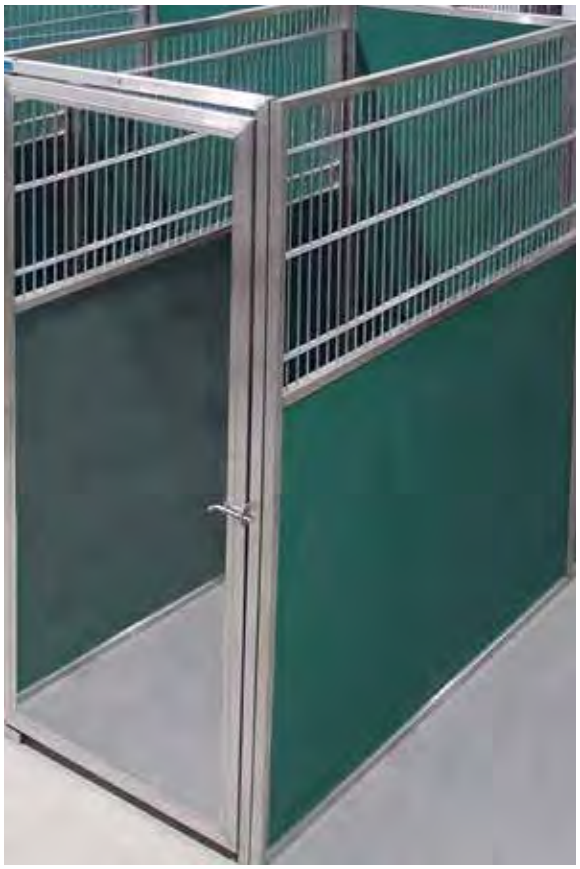
SIDE PANELS STAINLESS STEEL & STARLITE



Stainless Steel Side Panel

- Constructed of 18 gauge 304 stainless steel 1 1/4" square tubing
- 48" H isolation partition is double wall 20 gauge stainless steel sheet metal and is lined with high density foam to reduce noise
- No exposed raw edges to catch hair and dirt
- Side panel fits over a floor mount "U" channel to prevent cross contamination
- INCLUDES: Wall Angle to connect panel to back wall
- Available in custom sizes

#1048-SP 48" W x 75 1/2" H
#1060-SP 60" W x 75 1/2" H
#1072-SP 72" W x 75 1/2" H
#1084-SP 84" W x 75 1/2" H
#1096-SP 96" W x 75 1/2" H



Starlite Side Panel

- Frame body constructed of heavy duty TYPE 304 stainless steel
- Hand welded and polished
- 1/4" Stainless steel vertical and horizontal rods
- 48" H Isolation partition is a wall of 0.40" HDPE (high density polyethylene)
- INCLUDES: Wall Angle to connect panel to back wall

#1048-SLSP 48" L x 75 1/2" H Starlite Side Panel*
#1060-SLSP 60" L x 75 1/2" H Starlite Side Panel*
#1072-SLSP 72" L x 75 1/2" H Starlite Side Panel*
#1084-SLSP 84" L x 75 1/2" H Starlite Side Panel*
#1096-SLSP 96" L x 75 1/2" H Starlite Side Panel*
* INDICATE COLOR WHEN ORDERING

STARLITE IS A HIGH DENSITY POLYETHYLENE (HDPE)

- Abrasion Resistant
- Moisture Resistant
- Stain Resistant
- Odor Resistant
- Very Durable
- FDA Approved
- High Impact Strength
- Chemical Resistant

Available Starlite Colors

Blue Clay Green Red

*This is a photographic image and may not reflect exact color due to slight variations in manufacturing.
PLEASE CALL FOR FREE SAMPLE BEFORE ORDERING

DOORS PREMIUM & BOWL FEEDER



Premium Door

There are many reasons why the TriStar Premium kennel door will provide your facility with the performance you require.

- 1 1/4" stainless steel tubing is miter cut to create a pleasing aesthetic (Miter-diagonally joined at the corner)
- Stainless steel rods are welded to the bottom frame so urine, water and bacteria will not get trapped inside
- Kennel doors swing both in and out to assist with large or aggressive dogs and to allow kennel runs in narrow areas
- No bottom rail to trip over or trap urine, feces or fur
- Positive spring loaded latch allows one- handed operation & assures door can't be pushed open once closed
- Custom sizes available, great for renovating in existing spaces
- Wall angles to attach doors to block wall included/standard
- Grill door is made up of 1/4" stainless rods that pass through 14 gauge stainless band, Then tack welded to prevent rattling

#1036-KD 35 1/2" W x 75 1/2" H
#1048-KD 47 1/2" W x 75 1/2" H
#1060-KD 59 1/2" W x 75 1/2" H



Rotating Bowl Feeder

A stainless steel panel that rotates 360 degrees. This feature provides easy and safe access to food and water. A self-closing spring latch design makes this feature very easy to operate. This is an option that can be built into any door manufactured by TriStar. Two stainless steel 2 quart bowls included.

#1036-BF



BACK PANELS
STAINLESS STEEL & STARLITE



Stainless Steel Back Panel

- Panel is double wall 20 gauge stainless steel sheet metal and is lined with high density foam to reduce noise
- No exposed raw edges to catch hair and dirt
- Side panel fits over a floor mount "U" channel to prevent cross contamination
- INCLUDES: Wall Angle to connect panel to back wall
- Available in custom sizes
- Panel is designed with cross break for added strength

#1036-BP 35 1/2" W x 75 1/2" H Stainless Steel Back Panel
#1048-BP 47 1/2" W x 75 1/2" H Stainless Steel Back Panel
#1060-BP 59 1/2" W x 75 1/2" H Stainless Steel Back Panel



Starlite Back Panel

- Panel frame is constructed of heavy duty TYPE 304 stainless steel
- Panel is a wall of 0.40" HDPE (high density polyethylene)
- Hand welded and polished

#1036-SLBP 35 1/2" W x 75 1/2" H Starlite Back Panel*
#1048-SLBP 47 1/2" W x 75 1/2" H Starlite Back Panel*
#1060-SLBP 59 1/2" W x 75 1/2" H Starlite Back Panel*
* INDICATE COLOR WHEN ORDERING (See page 41 for color options)

GUILLOTINE



Open Position Closed Position

TRANSFER DOOR TO BE SURFACE MTD.

Starlite Back Panel Guillotine Door

The guillotine door is a feature offered in all starlite back panels. The door runs the width the back panel and slides inside of a stainless steel track. A back panel with guillotine door is usually used when you have a back-to-back kennel design. This feature provides easy and safe access to the adjoining kennel.

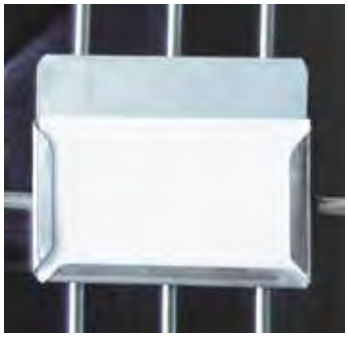


1000-EZCB
Upgraded Counter Balance & Slides



1000-GDCB
Counter Balance

ACCESSORIES



Card Holders

- Constructed of 304 stainless steel
- Attaches to any Kennel or Cage rod door

#CHGD-3x5 3"x5" Glass Door Card Holder
#CHGD-5x7 5"x7" Glass Door Card Holder
#CHRD-3x5 3"x5" Rod Door Card Holder
#CHRD-5x7 5"x7" Rod Door Card Holder





Kennel Mount Infusion Platforms

- Constructed of heavy type 304 stainless steel
- Attachment pole doubles as IV pole
- IV hook included
- Hanger hooks attach to most kennels and cages
- Available in custom sizes

#1000-IP Single Infusion Pump Platform
#1010-IP Dual Infusion Pump Platform



Stainless Steel Resting Bench

- Constructed of 304 stainless steel
- Hinge system enables it to swing up for cleaning

#1036-RB 35 1/2" W x 24" D Stainless Steel Resting Bench
#1048-RB 47 1/2" W x 24" D Stainless Steel Resting Bench
#1060-RB 59 1/2" W x 24" D Stainless Steel Resting Bench



Starlite Resting Bench (Not Shown)

- Stainless steel frame and Starlite surface design
- Hinge system enables it to swing up for cleaning

#1036-SLRB 35 1/2" W x 24" D Starlite Resting Bench
#1048-SLRB 47 1/2" W x 24" D Starlite Resting Bench
#1060-SLRB 59 1/2" W x 24" D Starlite Resting Bench



Starlite Trough Cover

- Stainless steel frame and Starlite surface design
- "Z-Clip" design enables you to lift off cover for easy cleaning

#1036-SLTC 35 1/2" W x 12" D Starlite Trough Cover
#1048-SLTC 47 1/2" W x 12" D Starlite Trough Cover
#1060-SLTC 59 1/2" W x 12" D Starlite Trough Cover

Stainless Steel Trough Cover (Not Shown)

- Constructed of 304 stainless steel
- "Z-Clip" design enables you to lift off cover for easy cleaning

#1036-TC 35 1/2" W x 12" D Stainless Steel Trough Cover
#1048-TC 47 1/2" W x 12" D Stainless Steel Trough Cover
#1060-TC 59 1/2" W x 12" D Stainless Steel Trough Cover

Kennel Roof Enclosures

- Constructed of heavy duty stainless steel

#1000-RE * CALL FOR SIZES AND PRICING

NO. 410.01 HOOK, LEASH

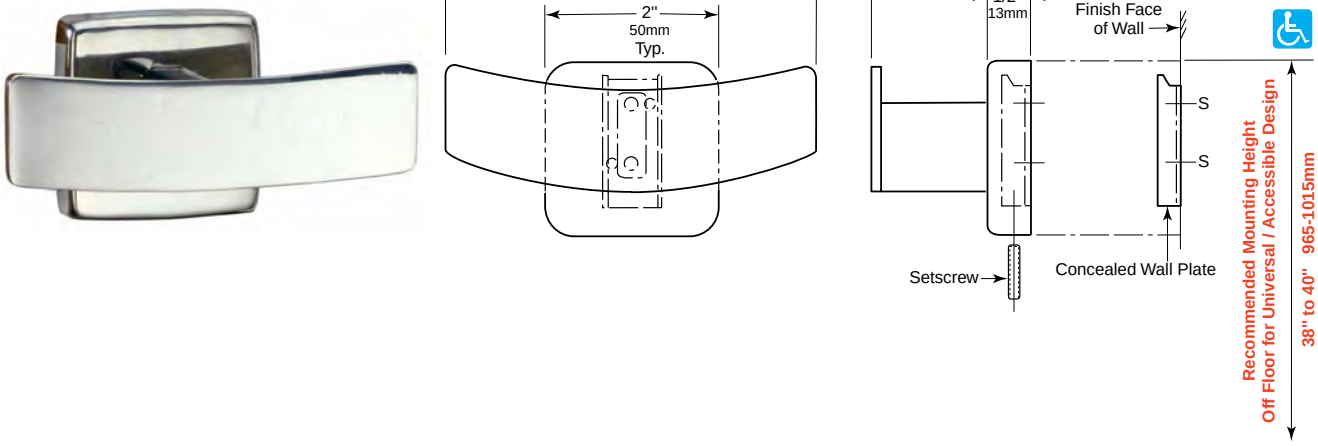
BOBRICK

Technical Data

ClassicSeries® SURFACE-MOUNTED DOUBLE ROBE HOOK

B-672
B-6727

Specify Model Required: ☐ Model B-672 Bright polished stainless steel
☐ Model B-6727 Satin-finish stainless steel



MATERIALS:

Flange and Support Arm — 18-8, type-304, 22-gauge (0.8mm) stainless steel. Concealed, 16-gauge (1.6mm) stainless steel mounting bracket. All-welded construction. Secured to wall plate with a stainless steel setscrew.

Concealed Wall Plate — 18-8, type-304, 16-gauge (1.6mm) stainless steel.

Cap — 18-8, type-304, 10-gauge (3.6mm) stainless steel. Welded to the support arm.

INSTALLATION:

To remove concealed wall plate from back of flange and mounting bracket, loosen setscrew. Mount wall plate so prongs are at top; secure with two sheet-metal screws, furnished by manufacturer, at points indicated by an *S*. Engage mounting bracket onto prongs of wall plate, then secure into position by tightening setscrew at bottom of flange.

For partitions with particle-board or other solid core, secure with sheet-metal screws furnished, or provide through-bolts, nuts, and washers.

For hollow-core metal partitions, provide solid backing into which the furnished sheet-metal screws can be secured.

For plaster or dry wall construction, provide concealed backing to comply with local building codes, then secure unit with sheet-metal screws furnished.

For other wall surfaces, provide fiber plugs or expansion shields for use with sheet-metal screws furnished, or provide 1/8" (3mm) toggle bolts or expansion bolts.

SPECIFICATION:

Surface-mounted double robe hook shall be type-304 stainless steel with _____ (insert one: bright polished or satin) finish. Flange and support arm shall be 22 gauge (0.8mm) and equipped with a concealed, 16-gauge (1.6mm) mounting bracket that is secured to a concealed, 16-gauge (1.6mm) wall plate with a stainless steel setscrew. Cap shall be 10 gauge (3.6mm), welded to the support arm.

Surface-Mounted Double Robe Hook shall be Model _____ (insert model number) of Bobrick Washroom Equipment, Inc., Clifton Park, New York; Jackson, Tennessee; Los Angeles, California; Bobrick Washroom Equipment Company, Scarborough, Ontario; Bobrick Washroom Equipment Pty. Ltd., Australia; and Bobrick Washroom Equipment Limited, United Kingdom.

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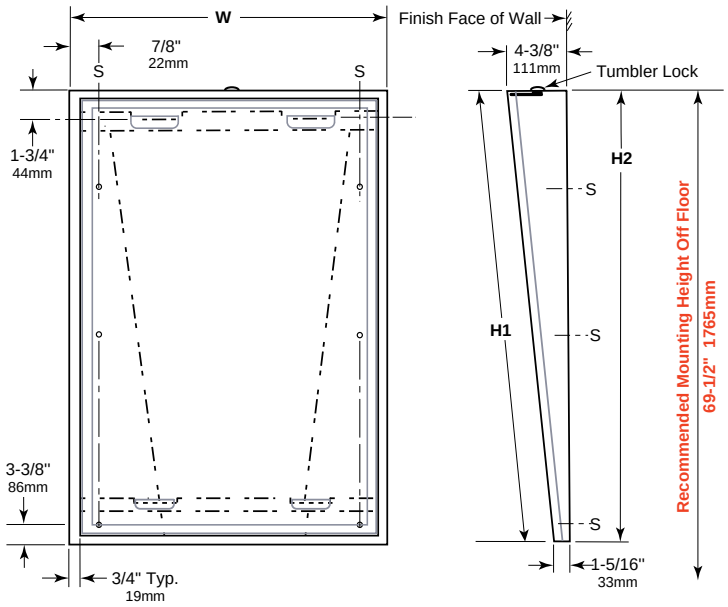
BOBRICK

Technical Data

TILT MIRROR WITH STAINLESS STEEL FRAME

B-293 SERIES





STANDARD STOCK SIZES

MODEL NO.	MIRROR SIZE W	MIRROR SIZE H1	OVERALL SIZE W	OVERALL SIZE H2
B-293 1830	18" (46cm)	30" (76cm)	18" (46cm)	30-3/16" (77cm)
B-293 1836	18" (46cm)	36" (91cm)	18" (46cm)	36-3/16" (92cm)
B-293 2436	24" (61cm)	36" (91cm)	24" (61cm)	36-3/16" (92cm)

Other sizes up to 40" x 40" (101 x 122cm) or 48" x 36" (122 x 91cm) are available on special order; minimum size available, 16" x 24" (41 x 61cm).
Design not as shown

MATERIALS:

Mirror Frame — 18-8, type 304, heavy-gauge stainless steel, 3/4" x 3/4" (19 x 19mm) angle with vertical-grain satin finish. One piece, roll-formed construction forms continuous integral stiffener on all sides. Bevel design on front of angle holds frame tightly against mirror. Corners of mirror frame are heliarc welded, ground and polish smooth. Galvanized steel back is fastened to frame with concealed screws and equipped with integral horizontal hanging brackets near the top and bottom of the mirror for hanging the mirror and to prevent the mirror from pulling away from the wall frame.

Wall Frame — 18-8, type 304, heavy-gauge stainless steel with satin finish. Tapers from 4-3/8" (111mm) depth at top to 1-5/16" (33mm) depth at bottom. Wall Frame furnished with tumbler lock to secure mirror to wall frame.
Designer's Note: Type 304 stainless steel provides superior corrosion resistance, compared to 400 Series stainless steel, against environmental moisture, hose-down maintenance and strong cleaning solutions.

Mirror — No. 1 quality, 1/4" (6mm) select float glass, selected for silvering; electrolytically copper-plated by the galvanic process, guaranteed for 15 years against silver spoilage. All edges are polished and protected by plastic filler strips; back is protected by full-size, shock-absorbing, water-resistant, nonabrasive, 1/8" (3mm) thick polystyrene padding.

OPERATION:

Mirror is designed to provide full visibility for wheelchair patients in hospitals and nursing homes.

INSTALLATION:

For complete installation instructions please follow 293-69 installation instruction sheet.

SPECIFICATION:

Tilt mirror assembly shall consist of a mirror and a separate wall frame with built-in wall hanger. Wall frame furnished with tumbler lock for securing mirror to wall frame. Tilt mirror frame shall be type 304 stainless steel with beveled front to hold frame tightly against mirror; corners shall be welded, ground, and polished smooth. Wall frame shall be type 304 stainless steel designed with horizontal locking bars to secure mirror to wall frame. All exposed surfaces shall have satin finish with vertical grain. Select float glass mirror shall be guaranteed for 15 years against silver spoilage. All edges shall be protected by plastic filler strips. Back shall be protected by full-size, shock-absorbing, water-resistant, nonabrasive, 1/8" (3mm) thick polystyrene padding.

Tilt Mirror shall be Model B-293 _____ (insert width and height) of Bobrick Washroom Equipment, Inc., Clifton Park, New York; Jackson, Tennessee; Los Angeles, California; Bobrick Washroom Equipment Company, Scarborough, Ontario; Bobrick Washroom Equipment Pty. Ltd., Australia; and Bobrick Washroom Equipment Limited, United Kingdom.

The illustrations and descriptions herein are applicable to production as of the date of this Technical Data Sheet.
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BOBRICK

Technical Data

1½" (38mm) DIAMETER STAINLESS STEEL GRAB BARS WITH SNAP FLANGE

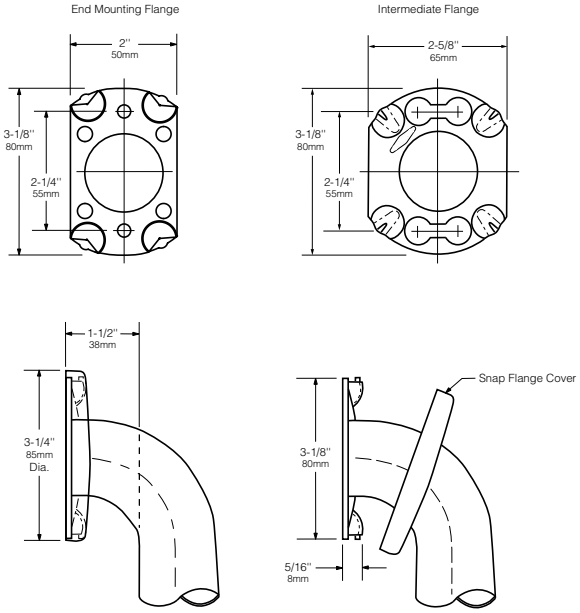
B-6806 SERIES

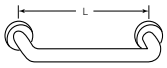
Specify Finish Required:

☐ Satin finish

☐ Satin finish with peened gripping surface; add suffix .99 to model number





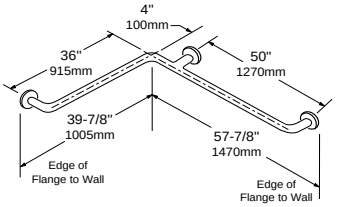


HORIZONTAL

B-6806 x 12, 18, 24, 30, 36, 42, 48

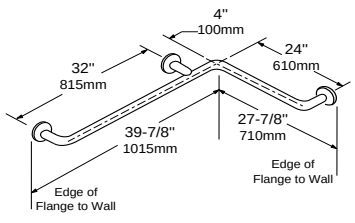


VERTICAL



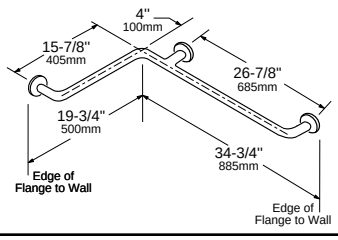
TWO-WALL WHEELCHAIR COMPARTMENT

B-68137



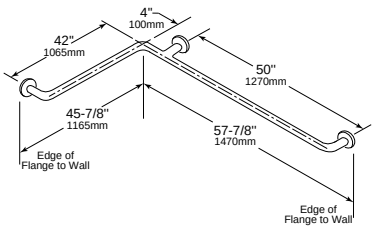
HORIZONTAL TUB / SHOWER COMPARTMENT BAR 24 x 36

B-68616



HORIZONTAL TWO-WALL BAR for Shower Stall

B-6861



TWO-WALL TOILET COMPARTMENT BAR 42 x 54

B-6897

continued . . .

The illustrations and descriptions herein are applicable to production as of the date of this Technical Data Sheet.
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MATERIALS:

Grab Bar — 18-8 S, type-304, 18-gauge (1.2mm) stainless steel tubing with satin-finish. 1-1/2" (38mm) outside diameter. Ends are heliarc welded to flanges. Clearance between the grab bar and wall is 1-1/2" (38mm).

Concealed Mounting Flanges — 18-8 S, type-304, 11-gauge (3.2mm) thick, stainless steel plate; end flanges 2" x 3-1/8" (50 x 80mm) with holes for attachment to wall. Intermediate flanges 2-5/8" x 3-1/8" (65 x 80mm) wide x 3-1/8" (80mm) diameter.

Snap Flange Covers — 18-8 S, type-304, 22-gauge (0.8mm) drawn stainless steel with satin-finish. 3-1/4" (85mm) diameter x 1/2" (13mm) deep. Each cover snaps over mounting flange to conceal mounting screws.

STRENGTH:

Bobrick grab bars that provide 1-1/2" (38mm) clearance from wall can support loads in excess of 900 pounds (408kg) if properly installed. Other grab bar configurations can support loads in excess of 250 pounds (113kg) if properly installed, complying with accessible design (including ADAAG in the U.S.A.) for structural strength

Safety Warning: Grab bars are no stronger than the anchors and walls to which they are attached and, therefore, must be firmly secured in order to support the loads for which they are intended. To avoid potential injury, the building owner or maintenance personnel should remove the grab bar from service if the grab bar is not adequately secured to wall or if there is any observed damage to the welds.

INSTALLATION:

Provide concealed anchor device or backing as specified or required in accordance with local building codes before wall is finished. Fasten concealed mounting flanges to anchor device or backing with at least two screws opposing each other in each flange. Snap flange covers over each mounting flange to conceal mounting screws. Concealed anchor devices and mounting screws are not included with Bobrick grab bars and must be specified as an accessory.

For Grab Bars with an Intermediate Flange(s), Pull Snap-Flange Covers away from mounting flanges. Place grab bar in desired mounting location. Use intermediate flange as a template to mark location of mounting screws at intermediate flange only. Mark screw locations at the center of the slot in the middle of the double-keyhole shaped mounting holes (2) in the intermediate flange. Remove grab bar from wall. Drive the intermediate flange mounting screws into wall at marked locations. **Note:** Make sure to leave a space of just over 1/8" (3.17mm) between the underside of the screw head and the wall. Install grab bar on the wall by placing the round ends of the intermediate flange double-keyhole shaped mounting holes over the mounting screws (2) are located in the middle of the flange slots. Install the mounting screws into the wall at the end flanges and secure tightly. Tighten the mounting screws at the intermediate flange. Press all snap-flange covers into place to conceal mounting flanges.

Note: Recommend use of 1/4" or #14 sheet metal or wood screws to install Intermediate Flange. #12 screws may also be used.

Important Notes:

1. **Mounting Kits —** Bobrick offers a mounting kit for installing grab bars; **one Bobrick mounting kit is required for each flange.**

Mounting Kit No.	Description
252-30	Consists of # (3) 14 x 2½" type-304 stainless steel, Phillips round-head, sheet-metal screws.

2. **Grab Bar Fastener —** Bobrick offers a grab bar fastening system that secures all Bobrick grab bar series; **one Bobrick fastener is required for each flange.** Install grab bar without backing in wall requires minimum 5/8" (16mm) thick painted or tiled drywall.

WingIt™ Fastener No.	Description
251-4	Consists of 10–32 x 5/16" round-head, Phillips 18/8 stainless steel screws. (1) WingIt grab bar fastener.

3. **Optional Anchor Device —** Bobrick grab bar anchor device includes stainless steel machine screws to be used for attaching grab bars to anchors. **one Bobrick concealed anchor device is required for each flange.**

Optional Anchor No.	Description
2583	Anchor for 3/4" to 1" (19-25mm) panel 1 anchor required for each flange.
2586	Anchor for 1/2" to 1" (13mm) panel 1 anchor required for each flange.

SPECIFICATION:

Grab bar shall be type-304 stainless steel with satin-finish. Grab bar shall have 18-gauge (1.2mm) wall thickness and 1-1/2" (38mm) outside diameter. Clearance between the grab bar and wall shall be 1-1/2" (38mm). Concealed mounting flanges shall be 11-gauge (3.2mm) thick stainless steel plate, 2" x 3-1/8" (50 x 80mm), and equipped with at least two screw holes for attachment to wall. Flange covers shall be 22 gauge (0.8mm), 3-1/4" (85mm) diameter x 1/2" (13mm) deep, and shall snap over mounting flange to conceal mounting screws and/or WingIt fasteners. Ends of grab bar shall pass through concealed mounting flanges and be heliarc welded to form one structural unit. Grab bar shall comply with accessible design (including ADAAG in the U.S.A.) for structural strength.

Grab Bar shall be Model _____ (insert model number) of Bobrick Washroom Equipment, Inc., Clifton Park, New York; Jackson, Tennessee; Los Angeles, California; Bobrick Washroom Equipment Company, Scarborough, Ontario; Bobrick Washroom Equipment Pty. Ltd., Australia; and Bobrick Washroom Equipment Limited, United Kingdom.

The illustrations and descriptions herein are applicable to production as of the date of this Technical Data Sheet.
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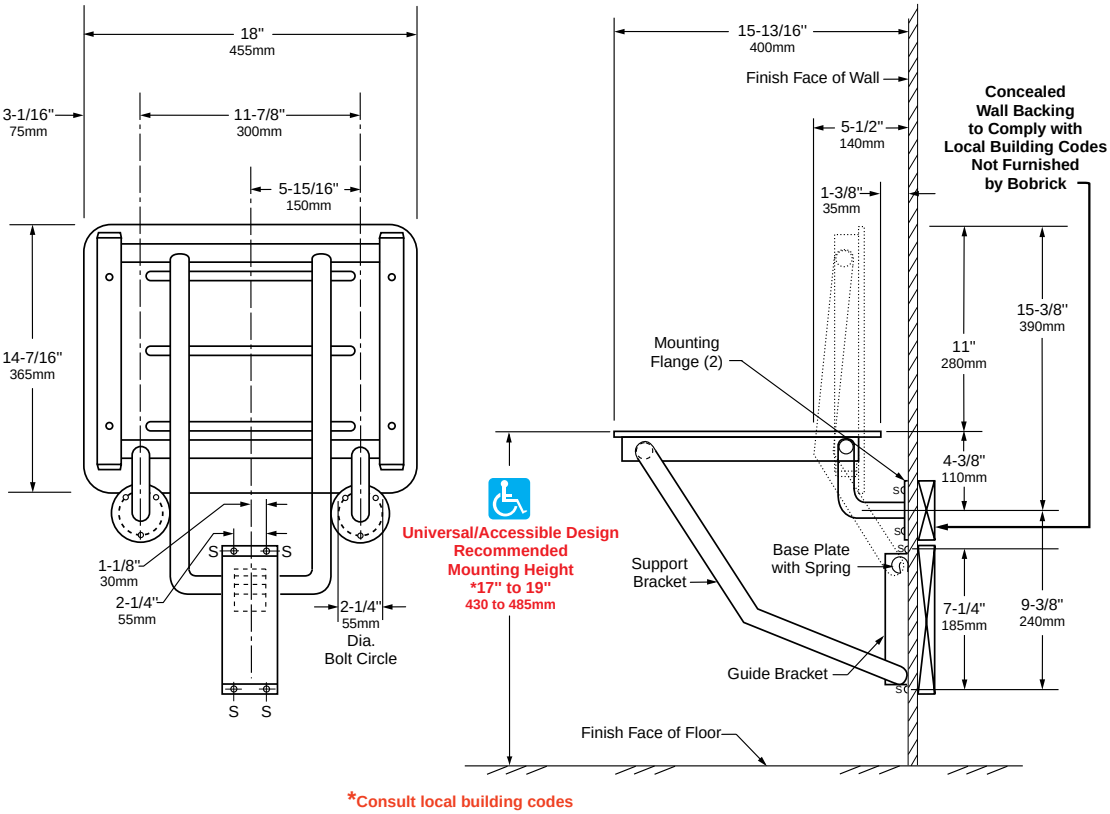
BOBRICK

Technical Data

SOLID PHENOLIC FOLDING SHOWER/DRESSING AREA SEAT

B-5191





*Consult local building codes

MATERIALS:

Seat — One-piece, 5/16" (8mm) thick, solidly fused plastic laminate with matte-finish melamine surfaces, ivory-colored face sheets, and black phenolic-resin core that are integrally bonded — cannot delaminate. Integral slots for water drainage. Secured to frame with stainless steel carriage bolts and acorn nuts.

Frame — 18-8, Type-304, stainless steel with satin finish. 16-gauge (1.6mm), 1-1/4" (30mm) square tubing and 18-gauge (1.2mm), 1" (25mm) diameter seamless tubing.

Mounting Flanges (2) — 18-8, Type-304, 3/16" (5mm) thick stainless steel with satin finish. 3" (75mm) diameter with three mounting screw holes.

Baseplate — 18-8, Type-304, heavy-gauge stainless steel.

Spring — 17-7, Type-301, 24-gauge (0.6mm) stainless steel. Spot-welded to baseplate.

Guide Bracket — 18-8, Type-304, 16-gauge (1.6mm) stainless steel with satin finish.

continued . . .

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OPERATION:

Shower seat can be folded up against the wall when not in use. The spring at the top of baseplate holds seat into upright position until released by pulling the top of seat away from wall. Bobrick Folding Shower Seats are not spring-loaded. The seats do not return automatically to the upright position after use. Support system with guide bracket allows varying mounting heights and leaves floor clear for easier cleaning. Nonporous solid phenolic seat has slots to permit water to drain, does not splinter or require oiling, and will not support growth of bacteria. Slotless round-head carriage bolts and acorn nuts provide additional safety to user. Bobrick shower seats, when properly installed, have sufficient strength to support 500 lbs., (227 kg) complying with accessible design guidelines (including ADAAG in the U.S.A.).

INSTALLATION:

Secure unit to wall at points indicated by an *S*, with the two mounting flanges located at top and the baseplate and guide bracket below. The bottom of support bracket must be positioned between the baseplate and guide bracket before they are secured to wall or partition. Mounting height of shower seat must comply with local building codes.

For stud walls, provide concealed backing to comply with local building codes and secure with #14 x 2-1/2" (6.3 x 65mm) stainless steel sheet-metal screws furnished by manufacturer.

For prefabricated shower stalls, provided adequate backing by the shower stall manufacturer. Secure with #14 x 2-1/2" (6.3 x 65mm) stainless steel mounting screws furnished by manufacturer. Bobrick offers a mounting kit for installing shower seats. For additional mounting kits please order 252-30. One mounting kit is required for each flange.

For masonry walls, provide fiber plugs or expansion shields for use with furnished sheet-metal screws, or provide 1/4" (6mm) toggle bolts or expansion bolts.

INSTALL SAFETY PLATE TO WALL:

Safety Plate is to be mounted on wall near Shower Seat in order to properly advise users of the Seat's weight restrictions. Correct installation of the Safety Plate will ensure that the Shower Seat meets A.N.S.I. Standards.

Permanently affix Safety Plate to wall on either side of the Shower Seat at a minimum height of 30" (760mm). If mounted above Seat, the Plate must be high enough so that it is not covered when Seat is on the up position. Mounting screws (4) are recommended, but double-sided tape on rear of Plate may be used for very smooth, non-porous surfaces.

SAFETY WARNING: Shower seats are no stronger than the anchors and walls to which they are attached and must be firmly secured in order to support the loads for which they are intended. Consult and comply with local building codes. To avoid potential injury, the building owner or maintenance personnel should remove the shower seat from service if the shower seat is not adequately secured to the wall. Unit shall support static loads of up to 500 lbs (227 kg) when properly installed and used. To avoid potential seat malfunction, DO NOT use seat if weight exceeds 500 lbs (227 kg).

SPECIFICATION:

Folding shower seat shall have a frame constructed of Type-304, satin-finish stainless steel that consists of 16-gauge (1.6mm), 1-1/4" (30mm) square tubing and 18-gauge (1.2mm), 1" (25mm) diameter seamless tubing. Seat shall be one-piece, 5/16" (8mm) thick, solidly fused plastic laminate with matte-finish melamine surfaces, ivory-colored face sheets, and black phenolic-resin core; secured to frame with stainless steel carriage bolts and acorn nuts. Shower seat shall be equipped with two 3" (75mm) diameter mounting flanges constructed of Type-304, 3/16" (5mm) thick, satin-finish stainless steel; a guide bracket constructed of Type-304, 16-gauge (1.6mm), satin-finish stainless steel; and a spring constructed of Type-301, 24-gauge (0.6mm) stainless steel that is spot-welded to a baseplate of Type-304, heavy-gauge stainless steel. Seat shall be able to lock in upright position when not in use. Shower seat shall comply with accessible design guidelines (including ADAAG in the U.S.A.).

Folding Shower Seat shall be Model B-5191 of Bobrick Washroom Equipment, Inc., Clifton Park, New York; Jackson, Tennessee; Los Angeles, California; Bobrick Washroom Equipment Company, Scarborough, Ontario; Bobrick Washroom Equipment Pty. Ltd., Australia; and Bobrick Washroom Equipment Limited, United Kingdom.

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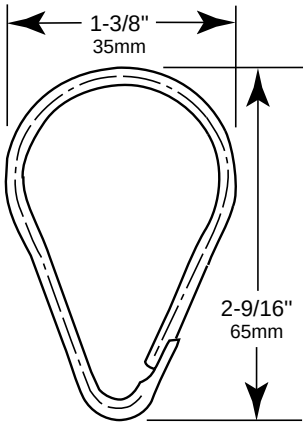
BOBRICK

Technical Data

STAINLESS STEEL SHOWER CURTAIN HOOK

204-1





MATERIALS:

18-8, Type-304, 0.09" (2.28mm) diameter stainless steel.

OPERATION:

Shower curtain hooks can be used with 1" and 1-1/4" (25 and 32mm) diameter shower curtain rods.

Designer's Note: 72" (1830mm) high shower curtains of opaque white vinyl are available from Bobrick as an optional accessory. Order Part No. 204-2 for 42" (1065mm) wide curtains (requires 7 hooks) or Part No. 204-3 for 70" (1780mm) wide curtains (requires 12 hooks).

INSTALLATION:

Hooks snap open to allow placement on 1" (25mm) or 1-1/4" (32mm) diameter shower curtain rods. Recommended for use with Bobrick Models B-207, B-4207, B-6047, and B-6107 stainless steel shower curtain rods.

SPECIFICATION:

Shower curtain hooks shall be 0.09" (2mm) diameter, type-304 stainless steel. Hooks shall be usable with 1" and 1-1/4" (25 and 32mm) diameter shower curtain rods.

Stainless Steel Shower Curtain Hooks shall be Part No. 204-1 of Bobrick Washroom Equipment, Inc., Clifton Park, New York; Jackson, Tennessee; Los Angeles, California; Bobrick Washroom Equipment Company, Scarborough, Ontario; Bobrick Washroom Equipment Pty. Ltd., Australia; and Bobrick Washroom Equipment Limited, United Kingdom.

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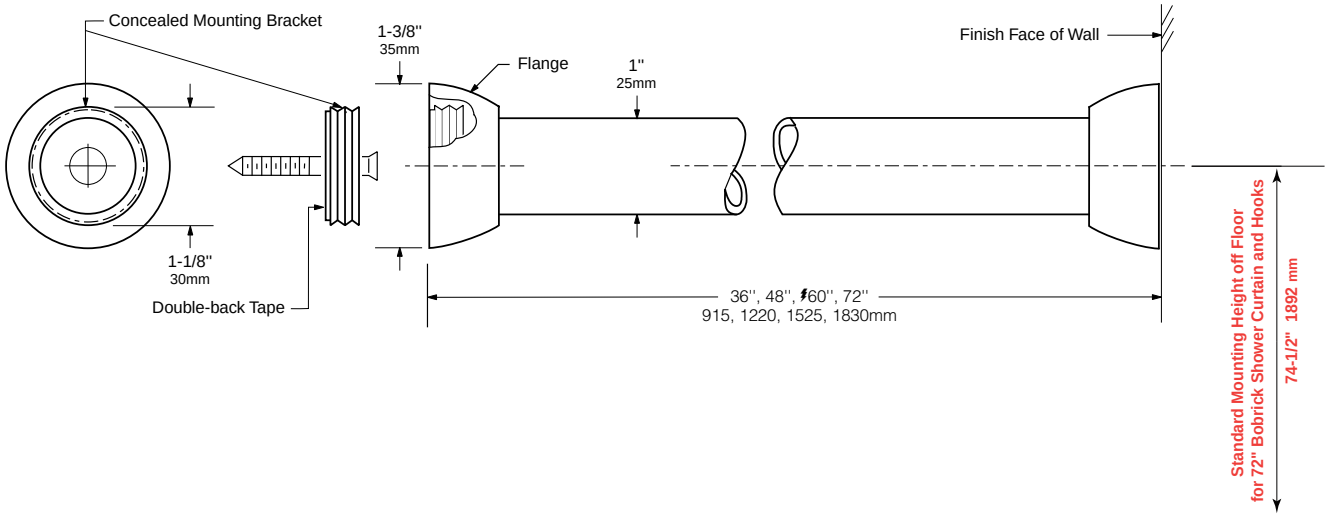
BOBRICK

Technical Data

HEAVY-DUTY SHOWER CURTAIN ROD WITH CONCEALED MOUNTING

B-207





MATERIALS:

Curtain Rod — 18-8, Type-304, 20-gauge (1.0mm) stainless steel tubing with satin finish. 1" (25mm) outside diameter. Available in lengths from 36" (915mm) up to 72" (1830mm).

Flanges (2) — 1-3/8" (35mm) diameter. Chrome-plated plastic. Bright polished finish.

Concealed Mounting Brackets (2) — Aluminum.

INSTALLATION:

Remove protective backing from tape attached to concealed mounting brackets. Position mounting brackets on opposite shower walls and secure with screws furnished by manufacturer. For plaster or dry wall construction, provide concealed backing to comply with local building codes, then secure brackets with screws furnished. For other wall surfaces, provide fiber plugs or expansion shields for use with screws furnished, or provide 1/8" (3mm) toggle bolts or expansion bolts. Slide flanges onto opposite ends of curtain rod. Position curtain rod, then screw threaded flanges onto mounting brackets.

SPECIFICATION:

Shower curtain rod shall be Type-304, 20-gauge (1.0mm) stainless steel with satin finish. It shall have an outside diameter of 1" (25mm). Flanges shall be 1-3/8" (35mm) diameter chrome-plated plastic with bright polished finish. Unit shall be equipped with concealed mounting brackets.

Shower Curtain Rod shall be Model B-207 x _____ (insert length) of Bobrick Washroom Equipment Inc., Clifton Park, New York; Jackson, Tennessee; Los Angeles, California; Bobrick Washroom Equipment Company, Scarborough, Ontario; Bobrick Washroom Equipment Pty. Ltd., Australia; and Bobrick Washroom Equipment Limited, United Kingdom.

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BOBRICK

Technical Data

VINYL SHOWER CURTAINS

204-2
204-3

Specify Part Required:

- ❑ 204-2 42" wide x 72" high (1065 x 1830mm)
- ❑ 204-3 70" wide x 72" high (1780 x 1830mm)



MATERIALS:

Opaque, matte white vinyl 0.008" (0.2mm) thick, containing antibacterial and flame-retardant agents. White HDPE grommets along top, one every 6" (150mm). Bottom and sides are hemmed.

OPERATION:

Hooks available as optional accessory: order Bobrick Part No. 204-1. 204-2 shower curtain, 42" wide x 72" high (1065 x 1830mm), requires 7 hooks. 204-3 shower curtain, 70" wide x 72" high (1780 x 1830mm), requires 12 hooks.

INSTALLATION:

Recommended for use with Bobrick stainless steel shower curtain hooks on Bobrick stainless steel shower curtain rods: Models B-207, B-4207, B-6047 and B-6107.

SPECIFICATION:

Shower curtains shall be opaque, matte white vinyl 0.008" (0.2mm) thick, containing antibacterial and flame-retardant agents (Formulated to meet CFSM Title 19.13115), and shall have white HDPE grommets along top. Bottom and sides shall be hemmed.
NFPA-701 certified.

Vinyl Shower Curtains shall be Model _____ (insert model number) of Bobrick Washroom Equipment, Inc., Clifton Park, New York; Jackson, Tennessee; Los Angeles, California; Bobrick Washroom Equipment Company, Scarborough, Ontario; Bobrick Washroom Equipment Pty. Ltd., Australia; and Bobrick Washroom Equipment Limited, United Kingdom.

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BOBRICK

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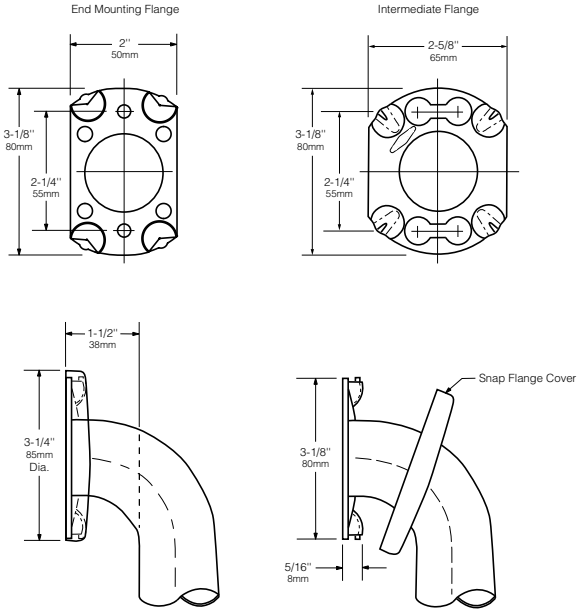
1½" (38mm) DIAMETER STAINLESS STEEL GRAB BARS WITH SNAP FLANGE

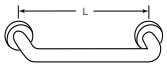
B-6806 SERIES

Specify Finish Required:

- ☐ Satin finish
- ☐ Satin finish with peened gripping surface; add suffix .99 to model number



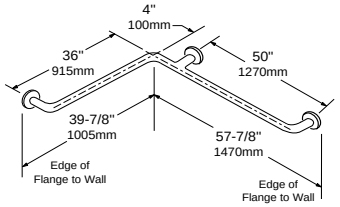




HORIZONTAL



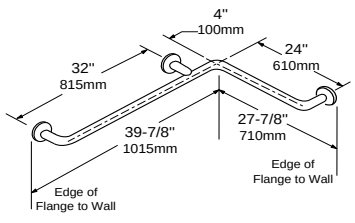
VERTICAL



TWO-WALL WHEELCHAIR COMPARTMENT

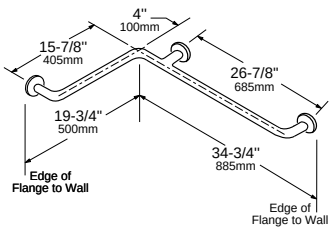
B-6806 x 12, 18, 24, 30, 36, 42, 48

B-68137



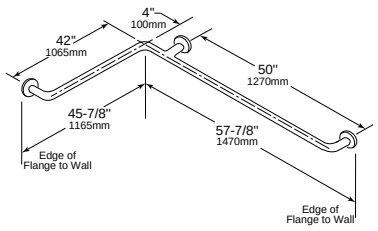
HORIZONTAL TUB / SHOWER COMPARTMENT BAR 24 x 36

B-68616



HORIZONTAL TWO-WALL BAR for Shower Stall

B-6861



TWO-WALL TOILET COMPARTMENT BAR 42 x 54

B-6897

continued . . .

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MATERIALS:

Grab Bar — 18-8 S, type-304, 18-gauge (1.2mm) stainless steel tubing with satin-finish. 1-1/2" (38mm) outside diameter. Ends are heliarc welded to flanges. Clearance between the grab bar and wall is 1-1/2" (38mm).

Concealed Mounting Flanges — 18-8 S, type-304, 11-gauge (3.2mm) thick, stainless steel plate; end flanges 2" x 3-1/8" (50 x 80mm) with holes for attachment to wall. Intermediate flanges 2-5/8" x 3-1/8" (65 x 80mm) wide x 3-1/8" (80mm) diameter.

Snap Flange Covers — 18-8 S, type-304, 22-gauge (0.8mm) drawn stainless steel with satin-finish. 3-1/4" (85mm) diameter x 1/2" (13mm) deep. Each cover snaps over mounting flange to conceal mounting screws.

STRENGTH:

Bobrick grab bars that provide 1-1/2" (38mm) clearance from wall can support loads in excess of 900 pounds (408kg) if properly installed. Other grab bar configurations can support loads in excess of 250 pounds (113kg) if properly installed, complying with accessible design (including ADAAG in the U.S.A.) for structural strength

Safety Warning: Grab bars are no stronger than the anchors and walls to which they are attached and, therefore, must be firmly secured in order to support the loads for which they are intended. To avoid potential injury, the building owner or maintenance personnel should remove the grab bar from service if the grab bar is not adequately secured to wall or if there is any observed damage to the welds.

INSTALLATION:

Provide concealed anchor device or backing as specified or required in accordance with local building codes before wall is finished. Fasten concealed mounting flanges to anchor device or backing with at least two screws opposing each other in each flange. Snap flange covers over each mounting flange to conceal mounting screws. Concealed anchor devices and mounting screws are not included with Bobrick grab bars and must be specified as an accessory.

For Grab Bars with an Intermediate Flange(s), Pull Snap-Flange Covers away from mounting flanges. Place grab bar in desired mounting location. Use intermediate flange as a template to mark location of mounting screws at intermediate flange only. Mark screw locations at the center of the slot in the middle of the double-keyhole shaped mounting holes (2) in the intermediate flange. Remove grab bar from wall. Drive the intermediate flange mounting screws into wall at marked locations. **Note:** Make sure to leave a space of just over 1/8" (3.17mm) between the underside of the screw head and the wall. Install grab bar on the wall by placing the round ends of the intermediate flange double-keyhole shaped mounting holes over the mounting screws (2) are located in the middle of the flange slots. Install the mounting screws into the wall at the end flanges and secure tightly. Tighten the mounting screws at the intermediate flange. Press all snap-flange covers into place to conceal mounting flanges.

Note: Recommend use of 1/4" or #14 sheet metal or wood screws to install Intermediate Flange. #12 screws may also be used.

Important Notes:

1. **Mounting Kits —** Bobrick offers a mounting kit for installing grab bars; **one Bobrick mounting kit is required for each flange.**

Mounting Kit No.	Description
252-30	Consists of # (3) 14 x 2½" type-304 stainless steel, Phillips round-head, sheet-metal screws.

2. **Grab Bar Fastener —** Bobrick offers a grab bar fastening system that secures all Bobrick grab bar series; **one Bobrick fastener is required for each flange.** Install grab bar without backing in wall requires minimum 5/8" (16mm) thick painted or tiled drywall.

WingIt™ Fastener No.	Description
251-4	Consists of 10–32 x 5/16" round-head, Phillips 18/8 stainless steel screws. (1) WingIt grab bar fastener.

3. **Optional Anchor Device —** Bobrick grab bar anchor device includes stainless steel machine screws to be used for attaching grab bars to anchors. **one Bobrick concealed anchor device is required for each flange.**

Optional Anchor No.	Description
2583	Anchor for 3/4" to 1" (19-25mm) panel 1 anchor required for each flange.
2586	Anchor for 1/2" to 1" (13mm) panel 1 anchor required for each flange.

SPECIFICATION:

Grab bar shall be type-304 stainless steel with satin-finish. Grab bar shall have 18-gauge (1.2mm) wall thickness and 1-1/2" (38mm) outside diameter. Clearance between the grab bar and wall shall be 1-1/2" (38mm). Concealed mounting flanges shall be 11-gauge (3.2mm) thick stainless steel plate, 2" x 3-1/8" (50 x 80mm), and equipped with at least two screw holes for attachment to wall. Flange covers shall be 22 gauge (0.8mm), 3-1/4" (85mm) diameter x 1/2" (13mm) deep, and shall snap over mounting flange to conceal mounting screws and/or WingIt fasteners. Ends of grab bar shall pass through concealed mounting flanges and be heliarc welded to form one structural unit. Grab bar shall comply with accessible design (including ADAAG in the U.S.A.) for structural strength.

Grab Bar shall be Model _____ (insert model number) of Bobrick Washroom Equipment, Inc., Clifton Park, New York; Jackson, Tennessee; Los Angeles, California; Bobrick Washroom Equipment Company, Scarborough, Ontario; Bobrick Washroom Equipment Pty. Ltd., Australia; and Bobrick Washroom Equipment Limited, United Kingdom.

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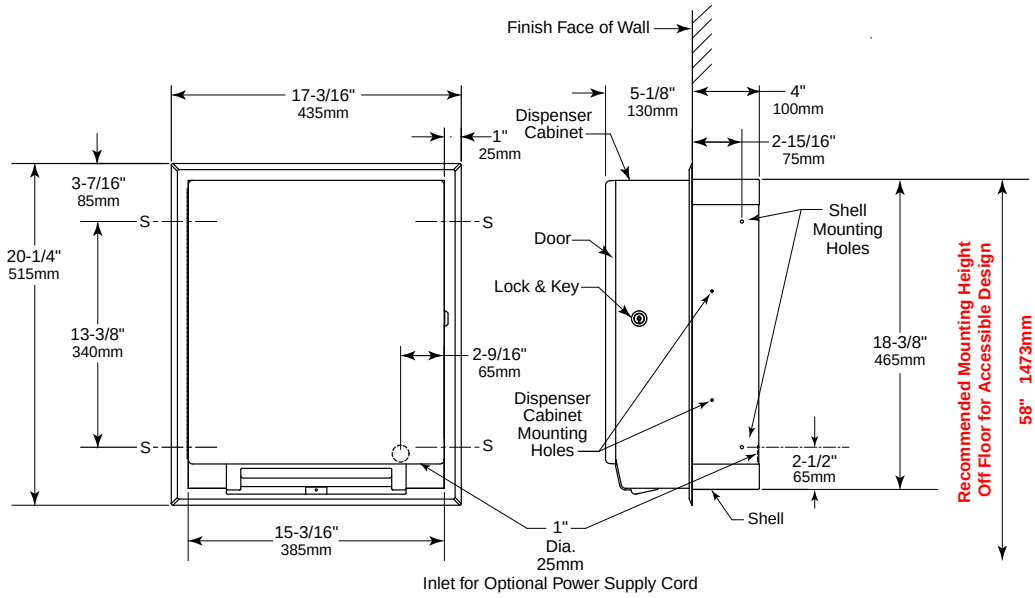
BOBRICK

Technical Data

SEMI-RECESSED AUTOMATIC, UNIVERSAL ROLL PAPER TOWEL DISPENSER

B-29744





Rough Wall Opening
16" (405mm) wide
18-7/8" (480mm) high
4" (102mm) minimum recessed depth

MATERIALS:

Cabinet — 18-8, Type-304, heavy-gauge stainless steel. All-welded construction. Exposed surfaces have satin finish. Equipped with a tumbler lock keyed like other Bobrick washroom accessories.

Door — 18-8, Type-304, 20-gauge (0.9mm) stainless steel with satin finish. Drawn, one-piece, seamless construction. Secured to cabinet with a full-length stainless steel piano-hinge.

Flange — 18-8, Type-304, 22-gauge (0.8mm)stainless steel with satin finish. Drawn, one-piece, seamless construction.

Shell — 18-8, Type-304, 22-gauge (0.8mm) stainless steel. All welded construction. Exposed surfaces have satin-finish.

Automatic Roll Towel Dispenser — Durable, high-impact resin materials. Accepts universal standard-core, non-perforated rolls 8" (205mm) wide, 8" (205mm) diameter. 800 ft (244 m) long. Dispenses one towel per dispense and can be set to dispense paper towels at three different lengths. Accommodates up to 3-1/2" (90mm) diameter stub roll with automatic transfer to full roll.

OPERATION:

Electronic sensor automatically dispenses towel when hands are placed under the towel opening. Intuitive LED light directs patrons to dispense area. Dispenses universal, 1-1/2" to 2" (38 to 51mm) diameter cores, up to 8" (205mm) diameter, 8" (205mm) wide, non-perforated, non-proprietary rolls. LED light at the towel opening flashes green when dispenser is ready to dispense, flashes orange, indicates low battery, flashes red if not ready to dispense or in need of service. Towel length can be set to 9" (230mm), 12" (305mm), 15" (380mm). Optional “Paper Saver” feature allows a shorter second sheet to dispense immediately after the first sheet. The “Paper Saver” feature has two second sheet length options: 25% shorter sheet length or 12.5% shorter sheet length. The battery pack power source, holds 4 “D” sized alkaline batteries (not furnished). Dispenser includes a 3-1/2" (90mm) diameter stub roll feature. When the stub roll is depleted, main roll automatically starts dispensing without the need to open the dispenser.

continued . . .

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POWER REQUIREMENTS:

Dispenser is powered by 4, "D" size alkaline batteries (not furnished) or an external 6-volt AC to DC power supply. Power supply is an optional accessory: order Bobrick Part No. 3974-57. (For non-U.S. compatible plugs, order Part No. 3974-55).

INSTALLATION:

Provide framed rough wall opening 16" wide x 18 7/8" high (405 x 480mm). Minimum recessed depth required to finish face of wall is 4" (102mm). Allow clearance for construction features that may protrude into rough wall opening from opposite wall. Coordinate with mechanical engineer to avoid pipes, vents and conduits. If unit projects above top of wainscot, provide channel or other filler to eliminate gap between flange and finish face of wall. Mount the Shell in wall opening with shims between framing and the shell at four points indicated by an S, then secure the Shell with #8 x 1-1/4" (4.2 x 32mm) sheet-metal screws (not furnished). Care should be taken to ensure that the heads of the mounting screws do not protrude. For plaster or dry wall construction, provide concealed backing to comply with local building codes, then secure the Shell with sheet-metal screws. For other wall surfaces, provide fiber plugs or expansion shields for use with flat-head sheet-metal screws, or provide 1/8" (3mm) toggle bolts or expansion bolts. Unlock and open the door of the dispenser cabinet. Carefully slide the dispenser cabinet into the shell while supporting it from underneath with one hand. Attach dispenser cabinet to shell using the pre-drilled pilot holes in the shell and four #8 x 1/2" (4.2 x 13mm) sheet metal screws (provided).

Open battery cover at the front of the dispenser and install 4, "D" size alkaline batteries. Select sheet length and "Paper Saver" mode using the switches to the right of the batteries. Load paper towel using the instructions on the dispenser.

Electrical supply for use with 6-volt AC to DC power supply must be installed per applicable building codes.

SPECIFICATION:

Semi-recessed mounted automatic universal roll paper towel dispenser shall be Type-304 stainless steel with all-welded construction; exposed surfaces shall have satin finish. Door shall be secured to cabinet with a full-length stainless steel piano-hinge and equipped with a concealed tumbler lock keyed like other Bobrick washroom accessories. No-touch dispenser, dispenses universal, 1-1/2" to 2" (38 to 51mm) diameter cores, up to 8" (205mm) diameter, 8" (205mm) wide, non-perforated, non-proprietary rolls. 800 ft (244 m) long. Dispenser automatically dispenses towel when hands are placed under the towel opening. Dispenser can be powered by 4 "D" size alkaline batteries or an optional 6-volt AC to DC power supply. Equipped with switches that allow paper length to be set at 9" (230mm), 12" (305mm) or 15" (380mm) and "Paper Saver" feature that provides a shorter second sheet with options of 25% shorter and 12.5% shorter. Blinking LED indicates if batteries need to be replaced. Automatic transfer shall dispense stub roll up to 3-1/2" (90mm) diameter before new roll is dispensed.

Semi-Recessed Automatic Universal Roll Paper Towel Dispenser shall be Model B-29744 of Bobrick Washroom Equipment, Inc., Clifton Park, New York; Jackson, Tennessee; Los Angeles, California; Bobrick Washroom Equipment Company, Scarborough, Ontario; Bobrick Washroom Equipment Pty. Ltd., Australia; and Bobrick Washroom Equipment Limited, United Kingdom.

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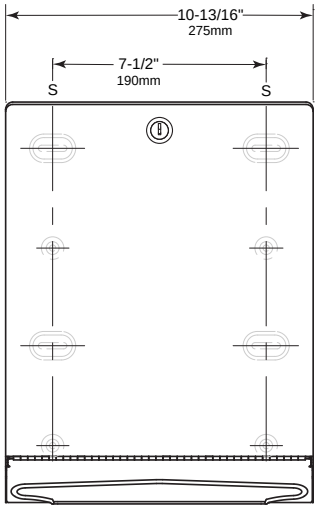
BOBRICK

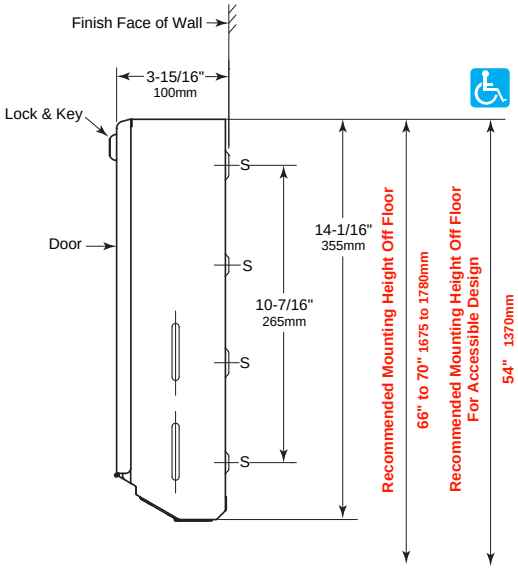
Technical Data

ClassicSeries® SURFACE-MOUNTED PAPER TOWEL DISPENSER

B-262







MATERIALS:

Cabinet — 18-8, type-304, 22-gauge (0.8mm) stainless steel. All-welded construction. Exposed surfaces have satin finish. Towel tray has hemmed opening to dispense paper towels without tearing.

Door — 18-8, type-304, 22-gauge (0.8mm) stainless steel with satin finish. Secured to cabinet with a full-length stainless steel piano-hinge. Equipped with a tumbler lock keyed like other Bobrick washroom accessories.

Optional: Order Bobrick Part No. 262-130 TowelMate® available as an optional accessory. TowelMate accessory allows for paper towels to dispense one at a time without bulging, sagging or falling through the towel tray opening. TowelMate fits Gamco and most manufacturers' similar models.

OPERATION:

Unit dispenses C-fold and multifold paper towels 3-1/8" to 3-13/16" (79–97mm) deep. Slots in sides of cabinet indicate refill time. Capacity: 400 C-fold or 525 multifold paper towels. To dispense narrower towels 2-1/2" to 3-1/8" (64–79mm) deep, order optional TowelMate accessory Bobrick Part No. 262-130.

INSTALLATION:

Mount unit on wall with four #10 x 1-1/4" (4.8 x 32mm) sheet-metal screws (not furnished) at four of the eight mounting holes indicated by an *S* (top slots and bottom holes preferable). For plaster or dry wall construction, provide concealed backing to comply with local building codes, then secure with sheet-metal screws. For other wall surfaces, provide fiber plugs or expansion shields for use with sheet-metal screws, or provide 1/8" (3mm) toggle bolts or expansion bolts.

SPECIFICATION:

Surface-mounted paper towel dispenser shall be type-304 stainless steel with all-welded construction; exposed surfaces shall have satin finish. Door shall be secured to cabinet with a full-length stainless steel piano-hinge and equipped with a tumbler lock keyed like other Bobrick washroom accessories. Paper towel tray shall have hemmed opening to dispense paper towels without tearing. Unit shall be capable of dispensing 400 C-fold or 525 multifold paper towels measuring 3-1/8" to 3-13/16" (79 to 97mm) deep. Narrower paper towels 2-1/2" to 3-1/8" (65 to 79mm) deep may be efficiently dispensed with the use of an optional TowelMate accessory, Bobrick Part No. 262-130. TowelMate accessory allows for paper towels to dispense one at a time without bulging, sagging or falling through the towel tray opening.

Surface-Mounted Paper Towel Dispenser shall be Model B-262 of Bobrick Washroom Equipment, Inc., Clifton Park, New York; Jackson, Tennessee; Los Angeles, California; Bobrick Washroom Equipment Company, Scarborough, Ontario; Bobrick Washroom Equipment Pty. Ltd., Australia; and Bobrick Washroom Equipment Limited, United Kingdom.

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NO. 443.01 DISPENSER, SANITIZER, TOUCHLESS

Omni-Foam Dispenser

Dispenser for foamed waterless sanitizers.
9oz and 17oz sizes available.



9 oz
2D43-Q7
(24/case)

2D45-QK
Optional
splashguard
24/case



17 oz
2D53-Q7
(12/case)

2D45-QK
Optional
splashguard
24/case

SDS Manual Dispenser

Dispenser for lotions, soaps, sanitizers and surgical scrubs.
Simply push the bar to dispense product. Fits 1L size.



NO. 444 DISPENSER, SANITIZER, TOUCHLESS

Omni-Foam Dispenser

Dispenser for foamed waterless sanitizers.
9oz and 17oz sizes available.



9 oz
2D43-Q7
(24/case)

2D45-QK
Optional
splashguard
24/case



17 oz
2D53-Q7
(12/case)

2D45-QK
Optional
splashguard
24/case

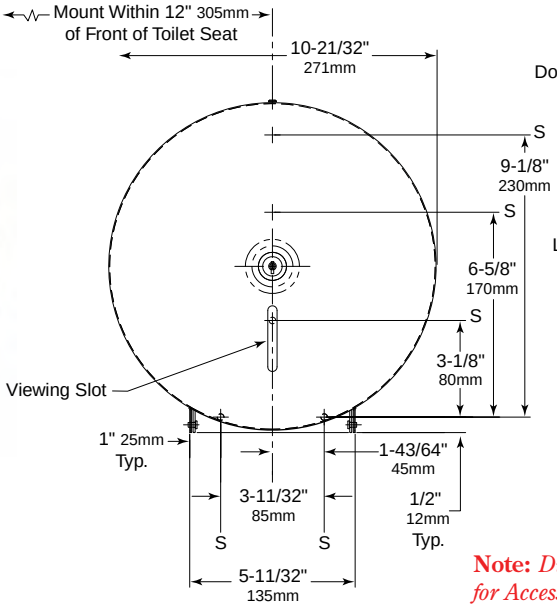
BOBRICK

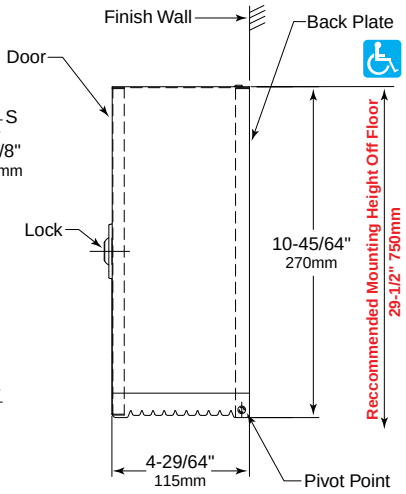
Technical Data

SURFACE-MOUNTED SINGLE JUMBO-ROLL TOILET TISSUE DISPENSER

B-2890







Note: *Dispenser is ICC A117.1 - 2009 Standard for Accessibility compliant. Unit can be located below grab bar, in area 24" minimum to 42" maximum from rear wall, with outlet 18" minimum above floor.*

MATERIAL:

Mounting Plate — 16-gauge (1.6mm) stainless steel.

Door — Type-304, 22-gauge (0.8mm) stainless steel with satin-finish. Slot reveals toilet tissue supply inside cabinet. Equipped with a lock keyed like other Bobrick Washroom Equipment accessories.

Spindle — Removable rubber-o-rings converts to smaller spindle. Fixed inner spindle, 20 gauge (0.9mm) stainless steel.

OPERATION:

Door unlocks with key provided and swings down for loading dispenser. Spindle adapter accommodates one toilet tissue roll up to 10" (255mm) diameter with a 1-5/8" (40mm) diameter core roll; convertible for 3" (75mm) diameter core rolls. Rubber o-rings (2) (furnished by manufacturer) may be added to the steel inner spindle to accommodate a 2-1/8" (55mm) diameter core roll. Wide viewing slot in door reveals the amount of toilet tissue on roll. Unit is designed for quick reloading.

INSTALLATION:

Mount unit on wall or toilet partition with sheet-metal screws at points indicated by an *S*. Rear edge of unit should be 20" (510mm) from back wall. This locates toilet tissue within 12" (305mm) of front of standard toilet that projects 30" (305mm) from back wall.

For plaster or dry wall construction, provide concealed backing to comply with local building codes, then secure with sheet-metal screws (not furnished). For other wall surfaces, provide fiber plugs or expansion shields for use with sheet-metal screws (not furnished), or provide 6mm (1/4") toggle bolts or expansion bolts.

For partitions with particle-board or other solid core, secure with sheet-metal screws (not furnished), or provide through-bolts, nuts, and washers. For hollow-core metal partitions, provide solid backing into which the sheet-metal screws can be secured. If two units are installed back-to-back, then provide threaded sleeves and machine screws for the full thickness of partition.

SPECIFICATION:

Single jumbo-roll toilet tissue dispenser door shall be 22-gauge (0.8mm) stainless steel with satin-finish. Door shall be equipped with a lock keyed like other Bobrick washroom accessories. Door shall have a slot to reveal toilet tissue supply inside cabinet. Spindle shall accommodate one toilet tissue roll up to 10" (255mm) diameter with a 1-5/8" (40mm) diameter core roll convertable for 3" (75mm) diameter core rolls or 2-1/8" (55mm) diameter core roll by adding rubber o-rings (2) furnished.

Single Jumbo-Roll Toilet Tissue Dispenser shall be Model B-2890 of Bobrick Washroom Equipment, Inc., Clifton Park, New York; Jackson, Tennessee; Los Angeles, California; Bobrick Washroom Equipment Company, Scarborough, Ontario; Bobrick Washroom Equipment Pty. Ltd., Australia; and Bobrick Washroom Equipment Limited, United Kingdom.

The illustrations and descriptions herein are applicable to production as of the date of this Technical Data Sheet.
The manufacturer reserves the right to, and does from time to time, make changes and improvements in designs and dimensions.

Revised 01/12/18 Printed in U.S.A.
© 2018 by Bobrick Washroom Equipment, Inc.

Wall Enclosures



0:00 / 0:00

Reach out to our team for ordering information.

Contact product representative

CUSTOMER SERVICE

For product specifications, service, and certificate requests, please call our Customer Service team.

Call Customer Service 800.964.5227 »

Looking for instructions for use?
Please visit our IFUs website »

Would you like to leave us feedback on our product content or images?

Product description

Mounted wall enclosures secure sharps containers, keep counter space clear, and help prevent access to contents in high traffic areas. Contents can be viewed by hospital personnel, but unsightly items are not fully visible to patients and visitors. Optional glove box holders keep gloves readily available.

- Sturdy, locked sharps container mounting allows for secure point of use disposal of sharps
- For convenience, all cabinets are universally keyed
- Sturdy, durable, long lasting ABS plastic provides a secondary barrier of protection
- Easily monitored fill level through viewing windows on front and sides
- Keep gloves readily available with optional glove dispensers
- Beige, unobtrusive style fits any room decor

Ordering information

Order Code	Description	Ship Case
85161H	SharpSafety™ Wall Enclosure, For Ir Room Sharps Cortairer, 2 ard 5 Quart	1
8516SH	SharpSafety™ Wall Enclosure, For Ir Room Sharps Cortairer, 2 ard 5 Quart	5
8556H	SharpSafety™ Wall Enclosure with Glove Box ard Cortairer, For 2 ard 5 Quart, Safety Ir Room Cortairer	1
85301H	SharpSafety™ Wall Enclosure, For Ir Room Sharps Cortairer, 2 ard 3 Gallor	1
85401H	SharpSafety™ Wall Enclosure, For Wide Operirg Ir Room Sharps Cortairer, 3 ard 4 Gallor	1
8554B	SharpSafety™ Wall Mourtirg Bracket	5
8516HDL	SharpSafety™ Door for Wall Enclosure, For 2 ard 5 Quart, Safety Ir Room Cortairer	1
8550B	Glove Box & Mourtirg Brackets	5
31307005	Wall Cabiret for 2 & 3 Gallor GG	1
31353553	Wall Cabiret for 5 Quart GG JR	1

Cardinal Health Completes Acquisition of Medtronic's Patient Recovery Business

Cardiral Health has acquired Medtroric's Patiert Care, Deep Veir Thrombosis ard Nutritioral Irsufficiercy busiress.

Read the press release »



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C/S Cubicle Curtains

SECTION 10 21 23
SURFACE MOUNTED I.V. TRACK & PENDANTS



PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Subject to compliance with the requirements listed, provide cubicle curtains from the following manufacturer:

1. C/S Cubicle Curtains, a Division of Construction Specialties, Inc.
   3 Werner Way
   Lebanon, NJ 08833
   P: (908) 849-4000 / F: (908) 849-4398
   CCInfo@c-sgroup.com
   www.c-sgroup.com

2. Alternative manufacturers will not be accepted.

2.02 IV TRACK SYSTEM

A. I.V. Tracks: C/S Cubicle Curtains I.V. track model #17000. Surface-mounted tracks of heavy extruded aluminum alloy 6063-T5, 1 ⅜" x ¾", slotted to receive twist lock I.V. Carriage, compete with accessories and components required for complete and secure installations including splicers, end caps and corner bends.

1. Corner Bends: Shall have a 12” - 18" radius fabricated in one continuous “L” shape.
2. Finish: Clear anodized aluminum.

B. Carriers: C/S Cubicle Curtains 17500 Twist-Lock I.V. Carriage, Carrier mechanism shall be designed to lock against surface of reinforcing I.V. Track.

1. Provide one carrier per unit of I.V. Track, or as needed.

C. I.V. Pendants:

1. **Model # 17100 – STANDARD 5 BOTTLE I.V. PENDANT,** Fabricated of polished stainless steel 9/16" diameter tubing for the main shaft and four ¼" stainless steel folding arms. This I.V. Unit will be able to be raised or lowered to a height from 19" to 32" to adjust to most ceiling heights. The locking mechanism is a stainless steel thumb push at base of unit.

2. **Model # 17800 – DELUXE 9 BOTTLE I.V. PENDANT,** Fabricated of polished stainless steel this unit has a ¾" diameter tubing for the main shaft, 3/8" diameter for the inner

shaft, and eight folding ¼" diameter spiral safety arms. This I.V. Unit will be able to be raised or lowered to a height from 28" to 42" to adjust to most ceiling heights.

END OF SECTION

3 Werner Way, Lebanon, NJ 08833 US, 800-972-7217
895 Lakefront Promenade, Mississauga, ON L5E 2C2 Canada, 905-274-3611
www.c-sgroup.com

© Copyright 2017 Construction Specialties, Inc. reserves the right to make design changes or withdraw any design without notice.

EAGLE GROUP®
Profit from the Eagle Advantage®

Specification Sheet

Item No.: _____
Project No.: _____
S.I.S. No.: _____

NO. 480 SHELF, MOP, HANGER

Utility Shelves

Short Form Specifications

Eagle Utility Shelf with Mop Hanger, model _____. Constructed of 16/304 stainless steel. Standard 8˝ wide. Furnished with mop hangers and hooks for hanging clothes.

MODELS:

- ❑ ***US0824-16/3***
- ❑ ***US0836-16/3***
- ❑ ***US0848-16/3***



#US0836-16/3

Design and Construction Features

- 16 gauge type 304 stainless steel.
- Mop hangers and hooks are riveted to front of shelf.
- Available in 24˝, 36˝, and 48˝ (610, 914, and 1219mm) lengths.
- Standard width is 8˝ (203mm).

EAGLE GROUP
100 Industrial Boulevard, Clayton, DE 19938-8903 USA
Phone: 302-653-3000 • Fax: 302-653-2065
www.eaglegrp.com

Foodservice Division: Phone 800-441-8440
MHC/Retail Display Divisions: Phone 800-637-5100

For custom configuration or fabrication needs, contact our **SpecFAB® Division.**
Phone: 302-653-3000 • Fax: 302-653-3091 • e-mail: specfab@eaglegrp.com

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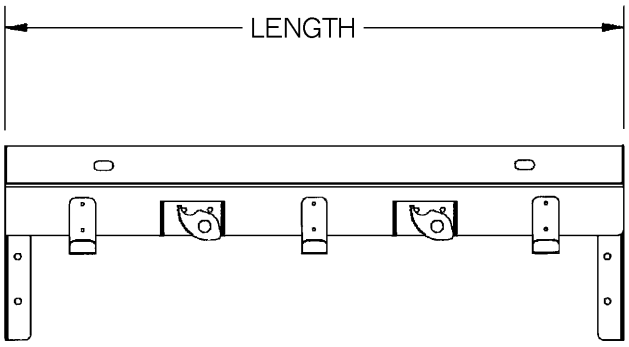
Spec sheets available for viewing, printing or downloading from our online literature library at *www.eaglegrp.com*

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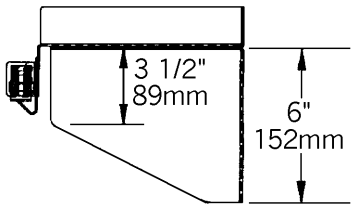
EAGLE GROUP®
Profit from the Eagle Advantage®

Item No.: _____
Project No.: _____
S.I.S. No.: _____

Utility Shelves



FRONT VIEW



SIDE VIEW

model #	shelf width in.	shelf width mm	shelf length in.	shelf length mm	weight lbs.	weight kg
US0824-16/3	8″	203	24″	610	9	4.1
US0836-16/3	8″	203	36″	914	11	5.0
US0848-16/3	8″	203	48″	1218	13	5.9

EAGLE GROUP
100 Industrial Boulevard, Clayton, DE 19938-8903 USA
Phone: 302-653-3000 • Fax: 302-653-2065
www.eaglegrp.com

Foodservice Division: Phone 800-441-8440
MHC/Retail Display Divisions: Phone 800-637-5100

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EAGLE GROUP®

Profit from the Eagle Advantage®

Specification Sheet

Item No.: _____

Project No.: _____

S.I.S. No.: _____

NO. 480 SHELF, MOP

Utility Shelves

MODELS:

- ❑ ***US0824-16/3***
- ❑ ***US0836-16/3***
- ❑ ***US0848-16/3***

Short Form Specifications

Eagle Utility Shelf with Mop Hanger, model _____. Constructed of 16/304 stainless steel. Standard 8˝ wide. Furnished with mop hangers and hooks for hanging clothes.



#US0836-16/3

Design and Construction Features

- 16 gauge type 304 stainless steel.
- Mop hangers and hooks are riveted to front of shelf.
- Available in 24˝, 36˝, and 48˝ (610, 914, and 1219mm) lengths.
- Standard width is 8˝ (203mm).

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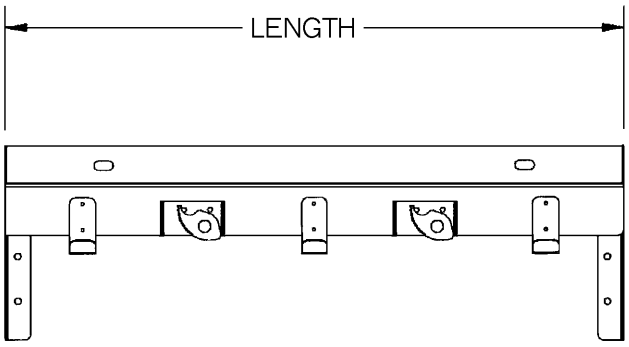
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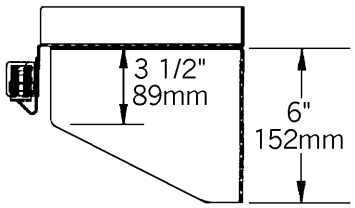
EAGLE GROUP®
Profit from the Eagle Advantage®

Item No.: _____
Project No.: _____
S.I.S. No.: _____

Utility Shelves



FRONT VIEW



SIDE VIEW

model #	shelf width in.	shelf width mm	shelf length in.	shelf length mm	weight lbs.	weight kg
US0824-16/3	8″	203	24″	610	9	4.1
US0836-16/3	8″	203	36″	914	11	5.0
US0848-16/3	8″	203	48″	1218	13	5.9

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Veterinary Anesthesia Machines

Service and Parts Manual

Model Numbers:

VMS®
VMS®Plus
VMC™
VME™
VME2®
VML®
VMR™



Matrx VMS



Matrx VMS Plus



Matrx VMS Wall Mount



Matrx VMC



Matrx VME2



Matrx VME Tabletop

FOR USE BY MIDMARK TRAINED TECHNICIANS ONLY

Matrx VML & VMR (not shown)

Part No. 10578200 Rev. AA3 (11/13/2018)

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(*) Indicates multiple pages due to model / serial number break(s).

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Symbols

DANGER
Indicates an imminently hazardous situation which <u>will</u> result in serious or fatal injury if not avoided.
This symbol is used only the most extreme conditions.

WARNING
Indicates a potentially hazardous situation which could result in serious injury if not avoided.

Caution
Indicates a potentially hazardous situation which <u>may</u> result in minor or moderate injury if not avoided. It may also be used to alert against unsafe practices

Equipment Alert
Indicates a potentially hazardous situation which could result in equipment damage if not avoided.

In Section A, test the components as indicated.
*(ex. **1st** ✓ then go to, **2nd** ✓)*

Refer to Section B for testing procedures.

The symbols below may be used in this manual to represent the operational status of table functions and components.

Indicates the function / component is working properly. No action required.

Indicates the function / component is working, but a problem exists.

Indicates the function is not working at all, or that the component is faulty.

Caution
Federal law restricts this device to sale by or on the order of a licensed veterinarian.

Ordering Parts

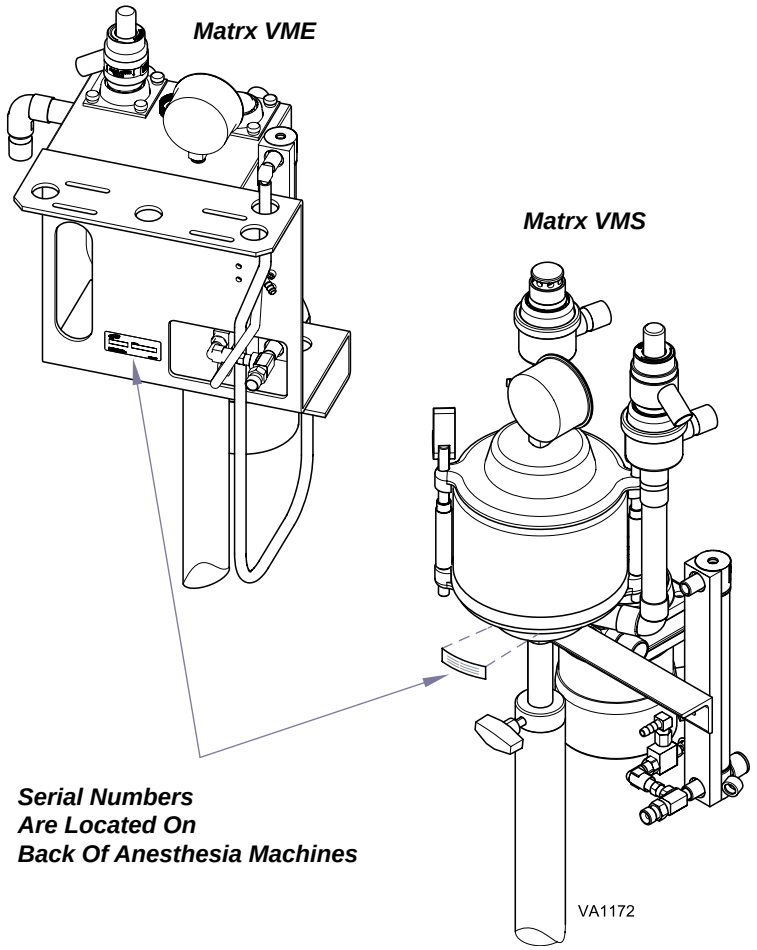
The following information is required when ordering parts:

- Serial number & model number
- Part number for desired part
  (Refer to Section E: Exploded Views & Parts Lists)

Non-warranty parts orders may be faxed to Midmark using the Fax Order Form in the back of this manual.

For warranty parts orders, call Midmark's Technical Service Department with the required information.
Hours: 8:00 am to 5:00 p.m. EST (Monday thru Friday)
Phone: 1-800-Midmark

Serial Number Location



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Scheduled Maintenance Chart

Scheduled Maintenance		
Interval	**Inspection / Service**	**Description**
Before Every Surgery	Inspect	Check machine connections and rubber parts for looseness, damage or wear. Replace as nesscessary.
	Perform Leak Test	Refer to Leak Test Procedure in Section B of this manual.
Daily	Clean	Refer to Cleaning Anesthesia Machine in Section B of this manual.
Weekly	Change Absorbent Material	Follow manufacturer's recommendations for proper use of CO2 absorbents.
Annually	Service Vaporizer	Service and calibrate vaporizer.
Every 2 Years	Replacement	*Replace components found in maintenance kits.* *(O-rings, gaskets, valve disks, breathing circuit, breathing bag, tubing)*
Date of Service: Location: Service Technician:		Model Number: Serial Number: Notes:

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Midmark Product Warranty / Return

Definition of a Warranty Return

A product or part covered by the Midmark warranty that fails while the terms of the warranty are in effect.

THIS WARRANTY IS GIVEN IN PLACE OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE.

No statement or claim about the product by any employee, agent, representative or dealer of Midmark shall constitute a warranty by Midmark or give rise to any liability or obligation of Midmark. Subject to the next sentence, Midmark warrants that each product or part shall be free from defects in workmanship and materials, under normal use and with appropriate maintenance, for one (1) year from the date of delivery to customer except for anesthesia machines and VIP 3000 vaporizers which have a five (5) year warranty, ClassicSeries Wet-ring Vacuums which have a three (3) year/6,000 hour warranty and ClassicSeries Lubricated Compressors which have a two (2) year/1,500 hour warranty. For plastic, rubber and disposable parts or items, Midmark warrants only that each such part and item shall be free from defects in

workmanship and materials at the time of delivery to the customer. Midmark's obligation for breach of this warranty, or for negligence or otherwise, shall be strictly and exclusively limited to Midmark's choice of repair or replacement of the product or part. This warranty shall be void for any product on which the serial number has been altered, defaced or removed. Midmark shall not be liable for any damage, injury or loss arising out of the use of the product, whether as a result of a defect in the product or otherwise, if, prior to such damage, injury or loss, the product was (1) damaged, misused, or misapplied; (2) repaired, altered or modified by persons other than Midmark; (3) not installed in strict compliance with applicable codes and ordinances; or (4) not installed by Midmark or an authorized Midmark dealer.

UNDER NO CIRCUMSTANCES SHALL MIDMARK BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES AS THOSE TERMS ARE DEFINED IN THE UNIFORM COMMERCIAL CODE.

Warranty Returns

1. Merchandise returned for warranty credit or replacement must have been purchased from Midmark within the specified warranty period or proof of installation within that time will be required.
2. Defective items will, at Midmark's discretion, either be repaired or replaced with equivalent merchandise.
3. If merchandise is found to not be defective, the 25% restocking fee will be charged.
4. Freight charges to return defective merchandise to Midmark are not reimbursable.
5. Freight charges to ship replacement or repaired merchandise to customer will be paid by Midmark.

Non-Warranty Returns

1. The following will NOT be accepted for credit: • Rubber goods over 30 days old • Rubber goods not in original, sealed package • All hoses • Special order items • Goods without a Return Goods Authorization (RA) • Merchandise more than 90 days old (from Midmark invoice date)
2. A 25% restocking charge will be deducted from the original purchase amount for all credits issued, except for return due to: • Midmark order entry error •

Warranty returns

3. Return Authorization (RA) numbers are valid for 180 days after the date issued.
4. Freight charges will not be credited.
5. Freight collect shipments are not accepted.
6. If merchandise is found to have been misused or in any way damaged after shipment from Midmark, credit will be made less charges for repair and less the 25% restocking charge. If merchandise is not salvageable, no credit will be issued.
7. All claims for damage or shortage occurring in transit must be made by the customer directly to the carrier.

Midmark Product Warranty / Return Continued On Next Page

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Midmark Product Warranty / Return (Continued)

Service and Repair Policy

Repair Service Procedures – Midmark offers repair service on all Midmark anesthesia equipment. This includes anesthesia equipment from Ohmeda, Fraser Harlake, Fraser Sweatman and Cyprane TEC 3. We provide excellent turnaround on all products with customer approval for service-repair work. All returns must be made through an authorized dealer. Units for repair should be sent to Midmark and packaged in the original shipping container if possible. Please contact our Customer Service Department prior to shipping the unit prepaid to receive an authorization RMA number. Specify the RMA number on the outside of the box and label it to the attention of Repair Service Center. Our highly qualified repair department is staffed with personnel trained in the manufacture and repair of Matrx veterinary anesthesia equipment. Vaporizer Service Warranty – In addition to the service records mentioned above, Midmark will warranty the service performed for a period of six months except for damage due to improper usage, handling or care.

Rental Returns, Anesthesia Equipment

1. Charges will accrue from the time the equipment was received by the customer through its receipt by Midmark and will be charged at the time of return of the rental to Midmark. A minimum
of one month charge will be made. Partial months will be rounded up to the next full month.
2. Loaners used during the repair of equipment that is under warranty will be at no charge. Loaner units must be returned to Midmark within 7 days after receipt of repaired unit or monthly
charge will be initiated. Freight charges for loaner to be sent to customer will be paid by Midmark.

Vaporizer Servicing

1. Vaporizers returned for servicing must be made through an authorized dealer. Units for repair should be sent to Midmark and packaged in the original shipping container if possible. Please contact our Customer Service Department prior to shipping the unit prepaid to receive authorization RMA number. Specify the RMA number on the outside of the box and label it to the attention of Repair Service Center.
2. Midmark Vaporizer -Service Records – Subsequent to servicing, each vaporizer has a separate service and performance record established which is placed on file at the Midmark Service Center in Versailles, OH. Should the need arise to verify that your equipment has been maintained to manufacturer's specifications, Midmark will be happy to supply this information.

Customer Return Instructions

Please follow the procedures outlined below so there is no delay of credit to your account. You must have a Return Authorization (RA) number before returning any merchandise to Midmark except for out-of-warranty repairs, equipment rentals, or vaporizers for servicing. Credit may be issued only after the merchandise is returned to and inspected by Midmark and determination is made that credit is due.

To Receive a Return Authorization

1. Call your Midmark Customer Service Representative at 1-800-MIDMARK (800-643-6275) to obtain an RA number.
2. Send the merchandise freight prepaid.

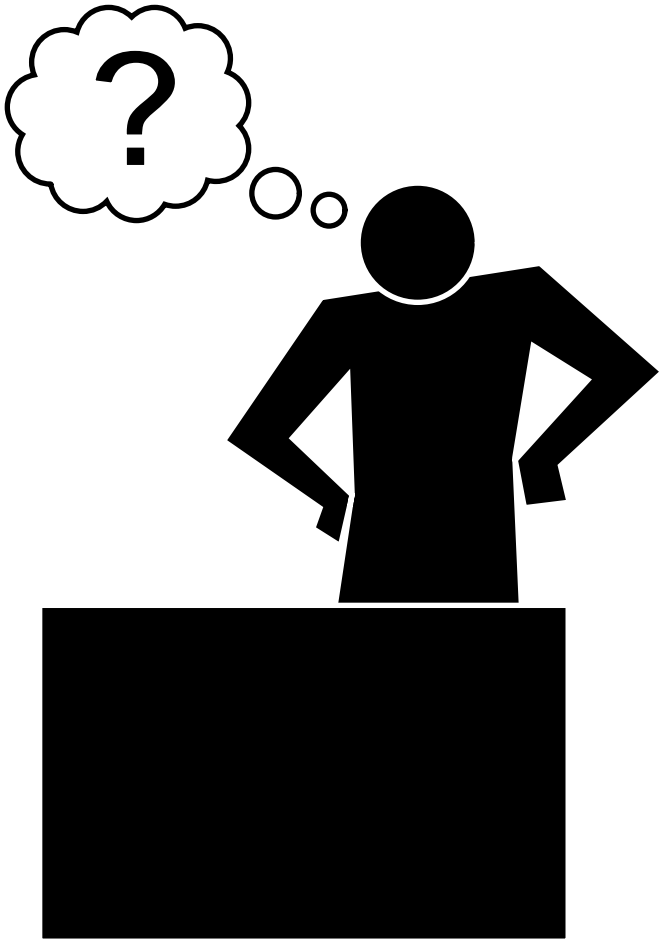
Non U.S. or Canada Service - Call your local Midmark Representative for the location of your nearest service center for further instructions.

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Section A

Operation & Troubleshooting

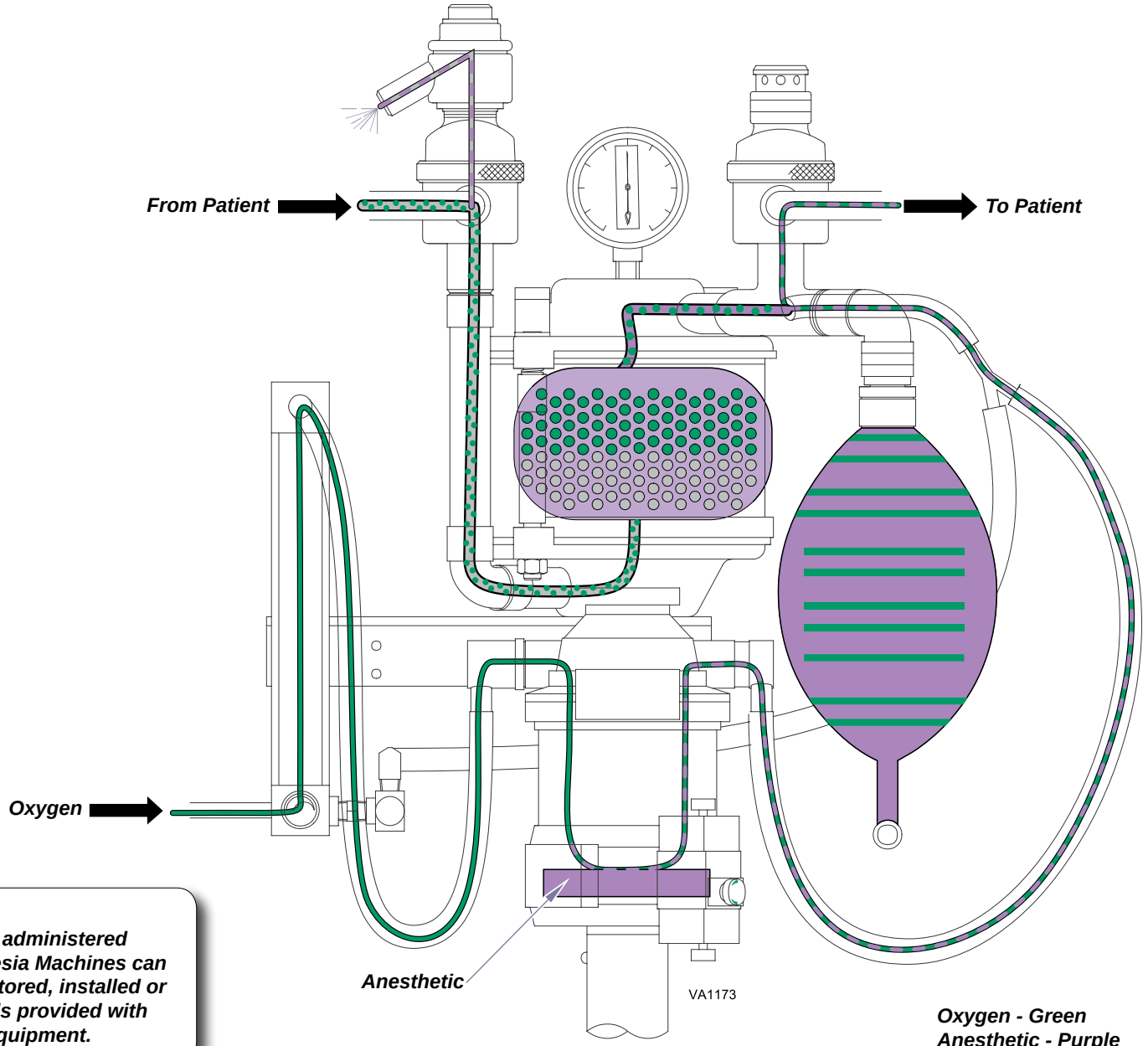
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Theory of Operation

1. Oxygen enters the machine at the lower back of flowmeter.
2. Oxygen exits flowmeter near top.
3. The oxygen enters the vaporizer and collects anesthetic gas.
4. The oxygen and anesthetic exits the vaporizer.
5. Oxygen and anesthetic enters the reservoir bag and inhalation tube then is inhaled by the patient.
6. The patient exhales. Waste gas enters the machine.
7. Waste gas enters the CO2 absorber canister which removes the CO2.
8. Gas without CO2 enters the reservoir bag, inhalation tube and patient, recycling the gas.
9. A small amount of waste gas exits the APL valve, maintaining pressure in machine and patient's lungs at 1-3cm H2O.



Oxygen - Green
Anesthetic - Purple
CO2 - Grey

WARNING
Analgesic compounds and oxygen administered through Matrx by Midmark Anesthesia Machines can be dangerous to patient and practitioner if stored, installed or administered improperly. Follow all protocols provided with these substances and associated delivery equipment.

Models:	***All***	
Serial Numbers:		

© Midmark Corporation 2008 SF-1926

Always verify model & serial number

VMS, VMS Plus & VMC Operation

CAUTION

Insure gas supplies are adequate and turned on. Verify vaporizer is filled to eliminate the possibility of anesthetic depletion during surgery.

To Operate Anesthesia Machine...

A) Lift CO2 absorber canister lock levers. Slide clear canister free of absorber assembly. Fill canister with absorbent material, following directions on canister label. Be sure canister and gasket mating surfaces are completely free of absorbent. Replace canister in absorber assembly. Simultaneously, close both lock levers to secure canister.

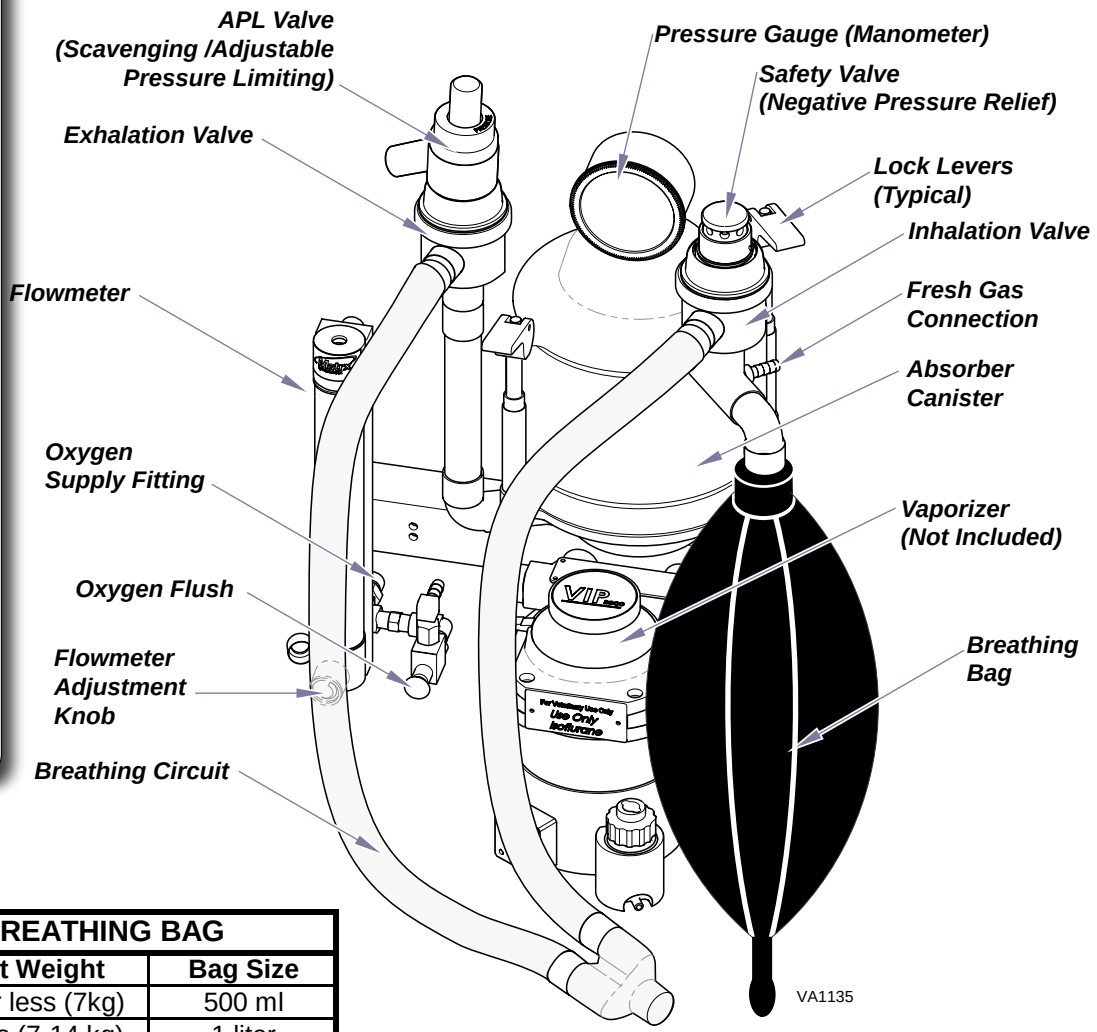
B) Connect breathing bag and breathing circuit.

C) Connect a 50-55 PSI (3.4-3.8 Bar) oxygen supply line to the oxygen supply fitting on the back of the flowmeter.

D) Adjust flowmeter and vaporizer settings to meet physiologic needs of the patient.

E) During anesthesia, monitor the pressure gauge, inhalation and exhalation valves, and the breathing bag. Make necessary corrections in flow rate, vaporizer setting, and Scavenging/Adjustable Pressure Limiting (APL) valve, to insure adequate depth of anesthesia and adequate ventilation of the patient.

Note: For guidelines on induction and anesthesia techniques, or particular species physiologic requirements, etc., please refer to a veterinary anesthesia textbook.



Equipment Alert

Never invert or tilt the vaporizer when it contains anesthetic liquid. Never overtighten the flowmeter needle valves, damage to the needle and seat will eventually result. Using the flowmeter, pressure gauge or pressure relief valve as handles when transporting can result in damage to compoents.

BREATHING BAG	
Patient Weight	**Bag Size**
15 lbs or less (7kg)	500 ml
15-30 lbs (7-14 kg)	1 liter
30-60 lbs (14-27 kg)	2 liter
60-100 lbs (27-45 kg)	3 liter
100 + lbs (45 + kg)	5 liter

Models:	***All VMS, VMS + and VMC***	
Serial Numbers:		

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Always verify model & serial number

VME & VME2 Operation

CAUTION

Insure gas supplies are adequate and turned on. Verify vaporizer is filled to eliminate the possibility of anesthetic depletion during surgery.

To Operate Anesthesia Machine...

A) Loosen thumb screw to remove CO2 absorber canister. Fill canister with absorbent material, following directions on canister label. Be sure canister and gasket mating surface are completely free of absorbent. Replace canister in absorber assembly. Tighten thumb screw.

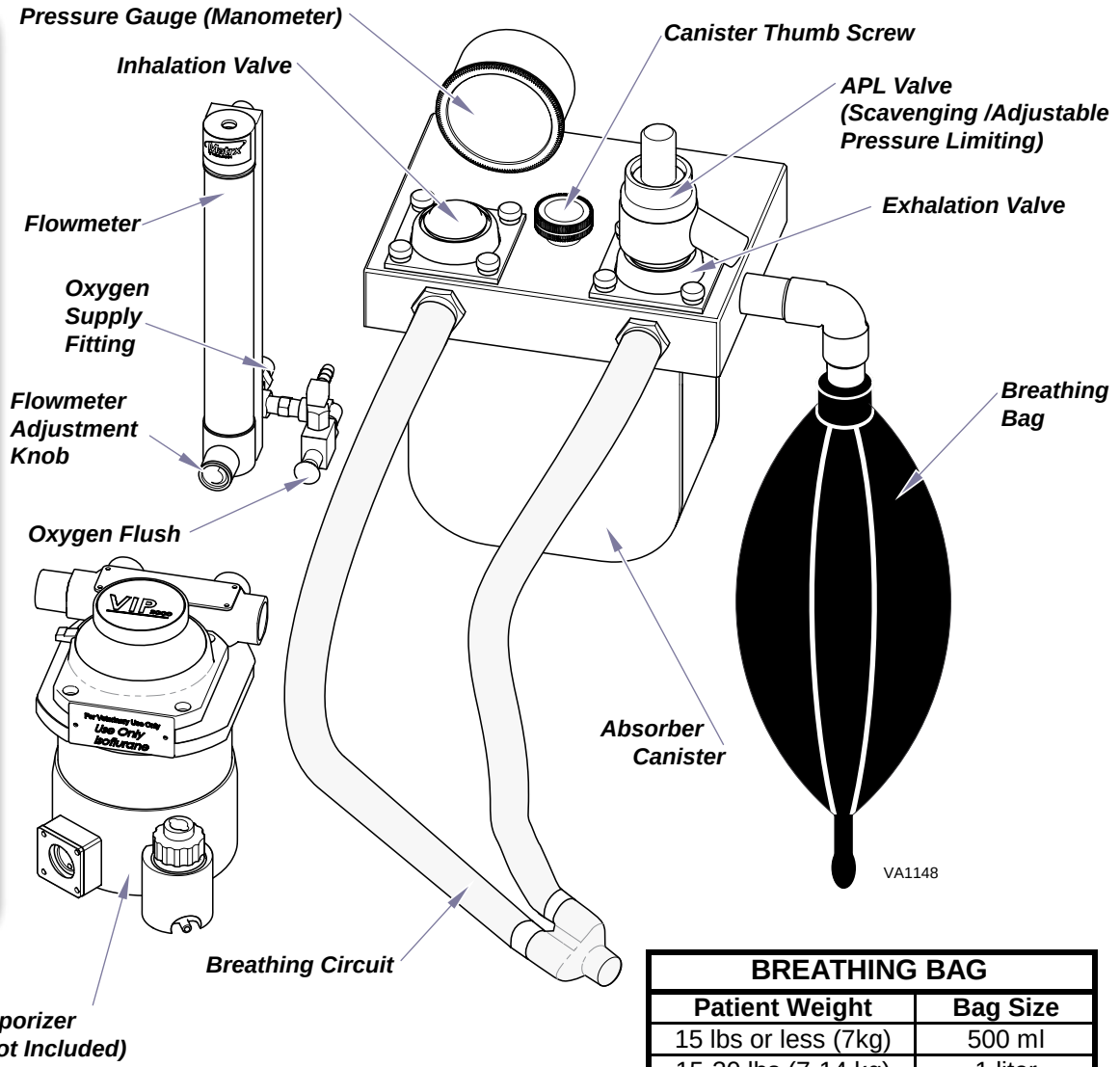
B) Connect breathing bag and breathing circuit.

C) Connect a 50-55 PSI (3.4-3.8 Bar) oxygen supply line to the oxygen supply fitting on the back of the flowmeter.

D) Adjust flowmeter and vaporizer settings to meet physiologic needs of the patient.

E) During anesthesia, monitor the pressure gauge, inhalation and exhalation valves, and the breathing bag. Make necessary corrections in flow rate, vaporizer setting, and Scavenging/Adjustable Pressure Limiting (APL) valve, to insure adequate depth of anesthesia and adequate ventilation of the patient.

Note: For guidelines on induction and anesthesia techniques, or particular species physiologic requirements, etc., please refer to a veterinary anesthesia textbook.



Equipment Alert

Never invert or tilt the vaporizer when it contains anesthetic liquid. Never overtighten the flowmeter needle valves, damage to the needle and seat will eventually result. Using the flowmeter, pressure gauge or pressure relief valve as handles when transporting can result in damage to compoents.

BREATHING BAG	
Patient Weight	**Bag Size**
15 lbs or less (7kg)	500 ml
15-30 lbs (7-14 kg)	1 liter
30-60 lbs (14-27 kg)	2 liter
60-100 lbs (27-45 kg)	3 liter
100 + lbs (45 + kg)	5 liter

Models:	***All VME & VME2***	
Serial Numbers:		

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Always verify model & serial number

Oxygen Flush

1. Oxygen enters the machine at the lower back of flowmeter.

2. Pressing the button on the oxygen flush valve bypasses the vaporizer.

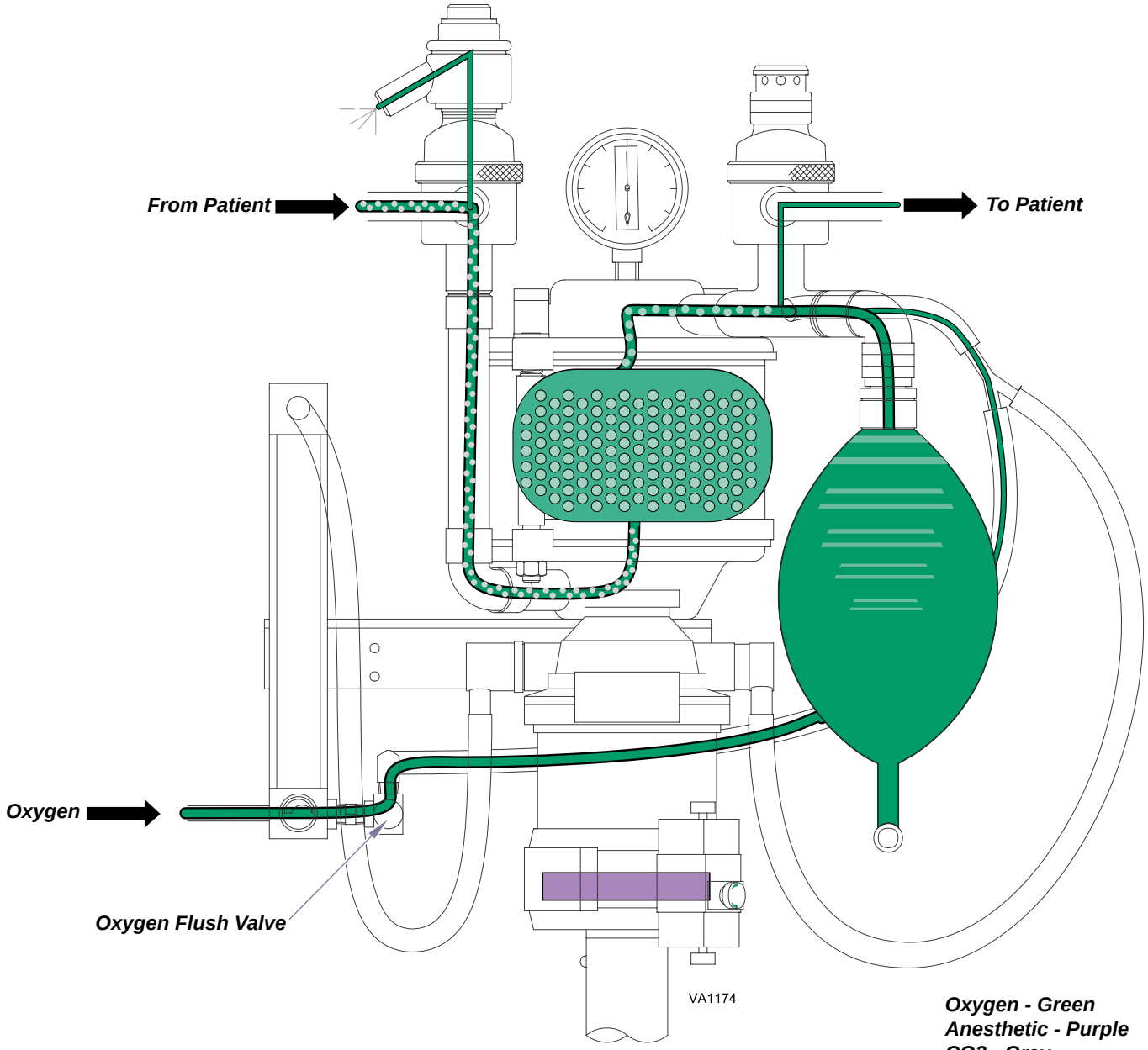
3. Oxygen enters the reservoir bag and inhalation tube then is inhaled by the patient.

4. The patient exhales. Waste gas enters the machine.

5. Waste gas enters the CO2 absorber canister which removes the CO2.

6. Oxygen without CO2 enters the reservoir bag, inhalation tube and patient, recycling the oxygen.

7. A small amount of waste gas exits the APL valve, maintaining pressure in machine and patient's lungs at 1-3cm H2O.



Oxygen - Green
Anesthetic - Purple
CO2 - Grey

Models:	***All***	
Serial Numbers:		

© Midmark Corporation 2008 SF-1926

Always verify model & serial number

Safety Valve
(Negative Pressure Relief Valve)

1. If there is no oxygen in the tank or the flow is shut of at the flow meter, room air enters the machine through the safety valve. The patient does not receive anesthetic gas

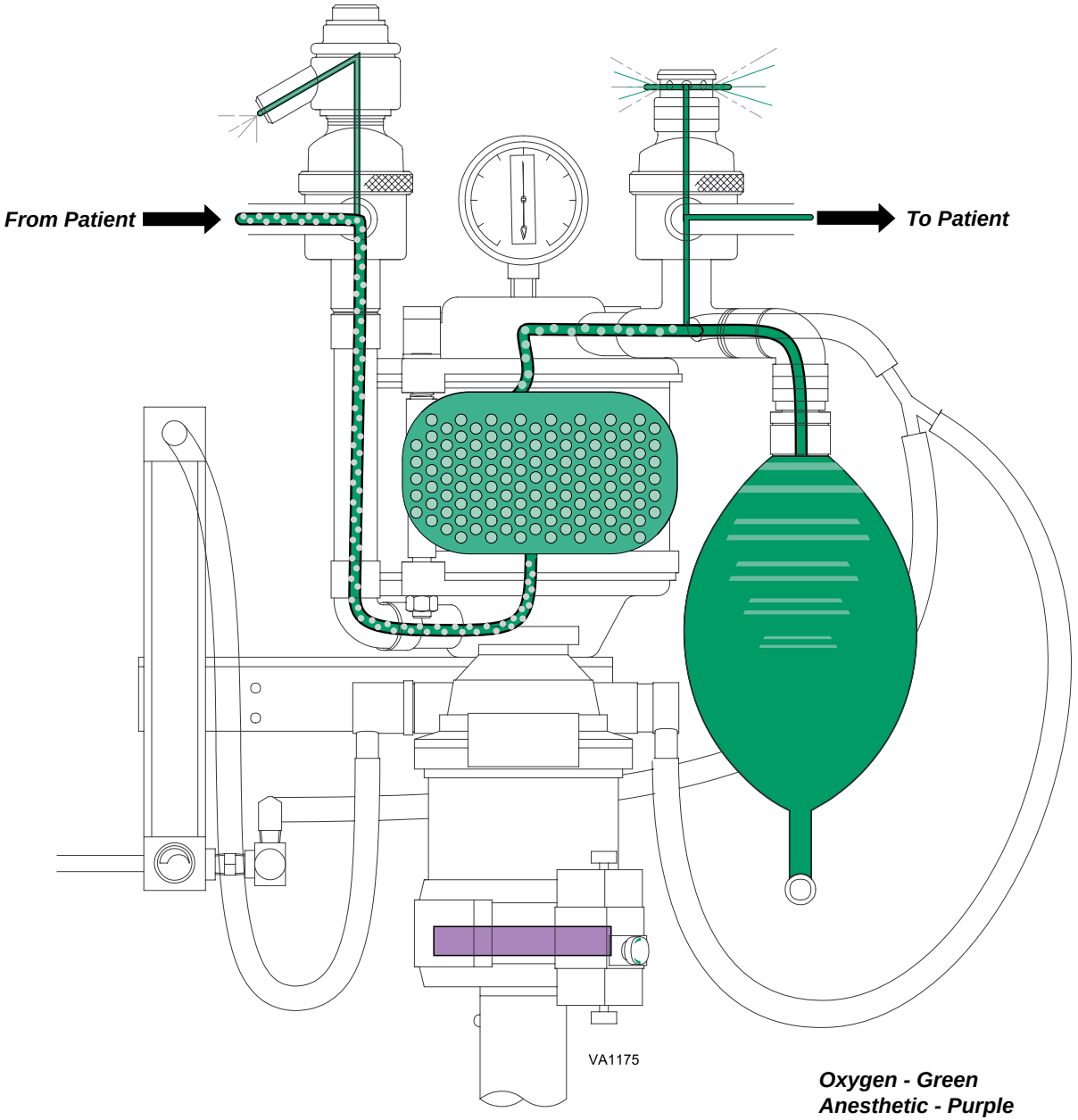
2. During inhalation, the reservoir bag deflates first, then air from the safety valve is drawn into the system.

3. The patient exhales. Waste gas enters the machine.

4. Waste gas enters the CO2 absorber canister which removes the CO2.

5. Air without CO2 enters the reservoir bag, inhalation tube and patient, recycling the air.

6. A small amount of waste gas exits the APL valve.



Oxygen - Green
Anesthetic - Purple
CO2 - Grey

Models:	***All***	
Serial Numbers:		

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Always verify model & serial number

Troubleshooting Chart

Problem	Probable Cause	Correction
Anesthesia Machine Leaks	Absorber canister.	Make sure gasket surfaces are clean and have no and free of absorbent granules. *VME Models Only* - Check tightness of absorber canister knob, verify no absorbent granules are in threaded hole. *VMS and VMC Models Only* - Verify absorber levers are in closed position. **Refer to: Section B Absorber Canister**
	Breathing bag, breathing circuit or hoses not sealing or has a hole.	Check breathing bag, breathing circuit and hoses for leak and replace if needed. **Refer to: Section B Breathing Bag and Breathing Circuit**
	Valve domes are loose.	Check inhalation and exhalation valve domes and o-rings are seated and clean. Verify thumb screws *(VME Models)* and or retainer rings *(VMS and VMC Models)* are tight. **Refer to: Section B Inhalation and Exhalation Valves**
	APL valve.	Make sure APL valve is closed during test and fully seated to clear exhalation dome. Remove APL valve, plug opening in clear dome to determine if leak originates from APL valve. Check O-ring under APL valve. **Refer to: Section B APL Valve**
	Vaporizer.	Verify fittings connected to vaporizer are tight. Check filler cap on vaporizer is tight and O-ring is undamaged. *(Test with Vaporizer turned off.)*
	Loose connection.	Check all connections to machine and fittings.
	Safety valve.	If machine is fitted with optional safety valve (negative pressure relief) valve, remove valve and plug opening in clear dome to determine if leak originates from safety valve. Check O-ring under safety valve. **Refer to: Section B Safety Valve**
Difficult to Induce Patient *"Will not go under"*	Machine leaking.	Perform leak test. **Refer to: Section B Leak Test**
	Anesthetic low.	Check anesthetic level.
	Flow rate setting.	Check for proper flow rate. **Refer to: Section B Flowmeter**
Desired Depth Of Anesthesia Not Maintainable *"Patient wakes up during procedure."*	Machine leaking.	Perform leak test. **Refer to: Section B Leak Test**
	CO_2 absorbent is old.	Change CO_2 absorbent. **Refer to: Section B Absorber Canister**
	Anesthetic low.	Check anesthetic level.
	Flow rate setting.	Check for proper flow rate. **Refer to: Section B Flowmeter**

Chart Continued on Next Page

Models:	***All***	
Serial Numbers:		

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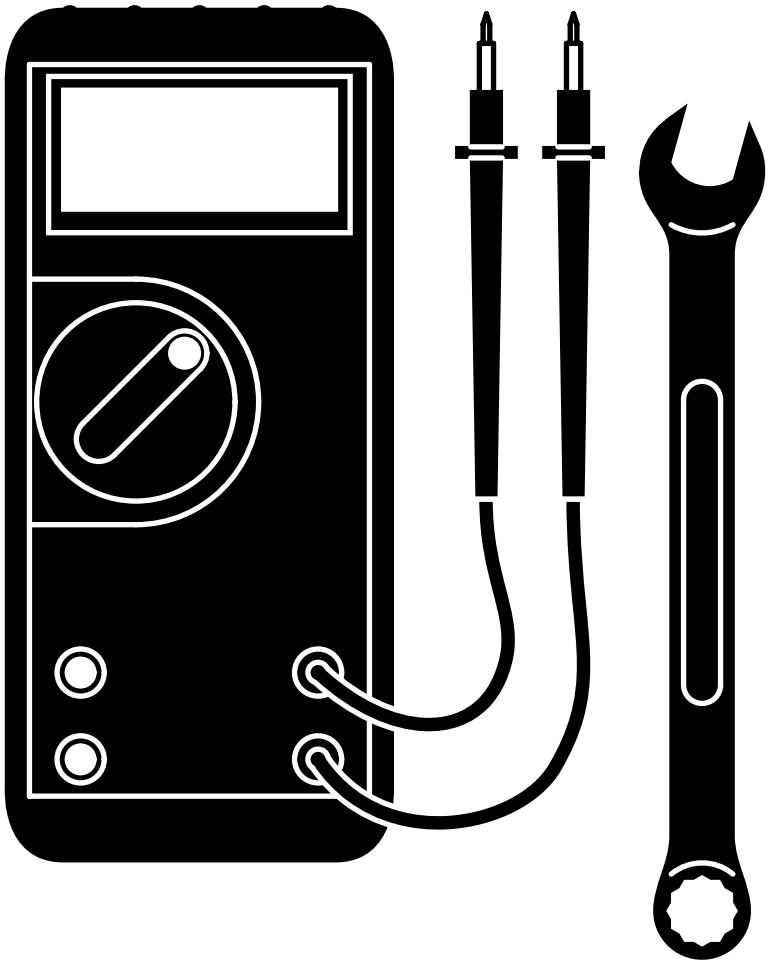
Troubleshooting Chart (continued)

Problem	Probable Cause	Correction
Breathing Bag "Over-Inflated"	APL valve closed.	Open APL valve. **Refer to: Section B APL Valve**
	Pressure setting.	Check pressure reading on pressure gauge • If pressure is between 1 - 3 cm H_2O when bag appears "over inflated" machine is functioning properly. • If pressure is over 4 cm H_2O, check for obstructions in scavenging device. Replace APL valve. **Refer to: Section B Pressure Gauge**
Breathing Bag Does Not Inflate	Machine leaking.	Perform leak test. **Refer to: Section B Leak Test**
	Excessive draw (if using a active scavenger).	Check active scavenger for excessive draw.
	Oxygen flow rate.	Check oxygen flow. **Refer to: Section A Oxygen Flush**
Insufficient Or No Oxygen Flow	Machine leaking.	Perform leak test. **Refer to: Section B Leak Test**
	Oxygen supply and or pressure.	Check oxygen supply and pressure. **Refer to: Section B Flowmeter and Pressure Gauge**
	Flowmeter needle valve broken.	Check flowmeter needle valve for operation. **Refer to: Section B Flowmeter**
Inhalation and Exhalation Valves Not Working Properly	Valves dirty or damaged.	Check valve seats for damage. **Refer to: Section B Inhalation and Exhalation Valves**
		Replace dirty or warped valve disks.

Models:	***All***	
Serial Numbers:		

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Section B



Component / System:	Page
Flowmeter	B-2
Oxygen Flush Valve	B-4
Breathing Bag	B-5
Breathing Circuit	B-6
Inhalation Valve	B-7
Safety Valve *(Negative Pressure Relief)*	B-8
Pressure Gauge *(Manometer)*	B-9
APL Valve *(Adjustable Pressure Limiting)*	B-10
Exhalation Valve	B-12
Absorber Canister	B-14
Leak Test *(VMS, VMS+, VMC)*	B-16
Leak Test *(VME, VME2)*	B-17
Cleaning Anesthesia Machine	B-18

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Flowmeter

Function

The needle valve is used to adjust the flow of oxygen into the machine. Turning the green knob clockwise closes the valve. Turning it counterclockwise opens it.

The ball in the graduated glass tube indicates the current rate of flow. Readings should be taken based on the position of the center of the ball.

The oxygen connection on the back of the flow meter uses a DISS (Diameter Indexed Safety System) fitting. This means that no standard gas fitting other than oxygen should be able to physically connect to the back of the flowmeter.

The color of the knob and the hose from the oxygen tank match the standard color code for oxygen. This is green for units sold in the USA.



VMS Model Shown

Flowmeter	Page
Function	B-2
Functional Testing	B-3
Tubing Diagrams	D-1
Exploded View / Part Numbers	E-1

www.midmark.com	File Name
Needle Valve Replacement	
Round Face	10536700
Flat Face	10188300

Models:	All	
Serial Numbers:		

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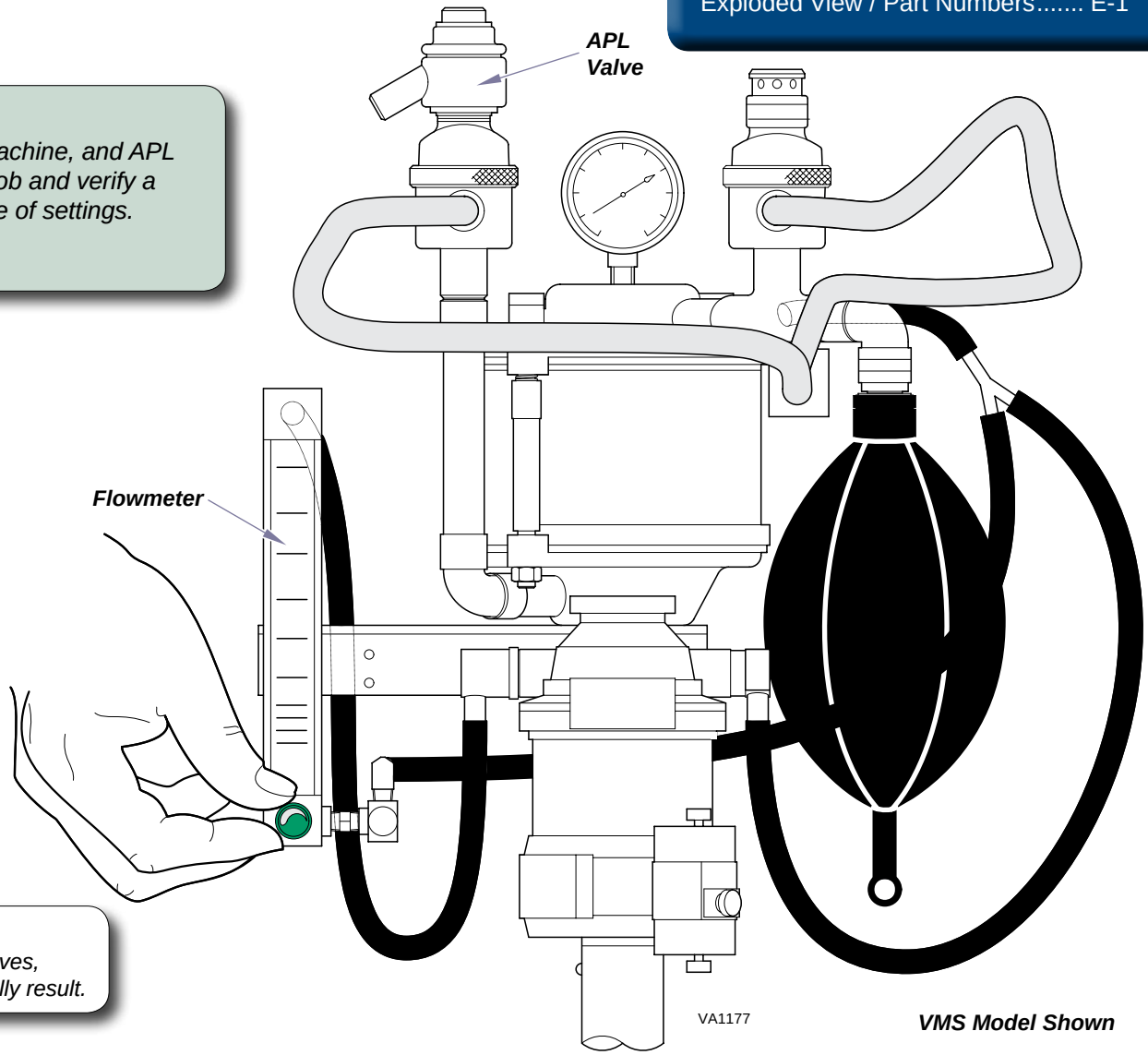
Flowmeter

Flowmeter	Page
Function	B-2
Functional Testing	B-3
Tubing Diagrams	D-1
Exploded View / Part Numbers	E-1

Functional Test

To Test flowmeter functionality..
With (50-55 PSI (3.4-3.8 Bar)) oxygen supplied to machine, and APL valve fully opened, rotate flowmeter needle valve knob and verify a smooth movement of flowmeter ball though full range of settings.

Note: Do not over tighten needle valve when closed.



VMS Model Shown

Equipment Alert
Never overtighten the flowmeter needle valves, damage to the needle and seat will eventually result.

Models:	All	
Serial Numbers:		

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Always verify model & serial number

Oxygen Flush Valve

Oxygen Flush Valve	Page
Oxygen Flush Operation	A-3
Tubing Diagrams	D-1

Function

The oxygen flush valve is a single purpose, self closing device that receives oxygen from the supply line and directs a flow of oxygen (35 to 75 LPM) directly into the system while bypassing the vaporizer.



VMS Model Shown

Models:	All	
Serial Numbers:		

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Reservoir

Function

The reservoir bag (breathing bag) is composed of rubber or plastic. The neck of the bag includes an opening to enable attachment to the 22mm tapered bag port on the anesthesia machine.

In general, small bags are used for small patients and large bags are used for large patients.

Bag functions:

- Acts as a reservoir – Allows gas to collect during exhalation so a reservoir is available for the next inhalation if greater than supplied by the flowmeter.
- Visually monitor patients respiration.
- Bags are very compliant. They serve as a buffer for excessive pressure in the system
- Provides a method for manually assisted ventilation (bagging a patient).

Reservoir (Breathing Bag)	Page
Function	B-5
Tubing Diagrams	D-1
Exploded View / Part Numbers	E-1

www.midmark.com	File Name
Maintenance Kit	
VMS, VMS +, VMC	10577100
VME, VME2	10577200



VMS Model Shown

Models:	All	
Serial Numbers:		

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Breathing Circuit

Breathing Circuit	Page
Function	B-6
Tubing Diagrams	D-1
Exploded View / Part Numbers	E-1

www.midmark.com	File Name
Maintenance Kit	
VMS, VMS +, VMC	10577100
VME, VME2	10577200

Function

The breathing circuit is a flexible corrugated tube used to convey gases to and from the patient. Corrugated tubing reduces kinking. They are available in 15mm and 22mm sizes.

Breathing circuits have 22mm female fittings at either end, to enable connection to the inhalation and exhalation ports on the anesthesia machine, and a 15mm female patient end for connection to masks or Endotracheal tubes.

Unilimb Rebreathing Circuits are a unique tube-within-a- tube design, which reduces clutter of multiple tubes.



VMS Model Shown

Unilimb Breathing Circuit



Models:	All	
Serial Numbers:		

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Always verify model & serial number

Inhalation Valve

Function

The inhalation valve is a simple unidirectional flutter valve with a 22mm male connector. A light thin disc seats horizontally on a circular knife-edge. A removable clear dome covers the top of the valve so that the disc can be observed. A guide, incorporated in the dome, prevents the disc from becoming dislodged.

Gas enters the valve at the bottom and flows through the center of the valve, raising the disc from its knife-edge seat. The gas then passes under the dome and through to the breathing circuit.

The inhalation valve opens on inhalation and closes on exhalation.

Breathing Circuit	Page
Function	B-7
Functional Testing	B-13
Tubing Diagrams	D-1
Exploded View / Part Numbers	E-1

www.midmark.com	File Name
Maintenance Kit	
VMS, VMS +, VMC	10577100
VME, VME2	10577200



Inhalation Valve

Models:	All	
Serial Numbers:		

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Always verify model & serial number

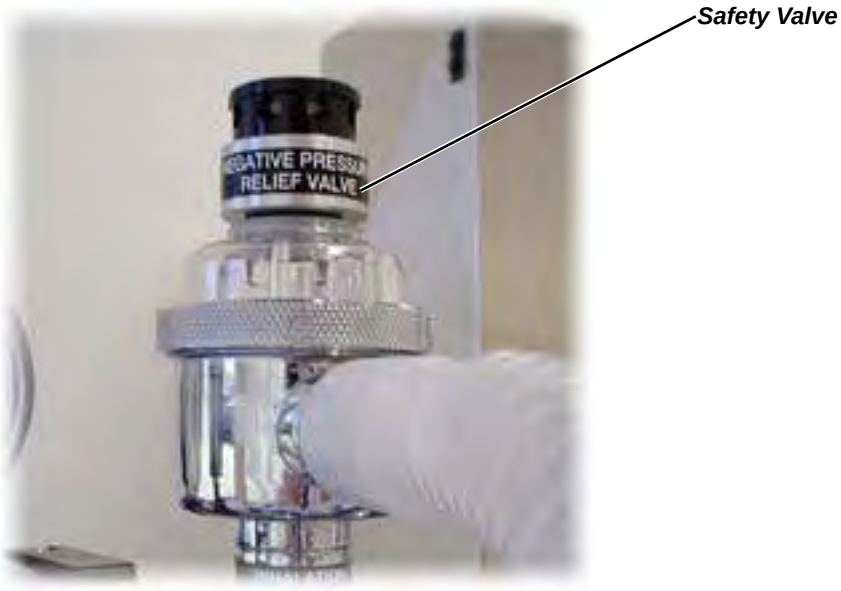
Testing & Repair

Safety Valve

Function

The safety (negative pressure relief) valve allows the patient to breathe if the oxygen supply runs out or is shut off.

This flexible diaphragm valve lets air in if the pressure inside the machine during inhalation becomes lower than the pressure outside.



Safety Valve

Models:	***All***	
Serial Numbers:		

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Always verify model & serial number

Testing & Repair

Pressure Gauge (Manometer)

Function

The pressure gauge (manometer) allows you to monitor pressure inside the system.

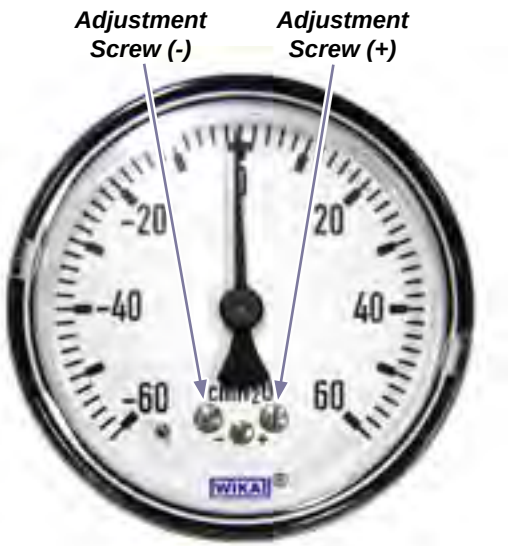
It is especially useful for leak testing the anesthesia machine and for monitoring the system pressure during assisted ventilation.



Old Style Marshall Pressure Gauge



Old Style Weksler Pressure Gauge



New Style Wika Pressure Gauge

Models:	All	
Serial Numbers:		

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Always verify model & serial number

APL Valve

APL Valve	Page
Function	B-10
Functional Testing	B-11
Tubing Diagrams	D-1
Exploded View / Part Numbers	E-1

www.midmark.com	File Name
Maintenance Kit	
VMS, VMS +, VMC	10577100
VME, VME2	10577200

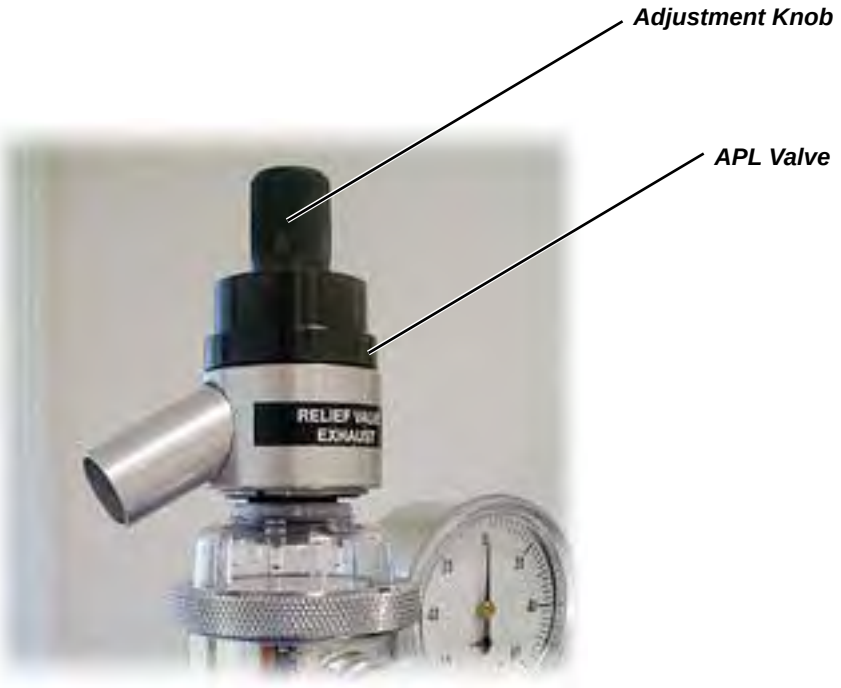
Function

The APL (scavenging / adjustable pressure limiting) valve controls the pressure in the system.

If the pressure in the system exceeds the pressure exerted by the weight of the poppet or the pressure exerted by the compression spring, the valve opens and gas escapes. This normally occurs when the patient is exhaling.

The pressure in the anesthesia machine and the patient's lungs can be controlled by turning the adjustment knob on top of the valve.

Fully open, the APL valve maintains a pressure in the anesthesia machine and the patient's lungs, of 1-3cm H2O.



Models:	All	
Serial Numbers:		

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Always verify model & serial number

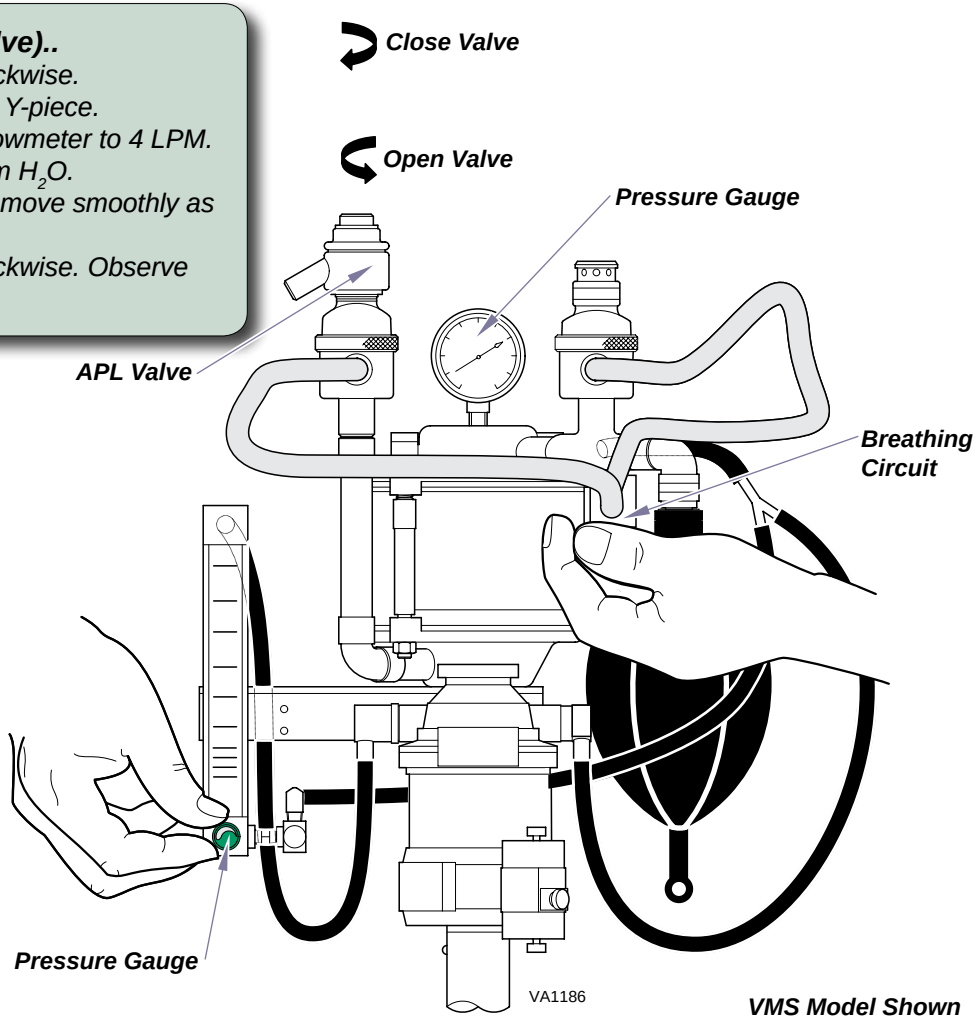
APL Valve	Page
Function	B-10
Functional Testing	B-11
Tubing Diagrams	D-1
Exploded View / Part Numbers	E-1

APL Valve

Functional Test

Scavenging/Adjustable Pressure Limiting (APL Valve)..

A) Open APL valve all the way by turning knob counter clockwise.
B) Place thumb over patient connection of breathing circuit Y-piece.
C) Turn on oxygen supply (50-55 PSI - 3.4-3.8 Bar), turn flowmeter to 4 LPM.
D) Observe pressure gauge. Verify reading is less than 4cm H_2O.
E) Slowly begin closing APL valve. Pressure gauge should move smoothly as pressure increases. DO NOT EXCEED 40cm H_2O!
F) Open APL valve all the way by turning knob counter clockwise. Observe pressure gauge and return to less than 4cm H_2O.



VMS Model Shown

Models:	All	
Serial Numbers:		

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Exhalation Valve

Function

The exhalation valve is a simple unidirectional flutter valve with a 22mm male connector. A light thin disc seats horizontally on a circular knife-edge. A removable clear dome covers the top of the valve so that the disc can be observed. A guide, incorporated in the dome, prevents the disc from becoming dislodged.

Exhaled gas enters the valve through the breathing circuit port, raising the disc from the knife-edge seat. The gas then passes under the dome and through the absorber canister or is vented out the APL valve.

The exhalation valve opens on exhalation and closes on inhalation.



Exhalation Valve

Exhalation Valve	Page
Function	B-12
Functional Testing	B-13
Tubing Diagrams	D-1
Exploded View / Part Numbers	E-1

www.midmark.com	File Name
Maintenance Kit	
VMS, VMS +, VMC	10577100
VME, VME2	10577200

Models:	All	
Serial Numbers:		

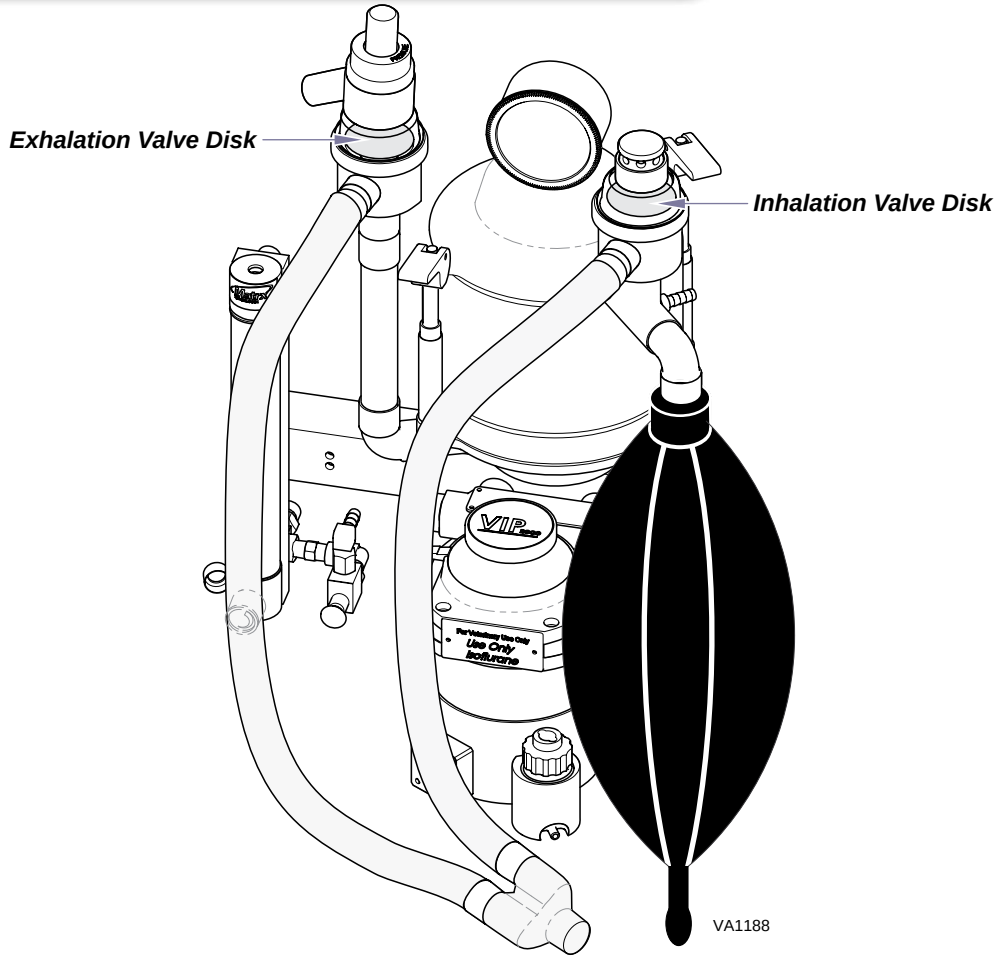
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Always verify model & serial number

Valves	Page
Exhalation Function	B-12
Inhalation Function	B-7
Functional Testing	B-13
Tubing Diagrams	D-1
Exploded View / Part Numbers	E-1

Functional Test

To test Inhalation and Exhalation Valves..
Check that valve disks are operating properly by observing movement during breathing cycles.



Models:	All	
Serial Numbers:		

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Always verify model & serial number

Absorber Canister

Absorber Canister	Page
Function	B-14
Cleaning	B-15
Tubing Diagrams	D-1
Exploded View / Part Numbers	E-1

www.midmark.com	File Name
Maintenance Kit	
VMS, VMS +, VMC	10577100
VME, VME2	10577200

Function

The absorber canister holds carbon dioxide absorption material. The absorbent removes CO_2 from expired gases before gases recycle back to the patient.

The 1500cc (1350g) absorber canister (found on the VMS and VMC anesthesia machines) has a transparent plastic canister located between upper and lower metal housings. Gaskets at the top and bottom fit between the canister and metal housings. A screen in the bottom gasket holds granular material in place, and a screen in the top gasket prevents granular material from entering the breathing circuit, if loose absorbent is used.

The absorber canister for the VME and VME2 anesthesia machines has a gasket located under the manifold. The canister attaches to the manifold with a knob accessed on top of the manifold.



VMS Model Shown

Equipment Alert
Over-tighting the canister knob can strip the canister mounting hole.

Models:	All	
Serial Numbers:		

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Always verify model & serial number

Absorber Canister

Absorber Canister	Page
Function	B-14
Filling & Cleaning	B-15
Tubing Diagrams	D-1
Exploded View / Part Numbers	E-1

Filling & Cleaning

VMS, VMS+, VMC...

Loose absorbent

A) Fill canister one third full.
B) Gently tap sides of canister to settle absorbent.
C) Fill canister two-thirds full and repeat step B.
D) Fill canister to fill line and repeat step B.

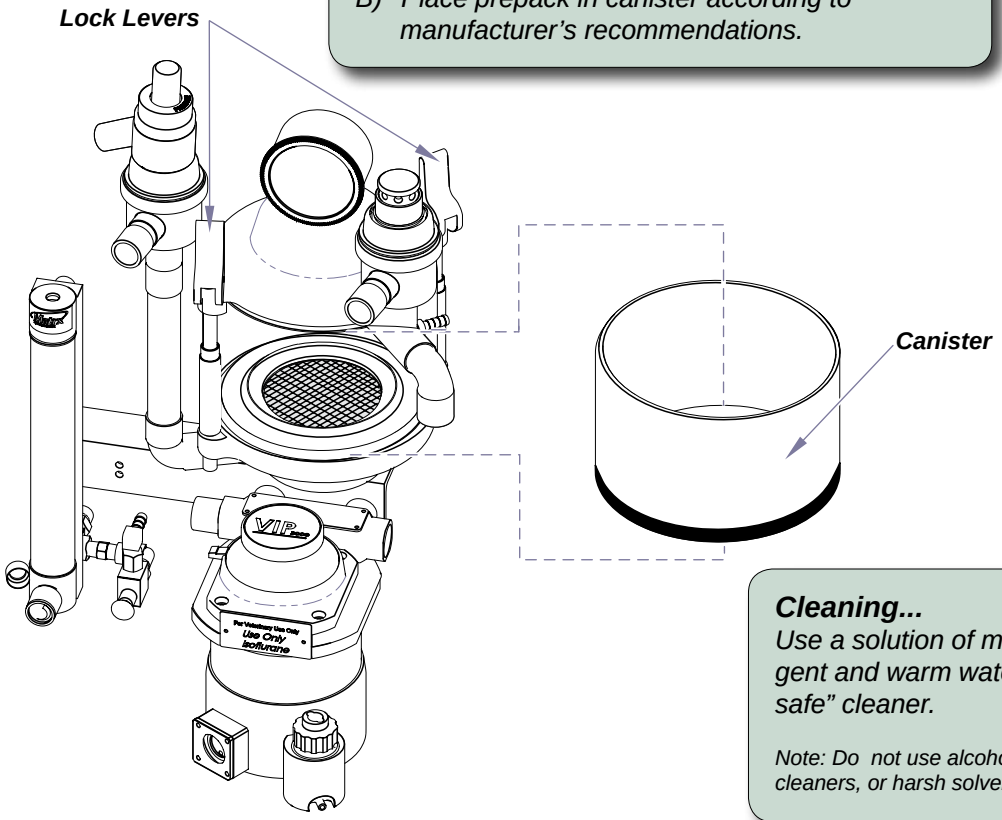
Prepacks

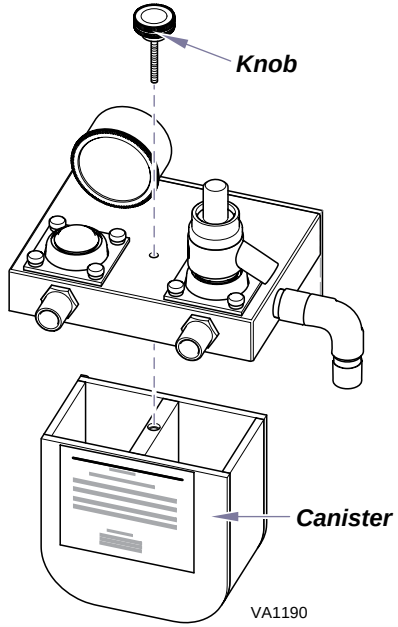
A) Peel off all sealing labels and wraps.
B) Place prepack in canister according to manufacturer's recommendations.

VME, VME2...

A) Cover threaded hole when filling.
B) Fill both sides of canister 1/2 full.
C) Gently tap sides of canister to settle absorbent.
D) Fill canister to fill line.

Note: The usable volume of absorbent should be not less than 1.5 times the tidal volume, do not wait for complete color change.





Cleaning...

Use a solution of mild soap or detergent and warm water, or any "acrylic safe" cleaner.

Note: Do not use alcohol, bleach, window cleaners, or harsh solvents.

Equipment Alert - VME & VME2

Over-tighting the canister knob can strip the canister mounting hole.

Models:	All	
Serial Numbers:		

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Always verify model & serial number

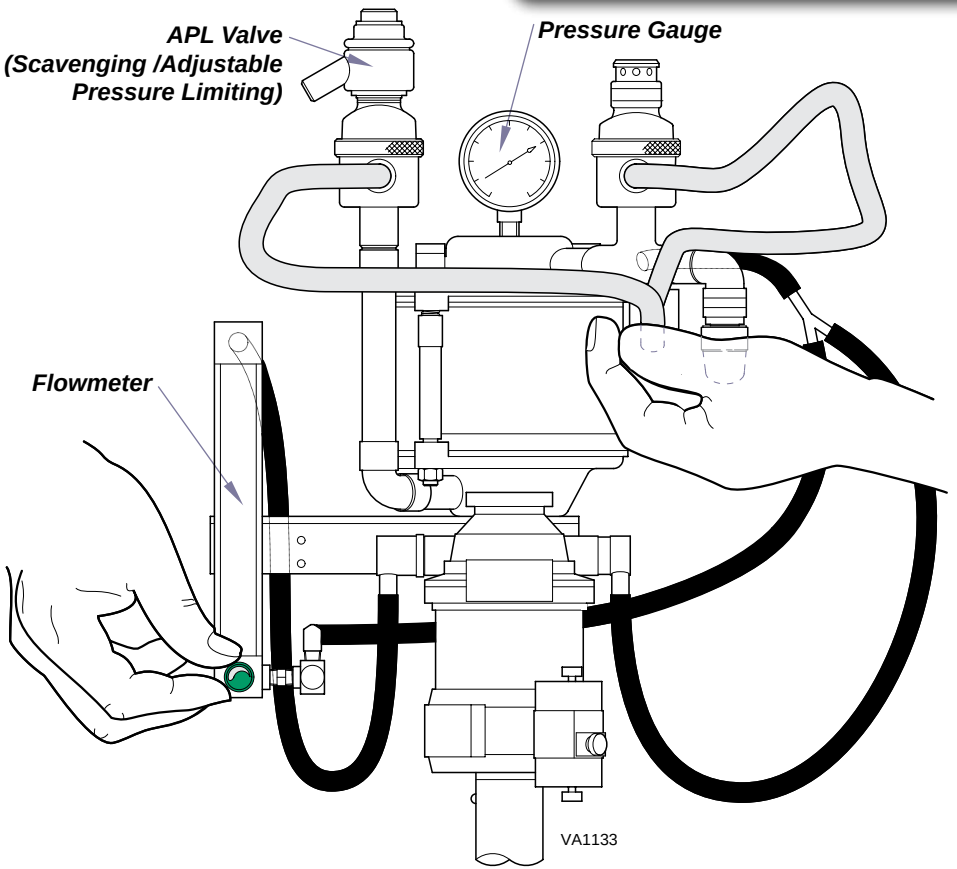
Testing & Repair

Leak Test - VMS, VMS Plus & VMC

Equipment Alert
Do not activate the oxygen flush during any part of this leak test.

To perform leak test...

A) Close APL (Scavenging /Adjustable Pressure Limiting) valve by turning knob clockwise.
B) Place thumb over patient connection of breathing circuit Y.
C) Remove breathing bag and cover bag port opening. (Use palm of hand that is covering Y.)
D) With oxygen (50-55 PSI [3.4-3.8 Bar]) supplied to anesthesia machine, slowly open flowmeter to register 30cm H_20 on anesthesia machine pressure gauge.
E) Turn off flowmeter when pressure reaches 30cm H_2O. (If pressure holds steady the system is leak free but if pressure drops, proceed to step (F).)
F) Slowly open flowmeter until pressure stabilizes at 30cm. H_2O setting. (This determines the magnitude of the leak. If leak rate is greater than 300ml/min; proceed to step (G).)
G) Refer to: "What if machine leaks?
H) Replace reservoir bag. Repeat step (B) and steps (D) through (F). This will determine the integrity of breathing bag.



What if Machine Leaks?

1) Breathing Bag - *If leak occurs, replace.*
2) Breathing Circuit - *Install new breathing circuit or obstruct inhalation / exhalation openings to determine if leak originates from breathing circuit.*
3) Vaporizer Fittings - *Verify fittings and tubing are securely attached.*
4) Canister Gaskets - *Check for loose absorbent grains between canister housing gaskets.*
5) Verify Canister *is seated properly.*
6) Safety Valves - *Remove valve and obstruct opening to determine if leak originates from negative pressure relief valve. Check the o-ring under valve for damage.*
7) APL Valve - *Remove valve and obstruct opening to determine if leak originates from APL valve. Check the o-ring under valve for damage.*
8) O-Rings *under chrome retaining rings. Check the o-rings for damage.*

Models:	All VMS, VMS + and VMC	
Serial Numbers:		

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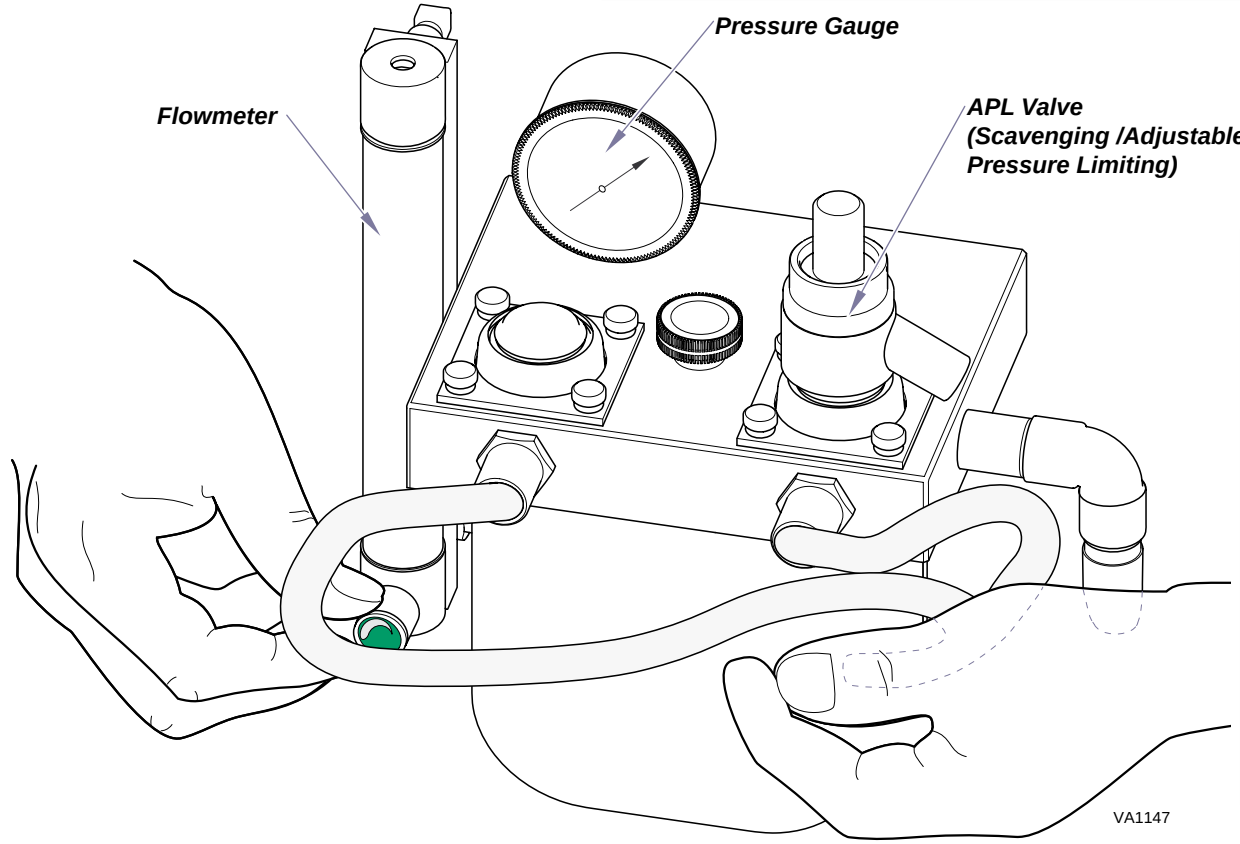
Testing & Repair

Leak Test - VME & VME2

BREATHING BAG	
Patient Weight	**Bag Size**
15 lbs or less (7kg)	500 ml
15-30 lbs (7-14 kg)	1 liter
30-60 lbs (14-27 kg)	2 liter
60-100 lbs (27-45 kg)	3 liter
100 + lbs (45 + kg)	5 liter

To perform leak test...

A) Close APL (Scavenging /Adjustable Pressure Limiting) valve by turning knob clockwise.
B) Place thumb over patient connection of breathing circuit Y.
C) Remove breathing bag and cover bag port opening. (Use palm of hand that is covering Y.)
D) With oxygen (50-55 PSI [3.4-3.8 Bar]) supplied to anesthesia machine, slowly open flowmeter to register 30cm H_20 on anesthesia machine pressure gauge.
E) Turn off flowmeter when pressure reaches 30cm H_2O. (If pressure holds steady the system is leak free but if pressure drops, proceed to step (F).)
F) Slowly open flowmeter until pressure stabilizes at 30cm. H_2O setting. (This determines the magnitude of the leak. If leak rate is greater than 300ml/min; proceed to step (G).)
G) Refer to: "What if machine leaks?
H) Replace reservoir bag. Repeat step (B) and steps (D) through (F). This will determine the integrity of breathing bag.



Equipment Alert

Do not activate the oxygen flush during any part of this leak test.

What if Machine Leaks?

1) Breathing Bag - *If leak occurs, replace.*
2) Breathing Circuit - *Install new breathing circuit or obstruct inhalation / exhalation openings to determine if leak originates from breathing circuit.*
3) Vaporizer Fittings - *Verify fittings and tubing are securely attached.*
4) Canister Gasket - *Check for loose absorbent grains between canister housing gasket.*
5) Verify Canister *is seated properly.*
6) APL Valve - *Remove valve and obstruct opening to determine if leak originates from APL valve. Check the o-ring under valve for damage.*
7) O-Rings *under dome and clamp. Check the o-rings for damage.*

Models:	***All VME & VME2***	
Serial Numbers:		

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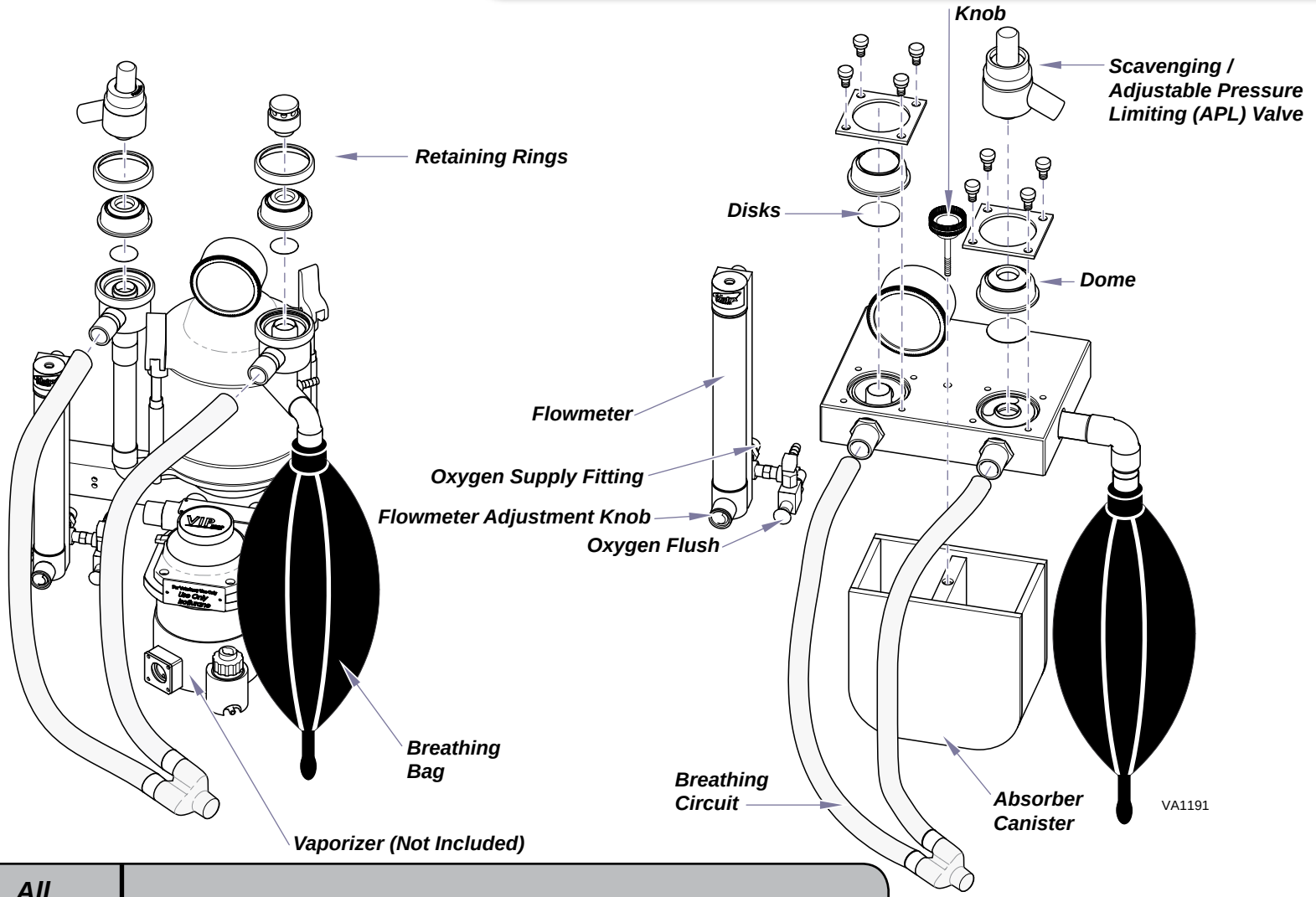
Testing & Repair

Cleaning

To Clean Anesthesia Machines...

A) Remove breathing bag and breathing circuit.
B) Wash with warm water and mild soap, rinse well and hang to dry.
C) Remove white disks from inhalation and exhalation valves.
D) Wipe disks with soft cloth, wipe out valves and reassemble.
E) Remove absorber canister and wipe off gaskets, canister and absorber housings.

Note: Anesthesia machines should be cleaned daily.



Models:	All	
Serial Numbers:		

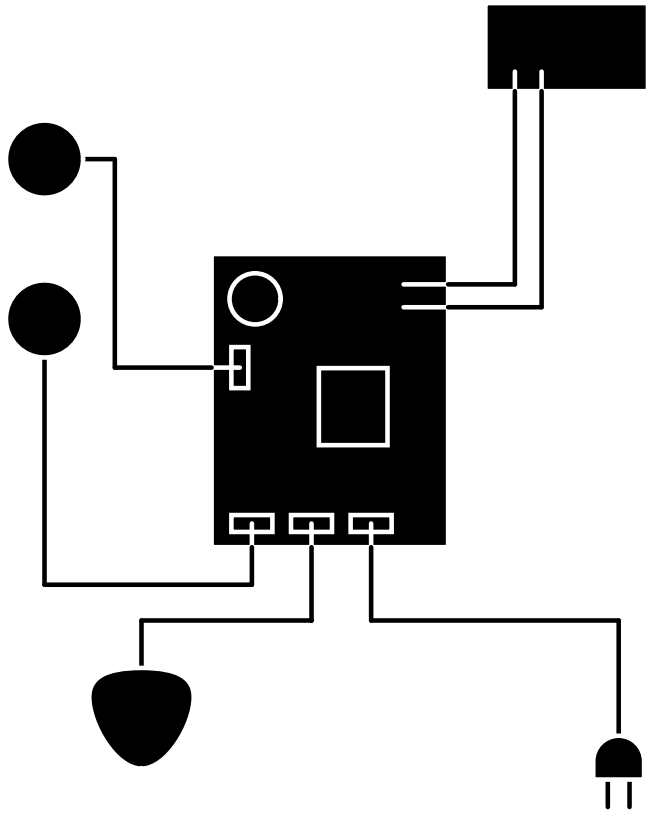
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Section D

Tubing Diagrams

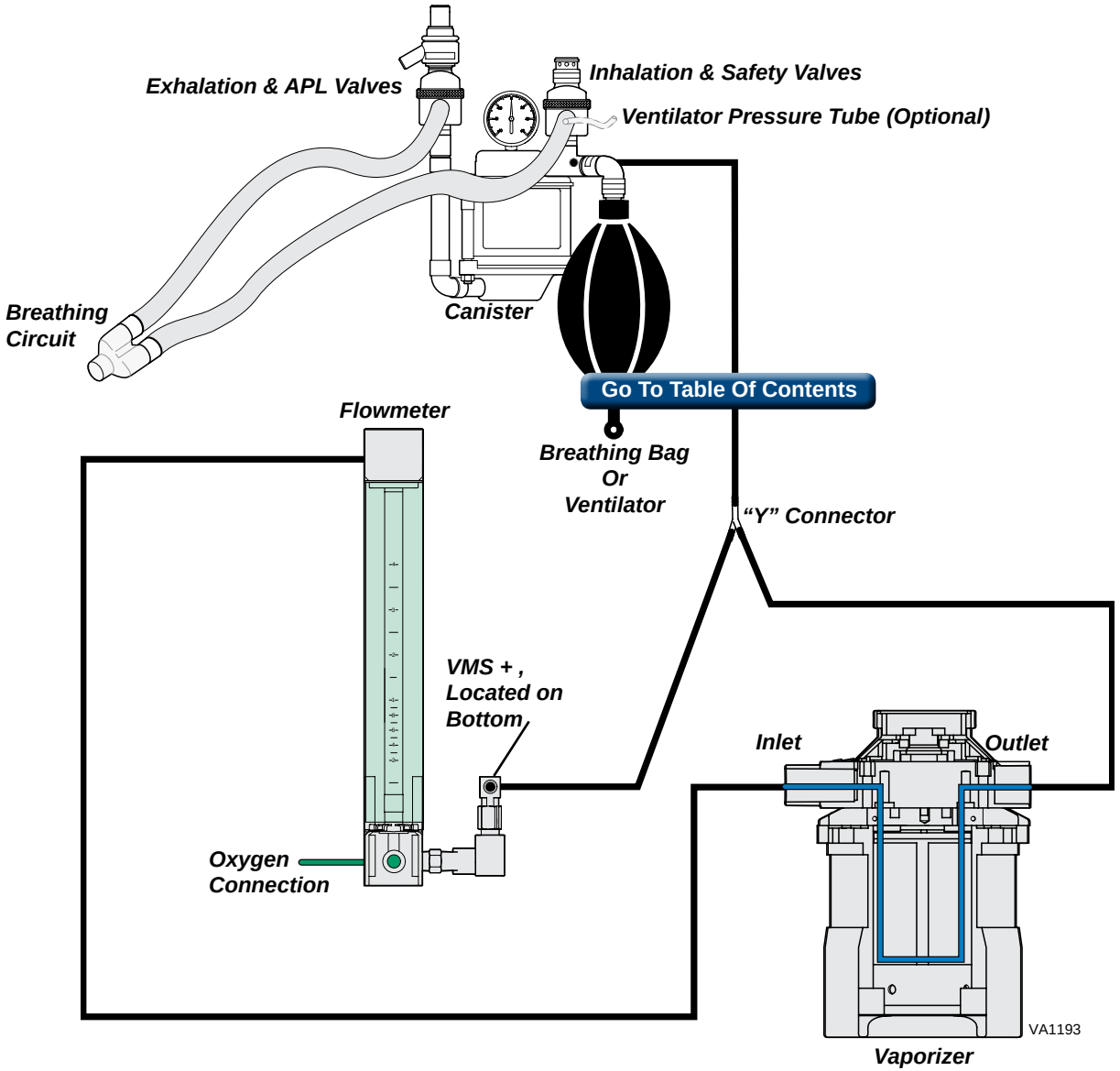
Diagrams	Page
VMS, VMS Plus	D-2
VMC	D-3
VME, VME2	D-4



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Tubing Diagrams

Refer To: **Page**
Exploded View / Part Numbers..... E-1



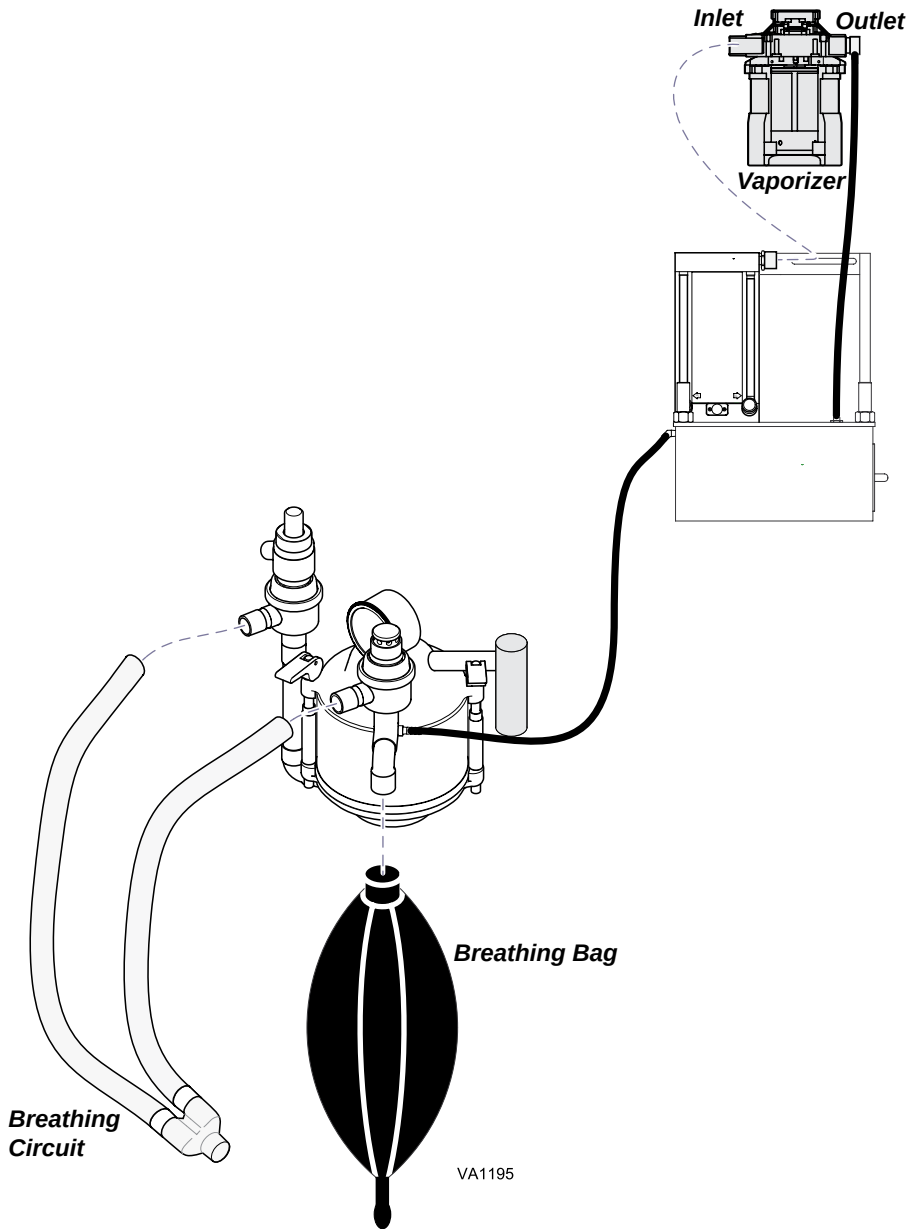
Models:	VMS	VMS Plus	
Serial Numbers:	all	all	

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Tubing Diagrams

Refer To: **Page**
Exploded View / Part Numbers..... E-1



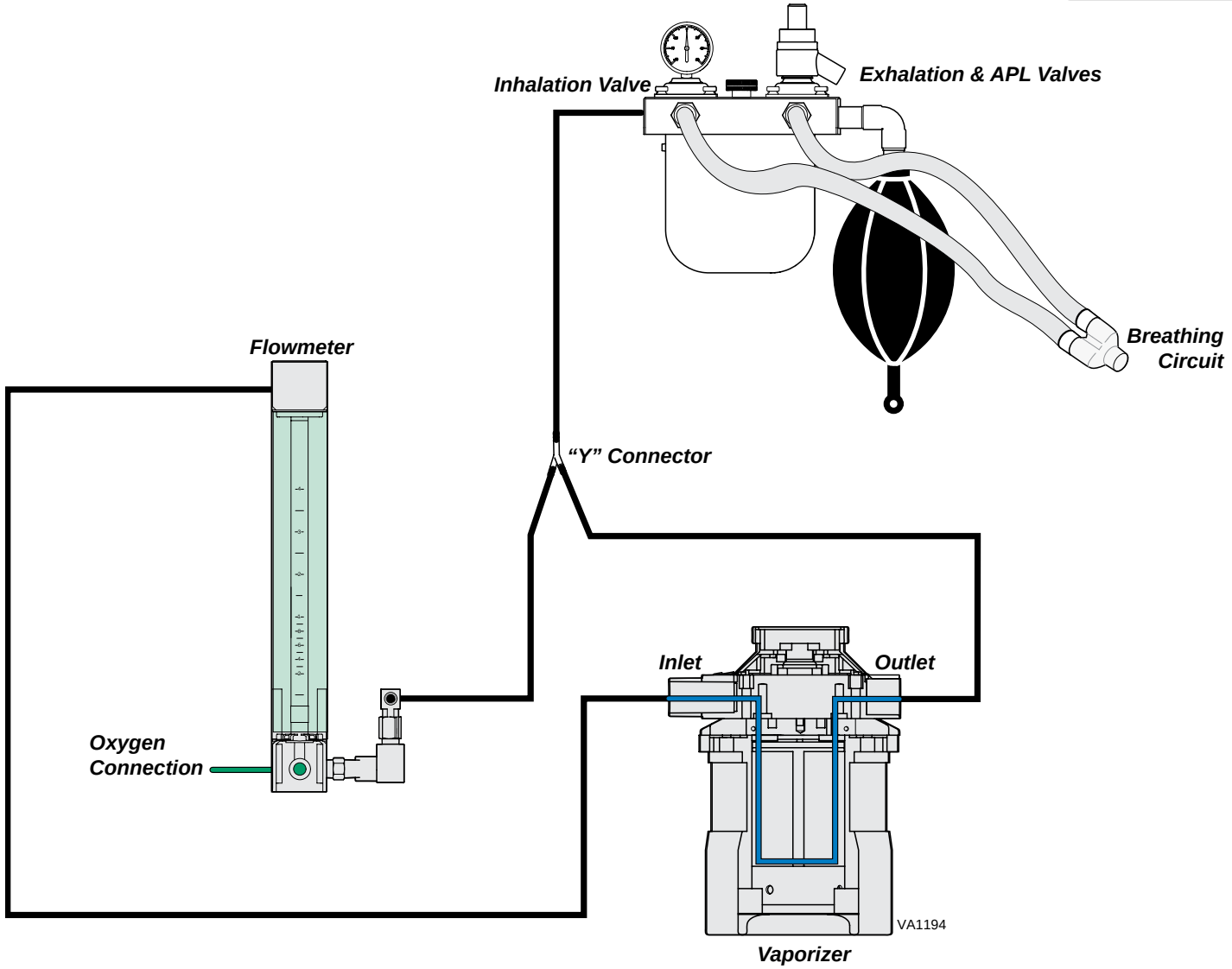
Models:	VMC	
Serial Numbers:	all	

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Tubing Diagrams

Refer To: **Page**
Exploded View / Part Numbers..... E-1



Models:	VME	VME2	
Serial Numbers:	all	all	

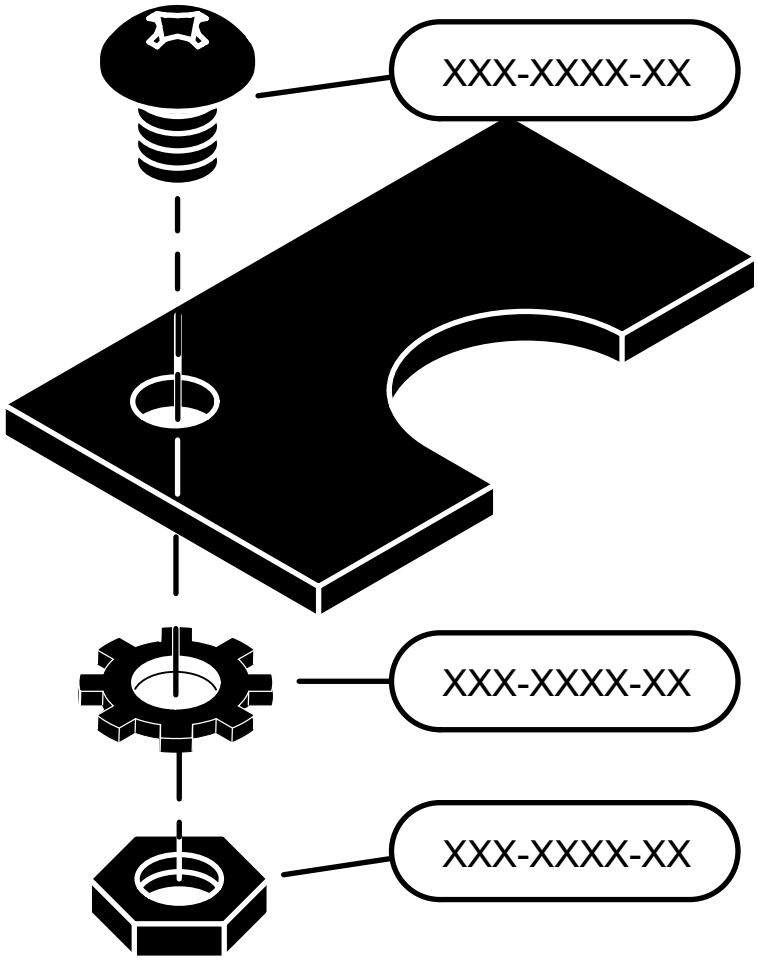
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Section E

Exploded Views & Parts Lists

Model: **Page**
Model Index E-2



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Veterinary Anesthesia Machines

***Click on Button to Activate Link to Parts Lists**

VMC Models

VMC Drawer Assembly..... E-3

VMC Stand Assembly..... E-4

Absorber Assembly E-14

VML Model

VML Anesthesia Machine E-15

VML Basic Assembly E-16

Absorber Assembly E-17

Maintence Kits E-19
VME Post Mount Maintence Kit..... E-20

VMS Models

VMS Wall Mount E-5

VMS Plus..... E-6

VMS..... E-7

VMS - Inhalation / Exhalation Valve Parts E-8

Absorber Assembly E-14

VMR Model

VMR Non-rebreathing System..... E-18

Sodasorb E-21

VME Models

VME2..... E-9

VME Tabletop E-10

VME - Inhalation / Exhalation Valve Parts with Canister Assembly E-11

VME Post Mount..... E-20

Flowmeter

Flowmeter Assembly (Present Models) ...E-12

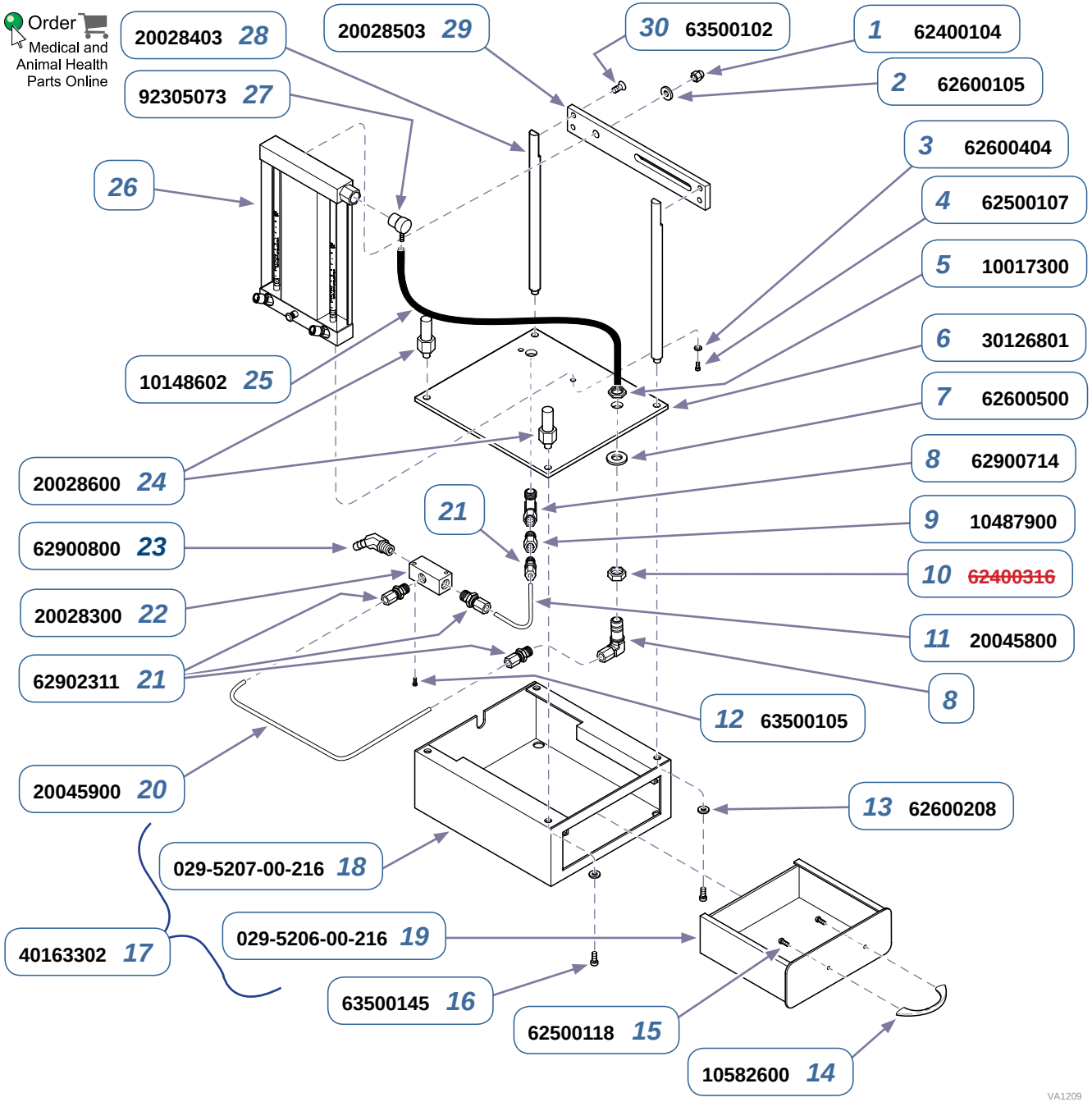
Flowmeter Assembly (Older Models) E-13

Note:
Look at Item 7 (older models page) and Item 14 (present models page) to determine if you have an older or newer model flowmeter assembly. Older models use a plastic cover and present models use a lens.

**** Indicates multiple pages due to a serial number break for the parts illustration.***

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VMC Drawer Assembly

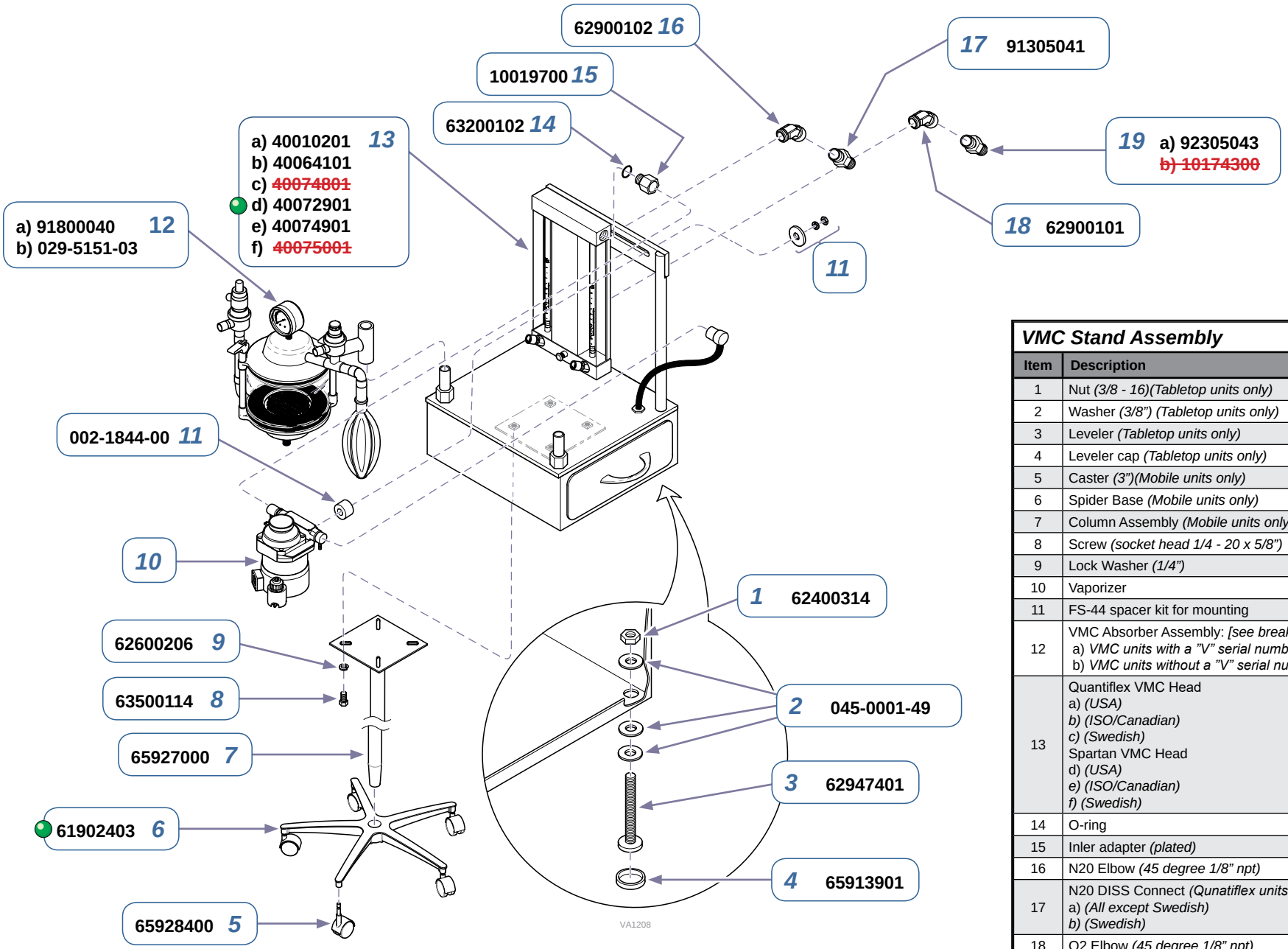
Item	Description	Qty.
1	Acorn nut *(1/4 - 20)*	1
2	Washer *(1/4")*	1
3	Lock Washer *(#8)*	4
4	Screw *(pan head 6-32 x 1/2")*	2
5	Hose Connector	1
6	Table top	1
7	Lock Washer *(1/2" external tooth)*	1
8	Elbow *(1/8 npt, apply teflon tape and adhesive)*	2
9	Oriface Assembly	1
10	Nut *(1/2" - 20)*	1
11	Tube *(O2 flush)*	1
12	Screw *(socket head 6 -32 x1")*	2
13	Lock Washer *(3/8")*	4
14	Drawer Handle	1
15	Screw *(pan head 8 - 32 x 1/4")*	2
16	Screw *(socket head 3/8 - 16 x 1")*	4
17	Drawer Unit (includes item 18 & 19)	1
18	• Drawer Unit Housing	1
19	• Drawer Assembly	1
20	Tube *(flowmeter outlet)*	1
21	Connector *(1/8" mnpt x 1/4 t)(apply adhesive)*	4
22	Manifold block *(apply adhesive to secure block)*	1
23	Connector *(45 deg. 1/8 npt x 1/4 t plated)*	1
24	Mounting post	2
25	Black Neoprene Rubber Tubing *(5/16" dia)*	AR
26	Refer to: Flowmeter Assembly	Ref
27	FS-2 outlet adapter	1
28	Upright bar *(painted)*	2
29	Cross bar *(painted)*	1
30	Screw *(socket head 6 - 32 x 3/8")*	4

Models:	VMC
Serial Numbers:	all

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VMC Stand Assembly

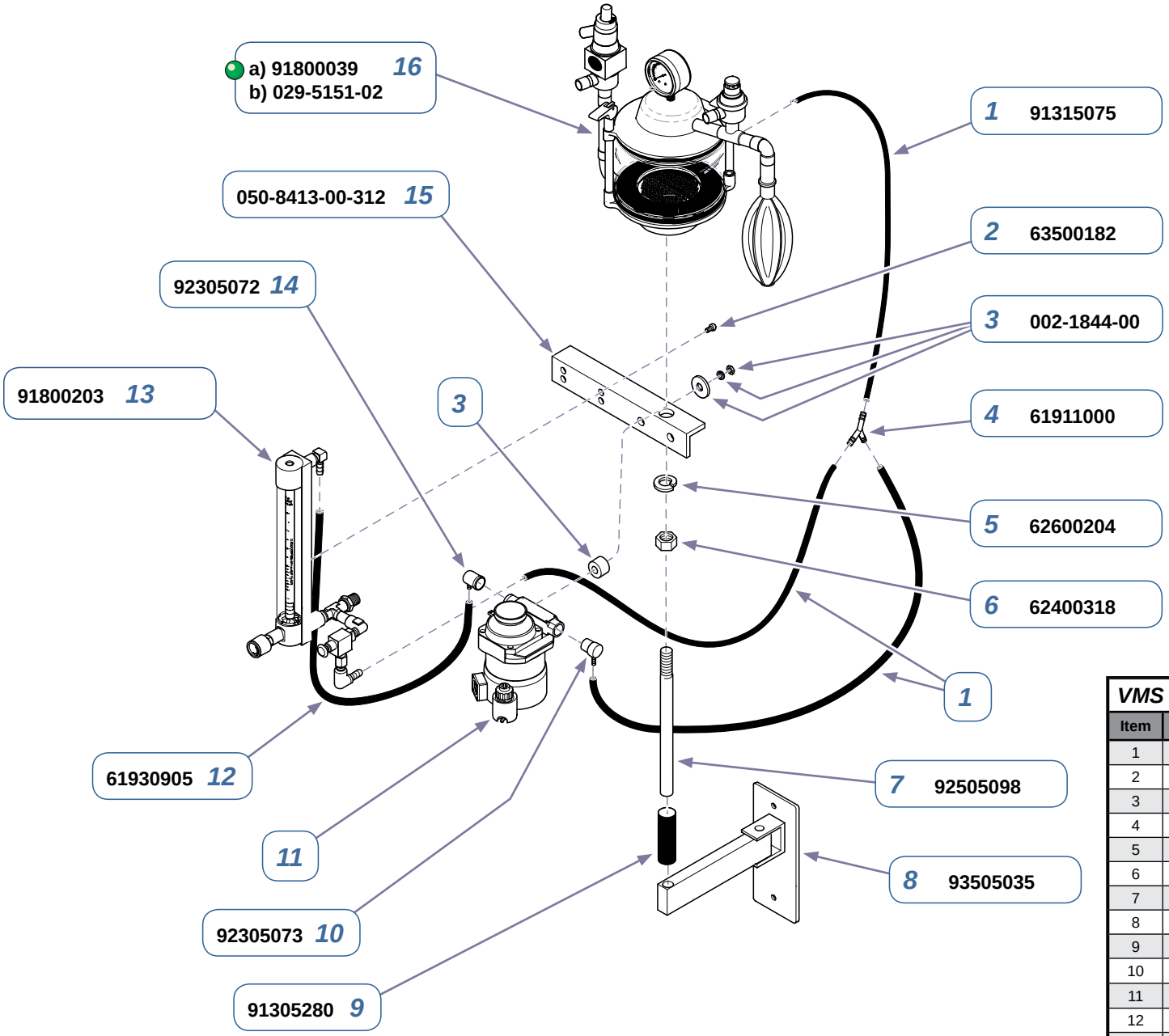
Item	Description	Qty.
1	Nut *(3/8 - 16)(Tabletop units only)*	4
2	Washer *(3/8")* *(Tabletop units only)*	12
3	Leveler *(Tabletop units only)*	4
4	Leveler cap *(Tabletop units only)*	4
5	Caster *(3")(Mobile units only)*	5
6	Spider Base *(Mobile units only)*	1
7	Column Assembly *(Mobile units only)*	1
8	Screw *(socket head 1/4 - 20 x 5/8")*	4
9	Lock Washer *(1/4")*	4
10	Vaporizer	1
11	FS-44 spacer kit for mounting	1
12	VMC Absorber Assembly: *[see breakdown]* a) *VMC units with a "V" serial number prefix* b) *VMC units without a "V" serial number prefix*	Ref
13	Quantiflex VMC Head a) *(USA)* *b) (ISO/Canadian)* *c) (Swedish)* Spartan VMC Head d) *(USA)* *e) (ISO/Canadian)* *f) (Swedish)*	AR
14	O-ring	1
15	Inler adapter *(plated)*	1
16	N20 Elbow *(45 degree 1/8" npt)*	AR
17	N20 DISS Connect *(Qunatiflex units only)* a) *(All except Swedish)* *b) (Swedish)*	NSS
18	O2 Elbow *(45 degree 1/8" npt)*	AR
19	O2 DISS Connect a) *(All except Swedish)* *b) (Swedish)*	AR
Items 20 & 21 are not shown and also included with item 13		
20	*30020200* Back Cover	1
21	*20013100* Stand Off	1

Models:	VMC
Serial Numbers:	all

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VMS Wall Mount

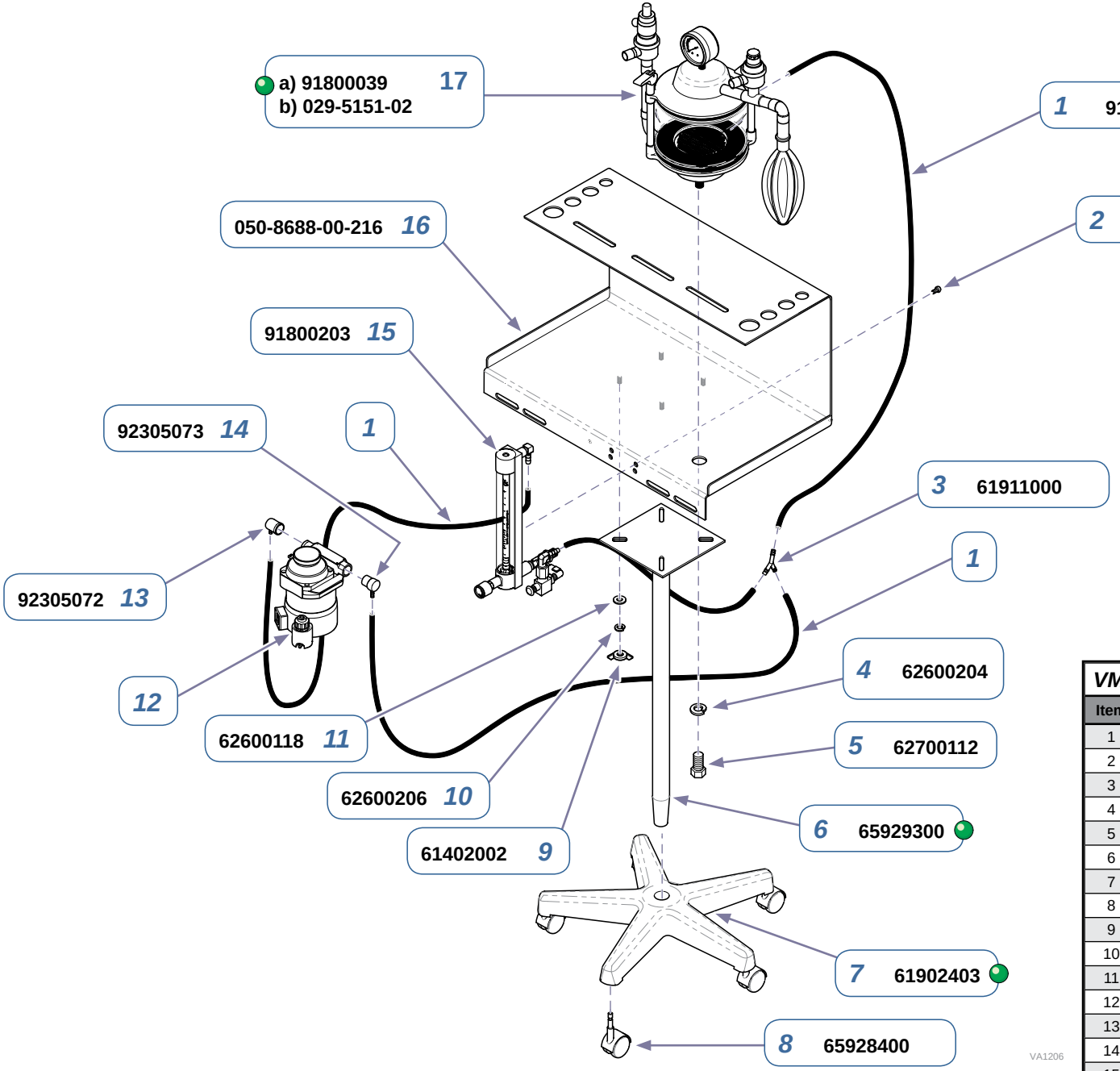
Item	Description	Qty.
1	Black Neoprene Rubber Tubing	AR
2	Screw Kit for Flowmeter *(10-32 x 5/16" socket hd)*	2
3	Screw Kit for Vaporizer Mounting	2
4	"Y" connector fitting	1
5	Lock Washer *(5/8")*	1
6	Nut *(5/8" -18)*	1
7	Mounting Stud	2
8	Mounting Bracket	1
9	Post spacer	1
10	FS-2 outlet adapter	1
11	Vaporizer	1
12	Black Neoprene Rubber Tubing *(24 in long)*	1
13	O2 Flowwmeter with flush assy.	NSS
14	a) FS-2A inlet adapter b) FS-2A inlet adapter *(without fittings)*	1
15	Mounting bracket	1
16	VMS Absorber Assembly: *[see breakdown]* a) *VMS units with a "V" serial number prefix* b) *VMS units without a "V" serial number prefix*	Ref

Models:	***VMS***	
Serial Numbers:	*all*	

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VMS Plus: Anesthesia Machine

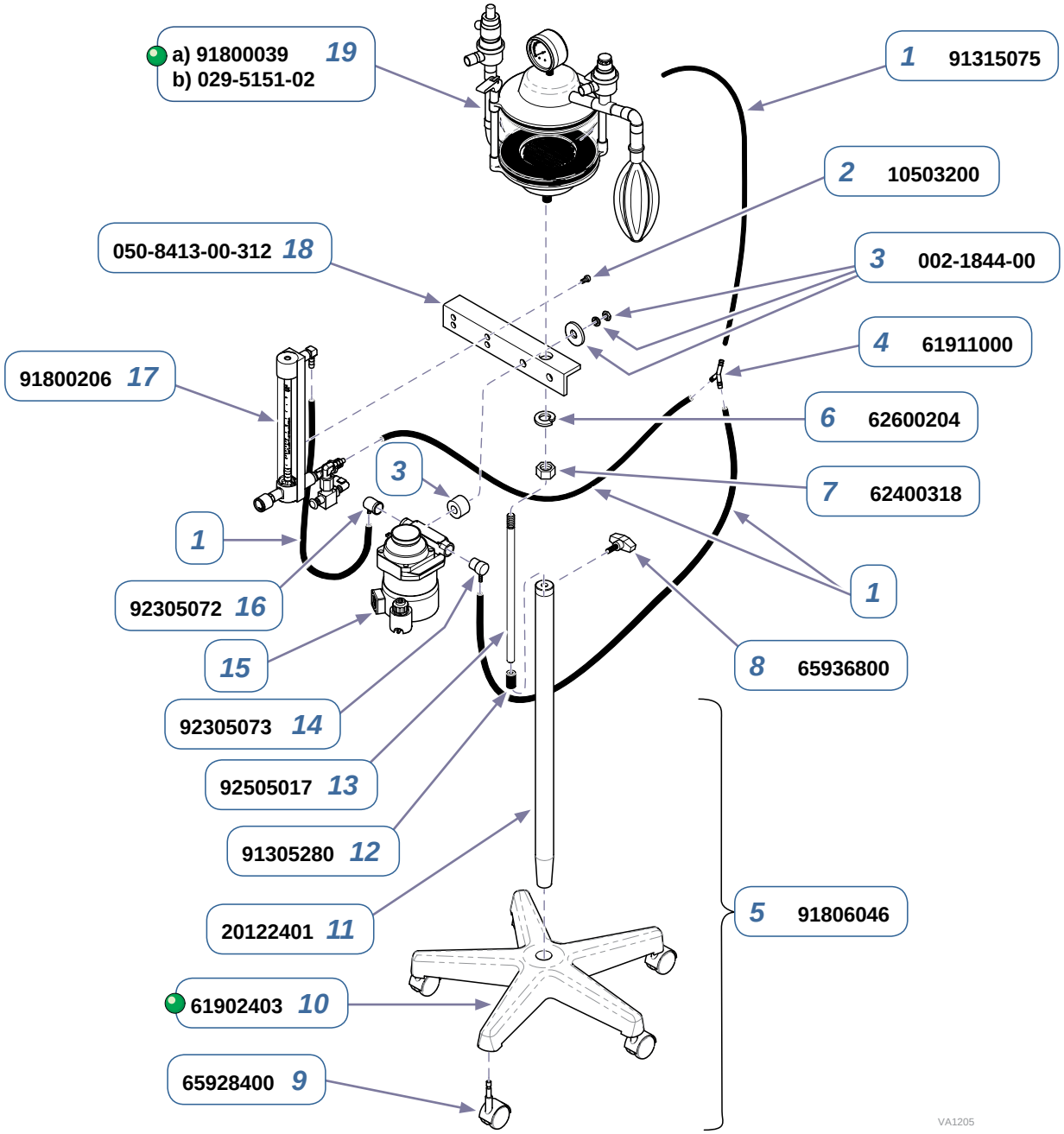
Item	Description	Qty.
1	Black Neoprene Rubber Tubing 1/4" I.D.	AR
2	Screw Kit *(10-32 x5/6")*	2
3	"Y" Connector	1
4	Lock Washer	1
5	Bolt	1
6	Column	1
7	Spider base *(5 -leg)*	1
8	Caster	5
9	Wing Nut	4
10	Lock Washer	4
11	Flat Washer	4
12	Vaporizer	1
13	FS2A Inlet Adapter	1
14	FS2 Outlet Adapter	1
15	O2 Flowmeter Assembly with Flush	1
16	Shelf	1
17	VMS Absorber Assembly: *[see breakdown]* a) *VMS units with a "V" serial number prefix* b) *VMS units without a "V" serial number prefix*	Ref

Models:	VMS Plus
Serial Numbers:	all

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Models:	VMS
Serial Numbers:	all

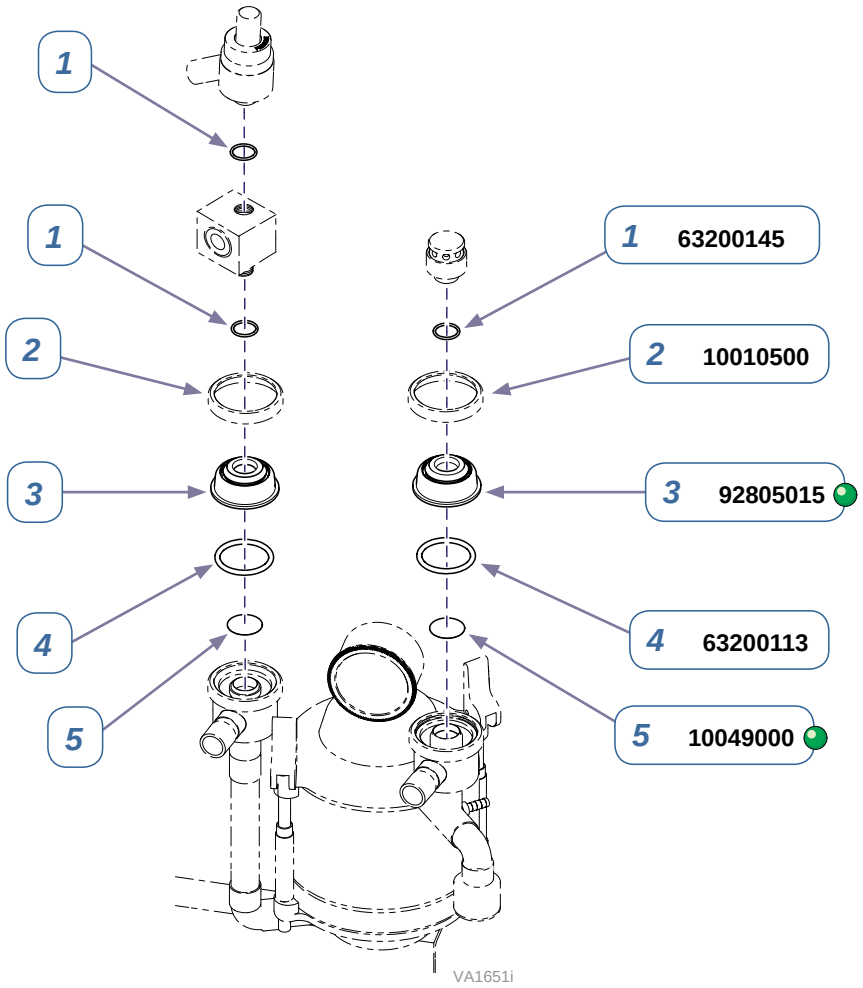
VMS

Item	Description	Qty.
1	Black Neoprene Rubber Tubing *(1/4" dia)*	AR
2	Screw Kit for Flowmeter (10-32 x 5/16")	2
3	Vaporizer Mounting Kit	2
4	Nylon "Y" Connector	1
5	VMS 40" Stand Assy *(Includes items 6 thru 13)*	1
6	• Lock Washer *(5/8")*	1
7	• Nut *(5/8" -18)*	1
8	• Stand Tee-Handle	1
9	• Caster *(3')*	5
10	• Spider Base *(5 leg)*	1
11	• Column	1
12	• Post Spacer	1
13	• Mounting Stud *(15")*	1
14	FS-2 Adapter	1
15	Vaporizer	1
16	FS-2A Adapter	1
17	O2 Flowmeter with Flush Assembly	1
18	Mounting Bracket	1
19	VMS Absorber Assembly: *[see breakdown]* a) *VMS units with a "V" serial number prefix* b) *VMS units without a "V" serial number prefix*	Ref

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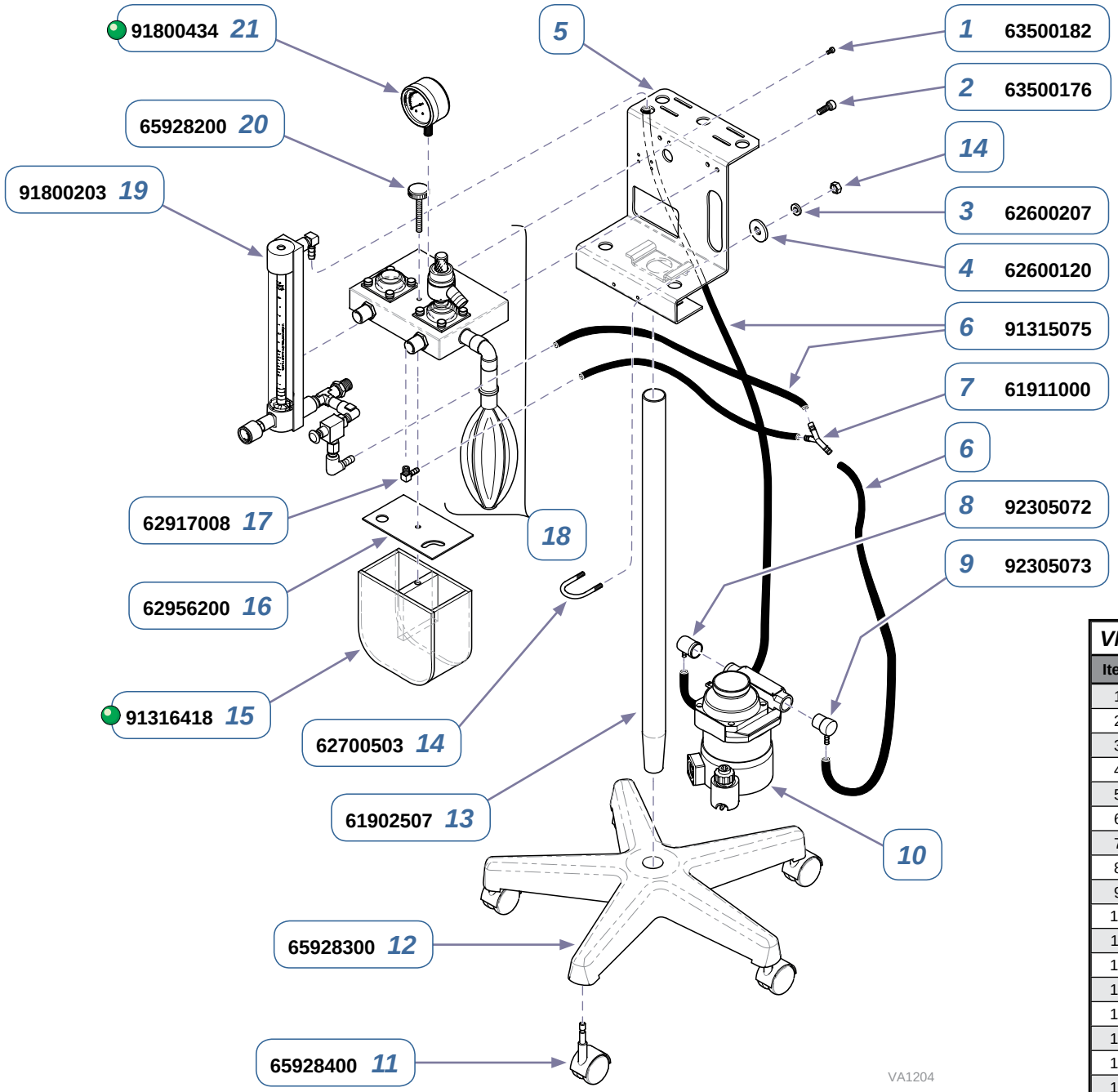
VMS - Inhalation / Exhalation Valve Parts

Item	Description	Qty.
1	O-ring	3
2	Dome Retainer Ring	2
3	Dome Clamp	2
4	O-ring	2
5	White Nylon Valve Disc	2

Models:	VMS	
Serial Numbers:	all	

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VME2: Anesthesia Machine

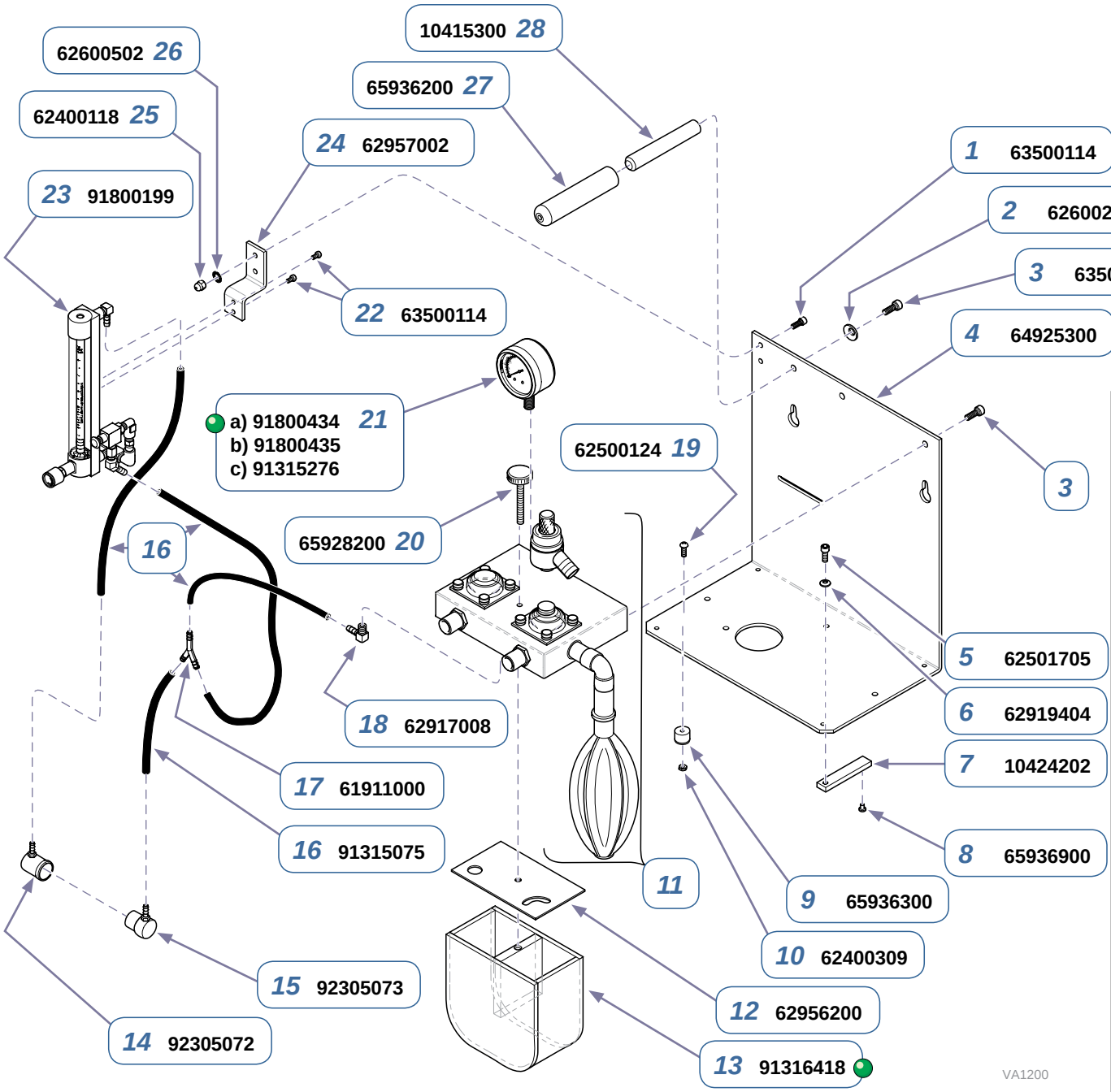
Item	Description	Qty.
1	Socket Head Bolt *(1/4 - 20 x 5/8")*	1
2	Screw*(5/16 - 18 x 3/4")*	2
3	Washer *(lock)*	2
4	Washer *(flat 5/16)*	2
5	Base Plate *(not available)*	1
6	Black Neoprene Rubber Tubing 1/4" I.D.	AR
7	"Y" Connector	1
8	FS2A Inlet Adapter	1
9	FS2 Outlet Adapter	1
10	Vaporizer	Ref
11	Caster	5
12	Spider base *(5 -leg)*	1
13	Column	1
14	U clamp *(includes 5/16" x 18 nuts)*	1
15	Asorber Canister *(w/decal)*	1
16	Gasket	1
17	Elbow *(90 Deg Male - 1/4 HB x 1/8 NPT Plated)*	1
18	Inhalation / Exhalation Valves	1
19	O2 Flowmeter Assembly with Flush	1
20	Canister Knob	1
21	Pressure Gauge	1

Models:	VME 2	
Serial Numbers:	all	

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Models:	VME
Serial Numbers:	all

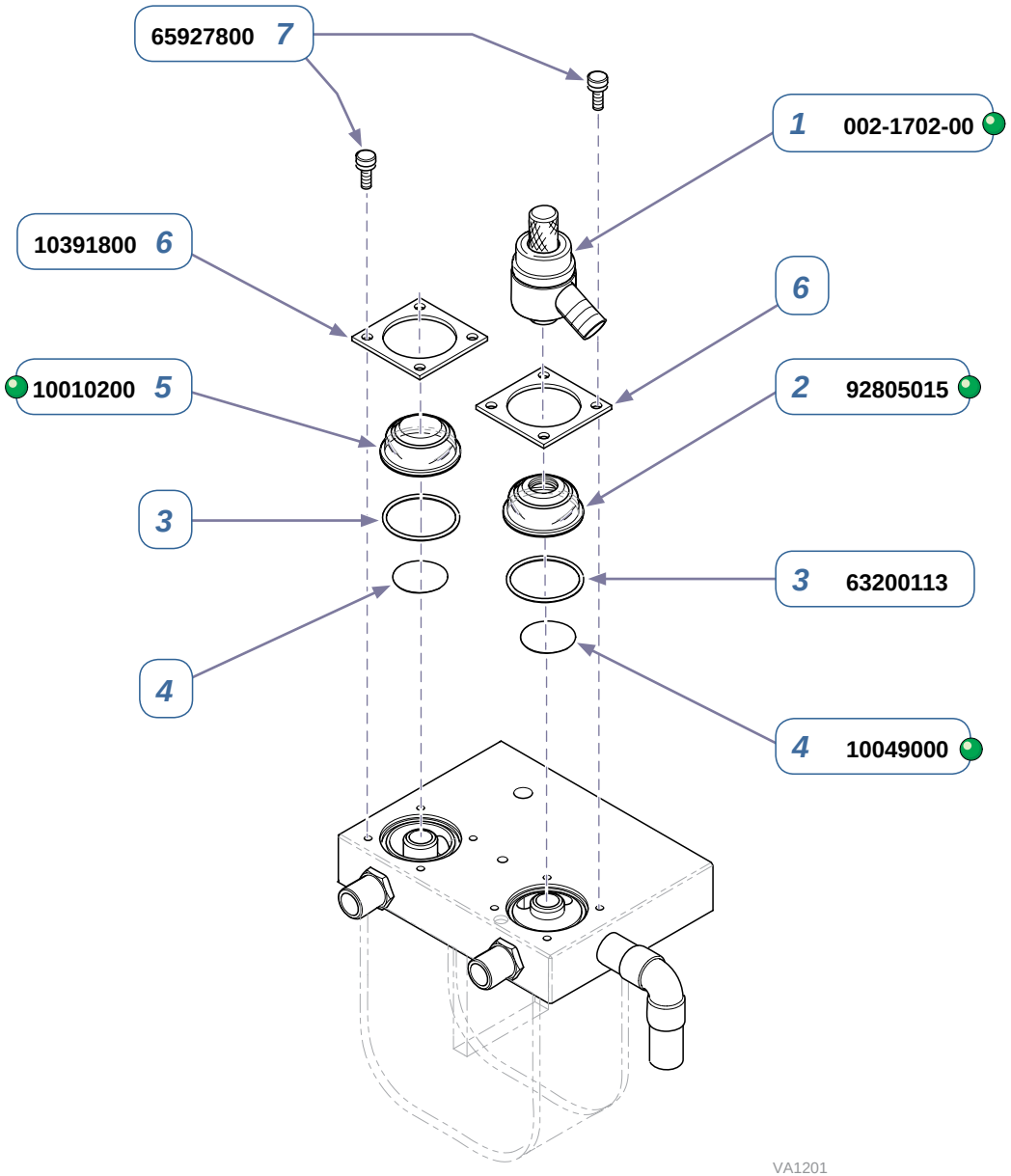
VME Table Top: Anesthesia Machine

Item	Description	Qty.
1	Socket head bolt *(1/4 - 20 x 5/8", Plated)*	1
2	Washer *(HLCL Spring Washer 5/16", Plated)*	1
3	Screw *(5/16 - 18 x 3/4")*	3
4	Panel	2
5	Should Bolt *(10 - 32)*	2
6	Spring Washer *(1/4")*	1
7	Anodized Leg	1
8	Bumper	1
9	Foot	4
10	Nut *(10-32 Plated)*	4
11	Inhalation / Exhalation Valves	1
12	Gasket	1
13	Absorber Canister *(w/decal)*	1
14	FS2A Inlet Adaptor	1
15	FS2 Outlet Adaptor	1
16	Black Neoprene Rubber Tubing *(1/4" dia)*	AR
17	"Y" Connector	1
18	Elbow *(90 Deg Male - 1/4 HB x 1/8 NPT Plated)*	1
19	Screw *(1/4" - 20 x 5/8", Plated)*	4
20	Canister Knob	1
21	a) Pressure gauge b) Pressure gauge replacement cover - Wexler (included with 91800434) c) Pressure gauge replacement cover - Marshall	1
22	Screw *(10 -032 x 5/16")*	2
23	O2 Flowmeter Assembly with Flush	1
24	Mounting Bracket	1
25	Acorn Nut **1/4 -20)*	2
26	Washer *(1/4")*	2
27	Handle Grip	1
28	Handle	1

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Models:	VME	
Serial Numbers:	all	

VME Table Top: Inhalation / Exhalation Valve Parts

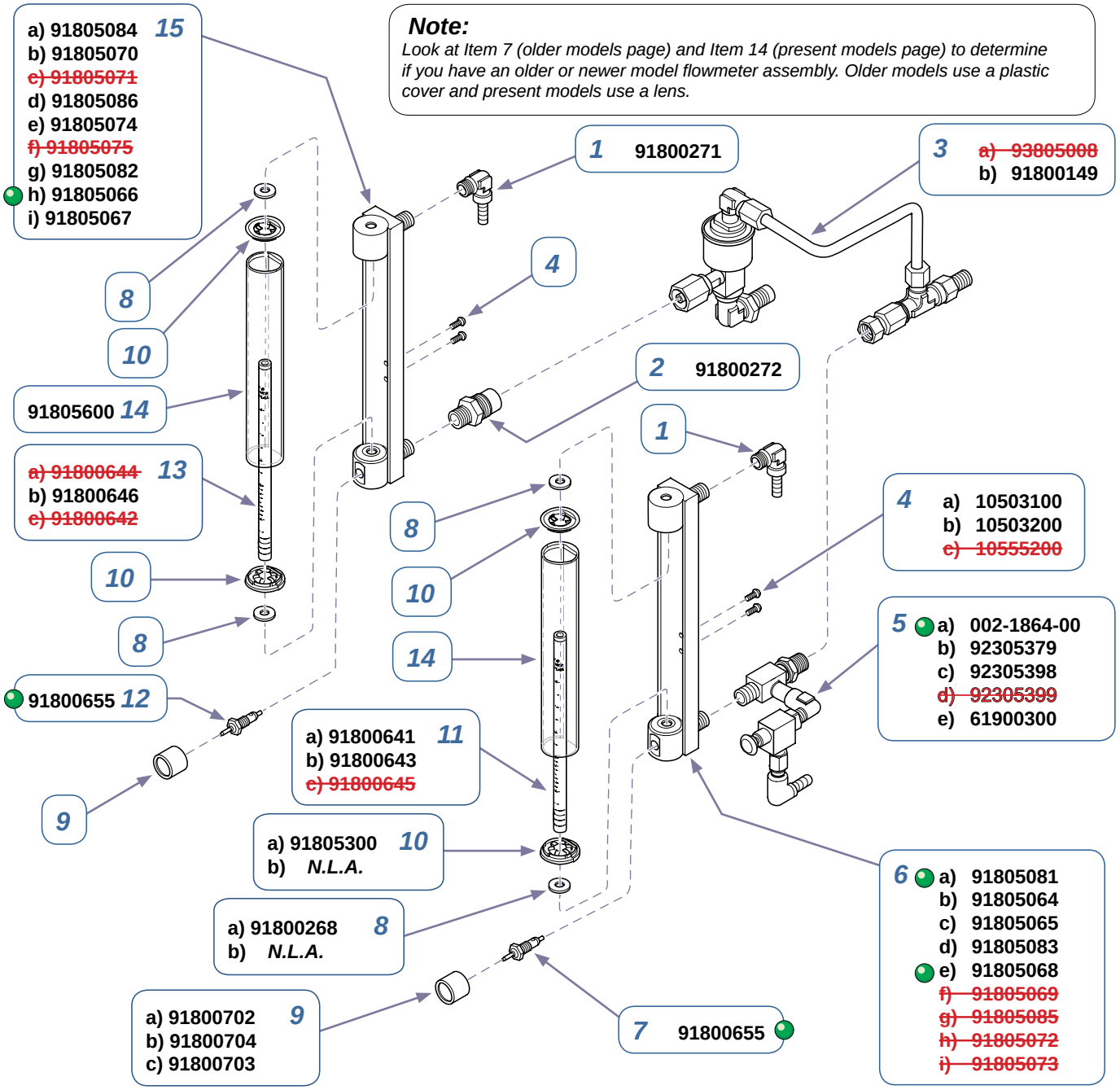
Item	Description	Qty.
1	APL Valve	1
2	Exhalation Valve	1
3	Gasket	2
4	White Nylon Valve Disc	2
5	Inhalation Dome	1
6	Dome Clamp	2
7	Thumb Screws	8

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Note:
Look at Item 7 (older models page) and Item 14 (present models page) to determine if you have an older or newer model flowmeter assembly. Older models use a plastic cover and present models use a lens.



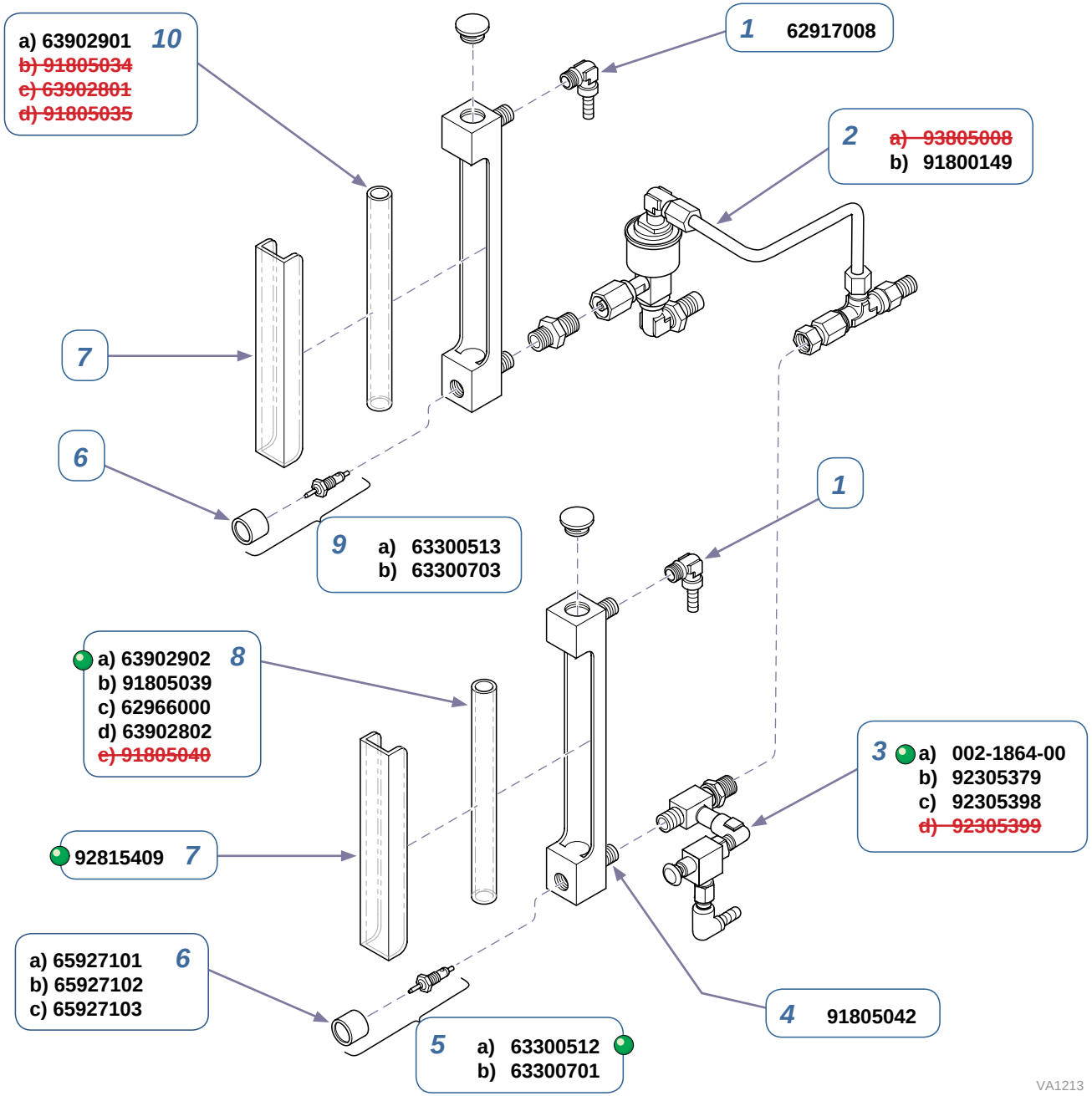
Flowmeter Assembly Present Models

Item	Description	Qty.
1	Elbow *(1/4M Hose Barb x 1/8" NPT)*	1
2	N2O DISS Fitting	1
3	N2O Fail-safe Assembly *a) (USA/ISO/Canadian)* *b) (Swedish)*	1
4	Screw Kit *a) VMS Plus Flowmeter (10-32 x 1/4")* *b) VMS/VME/VMR Flowmeter (10-32 x 5/16")* *c) VML (10-32 x 3/8")*	2
5	O2 Flush Assy *a) VMS/VML (USA/ISO/Canadian)* *b) VMS/VML (Swedish)* *c) VMS Plus/VME2 (USA/ISO/Canadian)* *d) VMS Plus/VME2 (Swedish)* *e) Push Button only*	1
6	O2 Flowmeter Assy without Flush *a) USA)* *g) VML (USA)* *b) (ISO/ Canadian)* *h) VML (ISO/Canadian)* *c) (Swedish)* *i) VML (Swedish)* *d) [USA(0-1000cc)]* *e) [ISO/Canadian (0-1000cc)]* *f) [Swedish (0-1000cc)]*	1
7	O2 Needle Valve Assembly with Positive Stop	1
8	Replacement Gaskets *a) (.2-4 lpm)* *b) (0-1000cc)*	2
9	Knob *a) Green* *b) Blue* *c) White*	2
10	Replacement End Caps *a) (.2-4 lpm)* *b) (0-1000cc)*	2
11	O2 Flowmeter Tube *a) (.2-4 lpm)* *c) VML* *b) (0-1000cc)*	1
12	N2O Needle Valve Assembly with Positive Stop	1
13	N2O Flowmeter Tube *a) (.2-4 lpm)* *b) (0-1000cc)* *c) VML (.5 - 10 lpm)*	1
14	Lens	1
15	N2O Flowmeter Assy without Flush *a) (USA)* *b) (ISO/Canadian)* *c) (Swedish)* *d) [USA(0-1000cc)]* *e) [ISO/Canadian (0-1000cc)]* *f) [Swedish (0-1000cc)]* *g) VML (USA)* *h) VML (ISO/Canadian)* *i) VML (Swedish)*	1

Models: / Serial Numbers:	VME2	VMR	VMS/VMS Plus	VME	VML	
	Newer Models	Newer Models	Newer Models	Newer Models	Newer Models	

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Always verify model & serial number



Note:
Look at Item 7 (older models page) and Item 14 (present models page) to determine if you have an older or newer model flowmeter assembly. Older models use a plastic cover and present models use a lens.

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Flowmeter Assembly Older Models

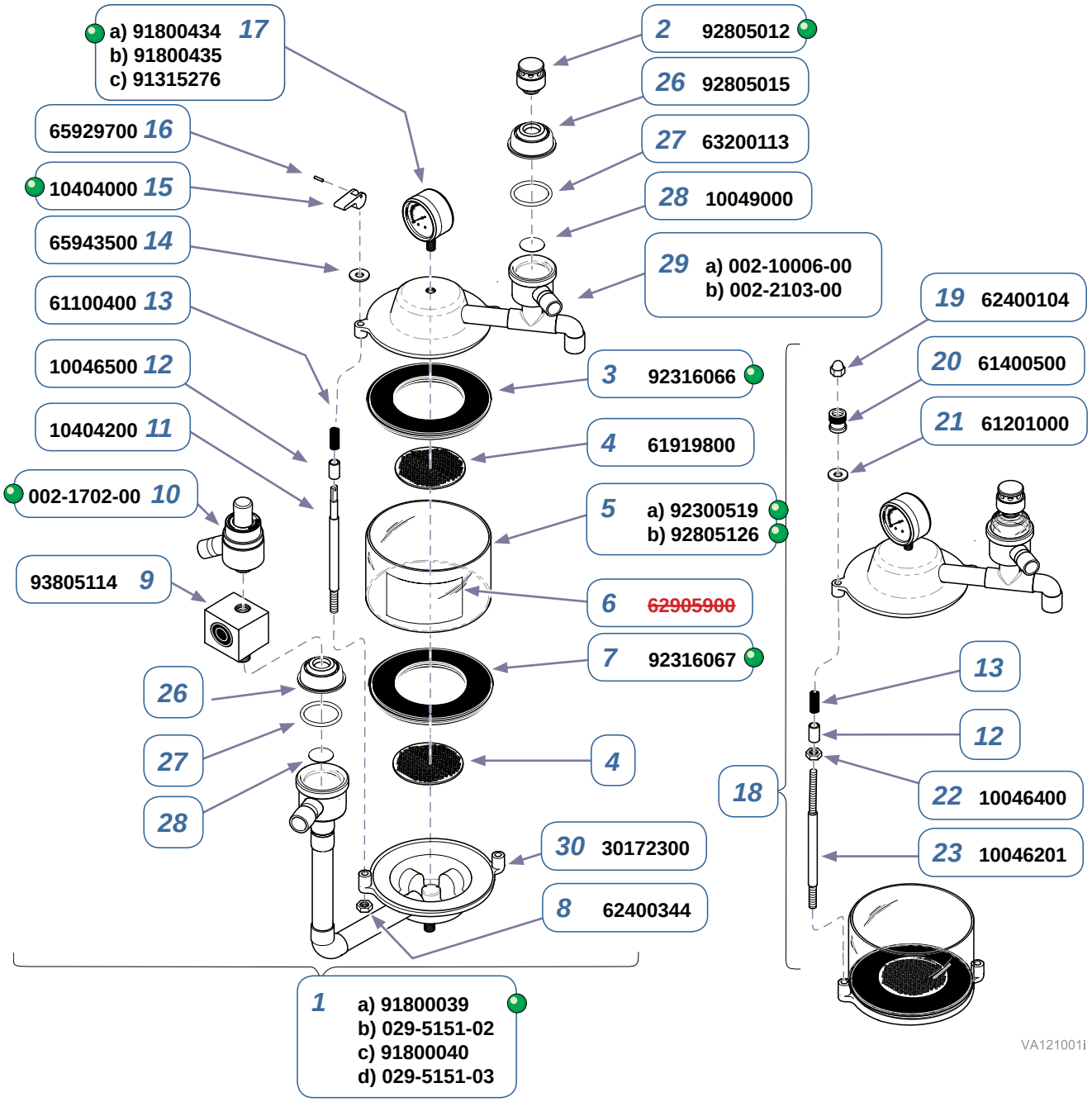
Item	Description	Qty.
1	Elbow *(1/4M Hose Barb x 1/8" NPT)*	1
2	N2O Fail-safe Assembly a) *(USA/ISO/Canadian)* *b) (Swedish)*	1
3	O2 Flush Assy *a) (VMS/VML)(USA/ISO/Canadian)* *b) (VMS/VML)(Swedish)* *c) (VMS Plus)(USA/ISO/Canadian)* *d) (VMS Plus)(Swedish)*	1
4	Inlet/Outlet Adapter *(npt x 1/4")*	1
5	O2 Needle Valve Assy w/Positive Stop a) *(USA)* *b) (ISO/Canadian/Swedish)*	1
6	Knob *a) Green* *b) Blue* *c) White*	1
7	Plastic Cover	1
8	O2 Flowmeter Tube Only a) *(VMS/VMS Plus/VME)(USA)* *b) (VMS/VMS Plus/VME)(ISO/Canadian/Swedish)* *c) (VMS/VMS Plus/VME)(USA/ISO/Canadian/ Swedish)(0-1000cc)* *d) (VML)(USA)* *e) (VML)(ISO/Canadian/Swedish)*	1
9	N2O Needle Valve Assy w/Positive Stop a) *(USA)* *b) (ISO/Canadian/Swedish)*	
10	N2O Flowmeter *(Flowmeter tube only)* a) *(VMS/VMS Plus)(USA)* *b) (VMS/VMS Plus)(ISO/Canadian/Swedish)* *c) (VML)(USA)* *d) (VML)(ISO/Canadian/Swedish)*	1

Models:	VMS	VMS Plus	VML	
Serial Numbers:	Older Models	Older Models	Older Models	

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Absorber Assembly

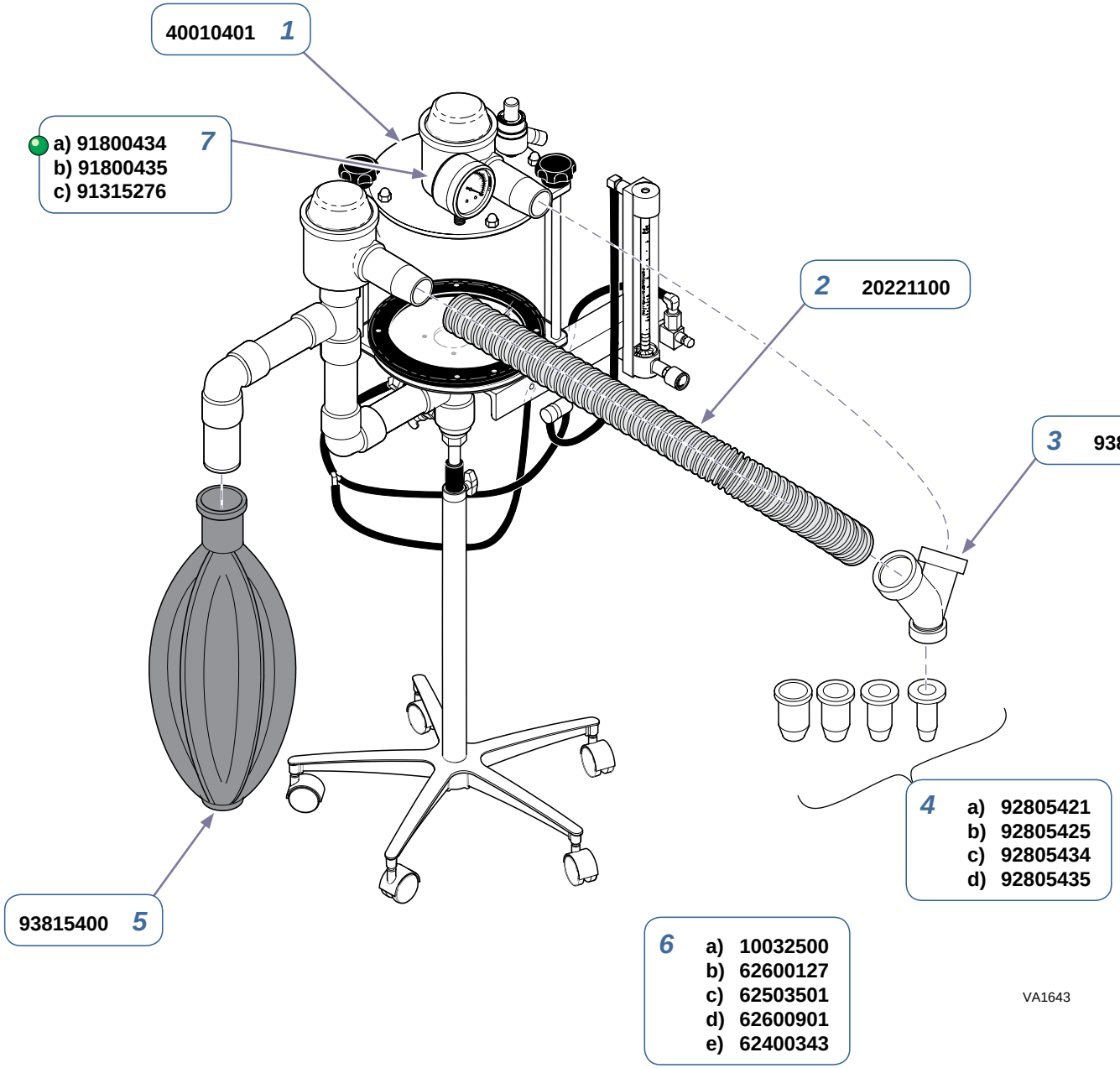
Item	Description	Qty.
1	Absorber Assembly: *(VMS includes items 2 thru 16 and 26 thru 30)* a) *VMS units with a "V" serial number prefix* b) *VMS units without a "V" serial number prefix* *(VMC (incl. items 2 thru 8,10 thru 17 and 26 thru 30)* c) *VMC units with a "V" serial number prefix* d) *VMC units without a "V" serial number prefix*	Ref
2	• Air intake valve	1
3	• Upper gasket	1
4	• Screen *(upper and lower)*	2
5	• Canister assembly *a) (includes canister, lower gasket/screen, and fill label)* *b) (includes canister, decal and no gaskets)*	AR
6	• Fill label	*1*
7	• Lower gasket	1
8	• Hex Nut	1
9	• Occlusion Valve *(VMS and VMS Plus Only)*	1
10	• APL Valve	1
11	• Tie rod	2
12	• Sleeve	2
13	• Spring	2
14	• Nylon washer	2
15	• "Quick Release" lever	2
16	• "Quick Release" lever pin	2
17	• a) Pressure gauge • b) Pressure gauge replacement cover - Wexler (included with 91800434) • c) Pressure gauge replacement cover - Marshall	1
18	Thumb nut absorber replacement parts *(incl. items 19 thru 23)*	
19	• Acorn nut	2
20	• Thumb nut	2
21	• White nylon washer	2
22	• Adjusting screw	2
23	• Tie rod	2
24	Optional drain valve assy. *(91525269 VMS only)(not shown)*	AR
25	Replacement pipe plug assy. *(91525270 VMS only)(not shown)*	AR
26	• *Dome Clamp*	2
27	• *O-ring*	2
28	• *White Nylon Valve Disc*	2
29	• *a)VMC Upper Housing Assembly* • *b)VMS Upper Housing Assembly* *(Both kits include items 2-4, 16, 26-28)*	1
30	• *Lower Housing Assembly*	1

Models:	VMS	VMS Plus	VMC	
Serial Numbers:	all	all	all	

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VML: Anesthesia Machine

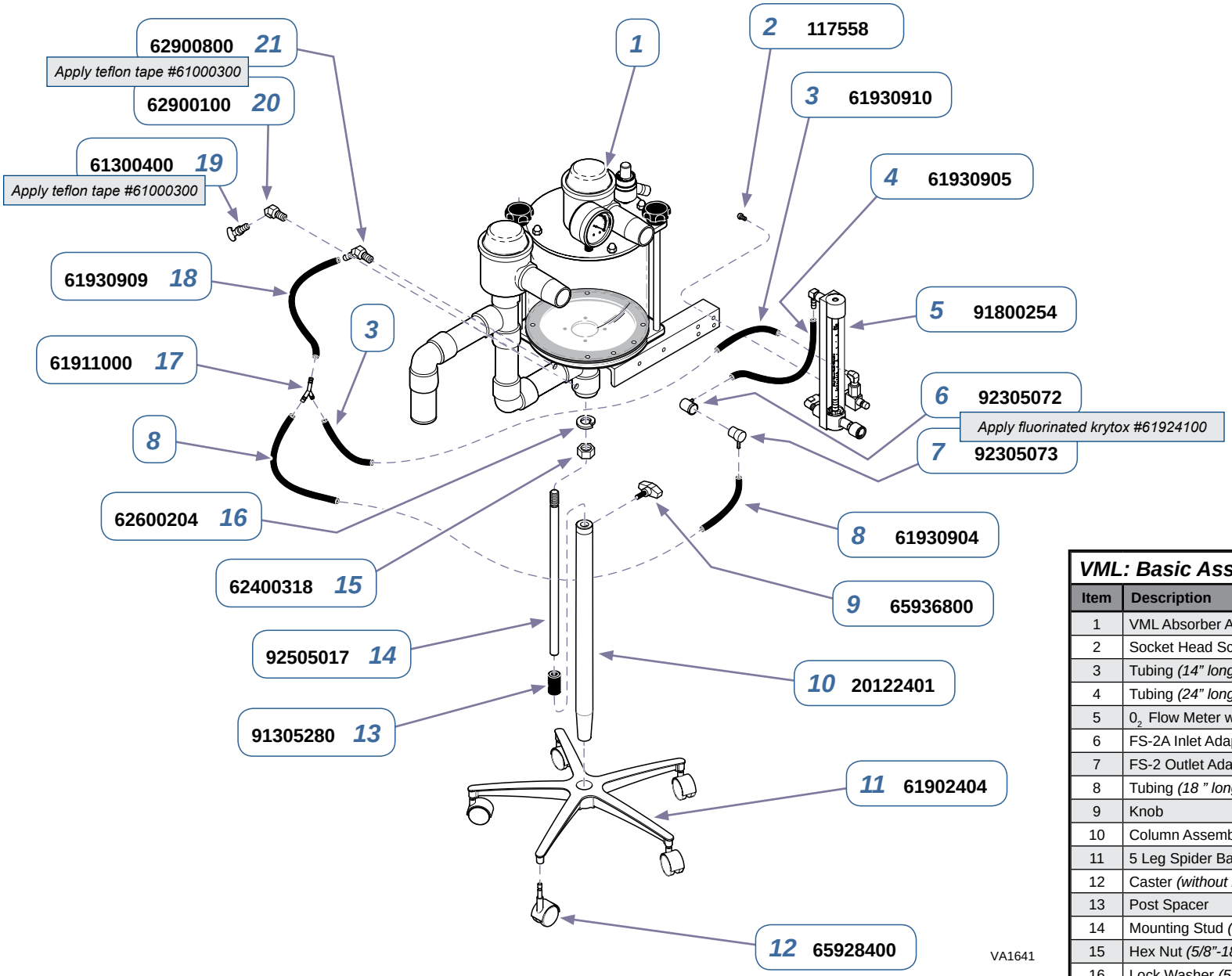
Item	Description	Qty.
1	VML Basic Assembly *(see breakdown elsewhere)*	1
2	Breathing Tubes	2
3	"Y" Piece Assembly *(includes PN 10008200 Retaining Ring)*	1
4	Endo Tube Connector: a) *(21mm)* *b) (25mm)* c) *(30mm)* *d) (40 mm)*	1
5	Breathing Bag *(30L)*	1
6	FS-44 Spacer Kit *(not shown)* a) *(plated spacer [2])* *b) (flat washer [2])* *c) (socket set screw [2])* *d) (lock washer [2])* *e) (hex nut [2])*	1
7	*a) Pressure gauge* *b) Pressure gauge replacement cover - Wexler (included with 91800434)* *c) Pressure gauge replacement cover - Marshall*	

Models:	***VML***	
Serial Numbers:	*Newer Models*	

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VML: Basic Assembly

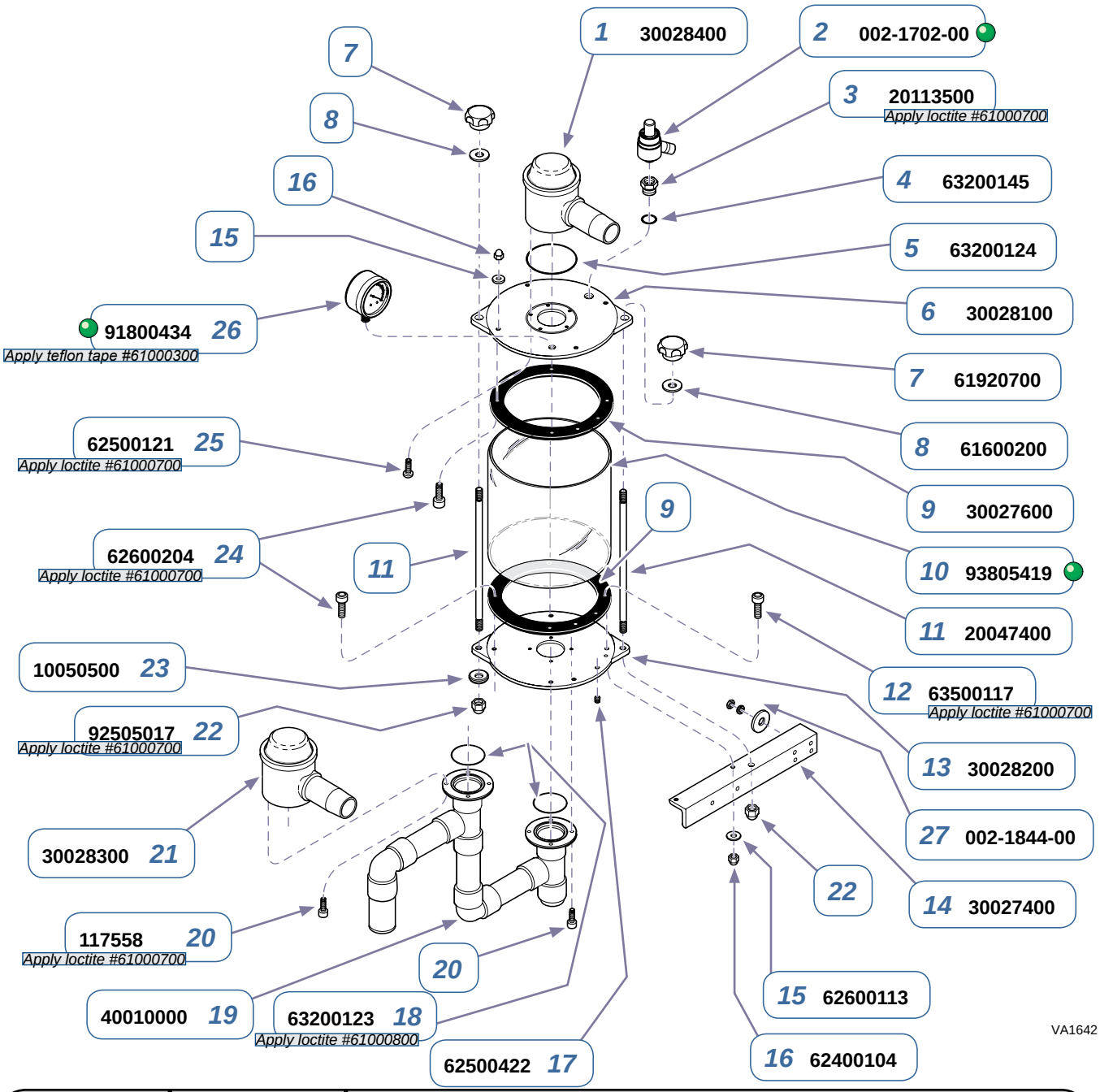
Item	Description	Qty.
1	VML Absorber Assy. *(see breakdown elsewhere)*	Ref
2	Socket Head Screw *(#10-32 x 3/8")*	2
3	Tubing *(14" long)*	1
4	Tubing *(24" long)*	2
5	0_2 Flow Meter with Flush Assembly	1
6	FS-2A Inlet Adapter *(apply fluorinated krytox)*	1
7	FS-2 Outlet Adapter *(apply fluorinated krytox)*	1
8	Tubing *(18 " long)*	1
9	Knob	1
10	Column Assembly *(31" long)*	1
11	5 Leg Spider Base	1
12	Caster *(without brake)*	5
13	Post Spacer	1
14	Mounting Stud *(15" long)*	1
15	Hex Nut *(5/8"-18)*	1
16	Lock Washer *(5/8")*	1
17	"Y" Connector	1
18	Tubing *(6" long)*	1
19	Drain Valve *(apply teflon tape)*	1
20	45° Street Elbow *(1/8" NPT [apply teflon tape])*	1
21	45° Hose Connector *(1/8" NPT x 1/4" tube [apply teflon tape])*	1

Models:	**VML**	
Serial Numbers:	*Newer Models*	

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VA1642

Models:	VML
Serial Numbers:	Newer Models

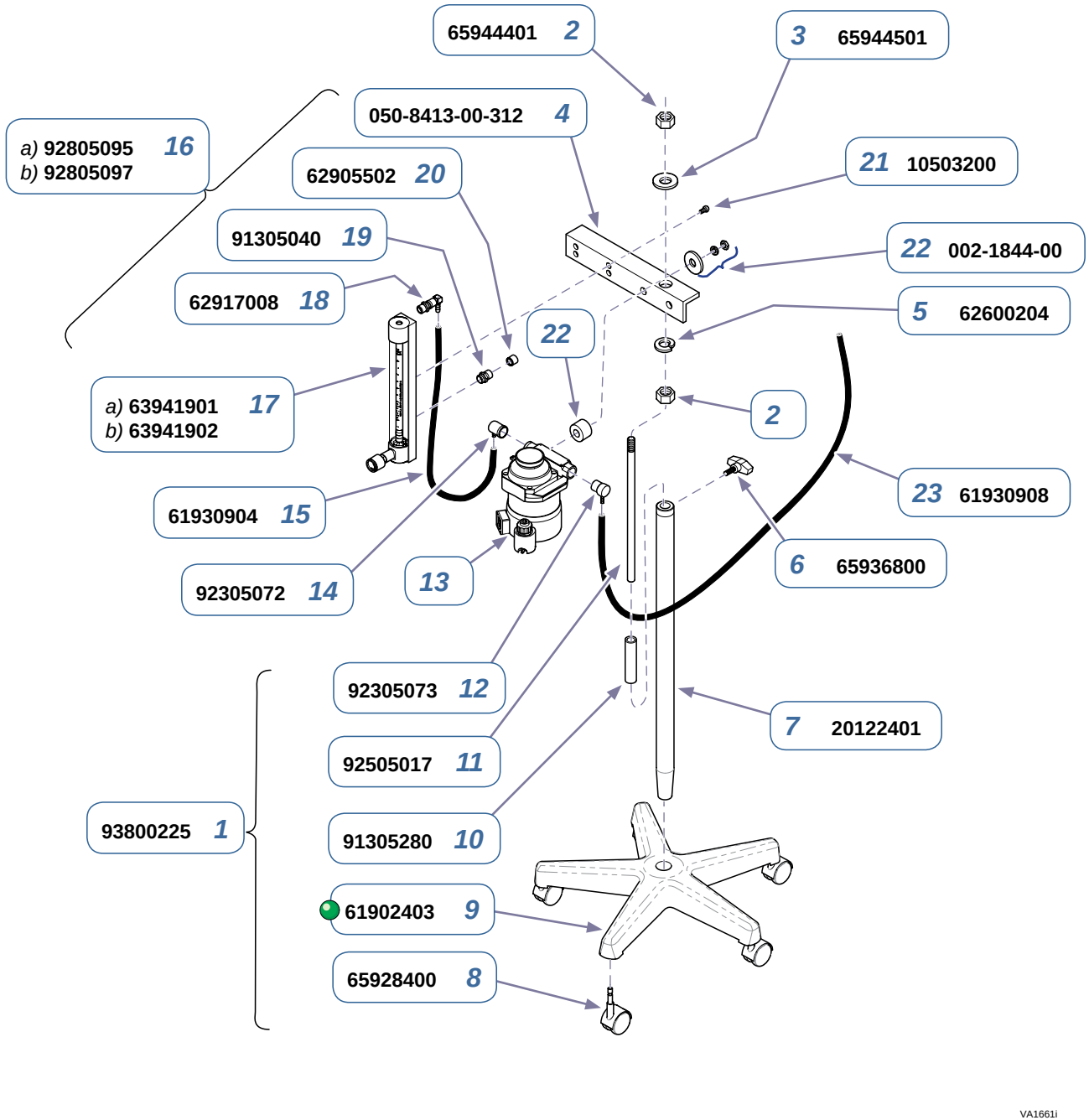
VML: Absorber Assembly

Item	Description	Qty.
1	Exhale Valve Assembly	1
2	APL Valve Assembly *Includes (Not Shown/Exploded)* 20004500 Dome Retainer Ring 20048200 Plastic Dome Assembly 61200700 Gasket 10006600 Nylon Disc 10006400 Dome Pin 63200124 Lower O-ring	1
3	APL Valve Adapter *(apply loctite)*	1
4	O-Ring	1
5	O-Ring	1
6	Upper End Plate Assembly	1
7	Fluted Knob	2
8	Thrust Washer	2
9	Gasket	2
10	Canister Assembly	1
11	Tie Rod	2
12	Socket Head Screw *(1/4"-20 x 1" [apply loctite])*	2
13	Lower End Plate Assembly	1
14	Mounting Bracket	1
15	Flat Washer *(.255" ID x .437 OD)*	10
16	Acorn Nut *(1/4"-20)*	10
17	Set Screw *(1/4"-20 x 3/4" [apply loctite])*	2
18	O-Ring	2
19	Plated Piping Assembly	1
20	Socket Head Screw *(#10"-32 x 3/8" [apply loctite])*	8
21	Inhale Valve Assembly	1
22	Acorn Nut *(1/2"-13 [apply loctite])*	2
23	Spacer	1
24	Socket Head Screw *(1/4"-20 x 3/4" [apply loctite])*	6
25	Pan Head Screw *(1/4"-20 x 3/4" [apply loctite])*	5
26	Pressure Gauge Manometer *(apply teflon tape)*	1
27	Spacer Kit	1

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Models:	VMR
Serial Numbers:	Newer Models

VMR: Non-rebreather System:
91800242 Low Flow VMR Stand w/o absorber
91800250 Standard Flow VMR Stand w/o absorber

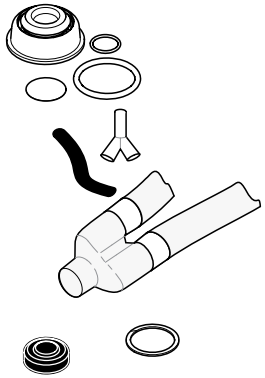
Item	Description	Qty.
1	Stand Assembly (includes items 2 thru 11)	1
2	• Thin Hex Nut	2
3	• Washer	1
4	• Mounting Bracket	1
5	• Lock Washer	1
6	• Stands Knob	1
7	• Column Assembly *(31")*	1
8	• Caster *(without brakes)*	5
9	• Spider Base	1
10	• Post Spacer	1
11	• Mounting Stud	1
12	Adapter (FS-2 {PLTD})	1
13	Vaporizer	Ref
14	Adapter (FS-2A {PLTD})	1
15	Tubibg *(18")*	1
16	Flowmeter: Assembly *(includes items 17 thru 20):* *a)* 0 to 4 lpm *b)* 0 to 1000 ccm.	1
17	• Flowmeter: *a)* 0 to 4 lpm *b)* 0 to 1000 ccm.	1
18	• Elbow Fitting	1
19	• Plated Piping Assembly	1
20	• Caplug	1
21	Hardware Kit	1
22	Spacer Kit	1
23	Tubibg *(48")*	1

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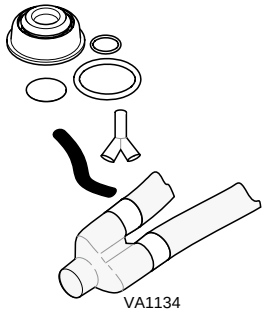
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1 **91303015**



VA113401

2 **91303017**



VA1134

Maintenance Kits
(Note: not all parts shown)

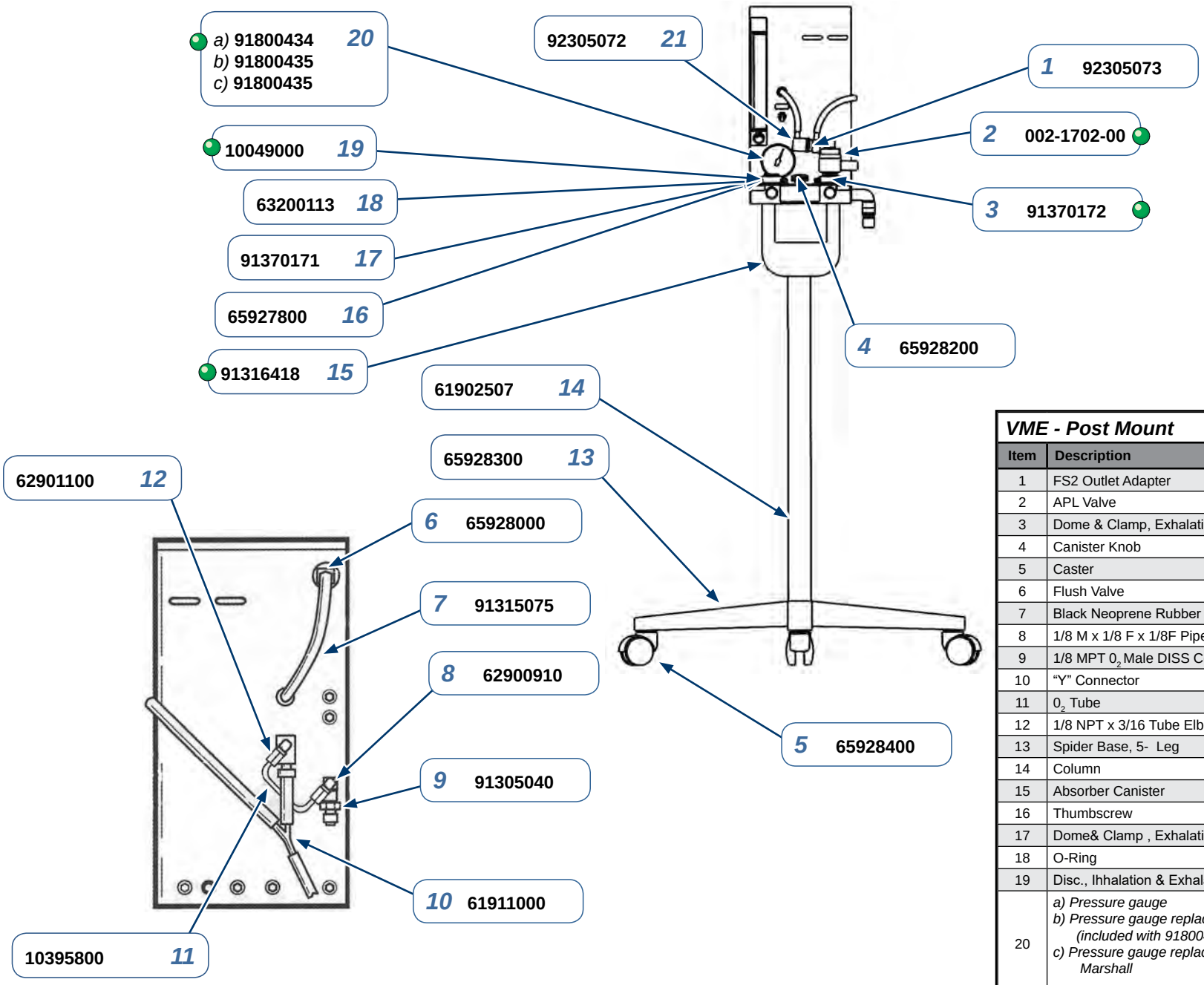
Item	Description	Qty.
1	VMS, VMS Plus and VMC Maintenance Kit Includes: (2) Disc (2) Large O-ring (3) Small O-ring (2) Dome Tubing (1) Breathing Circuit Upper and Lower Gaskets Diaphragm (VMS only) Back Up Ring (VmS only)	1 kit
2	VME Tabletop and VME2 Maintenance Kit (2) Disc (2) Large O-rings (2) Small O-rings Domes 2 Liter Breathing Bag Tubing & Y Connector Breathing Circuit Reservoir Bag Gasket	1 kit

Models:	***VMS***	***VMS Plus***	***VMC***	***VME***	***VME2***	
Serial Numbers:	*all*	*all*	*all*	*2006 thru Present*	*all*	

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VME - Post Mount

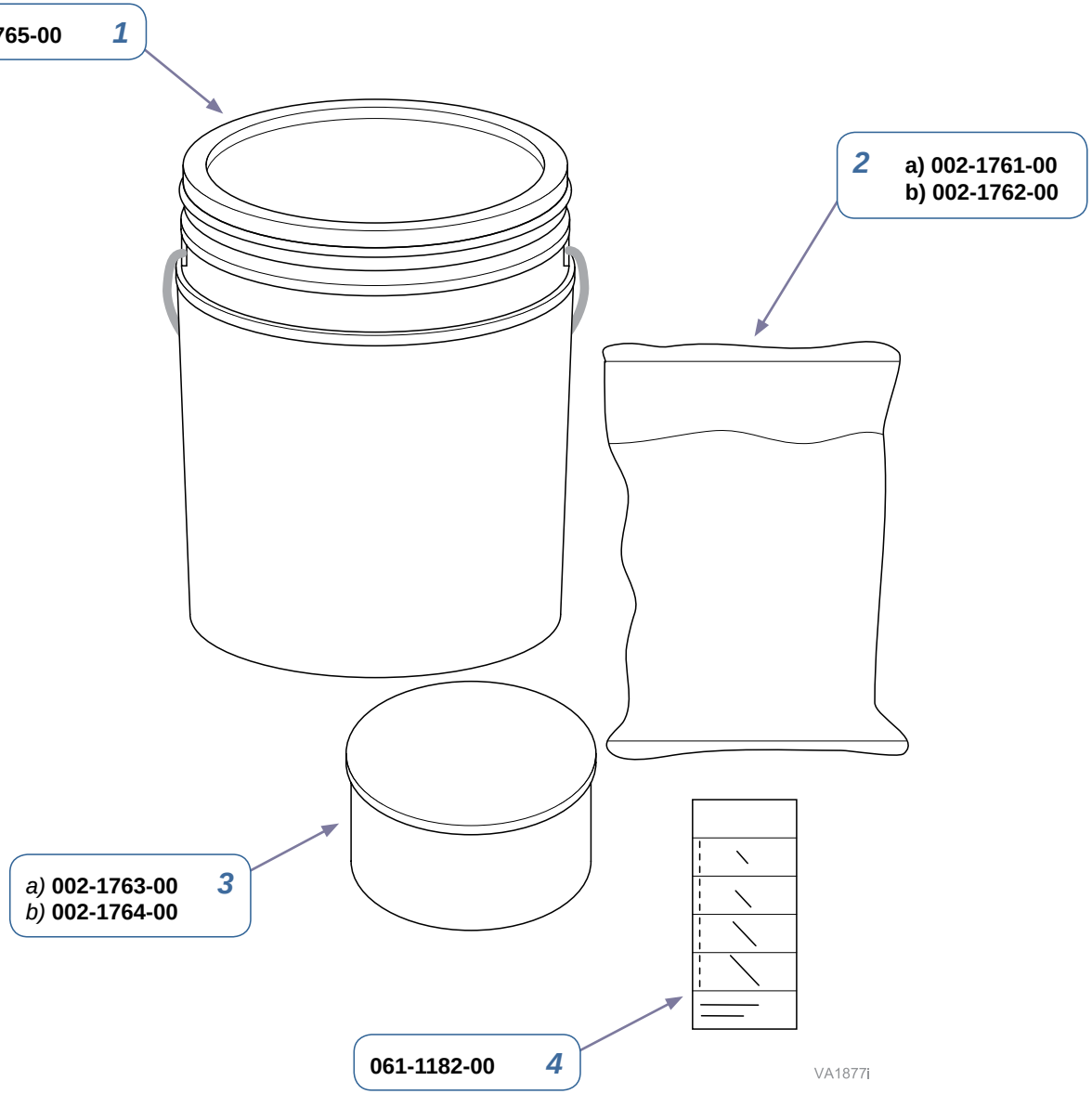
Item	Description	Qty.
1	FS2 Outlet Adapter	1
2	APL Valve	1
3	Dome & Clamp, Exhalation Valve	1
4	Canister Knob	1
5	Caster	3
6	Flush Valve	1
7	Black Neoprene Rubber Tubing, 1/4" ID	AR
8	1/8 M x 1/8 F x 1/8F Pipe Tee	1
9	1/8 MPT 0_2 Male DISS Connector	1
10	"Y" Connector	1
11	0_2 Tube	1
12	1/8 NPT x 3/16 Tube Elbow	1
13	Spider Base, 5- Leg	1
14	Column	1
15	Absorber Canister	1
16	Thumbscrew	1
17	Dome& Clamp , Exhalation Valve	1
18	O-Ring	1
19	Disc., Ihhalation & Exhalation Valves	1
20	*a) Pressure gauge* *b) Pressure gauge replacement cover - Wexler (included with 91800434)* *c) Pressure gauge replacement cover - Marshall*	
21	FS2A Inlet Adapter	1
Not Shown		
22	91303016 - Maintenance Kit	1
23	62956200 - Absorber Canister Gasket	1

Models:	***VME - Post Mount***
Serial Numbers:	*Built from 1997 thru 2006*

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Sodasorb		
Item	**Description**	**Qty.**
1	Sodasorb Standard	Bucket
2	*a)* Sodasorb LF Canister Pak *b)* Sodasorb Standard Canister Pak	Case of 12
3	*a)* Sodasorb LF Pre-Pak *b)* Sodasorb Standard Pre-Pak	Case of 12
4	Sodasorb LF Color Chart	1

Models:	*All*	
Serial Numbers:		

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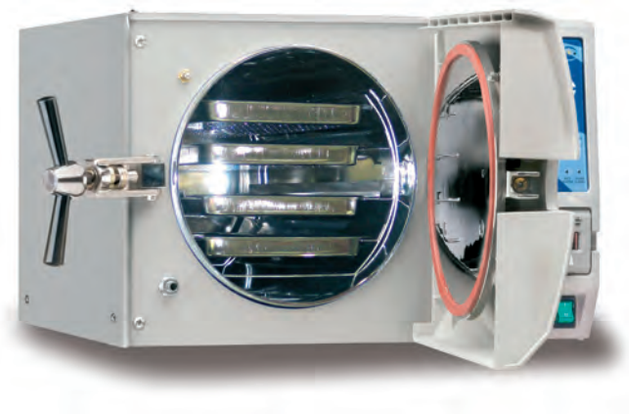
NO. 511.02 AUTOCLAVE, STEAM, COUNTERTOP

Tuttnauer
Your Sterilization & Infection Control Partners

EZ9™ and EZ10™

Closed Door System
Fully Automatic Autoclaves





EZ10 with 4 large trays

EZ9™ and EZ10™

Autoclaves will meet all your sterilization needs

- Chamber door remains closed during entire cycle
- Hepa filtered air is circulated in chamber during drying
- All program parameters can be customized and stored
- New brighter and easier to read panel
- Two year parts and labor warranty

* Above photo shown with optional printer

EZ9™ and EZ10™ Closed Door System Fully Automatic Autoclaves

With the simplicity of one touch design all your sterilization and drying needs are fulfilled. The Tuttnauer fully automatic autoclaves fill, sterilize, exhaust and dry at the touch of a button.

EZ9 and EZ10 Series:

Item No.	Chamber Dimensions Ø x L In(mm)	Volume	Overall Dimensions DxWxH In(mm)	Standard Cassettes	Tray Dimensions DxWxH In(mm)	No. of Trays	Standard Unwrapped Cycle time	Voltage(V) Freq.(Hz)	Power(W) Current(A)	Shipping Weight lbs(kg)
EZ9™	9" x 18" (230 x 470)	5gal/19L	21.5"x20"x14.4" (545x510x365)	2 full/2 half	16.3"x6.7"x0.8" (415x170x20)	3	Cold: 27 mins Hot: 13 mins	120V 50/60	1400W 12A	95 (43)
EZ10™	10" x 19" (254 x 475)	6gal/23L	21.5"x20"x14.4" (545x510x365)	3 full/3 half	16.3"x6.7"x0.8" (415x170x20)	4	Cold: 30 mins Hot: 14 mins	120V 50/60	1400W 12A	95 (43)
*EZ10k™ Kwiklave™	10" x 19" (254 x 475)	6gal/23L	21.5"x20"x14.4" (545x510x365)	3 full/3 half	16.3"x6.7"x0.8" (415x170x20)	4	Cold: 21 mins Hot: 11 mins	230V 50/60	2200W 10A	95 (43)

*Model EZ10k™ requires a voltage between 220V and 235V for proper operation. When applicable a buck/boost transformer (0.5KVA) may be required.

Features:

- Closed door active drying system to maintain sterility and ensure efficient drying of packs and pouches
- High efficiency air pump circulates air in chamber during drying cycle
- 0.2µm Hepa air filter (replaceable)
- New brighter and easier to read panel
- Program parameters can be customized and stored

Control Panel:



1. Program Selection
2. Detailed Digital Display
3. Programmable Keys
4. System Indicators

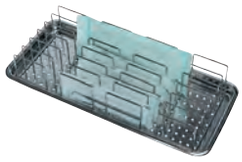
Optional Internal Printer



Documents: date, time, temperature, pressure.



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NO. 512 HEMATOCRIT

VetScan HM5

Operator's Manual



ABAXIS

VetScan HM5 Hematology System Original User's Manual

For Veterinary Use Only

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techsupport@abaxis.de

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info@abaxis.co.uk

September 2018

PN: 790-7013 Rev. F Text

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Union City, CA 94587

IMPORTANT: READ BEFORE USING THE VETSCAN® HM5 HEMATOLOGY ANALYZER FOR THE FIRST TIME

To get started quickly, please see the Quick Reference Guide in the pocket of this Operator's Manual.

Fill in this information for future reference.

Serial number (from the back of the unit): .....

Date of installation: .....

Distributor name and address: .....

.....

.....

Abaxis sales representative name: .....

Phone: .....

Email: .....

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September 2018
PN: 790-7013 Rev. F

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Section 1 General Information

This section provides general information about the Abaxis VetScan HM5 Hematology System.

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1.1 Introduction

The VetScan HM5 hematology analyzer is a compact, fully automated cell counter for in-vitro diagnostic use in veterinary clinics, research laboratories, universities, and pharmaceutical/biotech companies.

The VetScan HM5 can process 16–20 samples per hour, and is designed to determine the following 24 hematology parameters from 50 µl (2 x 25 µl) of whole blood:

- WBC, LYM#, MON#, NEU#, EOS#, BAS#
  LYM%, MON%, NEU%, EOS%, BAS%
- HGB, RBC, HCT, MCV, RDWc, MCH, MCHC, RDWs
- PLT, MPV, PCT, PDWc, PDWs

The VetScan HM5 is calibrated to analyze multiple veterinary species. Further species may periodically be added through a free software upgrade.

The VetScan HM5 system features the following components:

- The HM5 hematology analyzer itself, with a touchscreen interface and optimized software
- A reagent pack, including five individually-bottled solutions: Diluent, Lyse, Lyse 2, Cleaner, and Rinse

The HM5 provides multiple user-friendly features:

- Rapid CBC analyses, with full five-part differentials
- A database for up to 5000 records, with USB drive backup capability
- Automated on-screen reminders, and illustrated instructions to simplify routine maintenance tasks
- Quick reagent pack change method

For added convenience, the VetScan HM5 can be connected to a VetScan VS2 Chemistry Analyzer and an external printer, so that results from both instruments can be consolidated and printed on a single, standard-size page.

The VetScan HM5 can also be connected to a compatible Veterinary Practice Management Software system. For a list of these systems, visit http://www.abaxis.com.

1.1.1 Customer and Technical Support

Abaxis Technical Support personnel can answer your questions regarding the VetScan HM5 Hematology Analyzer, or the combined VetScan HM5/VS2 system.

1.1.1.1 For USA:

- **Telephone:** 1-800-822-2947, 24 hours a day, seven days a week
- **Email:** vetsupport@abaxis.com
- **Web:** www.abaxis.com
- **Fax:** 1-877-900-9333

1.1.1.2 For Europe:

- **Telephone:** +49 (6155) 780 210
- **Email:** techsupport@abaxis.de

  Or for the U.K.
- **Telephone:** +44 (1904) 909 500
- **Email:** info@abaxis.co.uk

1.1.1.3 For Other Areas:

- Contact a local Abaxis distributor, or email **vetsupport@abaxis.com**

1.1.2 Safety Information



WARNING: ***THE PERIPHERAL CONNECTORS ON THE ABAXIS VETSCAN HM5 ARE SELV (SAFETY EXTRA LOW VOLTAGE) CONNECTORS. TO AVOID THE RISK OF ELECTRICAL SHOCK, CONNECT THE INSTRUMENT ONLY TO EXTERNAL DEVICES THAT ARE SELV RATED.***



Note: *This equipment has been designed and tested to CISPR 11 Class A. In a domestic environment it may cause radio interference, in which case, you may need to take measures to mitigate the interference.*



Note: ***For Canada:*** *This product has been tested to the requirements of CAN/CSA-C22.2 No. 61010-1, second edition, including Amendment 1, or a later version of the same standard incorporating the same level of testing requirements.*



Note: *Abaxis recommends wearing protective eyewear and a lab coat when working directly with reagents (such as changing the reagent pack). In addition, users with sensitive skin should wear latex or nitrile gloves.*

1.2 HM5 System

1.2.1 Main Components

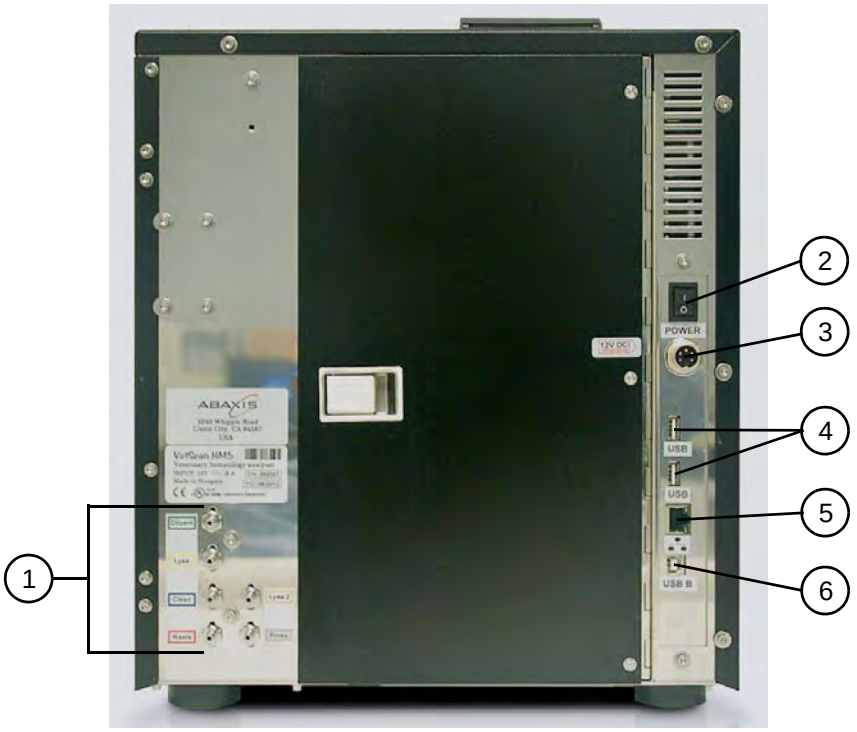
1.2.1.1 Front View

1. Built-in thermal printer
2. LCD touchscreen
3. Sampling door and rotor
4. USB Type A ports (2)



1.2.1.2 Back View

1. Reagent ports/inlets
2. Power switch ON/OFF
3. Power supply connection
4. USB Type A ports (2)
5. Ethernet port
6. USB Type B port



1.2.2 Power Supply and Power Cord

The analyzer uses an external 12v DC power supply that can operate from a 220 or 110 volt main outlet. The power supply's input socket is a standard power cable connection, and its output is a special locking socket. The cord used will be designated by the region.



1.2.3 Reagents

The VetScan HM5 reagent pack (PN 770-9000) consists of five bottles containing Diluent, Cleaner, Lyse, Lyse 2, and Rinse solutions.



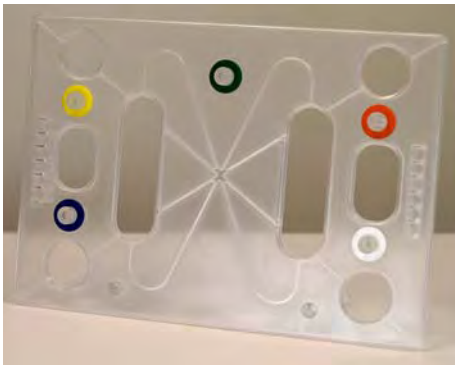
Table 1-1: Reagents and Containers

Reagents	Descriptions	Color	Volume
Diluent	Isotonic saline solution used to dilute whole blood specimens, and to rinse the analyzer's fluidic system between analyses.	Green	9 liters
Rinse	Used for certain species runs and for certain cleanings.	White	500 ml
Cleaner	Used in the fluidic system cleaning process.	Blue	300 ml
Lyse	Used to create hemolysate for three-part WBC differential, and for total WBC and HGB.	Yellow	300 ml
Lyse 2	Used to dilute whole blood and differentially hemolyse white blood cells to separate eosinophil granulocytes from other WBC by volume. Suitable for determining EOS, EOS%, BAS, and BAS% parameters.	Orange	800 ml

1.2.3.1 Reagent Connections

The VetScan HM5 draws in liquid reagents through a reagent tubing kit. This tubing can be configured in two ways, each of which connects to the analyzer's reagent inlets, but uses a different connection at the reagent pack.

- **Quick Change Apparatus (QCA):** The QCA (at right) allows a very rapid change to a new reagent pack, and can be used in setups where the reagent pack can be placed on a counter adjacent to the analyzer. The QCA includes a QCA frame, two kickstands (far right), and color-coded rigid dip tubes (below). In the QCA, the reagent tubing connects to the dip tubes in the reagent bottles.







Note: *When using the QCA:*

- *To avoid contaminating the reagents, do not let the dip tubes rest on the counter. Instead, rest the frame on the kickstands.*
- *Do not use part of a QCA that is broken.*
- *Do not place anything on top of the assembled QCA. This helps avoid kinks in the reagent tubing.*

CAUTION: *The tips of the dip tubes may have a sharp edge.*

- **Bottle Caps:** The Bottle Caps setup includes color-coded caps with nozzles and attached flexible drop-down tubes. The bottle caps screw onto the appropriate reagent bottles and are intended for compact locations, such as under-counter installations. In the Bottle Caps setup, the reagent tubing connects to the bottle caps.



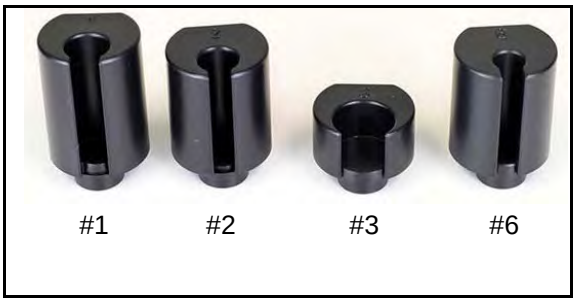
1.2.3.2 Reagent Tubing

The reagent tubing includes six color-coded tubes, all of which match the colors on the reagent and waste bottle caps.



1.2.4 Accessories

- **Keyboard:** A mini USB keyboard enables easier data input. Any USB keyboard can be used with the HM5.
- **Sample Tube Adaptors:**
  - **#1:** for 2-3 ml tubes and the Abaxis Control Tube
  - **#2:** for 1.3 ml tubes
  - **#3:** for 2 ml glass vials
  - **#6:** for microtainer tubes of 0.6 ml or less



- **Peristaltic Pump Tube:** In case this tube is damaged, a spare is provided. See "Peristaltic Pump Tubing Replacement" on page 6-13.
- **Thermal Paper Roll:** Two rolls are included with the analyzer package for use in the built-in printer. Each reagent pack also includes a new roll. Save the paper rolls, as printing to the built-in printer is often very useful for troubleshooting.



1.3 Touchscreen Icons

The following figures show the icons used in the HM5 touchscreen display.



Measure: Analyze samples and run blanks



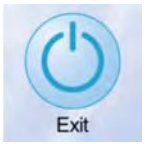
Database: Search, retrieve, view and manage up to 5,000 records



Maintenance: Clean, Calibrate, run Quality Control and manage Reagent Status



Settings: Manage printer, testing, date/time and other analyzer settings



Exit: Select shut-down options and log in to user accounts



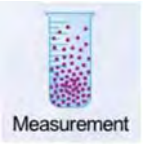
Communication: Manage VSx, serial USB communication and Device and Host Network Settings



Printer: Manage printer settings and printout options



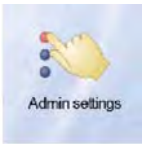
General Settings: Select analyzer options and language



Measurement Settings: Select units and set normal ranges for species



Date and Time: Change date and time options



Admin Settings: Allows Admin users to edit Reagent Replace settings, Schedule Maintenance and manage user accounts

Section 2

Installing the VetScan HM5

An Abaxis representative will normally install the VetScan HM5 analyzer. If this is not possible, however, follow the procedures in this section.

Section Contents

2.1 Choosing a Location 2-2

2.1.1 Environment Requirements 2-2

2.1.2 Electrical Requirements 2-3

2.2 Installation 2-3

2.3 Initializing the VetScan HM5 2-9

2.1 Choosing a Location



WARNING: ***MAKE SURE THE ANALYZER AND ALL ACCESSORIES ARE PROPERLY GROUNDED. IMPROPER GROUNDING CAN CAUSE INJURY, AND WILL VOID THE WARRANTY.***

The analyzer must be installed in a suitable location. To ensure accuracy and precision, and to maintain safety, the environmental and electrical requirements in this section must be met. Be sure to thoroughly consider all the following requirements in selecting a permanent location for the analyzer.



Note: *This analyzer is approved for use up to an altitude of 10,000 ft (3000 m).*

2.1.1 Environment Requirements

Choose a clean, dust-free, well-ventilated location, away from direct sunlight, and between 59–86 °F (15–30 °C). The location should also be level, sturdy, and as vibration-free as possible.

The HM5 works best if the analyzer and the reagent pack are on the same level. However, if this is not possible, place the reagent pack *below* the analyzer, so that the top of the reagent pack is *no more* than 18 in (45.7 cm) lower than the bottom of the analyzer.



WARNING: ***DO NOT PLACE THE REAGENT PACK ABOVE THE ANALYZER (SUCH AS ON A SHELF).***

DO NOT DROP THE REAGENT PACK, AS THIS CAN CAUSE MICRO-BUBBLES TO FORM, PREVENTING PROPER OPERATION.

IF THE PACK IS DROPPED, ALLOW IT TO SIT FOR 24 HOURS BEFORE INSTALLING IT ON AN ANALYZER.



Note: *To ensure accurate test results, use only reagents supplied by Abaxis.*

Avoid using equipment that can produce electromagnetic emissions nearby: refrigerators, freezers, centrifuges, fans, hair dryers, etc.

2.1.2 Electrical Requirements

- The VetScan HM5 is powered by a standard wall outlet, and requires a power supply of 100–240 VAC, 50–60 Hz, 1.5 A (this is provided with the analyzer).
- To avoid power surges and electrical noise, DO NOT plug the analyzer's power supply into a circuit that includes a centrifuge or other high-current device.



CAUTION: *Abaxis recommends using the analyzer with surge protection designed for a computer. In addition, a battery backup is strongly recommended if the VetScan HM5 will be used in an area prone to electrical surges or power outages.*

Use of an Abaxis provided power supply is required for system integrity and safety.

2.2 Installation



CAUTION: *Make sure the analyzer is powered* **OFF** *before connecting it to the power supply or any electrical device, such as an external printer, external keyboard, or computer.*

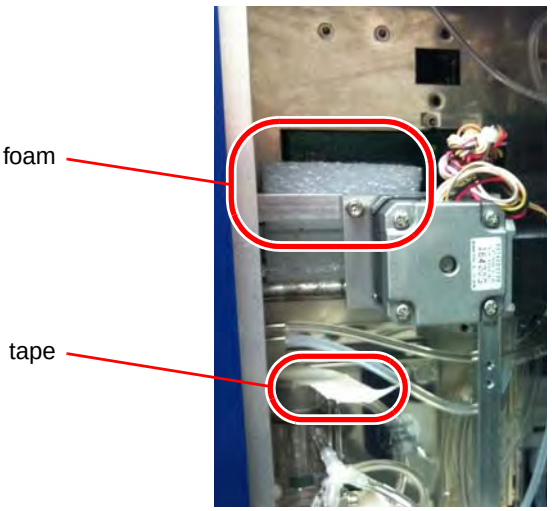
1. Open the shipping box, and lift the accessory box up and out of the shipping carton.
2. Remove the stabilizing foam from the top of the HM5.
3. Use both hands to carefully lift the HM5 out of the foam underneath it and out of the box.
4. Place the HM5 temporarily on a clean, stable counter.



CAUTION: ***Place the analyzer in upright position only.*** *Do not place the unit on its back, side, or top, or you could cause severe damage.*

5. Remove the plastic wrap from the HM5.
6. Use the metal latch to open the door on the right side of the HM5.

7. Remove the foam and tape from inside the unit, as shown.



8. Open the Accessory and Initial Goods boxes, and make sure all the following are included:

- HM5 Operator's Manual CD
- Mini-keyboard
- Tubing kit (reagent tubing, bottle caps with drop down tubing)
- Quick Reference Guide
- Four sample tube adapters
- VetScan HemaClean Kit
- 1 liter polypropylene flask
- Power supply and cord
- Thermal paper rolls (2)
- Peristaltic pump tube
- Waste bottle and lid with nozzle

9. Plug the battery backup or surge protector into a standard outlet. Hold the power button down until it beeps.

WARNING: ***USE ONLY THE POWER SUPPLY PROVIDED WITH THE VETSCAN HM5. USING ANY OTHER POWER SUPPLY CAN DAMAGE THE INSTRUMENT AND WILL VOID THE WARRANTY.***

10. Screw the power supply onto the back of the HM5.

11. Plug the power cable into the power supply and the battery side of the battery backup or surge protection device once it has been turned on.

12. Attach the long reagent tubes to the back of the HM5. Match the colors of the reagent tubing with the colors on the rear of the analyzer.



CAUTION: *When working with the reagent tubing, make sure the tubing does not become pinched or kinked and is not trapped between or beneath objects.*

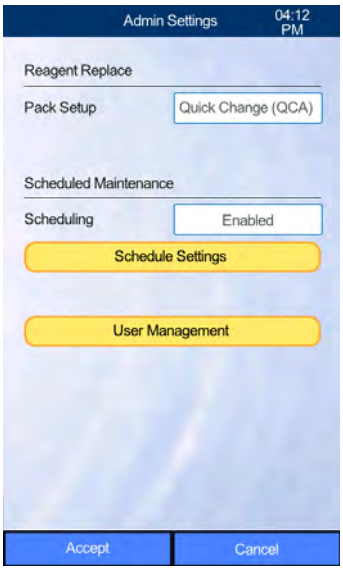
13. Attach the waste tube (red) to the top of the large white waste cap. Leave the other ends of the five reagent tubes free for now.
14. Place the white waste cap on the white waste bottle. This bottle can rest below the analyzer to provide more room on the counter.
15. If needed, attach the mini-keyboard to a USB Type A port on the back of the analyzer.

CAUTION: *If the analyzer has been kept at a temperature below 50 ºF (10 ºC), allow it to sit for* ***at least*** *an hour at the correct operating temperature (59–86 °F, 15–30 °C) before using it.*

16. Turn the analyzer on using the power switch on the back.
17. Allow the analyzer to boot up and initialize.

Note: *When the analyzer is turned on, it first performs a startup routine: all moving parts are tested, tubing is primed, sensors are calibrated, and automatic self-cleanings are performed. This process will take about 2 minutes.*

18. On the HM5's Home screen, select **Settings > Admin Settings**.



19. Select a **Pack Setup**:

- If the reagent pack will be *on the same level* as the HM5 (preferred) and you have the QCA (Quick Change Apparatus), select **Quick Change (QCA)** in **Reagent Replace.**







- If the reagent pack will be *on a lower level* than the HM5 and/or the Bottle Caps tubing set is being used, select **Bottle Caps**. Make sure the top of the reagent pack is no more than 18 in (45.7 cm) lower than the bottom of the analyzer.



20. Select **Schedule Settings > Reset > Accept** to restart maintenance timers from today.
21. Pour ~200 ml of distilled water into the Abaxis flask.
22. Submerge the free ends of the reagent tubes into the water.
23. Select **Maintenance > Reagent Status**, and then **Prime All**.
24. Run **Prime All** twice more (three times in all) until all water is gone from the flask and air is pumped into the tubing.



25. While the analyzer is priming, open the reagent pack. Remove the bottle caps from each of the five bottles. Save these lids for later disposal of the pack.

26. Make sure the foam liners stay in the bottle caps, and are not left on top of the bottles. See the photo.
27. Select **Exit > Change Reagent Pack**.
28. Follow the procedure below for the tubing set type being used: **QCA** or **Bottle Caps**.



CAUTION: *Use the color codes as guides when connecting tubing, dip tube heads, and reagent bottles. If the tubes are not connected correctly, the instrument will not produce accurate results.*

QCA Setup

a. Remove the QCA frame and both kickstands from the Initial Goods kit and unwrap them.

b. Insert the kickstands into the holes in the bottom of the frame and twist counterclockwise to lock them into place.

c. Place the QCA frame over the reagent pack so that the colors line up (green over green, yellow over yellow, etc.).

Note: *In the following steps, touch only the heads of the long dip tubes, or use clean gloves to prevent contamination of the dip tubes.*

d. Pull one of the five dip tubes (shown at right) out of the accessories kit.



Note: *To prevent contaminating the reagents, do not place the clean dip tubes on the counter.*

e. Insert the dip tube into the matching color-coded ring in the QCA frame.

f. When the dip tube touches the bottle seal, push the tube through the seal until the end of the tube contacts the bottom of the bottle.

Note: *The colored rings may not sit flush with the top of the frame.*

g. Connect the appropriately colored reagent tubes to the matching colored tops of the dip tubes.

h. Select **Next** through the steps of the pack change process until the analyzer primes.

Bottle Cap Setup



CAUTION: *In the following steps, do not touch the drop-down tubing with your bare hands, or you may contaminate the reagents. Wear latex or nitrile gloves.*

a. For each bottle in the reagent pack: cut an "X" in the heat seal and push down the 4 corners to open the bottle.

b. For each drop-down tube, one at a time:

i. Using a soft, lint-free cloth (such as a KimWipe®) moistened with distilled water (not tap water), wipe the drop-down tube to remove any lint or dust from the tube.

ii. Carefully place the drop-down tube into the appropriate color-matching bottle, then tighten the bottle cap.



Note: *Be sure to save the original reagent caps so you can re-cap the containers when the reagent pack is used up.*



CAUTION: *Make sure the small air vent on each cap is not blocked, so air can flow freely.*

c. Thread the long tubes from the back of the HM5 through the punched-out hole in the reagent pack lid.

d. Attach the long reagent tubes to the nozzles on the color-matching bottle caps.

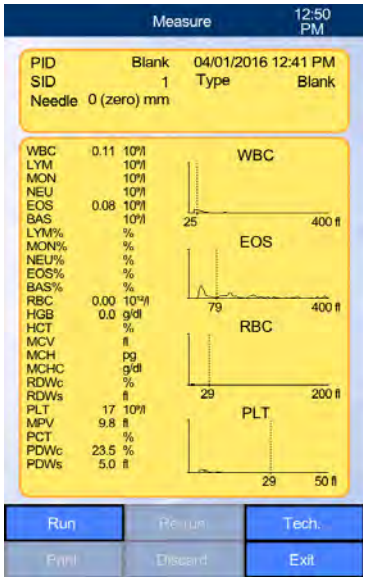
29. Select **Next** through the steps of the pack change process until the analyzer primes.

30. Select **Home** to return to the Home screen.

2.3 Initializing the VetScan HM5

1. Select **Measure > Run**. A Message that the blank has expired will appear.
2. Select **OK** to run a blank.

   The analyzer will run a blank measurement. When the process is complete, the instrument displays the result of the blank measurement. (Blank runs are described in more detail in "Running a Blank Measurement" on page 4-5.)
3. Select **Accept** if there are no flags and no values highlighted in red, indicating that the analyzer blank background level is within specifications.



   The analyzer then displays a sample measurement screen, as shown, and *is now ready to perform an analysis.*



Note: *You will be notified with a pop-up if the blank falls outside specifications. If this occurs, refer to "Blank Flags" on page 9-2. If the problem persists, call Abaxis Technical Support.*

4. Verify the analyzer's system settings, and make any needed changes: see "Settings" on page 3-1.

Section 3

Settings

This section describes how to configure the VetScan HM5's settings for optimal performance and to meet your particular lab requirements.

Section Contents

3.1 Settings Overview 3-2
3.2 Printer Settings 3-2
3.2.1 Connecting an External USB Printer 3-2
3.3 General Settings 3-3
3.3.1 Screen Saver and Standby Time 3-3
3.4 Measurement Settings 3-4
3.5 Date and Time Settings 3-4
3.6 Communication Settings 3-5
3.6.1 VSx Communication 3-7
3.6.2 Serial USB Connection to a Computer 3-7
3.6.3 Network Communication 3-8
3.6.4 Host Network 3-9
3.7 Admin Settings 3-11

3.1 Settings Overview

The HM5 analyzer's Settings screen and icons are shown at right, and have these functions.



- **Printer**: sets printer type, paper size and margins, information included on printouts, and color options. See below.
- **General**: controls sounds, language, export format, and delays for screen saver and standby modes. See page 3-3.
- **Measurement**: sets units, normal ranges, and sampling needle depth. See page 3-4.
- **Date and time**: sets date, time, and format for each. See page 3-4.
- **Communications**: enables communication with a connected computer or VS2 analyzer. See page 3-5.
- **Admin Settings**: set the reagent tubing type, maintenance scheduling, and user management. See page 3-11.

3.2 Printer Settings

The Abaxis HM5 can print to its built-in printer or a connected external printer. (For a list of compatible printers, contact Abaxis Technical Support.)

The HM5's printer settings enable users to select specific information to print, manage print color and quality, modify margins, and add a personalized header.

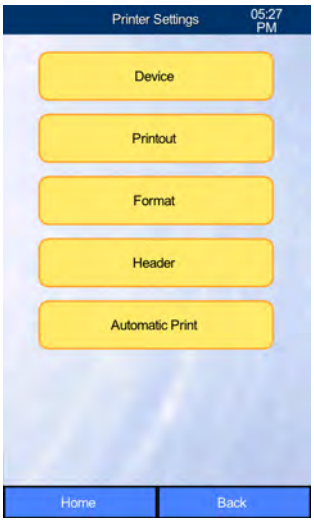
3.2.1 Connecting an External USB Printer

Follow these instructions to connect the HM5 to an external USB printer, and adjust the printer settings to fit the clinic's particular needs and setup.

You will need a USB A-B cable.

1. Plug the USB B (square) end of the cable into the printer, and the USB A (flat) end into a USB port on the back of the HM5.
2. From the HM5's Home screen, select **Settings > Printer**.

3. Adjust the printer settings as needed:



   - ❑ **Device**: selects printer, print mode, and paper type.
   - ❑ **Printout**: sets units and margins for printouts.
   - ❑ **Format:** selects the items included with printed results.
   - ❑ **Header:** sets up to 7 lines of customer information used at the top of the printout.
   - ❑ **Automatic Print:** enables automatic printing of results after CBC runs. (Disable if combining with VS2 results to avoid multiple printouts.)

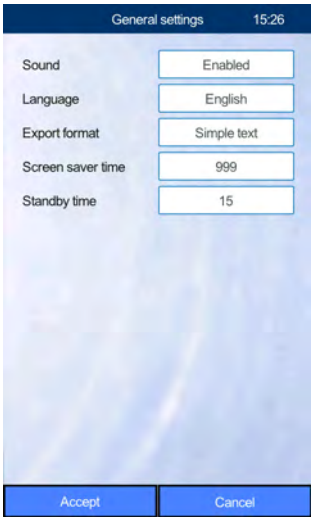
3.3 General Settings

Use **General Settings** to adjust sound, language, export format, screen saver time, and standby.

1. From the Home screen, select **Settings > General Settings**.
2. Select the settings to adjust:
   - ❑ **Sound**: enables/disables sound.
   - ❑ **Language:** selects the language used in analyzer displays.
   - ❑ **Data Export Format:** selects the format for exported data (**Advanced** is recommended).
   - ❑ **Screen Saver Time:** sets the delay time for screen saver activation, in minutes.
   - ❑ **Standby Time:** sets the delay time for standby activation, in minutes.

3.3.1 Screen Saver and Standby Time

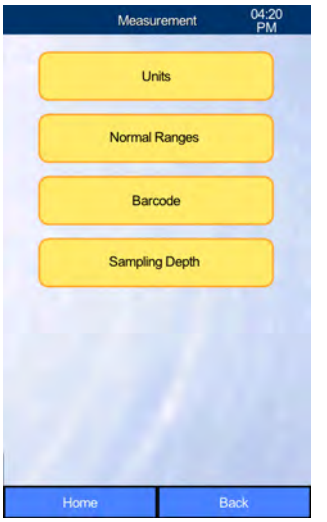
1. From the Home screen, select **Settings > General Settings**.
2. Select **Standby Time**, then enter the standby time in minutes.
3. Select **Screen Saver Time**, then enter the time before the screen saver activates, in minutes.
4. Select **Accept**.



3.4 Measurement Settings

Use **Measurement Settings** to set units, ranges, and sampling depth, or to enable scanning.

1. From the Home screen, select **Settings > Measurement**.
2. Select the settings to adjust:
   - ❑ **Units**: selects the units used for results.
   - ❑ **Normal Ranges**: sets default normal/reference ranges for each species.
   - ❑ **Barcode**: enables barcode scanning for patient ID numbers.
   - ❑ **Sampling Depth**: sets the default depth to which the needle descends into the sample tube to draw up blood.



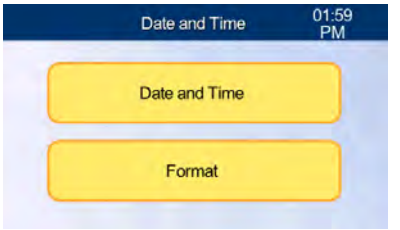


Note: *The HM5 software contains three duplicate software profiles called Dog2, Cat2 and Foal that measure with the same algorithms as Dog, Cat and Horse, respectively; users may edit these profiles with customized reference intervals for other species similar to dogs, cats or horses. They may also be used for younger pets, such as puppies, kittens or foals or geriatric populations. These customized reference ranges must be provided by the user.*

3.5 Date and Time Settings

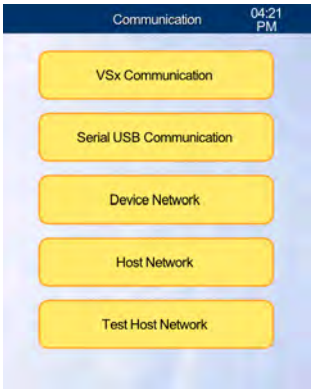
Use **Date and Time** to set the VetScan HM5's built-in clock and calendar, and the format used to display the date and time on results.

- ■ **Date and Time**: sets the displayed time and date on the analyzer clock.
- ■ **Format**: sets the date display format (Month/Day/Year, Year/Month/Day, or Day/Month/Year) and time display format (12- or 24-hour).



3.6 Communication Settings

This section provides information for network administrators to use in setting up the HM5 on a network.



The VetScan HM5 offers a variety of options for communicating with external systems such as practice management software, printers and selected Abaxis analyzers, using USB and/or network connections as described in this chapter.

The table below summarizes the USB and network data communication modes available to the HM5.

Table 3-1: VetScan HM5 USB/Network Communication Modes

Modes			
Target	**Name**	**Type**	**Purpose**
VetScan VS2 chemistry analyzers	VSx Communication	USB	Receives results from the VS2 analyzer and produces a formatted report that combines the VS2 and HM5 results when a Patient ID match is found in the HM5 database.
Computer (unidirectional)	Serial USB Cable Communication	USB	Sends results from the HM5 to a host (such as a computer with practice management software) through a USB serial COM port. See Table 3-2.
Computer (unidirectional)	Host PC (in Host Network)	Network	Sends results from the HM5 to a host computer via network-enabled software, such as a practice management system. See Table 3-3.
Computer (bidirectional)	Host EMR (in Host Network)	Network	Sends results from the HM5 to a host computer and receives work list orders from a host computer using network-enabled software, such as a practice management system or an electronic medical records (EMR) system. See Table 3-4.

These communication modes act independently and multiple modes can be enabled simultaneously though typical analyzer operation enables only one of the above modes at a time.



Note: *When changing communication modes, be sure to verify the settings for all modes to ensure that only the desired mode is enabled. VSx Communication can be enabled or disabled independently of other settings with no unintended consequences.*

The following tables list the most commonly used settings.

Table 3-2: Unidirectional Transmission to a Host Through a USB Cable

Communication	Setting Name	Setting
Serial USB Communication	Serial USB Link	**Enabled**
	Serial Automatic Send	**Enabled**
Host Network	Personal Computer (PC)	Inactive
	PC Automatic Send	Disabled
	Electronic Medical Record (EMR)	Inactive
	EMR Automatic Send	Disabled

Table 3-3: Unidirectional Transmission to a Host Computer Through a Network Connection

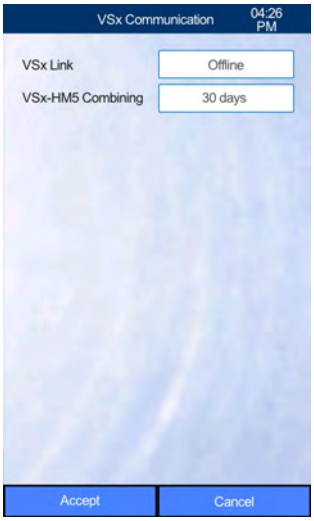
Communication	Setting Name	Setting
Serial USB Communication	Serial USB Link	Disabled
	Serial Automatic Send	Disabled
Host Network	Personal Computer (PC)	**Active**
	PC Automatic Send	**Enabled**
	Electronic Medical Record (EMR)	Inactive
	EMR Automatic Send	Disabled

Table 3-4: Bidirectional Transmission to a Host Computer Through a Network Connection

Communications	Setting Name	Setting
Serial USB Communication	Serial USB Link	Disabled
	Serial Automatic Send	Disabled
Host Network	Personal Computer (PC)	Inactive
	PC Automatic Send	Disabled
	Electronic Medical Record (EMR)	**Active**
	EMR Automatic Send	**Enabled**

3.6.1 VSx Communication

The HM5 can provide a formatted printout of results from an Abaxis VS2 analyzer and can produce a printout of VS2 results combined with HM5 results when a matching Patient ID is found in the HM5 result database.



1. On the Home screen, select **Settings > Communication > VSx Communication**.
2. Set **VSx Link** as needed:
   - ❑ **USB**: enables VSx communication and prints VS2 results.
   - ❑ **Offline**: VSx communication is disabled.
3. Set **VSx-HM5 Combining** to control the date range for the HM5 result lookup to match the VS2 patient result. Select **Same Day** to combine only HM5 results that were run on the same day as the VS2 result.
4. Connect the USB B (square) end of the USB cable to the USB B port on the back of the VS2.
5. Connect the USB A (flat) end of the cable to a USB A port on the HM5.
6. Press **Accept**.

3.6.2 Serial USB Connection to a Computer

The VetScan HM5 can connect to practice management software (PMS) on a computer using a USB A-B cable. For a list of compatible PMS software, visit the Abaxis website at www.abaxis.com.

3.6.2.1 USB A-B Cable Connection



1. Connect the B end of the cable into the USB B port on the back of the HM5.
2. Connect the A end of the cable into the PMS computer.
3. On the Home screen, select **Settings > Communication > Serial USB Communication**.
4. Enable **Serial USB Link** and **Serial Automatic Send**.
5. Set **Serial Link Baud Rate** to the rate recommended by the practice management software (typically 9600).
6. Using a computer connected to the internet, browse to www.abaxis.com.
7. Download and install the Color HM5 USB driver on the computer, following the instructions on the website. Contact the PMS company to complete the setup with the HM5.

3.6.3 Network Communication

The HM5 can connect to a computer network through the Ethernet port on the back of the analyzer (see “Back View” on page 1-4) using standard Cat5 networking cables:

- Unidirectional connections transmit results from the HM5 to a computer.
- Bidirectional communication transmits work orders to the HM5, from a software application such as practice management software, and results to the computer from the HM5. (For a list of compatible software, visit the Abaxis website at www.abaxis.com.)

When network communication is necessary, the HM5 must always be configured with a Device Network address assignment (see “Device Network,” below). This establishes the HM5 as a location on the network and enables the HM5 for subsequent use with the Host Network settings (see “Host Network” on page 3-9).

3.6.3.1 Device Network

The Device Network setting establishes the network address of the HM5 analyzer.

The network address may be assigned automatically via DHCP, or manually by making a static IP address assignment. The method to use depends on a number of factors, is best determined by the local network administrator.

DHCP address assignment is the easiest to configure and is the preferred method when Host EMR communication is not being used.

When using Host EMR communication, a fixed or static address is preferred. Contact your system administrator for details (see “Configure for Static Address Assignment” on page 3-9).



Note: *In some cases you may be directed to use the DHCP setting on the HM5, and the network administrator will configure the DCHP server to assign a fixed address to the HM5.*

In the Device Network screen, **Current Settings** shows the address assignment based on the most recent configuration: the information is automatically assigned if **DHCP Enabled** was used, or information entered manually for a static assignment.



Use **New Settings** to update the address assignment: see “Configure for DHCP Address Assignment,” or “Configure for Static Address Assignment,” below.

- Configure for DHCP Address Assignment
  1. Change the DHCP setting to **Enabled**. (You can ensure **Enabled** is set by selecting the setting value.)
  2. Press **Accept**.

- Configure for Static Address Assignment

  To use static address assignment for the HM5, your local network administrator must supply the necessary information.

  1. Change the DHCP setting to **Disabled**. (You can ensure **Disabled** is set by selecting the setting value.)
     The data entry fields in the New Settings area then become available.

  2. Enter the following settings using the values from your network administrator:
     - IP Address
     - Subnet Mask
     - Gateway
     - DNS

  3. Press **Accept**.

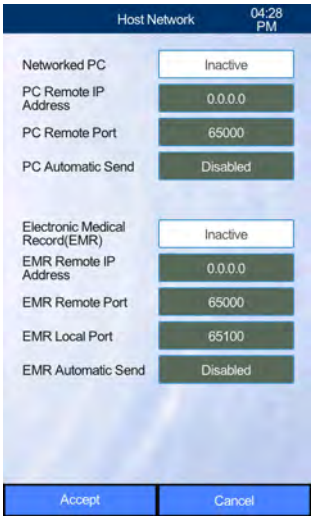
3.6.4 Host Network

When configured for Host Network communication, the HM5 can send results to another computer on the network (unidirectional mode), or accept work orders from and send results to a computer (bidirectional mode). The computer must be running compatible software to accept the result information and optionally send order information. For a list of compatible software, visit the Abaxis website at www.abaxis.com.

3.6.4.1 Personal Computer (PC)

The **Host Network > Personal Computer (PC)** settings enable the HM5 to send results one-way (unidirectional) to a network-enabled Personal Computer (PC) system or software such as a practice management system. In this mode, the HM5 cannot accept work list orders (bidirectional communication) from a PC system.

When sending results, the HM5 establishes an outbound connection to a specified IP address and port (see below). The receiving PC must be running a service that listens for incoming connections on the IP address and port. The local network administrator or software vendor can provide the necessary IP address and port values.



To configure the HM5 to send results to a PC system:

1. In the Host Network screen, set the Networked PC field to **Active**.
2. Enter the PC Remote IP Address and PC Remote Port number, as provided by your local network administrator or software vendor.

3. Set PC Automatic Send to **Enabled**.



Note: *Enabling PC Automatic Send is typical for this configuration, but may not be appropriate for your PMS or individual configuration. If you have questions about the correct setting for your clinic, contact Abaxis Technical Support or consult your PMS vendor.*

4. Select **Accept**.

3.6.4.2 Electronic Medical Record (EMR)

The **Host Network > Electronic Medical Record (EMR)** settings enable the HM5 to exchange work order and results (bidirectional) with a network-enabled PC or software such as a practice management system. Orders flow from the EMR host to the HM5, and results from the HM5 to the EMR host. The EMR host system software must be capable of bidirectional communication with the HM5.

When receiving orders, the HM5 establishes a listening service and waits for connections from the EMR host. The listening address is the HM5 analyzer IP address (see “Device Network” on page 3-8), and the listening port is determined by the EMR Local Port setting (see below).

When sending results, the HM5 establishes an outbound connection to the specified IP address and port (see below), and the receiving EMR system must be running a service listening for incoming connections on that IP address and port. The IP address and port values are provided by the local network administrator or software vendor.

To configure the HM5 to communicate with an EMR system:

1. In the Host Network screen, set Electronic Medical Record (EMR) to **Active.**
2. Enter the EMR Remote IP Address and EMR Remote Port number, as provided by your local network administrator or software vendor.
3. Enter the EMR Local Port number provided by, or determined in conjunction with, the EMR software vendor. (This is the port the HM5 listens on for incoming order connections.)
4. Set EMR Automatic Send to **Enabled**.



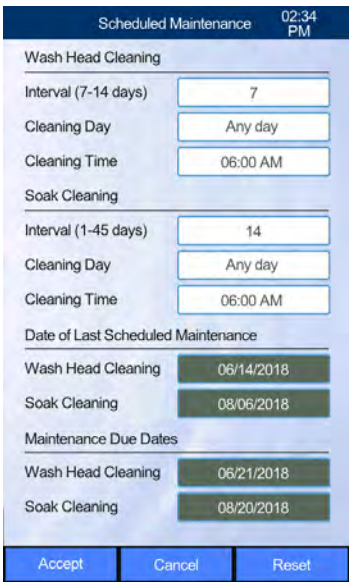
Note: *Enabling EMR Automatic Send is typical for this configuration, but may not be appropriate for your PMS or individual configuration. If you have questions about the correct setting for your clinic, contact Abaxis Technical Support or consult your PMS vendor.*

5. Press **Accept**.

3.7 Admin Settings

This menu is available to Admin-level users only (see Section 7). Use **Admin Settings** to adjust maintenance dates to fit the clinic's schedule, to tailor directions to the tubing set being used, and to set up user permissions.

1. On the HM5 Home screen, select **Settings > Admin Settings**.
2. The **Pack Setup** setting identifies the reagent pack tubing setup: select **QCA** or **Bottle Caps** (see "Installation" on page 2-3).
3. Select **Scheduling** and select the schedule for Wash Head Cleaning and Soak Cleaning:
   - ❑ To use the default maintenance schedule, select **Disable**.
   - ❑ To customize the maintenance schedule and enable full screen reminders for maintenance, select **Enable**.
4. Then select **Schedule Settings:**
   - ❑ The **Interval** fields can be used to set the number of days between cleanings. Abaxis recommends that **Intervals** be left at the default values of a 7 day Interval for Wash Head Cleaning and a 14 day Interval for Soak Cleaning. Use the **Cleaning Day/Time** fields to set the specific day and time that cleaning is due. Users who run fewer than 5 samples per day may set the Soak Cleaning Interval to 30 days.
   - ❑ Use **Last Date of Scheduled Maintenance** and **Maintenance Due Dates** to track the previous and the next scheduled cleanings.



Note: *The default interval settings are ideal for most clinics.*

Note: *Enabling Schedule Settings allows the user to set the preferred day and time for maintenance and will not allow samples to be run until maintenance procedures have been performed.*

Section 4

Running a Sample

Running a sample on the HM5 is a simple process that begins with good sample draws, proper mixing, and correct storage of the samples.

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4.2 Storing Samples 4-3
4.2.1 Remixing Before Running 4-3
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4.7.1 Histograms 4-10

4.1 Collecting and Handling Samples

Because sample integrity is essential for accurate test results, always follow the guidelines in this section for sample handling.



CAUTION: *Use only tubes containing potassium EDTA (purple/lavender top) for CBC analysis.*



Note: *For multiple tube draws, always fill the tubes in this order:*
1) blue top
2) red top or tiger top
3) green top
4) lavender/purple top

- When collecting a sample, select the largest vein possible, and select the appropriate needle size for the vein.
- If blood stops flowing into the syringe before enough sample is acquired, dispose of that syringe and attempt a new draw with a new needle, new syringe, and new draw site.
- Avoid delays of more than 20 seconds between the venipuncture and the sample transfer to the EDTA tube, and between filling the tube and mixing. Delays can cause platelet clumping and clot formation.



Note: *For best results, fill the tube with blood to at least half its maximum fill volume (as marked on the tube).*

- To achieve proper mixing and prevent clotting, immediately mix samples by inverting the tubes 10-15 times (25-30 times with very small samples or in low volume microtubes) Inversion speed should be 2-3 inversions per second.



Note: ***Do not shake samples!*** *Doing so can damage the blood cells, and can form micro-bubbles that will cause inaccurate results.*

- Mix thoroughly by hand immediately before analysis by gently inverting the tube 10-15 times.

- When using a vacutainer system, allow the vacuum to pull the sample in. If the tube stops filling before enough sample is acquired, try to quickly redirect the needle.

  If this takes more than 5-10 seconds, remove the needle and dispose of the sample, and attempt a new draw at a new site, with a new needle and new tube. Once the tube is full, mix by inverting the tube 10-15 times (25-30 times in low volume microtubes).
- When using a butterfly with a vacutainer system, gently invert the tube while the tube is filling.
- IMMEDIATELY mix tubes after filling them to prevent the blood from clotting in the tube.

4.2 Storing Samples

- Samples may be put in a rack or on a counter until ready to run.
- Samples should be run within 4 hours if stored at room temperature, or 8 hours if refrigerated.
- If the samples were refrigerated, allow them to warm to room temperature before analysis by sitting on the counter for 10-15 minutes. Samples may also be warmed by slowly rolling the tube in the palms of the hands for 5-10 minutes.
- Do not use a rocker to mix samples smaller than 1.0 ml.



Note: *Rockers do not mix samples well. To mix properly, invert each sample by hand 10 to 15 times* ***immediately after*** *drawing, then invert 10 to 15 times again* ***immediately before*** *running the sample.*

4.2.1 Remixing Before Running

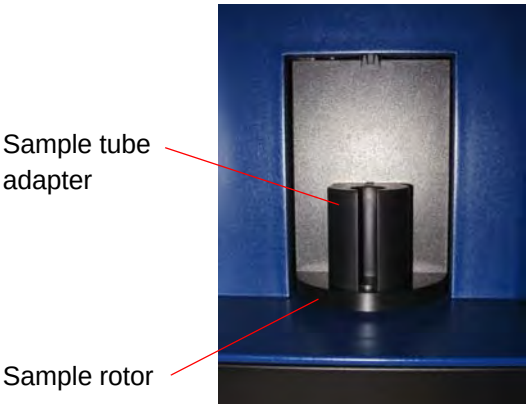
The HM5 software will display a reminder to mix samples before each sample run.

- Always mix the sample again with 10-15 inversions before analyzing the sample in the HM5. Over time, samples settle and start to separate so they must be mixed well again before being run.
- If any specks of solid blood (indicating clotting) are observed, or if there were any delays in filling the tube, discard the sample and redraw.

4.3 Before Performing an Analysis

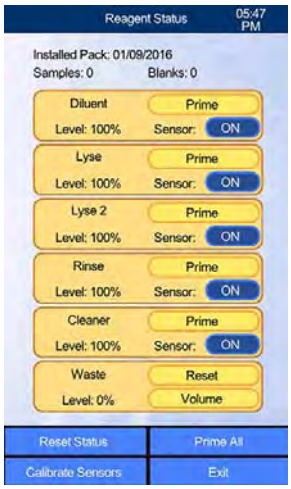
4.3.1 Daily Cleaning

1. Wipe up any spills on the sample rotor.
2. Keep the instrument and immediate surroundings as clean as possible.

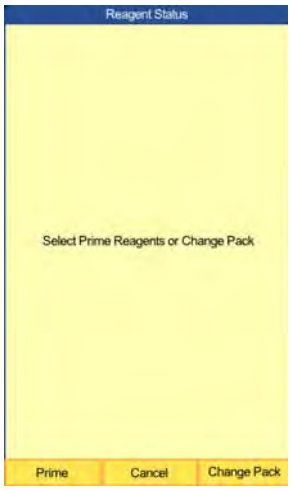


4.3.2 Check Tubing

1. Inspect the reagent tubes and connections to make sure the reagents can flow freely. Make sure the tubes are not pinched or kinked, or trapped between or beneath objects.
2. Check the reagent tubes (except the red waste tubing) for bubbles or air gaps. A few small, “soda-sized” bubbles are normal, but if any large bubbles (spanning the width of the tubing) or gaps exist, clear the affected tubes as follows.
   a. Make sure the affected tubes are securely attached at both ends.
   b. From the Home screen, select **Maintenance > Reagent Status**.



   c. Select **Prime All** to start priming the reagents. Confirmation will be required. Select **Change Pack** if you are currently changing the reagent pack, or **Prime** if you only need to clear bubbles in the tubes. For details on changing the reagent pack, see “Changing the Reagent Pack” on page 6-9.



   d. Repeat if needed to remove all air gaps and large bubbles from the reagent tubes.
   e. If priming is required more than two times or bubbles persist, call Abaxis Technical Support.



Note: *Air gaps in the waste tubing (red) are normal.*

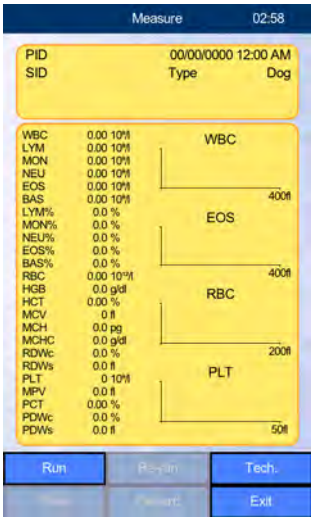
4.4 Running a Blank Measurement

A blank measurement must be run at the beginning of the day before any samples can be run, or every 12 hours for 24-hour clinics. Blanks must also be run after a reagent pack change. The blank checks the cleanliness of the VetScan HM5's fluidic system, and establishes a baseline for sample measurements. The results of a blank are used to determine if the background will affect the test results, and whether the analyzer needs cleaning or maintenance.

Note: *Each blank measurement is valid for 12 hours, after which the analyzer displays* **Blank results are expired!** *Accept the running of the blank then accept the blank to begin running samples again.*

In addition, a new blank must be run each time the analyzer is powered off and then powered on again.

1. From the Home screen, select **Measure > Run**.

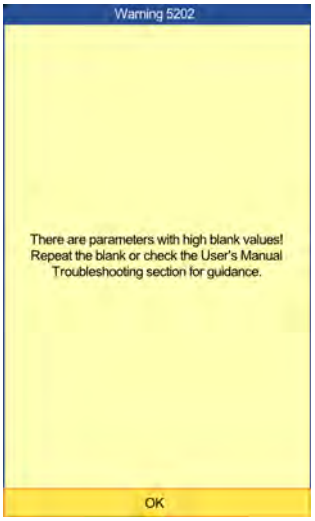


2. If the **Blank results are expired** screen appears, select **OK** to run a blank.

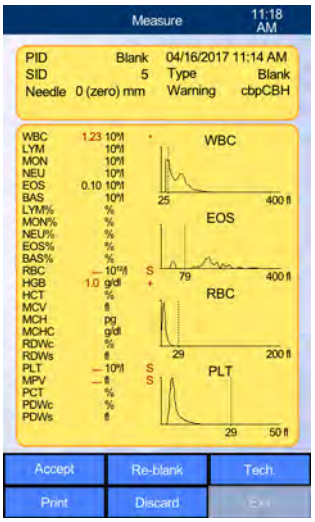
   (If a blank has already been run and accepted for the day, this message does not appear. To run a new blank, select **Run > Blank**.)

3. When the blank has run, if the blank is successful (meaning there are no values reported in red with **+** or ***** signs, and no warning message displayed) the results will appear on the screen.

4. If blank results are unacceptable for certain parameters, the analyzer will rerun the blank. If the results are still unacceptable, the message shown at right appears.



If this occurs, press **OK**, find the warning flag displayed at the upper right on the screen, then go to the section of "Troubleshooting" on page 9-1 for that flag.



CAUTION: *Do not accept an unacceptable blank (with high values).*

Note: *A new blank will be required after the following procedures:*

- ❑ Reagent Pack Change
- ❑ Soak Cleaning (see "Soak Cleaning" on page 6-6)
- ❑ Deep Cleaning (see "Deep Cleaning" on page 9-18)
- ❑ Self-test
- ❑ HM5 Reboot

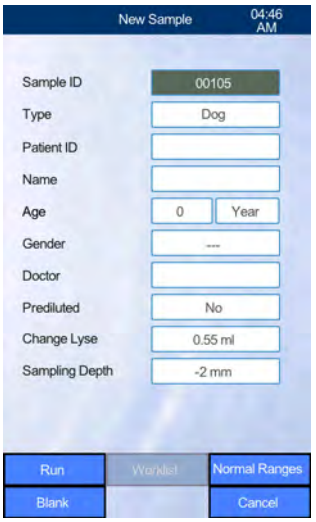
4.5 Running a Sample

Use this general procedure to analyze samples with the VetScan HM5.

1. Prepare a well-mixed, potassium EDTA-preserved sample — see "Collecting and Handling Samples" on page 4-2.
2. Select the appropriate sample tube adapter for the tube size being used:
   - ❑ **#1:** for 2-3 ml tubes and the Abaxis Control tube.
   - ❑ **#2:** for 1.3 ml tubes.
   - ❑ **#3:** for 2 ml glass vials.
   - ❑ **#6:** for microtainer tubes of 0.6 ml or less
3. Place the adapter into the slot in the sample door.



4. From the Home screen, select **Measure > Run**.
5. Select the patient species under **Type**.
6. Enter patient information: select the needed fields, enter the information, then select **Enter**.





Note: *If combining with a VS2 or sending results to a PMS, be sure to enter the matching patient number into the Patient ID.*

7. Make sure the sample tube is at least half full. If the tube is not adequately filled (see "Collecting and Handling Samples" on page 4-2), results can be affected. *Good sample acquisition and sample handling are essential to prevent issues.*

8. Adjust the sampling depth if needed. If the sample fill is adequate, use the 0 mm sampling depth. However, if the sample tube is less than half full and a new draw cannot be performed, or the values resemble a blank and an E Warning is present, lower the sampling depth to -2 mm.

    a. Select the **Sampling Depth** field.

    b. Select the appropriate sampling depth (If using false-bottom tubes, **+5 mm** may be needed.)

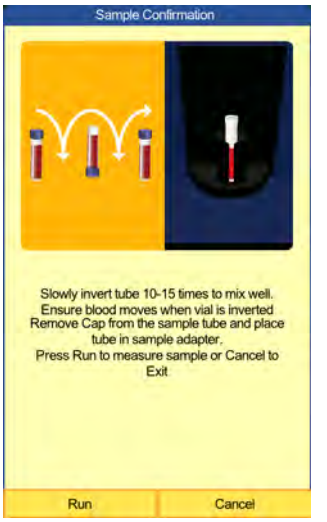
9. Select **Run**.

10. When prompted:

    a. Slowly invert the tube 10-15 times to mix well.

    b. Remove the cap from the sample tube, and place the tube in the appropriate sample adapter.

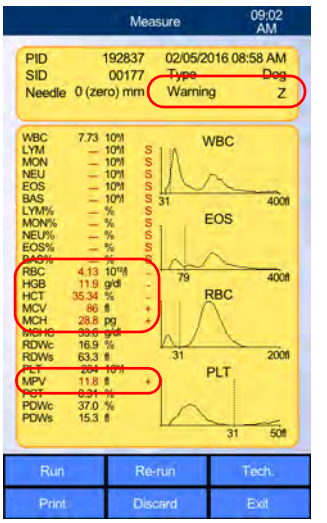
    c. Select **Run** as shown at right.



    The sample is taken into the HM5 and analysis begins. The CBC process takes approximately 4 minutes for a five-part differential, and 3 minutes for a three-part differential.

    When complete, results are displayed on the screen, and transmitted to a printer and/or the PMS, depending on configuration. (If the analyzer is not set to print results automatically, print them by selecting **Print**.)

If warning flags occur for the blanks or sample results, they will be indicated as shown in the example at right. See the Troubleshooting section for resolutions.



If results are out of range they will be indicated as follows:

1. Results *above* the species reference range are highlighted and marked with a plus sign (**+**).

2. Results *below* the species reference range are highlighted and marked with a minus sign (**–**).

4.6 Adjusting the Lyse Volume

The Lyse volume generally only needs adjustment on rare occasions if the patient has Lyse-resistant red blood cells, as indicated by an **L** warning on the results after other potential causes have been eliminated. For details on other potential causes and instructions, see "Result Warning Flags" on page 9-5.

If an L Warning occurs, proceed as follows:

1. If the sample was from a Cavalier King Charles Spaniel, or other breed with a known predisposition to macrothrombocytosis, perform a manual smear.
2. If the draw was difficult or the platelet value is low, redraw and rerun as this could be platelet clumping causing the L Warning.
3. Make sure the Lyse tube (yellow) has no kinks, or loose connections at the analyzer or bottle.
4. Make sure the tube is well attached to the connector on the dip tube or bottle cap.
5. Check for bubbles in the Lyse tube. If found, prime the Lyse and rerun the sample.
6. If the Lyse tube is in working order, from the Home screen, select **Measure > Run**.
7. Select the **Change Lyse** field, and increase the volume by 0.1 ml.
8. Rerun the sample.
9. If the **L Warning** persists, increase the Lyse by 0.2 ml, then rerun the sample.
10. If the L Warning still persists and there are no Lyse issues, perform a manual smear or send the sample out.



Note: *The new Lyse volume will be used for the current run only, then will revert to the default setting.*

4.7 Interpreting Results

The VetScan HM5 produces a printed report containing the patient ID, measurement data, numeric results with flags (if any), and histograms showing the different cell populations.



Note: *Always check whether the results include warning flags, at the top-right corner of the HM5 screen or the bottom of the HM5 printouts.*

Complete Blood Count (CBC) parameters are useful in assessing overall wellness of a patient, as well as identifying and monitoring certain disease states. See "CBC Parameters and Associated Indications" on page E-1 for information on the various CBC parameters and associated clinical indications.

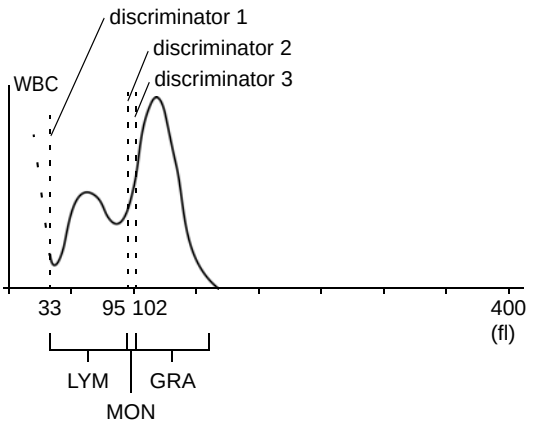
4.7.1 Histograms

In five-part differential mode, histograms display population distributions of each cell type: leukocytes (white blood cells — WBC), eosinophils (EOS), erythrocytes (red blood cells — RBC), and thrombocytes (platelets — PLT). The histograms show the relative frequency of cells on the vertical (Y) axis, and cell volume in femtoliters (fl) on the horizontal (X) axis.

Histograms enable you to quickly scan results for abnormalities, and also allow the versed practitioner to derive more information about the sample than is displayed by the values alone. The following pages describe each of the histograms (WBC, EOS, RBC, and PLT), and show a typical example of each with an explanation.

4.7.1.1 White Blood Cell Histogram (WBC)

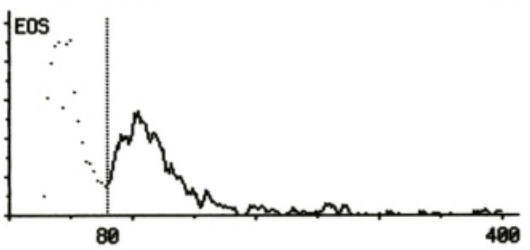
WBC histograms show white blood cell populations sorted by size. Cells larger than discriminator 1 are counted as WBCs. Blood includes three WBC populations:



- Lymphocytes (LYM), shown by the first peak in the histogram.
- Monocytes (MON), indicated by the area between the second and third discriminators (although the MON region does demonstrate a distinctive peak of its own, this peak is not always clear in histogram form).
- Granulocytes (GRA) are the neutrophils, eosinophils, and basophils, indicated by the peak to the right of the third discriminator.

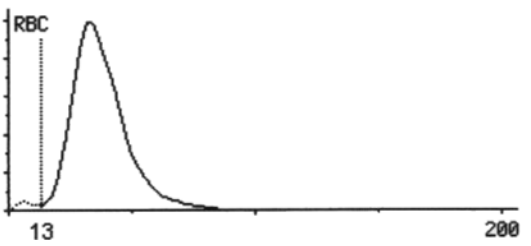
4.7.1.2 Eosinophil Histogram (EOS)

The distribution of eosinophils is shown by the second peak in the histogram. The first peak (dotted line) is the RBC "ghost" and other WBCs.

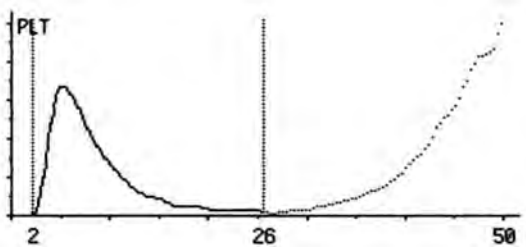


4.7.1.3 Red Blood Cell Histogram (RBC)

The distribution of red blood cells normally appears as a single, steep, bell-shaped curve. The presence of reticulocytes and nucleated red blood cells (nRBCs) cause this curve to widen.



4.7.1.4 Platelet Histogram (PLT)



The PLT histogram is a magnified portion of the beginning of the RBC histogram.

The example PLT histogram at right follows a log-normal distribution, with a good separation from RBCs.

The most commonly identified anomaly in platelet histograms results from aggregated (clumped) platelets. This appears as a flattened, lumpy histogram that increases towards the right side (see “Cat: Clumped PLT, Increased LYM” on page D-10).

Section 5

Quality Control and Calibration

This section describes the quality control and calibration procedures for the VetScan HM5.

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5.1 Quality Control

The VetScan HM5 includes a quality control (QC) function that verifies the analyzer's accuracy. Performing QC checks regularly helps ensure optimal performance.

Note: *Quality control cannot be run if the blank results are elevated.*

Note: *Performing quality control does not change the HM5's settings or functions (unlike calibration).*

5.1.1 Required Quality Control Sample

The quality control procedure requires using VetScan HM5 Hematology control samples, which can be purchased from Abaxis or an authorized distributor. These control samples are available in low, normal, and high range. Abaxis recommends *only the normal control* for most veterinary facilities, though low and high controls can also be run in particularly stringent regulatory environments.



Note: *Use only Abaxis VetScan HM5 Hematology controls on the VetScan HM5.*

5.1.2 Handling Quality Controls

When opening new Abaxis HM5 controls, *always write the open date* onto the package insert and the control tube itself. Users can then monitor the open date of each tube and avoid using degraded control material. After the control is first opened, it will be good for up to 14 days if it is properly stored.

WARNING: ***THE CONTROL MATERIAL IS PARTIALLY DERIVED FROM HUMAN SOURCES. OBSERVE UNIVERSAL SAFETY PRECAUTIONS WHEN HANDLING THE CONTROL.***

CAUTION: *Abaxis recommends wearing latex or nitrile gloves for these procedures.*

5.1.3 Entering Quality Control Values

Each lot of quality control material has assigned target values that must be entered into the HM5. This can be done using any of three methods:

- Enter values manually through the HM5's touchscreen or a USB keyboard: see "Entering Values Manually" on page 5-3.
- Load USB control value files: see "Loading Values from a USB Drive" on page 5-5.
- Load values through a USB 2D barcode reader: see "Loading Control Values with a 2D Barcode Reader" on page 5-6.

5.1.3.1 Entering Values Manually

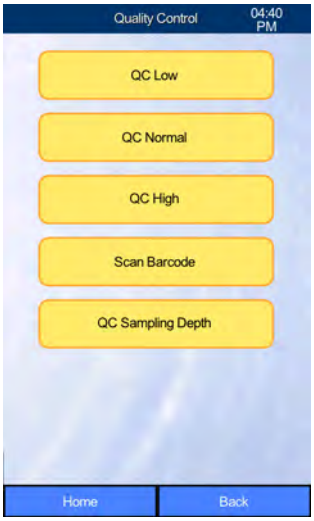
Enter control values manually, for one level of control at a time, using the HM5's touchscreen or a USB keyboard.



1. From the Home screen, select **Maintenance > Quality Control**.

   The Quality control screen includes buttons for QC levels **QC Low**, **QC Normal**, and **QC High**:

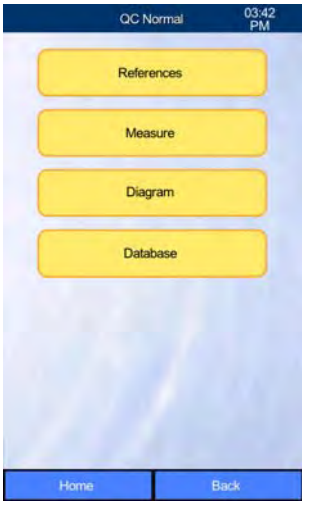
   - ❑ **QC Normal** for normal controls (required)
   - ❑ **QC Low** for low-level controls (optional)
   - ❑ **QC High** for high-level controls (optional)



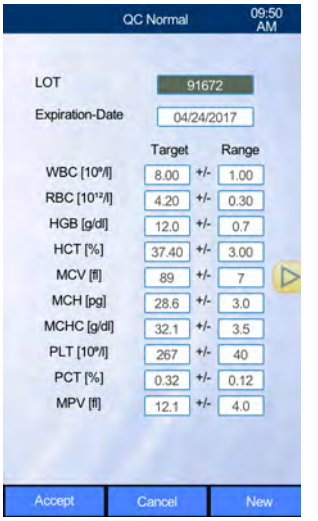
2. Select a QC level.

3. Select **Measure**.

4. Select **Run QC**.



5. Compare the on-screen lot number, expiration date, and target values with those shown on the package insert.

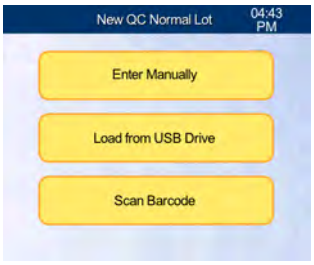


- ❑ If the lot number and expiration date of the current control tube in hand *are the same* as those displayed on-screen, verify that the on-screen target and range values match those on the control package insert, then select **Accept** and proceed to "Running a Quality Control Sample" on page 5-8.

- ❑ If the lot number and expiration date of the control tube *are different* than those on-screen, select **New**.



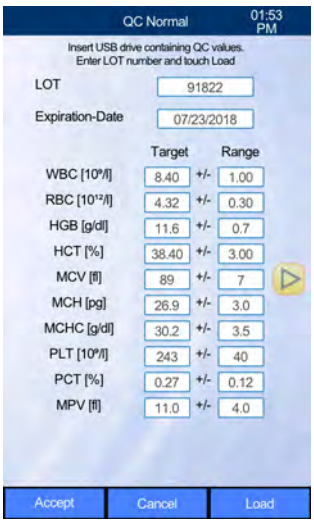
6. Select **Enter Manually** to enter values using the touchscreen and keyboard, **Load from USB Drive** for downloading the values from a USB Drive (with the values downloaded from www.abaxis.com) or **Scan Barcode** if a 2D barcode scanner from Abaxis is present.



7. When Manual is selected, enter the lot number, expiration date, Target (assay) values and Gap (ranges) from the pack.
8. Select **Accept**, followed by **Confirm**.
9. Go to "Running a Quality Control Sample" on page 5-8.

5.1.3.2 Loading Values from a USB Drive

1. Download the most recent control lot values files from www.abaxis.com onto a computer. Unzip the files then open it. Copy the files in the unzipped folder onto a USB drive. See the Abaxis website for more detailed instructions on extracting the files.
2. From the Home screen, select **Maintenance > Quality Control**.
3. Select **QC Normal** (or another level) **> Measure**.
4. Select **Run QC** then **New**.
5. Select **Load from USB Drive**.
6. Insert the USB drive containing the unzipped control values files downloaded from www.abaxis.com.
7. Enter the control lot number from the tube or control pack package insert into the LOT field on the screen, then select **Load**. The HM5 then loads the lot number file from the USB drive.
8. Verify that the loaded values are correct and match the package insert. Correct any incorrect values, then select **Accept**.
9. Verify that the lot number and expiration date match that on the tube to be measured, then select **Confirm**. Select **Accept** again then **Run QC**.
10. Go to "Running a Quality Control Sample" on page 5-8.

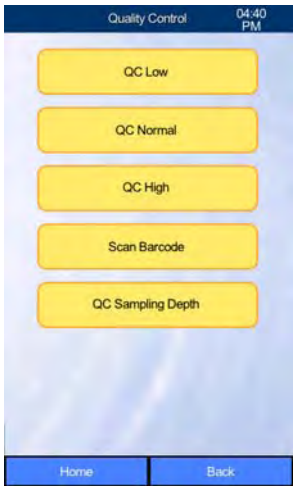


5.1.3.3 Loading Control Values with a 2D Barcode Reader

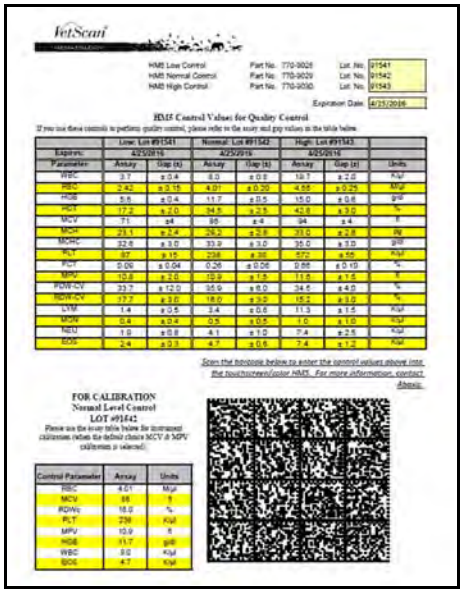
A 2D barcode reader can be used to quickly and accurately enter control values from an HM5 control values sheet.

1. Plug the 2D USB barcode reader into a USB port on the HM5.
2. From the Home screen, select **Maintenance > Quality Control**

.



3. Select **Scan Barcode**, then scan the 2D barcode on the HM5 value assignment sheet provided with the control tube.



Note: *When scanning the barcode, make sure the control sheet is on a flat surface.*

Note: **Scan Barcode** *can also be selected after choosing the QC level and selecting* **New***.*

4. Verify that the loaded values are correct, then select **Accept**.

5. Select **OK** to delete previous QC results and save the new reference ranges.



6. If the 2D barcode reader will not scan the barcode, check the reader's brand and model:

   - ❑ **For a Motorola/Symbol reader:** Scan "Return to Factory Defaults" below.

Return to Factory Defaults

SET DEFAULTS

Then scan the three barcodes below: 1,2 then 3.

1

SCAN OPTIONS

2

<DATA><SUFFIX>

3

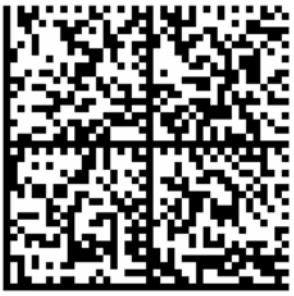
ENTER

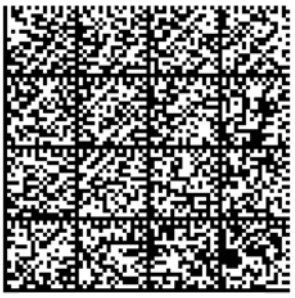
❑ **For a Code reader:**

a. Unplug the reader and plug it in again.

b. If the reader still doesn't scan correctly, scan the reset code at upper right, then scan the programming barcode at lower right.

1. Reset code





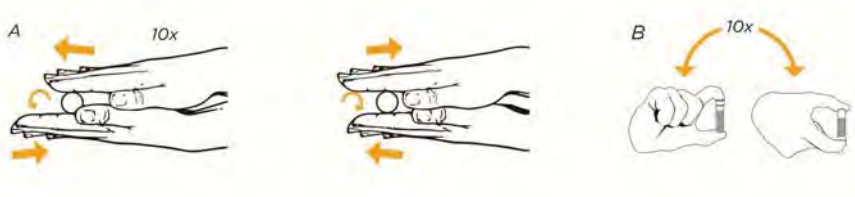
2. Programming code

7. Go to "Running a Quality Control Sample," below.

5.1.4 Running a Quality Control Sample

Note: *Before running a QC sample, make sure the control tubes have come to room temperature. Remove the controls from the refrigerator at least 15 minutes prior to use. Do not use a control that is expired or has been open for more than 14 days, as it may be degraded.*

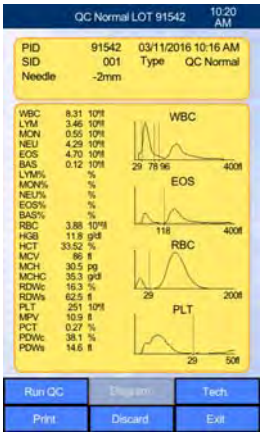
1. Be sure that you have already entered control values: see "Entering Quality Control Values" on page 5-3.
2. After accepting the new control values, select **Run QC**.
3. Mix well by slowly rolling the tube flat between your hands (A), and then slowly inverting the tube 10-15 times (B).





4. Select **Run**.

5. When analysis is complete, the analyzer displays the results.



Note: *Any values out of range are highlighted in red, along with a plus or minus sign.*

6. Abaxis recommends performing at least two control runs:
   - ❑ If the values reported are in range, the analyzer is functioning properly and calibration is not necessary.
   - ❑ If any value is consistently out of range, refer to the next section, "What to Do If QC Values Are Out of Range," or contact Abaxis Technical Support.
   - ❑ A third QC run may be performed if the results of the first two QC runs are conflicting (meaning one is out of range while the other is not, or if the results are widely different from each other).

5.1.5 What to Do If QC Values Are Out of Range

Note: *There are many reasons why QC values may be out of range so stop to investigate the cause before calibrating the analyzer. Calibration is rarely needed. Most QC out of range issues are related to the cleanliness of the analyzer and/or the storage or shipping conditions of the control.*

Values to focus on during QC runs are RBC, MCV, RDWc, PLT, MPV, HGB, WBC and EOS. All other values are calculated using these eight parameters. Certain values such as PDWs and BAS do not have ranges so may always report as out of range because of the lack of target and range data.

- ■ If there are any Warning flags, refer to the "Troubleshooting," section of this manual to resolve the cause of the Warning.
- ■ If the RDWc value is two or more points above the target value, discard the control and order a new one as this indicates it has frozen or been exposed to too much heat.
- ■ If all values which are counted (RBC, WBC, PLT, HGB and EOS) are all low, run Soak Cleaning then rerun the QC sample.
- ■ If MCV is high or low, run a Soak Cleaning (see "Soak Cleaning" on page 6-6) then run the QC sample again.

- If the WBC and EOS values are low, mix the QC sample better and rerun.
- If the WBC, RBC and HGB are high, mix the QC sample better and rerun.
- If just the RBC value is low, make sure the control is at room temperature, mix well and rerun.
- If the RBC and/or PLT values are elevated, clean any visible debris from the Wash Head and dilution chamber below it and perform a Soak Cleaning before running an additional QC run.

5.2 Calibration

5.2.1 When to Calibrate

The VetScan HM5 is factory-calibrated for optimal performance. In certain situations, calibration is needed to fine-tune the analyzer:

- When quality control measurements show that one or more parameters are consistently out of range, and the analyzer has been determined to be clean and the control has been stored and shipped properly.
- After relocating the HM5.



Note: *Calibration cannot be performed if the blank is unsuccessful.*

5.2.2 Required Calibration Materials

The calibration procedure requires the VetScan HM5 Hematology Normal control (Abaxis part number 770-9029), which can be purchased through an authorized distributor or directly from Abaxis.



WARNING: ***THE CONTROL MATERIAL IS PARTIALLY DERIVED FROM HUMAN SOURCES. OBSERVE UNIVERSAL SAFETY PRECAUTIONS WHEN HANDLING THE CONTROL.***

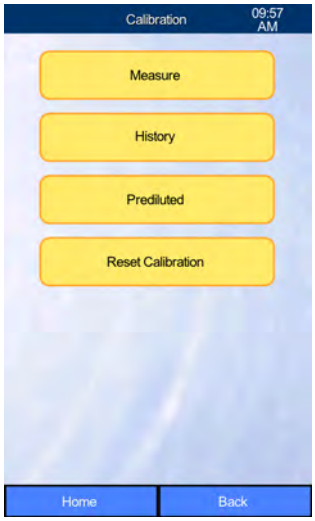
5.2.3 Calibration Procedure

Note: *Allow the normal control to reach room temperature before beginning. This takes about 15 minutes.*

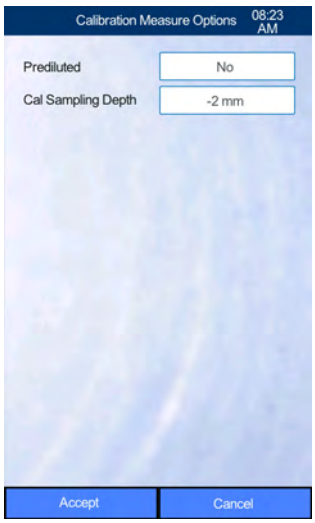
Once opened, the control has a shelf life of 14 days. Do not calibrate with an expired control or a tube that has been opened more than 14 days.

The calibration process requires at least three sample runs using the HM5 Normal control material.

1. From the Home screen, select **Maintenance > Calibration**.



2. Select **Measure**.
3. Verify that **Prediluted** is set to **No** and that **Cal Sampling Depth** is set to **–2 mm**.
4. Select **Accept**.



5. If QC ranges are for the same control tube, select **Copy** to pull over the values from the QC menu. If QC values do not match the lot on the control tube being used for calibration, enter the lot number, expiration date in MM/DD/YYYY format, and target values from the HM5 control package insert.

6. Select **Accept**.



7. Select **Run Cal**.

   When prompted, mix the control, remove the cap, place the tube in the appropriate tube adapter.

8. Select **Run** to begin the first calibration run.

   When the analysis is complete, the results will appear on-screen.

9. Select **Run Cal** again. The analyzer will display a reminder to mix the sample. Mix control well by slowly rolling the tube flat between your hands 10 times, and then slowly inverting the tube 10-15 times.

10. Follow the on-screen directions, then select **Run**.

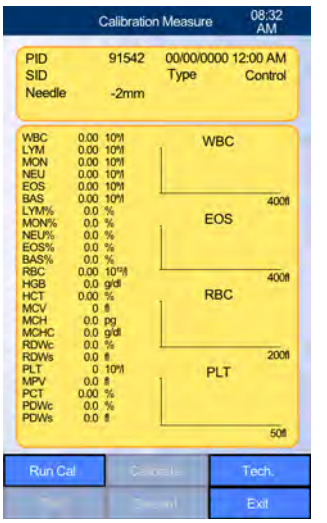
    When the second analysis is complete, the results will appear on-screen.

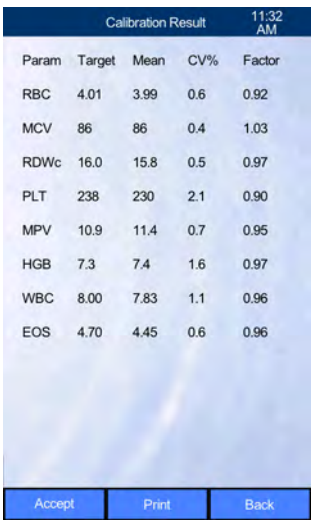
11. Select **Run Cal** for the third time. The analyzer will again display the mix reminder.

12. Select **Run**.

    The analyzer then displays the results of the third calibration.

13. Select **Calibrate**.





14. The analyzer then calculates and displays the new Calibration factors. Select **Accept** to complete the calibration.

Note: *If the analyzer displays the message* **1 or more of your factors are out of range**, *contact Abaxis Technical Support.*

15. Select **Exit**.
16. Perform a Quality Control run two or three times to verify that calibration was successful: see “Running a Quality Control Sample” on page 5-8.

5.2.4 View Calibration History

All calibration times and factors are saved, and can be viewed as follows:



1. From the Home screen, select **Maintenance > Calibration > History**.
2. Use the on-screen arrows to move through the history.

5.2.5 Resetting Calibration

If calibration fails repeatedly, call Abaxis Technical Support. If directed, use the Reset Calibration function as follows.

1. From the Home screen, select **Maintenance > Calibration > Reset Calibration**.
2. Select **OK**.
3. Calibrate the analyzer: see “Calibration Procedure” on page 5-11.

Section 6

Maintenance & Service

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6.1 Preventive Maintenance

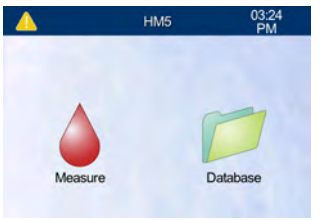
Always keep the analyzer and its immediate surroundings as clean as possible to help keep debris out of the system. Clean up any fluid spilled near the analyzer, and wipe up any spills on the sample rotor.

In addition, periodically performing certain preventive maintenance procedures will help keep the HM5 in optimal operating condition to ensure peak performance and high-quality results.

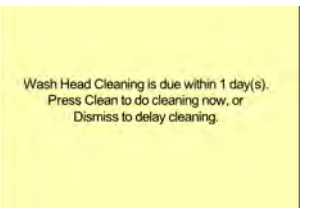
Preventive maintenance can be managed in two ways on the HM5: using the Scheduled Maintenance setting in the Admin Settings (accessible only to Admin users), or through default settings in the software.

The analyzer displays reminders when the two primary routine cleanings need to be performed:

- If Scheduling is disabled: a yellow triangle appears in the upper-left corner of the screen when cleaning is due. Select the triangle to see details.



- If Scheduling is enabled, you can adjust the cleaning frequency within allowed limits. Reminders appear three days, two days, and one day before cleaning is due. You can select **Next** in these messages to perform the cleaning, or **Dismiss** to postpone. Cleanings can also be performed by going to **Maintenance > Cleaning** and selecting the cleaning procedure desired from there.



- On the date and time cleaning is due, the analyzer displays a cleaning due message.

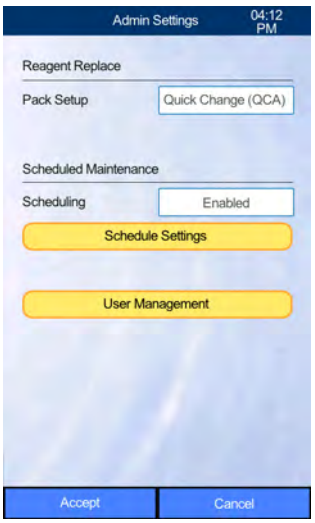


Note: *Once the cleaning due message appears, cleaning **must** be performed before the next measurement is run. You will not be able to run samples until cleaning is performed.*

6.1.1 Scheduling Maintenance

The analyzer's maintenance reminder intervals are preset, but can be adjusted to best suit the particular needs of the clinic.

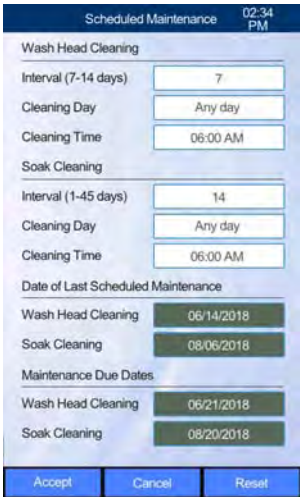
1. From the Home screen, select **Settings > Admin Settings**.
2. Selecting the **Scheduling** field changes the setting from **Enabled** to **Disabled** and vice versa. Set this to **Enabled**.



3. Select **Schedule Settings**.
4. As needed, select the appropriate fields to set the **Interval** and **Cleaning Day and Time** for the Wash Head and Soak Cleanings.

   Abaxis recommends these intervals:

   - Cleaning the Wash Head: 7 days
   - Soak Cleaning: 14 days





Note: *If your sample run rate will be less than 5 samples per day, you may set the Soak Cleaning Interval to 30 days.*

5. Select **Accept** for these settings then **Accept** again to confirm the Scheduling choice.



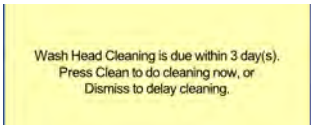
Note: *On installation, you can reset both timers to begin from the current date by pressing* **Reset**. *The next Scheduled Maintenance will then be a full interval away from the current date.*

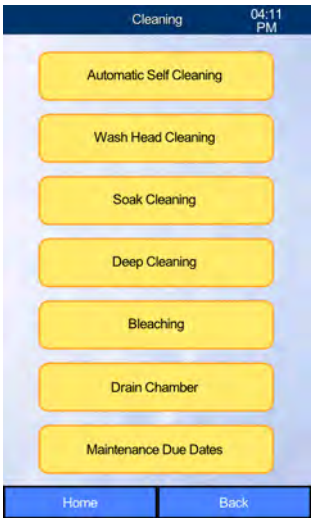
6.1.2 Cleaning the Wash Head

The Wash Head cleans the outer surface of the sample needle with a saline Diluent. If the Wash Head itself is not cleaned regularly, salt can accumulate on the bottom surface, leading to inaccurate test results, extra blanks being needed, and excess reagent use.

Note: *Do not clean the Wash Head without activating the HM5's software as described in this procedure. Otherwise, the needle assembly may not move correctly, and the analyzer will need to be restarted.*

1. If the analyzer displays a message that Wash Head cleaning is due, select **Clean** or **Next** to begin cleaning. If running this process manually (that is, without prompting by a pop-up), select **Maintenance** from the **Home screen > Cleaning > Clean the Wash Head.**





The analyzer then displays cleaning instructions, as detailed in the following steps.

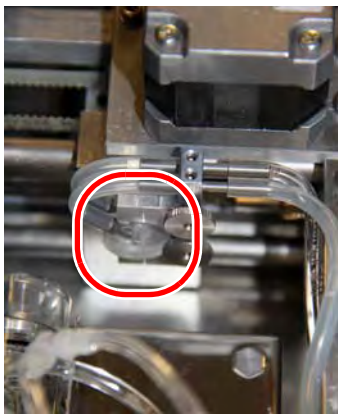


2. Open the door on the right side of the analyzer.



CAUTION: *Do not touch components inside the instrument except as specifically directed.*

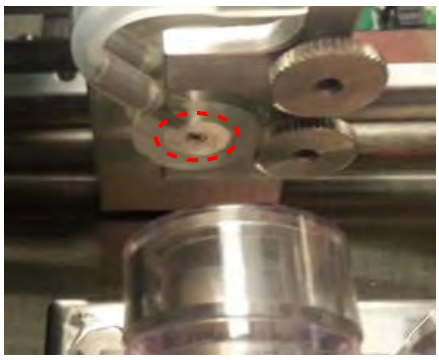
The Wash Head is located at the base of the needle, as shown at right.



3. Locate the Wash Head (Red Circle, see photo at right).
4. Visually inspect the Wash Head for any salt or blood build-up on its bottom surface. For best access, view from below. Refer to the following figures.



Clean Wash Head
No salt or blood build-up present on Wash Head's bottom surface



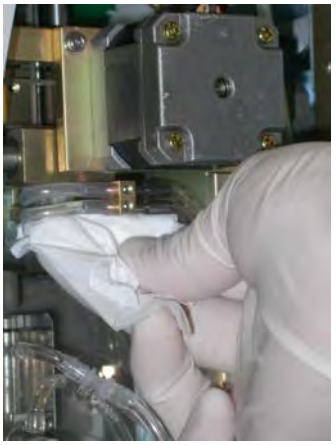
Wash Head with minor build-up



Wash Head with heavy build-up

- If minor salt or blood accumulation is visible on the Wash Head, clean the Wash Head: Use a soft, lint-free cloth and warm distilled water to gently wipe any build-up off the lower surface of the Wash Head.
- If the Wash Head has a great deal of accumulation on the bottom (as in the far right photo on previous page) or on the top (not shown), the Wash Head must first be removed for cleaning: see “Removing and Cleaning the Wash Head” on page 9-15.

  Upon removal, inspect the Wash Head for salt accumulation on the top *and* bottom surfaces.



5. Inspect the Wash Head to be sure it is clean before proceeding.
6. When finished, close the side door, then select **Done**.

6.1.3 Soak Cleaning

Soak Cleaning helps dissolve organic build-up from all surfaces that contact blood samples inside the analyzer and is the best way to clean the needle, the dilution chamber, and the aperture. The Soak Cleaning process will require a new, unused tube of VetScan HemaClean.

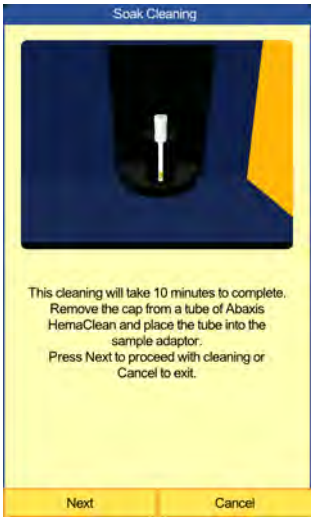
Abaxis recommends a Soak Cleaning every 14 days (the default setting). Users who run fewer than 5 samples per day may set the Soak Cleaning Interval to 30 days. The user may schedule a preferred day and time to perform this cleaning (see “Admin Settings” on page 3-11).

1. The analyzer displays reminders when a Soak Cleaning is needed. When this occurs, select **Next** to begin cleaning. An instruction screen is then displayed.



2. Remove the cap from a tube of HemaClean (Abaxis Part number: 790-1513) and place it on the HM5's holder.

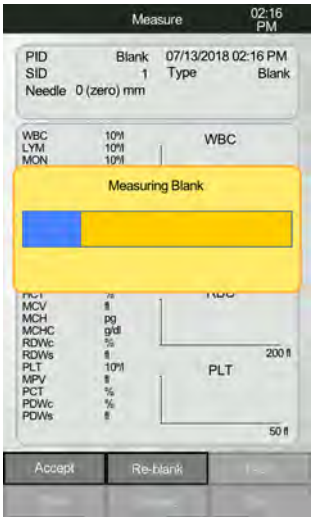




3. Select **Next**. The cleaning cycle will last approximately 10 minutes.

Note: *If Soak Cleaning is needed for troubleshooting outside of scheduled maintenance, select* ***Maintenance > Cleaning > Soak Cleaning****, and follow the on-screen instructions, as above.*

4. After the Soak Cleaning, a blank is required to verify that the background counts are within specification. The software will automatically prompt the user to run a blank when a measurement is attempted after a Soak Cleaning. From the Home screen, select **Measure**, and then **Run**.



5. If the blank results are expired and this screen appears, select **OK** to run a blank. If the screen does not appear, you MUST run a new blank anyway. Select **Run**, and then **Blank**.



6. When the blank has run, verify that the results are acceptable (shown in black) or unacceptable (shown in red, with + or * signs, indicating too high).
7. If acceptable, select Accept. The analyzer is now ready to run Quality Control. If not, proceed to "Blank Flags" on page 9-2.
8. Run Quality Control using a new, unopened HM5 normal control. For detailed instructions go to "Quality Control" on page 5-2. If any warning message pops up, contact Abaxis Technical Support.
9. If two out of three Quality Control runs are within target range, the analyzer is ready to run blood work. If two out of three runs fall out of target range or have any error warnings, call Abaxis Technical Support at (844) 247-5271.

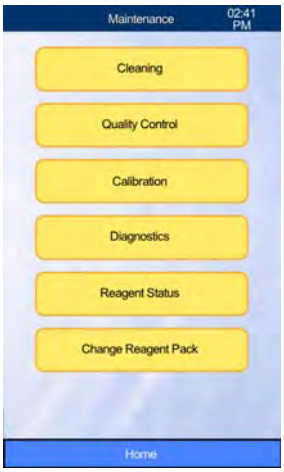
6.2 Automatic Self-Cleaning

After each measurement, the analyzer automatically cleans the measurement area. The software also provides a process to clear the measurement system of any debris when needed:

- when the blank is high for platelets or RBC
- to correct p, b, c, or C warnings after other cleaning procedures have failed
- following other cleaning procedures, such as Soak Cleaning, to ensure the aperture is clean

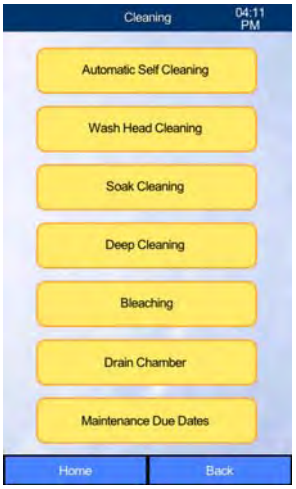
No additional cleaning solution is needed for this process: the HM5 uses the Cleaner and Rinse from the reagent pack.

1. From the Home screen, select **Maintenance**.
2. Select **Cleaning**.



3. Select **Automatic Self-Cleaning**.

   The analyzer then runs the cleaning process, and returns to the Maintenance menu when finished.



6.3 Changing the Reagent Pack



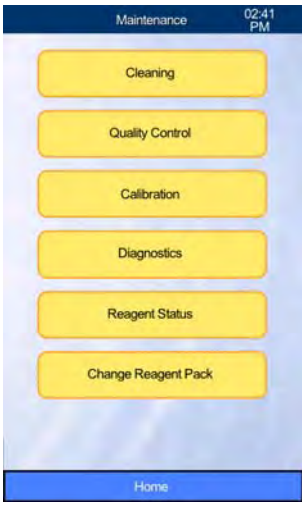
Note: *Abaxis recommends wearing protective eyewear and a lab coat when working directly with reagents (such as changing the reagent pack). In addition, users with sensitive skin should wear latex or nitrile gloves.*

The HM5 tracks the liquid levels in the reagent pack (Abaxis part no. 770-9000), and displays the message **The reagent volumes are running low** when one or more levels is low. When this occurs, change the reagent pack as follows.

1. Make sure you have the following:
   - ❑ New reagent pack
   - ❑ New HM5 Normal Quality Control
2. Remove the control from the refrigerator so it can warm to room temperature before use.
3. Select and follow the appropriate procedure below according to the reagent pack setup.

6.3.1 For QCA Tubing Setup

Use these instructions if the HM5 is set up with a QCA.



1. From the Home screen, select **Maintenance > Change Reagent Pack.**
2. Follow the displayed instructions and prompts.
3. Place the new reagent pack next to the current pack, then select **Next**.
4. Remove the new reagent pack from its shipping box, open the pack lid, then select **Next**.
5. Remove the foam from the pack, unscrew the bottle caps, remove any white foam liners from the bottle caps, and save the bottle caps.
6. Select **Next**.
7. Lift the QCA by the frame, and place it over the new pack. Align the kickstand posts next to the Diluent bottle. Select **Next**.
8. Make sure the frame is centered on each of the bottle seals, then select **Next**.
9. Verify that the colors on the reagent tubes, dip tube heads, QCA frame, and reagent pack all match.
10. One at a time, grasp each dip tube head, and push the tube through its white heat seal and into the same-colored bottle. Repeat until all dip tubes are through the bottle seals and touching the bottom of the bottles.
11. Select **Next**.
12. Dispose of the waste per local regulations. The original white waste bottle or the emptied Diluent bottle with the red cap that came with the initial shipment may be used as the waste container.
13. Select **Next**.
14. Make sure all reagent lines are securely connected to the back of the analyzer and the dip tube heads, and that the reagent tubes are not kinked.
15. Select **Next**. The HM5 will prime all of the reagent tubes.
16. Run a QC sample to make sure the new reagent pack is properly installed and the analyzer is in calibration. The system will prompt you to run a blank before running the control. Confirm that the blank results are within range before running the control: see “Running a Quality Control Sample” on page 5-8.
17. Select **Next**.

6.3.2 For Bottle Caps Tubing

This procedure requires a new reagent pack and a control.

1. From the Home screen, select **Maintenance > Change Reagent Pack**.
2. Follow the on-screen instructions.



Note: *In the following steps, do not touch the tubing with your bare hands, or you may contaminate the reagents. Wear latex or nitrile gloves.*

3. Place the new reagent pack next to the current pack, then select **Next**.
4. Remove the foam from the pack, unscrew and save the bottle caps, then select **Next**.
5. With a clean blade, cut an **X** into the heat seal, then fold down the four flaps to open the bottle.
6. Select **Next**.
7. One by one, remove the reagent caps with the drip-down tubing from the old reagent bottles, and place them on their color-matching bottles in the new reagent pack.



CAUTION: *To avoid contamination, avoid touching the flexible drop down tubes with bare hands.*

8. Make sure the small air vent on each cap is not blocked, so air can flow freely.
9. Empty the waste container, or set up the empty Diluent container from the old reagent pack as the new waste container.
10. Reconfirm that the colors on the reagent tubes, the back of the analyzer, the bottle caps, and the reagent pack all match. Make sure all reagent tubes are firmly attached to the bottle tops and the back of the analyzer, and that there are no kinks in the tubing.
11. Press **Next** to prime the reagents.
12. Press **Next** to proceed the Quality Control menu.
13. Run a QC sample to make sure the new reagent pack is properly installed: see "Running a Quality Control Sample" on page 5-8.

6.3.3 Disposing of Reagent

When it is time to change the reagent pack, there will always be reagent left in the bottles in the old reagent pack. Dispose of this remaining reagent as follows.



CAUTION: *Never pour reagent from a bottle in the old reagent pack into any bottle in the new pack. Doing so could drastically reduce the effectiveness of the new reagents, and could contaminate the new reagents.*

- Dispose of unused reagents and waste in an environmentally friendly manner. Check the local county regulations for proper disposal requirements.
- MSDS are available at in the Resource Center at www.abaxis.com/reference-center.

6.4 Software Upgrades

Abaxis will periodically provide a software upgrade for the HM5. Abaxis can send these upgrades preloaded on a USB drive, and they can be downloaded from www.abaxis.com and copied to a USB drive. Follow the instructions on the Abaxis website.

Upgrade from the USB drive as follows:

1. Power off the analyzer.
2. Plug the USB drive containing the software into a USB port on the analyzer.
3. Power on the analyzer and select **Upgrade**.



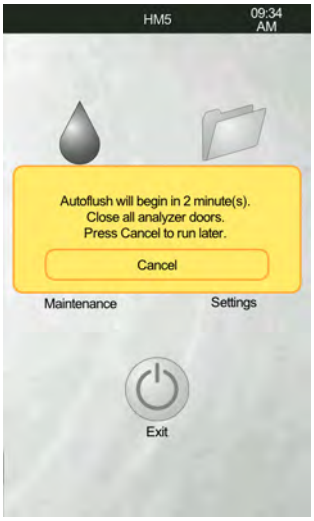
Note: *Do not select* **Erase/Format** *unless directed by Abaxis Technical Support. Doing so will erase all settings, patient data, and control data from the analyzer, and require it to be recalibrated.*

4. When prompted, unplug the USB drive and select **OK**.

The analyzer then automatically reboots to complete the software upgrade.

6.5 Auto Maintenance Flush

If the HM5 has been powered on but not used for 4 days, it will perform an Auto Maintenance routine to flush itself out to prevent salt build-up within its internal tubing. If the notification appears, select **OK** to begin maintenance immediately. Otherwise, the flush begins automatically within 2 minutes.



6.6 Peristaltic Pump Tubing Replacement

The analyzer's peristaltic pump is designed to be maintenance-free. However, after long periods of non-use, the pump tubing can become flattened and eventually needs to be "massaged" back into shape, or replaced. A spare tube is included in the accessories kit.

Although replacement is a simple process, Abaxis strongly recommends contacting Abaxis Technical Support before beginning. They will verify the need for pump tube replacement, and provide guidance through the process if necessary.



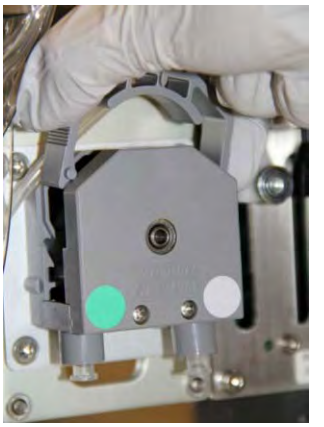
Note: *Wear latex or nitrile gloves during this procedure.*

Replace the peristaltic pump tube assembly as follows.

1. Open the analyzer's back door, and locate the peristaltic pump at the lower left of the rear compartment.
2. Disconnect the green and white color-coded tubes attached to the base of the pump housing, by twisting the luer connectors as shown.



3. Use your thumb and forefinger to grasp the middle of the serrated band, then squeeze and lift the band straight up.



4. Grasp the bottom left tube connector (green band) and push it to the left. The connector slides out, freeing the left end of the tube.



5. Grasp the bottom right tube connector (white band) and push it to the right. The connector slides out, freeing the right end of the tube.



6. Slide the gray attachments toward the center of the yellow pump tube.



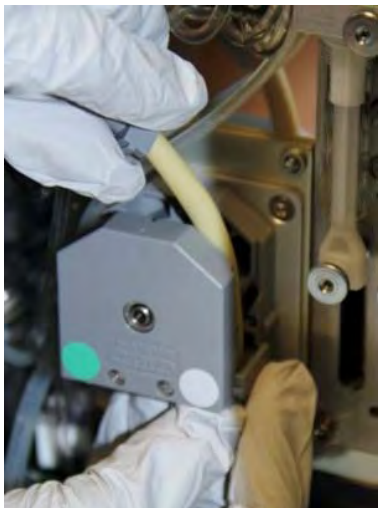
7. Disconnect the tube from the clear tube connectors.



8. Place the two gray attachments onto the new pump tube. Connect either end of the new yellow pump tube to the clear connectors.
9. Slide the gray attachments down onto the clear connectors so that the connectors fit snugly into the gray pieces.



10. Using one hand to guide the tubing, slide one of the gray pieces on the pump tube into the right side of the pump. Stretch the yellow pump tube over the top of the pump, then slide the remaining gray piece into the left side of the pump until it snaps into place.



11. Reconnect the appropriate color tubes to the bottom of the pump.
12. Grasp the gray cover and slide it down over the pump.
13. Once the notches on the side are in place, push down on the top of the cover until it snaps into place.
14. Wipe up any spilled fluids from the base of the instrument.



Section 7

User Permissions

This section describes how to provide three different levels of user access to the VetScan HM5.

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7.1.2 Advanced Level *7-2*
7.1.3 Admin Level (Default) *7-2*
7.2 Adding Users and Passwords *7-3*
7.3 Logging In *7-4*
7.4 Automatic Login Set *7-4*

7.1 User Permission Levels

The HM5 software provides for three levels of users: Basic, Advanced, and Admin.

7.1.1 Basic Level

Basic users can perform the following:

- Measure blanks and run CBCs
- Perform scheduled maintenance
- Change reagent packs
- Run QC control on previously entered QC lots
- View, print, and save CBC results

7.1.2 Advanced Level

Advanced users can perform all functions available to Basic Users, as well as the following:

- Load new QC lot values
- Calibrate the analyzer
- Adjust all settings other than Admin settings (schedule maintenance)

7.1.3 Admin Level (Default)

Admin users can view and operate all functions in the analyzer, and have access to all settings. The default user level is Admin.

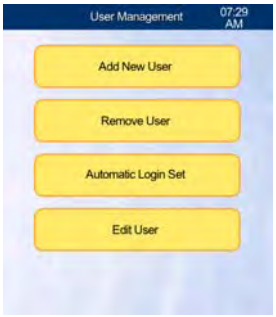
7.2 Adding Users and Passwords

Each user may have a unique login and password or multiple users of a given level may also share a login and password.

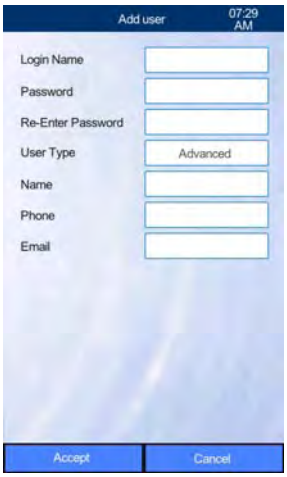
Add new users and their passwords as follows.

1. From the Home screen, select **Settings > Admin Settings > User Management > Add New User**.





2. Select fields and enter the **Login Name** and **Password**, then **Re-Enter Password**.



3. Select **User Type** until the desired permission level is displayed.
4. If desired, enter **Name**, **Phone**, and **Email**.
5. Select **Accept**.

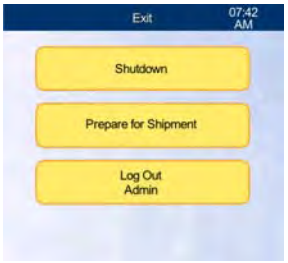
7.3 Logging In

Log into the HM5 as follows.

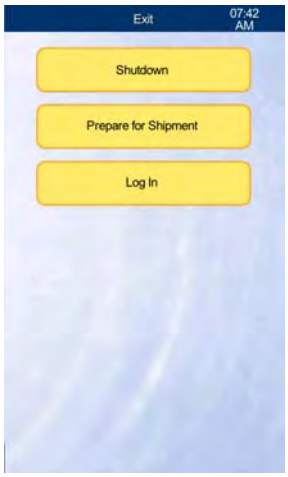


1. From the Home screen, select **Exit.**

2. Select **Log Out Admin**.



3. Select **Log In**, then enter your login name and password.





4. When the advanced or admin-level maintenance is complete, be sure to **Exit** and **Log Out** again to return the analyzer to its basic mode.

7.4 Automatic Login Set

Automatic login set allows the VetScan HM5 to revert to a specific user whenever rebooted.

1. Select **Settings > Admin Setting > User Management**.
2. Select **Automatic Login Set** and select the default user.

Section 8 Shutdown

This section describes how to shut down the VetScan HM5 analyzer.

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8.1.1 Temporary Shutdown 8-2

8.1.2 Longer Term Shutdown or Storage 8-3

8.1.3 Powering Off for Troubleshooting 8-3

8.1 Shutting Down the Analyzer

The HM5 is designed to be left on at all times, except when it will not be used for long periods. During such periods, shutdown functions are used to properly maintain the analyzer

- If the analyzer will be unused or powered off for more than a week, use the **Temporary Shutdown** option: see below.
- If the analyzer will be unused or turned off for more than two weeks, or will be shipped, use the **Prepare for Shipment** option: see "Longer Term Shutdown or Storage" on page 8-3.

CAUTION: ***Always*** *follow the instructions in this section when turning off the analyzer.*

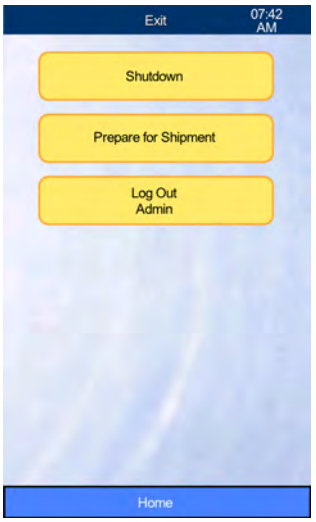
The analyzer uses an isotonic saline solution in its fluidic system. When the analyzer is shut down properly, as described below, it rinses its fluidic system to remove this solution. Simply turning off power does not allow it to perform this rinse, which can lead to salt build-up in the system.

CAUTION: *If an emergency occurs, turn off the analyzer using the power switch on the back of the instrument, and unplug the power cord from its outlet.*

8.1.1 Temporary Shutdown

If the analyzer will not be used for 7-14 days, shut it down as follows:

1. On the Home screen, select **Exit > Shutdown**.
2. Select **OK** to confirm.
3. When the analyzer displays a message and sounds a tone, power it off using the power switch on the rear panel. The off position is marked by the **O** symbol.



8.1.2 Longer Term Shutdown or Storage

If the analyzer will be unused for more than two weeks, or will be shipped, use the **Prepare for Shipment** option as follows.



CAUTION: *If this is not done before the analyzer is powered off for long periods, salt crystals can form blockages in the tubing.*

Required materials:

- Distilled water, 200 ml
- 1-liter flask, polypropylene (from Abaxis) or an equivalent container

1. From the Home screen, select **Exit**.
2. Select **Prepare for Shipment**.
3. Follow the instructions that appear on the display.

   The procedure drains the reagents from the analyzer, and flushes the Diluent from the internal tubing. An alarm sounds when it is safe to turn off the analyzer using the power switch on the back panel.

8.1.3 Powering Off for Troubleshooting

On occasion, the analyzer may freeze or require a reboot for troubleshooting. In these situations, proceed as follows:

1. Turn the analyzer off using the power switch on its back panel.
2. Turn the analyzer on.

Section 9 Troubleshooting

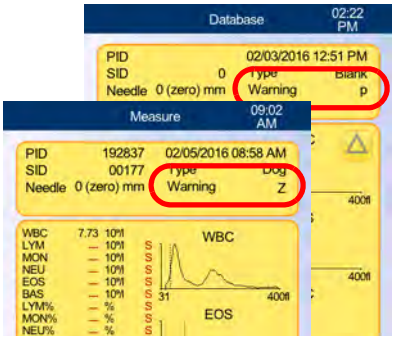
Use the information in this section to help diagnose and solve problems with the VetScan HM5.

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9.1 Warning Indicators

This section lists warning indicators (flags) that can appear in test results, along with possible solutions for each.



Capital-letter warning flags (**B**, **C, Z**, etc.) indicate WBC-related parameters, while lower-case flags (**b**, **c**, **p**, etc.) indicate RBC- or PLT-related parameters. This is true for *all* measurement cycles.

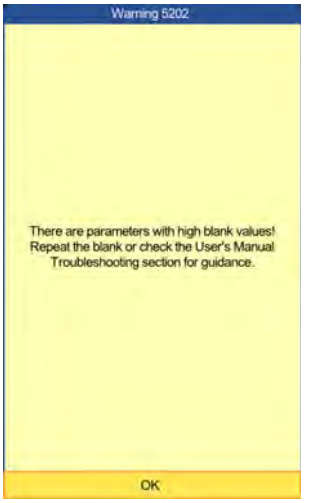
Warning flags appear at the top right of the blank or sample results screen.

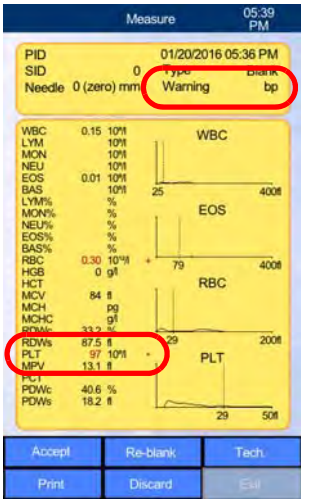
9.1.1 Blank Flags

A blank must be run at the beginning of each day before running samples, controls, or calibrations, or every 12 hours for 24-hour clinics. The blank measures the cleanliness of the analyzer and the purity of the reagents.

- If there are no warning flags and no values highlighted in red (accompanied by **+** or ***** **)**, accept the blank. The analyzer is then ready to run patient samples.
- If there are issues with the blank, the warning shown at right appears. Click **OK** to view the actual blank results on the blank results screen.

  Elevated values are shown in red.





High values for the following parameters cause the blank to fail and display these warning flags:

Parameter	High Blank Warning Flag	Blank Value Limit
WBC	B	0.50 x 10^9/l
EOS	X	0.20 x 10^9/l
RBC	b	0.05 x 10^12/l
HGB	H	10 g/dl
PLT	p	27 x 10^9/l

Other warning flags may be seen on a blank, such as c, C, and S.

9.1.1.1 High Blanks



CAUTION: *If the high blank value warning appears, accept or discard the blank and rerun it, but* ***do not begin running samples****. Instead, follow the troubleshooting procedures below according to the flags that appear in the results.*

There are parameters with high blank values! Repeat the blank or check the User's Manual Troubleshooting section for guidance.

If any high blanks are accepted without correcting causes, the blank flags will appear in the sample results, and the results for that parameter will not be reported, until the next acceptable blank is run and accepted. The analyzer will not allow QC or Calibration runs to be performed until the blank is acceptable.

A red **S** in the results indicates that a result was not displayed since an error occurred (such as a blank flag).

9.1.1.2 p, b Warning Flags

p and **b** flags can indicate salt and/or blood build-up. If either of these appears, do the following:

1. Visually inspect the Wash Head and dilution chamber below to make sure there is no salt or build-up. For the best view, examine from below. For details, see "Cleaning the Wash Head" on page 6-4.
   - ❑ If the Wash Head has significant accumulation, the Wash Head must be removed for cleaning: see "Removing and Cleaning the Wash Head" on page 9-15. While the Wash Head is removed, clean the area around the Wash Head mounting point if there is salt build-up there.
   - ❑ If the Wash Head is clean, perform a Soak Cleaning: see "Soak Cleaning" on page 6-6 then repeat the blank.
2. Check for blood debris in the dilution chamber. If debris is found, manually clean this area while performing Deep Cleaning (see "Deep Cleaning" on page 9-18) then rerun a blank.
3. If the **p** or **b** flags persist, perform a Soak Cleaning: see "Soak Cleaning" on page 6-6. Then repeat the blank.
4. If the **p** or **b** flags remain, contact Abaxis Technical Support.

9.1.1.3 X Warning Flags

X warning flags can indicate severe salt or blood build-up, or possible leaks in the Lyse 2 and/or Diluent reagent tubing. If an X flag appears, do the following:

1. Visually inspect the Wash Head and the dilution chamber below for salt or blood debris. For best access, view from below. See “Cleaning the Wash Head” on page 6-4. If debris is found, follow the directions for cleaning the Wash Head. Rerun the blank.
2. If the X flag persists, perform an Soak Cleaning: see “Soak Cleaning” on page 6-6, then rerun the blank.
3. If the issue has not been resolved, perform “Deep Cleaning” on page 9-18, then rerun the blank.
4. If the blank is still high for EOS, perform “Removing and Cleaning the Wash Head” on page 9-15. Remove blood debris from the dilution chamber while the Wash Head is pulled to the right during the cleaning process. Rerun the blank.
5. For continued X flags, check the Lyse 2 (orange) and Diluent (green) reagent tubing for bubbles or leaks. If either are found, attach the tubing more firmly to the analyzer, dip head or bottle cap. If the attachment is loose, cut 3-5 mm off the end of the tube and reattach. Then prime: **Maintenance > Reagent Status > Prime** and select Lyse 2 and/or Diluent.
6. If the flag persists, Remove the Lyse 2 (orange) and Diluent (green) reagent tubes from the back of the analyzer and hold them up so all of the fluids drain back into the bottles. Reattach the reagent tubes and prime them once: from the Home screen, select **Maintenance > Reagent Status > Prime** for Lyse 2 and/or Diluent. Run the blank.
7. If the EOS value is still high, open the analyzer’s back door, and examine the black syringe for any signs of salt residue on or near it. If salt or leaking fluid is present, contact Abaxis Technical Support.
8. If the **X** flag persists, contact Abaxis Technical Support.



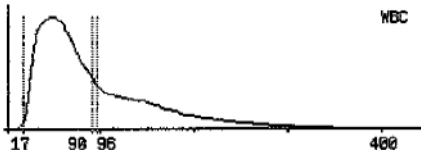
9.1.1.4 B, H Warning Flags

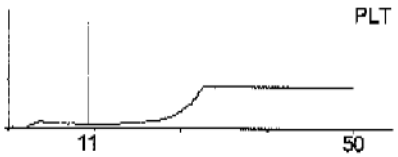
Warning Flag	Meaning	Solution
B	WBC blank is high	• **If B is the only flag:** check the Lyse (yellow) reagent tube for loose connections on the back of the analyzer and where the tubing connects to the bottle cap or dip head. If the tubing has stretched out at either location, cut the bulge off the tubing and reattach, then prime the Lyse. (From the Home screen, select **Maintenance > Reagent Status > Prime** for the Lyse.) • If **B** is accompanied by other flags (such as p, X or b), follow the troubleshooting process for those flags.
H	HGB blank is high	• Check for moisture, salt or blood debris on the HGB head (in the side door area, circled in red) and dry/clean if any is found. Reboot the HM5 then rerun the blank.  • Run Soak Cleaning or Deep Cleaning, then rerun the blank. • Run a self-test: from the Home screen, select **Maintenance > Diagnostics > Self-Test > Start**. If the self-test fails, call Abaxis Technical Support.

9.1.2 Result Warning Flags

Warning flags can appear in sample results as well as blanks. See the following chart to troubleshoot these flags.

Flag	Meaning	Description / Recommended action
E	No sample detected.	• If no values are shown (the results resemble blank results), verify that the sample tube is filled at least halfway. • If needed, lower the needle to -2 mm to reach the sample, and/or insert a sponge disk to raise the tube. See “Measurement Settings” on page 3-4. • Make sure the correct tube holder is being used for that size tube. • Run Soak Cleaning. • If the error persists, redraw the sample, making sure to fill the tube at least halfway, then rerun. If the error persists further, contact Abaxis Technical Support.

Flag	Meaning	Description / Recommended action
S	Particular value is too high or low to be measured.	• Check for other warnings, such as **X**, **p**, **m**, **M**, **c**, or **C**, and troubleshoot those to resolve the **S** flag.
M, **N**	WBC values are too high.	• This can occur with inadequate Lyse (yellow bottle) delivery. Make sure the Lyse tube (yellow) connects securely to the Lyse bottle and the reagent port on the back of the analyzer (if the connection is too loose, cut the bulge from the ends of the tube and reattach), then prime the Lyse and rerun the sample: from the Home screen, select **Maintenance > Reagent Status > Prime** for Lyse. • If the **M** flag persists, verify that the Lyse reagent tube is connected to the correct port on the back of the analyzer and to the correct bottle within the reagent pack. If bottles have been swapped, remove the reagent tubes from the back of the analyzer and hold the tubing up so all of the fluids drain back into the bottles then attach the tubing correctly and prime the tubes affected. • The **M** flag can also occur with legitimate very high WBC counts, as with leukemias: see the figure at right. Check the Lyse delivery system, and if no problems exist, perform a manual smear to verify the WBC count.  • If the **M** flag persists and the manual smear does not indicate a high WBC count, call Abaxis Technical Support.
c, **C**, **q**	Analyzer's aperture is clogged.	• Run 2-3 automatic self-cleanings (see "Automatic Self-Cleaning" on page 6-8). • Redraw a sample, making sure to transfer the sample into the tube immediately and mix well, then rerun. • If visible clots are seen in the original sample, perform a Deep Cleaning. If no visible clots, run a Soak Cleaning and rerun a new, well-mixed sample • Verify the software version is 2.3 or higher. • If the problem persists, call Abaxis Technical Support.
m	• RBC and/or PLT measurement exceeds the linearity limit. • A very dirty analyzer, contaminated reagent pack, or severely dehydrated patient.	• Make sure the sample is properly mixed, to prevent settling. • Visually inspect the Wash Head. If very dirty, remove and clean the Wash Head (see "Removing and Cleaning the Wash Head" on page 9-15), then rerun the sample. • If sample is hemolyzed, redraw and rerun. • Perform Soak Cleaning. If the warning persists, repeat the Soak Cleaning. • If the patient is severely dehydrated and fluid administration is indicated, discard the run and redraw after fluids have been absorbed. • If the **m** flag persists, call Abaxis Technical Support.

Flag	Meaning	Description / Recommended action
L	Insufficient Lyse reagent delivered to burst all RBCs (or lyse-resistant RBCs), platelet clumping or large platelets for a Cavalier King Charles Spaniel.	• If patient is a Cavalier King Charles Spaniel or other breed with known predisposition to macro-platelets, perform a manual smear. • If the draw was difficult, the platelets are low, or there were delays in filling the tube, redraw and rerun. • Make sure the Lyse tube (yellow) has no kinks, or bends and that nothing is compressing the tubing. • Check for bubbles in the Lyse tube. If found, prime the Lyse: see “Check Tubing” on page 4-4. • If no Lyse issues are found, rerun the sample with increased Lyse +0.1 ml, then if needed with +0.2 ml: see “Adjusting the Lyse Volume” on page 4-9. • If the L Flag still persists, draw a new sample, aiming for a clean needle puncture and fast transfer to the EDTA tube. • If the **L** flag still persists, call Abaxis Technical Support.
W	Severe platelet clumping or very large WBCs.	• If the cat platelet histogram resembles the diagram at right, redraw the sample, reduce delays in filling the tube, and mix well with at least 10-15 inversions immediately.  • If the **W** flag persists, call Abaxis Technical Support.
Y	• Reagent tubing connected to incorrect port or bottle, clogging, or insufficient Lyse 2 delivered. • If the **Y** flag is accompanied by many other warnings (**c**, **C**, **E**, **B**, **Y**), call Abaxis Technical Support.	• Make sure the Lyse 2 tube (orange) is connected to the Lyse 2 bottle. If not, disconnect the incorrectly connected tubes from the analyzer, and hold them up so the liquid in them flows back into the bottles. Connect tubes to the correct connections on the analyzer, bottle caps or dip tubes by color-matching the tubes, analyzer port, and bottle caps or dip tube heads, then prime Lyse 2. • If the tubing is already correctly connected, check the Lyse 2 tubing connections at the analyzer and the bottle cap/dip head. Make sure the tube is securely connected to the connector. If this reagent pack was newly installed, prime the Lyse 2 twice, then rerun the sample. • If the Lyse 2 tube is securely connected, run 1-3 automatic self-cleanings (see “Automatic Self-Cleaning” on page 6-8), then rerun the sample or blank that gave the **Y** warning. • If the **Y** flag persists, call Abaxis Technical Support.
Z	Lyse 2 delivery issues, or a dirty Wash Head or aperture.	• Check the Lyse 2 tube as described above for the **Y** flag. • If the Lyse 2 tube connected correctly, inspect the Wash Head and clean as needed (see “Cleaning the Wash Head” on page 6-4), then run 1-3 automatic self-cleanings (see “Automatic Self-Cleaning” on page 6-8). Rerun the sample. • If the **Z** flag persists, call Abaxis Technical Support.

9.2 Error Messages

9.2.1 Reagent Supply Errors

If a first Reagent Supply Error is displayed, proceed as follows before pressing **Prime**:

1. Check reagent tubing for loose connections for the reagent mentioned, in particular:
   - ❑ Where the tubing attaches to the rear of the analyzer.
   - ❑ Where the tubing attaches to the bottle cap or dip tube head (top of QCA).
2. If any connections are loose, attach more firmly by pushing the tubing further onto the hose barbs, bottle cap or dip tube head.
3. If tugging lightly on the affected clear tubes causes it to pop off of the attachment point, cut 3-5 mm off of the tip of the tubing, and reattach it to make a better seal.
4. Straighten the tubing if kinked or severely bent or being compressed by anything such as the foot of the analyzer.
5. Make sure the reagent bottle is not empty.
6. Prime the reagent tube by pressing the **Prime** button on the pop-up.
7. If a second Reagent Supply Error is displayed, open the door on the back of the analyzer, and check for any loose or disconnected tubes. Examine the seven white valves (circled in red) closely to see if any tubes have detached from them. Touch the tubes to help determine if they are tightly attached. Reconnect any tubes that are detached or loose, then select **Re-prime.**



8. If a third Reagent Supply Error appears, select **Abort** and contact Abaxis Technical Support.
9. If the reagent priming is successful, select **Back** and repeat the step before the Reagent Error appeared. If the reagent sensor was turned off during the error process, from the Home screen, select **Maintenance > Reagent Status**, and turn the sensor back **ON**.
10. Select **Calibrate Sensors**.
11. If the issue persists, call Abaxis Technical Support.

9.2.2 Fluid Sensor Error

If a screen shows a sensor calibration error, the system has turned off that reagent sensor.

1. Go through troubleshooting for "Reagent Supply Errors," on the previous page.
2. From the Home screen, select **Maintenance > Reagent Status**, and turn the sensor back **ON**.
3. Select **Calibrate Sensors** to recalibrate the failed sensor.
4. If the issue persists, call Abaxis Technical Support

9.2.3 Drain Pressure Error

Pressure errors occur when the analyzer is unable to empty its waste. This error can result from a kink in the waste tube, a full waste bottle, a salt or blood clot, or disconnected tubing in the analyzer.

1. Check the waste tube (red band) for pinching or kinks and straighten if necessary. Empty the waste bottle if needed.
2. Select **Drain**.

   The analyzer will make a series of clicking noises while it attempts the draining.
3. If the pressure error continues, touch **Re-Drain** and the analyzer will try again to clear the error by flushing fluids through the internal tubing.
4. If problem persists, open the analyzer's side door.

   a. Look for any debris in the tubing, especially around the puffer chamber (side door in the upper right, circled at right) and the tubing around the peristaltic pump (rear door lower left, as shown below).





   b. Check the puffer chamber drain tube for clots, and massage out any clots if possible.

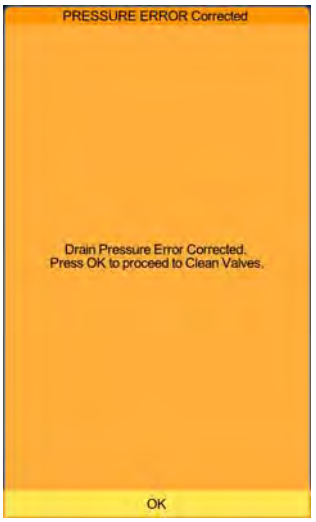
c. Check all tubing visible from the side door for clots, and remove and flush any tubing that has visible clots.

Note: *If any visible clot is found, after the warning is resolved, it is advisable to draw a fresh sample from the last patient.*

d. Make sure all internal tubing is properly connected to the correct ports, and no loose tubing ends are visible. Press **Re-Drain**.



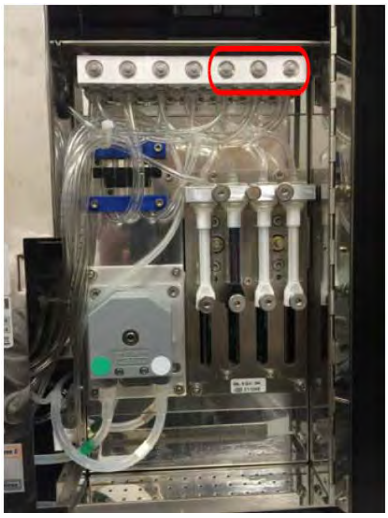
5. If the problem is not yet resolved, check whether the peristaltic pump tube has been overly flattened or is sticking to itself: see “Peristaltic Pump Tubing Replacement” on page 6-13.
6. Attempt to run a blank.
7. If the screen message indicates that the pressure error has resolved AND the blockage was due to clots in the valves, perform Valve Cleaning (only in software v2.3 and higher). The Valve Cleaning cycle will take about 20 minutes. Otherwise, select **Cancel**.
8. If the pressure error still persists, contact Abaxis Technical Support.



9.2.4 Vacuum Error

Vacuum errors can occur if a reagent bottle is empty, the Wash Head is moved without going through the on-screen prompts or one of the tubes inside the analyzer's back door becomes disconnected.

1. Open the analyzer's back door and look for any disconnected tubing and reconnect them. In particular, check the valves in the back door area as shown.



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Note: *If the tube falls off again immediately when the sample or blank run is attempted, the analyzer must be serviced: contact Abaxis Technical Support.*

2. Make sure no reagent bottles are empty.
3. Press each valve button several times to determine if any are stuck. Buttons should easily depress and pop back out. If a valve is stuck, contact Abaxis Technical Support.
4. Open the analyzer's side door to see if any liquid has spilled on the floor of the analyzer. Wipe up any liquid and power the analyzer off then on to re-home the needle. Run a blank to verify that the issue is resolved.
5. If the issue persists, open the analyzer's side door and look for any detached tubing. Dry and reconnect if any are found.
6. Grasp the measuring tube (shown at right) and push it in firmly while slightly rotating it to the right and left to be sure it is firmly seated.



7. Run a sample or blank to see if the issue is resolved.
8. If the issue persists, contact Abaxis Technical Support.

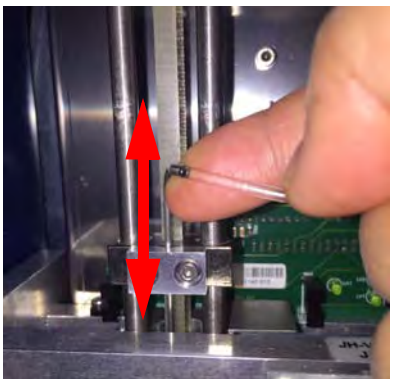
9.2.5 Needle Motor Errors

Sampling and Horizontal Needle Motor errors occur if the needle inside the analyzer's side door cannot move up and down or side to side, respectively.

9.2.5.1 Sampling Errors

Try the following in the order shown.

1. Open the side door, and locate the sampling needle (the thin tube which passes through the Wash Head).
    a. If the needle is bent or damaged, call Abaxis Technical Support.
    b. Move the needle away from any part it may be touching. If you move the needle, reboot the analyzer using the switch on the back of the analyzer.
    c. Make sure the Wash Head thumbscrews are tight (see picture of screws on the next page). Tighten them if they are loose and select **Retry**.
2. If the error repeats:
    a. Turn the analyzer off.
    b. Grasp the needle and move it up and down as far as able 3-4 times to relubricate the guide bars.
    c. Turn the analyzer back on and run a blank.



If the error continues, call Abaxis Technical Support.

9.2.5.2 Horizontal Needle Motor Errors

Try the following in the order shown.

1. Examine the area to the right and left of the needle and Wash Head assembly for any blockage (including salt build-up) preventing left and right motions. If anything is found:
    a. Remove the obstruction and/or clean the salt debris.
    b. Select **Retry**, or turn the analyzer off and on again, then attempt to run a blank.
    c. If the issue repeats, call Abaxis Technical Support.
2. If no obstruction is found:
    a. Turn the analyzer off.
    b. Move the needle out of the dilution chamber (if it is in the down position) then move the whole assembly left and right 3-4 times to redistribute the lubricant on the horizontal bars.
    c. Turn the analyzer back on and run a blank.
    d. If the issue repeats, call Abaxis Technical Support.

9.2.6 Sample Rotor Errors

The sample rotor turns the door to deliver the sample tube to the internal needle during a measurement. The Sample Rotor error indicates a blockage preventing the sample door from turning or an issue with the sample rotor motor.

Correct this error as follows:

1. Open the door on the analyzer's right side.
2. Make sure the two thumbscrews holding the Wash Head bracket in place are tight. If they aren't, tighten them.
3. Look for and remove anything that may be blocking the sample door from rotating.
4. Select **Retry** or reboot the analyzer then attempt to run a blank to determine if the issue is resolved.
5. If the issue repeats, call Abaxis Technical Support.

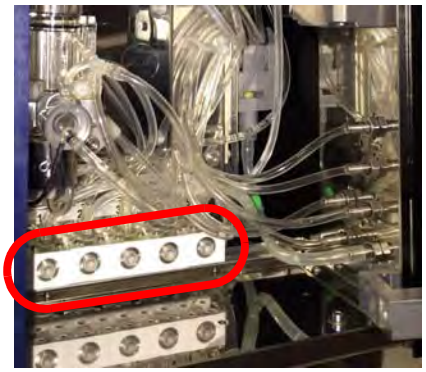


9.2.7 MValve Errors

The MValve error occurs when the controlling computer board fails or if a valve is stuck.

Correct this error as follows:

1. Open the analyzer's back and side doors.
2. Push the clear button on the front of each of the 12 valves (valves 1-5 circled at right) 2-3 times.
3. If debris is visible in one of the tubes attached to the valves, detach and remove that tube and attempt to massage the debris out of the tube.
4. Reattach the tube to its connection point.
5. Select **Retry**.
6. If the issue persists, turn the analyzer off and then on again, then attempt to run a blank.



9.2.8 MicroDilutor Motor Error

A MicroDilutor Motor error indicates an issue with the motor that draws blood into the sample needle.

Correct this error as follows:

1. Turn the analyzer off and open its side door.
2. Locate the cylinder (circled), place a finger on it and spin it back and forth several times.
3. Turn the analyzer back on and attempt to run a blank.
4. If the blank runs, perform an Soak Cleaning.



9.2.9 Diluent and Lyse Dilutor Motor Errors

These errors refer to the motors that move the syringes in the back of the analyzer.

Correct this error as follows:

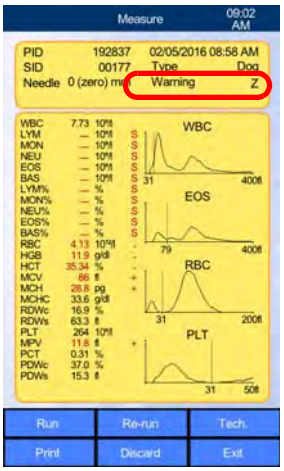
1. Check for kinks in the reagent tubing from the analyzer to the bottle caps or dip tube heads.
2. If no kinking is found, turn the analyzer off, open the back door of the analyzer and manually move the syringes up and down a few times.
   - ❑ If they move, turn the analyzer back on and attempt to run a blank.
   - ❑ If they do not move or appear to be damaged, call Abaxis Technical Support.



9.3 Evaluating Unexpected Results

If the analyzer results do not support the observed clinical symptoms, try the following steps:

1. Look for warning flags on the analyzer screen.

   If a flag is found, go to the troubleshooting procedure for that particular flag.

   Note: *When viewing results through a practice management software, keep in mind that some PMS systems do not show the flags from the analyzer patient file.*

2. Examine the platelet histogram for signs of clumping.

   For details, see "Cat: Clumped PLT, Increased LYM" on page D-10 for interpretation. Redraw and rerun if the PLT histogram indicates clumping.

3. Open the side door of the analyzer and look for any salt or blood debris. If any is found, clean the area necessary. Go to "Additional Cleanings and Processes" on page 9-15 for various cleaning procedures which can be run.

4. Run a new blank then rerun the sample to see if results now clinically fit.

5. If results are still not supporting the clinical symptoms, call Abaxis Technical Support

9.4 Additional Cleanings and Processes

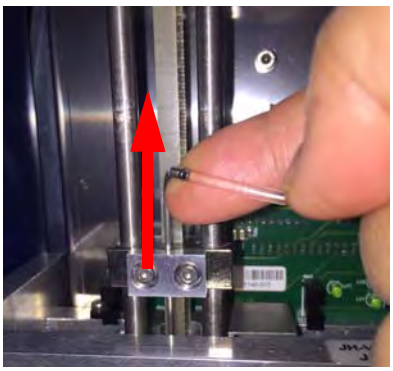
9.4.1 Removing and Cleaning the Wash Head

If salt or blood build-up on the Wash Head cannot be removed by merely wiping the surface or if salt debris is seen above the Wash Head, remove the Wash Head for more thorough cleaning.

1. Power off the analyzer using the switch on its back panel.

2. Open the door on the right side of the analyzer.

3. If the needle is not in the highest position, place a finger under the bend in the needle and push up until the needle will no longer rise.



CAUTION: *Take care not to bend the needle in the dilution chamber below.*

4. Move the Wash Head assembly to the right (arrow) until it stops.

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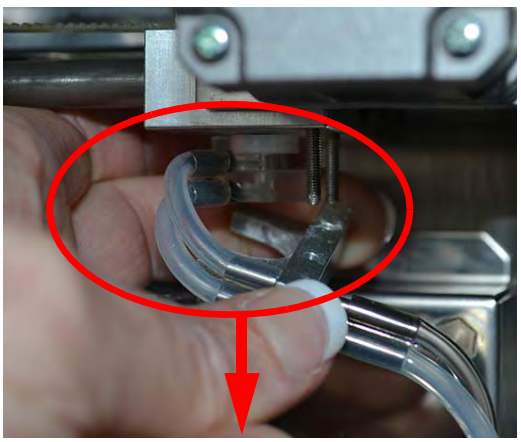


5. Loosen the thumbscrews (solid circle), and remove both completely. Take care not to drop them into the counting chamber (dashed circle).



6. Gently pull the Wash Head bracket (circled) straight down, then pull the Wash Head straight down.

   If the needle is pulled down with the Wash Head, hold the needle in place from above so it doesn't descend with the Wash Head.



7. Remove the Wash Head from the tubing, and submerge it in a container of warm distilled water.

8. If the two tubes from the Wash Head bracket are dirty or clogged, remove them from the bracket and submerge them as well.

9. Holding the metal tube connectors on the Wash Head, swing the Wash Head back and forth while submerged in the warm distilled water to increase flow through the central hole.



CAUTION: *Do not insert anything through the center of the Wash Head, as the Teflon there is easily damaged.*

10. After it has soaked for a couple of minutes, clean the top and bottom surfaces of the Wash Head by wiping thoroughly with a moist, lint-free tissue to remove all salt residue. Large, hard salt residues may require longer soaking times.

11. Inspect the Wash Head to make sure it is free of salt and blood build-up.

12. Reconnect the two tubes from the Wash Head bracket.

13. Make sure the Wash Head is right-side up, with the white disk facing upward as shown at right, and reinsert it into the round opening in the Wash Head bracket.



14. Slide the bottom of the Wash Head into the crescent-shaped notch, as shown.



15. Align the Wash Head with the needle, and the bracket with the two thumbscrew posts, as shown at right.
16. Push the Wash Head/bracket set upwards into place.
17. Screw on both thumbscrews tightly.



9.4.2 Deep Cleaning

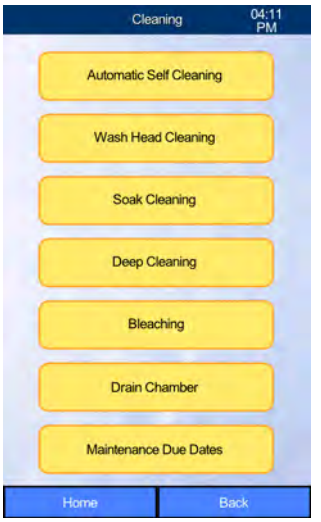
Deep Cleaning should be performed as an emergency cleaning procedure when an analyzer is displaying a trend of high HCT (particularly due to increasing MCV), even when routine Soak Cleaning has been regularly performed. This procedure will perform a more thorough cleaning of the HM5. Call Abaxis Technical Support before performing this procedure.



This procedure requires a lint-free cloth moisturized with distilled water, a new tube of HemaClean and an in-date (not expired) unopened HM5 normal control.

1. Open the side door and identify the Wash Head (Red Circle) and the dilution chamber (Blue Rectangle).
2. If salt or blood debris is found on the Wash Head proceed to clean the Wash Head: See “Cleaning the Wash Head” on page 6-4.
3. Navigate to **Maintenance > Deep Cleaning**.





4. Remove the cap from a new tube of HemaClean and place the tube on the tube holder at the front of the analyzer.
5. Select **Next** to start the cleaning. The Deep Cleaning will be complete in approximately 20 minutes.
6. Run Quality Control using a new, unopened HM5 control. For detailed instructions, go to "Quality Control" on page 5-2. If any warning message pops up, contact Abaxis Technical Support.



Note: *The analyzer will prompt to run a Blank before the first QC measurement.*

7. If two out of three Quality Control runs are within target range, the analyzer is ready to run blood work. If two out of three runs fall out of target range or have any error warnings, call Abaxis Technical Support at (844) 247-5271 for help in calibrating the instrument.

9.4.3 Removing and Cleaning the Aperture

The analyzer's aperture may get clogged or collect debris over time. If Soak Cleaning or Deep Cleaning does not resolve the problem, the aperture may need a more thorough cleaning or replacement.



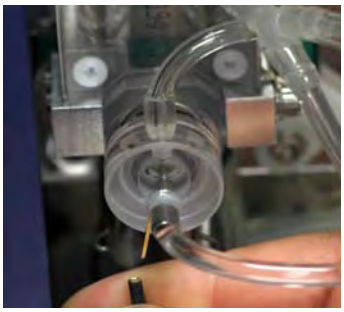
Clean the aperture as follows:

1. First remove the fluid from the dilution chamber by selecting **Maintenance > Cleaning > Drain Chamber**.

2. Open the door on analyzer's right side, and locate the measuring tube which contains the aperture (circled at right).



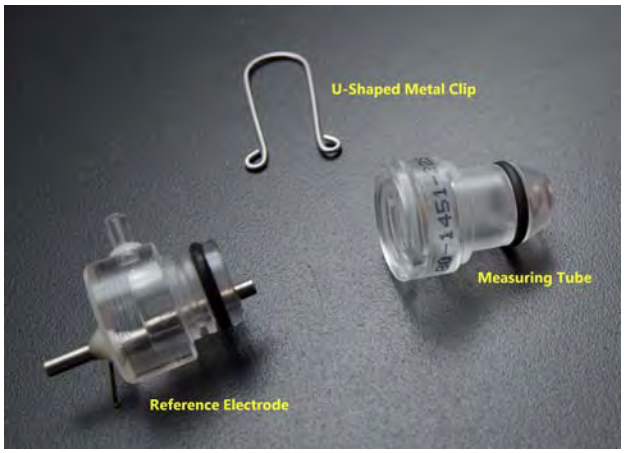
3. Disconnect the black wire from the left side of the measuring tube assembly by sliding it down and to the left.



4. Grasp the measuring tube and pull while slightly twisting left and right, until it comes off. This is a push-fit part so it should pull straight out.



5. Disconnect the tubing and pull off the U-shaped clip so the two pieces can be separated.



6. Place the measuring tube on a clean counter with the red or pink aperture facing up. Drop two drops of bleach onto the aperture and let it soak for ten minutes.



7. Rinse off the bleach with distilled water.

8. Put the reference electrode and measuring tube back together, and slide the U-shaped clip back into place.



9. Push the probe back into the body of the dilution chamber and reattach tubing.



10. Reattach the black wire.
11. Run a blank.
12. If the blank displays flags and results in red, contact Abaxis Technical Support.

9.4.4 Bleach Cleaning

If reagent pack contamination is suspected, use this procedure to decontaminate the analyzer and reagent tubing before attaching a new reagent pack. Soak Cleaning should be performed first to resolve any high values or blanks.



CAUTION: *Call Abaxis Technical Support before performing a Bleach Cleaning.*

This process requires distilled water (380 ml) and bleach (20 ml regular strength or 12 ml concentrated).

1. From the Home screen, select **Maintenance > Cleaning > Bleaching**.
2. Follow the on-screen directions.

   The analyzer drains the remaining fluids from inside the analyzer, then draws in the bleach solution. It then performs a soak for ten minutes. The bleach is then drained, and distilled water is pulled into the analyzer to soak for six minutes. The distilled water is then drained and the analyzer is ready for a new reagent pack to be installed.

9.5 Printer Troubleshooting

The analyzer can print to its built-in printer (on top of the unit) or to certain external USB printers. Use these suggestions to solve problems with either printer.

9.5.1 Built-in Printer

If the analyzer's built-in printer is not printing, check the following in this order:

1. Is the lid closed properly? If the light is blinking, one side of the printer lid may not have snapped shut.
2. Is the paper roll inserted correctly? Make sure to lower the paper roll in with the paper coming up the front from the bottom of the roll. Pull 1 or 2 inches of paper out and snap the lid closed. If the paper is inserted upside down, the paper will feed but will be blank.
3. If the paper is inserted, but it is not rolling properly, open the printer lid and clean the roller with a lint-free tissue to remove any debris.
4. If nothing prints and the analyzer was previously connected to an external printer, from the Home screen select **Settings > Printer**, then set **Device** to built-in. If a USB cable is still attached to the external printer, disconnect the cable from the analyzer.

9.5.2 External Printer

The analyzer can print to selected external USB printers. For a list of current compatible printers, call Abaxis Technical Support.

If an external printer encounters a problem, it attempts to transmit an error message to the analyzer. If the HM5 is unable to interpret that information it may freeze. Try resolving the printer issue, then reboot the analyzer.

1. Make sure the external printer is powered on and that the ink cartridges are not low on ink, empty or expired. If no ink lights are blinking or solid, try resetting the printer by unplugging it from power for 60 seconds.
2. Make sure the printer does not have a paper jam.
3. Try printing a test page from the printer.
4. Check the printer settings in the analyzer: from the Home page, select **Settings > Printer > Device**. If the analyzer shows **USB** for this setting, it is probably not recognizing the printer attached. Try reseating the USB cable from the printer to the HM5 then reboot the analyzer. If the device setting still shows USB instead of the exact printer type, try to print a result to trigger the connection.
5. Check that the USB A-B cable is securely attached to the analyzer and to the printer. Most printers have an Ethernet and a USB B port. Make sure the USB B end of the cable is not inserted into the Ethernet port.

9.5.2.1 If Results Are Not Combining With the VS2

Try the following in the order shown.

1. Check that VS2 communication is enabled: from the Home page, select **Settings > Communication > VSx Communication**, then set **VSx Link** to **USB** and **VSx-HM5 Combining** as needed.
2. From the Home page, select **Settings > Printer > Device**, and make sure the paper size is set to the size of the paper being used.
3. Select **Printout** and make sure the margins are correct: top and left margin both = 0.5.
4. Select **Format** and make sure **VSx Separate Page** is set to **Disabled** to combine on one page.
5. Make sure the Patient ID matches that on the VS2.
6. Make sure the date is the same in both analyzers and that the **Combine Within** setting is inclusive of the dates of the run.
7. Check the USB A-B cable attaching the VS2 to the HM5: make sure the B (square) end is in the USB B port on the back of the VS2, and the A (flat) end is in a USB A port on the back of the HM5.

Section 10

Specifications

This section contains technical specifications for the VetScan HM5 system, and lists its linearity ranges.

Section Contents

10.1 VetScan HM5 Specifications 10-2
10.2 Linearity Ranges 10-3
10.3 Precision 10-4

10.1 VetScan HM5 Specifications

Sample volume	25 µl of whole blood in three-part mode, 50 µl of whole blood in five-part mode. 50 µl of whole blood in five-part prediluted mode of 1:6; 25 µl of prediluted blood in three-part prediluted mode of 1:6.
Chambers	1 unified chamber for diluting whole blood and counting.
Reagent system	VetScan HM5 Reagent pack.
Aperture diameter	80 µm.
Throughput	24–30 tests/hour in three-part mode, 16–20 tests/hour in five-part mode.
Sampling method	Open tube system with automatic sample rotor, support for all HM2 and VetScan HM5 test tubes.
Sample types	Five-part mode: dog, cat, horse, alpaca, llama, cynomolgus macaque, rhesus macaque, control. Dog2 and Cat2 are the dog and cat profiles, but may be adjusted for puppy and kitten reference ranges, if desired. Three-part mode: mouse, rat, rabbit, ferret, pig, cow, sheep, goat, guinea pig, primate (primate is research only).
Clog prevention	High-voltage pulse on aperture in each analysis cycle and chemical cleaning of the aperture using Cleaner reagent.
Cleaning procedure	High-voltage burn of the aperture, deep cleaning, chemical cleaning of the aperture.
Quality control	Support for five-part differential control blood. QC parameters include: mean, ± range, SD and CV for all measured and calculated parameters, 16- and 64-day Levy-Jennings charts, separate QC database.
Calibration	Three-measurement automatic calibration of WBC, HGB, RBC, PLT, MCV, RDWc, MPV, and EOS absolute.
Multi-user feature	Three-level multi-user operation with selective privilege levels, user identification with ID and password. Contact Abaxis for more information.
User interface	Easy-to-use, menu-driven touchscreen user interface with on-screen help.
Languages available	English, French, German, Italian, Spanish, Czech, Polish, Portuguese, and Russian. For other languages, contact Abaxis Technical Support — see page 1-3.
Data capacity	5000 results, including RBC, PLT, WBC three-part and five-part histograms on-board. Data can be saved to USB drive or downloaded to computer.
Host computer interface	Four USB A ports, one USB B port, and one Ethernet port. Support for ASCII-based communication protocol only (V3.1).
Data back-up method	Port for USB drive on side and back panels.
Software upgrade method	USB drive.
External printer interface	USB.
Built-in printer	“Easy Paper Operation” built-in thermal printer.
Display	240x128-dot, high-contrast, backlit, graphics liquid crystal diode.
External keyboard	Standard USB-compatible keyboard.
Power requirement	12V DC, 5 A, 60 W.
Power supply unit	External, auto-ranging power unit for 100–120 or 200–240 VAC, 50–60Hz.
Operating temperature	59–86 °F (15–30 °C). Optimal temperature is 77 °F (25 °C).
Dimensions (W x D x H)	12.6 x 10.2 x 14.4 in (320 x 260 x 365 mm).
Net weight	27 lbs (12.3 kg).

10.2 Linearity Ranges

The VetScan HM5 is guaranteed to provide specified accuracies within its linearity range when properly calibrated and maintained. Beyond this range, results may still be displayed, but accuracy is no longer guaranteed.

If the value is over the maximum range of guaranteed linearity, the instrument cannot measure it, and the result will be marked with an **E**, **m**, **M**, or **N** flag.

To measure a sample whose parameters exceed the maximum linear value indicated in the table below, predilution is recommended.

The following tables list the linearity ranges for primary parameters in normal measuring mode and prediluted mode.

Table 10-1: Linearity Ranges in Normal Measuring Mode

Parameter	Linearity Ranges	Maximum	Unit
WBC	0–100	150	10^9 cells/liter
EOS	0.2–3.0	10.0	10^9 cells/liter
RBC	0–15	20	10^{12} cells/liter
PLT	0–700	1000	10^9 cells/liter
HGB	0–250	400	g/l
HCT	0–100	—	%
MCV	30–150	—	Fl
MPV	3–30	—	Fl

Table 10-2: Linearity Ranges for Prediluted Mode

Parameter	Linearity Ranges	Maximum	Unit
WBC	2–200	300	10^9 cells/liter
EOS	0.2–3.0	10.0	10^9 cells/liter
RBC	1–30	40	10^{12} cells/liter
PLT	100–2000	3000	10^9 cells/liter

10.3 Precision

The following precision parameters were established using normal level control on one instrument, with ten replicate measurements performed in one day.

Table 10-3: Control Parameter Precision

Parameter	Mean	SD	%CV
WBC (10^3 cell/µl)	8.05	0.15	1.89%
RBC (10^6 cells/µl)	4.49	0.111	2.44%
EOS (10^3 cell/µl)	5.00	0.07	1.32%
HCT (%)	40.39	1.01	2.51%
HGB (g/L)	125.66	1.71	1.36%
MCV (fL)	90.03	0.50	0.56%
PLT (10^3 cell/µl)	248.36	18.30	7.37%
MPV (fL)	12.69	0.177	1.39%

Appendix A

Introduction to Veterinary Hematology

This appendix introduces several fundamental concepts of veterinary hematology. Having a basic knowledge of these concepts will help you better understand the results from the analyzer.

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A.1 Function of Blood A-2
A.2 Composition of Blood. A-3
A.3 Blood Cell Parameters A-4
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A.1 Function of Blood

Blood circulates in the body and acts as a transport medium that carries oxygen, essential nutrients, and other materials to the cells of the body. It also serves to transport waste products for disposal. Neurons, muscle cells, connective tissue cells, and epithelial cells draw their nourishment from interstitial spaces, and respond to the glucose and oxygen content of that environment. Fresh supplies of oxygen and glucose are exchanged with the blood circulating in the capillaries. Blood receives its oxygen from the lungs and glucose from the intestines and liver.

Normal cell function depends on the rapid removal of toxic metabolic products (CO_2 and NH_3) from the interstitial fluid environment. These waste products are taken up by the plasma and red blood cells, and eliminated as the blood passes through the kidneys and lungs. Blood also delivers hormones, lipids, amino acids, salts, and vitamins, and removes urea and conjugated acids.

Blood distributes the heat generated by metabolizing body cells, so that body temperature is maintained at a constant level. In the event of vascular injury, blood platelets and plasma coagulation mechanisms prevent blood loss by aggregating with other platelets to form large hemostatic plugs (clots).

White blood cells protect against infections by identifying and killing invasive bacteria.

The number, size and distribution of blood cells provide important information for clinical diagnosis and therapy.

A.2 Composition of Blood

Whole blood contains three cellular components:

- Red blood cells (erythrocytes, RBC)
- White blood cells (leukocytes, WBC)
- Platelets (thrombocytes, PLT)

Table A-1: Cell Composition of Whole Blood*

	Red Blood Cells	**White Blood Cells**	**Platelets**
Normal density	5–12 x 10^{12} cells/l	6–15 x 10^{9} cells/l	100–700 x10^{9} cells/l
Nucleated?	No **	Yes	No
Sub-populations and their percentages	RBC: 99.9% NRBC: ** (Nucleated RBC) 0.1%	GRAnulocytes: 65% NEUtrophil: 60% EOSinophil: 4% BASophil: 1% LYMphocytes: 32% MONocytes: 3%	
Shape, size	Biconcave (donut) shape diameter: 5–7 µm thickness: 1.8–2 µm	GRAnulocytes: 13–16 µm LYMphocytes: 8–15 µm MONocytes: 15–25 µm	Fragments with a diameter of 2–4 µm
Volume of cell	30–80 fl	50–1500 fl	5–15 fl
Volumetric% in whole blood	40–45%	0.1%	0.3%

* Data generated using whole human blood.
** Mature mammalian RBCs are non-nucleated.

A.3 Blood Cell Parameters

A.3.1 Red Blood Cells, Hemoglobin

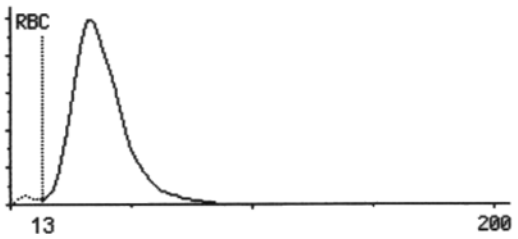
Red blood cells — RBC — are formed in the bone marrow. A mature dog red blood cell is non-nucleated, and has a mean corpuscular volume (MCV) of approximately 70 fl. RBCs are the most numerous cell type in blood. There are approximately 5–10 x 10^{12} cells/l in the blood of a healthy dog. RBC counts and MCV are directly measured primary parameters.

Hematocrit — HCT — is the ratio of the volume of RBCs to the total volume of blood. HCT is the simplest way to measure the degree of anemia, and is calculated from the RBC and MCV values:

$$HCT_{percent} = (RBC \times MCV) / 10$$

$$HCT_{absolute} = HCT_{percent} / 100$$

Red Blood Cell Distribution Width — RDW — is a measure of RBC anisocytosis, the degree of cell size variation. In a healthy sample, RBCs demonstrate a normal (Gaussian) distribution (bell curve), as shown at right. RDW can be characterized by a standard deviation (RDW-SD) or a coefficient of variation (RDW-CV) represented as a percentage.



Hemoglobin — HGB — is the main component of RBCs. It is a conjugated protein (with Fe), and its main function is to transport oxygen from the lungs to tissues and carbon dioxide from the tissues back to the lungs. HGB is the best measure of blood's oxygen-carrying capacity.

Mean Corpuscular Hemoglobin — MCH — is the average hemoglobin content of RBCs, and is calculated from RBC and HGB values:

MCH = (HGB / RBC) x 10, reported in picograms or fmol

Mean Corpuscular Hemoglobin Concentration — MCHC — is the concentration of HGB in an *average* RBC, calculated from the HGB and HCT values:

$MCHC = HGB / HCT_{absolute}$, reported in g/dl, g/l or mmol/l

Mean Corpuscular Volume — MCV — is the average size (volume) of red blood cells in the blood.

A.3.2 White Blood Cells

White Blood Cells — WBC — are formed in the bone marrow. During their maturation sequence they differentiate from the stem cells into mature sub-populations. WBCs are nucleated and classified as granulocytes (neutrophils, eosinophils, and basophils), lymphocytes, and monocytes. WBCs are equipped with all cell organelles necessary to perform vital protective functions in the body.

Normal WBC counts are a fraction of the RBC population. In pathological conditions, the WBC count can increase dramatically (up to 300 x 10^9 cells/l in extreme leukemia). In these cases, predilution of the sample is recommended for the most accurate results (see “Three-Part Differential Method” on page B-3).

Three-part differential histograms (volume distribution curves) of WBCs can be used as a simple, visual evaluation of the number and relative percentage of lymphocytes (LYM, LYM%), monocytes (MON, MON%), and granulocytes (GRA, GRA%).

WBC-related parameters are defined as follows:

WBC = LYM + MON + GRA

LYM% = LYM / WBC

MON% = MON / WBC

GRA% = GRA / WBC

NEU% = (GRA – EOS – BAS) / WBC

EOS% = EOS / WBC

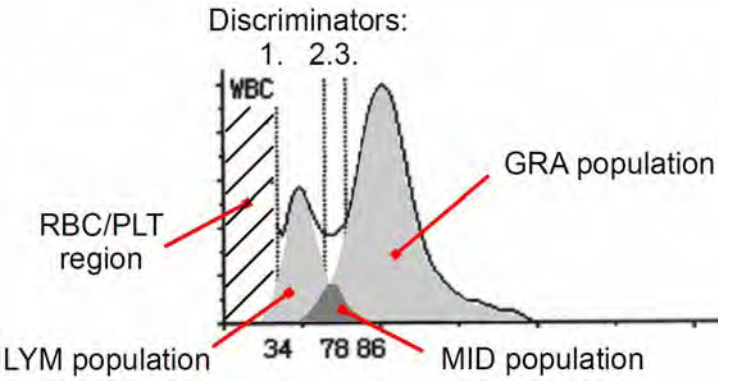
BAS% = BAS / WBC

Elevated WBC counts can affect other differential parameters. It is highly recommended that abnormal WBC and other cell differentials be confirmed by a manual blood smear, as is the case with all automated hematology analyzers.[1]

A.3.3 Automated WBC Classification

The analyzer evaluates each sample as a unique population, using dynamic cellular discriminators to assess the cellular distribution most accurately. To determine WBC sub-populations, the analyzer first sets “discriminator 1” at the limit of hemolysed RBCs + PLTs (on the left in the following graph) and LYM population, then fits normal distribution curves to the remaining WBC histogram (shown below in different shades of gray).

1. Bessman, JD. *Automated Blood Counts and Differentials. A Practical Guide.* (Baltimore: Johns Hopkins University Press, 1986), p. 107.

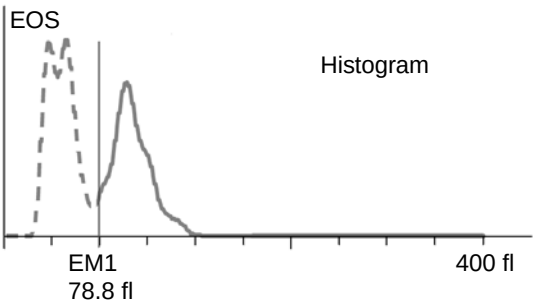


Eosinophilia is occasionally depicted as a peak between the MON and GRA classifications.

As with any automated system, good laboratory practice requires that all abnormal results be verified by slide (blood smear) review.

A.3.4 Eosinophils

Eosinophils — EOS — are granulocytes that are specialized to attack parasites, such as worms and protozoa. They are also the primary effector cells in allergic symptoms. In most species they can be identified morphologically by the presence of eosin-staining (red) granules.



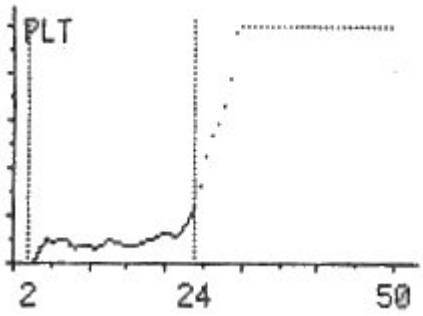
A.3.5 Platelets

Platelets — PLT — are non-nucleated fragments of the megakaryocyte in mammals. Note that platelets are formed by cellular fragmentation. Therefore, the platelet histogram normally has a logarithmic shape on the left side, and a normal shape on the right side ("log-normal" distribution).

Normal PLT concentrations range from 200–800 x 10^9 cells/l (for dogs), depending on the mean platelet volume (MPV), but can vary from 0–1000x10^9 cells/l under certain circumstances.

PLTs are relatively small compared to RBCs. The mean platelet volume — MPV — is approximately 10 fl, so in many species PLTs can effectively be separated from RBCs by their size.

Platelet aggregation is common, particularly in feline species, and is often depicted by a flattened, lumpy histogram, as shown at right. This effect can be minimized with proper sample collection and vortex mixing of the sample (up to 30 seconds) before analysis.



The analyzer calculates the volumetric ratio of PLTs in whole blood as follows:

$PCT_{percent} = (PLT \times MPV) / 10$

$PCT_{absolute} = PCT_{percent} / 100$

Typically, PCT = 0.003 = 0.3%

Platelet Distribution Width — PDW — is a measure of platelet anisocytosis, the degree of size variation. In a healthy sample, platelets demonstrate a Log normal distribution. PDW can be characterized by a standard deviation (PDW-SD) or a coefficient of variation (PDW-CV) represented as a percentage.

A.4 Normal Hematology Ranges

The following table summarizes normal ranges of blood cell parameters. Keep in mind that normal values vary from population to population, even geographically.

Parameter	Unit	Dog	Cat	Horse	Cow	Pig	Mouse	Rhesus–RUO*	Cyno–RUO*
WBC	10^9 cells/l	6–17	5.5–19.5	5.4–14.3	4–12	11–22	6–15	9.3-22.0	2.0-21.0
LYM	10^9 cells/l	1.00–4.80	1.5–7.0	1.50–7.70	2.50–7.50	5.5–11.1	3.40–7.44	4.0-13.86	0.94-9.26
MON	10^9 cells/l	0.2–1.50	0.0–1.50	0.0–1.50	0.0–0.84	0.66–1.32	0.0–0.6	0.0-0.76	0.01-0.57
NEU (or GRA)	10^9 cells/l	3.0–12.0	2.50–14.0	2.30–9.50	0.6–6.70	(5.0–10.0)	(0.5–3.80)	1.3-11.0	0.0-14.21
EOS	10^9 cells/l	0.0-0.8	0.0-1.0	0.0-1.0	0.1–1.0			0.0-0.25	0.00-0.23
RBC	10^{12} cells/l	5.5–8.5	5–10	6.8–12.9	5–10	5–8	7–12	4.4-6.2	5.0-6.5
HCT	%	37–55	24–45	32–53	24–46	32–50	35–45	36.0-48.0	38.0-52.0
MCV	fl	60–77	39–55	37–59	40–60	50–68	45–55	71-86	69-87
HGB	g/l	120–180	80–150	110–190	80–150	100–160	122–162	109-147	120-156
MCH	pg	19.5–24.5	12.5–17.5	12.3–19.7	11–17	17–21	11.1–12.7	21.8-26.2	21.4-26.2
MCHC	g/l	310–390	300–360	310–390	300–360	300–340	223–320	287-323	278-330
PLT	10^9 cells/l	165–500	300–800	100–400	100–800	325–715	200–450	216-502	261-629
MPV	fl	3.9–11.1	12–17						6.8-11.6

Parameter	Unit	Rat	Rabbit	Ferret	Guinea pig	Sheep	Goat
WBC	10^9 cells/l	2.1–19.5	3–11.5	2–10	5.0–17.0	4–12	4.0–13.0
LYM	10^9 cells/l	2.0–14.1	2.0–9.10	0.4–6.50	2.0–15.0	2.0–9.0	2.0–9.0
MON	10^9 cells/l	0.0–0.98	0.0–0.5	0.1–0.7	0.0–0.0	0.0–0.75	0.0–0.5
(GRA)	10^9 cells/l	(0.1–5.40)	(0.0–2.80)	(0.8–4.50)	(1.0–11.0)	(0.7–7.30)	(1.20–8.00)
RBC	10^{12} cells/l	5.3–10	5–9	7.8–13	4.8–6.3	9–15.8	5.5–8.5
HCT	%	35–52	36–50	36–56	30–44	27–45	37–55
MCV	fl	50–62	57–70	40–48	50–90	28–40	60–77
HGB	g/l	140–180	127–163	124–187	80–150	90–150	120–180
MCH	pg	16–23	17.5–23.5	13.5–16.5	12–13	8–12	19.5–24.5
MCHC	g/l	310–400	300–380	321–355	300–360	310–340	310–340
PLT	10^9 cells/l	500–1370	218–641	96–776	200–600	100–800	200–500
MPV	fl						

*RUO is Research Use Only

A.5 Veterinary Hematology References

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Appendix B

Operating Principles

This appendix explains the basic operating principles of the analyzer.

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B.1 Complete Blood Count (CBC) B-2
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B.1 Complete Blood Count (CBC)

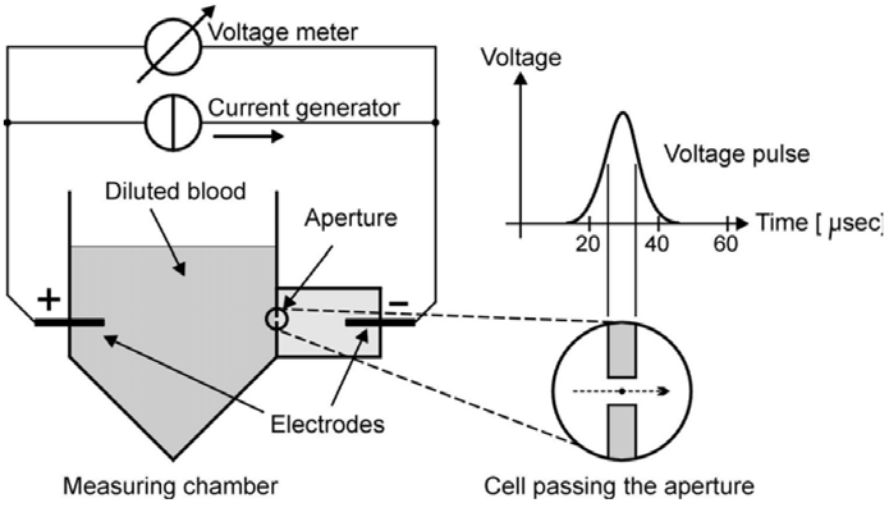
The analyzer utilizes impedance technology whereby electrically neutral blood cells pass through an electrically charged aperture thereby generating a “pulse.” Cell counts are determined by the number of pulses measured in a given volume of blood over a set period of time. The decrease in electrical conductance (degree of intensity) as measured is directly proportional to the cell volume. This size discrimination, along with susceptibility to various lysing agents distinguish the basic cell types (red, whites, platelets).

B.2 Measurement Methods

This section provides an overview of the hematology measurement methods used by the analyzer.

B.2.1 Volumetric Impedance Method

The analyzer uses a volumetric impedance method of counting blood cells. The following figure illustrates this method.

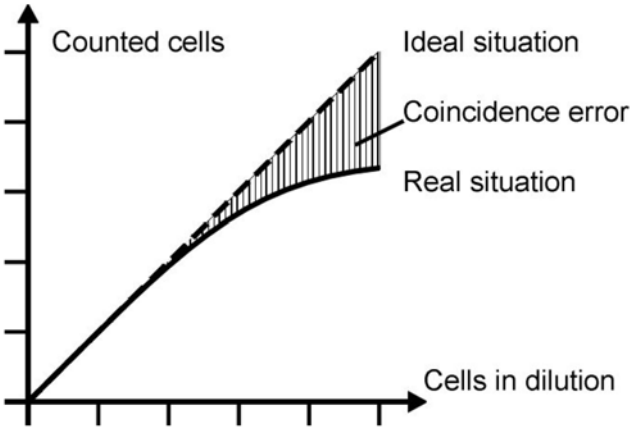


The principle of this method is that blood diluted with an isotonic solution (Diluent) conducts electric current by ionic conduction. A counting chamber made of an insulating material (plastic) holds this diluted blood, while a small circular hole (aperture) in this chamber allows the flow of diluted blood. (The analyzer aperture diameter and length is 80 µm — the optimal size for veterinary hematology.)

Placing two electrodes on the two sides of this aperture and applying constant electric current causes the isotonic solution to conduct electricity, and allows a voltage to be measured on the aperture.

Applying pressure to the diluted sample causes it to flow through the aperture. When a cell is passing the aperture, a small change in electric impedance occurs, so that the voltage rises somewhat and a small electric pulse occurs. The amplitude of this pulse is proportional to the ratio of the cell volume (size) and the aperture volume: the bigger the cell, the higher the pulse.

Proper counting (or differentiation) of cells requires passing of only one cell through the aperture at a time. To help ensure this, the blood samples must be diluted, since cell concentrations are otherwise too high.



Although diluted blood is used, in cases of extremely high concentrations (such as leukemia) WBC density can be 100x higher than normal, causing two or more cells to pass through the aperture at a time, generating one pulse instead of two (or more). This is called coincidence, and results in non-linear counting of cells. Flags **m**, **M**, and **N** appear in this case.

The WBC linearity range is 100 x 10^9 cells/l.

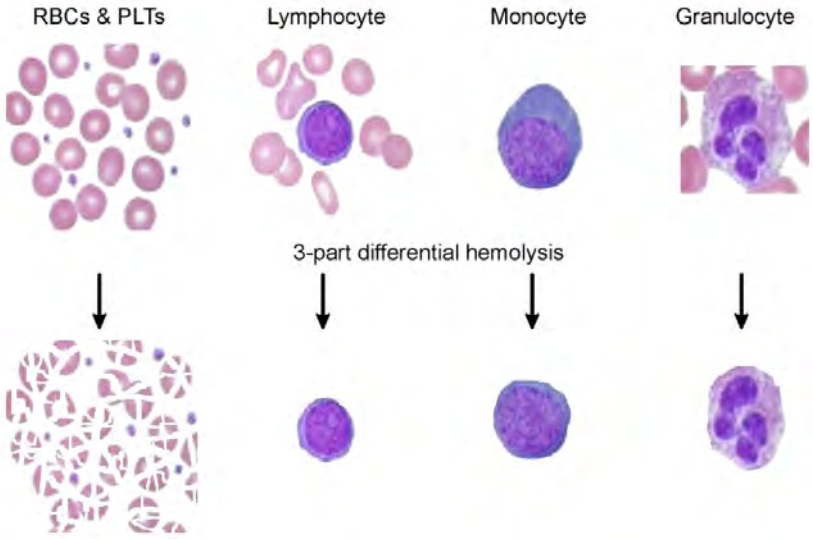
In cases of cell counts beyond the linear range, an external predilution of the sample is recommended.

B.2.2 Three-Part Differential Method

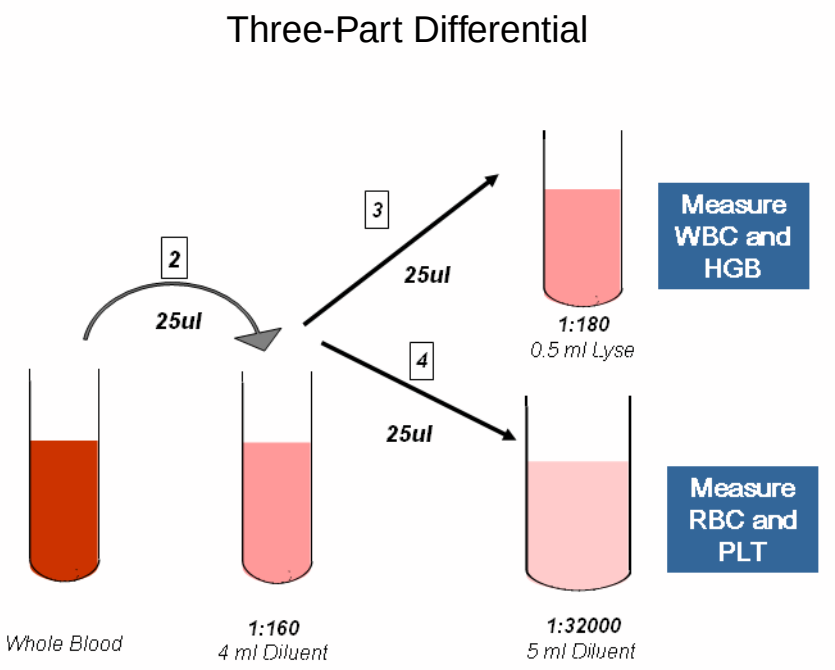
To perform a three-part WBC differential count, the RBCs must first be lysed since RBCs are typically 1000 times more numerous in normal blood than are WBCs and would interfere with WBC counting if left intact. Lysing also releases the hemoglobin stored in the RBCs for direct analysis in the solution.

Therefore, a hemolysing reagent (Lyse) is used to dissolve cellular membranes, thus destroying RBCs, and creating a complex solution suitable for photometry of HGB and counting WBCs.

The following figure shows the changes in blood cell characteristics that occur during three-part differential hemolysis.

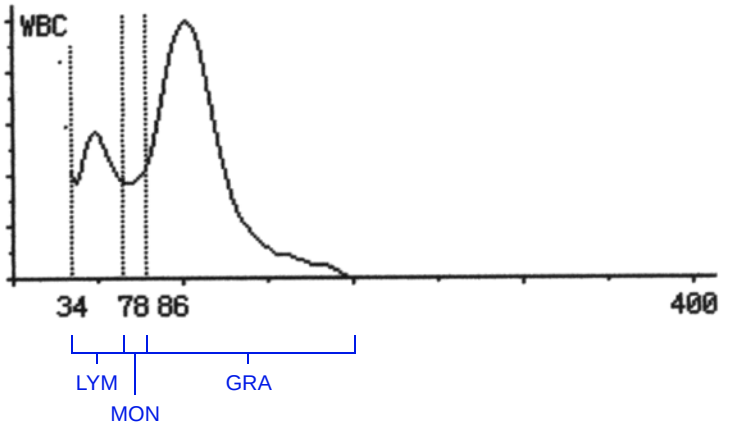


The membranes of the WBCs become selectively permeable, so that they begin to shrink down to their nuclei in the slightly hypertonic Lyse solution. Effectively hemolysed samples contain WBC particles in the 30–300 fl region (for veterinary species).



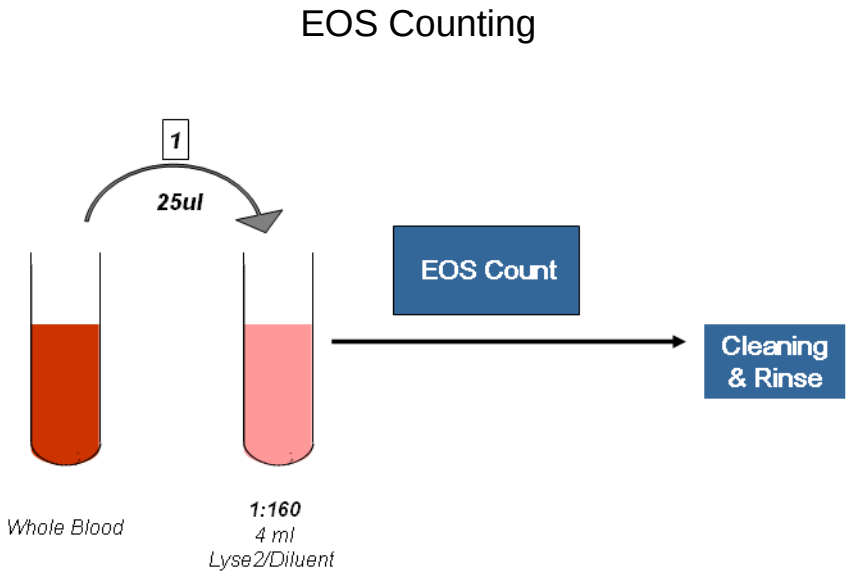
For the three-part counting, a primary dilution of 1:160 is created by diluting 25 µl of whole blood with 4 ml of Diluent into the chamber. After taking the RBC sample of 25 µl, the remaining diluted blood is treated with 0.5–0.7 ml of Lyse reagent — this depends on the animal profile selected — to destroy red blood cells. The remaining solution is suitable for photometric measurements of HGB, and counting of WBC. After these measurements are done, the software is able to determine HGB, WBC, LYM, LYM%, MON, MON%, total GRA, and GRA%. GRA contains all types of granulocytes: GRA = NEU + EOS + BAS, and GRA% = NEU% + EOS% + BAS%. Volume distribution of three-part measurement can be seen on the three-part histogram. The cells are separated in three regions depending on their sizes: LYM, MON, and GRA, from left to right, separated by discriminators.

The figure below shows a typical three-part differential WBC histogram of selective hemolysis (dog).



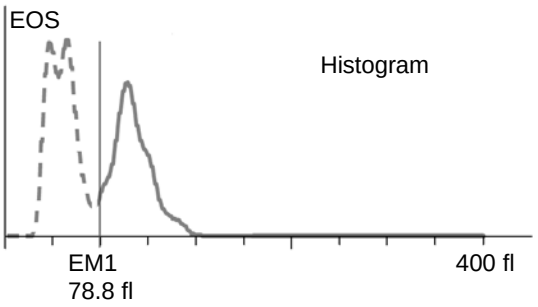
B.2.3 Five-Part WBC Differential Method

Five-part WBC differential results are determined using two separate dilutions, and two counting sessions. The first session is used to count EOS, while the second is the three-part differential and RBC counting described above. In three-part only measurements, the EOS counting is omitted.



To determine EOS, EOS% and BAS, BAS%, a second sample preparation and counting is required. 25 µl of whole blood sample is diluted with a species-dependent volume of Lyse 2 solution, a hemolytic reagent and Diluent, to form a 1:200 dilution. During the incubation time, white blood cells will be differentially hemolysed, so that eosinophils will retain a higher cellular volume.

After counting and sizing the cells, the software will interpret all cells above the discriminator as eosinophils. The user can observe the distribution of the cells on the EOS histogram.



The number and percentage of BAS cells will be calculated using EOS and other internal parameters using a mathematical formula.

The EOS count is then followed with a three-part differential count (described above) to provide the rest of the WBC count, the RBC and the PLT and related parameters.

B.3 Hemoglobin Determination

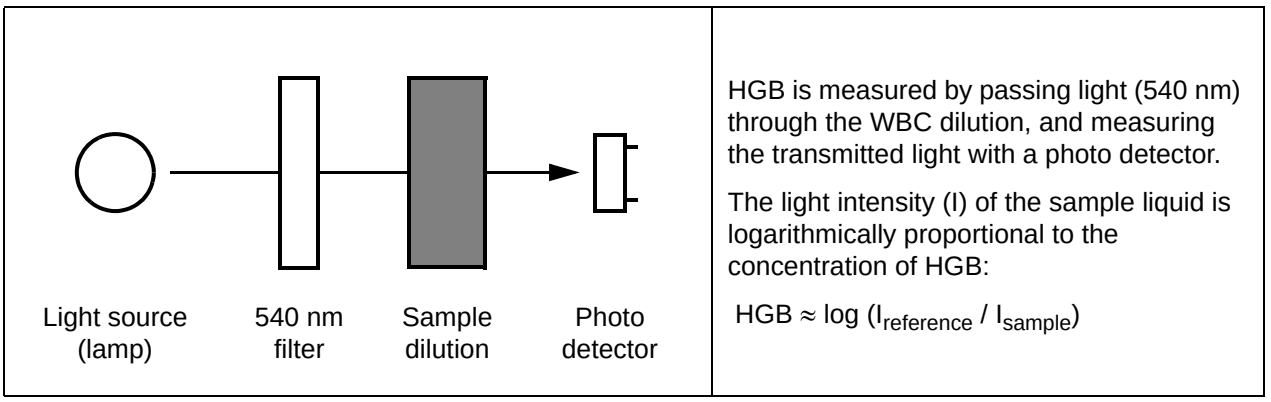
Hemoglobin is measured directly by means of the traditionally used cyanomethoglobin reaction, but the HM5 uses cyanide-free substances to reach the same endpoint.

Hemoglobin concentration is measured photometrically.

B.3.1 Hemoglobin Determination by Photometry

HGB determination is one of the most important hematology parameters, as it relates to the oxygen carrying capacity of blood.

The analyzer uses cyanide-free lysing reagents to minimize negative effects on user safety and the environment. The effect of cyanide-free Lyse is very similar to that of Lyse containing cyanide, but the chemical reaction is slightly different. The figure below illustrates the HGB measurement method.



B.4 Measured and Calculated Parameters

Each sample is analyzed to produce a complete, 24-parameter, five-part differential blood count (CBC), including the following measured or calculated parameters:

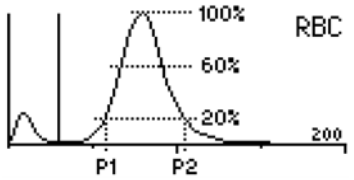
- WBC — total white blood cell count
- LYM — lymphocyte count
- MON — monocyte count*
- NEU — neutrophil count
- EOS — eosinophil count
- BAS — basophil count
- LYM% — lymphocyte percentage
- MON% — monocyte* percentage
- NEU% — neutrophil percentage
- EOS% — eosinophil percentage
- BAS% — basophil percentage
- RBC — red blood cell count
- HGB — hemoglobin
- HCT — hematocrit
- MCV — mean corpuscular volume
- MCH — mean corpuscular hemoglobin
- MCHC — mean corpuscular hemoglobin concentration
- RDWc, RDWs (std dev) — red cell distribution width, coefficient of variation
- PLT — platelet count
- PCT — platelet crit
- MPV — mean platelet volume
- PDWc, PDW (std dev) — platelet distribution width, coefficient of variation

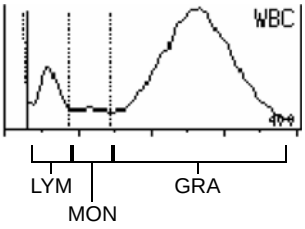
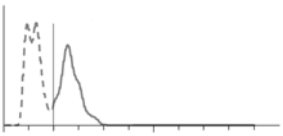
* The monocyte category consists primarily of monocytes. Impedance counters categorize white blood cell types (differential) according to size, and therefore a certain percentage of eosinophils may have a mass that falls in the normal range for monocytes (the exact percentage depends on the individual animal and is generally inconsequential due to the very low numbers of eosinophils in a healthy animal). Eosinophilias, however, can sometimes be visualized as a distinct peak between the monocyte range and the granulocyte peak on a histogram.

B.5 Measured and Calculated Values

The VetScan HM5 measures and calculates the following values from tested blood samples.

Table B-1: Measured and Calculated Values

Values	Definitions
White Blood Cells — **WBC** (reportable as: cells/l, cells/µl)	Total number of leukocytes (white blood cells).
Red Blood Cells — **RBC** (reportable as: cells/l, cells/µl)	Total number of erythrocytes (red blood cells).
Hemoglobin concentration — **HGB** (reportable as: g/dl, g/l, mmol/l)	Measured photometrically at 540 nm (see "Volumetric Impedance Method" on page B-2 for details). • $HGB = HGB_{cal} \times (HGB_{measured} - HGB_{blank})$
Mean Corpuscular Volume — **MCV** (fl)	Average volume of individual erythrocytes derived from the RBC histogram.
Hematocrit — **HCT** (reportable as: percentage, absolute)	Also known as Packed Cell Volume (**PCV**). Calculated from the RBC and MCV values: • $HCT_{percentage} = RBC \times MCV / 10$ • $HCT_{absolute} = HCT_{percentage} / 100$
Mean Corpuscular Hemoglobin — **MCH** (reportable as: picogram, fmol)	Average hemoglobin content of erythrocytes, calculated from RBC and HGB values: • MCH = HGB / RBC
Mean Corpuscular Hemoglobin Concentration — **MCHC** (reportable as: g/dl, g/l, mmol/l)	Calculated from the HGB and HCT values: • $MCHC = HGB / HCT_{absolute}$
Red Cell Distribution Width — (reportable as: **RDW-SD** [fl], **RDW-CV** [absolute])	Measure of the degree of RBC anisocytosis. Calculated using the distribution width of the erythrocyte or platelet population derived from the histogram at 20% of peak: 
Platelet — **PLT** (reportable as: cells/l, cells/µl)	Number of thrombocytes (platelets). • $PLT = PLT_{cal} \times$ (cells/l, cells/µl)
Mean Platelet Volume — **MPV** (fl)	Average volume of individual platelets derived from the PLT histogram.
Platelet Distribution Width — (reportable as: **PDW-SD** [fl], **PDW-CV** [absolute])	Measure of the degree of platelet anisocytosis.
Platelet Hematocrit (Thrombocrit) — **PCT** (reportable as: percentage, absolute)	Calculated from the PLT and MPV values: • $PCT_{percentage} = PLT \times MPV / 10$ • $PCT_{absolute} = PCT_{percentage} / 100$

Values	Definitions
White Blood Cell Differential: **LYM, LYM%:** lymphocytes **MON, MON%:** monocytes **GRA, GRA%:** neutrophil, eosinophil and basophil granulocytes	Absolute values counted in the channels determined by the three WBC discriminators:  Percentages calculated from the absolute WBC value.
Eosinophils — **EOS**, **EOS%** (reportable as: cells/l, cell/µl, %)	Absolute values counted in channels as determined by the EOS discriminator.  Percentage calculated from the absolute EOS and WBC values.
Basophils — **BAS**, **BAS%** (reportable as cells/l, cells/µl, %)	BAS is the absolute count of basophils. BAS% is the percentage of basophils in the total WBC.
Neutrophils — **NEU**, **NEU%** (reportable as cells/l, cells/µl, %)	NEU is the absolute count of neutrophils. NEU% is the percentage of neutrophils in the total WBC.

Appendix C

Potential Sample Interferences

Appendix Contents

Table C-1 lists situations in which substances in the samples themselves can interfere with accurate analysis, and provides possible solutions.

Table C-1: Intrinsic Substances: Potential Sample-Induced Interferences

Sample Condition	Indicators	Results Affected	Causes	Solutions
Lipemia	• Cloudy, white plasma. • High MCHC.	Increased HGB, MCHC, MCH. RBCs may be smudged on blood film.	Non-fasted sample	Redraw fasted sample.
			Metabolic disorder[a]	Use RBC, PCV, MCV, and RDW rather than HGB, MCH, MCHC values to assess anemia.
Hemolysis	Pink or red plasma.	• Decreased RBC, PCV • Increased MCHC	Traumatic venipuncture	Redraw w/ clean venipuncture. Remove needle before dispensing blood into tube.
			Hemolytic anemia	N/A
Clumped platelets	• Decreased platelet count w/ platelet clumps often visible on blood smear or applicator stick dipped in sample. • Rising left side of lymphocyte curve. • Small pale clots stick to wooden applicator stick swirled in sample. • Low platelet histogram with a rising right side. • Possible tailing on right side of granulocyte curve.	Decreased PLT +/- increased WBC	Traumatic venipuncture or feline species	Redraw; collect blood in anti-coagulated syringe or use vacutainer system; invert tube several times immediately after filling; vortex sample immediately before testing.
			Excess potassium EDTA (under-filled tube)	Fill tube at least halfway, or remove portion of potassium EDTA before filling tube.
			Miscellaneous/ idiopathic	Use alternative anti-coagulant as heparin or citrate; vortex sample immediately prior to sampling.
Giant platelets	Right side of platelet histogram runs into RBC histogram.	Decreased PLT, decreased MPV	Thrombopoiesis, feline species	Confirm platelet estimate on smear and/or manual platelet count.
Clotted sample	• Visible clot in sample. • Red clot(s) stick to wooden applicator stick swirled in sample. • Platelet clumps may or may not be visible on blood smear.	Decreased PLT, decreased WBC, and/or decreased RBC (varies with clot size)	Traumatic venipuncture and/or delayed transfer to anti-coagulant	Redraw with clean venipuncture; use vacutainer system or anti-coagulated syringe; mix collection tube by multiple inversions immediately after filling. Clotted sample may clog the sample needle.
Lyse-resistant RBCs	• Rising left side of lymphocyte curve. • L flag in dogs.	Increased WBC, increased Lymphs	Idiopathic (most commonly with felines)	Lyse volume may be adjusted for the sample (for additional information, contact Abaxis Technical Support — see page 1-3).

a).Diabetes mellitus, nephrotic syndrome, hypothyroidism, lipoprotein lipase deficiency, acute pancreatitis, cholestasis, hyperadrenocorticism, hypercholesterolemia in briards, idiopathic hyperlipidemia of miniature schnauzers.

Appendix D

Veterinary Case Studies

The following pages present a variety of veterinary case studies.

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D.1 Normal Level Control

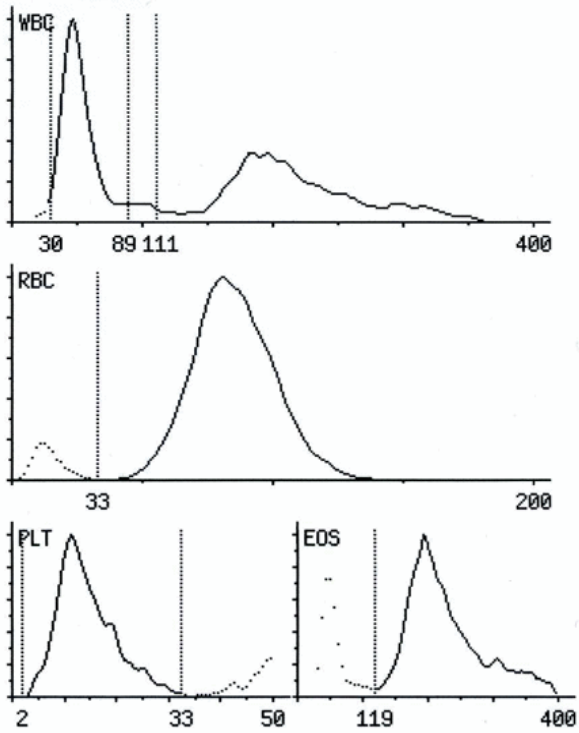
The following report shows typical histograms of normal level control blood run in test mode (the control results are the same in test mode as in QC mode).

Note the differences in cell populations: human samples and control blood contain larger cells than animal blood.

Samples run under the species “Control” do not display reference range bars or cell percentages.

VetScan HM5

Patient ID:		90742		Doctor:	
Name:				Age/Sex:	0 years / -
Test time:		11.05.2007	04:29PM	S/N:250315	
Mode:		Control		Report date:	11.29.2007
WBC	7.57	10^9/l			
LYM	3.03	10^9/l			
MON	0.46	10^9/l			
NEU	4.09	10^9/l			
EOS	4.27	10^9/l			
BAS	0.11	10^9/l			
LY%		%			
MO%		%			
NE%		%			
EO%		%			
BA%		%			
RBC	4.56	10^12/l			
HGB	12.1	g/dl			
HCT	39.07	%			
MCV	86	fl			
MCH	26.6	pg			
MCHC	31.0	g/dl			
RDWc	16.2	%			
PLT	228	10^9/l			
PCT	0.34	%			
MPV	15.0	fl			
PDWc	32.6	%			

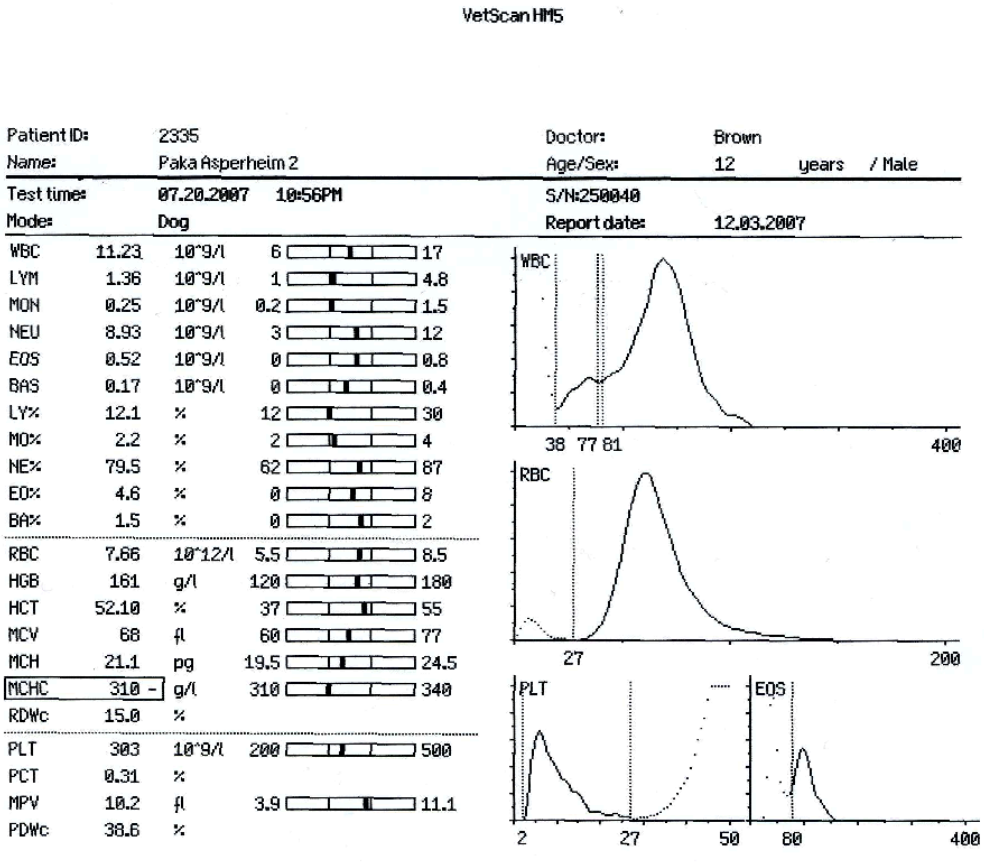


D.2 Dogs

Dog samples show RBC peaks around 60–70 fl with a good separation of the PLTs from the RBCs. Canine lymphocyte populations (lymphocytes, monocytes, and granulocytes) can overlap as a result of similar cell sizes.

D.2.1 Dog: Normal Sample

The following shows a normal dog histogram.

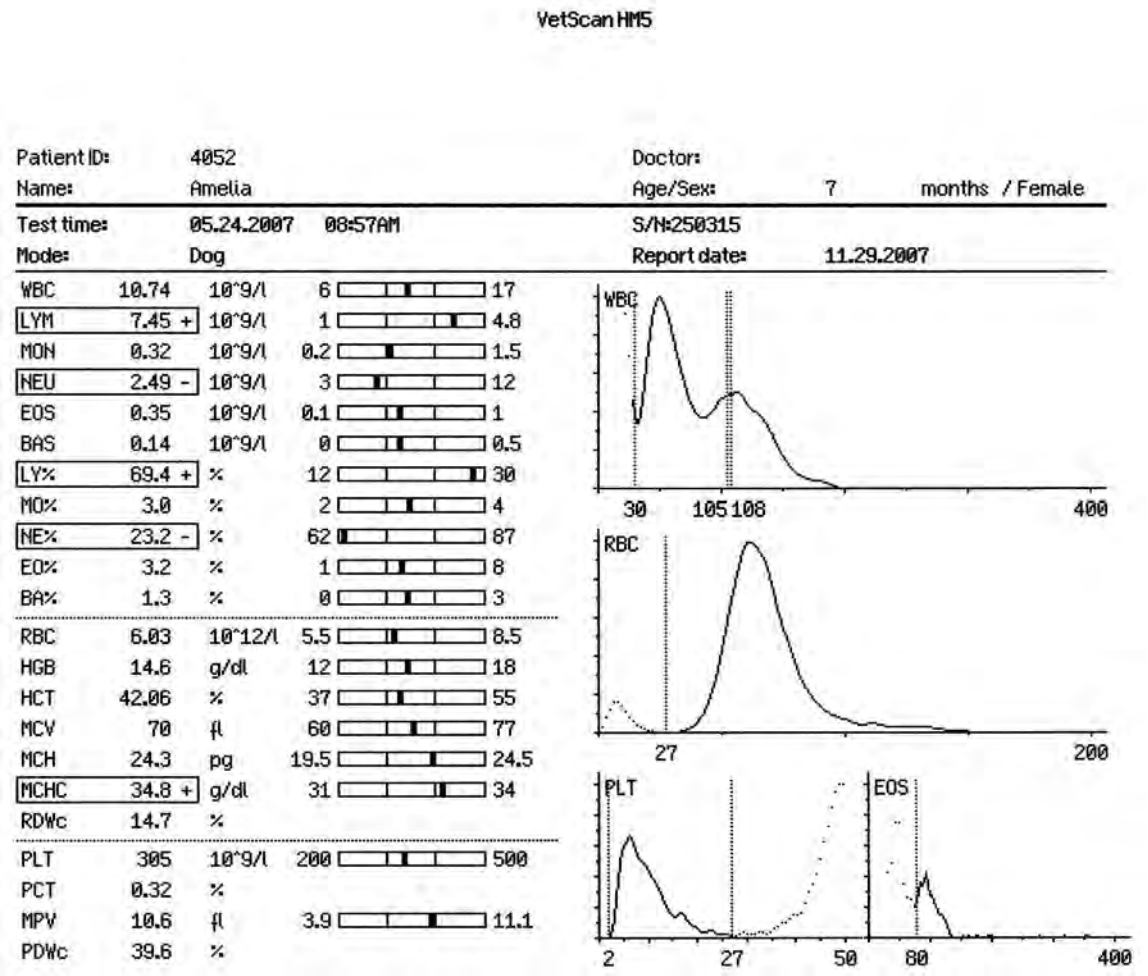


These histograms indicate the following:

- WBC — All cells larger than approximately 40 fl are counted as WBCs (indicated by discriminator 1). Discriminators 2 and 3 show the MON population. The histogram shows well-defined LYM and GRA peaks, with MON in the valley between them.
- RBC — All cells larger than 25 fl are counted as RBCs. The RBC histogram follows a normal distribution. The MCV is near 68 fl, and the RBC is near 7.66 x 10^{12} cells/l.
- PLT — PLT cell population is between 2 and 27 fl. The PLT histogram follows a log-normal distribution.
- EOS — An ideal EOS peak is shown, well-separated from other cell types to the left.

D.2.2 Dog: High LYM%, Low GRA%

The following shows a sample that has high LYM%. (LYM% is normally near 12–30% for dogs.) This case shows a lymphocytosis.

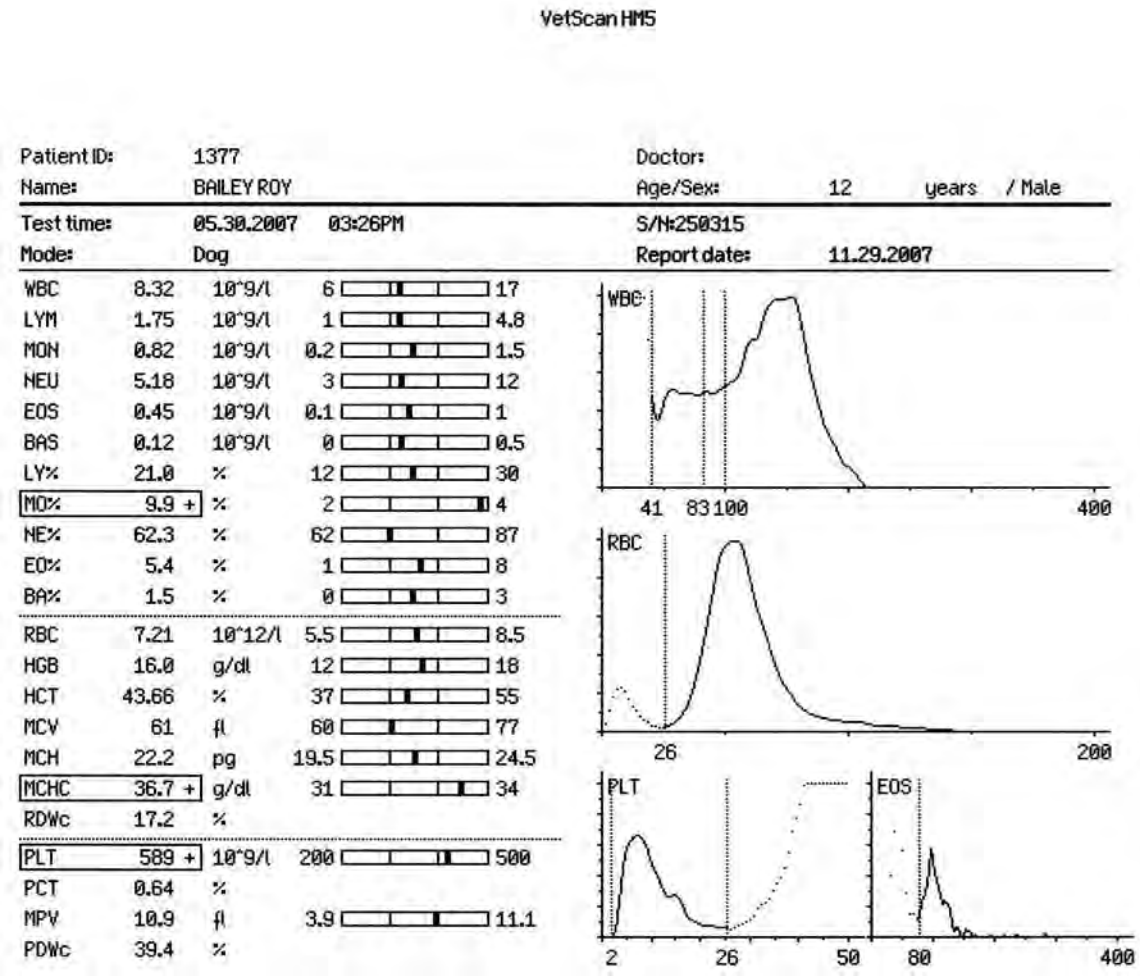


These histograms indicate the following:

- WBC — High LYM%, low NEU%.
- RBC — Normal.
- PLT — Normal.

D.2.3 Dog: High PLT

In this sample, the absolute value of PLT is high, and the LYM population is much smaller than the GRA population. This case demonstrates a thrombocytosis.

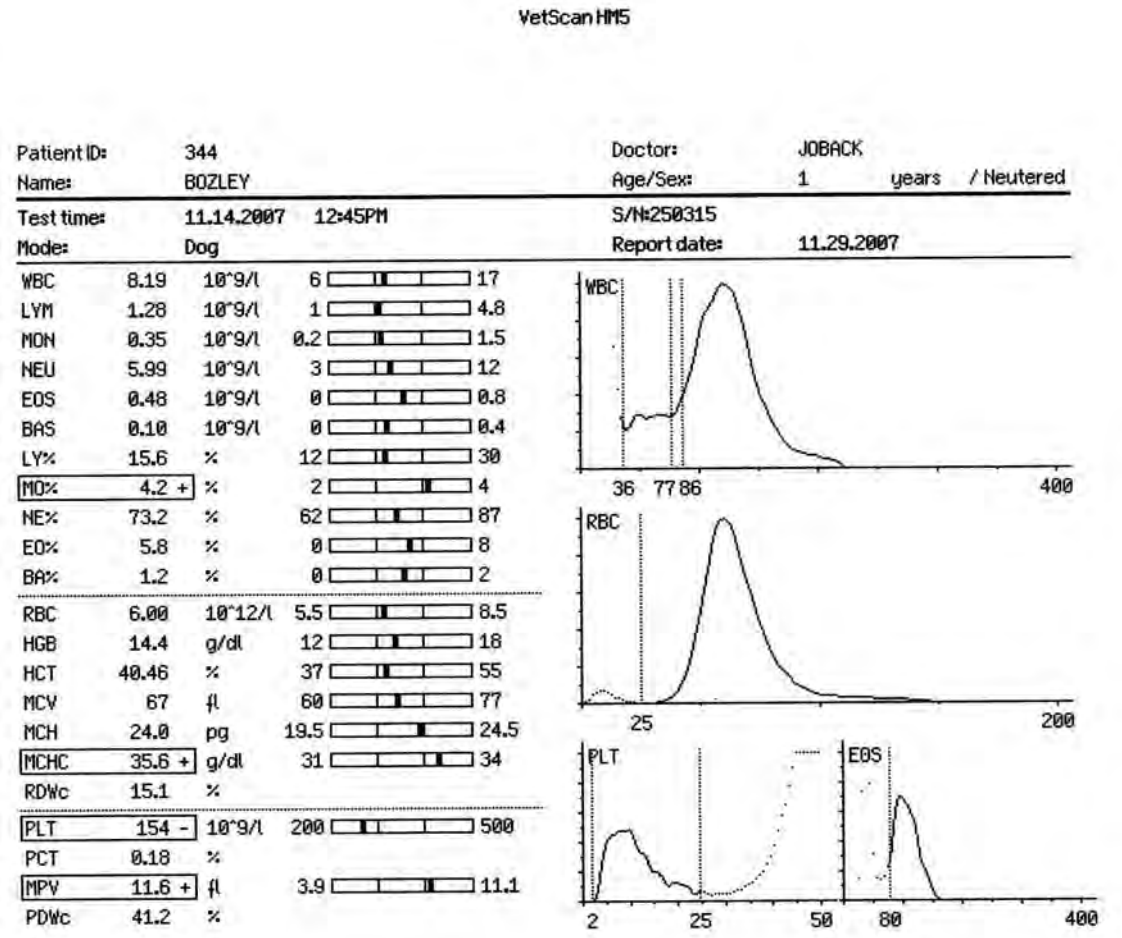


These histograms indicate the following:

- WBC — Three-part differential curve with good separation between populations.
- EOS — Normal EOS count.
- RBC — Normal.
- PLT — High PLT. No sign of PLT clumping.

D.2.4 Dog: Low PLT, Low MPV

This sample shows a very low PLT, while the WBC and the differential are normal. This case demonstrates a thrombocytopenia.

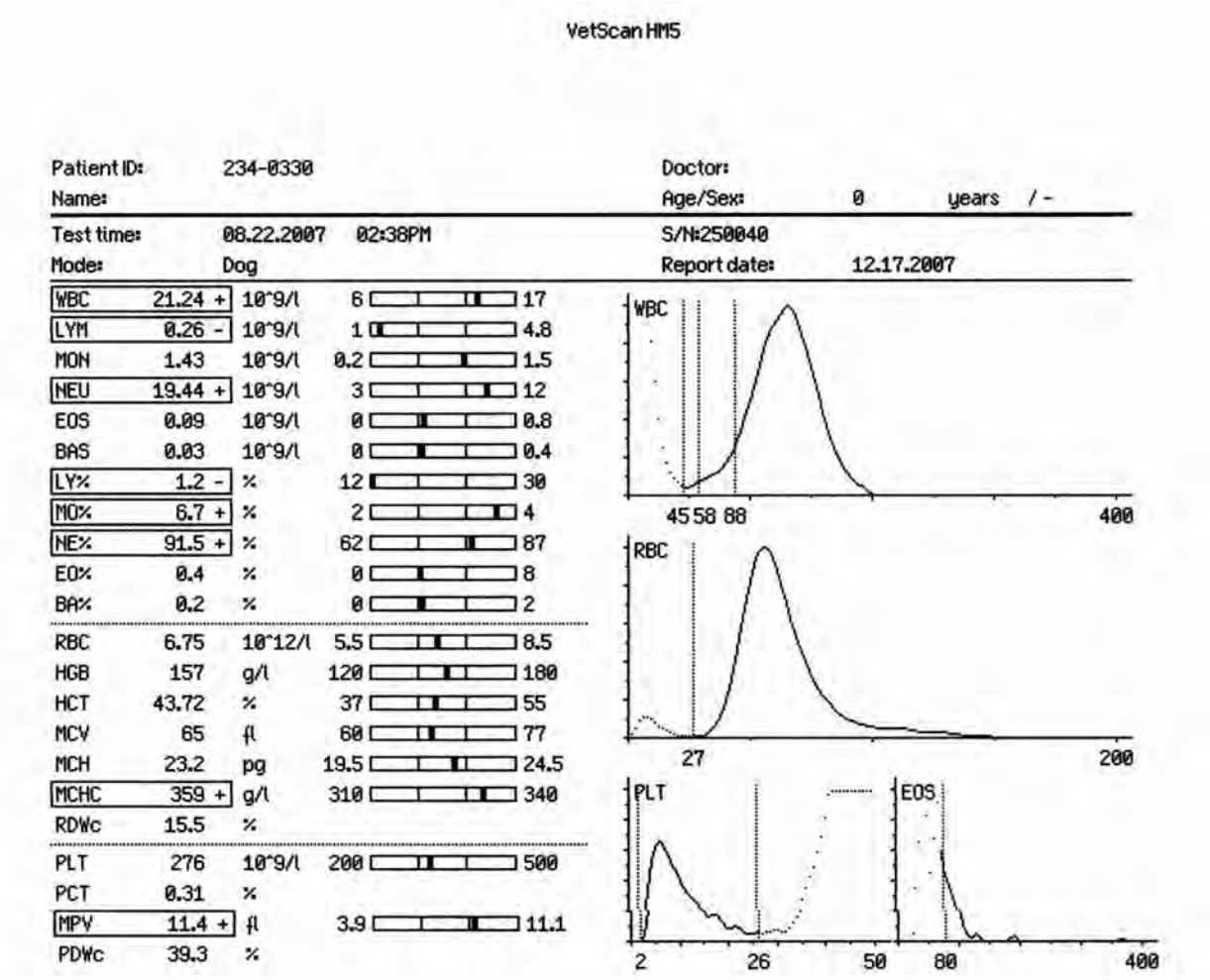


These histograms indicate the following:

- WBC — Discriminator 1 is at 36 fl, which is slightly lower than normal. Otherwise, the histogram appears to be normal. Discriminators 2 and 3 are placed correctly according to the WBC population.
- RBC — Normal.
- PLT — Low PLT. The nicely shaped PLT curve indicates that no clumping has occurred, but a manual smear is recommended for confirmation.

D.2.5 Dog: Stress Leukogram

When dogs are stressed before the sample draw, they often show an increase in total WBC count, with an elevated NEU count and a decreased LYM count. Dogs that are stressed but otherwise healthy display results similar to those shown below.

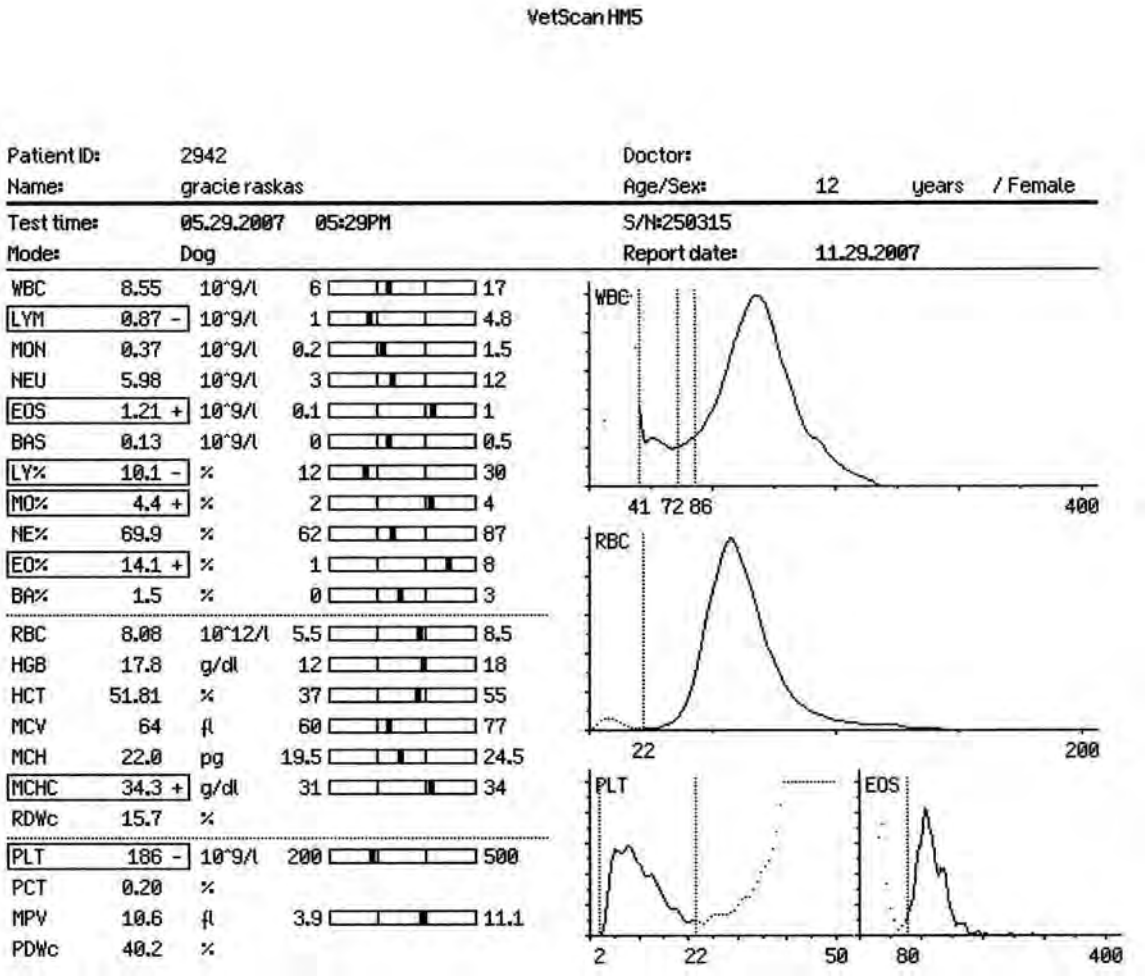


These histograms indicate the following:

- WBC — Very high total leukocyte count, with a pronouncedly shrunken LYM peak and an elevated NEU with suppressed EOS.
- RBC — Normal.
- PLT — PLT count is normal for this sample.

D.2.6 Dog: Eosinophilia

This sample demonstrates an eosinophilic canine patient.



These histograms indicate the following:

- WBC — The histogram shows a fairly normal WBC profile.
- EOS — The absolute count of eosinophils and EOS% are above normal. The high EOS value indicates a need for a manual blood smear.
- PLT — The distinct peak shows a slight thrombocytopenia, with no detectable clumping.

D.3 Cats

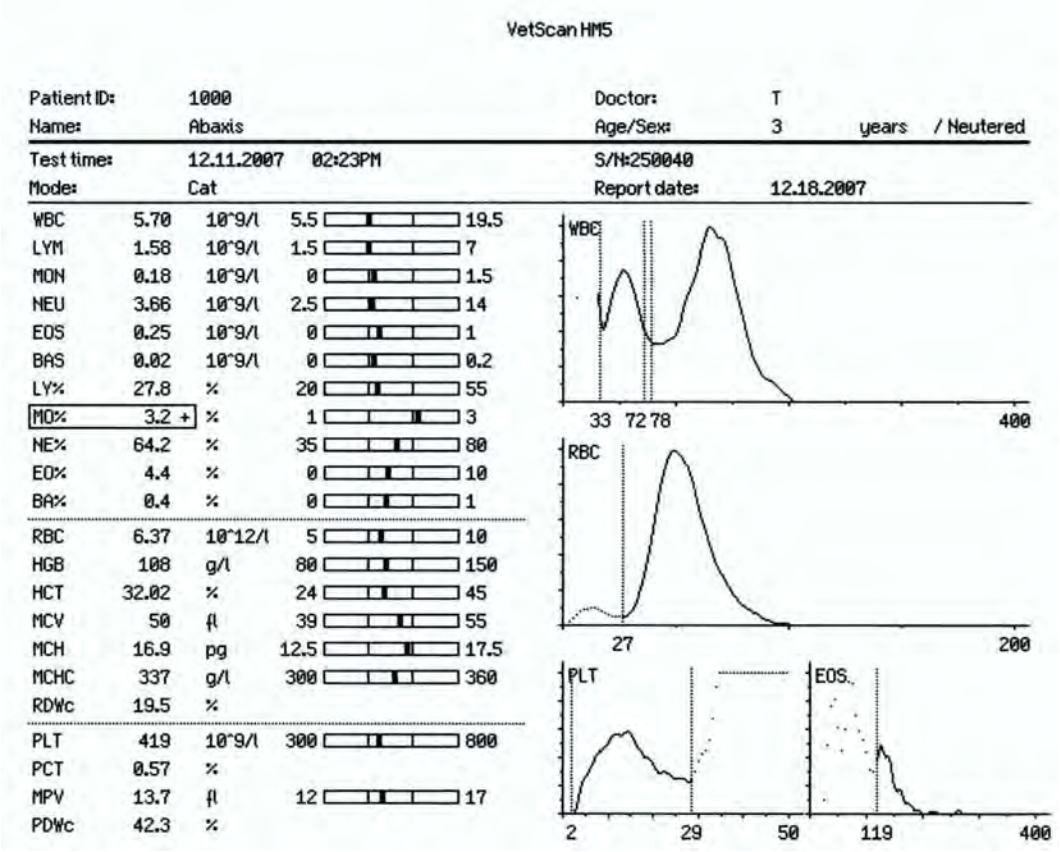
An important characteristic of cat blood is that the RBCs are much smaller than those of dogs, potentially causing the RBC and PLT histograms to overlap slightly.

Cats also commonly demonstrate both platelet aggregation and giant platelets. The analyzer minimizes these effects with a proprietary technology and dynamic discriminator approach to maximize accuracy.

Some clinics have minimized stress-induced platelet aggregation by collection from the saphenous vein. Analyzing the sample as close to the time of draw as possible also minimizes PLT clumping. Pre-analytical vortex mixing (up to 30 seconds) also helps disaggregate platelets, with no deleterious effects.

D.3.1 Cat: Optimal Sample

The following shows an optimal normal cat sample.

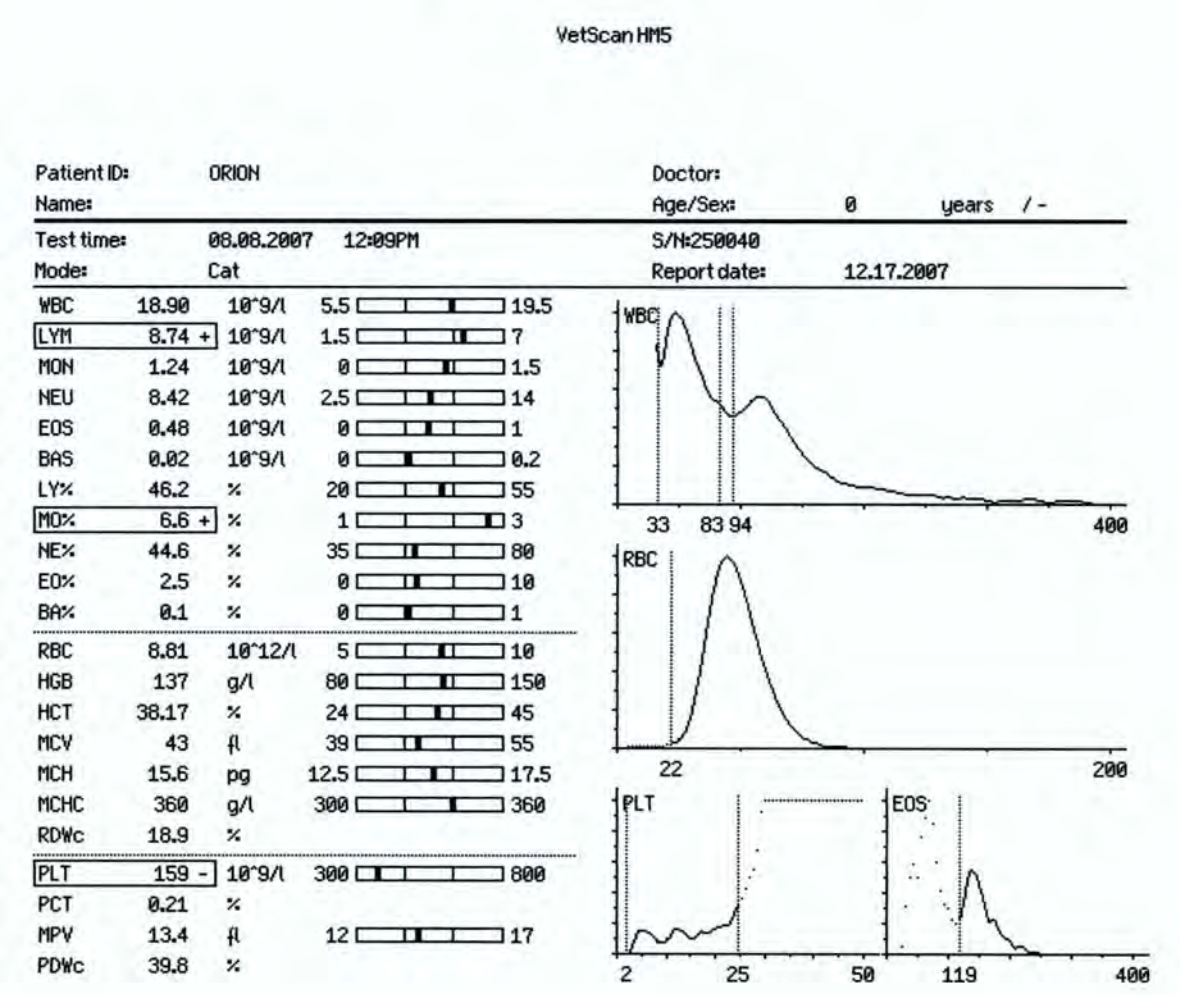


These histograms indicate the following:

- WBC — Normal. Well-defined and well-separated LYM and GRA (granulocyte) peaks.
- RBC — Normal.
- PLT — Optimal: the PLT is well separated from the RBC in a well-defined peak.

D.3.2 Cat: Clumped PLT, Increased LYM

The histograms for this cat indicate that clumped PLTs are affecting the WBC count:

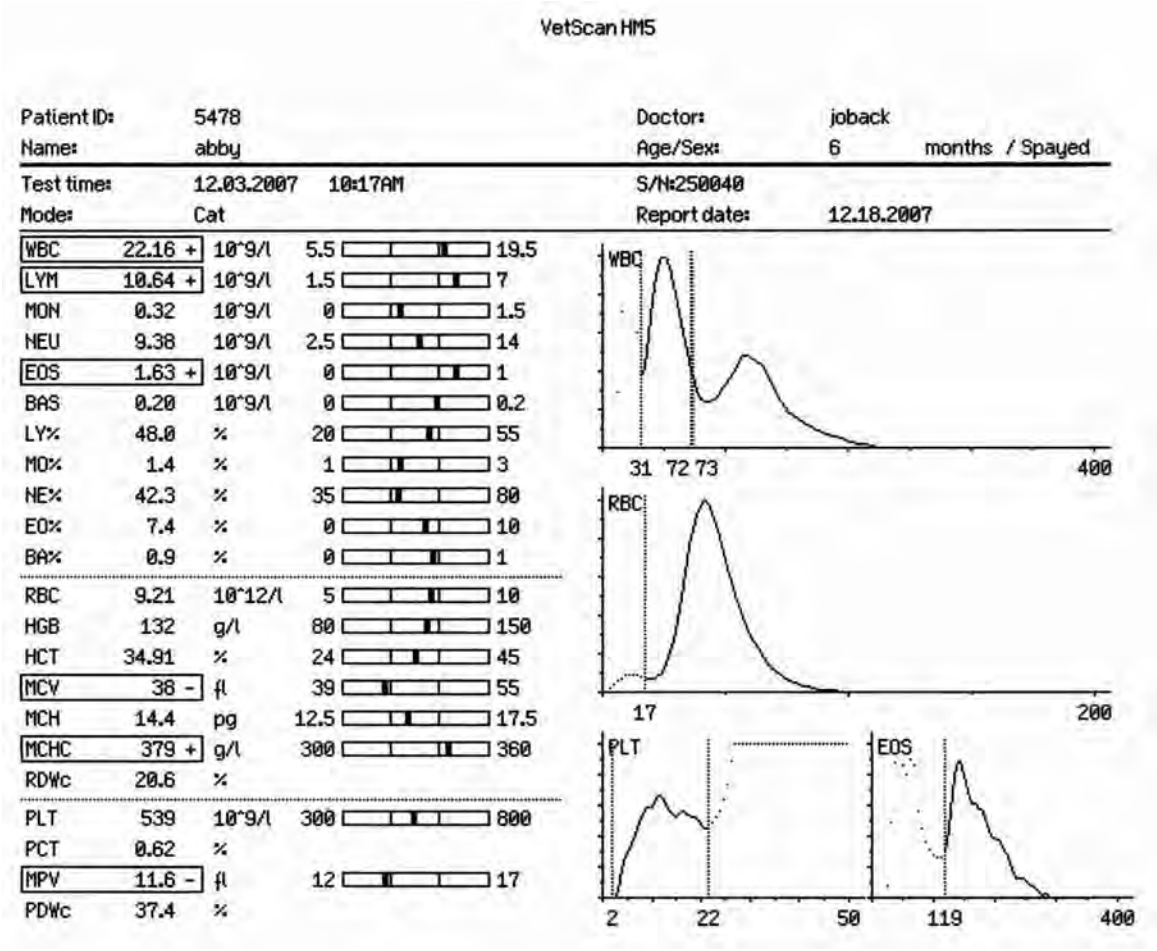


These histograms indicate the following:

- WBC — The increased size of the LYM peak relative to the GRA peak and the high LYM result on a cat sample suggest that the user should examine the PLT histogram. The clumped platelets (PLT) increase the LYM count in this sample, and also contribute to cell aggregates, shown in the extended tail on the right of the histogram.
- PLT — The PLT histogram lacks a defined peak and slopes upward to the right, indicating the presence of clumped platelets.

D.3.3 Cat: Eosinophilia and Lymphocytosis

This sample demonstrates a lymphocytosis and eosinophilia in a feline patient.



These histograms indicate the following:

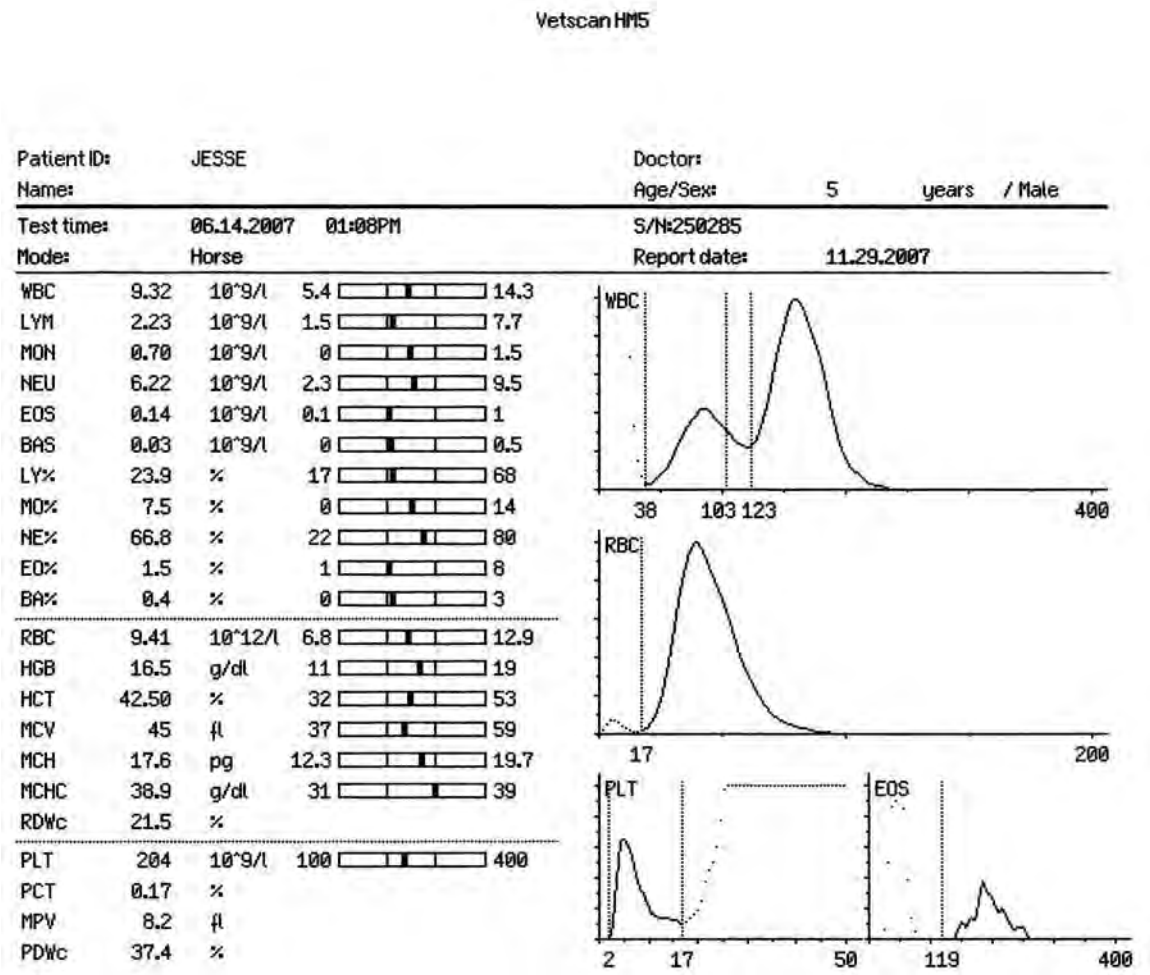
- WBC — Large increase in LYM with a relative decrease in GRA. The large LYM count and uniform shape of the histograms indicate that this is likely a genuine lymphocytosis.
- EOS — The EOS histogram shows a single broad peak, which causes the high EOS count.
- RBC — Normal, with normal distribution.
- PLT — The PLT curve slopes up and indicates some clumping in this sample.

D.4 Horses

Horse samples typically show a good separation of PLT/RBC, and well-separated WBC populations. The MCV is relatively low, while the RBC is high — around $10x10^{12}$ cells/l — giving an HCT near 40%.

D.4.1 Horse: Normal Sample

The following shows a typical normal sample for a horse:

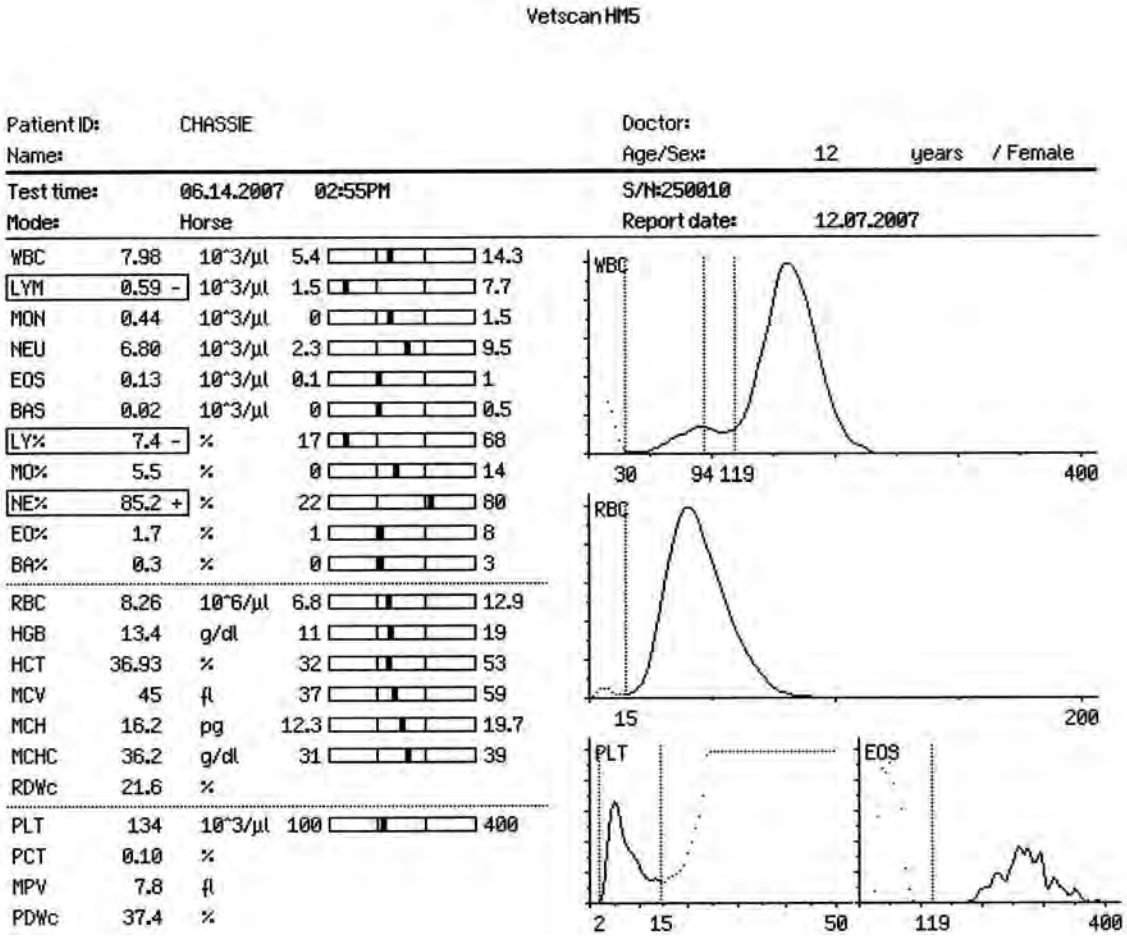


These histograms indicate the following:

- WBC — WBC value is normal, the cells are well separated, and the discriminators are set accurately.
- RBC — Normal. (Compare dog and horse histograms to see the smaller cells in the horse.)
- PLT — PLT is correct. (Note the good separation at the PLT/RBC discriminator.)

D.4.2 Horse: Low LYM%, High GRA%

The following is a typical horse sample with a lymphopenia.

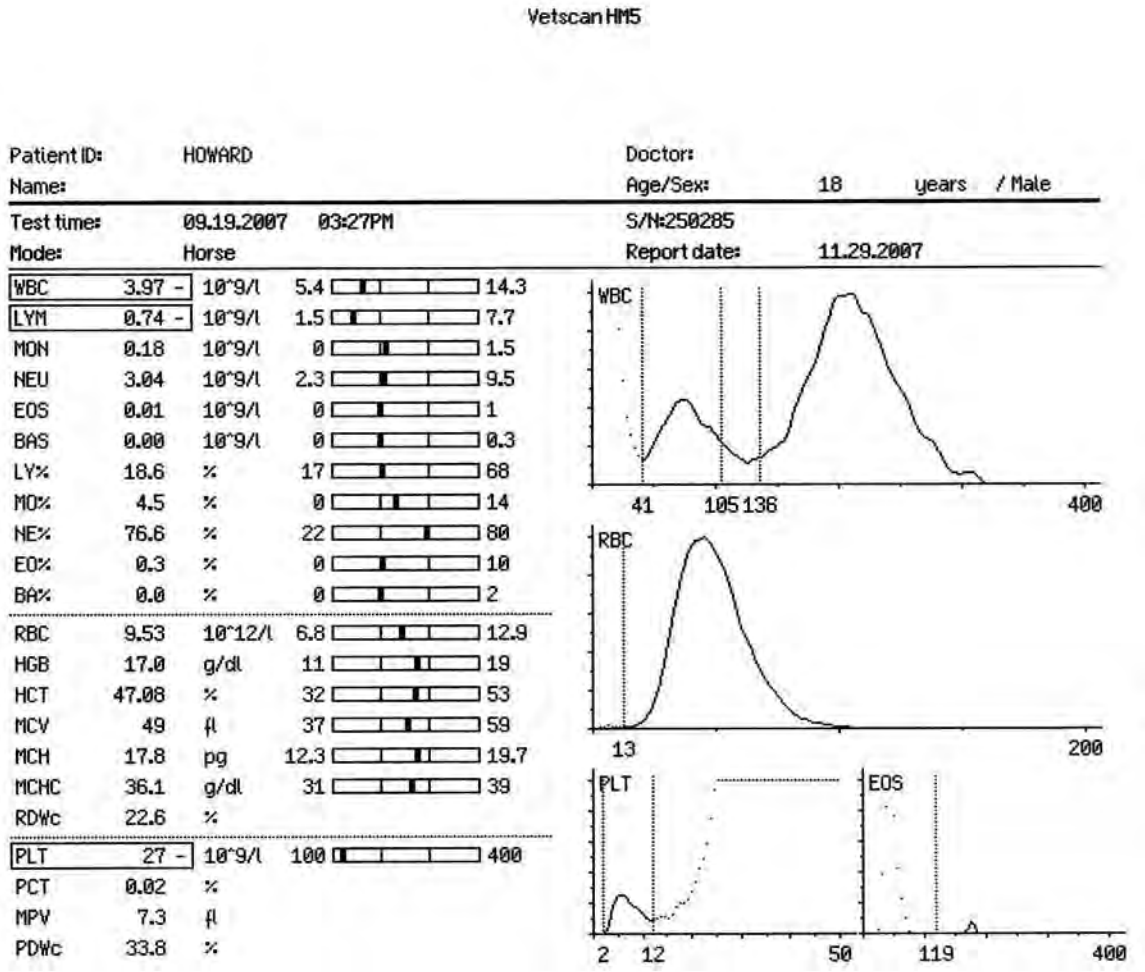


These histograms indicate the following:

- WBC — Low LYM% and a high GRA%. Discriminators are set accurately.
- RBC — Normal.
- PLT — Normal. (Note the good separation from RBCs.)

D.4.3 Horse: Low PLT and WBC (Leukopenia/Lymphopenia)

In some cases, the PLT will be low. You can compare the height of the PLT peak to the RBC peak on the RBC histogram.

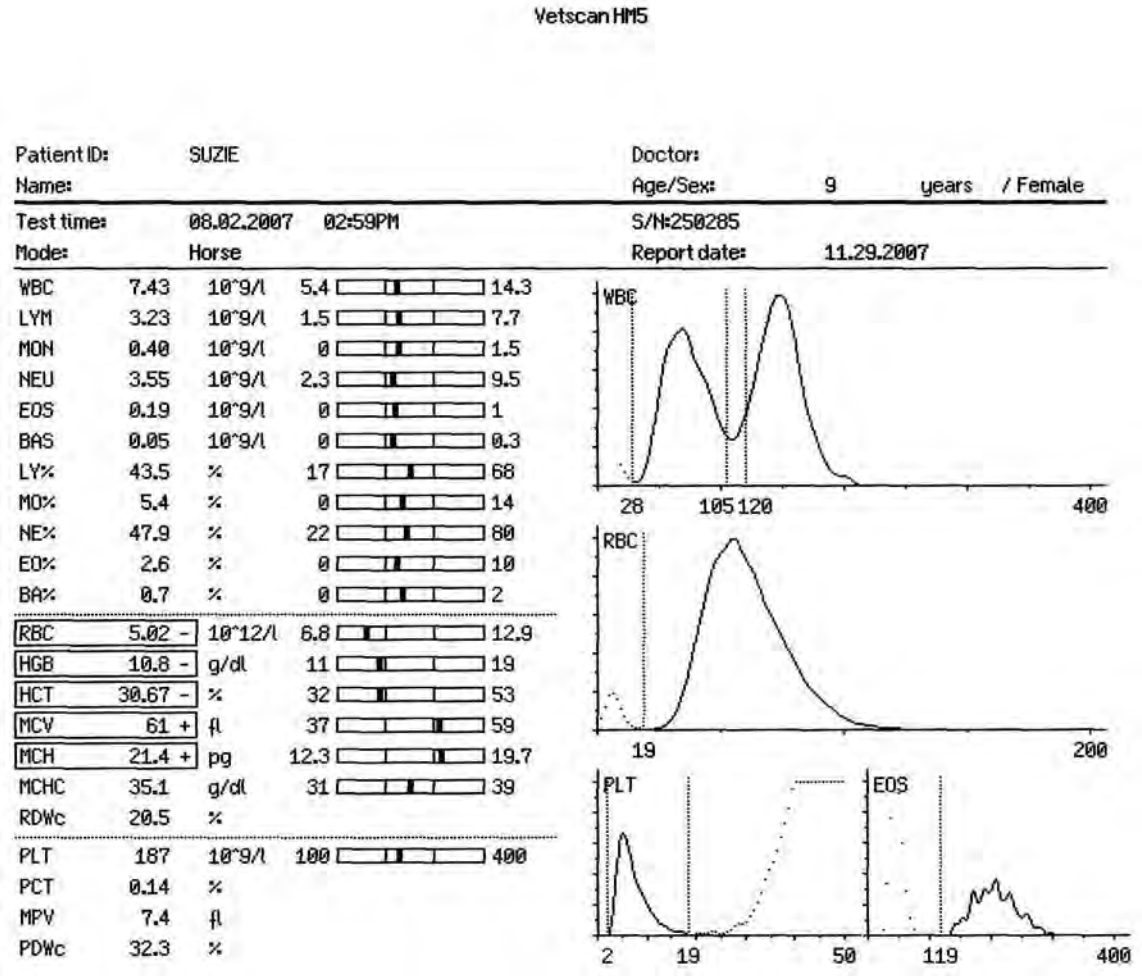


These histograms indicate the following:

- WBC — Low WBC and LYM, with accurately placed discriminators.
- RBC — Normal.
- PLT — Low PLT.

D.4.4 Horse: Low RBC and HGB

This case shows a normal sample, with a slightly low RBC and HGB. It also shows good separation of the WBC populations from the RBC and from each other.



These histograms indicate the following:

- WBC — This is a well-separated WBC histogram, showing clear populations and good WBC differentials.
- RBC — Low RBC (HCT) and HGB, indicating possible anemia. MCV is slightly higher, and the RBC histogram is slightly skewed to the larger end, indicating the presence of larger, perhaps immature RBCs.
- PLT — Normal. (Note the good separation from RBCs.)

Appendix E

CBC Parameters and Associated Indications

Complete Blood Count (CBC) parameters are useful in assessing overall wellness of a patient, as well as identifying and monitoring certain disease states. This appendix outlines the various CBC parameters and associated clinical indications.

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E.1 White Blood Cell Parameters and Associated Indications E-2

E.2 Red Blood Cell Parameters and Associated Indications E-3

E.3 Platelet Parameters and Associated Indications E-4

E.1 White Blood Cell Parameters and Associated Indications

Table E-1: White Blood Cell Parameters and Associated Indications

White Blood Cell (Leukocyte)	Role	Increase in Disease State	Decrease in Disease State
Non-Granulocytic			
Lymphocytes	**B-cells**: humoral immunity (antibody synthesis) **T-cells**: cellular immunity	• Chronic inflammation • Acute infection/recovery • Lymphocytic leukemia • Hypoadrenocorticism	• Acute/severe disease • Viral disease • Endotoxemia • Hyperadrenocorticism • Stress-related corticosteroid response
Monocytes	Immature macrophages — phagocytosis of debris/foreign material, killer-cell activation	Necrotic, malignant, hemorrhagic, or immune-mediated disease	Rare, no known significance
Granulocytes			
Neutrophils ***Left shift:*** Increased numbers of immature neutrophils/band cells. • regenerative: up to 50% bands, neutrophilia, absence of myelocytes/metamyelocytes • degenerative: > 10% bands, depressed total neutropenia, presence of myelocytes/metamyelocytes (poor prognostic indicator) ***Right shift:*** Increased number of hypermature (hyper-segmented) neutrophils, often seen with non-infectious inflammatory process (e.g. malignancy)	Phagocytize/kill microorganisms, initiate and modify inflammatory process, cytotoxic	• Inflammation • Neoplasm • Stress • Exercise/excitement	• Bacterial infection • Viral infection • Drug-induced (bone marrow depression)
Eosinophils	• Parasiticidal • Cytotoxic • Phagocytic	• Parasitic infection • Allergic responses • Hypoadrenocorticism	• Stress • Hyperadrenocorticism • ACTH therapy
Basophils	• Initiate inflammation • Prevent coagulation • Activate lipoprotein lipase	• Allergic reactions • Parasitic infection • Neoplasia	No known significance

E.2 Red Blood Cell Parameters and Associated Indications

Table E-2: Red Blood Cell Parameters and Associated Indications

Parameter	Definition	Diagnostic Consideration
Hematocrit (HCT)	Percentage of total cellular constituents (primarily red blood cells) in a unit of whole blood	Anemia exists when the HCT falls below the reference range for the species. Hematocrit will normally have a value of approximately three times the hemoglobin value.
Hemoglobin (HGB)	The oxygen-carrying component of red blood cells; allows for the calculation of MCH and MCHC	Hemoglobin normally falls in the range of 1/3 of the hematocrit value.
RBC Indices Anemia Characterization		
MCV Mean Corpuscular Volume	Measure of the volume of an average RBC	• Increase: most commonly associated with reticulocytes/regenerative anemia. • Decrease: iron-deficiency anemia. • Normal MCV is consistent with non-regenerative anemia, often due to chronic disease. MCV should always be interpreted in light of other clinical data.
MCH Mean Corpuscular Hemoglobin	Calculated HGB concentration of an average RBC: • MCH = (HGB x 10) / RBC (in picograms)	• Increase: most commonly the result of hemolysis. • Decrease: hypochromasia common in iron-deficiency anemia and reticulocytosis.
MCHC Mean Corpuscular Hemoglobin Concentration	Calculated HGB concentration in an average RBC: • MCHC = MCH / MCV (in grams of HGB per 100 ml RBCs)	• In the anemic state, normal MCHC (with normal MCV) is consistent with non-regenerative anemia due to chronic disease. • Decrease: hypochromasia common in iron-deficiency anemia and reticulocytosis.
RDW Red Cell Distribution Width	Measure of red blood cell anisocytosis (cell size variation)	• Elevated RDW is typically indicative of anisocytosis. In the anemic state, increased RDW with an associated increase in MCV can indicate increased levels of immature RBCs.

E.3 Platelet Parameters and Associated Indications

Table E-3: Platelet Parameters and Associated Indications

Parameter	Increase in Disease State	Decrease in Disease State
Total Platelet Count	Thrombocytosis is present with excess bleeding, iron deficiency anemia and myeloproliferative syndromes.	• Disseminated intravascular coagulation • Bone marrow depression • Autoimmune hemolytic anemia • Severe hemorrhage • Liver disease • Parasites
MPV Mean Platelet Volume	Indirect evidence of increased (bone marrow) megakaryocyte response.	Not an accurate predictor of decreased megakaryocyte response.
PCT Platelet Hematocrit	Volume of platelets expressed as a percentage of whole blood (used as a research tool).	Volume of platelets expressed as a percentage of whole blood (used as a research tool).
PDW Platelet Distribution Width	Increased measure of platelet anisocytosis (platelet size variation) indicative of active platelet release.	No known clinical significance.

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NO. 514, ANALYZER, ELECTROLYTE

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Electrolyte Analyzer



Proven



Delivering Proven Performance

- Fully automated system measuring Na+, K+, Cl- and Ca++utilizing Ion Selective Electrode technology
- Sample types to include whole blood, serum, plasma and urine
- Open system architecture allows for testing on varying animal species
- Result storage and retrieval for 1000 sample results
- Powerful microprocessor allowing for integration of results into external LIS

DiaSys USA

CHOOSING QUALITY.

A Proven Electrolyte Analyzer for Veterinary Use

Specifications

Sample	Open, Feline, Canine, Bovine, Equine, Swine, Ovine,
Sample Type	Whole Blood, Serum, Plasma, Urine, or Dialysate
Sample Size	95 µl
Detection Range	Blood Na+: 40-200 mmol/L Dialysate K+: 1.7-15 mmol/L Cl-: 50-200 mmol/L Ca++: 0.3-5.0 mmol/L Urine Na+: 3-300 mmol/L K+: 5-120* mmol/L Cl-: 15-300 mmol/L *60-120 requires additional dilution
Display Resolution	Na+: 1 mmol/L or 0.1 mmol/L K+: 0.1 mmol/L or 0.01 mmol/L Cl-: 1 mmol/L or 0.1 mmol/L Ca++: 0.01 mmol/L or 0.001 mmol/L
Analysis Time	60 sec without printout (60 per hour) 75 sec with printout (48 per hour)
Data Storage	1000 Patient Results 500 Level 1 QC Results 500 Level 2 QC Results 500 Level 3 QC Results
Calibration	2 point every 4 hours 1 Point after every Measurement
Reproducibility	Within Run (n=30) Blood, Serum, Plasma, Dialysate Na+: CV ≤ 1% (120-160 mmol/L) K+: CV ≤ 2% (2.5-6 mmol/L) Cl-: CV ≤ 2% (85-130 mmol/L) Ca++: SD ≤ 0.02 mmol/L (0.8 – 1.5 mmol/L) Urine, Na+: CV ≤ 5% (100-250 mmol/L) K+: CV ≤ 5% (10-60 mmol/L) Cl-: CV ≤ 5% (100-250 mmol/L) (Calcium is not typically measured in urine samples)
User Input	Keypad, External Keyboard, External Barcode Scanner (optional)
Output	Graphic backlit display Graphic 16 column printer RS232 LIS Serial Communication
Ambient Conditions	15-32°C, Room temperature (60-90°F) <85% humidity
Languages	English, Chinese, French, German, Italian, Japanese, Portuguese, Russian, Spanish, Korean, Polish
Power	100-240V ~ 50/60 Hz (self adjusting) 1.6 A max, 50 Watts max
Size & Weight	13.2 x 12.4 x 12 in or 335 x 315 x 295 mm, 14 lbs or 6 Kgs

DiaSys USA

DiaSys Diagnostic Systems, USA, LLC
28287 Beck Road
Building D15
Wixom, MI 48393

Phone: (800) 466.9106
marketingservices@diasysusa.com
www.diasys-us.com

Combo V24T Centrifuge

NO. 515 CENTRIFUGE, MICROHEMATOCRIT

Accomplish both test tube and microhematocrit separations with the Combo V24T centrifuge. The Combo V24T spins test tubes, capillary tubes or microtubes by simply changing rotors — no tools required! Achieve microhematocrit separations in less than five minutes at 12,000 rpm; then accurately determine results with the included reader disc. Other features include variable speed control, 30-minute timer, rubber feet, and all-metal body construction.



ADVANTAGES

One unit for all centrifuge needs
Fast spin, fast stop, fast read
Variable speed
Digital tachometer
Quiet vibration-free operation

FEATURES

Suction-cupped feet to prevent slipping
Impact-resistant safe-view lid
All-metal body construction
Cooling fan for motor compartment
Heavy duty high-speed motor
Safety shut off switch in lid
Locking lid
Wide mouth for easy clean-up
Digital readout

SPECIFICATIONS

12,000rpm on High speed setting
- Microhematocrit rotor: 14,500g
- Microtube rotor: 12,900g

4,000rpm on Low speed setting
- Test tube rotor: 2,415g

CONTROLS

Illuminated power switch
Electric brake for quick stop
High/low speed setting switch
Auto-off 30 minute timer with bell
Variable speed control

WEIGHT AND DIMS

Height: 11" (277mm)
Length: 17" (432mm)
Width: 14" (355mm)
Weight: 31.3 lbs (14.2kg)

Combo V24 Centrifuge

Model #	Description
CMP-BX7N-77T1	Combo centrifuge box with digital tachometer, variable speed dial, timer, and brake

- Spin Hematocrit or Test Tubes
- Easy-Change Rotors

CHOOSE THE ROTORS



CMP-RT24-75HE
Spin standard 75mm capillary tubes with the 24-place microhematocrit rotor. Results can be read directly from the rotor with the included reader disk.



CMP-RT24-02MT
The 24-place microtube rotor holds 1.5 to 2 ml sized tubes.



CMP-RT12-15TT
The 12-place test-tube rotor holds 3ml-15ml sized tubes with included tube shields and inserts for smaller tubes. 24 place rotor also available.



CMP-RT24-15TT
The 24-place test-tube rotor holds 15ml sized tubes with included tube shields and inserts for smaller tubes. 12 place rotor also available.

LW Scientific

P 770.270.1394
F 770.270.2389

865 Marathon Parkway
Lawrenceville GA 30046

LWScientific.com

Care and Maintenance

1. Use only high quality test tubes. Lower quality or inexpensive glass or plastic tubes may fracture and release their contents into the tube chamber. Make sure you know the maximum force allowed for the tubes you are spinning.
2. Never force a tube into the tube shield. The tube shields were design to accommodate most common sizes of tubes.
3. Keep the tube shields clean. If a tube breaks inside a shield, clean all the debris from the shield and bowl and disinfect.
4. If a large amount of fluid has spilled inside the unit, carefully remove the tube shields and rotor and clean the inside of the rotor chamber and the top of the motor.

*The horizontal metal rotor and tube shields can be autoclaved.

Specifications

Nominal Speed:	500-3400 rpm
Fuse:	10A
Height:	9.9in
Width:	14.9in
Depth:	14.5in
Weight:	12lbs
Boxed Dims:	16x16x12in
Boxed Weight:	17lbs

Fluid Recommendations:	***Speed***	***Time***
Whole Blood	3400	10 min.
Urine	1800	5-10 min.

LED Display Definitions:

Green LED ON:
Lid is locked / Ready for cycle

Green LED blinking quickly RED LED ON:
Unit accelerating

Green LED blinking slowly RED LED ON:
Unit at operating speed

Red LED blinking/display is "00":
Lid locked / Cycle complete

G-Force with Fixed Rotor:

RCF (g's)	Radius (mm)	RPM
31	112	500
80	112	800
125	112	1000
180	112	1200
245	112	1400
282	112	1500
321	112	1600
406	112	1800
501	112	2000
606	112	2200
721	112	2400
846	112	2600
982	112	2800
1127	112	3000
1282	112	3200
1364	112	3300
1450	112	3400

G-Force with Swing-Out Rotor:

RCF (g's)	Radius (mm)	RPM
39	140	500
100	140	800
156	140	1000
225	140	1200
306	140	1400
352	140	1500
400	140	1600
507	140	1800
626	140	2000
757	140	2200
901	140	2400
1058	140	2600
1227	140	2800
1408	140	3000
1602	140	3200
1704	140	3300
1809	140	3400

G-Force with Micro-Tube & 50ml Rotor:

RCF (g's)	Radius (mm)	RPM
29	102	500
73	102	800
115	102	1000
165	102	1200
224	102	1400
258	102	1500
293	102	1600
371	102	1800
458	102	2000
554	102	2200
660	102	2400
774	102	2600
898	102	2800
1031	102	3000
1173	102	3200
1247	102	3300
1324	102	3400

The Universal Centrifuge is intended for use as a general laboratory centrifuge. MKT-7.5.3.-L-110 | Rev 8

P. 770.270.1394 F. 770.270.2389 865 Marathon Parkway Lawrenceville GA 30046

NO. 516 CENTRIFUGE, FECAL

LW Scientific

Universal Centrifuge

Instruction Manual





A	Lid
B	ON/OFF Switch (DC Power Jack)
C	Run Button
D	Stop/Open Button
E	Speed Setting
F	Time Setting
G	Emergency Release Hole
H	Lid Latch

Introduction

The Universal Centrifuge from LW Scientific is the perfect solution for both laboratories and doctors' offices. This newest member of our USA centrifuge initiative features a ZERO-RPM locking lid for safety and digital programming of time ranging from 1-99 minutes and speed ranging from 500-3400rpm. Achieve up to 1550g with the fixed-angle rotor or 1809g with the swing-out rotor, resulting in clean, easy to read lines of separation. The LWS Universal centrifuge has a DC motor and comes with a 110-220v auto-switching power supply.

Maximum test-tube size for the ***8-place fixed-angle rotor*** is 122mm tall and 17.5mm wide if spinning 8 tubes (full load), and 131mm tall and 17.5mm wide if spinning 4 tubes (every other position).

Maximum test-tube size for the ***6-place swing-out rotor*** is 131mm tall and 17.5mm wide if spinning 6 tubes.

Maximum micro-tube size for the ***40-place micro-tube rotor*** is 11mm wide (at the collar) and 50mm tall.

Maximum 50ml tube size for the ***4-place 50ml rotor*** is 30mm wide and 120mm tall.

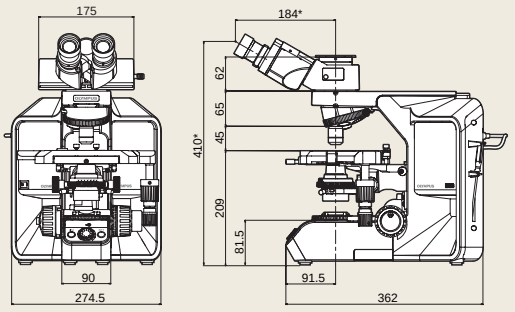
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BX43

BX43 dimensions

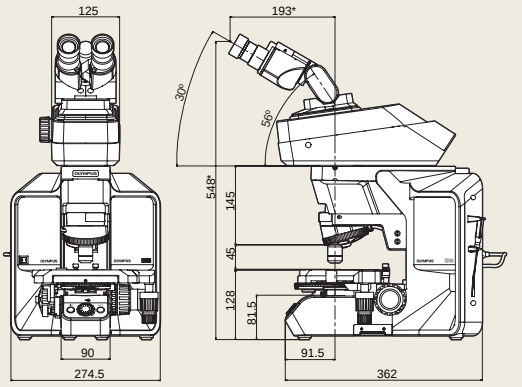
(unit: mm)



Weight: Approx. 13 kg, Power consumption: Approx. 4 W
The length marked with an asterisk (*) may vary according to interpupillary distance. Distance for figure shown is 62 mm.

BX46 dimensions

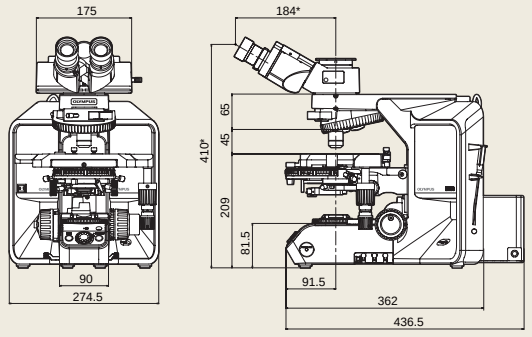
(unit: mm)



Weight: Approx. 17 kg, Power consumption: Approx. 4 W
The length marked with an asterisk (*) may vary according to interpupillary distance. Distance for figure shown is 62 mm.

BX53 dimensions

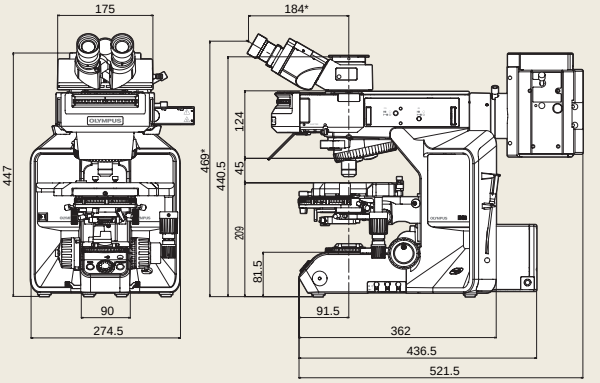
(unit: mm)



Weight: Approx. 16 kg, Power consumption: Approx. 140 W
The length marked with an asterisk (*) may vary according to interpupillary distance. Distance for figure shown is 62 mm.

BX53 FL dimensions

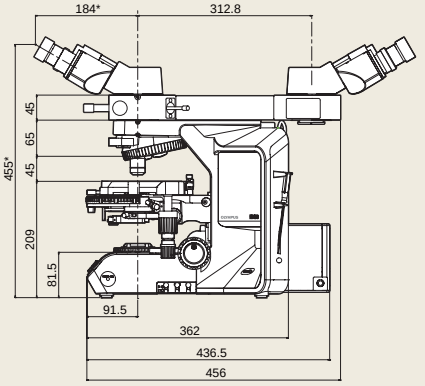
(unit: mm)



Weight: Approx. 21 kg, Power consumption: Approx. 290 W
The length marked with an asterisk (*) may vary according to interpupillary distance. Distance for figure shown is 62 mm.

BX53+U-DO dimensions

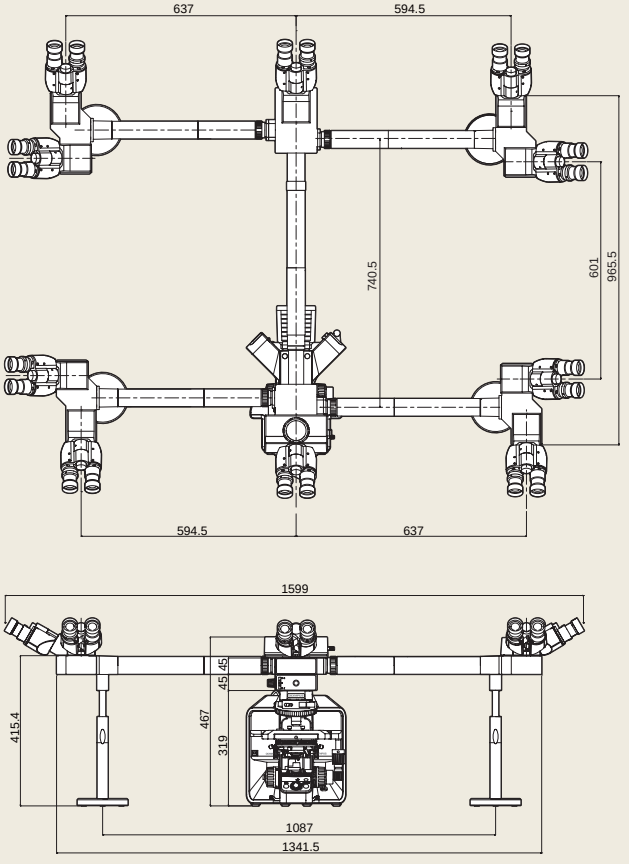
(unit: mm)



Weight: Approx. 19 kg, Power consumption: Approx. 140 W
The length marked with an asterisk (*) may vary according to interpupillary distance. Distance for figure shown is 62 mm.

BX53+U-MDO10 dimensions

(unit: mm)



Weight: Approx. 35 kg, Power consumption: Approx. 140 W
The length marked with an asterisk (*) may vary according to interpupillary distance. Distance for figure shown is 62 mm.

BX43 specifications

Microscope frame	Optical system	UIS2 optical system
	Focus	Vertical stage movement: 25 mm stage stroke with coarse adjustment limit stopper, Torque adjustment for coarse adjustment knobs, Stage mounting position variable, High sensitivity fine focusing knob (minimum adjustment gradations: 1 µm)
	Illuminator	Built-in Koehler illumination for transmitted light, light intensity manager switch High color reproductivity LED light source, 6 V 30 W halogen bulb (pre-centered)
Revolving nosepiece		Interchangeable reversed quintuple/coded quintuple/sextuple/septuple/coded septuple nosepiece
Observation tube	Widefield (F.N. 22)	• Widefield tilting, telescopic and lifting binocular • Widefield tilting trinocular • Widefield trinocular • Widefield erect image trinocular • Widefield tilting binocular • Widefield ergo binocular • Widefield binocular
	Super widefield (F.N. 26.5)	• Super widefield trinocular • Super widefield erect image trinocular
Stage		Ceramic-coated coaxial stage with left or right hand low drive control: with rotating mechanism and torque adjustment mechanism, optional rubber grips available (Non stick grooved coaxial, plain, rotatable stages are also available)
Condenser		• Abbe (N.A. 1.1), for 4x–100x • Swing out Achromatic (N.A. 0.9), for 1.25x–100x (swing-out: 1.25x–4x) • Achromatic Aplanatic (N.A. 1.4), for 10x–100x • Phase contrast, darkfield (N.A. 1.1), [phase contrast: for 10x–100x, darkfield: for 10x–100x (up to N.A. 0.80)] • Universal (N.A. 0.9), for 1.25x–100x [swing-out: 1.25x–4x, with oil top lens:(N.A. 1.4)] • Low (N.A. 0.75), for 2x–100x (Dry) • Ultra low (N.A. 0.16), for 1.25x–4x • Darkfield dry (N.A. 0.8–0.92), for 10x–100x • Darkfield oil (N.A. 1.20–1.40), for 10x–100x

BX46 specifications

Microscope frame	Optical system	UIS2 optical system
	Focus	Fixed low stage nosepiece focus 15 mm focus stroke with coarse adjustment limit stop Torque adjustment for coarse adjustment knobs High sensitivity fine focusing knob (adjustment gradations: 1 µm)
	Illuminator	Built-in Koehler illumination for transmitted light, light intensity manager switch High color reproductivity LED light source
Revolving nosepiece		Fixed reversed coded quintuple nosepiece
Observation tube	Widefield (F.N. 22)	• Widefield tilting trinocular • Widefield trinocular • Widefield tilting binocular • Widefield tilting,Telescopic,Lifting binocular • Widefield ergo binocular • Widefield binocular
Stage		Ceramic-coated coaxial stage with left or right hand low drive control, rotating mechanism and torque adjustment mechanism (Low torqe, Plain, Rotating stages are also available)
Condenser		Built-in condenser (N.A. 0.9) 1.25x–100x (swing out: 1.25x–2x)

BX53 specifications

Microscope frame	Optical system	UIS2 optical system
	Focus	Vertical stage movement: 25 mm stage stroke with coarse adjustment limit stopper, Torque adjustment for coarse adjustment knobs, Stage mounting position variable, High sensitivity fine focusing knob (minimum adjustment gradations: 1 µm)
	Illuminator	Built-in Koehler illumination for transmitted light, Light preset switch, Light intensity LED indicator, Built-in filters (LBD-IF, ND6, ND25, optional) 12 V 100 W halogen bulb (pre-centered)
Revolving nosepiece		Interchangeable reversed quintuple/coded quintuple/sextuple/septuple/coded septuple nosepiece
Observation tube	Widefield (F.N. 22)	• Widefield tilting trinocular • Widefield trinocular • Widefield tilting binocular • Widefield tilting,Telescopic,Lifting binocular • Widefield ergo binocular • Widefield binocular
	Super widefield (F.N. 26.5)	• Super widefield trinocular • Super widefield erect image trinocular
Stage		Ceramic-coated coaxial stage with left or right hand low drive control: with rotating mechanism and torque adjustment mechanism, optional rubber grips available (Non stick grooved coaxial, plain, rotatable stages are also available)
Condenser		• Abbe (N.A. 1.1), for 4x–100x • Swing out Achromatic (N.A. 0.9), for 1.25x–100x (swing-out: 1.25x–4x) • Achromatic Aplanatic (N.A. 1.4), for 10x–100x • Phase contrast, darkfield (N.A. 1.1), [phase contrast: for 10x–100x, darkfield: for 10x–100x (up to N.A. 0.80)] • Universal (N.A. 0.9), for 1.25x–100x [swing-out: 1.25x–4x, with oil top lens:(N.A. 1.4)] • Low (N.A. 0.75), for 2x–100x (Dry) • Ultra low (N.A. 0.16), for 1.25x–4x • Darkfield dry (N.A. 0.8–0.92), for 10x–100x • Darkfield oil (N.A. 1.20–1.40), for 10x–100x
Fluorescence illuminator		• Multi-purpose coded type (F.N. 22, 8-position mirror unit turret, 4-position ND slider) • Economical type (F.N. 26.5, 8-position mirror unit turret)
Fluorescence light source		100 W Hg apo lamp housing and transformer, 100 W Hg lamp housing and transformer or 75 W Xe lamp housing and transformer

The U-CBM is designed for the BX3 use in industrial environments for the EMC performance (IEC61326-1 Class A device). Using it in a residential environment may affect other equipment in the environment.

BX43/BX46/BX53 common specifications

Operating environment	• Indoor use • Ambient temperature : 5 ° to 40 °C (41 ° to 104 °F) • Maximum relative humidity : 80 % for temperatures up to 31° C (88 °F), decreasing linearly through 70 % at 34 °C (93 °F), 60 % at 37 °C (99 °F), to 50 % relative humidity at 40 °C (104 °F) • Supply voltage fluctuations : Not to exceed ±10 % of the normal voltage

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- Low-profile platform with wall-mounted digital readout

6102 Flush-Mounted In-Floor Scale

- For wheelchair, chair and stand-on weighing
- Level with floor to help reduce fall risk and improve ease of access
- Bright, easy-to-read display

6154 Flush-Mounted In-Floor Scale

- Designed to easily weigh patients on stretchers

Find the Right Scale for You

	5102 Physician's Stand-On Scale	6102 Flush-Mounted Floor Scale	6154 Flush-Mounted In-Floor Scale
Weighing Capacity	660 lb / 300 kg	825 lb / 375 kg	825 lb / 375 kg
Platform	Anodized aluminum, 18" x 14"	Anodized aluminum, 32" x 36"	Anodized aluminum, 35" x 54"
Optional Accessories	Wall-mount height gauge and power adapter	Printer, thermal printer paper (box, 15 rolls), handrail, battery pack 7.2 V, wall-mount height gauge (stainless steel, IN/CM)	
Readout	Digital LED display in pounds and kilograms, or kilograms only. Wall mounted.	Digital LED display in pounds and kilograms, or kilograms only. Surface or flush mounted.	
Power Source	6 C-size disposable alkaline batteries. Power adapter available.	110 VAC with rechargeable battery backup	
Rough-In Frame Kit	N/A	Allows for a uniform, finished-looking installation	
Printer (Accessory)	N/A	Built-in, paper tape, uses standard thermal paper	
Resolution	0.1 lb / 100 gm		
Automatic Zero	Automatically returns to zero, ready for next patient		
Weight Recall	Recalls last weight		
Reweigh	Recomputes patient's weight while patient is on scale		
Computer Capability	RS-232 output (optional)		

Welch Allyn, Inc.
4341 State Street Road
Skaneateles Falls, NY 13153 USA
(p) 800.535.6663 (f) 315.685.3361

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User's Guide

Rev. AA1 5/21/18

TP202 20-42-FO-00014 Rev A1 C2169

Pre-Installation

Note
Save all packaging until certain you are satisfied with the product.

Thank you for purchasing The Midmark Way™ Scale!

Open packages carefully. Inspect the shipping cartons and contents for any visible damage. This is important in the event that any breakage has occurred during transit.

Below is a list of everything you should receive:

- The Midmark Way™ platform scale base
- 1 ribbed vinyl platform mat
- The Midmark Way™ display/readout box with mounting bracket
- 1 AC adapter power cord
- 1 stainless steel scale cover

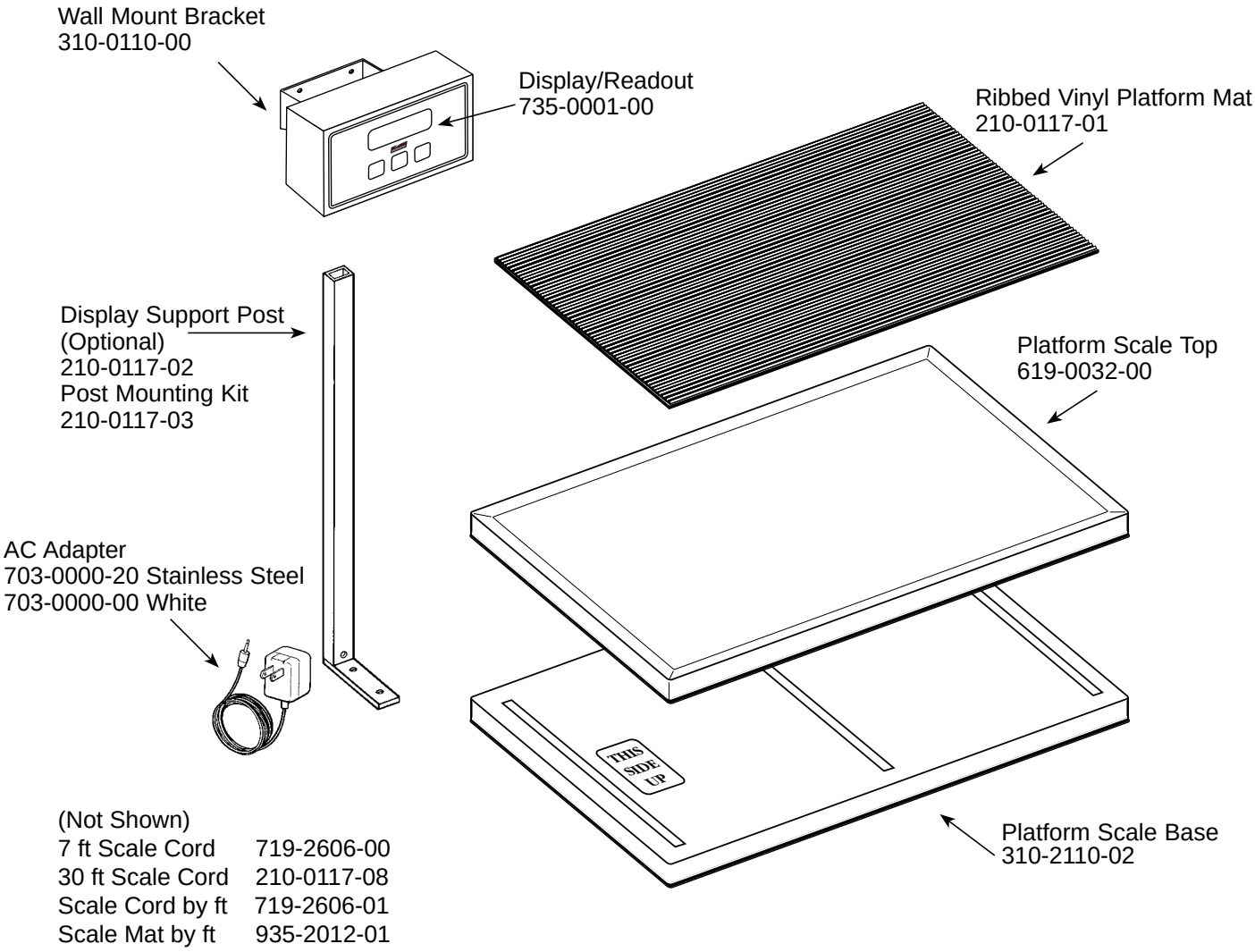
Refer to the drawing on the next page to identify parts.

Specifications

Platform Size:	44" x 22" x 2 5/8" tall
Maximum Capacity:	300 pounds
Accuracy:	Within 0.2% at 300 pounds
Electrical:	Operates on standard 110 VAC or one 9-volt DC battery
Shipping Weight:	45 pounds
Display Mount Post Height:	36"

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Parts Identification



(Not Shown)

7 ft Scale Cord	719-2606-00
30 ft Scale Cord	210-0117-08
Scale Cord by ft	719-2606-01
Scale Mat by ft	935-2012-01

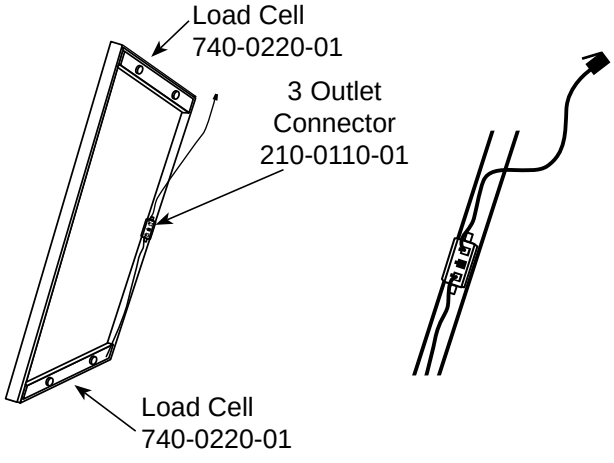
Assembly & Installation

If assembling a scale purchased with the optional post mount for the display panel, go to “Post Mounted Displays”, page 5, for Post Mount installation instructions.

1. Place the scale on a flat, level surface with no less than 1" clearance on each side. We **do not** recommend recessing the scale into the floor. Tip the scale on end and locate the phone jack, with phone cord coming out of the side.

2. The side of the scale with the display cord plug-in should be placed nearest to the wall. Be sure the scale is level

continued



TP202 20-42-FO-00014 Rev A1 C2169
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Assembly & Installation *continued*

after positioning. Screw-in feet on the bottom of the scale base may be adjusted as necessary.

3. Plug the end of the phone jack cord into the jack marked “Base” on the back side of the scale display.

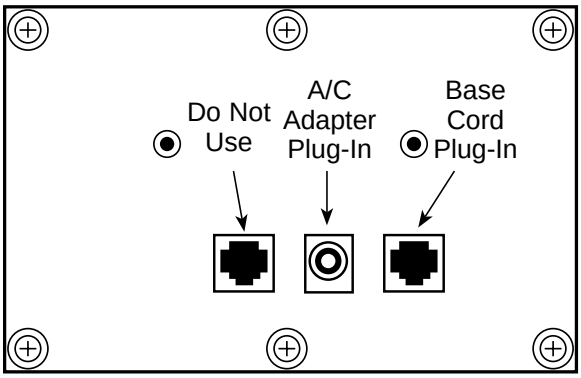
   back side of the scale display.
4. If you are using AC power to operate the scale, you may now plug the power cord into the back of the display panel, and plug the AC adapter into a standard wall outlet.

5. Mount the wall bracket securely to the wall (or counter) with appropriate hardware (not supplied). See sug gestions for mounting hardware at right. Suggested height for the mounting bracket is 48” to 60" from the floor.

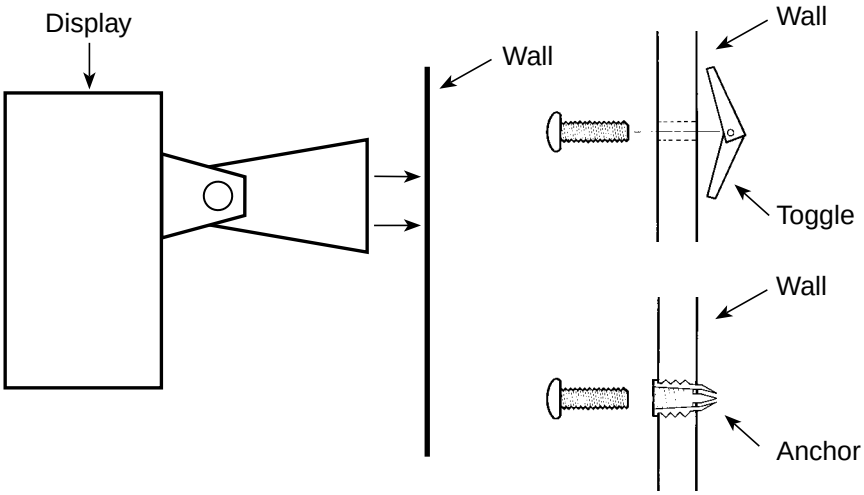
6. Press the “ON/ZERO” button.

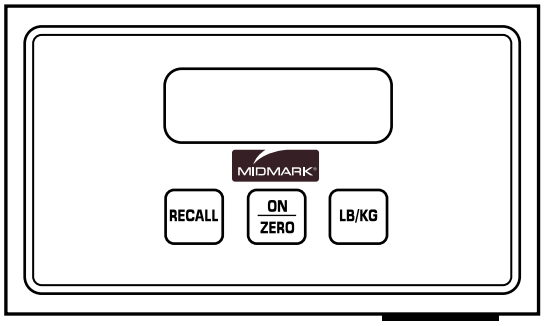
Operating The Midmark Way™ scale with battery power requires one 9-volt battery. The scale ships with a battery installed. To replace the battery, refer to the drawing at right. To perform an AC/DC switch see page 6.

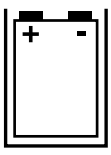
Note: Always keep the readout display matched to its proper base. If multiple scales have been purchased, match the serial number that is on the back of the display with the same serial number found on the bottom of scale base.



Back view of Display/Readout







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Post Mounted Displays

1. The display cord and AC adapter cord should be threaded through the post mount column. Start at the bottom of the column and thread the cords up through the top.

2. Place the scale base in the desired location. Tip the scale up and locate the corner you wish to install the post mount on.

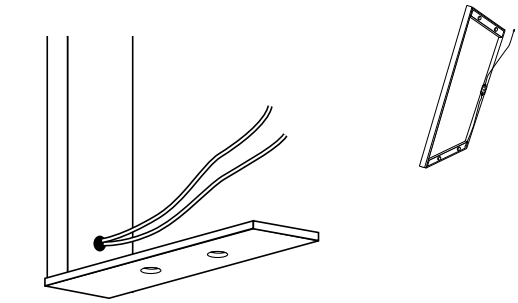
3. Next install the post mount as shown at right by first removing the leveling foot. Use the leveling foot and hex bolt provided to attach the post mount to the scale platform.
   Note: The scale will now be uneven. The remaining three feet must be adjusted to match the foot inserted in the post mount.

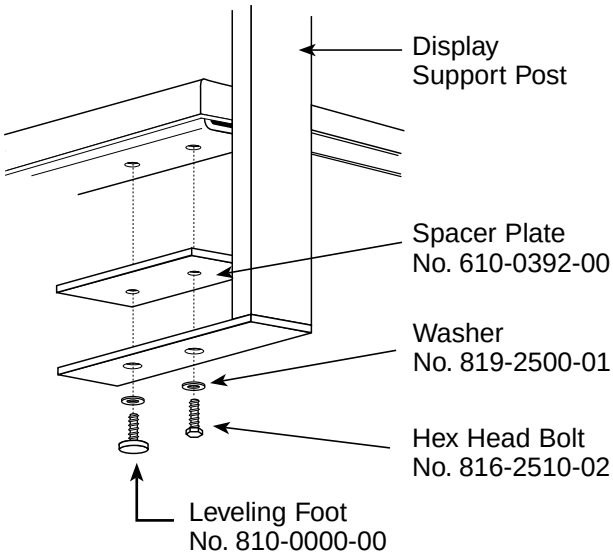
4. Fasten the scale display box to the top of the mount post with the two Phillips head screws. Plug the display connector cord and AC adapter cord coming from the top of the mount post into the back of the display. (See page 4)

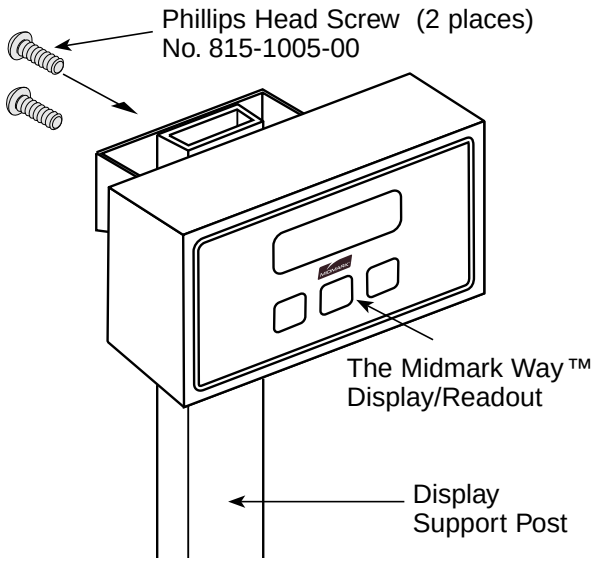
Note: Always keep the display matched to its proper base. If multiple scales have been purchased, match the serial number on the back of the display with the same serial number found on the bottom of scale base.

6. If using AC power to operate the scale, plug the power cord into the back of the display panel, and plug the AC adapter into a standard wall outlet. If operating the scale with battery power see pages 4 and 6.

7. Press the “ON/ZERO” button.







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Scale Features/Operation

Using The Control Panel:

ON ZERO

Push to turn unit on. Display shows the following:

^^^^ – self test
Midmark– checks display segments
u 1.7 – software revision
b xx.x – battery voltage (varies with AC plug in and internal 9v battery.) A reading of 6.0v indicates the need for battery replacement; the unit will shut off at a reading of 5.5v.
0.0 – ready to weigh

LB/KG

Push and hold for 4 seconds until display indicates unit shift. Display will show "conv" until the conversion is complete.

RECALL

Push the RECALL button – The display will show the message "rECL" then alternately flash between the last stable weight and the "rECL" message. Press ON/ZERO button to return to normal weighing. Works only with hold function active.

Features:

Tare Function:

Any weight within the scale capacity can be zeroed out by pressing the ON/ZERO button. When the weight is removed, the display flashes the tared weight. Press ON/ZERO button to return to normal weighing.

Weighing Function:

Display will blank out until a close range of the weight is reached. With the hold function active, the display will show the stable weight and the "hold" indication. The displayed weight will lock until the weight is removed.

Weight Hold:

Press and hold the ON/ZERO button and the RECALL button. Display will show "zero" then "h on" or "h off". Release buttons when selection is made. Default setting is "h on".

Automatic Shut Off:

In AC mode, the indicator will shut off in one hour. In battery mode, the indicator will shut off in one minute.

Calibration:





1) Install fresh 9 volt battery in indicator.
2) Unplug indicator's AC adapter from back of indicator.
3) Press and hold ON/ZERO button and LG/KG button. The display will change from "zero" to "CAL0" in about 3 sec onds.
4) With an empty platform press the ON/ ZERO button. The indicator will count down from "16" to "1" and display "C50".
5) Place a 50 lb. weight on platform and press the ON/ZERO button. The indicator will countdown from "16" to "1". Display will show "50".
6) Remove the 50 lb. weight and press the ON/ZERO button. The scale is calibrated and automatically returned to normal weight mode.
7) Re-plug AC adapter into indicator.

Switching from AC to DC:

Unplug the AC power cord from display. Press the ON/ZERO button to turn indicator on.

Switching from DC to AC:

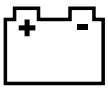
Plug AC adapter into a standard wall socket and the cord into the AC outlet on back of display. Press the ON/ZERO button to turn the indicator on.

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Troubleshooting

Indicators:

Messages on the readout indicate operating condition:

OL	Indicates weight on scale exceeds capacity.
OPEN	Indicates malfunctioning of cable, or the scale needs to be calibrated.
	Indicates battery is discharged.

In The Event Of A Problem:

In the event that a problem occurs, Midmark Technical Support is ready to assist you. In order to save time, please check the following items before calling:

- Does the readout display have a message that indicates what the problem is? Refer to “Indicators” at left for descriptions.
- Check all cables/connections.
- Unplug AC power and battery, then plug-in again to reset the scale.

Midmark Technical Support: 1-800-643-6275

Care & Cleaning

The Midmark Way™ scale platform may be cleaned with any commercially available product recommended for use on stainless steel. Frequent cleaning will prolong the life and help maintain the natural luster of the stainless steel.

To prevent scratching, use a soft cloth to clean the scale. If scrubbing is necessary, use a nylon or plastic type scrubber. When cleaning, always rub in the direction of the “grain” of the metal.

To remove minor scratches, we recommend using a 3M ScotchBrite® scouring pad rubbed lightly in the direction of the “grain” of the metal.

Never use steel wool or steel brushes when cleaning your platform scale. Steel particles may become embedded into the stainless steel and cause rust.

Avoid use of chlorine bleach for cleaning. Chlorides, bromides, iodides and thiocyanates will cause pitting, corrosion and discoloration of the metal. If using bleach, clean thoroughly with water to completely remove bleach residue.

Avoid excessive moisture. The Midmark Way™ platform scale contains electronic components that may be damaged by excessive exposure to moisture. When cleaning or mopping the floor, do not leave the scale in standing water. For thorough cleaning, the stainless steel platform cover may be lifted off the scale base and cleaned separately, away from electronic components.

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Product Warranty

This product is warrantied for 2 years from the date of delivery to the original purchaser only. The warranty is only applicable if customer complies with all instructions and specifications furnished by Midmark relating to installation, care, and application. The customer agrees not to modify, misapply, or misuse product in any manner which deviates from the Midmark instructions. Any repairs, alterations, or services provided by parties other than Midmark or its authorized representatives may void warranty. The buyer is responsible for all freight charges on returned items.

Product Satisfaction Policy

In the event that the customer is not fully satisfied with the products purchased, Midmark may, at its own discretion, arrange for the customer's account to be credited (excluding shipping charges) or replace the product. The customer must notify Midmark of any claim of nonconformity or defect in writing within 30 days from the date of receipt. The product must be returned to Midmark in its original packaging, undamaged and showing no unusual wear within 20 days of the customer's written notice.

To return an item, follow these simple instructions:

- Call Midmark for complete instructions (800-643-6275)
- A sales representative will give you a Return Authorization Number
- If a Restocking Fee applies, you will be informed at this time
- Label the boxes with the Return Authorization Number
  (All items must have a Return Authorization Number)
- Return the items, postage/freight prepaid

If necessary, the Midmark sales representative will assist you with freight arrangements.

Note: Custom orders and/or custom colors may not be returned.

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Carthage, MO 64836
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- Double motor pet dryer features four adjustable speeds from 20 to 80 meters per second and an adjustable temperature gauge modifiable from 25 to 80 for convenience
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3.5V Lithium Ion rechargeable handle (shown) provides 2.4X more power compared to our Nickel Cadmium rechargeable handle

ACCESSORIES

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Slotted Specula Instrumentation Tip

23804
Otoscope Insufflation Bulb and Tube



24330
Sofseal Specula Tip

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Configurations	
77791-MX	Welch Allyn Green Series™ 777 Integrated Wall Diagnostic System including MacroView Otoscope, Coaxial Ophthalmoscope, KleenSpec Disposable Specula Dispenser, Wall Aneroid Sphygmomanometer and SureTemp® Plus 690 Electronic
77792-M	Welch Allyn Green Series 777 Integrated Wall Diagnostic System including MacroView Otoscope, Coaxial Ophthalmoscope, KleenSpec Disposable Specula Dispenser and Wall Aneroid Sphygmomanometer
77792-MNOBP	Welch Allyn Green Series 777 Integrated Wall Diagnostic System including MacroView Otoscope, Coaxial Ophthalmoscope and KleenSpec Disposable Specula Dispenser
71641-MS	Welch Allyn 3.5 V Halogen HPX™ Diagnostic Set including MacroView Otoscope, Coaxial Ophthalmoscope, two Lithium Ion Rechargeable Handles and Universal Desk Charger
71641-M	Welch Allyn 3.5 V Halogen HPX Diagnostic Set including MacroView Otoscope, Coaxial Ophthalmoscope, two Nickel Cadmium Rechargeable Handles and Universal Desk Charger
23920	Welch Allyn 3.5 V Halogen HPX Digital MacroView Fiber-Optic Otoscope; Mini-USB Cable (10.0 ft/3.0 m) and set of Reusable Ear Specula
Accessories	
23804	Insufflation Bulb
52700	4.00 mm KleenSpec Slotted Disposable Specula Instrumentation Tip
52432-U	2.75 mm Universal KleenSpec Pediatric Disposable Ear Specula
52434-U	4.25 mm Universal KleenSpec Disposable Ear Specula
24320	SofSeal Specula Tip for Disposable Ear Specula, small
24330	SofSeal Specula Tip for Disposable Ear Specula, medium

For more information on the MacroView Otoscope, please contact your Welch Allyn sales representative of visit www.welchallyn.com.

Welch Allyn, Inc.
4341 State Street Road
Skaneateles Falls, NY 13153 USA
(p) 800.535.6663 (f) 315.685.3361



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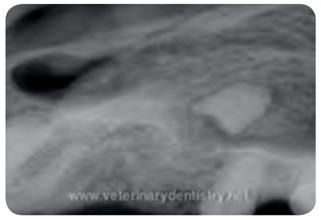
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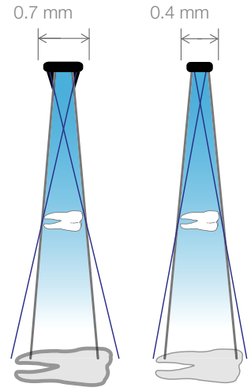
* PetMD, Gum Disease in Dogs, www.petmd.com/dog/conditions/mouth/c_multi_peridontal_disease

VetPro® DC

Designed to enhance your clinic's efficiency

The VetPro® DC uses simple icons and a large, easy-to-read display for ease of use. You can select the mA, kV and time settings of your choice or choose the convenient pre-programmed technique settings. The positioning arm is constructed with high-tolerance, frictionless joints and a heavy duty dual braking system designed for precise and stable placement. The unique tube head handle is designed to let you effortlessly put the X-ray source where you want it, with just one hand.

- Intuitive, with easy-to-use, veterinary-specific software and control panel
- DC technology allows you to adjust kV (60, 65 and 70) and mA (4, 5, 6 and 7)
- A flexible system with settings you can customize to suit your practice
- 0.4 mm focal spot (smallest in the industry) is designed to produce visibly higher resolution images
- Optional sensor holder on arm available
- 56", 66", 76" or 82" arm lengths and versatile mobile system
- No-hassle installation - simply connect the USB cable to your PC, use the quick calibration flash drive to prepare your sensor, and the system is ready
- Superior construction – made in the U.S.A.
- Before, during and after sale support



The VetPro® DC 0.4 mm focal spot is designed to produce visibly higher resolution images whether you're using film or digital sensors. Details are sharper and more defined. Small but important differences are easier to spot. Pathologies are easier to identify.



Midmark—the digital dental X-ray experts



VetPro® DR
Digital Dental Radiography Sensor

The VetPro® DR sensor is designed to allow you to get the soft-tissue visualization plus crown and root definition that you need to ensure you are providing your patients with superior dental care.

- Cable is Kevlar® reinforced, designed for improved durability
- Waterproof, hermetic seal is designed to reduce problems encountered during routine cleaning
- CMOS technology designed to deliver enhanced image quality
- High-speed USB connection designed to capture images 37% faster
- Rounded corners means easier positioning in tight spaces for better capture of roots
- Ask us about our Sensor Safe® Extended Care and Factory Warranty Extension programs





VetPro® CR
Digital Dental Radiography Reader

Do you prefer to use phosphor plates?

The VetPro® CR is designed to be an easy to use and affordable dental imaging solution from the name you trust. Who says high-quality dental imaging needs to be complicated or expensive?

The VetPro® CR Dental Radiography Reader was designed to provide the following features and resulting benefits for your clinic:

- Rapid, high-quality readings
- Low maintenance with no brushes. Helps reduce image artifacts from hair, etc.
- Size 4c plate available – large enough to capture larger teeth but small enough for easier positioning
- Affordable and compact veterinary dental solution
- Progeny® Imaging Software included at no additional cost after purchase
- Easy-to-use LCD touchscreen interface
- Utilize existing X-ray equipment and imaging techniques
- Standard and high resolution options
- Easy-to-position, reusable imaging plates
- Built-in erase function
- Streamlined unit for ease of cleaning
- Software optimizes acquisition, processing and management
- USB connection
- Eliminate darkroom and chemicals
- Auto calibration ensures stability and consistency
- Aids in marketing your practice's use of digital technology
- Size 2 and 4c imaging plates are included with the unit – sizes 0, 1, 2, 3 and 4c available for purchase





Midmark Animal Health is known in the industry for our market-leading digital X-ray machine, trusted digital imaging systems, intuitive software and an unmatched, nationwide support and service network.

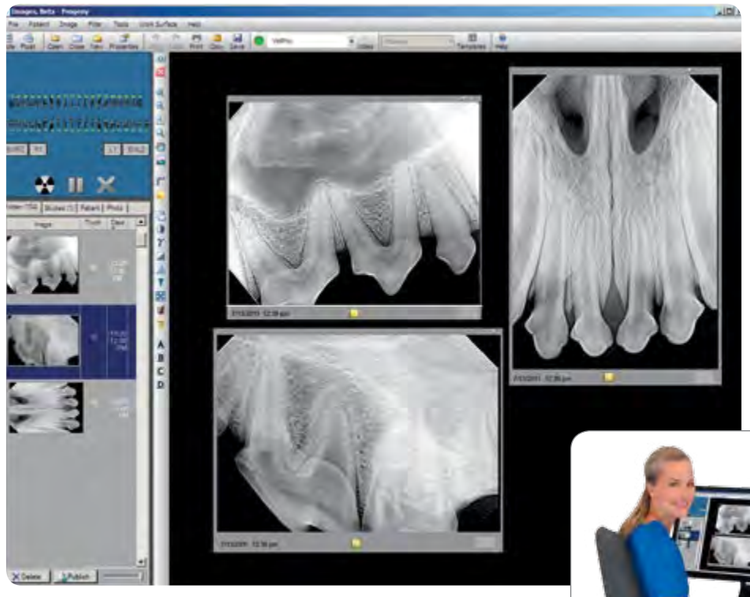


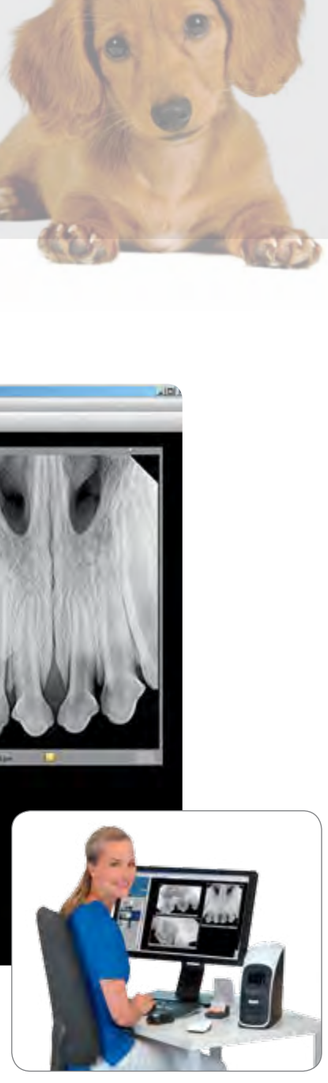
Phosphor plates are designed to have the following benefits:

- Thin, flexible imaging plates with no cables
- Imaging plates offer 100 percent active area
- Familiar workflow and accessories comparable to film, allowing for seamless integration into the practice
- No need for cleaning after each use
- Use multiple plates during one procedure
- Plates are inexpensive to replace

Our imaging software has been designed with a look and formatting that's familiar and easy to learn so you'll be acquiring, enhancing and storing images in no time.







Integrated with AVImark® Veterinary Practice Management Software

VetPro® Complete
Digital Dental Radiography Systems

Whether your clinic is equipped with film, fully digital or a combination of both, we feel you should have the freedom to choose what you are most comfortable using without sacrificing the quality, service and support that you've come to expect from the Midmark brand. That's why we provide you with multiple imaging options and the training and support you need to get the best use of your equipment.



VetPro® Complete CR



VetPro® Complete DR



Canine Tooth Panel



Feline Tooth Panel

VetPro® Complete Mobile Imaging Station

A digital imaging solution that includes a VetPro® Complete Mobile unit with #2 sensor, laptop pre-loaded with imaging software and laptop tray.



VetPro® DC Specifications

Line Voltage: 120-230 VAC +/- 10% 50-60 Hz

Line Load: Maximum current amps

Tube Potential: 60, 65 or 70 kV

Tube Current: 4, 5, 6 or 7 mA

Exposure Time: 20 ms to 2 seconds

Cone Length: 20 cm (8 inches)

Minimum Inherent Filtration: 2 mm Al equivalent at 70 kV

Focal Spot: 0.4 mm (IEC 336)

Duty Factor: 1:15

Remote exposure hand switch included

Shipping Weight:
95 lb (wall mount)
330 lb (mobile)

Applicable Documents Federal Regulations: 21 CFR, UL, CE

Warranty: 2 years, limited

Options: choice of 56", 66", 76" or 82" (total reach); double stud mounting plate

VetPro® CR Specifications

Selectable Pixel Size: High

35µm · Standard 64µm

Sampling Pixel Pitch (35µm): 14.3 lp/mm

Readout Time: 4.1 ~ 7.2 sec

Resolution: Data Capture 16-bits per pixel, 65,000 graytones

Eraser: Embedded

Dimensions 10.4" (H)" x 4.7" (W) x 12.5" (D)/265 (H) x 120 (W) x 318 (D) mm

Weight: 10.4 lb (4.7 kg)

System Configuration: Tabletop

Interface: USB 2.0 high speed (480 Mbps)

Power Requirements: 100 ~ 240V/50 ~ 60Hz, 30W · UPS required

Warranty: 1 year

VetPro® DR Sensors Specifications

Dimensions:
Size 1 (film size equivalent)
37 mm x 24 mm x 6 mm

Size 2 (film size equivalent)
43 mm x 30 mm x 6 mm

Active Area:
Size 1 (film size equivalent)
30 mm x 20 mm

Size 2 (film size equivalent)
36 mm x 26 mm

Number of Pixels:
Size 1 (film size equivalent)
1580 lines x 1050 pixels

Size 2 (film size equivalent)
1896 lines x 1368 pixels

Pixel Size: 19 µm x 19 µm

Theoretical Resolution:
26 lp/mm

Levels of Grey: 4096

Connection Type:
High-speed USB 2.0

Sensor Cable Length: 3 meters

Warranty: 2 years

Progeny® Vet Imaging Software

Computer Workstation Requirements:

Operating System: Windows® 8 Pro or Enterprise Edition (32 & 64 bit), Windows® 7 Ultimate or Professional (32 & 64 bit)

Processor: Intel® (or x86 compatible) Single Core™ 2 GHz or better (or Dual Core™ at 1.7 GHz recommended),

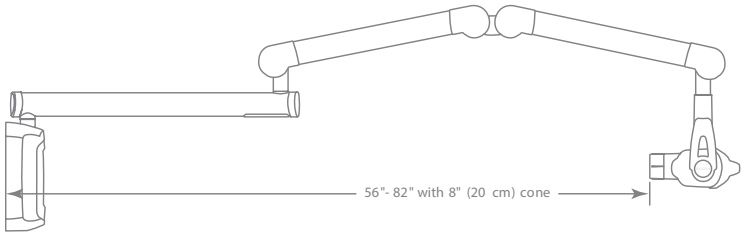
Memory: 2 GB RAM (minimum), 3 GB RAM (recommended),

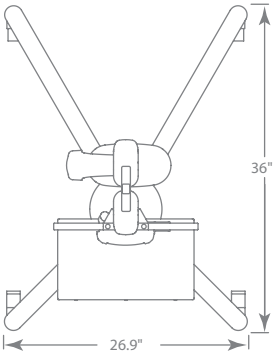
Storage: 80 GB Hard Drive (minimum)

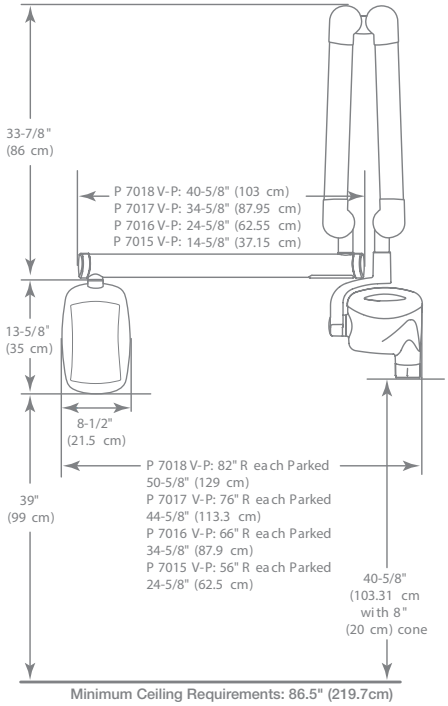
Video: 32 bit, 1024 x 768 resolution capable (minimum)

Display: 1024 x 768, 32 true bit color (recommended)

Ports: Two High-Speed USB 2.0







Authorized Representative:

CEpartner4U
Esdoornlaan 13
3951DB Maarn
The Netherlands
www.cepartner4u.eu

Better Patient Care. Better Business.™

midmarkanimalhealth.com

X-ray, Radiography Sensors, Mobile Station - Manufactured by Midmark Corporation, Lincolnshire, IL.
Radiography Reader, Plates - Manufactured by 3D Imaging and Simulations Corp, Yuseong-gu, Daejeon, Korea, for distribution by Midmark Corporation, Versailles, OH.

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Midmark is an ISO 13485 Certified Company.

MIDMARK®
Because we care.

Digital Dental X-ray

Midmark Animal Health Products





MIDMARK®

Disease you can't see...

60% of periodontal disease lies below the gum line, and many issues aren't detectable via probing or visual inspection.*

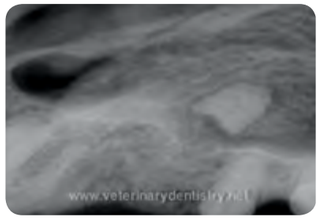
Don't let patients leave your clinic with undiagnosed disease. Only through the use of dental radiographs can you effectively diagnose dental disease that could result in tooth loss and many systemic diseases affecting the heart, liver and kidneys.



Teeth appear normal and healthy.



X-ray shows underlying pathology.



Post-extraction images allow you to spot remaining tooth fragments.



You can't afford not to invest in dental X-ray. VetPro® systems can pay for themselves in less than a year! Let us show you how.

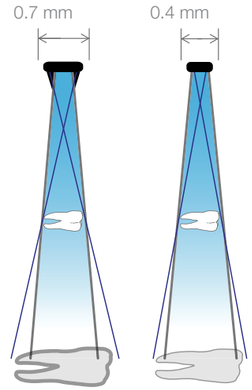
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- Standard and high resolution options
- Easy-to-position, reusable imaging plates
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- Software optimizes acquisition, processing and management
- USB connection
- Eliminate darkroom and chemicals
- Auto calibration ensures stability and consistency
- Aids in marketing your practice's use of digital technology
- Size 2 and 4c imaging plates are included with the unit – sizes 0, 1, 2, 3 and 4c available for purchase





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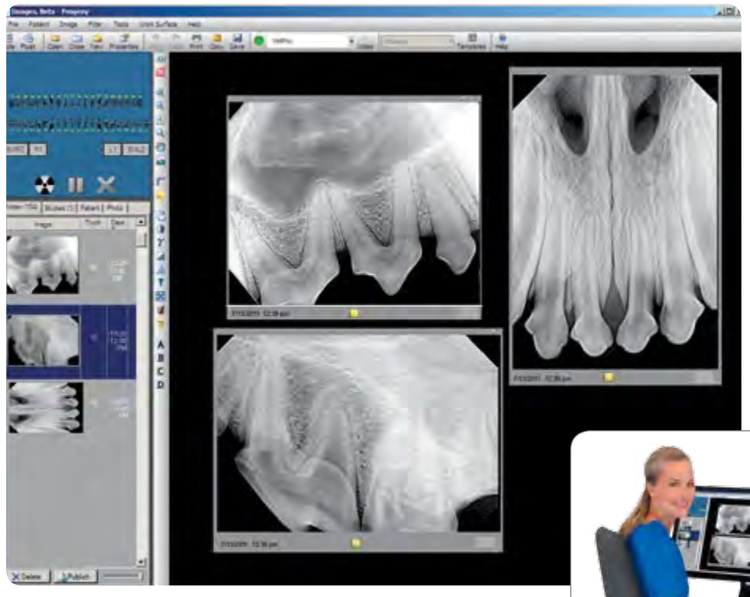


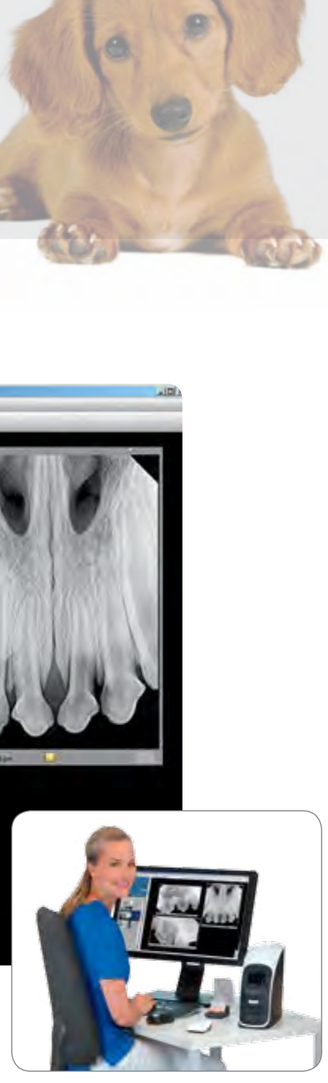
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VetPro® Complete CR



VetPro® Complete DR



Canine Tooth Panel



Feline Tooth Panel

VetPro® Complete Mobile Imaging Station

A digital imaging solution that includes a VetPro® Complete Mobile unit with #2 sensor, laptop pre-loaded with imaging software and laptop tray.



VetPro® DC Specifications

Line Voltage: 120-230 VAC +/- 10% 50-60 Hz

Line Load: Maximum current amps

Tube Potential: 60, 65 or 70 kV

Tube Current: 4, 5, 6 or 7 mA

Exposure Time: 20 ms to 2 seconds

Cone Length: 20 cm (8 inches)

Minimum Inherent Filtration: 2 mm Al equivalent at 70 kV

Focal Spot: 0.4 mm (IEC 336)

Duty Factor: 1:15

Remote exposure hand switch included

Shipping Weight:
95 lb (wall mount)
330 lb (mobile)

Applicable Documents Federal Regulations: 21 CFR, UL, CE

Warranty: 2 years, limited

Options: choice of 56", 66", 76" or 82" (total reach); double stud mounting plate

VetPro® CR Specifications

Selectable Pixel Size: High

35µm · Standard 64µm

Sampling Pixel Pitch (35µm): 14.3 lp/mm

Readout Time: 4.1 ~ 7.2 sec

Resolution: Data Capture 16-bits per pixel, 65,000 graytones

Eraser: Embedded

Dimensions 10.4" (H)" x 4.7" (W) x 12.5" (D)/265 (H) x 120 (W) x 318 (D) mm

Weight: 10.4 lb (4.7 kg)

System Configuration: Tabletop

Interface: USB 2.0 high speed (480 Mbps)

Power Requirements: 100 ~ 240V/50 ~ 60Hz, 30W · UPS required

Warranty: 1 year

VetPro® DR Sensors Specifications

Dimensions:
Size 1 (film size equivalent)
37 mm x 24 mm x 6 mm

Size 2 (film size equivalent)
43 mm x 30 mm x 6 mm

Active Area:
Size 1 (film size equivalent)
30 mm x 20 mm

Size 2 (film size equivalent)
36 mm x 26 mm

Number of Pixels:
Size 1 (film size equivalent)
1580 lines x 1050 pixels

Size 2 (film size equivalent)
1896 lines x 1368 pixels

Pixel Size: 19 µm x 19 µm

Theoretical Resolution:
26 lp/mm

Levels of Grey: 4096

Connection Type:
High-speed USB 2.0

Sensor Cable Length: 3 meters

Warranty: 2 years

Progeny® Vet Imaging Software

Computer Workstation Requirements:

Operating System: Windows® 8 Pro or Enterprise Edition (32 & 64 bit), Windows® 7 Ultimate or Professional (32 & 64 bit)

Processor: Intel® (or x86 compatible) Single Core™ 2 GHz or better (or Dual Core™ at 1.7 GHz recommended),

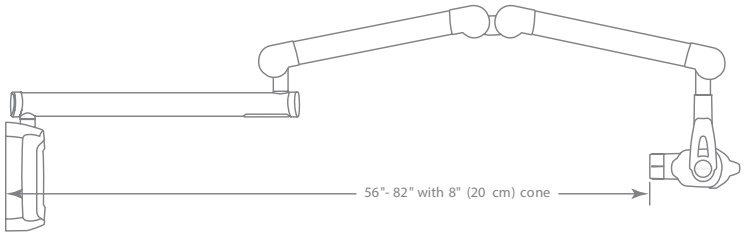
Memory: 2 GB RAM (minimum), 3 GB RAM (recommended),

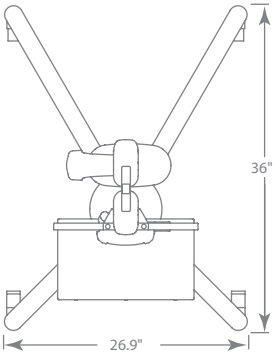
Storage: 80 GB Hard Drive (minimum)

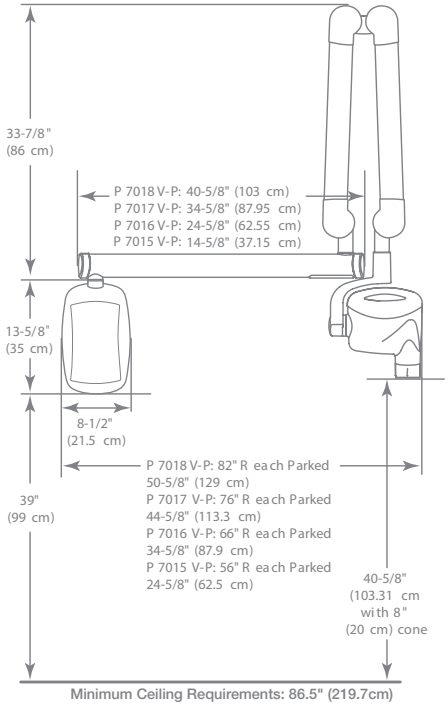
Video: 32 bit, 1024 x 768 resolution capable (minimum)

Display: 1024 x 768, 32 true bit color (recommended)

Ports: Two High-Speed USB 2.0







Authorized Representative:

CEpartner4U
Esdoornlaan 13
3951DB Maarn
The Netherlands
www.cepartner4u.eu

Better Patient Care. Better Business.™

midmarkanimalhealth.com

X-ray, Radiography Sensors, Mobile Station - Manufactured by Midmark Corporation, Lincolnshire, IL.
Radiography Reader, Plates - Manufactured by 3D Imaging and Simulations Corp, Yuseong-gu, Daejeon, Korea, for distribution by Midmark Corporation, Versailles, OH.

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Midmark is an ISO 13485 Certified Company.

MIDMARK®
Because we care.

NO. 531 DENTAL ARM, PROPHYLAXIS, CABINET MOUNT

MIDMARK®

VetPro® 5000 Wall / Cabinet & Table Mount Dental Delivery System

For Models:

8001-001
8001-002
8001-003
8001-005
8001-006
8001-007



User's Guide

003-1902-00 Rev L (11/10/15)

Style C

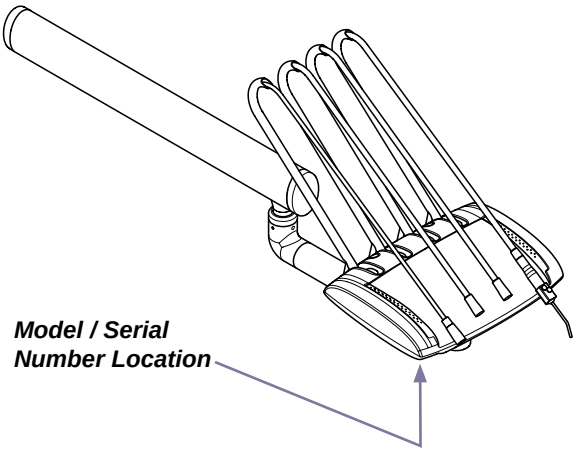
Product Information

Dealer :

Date of Purchase:

Model / Serial Number:

Midmark Authorized Service Company:



VA1280

Calling for Service

Note
Model / Serial number information is required when calling for service.

If service is required, contact your Midmark dealer.

To contact Midmark directly:

1-800-Midmark (1-800-643-6275) or 937-526-3662
8:00 am until 5:00 p.m., Monday through Friday (EST)
[excluding standard U.S. holidays]

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Important Information

Safety Symbols



DANGER
Indicates an imminently hazardous situation which <u>will</u> result in serious or fatal injury. This symbol is used only the most extreme conditions.



WARNING
Indicates a potentially hazardous situation which could result in serious injury.



Caution
Indicates a potentially hazardous situation which <u>may</u> result in minor or moderate injury. It may also be used to alert against unsafe practices



Equipment Alert
Indicates a potentially hazardous situation which could result in equipment damage.



Proper Shipping Orientation



Maximum stacking height
(Do not stack)



Fragile



Keep Dry



Consult User Guide



Do Not Tumble



Handle With Care

Transportation / Storage Conditions

Ambient Temperature Range:.....50°F to 104°F (+10°C to +40°C)
Relative Humidity.....10% to 90% (non-condensing)
Atmospheric Pressure .....700hPa (20 in.Hg) to 1060hPa (31 in.Hg)

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Intended Use

To provide veterinarians and/or technicians with air & water to operate handpieces, scaler, syringes, and Midmark authorized accessories during veterinary dental procedures.

Electromagnetic Interference

This product is designed and built to minimize electromagnetic interference with other devices. However, if interference is noticed between another device and this product:

- Remove interfering device from room
- Increase separation between product and interfering device
- Contact Midmark if interference persists

Disposal of Equipment

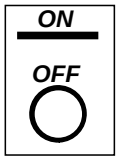
At the end of product life, the dental unit, accessories, and other consumable goods may become contaminated from normal use. Consult local codes and ordinances for proper disposal of equipment, accessories and other consumable goods.

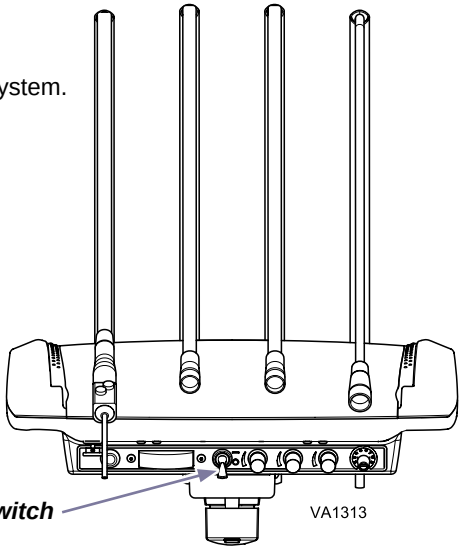
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Operation

Master ON / OFF Switch

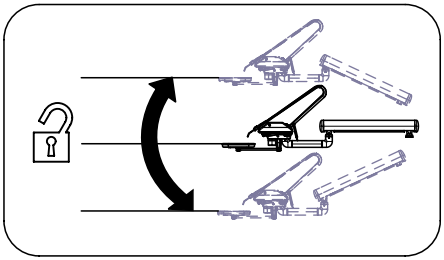
The master on / off switch must be ON to operate the delivery system.

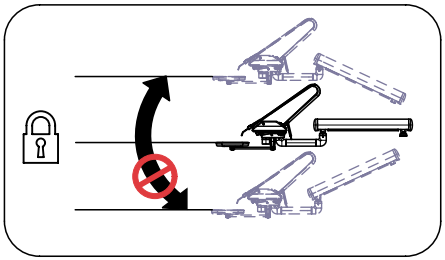


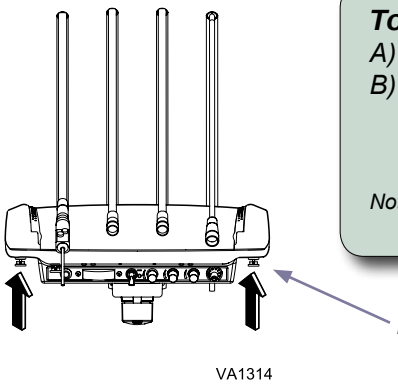


Flex Arm

To avoid injury to the patient or staff, the flex arm can be locked to prevent accidental movement.
(The flex arm will still move upward when locked.)







To Unlock / Lock Flex arm...

A) Turn power on. Allow system to pressurize.

B) Push up release button to disengage lock and lower to desired height. It may be necessary to move head upwards slightly before lowering.

Note: Flex arm lock buttons will not work unless the system is pressurized.

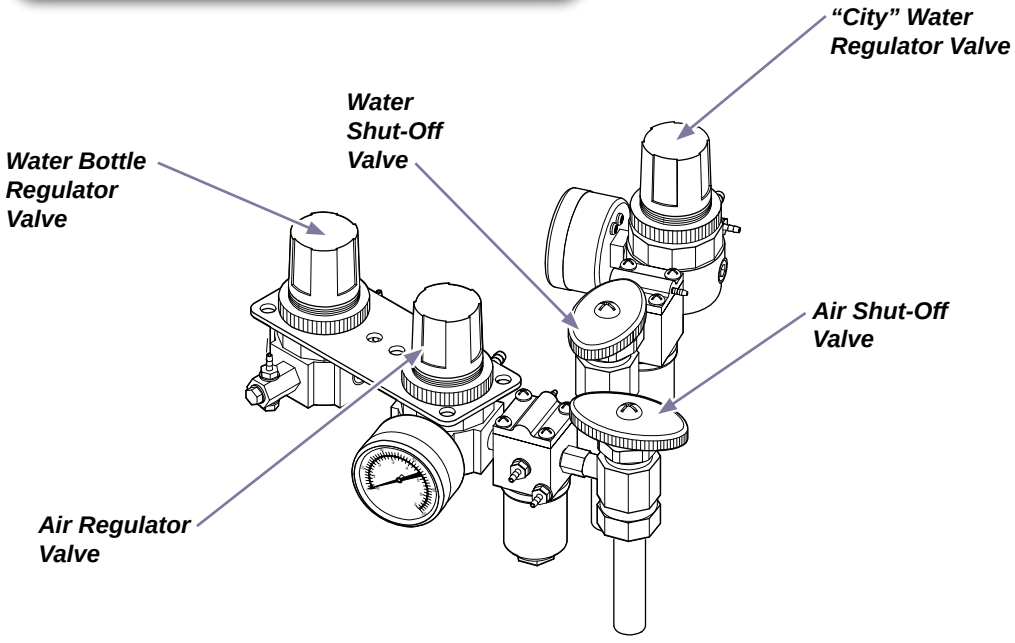
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Operation

Manual Shut-Off Valves - (Only for Units with Junction Box)

The manual shut-off valves allow you to stop the air and/or water supply at the point of input to the dental unit. This can be done during extended periods of no-use (ex. vacation, holidays, etc.), or in the event of a malfunction.

To shut off water to Dental Unit...
Rotate water shut-off valve knob clockwise.



To shut off air to Dental Unit...
Rotate air shut-off valve knob clockwise.

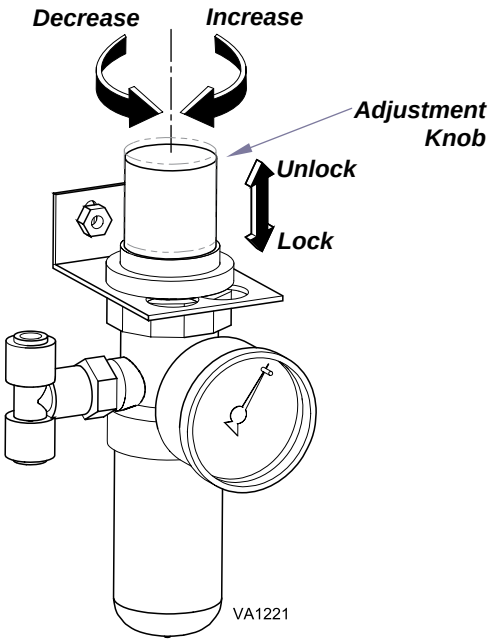
© Midmark Corporation 2008

Operation

Pressure Regulator Valves - (Only for Units with Junction Box)

The pressure regulator valves allow you to adjust the air and water pressure that is supplied to the dental unit.

Recommended Settings
"City" Water Regulator Valve.....30 PSI
Air Regulator Valve.....80 PSI
Water Bottle Regulator Valve.....30 PSI *(Do not adjust!)*



To adjust regulator...
A) Pull knob up to unlock.
B) Rotate knob until desired pressure is displayed on gauge.
C) Push knob down to lock.

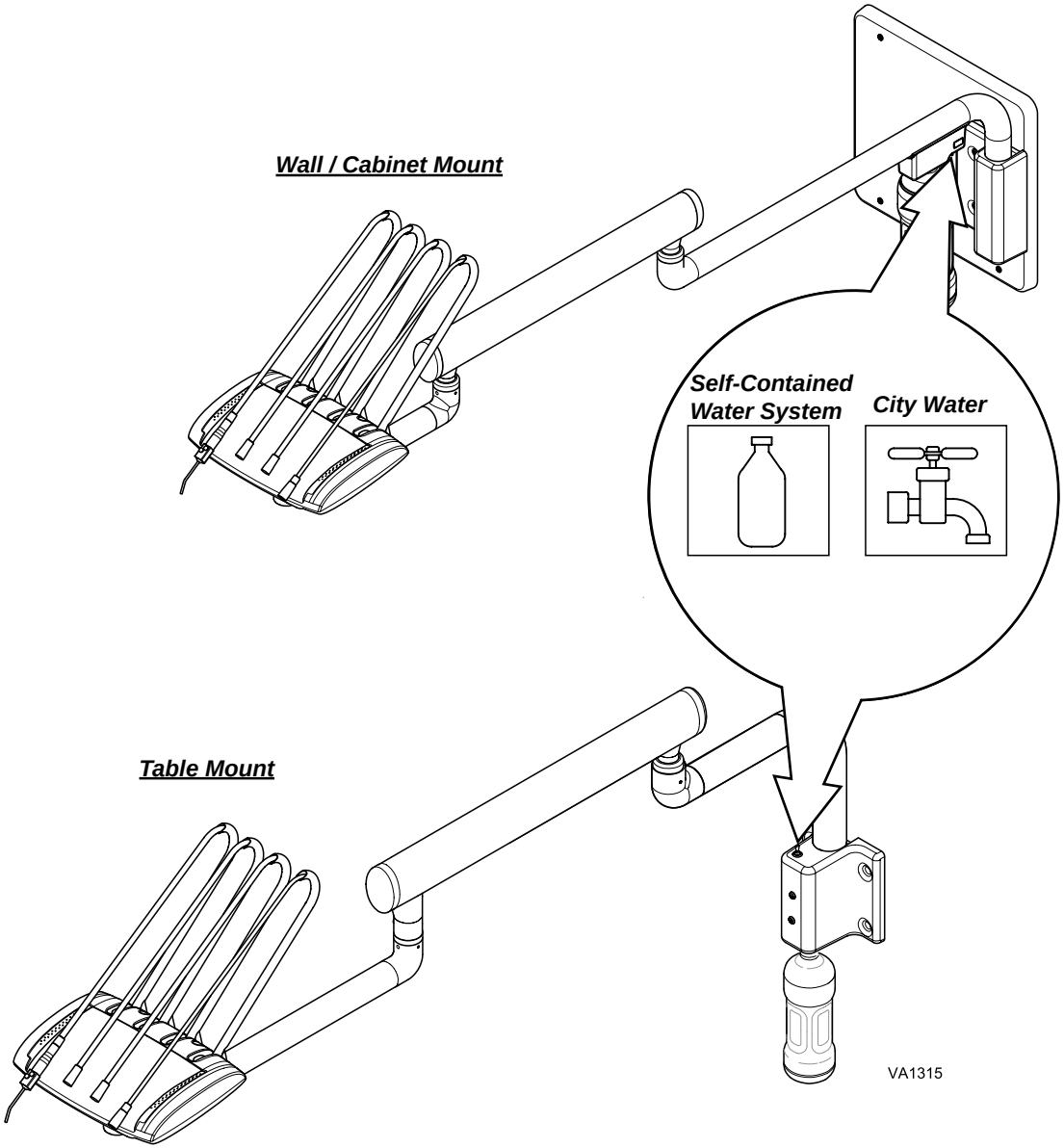
Equipment Alert
The dental unit has been designed to operate at the recommend settings. Setting the pressure higher / lower than recommended may result in damage to the equipment or diminished performance.

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Operation

Water Toggle Switch

The water toggle switch allows you to choose the water source for the delivery system. You may use either “City” water (tap water), or water from the self-contained water system bottle. Location of the switch is shown below.

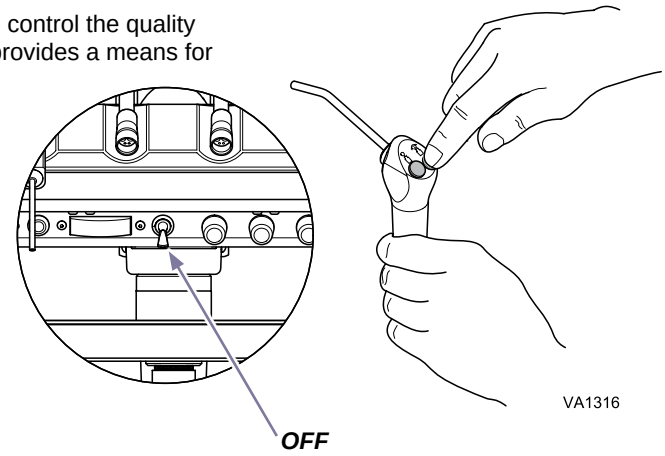


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Operation

Self-Contained Water - System

The self-contained water system allows you to control the quality of water used in your delivery system. It also provides a means for disinfecting the system's internal tubing.



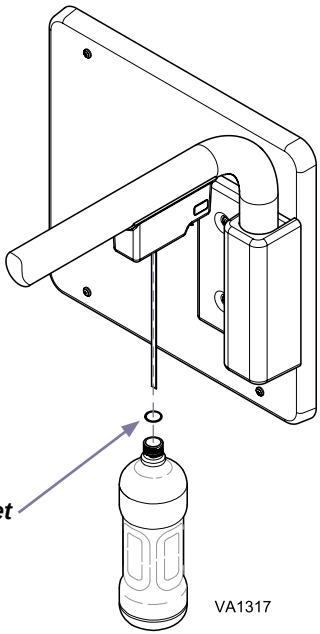
Caution

Residual air pressure may cause the water bottle to fall and/or bottle contents to spill or spray if not released.

Before you begin...

A) Turn master switch OFF.
B) Press syringe air button until all residual air pressure is released.

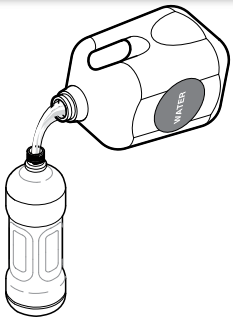
Wall Mount Shown



To fill the Self -Contained Water System...

A) Unscrew water bottle.
B) Fill bottle with water. (Distilled Water Is Recommended)
C) Be sure gasket is in place.
D) Screw bottle into mounting cap.

Note: If gasket is not installed properly, you will hear a hissing when the system is turned ON. Water bottle should be checked in between each patient and filled if necessary.



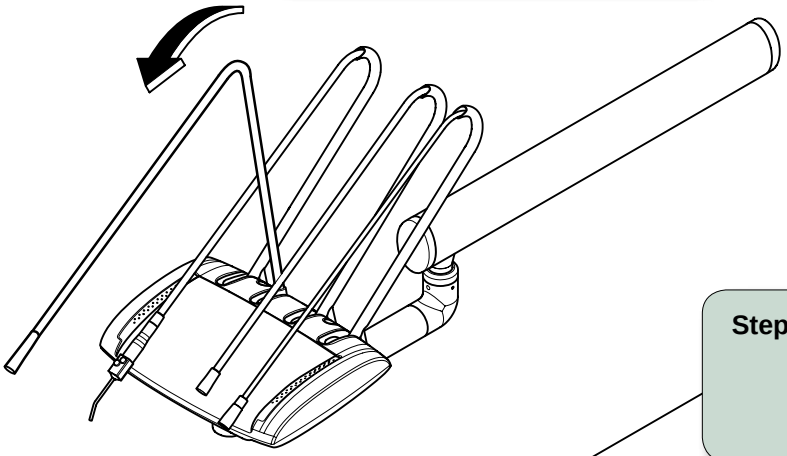
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Operation

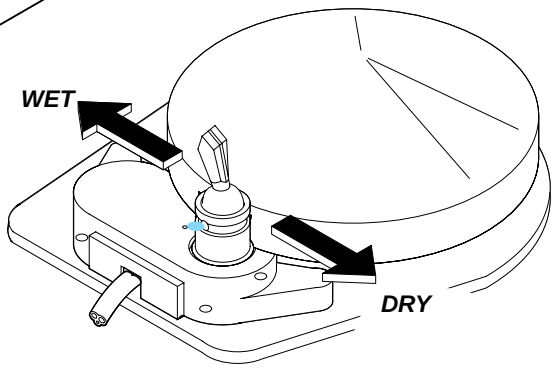
Handpieces

Before you begin...
Turn Master ON / OFF switch ON.
Move Water Toggle Switch to desired setting.

Step 1: Pull handpiece forward.



Step 3: Press foot control pedal to deliver drive air to the handpiece.



VA1318

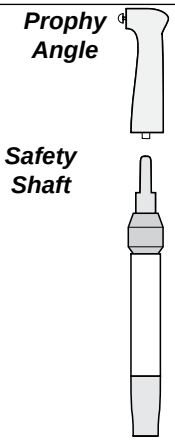
Step 2: Select Wet or Dry operation using the foot control toggle switch.

Note: The blue dot indicates Wet position.

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Operation

Handpiece Care



To Change Prophy Angle...

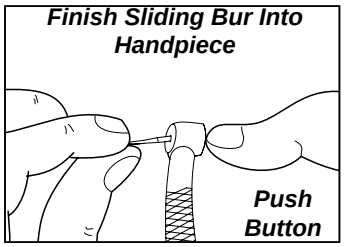
A) Rotate chuck to the right to unlock.
B) Install Prophy angle, turn chuck release ring left to tighten.

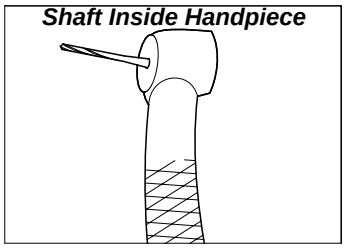
To Change Bur in High Speed Handpiece...

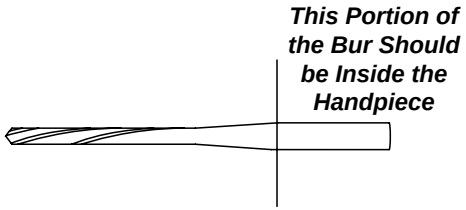
A) Push button on back of handpiece and pull the bur out.
B) Push bur into handpiece. (The shank will only go in half-way)
C) Then push button on back of handpiece and push the bur in until shank is all the way in.

Note: Friction grip burs (FG Style) are designed so that the entire straight portion of the shaft should be inside the chuck of the handpiece. You should only see the tapered portion of the bur if installed properly.







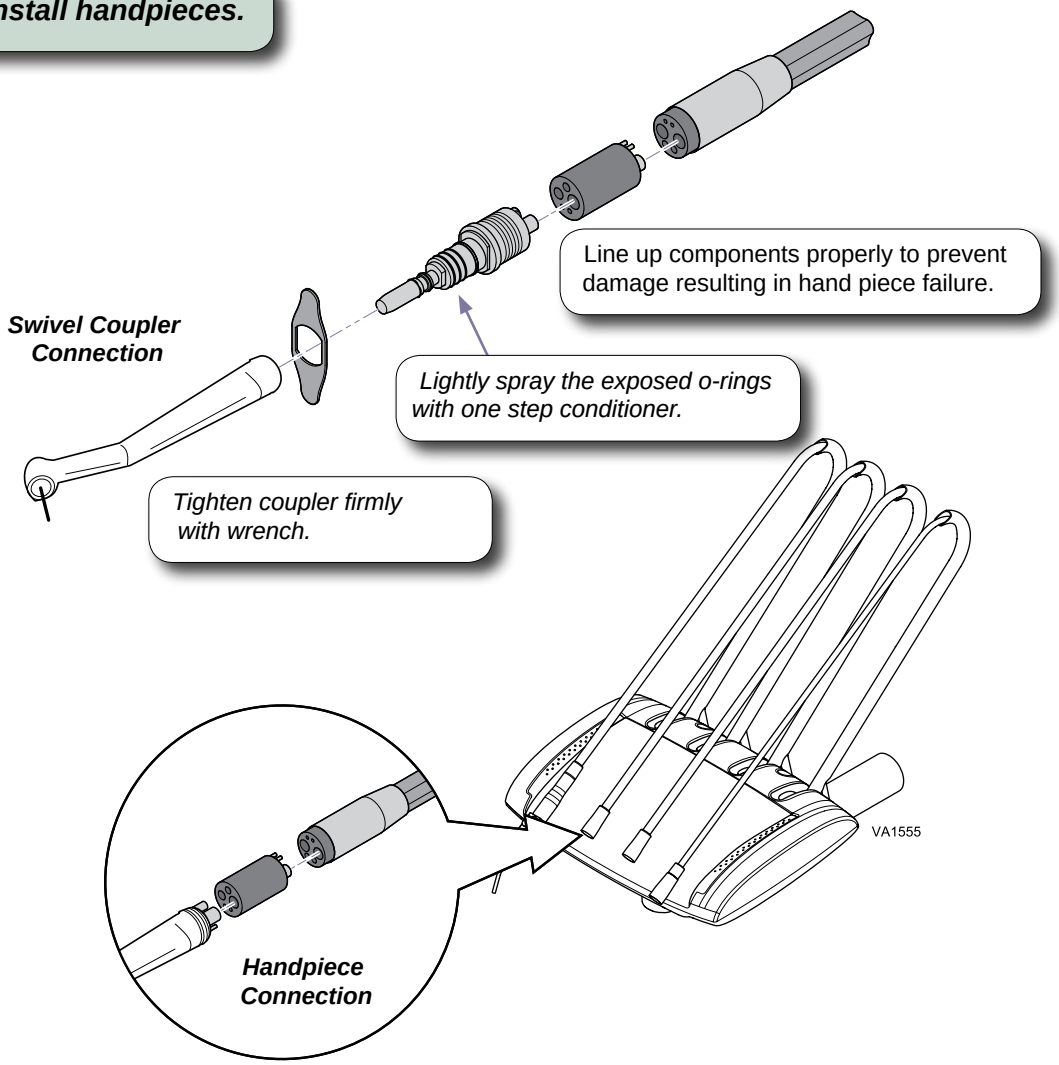


VA1546

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Handpiece Care

Install handpieces.



Equipment Alert

Complete manufacture's instructions for "Infection Control / Sterilization found in the documentation included with the handpieces. Failure to do this will cause premature failure of handpieces.

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Operation

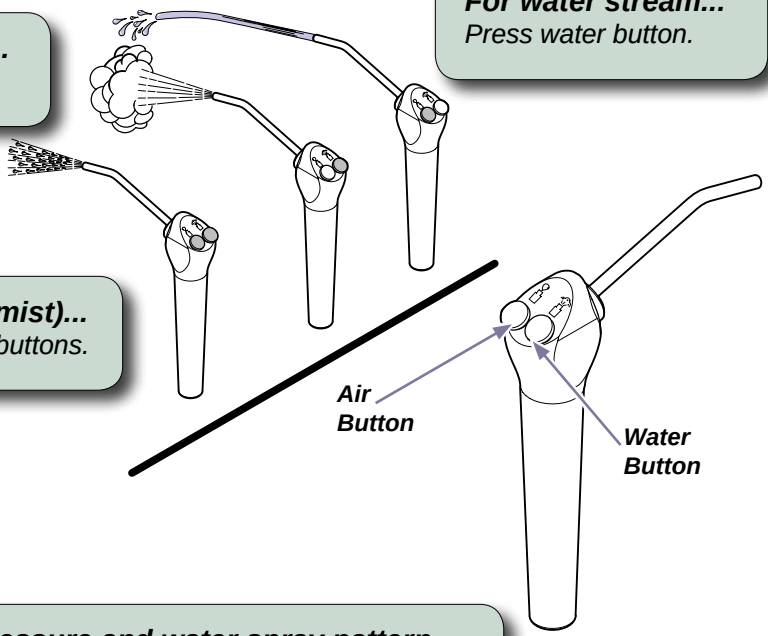
Syringe

This page shows operation and adjustment for a standard 3-way syringe.

Before you begin...
Turn master ON / OFF switch ON.
Move water toggle switch to desired setting.

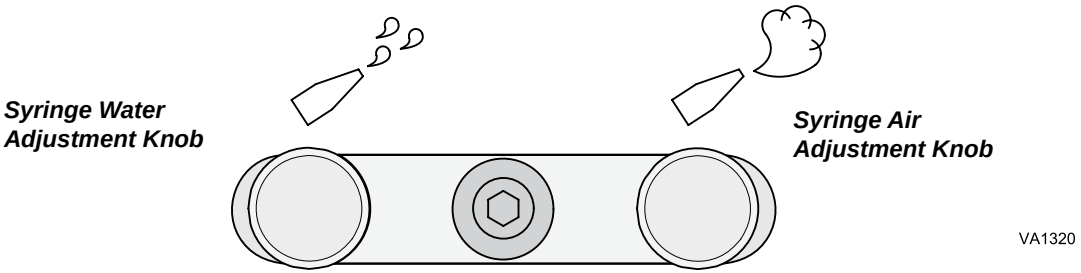
For water stream...
Press water button.

For air spray...
Press air button.



For water spray (mist)...
Press air and water buttons.

To adjust air spray pressure and water spray pattern...
Rotate syringe air adjustment knob as necessary.

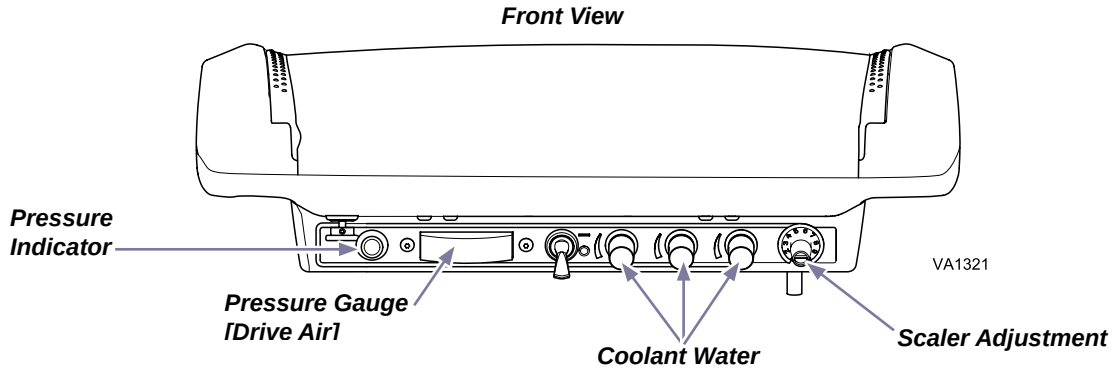


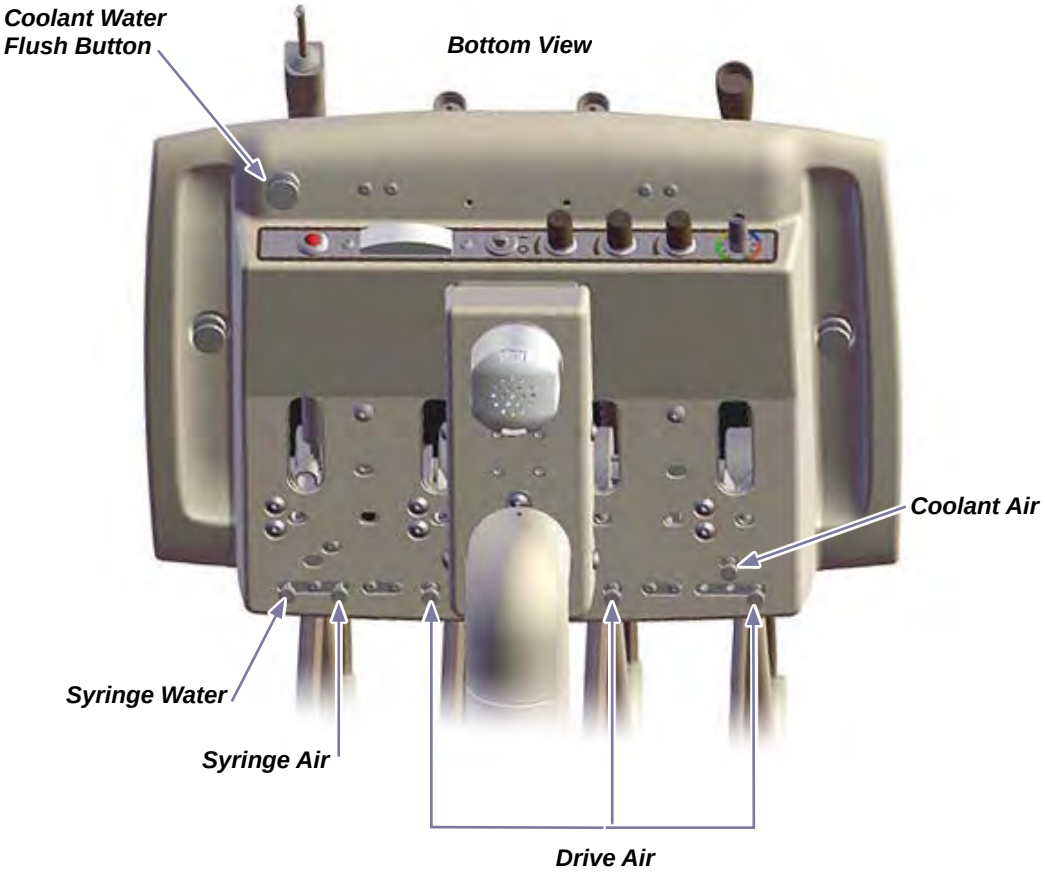
To adjust water steam pressure and water spray pattern...
Rotate syringe water adjustment knob as necessary.

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Operation

Adjustment Knob Locations





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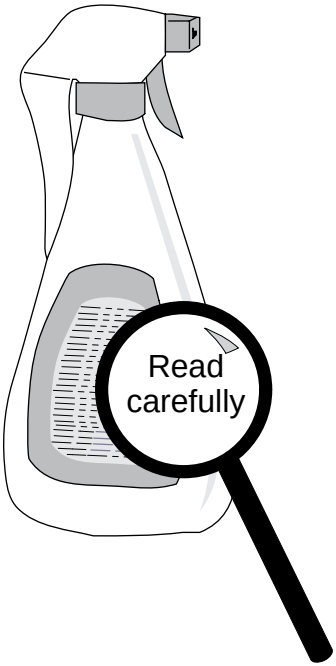
Cleaning

Note

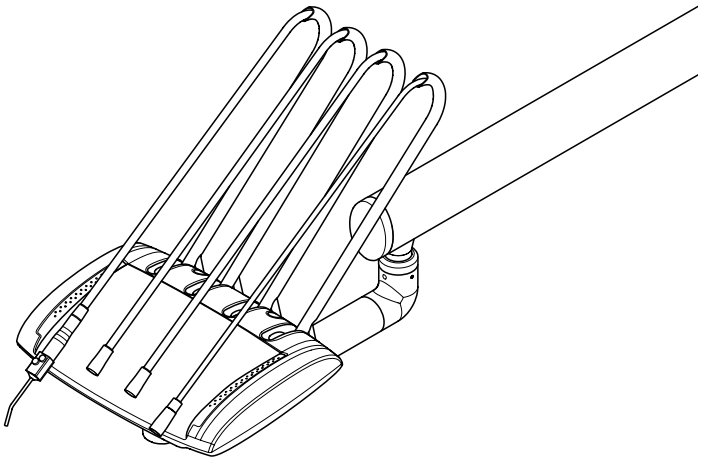
Every veterinary practice setting is different and no one disinfectant is the best choice for every facility. There are several organizations educated in disinfection procedures. Refer to web sites of accredited sources that can assist veterinary personnel in choosing what is best for their practice. Listed below are a few of the sites.

Organization for Safety & Asepsis Procedures
http://www.osap.org

Dept. of Health & Human Resources Centers for Disease Control & Prevention (CDC)
http://www.cdc.gov



DA148100i



VA1251

When using disinfectants...

- *Carefully read the product label and directions for use.*
- *Do not exceed the dilution rate.*

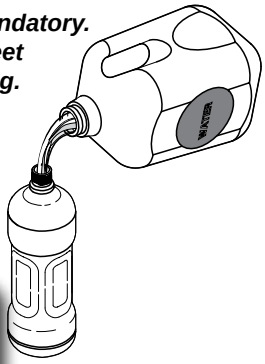
Equipment Alert

Refer to handpiece manufacturer for suggested cleaning procedures.

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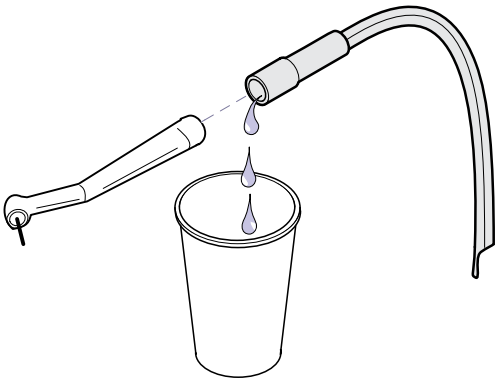
Maintenance

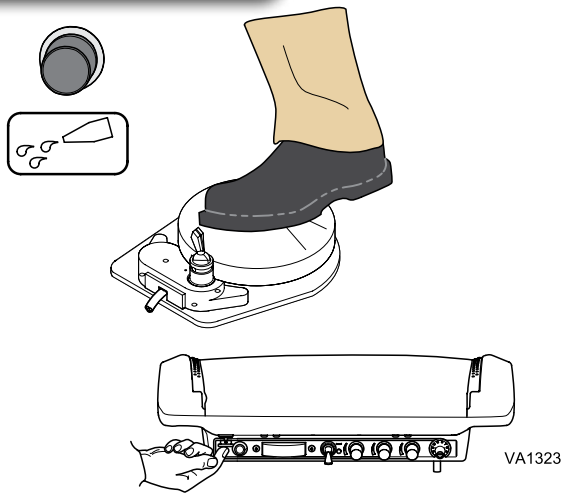
Distilled water is not mandatory. However, water must meet requirements for drinking.



At the beginning of each work day...
- *Fill water bottles with fresh distilled water.*
- *Flush handpieces.*

To Flush Delivery System...
A) *Remove all handpieces that use water.*
B) *Open water needle valve.*
C) *Turn foot control toggle switch to WET.*
D) *Hold end of tubing over a container and press foot control for 30 seconds. Then press and hold flush button for 30 seconds. Repeat (step D) for all handpieces.*
E) *Press and hold syringe buttons (air & water) for 30 seconds.*
F) *Install newly disinfected handpieces.*
G) *Refill water bottle.*



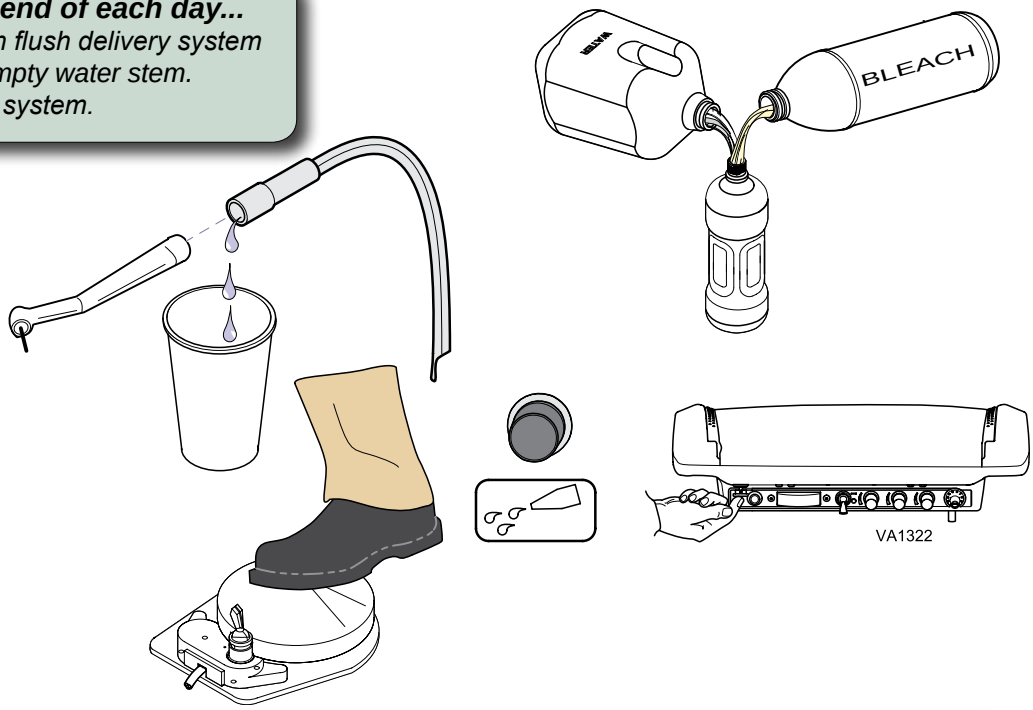


Between each patient...
- *Remove disposable tips, instruments, etc..*
- *Flush delivery system.*
- *Clean handpieces and scaler per manufacturers instructions.*
- *Fill water bottles.*

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Maintenance - *continued*

At the end of each day...
- *Bleach flush delivery system and empty water stem.*
- *Clean system.*



EQUIPMENT ALERT
Do not use colored/scented bleach, or concentrations greater than recommended. Do not leave bleach solution in delivery system longer than 30 minutes, it could damage the delivery system.

To Bleach Flush Delivery System...

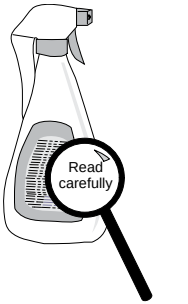
A) Remove all handpieces that use water.
B) Remove water bottles and fill with 9 parts water and 1 part bleach.
C) Open water needle valve.
D) Hold end of tubing over a container and press foot control for 30 seconds. Then press and hold flush button for 30 seconds. Repeat (step D) for all handpieces.
E) Press and hold syringe buttons (air & water) for 30 seconds.
F) Leave bleach solution in delivery system for 10 - 20 minutes, then remove / empty / rinse water bottles.
G) Fill water bottles with fresh water and repeat steps C thru E until bleach odor is gone.
H) Install newly disinfected handpieces.
I) Empty water bottles.

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Maintenance - continued

To Clean System...
A) Disinfect handpieces according to manufacturer's instructions.
B) Wipe down the WHIP head and operatory equipment with disinfectant.

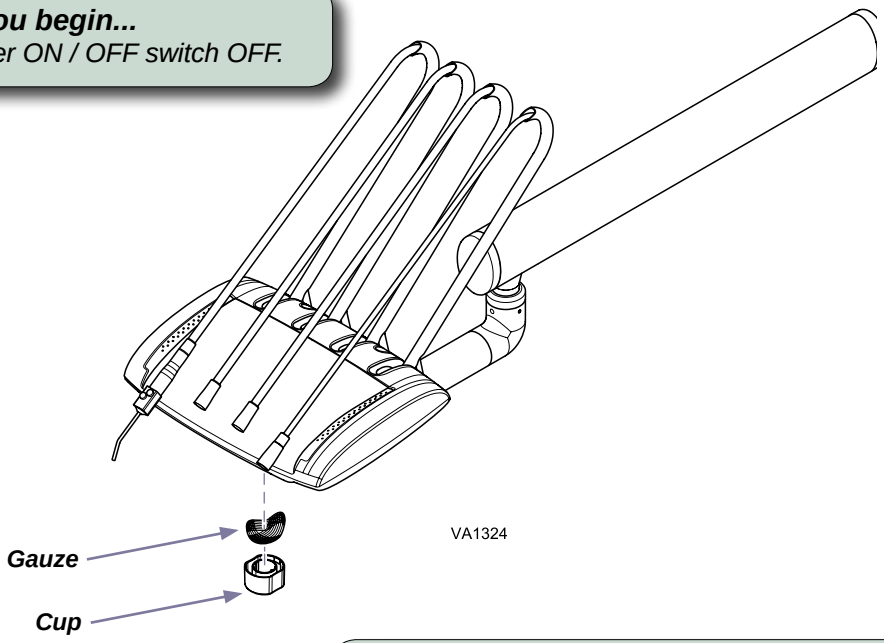
Note: Refer to "Cleaning" page in this guide.



Air / Oil Separator

Periodically, check the gauze in the air / oil separator cup. When gauze is saturated it must be replaced.

Before you begin...
Turn master ON / OFF switch OFF.



To clean the air / oil separator cup...
A) Unsnap cup.
B) Dispose of saturated gauze.
C) Disinfect cup.
D) Install new gauze, then reinstall cup.

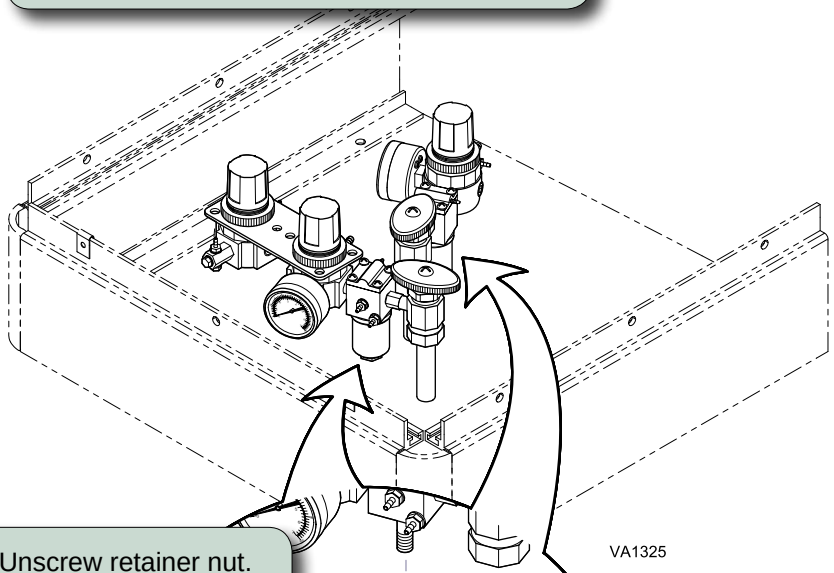
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Maintenance

Regulator Valve Filters (Only for Units with Junction Box)

The air and water pressure regulator valves each have a sediment filter to prevent debris from entering the system. To maintain proper air and water flow, these filter should be replaced approximately every three months.

Before you begin...
Turn off water & air supply to the dental unit by closing both manual shut-off valves.



Step 2: Unscrew retainer nut. Remove filter.

Step 3: Install new filter. Secure with retainer nut.

Note: Install the filter & retainer nut with the ridged side up (as shown).

Step 1: Unscrew filter cap.

Note: Use 9/16" wrench.

Step 4: Reinstall filter cap.

Note: Use 9/16" wrench.

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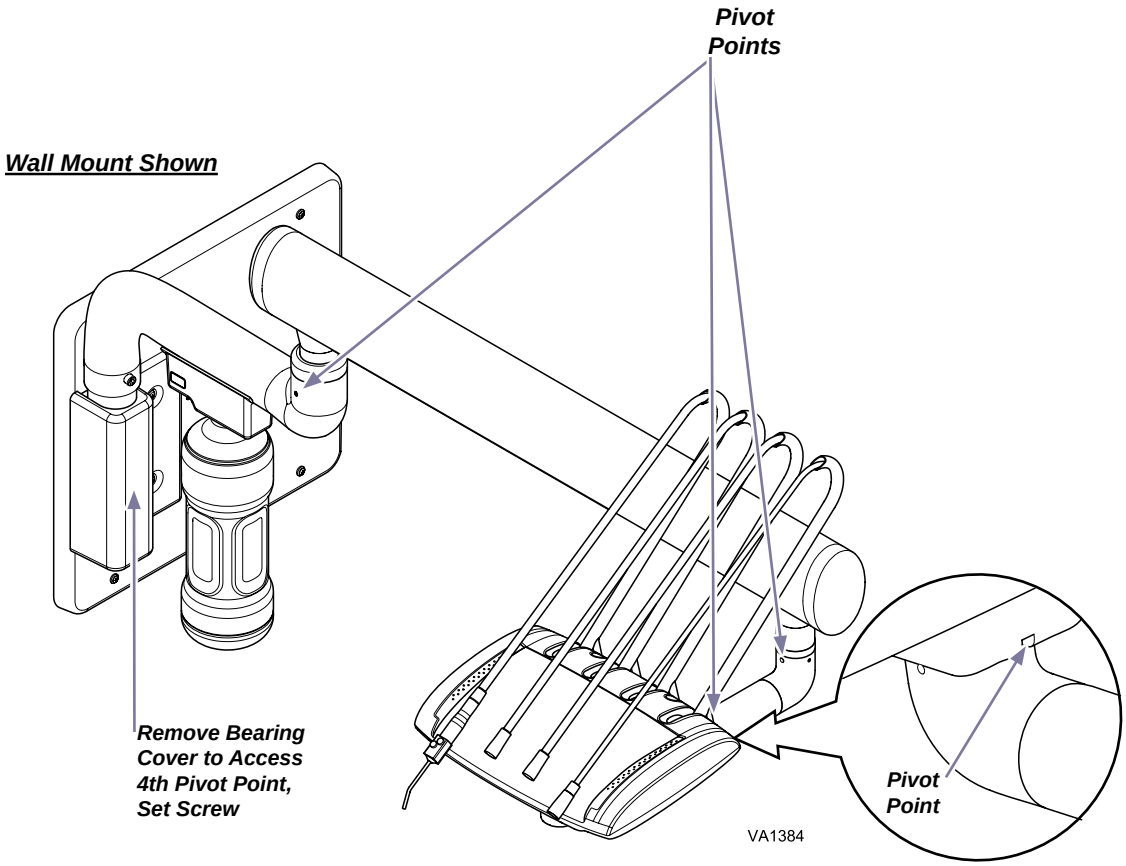
Maintenance - continued

Flex Arm - Pivot Point Adjustment

If the flex arem has too much play or is not moving freely, adjust the pivot point, set screws as necessary.

To Adjust Arms at Pivot Points..

If arms have too much play, tighten them (Clockwise).
If they do not move freely, loosen them (Counter-Clockwise).



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Specifications

Water Module	
Reservoir	One - 1 Liter
City Water	Toggled with Reservoir
Pressurized System	30 - 50 PSI
Aseptic	Non-Retracting HPC Coolant
Handpiece Flush System	Manual
Recommended Pressure Settings (Junction Box)	
“City” Water Regulator Valve	30 PSI
Air Regulator Valve	80 PSI
Water Bottle Regulator Valve	30 PSI
Electrical	
Voltage	115 VAC
Circuit Breaker Protection	15 amps
Frequency	60 Hz

WARNING
Equipment not suitable for use in the presence of a flammable anesthetic mixture.

WARNING
The Acteon Newtron® LED scaler complies with current electromagnetic compatibility standards. However, it must not be used by or on those with cardiac stimulators or other active implants unless adequate electromagnetic interference shielding is present. Check with a cardiologist to verify the EMI shielding capabilities of the implant. See enclosed Newtron® LED manual for further advisories.

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Limited Warranty

SCOPE OF WARRANTY
Midmark Corporation ("Midmark") warrants to the original purchaser its Exam Room Casework, Veterinary products and components (except for components not warranted under "Exclusions") manufactured by Midmark to be free from defects in material and workmanship under normal interior use and service. Midmark's obligation under this warranty is limited to the repair or replacement, at Midmark's option, of the parts or the products the defects of which are reported to Midmark within the applicable warranty period and which, upon examination by Midmark, prove to be defective.

APPLICABLE WARRANTY PERIOD
The applicable warranty period, measured from the date of delivery to the original user, shall be as follows:
• **The VetPro® 5000 unit is warranted against defect in material and workmanship for a period of two years from the time of delivery.**
DENTAL PRODUCTS are warranted against defect in material and workmanship for the period indicated below from the time of delivery:
a) 2 years for all products and components (except for the periods in b through d).
b) "KINK-VALVE" module carries a 10 year warranty.
c) Accessories not manufactured by Midmark are excluded (i.e. Fiber optic systems, Scalers, Handpieces, etc.).
d) Replacement parts and accessories carry a 90 day warranty

EXCLUSIONS
This warranty does not cover and Midmark shall not be liable for the following; (1) repairs and replacements required because of misuse, abuse, negligence, alteration, accident, freight damage, or tampering; (2) changes in color caused by natural or artificial light; (3) products which are not installed, used, and properly cleaned as required in the Midmark written "Installation" and or "Installation/Operation" Manual applicable for this product; (4) products considered to be of a consumable nature such as light bulbs and surge suppression product; (5) accessories or parts not manufactured by Midmark; (Any warranties on these items are extended directly by the manufacturer of these items to the original purchaser.
Information on these manufacturers' warranties will be enclosed with the applicable products. Also, Midmark will furnish copies of any of the warranties extended by any such manufacturers upon request.) (6) specially manufactured products; (7) damage caused by animals; (8) charges by anyone (including Midmark's authorized dealers) for adjustments, repairs, replacement parts, installation, or other work performed upon or in connection with such products which is not expressly authorized in writing in advance by Midmark.

EXCLUSIVE REMEDY
Midmark's only obligation under this warranty is the repair or replacement of defective parts. Midmark shall not be liable for any direct, special, indirect, incidental, exemplary or consequential damages or delay including, but not limited to, damages for loss of profits or loss of use.

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THIS WARRANTY IS MIDMARK'S ONLY WARRANTY AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. MIDMARK MAKES NO IMPLIED WARRANTIES OF ANY KIND INCLUDING ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE. THIS WARRANTY IS LIMITED TO THE REPAIR OR REPLACEMENT OF DEFECTIVE PARTS.

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Because we care.

NO. 533 ULTRASOUND



E1 is the first member of the E-series family. As a newly released hand carried B/W ultrasound model, it is equipped with complete functions for a confident and efficient diagnoses which makes it the best B&W model on the market. E1 integrated a number of advanced imaging technologies such as the full digital broad band width beam former, wide band dynamic range, and multi-beam parallel processing. Although it is targeting a B/W market, it supports PW Doppler, Auto IMT, Spatial Compounding, Auto Image Optimization, Stand-by Mode, Enhanced Needle Visualization, Panoramic imaging with 2 standard probe ports and 15.6″ LED monitor.

Specialties

Abdominal

Vascular

Features

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SonoScape
(https://sonoscapenorthamerica.us)
Efficient Diagnosis



Ease of Use



Expansive Accessories

Specifications

Specifications

Size: 378mm×352mm×114mm (W×H×D)

Weight: Approx. 6.5kg (at most, including battery

Approx. 6.1kg (at most, without battery)

Monitor: 15.6” widescreen and high-resolution color

LCD monitor, LED backlight, anti-flickering and

Vertically and horizontally rotatable

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Probe port: one (two ports can be equipped by order)

Frame Rate: Up to 60fps (Probe Dependent)



Image Gallery

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BUSINESS INFO

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Tel: (855) 761-SONO (855-761-7666)

market@sonoscape.net

SonoScape US Service Center

8200 South Quebec St.,

Suite A3-294

Centennial CO 80112

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NO. 542.01 X-RAY, DENTAL, DIGITAL RADIOGRAPHY READER

Digital Dental X-ray

Midmark Animal Health Products





MIDMARK®

Disease you can't see...

60% of periodontal disease lies below the gum line, and many issues aren't detectable via probing or visual inspection.*

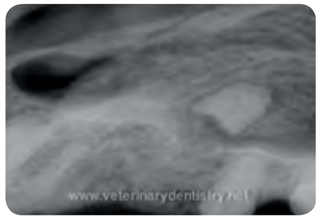
Don't let patients leave your clinic with undiagnosed disease. Only through the use of dental radiographs can you effectively diagnose dental disease that could result in tooth loss and many systemic diseases affecting the heart, liver and kidneys.



Teeth appear normal and healthy.



X-ray shows underlying pathology.



Post-extraction images allow you to spot remaining tooth fragments.



You can't afford not to invest in dental X-ray. VetPro® systems can pay for themselves in less than a year! Let us show you how.

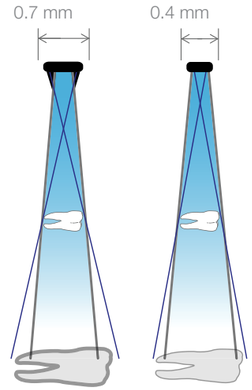
* PetMD, Gum Disease in Dogs, www.petmd.com/dog/conditions/mouth/c_multi_peridontal_disease

VetPro® DC

Designed to enhance your clinic's efficiency

The VetPro® DC uses simple icons and a large, easy-to-read display for ease of use. You can select the mA, kV and time settings of your choice or choose the convenient pre-programmed technique settings. The positioning arm is constructed with high-tolerance, frictionless joints and a heavy duty dual braking system designed for precise and stable placement. The unique tube head handle is designed to let you effortlessly put the X-ray source where you want it, with just one hand.

- Intuitive, with easy-to-use, veterinary-specific software and control panel
- DC technology allows you to adjust kV (60, 65 and 70) and mA (4, 5, 6 and 7)
- A flexible system with settings you can customize to suit your practice
- 0.4 mm focal spot (smallest in the industry) is designed to produce visibly higher resolution images
- Optional sensor holder on arm available
- 56", 66", 76" or 82" arm lengths and versatile mobile system
- No-hassle installation - simply connect the USB cable to your PC, use the quick calibration flash drive to prepare your sensor, and the system is ready
- Superior construction – made in the U.S.A.
- Before, during and after sale support



The VetPro® DC 0.4 mm focal spot is designed to produce visibly higher resolution images whether you're using film or digital sensors. Details are sharper and more defined. Small but important differences are easier to spot. Pathologies are easier to identify.



Midmark—the digital dental X-ray experts



VetPro® DR
Digital Dental Radiography Sensor

The VetPro® DR sensor is designed to allow you to get the soft-tissue visualization plus crown and root definition that you need to ensure you are providing your patients with superior dental care.

- Cable is Kevlar® reinforced, designed for improved durability
- Waterproof, hermetic seal is designed to reduce problems encountered during routine cleaning
- CMOS technology designed to deliver enhanced image quality
- High-speed USB connection designed to capture images 37% faster
- Rounded corners means easier positioning in tight spaces for better capture of roots
- Ask us about our Sensor Safe® Extended Care and Factory Warranty Extension programs





VetPro® CR
Digital Dental Radiography Reader

Do you prefer to use phosphor plates?

The VetPro® CR is designed to be an easy to use and affordable dental imaging solution from the name you trust. Who says high-quality dental imaging needs to be complicated or expensive?

The VetPro® CR Dental Radiography Reader was designed to provide the following features and resulting benefits for your clinic:

- Rapid, high-quality readings
- Low maintenance with no brushes. Helps reduce image artifacts from hair, etc.
- Size 4c plate available – large enough to capture larger teeth but small enough for easier positioning
- Affordable and compact veterinary dental solution
- Progeny® Imaging Software included at no additional cost after purchase
- Easy-to-use LCD touchscreen interface
- Utilize existing X-ray equipment and imaging techniques
- Standard and high resolution options
- Easy-to-position, reusable imaging plates
- Built-in erase function
- Streamlined unit for ease of cleaning
- Software optimizes acquisition, processing and management
- USB connection
- Eliminate darkroom and chemicals
- Auto calibration ensures stability and consistency
- Aids in marketing your practice's use of digital technology
- Size 2 and 4c imaging plates are included with the unit – sizes 0, 1, 2, 3 and 4c available for purchase





Midmark Animal Health is known in the industry for our market-leading digital X-ray machine, trusted digital imaging systems, intuitive software and an unmatched, nationwide support and service network.

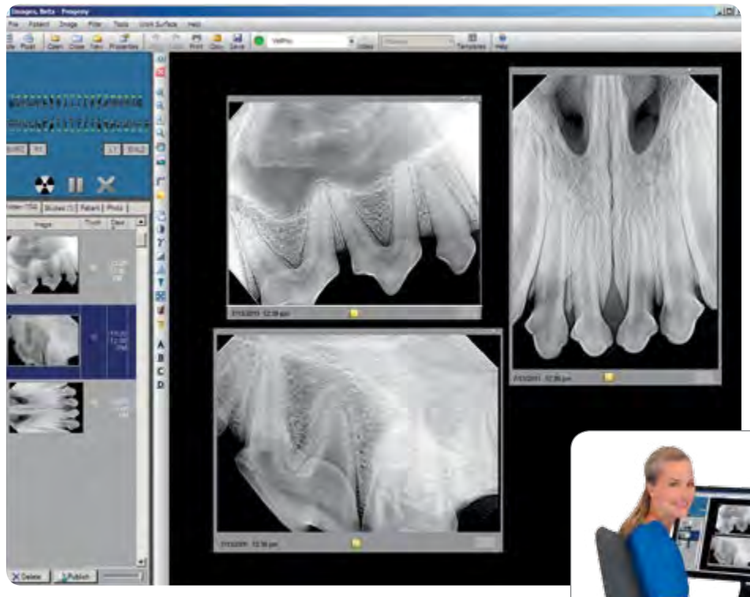


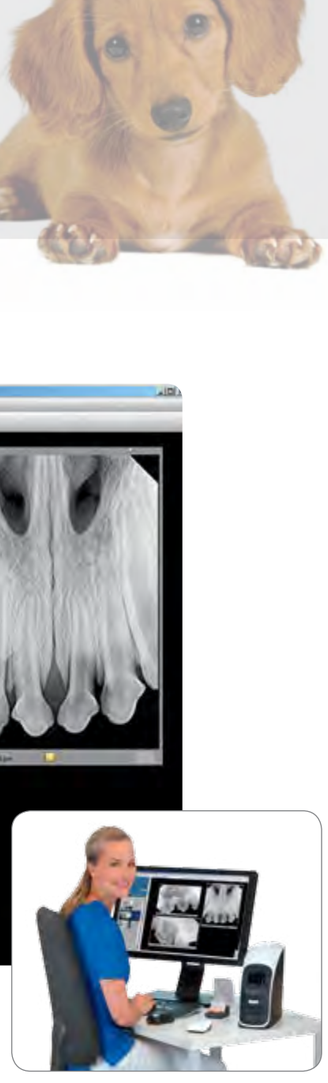
Phosphor plates are designed to have the following benefits:

- Thin, flexible imaging plates with no cables
- Imaging plates offer 100 percent active area
- Familiar workflow and accessories comparable to film, allowing for seamless integration into the practice
- No need for cleaning after each use
- Use multiple plates during one procedure
- Plates are inexpensive to replace

Our imaging software has been designed with a look and formatting that's familiar and easy to learn so you'll be acquiring, enhancing and storing images in no time.







Integrated with AVImark® Veterinary Practice Management Software

VetPro® Complete
Digital Dental Radiography Systems

Whether your clinic is equipped with film, fully digital or a combination of both, we feel you should have the freedom to choose what you are most comfortable using without sacrificing the quality, service and support that you've come to expect from the Midmark brand. That's why we provide you with multiple imaging options and the training and support you need to get the best use of your equipment.



VetPro® Complete CR



VetPro® Complete DR



Canine Tooth Panel



Feline Tooth Panel

VetPro® Complete Mobile Imaging Station

A digital imaging solution that includes a VetPro® Complete Mobile unit with #2 sensor, laptop pre-loaded with imaging software and laptop tray.



VetPro® DC Specifications

Line Voltage: 120-230 VAC +/- 10% 50-60 Hz

Line Load: Maximum current amps

Tube Potential: 60, 65 or 70 kV

Tube Current: 4, 5, 6 or 7 mA

Exposure Time: 20 ms to 2 seconds

Cone Length: 20 cm (8 inches)

Minimum Inherent Filtration: 2 mm Al equivalent at 70 kV

Focal Spot: 0.4 mm (IEC 336)

Duty Factor: 1:15

Remote exposure hand switch included

Shipping Weight:
95 lb (wall mount)
330 lb (mobile)

Applicable Documents Federal Regulations: 21 CFR, UL, CE

Warranty: 2 years, limited

Options: choice of 56", 66", 76" or 82" (total reach); double stud mounting plate

VetPro® CR Specifications

Selectable Pixel Size: High

35µm · Standard 64µm

Sampling Pixel Pitch (35µm): 14.3 lp/mm

Readout Time: 4.1 ~ 7.2 sec

Resolution: Data Capture 16-bits per pixel, 65,000 graytones

Eraser: Embedded

Dimensions 10.4" (H)" x 4.7" (W) x 12.5" (D)/265 (H) x 120 (W) x 318 (D) mm

Weight: 10.4 lb (4.7 kg)

System Configuration: Tabletop

Interface: USB 2.0 high speed (480 Mbps)

Power Requirements: 100 ~ 240V/50 ~ 60Hz, 30W · UPS required

Warranty: 1 year

VetPro® DR Sensors Specifications

Dimensions:
Size 1 (film size equivalent)
37 mm x 24 mm x 6 mm

Size 2 (film size equivalent)
43 mm x 30 mm x 6 mm

Active Area:
Size 1 (film size equivalent)
30 mm x 20 mm

Size 2 (film size equivalent)
36 mm x 26 mm

Number of Pixels:
Size 1 (film size equivalent)
1580 lines x 1050 pixels

Size 2 (film size equivalent)
1896 lines x 1368 pixels

Pixel Size: 19 µm x 19 µm

Theoretical Resolution:
26 lp/mm

Levels of Grey: 4096

Connection Type:
High-speed USB 2.0

Sensor Cable Length: 3 meters

Warranty: 2 years

Progeny® Vet Imaging Software

Computer Workstation Requirements:

Operating System: Windows® 8 Pro or Enterprise Edition (32 & 64 bit), Windows® 7 Ultimate or Professional (32 & 64 bit)

Processor: Intel® (or x86 compatible) Single Core™ 2 GHz or better (or Dual Core™ at 1.7 GHz recommended),

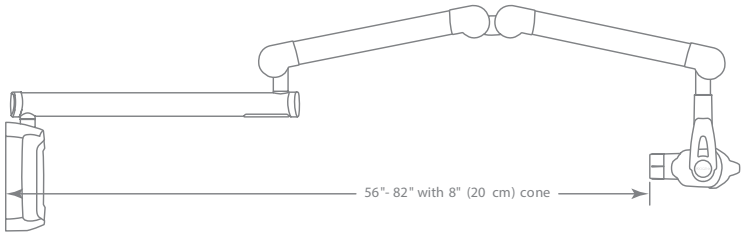
Memory: 2 GB RAM (minimum), 3 GB RAM (recommended),

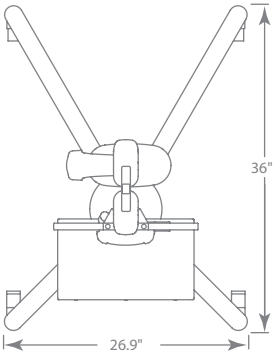
Storage: 80 GB Hard Drive (minimum)

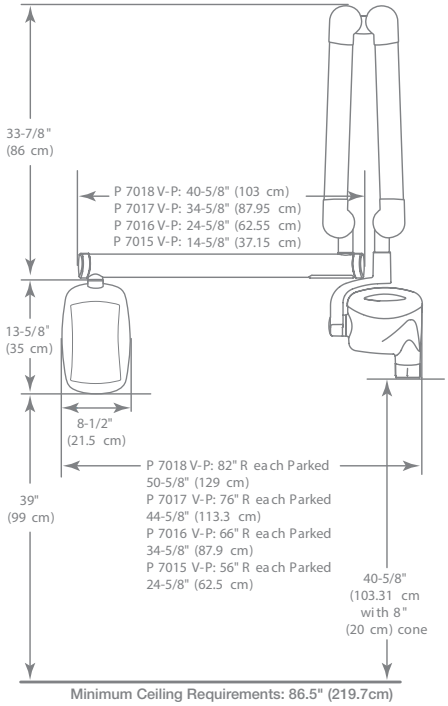
Video: 32 bit, 1024 x 768 resolution capable (minimum)

Display: 1024 x 768, 32 true bit color (recommended)

Ports: Two High-Speed USB 2.0







Authorized Representative:

CEpartner4U
Esdoornlaan 13
3951DB Maarn
The Netherlands
www.cepartner4u.eu

Better Patient Care. Better Business.™

midmarkanimalhealth.com

X-ray, Radiography Sensors, Mobile Station - Manufactured by Midmark Corporation, Lincolnshire, IL.
Radiography Reader, Plates - Manufactured by 3D Imaging and Simulations Corp, Yuseong-gu, Daejeon, Korea, for distribution by Midmark Corporation, Versailles, OH.

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Midmark is an ISO 13485 Certified Company.

MIDMARK®
Because we care.

NO. 542 X-RAY, DENTAL, WALL MOUNT

Digital Dental X-ray

Midmark Animal Health Products





MIDMARK®

Disease you can't see...

60% of periodontal disease lies below the gum line, and many issues aren't detectable via probing or visual inspection.*

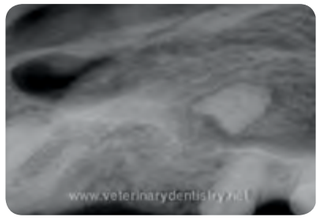
Don't let patients leave your clinic with undiagnosed disease. Only through the use of dental radiographs can you effectively diagnose dental disease that could result in tooth loss and many systemic diseases affecting the heart, liver and kidneys.



Teeth appear normal and healthy.



X-ray shows underlying pathology.



Post-extraction images allow you to spot remaining tooth fragments.



You can't afford not to invest in dental X-ray. VetPro® systems can pay for themselves in less than a year! Let us show you how.

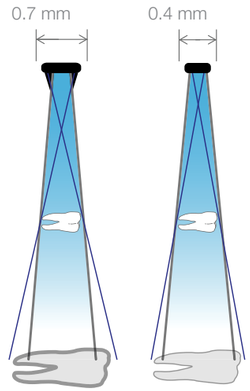
* PetMD, Gum Disease in Dogs, www.petmd.com/dog/conditions/mouth/c_multi_peridontal_disease

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- Streamlined unit for ease of cleaning
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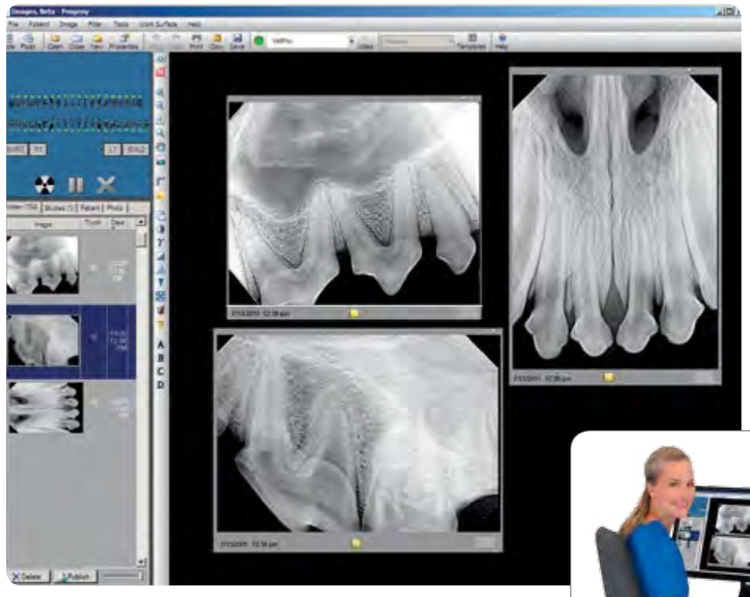


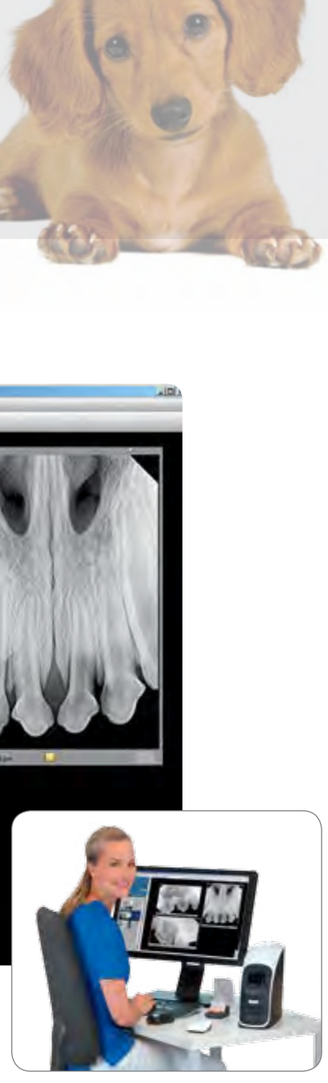
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VetPro® Complete CR



VetPro® Complete DR



Canine Tooth Panel



Feline Tooth Panel

VetPro® Complete Mobile Imaging Station

A digital imaging solution that includes a VetPro® Complete Mobile unit with #2 sensor, laptop pre-loaded with imaging software and laptop tray.



VetPro® DC Specifications

Line Voltage: 120-230 VAC +/- 10% 50-60 Hz

Line Load: Maximum current amps

Tube Potential: 60, 65 or 70 kV

Tube Current: 4, 5, 6 or 7 mA

Exposure Time: 20 ms to 2 seconds

Cone Length: 20 cm (8 inches)

Minimum Inherent Filtration: 2 mm Al equivalent at 70 kV

Focal Spot: 0.4 mm (IEC 336)

Duty Factor: 1:15

Remote exposure hand switch included

Shipping Weight:
95 lb (wall mount)
330 lb (mobile)

Applicable Documents Federal Regulations: 21 CFR, UL, CE

Warranty: 2 years, limited

Options: choice of 56", 66", 76" or 82" (total reach); double stud mounting plate

VetPro® CR Specifications

Selectable Pixel Size: High

35µm · Standard 64µm

Sampling Pixel Pitch (35µm): 14.3 lp/mm

Readout Time: 4.1 ~ 7.2 sec

Resolution: Data Capture 16-bits per pixel, 65,000 graytones

Eraser: Embedded

Dimensions 10.4" (H)" x 4.7" (W) x 12.5" (D)/265 (H) x 120 (W) x 318 (D) mm

Weight: 10.4 lb (4.7 kg)

System Configuration: Tabletop

Interface: USB 2.0 high speed (480 Mbps)

Power Requirements: 100 ~ 240V/50 ~ 60Hz, 30W · UPS required

Warranty: 1 year

VetPro® DR Sensors Specifications

Dimensions:
Size 1 (film size equivalent)
37 mm x 24 mm x 6 mm

Size 2 (film size equivalent)
43 mm x 30 mm x 6 mm

Active Area:
Size 1 (film size equivalent)
30 mm x 20 mm

Size 2 (film size equivalent)
36 mm x 26 mm

Number of Pixels:
Size 1 (film size equivalent)
1580 lines x 1050 pixels

Size 2 (film size equivalent)
1896 lines x 1368 pixels

Pixel Size: 19 µm x 19 µm

Theoretical Resolution:
26 lp/mm

Levels of Grey: 4096

Connection Type:
High-speed USB 2.0

Sensor Cable Length: 3 meters

Warranty: 2 years

Progeny® Vet Imaging Software

Computer Workstation Requirements:

Operating System: Windows® 8 Pro or Enterprise Edition (32 & 64 bit), Windows® 7 Ultimate or Professional (32 & 64 bit)

Processor: Intel® (or x86 compatible) Single Core™ 2 GHz or better (or Dual Core™ at 1.7 GHz recommended),

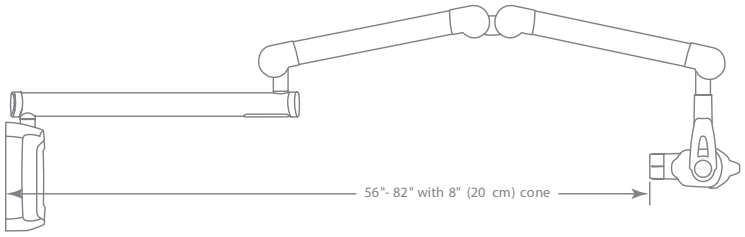
Memory: 2 GB RAM (minimum), 3 GB RAM (recommended),

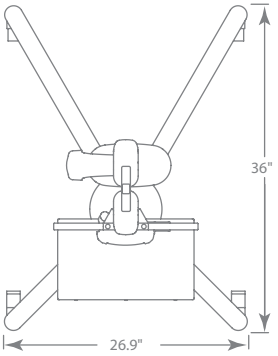
Storage: 80 GB Hard Drive (minimum)

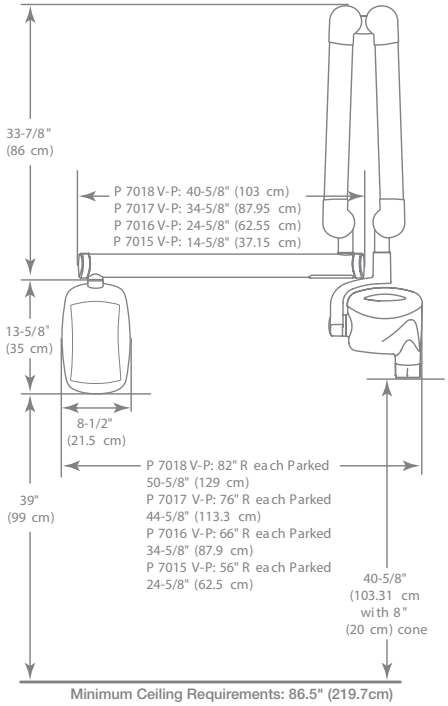
Video: 32 bit, 1024 x 768 resolution capable (minimum)

Display: 1024 x 768, 32 true bit color (recommended)

Ports: Two High-Speed USB 2.0







Authorized Representative:

CEpartner4U
Esdoornlaan 13
3951DB Maarn
The Netherlands
www.cepartner4u.eu

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Midmark is an ISO 13485 Certified Company.

MIDMARK®
Because we care.

Wall-Mounted Exam Tables

Stationary Wall Mount Exam Table

- Optional 12" x 16" x 4" deep 20 gauge stainless steel drawer may be opened from either side
- Raised seamless back splash protects the back wall
- 1 1/8" thick inner board for a solid, quiet working surface
- 20 gauge stainless steel top with raised anti-drip edges
- Spacious 22" x 44" work surface

101-1610-00	Without Drawer, Laminate Top, White	$288.00
101-1610-30	Without Drawer, Laminate Top, Custom Color	$333.00
101-1610-05	With Drawer, Laminate Top, White	$356.00
101-1610-35	With Drawer, Laminate Top, Custom Color	$402.00
101-1640-00	Without Drawer, Stainless Steel Top	$423.00
101-1640-05	With Drawer, Stainless Steel Top	$492.00



Laminate Top

Wall Hugger Folding Exam Table

- Wall mount plate has baked on finish to resist corrosion
- Allows easy access all around and unobstructed floor space
- 1 1/8" thick inner board for a solid, quiet working surface
- 20 gauge stainless steel top with raised anti-drip edges
- Spacious 22" x 44" work surface
- Counterbalanced action lifts and lowers effortlessly
- 4 1/2" from wall when folded to the "up" position

101-2710-00	Laminate Top, White	$971.00
101-2710-30	Laminate Top, Custom Color	$1034.00
101-2740-00	Stainless Steel Top	$1,034.00





Counterbalance Mechanism

BACK TO CONTENTS

EXAM



#400-21

Wall Mount Exam Tables

- 22" x 45" Exam top 18 gauge stainless steel
- Raised marine edge contains spills on work surface
- 1" back splash protects wall from water damage
- Available with pass-thru drawer
- Available in custom sizes

#400-20 Wall Mount Exam Table
#400-21 Wall Mount Exam Table with Pass-Thru Drawer

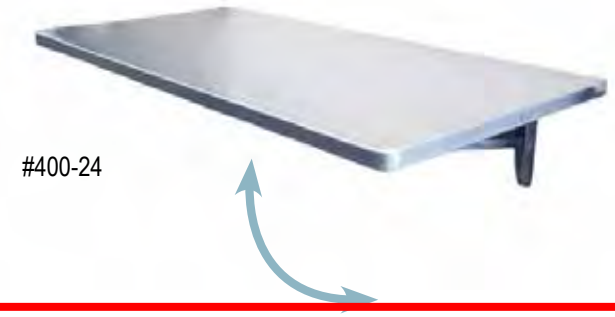


#400-23

Wall Mount Folding Exam Table

- Folds up to store & down to use
- Exam top constructed of 18 gauge stainless steel
- Raised marine edge contains spills on work surface
- Available in custom sizes

#400-23: 20" x 45" End mount - fold up to store & down to use



#400-24

Wall Mount Folding Exam Table

•Folds up to use & folds down to store
•Exam top 18 gauge stainless steel
•Raised marine edge contains spills on work surface
•Available in custom sizes

#400-24 20" x 35" Side mount - folds down to store & up to use



#400-25

Wall Mount Fold Up Exam Table

- Folds down to store & folds up to use
- 35" L x 20" W Exam top 18 gauge stainless steel
- Raised marine edge contains spills on work surface
- 1" back splash protects wall from water damage
- Available in custom sizes

#400-25 Wall Mount Fold Up Exam Table

Wall-Mounted Exam Tables

Stationary Wall Mount Exam Table

- Optional 12" x 16" x 4" deep 20 gauge stainless steel drawer may be opened from either side
- Raised seamless back splash protects the back wall
- 1 1/8" thick inner board for a solid, quiet working surface
- 20 gauge stainless steel top with raised anti-drip edges
- Spacious 22" x 44" work surface

101-1610-00	Without Drawer, Laminate Top, White	$288.00
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101-2710-30	Laminate Top, Custom Color	$1034.00
101-2740-00	Stainless Steel Top	$1,034.00





Counterbalance Mechanism

BACK TO CONTENTS

NO. 553 TRANSPORT, GURNEY

OLYMPIC VERSA-LIFT™

One electric lift that does 3 jobs

GURNEY

Lightweight, easy to roll and steer



TREATMENT

IV Pole and Instrument Tray fit in corner sockets



CURBSIDE

Remove patients from cars easier, safer with electric lift and lift-off stretchers.





Hands-on care
Raise lift for transport with assistant.

Hidden handle
Slides out. One person can safely move patients outdoors.



New Model Versa-Lift
with
QUICK-LOCK
Casters



One lever locks/unlocks all 4 casters

Saves time No more locking and unlocking one caster at a time.

Safer Locks all 4 casters securely. No chance of an unlocked caster. 300 lb. patient capacity.

2 Brake Levers One on each side of the Versa-Lift.

2 Foot Switches For electric lift, one on each side of Versa-Lift.

Instrument Tray Included on swing arm, drops into sockets.

Order Model 50705

More >>>

OLYMPIC VERSA-LIFT™

For lifting and transporting Saves time Improves patient care



Features

Protects against back injury Ergonomic electric lift. No more lifting or carrying heavy patients. Helps your hospital meet safety standards. Maximum height 40" for standing comfort.

Saves time Takes fewer people and less time to transport heavy patients.

Improves patient care A gurney that combines an electric lift with lift-off stretchers. Less traumatic for patients than awkward hand carrying, especially for injured or compromised patients.

Safety compliant Helps your hospital meet current safety standards.

Rolls easily Lightweight, only 68 pounds, half the weight of some gurneys. Large, locking casters. (See reverse side for new Versa-Lift with QUICK-LOCK Casters.)

Turns on a dime Steering handles at both ends. Maneuvers in tight spaces.

Low-boy handle With lift in lowered position, a hidden handle slides out so one person can safely transport a patient in the low-boy position if necessary.

Outdoor use Makes removing patients from cars easier, safer with electric lift and lift-off stretchers.

Quick recharge battery With charging light.

Versatile 3 products for price of one – a gurney, treatment table, and curbside lift.

Watch video demonstration www.OlyVet.com

Lift-off Stretchers

Ergonomic and safe



The top of the Versa-Lift is a stretcher which is held securely on 4 posts but easily lifts off for transferring patients to x-ray and other tables. Saves back strain and complies with safety recommendations. Easier, quicker transfers. Safer for patients and staff. Two stretchers available.



Hard Stretcher

For treatment and exams. Molded of rigid reinforced polymer. Durable. Wipes clean. Non-slip surface. 2 Velcro straps.



Soft Stretcher

Reinforced fabric is medical-grade, anti-microbial Herculite®. Wipes clean. X-ray transparent. Strong. 2 Velcro straps.

Specifications

Dimensions 52" x 24".

Height range 13" – 40".

Casters Large 5" casters with new Quick-Lock central locking system, or individual locks.

Net weight 68 pounds.

Steering Handles At both ends.

IV Pole Included all models.

Instrument Tray on swing arm included on Model 50705.

Foot Switches 2 foot switches on Model 50705. One switch on other models.

Electrical 120v/60Hz.

Order from your Distributor



Olympic Versa-Lift with Quick-Lock Casters.
Complete with Hard Stretcher, Soft Stretcher, IV Pole, Instrument Tray, and 2 Foot Switches ..... **Model 50705**

Olympic Versa-Lift with Hard Stretcher, Soft Stretcher, and IV Pole ..... **Model 50701**

Olympic Versa-Lift with IV Pole and Hard Stretcher only .... **Model 50703**



Instrument Tray
Accessory fits on Versa-Lift ..... **Model 50780**

3-Year Olympic Warranty Includes all parts and labor

MIDMARK®

Peninsula Folding Lift Table Manual



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Pre-Installation 2
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TP202 20-42-FO-00014 Rev A1 C2169

Rev. AA1 4/24/18

Pre-Installation

WARNING
Do not move the Peninsula Folding Lift table by yourself. Improper handling may result in injury or damage to the product. Operator should never place foot on table base or under the table top.

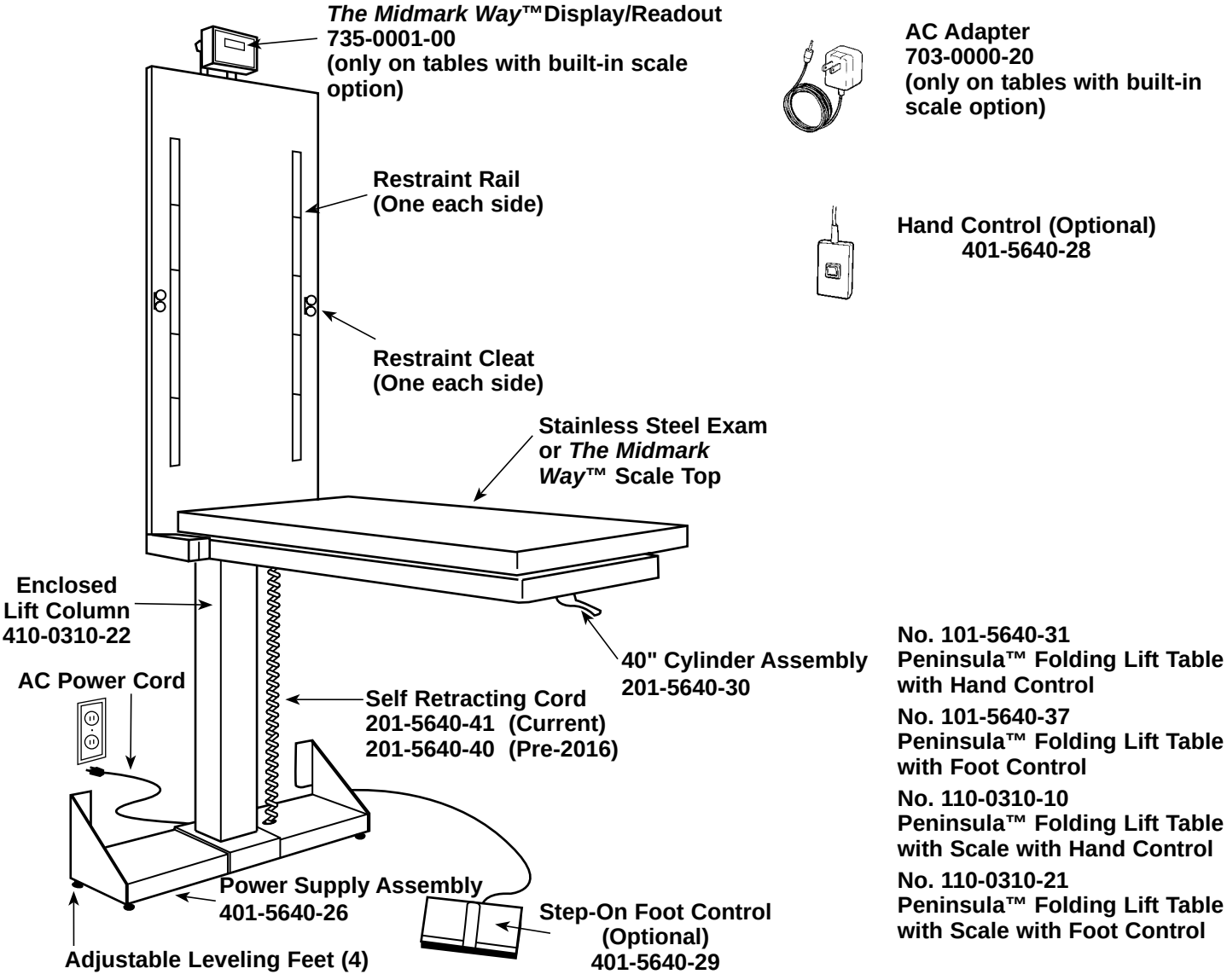
Equipment Alert

Weight limit on the table is 225 lbs..

Note
Save all packaging until certain you are satisfied with the product.

Open packages carefully. Inspect the shipping carton and contents for any visible damage.

Parts Identification



No. 101-5640-31
Peninsula™ Folding Lift Table with Hand Control

No. 101-5640-37
Peninsula™ Folding Lift Table with Foot Control

No. 110-0310-10
Peninsula™ Folding Lift Table with Scale with Hand Control

No. 110-0310-21
Peninsula™ Folding Lift Table with Scale with Foot Control

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Installation

Keep the table folded during installation. Lift Peninsula™ Folding Lift Table from base and column.

Mounting the Peninsula™ Folding Lift Table:

Midmark recommends consulting your contractor before mounting table to the wall.

Hardware should meet minimum requirements: 3/8" diameter, 600 lb. shear capacity, 1,600 lb. pull capacity.

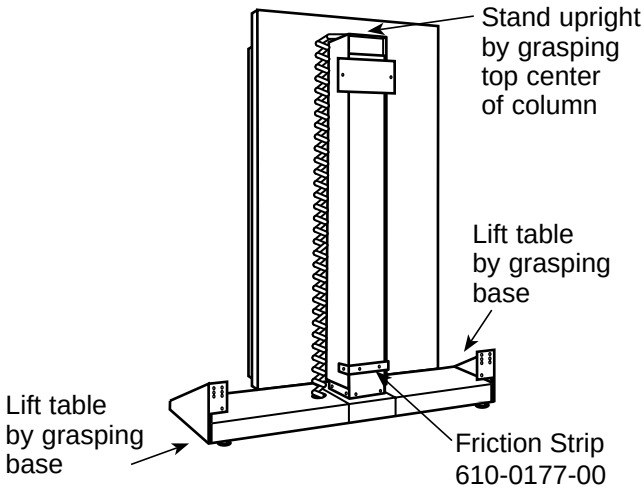
After installation, your table is ready for operation. Plug in the power cord at the base of the column. Remove the safety pin (shown at right below).

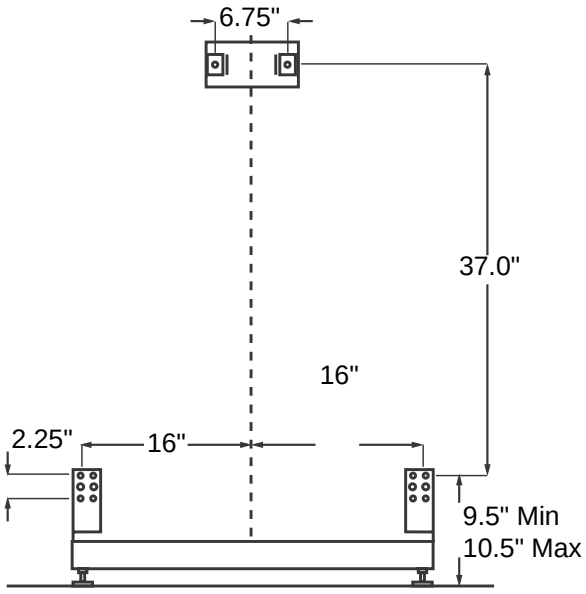
The folding table top is operated by depressing the lever under the top and pulling down or pushing up on the top at the same time.

The folding top is designed to stay in any position. A manually operated safety pin (shown at right) has been installed for added safety when the table is not in use.

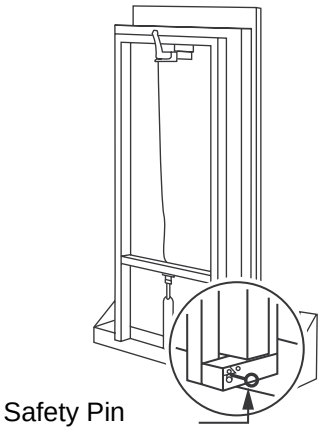
To raise or lower the table to desired height, depress the up or down switch of the hand or foot control.

If you purchased a scale top model, continue with the instructions on the next page. If you have an exam top only, go to page 6.





Mounting Template

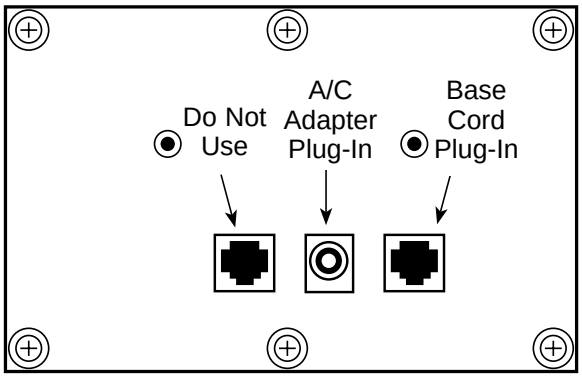

Safety Pin 821-3745-00

TP202 20-42-FO-00014 Rev A1 C2169
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Installation with Scale

Refer below for connecting instructions if installing a lift table with the optional ***Midmark Way***™ scale built-in.

1. Remove the scale/readout display from the small box enclosed within the carton on the pallet.
2. Plug the AC adapter cord and display cord into the back of the scale readout/display. (The display cord the straight cord extending from the exam top.)
3. Plug the A/C adapter into a 110v power outlet.
4. Hang the scale readout/display over the top back of the stainless steel exam top.



Back view of Display/Readout

Scale Features/Operation

Using The Control Panel:

ON/ZERO Push to turn unit on. Display shows the following:

- ^^^^ – Self test
- Midmark– Checks display segments
- u 1.7 – Software revision
- b xx.x – Battery voltage (varies with AC plug in and internal 9v battery.) A reading of 6.0v indicates the need for battery replacement; the unit will shut off at a reading of 5.5v.
- 0.0 – Ready to weigh

LB/KG Push and hold until display indicates unit shift. Display will show "conv" until the conversion is complete.

RECALL Push the RECALL button – The display will show the message "rECL" then alternately flash between the last stable weight and the "rECL" message. Press ON/ZERO button to return to normal weighing. Works only with hold function active.

Features:

Tare Function:

Any weight within the scale capacity can be zeroed out by pressing the ON/ZERO button. When the weight is removed, the display flashes the tared weight. Press ON/ZERO button to return to normal weighing.

Weighing Function:

Display will blank out until a close range of the weight is reached. With the hold function active, the display will show the stable weight and the "hold" indication. The displayed weight will lock until the weight is removed.

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Scale Features/Operation *continued*

Weight Hold:
Press and hold the ON/ZERO button and the RECALL button. Display will show "zero" then "h on" or "h off". Release buttons when selection is made. Default setting is "h on".

Automatic Shut Off:
In AC mode, the indicator will shut off in one hour. In battery mode, the indicator will shut off in one minute.

Calibration:



1) Install fresh 9 volt battery in indicator.
2) Unplug indicator's AC adapter from back of indicator.
3) Press and hold ON/ZERO button and LG/KG button. The display will change from "zero" to "CAL0" in about 3 seconds.
4) With an empty platform press the ON/ZERO button. The indicator will count down from "16" to "1" and display "C50".
5) Place a 50 lb. weight on platform and press the ON/ZERO button. The indicator will countdown from "16" to "1". Display will show "50".
6) Remove the 50 lb. weight and press the ON/ZERO button. The scale is calibrated and automatically returned to normal weight mode.
7) Re-plug AC adapter into indicator.

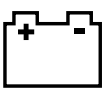
Switching from AC to DC:
Unplug the cord from the display. Press the ON/ZERO button to turn indicator on.

Switching from DC to AC:
Plug the AC adapter into a standard wall socket and the cord into the AC outlet on the back of the display. Press the ON/ZERO button to turn indicator on.

Troubleshooting

Indicators:

Messages on the readout indicate operating condition:

OL	Indicates weight on scale exceeds capacity or malfunction of scale display.
OPEN	Indicates malfunctioning of base or cable, or the scale needs to be calibrated.
	Indicates batteries are discharged.

In The Event Of A Problem:

In the event that a problem occurs, a Midmark technician is ready to assist you. In order to save time, please check the following items before calling:

- Does the readout display have a message that indicates what the problem is? Refer to "Indicators" at left for descriptions.
- Check all cables/connections.
- Unplug AC power and battery, then plug-in again to reset the scale.

Midmark Technical Support: 1-800-643-6275

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Care & Cleaning

The stainless steel components may be cleaned with any commercially available product recommended for use on stainless steel. Frequent cleaning will prolong the life and help maintain the natural luster of the stainless steel.

To prevent scratching, use a soft cloth to clean the scale. If scrubbing is necessary, use a nylon or plastic type scrubber. When cleaning, always rub in the direction of the “grain” of the metal.

To remove minor scratches, we recommend using a 3M ScotchBrite® scouring pad rubbed lightly in the direction of the “grain” of the metal.

Never use steel wool or steel brushes when cleaning your stainless steel components. Steel particles may become embedded into the stainless steel and cause rust.

Avoid use of chlorine bleach for cleaning. Chlorides, bromides, iodides and thiocyanates will cause pitting, corrosion and discoloration of the metal. If using bleach, clean thoroughly with water to completely remove bleach residue.

Avoid excessive moisture.
The Peninsula™ Folding Lift Table contains electronic components that may be damaged by excessive exposure to moisture. When cleaning or mopping the floor, do not leave the table in standing water.

Specifications

Dimensions	
Exam Surface:	44" x 22"
Exam Height:	adjusts 8 1/2" to 40"
Base:	34" x 10 1/2"
Table Top Extended:	approx. 60"
Maximum Height:	90" when raised
Lift Capacity:	225 pounds
Scale Capacity (optional):	300 pounds
Scale Accuracy:	Within 0.2% at 300 pounds
Electrical:	Operates on standard 115 VAC

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Product Warranty

This product is warranted for 1 year from the date of delivery to the original purchaser only. If equipped with the Midmark Scale, the scale is warranted for 2 years. Warranty is only applicable if customer complies with all instructions and specifications furnished by Midmark relating to installation, care, and application. Customer agrees that they will not modify, misapply, or misuse product in any manner which deviates from the Midmark instructions. Any repairs, alterations, or services provided by parties other than Midmark or its authorized representatives may void warranty. The buyer is responsible for all freight charges on returned items.

Product Satisfaction Policy

In the event that the customer is not fully satisfied with the products purchased, Midmark may, at its own discretion, arrange for the customer's account to be credited (excluding shipping charges) or replace the product. The customer must notify Midmark of any claim of nonconformity or defect in writing within 30 days from the date of receipt. The product must be returned to Midmark in its original packaging, undamaged and showing no unusual wear within 20 days of the customer's written notice.

To return an item, follow these simple instructions:

- Call Midmark for complete instructions (1-800-643-6275)
- A sales representative will give you a Return Authorization Number
- If a Restocking Fee applies, you will be informed at this time
- Label the boxes with this Return Authorization Number
  (All items must have a Return Authorization Number)
- Return the items, postage/freight prepaid

If necessary, the Midmark sales representative will assist you with freight arrangements.

Note: Custom orders and/or custom colors may not be returned.

Midmark Corporation - Carthage Facilities
1000 Civil War Road
Area 5
Carthage, MO 64836
1-800-643-6275

www.midmark.com

Stainless Steel Surgery Tables

V-Top Surgery Tables

V-Top Surgery Table with Adjustable Electric Column



- Self-contained electric column requires no maintenance
- (Column is covered by full 2-year warranty)
- Full 12" up and down height adjustment
- Electric lift column quietly and smoothly raises and lowers
- Available accessories: table top extension, rail extensions to accommodate larger animals and casters for easy mobility

100-3041-21	50" With Heated Top	$3,213.00
100-3041-01	50" Without Heated Top	$2,788.00
100-3071-21	60" With Heated Top	$3,441.00
100-3071-01	60" Without Heated Top	$2,903.00

V-Top Surgery Table with Adjustable Hydraulic Column



- Self-contained hydraulic column requires no maintenance
- Convenient 6" up and down height adjustment
- Available accessories: table top extension, rail extensions to accommodate larger animals and casters for easy mobility

100-4041-21	50" With Heated Top	$2,903.00
100-4041-00	50" Without Heated Top	$2,436.00
100-4071-21	60" With Heated Top	$3,031.00
100-4071-00	60" Without Heated Top	$2,559.00

V-Top Surgery Table with Pedestal Column



- Available accessories: table top extension, rail extensions to accommodate larger animals and casters for easy mobility

100-0041-23	50" With Heated Top	$2,501.00
100-0041-00	50" Without Heated Top	$2,056.00
100-0071-21	60" With Heated Top	$2,628.00
100-0071-00	60" Without Heated Top	$2,183.00

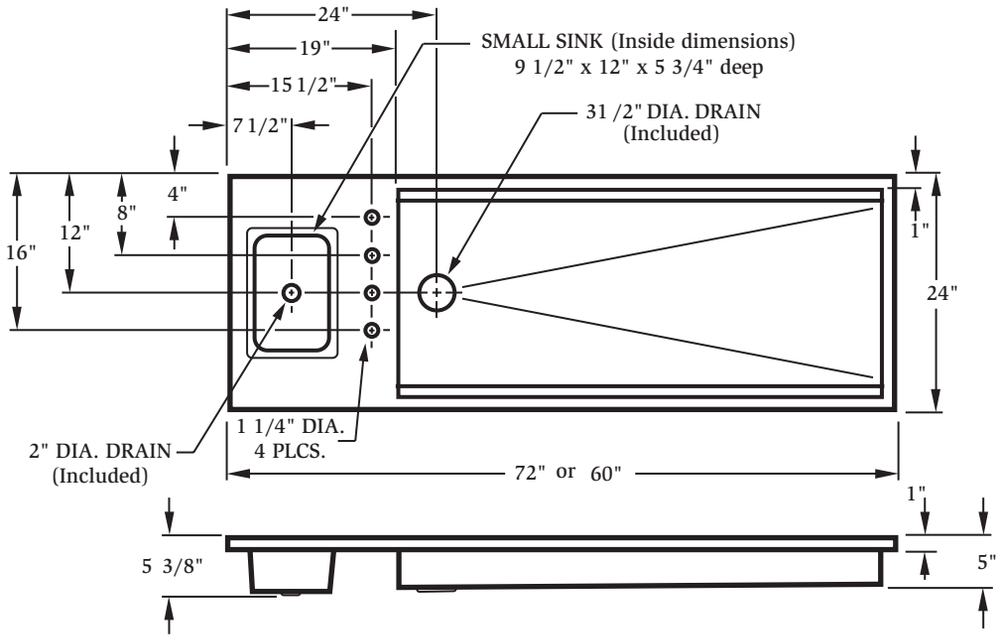
BACK TO CONTENTS

For questions on these formerly VSSI inc. products or for ordering information, please contact our Carthage customer service team at: 1-800-299-9525

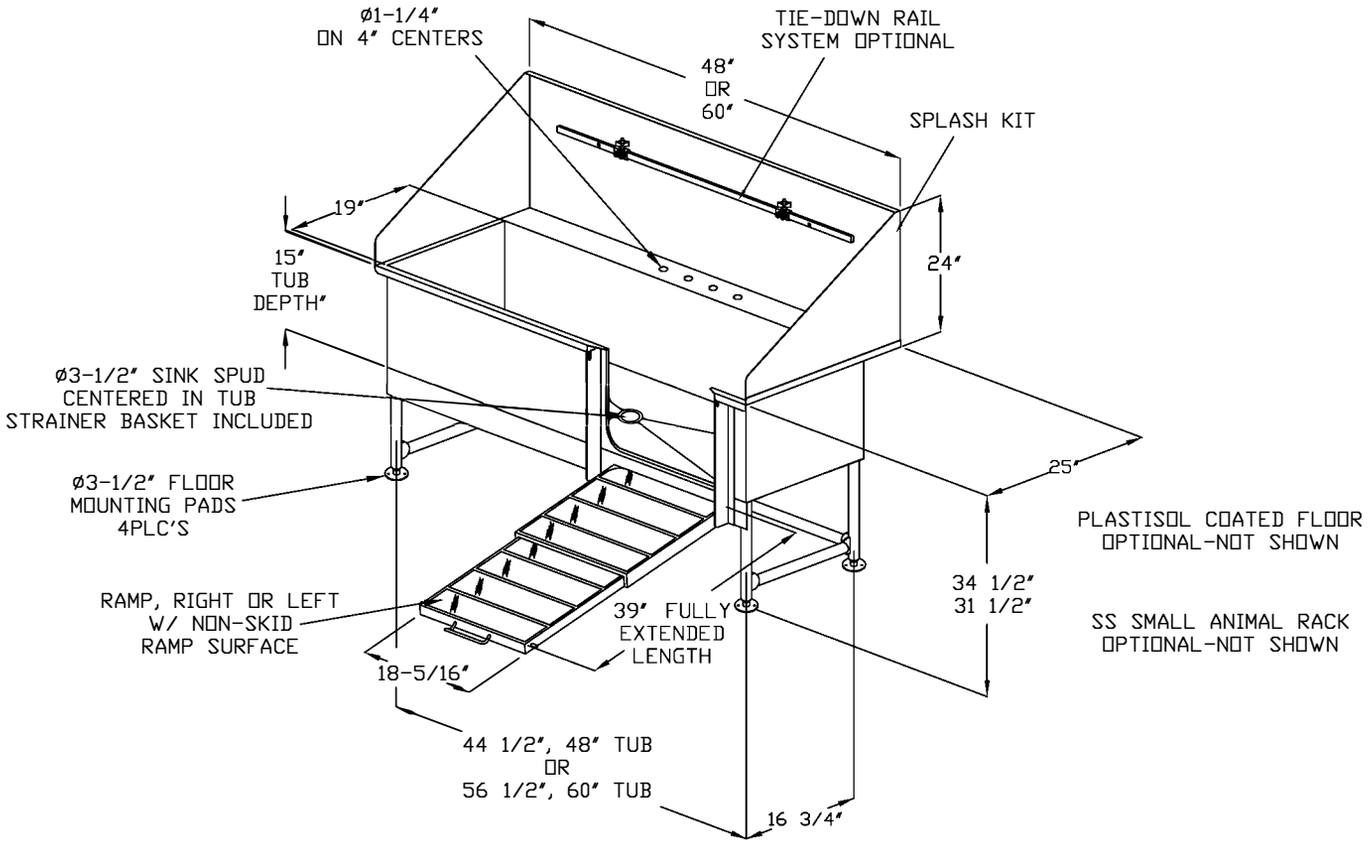
Made in USA

Tub Specifications

Note: All dimensions are ± 1/8"



18 GA STAINLESS STEEL GROOMING TUB WITH TELESCOPING RAMP



Vet Peninsula Table

Model Numbers:

8003*

8004*

8007*

Service and Parts Manual



FOR USE BY MIDMARK TRAINED TECHNICIANS ONLY

Part No. 004-0684-00 Rev. (5/19/17)

Style B

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- 8007 Dry Table vi

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not available

Section B

TESTING & REPAIR

Door Adjustment B-2

Section C

ACCESS PROCEDURES

not available

Section C

WIRING DIAGRAMS

not available

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EXPLODED VIEWS / PARTS LIST

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Door Components E-27
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Plumbing Components E-29*

Linked Files

(*) Indicates multiple pages due to model / serial number break(s).

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Symbols

DANGER
Indicates an imminently hazardous situation which <u>will</u> result in serious or fatal injury if not avoided. This symbol is used only the most extreme conditions.

WARNING
Indicates a potentially hazardous situation which could result in serious injury if not avoided.

Caution
Indicates a potentially hazardous situation which <u>may</u> result in minor or moderate injury if not avoided. It may also be used to alert against unsafe practices

Equipment Alert
Indicates a potentially hazardous situation which could result in equipment damage if not avoided.

Note
Used for special instructions or additional information.

The symbols below may be used in this manual to represent the operational status of table functions and components.

Indicates the function / component is working properly. No action required.

Indicates the function / component is working, but a problem exists.

Indicates the function is not working at all, or that the component is faulty.

Ordering Parts

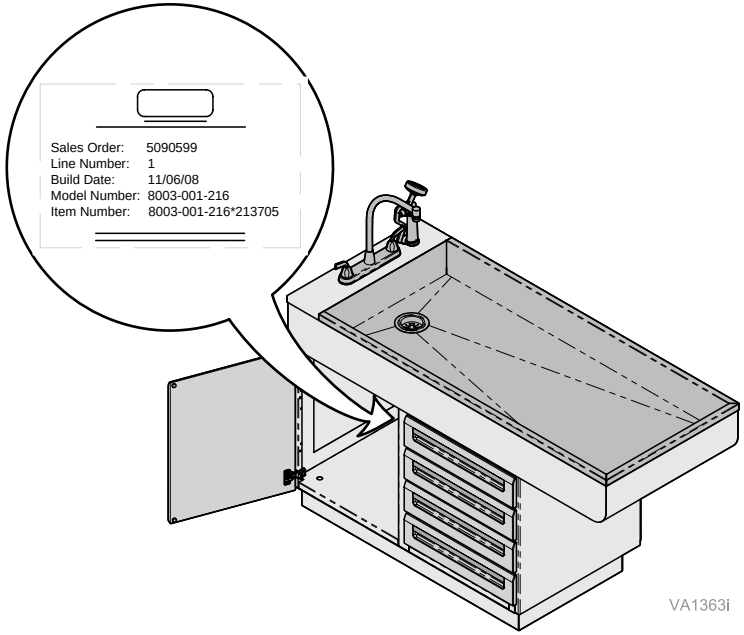
The following information is required when ordering parts:

- Serial number & model number
- Part number for desired part
  (Refer to Section E: Exploded Views & Parts Lists)

Non-warranty parts orders may be faxed to Midmark using the Fax Order Form in the back of this manual.

For warranty parts orders, call Midmark's Technical Service Department with the required information.
Hours: 8:00 am to 5:00 p.m. EST (Monday thru Friday)
Phone: 1-800-Midmark (1-800-643-6275)

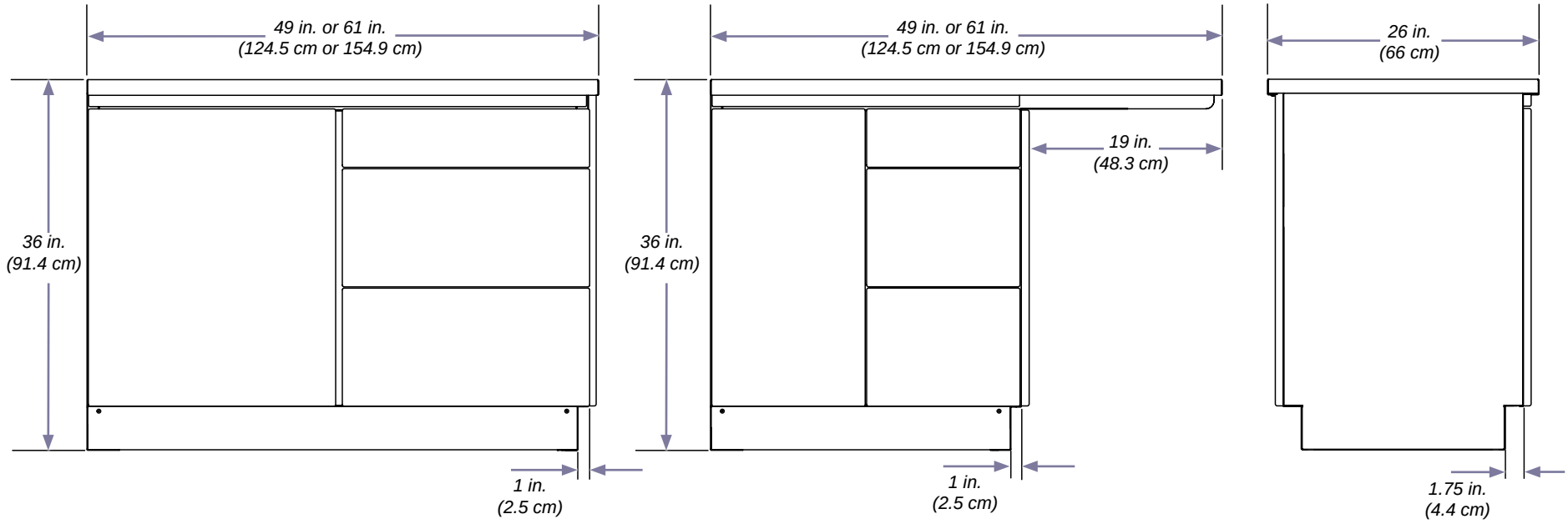
Serial Number Location



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Weights & Dimensions
8007 Dry Table

8007 48” Dry Table		*8007 48” Dry Table w/ Overhang*	
Width	26 inches (66 cm)	**Width**	26 inches (66 cm)
Length	49 inches (124.5 cm)	**Length**	49 inches (124.5 cm)
Height	36 inches (91.4 cm)	**Height**	36 inches (91.4 cm)
Weight	225 lbs (102.1 kg)	**Weight**	205 lbs (93 kg)
Shipping Weight	265 lbs (120.2 kg)	**Shipping Weight**	245 lbs (111.1 kg)
8007 60” Dry Table		***8007 60” Dry Table w/ Overhang***	
Width	26 inches (66 cm)	**Width**	26 inches (66 cm)
Length	61 inches (154.9 cm)	**Length**	61 inches (154.9 cm)
Height	36 inches (91.4 cm)	**Height**	36 inches (91.4 cm)
Weight	290 lbs (131.5 kg)	**Weight**	230 lbs (104.3 kg)
Shipping Weight	330 lbs (149.7 kg)	**Shipping Weight**	270 lbs (122.5 kg)



VA1679i

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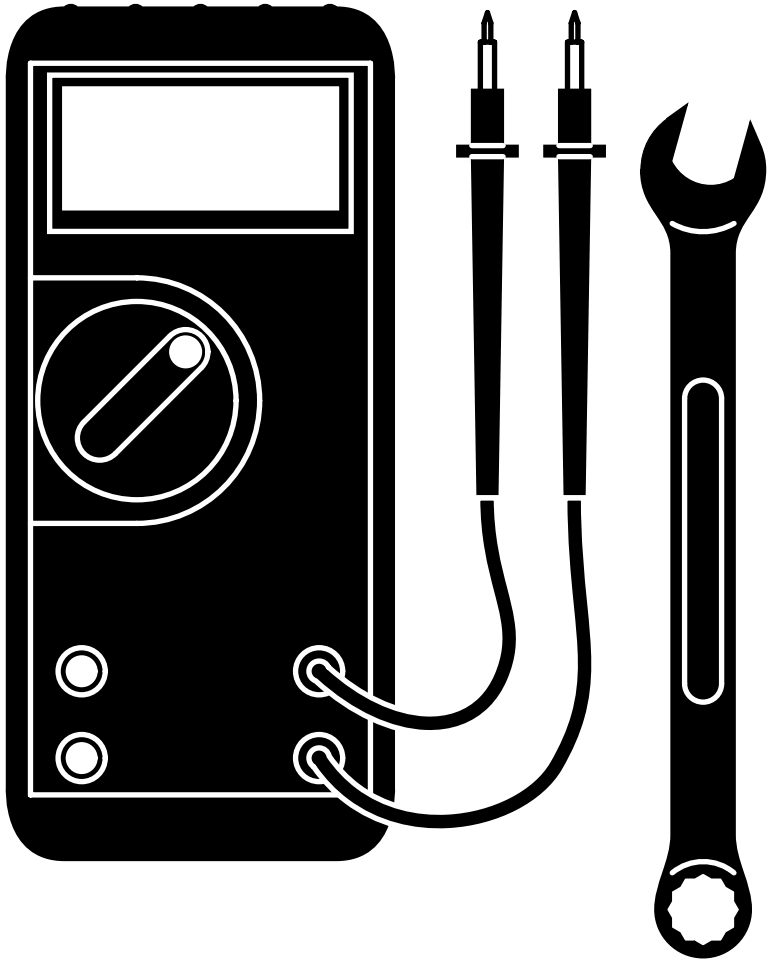
Cleaning and Maintenance

Interval	Inspection / Service	Description
After Each Use	Cleaning	Clean stainless steel tub with a mild cleaning agent and rinse thoroughly and towel dry. Commercial cleaners need to be approved for use on stainless steel surfaces. Only use nylon or plastic bristle scrubbers when needed. Using steel wool or steel brush may cause steel particles to embed into surface causing rust. (Note: When using scrubbers always scrub with the grain of the steel)
		Clean debris trap after each use from hair and any other debris.
Weekly	Cleaning	Wipe painted metal & plastic surfaces with a clean soft cloth and mild cleaner. (Note: Periodic application of common furniture wax will ease cleaning and maintain the luster of the surfaces).
	Obvious Damage	Visually inspect components for damage to ensure they are functioning properly.
Date of Service: Location: Service Technician:		Model Number: Serial Number: Notes:

Section B

Testing & Adjustments

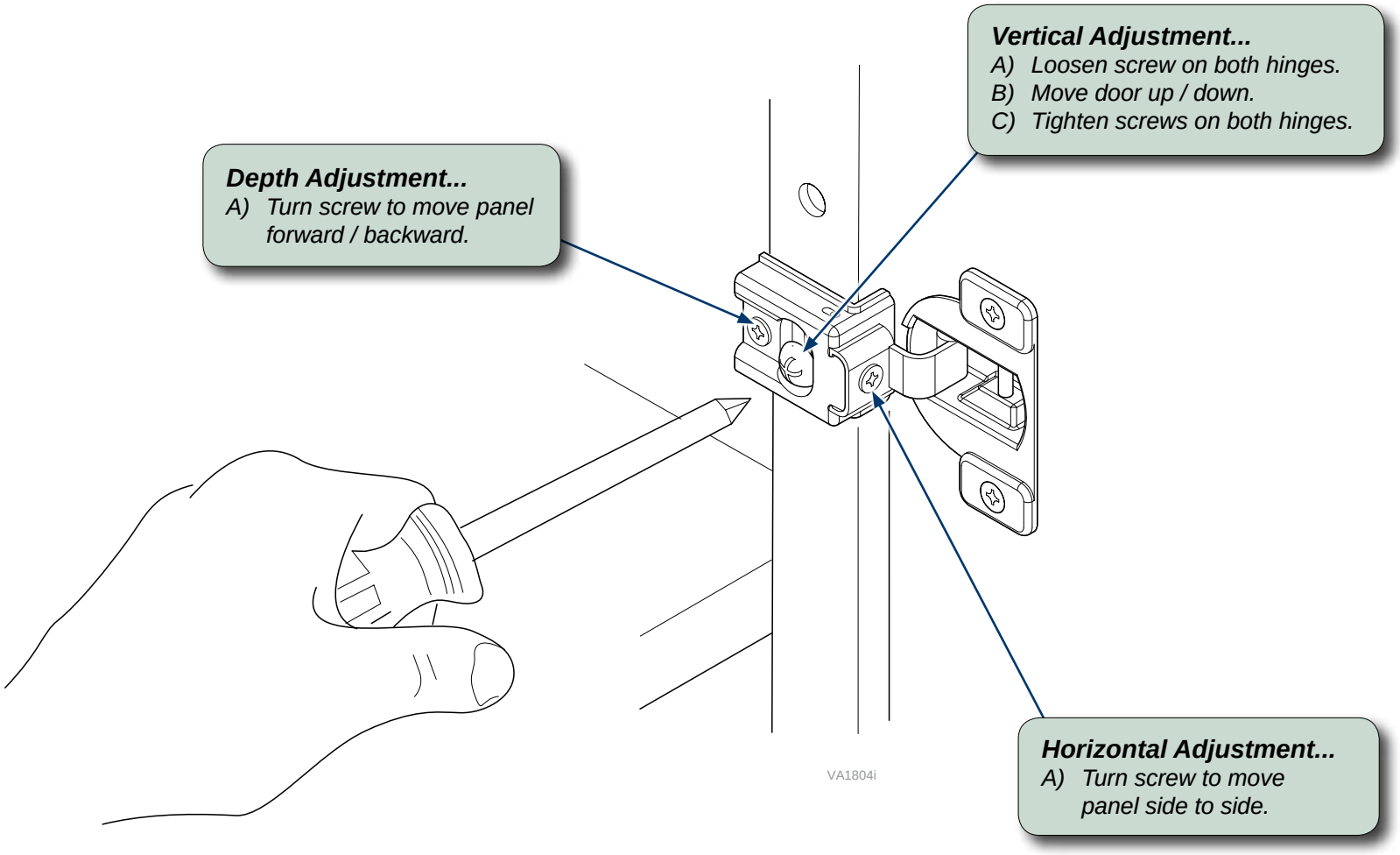
Door Adjustment.....B-2



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Doors

Door Adjustment

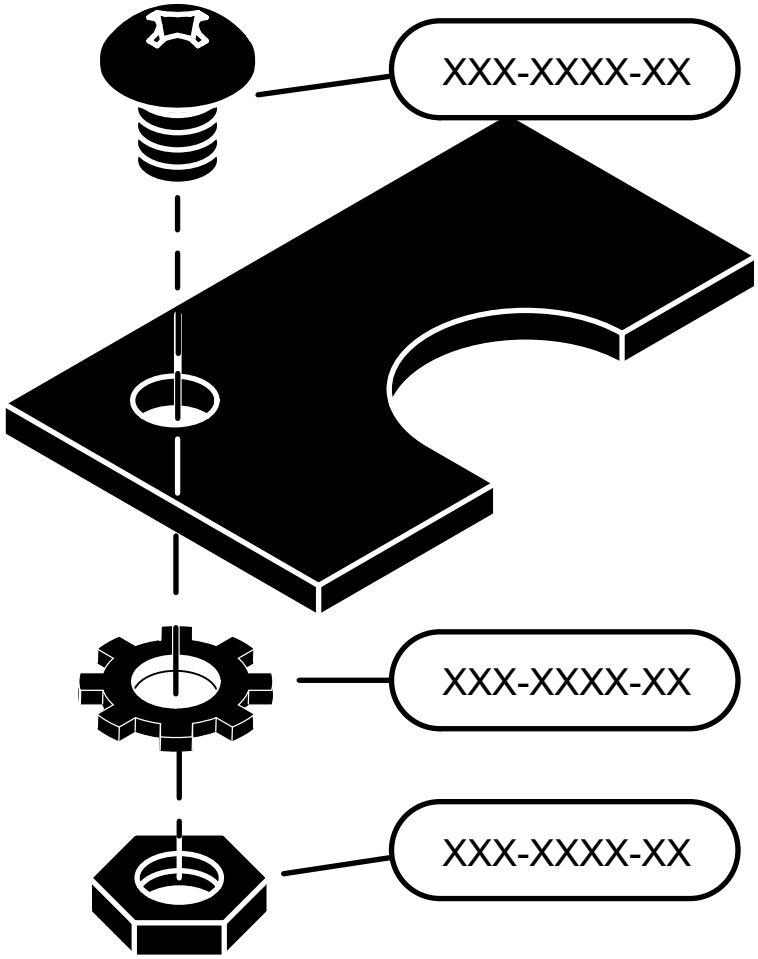


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Section E

Exploded Views & Parts Lists

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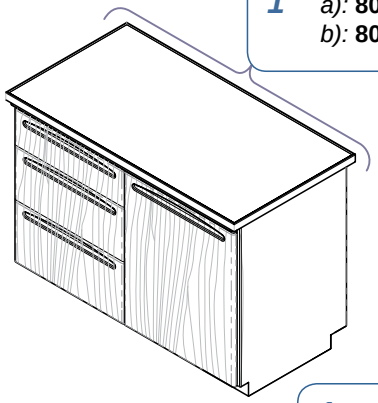
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Order Medical and Animal Health Parts Online

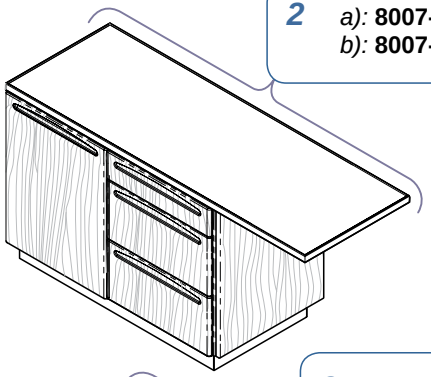
Color Selector..... www.midmark.com

Integrated Handle

1 *a):* **8007-001-00-xxx-xxx**
b): **8007-002-00-xxx-xxx**

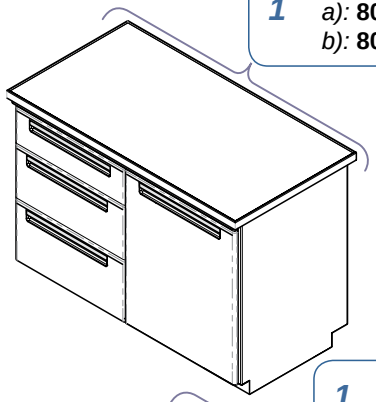


2 *a):* **8007-003-00-xxx-xxx**
b): **8007-004-00-xxx-xxx**

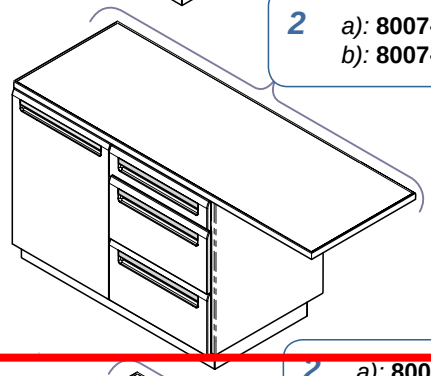


Snap-on Handle

1 *a):* **8007-001-01-xxx-xxx**
b): **8007-002-01-xxx-xxx**

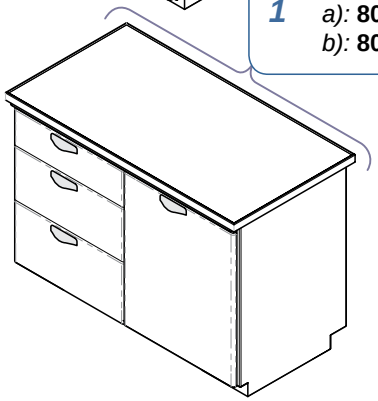


2 *a):* **8007-003-01-xxx-xxx**
b): **8007-004-01-xxx-xxx**

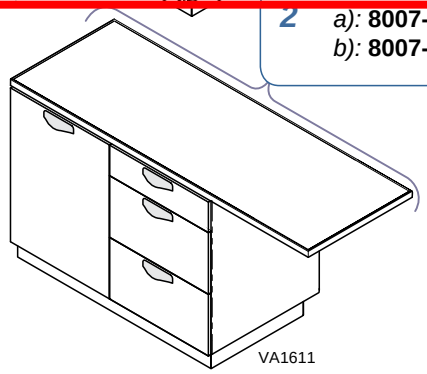


Ritter

1 *a):* **8007-001-02-xxx-xxx**
b): **8007-002-02-xxx-xxx**



2 *a):* **8007-003-02-xxx-xxx**
b): **8007-004-02-xxx-xxx**



VA1611

Models:	8007-001*	8007-002*	8007-003*	8007-004*
Serial Numbers:	all	all	all	all

48" Dry Table Models

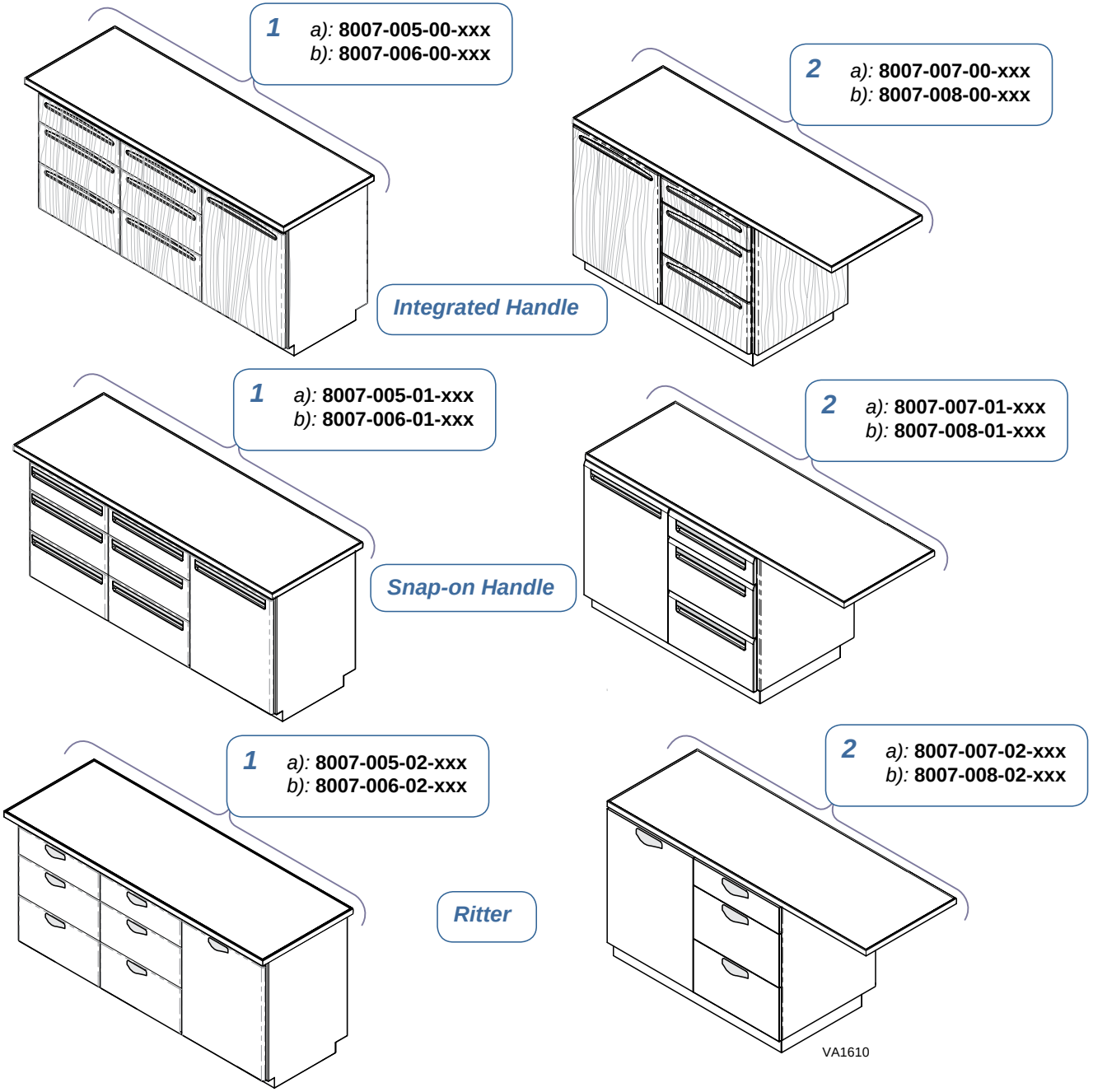
Item	Description	Qty.
1	8007 a) -001 (RH Dry Pen w/o OH) RH Door (24") 1-4" Drawer (24") & 2-8" Drawers (24") b) -002 48" (LH Dry Pen w/o OH) LH Door (24") 1-4" Drawer (24") & 2-8" Drawers (24")	1
2	8007 a) -003 (RH Dry Pen w/OH) RH Door (15") 1-4" Drawer (15") & 2-8" Drawers (15") b) -004 (LH Dry Pen w/OH) LH Door (15") 1-4" Drawer (15") & 2-8" Drawers (15")	1

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Models:	8007-005*	8007-006*	8007-007*	8007-008*	
Serial Numbers:	all	all	all	all	

60" Dry Table Models

Item	Description	Qty.
1	8007 a) -005 (RH Dry Pen w/o OH) RH Door (21") 1-4" Drawer (21") & 2-8" Drawers (21") 1-4" Drawer (18") & 2-8" Drawers (18") b) -006 (LH Dry Pen w/o OH) LH Door (21") 1-4" Drawer (21") & 2-8" Drawers (21") 1-4" Drawer (18") & 2-8" Drawers (18")	1
2	8007 a) -007 (RH Dry Pen w/OH) RH Door (21") 1-4" Drawer (21") & 2-8" Drawers (21") b) -008 (LH Dry Pen w/OH) LH Door (21") 1-4" Drawer (21") & 2-8" Drawers (21")	1

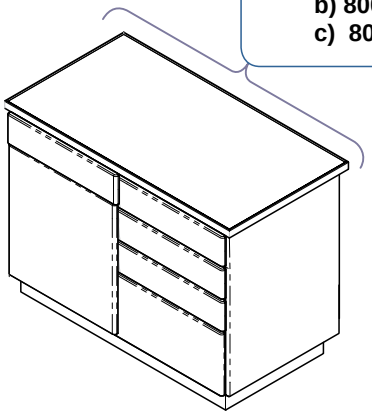
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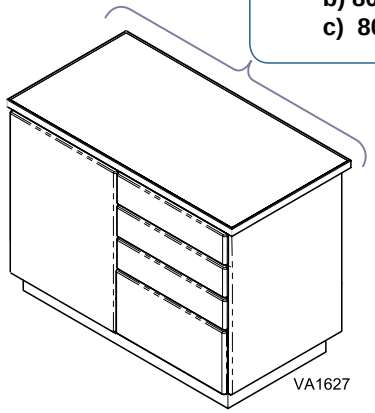
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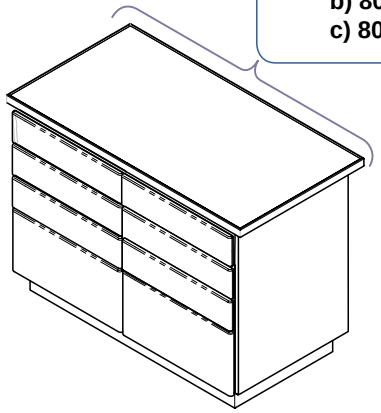
1
a) 8004-002-00-xxx-xxx
b) 8004-002-01-xxx-xxx
c) 8004-002-02-xxx-xxx
Not Shown
a) 8004-001-00-xxx-xxx
b) 8004-001-01-xxx-xxx
c) 8004-001-02-xxx-xxx

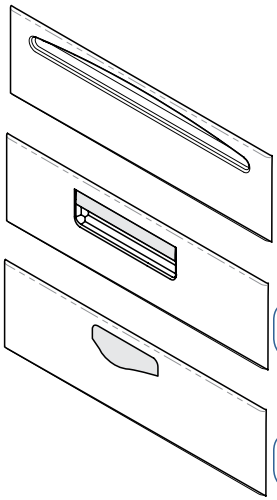


2
a) 8004-004-00-xxx-xxx
b) 8004-004-01-xxx-xxx
c) 8004-004-02-xxx-xxx
Not Shown
a) 8004-003-00-xxx-xxx
b) 8004-003-01-xxx-xxx
c) 8004-003-02-xxx-xxx



3
a) 8004-005-00-xxx-xxx
b) 8004-005-01-xxx-xxx
c) 8004-005-02-xxx-xxx





a) Integrated Handle

b) Snap-on Handle

c) Ritter

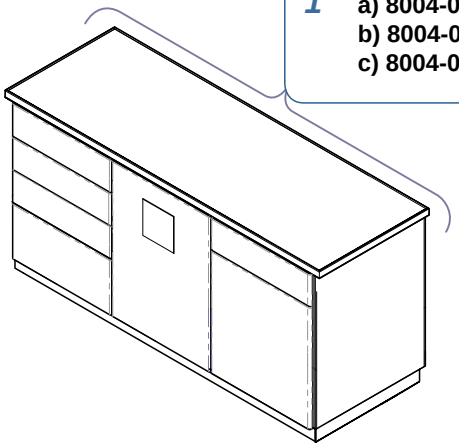
44" Island Exam Table Models w/SS Top

Item	Description	Qty.
1	8004-002-xx-xxx-xxx 1 - 4" drawer, LH Door 3 - 4" Drawers, 1 - 8" Drawer a) Wood Grain (Integrated Handle) b) Midmark (Snap-on Handle) c) Ritter 8004-001-xx-xxx-xxx 3 - 4" Drawers, 1 - 8" Drawer 1 - 4" drawer, RH Door a) Wood Grain (Integrated Handle) b) Midmark (Snap-on Handle) c) Ritter	1
2	8004-004-xx-xxx-xxx LH Door 3 - 4" Drawers, 1 - 8" Drawer a) Wood Grain (Integrated Handle) b) Midmark (Snap-on Handle) c) Ritter 8004-003-xx-xxx-xxx RH Door 3 - 4" Drawers, 1 - 8" Drawer a) Wood Grain (Integrated Handle) b) Midmark (Snap-on Handle) c) Ritter	1
3	8004-005-xx-xxx-xxx 3 - 4" Drawers, 1 - 8" Drawer 3 - 4" Drawers, 1 - 8" Drawer a) Wood Grain (Integrated Handle) b) Midmark (Snap-on Handle) c) Ritter	1

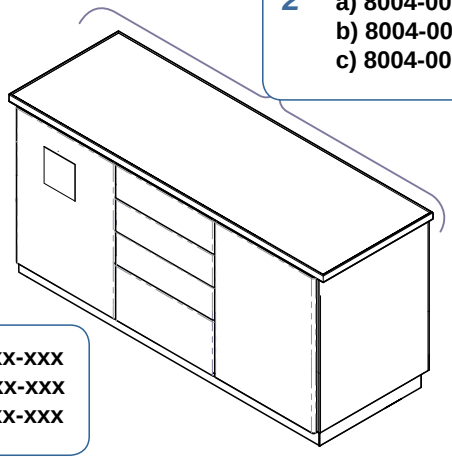
Models:	***8004-001****	***8004-002****	***8004-003****	***8004-004****	***8004-005****	
Serial Numbers:	*all*	*all*	*all*	*all*	*all*	

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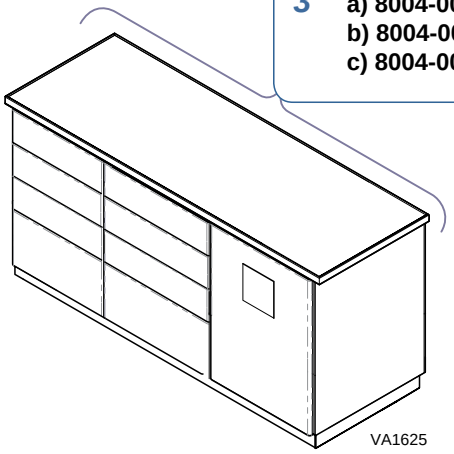
Always verify model & serial number



1 a) 8004-006-00-xxx-xxx
b) 8004-006-01-xxx-xxx
c) 8004-006-02-xxx-xxx



2 a) 8004-007-00-xxx-xxx
b) 8004-007-01-xxx-xxx
c) 8004-007-02-xxx-xxx

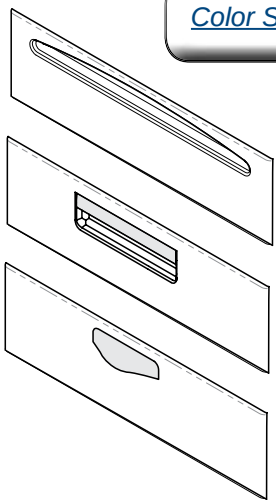


3 a) 8004-008-00-xxx-xxx
b) 8004-008-01-xxx-xxx
c) 8004-008-02-xxx-xxx

VA1625

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a) Integrated Handle

b) Snap-on Handle

c) Ritter

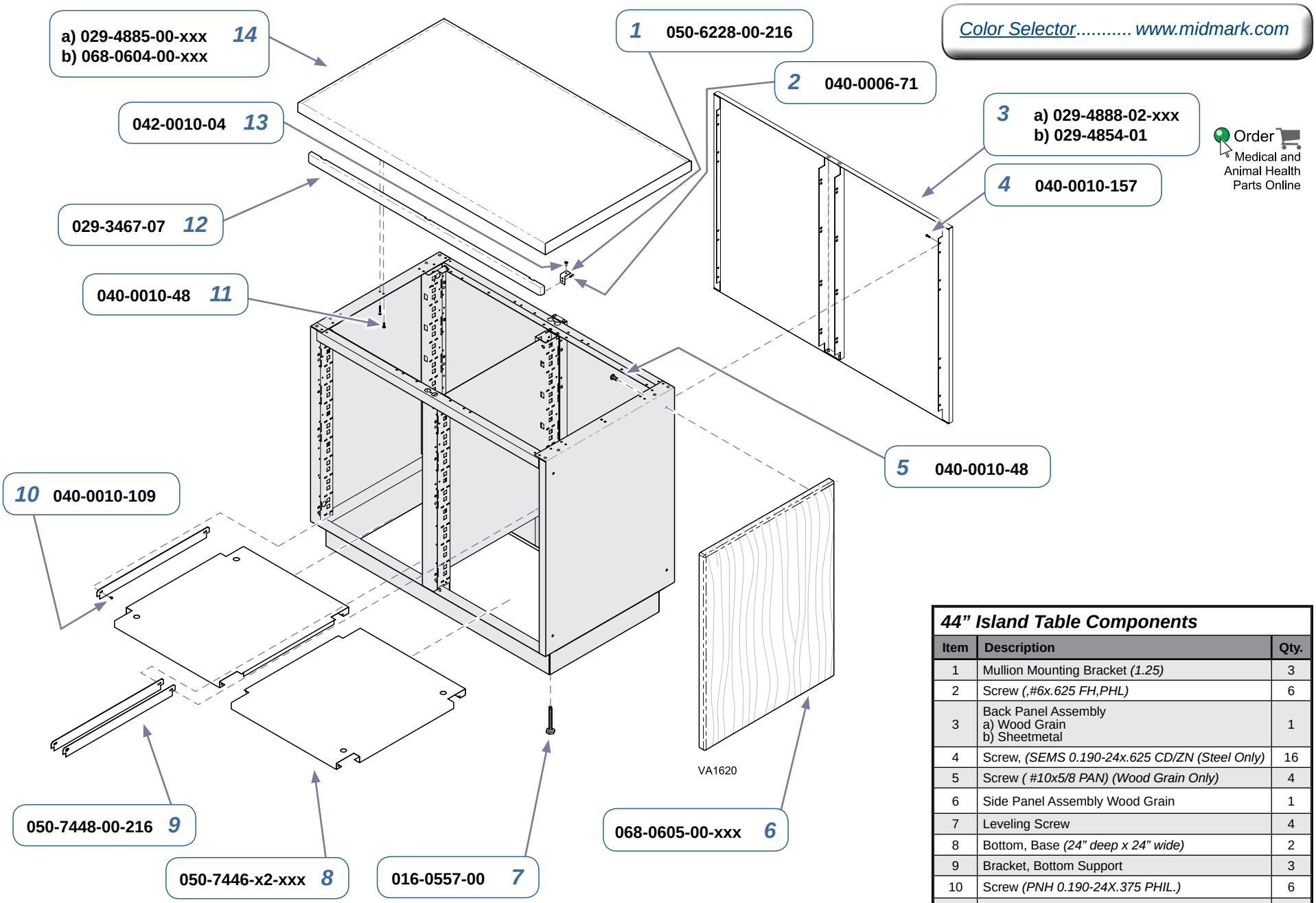
Models:	8004-006-xx-xxx	8004-007-xx-xxx	8004-008-xx-xxx	
Serial Numbers:	all	all	all	

59” Island Exam Table Models

Item	Description	Qty.
1	59” Island w/SS Top 3 - 4” Drawers, 1 - 8” Drawer LH Door w/ Trash Chute 1 - 4” drawer, RH Door a) Wood Grain (Integrated Handle) b) Midmark (Snap-on Handle) c) Ritter	1
2	59” Island w/SS Top LH Door w/ Trash Chute 3 - 4” Drawers, 1 - 8” Drawer RH Door a) Wood Grain (Integrated Handle) b) Midmark (Snap-on Handle) c) Ritter	1
3	59” Island w/SS Top 3 - 4” Drawers, 1 - 8” Drawer 3 - 4” Drawers, 1 - 8” Drawer RH Door w/Trash Chute a) Wood Grain (Integrated Handle) b) Midmark (Snap-on Handle) c) Ritter	1

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44" Island Table Components

Item	Description	Qty.
1	Mullion Mounting Bracket *(1.25)*	3
2	Screw *(,#6x.625 FH,PHL)*	6
3	Back Panel Assembly a) Wood Grain b) Sheetmetal	1
4	Screw, *(SEMS 0.190-24x.625 CD/ZN (Steel Only)*	16
5	Screw *(#10x5/8 PAN) (Wood Grain Only)*	4
6	Side Panel Assembly Wood Grain	1
7	Leveling Screw	4
8	Bottom, Base *(24" deep x 24" wide)*	2
9	Bracket, Bottom Support	3
10	Screw *(PNH 0.190-24X.375 PHIL.)*	6
11	Screw *(#10 x 5/8" PAN)*	10
12	Mullion Assembly	1
13	Rivet	3
14	Top Assembly a) Steel b) Laminate	1

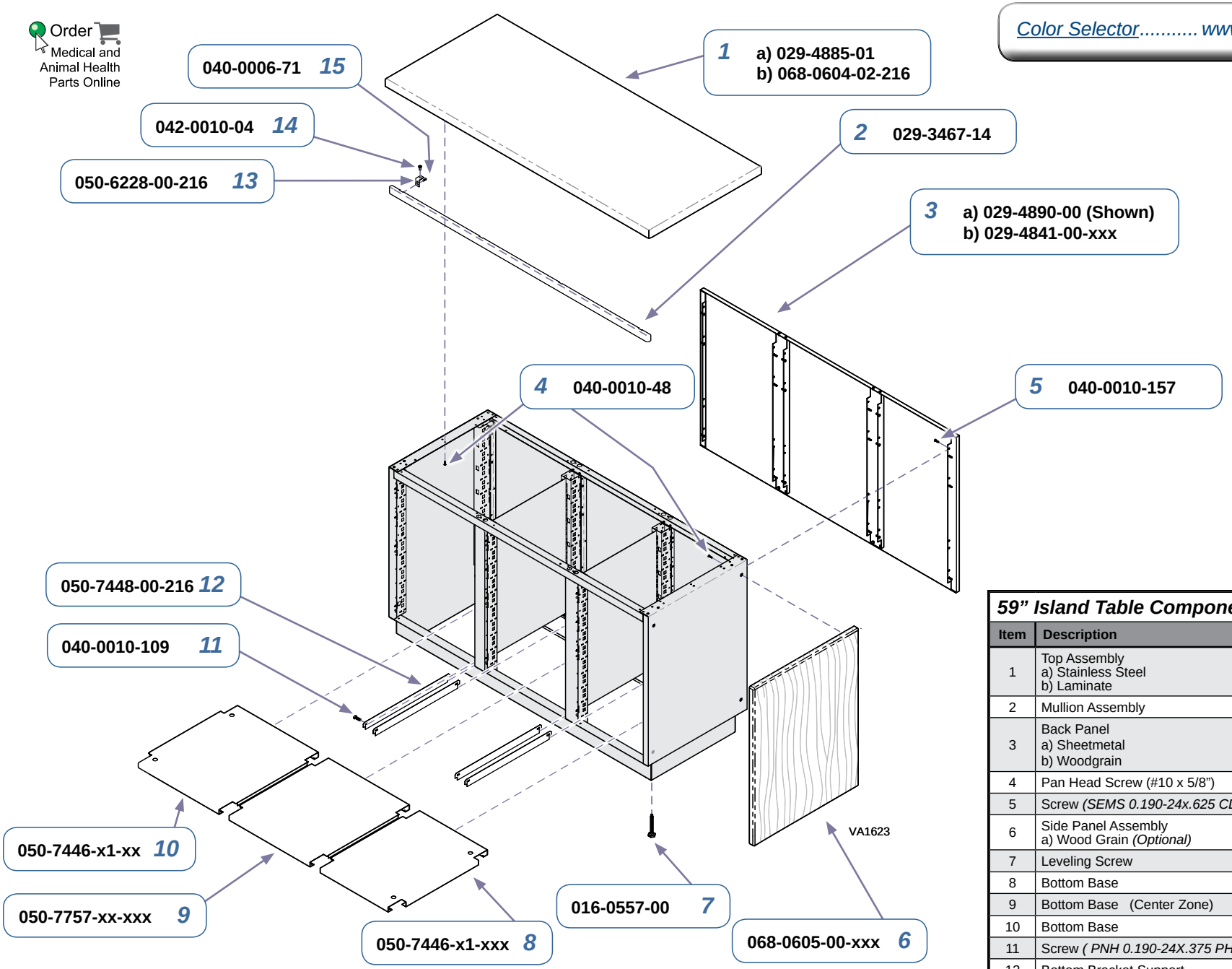
Models:	8004-001*	8004-002*	8004-003*	8004-004*	8004-005*	
Serial Numbers:	all	all	all	all	all	

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59" Island Table Components

Item	Description	Qty.
1	Top Assembly a) Stainless Steel b) Laminate	1
2	Mullion Assembly	1
3	Back Panel a) Sheetmetal b) Woodgrain	1
4	Pan Head Screw (#10 x 5/8")	AR
5	Screw *(SEMS 0.190-24x.625 CD/ZN)*	AR
6	Side Panel Assembly a) Wood Grain *(Optional)*	1
7	Leveling Screw	4
8	Bottom Base	1
9	Bottom Base (Center Zone)	1
10	Bottom Base	1
11	Screw *(PNH 0.190-24X.375 PHIL.)*	22
12	Bottom Bracket Support	5
13	Mullion Mounting Bracket (1.25)	4
14	Rivet	4
15	Screw *(#6 x .625, Flat Head PHL)*	4

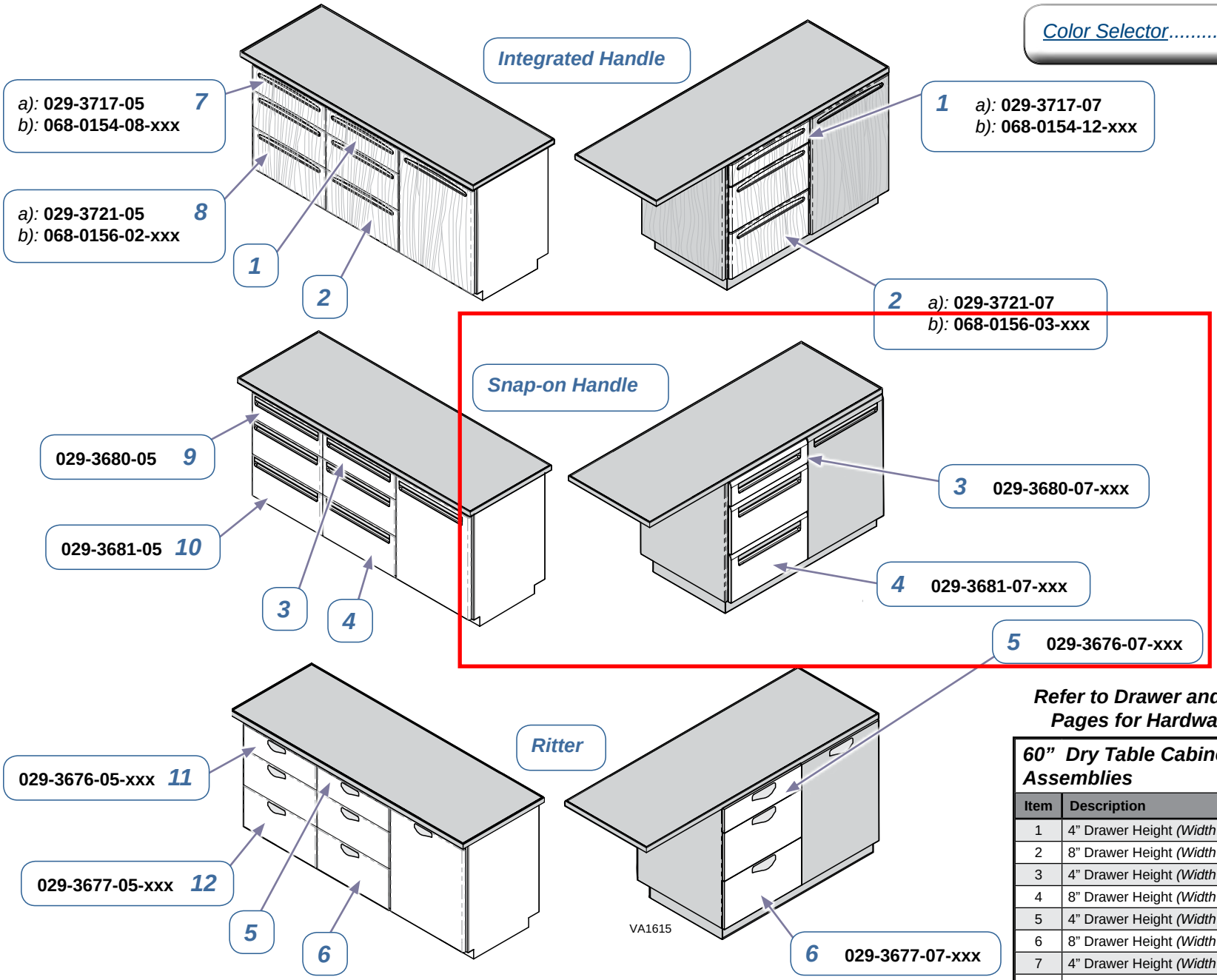
Models:	8004-006-xx-xxx	8004-007-xx-xxx	8004-008-xx-xxx	
Serial Numbers:	all	all	all	

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Refer to Drawer and Door Component Pages for Hardware Part Numbers

60" Dry Table Cabinet Drawer Assemblies		
Item	**Description**	**Qty.**
1	4" Drawer Height *(Width - 21") (Depth - 24")*	AR
2	8" Drawer Height *(Width - 21") Depth - 24")*	AR
3	4" Drawer Height *(Width - 21") (Depth - 24")*	AR
4	8" Drawer Height *(Width - 21") Depth - 24")*	AR
5	4" Drawer Height *(Width - 21") (Depth - 24")*	AR
6	8" Drawer Height *(Width - 21") Depth - 24")*	AR
7	4" Drawer Height *(Width - 18") (Depth - 24")*	AR
8	8" Drawer Height *(Width - 18") Depth - 24")*	AR
9	4" Drawer Height *(Width - 18") (Depth - 24")*	AR
10	8" Drawer Height *(Width - 18") Depth - 24")*	AR
11	4" Drawer Height *(Width - 18") (Depth - 24")*	AR
12	8" Drawer Height *(Width - 18") Depth - 24")*	AR

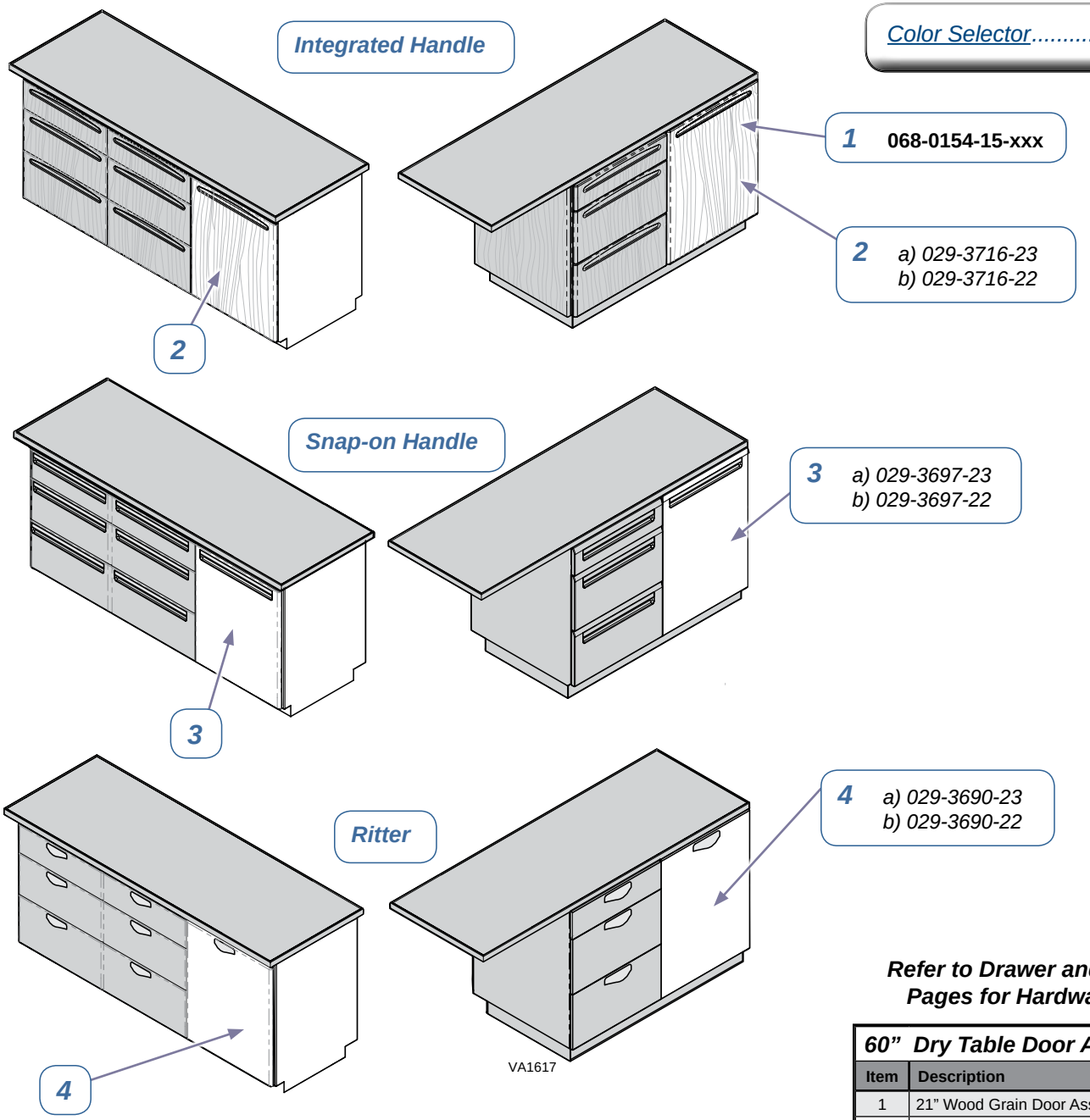
Models:	***8007-005****	***8007-006****	***8007-007****	***8007-008****
Serial Numbers:	*all*	*all*	*all*	*all*

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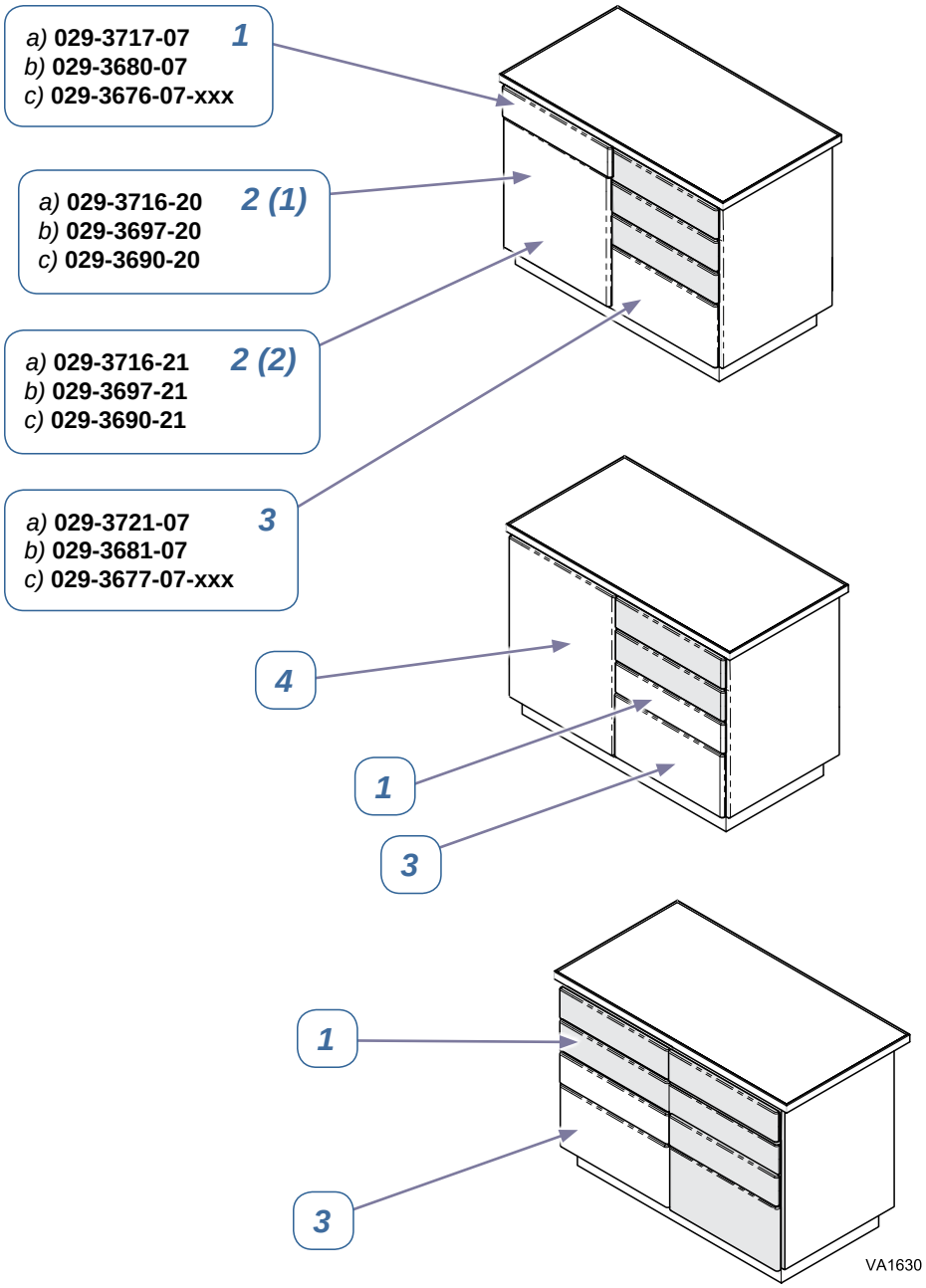
Refer to Drawer and Door Component Pages for Hardware Part Numbers

60" Dry Table Door Assemblies		
Item	**Description**	**Qty.**
1	21" Wood Grain Door Assembly	1
2	*a) 21" RH Door Assembly* *b) 21" LH Door Assembly*	1
3	*a) 21" RH Door Assembly* *b) 21" LH Door Assembly*	1
4	*a) 21" RH Door Assembly* *b) 21" LH Door Assembly*	1

Models:	***8007-005****	***8007-006****	***8007-007****	***8007-008****
Serial Numbers:	*all*	*all*	*all*	*all*

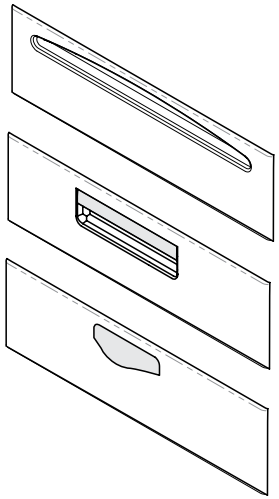
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a) Integrated Handle

b) Snap-on Handle

c) Ritter

Refer to Drawer and Door Component Pages for Hardware Part Numbers

44" Island Exam Table
Door and Drawer Assemblies

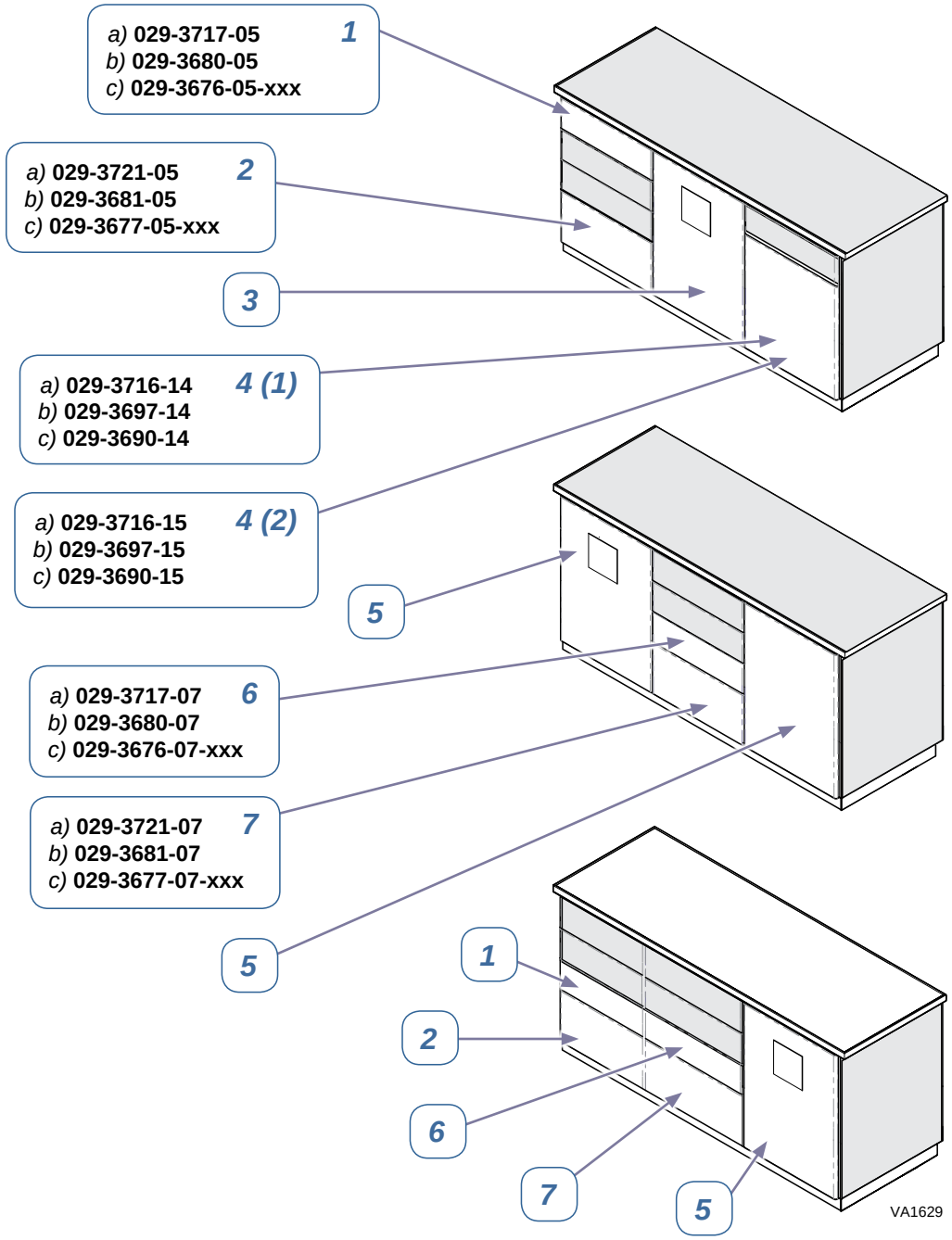
Item	Description	Qty.
1	4" Drawer Height *(Width - 21") (Depth-24")*	AR
2	2 (1) LH Short Door Assembly *(Height -) Width - 18") (Depth - 24")* 2 (2) RH Short Door Assembly *(Height -) Width - 18") (Depth - 24")*	AR
3	8" Drawer Height *(Width - 21") (Depth-24")*)	REF
4	21" Door Assembly Ref Door Components (Island Tables)	AR

**Note - For Drawer Hardware Refer to Drawer Components*
For Short Door Hardware Refer to Door Components

Models:	***8004-001****	***8004-002****	***8004-003****	***8004-004****	***8004-005****	
Serial Numbers:	*all*	*all*	*all*	*all*	*all*	

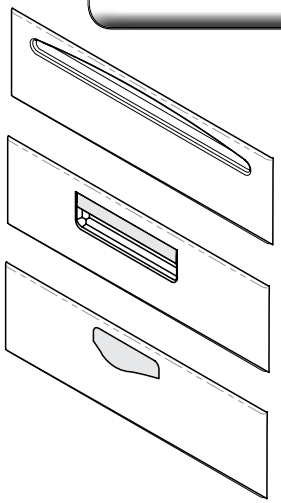
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a) Integrated Handle

b) Snap-on Handle

c) Ritter

Refer to Drawer and Door Component Pages for Hardware Part Numbers

59" Island Exam Table
Door and Drawer Assemblies

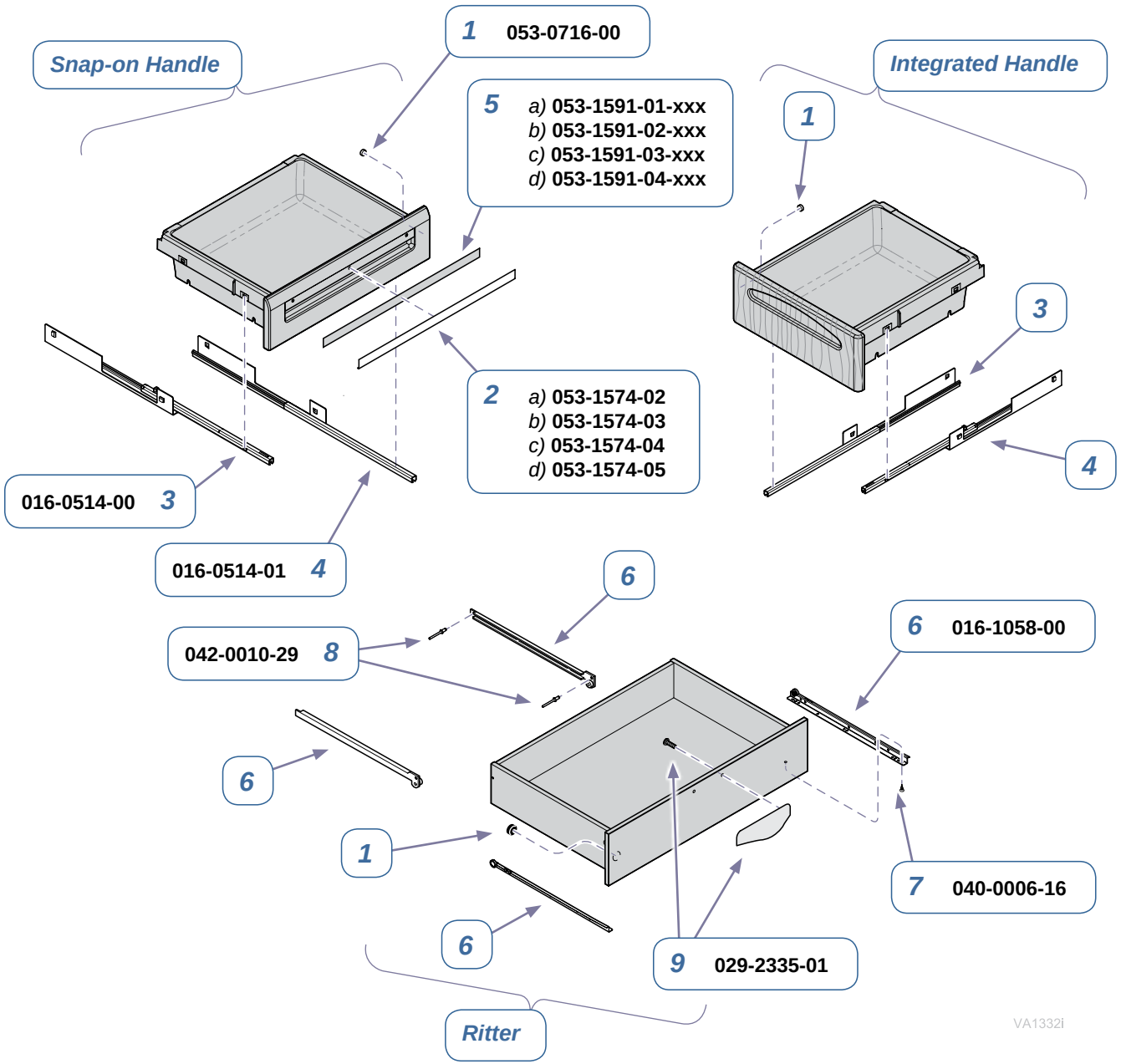
Item	Description	Qty.
1	4" Drawer Height *(Width - 18") (Depth-24")*	AR
2	8" Drawer Height *(Width - 18") (Depth-24")*	AR
3	21" Door Assembly Ref Door Components (Island Tables)	REF
4	4 (1) LH Short Door Assembly *(Height -) Width - 18") (Depth - 24")* 4 (2) RH Short Door Assembly *(Height -) Width - 18") (Depth - 24")*	AR
5	18" Door Assembly Ref Door Components (Island Tables)	REF
6	4" Drawer Height *(Width - 21") (Depth-24")*	AR
7	8" Drawer Height *(Width - 21") (Depth-24")*	AR

**Note - For Drawer Hardware Refer to Drawer Components*
For Short Door Hardware Refer to Door Components

Models:	***8004-006-xx-xxx***	***8004-007-xx-xxx***	***8004-008-xx-xxx***	
Serial Numbers:	*all*	*all*	*all*	

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Models:	All
Serial Numbers:	all

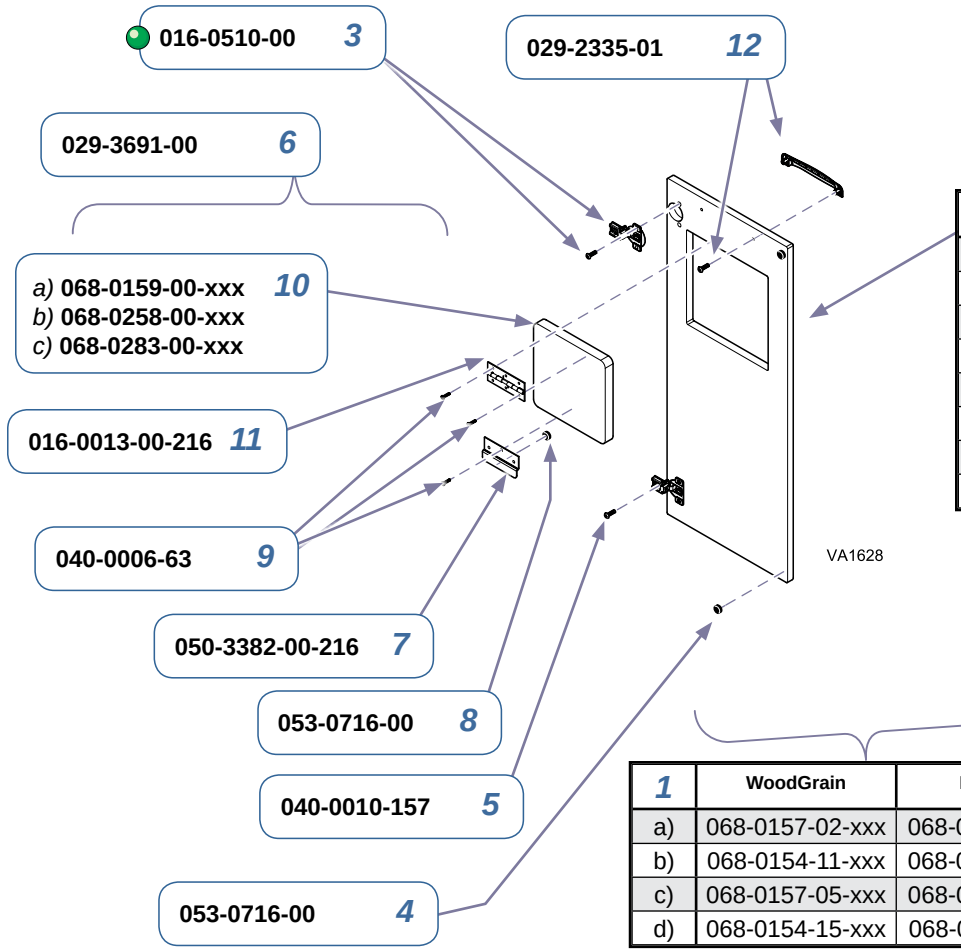
Drawer Components

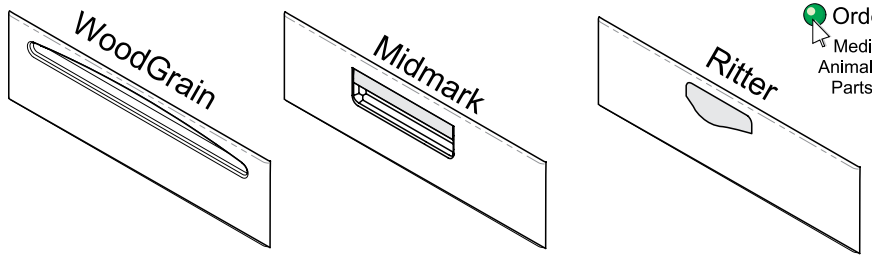
Item	Description	Qty.
1	Bumper *(included w/ drawer assembly number)*	2
2	Clear Handle Cover a) *15" drawer width* *b) 18" drawer width* *c) 21" drawer width* *d) 24" drawer width* *(included w/ drawer assembly number)*	1
3	L.H. Slide *(24" drawer depth)*	1
4	R.H. Slide *(24" drawer depth)*	1
5	Color Insert *(specify color)* a) *15" drawer width* *b) 18" drawer width* *c) 21" drawer width* *d) 24" drawer width*	1
6	Slide Set *(24" drawer depth)* *(1 complete set, incl. screws Item 7)* *(set incl. w/ Ritter drawer assy. number ONLY)*	1
7	Screws *(#6 x 1/2" Flat Head)*	1
8	Rivet	4
9	Handle Assembly Set *(incl. screws) (Ritter ONLY)*	1

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2	WoodGrain	Midmark	Ritter
a)	029-3722-05	029-3699-05	029-3692-05
b)	029-3722-04	029-3699-04	029-3692-04
c)	029-3716-17	029-3697-17	029-3690-17
d)	029-3716-16	029-3697-16	029-3690-16
e)	029-3722-09	029-3699-09	029-3692-09
f)	029-3722-08	029-3699-08	029-3692-08
g)	029-3716-23	029-3697-23	029-3690-23
h)	029-3716-22	029-3697-22	029-3690-22

1	WoodGrain	Midmark	Ritter
a)	068-0157-02-xxx	068-0256-02-xxx	068-0282-02-xxx
b)	068-0154-11-xxx	068-0249-08-xxx	068-0281-08-xxx
c)	068-0157-05-xxx	068-0256-05-xxx	068-0282-06-xxx
d)	068-0154-15-xxx	068-0249-11-xxx	068-0281-11-xxx

Door Components (Island Tables)

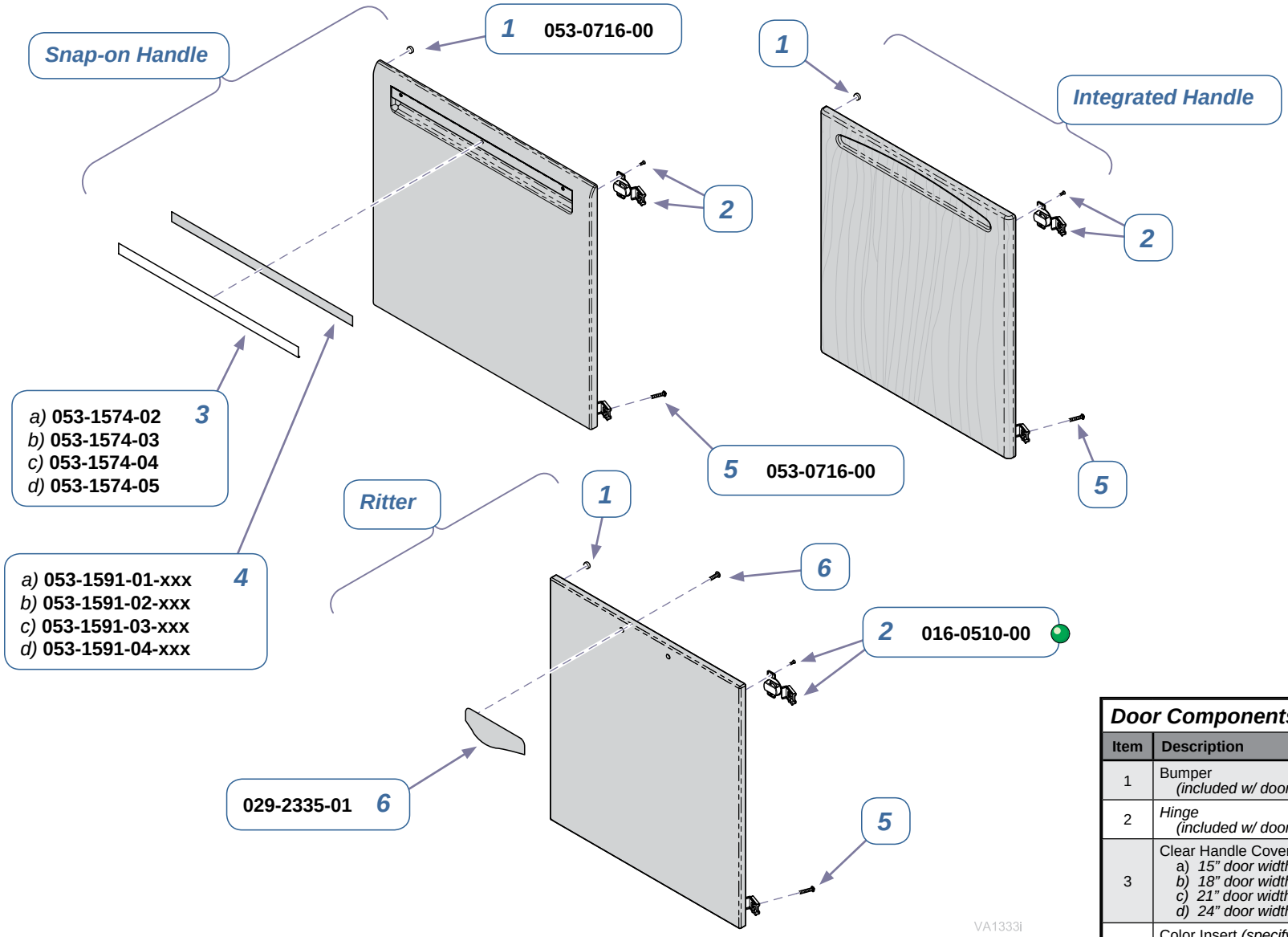
Item	Description	Qty.
1	**Door Assembly** **Note - With Waste Drop includes Items 2 thru 12 Without Waste Drop includes Items 2, 3 & 4 You must also order item 2 and specify "assemble"* a) 18" RH Door *(with Waste Drop - Shown)* b) 18" LH Door *(with Waste Drop)* c) 18" RH Door *(without Waste Drop)* d) 18" LH Door *(without Waste Drop)* e) 21" RH Door *(with Waste Drop)* f) 21" LH Door *(with Waste Drop)* g) 21" RH Door *(without Waste Drop)* h) 21" LH Door *(without Waste Drop)*	1
2	• **Door Panel (specify color)** a) 18" RH or LH Door *(with Waste Drop - Shown)* b) 18" RH or LH Door *(without Waste Drop)* c) 21" RH or LH Door *(with Waste Drop)* d) 21" RH or LH Door *(without Waste Drop)*	1
3	• Hinge	2
4	• Bumper	2
5	Screw *(SEMS 0.190-24x.625 CD/ZN)*	
6	• Waste Panel Assembly (specify color)	1
7	• • Waste Drop Bracket	1
8	• • Bumper	1
9	• • Screw *(#6 x 5/8")*	9
10	• • Waste Panel (specify color) a) WoodGrain, b) Midmark, c) Ritter	1
11	• • Spring Hinge	1
12	Handle Assembly Set *(includes screws)*	1

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Models:	***8004-xxx-xx-xxx***	
Serial Numbers:	*all*	

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Models:	All
Serial Numbers:	all

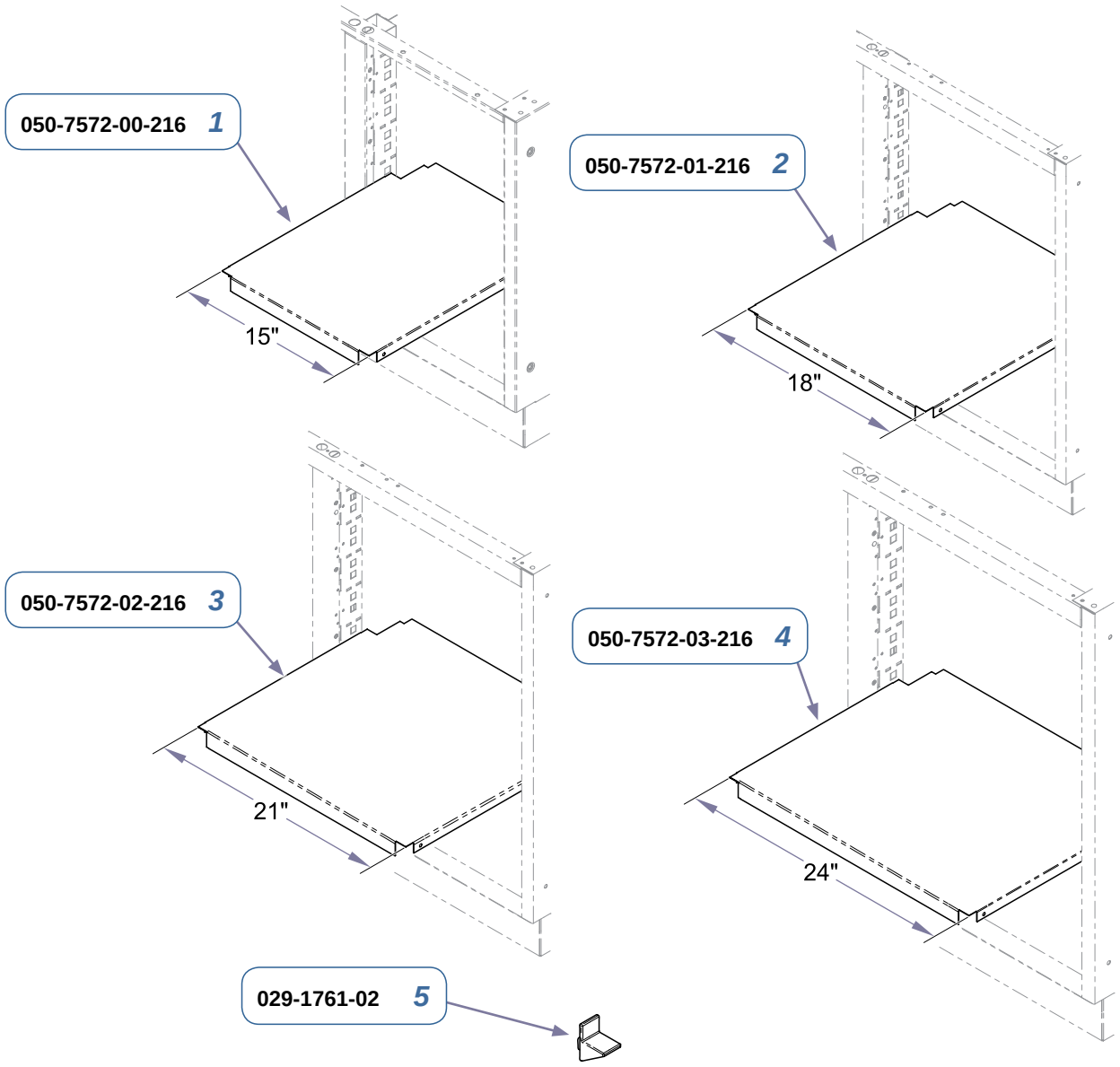
Door Components

Item	Description	Qty.
1	Bumper *(included w/ door assembly number)*	2
2	*Hinge* *(included w/ door assembly number)*	2
3	Clear Handle Cover a) *15" door width* b) *18" door width* c) *21" door width* d) *24" door width*	1
4	Color Insert *(specify color)* a) *15" door width* b) *18" door width* b) *21" door width* c) *24" door width*	1
5	Screws *(#10-24 x 5/8")*	2
6	Handle Assembly Set *(incl. screws) (Ritter ONLY)*	1

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Note:
Shelf Clips need to be ordered separately.

Shelves		
Item	**Description**	**Qty.**
1	15” Width Shelf - *(Door Panel width 14-11/16”)*	1
2	18” Width Shelf - *(Door Panel width 17-11/16”)*	1
3	21” Width Shelf - *(Door Panel width 20-11/16”)*	1
4	24” Width Shelf - *(Door Panel width 23-11/16”)*	1
5	Shelf Clips *(4 clips per bag)*	1

Models:	***All***	
Serial Numbers:	*all*	

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Vet Peninsula Table

Model Numbers:

8003*

8004*

8007*

Service and Parts Manual



FOR USE BY MIDMARK TRAINED TECHNICIANS ONLY

Part No. 004-0684-00 Rev. (5/19/17)

Style B

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General Info

GENERAL INFORMATION

Symbols iii
Ordering Information iii
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Weights & Dimensions
- 8003 Wet Table iv
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not available

Section B

TESTING & REPAIR

Door Adjustment B-2

Section C

ACCESS PROCEDURES

not available

Section C

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not available

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Door Components E-27
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Plumbing Components E-29*

Linked Files

(*) Indicates multiple pages due to model / serial number break(s).

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Symbols

DANGER
Indicates an imminently hazardous situation which <u>will</u> result in serious or fatal injury if not avoided. This symbol is used only the most extreme conditions.

WARNING
Indicates a potentially hazardous situation which could result in serious injury if not avoided.

Caution
Indicates a potentially hazardous situation which <u>may</u> result in minor or moderate injury if not avoided. It may also be used to alert against unsafe practices

Equipment Alert
Indicates a potentially hazardous situation which could result in equipment damage if not avoided.

Note
Used for special instructions or additional information.

The symbols below may be used in this manual to represent the operational status of table functions and components.

Indicates the function / component is working properly. No action required.

Indicates the function / component is working, but a problem exists.

Indicates the function is not working at all, or that the component is faulty.

Ordering Parts

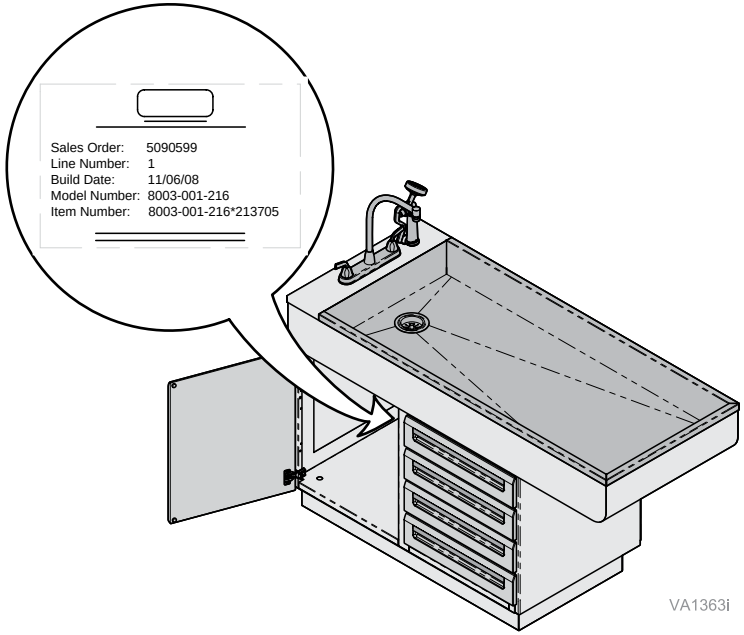
The following information is required when ordering parts:

- Serial number & model number
- Part number for desired part
  (Refer to Section E: Exploded Views & Parts Lists)

Non-warranty parts orders may be faxed to Midmark using the Fax Order Form in the back of this manual.

For warranty parts orders, call Midmark's Technical Service Department with the required information.
Hours: 8:00 am to 5:00 p.m. EST (Monday thru Friday)
Phone: 1-800-Midmark (1-800-643-6275)

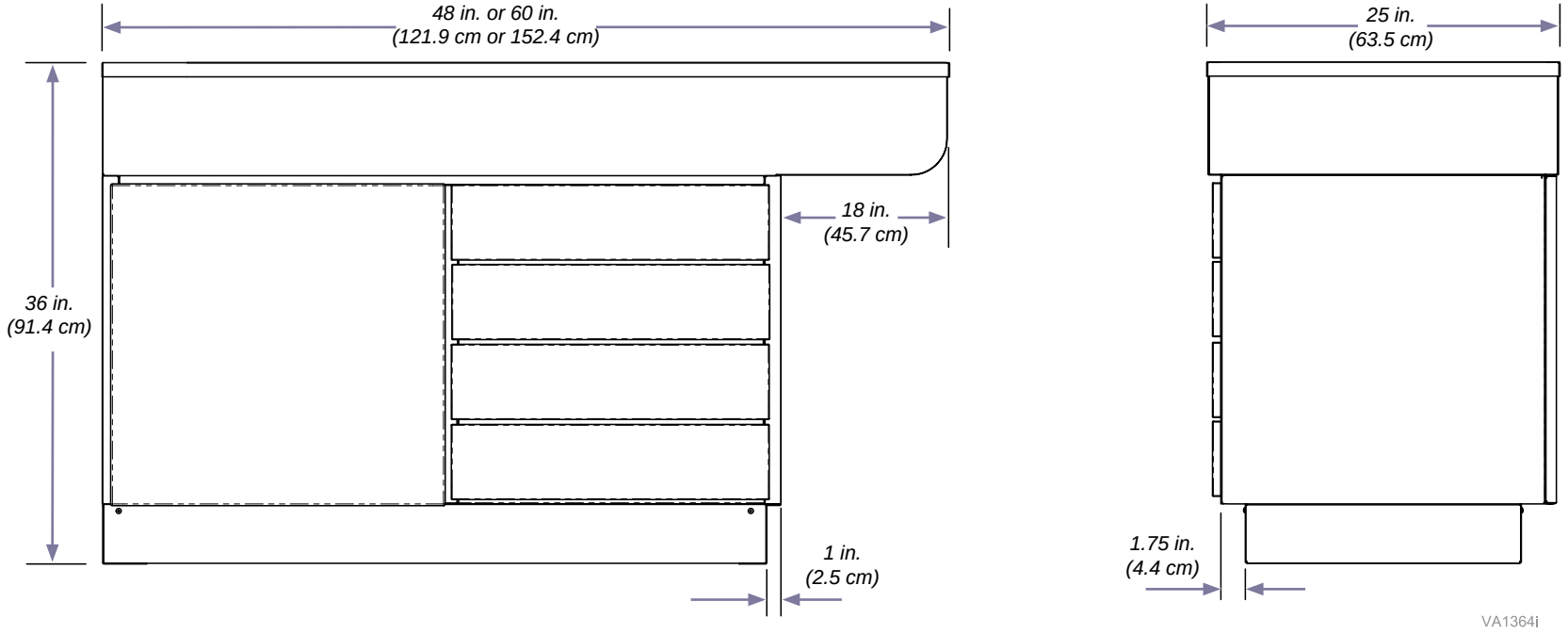
Serial Number Location



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Weights & Dimensions
8003 Wet Table

8003 48” Wet Table (Standard Table)		*8003 48” Wet Table for Vet Pro 5000 (Table only)*	
Width	25 inches (63.5 cm)	**Width**	25 inches (63.5 cm)
Length	48 inches (121.9 cm)	**Length**	48 inches (121.9 cm)
Height	36 inches (91.4 cm)	**Height**	36 inches (91.4 cm)
Weight	250 lbs (113 kg)	**Weight**	257 lbs (117 kg)
Shipping Weight	290 lbs (131 kg)	**Shipping Weight**	297 lbs (135 kg)
8003 60” Wet Table (Standard Table)		*8003 60” Wet Table for Vet Pro 5000 (Table only)*	
Width	25 inches (63.5 cm)	**Width**	25 inches (63.5 cm)
Length	60 inches (152.4 cm)	**Length**	60 inches (152.4 cm)
Height	36 inches (91.4 cm)	**Height**	36 inches (91.4 cm)
Weight	275 lbs (125 kg)	**Weight**	283 lbs (135 kg)
Shipping Weight	315 lbs (143 kg)	**Shipping Weight**	323 lbs (146 kg)



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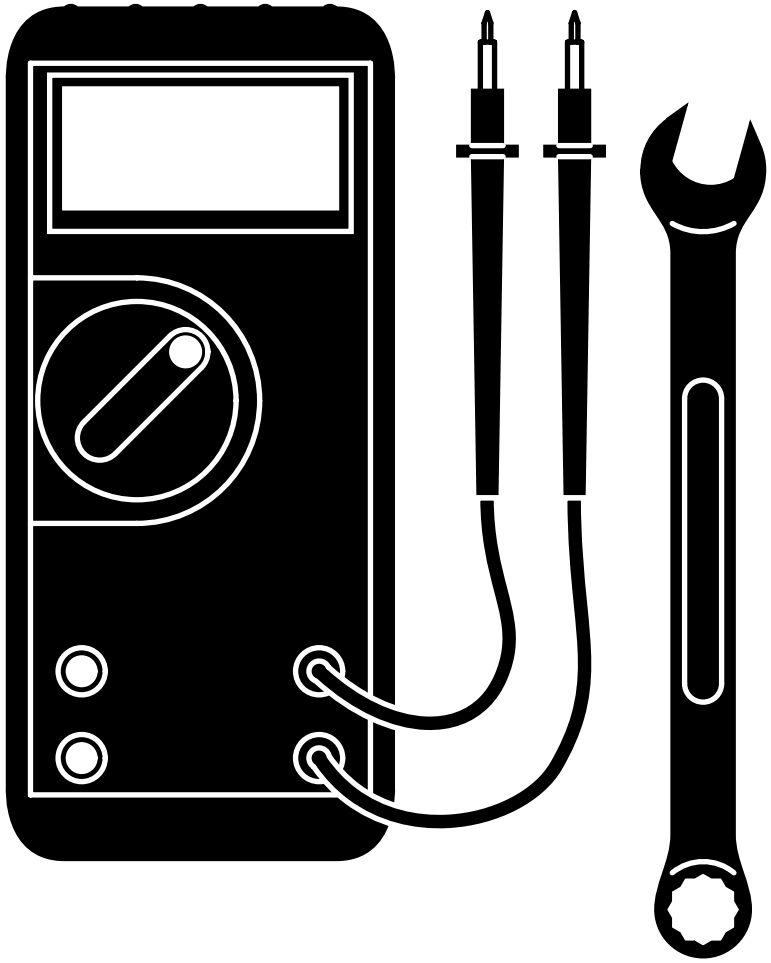
Cleaning and Maintenance

Interval	Inspection / Service	Description
After Each Use	Cleaning	Clean stainless steel tub with a mild cleaning agent and rinse thoroughly and towel dry. Commercial cleaners need to be approved for use on stainless steel surfaces. Only use nylon or plastic bristle scrubbers when needed. Using steel wool or steel brush may cause steel particles to embed into surface causing rust. (Note: When using scrubbers always scrub with the grain of the steel)
		Clean debris trap after each use from hair and any other debris.
Weekly	Cleaning	Wipe painted metal & plastic surfaces with a clean soft cloth and mild cleaner. (Note: Periodic application of common furniture wax will ease cleaning and maintain the luster of the surfaces).
	Obvious Damage	Visually inspect components for damage to ensure they are functioning properly.
Date of Service: Location: Service Technician:		Model Number: Serial Number: Notes:

Section B

Testing & Adjustments

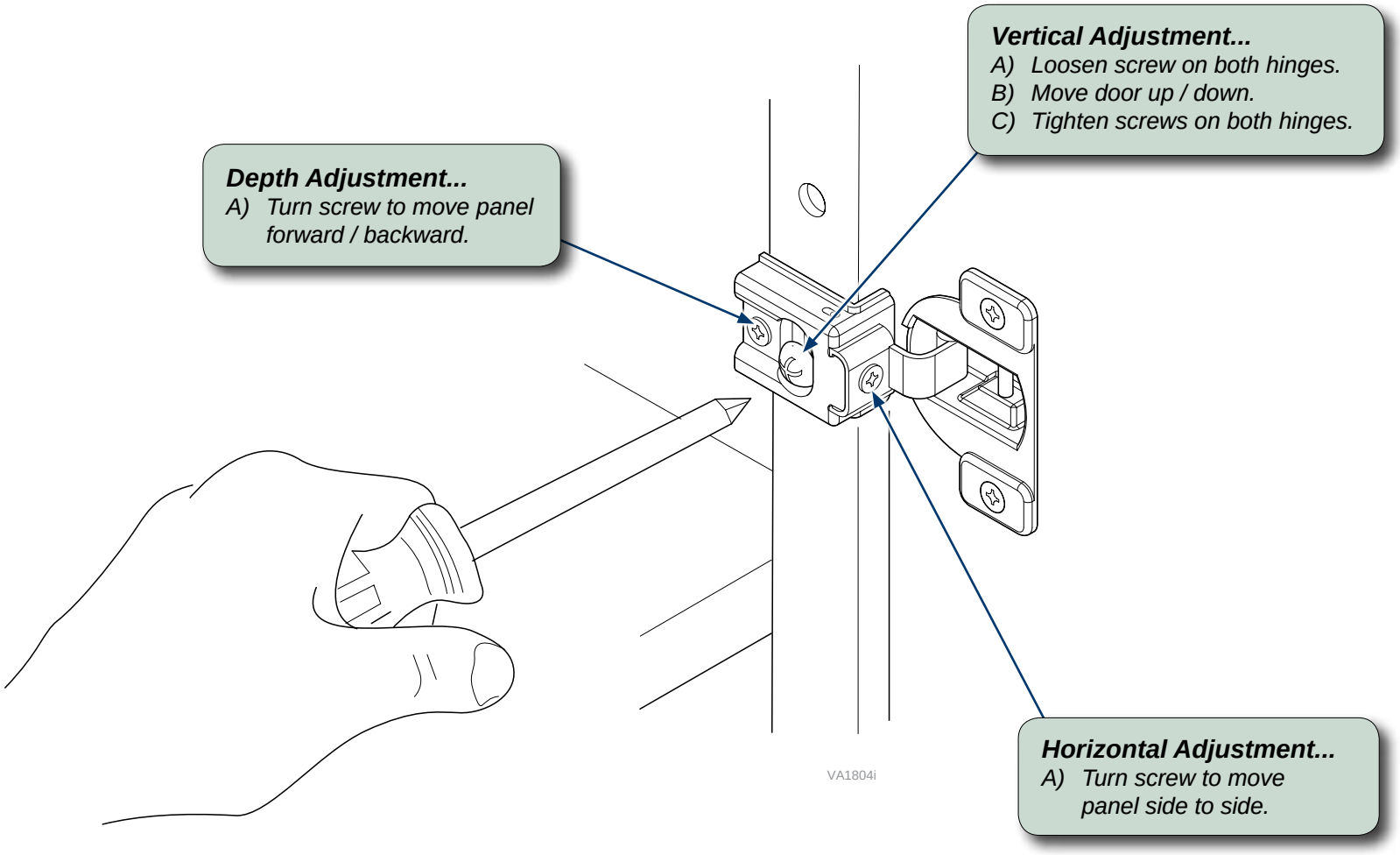
Door Adjustment.....B-2



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Doors

Door Adjustment

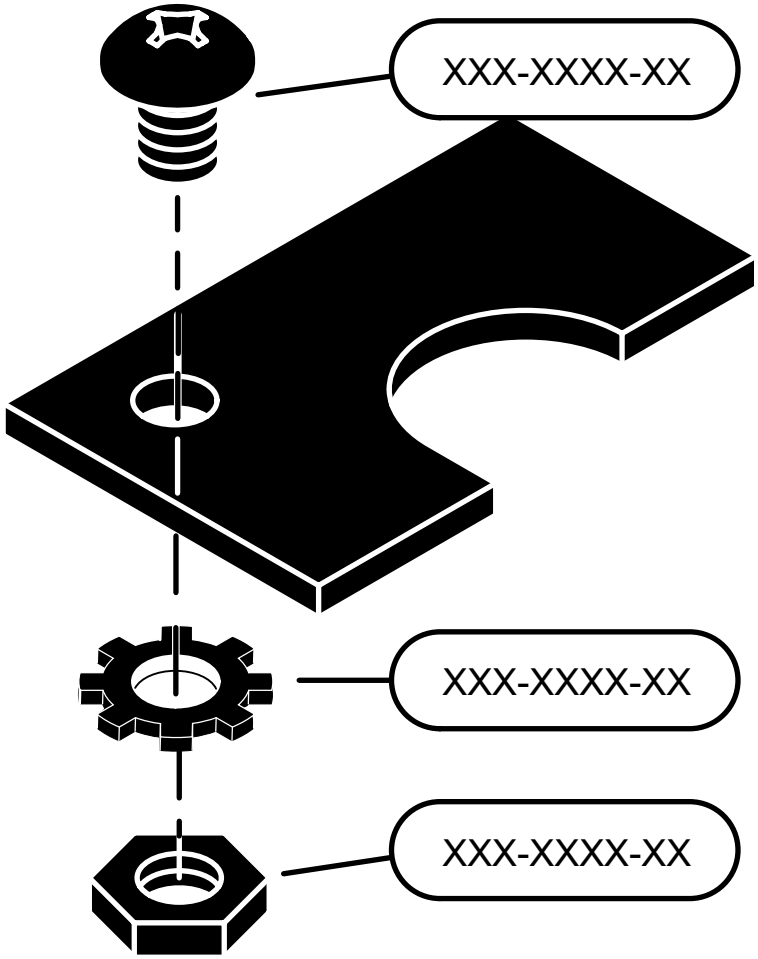


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Section E

Exploded Views & Parts Lists

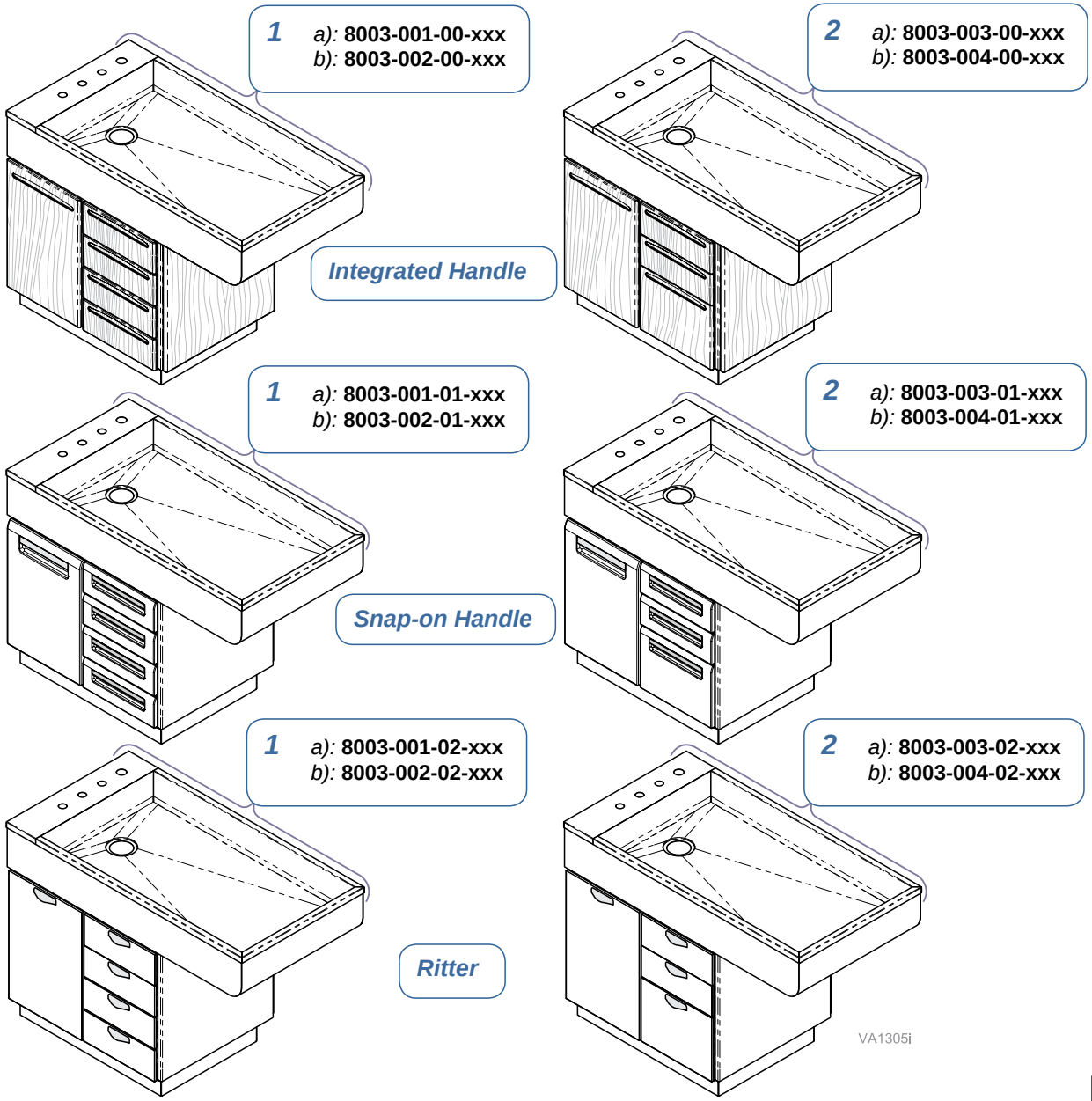
48” Wet Penninsula.....E-2
60” Wet Penninsula.....E-3
48” Dry.....E-4
60” Dry.....E-5
44” Island Table.....E-6
59” Island Table.....E-7



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Color Selector..... www.midmark.com

Order Medical and Animal Health Parts Online



Models:	8003-001-xx-xxx	8003-002-xx-xxx	8003-003-xx-xxx	8003-004-xx-xxx
Serial Numbers:	all	all	all	all

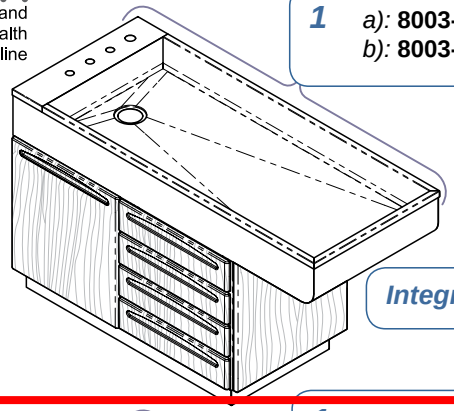
48" Wet Table Models

Item	Description	Qty.
1	8003 a) -001 48" RH (4) 4" Drawers b) -002 48" LH (4) 4" Drawers *(Shown)*	1
2	8003 a) -003 48" RH (2) 4", (1) 8" Drawers b) -004 48" LH (2) 4", (1) 8" Drawers *(Shown)*	1

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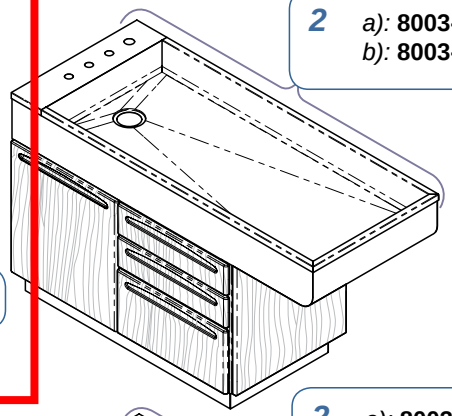
Always verify model & serial number

Order Medical and Animal Health Parts Online

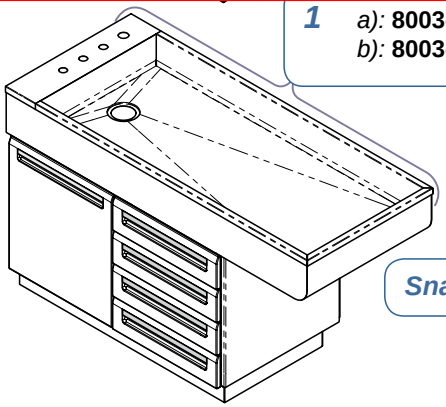


1 a): 8003-005-00-xxx
b): 8003-006-00-xxx

Integrated Handle

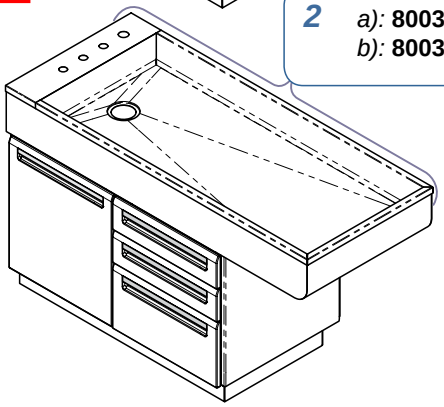


2 a): 8003-007-00-xxx
b): 8003-008-00-xxx

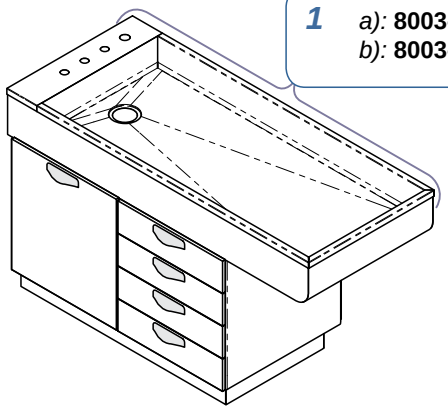


1 a): 8003-005-01-xxx
b): 8003-006-01-xxx

Snap-on Handle

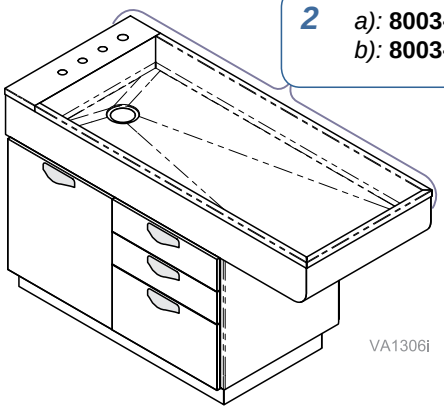


2 a): 8003-007-01-xxx
b): 8003-008-01-xxx



1 a): 8003-005-02-xxx
b): 8003-006-02-xxx

Ritter



2 a): 8003-007-02-xxx
b): 8003-008-02-xxx

VA1306i

Color Selector..... www.midmark.com

Note:

The 60" Wet Table models are available with side plumbing access for peninsula applications or floor plumbing access for island applications. Refer to "60 inch Wet Table Components" page elsewhere in this manual for the different service-able parts.

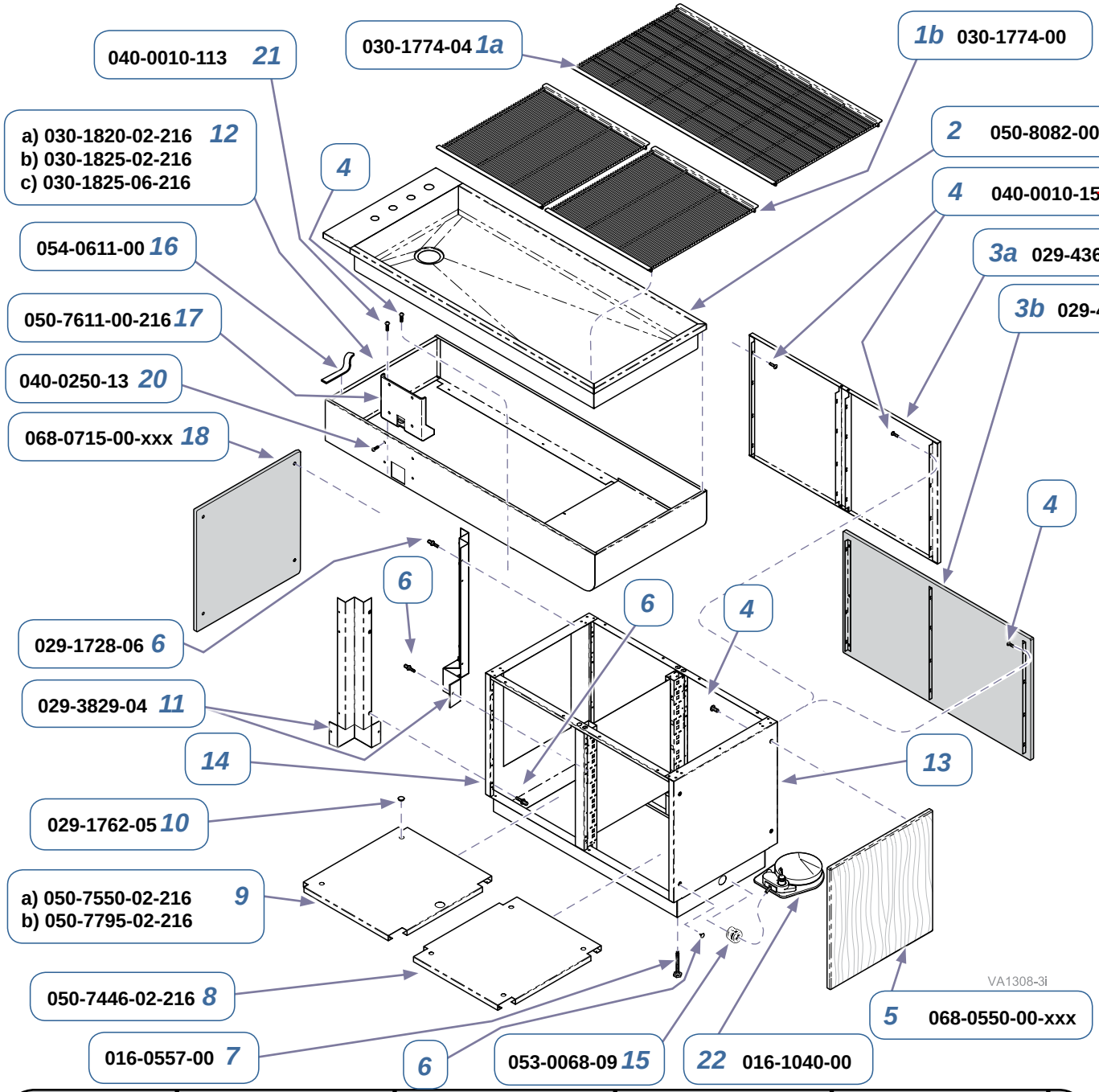
Models:	8003-005-xx-xxx	8003-006-xx-xxx	8003-007-xx-xxx	8003-008-xx-xxx
Serial Numbers:	all	all	all	all

60" Wet Table Models

Item	Description	Qty.
1	8003 a) -005 60" RH (4) 4" Drawers b) -006 60" LH (4) 4" Drawers *(Shown)*	1
2	8003 a) -007 60" RH (2) 4", (1) 8" Drawers b) -008 60" LH (2) 4", (1) 8" Drawers *(Shown)*	1

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SEE INSERT #573.01

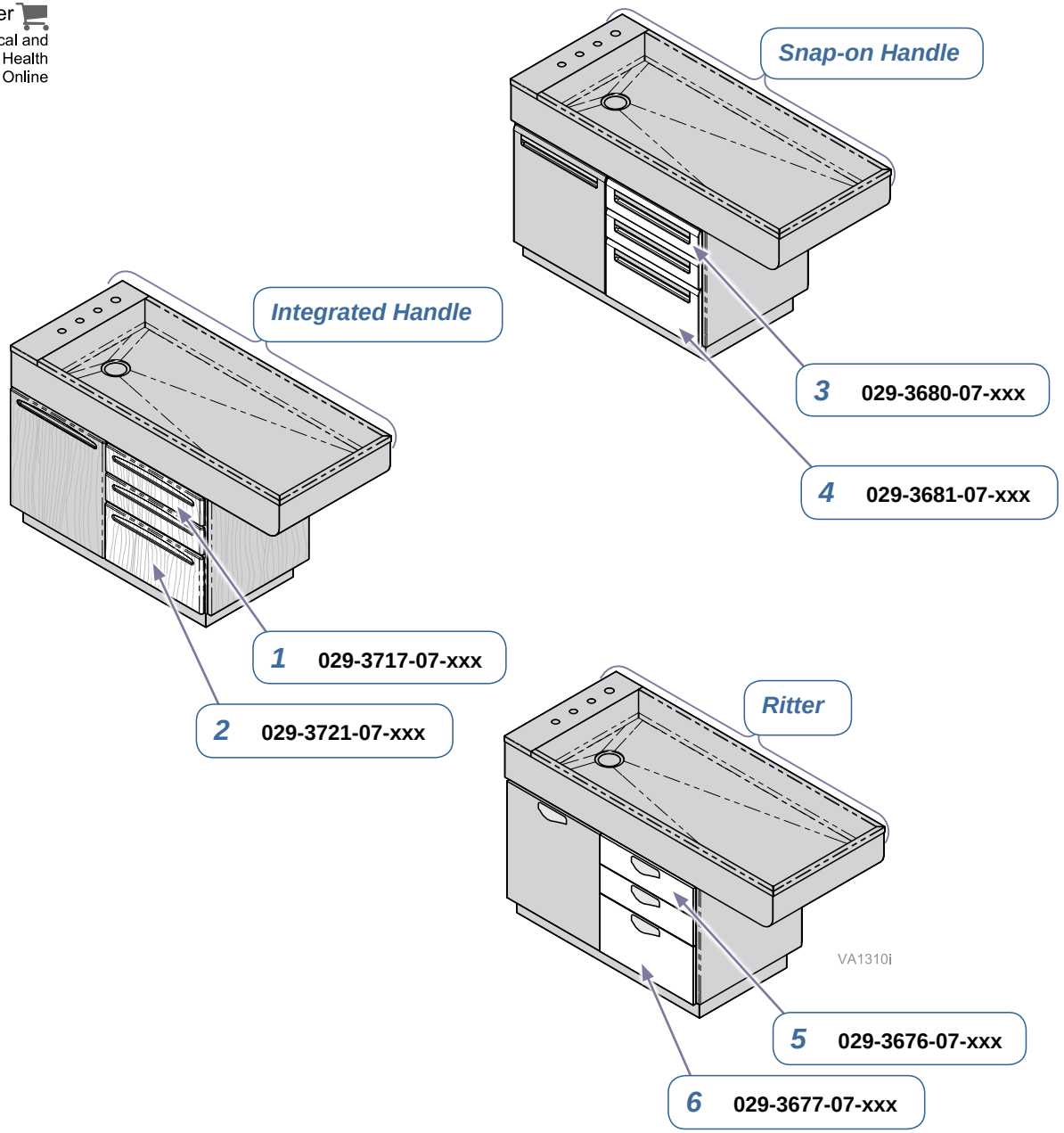
60" Wet Table Components

Item	Description	Qty.
1a	Recessed Rack (Standard)	1
1b	Recessed Racks (Optional)	2
2	Stainless Steel Tub	1
3	Back Panel Assembly: a) *Sheet Metal Back Panel (used on units with Snap-on and Ritter handles)* b) Wood Grain Laminate Back Panel (*used on units with Integrated handles*)	1
4	Screw (*#10-24 x 5/8"*)	AR
5	Side Panel *(Only used on integrated handle units with wood grain laminate back panel [3b])*	1
6	Hardware Kit *{includes the following}* • Screw *(#10-24 x 3/4" [pt. no. 042-0144-00])* • Hole Plug *(pt. no. 053-0667-00-216)*	1
7	Leveling Screw	6
8	Base Bottom	AR
9	Sink Base Bottom - a) Standard b) w/ Hole	1
10	Base Hole Plugs	4
11	36" Bracket Assembly *(used only on peninsula applications)*	1
12	a) 60" Upper Wrap b) 60" Upper Wrap *(with L.H. Whip Head [shown])* c) 60" Upper Wrap *(with R.H. Whip Head)*	1
13	Shell Assembly ***(Non-servicable part)*** a) *Peninsula (side access plumbing [shown])* b) *Island (floor access plumbing [not shown])*	NA
14	Slide Bracket Assembly ***(Non-servicable part)*** a) *Peninsula (side access plumbing [shown])* b) *Island (floor access plumbing [not shown])*	NA
15	Strain Relief Bushing	1
16	Foam Tape *(sold by the inch)*	168"
17	Table Mount Whip Bracket	1
18	Side Panel *(Only used on integrated handle units with wood grain laminate back panel [3b])*	1
19	Hold-down Anti-Tip Bracket *(not shown)*	1
20	Pan Head Phillips *(1/4-20 x 5/8")*	4
21	Pan Head Phillips *(#10-24 x 5/8")*	1
22	Foot Control, 4 Port, Wet-Dry	1

Models:	8003-005-xx-xxx	8003-006-xx-xxx	8003-007-xx-xxx	8003-008-xx-xxx
Serial Numbers:	all	all	all	all

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Models:	8003-005-xx-xxx	8003-006-xx-xxx	8003-007-xx-xxx	8003-008-xx-xxx
Serial Numbers:	all	all	all	all

Refer to Drawer and Door Component Pages for Hardware Part Numbers

60" Wet Table Cabinet Drawer Assemblies

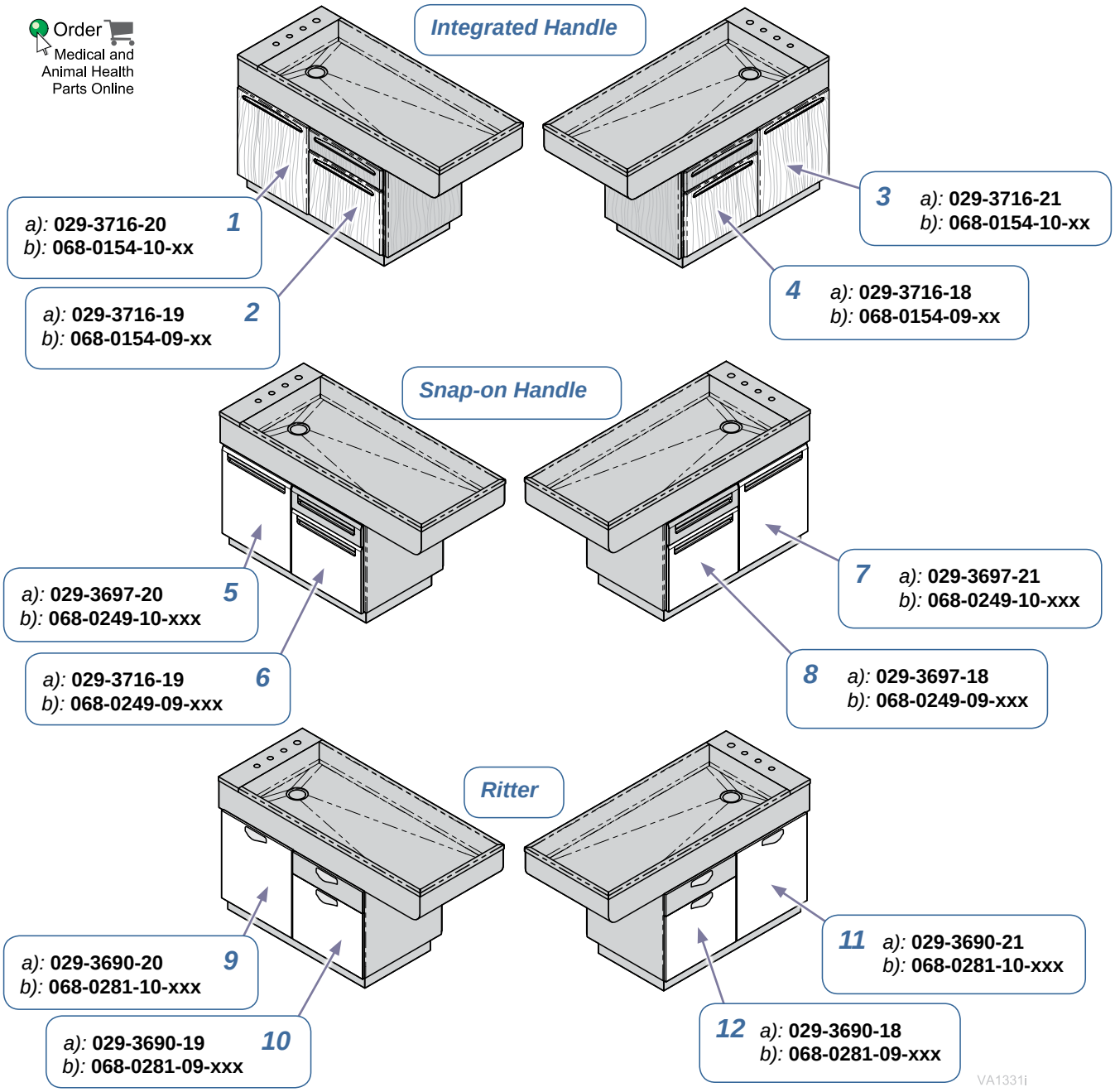
Item	Description	Qty.
1	4" Drawer Height *(Width - 21") (Depth - 24")*	AR
2	8" Drawer Height *(Width - 21") Depth - 24")*	AR
3	4" Drawer Height *(Width - 21") (Depth - 24")*	AR
4	8" Drawer Height *(Width - 21") Depth - 24")*	AR
5	4" Drawer Height *(Width - 21") (Depth - 24")*	AR
6	8" Drawer Height *(Width - 21") Depth - 24")*	AR

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Models:	8003-005-xx-xxx	8003-006-xx-xxx	8003-007-xx-xxx	8003-008-xx-xxx
Serial Numbers:	all	all	all	all

Refer to Drawer and Door Component Pages for Hardware Part Numbers

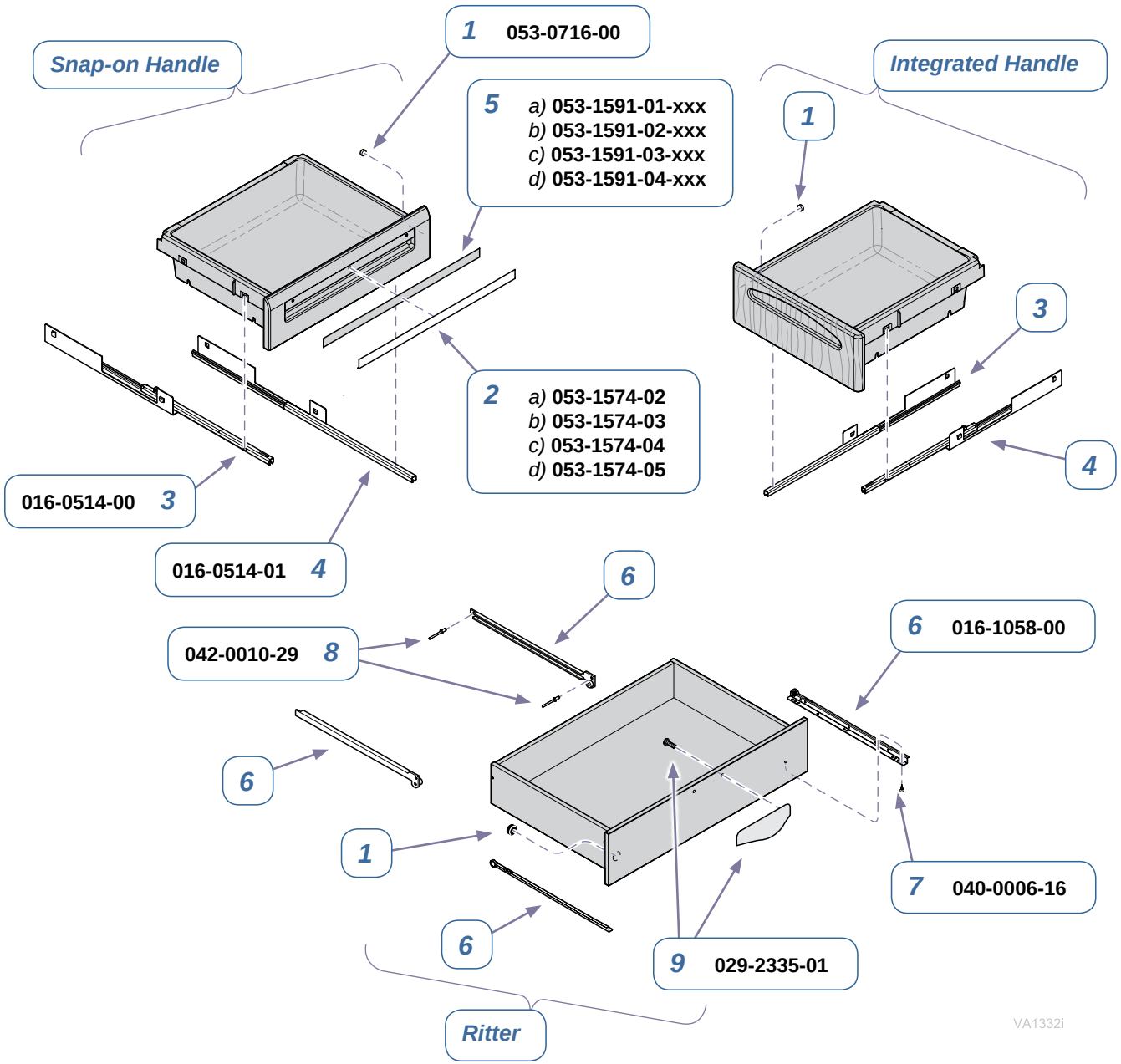
Note: You MUST order both a & b and specify "ASSEMBLE"

60" Wet Table Cabinet Door Assemblies

Item	Description	Qty.
1	a) LH Tall Door Assmbly *(Width - 21")* b) Door Panel *(specify color)* *(Width - 20.69", Height - 22.78")*	1
2	a) RH Short Door Assmbly *(Width - 21")* b) Door Panel *(specify color)* *(Width - 20.69", Height - 17.05")*	1
3	a) RH Tall Door Assmbly *(Width - 21")* b) Door Panel *(specify color)* *(Width - 20.69", Height - 22.78")*	1
4	a) LH Short Door Assmbly *(Width - 21")* b) Door Panel *(specify color)* *(Width - 20.69", Height - 17.05")*	1
5	a) LH Tall Door Assmbly *(Width - 21")* b) Door Panel *(specify color)* *(Width - 20.69", Height - 22.78")*	1
6	a) RH Short Door Assmbly *(Width - 21")* b) Door Panel *(specify color)* *(Width - 20.69", Height - 17.05")*	1
7	a) RH Tall Door Assmbly *(Width - 21")* b) Door Panel *(specify color)* *(Width - 20.69", Height - 22.78")*	1
8	a) LH Short Door Assmbly *(Width - 21")* b) Door Panel *(specify color)* *(Width - 20.69", Height - 17.05")*	1
9	a) LH Tall Door Assmbly *(Width - 21")* b) Door Panel *(specify color)* *(Width - 20.69", Height - 22.78")*	1
10	a) RH Short Door Assmbly *(Width - 21")* b) Door Panel *(specify color)* *(Width - 20.69", Height - 17.05")*	1
11	a) RH Tall Door Assmbly *(Width - 21")* b) Door Panel *(specify color)* *(Width - 20.95", Height - 22.78")*	1
12	a) LH Short Door Assmbly *(Width - 21")* b) Door Panel *(specify color)* *(Width - 20.95", Height - 17.05")*	1

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Always verify model & serial number



Models:	All
Serial Numbers:	all

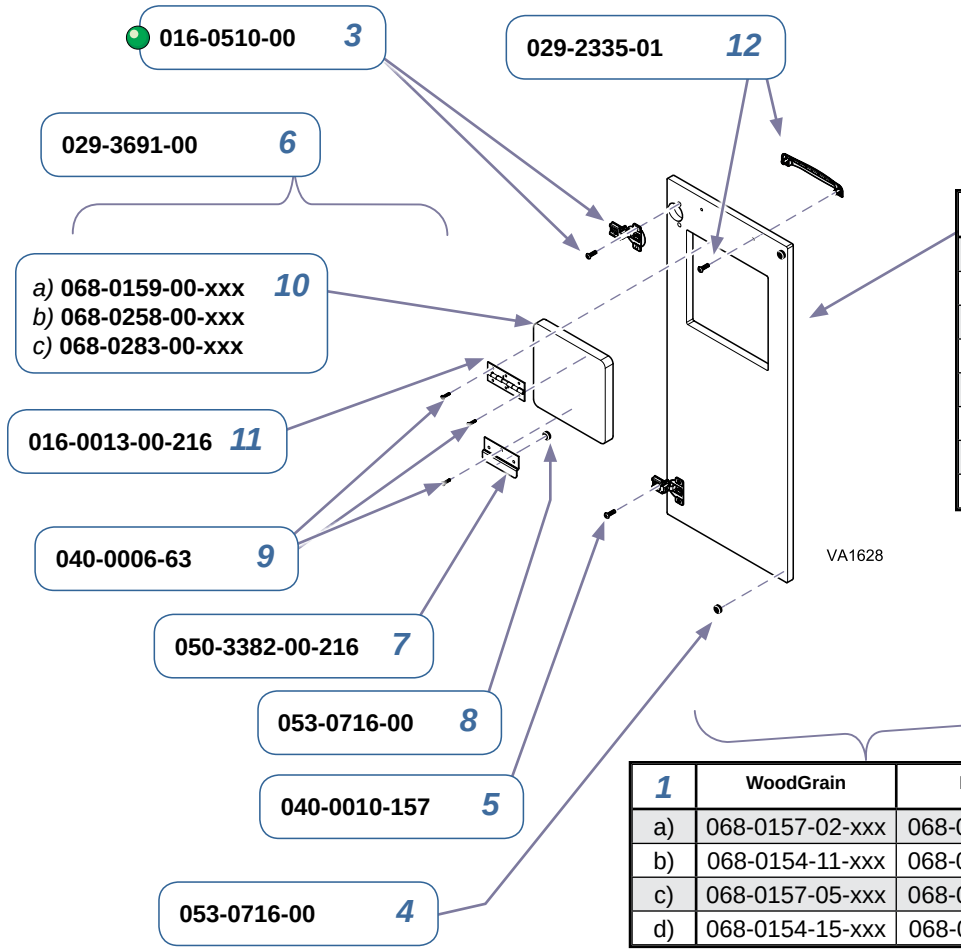
Drawer Components

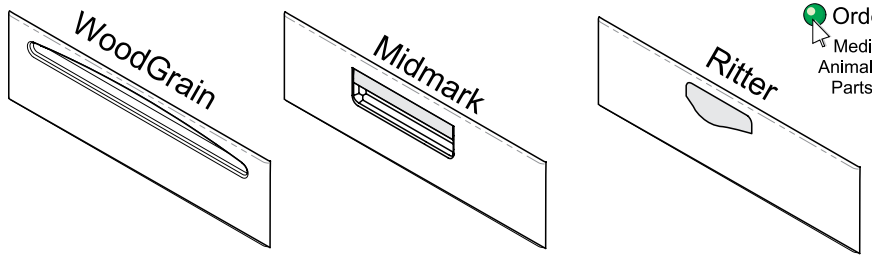
Item	Description	Qty.
1	Bumper *(included w/ drawer assembly number)*	2
2	Clear Handle Cover a) *15" drawer width* *b) 18" drawer width* *c) 21" drawer width* *d) 24" drawer width* *(included w/ drawer assembly number)*	1
3	L.H. Slide *(24" drawer depth)*	1
4	R.H. Slide *(24" drawer depth)*	1
5	Color Insert *(specify color)* a) *15" drawer width* *b) 18" drawer width* *c) 21" drawer width* *d) 24" drawer width*	1
6	Slide Set *(24" drawer depth)* *(1 complete set, incl. screws Item 7)* *(set incl. w/ Ritter drawer assy. number ONLY)*	1
7	Screws *(#6 x 1/2" Flat Head)*	1
8	Rivet	4
9	Handle Assembly Set *(incl. screws) (Ritter ONLY)*	1

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Always verify model & serial number

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2	WoodGrain	Midmark	Ritter
a)	029-3722-05	029-3699-05	029-3692-05
b)	029-3722-04	029-3699-04	029-3692-04
c)	029-3716-17	029-3697-17	029-3690-17
d)	029-3716-16	029-3697-16	029-3690-16
e)	029-3722-09	029-3699-09	029-3692-09
f)	029-3722-08	029-3699-08	029-3692-08
g)	029-3716-23	029-3697-23	029-3690-23
h)	029-3716-22	029-3697-22	029-3690-22

1	WoodGrain	Midmark	Ritter
a)	068-0157-02-xxx	068-0256-02-xxx	068-0282-02-xxx
b)	068-0154-11-xxx	068-0249-08-xxx	068-0281-08-xxx
c)	068-0157-05-xxx	068-0256-05-xxx	068-0282-06-xxx
d)	068-0154-15-xxx	068-0249-11-xxx	068-0281-11-xxx

Door Components (Island Tables)

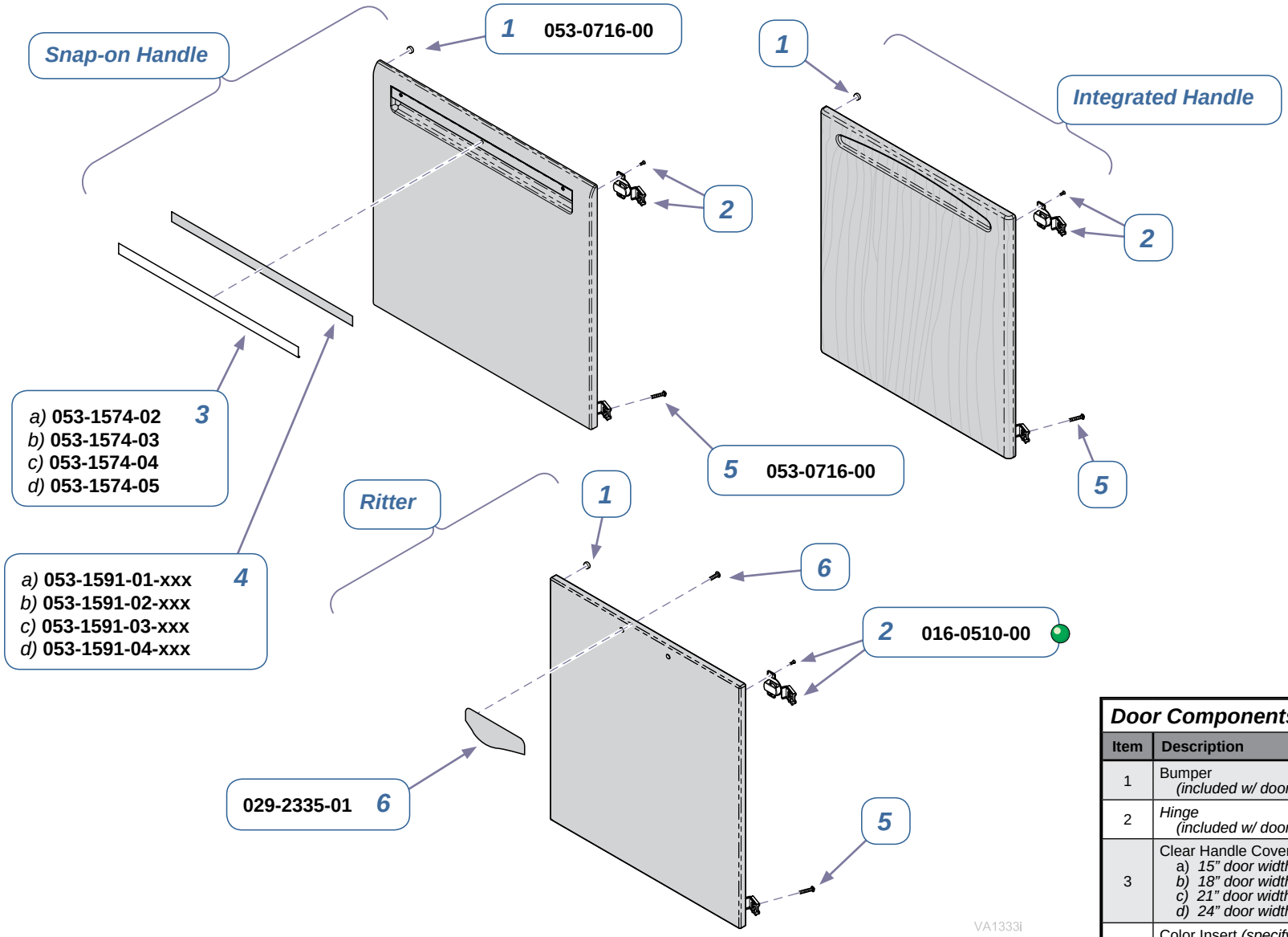
Item	Description	Qty.
1	**Door Assembly** **Note - With Waste Drop includes Items 2 thru 12 Without Waste Drop includes Items 2, 3 & 4 You must also order item 2 and specify "assemble"* a) 18" RH Door *(with Waste Drop - Shown)* b) 18" LH Door *(with Waste Drop)* c) 18" RH Door *(without Waste Drop)* d) 18" LH Door *(without Waste Drop)* e) 21" RH Door *(with Waste Drop)* f) 21" LH Door *(with Waste Drop)* g) 21" RH Door *(without Waste Drop)* h) 21" LH Door *(without Waste Drop)*	1
2	• **Door Panel (specify color)** a) 18" RH or LH Door *(with Waste Drop - Shown)* b) 18" RH or LH Door *(without Waste Drop)* c) 21" RH or LH Door *(with Waste Drop)* d) 21" RH or LH Door *(without Waste Drop)*	1
3	• Hinge	2
4	• Bumper	2
5	Screw *(SEMS 0.190-24x.625 CD/ZN)*	
6	• Waste Panel Assembly (specify color)	1
7	• • Waste Drop Bracket	1
8	• • Bumper	1
9	• • Screw *(#6 x 5/8")*	9
10	• • Waste Panel (specify color) a) WoodGrain, b) Midmark, c) Ritter	1
11	• • Spring Hinge	1
12	Handle Assembly Set *(includes screws)*	1

Color Selector..... www.midmark.com

Models:	***8004-xxx-xx-xxx***	
Serial Numbers:	*all*	

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Always verify model & serial number



Models:	All
Serial Numbers:	all

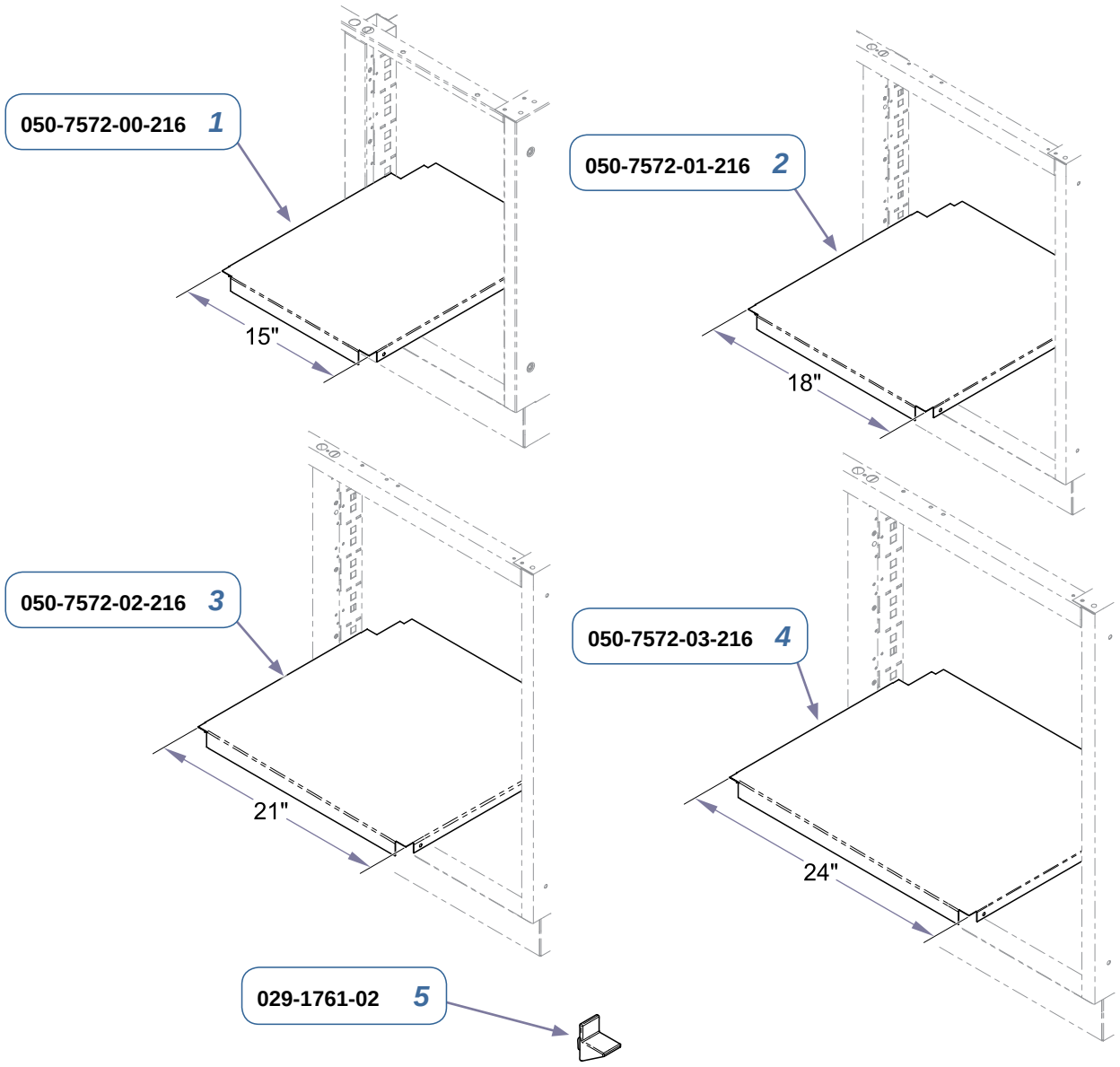
Door Components

Item	Description	Qty.
1	Bumper *(included w/ door assembly number)*	2
2	*Hinge* *(included w/ door assembly number)*	2
3	Clear Handle Cover a) *15" door width* b) *18" door width* c) *21" door width* d) *24" door width*	1
4	Color Insert *(specify color)* a) *15" door width* b) *18" door width* b) *21" door width* c) *24" door width*	1
5	Screws *(#10-24 x 5/8")*	2
6	Handle Assembly Set *(incl. screws) (Ritter ONLY)*	1

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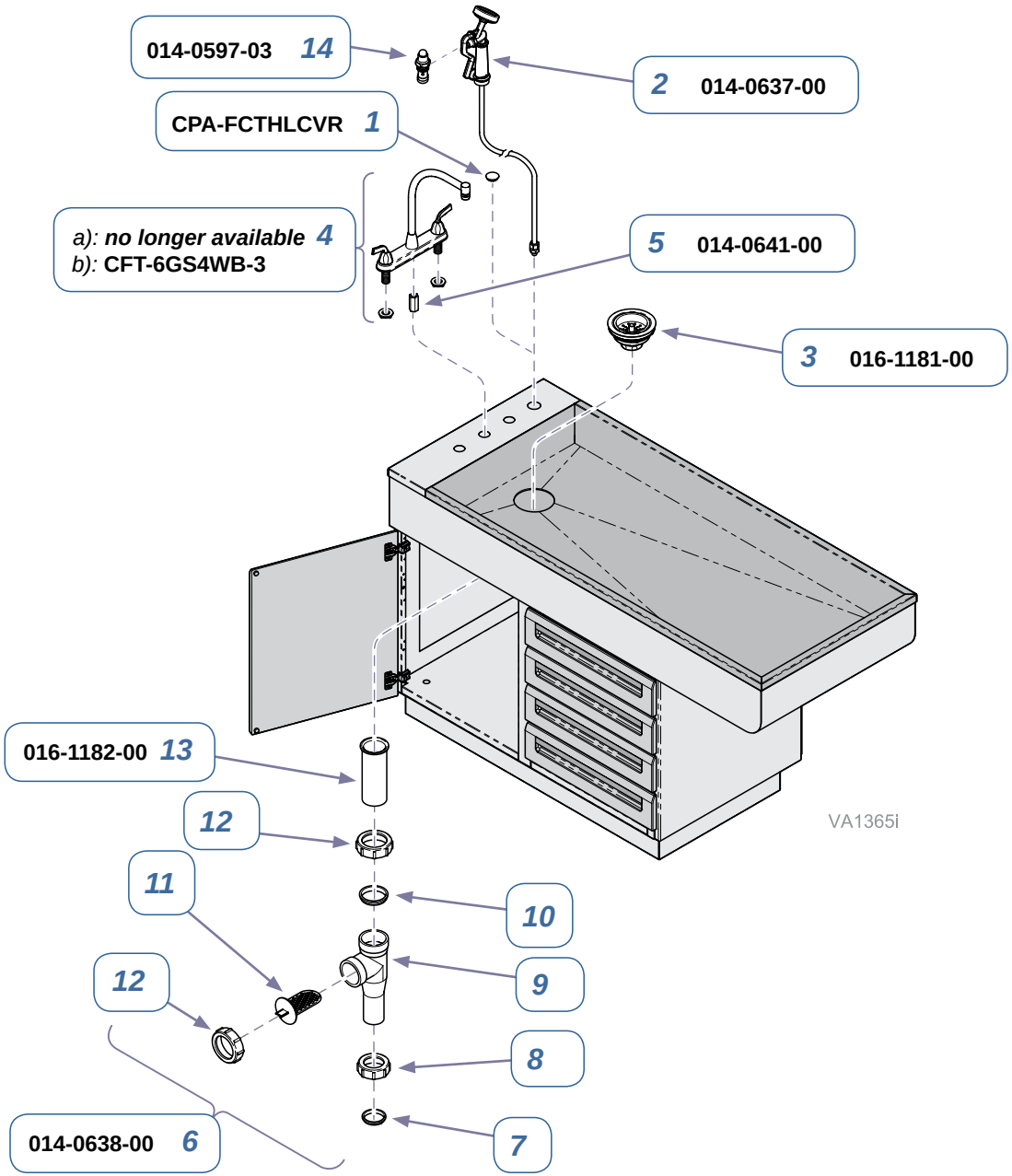
Note:
Shelf Clips need to be ordered separately.

Shelves		
Item	**Description**	**Qty.**
1	15” Width Shelf - *(Door Panel width 14-11/16”)*	1
2	18” Width Shelf - *(Door Panel width 17-11/16”)*	1
3	21” Width Shelf - *(Door Panel width 20-11/16”)*	1
4	24” Width Shelf - *(Door Panel width 23-11/16”)*	1
5	Shelf Clips *(4 clips per bag)*	1

Models:	***All***	
Serial Numbers:	*all*	

© Midmark Corporation 2008 SF-1929 [Revised: 7/21/16]

Always verify model & serial number



Order Medical and Animal Health Parts Online

Plumbing Components

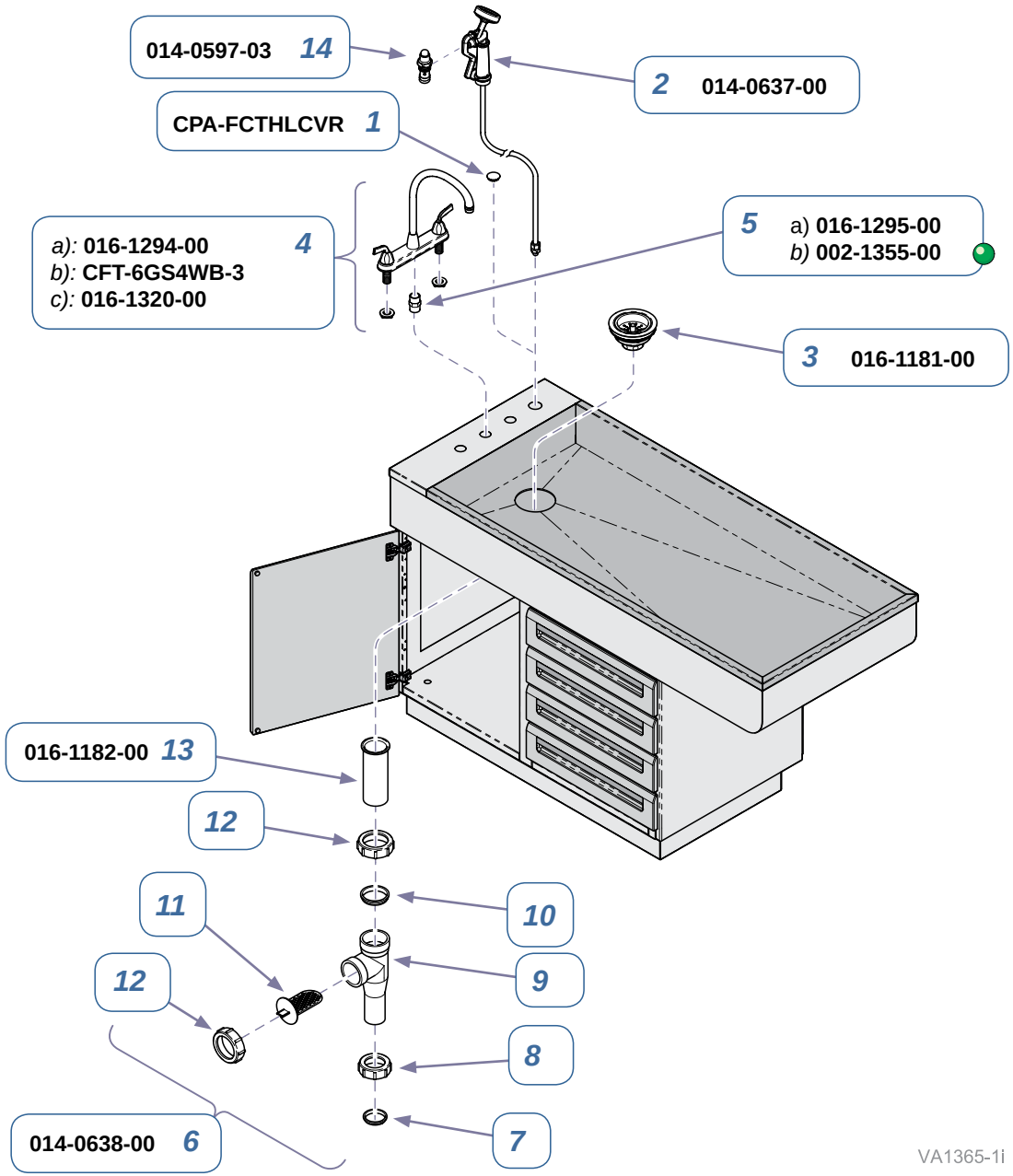
Item	Description	Qty.
1	Plug	1
2	Sprayer	1
3	Drain Assembly	1
4	Faucet a) *w/ Spayer Hook-up* b) *w/o Spayer Hook-up*	1
5	• Sprayer Adaptor	1
6	Hair Trap Assembly *(includes items 7 thru 13)*	1
7	• Ring	NSS
8	• PVC Nut	NSS
9	• Main PVC Body	NSS
10	• Ring	NSS
11	• Trap	NSS
12	• PVC Nut	NSS
13	• Flanged Tail Piece Tube	1
14	Bonnet Assembly Kit	1

NSS= Not Sold Separately

Models:	***8003***	
Serial Numbers:	*V676477 thru V846565*	

© Midmark Corporation 2008 SF-1929 [Revised: 5/19/17]

Always verify model & serial number



Order
Medical and
Animal Health
Parts Online

Plumbing Components

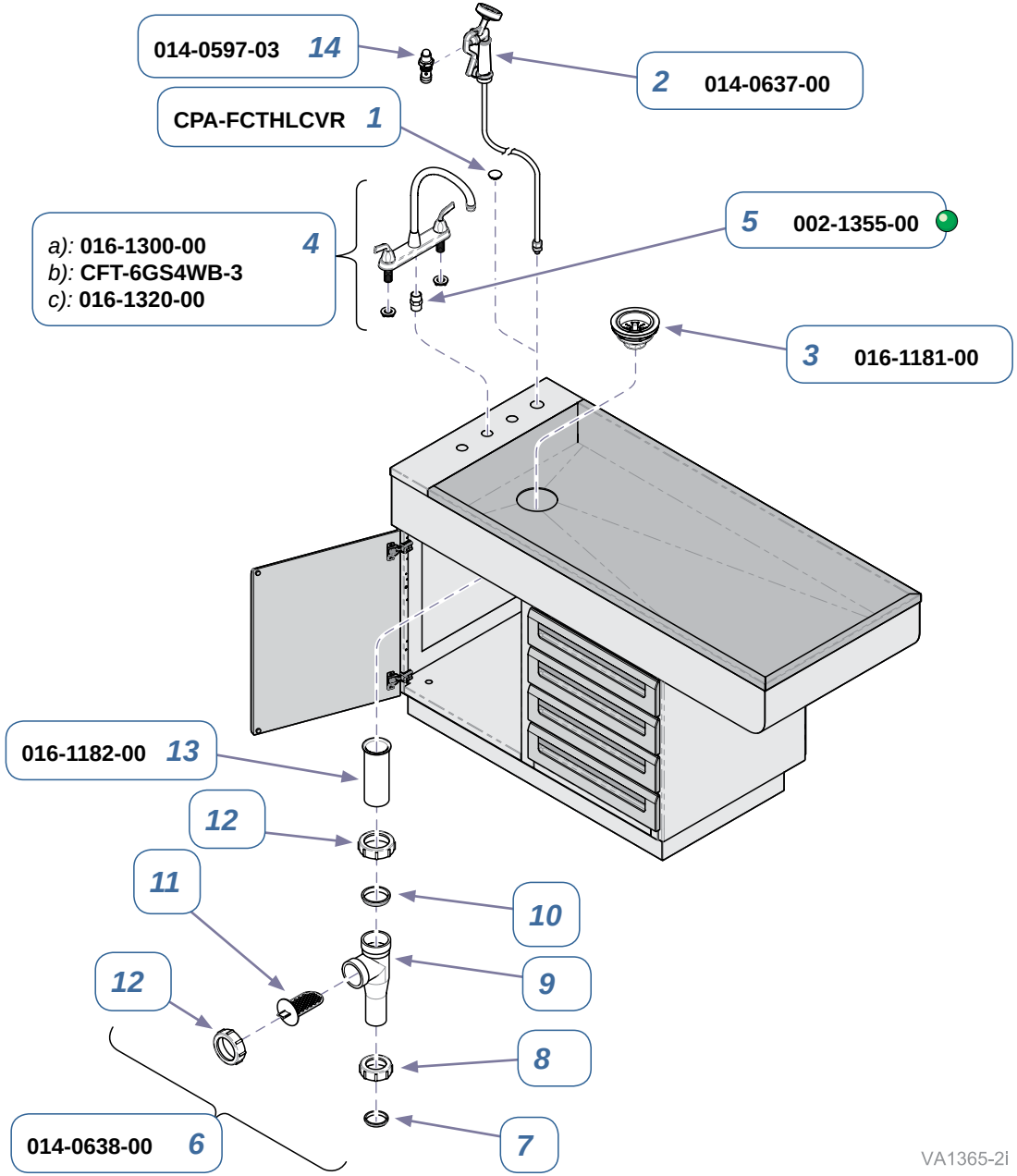
Item	Description	Qty.
1	Plug	1
2	Sprayer	1
3	Drain Assembly	1
4	Faucet: a) *w/ Sprayer Hook-up* b) *w/o Sprayer Hook-up* c) *w/ Sprayer and Vacuum Breaker*	1
5	Adaptor: a) *Sprayer* b) *Backflow Preventer*	1
6	Hair Trap Assembly *(includes items 7 thru 13)*	1
7	• Ring	NSS
8	• PVC Nut	NSS
9	• Main PVC Body	NSS
10	• Ring	NSS
11	• Trap	NSS
12	• PVC Nut	NSS
13	• Flanged Tail Piece Tube	1
14	Bonnet Assembly Kit	1

Models:	8003
Serial Numbers:	V846566 thru V1082384

NSS= Not Sold Separately

Always verify model & serial number

© Midmark Corporation 2008 SF-1929 [Revised: 05/19/17]



Order Medical and Animal Health Parts Online

Plumbing Components

Item	Description	Qty.
1	Plug	1
2	Sprayer	1
3	Drain Assembly	1
4	Faucet: a) *w/ Sprayer Hook-up* b) *w/o Sprayer Hook-up* c) *w/ Sprayer and Vacuum Breaker*	1
5	Backflow Preventer *(optional)*	1
6	Hair Trap Assembly *(includes items 7 thru 13)*	1
7	• Ring	NSS
8	• PVC Nut	NSS
9	• Main PVC Body	NSS
10	• Ring	NSS
11	• Trap	NSS
12	• PVC Nut	NSS
13	• Flanged Tail Piece Tube	1
14	Bonnet Assembly Kit	1

Models:	**8003**
Serial Numbers:	*V1082385 thru Present*

NSS= Not Sold Separately

Always verify model & serial number

© Midmark Corporation 2008 SF-1929 [Revised: 5/19/17]

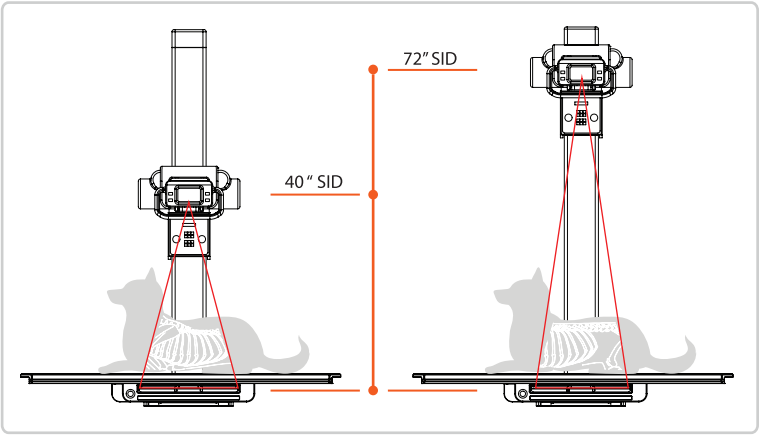
MYVET®
A Division of Rayence

NO. 575 X-RAY, VETERINARY

MYVET Table i72W

Elevating **Digital Radiographic Table**

40 to 72 inch SID



- Silent tabletop and X-ray tray movements
- Upright positioning detector tray for horizontal imaging
- Easy foot switch table control





17"x17" CsI Wireless Flat Panel Detector

1.3Gbps Wireless Transfer

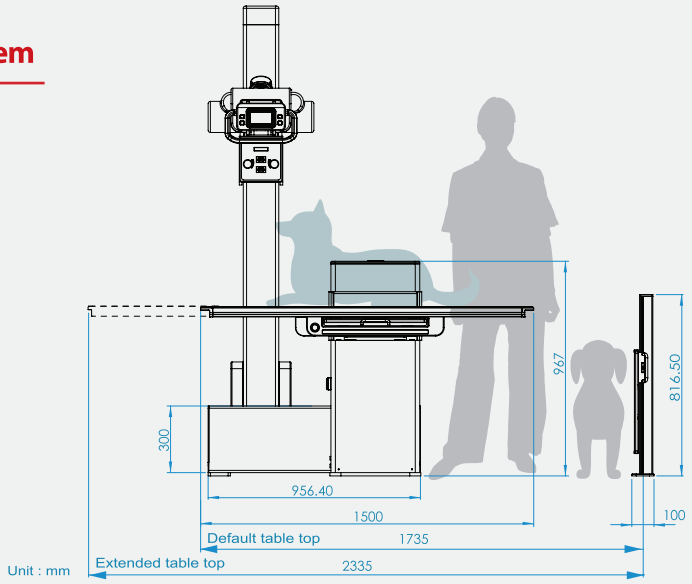
** Assembled in the USA **

- Data speed : up to Wi-Fi 1.3 Gbps (802.11a/g/n/ac)
- Image quality : 127μm, Cesium-Iodide
- Design : Lightweight carbon-fiber design, shock and water resistant (IPX6)

MYVET Table i72W Elevating table system

The i72w X-ray table is a revolutionary design that provides a 72 inch SID in the horizontal as well as vertical imaging plane. The X-ray table provides silent mechanical movements that help reduce animal stress during a typical study. The i72w is designed to improve workflow in small animal veterinary practices.

- SID (in) : 40 to 72 inch
- Stand (ft) : 6.8 ft
- Table (m) : 1.5 x 0.64 (59.10 x 25.20 inch)
- Power : 32kW 400mA
  280/230 VAC Single Phase

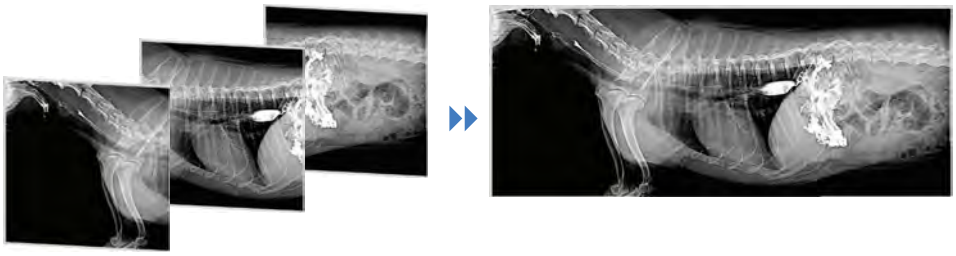


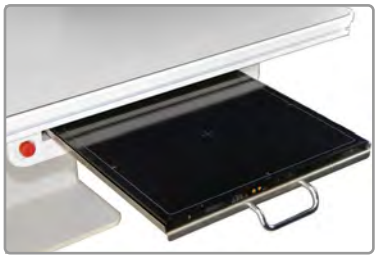
** Specifications subject to change without notice **

Features

- Stitching, Auto position to 40 and 72 inch
- Minimum table top height: 10.5 inch
- Rounded table corners
- Quiet motor movement
- Tube turns 90 degree (enables upright imaging)
- Optical light switch tube head lock release
- Easy foot switch operation
- Magnetic contact charging Bucky

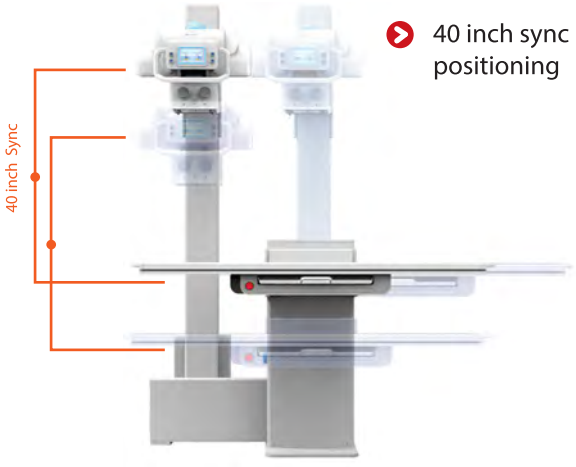
Image Stitching with auto table positioning



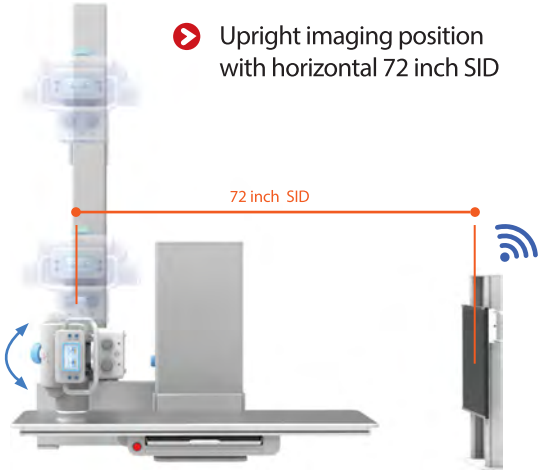


Magnetic contact charging Bucky

Dynamic table positioning and sync positioning



40 inch sync positioning



Upright imaging position with horizontal 72 inch SID

Standard Equipment

- Generator : 32kW 400mA
- X-ray tube : 200 KHU 0.6-1.5mm Focal Spot
- 17"x17" Wireless DR flat panel detector

Optional equipment is available

- Generator : 40kW 500mA output
- Panel : 17x17 inch tethered flat panel detector (i72T)

MYVET®
A Division of Rayence

Rayence Inc. 2200 Fletcher Ave, Suite 705B Fort Lee, NJ 07024 T: 888.854.5848 F: 201.585.0293 info@myvetimaging.com www.myvetimaging.com • www.rayenceusa.com

Adjustable Height Grooming Tub with Backsplash

- 18 Gauge, 304 stainless steel
- Back deck—makes a convenient place to store supplies
- Strainer basket included
- No floor space obstruction—allows you to stand close
- Adjustable legs—31 1/2" to 34 1/2" deck height
- Non-skid ramp surface
- Easy one-handed operation
- Ramp locks in upright position with a watertight seal



Adjustable Height Grooming Tub With Backsplash

105-0446-10	60" Grooming Tub with Backsplash and Ramp	$2,273.00
105-0346-10	48" Grooming Tub with Backsplash and Ramp	$2,090.00
105-0446-06	60" Standard Grooming Tub with Backsplash	$1,677.00
105-0346-06	48" Standard Grooming Tub with Backsplash	$1,593.00

ACCESSORIES

205-0446-01	Plastisol™ Coated Floor, 60"	$295.00
205-0346-01	Plastisol™ Coated Floor, 48"	$225.00
205-0446-02	Tie Down Rail System	$177.00
205-0446-00	Stainless Steel Small Animal Rack - 18.5" x 22"	$195.00



Stainless Steel Rack







BACK TO CONTENTS

NO. 592 LIGHT, SURGICAL, DOUBLE HEAD

Generation 3 Galaxy 8X4

Dual Ceiling Mounted Light

Part #: 8X4-GS2



Introduction

The ***StarTrol*** Galaxy Generation 3, the newest member of our lighting family. The LED's are brighter than our current lights and features five level diming. The new sleek design, features a fully enclosed light head for improved clean ability. ***StarTrol*** is proudly made in the United States, with an unmatched 10 year limited warranty.

Standard Features

Unlimited Rotation at the 2 main pivot points
Robust spring - that never needs adjustment
Touch Sense on / off with 5 step dimming, along with level indicator lights
Multiple configurations (Wall, Single, and Dual Ceilings)
Removable anodized aluminum handle
Enclosed light head for improved clean ability
10 year limited warranty

Accessories

Additional Aluminum handle (Part# HDN)
Ceiling Cover for flush mount installations (Part # GHC)
Jumbo Bezel for above ceiling installations (Part# JZB)

Architectural Specifications

StarTrol Gen 3 8X4-GS2 is made up of two 12.5" diameter aluminum light heads featuring 32 LEDs per head (200,000 lux at a meter). This light has an arm reach of 120" with unlimited rotation at the 2 main pivot points. The light head has a 700° rotation at the arm and head pivot point and 330° at the light head joint.

Technical Data

Part number: 8X4-GS2
Input voltage: 100-240 VAC 50-60Hz Auto Adjusting
Input Current: 2 Amps @ 120 VAC
Light Output: 200,000 lux at a meter
Spot Size: 10 inches
Color Temperature: 4500K
Color rendering index: 95
R9: 99
LED Life: 50,000+ hours
Number of LEDs: 64
Dimming: 5 Level Touch Sense
Total Reach: 60 inches (5 feet)
Minimum Ceiling Height: 96" with an 80" pivot**
Maximum Ceiling Height: 126" with an 80" pivot**

** Check with the manufacturer for lights outside these measurements.

Midmark Track Light Monitor



Track Light Monitor



midmark

SHARE

Midmark Track Dental Light Monitor

The Track Light Monitor from Midmark combines the best in dental lighting with unparalleled monitor positioning, enhancing the patient experience while improving efficiency and case acceptance.

Request Literature | Schedule a Demo | Request a Quote

Financing Opportunities

Click to Request Product Financing Options

Description | **Specifications**

Dental Grade Monitor

- 17" dental grade monitor with remote control
- Sealed display, buttons and speakers are designed to withstand the use of disinfectants
- Colors: 16.7 million Resolution: SXGA 1280 x 1024
- Digital TV tuner with CC: NTSC, ATSC & QAM
- HD support: 480i, 480p, 720p, 1080i, 1080p

Operating Light

- Quality white light
- Unsurpassed shadow reduction
- Automatic motion controlled on/off function
- Three intensity settings independent, composite safe setting
- Upfront touchpad controls
- Three axes of rotation for precise positioning
- Feathered edge to reduce eye strain
- Can be ordered with a halogen or LED operatory light

Midmark LED Operating Light

midmark

SHARE



Click Here to Zoom

Efficient design eliminates the need for noisy cooling fans.






Midmark LED Dental Operating Light

Where many lights are an afterthought of old technology, the Midmark Dental LED Operatory Light, with its advanced lighting design, pushes LED lighting quality to the edge.

Request Literature | Schedule a Demo | Request a Quote

Financing Opportunities

Click to Request Product Financing Options

Description | **Specifications**

Operate Mode Color Temperature	5700 Kelvin
Operate Mode Intensity	1400, 1950, 2500 Foot Candles
15000, 21000, 27000 Lux	
Composite Mode Color Temperature	4000 Kelvin
Composite Mode Intensity	2100 Foot Candles
22000 Lux	
Pattern Size	3.3" x 7.5"

255 LED Procedure Light



NO. 571 LIGHT, TREATMENT, CEILING, SINGLE HEAD

Ritter® by MIDMARK

255 Lighting



Affordable, improved performance procedure lighting

Whether you practice in an office environment or specialized procedure area, your work requires superior, white, shadow-free illumination that is safe and cool to the touch. The Ritter 255 LED Procedure Light by Midmark is designed to deliver both quality and affordability with features that can help you provide the best care to your patients.



High-quality procedure lighting

Integrated controls on both sides of the light head provide convenient access to make lighting adjustments. You can turn the light on and off and adjust the light brightness from the control touchpad. The sleek contours and sealed light head were designed to make cleaning and care easier. And the handle can be removed for steam sterilization.



Features designed to make your life easier

The Ritter 255 LED Procedure Light is counterbalanced, designed to help you achieve precise positioning using less force – all without drifting or needing frequent adjustments like spring-based systems. And the yoke design is intended to further simplify positioning with its smooth range of motion.

Seeing is believing

We've also designed the 255 light with a large reflector, including 1,040 reflecting facets, which provide an even distribution of light and reduction of shadows for uninterrupted illumination.



Ritter 255 Single Procedure Light



Ritter 255 Mobile Procedure Light



Ritter 255 Combination Procedure Light



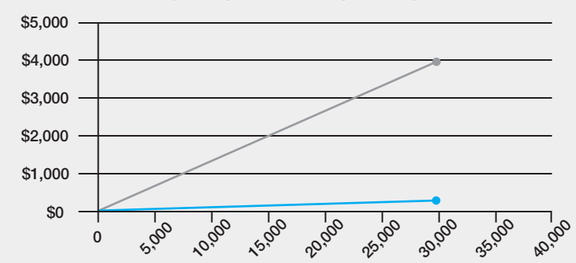
Ritter 255 Wall Mount Procedure Light

Superior lighting by design

The Ritter 255 LED Procedure Light is designed to deliver superior illumination. The combination of the optics enhances one's ability to see color variations in tissue and is intended to aid you in a more accurate diagnosis and treatment. Features include:

- 7,500 footcandles, significantly more light intensity of similar products
- An exceptional color rendering index of greater than 95
- And a color temperature of 4,400 K

The LED difference
Lifetime Operating Cost (Including Bulb Replacement Cost)



S P E C I F I C A T I O N S

Ritter 255 Procedure Light Specifications

Illumination at 39" (1 m)

Focal length: 7,500 fc (80,700 lux)

Pattern diameter: 7.5" (19 cm)

Depth of field: 29.8" (75.8 cm)

Color temperature: 4,400 K

Diameter of lighthead: 20" (50.8 cm)

LED Light Module: 16 LEDs arranged in a 4x4 array, 32 Watt rating.

Electrical

115 VAC, 50/60 Hz, 0.7 amps

230 VAC, 50/60 Hz, 0.5 amps

Classified by TUV with respect to electric shock, fire, mechanical and luminaires for diagnosis hazards only in accordance with IEC/ES 60601-1, CAN/CSA C22.2 60601-1, 60601-1-2, 60601-2-41, CE Medical Device Directive 93/42/EEC Annex VII Class 1, and RoHS European Directive 2011/65/EU

Models

255-001 Single mount, 8' (2.4 m) ceiling

255-002 Single mount, 9' (2.7 m) ceiling

255-003 Dual mount, 8' (2.4 m) ceiling

255-004 Dual mount, 9' (2.7 m) ceiling

255-005 Mobile Procedure Light

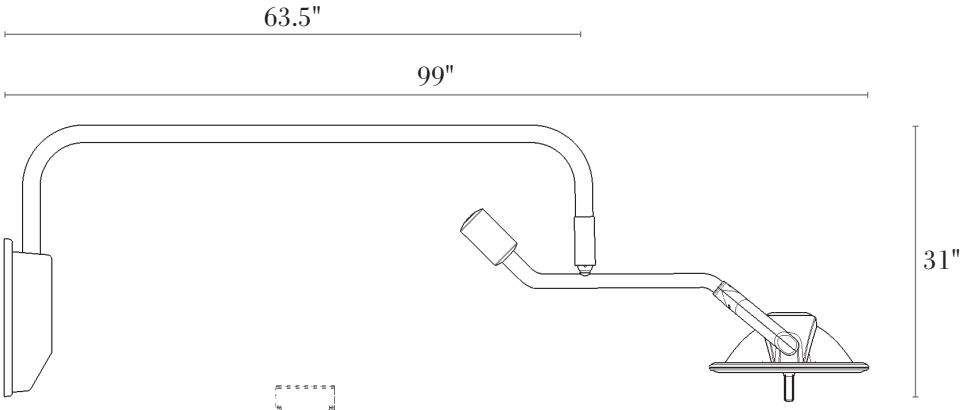
255-006 Wall Mount

255-007 Mobile Procedure Light w/o cord

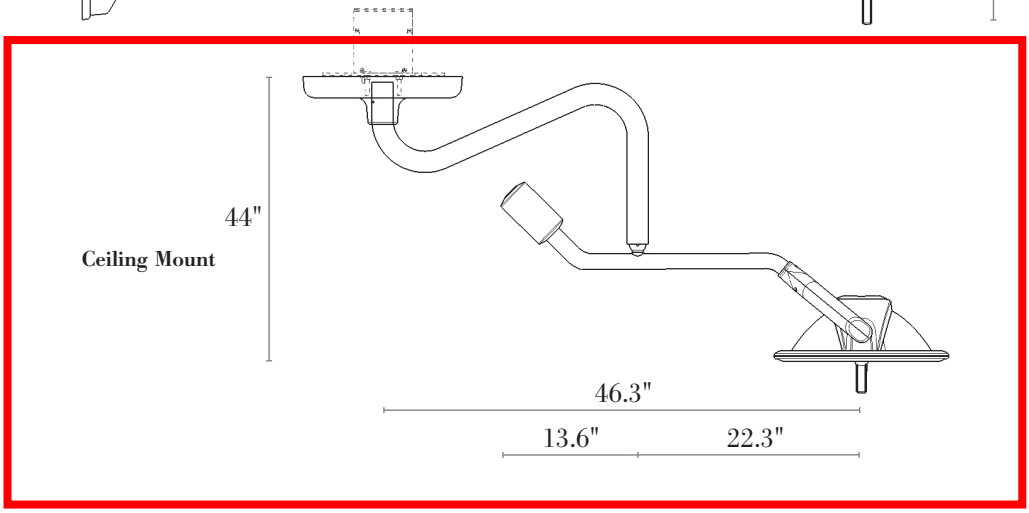
The following systems are recommended based on the following ceiling heights (measured from the bottom of the ceiling surface to the floor):

Less than 8' (2.4 m)	Mobile Light
8' (2.4 m) to 9' (2.7 m)	8' (2.4 m) Single or Dual Light
9' (2.7 m) to 10' (3 m)	9' (2.7 m) Single or Dual Light
Greater than 10' (3 m)	8' (2.4 m) Single or Dual Light with 10' ceiling mount adapter kit(s) or Mobile light

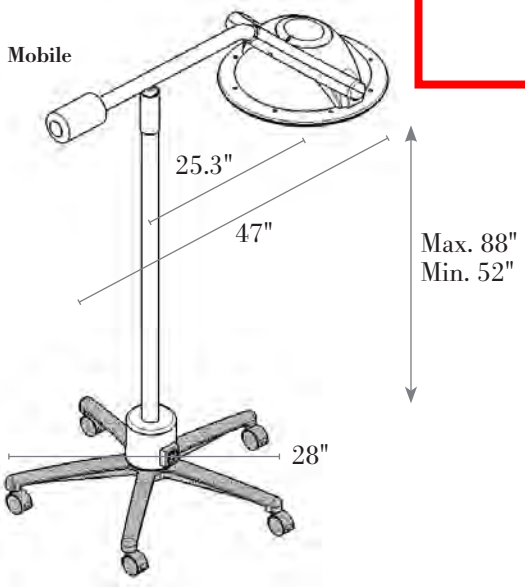
Wall Mount



Ceiling Mount



Mobile



Authorized CE Representative
Countries in the EEC should direct all questions, incidents, and complaints to Midmark's Authorized CE representative listed below:

Midmark EMEA Ltd
Beech House, First Floor
East Wing, Ancells Business Park
Fleet, Hampshire,
GU51 2UN, UK
Call: + 44 (0) 1252 360 940
Fax: + 44 (0) 1252 360 941

Midmark is an ISO 13485 and ISO 9001 Certified Company.

For more information or a demonstration, contact your Midmark dealer or Midmark Corporation, Versailles, Ohio.
Call: 1-800-MIDMARK
Fax: 1-800-365-8631
midmark.com

Ritter® by MIDMARK

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Products subject to improvement changes without notice.
Litho in U.S.A. 007-1070-00 Rev. B1 (11/15)

SMOKE SHARK™ II

SMOKE EVACUATOR

Bovie®

SMOKE EVACUATION FOR THE OFFICE AND SURGERY CENTER













PROCEDURE SAFETY

AORN recommends the use of smoke evacuation systems during any medical procedure producing surgical smoke.

REDUCED RISK

500,000 healthcare professionals are exposed to surgical smoke proven to carry viruses, CO, and other chemical and biological hazards. The Smoke Shark II mimizes exposure to these toxic smoke plumes during electrosurgery, laser, and harmonic scalpel procedures.

COST EFFECTIVE

The Extended-Life Filter (SF35) offers up to 35 hours performance reducing procedure cost by 38%(+/-) when used at the lowest setting.

INCREASED EFFICIENCY

The Smoke Shark II Smoke Evacuator is compatible with most electrosurgical generators. The unit operates in conjunction with the optional Bovie Remote Activation Switch (SERS2) for maximized filter life and surgical efficiency.

MODERN DESIGN

A light-weight, ultra-quiet and compact design allowing for simplified operation, storage, and portability.

RELIABLE

The Smoke Shark II Smoke Evacuator includes a standard two (2) year manufacturer warranty.

STANDARD SETUP

Long-Life 35-hr Filter	Pneumatic Footswitch	Smoke Evacuator Pencil Adapter with 6′ Tube*	Remote Switch Activator*
			
SF35 (included)	FSSEP (included)	SEPAT	SERS2

* sold separately

OTHER OPTIONAL ACCESSORIES

Customize your Smoke Shark™ for a variety of applications by choosing from the accessories below:

6′ Tube (non-sterile)	6′ Tube with Wand & Tip (non-sterile)	6′ Tubing for ValleyLab® & IEC Pencil (sterile)	Laser-Resistant Wand (non-sterile)	Reducer Fitting
				
786T†	SETW†	SEVL	SELW	SERF†

† Also available packed sterile

Disposable Suction Coagulators	
Handswitch Activated	Footswitch Activated
	
SCH08‡	SCF08‡

‡ Other sizes available





SEAS

Arm Stand

TECHNICAL SPECIFICATIONS

Smoke Shark II Technical Specifications…

Dimensions:	Line Voltage:	Line Frequency:	Noise Level, dBA:
Height 15.2 cm (6 in.) Width 27.9 cm (11 in.) Depth 39.4 cm (15.5 in.) Weight 4.3 kgs (10 lbs)	SE02: 100/120 VAC SE02-220: 240 VAC	50 - 60 Hz	55.0 dBA (Maximum)
Warranty: limited two (2) year on unit only			

The Smoke Shark II meets U.S. and International Standards.

Bovie Medical Corporation • 5115 Ulmerton Road • Clearwater, FL 33760 • www.boviemed.com • sales@boviemed.com
U.S. Phone 1-800-537-2790 • Fax 1-800-323-1640 • Int'l Phone +1-727-384-2323 • Fax +1-727-347-9144

Bovie® is a registered trademark of Bovie Medical Corporation. ValleyLab® is a registered trademark of Covidien AG Corporation .

NO. 631.01 COMPUTER, BRACKET, WALL MTD

M Series Monitor and Keyboard

PRODUCT DETAILS



37" / 94.0 cm Seismic Channel

WC-0002-11

- Seismic channel
- Includes mounting hardware and instructions
- OSHPD Pre-Approval: WC-0002-03, -05, -07, -09, -11, and -15.

8 x 8”/20.3 x 20.3 cm M Series Articulating Arm with Swivel-Only Front End

WMM-0005-09

- M Series Articulating Arms pivot at the channel and midway for lateral positioning and extension
- Swivel adjustment at the head of the arm, range of motion from flush to full extension, and cable management
- Maximum Arm Load: 30 lb / 13.6 kg
- Product Weight: 3.5 lb / 1.6 kg

Folding Ergo Bracket

FLP-0004-89

GCX display and keyboard mounting brackets accept all GCX keyboard trays/plates and are VESA® FDMI™ 75/100 mm compatible.

- Keyboard tray/plate can fold upward for security or to save space
- Separation of display and keyboard with independent display-tilt adjustment
- Weight: 9.2 lb / 4.2 kg

20.8" / 52.8 cm Ergo Keyboard Tray with Wrist Rest, Slide-Out Mouse Trays and Bottom Cover

WM-0023-56

- Keyboard tray dimensions (excluding wrist rest): 20.8 x 8.7” / 52.8 x 22.1 cm
- Slide-out mouse trays: 8 x 6.5" / 20.3 x 16.5 cm
- Padded wrist rest
- Mouse house, mouse pads
- Product weight: 6.2 lb / 2.8 kg

Note: Not for use with FLP-0004-83 or FLP-0004-97

RECOMMENDED ACCESSORIES

GCX is an ISO 13485 registered company (TUV-USA). GCX, PolyMount, and PolyQuip are registered trademarks, and VHRC, VHC, VHM, VHRS, PRC, M Series, and Stor-Locx are trademarks, of GCX Corporation. All other brand names, product names, or trademarks belong to their respective holders. © Copyright 2019.

1.5 to 3"/3.8 to 7.6 cm wide CPU

WM-0007-40

- Max. load: 25 lb / 11.3 kg
- Max. height: 14" / 35.6 cm
- Max. depth: 14" / 35.6 cm
- Weight: 4.5 lb / 2 kg

GCX Mounting Solutions

www.gcx.com

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NO. 630 COMPUTER

Compact, flexible desktops designed to provide all the essentials your business needs.

OptiPlex 3050 Tower, Small Form Factor and Micro



More power

Intel® 7th generation processors allow for the fastest OptiPlex yet with support up to Core™ i5

Stay flexible

Versatile suite of stand and mounting options to tailor your workspace to max out on productivity

Service with ease

Entry tool-less design and simple removeable side panel to service and expand effortlessly

Stay secure

With TPM, chassis intrusion switch, Dell Data Protection and cable covers for certain form factors, you can work more and focus less on security risks

Features & Technical Specifications

Feature	3050 Tower/Small Form Factor/Micro Technical Specifications
Processor[1]	Intel ® 7th generation Celeron, Pentium and Core™ i3 Dual Core, Core™ i5 Quad Core (up to 65W Tower/Small Form Factor, 35W Micro); supports Win 10/Linux Intel ® 6th generation Celeron, Pentium and Core™ i3 Dual Core, Core™ i5 Quad Core (up to 65W Tower/Small Form Factor, 35W Micro); supports Win 7/8.1/10/Linux
Chipset	Intel® B250 Chipset
Operating System[1]	Microsoft® Windows 7 Pro (32/64-bit) with Windows 10 Pro License (requires Intel® 6th generation processors) Microsoft® Windows 7 Embedded (OEM only) Microsoft® Windows 10 Home (64-bit) Microsoft® Windows 10 Pro (64-bit) Microsoft® Windows 10 Embedded (OEM only) Ubuntu® 16.04 LTS (64-bit) Neokylin® v6.0 (China only)
Graphics Options[2]	Integrated Intel® HD Graphics 610/630 (with Intel® 7th generation processors) Integrated Intel® HD Graphics 510/530 (with Intel® 6th generation processors) Supports optional discrete graphics Tower/Small Form Factor: 1GB/2GB AMD Radeon™ R5 430, 4GB AMD Radeon™ R7 450
Memory[2,3]	2 DIMM slots (2 SODIMM slots for Micro); Non-ECC dual-channel 2400MHz DDR4 SDRAM. (Memory performance on Intel® 6th generation processors will be at 2133MHz). Max memory 32GB
Networking	Integrated Realtek® RTL8111H Ethernet LAN 10/100/1000 Optional wireless: Intel® 8265 802.11ac+ Bluetooth 4.2[13] card; Intel ® 3165 802.11ac+ Bluetooth 4.2[14] card
I/O Ports	**Tower/Small Form Factor:** 8 External USB: 4 x USB 3.1 Gen 1 (2 front/2 rear) and 4 x USB 2.0 (2 front/2 rear); 2 Internal USB 2.0; 1 RJ-45; 1 Display Port 1.2; 1 HDMI 1.4; 1 UAJ, 1 Line-out; 1 VGA (optional); Serial+PS/2 (optional) **Micro:** 6 External USB: 4 x USB 3.1 Gen 1 (2 front/2 rear) and 2 x USB 2.0 (2 rear); 1 RJ-45; 1 HDMI 1.4; 1 Display Port 1.2; 1 UAJ (front); 1 Line-out (front); additional DisplayPort 1.2 (optional); 1 VGA (optional); Serial+PS2 (optional); Serial (optional)
Security Options	Trusted Platform Module[6] TPM 1.2 or 2.0, Dell Data Protection| Encryption, Microsoft Windows Bitlocker, Local HDD data wipe via BIOS ("Secure Erase"), Encryption - SED HDD (Opal FIPS), Chassis lock slot support, Lockable Port Cover, Chassis Intrusion Switch, D-Pedigree (Secure Supply Chain Functionality), Setup/BIOS Password, Optional Smart Card keyboards, Intel® Trusted Execution Technology, Intel® Identity Protection Technology, Dell Secure Works, firmware support for optional Absolute Data & Device Security (formerly Computrace)[7], Intel Software Guard eXtensions
Storage[4] **Options (internal)**	Hard disk drives: up to 2 TB; solid state drives: up to 512 GB. Dual storage support Supports Hybrid, Opal SED FIPS, M.2 PCIe Solid State Drive Intel® Optane™ Memory Ready
Environmental, Ergonomic, & Regulatory Standards	Environmental Standards (eco-labels): ENERGY STAR 6.1 qualified, EPEAT Registered[9], TCO Certified, CEL, WEEE, Japan Energy Law, South Korea E-standby, South Korea Eco-label, EU RoHS, China RoHS[14]. Please see your local representative or www.dell.com for specific details
Removable Media Options	Supports optional optical disc drives and media card reader (Tower/ Small Form Factor only)
Configuration Services	Factory Image load. BIOS Customization. Hardware Customization, asset tagging and reporting
Systems Management Options[8]	Dell Client Command Suite for in-band systems management
Warranty	Limited Hardware Warranty[10]; Standard Next Business Day On Site Service after Remote Diagnosis[11]; Optional Dell ProSupport offers premium support from expert technicians and 24x7 availability[12]

Chassis	Tower	Small Form Factor	Micro
Dimensions (H x W x D)(inches/cm)	13.8 x 6.1 x 10.8 / 35 x 15.4 x 27.4	11.4 x 3.7 x 11.5 / 29 x 9.7 x 29.2	7.2 x 1.4 x 7.0 18.2 x 3.6 x 17.8
Min. Weight (lbs/kg)	17.49 / 7.93	11.42 / 5.14	2.6 / 1.18
Number of Bays	1 internal 3.5” HDD 2 internal 2.5” HDD/SSD 1 external slim ODD	1 x 3.5” HDD or 2.5" HDD/SDD 1 external slim ODD	1 internal 2.5” bay
Expansion Slots	1 full height PCIe x16 3 full height PCIe x1 1 M.2 (22x80mm / 22x42mm)	1 half height PCIe x16 1 half height PCIe x1 1 M.2 (22x80mm / 22x42mm)	1 M.2 (22x30mm) 1 M.2 (22x80mm / 22x42mm)
Power Supply[1,5] Unit (PSU)	Standard 240W PSU Active PFC 240W typical 85% Efficient PSU (80 PLUS Bronze) ENERGY STAR compliant, Active PFC 240W typical 92% Efficient PSU (80 PLUS Platinum); ENERGY STAR compliant, Active PFC	Standard 180W PSU Active PFC 180W typical 85% Efficient PSU (80 PLUS Bronze) ENERGY STAR compliant, Active PFC 180W typical 92% Efficient PSU (80 PLUS Platinum); ENERGY STAR compliant, Active PFC	65W external adapter with 87% minimum average efficiency for use with 35W processors

Essential Accessories

OptiPlex 3050 Tower, Small Form Factor and Micro

At The Desk



Dell OptiPlex Small Form Factor All-in-One Stand



Dell OptiPlex Micro All-in-One Stand



Dell OptiPlex Micro DVD+/-RW Drive Enclosure



Dell OptiPlex Micro VESA Mount



Dell OptiPlex Micro All in One Mount for E-Series Displays



Dell Pro Stereo Headset UC350



Dell OptiPlex Tower or Small Form Factor Cable Cover



Dell Wireless Keyboard and Mouse KM636



Dell 24 Monitor P2417H (dual set up)



Compact, flexible desktops designed to provide all the essentials your business needs.

OptiPlex 3050 Tower, Small Form Factor and Micro

Discover professional class desktops at www.dell.com/OptiPlex

1. Offering and availability may vary by region. Some items available after product introduction. For complete details, refer to the Technical Guidebook published on www.dell.com.
2. System Memory and Graphics: Significant system memory may be used to support graphics, depending on system memory size and other factors.
3. 4GB or Greater System Memory Capability: A 64-bit operating system is required to support 4GB or more of system memory.
4. Storage: GB means 1 billion bytes and TB equals 1 trillion bytes; actual capacity varies with preloaded material and operating environment and will be less.
5. PSU: This form factor utilizes a more efficient Active Power Factor Correction (APFC) power supply. Dell recommends only Universal Power Supplies (UPS) based on Sine Wave output for APFC PSUs, not an approximation of a Sine Wave, Square Wave, or quasi-Square Wave (see UPS technical specifications). If you have questions please contact the manufacturer to confirm the output type.
6. TPM: Not available in all regions.
7. Absolute Data & Device Security (formerly Computrace): Not a Dell offer. Certain conditions apply. For full details, see terms and conditions at www.lojackforlaptops.com.
8. In-Band Systems Management - This option entirely removes Intel out of band systems (OOB) management features. The system can still support in band management. OOB management support through AMT cannot be upgraded post-purchase.
9. Please refer to www.epeat.net for specific country registration rating and participation.
10. Limited Hardware Warranty: For copy of Ltd Hardware Warranty, write Dell USA LP, Attn: Warranties, One Dell Way, Round Rock, TX 78682 or see www.dell.com/warranty.
11. Onsite Service after Remote Diagnosis: Remote Diagnosis is determination by online/phone technician of cause of issue; may involve customer access to inside of system and multiple or extended sessions. If issue is covered by Limited Hardware Warranty (www.dell.com/warranty) and not resolved remotely, technician and/or part will be dispatched, usually within 1 business day following completion of Remote Diagnosis. Availability varies. Other conditions apply.
12. Availability and terms of Dell Services vary by region. For more information, visit www.dell.com/servicedescriptions.
13. Particular versions of Microsoft Windows may not support the full Bluetooth 4.2 functionality
14. For a complete listing of declarations and certifications, refer to the Dell Regulatory and Environmental Datasheet found in the Manuals section of Product Support information http://www.dell.com/support/home/us/en/19

Revised February 2017

Large Flat Panel/TV Ceiling Mount

PRODUCT DETAILS



M Series Large Flat Panel/TV Mount

FLP-0010-20

- TV mount for 100 x 200 mm, 200 x 200 VESA patterns
- Tilt/swivel adjustability
- 4.75"/12.1 cm From wall
- OSHPD Approval OPA-0165-13
- Maximum weight: 60 lbs/27.2 kg
- Product weight: 5.2 lbs/2.4 kg

24"/61.0 cm Column

CM-0010-03

- Dual channel columns allow standard GCX wall mounting solutions to be used for ceiling mount applications
- Features two channel profiles to mount arms and accessories plus two side raceways with covers for cable management
- Port hole at the top allows cables to be rundown the anchorage pipe and inside the column
- Pass-through access port in the channel profile area allows cable access from inside the column and to both sides
- Mounts to 1.5"/3.8 cm NPT pipe (not included)
- Channel profiles can easily be positioned for left/right or front/back orientation to accommodate different arm combinations and application requirements
- Not for use with any GCX VHM P/PL Variable Height Arm with an Extension
- 100 lbs./45.4 kg maximum load at channel profile (flush to column)
- 50 lbs/22.7 kg maximum load 24"/61 cm from the channel profile*
- 360 degree swivel adjustment for optimal positioning

NOTE: Assumes adequate anchorage of column. Adequate anchorage is the responsibility of the purchaser.

GCX is an ISO 13485 registered company (TUV-USA). GCX, PolyMount, and PolyQuip are registered trademarks, and VHRC, VHC, VHM, VHRS, PRC, M Series, and Stor-Locx are trademarks, of GCX Corporation. All other brand names, product names, or trademarks belong to their respective holders. © Copyright 2019.

TVT624



Display size **10"-29"**

Max load **25lb (11kg)**

tru•vue™ Tilting Wall Mount

FOR 10" TO 29" DISPLAYS

The TruVue™ series wall mounts combine ease of installation with viewing flexibility. With TVT624, a low-profile design positions the TV just 2.00" (51mm) from the wall. The Hook-and-Hang™ system offers easy, one-person installation of the TV. Tilt the TV 15° forward or 5° backward to optimize the TV's viewing angle.

The TVT624's adjustable viewing feature provides 15° of forward tilt and 5° backward tilt, creating the most optimal viewing angle.

GET IT RIGHT™

Additional Features

- ☑ Positions TV only 2.00" (51mm) from the wall
- ☑ Low-profile design creates a clean, concealed look
- ☑ Includes necessary wall and display attachment hardware
- ☑ VESA® 75 x 75 and 100 x 100mm TV mounting hole patterns
- ☑ Mounts to wood stud, concrete, cinder or breeze block
- ☑ TV adaptor plate simply slides into the wall plate for a quick and easy installation
- ☑ Design is UL listed and tested to four times stated load capacity



HOOK-AND-HANG DESIGN
TV can be installed by a single person

LOCKING TILT
TV locks at any angle with adjustment screws

FLEXIBLE MOUNTING LOCATIONS
Mounts to wood stud, concrete, cinder or breeze block

VESA® COMPATIBLE
Accommodates 75 and 100 mm mounting pattern



Comes in color packaging with included level, installation hardware and easy to follow instructions.

ULTRA HD TV READY

PEERLESS-AV 4X SAFETY TESTED

RoHS

info@peerless-av.com
peerless-av.com

peerless-AV®

Model Numbers

WARRANTY: Limited 5-year

TVT624	TruVue™ Tilting Wall Mount for 10" to 29" Displays

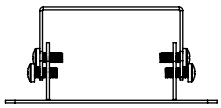
Product Specifications

	DIMENSIONS (W x H x D)	PRODUCT WEIGHT	LOAD CAPACITY	FINISH	AVAILABLE COLORS
TVT624	4.41" x 4.41" x 2.00"-2.39" (112 x 112 x 51-61mm)	1.1lb (0.5kg)	25lb (11kg)	Scratch resistant fused epoxy	Matte black

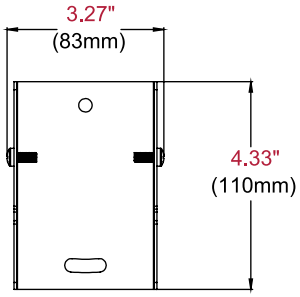
Package Specifications

	PACKAGE SIZE (W x H x D)	PACKAGE SHIP WEIGHT	PACKAGE UPC CODE	PACKAGE CONTENTS	UNITS IN PACKAGE
TVT624	5.31" x 2.83" x 6.69" (135 x 72 x 170mm)	1.3lb (0.6kg)	735029293224	Wall mount, wall and TV installation hardware, level	1

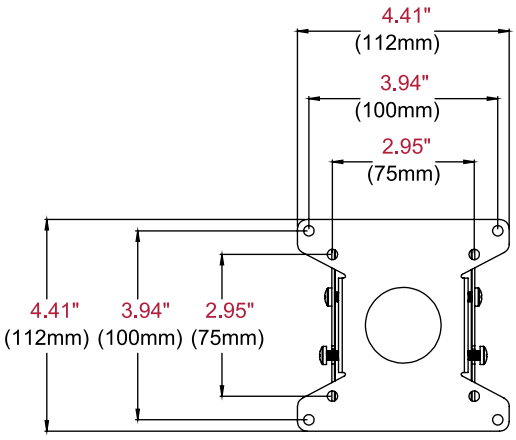
All dimensions = inch (mm)



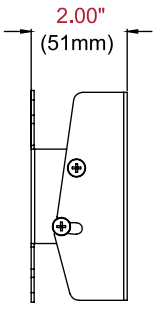
TOP VIEW



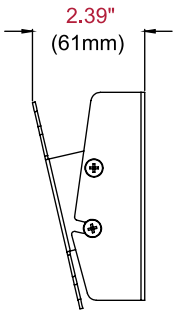
WALL PLATE DETAIL



FRONT VIEW



SIDE VIEW



SIDE VIEW
+15°/-5° TILT

Architect Specifications

The TruVue™ Tilting Wall Mount shall be a Peerless-AV model TVT624 and shall be located where indicated on the plans. Assembly and installation shall be done according to instructions provided by the manufacturer.

Visit peerless-av.com to see the complete line of AV solutions from Peerless-AV, including outdoor displays, wireless, kiosks, digital audio, display mounts, projector mounts, carts/stands, and a full assortment of accessories.

Peerless-AV
2300 White Oak Circle
Aurora, IL 60502 USA

(800) 865-2112
(630) 375-5100
Fax: (800) 359-6500

Peerless-AV Europe
Unit 3 Watford Interchange
Colonial Way, Watford
Herts, WD24 4WP
United Kingdom
+44 (0) 1923 200100
Fax: +44 (0) 1923 200101

Peerless-AV de México
Ave de las Industrias 413
Parque Industrial Escobedo
Escobedo, N.L.,
Mexico 66050
+52 (81) 8384-8300
Fax: +52 (81) 8384-8360

LIT-1272

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NO. 630 COMPUTER

Compact, flexible desktops designed to provide all the essentials your business needs.

OptiPlex 3050 Tower, Small Form Factor and Micro



More power

Intel® 7th generation processors allow for the fastest OptiPlex yet with support up to Core™ i5

Stay flexible

Versatile suite of stand and mounting options to tailor your workspace to max out on productivity

Service with ease

Entry tool-less design and simple removeable side panel to service and expand effortlessly

Stay secure

With TPM, chassis intrusion switch, Dell Data Protection and cable covers for certain form factors, you can work more and focus less on security risks

Features & Technical Specifications

Feature	3050 Tower/Small Form Factor/Micro Technical Specifications
Processor[1]	Intel ® 7th generation Celeron, Pentium and Core™ i3 Dual Core, Core™ i5 Quad Core (up to 65W Tower/Small Form Factor, 35W Micro); supports Win 10/Linux Intel ® 6th generation Celeron, Pentium and Core™ i3 Dual Core, Core™ i5 Quad Core (up to 65W Tower/Small Form Factor, 35W Micro); supports Win 7/8.1/10/Linux
Chipset	Intel® B250 Chipset
Operating System[1]	Microsoft® Windows 7 Pro (32/64-bit) with Windows 10 Pro License (requires Intel® 6th generation processors) Microsoft® Windows 7 Embedded (OEM only) Microsoft® Windows 10 Home (64-bit) Microsoft® Windows 10 Pro (64-bit) Microsoft® Windows 10 Embedded (OEM only) Ubuntu® 16.04 LTS (64-bit) Neokylin® v6.0 (China only)
Graphics Options[2]	Integrated Intel® HD Graphics 610/630 (with Intel® 7th generation processors) Integrated Intel® HD Graphics 510/530 (with Intel® 6th generation processors) Supports optional discrete graphics Tower/Small Form Factor: 1GB/2GB AMD Radeon™ R5 430, 4GB AMD Radeon™ R7 450
Memory[2,3]	2 DIMM slots (2 SODIMM slots for Micro); Non-ECC dual-channel 2400MHz DDR4 SDRAM. (Memory performance on Intel® 6th generation processors will be at 2133MHz). Max memory 32GB
Networking	Integrated Realtek® RTL8111H Ethernet LAN 10/100/1000 Optional wireless: Intel® 8265 802.11ac+ Bluetooth 4.2[13] card; Intel ® 3165 802.11ac+ Bluetooth 4.2[14] card
I/O Ports	**Tower/Small Form Factor:** 8 External USB: 4 x USB 3.1 Gen 1 (2 front/2 rear) and 4 x USB 2.0 (2 front/2 rear); 2 Internal USB 2.0; 1 RJ-45; 1 Display Port 1.2; 1 HDMI 1.4; 1 UAJ, 1 Line-out; 1 VGA (optional); Serial+PS/2 (optional) **Micro:** 6 External USB: 4 x USB 3.1 Gen 1 (2 front/2 rear) and 2 x USB 2.0 (2 rear); 1 RJ-45; 1 HDMI 1.4; 1 Display Port 1.2; 1 UAJ (front); 1 Line-out (front); additional DisplayPort 1.2 (optional); 1 VGA (optional); Serial+PS2 (optional); Serial (optional)
Security Options	Trusted Platform Module[6] TPM 1.2 or 2.0, Dell Data Protection| Encryption, Microsoft Windows Bitlocker, Local HDD data wipe via BIOS ("Secure Erase"), Encryption - SED HDD (Opal FIPS), Chassis lock slot support, Lockable Port Cover, Chassis Intrusion Switch, D-Pedigree (Secure Supply Chain Functionality), Setup/BIOS Password, Optional Smart Card keyboards, Intel® Trusted Execution Technology, Intel® Identity Protection Technology, Dell Secure Works, firmware support for optional Absolute Data & Device Security (formerly Computrace)[7], Intel Software Guard eXtensions
Storage[4] **Options (internal)**	Hard disk drives: up to 2 TB; solid state drives: up to 512 GB. Dual storage support Supports Hybrid, Opal SED FIPS, M.2 PCIe Solid State Drive Intel® Optane™ Memory Ready
Environmental, Ergonomic, & Regulatory Standards	Environmental Standards (eco-labels): ENERGY STAR 6.1 qualified, EPEAT Registered[9], TCO Certified, CEL, WEEE, Japan Energy Law, South Korea E-standby, South Korea Eco-label, EU RoHS, China RoHS[14]. Please see your local representative or www.dell.com for specific details
Removable Media Options	Supports optional optical disc drives and media card reader (Tower/ Small Form Factor only)
Configuration Services	Factory Image load. BIOS Customization. Hardware Customization, asset tagging and reporting
Systems Management Options[8]	Dell Client Command Suite for in-band systems management
Warranty	Limited Hardware Warranty[10]; Standard Next Business Day On Site Service after Remote Diagnosis[11]; Optional Dell ProSupport offers premium support from expert technicians and 24x7 availability[12]

Chassis	Tower	Small Form Factor	Micro
Dimensions (H x W x D)(inches/cm)	13.8 x 6.1 x 10.8 / 35 x 15.4 x 27.4	11.4 x 3.7 x 11.5 / 29 x 9.7 x 29.2	7.2 x 1.4 x 7.0 18.2 x 3.6 x 17.8
Min. Weight (lbs/kg)	17.49 / 7.93	11.42 / 5.14	2.6 / 1.18
Number of Bays	1 internal 3.5” HDD 2 internal 2.5” HDD/SSD 1 external slim ODD	1 x 3.5” HDD or 2.5" HDD/SDD 1 external slim ODD	1 internal 2.5” bay
Expansion Slots	1 full height PCIe x16 3 full height PCIe x1 1 M.2 (22x80mm / 22x42mm)	1 half height PCIe x16 1 half height PCIe x1 1 M.2 (22x80mm / 22x42mm)	1 M.2 (22x30mm) 1 M.2 (22x80mm / 22x42mm)
Power Supply[1,5] Unit (PSU)	Standard 240W PSU Active PFC 240W typical 85% Efficient PSU (80 PLUS Bronze) ENERGY STAR compliant, Active PFC 240W typical 92% Efficient PSU (80 PLUS Platinum); ENERGY STAR compliant, Active PFC	Standard 180W PSU Active PFC 180W typical 85% Efficient PSU (80 PLUS Bronze) ENERGY STAR compliant, Active PFC 180W typical 92% Efficient PSU (80 PLUS Platinum); ENERGY STAR compliant, Active PFC	65W external adapter with 87% minimum average efficiency for use with 35W processors

Essential Accessories

OptiPlex 3050 Tower, Small Form Factor and Micro

At The Desk



Dell OptiPlex Small Form Factor All-in-One Stand



Dell OptiPlex Micro All-in-One Stand



Dell OptiPlex Micro DVD+/-RW Drive Enclosure



Dell OptiPlex Micro VESA Mount



Dell OptiPlex Micro All in One Mount for E-Series Displays



Dell Pro Stereo Headset UC350



Dell OptiPlex Tower or Small Form Factor Cable Cover



Dell Wireless Keyboard and Mouse KM636



Dell 24 Monitor P2417H (dual set up)



Compact, flexible desktops designed to provide all the essentials your business needs.

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1. Offering and availability may vary by region. Some items available after product introduction. For complete details, refer to the Technical Guidebook published on www.dell.com.
2. System Memory and Graphics: Significant system memory may be used to support graphics, depending on system memory size and other factors.
3. 4GB or Greater System Memory Capability: A 64-bit operating system is required to support 4GB or more of system memory.
4. Storage: GB means 1 billion bytes and TB equals 1 trillion bytes; actual capacity varies with preloaded material and operating environment and will be less.
5. PSU: This form factor utilizes a more efficient Active Power Factor Correction (APFC) power supply. Dell recommends only Universal Power Supplies (UPS) based on Sine Wave output for APFC PSUs, not an approximation of a Sine Wave, Square Wave, or quasi-Square Wave (see UPS technical specifications). If you have questions please contact the manufacturer to confirm the output type.
6. TPM: Not available in all regions.
7. Absolute Data & Device Security (formerly Computrace): Not a Dell offer. Certain conditions apply. For full details, see terms and conditions at www.lojackforlaptops.com.
8. In-Band Systems Management - This option entirely removes Intel out of band systems (OOB) management features. The system can still support in band management. OOB management support through AMT cannot be upgraded post-purchase.
9. Please refer to www.epeat.net for specific country registration rating and participation.
10. Limited Hardware Warranty: For copy of Ltd Hardware Warranty, write Dell USA LP, Attn: Warranties, One Dell Way, Round Rock, TX 78682 or see www.dell.com/warranty.
11. Onsite Service after Remote Diagnosis: Remote Diagnosis is determination by online/phone technician of cause of issue; may involve customer access to inside of system and multiple or extended sessions. If issue is covered by Limited Hardware Warranty (www.dell.com/warranty) and not resolved remotely, technician and/or part will be dispatched, usually within 1 business day following completion of Remote Diagnosis. Availability varies. Other conditions apply.
12. Availability and terms of Dell Services vary by region. For more information, visit www.dell.com/servicedescriptions.
13. Particular versions of Microsoft Windows may not support the full Bluetooth 4.2 functionality
14. For a complete listing of declarations and certifications, refer to the Dell Regulatory and Environmental Datasheet found in the Manuals section of Product Support information http://www.dell.com/support/home/us/en/19

Revised February 2017

NO. 642 MULTI-FUNCTION DEVICE

KONICA MINOLTA

Giving Shape to Ideas



- Brings the benefits of MFP performance to your desktop
- All-in-one productivity means you can easily print, copy, scan and distribute information
- Built-in intelligent fax capability
- Fast color scanning to multiple destinations
- Monochrome print/copy output at up to 25ppm
- Expandable paper capacity to work efficiently with less reloading
- Standard 80-sheet duplexing auto document feeder
- Toner capacity of 20,000 sheets lowers cost of ownership

bizhub 25e

MONOCHROME COMPACT MULTIFUNCTION PRINTER

mfp



mfp

bizhub 25e

COMPACT MONOCHROME MULTIFUNCTION PRINTER



Overview

bizhub 25e	A business professional that out-performs ordinary all-in-one devices, the bizhub 25e is a real workhorse – combining 25 ppm monochrome print/copy output, fast color scanning with duplexing auto document feeder, standard high-speed fax, 2,100-sheet maximum paper capacity and energy-saving operation to help control your costs.

System Specifications

System memory	512 MB
Interface	10-Base-T/100-Base-TX, USB 2.0
Network protocols	TCP/IP (IPv4, IPv6) / IPP, SNMP, HTTP, HTTPS
Frame types	Ethernet II
Automatic document feeder	Up to 80 originals / 5.5" x 8.5" to 8.5" x 14" / 35-128 gsm duplexing automatic document feeder
Printable paper size	4" x 6" to 8.5" x 14" Custom paper sizes: 3.6" to 8.5" (W) to 5.5" x 14" (L)
Printable paper weight	60-160 gsm
Paper input capacity	**Standard:** 600 sheets **Max.:** 2,100 sheets
Tray 1	500 sheets, 5.5" x 8.5" to 8.5" x 14", 60-90 gsm
Tray 2– 4 (optional)	500 sheets each, 5.5" x 8.5" to 8.5" x 14", 60-90 gsm
Manual bypass	100 sheets, 4" x 6" to 8.5" x 14" Custom paper sizes: 3.6" to 8.5" (W) to 5.5" x 14" (L), 60-160 gsm
Automatic duplexing	4" x 6" to 8.5" x 14" / 60-90 gsm
Output capacity	**Std.:** 250 sheets / **Max.:** 350 sheets (incl. optional external job separator)
Copy/print volume	**Max.:** 50,000 pages[1]
Toner lifetime	Up to 20,000 pages
Drum lifetime	Up to 42,000 pages
Power consumption	120 V / 60 Hz, Less than 1.09 kW
System dimensions	20.5" x 20.2" x 20.0" (W x D x H)
System weight	Approx. 53 lb

Copier Specifications

Copying process	Electrostatic LED copy, mono component
Toner system	Polymerized Toner
Print speed	Up to 25 ppm
Autoduplex speed	Up to 10 ppm
1st copy out time	5 sec.
Warm-up time	Approx. 12 sec.[2]
Print resolution	600 x 600 dpi
Multi copy	1-99
Gradation	256 gradations
Original format	**Max.:** Up to 8.5" x 14"
Magnification	25-400% in 1% steps
Copy functions	Duplex copy, electronic sorting, rotation copy, 2-in-1, 4-in-1, ID card copy, custom size settings

Printer Specifications

Print resolution	600 x 600 dpi
PDL	GDI, PCL 5e/XL, PostScript 3 (optional), PDF direct print (optional), Barcode and OCR fonts printing (optional)
Operating systems	Windows (x32/x64): XP/ Vista / 7 / 8 Windows Server (x32/x64): 2003 / 2008 / 2008 R2 / 2012 Macintosh OS X 10.x or later UNIX / Linux / Citrix SAP AS/400
Printer fonts	80 PCL Latin, 136 PostScript 3 Emulation Latin (optional), 32 Barcode/OCR (optional)
Print functions	Duplex printing, cover sheet, electronic sorting, density adjustment, toner save mode, n-up, watermark (only PCL, PostScript 3), secure print

Scanner Specifications

Scan speed	**B&W:** Up to 40 opm / **Color:** Up to 27 opm
Scan resolution	**Max.:** 600 x 600 dpi
Scan modes	Scan-to-Email, Scan-to-SMB, Scan-to-FTP, Scan-to-USB, Scan-to-Evernote, TWAIN local/network
File formats	PDF, encrypted PDF, TIFF, JPEG
Scan destinations	1,030 (single + group) / LDAP support

Fax Specifications

Standard	Super G3
Transmission	Analogue PC-Fax, i-Fax reception
Resolution	**Max.:** Up to 400 dpi
Compression	MH, MR, MMR, JBIG
Modem	Up to 33.6 Kbps
Destinations	1,030
Functions	Time shift, automatic fax forwarding

Options

PF-508 Paper tray	8.5" x 11" to 8.5" x 14", 500 sheets, up to 90 gsm / up to 3 can be installed
SCD-26S Copier desk small	Provides storage space for print media, etc., in case 3 PF-508 are installed
SCD-26L Copier desk large	Provides storage space for print media, etc., in case 1 or 2 PF-508 is installed
JS-604 External job separator	Additional output tray, separation for fax output etc.
PS-505 PostScript 3 enabler	PostScript 3 printing
BC-904 Barcode print	Barcode printing
PS-506 PostScript 3, barcode, OCR enabler	PostScript 3 printing including Barcode and OCR font printing
EM-905 PostScript memory upgrade (1 GB)	SD card memory extension, enables PCL PDF direct printing
MC-901 Mechanical counter	Mechanical hard counter for quick access to machine print counts
SX-4600WAN Wireless LAN	Provides wireless connectivity
Panel overlay kit (FR)	Panel overlay for French language users / Includes French drivers
Panel overlay kit (SP)	Panel overlay for Spanish language users / Includes Spanish drivers
SP-504 Fax stamp kit	Installed in RADF / Stamps fax originals

System Features

Security	Mac address blocking, IP address blocking, SSL, HTTPS, encrypted PDF, user authentication, secure print
Accounting	Up to 100 user accounts, Active Directory 2003 support, user function access definition (user access control)

[1] Maximum Monthly Duty Cycle describes the maximum number of pages a device can output on a monthly basis. This specification is a guidline intended to offer a comparison of durability as it relates to the entire Konica Minolta MFP and printer product line so that the appropriate device can be placed in order to meet customer needs

[2] Warm-up time may vary depending on the operating environment and usage

KONICA MINOLTA

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KONICA MINOLTA BUSINESS SOLUTIONS U.S.A., INC.
100 Williams Drive, Ramsey, New Jersey 07446

CountOnKonicaMinolta.com

Item #: 25ESS
1/15 - S

12" Wide Designer Lockers Double Tier "S" Style

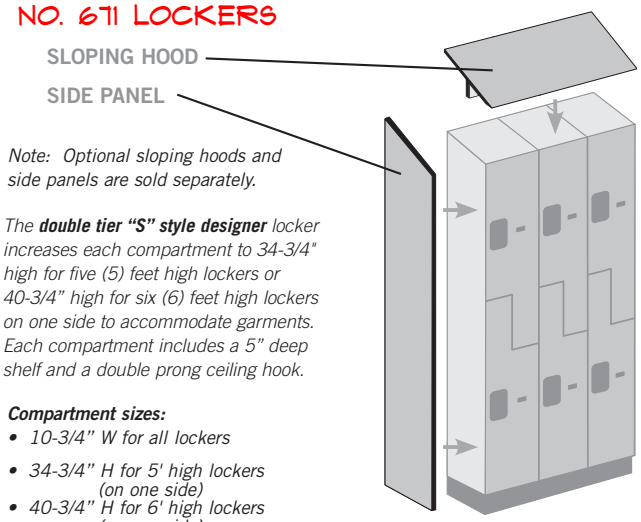
12" WIDE DOUBLE TIER "S" STYLE DESIGNER WOOD LOCKERS

5' HIGH AND 6' HIGH

Constructed of industrial grade particleboard and covered with durable high pressure laminate, Salsbury 37000 series 12" wide double tier “S” style designer wood lockers are ideal for settings where a professional environment is desired. 12" wide double tier “S” style designer wood lockers feature a gray, blue, black, maple, cherry or mahogany finish and are available in 15”, 18” and 21” depths. 12" wide double tier “S” style designer wood lockers are available in heights of five (5) feet and six (6) feet and include a 4” high black base (add 4” for the base). Optional matching laminated sloping hoods and side panels easily attach to double tier “S” style designer lockers and provide a finished look to an individual locker or a row of lockers. All locker doors are 12” W x 3/4” D and include a black name / number plate (custom engraving #33360 is available as an option upon request). All locker doors also include heavy duty concealed hinges and a lift up handle and recessed hasp for added security – built-in locks (#33310 for combination and #33315 for key), padlocks (#33320 for combination and #33325 for key), electronic locks (#33390) and resettable combination locks (#33395) are available as options upon request. One wide double tier “S” style designer lockers are available as fully assembled units only. Three (3) wide double tier “S” style designer lockers are also available as fully assembled units only and require minor assembly - see all designer locker options and locks on pages 82-83.

DESIGNER LOCKER OPTIONS

NO. 671 LOCKERS



Note: Optional sloping hoods and side panels are sold separately.

*The **double tier “S” style designer** locker increases each compartment to 34-3/4" high for five (5) feet high lockers or 40-3/4” high for six (6) feet high lockers on one side to accommodate garments. Each compartment includes a 5” deep shelf and a double prong ceiling hook.*

Compartment sizes:

- *10-3/4” W for all lockers*
- *34-3/4” H for 5' high lockers (on one side)*
- *40-3/4” H for 6' high lockers (on one side)*
- *13-3/4” D for 15" deep lockers*
- *16-3/4” D for 18" deep lockers*
- *19-3/4” D for 21" deep lockers*

Note: It is recommended that all lockers be wall and/or floor anchored.

See ALL designer locker options and locks on pages 82-83
See ALL benches on pages 106-111
See matching designer wood storage cabinets on pages 116-117

Volume Discount Pricing Available at Lockers.com!



#37351's with optional sloping hoods (#33354), side panels (#33306), built-in electronic locks (#33390), engraved name / number plates (#33360) and designer wood locker benches (#77788D) displayed

5' HIGH LOCKERS

12" WIDE DOUBLE TIER "S" STYLE - ONE WIDE

MODEL	UNIT SIZE	WEIGHT	PRICE
ONE WIDE *- (64" H with base)*		***Compartment Size**: 10-3/4" W x 34-3/4" H*	
37155[1]	12" W x 60" H x 15" D	85 lbs.	$300.00
37158[1]	12" W x 60" H x 18" D	100 lbs.	$330.00
37151[1]	12" W x 60" H x 21" D	115 lbs.	$360.00

12" WIDE DOUBLE TIER "S" STYLE - THREE WIDE

MODEL	UNIT SIZE	WEIGHT	PRICE
THREE WIDE *- (64" H with base)*		***Compartment Size**: 10-3/4" W x 34-3/4" H*	
37355[1]	36" W x 60" H x 15" D	255 lbs.	$810.00
37358[1]	36" W x 60" H x 18" D	300 lbs.	$890.00
37351[1]	36" W x 60" H x 21" D	345 lbs.	$970.00



37158



37358

Designer Lockers displayed with optional side panels

(side panels sold separately)

6' HIGH LOCKERS

12" WIDE DOUBLE TIER "S" STYLE - ONE WIDE

MODEL	UNIT SIZE	WEIGHT	PRICE
ONE WIDE *- (76" H with base)*		***Compartment Size**: 10-3/4" W x 40-3/4" H*	
37165[1]	12" W x 72" H x 15" D	95 lbs.	$320.00
37168[1]	12" W x 72" H x 18" D	110 lbs.	$350.00
37161[1]	12" W x 72" H x 21" D	125 lbs.	$380.00

12" WIDE DOUBLE TIER "S" STYLE - THREE WIDE

MODEL	UNIT SIZE	WEIGHT	PRICE
THREE WIDE *- (76" H with base)*		***Compartment Size**: 10-3/4" W x 40-3/4" H*	
37365[1]	36" W x 72" H x 15" D	285 lbs.	$870.00
37368[1]	36" W x 72" H x 18" D	330 lbs.	$950.00
37361[1]	36" W x 72" H x 21" D	375 lbs.	$1,030.00



37168



37368

** Compartment depth is 1-1/4" less than overall unit depth.*

[1] Specify



gray | blue | black | maple | cherry | mahogany

Designer Locker Options & Locks

for lockers on pages 62-81



SLOPING HOODS

MODEL	DESCRIPTION	WEIGHT	PRICE
FOR 12" WIDE LOCKERS			
33357[1]	Sloping hood - for 12" wide lockers - 15" deep - one wide	3 lbs.	$40.00
33359[1]	Sloping hood - for 12" wide lockers - 15" deep - three (3) wide	9 lbs.	$100.00
33353[1]	Sloping hood - for 12" wide lockers - 18" deep - one wide	3 lbs.	$45.00
33356[1]	Sloping hood - for 12" wide lockers - 18" deep - three (3) wide	9 lbs.	$115.00
33352[1]	Sloping hood - for 12" wide lockers - 21" deep - one wide	4 lbs.	$50.00
33354[1]	Sloping hood - for 12" wide lockers - 21" deep - three (3) wide	12 lbs.	$125.00
FOR 15" WIDE LOCKERS			
22251[1]	Sloping hood - for 15" wide lockers - 18" deep - one wide	4 lbs.	$50.00
22253[1]	Sloping hood - for 15" wide lockers - 18" deep - three (3) wide	12 lbs.	$125.00
22252[1]	Sloping hood - for 15" wide lockers - 21" deep - one wide	5 lbs.	$60.00
22254[1]	Sloping hood - for 15" wide lockers - 21" deep - three (3) wide	15 lbs.	$150.00
22255[1]	Sloping hood - for 15" wide lockers - 24" deep - one wide	6 lbs.	$70.00
22257[1]	Sloping hood - for 15" wide lockers - 24" deep - three (3) wide	18 lbs.	$175.00

SIDE PANELS

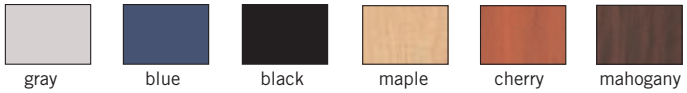
MODEL	DESCRIPTION	WEIGHT	PRICE
FOR 15" DEEP LOCKERS			
33300[1]	Side panel - for 5 feet high - without sloping hood	15 lbs.	$90.00
33309[1]	Side panel - for 5 feet high - with sloping hood	15 lbs.	$100.00
33330[1]	Side panel - for 6 feet high - without sloping hood	15 lbs.	$90.00
33339[1]	Side panel - for 6 feet high - with sloping hood	15 lbs.	$100.00
FOR 18" DEEP LOCKERS			
33303[1]	Side panel - for 5 feet high - without sloping hood	17 lbs.	$100.00
33304[1]	Side panel - for 5 feet high - with sloping hood	17 lbs.	$110.00
33333[1]	Side panel - for 6 feet high - without sloping hood	17 lbs.	$100.00
33334[1]	Side panel - for 6 feet high - with sloping hood	17 lbs.	$110.00
FOR 21" DEEP LOCKERS			
33305[1]	Side panel - for 5 feet high - without sloping hood	20 lbs.	$110.00
33306[1]	Side panel - for 5 feet high - with sloping hood	20 lbs.	$120.00
33335[1]	Side panel - for 6 feet high - without sloping hood	20 lbs.	$110.00
33336[1]	Side panel - for 6 feet high - with sloping hood	20 lbs.	$120.00
FOR 24" DEEP LOCKERS			
22237[1]	Side panel - for 6 feet high - without sloping hood	25 lbs.	$120.00
22238[1]	Side panel - for 6 feet high - with sloping hood	25 lbs.	$130.00

ADDITIONAL COMPARTMENT SHELVES

MODEL	DESCRIPTION	WEIGHT	PRICE
FOR 12" WIDE LOCKERS			
33394	Compartment shelf - for 12" wide lockers - 15" deep - black	3 lbs.	$20.00
33398	Compartment shelf - for 12" wide lockers - 18" deep - black	3 lbs.	$25.00
33391	Compartment shelf - for 12" wide lockers - 21" deep - black	4 lbs.	$30.00
FOR 15" WIDE LOCKERS			
22298	Compartment shelf - for 15" wide lockers - 18" deep - black	4 lbs.	$25.00
22291	Compartment shelf - for 15" wide lockers - 21" deep - black	5 lbs.	$30.00
22294	Compartment shelf - for 15" wide lockers - 24" deep - black	5 lbs.	$35.00

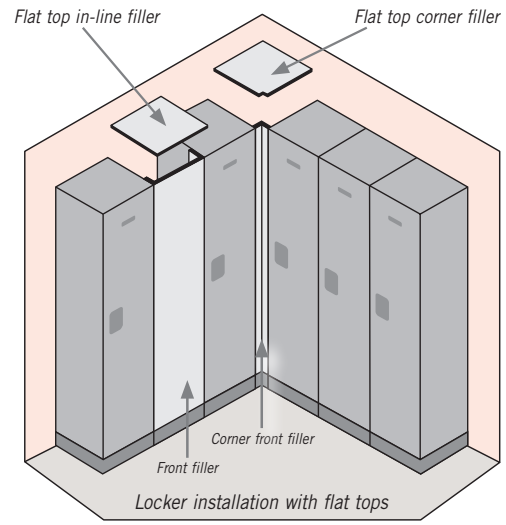
For ADA Compliance Guidelines Visit: www.lockers.com/ADA-Designer-Wood-Lockers

[1] Specify

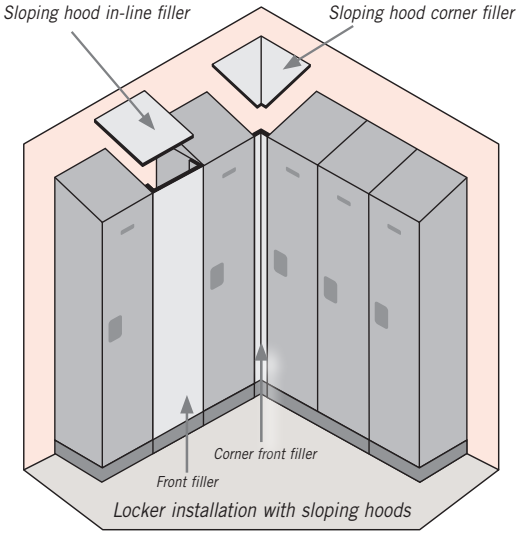


LOCKER FILLERS

Salsbury locker fillers are an ideal option for locker installations that encounter obstructions such as pipes, columns and other obstacles. Corner and in-line fillers overlay gaps between the existing locker tops and are easily attached providing a finished look to the locker installation. Vertical front fillers provide a professional appearance to the locker installation. Locker fillers can be easily field cut for custom installations.



Locker installation with flat tops



Locker installation with sloping hoods

TOP FILLERS - CORNER

MODEL	DESCRIPTION	WEIGHT	PRICE
33337[1]	Flat top filler - corner - for 15" deep lockers	4 lbs.	$50.00
33338[1]	Flat top filler - corner - for 18" deep lockers	4 lbs.	$60.00
33331[1]	Flat top filler - corner - for 21" deep lockers	5 lbs.	$70.00
22239[1]	Flat top filler - corner - for 24" deep lockers	5 lbs.	$70.00
33377[1]	Sloping hood filler - corner - for 15" deep lockers	5 lbs.	$60.00
33378[1]	Sloping hood filler - corner - for 18" deep lockers	5 lbs.	$70.00
33371[1]	Sloping hood filler - corner - for 21" deep lockers	6 lbs.	$80.00
22279[1]	Sloping hood filler - corner - for 24" deep lockers	6 lbs.	$80.00

TOP FILLERS - IN-LINE

MODEL	DESCRIPTION	WEIGHT	PRICE
33347[1]	Flat top filler - in-line - 15" wide - for 15" deep lockers	3 lbs.	$40.00
33348[1]	Flat top filler - in-line - 15" wide - for 18" deep lockers	3 lbs.	$50.00
33341[1]	Flat top filler - in-line - 15" wide - for 21" deep lockers	4 lbs.	$60.00
22249[1]	Flat top filler - in-line - 15" wide - for 24" deep lockers	4 lbs.	$60.00
33387[1]	Sloping hood filler - in-line - 15" wide - for 15" deep lockers	4 lbs.	$50.00
33388[1]	Sloping hood filler - in-line - 15" wide - for 18" deep lockers	4 lbs.	$60.00
33381[1]	Sloping hood filler - in-line - 15" wide - for 21" deep lockers	5 lbs.	$70.00
22289[1]	Sloping hood filler - in-line - 15" wide - for 24" deep lockers	5 lbs.	$70.00

FRONT FILLERS - VERTICAL

MODEL	DESCRIPTION	WEIGHT	PRICE
FOR 15, 18", 21" AND 24" DEEP LOCKERS			
33369[1]	Front filler - vertical - 9" wide - 72" high	10 lbs.	$80.00
33367[1]	Front filler - vertical - 15" wide - 72" high	15 lbs.	$100.00
33364	Corner front filler - vertical - black - 72" high	5 lbs.	$50.00

[1] Specify


gray | blue | black | maple | cherry | mahogany

DESIGNER LOCKER LOCKS / NUMBER PLATES

MODEL	DESCRIPTION	PRICE
33310	Built-in lock - combination style	$15.00
33311	Master control key - for built-in combination lock #33310	$10.00
33315	Built-in lock - key style with (2) keys	$15.00
33316	Master control key - for built-in key lock #33315	$10.00
33399	Key blanks - for #33315 built-in locks - box of (50)	$35.00
33320	Padlock - combination style	$10.00
33321	Master control key - for combination padlock #33320	$10.00
33325	Padlock - key style with (2) keys	$10.00
33329	Key blanks - for #33325 key padlocks - box of (50)	$35.00
33390	Electronic lock (specify: silver, black or gold finish)	$65.00
33393	Custom lock installation - lock provided by owner	$10.00
33395	Resettable combination lock (specify: silver or black finish)	$30.00
33396	Master control key - for resettable combination lock #33395	$10.00
33360	Custom engraved number plates - 2-1/4" W x 1-1/8" H	$3.00


#33310


#33315


Sample recessed hasp with combination padlock (#33320) displayed


#33320


#33325


Sample electronic lock (#33390) in silver finish displayed


#33390

For single or multi-use applications.


#33395


Sample recessed hasp with resettable combination lock (#33395) in silver finish displayed

12

Larsen's®

Architectural Series Fire Extinguisher Cabinets Submittal and Detail Sheet

PROJECT:_____ LOCATION:_____

MODEL NUMBER:_____ QUANTITY:_____

ARCHITECT:_____ CONTRACTOR:_____

DATE:_____ DISTRIBUTOR:_____

SPECIFICATIONS:

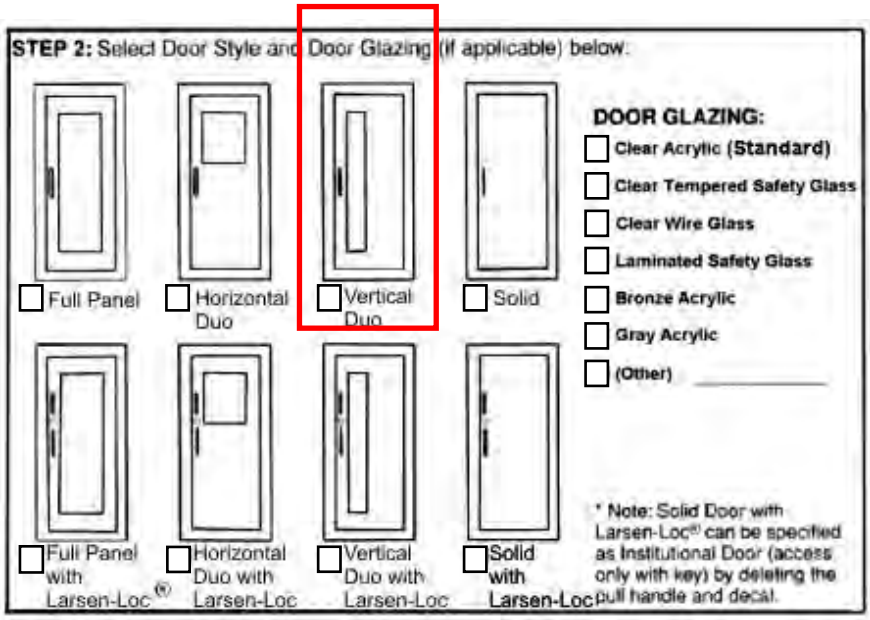
All recessed and semi-recessed cabinets and surface-mounted steel cabinets have a heavy gauge, white baked enamel box. Surface-mounted cabinets with aluminum door and trim have a box constructed entirely of clear or color anodized aluminum. Surface-mounted cabinets with stainless steel door and trim have a box constructed entirely of 304 stainless steel with a #4 finish.

Steel and stainless steel cabinets have a full ½" thick hollow metal heavy gauge door. Trims and doors feature one piece construction with satin finish pull handle, continuous matching hinge, and self-adjusting roller catch. Baked white enamel finish is standard for steel units. Stainless steel cabinets have a #4 finish, 304 stainless steel.

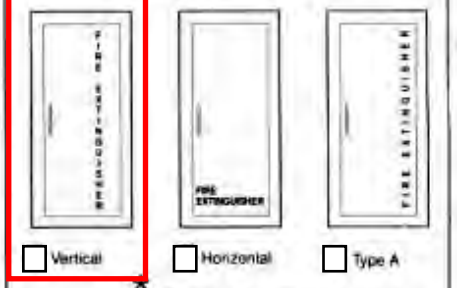
Aluminum cabinet doors and trims are extruded or fabricated aluminum with clear satin anodized finish. Aluminum door is ½" thick with satin finish matching pull handle and hinge. Color anodized finishes are available as options.

STEP 1: Select cabinet model number from the dimensions on page 2 and indicate on the top of this sheet. To specify aluminum trim and door, use the prefix, **"AL"** before the model number. To specify stainless steel trim and door, use the prefix, **"SS"** before the model number. **Note: Rough opening dimensions are larger for fire-rated cabinets. Please refer to separate Fire-Rated Cabinet Submittal and Detail Sheet.**

STEP 2: Select Door Style and Door Glazing (if applicable) below:



STEP 5: Select Optional* Die Cut Lettering Style and Color:



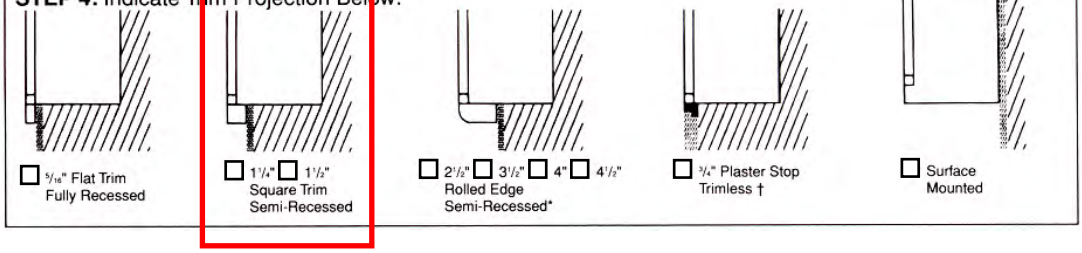
☐ Black
☐ White
☐ Red
☐ Other _____

Die cut lettering is available at additional cost. Standard application of lettering is on the metal section of the door - not on the glazing. Decals also are available and are shippedloose for jobsite application.

STEP 3: Indicate Trim and Door Material:

- ☐ Steel
- ☐ Aluminum (AL)
- ☐ Stainless (SS)
- ☐ Other (specify) _____

STEP 4: Indicate Trim Projection Below:



† Trimless cabinets must be installed before the drywall because their plaster stops must be behind the drywall. Trimless cabinets are not recommended for block wall installation.

* See back of this sheet or attached sheet for Recessed Handle (required only for 4" return trims when ADA wall projection compliance is necessary)

LARSEN'S MANUFACTURING COMPANY - www.larsensmfg.com
7421 Commerce Lane N.E., Minneapolis, MN 55432 Phone: (763) 571-1181 FAX: (763) 571-6900
FLORIDA DIVISION: 3130 N.W. 17th Street, Ft. Lauderdale, FL 33311 Phone: (954) 486-3325 FAX: (954) 486-3352

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CABINET DIMENSIONS - ARCHITECTURAL SERIES

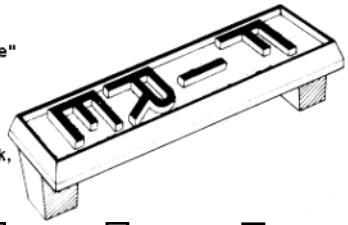
Model Number	Trim Style and Projection	Inside Box Dimensions			Outside Trim Dimensions**		Rough Opening***			Recommended Extinguisher Capacity
		Height	Width	Depth	Height	Width	Height	Width	Depth	
☐ __ 2409-R1	Rec. 5/16"	24"	9½"	5"*	27½"	13"	25"	10½"	5¼"	MP2
☐ __ 2409-5R	Semi-Rec. 1½"	24"	9½"	5"*	27½"	13"	25"	10½"	4"	MP5, MP5-DC2 , DC5
☐ __ 2409-R3	Semi-Rec. 2½"	24"	9½"	5"*	27½"	13"	25"	10½"	3"	HT2½, HT5
☐ __ 2409-R2	Rec. 5/16"	24"	9½"	6"	27½"	13"	25"	10½"	6¼"	
☐ __ 2409-R7	Semi-Rec. 1½"	24"	9½"	6"	27½"	13"	25"	10½"	5"	MP2 MP5
☐ __ 2409-6R	Semi-Rec. 2½"	24"	9½"	6"	27½"	13"	25"	10½"	4"	MP5-A,
☐ __ 2409-R4	Semi-Rec. 3½"	24"	9½"	6"	27½"	13"	25"	10½"	3"	DC2½, DC5
☐ __ 2409-RM	Semi-Rec. 4½"	24"	9½"	6"	27½"	13"	25"	10½"	2"	MP6, MP10
☐ __ 2409-RT	Trimless	24"	9½"	6"	-	-	†	†	6½"	DC6, DC10, CD5
☐ __ 2409-SM	Surface Mounted	27½"	13"	6"	27½"	13"	-	-	-	HT2½, HT5
☐ __ 2409-RA	Semi-Rec. 4"	24"	9½"	6"	27½"	13"	25"	10½"	2½"	
* Depth is 4¾" when supplied with aluminum door and trim. The AL2409-5R has a 1¼" square trim.										
☐ __ 2712-R	Rec. 5/16"	27"	12"	8"	30½"	15½"	28"	13"	8¼"	All of Above
☐ __ 2712-RK	Semi-Rec. 1¼"	27"	12"	8"	30½"	15½"	28"	13"	7¼"	PW2 , MP20
☐ __ 2712-RL	Semi-Rec. 2½"	27"	12"	8"	30½"	15½"	28"	13"	6"	DC20, CD10
☐ __ 2712-RM	Semi-Rec. 4½"	27"	12"	8"	30½"	15½"	28"	13"	4"	WC-6L
☐ __ 2712-RT	Trimless	27"	12"	8"	-	†	†	†	8½"	HT11, HT15½
☐ __ 2712-SM	Surface Mounted	30½"	15½"	8½"	30½"	15½"	-	-	-	WC2 , WM2
☐ __ 2712-RA	Semi-Rec. 4"	27"	12"	8"	30½"	15½"	28"	13"	4½"	
☐ __ 2720-R	Rec. 5/16"	27"	20"	8"	30½"	23½"	28"	21"	8¼"	Two Each of t e listed:
☐ __ 2720-RK	Semi-Rec. 1¼"	27"	20"	8"	30½"	23½"	28"	21"	7¼"	PW2½, MP10
☐ __ 2720-RL	Semi-Rec. 2½"	27"	20"	8"	30½"	23½"	28"	21"	6"	DC10, MP20
☐ __ 2720-RM	Semi-Rec. 4½"	27"	20"	8"	30½"	23½"	28"	21"	4"	DC20, CD5,D10
☐ __ 2720-RT	Trimless	27"	20"	8"	-	-	†	†	8½"	WC-6L, HT11, HT15
☐ __ 2720-SM	Surface Mounted	30½"	23½"	8½"	30½"	23½"	-	-	-	WC2 , WM2
☐ __ 2720-RA	Semi-Rec. 4"	27"	20"	8"	30½"	23½"	28"	21"	4½"	
☐ __ 3012-R	Rec. 5/16"	30"	12"	8"	33½"	15½"	31"	13"	8¼"	Same as 2712
☐ __ 3012-RK	Semi-Rec. 1¼"	30"	12"	8"	33½"	15½"	31"	13"	7¼"	
☐ __ 3012-RL	Semi-Rec. 2½"	30"	12"	8"	33½"	15½"	31"	13"	6"	
☐ __ 3012-RM	Semi-Rec. 4½"	30"	12"	8"	33½"	15½"	31"	13"	4"	
☐ __ 3012-RT	Trimless	30"	12"	8"	-	-	†	†	8½"	
☐ __ 3012-SM	Surface Mounted	33½"	15½"	8½"	33½"	15½"	-	-	-	
☐ __ 3012-RA	Semi-Rec. 4"	30"	12"	8"	33½"	15½"	31"	13"	4½"	
☐ __ 3612-R	Rec. 5/16"	36"	12"	8"	39½"	15½"	37"	13"	8¼"	Same as 2712
☐ __ 3612-RK	Semi-Rec. 1¼"	36"	12"	8"	39½"	15½"	37"	13"	7¼"	
☐ __ 3612-RL	Semi-Rec. 2½"	36"	12"	8"	39½"	15½"	37"	13"	6"	**FB 3612 OPTION:**
☐ __ 3612-RM	Semi-Rec. 4½"	36"	12"	8"	39½"	15½"	37"	13"	4"	
☐ __ 3612-RT	Trimless	36"	12"	8"	-	-	†	†	8½"	☐ w/Shelf &
☐ __ 3612-SM	Surface Mounted	39½"	15½"	8½"	39½"	15½"	-	-	-	Fire Blanket
☐ __ 3612-RA	Semi-Rec. 4"	36"	12"	8"	39½"	15½"	37"	13"	4½"	
☐ __ 3216-R	Rec. 5/16"	32"	16"	8"	35½"	19½"	33"	17"	8¼"	
☐ __ 3216-RK	Semi-Rec. 1¼"	32"	16"	8"	35½"	19½"	33"	17"	7¼"	PW2½, MP20
☐ __ 3216-RL	Semi-Rec. 2½"	32"	16"	8"	35½"	19½"	33"	17"	6"	DC20, CD10
☐ __ 3216-RM	Semi-Rec. 4½"	32"	16"	8"	35½"	19½"	33"	17"	4"	CD15
☐ __ 3216-RT	Trimless	32"	16"	8"	-	-	†	†	8½"	WM2 , WMC2
☐ __ 3216-SM	Surface Mounted	35½"	19½"	8½"	35½"	19½"	-	-	-	
☐ __ 3216-R	Semi-Rec. 4"	32"	16"	8"	35½"	19½"	33"	17"	4½"	

† Trimless cabinets must be installed before the drywall because their plaster stops must be behind the drywall.
Trimless cabinets are not recommended for block wall installation
** Deduct ¾" from HxW dimensions for cabinets with aluminum trim.
***** Rough openings are larger for fire-rated cabinets. Please refer to Fire-rated Extinguisher Cabinet Submittal and Detail Sheet.**

NOTE: Semi-recessed and surface-mounted cabinet compliance with ADA wall projection guidelines depends on several location and installation issues.
Please refer to http://www.larsensmfg.com

☐ OPTIONAL "FIRE" HANDLE

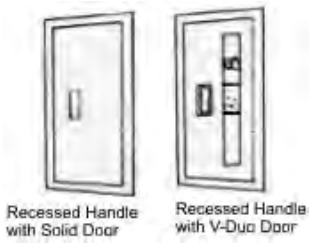
Optional die cast "Fire" Handle is available at additional cost. Natural finish is standard. Optional finishes are red, black, and white.



☐ Standard ☐ Red ☐ Black ☐ White

☐ OPTIONAL RECESSED HANDLE

Optional recessed handle is available at additional cost for Solid, H-Duo or V-Duo Doors. Larsen-Loc® is also available with recessed handle. The recessed handle must be specified with 4" projecting trims in order for the cabinet to comply with ADA wall projection guidelines.



Recessed Handle with Solid Door — Recessed Handle with V-Duo Door

LARSEN'S MANUFACTURING COMPANY - www.larsensmfg.com
7421 Commerce Lane N.E., Mpls, MN 55432 Phone: (763) 571-1181 FAX: (763) 571-6900
FLORIDA DIVISION: 3130 N.W. 17th Street, Ft. Lauderdale, FL 33311 Phone: (954) 486-3325 FAX: (954) 486-3352

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Previous Item in product family



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prev See all 98 items in product family next

Atomic Wall Clock – 14" - Stainless Steel

Item #: WG695324 Email Print

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17 reviews | Write a review

Price: $ 19.95

Quantity: 1

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Universal One Round Wall Clock, 13-1/2", Black


Oversized Wall Clock 20" - Aluminum


Wall Digital Clock

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Black Wall Clock – 12" - Plastic
(5)
Add $9.95

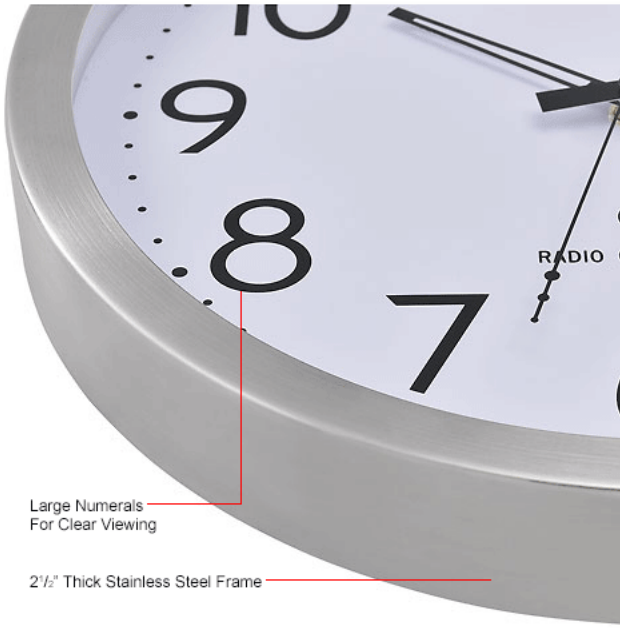
Product Information | Photo/Video Gallery | Customer Review | Product Q&A | Accessories

Global Industrial™ 14" Atomic Clock, Silver

This Atomic Clock automatically synchronizes the time several times a day based on a radio signal from Fort Collins, CO (WWVB). The Radio Controlled Clock never needs resetting and is accurate to the second. Atomic Clock features a 14" face with bold, black Arabic numerals making the time easy to read. It's classic style matches most decors and is a perfect fit for any office, classroom or space. Frame is constructed of stainless steel with a 2 mm thick glass lens. Requires one AA battery (included). Once you install the battery and choose one of four U. S. time zones, the clock automatically sets to the accurate time in hours, minutes, and seconds, and continues to adjust itself even for daylight savings time. No need to spend manpower adjusting time. FCC certified.

Clock Diameter: 14"
Clock Depth: 2-1/2"

Certain conditions such as, heavy storms or electro-magnetic interference may affect the signal strength. Not recommended for use in close proximity to mountains, power plants, and airports.



Documents are in PDF format

Product Specifications

WIDTH INCHES	14
DEPTH INCHES	2-1/2
HEIGHT INCHES	14
COLOR FINISH	Silver
DESCRIPTION	14" Atomic Clock
FACE COLOR	White
MANUFACTURERS PART NUMBER	695324
MECHANISM	Atomic
BRAND	Global Industrial™

Have A Question About This Product?

2 Question | **2** | Answer

Read All Q&A Ask a Question

STYLE	Radio Controlled	Answer A Question
NUMBER TYPE	Arabic/Standard	
SHAPE	Round	
FRAME COLOR	Silver	
TYPE	Analog Clocks	

Customers Who Viewed This Also Viewed



Black Wall Clock – 12" - Plastic

(5)

$9.95



Howard Miller® Chronicle Wall Clock w/ LCD Inset,

Not Yet Rated

$36.95



Universal One™ Whisper Quiet Clock, 12", Black

Not Yet Rated

$10.25



15" Wall Clock Battery Operated

(48)

$24.95



Wall Clock Double Sided Battery Operated

(6)

$44.95



Chicago Lighthouse 14.5" Round Electric Wall Clock,

(6)

$28.95

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- Press Releases
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Profile+

NO. 683 SCREEN, PROJECTION, FIXED

Permanently Mounted Projection Screen with Thin Bezel Trim Frame

Specifications—Profile+

_____ permanently tensioned projection screens, size _____h. x _____ w. (viewing area), designed for wall mounting. ½" (13mm) of black extruded thin bezel trim frame shall be visible from the front, and shall attach to hidden base frame using a compression fit. The face of the frame shall be less than $1^{15}/_{16}$" (4.5 cm) away from the wall, with a beveled back to give the screen the appearance of floating in front of the wall. Viewing surface to have ¾" (19mm) hem pocket on all four sides to accept screen insertion tubing. Surface wraps around and attaches to extruded base frame using extruded plastic strips, eliminating pulling and puckering inherent to fabric attachment utilizing snaps or hook & loop fabric strips. Matt White XT1000V and Grey XH600V viewing surfaces are certified to GREENGUARD standards for low chemical emissions into indoor air during product usage. For more information, visit ul.com/gg. Base trim frame extrusions shall provide for up to 1½" (38mm) of horizontal and vertical surface tension adjustability in $^3/_8$" (9.5mm) increments to combat screen stretch and sag over time. Frame equipped with mounting flange that mates with wall brackets. Available in custom sizes up to 30' (9.14m) wide. Patented by Draper, Inc.

GREENGUARD GOLD — PRODUCT CERTIFIED FOR LOW CHEMICAL EMISSIONS UL.COM/GG UL 2818

Patent information available at http://www.draperinc.com/legal/patents/
Downloadable 3-part specifications are available at www.draperinc.com.
Entire unit certified by Underwriters' Laboratories for the U.S. and Canada. Plenum rated case (UL approved "Suitable for Use in Environmental Air Space"). Specifications subject to change without notice.

Please Mark Appropriate Selections

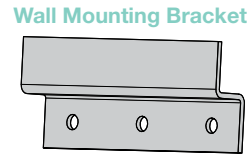
Select Viewing Surface:

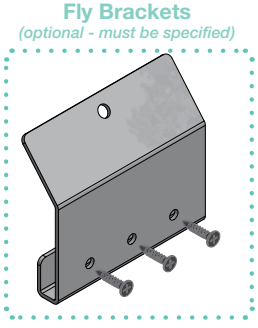
- ☐ Matt White XT1000V *(1.0 gain): GREENGUARD Gold certified*
- ☐ Grey XH600V *(0.6 gain) (Thru 9' x 12'): GREENGUARD Gold certified*
- ☐ Pearl White MH1500V *(1.5 gain) (Thru 9' x 12'): Optional*
- ☐ Pure White XT1300V *(1.3 gain): Optional*
- ☐ ReAct MS1000V *(1.0 gain): Optional*
- ☐ TecVision *(isf Certified for Color Accuracy) Optional:*_____
- ☐ Other: _____
- ☐ Black Frame *(standard if no choice indicated)*

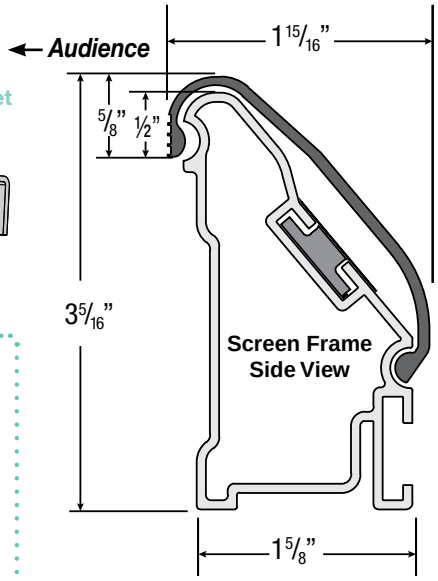
Dimensions & Data

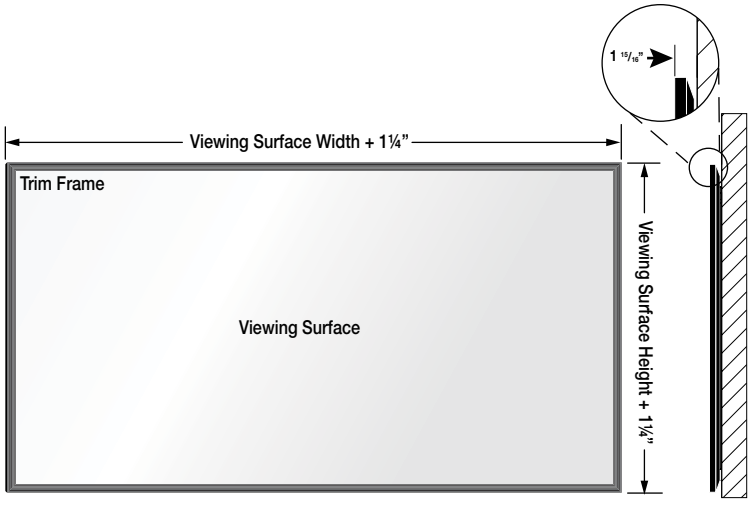
Nominal Diagonal	Image Area	Overall H x W	Net Wt. (lbs.)	Qty.
16:10 Format				
94"	50" x 80"	51 ¼" x 81¼"	76	
109"	57½" x 92"	58 ¾" x 93 ¼"	80	
113"	60" x 96"	61 ¼" x 97 ¼"	84	
123"	65" x 104"	66 ¼" x 105 ¼"	87	
137"	72 ½" x 116"	73 ¾" x 117 ¼"	94	
165"	87½" x 140"	88 ¾" x 141 ¼"	99	
198"	105" x 168"	106 ¼" x 169 ¼"	108	
226"	120" x 192"	121 ¼" x 193 ¼"	114	
255"	123" x 216"	124 ¼" x 217 ¼"	125	
283"	150" x 240"	151 ¼" x 241 ¼"	133	
HDTV Format (16:9)				
92"	45" x 80"	46 ¼" x 81 ¼"	76	
100"	49" x 87"	50 ¼" x 88 ¼"	80	
106"	52" x 92"	53 ½" x 93 ¼"	82	
110"	54" x 96"	55 ¼" x 97 ¼"	85	
119"	58" x 104"	59 ¼" x 105 ¼"	89	
133"	65" x 116"	66 ¼" x 117 ¼"	93	
161"	79" x 140"	80 ¼" x 141 ¼"	98	
193"	94 ½" x 168"	95 ¾" x 169 ¼"	105	
220"	108" x 192"	109 ¼" x 193 ¼"	110	
248"	121 ½" x 140"	122 ¾" x 217 ¼"	122	
275"	135" x 240"	136 ½" x 241 ¼"	130	
CinemaScope Format (2.35:1)				
115"	45" x 105 ¾"	46 ¼" x 107"	60	
132"'	52" x 122"	53 ¼" x 123 ¼"	68	
148"	58" x 136 ¼"	59 ¼" x 137 ½"	73	
166"	65" x 152 ¾"	66 ¼" x 154"	86	
204"	80" x 188"	81 ¼" x 189 ¼"	102	
230"	90" x 211 ½"	91 ¼" x 212 ¾"	115	
248"	97" x 228"	98 ¼" x 229 ¼"	120	
260"	101 ¾" x 239 ¼"	103" x 240 ½"	122	
Custom Size				

Profile+ Frame Details









PROJECT: _____

_____

ARCHITECT: _____

CONTRACTOR: _____

SUPPLIER: _____

DATE: _____ **REVISED:** _____

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West Hartford, CT 06110

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Product Environmental Profile

Wiremold® Evolution™ Series Floor Boxes

PEP ecopassport®

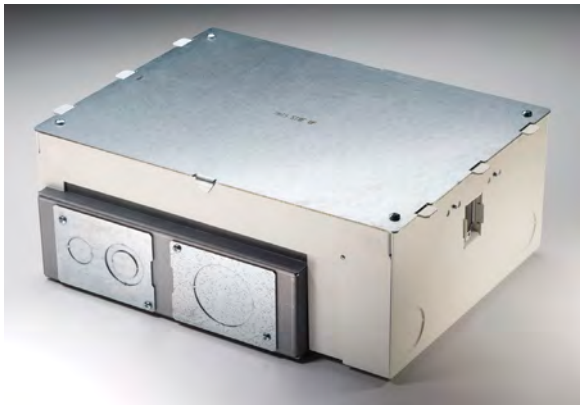
LEGRAND'S ENVIRONMENTAL COMMITMENTS

• Incorporate environmental management into our industrial sites
Of all Legrand sites worldwide, over 85% are ISO 14001-certified (sites belonging to the Group for more than five years).

• Offer our customers environmentally friendly solutions
Develop innovative solutions to help our customers design more energy efficient, better managed and more environmentally friendly installations.

• Involve the environment in product design and provide informations in compliance with ISO 14025
Reduce the environmental impact of products over their whole life cycle.
Provide our customers with all relevant information (composition, consumption, end of life, etc.).

REFERENCE PRODUCT

Function	Connect a work station remote from the wall to the energy and communication network for 20 years via 4 wiring accessories.
Reference Product	
	Cat. No. EFB45S
	4-Gang Evolution Floor Box

The company reserves the right to change specifications and designs without notice. All illustrations, descriptions, dimensions and weights in the document are for guidance and cannot be held binding on the company.

PRODUCTS CONCERNED

The environmenal data is representative of the following products (see extrapolation rule at the end of the document):

EFB45S, EFB6S, EFB8S, EFB10S, EFB45S-OG, EFB6S-OG, EFB8S-OG, EFB10S-OG

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Product Environmental Profile

Wiremold®Evolution™ Series Floor Boxes

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CONSTITUENT MATERIALS

This Reference Product contains no substances prohibited by the regulations applicable at the time of its introduction to the market. It respects the restrictions on use of hazardous substances as defined in the RoHS directive 2011/65/CE.

Total weight of Reference Product	**248.14oz (7034.9g)** (with unit packaging)

Plastics as % of weight		**Metals as % of weight**		**Other as % of weight**	
PC	**3.5 %**	Steel	**74.4 %**		
		Others metals	**1.8 %**		
		Copper alloys	**< 0.1 %**	**Packaging as % of weight**	
				Paper	**14.0 %**
				Wood	**5.3 %**
				PE	**1.0 %**
Total plastics	**3.5 %**	**Total metals**	**76.2 %**	**Total other and packaging**	**20.3 %**

Estimated recycled material content: 38 % by mass.

MANUFACTURE

This Reference Product comes from sites that have received ISO14001 certification.

DISTRIBUTION

Products are distributed from logistics centers located to optimize transport efficiency using EPA SmartWay® certified carriers to reduce greenhouse gases emissions. The Reference Product is therefore transported over an average distance of 2175 miles by truck from our warehouse to the local point of distribution into the market in North America.

INSTALLATION

For the installation of the product, only standard tools are needed.

USE

Servicing and maintenance :
Under normal conditions of use, this product requires no servicing or maintenance.

Consumables :
No consumables are necessary to use the Reference Product.

END OF LIFE

Development teams integrate product end-of-life factors in the design phase.

Hazardous waste* contained in the product: no hazardous waste
(*) Hazardous waste as defined by European Commission decision 2000/532/EC.

• Recycling rate:
Calculated using the method described in the IEC/TR 62635 technical report, the recyclability rate of the product is estimated as 98 %. This value is based on data collected from a technological channel using industrial procedures. It does not pre-validate the effective use of this channel for end-of-life electrical and electronic products.

Separated into:

- metal materials (excluding packaging) : 76.2 %
- plastic materials (excluding packaging) : 3.4 %
- packaging (all types of materials) : 19.1 %

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ENVIRONMENTAL IMPACTS

The evaluation of environmental impacts examines the stages of the Reference Product life cycle: manufacturing, distribution, installation, use and end-of-life. IIt is representative from products marketed and used in North America.

For each phase, the following modelling elements were taken in account:

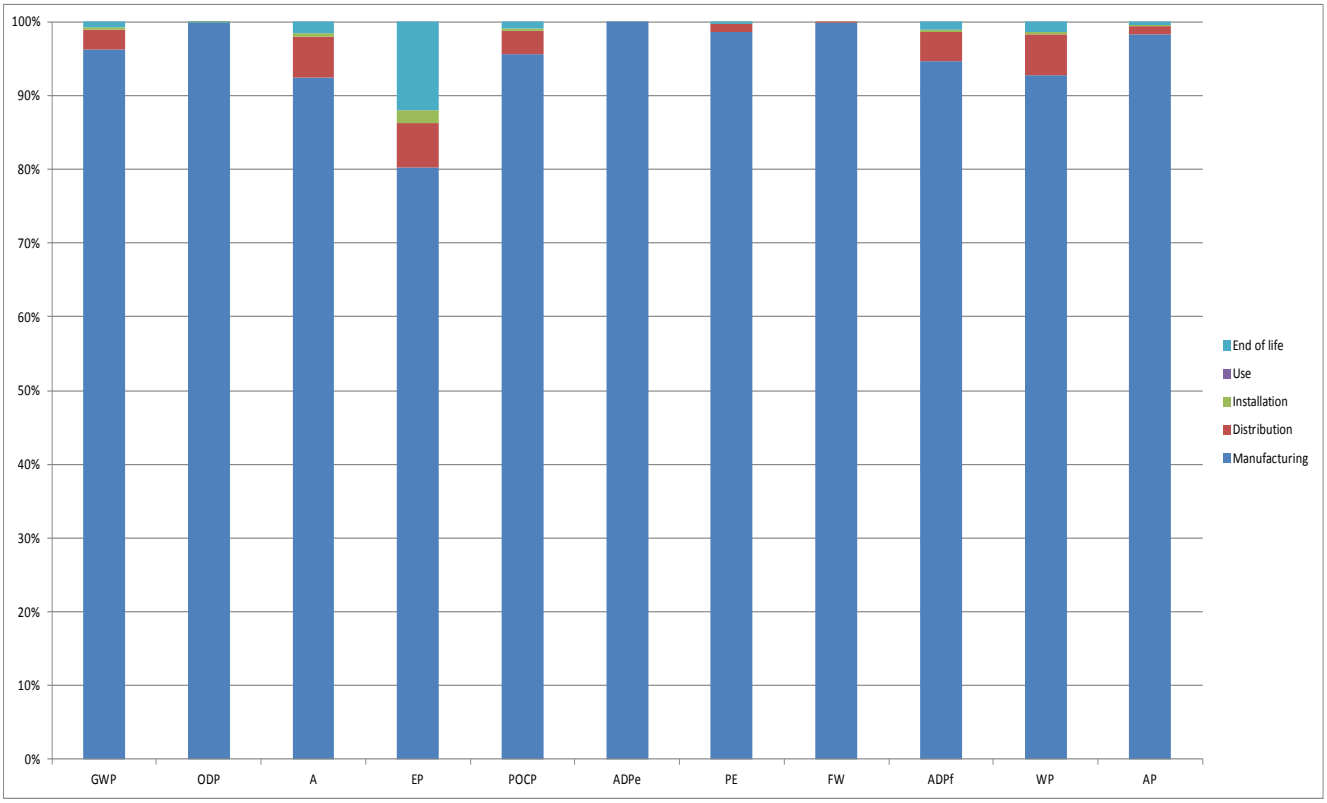
Manufacture	Packaging taken into account. As required by the «PEP ecopassport» programme all transports for the manufacturing of the Reference Product, including materials and components, has been taken in account. The waste generated during manufacturing phase has been taken into account.
Distribution	Transport between the last Group distribution centre and an average delivery to the sales area
Installation	The end-of-life of the packaging is taken into account at this phase
Use	• Under normal conditions of use, this type of product requires no servicing or maintenance. • No consumables are necessary to use this type of product. • Product category: PSR0003-ed1.1-EN-2015_10_16-Cable_Management_Solutions §3.2.3.1. Non-equipped service poles, service posts and multi-outlets extension. • Use scenario : no energy consumption during 20 year working life. This modelling duration does not constitute a minimum durability requirement. • Energy model: Electricity Mix; United States - 2009.
End of life	The default end of life scenario maximizing the environmental impacts
Software and database used	EIME V5 and its database «CODDE-2015-04» and the indicators defined ine the PCR ed3 in alignment with the EN 15804 standard.

SELECTION OF ENVIRONMENTAL IMPACTS

	Total for Life cycle		Raw material and manufacture		Distribution		Installation		Use		End of life	
Global warming	**4.44E+01**	**kgCO2 eq.**	4.27E+01	**96%**	1.23E+00	**3%**	8.72E-02	**< 1%**	0.00E+00	**0%**	3.74E-01	**< 1%**
Ozone depletion	**3.34E-06**	**kgCFC-11 eq.**	3.33E-06	**100%**	2.48E-09	**< 1%**	6.46E-10	**< 1%**	0.00E+00	**0%**	2.97E-09	**< 1%**
Acidification of soils and water	**9.90E-02**	**kgSO2 eq.**	9.15E-02	**92%**	5.51E-03	**6%**	4.12E-04	**< 1%**	0.00E+00	**0%**	1.57E-03	**2%**
Water eutrophication	**2.13E-02**	**kg(PO4)3- eq.**	1.71E-02	**80%**	1.27E-03	**6%**	3.75E-04	**2%**	0.00E+00	**0%**	2.57E-03	**12%**
Photochemical ozone formation	**1.23E-02**	**kgC2H4 eq.**	1.18E-02	**96%**	3.91E-04	**3%**	2.93E-05	**< 1%**	0.00E+00	**0%**	1.18E-04	**< 1%**
Depletion of abiotic resources - elements	**2.56E-04**	**kgSb eq.**	2.56E-04	**100%**	4.90E-08	**< 1%**	3.88E-09	**< 1%**	0.00E+00	**0%**	1.64E-08	**< 1%**
Total use of primary energy	**1.63E+03**	**MJ**	1.61E+03	**99%**	1.64E+01	**1%**	1.13E+00	**< 1%**	0.00E+00	**0%**	4.44E+00	**< 1%**
Net use of fresh water	**4.54E-01**	**m3**	4.53E-01	**100%**	1.10E-04	**< 1%**	2.73E-05	**< 1%**	0.00E+00	**0%**	1.14E-04	**< 1%**
Depletion of abiotic resources - fossil fuels	**4.36E+02**	**MJ**	4.12E+02	**95%**	1.72E+01	**4%**	1.22E+00	**< 1%**	0.00E+00	**0%**	4.95E+00	**1%**
Water pollution	**3.72E+03**	**m3**	3.46E+03	**93%**	2.02E+02	**5%**	1.34E+01	**< 1%**	0.00E+00	**0%**	5.26E+01	**1%**
Air pollution	**4.84E+03**	**m3**	4.75E+03	**98%**	5.02E+01	**1%**	9.38E+00	**< 1%**	0.00E+00	**0%**	2.30E+01	**< 1%**

The values of the 27 impacts defined in the PCR-ed3-EN-2015 04 02 are available in the digital database of pep-ecopassport.org website.

% ENVIRONMENTAL IMPACT PER LIFE CYCLE STAGE OF REFERENCE PRODUCT



For products covered by the PEP other than the reference product, the environmental impacts of each phase of the lifecycle are calculated with:

	Manufacturing	Distribution	Installation	Use	End of life
EFB6S	1.8	1.4	1.2	Same Values	1.7
EFB8S	2.2	1.5	1.2		2.0
EFB10S	2.2	1.5	1.2		2.0
EFB45S-OG	1.2	1.0	1.4		1.0
EFB6S-OG	1.9	1.3	1.7		1.5
EFB8S-OG	2.3	1.4	1.7		1.7
EFB10S-OG	2.2	1.3	1.7		1.6

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Product Environmental Profile

Wiremold®Evolution™ Series Floor Boxes

Registration N°: LGRP-00597-V01.01-EN	Drafting rules: PEP-PCR-ed3-EN-2015 04 02 Supplemented by PSR0003-ed1.1-EN-2015_10_16
Verifier accreditation N°: VH02	Information and reference documents : **www.pep-ecopassport.org**
Date of issue: 12-2017	Validity period: 5 years
Independent verification of the declaration and data, in compliance with ISO 14025:2010 Internal ☒ External ☐	
The PCR review was conducted by a panel of experts chaired by Philippe Osset (SOLINNEN)	
PEP are compliant with XP C08-100-1: 2014 The elements of the present PEP cannot be compared with elements from another program	
Document in compliance with ISO 14025 : 2010: «Environmental labels and declarations. Type III environmental declarations»	
Environmental data in alignment with EN 15804 : 2012 + A1 : 2013	

NO. 711 - OXYGEN - GREEN
NO. 712 - WAGD - PURPLE
NO. 713 - VACUUM - WHITE

(https://www.ohiomedical.com/)



D.I.S.S. HANDTIGHT ADAPTER

Product Order Number: DA - 15UO - M2 - DH

DISS Hand-tight female fittings are available in a wide variety of gases and configurations including 1/8", 1/4" MNPT & FNPT (Male National Pipe Thread & Female National Pipe Thread) as well as, 1/4" and 5/16" Hose barbs and much more. Try out our part configurator to see more options.

Product Specifications

Model: Amvex D.I.S.S. Handtight Adapters

Air Type: Oxygen

Fitting Type: 1/8" NPT Male

Related Documents

NO. 711 - OXYGEN - GREEN
NO. 712 - WAGD - PURPLE
NO. 713 - VACUUM - WHITE

(https://www.ohiomedical.com/)



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Model: Amvex D.I.S.S. Handtight Adapters

Air Type: Oxygen

Fitting Type: 1/8" NPT Male

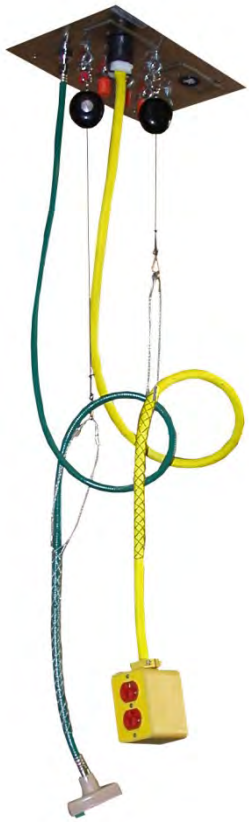
Related Documents

HSI Hospital Systems, Inc.

MedGas Hose & Electrical/Data Cord Drops

The **Hose/Cord Drop** will accommodate a mixture of various medical gas and vacuum hose, electrical and data cord drops.





Features

- Welded steel construction back box
- Cover plate is stainless steel with a brushed finish
- Exposed cable reels
- Adjustable cable retractor to pull hose up out of the way when not in use
- Strain relief anchor point for each device

Medical Gas Hose Drop

- DISS fitting at proximal end
- Conductive, color coded hose, 6ft
- Kellems strain relief grip
- Medical gas coupler at distal end. Available in DISS, Chemetron, Puritan-Bennett, Ohmeda and Oxequip. Also available in HTM-2022 or DIN

Electrical Cord Drop

- Twist-lock, Hospital Grade plug at top end
- Heavy duty, SJTOW cord, 6ft
- Kellems strain relief grip
- Electrical Receptacle(s), Hospital Grade, Duplex, 20A, mounted in a NEoTEX non-conductive box

Data Cord Drop

- ¾", 1g, Face plate at top end
- Flex, Plastic Conduit, 6ft
- Kellems strain relief grip
- 4 port module insert and face plate

Hose and Cord drops can be added or removed to suit the requirement of the room. Each drop is considered an individual item unless otherwise noted. Standard back box is 8" x 8" and can accommodate up to 4 services. Larger boxes are available when required. Refer to part numbers and descriptions on page 2.

Hospital Systems, Inc.—750 Garcia Ave—Pittsburg, CA 94565
phone: 925.427.7800
fax: 925.427.0800
www.HSIheadwalls.com

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Ordering Information

Medical Gas Hose Drops are available with any configuration of the following medical gas outlets [Up to 8 services] Please specify Outlet Type at time of purchase.

- Oxygen
- Medical Air
- Vacuum'
- EVAC [WAGE]
- N2O
- Co2

Medical Gas Hose Drops	**Part Number**
Medical Gas, Single, Vacuum	299055-VAC
Medical Gas, Single, Oxygen	299056-OXY
Medical Gas, Single, Medical Air	299057-AIR
Medical Gas, Single, Nitrous Oxide	299058-N2O
Medical Gas, Single, Evacuation (WAGD)	299059-EVAC
Medical Gas, Single, Carbon Dioxide	299060-CO2
Medical Gas, Single. Nitrogen	299061-N2
Electrical Cord Drops	**Part Number**
Single Drop w/ 1 Duplex, Emergency, Red	299098
Single Drop w/ 1 Duplex, Normal, Ivory	299098-I
Single Drop w/ 1 Duplex, Normal, White	299098-W
Single Drop w/ 2 Duplex, Emergency, Red	299099
Single Drop w/ 2 Duplex, Normal, Ivory	299099-I
Single Drop w/ 2 Duplex, Normal, White	299099-W
Data Cord Drop	
Single Drop, Data with 4 Port Module Insert	299100

Boxes and Drops are available as individual items or as an assembly.

Available with US Plug, British Standard and DIN

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www.HSIheadwalls.com

NO. 711 - OXYGEN - GREEN
NO. 712 - WAGD - PURPLE
NO. 713 - VACUUM - WHITE

(https://www.ohiomedical.com/)



D.I.S.S. HANDTIGHT ADAPTER

Product Order Number: DA - 15UO - M2 - DH

DISS Hand-tight female fittings are available in a wide variety of gases and configurations including 1/8", 1/4" MNPT & FNPT (Male National Pipe Thread & Female National Pipe Thread) as well as, 1/4" and 5/16" Hose barbs and much more. Try out our part configurator to see more options.

Product Specifications

Model: Amvex D.I.S.S. Handtight Adapters

Air Type: Oxygen

Fitting Type: 1/8" NPT Male

Related Documents

HSI Hospital Systems, Inc.

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Air Type: Oxygen

Fitting Type: 1/8" NPT Male

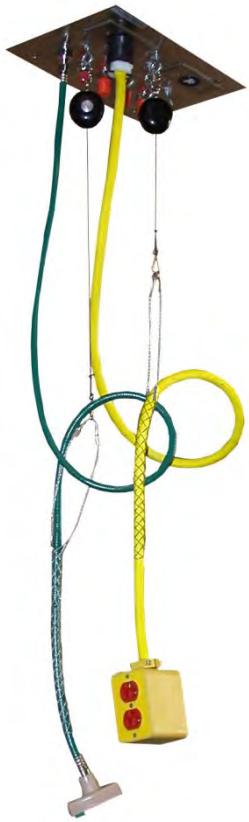
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Available with US Plug, British Standard and DIN

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NO. 714 RACK, CYLINDER

Large Dual Oxygen Cylinder Wall Mount

Part Number: CR-WM200



Dual Large Cylinder Wall Mount

Your Price: $55.00

- Easy mounting on any flat wall surface **hardware not included
- Meets OSHA requirements
- Black powder coat finish
- Durable steel construction
- Dimensions: 20.5" Wide x 1.5" Tall x 7.75" Deep
- For Large Dual Cylinders up to 9" Diameter
- Comes with Heavy duty holding chain

VETROSON® OXY-GEN™ SYSTEMS

NO. 716 GENERATOR, OXYGEN

SUMMIT HILL LABORATORIES
Tinton Falls Business Center
One Sheila Drive
Tinton Falls, New Jersey 07724

Phone: (732) 933-0800
Fax: (732) 933-0055
E-Mail: sales@summithilllaboratories.com
www.summithilllaboratories.com

Summit Hill Laboratories offers Two VETROSON® OXY-GEN™ SYSTEMS Supplying oxygen for the veterinary hospital at a low cost per LPM.

Model	Delivers	Tailor Made for:
VGS2015 120V	20 PSI, 15 LPM	Anesthesia machines and ICU units
VGS5015 230V	50 PSI, 15 LPM	.....Above plus a ventilator

Knowing LPM is the way to size up which VETROSON® OXY-GEN™ SYSTEM is right for you. How can you do this? It's simple. An anesthesia machine uses about 1 LPM, fill a Snyder ICU or a Cage Door ICU at 10 LPM, maintain at 5 LPM. Both can run on a 20 PSI unit.
A ventilator averages 4 LPM depending on tidal volume. It requires 50 PSI.
Add the total LPM required by the oxygen consuming equipment at peak loads. Then select the proper model.



Patent Pending

SAVE MONEY ON YOUR OXYGEN BILLS....
COSTS CENTS PER DAY VS. DOLLARS PER DAY FOR OXYGEN
RUN YOUR ICU UNIT ALL DAY LONG – USE IT FOR MORE PATIENTS
SUMMIT HILL LABORATORIES IS VERY KNOWLEDGEABLE REGARDING THE OXYGEN NEEDS OF THE VETERINARY PROFESSION

SAVE MONEY ON YOUR OXYGEN BILLS.....
USING THE VETROSON® OXY-GEN™ SYSTEMS!
(COSTS PENNIES PER DAY VS. DOLLARS PER DAY FOR OXYGEN)

What is it?
Each Oxy-Gen™ System is a combination of a generator and receiver tank with interfaces that connect the generator to the receiver tank and the receiver tank to the central oxygen system manifold. The system can produce a minimum of 14,000 liters of oxygen in a 24 hour period delivering either 20 or 50 PSI at a flow rate of 15 LPM.

What isn't it?
It is **not** a concentrator. Concentrators are generally used in a 1 to 1 situation delivering up to 5 PSI, which is not sufficient pressure to connect to a manifold and handle multiple machine requirements. It is **not** used to fill oxygen "H" tanks.

Why have continuous flow ?
It is necessary to have all the VETROSON® components to insure adequate flow and pressure to handle a veterinary hospital's total oxygen requirements-anesthesia machines, ventilators, a Snyder ICU or Oxygen Cage Door units. With continuous flow one is assured accuracy in LPM delivery.

Why a Receiver Tank?
The receiver tank holds 30 liters of oxygen. The receiver tank is designed to handle multiple flushes for an oxygen purge during anesthesia and filling of ICU's without throwing the system off balance. This tank is not for storage. It is continually releasing a small amount of oxygen.

Calculating Requirements
Use 1 LPM for each anesthesia machine in use, 10 LPM to fill a Snyder ICU or an Oxygen Cage Door- 5 LPM to maintain it, and 4 LPM for each ventilator. If the practice has a ventilator, a 50 PSI unit must be purchased. These figures vary slightly per individual animal's anesthesia requirements. Match your LPM requirements with LPM supplied. Leave a little room for an additional anesthesia machine or an ICU unit. The cost per LPM will be the lowest for any oxygen generator available today.

What are the electrical requirements, size, and weight of the units?

Model	Delivers	Volts	Starting Amps	Running Amps	Power Watts	Weight* (LBS.)	Depth (Inches)	Width (Inches)	Height (Inches)
VGS2015	20 PSI, 15 LPM	115	20	8	920	145	17	25	38
VGS5015	50 PSI, 15 LPM	230	15	7	1610	175	17	25	38
Weights shown are for the generator only. The Receiver Tank weighs an additional 34#. The shipping weight will be more due to the box, packing material and pallet.									

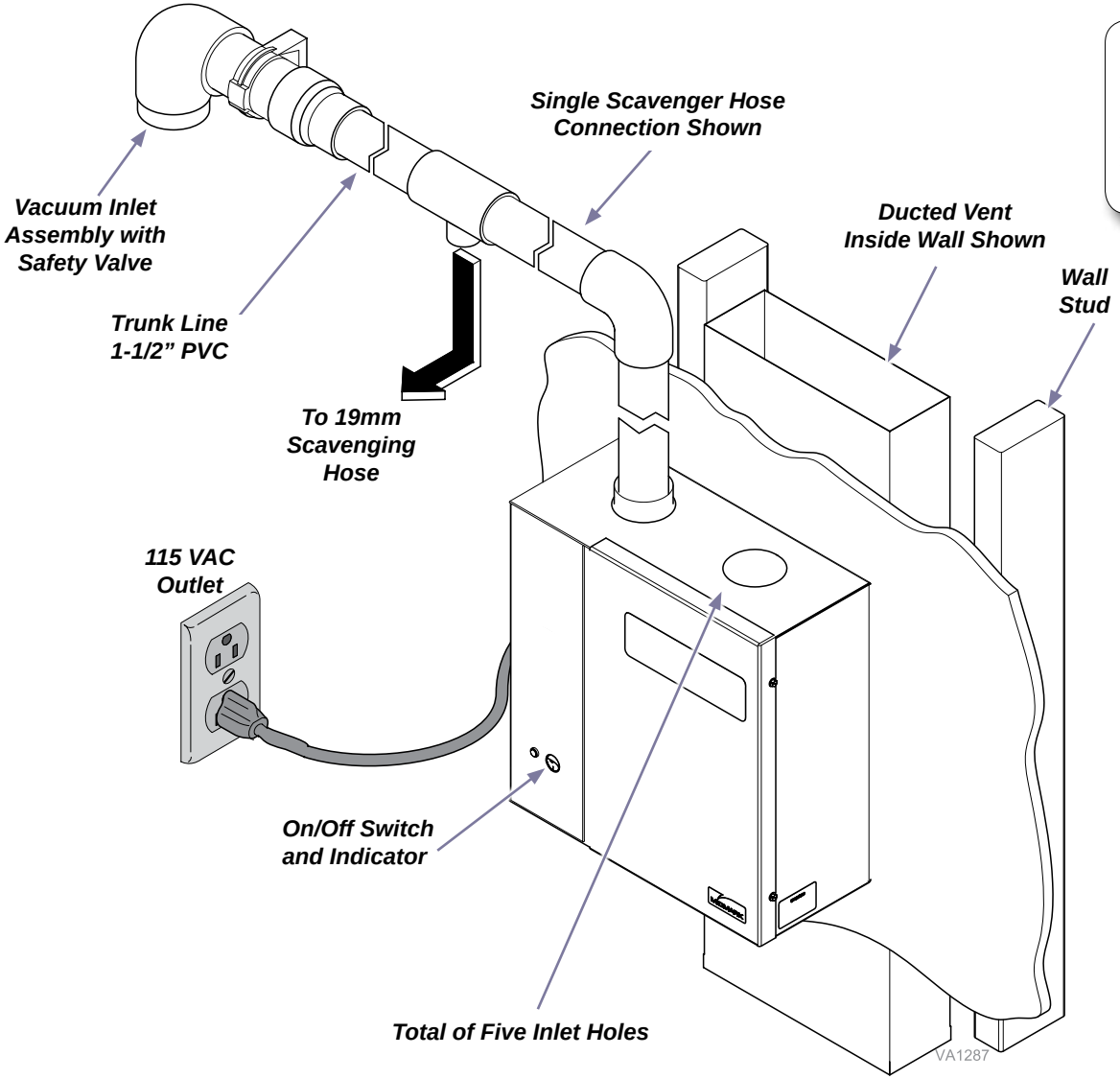
Installation
Easy to install. Attach the short hose on the receiver tank to the generator and the long hose to the oxygen system manifold. Plug the electrical cord into a nearby dedicated receptacle.

Back Up
Utilize your present system as back up in the event of electrical failure. In this instance just turn the Oxy-Gen™ System off and the O2 tank on.

Matrx™ Central Scavenger
Waste Anesthetic Gas Disposal System Installation

Applies to Models:
40162800

NO. 717 GAS, SCAVENGING, WAGD SYSTEM



WARNING
Equipment is not suitable for use in the presence of a flammable anesthetic mixture. Make certain that the installation does not interfere with wiring, gas or water pipes inside the walls when mounting the scavenger unit. A qualified contractor may be required to perform these procedures.

Equipment Alert
Trunk line Inlet holes are shown with plastic caps. There are two more on back and one on bottom. All unused trunk line Inlet holes must be capped. Vacuum Inlet Assembly with Safety Valve must be installed facing downward.

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Important Information

Intended Use

Operation of all Midmark Waste Anesthetic Gas Disposal equipment is restricted to use in veterinary procedures.

Disposal of Equipment

At the end of product life, the unit(s), accessories, and other consumable goods may become contaminated from normal use. Consult local codes and ordinances for proper disposal of equipment, and other consumable goods.

Transportation / Storage Conditions

Ambient Temperature Range:.....32°F to 104°F (0°C to 40°C)
Relative Humidity.....10% to 90% (non condensing)
Atmospheric Pressure .....500hPa to 1060hPa (0.49atm to 1.05atm)

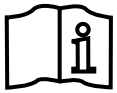

Proper Shipping Orientation



Maximum stacking height
(Do not stack)


Fragile


Keep Dry


Consult User Guide


Do Not Tumble


Handle With Care

Safety Symbols


DANGER
Indicates an imminently hazardous situation which <u>will</u> result in serious or fatal injury if not avoided. This symbol is used only the most extreme conditions.


WARNING
Indicates a potentially hazardous situation which could result in serious injury if not avoided.


Caution
Indicates a potentially hazardous situation which <u>may</u> result in minor or moderate injury if not avoided. It may also be used to alert against unsafe practices


Equipment Alert
Indicates a potentially hazardous situation which could result in equipment damage if not avoided.

Note
Amplifies a procedure, practice, or condition.

Central Scavenger Site Requirements

Plumbing	***Trunk Line***	
	Type	PVC Sch 40 Pipe
	Size	1-1/2” (Installer Supplied)
	Termination	Vacuum Inlet Assembly with Room Air Safety Valve Facing Downwards (included)
	Scavenger Connection	Secure PVC Pipe to Inlet Hole with O-ring and Lock Nut (included)
	Maximum Length	100’ Pipe, 8 Elbows
	Max Trunk Lines	3 Trunk Lines for Each Central Scavenger Unit with up to 4 Scavenging Hose Connections *(Note: Only 3 Scavenging Hose Connections in Canada)* *(40’ Scavenging Hose included)*
	Mounting Options	PVC can be mounted to Wall or Ceiling *(can be concealed inside wall or above ceiling)*
Vent	**Type**	Direct or Ducted
	Size	Maximum length for 3-1/4 x 10in. ducting is 40 feet with no more than one 90° bend. Maximum length for 5 in. diameter round ducting is 30 feet with no more than one 90° bend.
	Template	Paper Template Provided
Electrical	**Boxes**	
	Supply	115 VAC Outlet
	Power Cord Length	6’
Environmental	**Temperature**	
	Equipment Room Ambient Temperature	32° to 104° F 0° to 40° C

Installation Kit Components

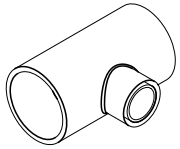
Installation Preparation...
Choose a location to install the Scavenger Unit within 6 feet of a 115 VAC outlet.

Note: Use the Cutout Template provided in the Installation Kit to mark the appropriate cutouts for the required installation configuration (Direct Wall or Ducted Vent) and optional rear Trunk Inlet Line holes.

Cutout Template (1)



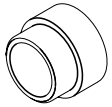
1-1/2" x 1 1/2" x 3/4" NPT RDC Tee (4)



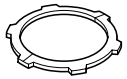
Auto-close 19 mm Hose Fitting (4)



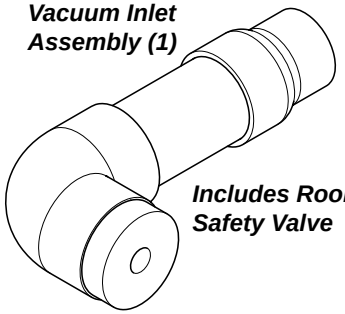
Male Adapter 1-1/2 in. PVC (1)



Lock Nut Conduit 1-1/2 in. (1)

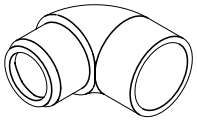


Vacuum Inlet Assembly (1)



Includes Room Air Safety Valve

Street Elbow PVC 1-1/2 in. (4)



O-Ring (1)



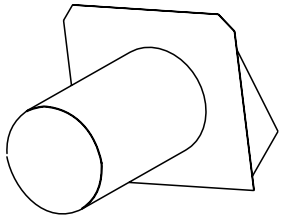
Flanged Lock Nut (2)



19 mm Male Fitting x 3/4" NPT for RDC Tees (4)



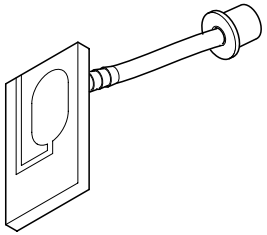
Outside Vent with screen (1)



40 Ft. of 19mm Magenta Scavenging Hose



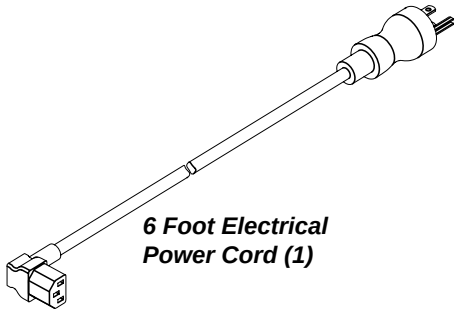
Manometer with Tubing and 1/4" Adapter (1)



19mm Adapter (4)



6 Foot Electrical Power Cord (1)

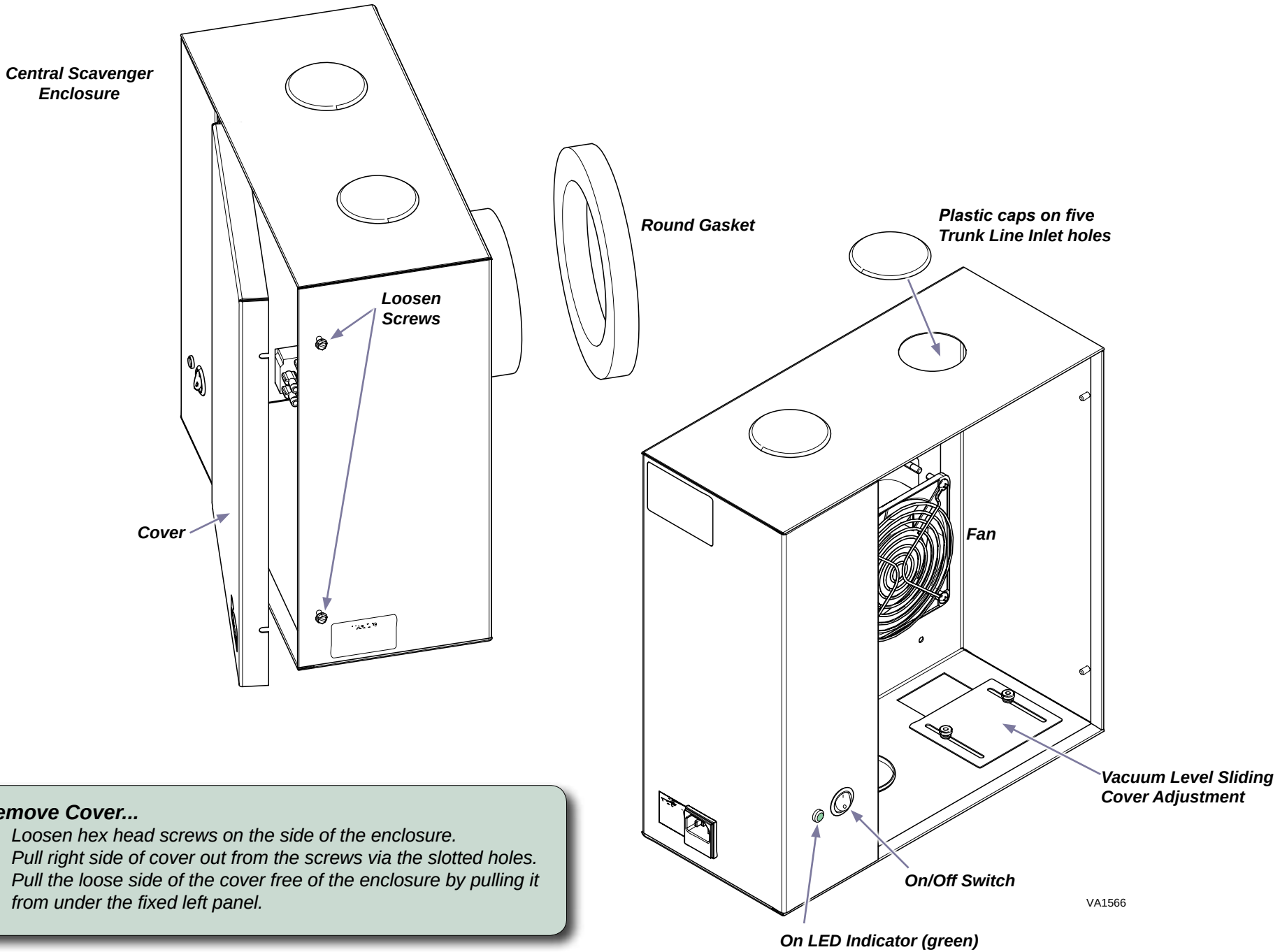


19mm Female Fitting x 3/4" NPT (4)



VA1288

Central Scavenger Unit



Remove Cover...

A) Loosen hex head screws on the side of the enclosure.
B) Pull right side of cover out from the screws via the slotted holes.
C) Pull the loose side of the cover free of the enclosure by pulling it from under the fixed left panel.

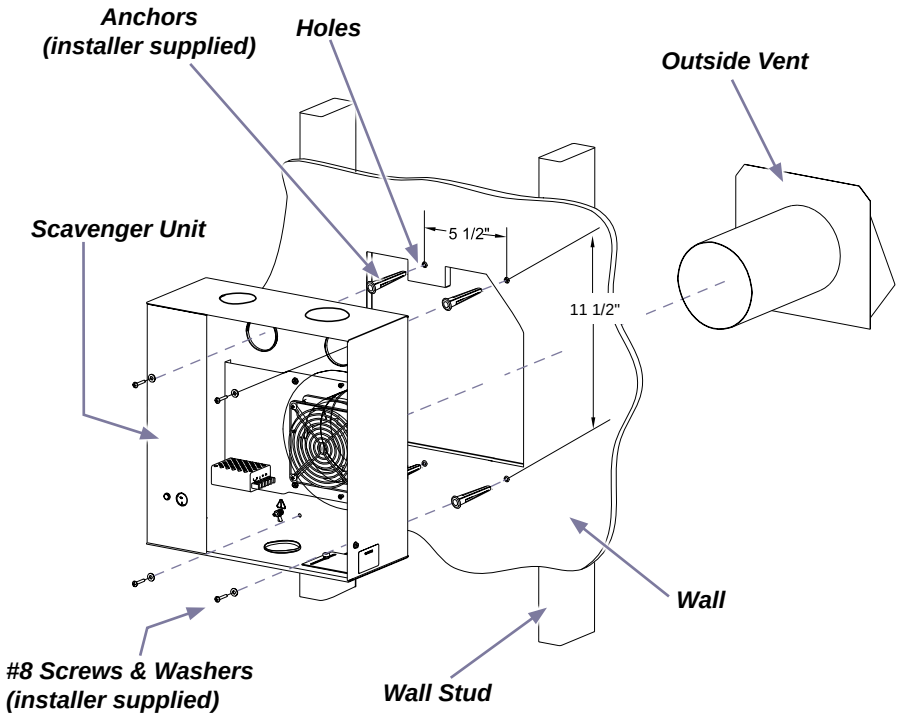
Vent Installation

Install direct wall or ducted vent.

Note: Use the paper template provided to properly locate the anchor and vent holes on the wall surface before drilling and mounting the unit to the wall.

Direct Wall Vent Installation

Mount the scavenger unit to the wall.



Mount the vent to an outside wall and weatherproof as necessary.
Trim vent duct length to keep vent flush with outside wall.

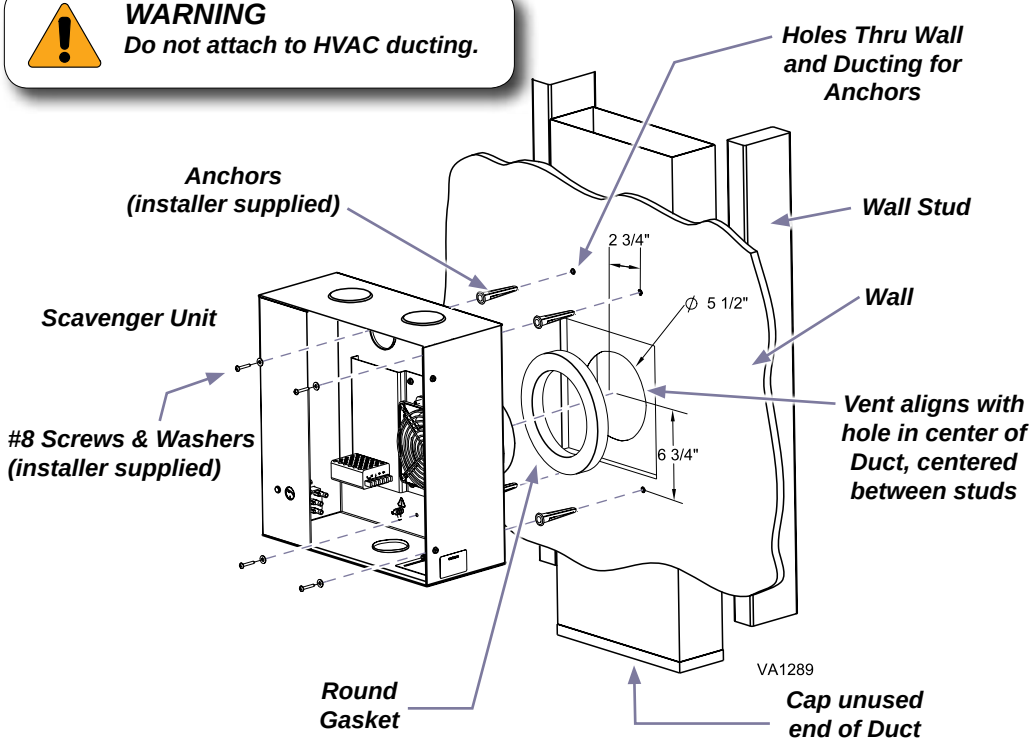
Ducted Vent Installation

Use 3-1/4 x 10 in. rectangular duct installed thru an interior wall to vent scavenger unit to the roof or an outside wall.

A) Secure scavenger unit to wall anchors.
B) Press scavenger unit thru wall and into duct.
C) Use four #8 screws and flat washers to draw together.

Note: Round, 5 in. diameter ducting could also be used to vent the scavenging unit thru the wall.

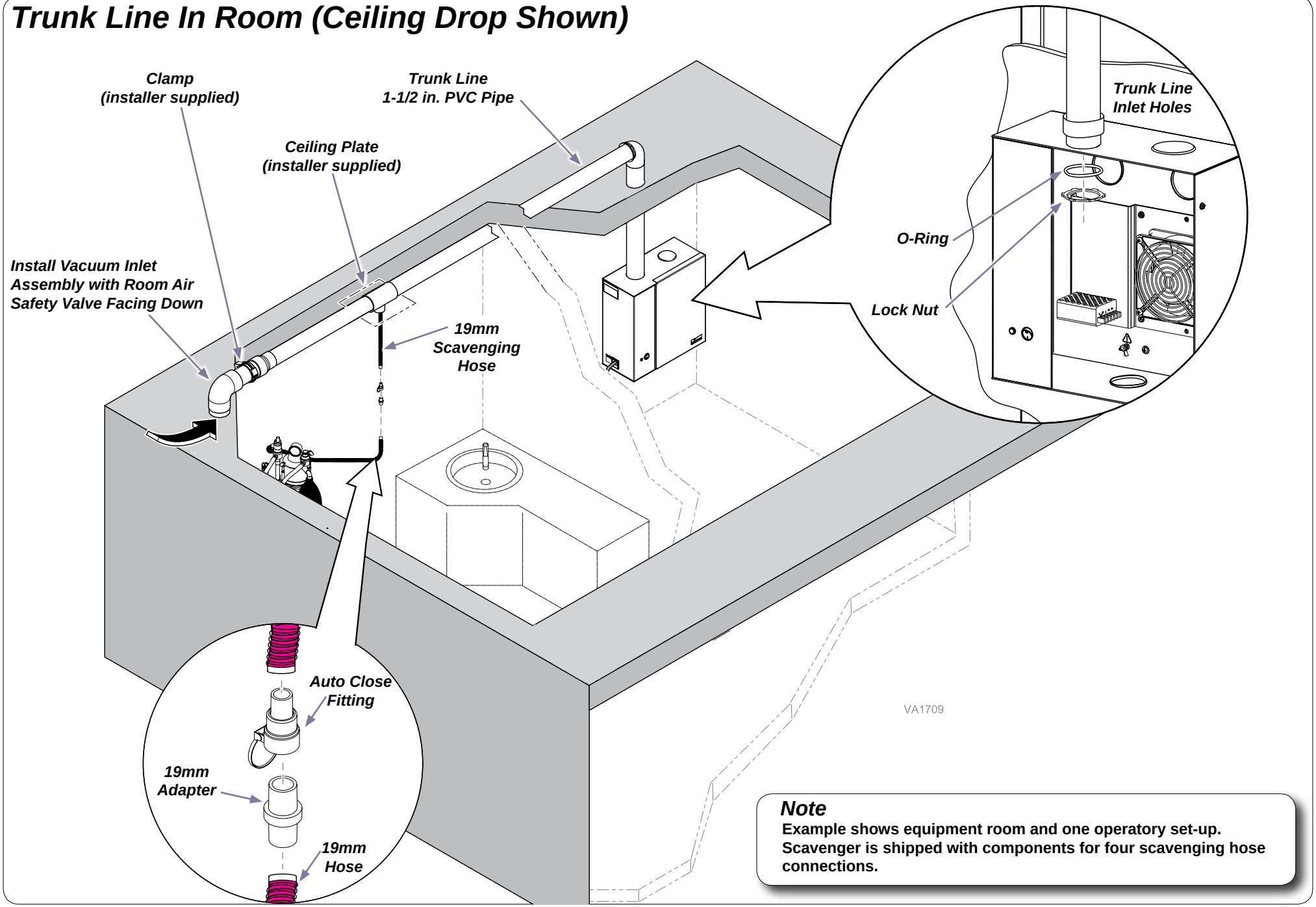
WARNING
Do not attach to HVAC ducting.



Mount the vent to an outside wall and weatherproof as necessary.
Trim vent duct length to keep vent flush with an outside wall.
Use a vent designed for roof applications if the vent terminates on a roof.

Install trunk line in ceiling or wall (wall shown on next page).

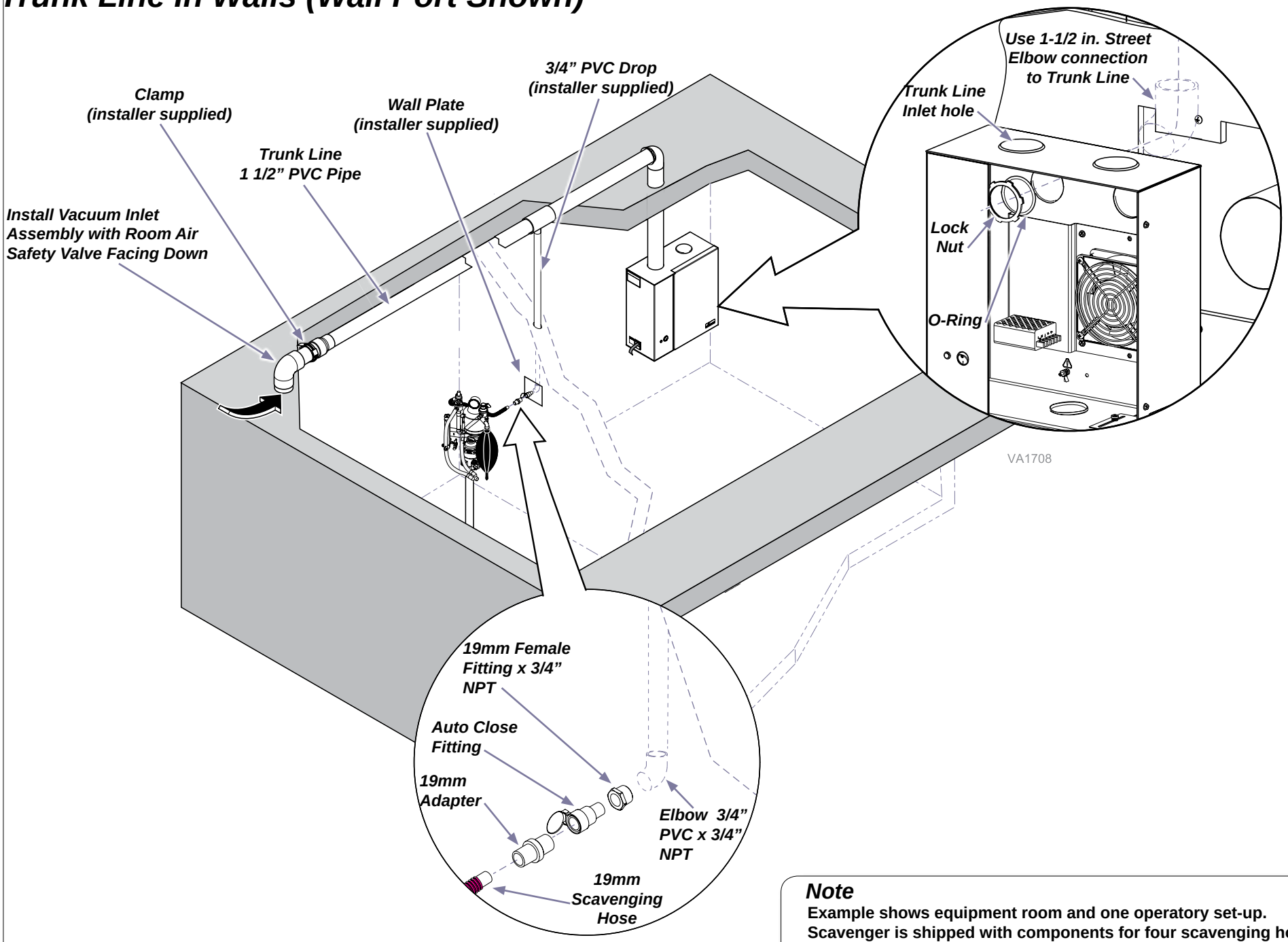
Trunk Line In Room (Ceiling Drop Shown)



Note

Example shows equipment room and one operatory set-up. Scavenger is shipped with components for four scavenging hose connections.

Trunk Line In Walls (Wall Port Shown)



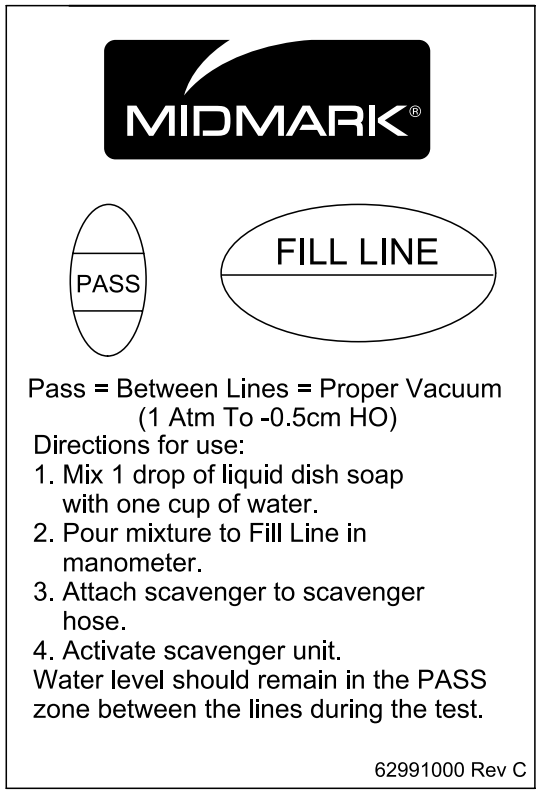
Note

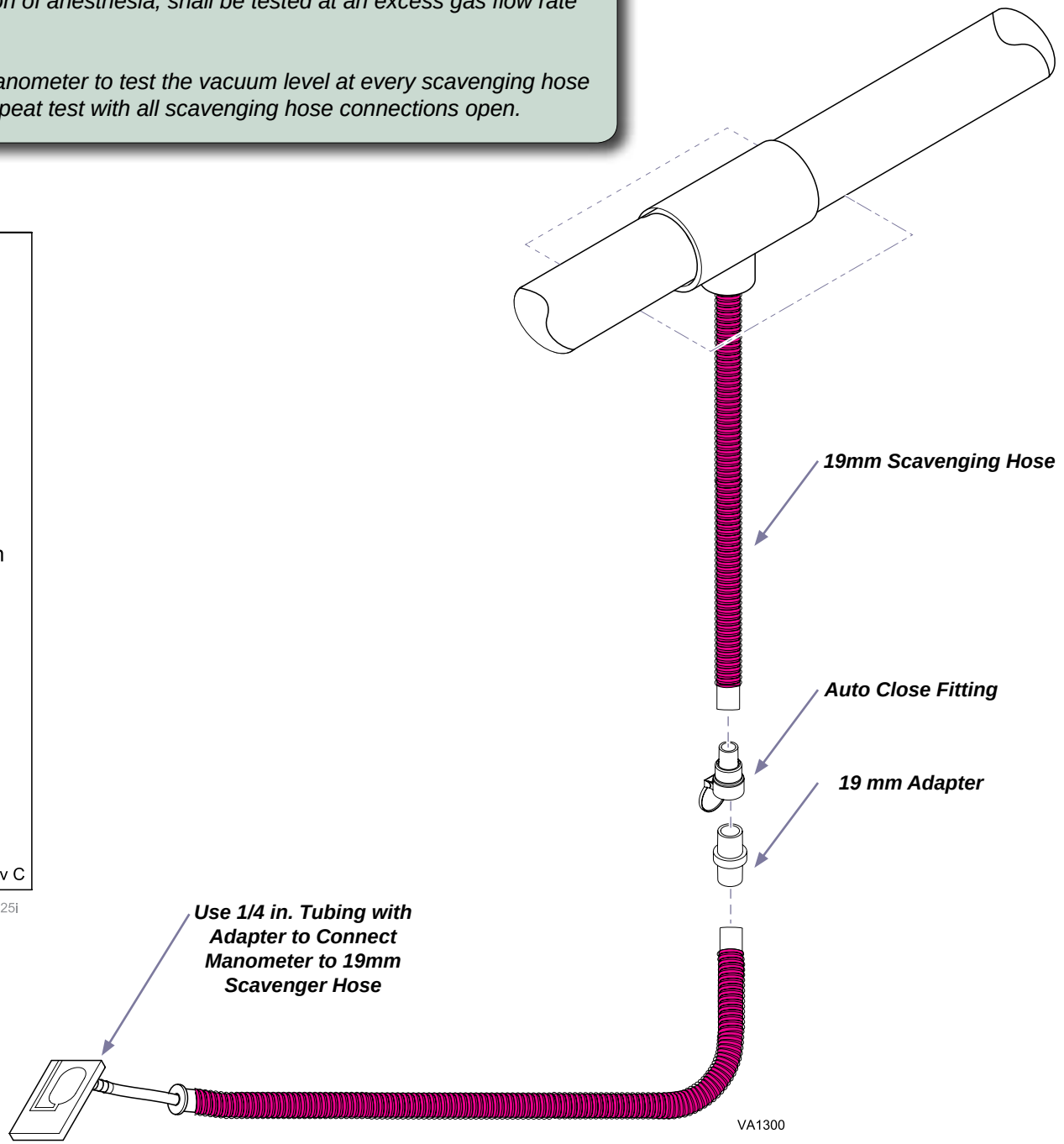
Example shows equipment room and one operatory set-up. Scavenger is shipped with components for four scavenging hose connections.

Testing the Vacuum Level

The maximum allowable negative pressure in the central scavenger system, immediately downstream of the gas collecting assembly during normal administration of anesthesia, shall be tested at an excess gas flow rate of zero and shall be 50 Pa (0.5 cm-H_2O) or less.

Follow the instructions printed on the front of the manometer to test the vacuum level at every scavenging hose throughout the entire central scavenger system. Repeat test with all scavenging hose connections open.





model 7610

AXION® MSR Sink Mount Eye/Face Wash

FEATURES & BENEFITS

VALVE

Units pull-down to activate design produces a full continuous flow of water and provides an easy start to the irrigation process.

SAFETY

8" x 10-3/4" (20.3 x 27.3 cm) universal emergency sign make the unit easily detected in an emergency. Test card to record weekly checks helps maintain the unit's best working quality.

MOUNTING

Unit mounts at the back of sink, or on a wall so when the unit is not in use, it is as far out of the way as possible.

EYE/FACE WASH

AXION® MSR eye/face wash head (patent pending) uses an inverted directional laminar flow to sweep contaminants away from the vulnerable nasal cavity.



OPTIONS

- ☐ Thermostatic Mixing Valve: Model 9201EW AXION® Emergency Tempering Valve thermostatically mixes hot and cold water to provide a safe fluid supply for a single emergency eye/face wash, with a flow rate of 10 gpm (38.8 L).
- ☐ Emergency Alarm System : Model 9001.5, 1/2" 120 VAC emergency alarm and light system. Buzzer and flashing light are activated by a 1/2" IPS double pole, double throw flow switch.
- ☐ Thermostatic Mixing Valve: Model 9201EFE AXION® Emergency Tempering Valve thermostatically mixes hot and cold water to provide a safe fluid supply for a single emergency eye/face wash, with a flow rate of 12 gpm (38.8 L).
- ☐ Thermostatic Mixing Valve: Model TWBS.EWE Lead-free AXION® Emergency Tempering Valve thermostatically mixes hot and cold water to provide a safe fluid supply for emergency eyewash equipment, with a flow rate of 12 gpm (45.4 L).

For more information, visit www.hawsco.com or call (888) 640-4297.

SPECIFICATIONS

Model 7610 barrier-free sink/counter top or wall mount eye/face wash with AXION® MSR eye/face wash head with inverted directional laminar flow for Zero Vertical Velocity™ supplied by an integral 4.2 gpm flow control. For sinks this model will not fit over, the 13 inch drop-down length of the Haws model 7610S fits nicely into most standard sinks. Also included; polished chrome brass single action pull-down valve body, wheelchair accessibility, universal sign, and 1/2" O.D. (1.3 cm) slip joint inlet.

APPLICATIONS

Where safety is of the utmost importance and the eyes of any person may be exposed to injurious or corrosive materials, suitable facilities for quick flushing and cleansing of the eyes must be provided within the work area for immediate emergency use. When installed properly, the stable construction, counter top design of the 7610 is space efficient with its rear mounting location and can accommodate barrier-free access. Model is certified by CSA to meet the ANSI Z358.1 Standard for Emergency Eyewash and Shower Equipment.

DISCLAIMER: Continued product improvements make specifications subject to change without notice. Check www.hawsco.com for the latest product information and updates.

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NOTES:

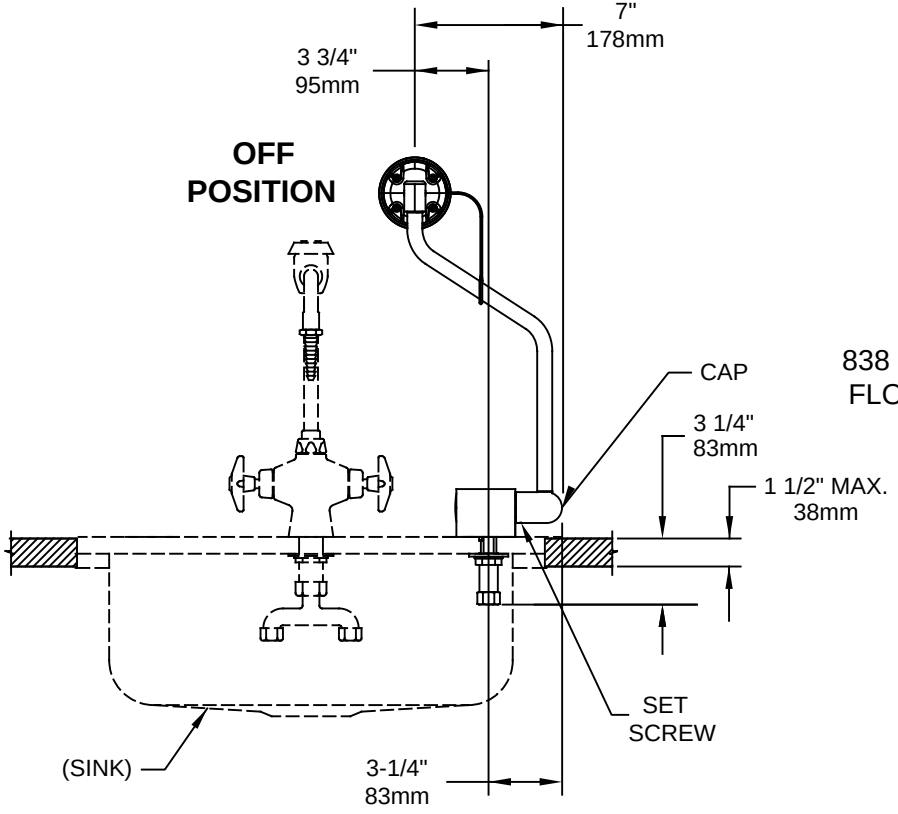
1. WHEN INSTALLING THIS UNIT, LOCAL , STATE, OR FEDERAL CODES SHOULD BE ADHERED TO FOR INSTALLATION DIMENSIONS (LOCATIONS), WASTE AND SUPPLY REQUIREMENTS OTHER THAN SHOWN.
2. TO COMPLY WITH ANSI Z358.1-2014 FOR EMERGENCY EYEWASH OR EYE/FACE WASH: EYEWASH OR EYE/FACE WASH SHALL BE POSITIONED SUCH THAT FLUSHING FLUID PATTERN IS NOT LESS THAN 33" (838mm), NO GREATER THAN 53" (1346mm) FROM SURFACE ON WHICH USER STANDS, AND 6.0" (153mm) MINIMUM FROM WALL OR NEAREST OBSTRUCTION.

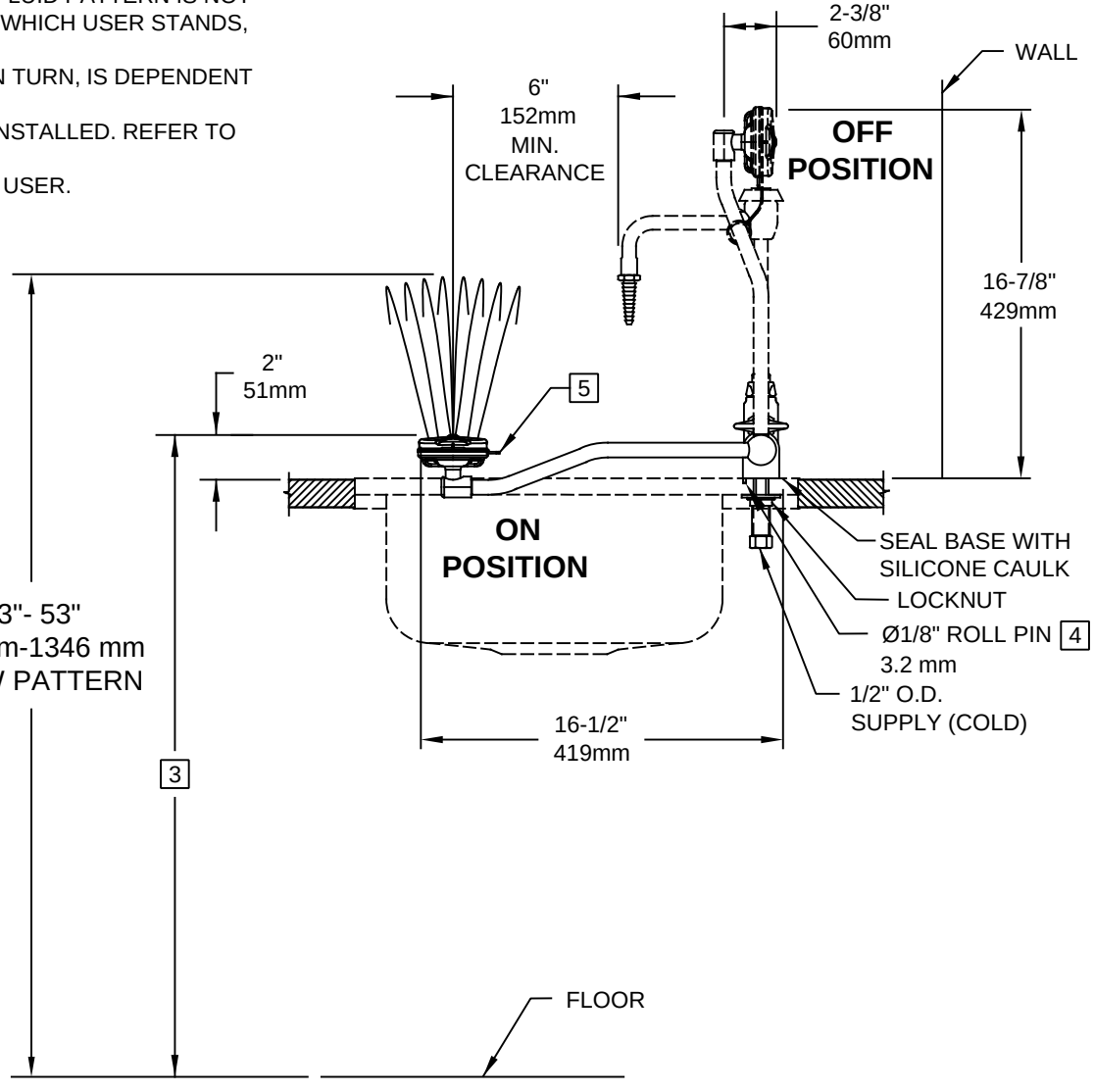
[3] HEIGHT IS DETERMINED BY WATER FLOW PATTERN HEIGHT SHOWN, WHICH IN TURN, IS DEPENDENT ON IN-LINE SUPPLY PRESSURE.

[4] DRILL ONE Ø7/8" [22mm] HOLE AND TWO Ø5/32" HOLES WHERE UNIT IS TO BE INSTALLED. REFER TO MOUNTING HOLE DETAIL ON SHEET 2 OF 3 OR 3 OF 3.

[5] ASSEMBLE EYE/FACE WASH TO ARM; ORIENT TAB ON ASSEMBLY AWAY FROM USER.

6. DIMENSIONS MAY VARY BY ±1/2" (13 mm).





7610 DECK MOUNTED CONFIGURATION

(SEE SHEET 3 FOR 7610 DECK MOUNTED DETAIL)

(SEE SHEET 2 FOR 7610 WALL MOUNTED CONFIGURATION)

Haws®
1455 KLEPPE LANE
SPARKS, NEVADA 89431
(775) 359-4712 FAX (775) 359-7424
E-MAIL: HAWS@HAWSCO.COM
WEBSITE: WWW.HAWSCO.COM

ECN NO.	REVISED PER	BY:
2066	ECN: 5342	JP
DRAWN:	DATE:	CHK'D.:
JF	10/96	FV
APPROVED:	DATE:	
MJ	09/12/18	

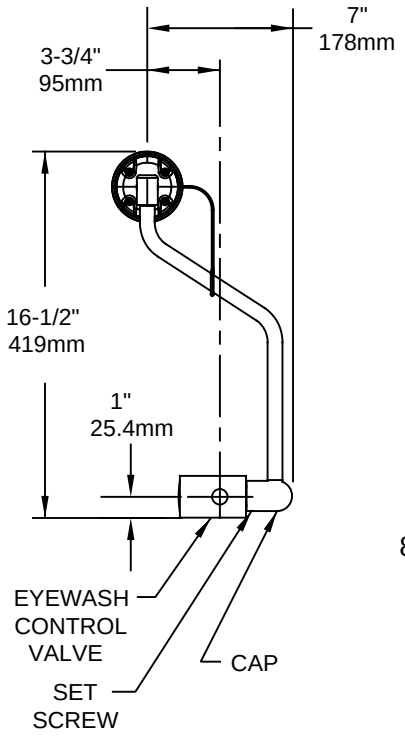
MODEL(S)
7610
PULLDOWN EYE/FACE WASH

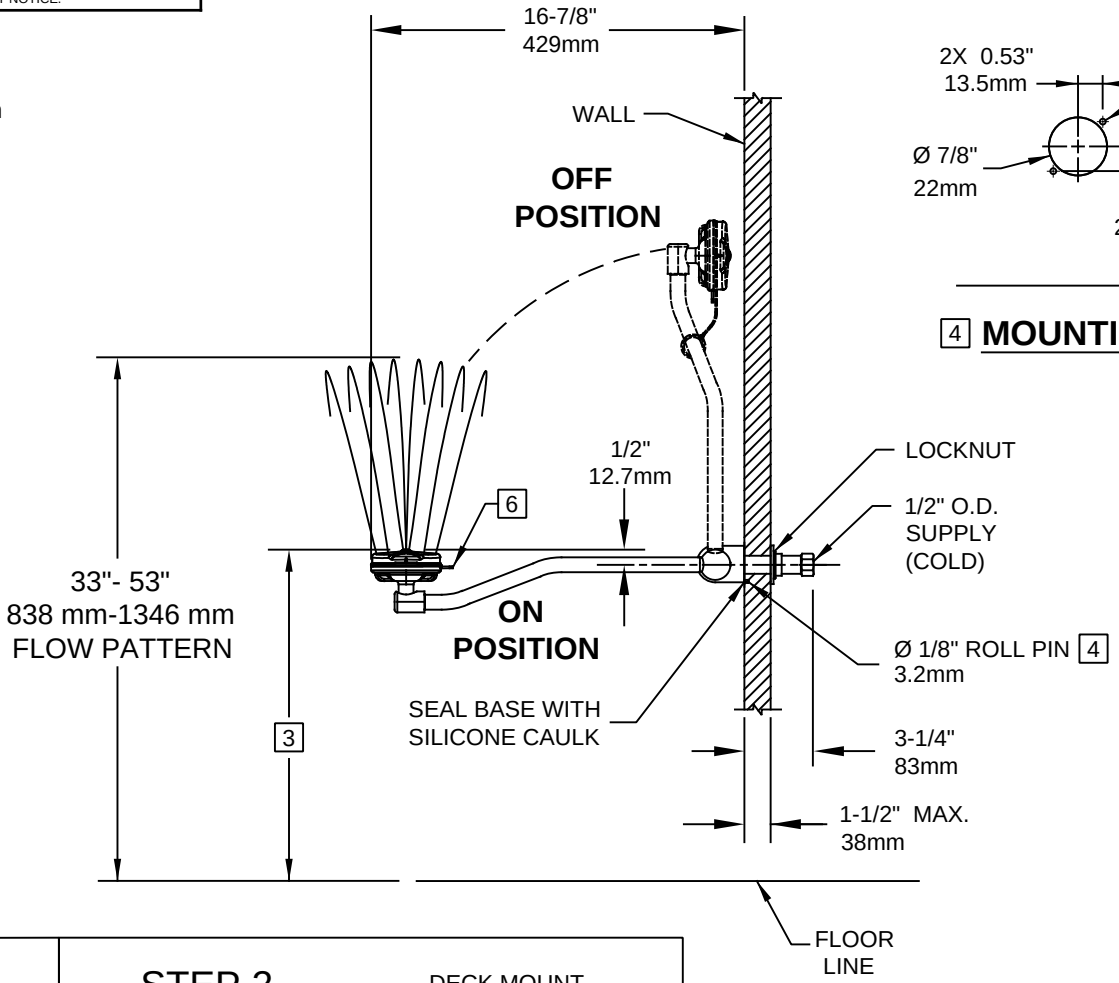
PART NUMBER 0002080067.D
REVISION 19

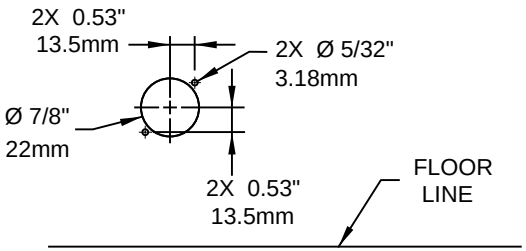
SCALE: 1:1 | DRAWING TYPE: INSTALLATION | SIZE: A | SHEET 1 OF 3

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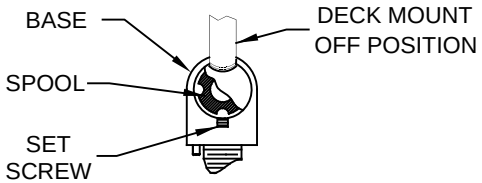




4 MOUNTING HOLE DETAIL

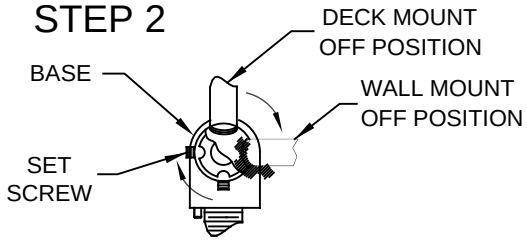
CONVERT TO WALL MOUNT CONFIGURATION

STEP 1



UNIT IS SHIPPED IN DECK MOUNT CONFIG-URATION. TO CONVERT TO WALL MOUNT CONFIGURATION, POSITION ARM IN "DECK MOUNT OFF POSITION" AS ABOVE.

STEP 2



NOTE DEPTH OF SET SCREW PRIOR TO LOOSENING. LOOSEN SET SCREW AND ROTATE EYEWASH ARM 90°CLOCKWISE (AS SHOWN) WHILE MAKING SURE TO NOT ROTATE THE SPOOL. RE-TIGHTEN SET SCREW IN NEW POSITION. ENSURE SET SCREW IS PROPERLY SEATED IN INDENT. ENSURE SET SCREW IS TIGHT AND AT IT'S ORIGINAL DEPTH. ENSURE CORRECT ARM ORIENTATION BEFORE MOUNTING TO WALL. REFERENCE DRAWINGS AT RIGHT.

7610 WALL MOUNTED CONFIGURATION

(SEE SHEET 1 FOR 7610 DECK MOUNTED CONFIGURATION)

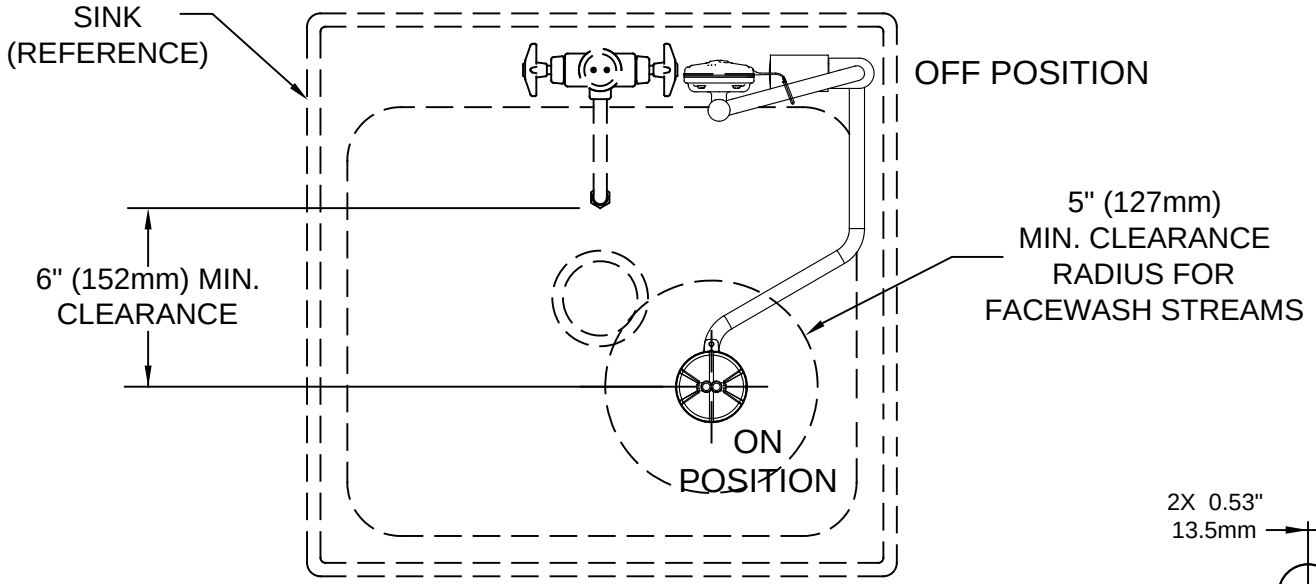
(SEE SHEET 3 FOR 7610 DECK MOUNTED DETAIL)

Haws®
1455 KLEPPE LANE
SPARKS, NEVADA 89431
(775) 359-4712 FAX (775) 359-7424
E-MAIL: HAWS@HAWSCO.COM
WEBSITE: WWW.HAWSCO.COM

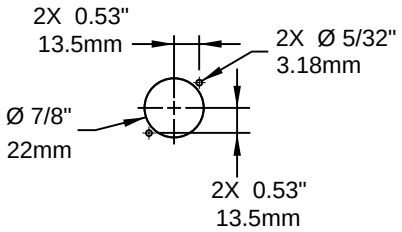
ECN NO. 2066	REVISED PER ECN: 5342	BY: JP	MODEL(S) 7610 PULLDOWN EYE/FACE WASH		PART NUMBER 0002080067.D
DRAWN: JF	DATE: 10/96	CHK'D.: FV			REVISION 19
APPROVED: MJ	DATE: 09/12/18		SCALE: 1:1	DRAWING TYPE: INSTALLATION	SIZE: A / SHEET 2 OF 3

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DECK MOUNT DETAIL



4 MOUNTING HOLE DETAIL

7610 DECK MOUNTED CONFIGURATION

(SEE SHEET 1 FOR 7610 DECK MOUNTED CONFIGURATION)
(SEE SHEET 2 FOR 7610 WALL MOUNTED CONFIGURATION)

Haws®
1455 KLEPPE LANE
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(775) 359-4712 FAX (775) 359-7424
E-MAIL: HAWS@HAWSCO.COM
WEBSITE: WWW.HAWSCO.COM

ECN NO.	REVISED PER	BY:	MODEL(S)	PART NUMBER
5113	ECN: 5342	JP	7610 PULLDOWN EYE/FACE WASH	0002080067.D
DRAWN: CC	DATE: 07/07/16	CHK'D.: FV		REVISION 19
APPROVED: MJ	DATE: 09/12/18		SCALE: 1:1 DRAWING TYPE: INSTALLATION	SIZE: A SHEET 3 OF 3

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Spray Master Technologies®

spraymastertech.com

PRODUCT: NO. 750 CONTROL PANEL, SMT REMOTE

SKU NUMBER: _____

QUANTITY: _____

SMT - Surface Mount Remote

NOTE: CONTROLS MAY BE MANUAL SWITCH OR BUTTON



300-1698 Surface Mount

FEATURES

- Stainless Steel Remote Station
- Shut-off Quick Connect
- Top or Rear Entry
- Stainless Steel Tubing Supply
- Bottom Port
- Non-Locking
- Electronic Controls

OSHA UL ETL ETL CE

Spray Master Technologies®

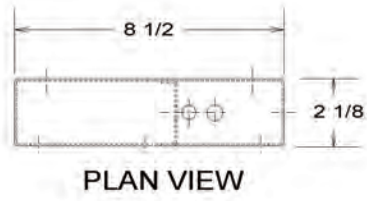
TOLL FREE: 800-548-3373

115 E. Linden • Rogers, Arkansas 72756 USA
(479) 636-5776 • Fax: (479) 636-3245

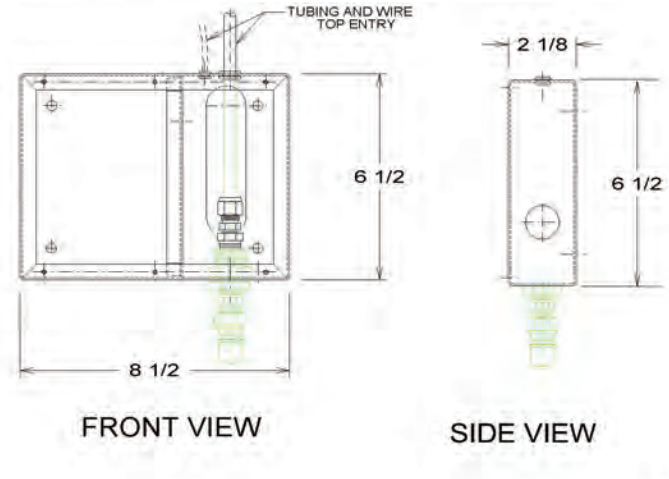
www.spraymastertech.com

*Prices and Specifications are subject to change without prior notice.

SMT - Surface Mount Remote



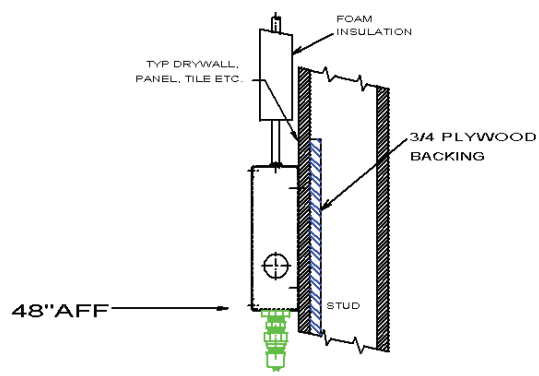
PLAN VIEW



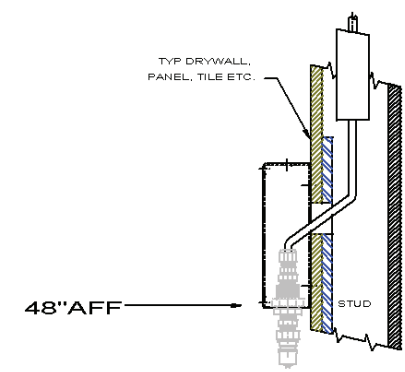
FRONT VIEW

SIDE VIEW

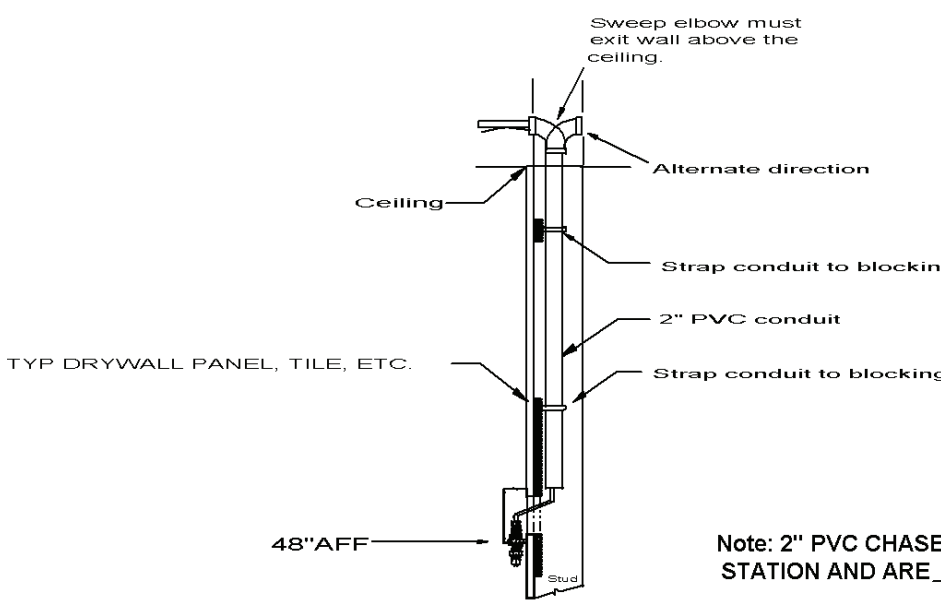
CS- 1698 A



SIDE VIEW
(Surface Wall- Tubing)



SIDE VIEW
(IN-WALL TUBING)

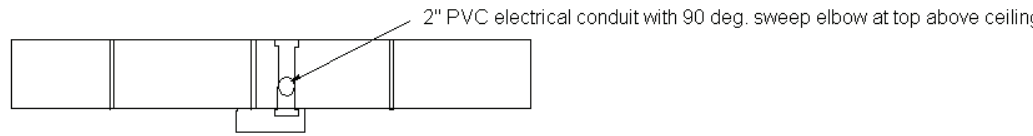


Side View
(In Wall Tubing)

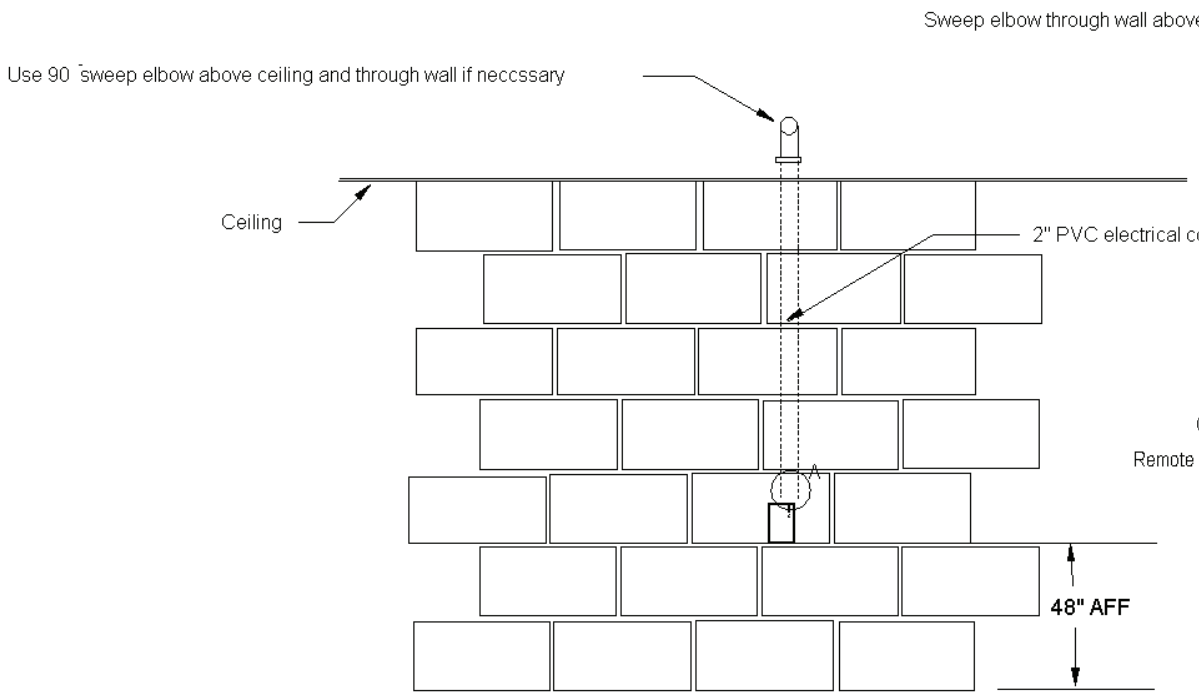
Note: 2" PVC CHASES ARE REQUIRED FOR EACH REMOTE STATION AND ARE NOT QUOTED OR SUPPLIED BY SMT

CS- 1698 B

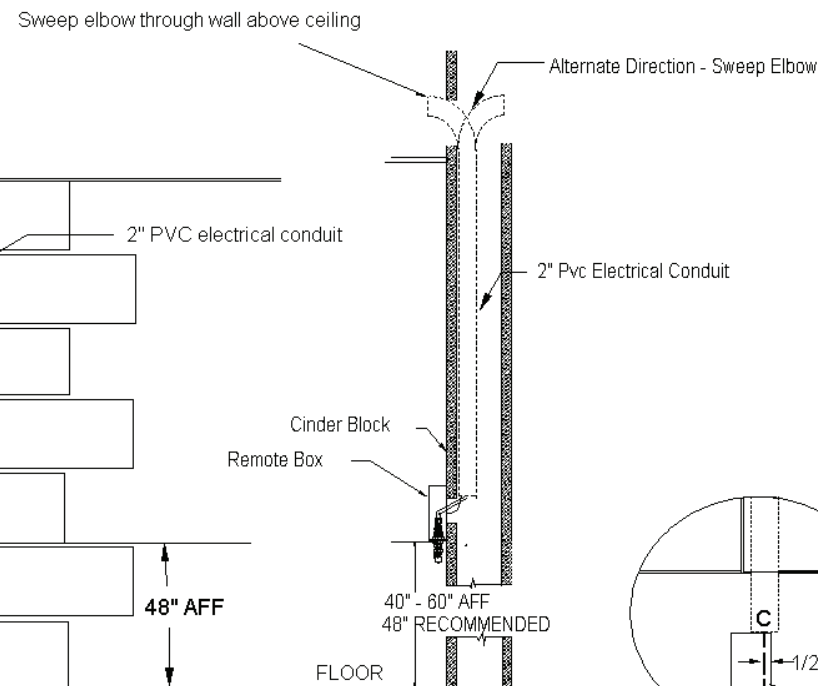
SMT - Surface Mount Remote



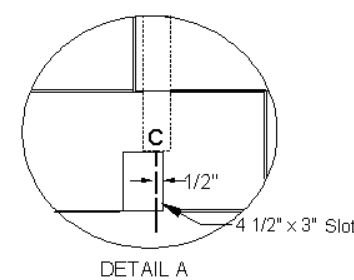
TOP VIEW



FRONT VIEW



SIDE VIEW



DETAIL A

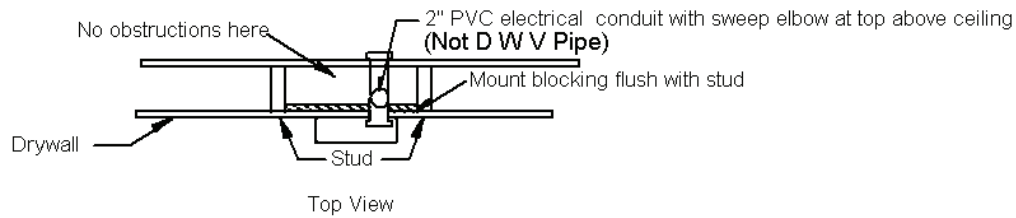
Note: 2" PVC CHASES ARE REQUIRED FOR EACH REMOTE STATION AND ARE NOT QUOTED OR SUPPLIED BY SMT

NOTES:

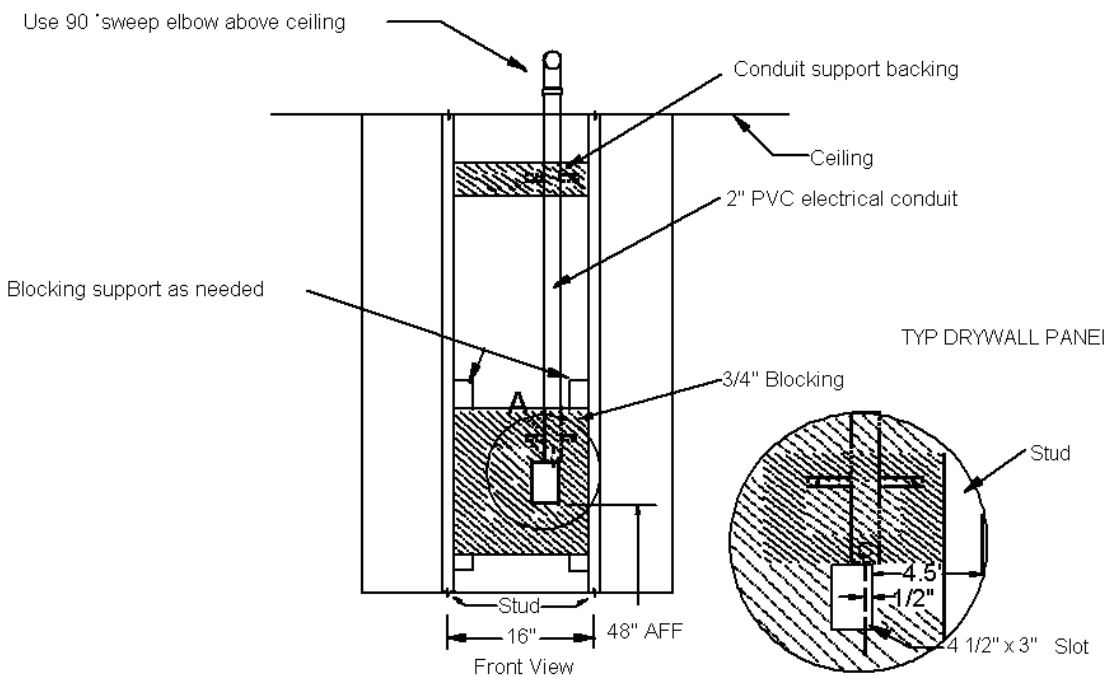
1.-Cut or block bottom of 4 1/2" x 3" opening 48" above finished floor
2.-Ensure there are no obstructions
3.-Secure conduit chase in wall centered at 1/2" from right side of 4 1/2" x 3" opening at front inside of Masonary Block
4.-Do not cover 4 1/2" x 3" opening.
5.-Remote box will mount on surface of finished wall.
6.-Call for Technical Support (800) 548-3373
7.-Special Provision required for furred out masonary wall.

CHASE INSTALLATION
MASONARY WALL
SURFACE REMOTE
300-2070

SMT - Surface Mount Remote

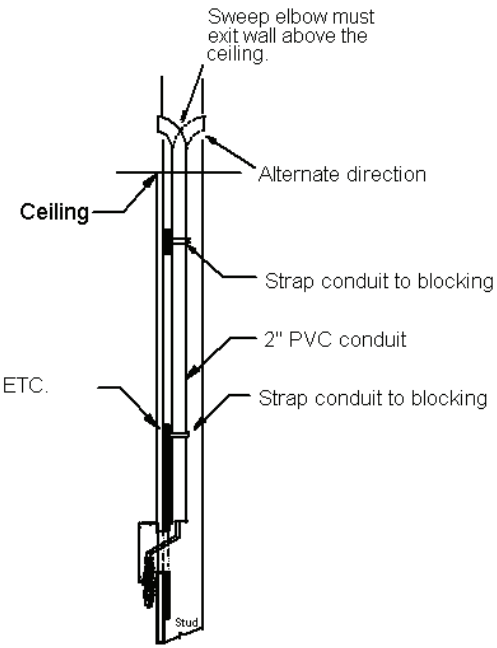


Top View



Front View

DETAIL A



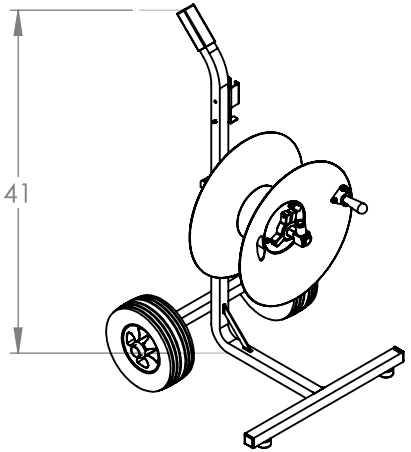
Side View
(In Wall Tubing)

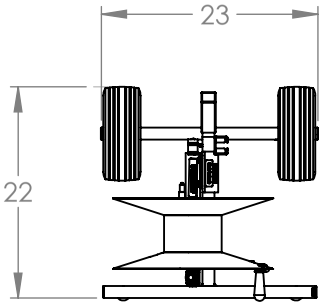
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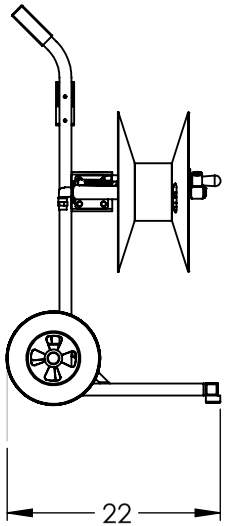
1. Mount the blocking with bottom of 4 1/2" x 3" opening 48" above finished floor.
2. Ensure there are no obstructions behind opening in the panel.
3. Make sure the blocking is mounted flush with stud.
4. Secure blocking firmly to both studs.
5. Secure conduit chase to back of blocking centered at 1/2" from right side of 4 1/2" x 3" opening.
6. Do not cover 4 1/2" x 3" opening.
7. Remote box will mount on surface of finished wall.
8. Call for Technical Support (800) 548-3373

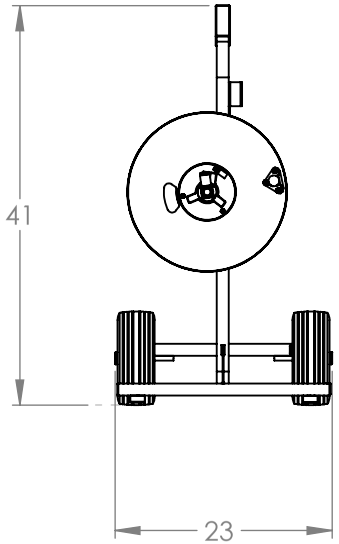
Note: 2" PVC CHASES & BACKING ARE REQUIRED FOR EACH REMOTE STATION AND ARE NOT QUOTED OR SUPPLIED BY SMT

Blocking & Chase Installation
Surface Mount Remote
ACD-300-2067









ASSEMBLED

PROPRIETARY AND CONFIDENTIAL

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UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL
ANGULAR: MACH BEND
TWO PLACE DECIMAL
THREE PLACE DECIMAL

INTERPRET GEOMETRIC TOLERANCING PER:

MATERIAL

FINISH

DO NOT SCALE DRAWING

	NAME	DATE
DRAWN		
CHECKED		
ENG APPR.		

COMMENTS:

Assembled Products Corp.

Description:

HD Hose Reel

SIZE	DWG. NO.	REV
A	300-5258	

SCALE: 1:20 WEIGHT: SHEET 1 OF 1

5 4 3 2 1

NO. 752 SYSTEM, CLEANING, CENTRAL STATION



Momentum Plus (3.6 Central Unit)

Industrial Pressure Washing System

Item #: 300-5007
Availability: In Stock
Usually ships In 7-10 business days

Price: **CALL**

Spray Master Technologies' new Momentum series redefines the pressure washer industry. With an industry first smart control system, the Momentum Plus (2.1 Central System) gives you the information you need to ensure proper operation, pressure, and chemical metering.

Qty 1
Add to Cart







- SMT Smart Control System with Logic Controller
- Wall or Rack Mount for Quick Installation
- Chemical Injection by Solenoid
- Anti-Siphon and Backflow Protection/Float Tank
- Optional Pulse Pump (shown) Provides Accurate Metering and AHP Compatibility
- Maintenance Kit – Water Filter, Replacement Filter, 1 Hydraulic Oil
- 115v or 208v
- GFCI Protected

You may also be interested in these:



0

Product Description | Specifications

Spray Master Technologies' new ***Momentum Series*** redefines the pressure washer industry. With an industry first smart control system, the ***Momentum Plus™*** gives you the information you need to ensure proper operation, pressure, and chemical metering.

The advanced control system provides constant monitoring of performance and maintenance conditions to ensure maximum reliability and performance are achieved. One centralized "brain" to control multiple remote stations. Advanced metering capability allows you to accurately control chemical dilution with the touch of the button.

The easy to read LCD screen provides status, pressure readings, hours of operation, maintenance reminders, and more valuable information to keep you informed of the Momentum Plus operational condition.

Motor

- Baldor 2 HP Commercial Electric Motor
- TEFC - Totally Enclosed Fan Cooled
- Designed for Continuous Use

Pump

- General Pump
- 1000 PSI @ 2.1 GPM
- Triplex Ceramic Plunger Design
- Commercial Quality for Long Life

Float Tank

- Provides 2" Air Gap
- Anti-Siphon, Anti-Backflow Protection
- Low Water Shutoff Protection
- Intake Filter
- City of LA Approved

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Ecommerce software by AmeriCommerce

Spray Master Technologies®

spraymastertech.com

PRODUCT: NO. 751.1 CLEANING, KENNEL, WALL MOUNT

SKU NUMBER: _____

QUANTITY: _____

SMT - 1100W Wall Mount System



Includes hose reel

300-5025 2.2 gpm / 8.3 lpm @ 1100 psi / 76 bars, 115V
300-5035 2.2 gpm / 8.3 lpm @ 1000 psi / 69 bars, 208V
300-5027 2.2 gpm / 8.3 lpm @ 1100 psi / 76 bars, 230V
300-5024 2.9 gpm / 11 lpm @ 850 psi / 59 bars, 115V
300-5034 2.9 gpm / 11 lpm @ 800 psi / 55 bars, 208V
300-5026 2.9 gpm / 11 lpm @ 850 psi / 59 bars, 230V

FEATURES

- 2 hp Motor TEFC, 1725 rpm, 1 Phase Draws 15A
- 3 Cylinder CAT® Super Flow Plunger Pump
- Quick Coupler Set (Connects Hose to Unit)
- Quick Coupler Set (Connects Gun to Hose)
- 50 ft / 15.3 m High Pressure Hose (Steel Braided)
- SMT-200RWC Manual Rewind Hose
- Adjustable Chemical Injector
- One 1gal/3.8L Chemical Basket
- Pressure Gauge, 2000 psi / 138 bars, Liquid Filled
- Stainless Steel Cover and Frame
- Stainless Steel Wall Mount Brackets with Gun Hanger
- 6 ft/2m - Water Inlet Supply Hose
- 4 ft/1.3m Cord with GFC
- Maintenance Kit: Water Filter, Replacement Filter and Two Hydraulic Oils
- ETL-CSA Listed to UL 1776
- Shipping Weight: 239 lb / 104.3 kg

OSHA UL ETL ETL CE

Spray Master Technologies®

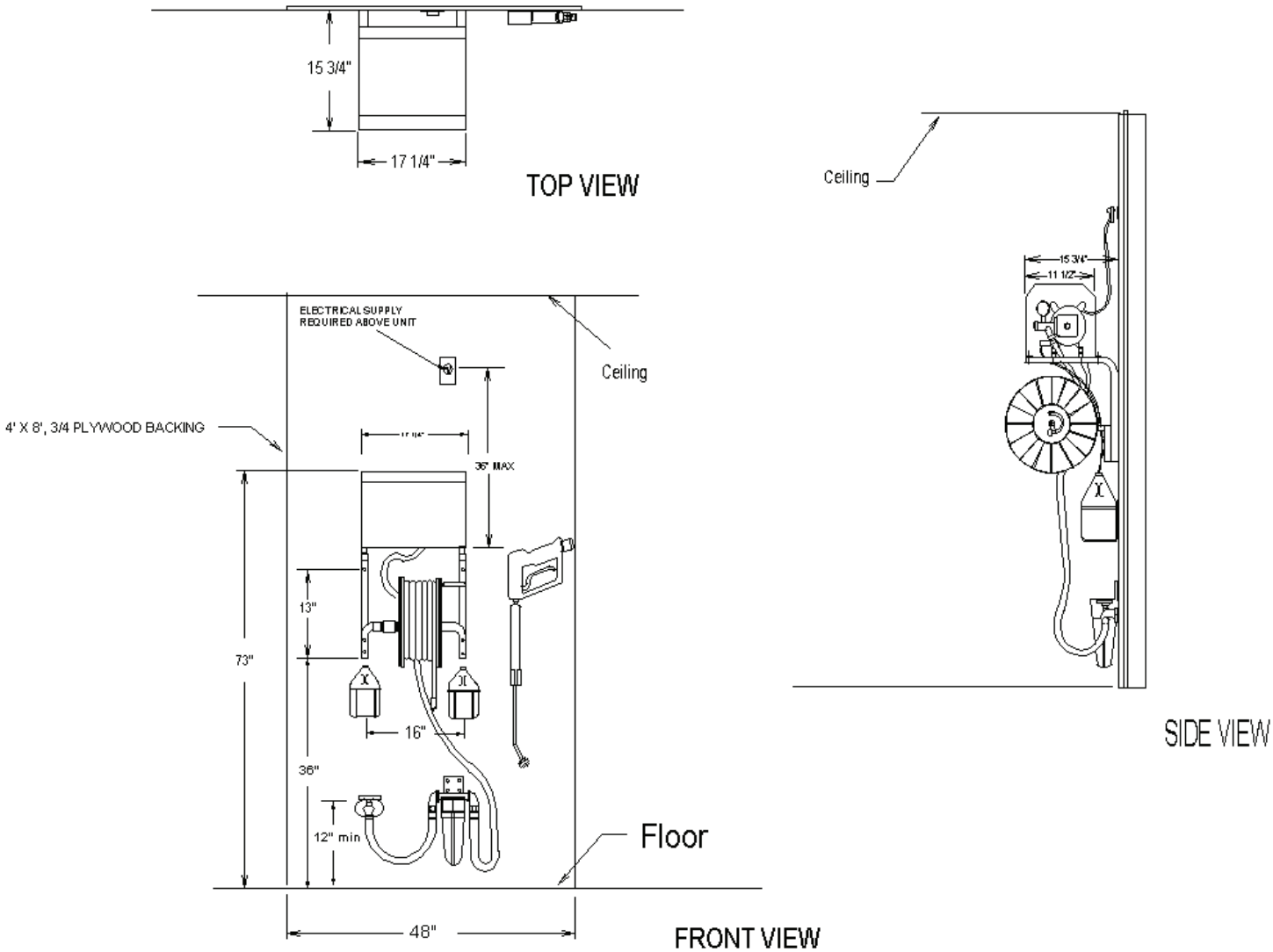
TOLL FREE: 800-548-3373

115 E. Linden • Rogers, Arkansas 72756 USA
(479) 636-5776 • Fax: (479) 636-3245

www.spraymastertech.com

*Prices and Specifications are subject to change without prior notice.

SMT - 1100W Wall Mount System



Equipment Specifications

Clearances

Left side	12″/30 cm
Right side	12″/30 cm
Overhead	14″/35 cm
Floor	36″/91 cm
Front	36″/91 cm

Plumbing

3/4″/2cm Hose Bib with 5gpm/.14Lpm @ 30psi/20.6bars. 120°F/49°C

Electrical

115V, 16A dedicated circuit or 208-230V, 15A GFCI.

Installation Specifications

Electrical:

One (1) 115V, 60hz, single phase, 20A, 'Dedicated Circuit' with standard receptacle. NOTE: For 208V or 230V units a 15A wall receptacle is required.

Water:

One (1) warm water outlet 120°F/49°C MAX with standard ¾″/1.9cm hose bib with shut-off valve. A pressure gauge in the water line can be helpful although it is not mandatory. A minimum of 5 gal. / 19L per minute and a line pressure not less than 30psi/20.6bars, is required.

Location:

Heated utility room or closet with venitlation. Minimum 14in/.35m clearance above unit required to remove cover. The cover must be removed for servicing the unit. The unit can be serviced without removing it from the wall.

General Recommendations:

Floor drains are essential in new facilities to receive the greatest utilization and maximum efficiency of your SPRAY MASTER Pressure Washer. Floor materials and wall coverings which can be cleaned with pressurized water are desirable. Locate electrical outlets above washing areas.

legrand

Wiremold
60 Woodlawn Street
West Hartford, CT 06110

1.877.BY.LEGRAND (295.3472)
www.legrand.us

Product Environmental Profile

Wiremold® Plugmold® 2000 Series™

PEP ecopassport®

LEGRAND'S ENVIRONMENTAL COMMITMENTS

• Incorporate environmental management into our industrial sites
Of all Legrand sites worldwide, over 85% are ISO 14001-certified (sites belonging to the Group for more than five years).

• Offer our customers environmentally friendly solutions
Develop innovative solutions to help our customers design more energy efficient, better managed and more environmentally friendly installations.

• Involve the environment in product design and provide informations in compliance with ISO 14025
Reduce the environmental impact of products over their whole life cycle.
Provide our customers with all relevant information (composition, consumption, end of life, etc.).

REFERENCE PRODUCT

Function	Distribute the electrical network to the workstation via multi outlets raceway with 10x20A sockets for 20 years.
Reference Product	
	Cat. No. V20GB506TR (length 5ft)
	Low profile multiple outlet raceway

The company reserves the right to change specifications and designs without notice. All illustrations, descriptions, dimensions and weights in the document are for guidance and cannot be held binding on the company.

PRODUCTS CONCERNED

The environmenal data is representative of the following products (see extrapolation rule at the end of the document):

- **20GB series:** S20GB206, V20GB306, G20GB306, BK20GB306, WH20GB306, S20GB306, V20GB506, S20GB506, BK20GB506, WH20GB506, G20GB506, V20GB512, G20GB512, BK20GB512, WH20GB512, S20GB512, V20GB606,G20GB606, BK20GB606, WH20GB606, S20GB606, V20GB609, G20GB609, V20GB612, G20GB612, S20GB612, BK20GB612, WH20GB612, V20GB618, G20GB618
- **20GBTR(USB) series:** V20GB306TR(USB), G20GB306TR(USB),BK20GB306TR(USB), WH20GB306TR(USB), S20GB306TR(USB), V20GB506TR(USB), G20GB506TR(USB), BK20GB506TR(USB),WH20GB506TR(USB), S20GB506TR(USB), S20GB606TR(USB), V20GB606TR(USB), G20GB606TR(USB), BK20GB606TR(USB), WH20GB606TR(USB),
- **20IG series:** V20IG306, G20IG306, V20IG606, G20IG606
- **20GBA series:** V20GBA512, G20GBA512, V20IG512, G20IG512, V20GBA609, G20GBA609, V20GBA612, G20GBA612, V20GBA618, G20GBA618
- **20GBTRUSBA series:** V20GB509TRUSBA, G20GB509TRUSBA, BK20GB509TRUSBA, WH20GB509TRUSBA, S20GB509TRUSBA
- **PM36C, 20-C2**
- **PM48C**
- **20GBTRGFI series:** V20GB306TRGFI, G20GB306TRGFI,BK20GB306TRGFI, WH20GB306TRGFI, S20GB306TRGFI, V20GB506TRGFI, G20GB506TRGFI, BK20GB506TRGFI,WH20GB506TRGFI, S20GB506TRGFI, S20GB606TRGFI, V20GB606TRGFI, G20GB606TRGFI, BK20GB606TRGFI, WH20GB606TRGFI

CONSTITUENT MATERIALS

This Reference Product contains no substances prohibited by the regulations applicable at the time of its introduction to the market. It respects the restrictions on use of hazardous substances as defined in the RoHS directive 2011/65/CE.

Total weight of Reference Product	**70.91oz (2010.2g)** (with unit packaging)

Plastics as % of weight		**Metals as % of weight**		**Other as % of weight**	
PA	**6.4 %**	Steel	**49.8 %**		
POM	**1.1 %**	Copper	**8.9 %**		
PVC	**0.9 %**			**Packaging as % of weight**	
				Wood	**24.1 %**
				Paper	**7.4 %**
				PE	**0.8 %**
Total plastics	**8.4 %**	**Total metals**	**58.7 %**	**Total other and packaging**	**32.4 %**

Estimated recycled material content: 27 % by mass.

For GFCI protected Plugmold (XX20GBXXXTRGFI), use the table below regarding the constituent materials.

Total weight of Reference Product	**72.06oz (2043.2g)** (with unit packaging)

Plastics as % of weight		**Metals as % of weight**		**Other as % of weight**	
PA	**6.8 %**	Steel	**49.3 %**	Electronic components	**0.5 %**
POM	**1.0 %**	Copper	**8.9 %**		
PVC	**0.9 %**			**Packaging as % of weight**	
PET	**0.2 %**			Wood	**23.8 %**
PC	**< 0.1 %**			Paper	**7.3 %**
				PE	**0.8 %**
Total plastics	**8.9 %**	**Total metals**	**58.2 %**	**Total other and packaging**	**32.4 %**

Estimated recycled material content: 26 % by mass.

For Plugmold equipped with a USB charging system (XX20GBXXXTRUSBX) use the table below regarding the constituent materials.

Total weight of Reference Product	**78.34oz (2221.1g)** (with unit packaging)

Plastics as % of weight		**Metals as % of weight**		**Other as % of weight**	
PA	**5.8 %**	Steel	**46.3 %**	Electronic components	**1.3 %**
PC	**3.0 %**	Copper	**11.6 %**		
PVC	**1.3 %**			**Packaging as % of weight**	
POM	**1.0 %**			Wood	**21.8 %**
				Paper	**6.7 %**
				PE	**0.8 %**
Total plastics	**11.0 %**	**Total metals**	**57.9 %**	**Total other and packaging**	**30.8 %**

Estimated recycled material content: 26 % by mass.

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Product Environmental Profile

Wiremold® Plugmold® 2000 Series™

PEP ecopassport®

MANUFACTURE

This Reference Product comes from sites that have received ISO14001 certification.

DISTRIBUTION

Products are distributed from logistics centers located to optimize transport efficiency using EPA SmartWay® certified carriers to reduce greenhouse gases emissions. The Reference Product is therefore transported over an average distance of 2175 miles by truck from our warehouse to the local point of distribution into the market in North America.

INSTALLATION

For the installation of the product, only standard tools are needed.

USE

Servicing and maintenance :
Under normal conditions of use, this product requires no servicing or maintenance.

Consumables :
No consumables are necessary to use the Reference Product.

END OF LIFE

Development teams integrate product end-of-life factors in the design phase.

Hazardous waste* contained in the product: no hazardous waste
(*) Hazardous waste as defined by European Commission decision 2000/532/EC.

• **Recycling rate:**
Calculated using the method described in the IEC/TR 62635 technical report, the recyclability rate of the product is estimated as 94.9 %. This value is based on data collected from a technological channel using industrial procedures. It does not pre-validate the effective use of this channel for end-of-life electrical and electronic products.

Separated into:

- metal materials (excluding packaging) : 58.7 %
- plastic materials (excluding packaging) : 9.8 %
- packaging (all types of materials) : 30.4 %

ENVIRONMENTAL IMPACTS

The evaluation of environmental impacts examines the stages of the Reference Product life cycle: manufacturing, distribution, installation, use and end-of-life. IIt is representative from products marketed and used in North America.

For each phase, the following modelling elements were taken in account:

Manufacture	Packaging taken into account. As required by the «PEP ecopassport» programme all transports for the manufacturing of the Reference Product, including materials and components, has been taken in account. The waste generated during manufacturing phase has been taken into account.
Distribution	Transport between the last Group distribution centre and an average delivery to the sales area
Installation	The end-of-life of the packaging is taken into account at this phase
Use	• Under normal conditions of use, this type of product requires no servicing or maintenance. • No consumables are necessary to use this type of product. • Product category: PSR0003-ed1.1-EN-2015_10_16-Cable_Management_Solutions §3.2.3.2. Pre-equipped service poles, service posts and multi-outlet extensions. • Use scenario : non-continuous operation (30% of the time) for 20 years at 30% of rated load. This modelling duration does not constitute a minimum durability requirement. • Energy model: Electricity Mix; United States - 2009.
End of life	The default end of life scenario maximizing the environmental impacts
Software and database used	EIME V5 and its database «CODDE-2015-04» and the indicators defined ine the PCR ed3 in alignment with the EN 15804 standard.

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Product Environmental Profile

Wiremold® Plugmold® 2000 Series™

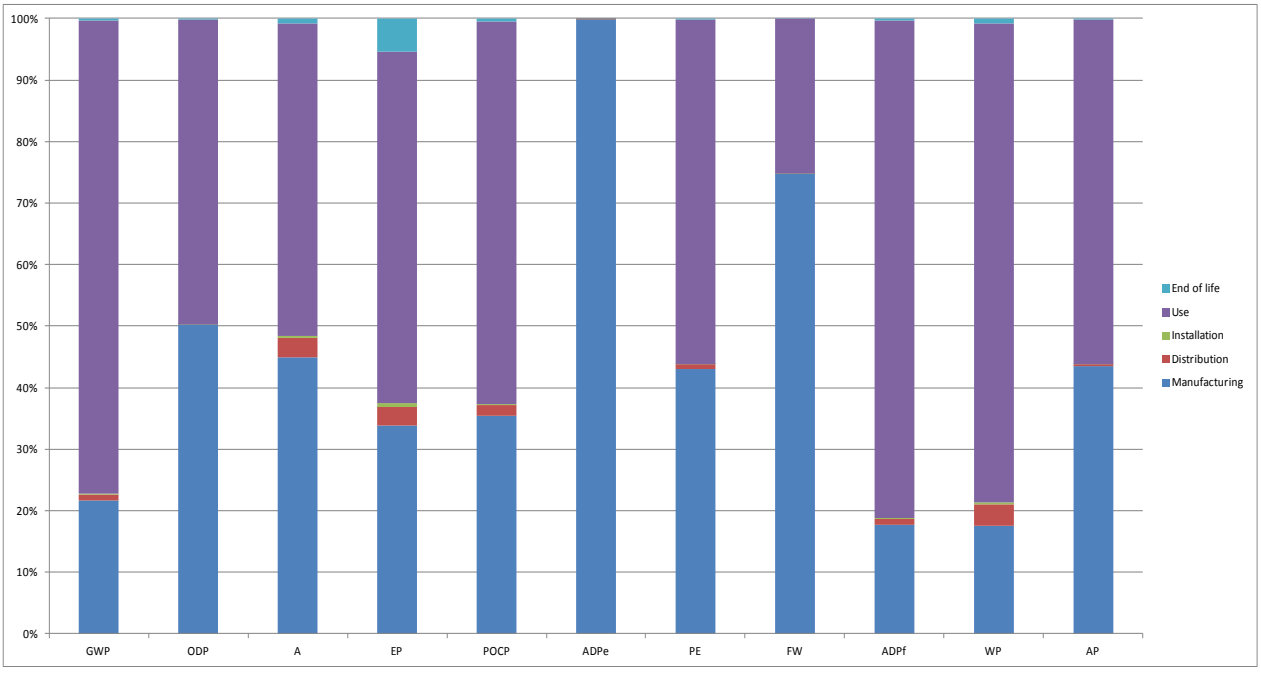
PEP ecopassport®

SELECTION OF ENVIRONMENTAL IMPACTS

	Total for Life cycle		Raw material and manufacture		Distribution		Installation		Use		End of life	
Global warming	**3.46E+01**	**kgCO2 eq.**	7.48E+00	**22%**	3.50E-01	**1%**	3.34E-02	**< 1%**	2.66E+01	**77%**	9.60E-02	**< 1%**
Ozone depletion	**9.74E-07**	**kgCFC-11 eq.**	4.90E-07	**50%**	7.09E-10	**< 1%**	1.12E-10	**< 1%**	4.82E-07	**50%**	1.00E-09	**< 1%**
Acidification of soils and water	**5.01E-02**	**kgSO2 eq.**	2.25E-02	**45%**	1.57E-03	**3%**	1.54E-04	**< 1%**	2.55E-02	**51%**	3.98E-04	**< 1%**
Water eutrophication	**1.17E-02**	**kg(PO4)3- eq.**	3.97E-03	**34%**	3.62E-04	**3%**	7.39E-05	**< 1%**	6.71E-03	**57%**	6.24E-04	**5%**
Photochemical ozone formation	**6.55E-03**	**kgC2H4 eq.**	2.32E-03	**35%**	1.12E-04	**2%**	1.09E-05	**< 1%**	4.08E-03	**62%**	3.00E-05	**< 1%**
Depletion of abiotic resources - elements	**2.95E-04**	**kgSb eq.**	2.95E-04	**100%**	1.40E-08	**< 1%**	1.37E-09	**< 1%**	2.61E-07	**< 1%**	4.48E-09	**< 1%**
Total use of primary energy	**6.40E+02**	**MJ**	2.75E+02	**43%**	4.69E+00	**< 1%**	4.45E-01	**< 1%**	3.58E+02	**56%**	1.12E+00	**< 1%**
Net use of fresh water	**1.87E-01**	**m3**	1.40E-01	**75%**	3.13E-05	**< 1%**	5.06E-06	**< 1%**	4.70E-02	**25%**	3.72E-05	**< 1%**
Depletion of abiotic resources - fossil fuels	**5.20E+02**	**MJ**	9.24E+01	**18%**	4.92E+00	**< 1%**	4.68E-01	**< 1%**	4.21E+02	**81%**	1.28E+00	**< 1%**
Water pollution	**1.68E+03**	**m3**	2.95E+02	**18%**	5.76E+01	**3%**	5.40E+00	**< 1%**	1.31E+03	**78%**	1.31E+01	**< 1%**
Air pollution	**4.03E+03**	**m3**	1.75E+03	**43%**	1.44E+01	**< 1%**	2.16E+00	**< 1%**	2.26E+03	**56%**	6.68E+00	**< 1%**

The values of the 27 impacts defined in the PCR-ed3-EN-2015 04 02 are available in the digital database of pep-ecopassport.org website.

% ENVIRONMENTAL IMPACT PER LIFE CYCLE STAGE OF REFERENCE PRODUCT



Product Environmental Profile

Wiremold® Plugmold® 2000 Series™

All the raceways are made of painted metals. For all the colors, WH (white), BK (black), V (ivory), G (grey), S (silver), the environmentals impacts are the same. The environmental impacts for IG and GB wiring configuration are the same.
For all the different spacing between the outlets, the environnmental impacts should be considered the same for a fixed length of the product. The calculation has been made on a 6inch spacing which maximizes the impacts.
The two tables below can be combinated.
For WP* (Water Pollution) lines, only the impact on Water Pollution for the manufacturing phase must be multiply by this specific factor.

	Manufacturing		Distribution	Installation	Use	End of life
20GB series	1.0		1.0	1.0	1.0	1.0
20GBA series	1.3		1.1	1.0	1.0	1.1
PM36C/20-C2	4.9	**WP*:** 12.6	0.9	1.3	1.8	1.3
PM48C	6.5	**WP*:** 16.8	1.2	1.7	2.3	1.7
20GBTRGFI series	2.0		1.1	1.0	2.9	1.1
20GBTRUSB series	1.3	**WP*:** 2.8	1.1	1.0	17.5	1.2
20GBTRUSBA series	1.6	**WP*:** 2.9	1.1	1.0	18.1	1.4

The environmental impacts shown on the table above are based on the default length 5ft of the reference product.To extrapolate different lengths, multiply all the impacts by the scale factor corresponding to the desired length shown in the table below.

Length (ft)	2	3	5 (REF)	6
Ratio	0.4	0.6	1.0	1.2

Registration N°: LGRP-00574-V01.01-EN	Drafting rules: PEP-PCR-ed3-EN-2015 04 02 Supplemented by PSR0003-ed1.1-EN-2015_10_16
Verifier accreditation N°: VH02	Information and reference documents : **www.pep-ecopassport.org**
Date of issue: 12-2017	Validity period: 5 years
Independent verification of the declaration and data, in compliance with ISO 14025:2010 Internal ☒ External ☐	
The PCR review was conducted by a panel of experts chaired by Philippe Osset (SOLINNEN)	
PEP are compliant with XP C08-100-1: 2014 The elements of the present PEP cannot be compared with elements from another program	
Document in compliance with ISO 14025 : 2010: «Environmental labels and declarations. Type III environmental declarations»	
Environmental data in alignment with EN 15804 : 2012 + A1 : 2013	

HSI Hospital Systems, Inc.

MedGas Hose & Electrical / Data Cord Drops

The **Hose / Cord Drop** will accommodate a mixture of various medical gas and vacuum hose, electrical and data cord drops.



Features

- Welded steel construction back box
- Cover plate is stainless steel with a brushed finish
- Exposed cable reels
- Adjustable cable retractor to pull hose up out of the way when not in use
- Strain relief anchor point for each device

Medical Gas Hose Drop

- DISS fitting at proximal end
- Conductive, color coded hose, 6ft
- Kellems strain relief grip
- Medical gas coupler at distal end. Available in DISS, Chemetron, Puritan-Bennett, Ohmeda and Oxequip. Also available in HTM-2022 or DIN

Electrical Cord Drop

- Twist-lock, Hospital Grade plug at top end
- Heavy duty, SJTOW cord, 6ft
- Kellems strain relief grip
- Electrical Receptacle(s), Hospital Grade, Duplex, 20A, mounted in a NEoTEX non-conductive box

Data Cord Drop

- ¾", 1g, Face plate at top end
- Flex, Plastic Conduit, 6ft
- Kellems strain relief grip
- 4 port module insert and face plate

Hose and Cord drops can be added or removed to suit the requirement of the room. Each drop is considered an individual item unless otherwise noted. Standard back box is 8" x 8" and can accommodate up to 4 services. Larger boxes are available when required. Refer to part numbers and descriptions on page 2.

Hospital Systems, Inc.—750 Garcia Ave—Pittsburg, CA 94565
phone: 925.427.7800
fax: 925.427.0800
www.HSIheadwalls.com

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Ordering Information

Medical Gas Hose Drops are available with any configuration of the following medical gas outlets [Up to 8 services] Please specify Outlet Type at time of purchase.

- Oxygen
- Medical Air
- Vacuum'
- EVAC [WAGE]
- N2O
- Co2

Medical Gas Hose Drops	**Part Number**
Medical Gas, Single, Vacuum	299055-VAC
Medical Gas, Single, Oxygen	299056-OXY
Medical Gas, Single, Medical Air	299057-AIR
Medical Gas, Single, Nitrous Oxide	299058-N2O
Medical Gas, Single, Evacuation (WAGD)	299059-EVAC
Medical Gas, Single, Carbon Dioxide	299060-CO2
Medical Gas, Single. Nitrogen	299061-N2
Electrical Cord Drops	**Part Number**
Single Drop w/ 1 Duplex, Emergency, Red	299098
Single Drop w/ 1 Duplex, Normal, Ivory	299098-I
Single Drop w/ 1 Duplex, Normal, White	299098-W
Single Drop w/ 2 Duplex, Emergency, Red	299099
Single Drop w/ 2 Duplex, Normal, Ivory	299099-I
Single Drop w/ 2 Duplex, Normal, White	299099-W
Data Cord Drop	
Single Drop, Data with 4 Port Module Insert	299100

Boxes and Drops are available as individual items or as an assembly.

Available with US Plug, British Standard and DIN

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HSI Hospital Systems, Inc.

MedGas Hose & Electrical/Data Cord Drops

The **Hose/Cord Drop** will accommodate a mixture of various medical gas and vacuum hose, electrical and data cord drops.



Features

- Welded steel construction back box
- Cover plate is stainless steel with a brushed finish
- Exposed cable reels
- Adjustable cable retractor to pull hose up out of the way when not in use
- Strain relief anchor point for each device

Medical Gas Hose Drop

- DISS fitting at proximal end
- Conductive, color coded hose, 6ft
- Kellems strain relief grip
- Medical gas coupler at distal end. Available in DISS, Chemetron, Puritan-Bennett, Ohmeda and Oxequip. Also available in HTM-2022 or DIN

Electrical Cord Drop

- Twist-lock, Hospital Grade plug at top end
- Heavy duty, SJTOW cord, 6ft
- Kellems strain relief grip
- Electrical Receptacle(s), Hospital Grade, Duplex, 20A, mounted in a NEoTEX non-conductive box

Data Cord Drop

- ¾", 1g, Face plate at top end
- Flex, Plastic Conduit, 6ft
- Kellems strain relief grip
- 4 port module insert and face plate

Hose and Cord drops can be added or removed to suit the requirement of the room. Each drop is considered an individual item unless otherwise noted. Standard back box is 8" x 8" and can accommodate up to 4 services. Larger boxes are available when required. Refer to part numbers and descriptions on page 2.

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Ordering Information

Medical Gas Hose Drops are available with any configuration of the following medical gas outlets [Up to 8 services] Please specify Outlet Type at time of purchase.

- Oxygen
- Medical Air
- Vacuum'
- EVAC [WAGE]
- N2O
- Co2

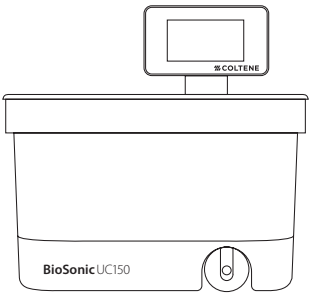
Medical Gas Hose Drops	**Part Number**
Medical Gas, Single, Vacuum	299055-VAC
Medical Gas, Single, Oxygen	299056-OXY
Medical Gas, Single, Medical Air	299057-AIR
Medical Gas, Single, Nitrous Oxide	299058-N2O
Medical Gas, Single, Evacuation (WAGD)	299059-EVAC
Medical Gas, Single, Carbon Dioxide	299060-CO2
Medical Gas, Single. Nitrogen	299061-N2
Electrical Cord Drops	**Part Number**
Single Drop w/ 1 Duplex, Emergency, Red	299098
Single Drop w/ 1 Duplex, Normal, Ivory	299098-I
Single Drop w/ 1 Duplex, Normal, White	299098-W
Single Drop w/ 2 Duplex, Emergency, Red	299099
Single Drop w/ 2 Duplex, Normal, Ivory	299099-I
Single Drop w/ 2 Duplex, Normal, White	299099-W
Data Cord Drop	
Single Drop, Data with 4 Port Module Insert	299100

Boxes and Drops are available as individual items or as an assembly.

Available with US Plug, British Standard and DIN

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NO. 819_CLEANER, ULTRASONIC, COUNTERTOP



BioSonic® UC150

Ultrasonic Cleaner

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COLTENE

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Date of issue:
09-2018

BioSonic® UC150

Ultrasonic Cleaner

1. Overview

An Essential Part of Your Infection Control System

Congratulations on your purchase of a BioSonic® Ultrasonic Cleaner - a high quality, extremely efficient and popular ultrasonic cleaning system in dentistry.

Developed specifically for the dental industry, BioSonic units feature a unique product design to optimize time and safety in the office or laboratory.

BioSonic is a complete ultrasonic cleaning system, with a full line of cleaning solutions and unit accessories which provide you with the flexibility to efficiently clean instruments, prostheses, burs and other appliances.

What is Ultrasonic Cleaning?

Ultrasonic Cleaning is a process created by high frequency soundwaves. The soundwaves, enhanced by specially formulated cleaning solutions, create high energy cavitation. During cavitation, millions of tiny bubbles form and then collapse or "implode," releasing enormous amounts of energy and shockwaves which scour the surface of instruments, appliances and other devices placed in the cleaning solution. This powerful scouring action reaches into minute crevices, which manual brushing cannot reach. The combination of energy and specially formulated solutions make ultrasonic cleaning the most effective method for removing large and microscopic debris.

Intended Use:

The BioSonic® UC150 Ultrasonic Cleaner is intended for cleaning medical instruments by the emission of high frequency soundwaves.

2. Safety Information

NOTE: Failure to comply with these Caution and Warning statements may result in injury to personnel or equipment damage.

 **CAUTION!**	Do not operate the unit without sufficient solution in the tank. Do not use water alone as the carrier bath. Water is not a satisfactory coupling agent unless a wetting agent is used. For best results use BioSonic General Purpose, BioSonic Germicidal Cleaner or BioSonic Enzymatic Ultrasonic Cleaning solutions.
	Do not place objects directly on bottom of the tank because they may block cavitation and cause buildup of heat in the transducer causing premature failure. Use only BioSonic UC150 accessory baskets, cassette racks or beakers to hold items.
	Do not restrict airflow. Provide adequate ventilation by maintaining at least 2 inches clearance at the back.
	Do not subject unit to shock or impact.
	Do not immerse the unit in water.
	Keep the display surface dry for proper functioning of device.
	This product is intended for use only by trained healthcare professionals.
	Use this product in accordance with the instructions in the owner's guide.
	Unspecified or improper use of this product may impair safety protection.
	Before cleaning items of considerable value ultrasonically, consult the item's manufacturer for cleaning precautions.
	The power off selection from the keypad does not turn off main power to the unit. Unplug the device from the power outlet to shut down the device.
	This equipment may cause radio interference or may disrupt the operation of nearby equipment. It may be necessary to take mitigation measures such as reorienting or relocating the unit or shielding the location.
	Never drain tank by manually discarding solution as this may cause the unit to stop working properly.
	Use only the supplied power cord or equivalent rated for 105°C.
	Do not disassemble the unit. There are no user serviceable parts inside.
	Keep unit covered to reduce airborne contaminants.
	Do not place fingers or hands in the ultrasonic tank while in operation.
	Ensure appropriate decontamination in case of spillage of hazardous material on or inside of the equipment through device openings.

WARNING! Operation for long periods of time will cause the cleaning solution to get very hot. To avoid scalding, do not place hands in the solution or spill any onto you. Be careful when removing an item from the tank as it may also be hot.

3. Explanation of Symbols

	Caution: Hot Surface		Settings Menu
	Warning/Caution: Refer to accompanying documents		Log
	Caution: Risk of Electric shock		Heater Settings
	Temperature Limits		Degas Menu
	Humidity Limits		Date and Time Settings
	Proper Disposal Required		Language and Measures Settings
	Eco Cleaning Mode [15 min.]		'MY' mode settings
	Regular Cleaning Mode [20 min.]		Information
	Strong Cleaning Mode [30 min.]		Screen ON/OFF
	'MY' Cleaning/Custom mode		Manufacturer

4. Unpacking



Figure 1 **BioSonic UC150 Parts and descriptions**

- Remove your BioSonic unit from the shipping container and inspect the unit for any possible damage which may have occurred during shipping.
- Check the serial number of the unit (found on either the underside or rear of the unit) with the number on the shipping carton. If they are not identical, contact your dealer.
- **Register your product warranty at: http://warranty.coltene.com**

5. Installation and Setup

General Setup

- Select your desired location for the cleaner. It should be on a solid level surface and in close proximity to a sink or to waste lines to facilitate draining. The hose supplied with the unit will allow you to place the unit on the left side of the sink or connect directly to the waste line.

- Connect one end of the hose to the drain valve ***(Figure 4*)*** and place the other end in the sink. If desired, have your plumber connect the hose directly to the waste line with the appropriate fittings.

*see last page for figures

- CONNECT THE DISPLAY. Attach the connector on the bottom of the display module to the connector on the top right-hand corner of the unit. Press the display module down carefully until it snaps into the right position.

- PLUG IN THE UNIT. Attach the BioSonic UC150 electrical cord at the lower back of the unit and plug into a three-wire grounded AC outlet (in accordance with local regulations) (Figure 9*). It is recommended that the unit be plugged into a Ground Fault Circuit Interrupter (GFCI) outlet.

Installation instructions for recessing unit:

- Tools Required:
  - Electric Drill
  - Drill bit to drill a hole large enough to accept your reciprocating saw blade
  - Reciprocating saw and blade

NOTE: This Ultrasonic Cleaner must be installed by an experienced equipment manager or licensed contractor. Be sure to follow local building codes.
NOTE: Before you begin please read and understand the safety instructions provided by the manufacturer of the tools required for installation.

- Select the desired location for the cleaner. You will need at least 19 cm (7.5 inches) clear vertical space below the top of the counter to accommodate the tank enclosure. The countertop must be flat and level. Make sure that you are not selecting a location which will interfere with drawers or vertical partitions between cabinets.

- Tape the enclosed template down to the counter top in the desired location. Make sure that the "front of the unit" is closest to the user.

- Cut along the "cut line" for the counter top with a jigsaw or other reciprocating saw.

- Clean away dirt or sawdust around the opening and remove scrap wood.

- Attach the rubber gasket on the housing for better seating between bezel and counter top.

- Lower unit into opening. Be sure that the printed BioSonic logo on the housing faces the user. ***(Figure 11*)***

- The hose supplied with the BioSonic UC150 will allow you to dispose of the waste in accordance with your local, state and/or federal regulations.

*see last page for figures

- Opening the drain valve will allow you to empty the solution into a waste storage container for disposal in accordance with your local, state and/or federal regulations.

WARNING! (Failure to comply may result in personnel injury and/or equipment damage.)

Power should not be supplied to the unit until all interconnections between the display and tank enclosure and any accessories are securely connected.

This unit must be properly grounded. Failure to properly ground unit may result in serious injury.

Power up Settings:

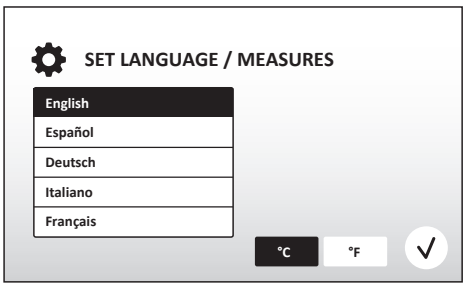


Figure 2 **Setup Screen: Language and Measures**

- SELECT A LANGUAGE AND TEMPERATURE UNIT: Select the language for your appropriate region from the drop down list. Press (√) button to accept.

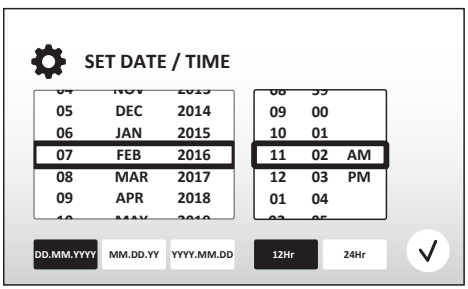


Figure 3 **Setup Screen: Date and Time**

- SET THE DATE AND TIME: Set the date and time with the preferred format by using the drop down list and format buttons. Press (√) to accept. User can choose one of the three date formats:
  - DD.MM.YY
  - MM/DD/YY
  - YY-MM-DD

- SETUP COMPLETE. The display will now show the main screen once setup is completed in the language of your choice. Your BioSonic UC150 is now setup and ready to use!

NOTE: If modifications need to be made to the setup of the unit, go to settings menu by pressing ⚙ to change the setup options.

6. Filling Instructions

- Ensure that the drain handle ***(Figure 5*)*** is fully rotated counter-clockwise to the closed position. Fill the unit with warm water to the fill line indicator ***(Figure 6*)***. Ensure that the water level is filled up to the minimum line and does not exceed the maximum line while using accessories like beakers or baskets.

- Pour the required amount of ultrasonic cleaning solution (eg. BioSonic General Purpose UC30, BioSonic Enzymatic Ultrasonic Cleaner UC32) and water into the tank. Note that some solutions require the use of a beaker.

- Change the solution in the tank daily or sooner if it appears soiled or discolored. When beakers are used, change the solution in the beaker after each use.

- Drain unit by fully rotating the drain handle clockwise to the "Open" position and allow the solution to empty into sink or waste system. Rinse tank and fully rotate the drain handle counter-clockwise to the "Closed" position. Never drain tank by manually discarding solution as this may cause the unit to stop working properly.

NOTE: Never operate the unit without solution. **Operating a dry tank will void the warranty.** Do not place objects directly on bottom of tank. Always use a cassette basket or beakers.

7. Degassing

Degassing the solution eliminates large air bubbles that interfere with the cleaning process and is necessary each time new solution is added to the tank.

NOTE: Be careful not to introduce unwanted gases into the liquid. Do not pump/pour the solution too quickly into the bath, insert/remove the product being cleaned into the bath too rapidly, or move product while in the bath. Doing so will re-introduce gas into the solution and require a longer degas cycle.

- PRESS THE DEGAS icon on the main screen.
- Select the type of solution to log solution used or degas only and press ✓ to degas.
- The BioSonic UC150 will begin to cycle on and off during the degassing process. The timer will count down from five minutes.
- DEGAS COMPLETE! Once the timer reaches zero, the words "Degas Complete" will be displayed. Your solution is now ready for use. Press ⌂ to return to the main screen.

*see last page for figures

8. Operation Instructions

Mode Selection

- Four modes are available to choose from on the main screen - 3 Preset modes: ECO: for light load time; REGULAR: for medium load time; STRONG: for heavy load time and "MY" mode for customized operation. ***(Figure 12*)***

- **'MY' mode:** For custom mode settings, select MY SETUP from settings menu. Set the desired temperature and cleaning time. Ensure that HEATER function is ON if heating is desired. Press ✓ to accept.

- Select mode by pressing appropriate icon for your particular load. Ensure that the lid is closed before and during operation. Press ▶ to start cleaning cycle. Press ⏸ to pause. The BioSonic UC150 will continue to clean as the timer counts down the remaining time from the user-selected cleaning time.

- Once the timer reaches zero, "Program Successful" will be displayed on the screen until any button is pressed. Press ⌂ to return to the main screen or to abort the process.

  NOTE: The cleaning cycle can be stopped at any time by pressing start or pause. Press ⌂ to return to the main screen.

- The BioSonic Ultrasonic cleaner should always be covered while operating to trap aerosols in the unit. The BioSonic UC150 is equipped with a hinged cover for easy one hand opening. The cover also conveniently lifts off for cleaning in spaces with low cabinets above the unit.

- Do not place additional instruments into a cleaning load mid-cycle. The additional instruments may not be cleaned as effectively as those in the original load. Additional instruments may also impact the cleaning efficacy of the original load by covering soiled instruments and increasing the mass of the load.

Heater Operation

The BioSonic UC150 model is equipped with a heater to accelerate heating of the solution in the tank. Selecting a temperature instructs the heater to activate during the next cleaning cycle and remain active until the temperature is reached.

NOTE: The heater feature is not designed to *maintain* the selected temperature, but rather activate at the start of the next cleaning cycle and deactivate once the set temperature is reached. **Thermostatic control is not a feature of the Biosonic UC150.**

*see last page for figures

CAUTION!	The heating function of the BioSonic UC150 (if enabled) takes place until the set temperature is reached only. If the set temperature is reached before the end of the cleaning cycle, the heater will shut off, but the cycle will continue. Through prolonged use, the natural cavitation process will continue to heat the solution beyond the desired temperature, but at a decreased rate without the heater. When this happens, the unit is still functioning properly.

Activate the Heat Feature

In order to obtain the activation code, visit http://biosonic.coltene.com or email customer service at info.us@coltene.com or info.ch@coltene.com.

NOTE: The temperature in the tank is displayed in the top bar of the LCD screen. Pressing the key to activate this feature will bring up a new screen on the display. The first time this feature is activated, the user must enter the activation code. Press ▶ once the code is entered. The heating function will now be available for use.

Set the Desired Temperature

- Press the button. Set the temperature between 25°C (75°F) and 60°C (140°F).
- Select "HEATER ON" to activate heating function. Press √ to accept the temperature.
- A symbol will be displayed on the top of main screen if heater is selected ON. The heater will now function during the selected cleaning cycle.
- Select "HEATER OFF" if heating is not desired.
- A blinking symbol on the main screen is displayed while the heating is in progress during a cleaning cycle. Current temperature information will always be displayed at the top of the LCD display.

NOTE: The heater will not turn on until a cleaning cycle has been initiated. It is, therefore, recommended that a pre-cycle (with heater activated) be performed when a specific temperature is desired. The cycle can be run without cleaning load and the length of the cycle would depend on the desired temperature.

NOTE: The user can change the temperature unit from C to F using the settings menu.

9. Cleaning Methods

In Tank

Basket Cleaning: Place parts to be cleaned into the basket or use cassettes. ***(Figure 8*)*** Then place the basket directly into the main tank containing BioSonic General Purpose, Germicidal, or Enzymatic Cleaner. Follow dosage instructions per cleaning solution label. After cleaning, rinse the basket and instruments thoroughly under running water.

In Beaker

For specialized item cleaning (e.g. prostheses, burs): Place items into a beaker and add desired cleaning solution (e.g. BioSonic Cement Remover or BioSonic General Purpose) according to the product directions. Suspend the beaker in the tank by using the beaker holder and place the beaker positioning ring around the beaker so that the bottom 2/3rd is suspended in the main bath.

NOTE: Beaker holder is to be used in conjunction with the basket ***(Figure 7*)***. Use caution when removing basket if beakers are left in place.

10. Accessory Use

- CASSETTE BASKET: The BioSonic UC150 basket cleans large volumes of instruments and increases instrument processing efficiency.
  Place items in an instrument cassette or directly at the bottom of the basket. Place basket in tank and clean for desired time. After cleaning, rinse the basket and instruments thoroughly under running water.

- BEAKER HOLDER: The beaker holder holds a 600 ml glass beaker to clean small parts, burs, and prostheses.
  Place the Beaker Holder on the basket and insert the basket into the tank. Place positioning rings around the beaker so that the bottom 2/3 of the beaker is suspended in the main bath. Clean for desired time.

11. Data Log

- VIEW LOG: Select LOG from main menu ***(Figure 12*)*** to view cleaner data log.

- DATA DOWNLOAD: Insert a USB stick in the USB port provided on the left of the BioSonic UC150 device display. To download cleaner use data onto the USB device, press ⬇ key. Press √ key to confirm data download. Monthly data log files will be available in .csv format on the USB file ***(Figure 13*)***.

*see last page for figures

12. Maintenance

Cleaning

All components should be cleaned each day by wiping with a soft cloth moistened with a commercially available mineral deposit remover followed by cleaning with isopropyl alcohol or a mild disinfectant. It is recommended to drain and dry the tank at the end of each work day.



CAUTION!

Do not use petroleum based solvents, iodophors or phenolic based products. Iodophors and phenolics can stain the surface of the unit. Clean up all liquid spills immediately. Rust deposits on tank can be cleaned/ removed with a commercially available stainless steel cleaner.

Stainless Steel Cleaning

✓ **Allowable:**

- Wash with a clean cloth or rag soaked with warm water and mild soap or liquid dish detergent.
- Always clean in the direction of the original polish lines.
- Always rinse well with clear water (2 or 3 times) after cleaning. Wipe dry completely.
- Specialized household stainless steel cleaner may also be used.

× **Avoid:**

- Do not let dirt accumulate.
- Steel or stainless steel wool or scrapers to remove stubborn debris.
- Harsh or abrasive cleaners.
- Chemicals harmful to stainless steel not limited to but including products that contain chloride, fluoride, iodide or bromide.
- Cleaners that contain bleach.

In case of questions regarding compatibility of decontamination or cleaning agents please contact the manufacturer or your supplier.

Inspecting the Power Cord Periodically

Check the power cord for damage and see that the connectors at both ends of the cord are fully seated.

Changing the Fuse

- Remove the power cord from the wall outlet first and then from the power cord receptacle on the rear of the unit.

- The fuse compartment is located directly above to the power cord receptacle. To access, take a small, flat-headed screwdriver to the tabs on the fuse holder. Apply slight pressure to release the fuse holder ***(Figure 9*)***.
- Gently remove the fuses from the fuse holder.
- Examine the fuses ***(Figure 10*)***. If blown, replace with a fuse that matches the unit's voltage and current. If fuse appears to be in good condition, return the unit to your dealer or Coltène/Whaledent. This is an indication that the unit is defective.
- Plug the power cord into the power cord receptacle on the rear of the unit. Then plug the power cord into the wall receptacle.

NOTE: The fuse is a protection device designed to limit the amount of current being drawn or supplied to the unit. If a fuse is blown, this can mean that there was a surge of current to the unit due to an external power surge such as lightning, or more likely due to an internal component failure of the cleaner.

Firmware Update Process

Checking the Firmware Version

- Press the "Setup" icon from the main menu, bottom left icon on the display
- Press the "Information" icon from the setup menu, far right icon on the display
- The unit serial number and firmware version will be displayed
- Press the "Check Mark" icon then the "Home" icon to return to the main menu

Firmware Update Process

- Place the most current firmware update folder "coltene-update" on a blank USB stick
- With the BioSonic UC150 displaying the main menu, place the USB stick in the display's USB port
- Wait a minute and the software update screen will appear on the display noting the current firmware version on the BioSonic UC150 and the current version on the USB stick
- Press the "Update" icon to start the software update process
- Do not touch the unit or the USB stick during the update process until the unit reboots and the main menu is displayed
- The firmware update process is complete and the USB stick can be removed

*see last page for figures

13. Troubleshooting

NOTE: Consult your dealer or Coltène/Whaledent for service if needed.

Error Codes

- The BioSonic UC150 is designed to interrupt a cleaning cycle and display an error code if a problem is detected. The table below lists the BioSonic UC150 error messages and the recommended user actions if encountered.

NOTE: The below table is provided as a reference to help users further understanding the BioSonic UC150's error code.

Customer Error Code Table

Error	Error Name	Description	Recommended User Action
00	No Error	Cycle completed	Displayed in the user log file
01	Aborted by user	Cycle was aborted by the user	This error is displayed in the user log file only to note that the cleaning cycle was not completed. The unit can continue to be used normally.
02	Power interrupted	Power to (or within) the unit was interrupted	If power was interrupted by external means (power outage, unit was unplugged, display was removed) press the "OK" icon on the display screen to go to the main menu and resume the next cleaning cycle.
03	Liquid	Liquid level is too low	Verify that the solution level in the tank is filled between the minimum and maximum fill lined stamped on the inside back of the tank. If solution level is withing the fill lines, contact customer service.
04	File missing	Firmware files are missing	Contact customer service for firmware update.
05-09	N/A	N/A	N/A
10	Over temperature Board	Temperature on power PCB assembly above 60º C/140º F	Ensure room temperature and humidity are within the recommended operational environmental conditions and there is at least 2 inches of clearance on all sides of the unit for adequate ventilation. If problem persists, contact customer service.
11	Over temperature Board	Hardware has shutdown due to temperature on power PCB assembly above 65º C/150º F	Ensure room temperature and humidity are within the recommended operational environmental conditions and there is at least 2 inches of clearance on all sides of the unit for adequate ventilation. If problem persists, contact customer service.
12	Over temperature Tank	Tank solution temperature is too high	If the unit has been operated for extended periods of time (e.g. multiple hours without intermission) the bath temperature may rise beyond an acceptable level. Either change the solution or wait for it to cool. If the problem persists, contact customer service.

Error	Error Name	Description	Recommended User Action
13	Over temperature Tank	Tank solution temperature is too high	If the unit has been operated for extended periods of time (e.g. multiple hours without intermission) the bath temperature may rise beyond an acceptable level. Either change the solution or wait for it to cool. If the problem persists, contact customer service.
14	Tank temperature rising	Solution bath temperature is increasing too quickly	Ensure that the tank is filled with solution to within the fill lines. If problem persists, contact customer service.
15	Tank temperature rising	Solution bath temperature is increasing too slowly	Ensure that the tank is filled with solution to within the fill lines. If problem persists, contact customer service.
20	Overcurrent	Abnormal current level	Contact customer service.
21	Overcurrent	Abnormal current level	Contact customer service.
22	Overvoltage	Abnormal voltage level	Contact customer service.
23	Overvoltage	Abnormal voltage level	Contact customer service.
24	Power deviation	Power output is lower than expected	Verify that the input voltage to the unit is within the specifications noted in the instructions for use. Deviations in supply voltage may trigger this error. If the problem persists, contact customer service.
25	Power deviation	Power output is lower than expected	Verify that the input voltage to the unit is within the specifications noted in the instructions for use. Deviations in supply voltage may trigger this error. If the problem persists, contact customer service.
26	Power deviation	Power output is higher than expected	Verify that the input voltage to the unit is within the specifications noted in the instructions for use. Deviations in supply voltage may trigger this error. If the problem persists, contact customer service.
27	Power deviation	Power output is higher than expected	Verify that the input voltage to the unit is within the specifications noted in the instructions for use. Deviations in supply voltage may trigger this error. If the problem persists, contact customer service.
28 - 39	N/A	N/A	N/A
40	Piezo no connection	Unexpected error with the piezo driver	Contact customer service.
41	Only one piezo connected	Unexpected error with the piezo driver	Contact customer service.
42	Piezo short-circuit	Unexpected error with the piezo driver	Contact customer service.
43	Piezo no power	Unexpected error with the piezo driver	Contact customer service.
44	Main switch failure	Main relay switch error	Unplug the unit and contact customer service. Do no attempt to reactivate the unit.
45	Tank Temperature Sensor failure	Temperature sensor not responding	Contact customer service.
46	Voltage Measure failure	Unexpected drive signal measurement	Contact customer service.
47	Current Measure failure	Unexpected drive signal measurement	Contact customer service.
48	Phase Measure failure	Unexpected drive signal measurement	Contact customer service.
49	N/A	N/A	N/A
50-69	Cable connection error	Internal cable failure	Contact customer service.

- **Unit is dead and the LCD screen on the unit doesn't light up**
  Check the outlet that the unit power cord is plugged into by plugging a lamp (or similar device) into the outlet to verify that the GFIC outlet or circuit breaker is active and didn't trip. If tripped, verify that the current requirements are not exceeded by any devices plugged into the outlet or total circuit. If the outlet is working, remove the power cord from the IEC connector of the unit to gain access to the unit fuse holder. Follow the instruction for changing the fuse in the maintenance section of this manual.

Frequently Asked Questions (FAQ)

1. "How do I test my unit to verify that it's working?"
In order to verify the performance of your BioSonic UC150, follow the instructions on the BioSonic UC150 Ultrasonic Cleaner Performance Test flyer. A copy of the procedure is included with each device and is also available at www.coltene.com.

NOTE:
- In some areas where the water quality is considered "hard," distilled water may be required.

- To adequately test an ultrasonic cleaner's ability to cavitate, solution must be present in the tank prior to verifying performance.

- Various solutions may inhibit the functioning of a unit (powder or tablet). It may therefore be necessary to dissolve the powder/liquid solutions in warm water prior to being added to the tank or use warm water in the tank and then perform the performance test.

2. "How long should I clean my instruments?"
Listed below are several parameters to consider when determining the duration of any cleaning cycle. Adjustments to one or more of these parameters may be needed to achieve the desired level of cleaning.

NOTE: Always consult the manufacturer or suppliers instructions for use before cleaning a device.

The below guidance cannot be used to replace the cleaning instructions provided by the manufacturer of the instruments; they are provided to help users get the most out of each cleaning cycle. If soil is still visible after the completion of a cleaning cycle, modification to one or more parameters may be required, and then additional cleaning cycles may be required until all soil is, at a minimum, visibly removed.

- Size of the load being cleaned
  The more instruments placed into an ultrasonic bath, the less effective the cleaning cycle will be. It is not recommended to place instruments in the basket so that they overlap, as open surface areas will be easier to clean. Filling a basket with clear space between instruments should lead to a more effective cleaning cycle.

- Amount and type of soil to be removed
  Some contaminates have a stronger bond to the items being cleaned and may need a longer cleaning cycle. Also, the amount of soil on items being cleaned has an effect on the time required to complete a cleaning cycle.

- Type of cleaning solution used
  Not all kinds of cleaning solutions are the same in regards to cleaning effectiveness. Some cleaning solutions work well on some contaminates, but not as well on other contaminates.

- Type of water
  Not all water is the same and may vary in level of contaminates and hardness which can affect the level of cavitation in the solution. This can increase or decrease the time of a cleaning cycle.

- Solution temperature
  The temperature of the solution can have an impact on the effectiveness of the cleaning cycle. The formation of cavitation events increases with temperature and the corresponding reduction in the fluid surface tension. Also, some solutions are more effective at a higher temperature, while others are more effective at a lower temperature. Consult the instructions of the solution for any requirements or recommendations from the manufacturer.

- Amount of soil in the solution
  Repeated use of the same solution bath will lead to decreased performance as the bath becomes saturated with soil. Continue reading below for guidance on frequency of solution change.

- How long instruments have been soiled prior to cleaning
  Soil should not be allowed to dry on instruments prior to cleaning; they should be processed immediately following a procedure. If they cannot be cleaned immediately following a procedure, it is recommended they be placed in a soaking solution so the soil does not harden on the instruments, which would increase the time of the cleaning cycle. The BioSonic ST16 Dental Soaking Tray is an example of a device designed for this purpose.

3. "How often should I change the solution bath?"
How often the solution bath is changed depends on the solution used, frequency of use, and size of cleaning loads. It is recommended to change your solution every 8 hours at a minimum, or whenever the solution becomes visibly soiled or dirty.

4. "I've activated the heater option, but the temperature doesn't remain stable. Why doesn't the temperature remain at a set point?"
Please refer to the section of the manual that describes the heater operation in detail. The BioSonic UC150 heater option only provides additional energy to the solution to increase the temperature more quickly than with cavitation alone. It is not designed to maintain a set temperature or cool the solution to a lower temperature.

5. "I've activated the heater option, but the solution isn't heating."
Please refer to the section of the manual that describes the heater operation in detail. The BioSonic UC150 heater is only activated when the heater is turned on through the temperature menu and a cleaning cycle has been activated. The heater will not turn on during a degas cycle or when the unit is idle.

6. "Why is there a high pitch sound coming from the Ultrasonic Cleaner?"
When a unit is initially filled up with a fresh solution mix there are lots of bubbles in the solution. If the unit is turned on right after fresh solution is added to the tank, it may make a screeching sound. Additionally, when placing a basket with instruments into the solutions, air is introduced and dissolves in the solution, which may create a screeching sound. The noise is present in all BioSonic cleaners, but is a normal occurrence and is not an indication of any issues with your device, simply that degas may be required.

To degas, please refer to the section of this manual that describes degassing in detail.

7. "What is degassing and why do I need to do this?"
Before cavitation can become effective in an ultrasonic cleaner the gas trapped in the liquid must be removed. If it is not removed, the cavitation bubbles will fill with this gas, cushioning the implosion force. To degas, refer to the section of this manual that describes degassing in detail.

8. "What solution should I be using?"
The purpose of the solution is to break the bonds between the instruments and the soil. Water alone has no cleaning properties and has high surface tension, which inhibits the cavitation bubbles from developing. Adding cleaning solution reduces fluid surface tension and contains ingredients designed to optimize the ultrasonic cleaning process.

Liquid solution allows for instantaneous solution preparation where tablets and powder solutions must be fully dissolved prior to beginning the cleaning process. It is recommended that

tablets and dry solutions be dissolved in hot water prior to placing them in the tank to prevent them from settling on the bottom of the tank until the ultrasonic action dissolves them.

The BioSonic system offers a full line of cleaning solutions which offer the flexibility to efficiently clean and disinfect instruments, prostheses, and other items. It is recommended that BioSonic solutions be used with your BioSonic cleaner for consistent and effective performance.

Visit www.coltene.com or the order information details section of this manual for more information about BioSonic solutions.

9. "What can be cleaned using my Ultrasonic Cleaner?"

Ultrasonic cleaning is effective for most instruments such as:

- Dental burs which are reprocessable
- NiTi endodontic files
- Jointed instruments, e.g. scissors
- Stainless steel syringes
- Serrated instruments
- Plastics, cemented glass syringes, mirrors etc. may not be successfully processed using ultrasonics.

NOTE: Always consult the manufacturer's instructions regarding the cleaning of instruments/ devices to ensure suitability for ultrasonic cleaning!

Service

When calling customer service please have the following information available:

- Office name and phone number
- Contact person in case the service department needs to talk to the end user of the equipment
- Contact email
- Doctor's name
- Model number of the unit
- Serial number of the unit
- Dealer's name
- Detail description of the problem including any error codes displayed
- Photos and short videos of the unit problem are very helpful
- Copy of your purchase invoice for warranty validation
- Solution type (liquid, dry, or tablet) and the brand name
- Any cassettes that are being used, and if so, the cleaning cycle time

Customer service may require the end user to troubleshoot the unit during the call to determine if the issue requires a service technician. Please be prepared and ready to access the unit.

If service is required, a Coltene Customer Service Representative will issue the customer a complaint number and return shipping instructions.

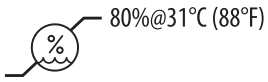
For service, contact your dealer or Coltene customer service.

14. Technical Details

Environmental Conditions:

- Intended for indoor use.
- Maximum altitude 2000 m.
- Recommended Storage and transport temperature: 

- Temperature during operation: 

- Relative humidity: 

- Main supply voltage fluctuations not to exceed ± 10% of the nominal voltage.
- IEC-60664-1 Pollution degree 2.

Electrical Information:

- Power Supply Input: 100 V – 240 V AC / 50 ~ 60 Hz
- Transducers: 2
- Operating Frequency: 48 kHz - 50.5 kHz
- Fuse Specifications: 2 Fuses FST, 5 × 20 mm, Slow Blow, 250 VAC, 5A, IEC 60127-2 Sheet 3

Max Power @ Input Voltage			
Input Voltage	**Max Power without Heater***	**Max Power with Heater***	**Max Current**
100 V	160 W	425 W	4.3 A
115 V	160 W	510 W	4.4 A
230 V	160 W	510 W	2.2 A
240 V	160 W	540 W	2.3 A
*average over a sweep period			

- EMC Class A: Suitable for use in all establishments other than domestic and those directly connected to a low-voltage power supply network which supplies buildings used for domestic purposes.
- Class I electrical equipment per IEC 61140.

• Transient over voltages category II per IEC 61010.

Mechanical information:

Tank Capacity	6.6 L (1.75 US gal)
Use Capacity	5.7 L (1.5 US gal)
Overall Dimensions	L × B × H = 34.5 × 27.6 × 35.5 cm (13.6" × 10.8" × 14") (w/ display)
Tank Dimensions	28.7 × 16.0 × 17.8 cm (11.3" × 6.3" × 7")
Above countertop surface **Below countertop surface**	34.5 × 27.6 × 17.2 cm (13.6" × 10.8" × 6.8") 32.9 × 26 × 18.3 cm (13" × 10.2" × 7.2")

15. Disposal Considerations 

The BioSonic UC150 is an electric appliance requiring proper disposal according to local laws and regulations.

This appliance is labeled in accordance with European directive 2012/19/EU concerning used electrical and electronic appliances (waste electrical and electronic equipment - WEEE). This guideline determines the framework for the return and recycling of used appliances as applicable throughout the EU. The symbol on the product or on the documents accompanying the product indicates that this appliance may not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment.

16. Warranty information

The BioSonic UC150 has been developed specifically for use in dentistry and intended to be operated only by dental professionals in accordance with the instructions contained in this guide. However, notwithstanding anything contained herein, the user shall at all times be solely responsible for determining the suitability of the product for the intended purpose and the method of its use. Any guidance on application technology offered by or on behalf of the manufacturer or distributor, whether written, verbal or by demonstration, shall not relieve the dental professional of his/ her obligation to control the product and to make all professional judgments regarding its use.

This product has been carefully manufactured and has met stringent quality assurance requirements. Our products are manufactured from new parts or new and serviceable used parts. Regardless, our warranty terms apply. If, in normal use, it is found defective in material or workmanship within a period of two years from date of purchase, it will be repaired at Coltène/

Whaledent's option, or replaced. Tampering with any of the components, misuse, negligence, alteration, water damage, accident or lack of reasonable or proper maintenance and care will void this warranty. Failure to use and/or maintain the product in accordance with the instructions contained in this manual will void this warranty.

THE FOREGOING IS IN LIEU OF ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION, ANY WARRANTIES OR MERCHANTABILITY OR FITNESS FOR USE.

COLTÈNE/WHALEDENT AG ASSUMES NO RESPONSIBILITY FOR ANY INCONVENIENCE, LOSS, INJURY OR DIRECT, INDIRECT OR CONSEQUENTIAL DAMAGE ARISING FROM THE POSSESSION OR USE OF THIS PRODUCT.

Any claim for damage or breakage in transit should be made at once against the carrier. If factory service is required, be certain to properly pack your equipment and return prepaid and insured to the factory.

CERTIFICATE OF LIMITED WARRANTY

Coltène/Whaledent (C/W) warrants this product to be free from defects in workmanship and materials for a period of twenty-four (24) months from the date of original purchase. During such warranty period, C/W undertakes to repair or replace this product, at its option, if such product does not function properly under normal use and service, which malfunction is due solely to a defect in workmanship or material.

This warranty does not cover any of the following:

- Damage caused by accident, abuse, misuse, neglect, alteration, transit, failure to follow manufacturer's instructions, lack of reasonable and proper maintenance and care, or Acts of God.
- Normal wear and tear (i.e.: bulbs, fuses, etc.).
- Minor imperfections that do not materially affect the product`s performance.
- Use of the product by anyone other than a licensed dental practitioner or qualified dental hygienist.

This warranty shall become null and void if any repair or servicing of the product is made or attempted by any person not authorized by C/W, or if any part not authorized by C/W is used in any repair or servicing.

This warranty is in lieu of any and all other warranties relating to the product, expressed or implied, including, without limitation, implied warranties of merchantability and fitness for a particular purpose. In no event shall C/W be liable for direct, indirect, tort, exemplary, punitive, special, incidental, or consequential damages arising from the possession or use of the product, including but not limited to loss of use of the product, lost revenues or

profits, or the cost of substitute equipment. The limitations provided for herein shall inure to the benefit of C/W's suppliers and subcontractors.

This Certificate of Limited Warranty is valid only if it has been completed with date of purchase and dealer's name.

If this product becomes defective during the warranty period, it must be delivered together with this Certificate of Limited Warranty and a written warranty claim to the C/W dealer from which it was originally purchased. All warranty claims must include a detailed written description of the claimed defect. The purchaser will be responsible for all costs and risks of transit, and we therefore suggest that the product be carefully packed and that it be shipped to the dealer insured for its full value.

Register your product warranty by either option 1 or 2:

#1. Please return the following information to
Coltène/Whaledent AG, Feldwiesenstrasse 20, 9450 Altstätten / Switzerland
Name and address of purchaser:
Distributor's name and address:
Phone:
Email:
Model Number:
Date of purchase:
Serial number:

#2. Register your product warranty at: http://warranty.coltene.com

17. Order Information Details

	REF No*	Description	Quantity
UC150 Units	60021987	UC150 Cleaner Unit USA Plug Type A	1
	60021988	UC150 Cleaner Unit Euro Plug Type F	1
	60021989	UC150 Cleaner Unit UK Plug Type G	1
	60021990	UC150 Cleaner Unit AUS Plug Type I	1
Accessory kit	60022042	Basket, Beakers (2), Covers(2), Positioning rings(2), Beaker holders(2)	1
Accessories	60022040	Cassette Basket (26.8 × 15.8 × 11.5 cm|10.4 × 6.2 × 4.4")	1
	60022041	Beaker Holder	1
	UC53	600 ml Beaker with Cover and Positioning Ring	1
	60022043	UC150 Replacement Drain Filters	3
	60022044	UC150 Replacement Drain Hose	1
	60022045	UC150 Replacement Lid	1
	60022046	UC150 Gasket for sealing	1
Ultrasonic Solutions	UC30	General Purpose Cleaning Solution Concentrate in MeterDose® Dispensing Bottle	473 ml/16oz
	UC31	BioSonic General Purpose Cleaner plus Super Rust Inhibitor	15 ml × 20
	UC32	Enzymatic Ultrasonic Cleaner Concentrate in MeterDose Dispensing Bottle	236 ml/8oz
	UC34	Plaster & Stone Remover Powder Concentrate in Jar	840g/1.85 lbs
	UC38	Germicidal Ultrasonic Cleaning Concentrate in MeterDose Dispensing Bottle	236 ml/8oz
	UC39	Cement Remover Concentrate in MeterDose Dispensing Bottle	473 ml/16oz
	UC42	Germicidal Ultrasonic Cleaning Concentrate in MeterDose Dispensing Bottle	473 ml/16oz
	60021960	UC40 Universal Ultrasonic Cleaner Concentrate, 1L dosed bottle*	1L
	60021961	UC40 Universal Ultrasonic Cleaner Concentrate, 5L Refill can*	5L

**Available in Europe only*

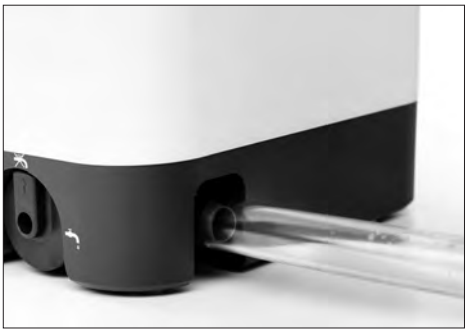


Figure 4



Figure 5

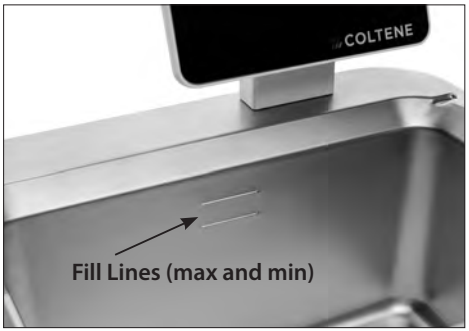


Figure 6

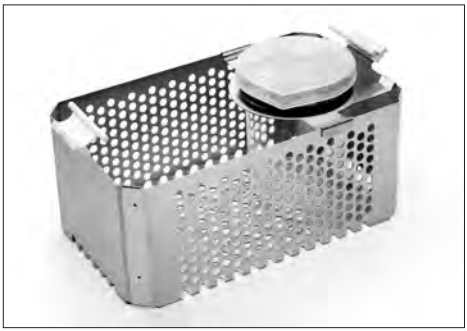


Figure 7



Figure 8



Figure 9



Figure 10



Figure 11

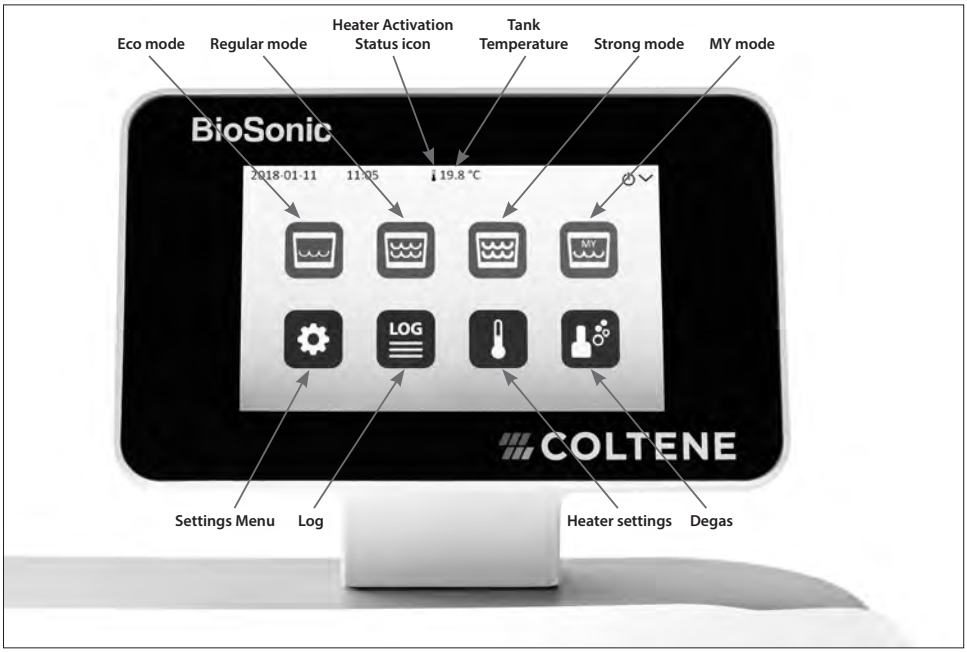


Figure 12

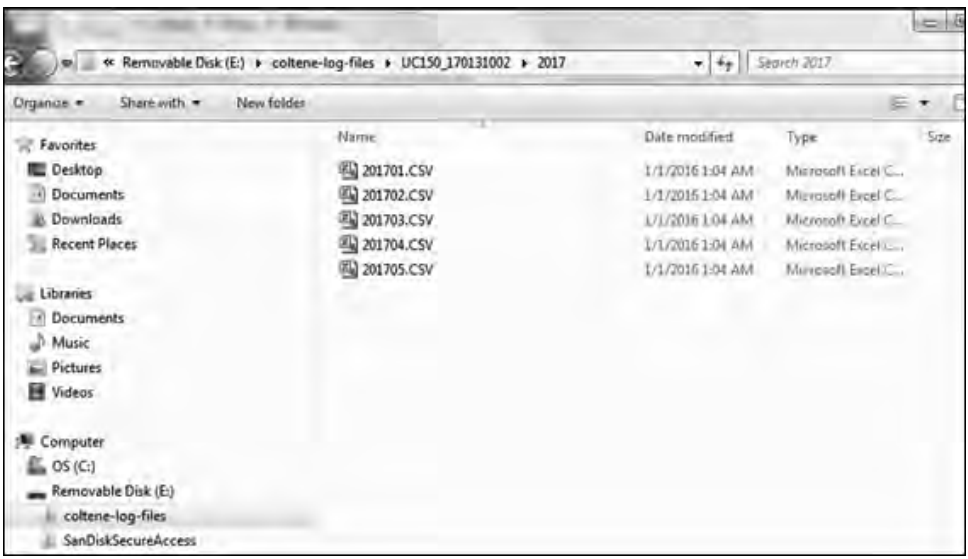


Figure 13

BioSonic® UC150

Ultrasonic Cleaner

Coltène/Whaledent AG
Feldwiesenstrasse 20
9450 Altstätten / Switzerland
T +41 71 757 5300
F +41 71 757 5301
info.ch@coltene.com

US/CA Representative
Coltène/Whaledent Inc.
235 Ascot Parkway
Cuyahoga Falls, Ohio 44223 / USA
T +1 330 916 8800
F +1 330 916 7077
info.us@coltene.com

www.coltene.com
Made in USA

CE

30004475A

COLTENE

WARING COMMERCIAL

QUARTER-SIZE & HALF-SIZE HEAVY-DUTY CONVECTION OVENS



WCO500X: 3 baking racks and 1 half-size sheet pan included



WCO250X: 2 baking racks and 1 quarter-size sheet pan included

- Convection bake, roast, bake and broil functions
- Double-pane, tempered glass door
- Advanced airflow design
- Heavy-duty brushed stainless steel construction
- Heat settings from 150°F – 500°F
- WCO250X: Handles up to 3 quarter-size sheet pans (not included)
  2 baking racks and 1 quarter-size sheet pan included
- WCO500X: Handles up to 4 half-size sheet pans (not included)
  3 baking racks and 1 half-size sheet pan included
- 1700 watts
- Limited One Year Motor Warranty



WCO500X

UL NSF c UL US

WCO Series

WARING COMMERCIAL

QUARTER-SIZE & HALF-SIZE HEAVY-DUTY CONVECTION OVENS



WCO250X/WCO250XC



WCO500X/WCO500XC

ITEM	ELECTRICAL	LISTINGS	OUT OF BOX WEIGHT	OUT OF BOX DIMENSIONS (L × W × H)	CORD LENGTH	WARRANTY
WCO250X	120V, 1700W, 14A, 60HZ	UL, NSF	41.8	21" x 19" x 12"	39"	Limited 1 Year
WCO250XC	120V, 1700W, 14A, 60HZ	cULus, NSF	41.8	21" x 19" x 12"	39"	Limited 1 Year
WCO500X	120V, 1700W, 14A, 60HZ	UL, NSF	55.2	23" x 23" x 15"	39"	Limited 1 Year
WCO500XC	120V, 1700W, 14A, 60HZ	cULus, NSF	55.2	23" x 23" x 15"	39"	Limited 1 Year

ORDERING INFO INFORMATION	#STD. PKG.	GIFTBOX WEIGHT	CUBIC FEET	BOX DIMENSIONS (L × W × H)	UPC	CASE PKG.	MC WEIGHT	MC DIMENSIONS (L × W × H)	MBC
WCO250X	1	33.2	2.98	22.12" x 23.12" x 17.12"	040072022432	1	33.2	23.75" x 23.75" x 17.5"	10040072022439
WCO250XC	1	33.2	2.98	22.12" x 23.12" x 17.12"	040072025617	1	33.2	23.75" x 23.75" x 17.5	10040072025614
WCO500X	1	58	7.1	23.25" x 26.87" x 16.87"	040072022449	1	53.0	26.75" x 24.50" x 20"	10040072022446
WCO500XC	1	58	7.1	23.25" x 26.87" x 16.87"	040072025600	1	53.0	26.75" x 24.50" x 20"	10040072025607

PARTS & ACCESSORIES	ITEM #	UPC
Quarter-Size Nickel-Plated Baking Rack	WCO250RK	040072011313
Quarter-Size Stainless Steel Baking Sheet	WCO250TR	040072011306
Half-Size Nickel-Plated Baking Rack	WCO500RK	040072011337
Half-Size Stainless Steel Baking Sheet	WCO500TR	040072011320

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Tel. 800-492-7464 • Fax 860-496-9008

16WC019295

OptiVac®

AC/DC Portable Suction Unit

The Quality of Gomco® Where You Need It Most.



The OptiVac is the most versatile product in the industry-leading Gomco line of portable suction equipment. Its compact design, ease of operation, rechargeable battery, AC power supply, and fully-enclosed unit are just a few of its unique features.

Standard Features

- 3 hours run time at maximum vacuum on a fully-charged battery
- 1 hour run time after just 2 hours of charging
- AC or DC operation … ready when you are, 24/7
- 25-550 mm Hg vacuum range, coupled with greater than 30 lpm flow at open flow, provides powerful suction for faster aspiration
- Fully chargeable in 8 hours
- Will run at full performance on AC power even with a depleted battery
- Battery maintenance system keeps the battery fully charged but not over-charged
- Long-life internal rechargeable battery eliminates the need for frequent replacement
- Sealed water-resistant unit is easy to clean, and minimizes potential contamination or damage to the compressor and battery.
- Angled control panel for easy viewing
- Impact-resistant and durable
- 3-year warranty on the unit, 1 year on the battery

Gomco by Allied

OptiVac® AC/DC Portable Suction Unit



Tubing can be cut to desired length and attached to disposable hydrophobic bacteria filter.

SPECIFICATIONS

Dimensions:	16.8" W x 7.5" D x 9.4" H (427 mm x 191 mm x 239 mm)
Weight:	11.4 lbs. (5.18 kg)
Vacuum Range:	-25 to -550 mm Hg
Vacuum Flow:	Greater than 30 lpm at open flow
AC Operation:	110-230 volts, 50/60 Hz
DC Operation:	12 volt DC battery
Battery Type:	Sealed lead acid
Battery Life at Maximum Vacuum:	3 hours at 550 mm Hg
Battery Charge Time:	Full charge in 8 hours
Battery Charge Status:	Yes; 5 indicator lights
Bad Battery Sensor:	Yes; 5 red LEDs
Battery Depleted:	Unit automatically shuts off
AC Charger:	Internal charger
Operation with Depleted Battery:	Yes; charging circuit can run on AC if battery is depleted
Operating Temperature:	-4°F to 120°F
Sound Level:	Less than 60 dBA
UL/ETL Listed:	Yes
Warranty:	3 years on unit, 1 year on battery
Regulatory Approvals:	FDA, CE, HC

ORDERING INFORMATION*

G180	OptiVac Portable Suction Unit, 1500 ml disposable canister, 110-230V/50-60 Hz
G180CE	OptiVac Portable Suction Unit, 1500 ml disposable canister, 110-230V/50-60 Hz
G180CE-JAR	OptiVac Portable Suction Unit, 1200 ml polycarbonate bottle, 110-230V/50-60 Hz
G180-JAR	OptiVac Portable Suction Unit, 1200 ml polycarbonate bottle, 110-230V/50-60 Hz

*All models come with disposable suction tubing and 3 disposable hydrophobic bacteria filters

ACCESSORIES

20-08-0003	Disposable Collection Canister, 1500 ml, stem inlet (48/case)
20-08-0016	Disposable Collection Canister, 1500 ml, stem inlet (16/case)
01-90-3928	Disposable Hydrophobic Bacteria Filter, 1/4" hose barb x 1/4" hose barb (3/pkg.)
S610100	Suction Tubing Kit: 1 each 15" & 72" length, 1/4" ID, blue-tipped, clear PVC
L190-BAG	Carrying Case with should strap



L190-BAG



20-08-0003



01-90-3928



S610100

CE 0413

G180CE
G180CE-JAR

EC REP **EMERGO EUROPE**
Molenstraat 15
2513 BH, The Hague
The Netherlands

Allied HEALTHCARE PRODUCTS INC. GLOBAL SUPPORT OF LIFE

Allied Healthcare Products, Inc. ▪ 1720 Sublette Avenue ▪ St. Louis, MO 63110 USA
314/771-2400 ▪ 800/444-3954 ▪ FAX: 314/771-0650 ▪ www.alliedhpi.com

U.S.
Toll Free: 800/444-3940
FAX: 800/477-7701

Canada & Mexico
Toll Free: 800/446-0552
FAX: 800/246-6201

International
Telephone: 314/268-1683
FAX: 314/771-5183

ISO 13485: 2003

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All specifications are nominal and subject to change without notice.

Form 21-00-0001
Rev. January 2014

NO. 813_CART, TREATMENT

650 Ford Street
Colorado Springs, CO 80915
Toll:(800)433-4064 * Ph: (719)637-0300
Fax:(719)597-8273 * www.harloff.com

ETC Line, Four Drawer, Treatment Cart
#ETC-4



Specifications

Construction:

• Sturdy, uni-body steel construction

Features:

• Low height make these carts ideal for bedside or under a counter
• Key lock with two keys
• 3” stem casters, two with brake
• Roller drawer slides
• Removable plastic top
• Latex free
• Twelve year warranty
• Hard-baked powder coat finish

Drawer Configuration:
• (1) – 2.75” (6.98 cm)
• (3) – 5.75” (14.6 cm)

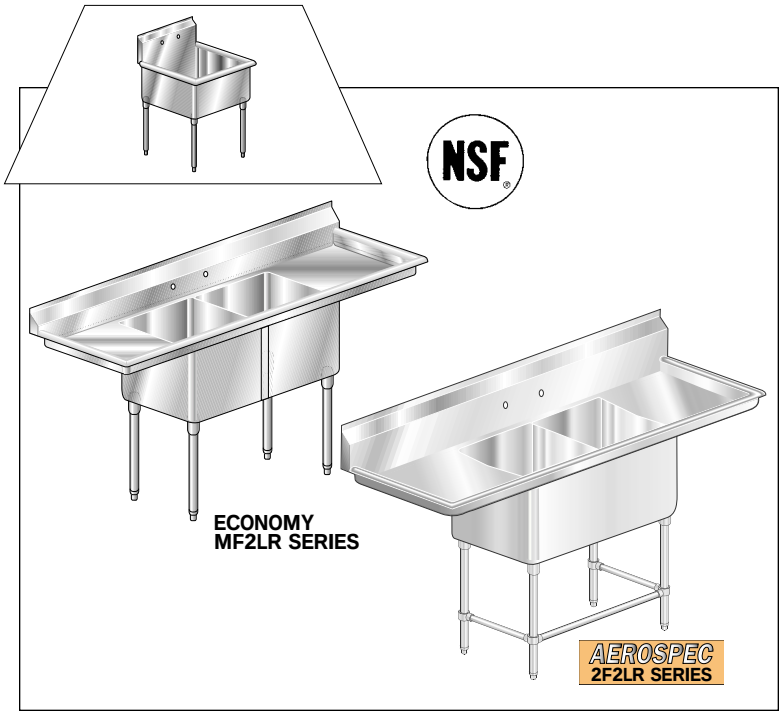
Sixteen available color choices:
***Antimicrobial Finish Available**
Burgundy, Hammer Red, Red, Yellow, Beige, Sand, White, HammerTone Green, Teal, HammerTone Blue, Navy, Light Blue, HammerTone Gray, Light Gray, Mauve, Hammer Black

Assembled Cart Dimensions
• 27.25” H x 23.38” W x 15.13” D (69.2 cm H x 59.4 W x 38.4 D)
• Cart weight: 48 lbs (21.8 kg)
• Approx. Shipping Weight: 63 pounds (28.7 kg)

** PLEASE NOTE THIS CART IS SHORTER THAN STANDARD COUNTER HEIGHTS

NSF SINKS

F2LR SERIES, Two Compartment with Two Drainboards



Item#_____Project_____

Quantity	ECONOMY MF2 Model #	DELUX 3F2 Model #	AEROSPEC 2F2 Model #
21" WIDE			
____	MF2–2116–18LR	3F2–2116–18LR	2F2–2116–18LR
____	MF2–2116–24LR	3F2–2116–24LR	2F2–2116–24LR
____	MF2–2116–30LR	3F2–2116–30LR	2F2–2116–30LR
____	MF2–2116–36LR	3F2–2116–36LR	2F2–2116–36LR
20" WIDE			
____	MF2–2020–20LR	3F2–2020–20LR	2F2–2020–20LR
____	MF2–2020–24LR	3F2–2020–24LR	2F2–2020–24LR
____	MF2–2020–30LR	3F2–2020–30LR	2F2–2020–30LR
____	MF2–2020–36LR	3F2–2020–36LR	2F2–2020–36LR
24" WIDE			
____	MF2–2418–18LR	3F2–2418–18LR	2F2–2418–18LR
____	MF2–2418–24LR	3F2–2418–24LR	2F2–2418–24LR
____	MF2–2418–30LR	3F2–2418–30LR	2F2–2418–30LR
____	MF2–2418–36LR	3F2–2418–36LR	2F2–2418–36LR
24" WIDE			
____	MF2–2424–18LR	3F2–2424–18LR	2F2–2424–18LR
____	MF2–2424–24LR	3F2–2424–24LR	2F2–2424–24LR
____	MF2–2424–30LR	3F2–2424–30LR	2F2–2424–30LR
____	MF2–2424–36LR	3F2–2424–36LR	2F2–2424–36LR
30" WIDE			
____	MF2–3020–20LR	3F2–3020–20LR	2F2–3020–20LR
____	MF2–3020–24LR	3F2–3020–24LR	2F2–3020–24LR
____	MF2–3020–30LR	3F2–3020–30LR	2F2–3020–30LR
____	MF2–3020–36LR	3F2–3020–36LR	2F2–3020–36LR

MATERIAL

BODY

- MF –16 gauge 304 stainless steel bowl, 430 body.
- 3F –16 gauge 304 stainless steel.
- 2F –14 gauge 304 stainless steel. (AEROSPEC)

LEGS

- 1⅝" O.D. 16 gauge 304 series stainless steel tubing, complete with 1" adjustable impact resistant white metal feet.

DESIGN FEATURES

- All sinks are fully cartoned.
- Easily assembled.
- Drainboards pitched ¼" for positive drainage.

EXCLUSIVE AERO SAFETY EDGE

- Sink hemmed on the roll and backsplash to eliminate cuts from rough edges.

CONSTRUCTION

- ***Exclusive 14" bowl depth on all models (consultant's spec).***
- ***Custom style fabricated bowl for true gauge integrity.***
- All sinks have a ¾" radius at all intersecting planes (consultant's spec).
- 18 gauge stainless steel strip to cover seams between bowls.
- Stainless steel gusset is machine welded 360 deg. to a stainless steel triangular plate.
- Gusset plate is fully welded directly underneath the sink for support.
- Polished to a #4 blended finish.
- All sinks with drainboards 30" or longer equipped with 2 stainless steel 1⅝" O.D. legs with stainless steel gussets and white metal feet.

PLUMBING

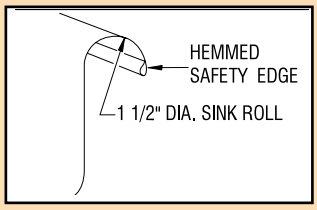
- Water supply is ½" hot and cold.
- Faucet holes are 8" o.c. (Faucets not included. See accessories).

AEROSPEC

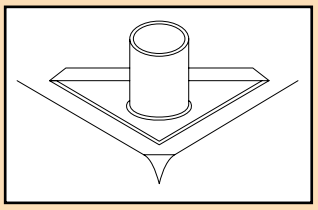
Includes all of the above and the following:

- Full 10" backsplash instead of standard 7".
- 18 gauge stainless steel enclosure surrounding all sink bowls.
- Stainless steel feet in lieu of white metal.
- Legs have stainless steel crossbracing with aluminum castings at all intersections.

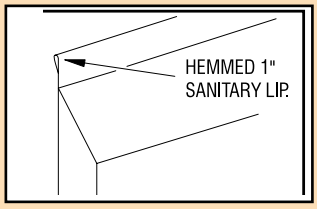
CUSTOM SIZES AVAILABLE



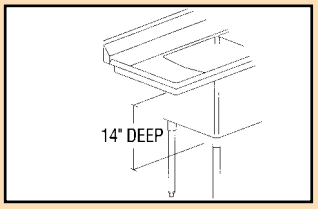
Exclusive Aero Safety Edge



Fully Welded Gusset Assembly



1" Sanitary Lip



14" Custom-Style Bowl

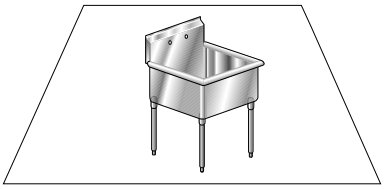
CONSULTANT'S SPECS AT PRODUCTION PRICES

email - sales@aeromfg.com
AERO MANUFACTURING COMPANY • 310 ALLWOOD ROAD, CLIFTON, NEW JERSEY 07012 • VOICE 973.473.5300 FAX 973.473.3794

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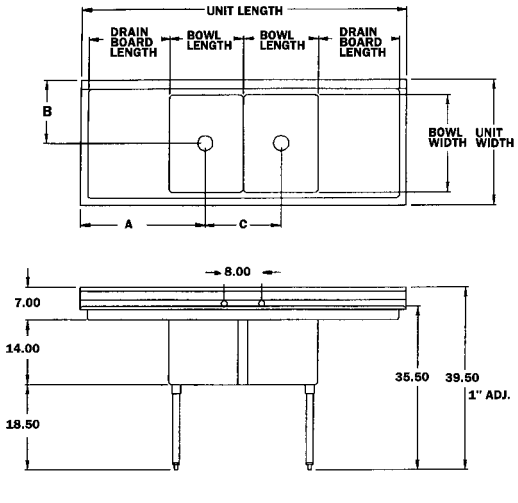
DIMENSIONAL SPECIFICATIONS

F2LR SERIES, NSF Sinks, Two Compartment, Two Drainboards



- Supplied with stainless steel drain basket and strainer.

NSF



BOWL Width	BOWL Length	UNIT Width	UNIT Length	DRAIN BOARD Length	A Drain	B Drain	C Drain	ECONOMY MF2 Model #	DELUX 3F2 Model #	AEROSPEC 2F2 Model #	Ship Weight	Cubic Feet	Sets, Faucet Holes
21" WIDE													
21	16	27	71	18	27.5	13.75	16	MF2–2116–18LR	3F2–2116–18LR	2F2–2116–18LR	130	23	ONE
21	16	27	83	24	33.5	13.75	16	MF2–2116–24LR	3F2–2116–24LR	2F2–2116–24LR	140	27	ONE
21	16	27	95	30	39.5	13.75	16	MF2–2116–30LR	3F2–2116–30LR	2F2–2116–30LR	150	31	ONE
21	16	27	107	36	45.5	13.75	16	MF2–2116–36LR	3F2–2116–36LR	2F2–2116–36LR	160	35	ONE
20" WIDE													
20	20	26	83	20	31.5	13.25	20	MF2–2020–20LR	3F2–2020–20LR	2F2–2020–20LR	140	27	ONE
20	20	26	91	24	35.5	13.25	20	MF2–2020–24LR	3F2–2020–24LR	2F2–2020–24LR	150	33	ONE
20	20	26	103	30	41.5	13.25	20	MF2–2020–30LR	3F2–2020–30LR	2F2–2020–30LR	160	36	ONE
20	20	26	115	36	47.5	13.25	20	MF2–2020–36LR	3F2–2020–36LR	2F2–2020–36LR	170	40	ONE
24" WIDE													
24	18	30	75	18	28.5	13.75	18	MF2–2418–18LR	3F2–2418–18LR	2F2–2418–18LR	135	25	ONE
24	18	30	87	24	34.5	13.75	18	MF2–2418–24LR	3F2–2418–24LR	2F2–2418–24LR	145	29	ONE
24	18	30	99	30	40.5	13.75	18	MF2–2418–30LR	3F2–2418–30LR	2F2–2418–30LR	155	32	ONE
24	18	30	111	36	46.5	13.75	18	MF2–2418–36LR	3F2–2418–36LR	2F2–2418–36LR	165	36	ONE
24" WIDE													
24	24	30	87	18	31.5	15.25	24	MF2–2424–18LR	3F2–2424–18LR	2F2–2424–18LR	150	32	ONE
24	24	30	99	24	37.5	15.25	24	MF2–2424–24LR	3F2–2424–24LR	2F2–2424–24LR	165	36	ONE
24	24	30	111	30	43.5	15.25	24	MF2–2424–30LR	3F2–2424–30LR	2F2–2424–30LR	175	40	ONE
24	24	30	123	36	49.5	15.25	24	MF2–2424–36LR	3F2–2424–36LR	2F2–2424–36LR	185	45	ONE
30" WIDE													
30	20	36	83	18	31.5	18.25	20	MF2–3020–20LR	3F2–3020–20LR	2F2–3020–20LR	160	35	ONE
30	20	36	91	24	35.5	18.25	20	MF2–3020–24LR	3F2–3020–24LR	2F2–3020–24LR	175	40	ONE
30	20	36	103	30	41.5	18.25	20	MF2–3020–30LR	3F2–3020–30LR	2F2–3020–30LR	185	45	ONE
30	20	36	115	36	47.5	18.25	20	MF2–3020–36LR	3F2–3020–36LR	2F2–3020–36LR	195	50	ONE

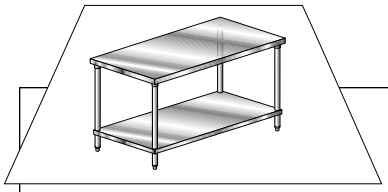
All dimensions are typical (tol. ±½"). • For Accessories and Options see pages FS-7A, FS-7B.

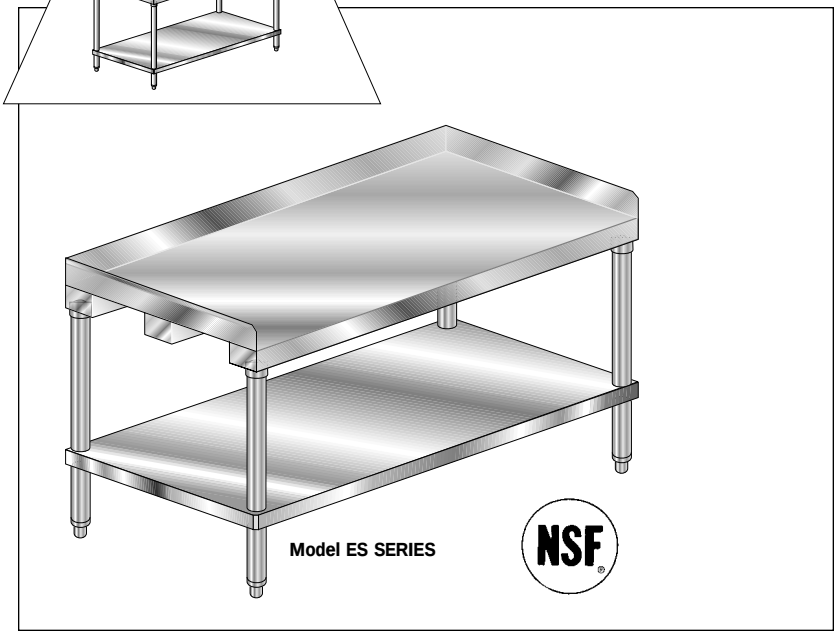
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EQUIPMENT STANDS

EG/ES SERIES





Item#_____Project_____

GALVANIZED UNDERSHELF

Quantity	16GA 430 Model #	14GA 304 Model #	16GA 430 Model #	14GA 304 Model #
24" WIDE				
_____	4EG–2424	2EG–2424	4EG–3024	2EG–3024
_____	4EG–2430	2EG–2430	4EG–3030	2EG–3030
_____	4EG–2436	2EG–2436	4EG–3036	2EG–3036
_____	4EG–2448	2EG–2448	4EG–3048	2EG–3048
_____	4EG–2460	2EG–2460	4EG–3060	2EG–3060
_____	4EG–2472	2EG–2472	4EG–3072	2EG–3072
_____	4EG–2484	2EG–2484	4EG–3084	2EG–3084
_____	4EG–2496	2EG–2496	4EG–3096	2EG–3096

STAINLESS UNDERSHELF

Quantity	16GA 430 Model #	14GA 304 Model #	16GA 430 Model #	14GA 304 Model #
30" WIDE				
_____	4ES–2424	2ES–2424	4ES–3024	2ES–3024
_____	4ES–2430	2ES–2430	4ES–3030	2ES–3030
_____	4ES–2436	2ES–2436	4ES–3036	2ES–3036
_____	4ES–2448	2ES–2448	4ES–3048	2ES–3048
_____	4ES–2460	2ES–2460	4ES–3060	2ES–3060
_____	4ES–2472	2ES–2472	4ES–3072	2ES–3072
_____	4ES–2484	2ES–2484	4ES–3084	2ES–3084
_____	4ES–2496	2ES–2496	4ES–3096	2ES–3096

Maple Cutting Boards 8" Wide, 1¼" Thick

_____ ACB–824
_____ ACB–830
_____ ACB–836
_____ ACB–848
_____ ACB–860
_____ ACB–872
_____ ACB–884
_____ ACB–896

Adjustable Plate Shelf (Only Available With Cutting Board)

_____ APS–824
_____ APS–830
_____ APS–836
_____ APS–848
_____ APS–860
_____ APS–872
_____ APS–884
_____ APS–896

MATERIAL

TOP

- 14 gauge 304 stainless steel.
- 2" turn down on 1 side, 2" splash on 3 sides.
- Two heavy gauge steel box channels on 24" wide tables for rigidity.
- Three heavy gauge steel box channels on 30" wide tables for rigidity.
- Sound deadened between table top and channels.

SHELF

- 18 gauge galvanized or 430 series stainless steel.

LEGS

- 1⅝" O.D. 16 gauge galvanized or 304 series stainless steel tubing, complete with 1" adjustable, impact resistant white metal feet.

DESIGN FEATURES

- Undershelf is the largest in the industry.
- Undershelf is fully adjustable and flexible in design.
- All stands fully cartoned.
- Easily assembled.

EXCLUSIVE AERO SAFETY EDGE

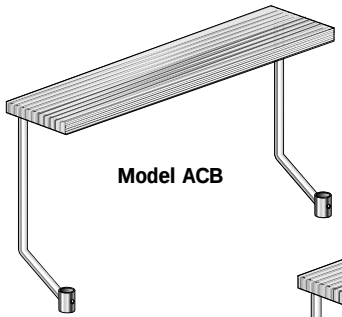
- Stand and undershelf hemmed to eliminate cuts from rough edges.

CONSTRUCTION

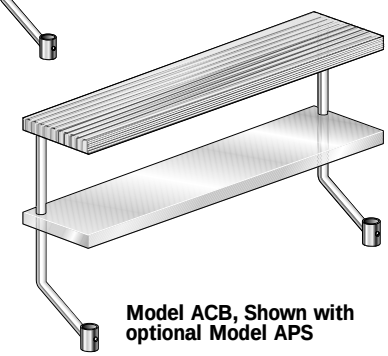
- Stand is polished to a #4 mill finish.
- Heliarc welded construction creates uniform, rock-solid unit.
- Gussets fully welded on two planes for extra rigidity.
- All tables shipped K.D.

OPTIONS

- 1¼" Maple cutting board attached to adjustable stainless steel tubular supports. (Model #ACB)
- 18 gauge 430 stainless steel adjustable plate shelf (must be ordered with cutting board). (Model #APS)



Model ACB



Model ACB, Shown with optional Model APS

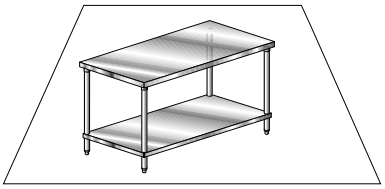
BUILT TO LAST A LIFETIME

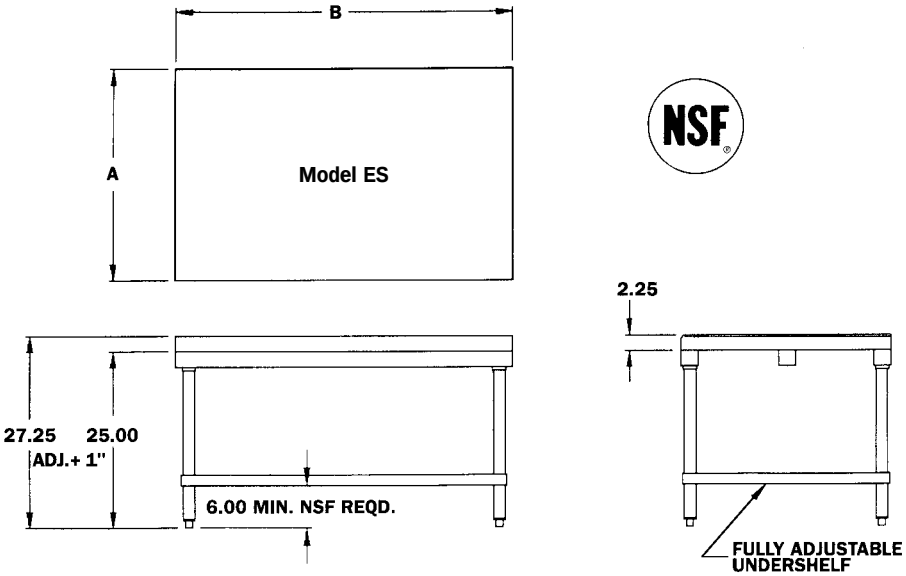
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DIMENSIONAL SPECIFICATIONS

EG/ES SERIES Equipment Stands





A Width	B Length	GALVANIZED UNDERSHELF ECONOMY 16GA 430 Model #	GALVANIZED UNDERSHELF PREMIUM 14GA 304 Model #	STAINLESS UNDERSHELF ECONOMY 16GA 430 Model #	STAINLESS UNDERSHELF PREMIUM 14GA 304 Model #	Ship Weight	Cubic Feet
24" WIDE							
24	24	4EG–2424	2EG–2424	4ES–2424	2ES–2424	42	8
24	30	4EG–2430	2EG–2430	4ES–2430	2ES–2430	49	11
24	36	4EG–2436	2EG–2436	4ES–2436	2ES–2436	56	13
24	48	4EG–2448	2EG–2448	4ES–2448	2ES–2448	74	17
24	60	4EG–2460	2EG–2460	4ES–2460	2ES–2460	84	21
24	72	4EG–2472	2EG–2472	4ES–2472	2ES–2472	102	25
24	84	4EG–2484	2EG–2484	4ES–2484	2ES–2484	120	29
24	96	4EG–2496	2EG–2496	4ES–2496	2ES–2496	135	33
30" WIDE							
30	24	4EG–3024	2EG–3024	4ES–3024	2ES–3024	42	10
30	30	4EG–3030	2EG–3030	4ES–3030	2ES–3030	49	13
30	36	4EG–3036	2EG–3036	4ES–3036	2ES–3036	56	16
30	48	4EG–3048	2EG–3048	4ES–3048	2ES–3048	74	21
30	60	4EG–3060	2EG–3060	4ES–3060	2ES–3060	84	26
30	72	4EG–3072	2EG–3072	4ES–3072	2ES–3072	102	31
30	84	4EG–3084	2EG–3084	4ES–3084	2ES–3084	120	36
30	96	4EG–3096	2EG–3096	4ES–3096	2ES–3096	135	42

A Width	B Length	ECONOMY 16GA 430 Model #	Ship Weight	Cubic Feet
Maple Cutting Boards 8" Wide, 1¼" Thick				
8	24	ACB–824	28	1
8	30	ACB–830	29	1
8	36	ACB–836	30	1
8	48	ACB–848	34	2
8	60	ACB–860	37	2
8	72	ACB–872	40	3
8	84	ACB–884	56	3
8	96	ACB–896	64	3
Adjustable Plate Shelf (Only Available With Cutting Board)				
8	24	APS–824	22	1
8	30	APS–830	24	1
8	36	APS–836	25	1
8	48	APS–848	27	2
8	60	APS–860	31	2
8	72	APS–872	40	3
8	84	APS–884	50	3
8	96	APS–896	57	3

ASK AERO:
We can Customize any product for any Application!

Call for Details!

All dimensions are typical (tol. ±½"). • For Accessories and Options see pages TS-5A & TS-5B.

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NO. 815 BOX, GLOVE, WALL MOUNT



Description:
Glove Box Dispenser - Triple

Holds three boxes of gloves
Two-way keyholes for vertical or horizontal wall mounting
Stainless Steel
Made in the USA

Consumable items are for demonstration purposes only and are not available for purchase through BOWMAN®.

Download Product Datasheet

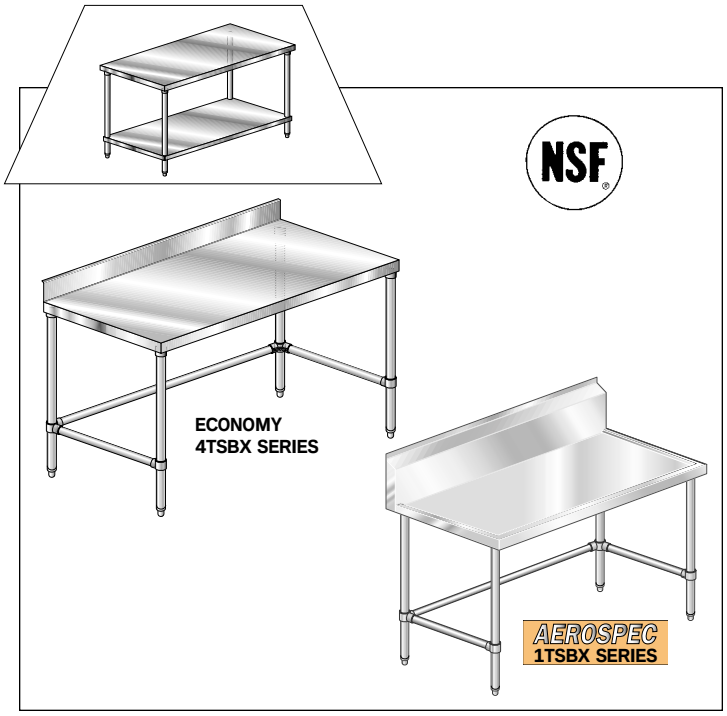
Dimensions: *Dimensions rounded to the nearest 1/16"*
15.82"W x 10.04"H x 3.79"D
40.2 cm x 25.5 cm x 9.6 cm

Related Products Quick Add to Cart:

SKU: GS-006
$72.00
1 Add To Cart

WORK TABLE

TSBX SERIES 4" & 10" Backsplash, S/S Legs and Crossbracing



Item#_____Project_____

Quantity	ECONOMY 16GA 430 Model #	DELUX 16GA 304 Model #	PREMIUM 14GA 304 Model #	AEROSPEC 14GA 304 Model #
24" WIDE				
_____	4TSBX–2424	3TSBX–2424	2TSBX–2424	1TSBX-2424
_____	4TSBX–2430	3TSBX–2430	2TSBX–2430	1TSBX-2430
_____	4TSBX–2436	3TSBX–2436	2TSBX–2436	1TSBX-2436
_____	4TSBX–2448	3TSBX–2448	2TSBX–2448	1TSBX-2448
_____	4TSBX–2460	3TSBX–2460	2TSBX–2460	1TSBX-2460
_____	4TSBX–2472	3TSBX–2472	2TSBX–2472	1TSBX-2472
_____	4TSBX–2484	3TSBX–2484	2TSBX–2484	1TSBX-2484
_____	4TSBX–2496	3TSBX–2496	2TSBX–2496	1TSBX-2496
_____	4TSBX–24108	3TSBX–24108	2TSBX–24108	1TSBX-24108
_____	4TSBX–24120	3TSBX–24120	2TSBX–24120	1TSBX-24120
_____	4TSBX–24132	3TSBX–24132	2TSBX–24132	1TSBX-24132
_____	4TSBX–24144	3TSBX–24144	2TSBX–24144	1TSBX-24144
30" WIDE				
_____	4TSBX–3024	3TSBX–3024	2TSBX–3024	1TSBX-3024
_____	4TSBX–3030	3TSBX–3030	2TSBX–3030	1TSBX-3030
_____	4TSBX–3036	3TSBX–3036	2TSBX–3036	1TSBX-3036
_____	4TSBX–3048	3TSBX–3048	2TSBX–3048	1TSBX-3048
_____	4TSBX–3060	3TSBX–3060	2TSBX–3060	1TSBX-3060
_____	4TSBX–3072	3TSBX–3072	2TSBX–3072	1TSBX-3072
_____	4TSBX–3084	3TSBX–3084	2TSBX–3084	1TSBX-3084
_____	4TSBX–3096	3TSBX–3096	2TSBX–3096	1TSBX-3096
_____	4TSBX–30108	3TSBX–30108	2TSBX–30108	1TSBX-30108
_____	4TSBX–30120	3TSBX–30120	2TSBX–30120	1TSBX-30120
_____	4TSBX–30132	3TSBX–30132	2TSBX–30132	1TSBX-30132
_____	4TSBX–30144	3TSBX–30144	2TSBX–30144	1TSBX-30144
36" WIDE				
_____	4TSBX–3636	3TSBX–3636	2TSBX–3636	1TSBX-3636
_____	4TSBX–3648	3TSBX–3648	2TSBX–3648	1TSBX-3648
_____	4TSBX–3660	3TSBX–3660	2TSBX–3660	1TSBX-3660
_____	4TSBX–3672	3TSBX–3672	2TSBX–3672	1TSBX-3672
_____	4TSBX–3684	3TSBX–3684	2TSBX–3684	1TSBX-3684
_____	4TSBX–3696	3TSBX–3696	2TSBX–3696	1TSBX-3696
_____	4TSBX–36108	3TSBX–36108	2TSBX–36108	1TSBX-36108
_____	4TSBX–36120	3TSBX–36120	2TSBX–36120	1TSBX-36120
_____	4TSBX–36132	3TSBX–36132	2TSBX–36132	1TSBX-36132
_____	4TSBX–36144	3TSBX–36144	2TSBX–36144	1TSBX-36144

MATERIAL

TOP

- 1⅞" turn down on 3 sides.
- Rear has a 4" splash.
- Two heavy gauge steel box channels on 24" wide tables for rigidity.
- Three heavy gauge steel box channels on 30" tables for rigidity.
- Four heavy gauge steel box channels on 36" tables for rigidity.
- Sound deadened between table top and channels.

Crossbracing

- 1¼" O.D. 16 gauge 304 series stainless steel crossbracing, 1⅝" I.D. aluminum castings at all leg intersections.

LEGS

- 1⅝" O.D. 16 gauge 304 series stainless steel tubing, complete with 1" adjustable, impact resistant, white metal feet.

DESIGN FEATURES

- Crossbracing is fully adjustable and flexible in design.
- All tables fully cartoned.
- Easily assembled.

EXCLUSIVE AERO SAFETY EDGE

- Table hemmed to eliminate cuts from rough edges.

CONSTRUCTION

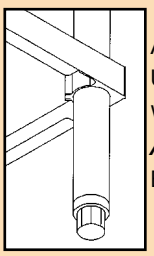
- Top is polished to a #4 mill finish.
- Heliarc welded construction creates uniform, rock-solid unit.
- Gussets fully welded for extra rigidity.
- All tables shipped K.D.

AEROSPEC

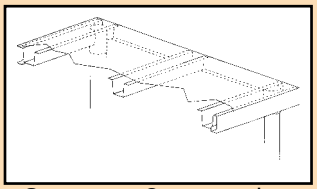
- 1TSBX TABLES ARE ***AEROSPEC DESIGNED.***
  In addition to above specifications;
- Three sides have a "V" countertop edge to inhibit spillage.
- Backsplash is 10" high including a 2" return on a 45 deg. angle.
- Stainless steel gussets in lieu of galvanized.
- Stainless steel feet in lieu of white metal.

SEE PAGES SP-6A & SP-6B TO DESIGN YOUR FLEXIBLE WORKCENTER

SEE PAGES TS-5A & TS-5B TO CUSTOMIZE YOUR AERO TABLE



Adjustable Undershelf with Exclusive *AEROLOCK* Extrusion



Strongest Construction in the Industry

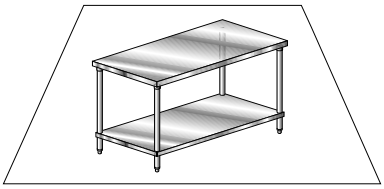
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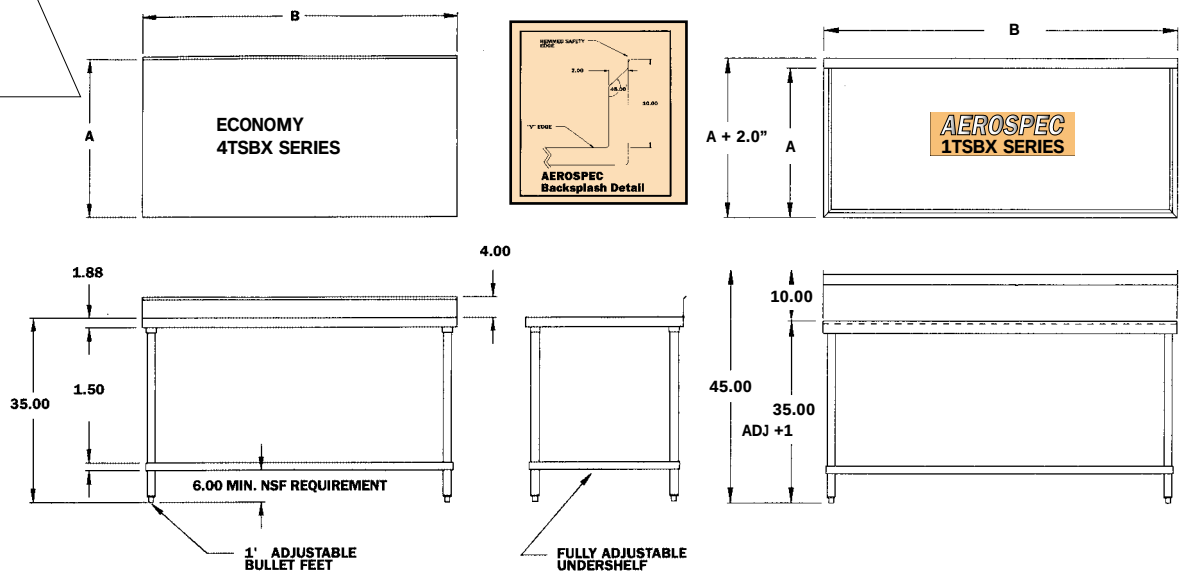
DIMENSIONAL SPECIFICATIONS

TSBX SERIES 4" & 10" Backsplash, S/S Legs and Crossbracing



- Tables over 72" in length are shipped with six legs.
- All feet have a full 1" adjustability.
- Crossbracing is fully adjustable.

NSF



A Width	B Length	ECONOMY 16GA 430 Model #	DELUX 16GA 304 Model #	PREMIUM 14GA 304 Model #	AEROSPEC 14GA 304 Model #	Ship Weight	Cubic Feet
24" WIDE							
24	24	4TSBX–2424	3TSBX–2424	2TSBX–2424	1TSBX-2424	50	3
24	30	4TSBX–2430	3TSBX–2430	2TSBX–2430	1TSBX-2430	55	3
24	36	4TSBX–2436	3TSBX–2436	2TSBX–2436	1TSBX-2436	66	4
24	48	4TSBX–2448	3TSBX–2448	2TSBX–2448	1TSBX-2448	81	5
24	60	4TSBX–2460	3TSBX–2460	2TSBX–2460	1TSBX-2460	95	7
24	72	4TSBX–2472	3TSBX–2472	2TSBX–2472	1TSBX-2472	113	8
24	84	4TSBX–2484	3TSBX–2484	2TSBX–2484	1TSBX-2484	135	9
24	96	4TSBX–2496	3TSBX–2496	2TSBX–2496	1TSBX-2496	150	11
24	108	4TSBX–24108	3TSBX–24108	2TSBX–24108	1TSBX-24108	165	12
24	120	4TSBX–24120	3TSBX–24120	2TSBX–24120	1TSBX-24120	268	13
24	132	4TSBX–24132	3TSBX–24132	2TSBX–24132	1TSBX-24132	301	15
24	144	4TSBX–24144	3TSBX–24144	2TSBX–24144	1TSBX-24144	316	16
30" WIDE							
30	24	4TSBX–3024	3TSBX–3024	2TSBX–3024	1TSBX-3024	56	3
30	30	4TSBX–3030	3TSBX–3030	2TSBX–3030	1TSBX-3024	70	4
30	36	4TSBX–3036	3TSBX–3036	2TSBX–3036	1TSBX-3036	77	5
30	48	4TSBX–3048	3TSBX–3048	2TSBX–3048	1TSBX-3048	92	7
30	60	4TSBX–3060	3TSBX–3060	2TSBX–3060	1TSBX-3060	111	8
30	72	4TSBX–3072	3TSBX–3072	2TSBX–3072	1TSBX-3072	129	10
30	84	4TSBX–3084	3TSBX–3084	2TSBX–3084	1TSBX-3084	153	12
30	96	4TSBX–3096	3TSBX–3096	2TSBX–3096	1TSBX-3096	171	13
30	108	4TSBX–30108	3TSBX–30108	2TSBX–30108	1TSBX-30108	195	15
30	120	4TSBX–30120	3TSBX–30120	2TSBX–30120	1TSBX-30120	294	17
30	132	4TSBX–30132	3TSBX–30132	2TSBX–30132	1TSBX-30132	331	18
30	144	4TSBX–30144	3TSBX–30144	2TSBX–30144	1TSBX-30144	346	20
36" WIDE							
36	36	4TSBX–3636	3TSBX–3636	2TSBX–3636	1TSBX-3636	92	6
36	48	4TSBX–3648	3TSBX–3648	2TSBX–3648	1TSBX-3648	101	8
36	60	4TSBX–3660	3TSBX–3660	2TSBX–3660	1TSBX-3660	121	10
36	72	4TSBX–3672	3TSBX–3672	2TSBX–3672	1TSBX-3672	142	12
36	84	4TSBX–3684	3TSBX–3684	2TSBX–3684	1TSBX-3684	169	14
36	96	4TSBX–3696	3TSBX–3696	2TSBX–3696	1TSBX-3696	189	16
36	108	4TSBX–36108	3TSBX–36108	2TSBX–36108	1TSBX-36108	160	18
36	120	4TSBX–36120	3TSBX–36120	2TSBX–36120	1TSBX-36120	315	20
36	132	4TSBX–36132	3TSBX–36132	2TSBX–36132	1TSBX-36132	358	22
36	144	4TSBX–36144	3TSBX–36144	2TSBX–36144	1TSBX-36144	373	24

All dimensions are typical (tol. ±½"). • For Accessories and Options see pages TS-5A & TS-5B.

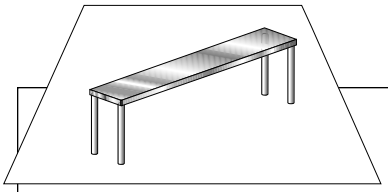
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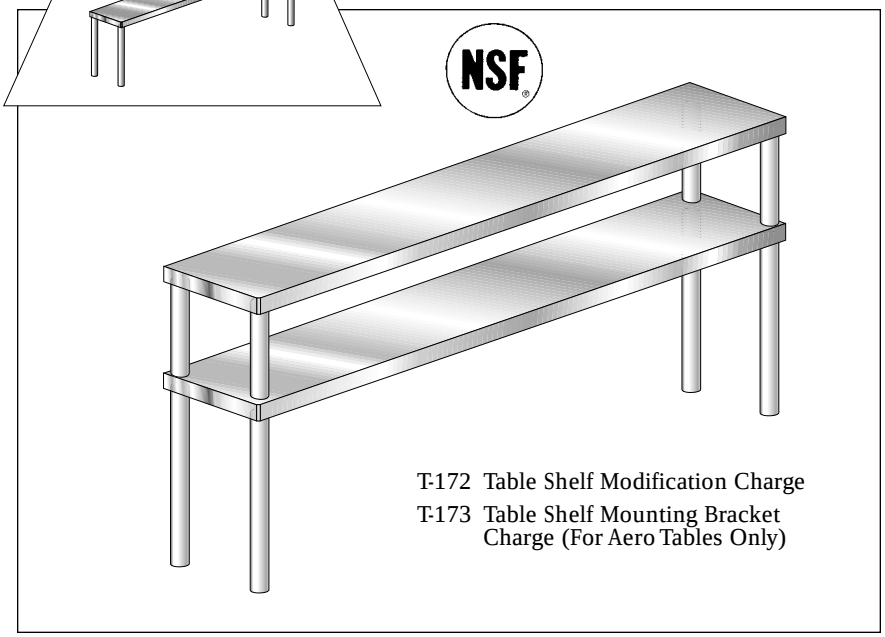
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OVERSHELF

DO SERIES Table Mounted, Double Overshelf



Item#_____Project_____



T-172 Table Shelf Modification Charge

T-173 Table Shelf Mounting Bracket Charge (For Aero Tables Only)

Quantity	ECONOMY 16GA 430 Model #	DELUX 16GA 304 Model #	AEROSPEC 14GA 304 Model #
10" WIDE			
____	4DO–1036	3DO–1036	2DO–1036
____	4DO–1048	3DO–1048	2DO–1048
____	4DO–1060	3DO–1060	2DO–1060
____	4DO–1072	3DO–1072	2DO–1072
____	4DO–1084	3DO–1084	3DO–1084
____	4DO–1096	3DO–1096	2DO–1096
____	4DO–10108	3DO–10108	2DO–10108
____	4DO–10120	3DO–10120	2DO–10120
____	4DO–10132	3DO–10132	2DO–10132
____	4DO–10144	3DO–10144	2DO–10144
12" WIDE			
____	4DO–1236	3DO–1236	2DO–1236
____	4DO–1248	3DO–1248	2DO–1248
____	4DO–1260	3DO–1260	2DO–1260
____	4DO–1272	3DO–1272	2DO–1272
____	4DO–1284	3DO–1284	2DO–1284
____	4DO–1296	3DO–1296	2DO–1296
____	4DO–12108	3DO–12108	2DO–12108
____	4DO–12120	3DO–12120	2DO–12120
____	4DO–12132	3DO–12132	2DO–12132
____	4DO–12144	3DO–12144	2DO–12144
15" WIDE			
____	4DO–1536	3DO–1536	2DO–1536
____	4DO–1548	3DO–1548	2DO–1548
____	4DO–1560	3DO–1560	2DO–1560
____	4DO–1572	3DO–1572	2DO–1572
____	4DO–1584	3DO–1584	2DO–1584
____	4DO–1596	3DO–1596	2DO–1596
____	4DO–15108	3DO–15108	2DO–15108
____	4DO–15120	3DO–15120	2DO–15120
____	4DO–15132	3DO–15132	2DO–15132
____	4DO–15144	3DO–15144	2DO–15144
18" WIDE			
____	4DO–1836	3DO–1836	2DO–1836
____	4DO–1848	3DO–1848	2DO–1848
____	4DO–1860	3DO–1860	2DO–18608
____	4DO–1872	3DO–1872	2DO–1872
____	4DO–1884	3DO–1884	2DO–1884
____	4DO–1896	3DO–1896	2DO–1896
____	4DO–18108	3DO–18108	2DO–18108
____	4DO–18120	3DO–18120	2DO–18120
____	4DO–18132	3DO–18132	2DO–18132
____	4DO–18144	3DO–18144	2DO–18144

MATERIAL

SHELF

4DO – 16 gauge 430 stainless steel
3DO – 16 gauge 304 stainless steel
2DO – 14 gauge 304 stainless steel

LEGS

- 1⅝" O.D. 16 gauge 304 series stainless steel tubing.

DESIGN FEATURES

- Shelf has 1½" turn down on 4 sides.
- Legs mounted into *Aerolock* aluminum extrusions for extra strength.
- Fully adjustable *Aerolock* aluminum extrusions allow mid shelf to be placed at any height (suggested height is 18" above table).
- Easily assembled.
- K.D. design means UPS shipment for many sizes.

EXCLUSIVE AERO SAFETY EDGE

- Shelves hemmed to eliminate cuts from rough edges.

CONSTRUCTION

- Shelf is polished to a #4 mill finish.
- Shipped complete with 1⅝" rubber expander assembly.
- All shelves shipped K.D.

CUSTOM SIZES AVAILABLE

AT AERO
WE PROVIDE
CUSTOM EQUIPMENT
AT PRODUCTION PRICES!

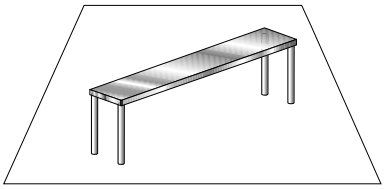
BUILT TO LAST A LIFETIME

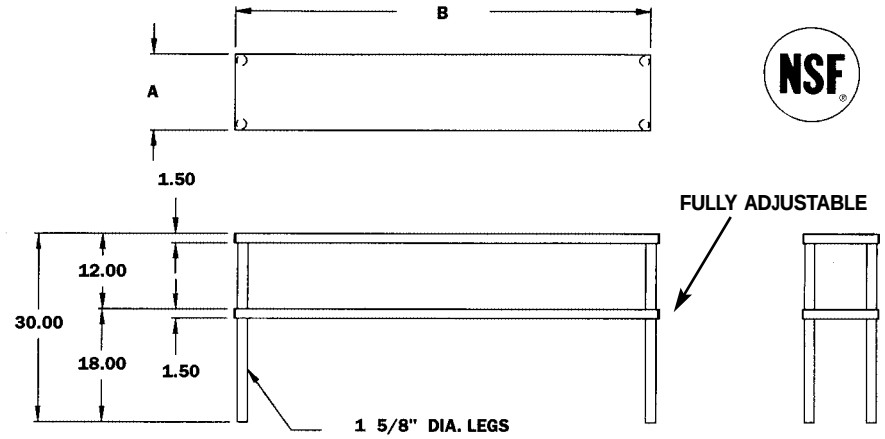
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DIMENSIONAL SPECIFICATIONS

DO SERIES Table Mounted, Double Overshelf





NSF

- Shelves over 72" in length are shipped with six legs.
- 18" mid-shelf height is standard. Adjustable to any height.

T-172 Table Shelf Modification Charge

T-173 Table Shelf Mounting Bracket Charge (For Aero Tables Only)

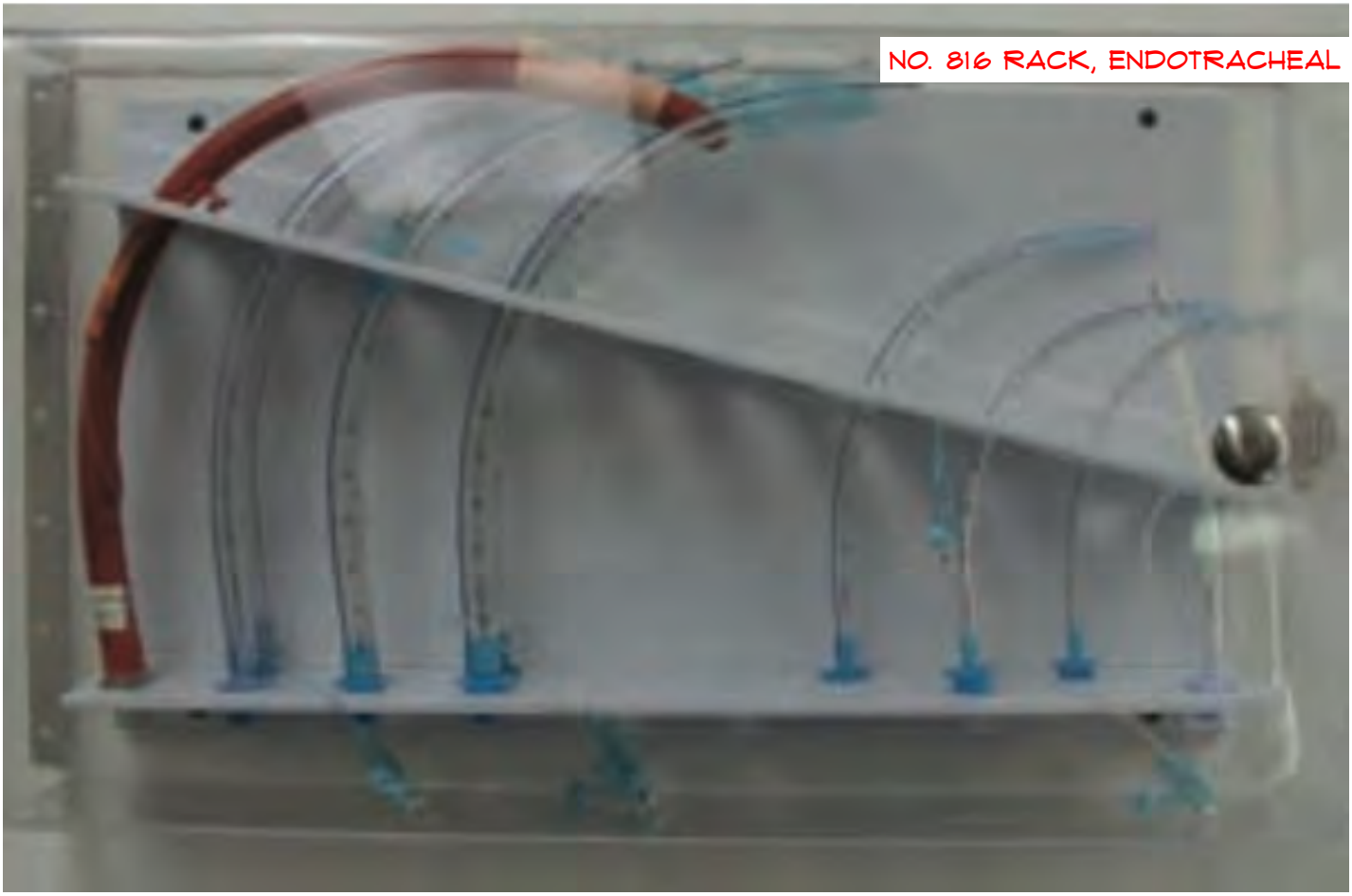
A Width	B Length	ECONOMY 16GA 430 Model #	DELUX 16GA 304 Model #	AEROSPEC 14GA 304 Model #	Ship Weight	Cubic Feet
10" WIDE						
10	36	4DO–1036	3DO–1036	2DO–1036	24	4
10	48	4DO–1048	3DO–1048	2DO–1048	29	5
10	60	4DO–1060	3DO–1060	2DO–1060	35	6
10	72	4DO–1072	3DO–1072	2DO–1072	40	8
10	84	4DO–1084	3DO–1084	3DO–1084	46	9
10	96	4DO–1096	3DO–1096	2DO–1096	55	10
10	108	4DO–10108	3DO–10108	2DO–10108	60	11
10	120	4DO–10120	3DO–10120	2DO–10120	66	13
10	132	4DO–10132	3DO–10132	2DO–10132	72	14
10	144	4DO–10144	3DO–10144	2DO–10144	78	15
12" WIDE						
12	36	4DO–1236	3DO–1236	2DO–1236	24	7
12	48	4DO–1248	3DO–1248	2DO–1248	29	9
12	60	4DO–1260	3DO–1260	2DO–1260	35	12
12	72	4DO–1272	3DO–1272	2DO–1272	40	14
12	84	4DO–1284	3DO–1284	2DO–1284	46	16
12	96	4DO–1296	3DO–1296	2DO–1296	55	19
12	108	4DO–12108	3DO–12108	2DO–12108	60	21
12	120	4DO–12120	3DO–12120	2DO–12120	66	23
12	132	4DO–12132	3DO–12132	2DO–12132	72	26
12	144	4DO–12144	3DO–12144	2DO–12144	78	28
15" WIDE						
15	36	4DO–1536	3DO–1536	2DO–1536	24	9
15	48	4DO–1548	3DO–1548	2DO–1548	29	12
15	60	4DO–1560	3DO–1560	2DO–1560	35	15
15	72	4DO–1572	3DO–1572	2DO–1572	40	18
15	84	4DO–1584	3DO–1584	2DO–1584	46	20
15	96	4DO–1596	3DO–1596	2DO–1596	55	23
15	108	4DO–15108	3DO–15108	2DO–15108	60	26
15	120	4DO–15120	3DO–15120	2DO–15120	66	29
15	132	4DO–15132	3DO–15132	2DO–15132	72	32
15	144	4DO–15144	3DO–15144	2DO–15144	78	35
18" WIDE						
18	36	4DO–1836	3DO–1836	2DO–1836	24	11
18	48	4DO–1848	3DO–1848	2DO–1848	29	14
18	60	4DO–1860	3DO–1860	2DO–1860	35	18
18	72	4DO–1872	3DO–1872	2DO–1872	40	21
18	84	4DO–1884	3DO–1884	2DO–1884	46	25
18	96	4DO–1896	3DO–1896	2DO–1896	55	28
18	108	4DO–18108	3DO–18108	2DO–18108	60	32
18	120	4DO–18120	3DO–18120	2DO–18120	66	35
18	132	4DO–18132	3DO–18132	2DO–18132	72	39
18	144	4DO–18144	3DO–18144	2DO–18144	78	42

All dimensions are typical (tol. ±½"). • For Accessories and Options see pages TS-5A, TS-5B.

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(https://www.jorvet.com/wp-content/uploads/2016/08/J0160a.png)

Endotracheal Tube Rack & Cover

$182.00

Unit of Measure: EA

1 Add to cart

SKU: J0160A
Categories: Anesthesia Equipment (https://www.jorvet.com/product-category/anesthesia-equipment/), Endotracheal Tube Accessories (https://www.jorvet.com/product-category/anesthesia-equipment/endotracheal-tube-accessories/)

Description

Additional Information

Product Description

Free Shipping On Orders Over $300* (https://www.jorvet.com/shipping-policy/)

Endotracheal Tube Rack Cover. Protective storage of endotra- cheal tubes is a requirement for AAHA Hospitals. Jorvet is now offering a clean protective cover for clinics using our popular rack. It gives a nice professional look to endotube storage.

0 ($0.00) (https://www.jorvet.com/cart/)

- Magnetic lock: holds door closed, but opens easily
- Metal hinge includes mounting screws and wall expanders
- Able to mount on most surfaces

ET Tube Rack and Cover.

Related Products

(https://www.jorvet.com/product/cuffed-endotracheal-tube-5-5mm/)
(https://www.jorvet.com/product/cuffed-endotracheal-tube-5-5mm/)



Free Shipping On Orders Over $300* (https://www.jorvet.com/shipping-policy/)

0 ($0.00) (https://www.jorvet.com/cart/)

(https://www.jorvet.com/product/cuffed-endotracheal-tube-5-5mm/)

NO. 817 RACK, APRON, LEAD MOBILE



Mini Mobile Apron Rack

- Heavy gauge cold rolled steel
- Powder coated
- Attractive, durable, long lasting finish
- Hospital grade casters
- Holds up to six protection aprons, a pair of lead gloves and two pairs of radiation protection glasses
- Compact size (72” H x 27” W x 25” D)
- Aprons and other accessories available separately

Model	Description	
683418	Mini Mobile Apron Rack Width: 27” Height: 78” Depth: 25”	Box 1: 56 lbs. (29” x 49” x 8”)
683419	Mini Mobile Apron Rack with six 683450 hangers Width: 27” Height: 78” Depth: 25”	Box 1: 56 lbs. (29” x 49” x 8”)

All Infab Apron Racks ship in standard white unless specified.



New Swivel Casters
All new barriers and racks feature our new and improved swivel casters.

FEATURES

Built by Hand

Custom Colors

Custom Logos

Shipping worldwide
by ground, air, or sea freight

10 Day Lead Time

Phone: 805-987-5255
Fax: 805-482-8424
E-mail: info@infabcorp.com
Web: www.InfabCorp.com

Infab Corporation
3651 Via Pescador
Camarillo, CA 93012

ORDERING INFORMATION SPECIFICATIONS DOCUMENTS/SDS NO. 818 STAND, MAYO



Click to enlarge. To view full image, click here

Medline Stainless Steel Mayo Stands

- Removable tray for easy cleaning
- Foot-pedal operated lock adjusts height from 36" -62" high
- Low profile base design easily slides under equipment.
- All welded #304 stainless steel construction
- 2" Double ball bearing casters
- Brass inserts allow for easy height adjustment
- Unique "safe descend" feature built in for patient and staff

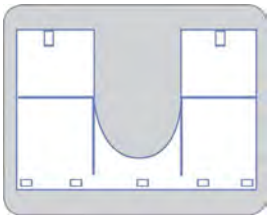
Ordering Information

Material	Description	Packaging
MPHM1621SS	STAND, MAYO, SS, 16.25"X21.25" TRAY, FT	1 EA
MPHM2025SS	STAND, MAYO, SS, 20X25 TRAY, FOOT OP	1 EA

Customers Who Bought This Item Also Bought


Perforated Mayo Stand Trays


Steel Foot Stools with Handrail


Invisishield 1-Piece C
C-Arm Drapes




ee

Documents/SDS

Literature

Literature
LIT701R_CAT_Capital Equipment_PAC_18.pdf

Specifications

HPIS CODE	710_920_20_0
LATEX FREE	Yes, No

MEDLINE

Have a Quick Minute?

Thank you for visiting our website. We are conducting a **brief customer satisfaction survey** to learn how we can improve Medline.com for you - our valued customer. **Would you be willing to answer** a few brief questions about your experience?

Yes, I'll give feedback! Powered by Ethnio

ORDERING INFORMATION SPECIFICATIONS DOCUMENTS/SDS

MATERIAL	Stainless Steel
MAX HEIGHT INCHES	62 in
MIN HEIGHT INCHES	36 in
OPERATION TYPE	Foot
TRAY SIZE	16.25" X 21.25", 20"x25"
UNSPSC	42295106
UNIT COMPATIBILITY	PEDIGO : Pedigo, Pedigo Products
WIDTH INCHES	16.25 in, 20 in

Your Recent Browsing History



Stainless Steel Mayo Stands
by Mid Central Medical

MEDLINE

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819_PANEL, LOUVER

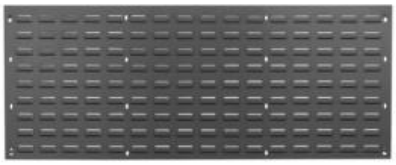
Search by Keyword, Model or Competitor Product Number

SEARCH

QUOTE REQUEST

You have no items in your quote request.

QLP-4819CO CONDUCTIVE LOUVERED PANEL



Click on the image above to view full picture [+]

Quantity:

Email This Facebook Twitter [+] More

The QLP-4819CO conductive Louvered panel is a Louvered panel unit designed with extra width to provide more storage space for your conductive storage bins. The bins are paramount in protecting stored electrical components from damaging EMI interference.

Features:

- Load Capacity: 250 lbs.
- Carton Weight: 18 lbs.
- Dimensions: 48" x 19"

It

CLICK HERE TO BUY FROM ANY OF THESE GREAT LOCATIONS

WHERE TO BUY

View or download Catalog PDF for this product. Click Here

Additional Information

ADDITIONAL INFORMATION

Ctn Wt.	18
Load (lbs.)	250
Outside Dimensions	48" x 19"

MEDICAL

Pass-Thru Medical Cabinet

- Constructed of 18 gauge 304 stainless steel and 1/4" tempered glass
- Upper & Lower cabinets are accessible from either side
- Double door upper cabinet is equipped with 3 adjustable stainless steel shelves
- Locking doors available
- Custom sizes available
- OPTIONAL: Stainless steel trim available when placed into wall (ask for details).

#700-30 Pass-Thru Upper & Lower 2 Door Medical Cabinetry



#700-30

MEDICAL CABINETS



Shown here installed in a surgery room.



TriStar offers this unit in custom sizes. Call us for details.

Pass-Thru Medical Window

- Constructed of 18 gauge 304 stainless steel and tempered glass
- Overall dimension of 36" W x 36" H x 12" D
- 2 stainless steel shelves
- OPTIONAL: Locking doors available
- Available in custom sizes

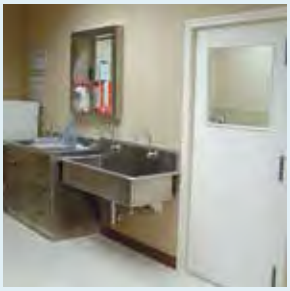
#700-50 Pass-Thru Medical Window



#700-50
Shown here installed and trimmed out in stainless steel

#700-50TP
Trim Package for Pass-Thru Medical Window

PASS-THRU WINDOWS INSTALLATION



The window finished out with dry wall.



Finished out with a stainless steel frame.

Sealed Air
Diversey Care

NO. 822 DISPENSER, CHEMICAL

Diversey

J-Fill® QuattroSelect®

Dispensing System



Wall-mounted dispensing system that accurately dispenses four different products and rinse water in one easy step.

Easy to Use

- Dispenses four products at the push of a button
- Number and color-coded labels for easier product identification
- J-Fill® dispensing system will dispense accurate cleaning solutions with no measuring, mixing or mess
- Fill buckets, autoscrubbers or bottles from a central location accurately and efficiently
- Easy product change-out
- High flow bucket fill and low flow bottle fill

Features

- Air Gap backflow prevention
- One handed low flow bottle filling
- Remote high flow bucket/autoscrubber fill gun
- Smart Valve™ product selection
- Product identification windows
- Drip tray with drain hose
- Rugged powder coated steel construction
- Lockable cabinet with keys
- Design only allows J-Fill® packaging to be used within dispenser
- Uses J-Fill® Spill-Tite™/MC cartridges that are leak proof and virtually eliminates chemical exposure, tampering and manually diluting products
- Metering tip in each J-Fill® cartridge ensures precise dilution and eliminates possibility of tampering with dilution ratios
- J-Fill® dispensers use superconcentrated and hyperconcentrated chemicals, reducing in-use cost, packaging used and solid waste disposal

Designed For

- Healthcare
- Food Service
- Education
- Retail
- BSC
- Government

Use Overview

QuattroSelect® Dispensing System allows you to choose from four different products with the turn of a dial. Simply select the product you desire, choose one handed low flow bottle fill or point of use bucket activation and dispense ready-to-use solutions into spray bottles, buckets and automatic scrubbers. The lockable cabinet helps eliminate unwanted cartridge removal.





Remote high flow bucket activation



High flow and low flow quick change



One handed bottle fill

Product Specifications

Description	
Unit Dimensions	24.25" x 18.5" x 7.5" (62 cm x 47 cm x 19 cm)
Weight	15 lbs./6.8 kg
Weight in Carton	19 lbs./8.6 kg
Carton Dimension	27" x 20.5" x 9.5" (68 cm x 52.1 cm x 24.1 cm)
Low Flow Rate	1.5 gpm (5.1 Lpm)
High Flow Rate	4.0 gpm (15.0 Lpm)
Water In-Let Hose	4' (1.22 m)
Remote Bucket Fill Hose	8' (2.44 m)
Drip Tray Drainage Hose	8' (2.44 m)

Operating Range Requirements

Description	Concentrate
Water Pressure	30–85 psi (170–580 KPA)
Water Flow	> 2.0 gpm
Water Temperature	40–120° F (5–48° C)

ASSE 1055-B backflow prevention requirements.

Available Items

Product Code	Description/Package Size
3764735	J-Fill® QuattroSelect® Air Gap Dispenser / 1 Unit
3754220	J-Fill® QuattroSelect® Safe Gap Dispenser / 1 Unit
5913247	J-Fill® QuattroSelect® Safe Gap dispenser - Solid Door Unit / 1 Unit

Safety Reminder

Please make sure your employees read and understand the product label and Safety Data Sheet before using this product. The label contains directions for use, and both the label and SDS contain hazard warnings, precautionary statements and first aid procedures. SDSs are available on-line at www.sealedair.com or by calling 888 352 2249. Improper use or dilution may result in damage to surfaces and may result in health and physical hazards that match those of the concentrate. Please refer to the Diversey HazMat Library, only available through Internet Explorer, http://naextranet.diversey.com/dot/, for up to date shipping information.

www.sealedair.com

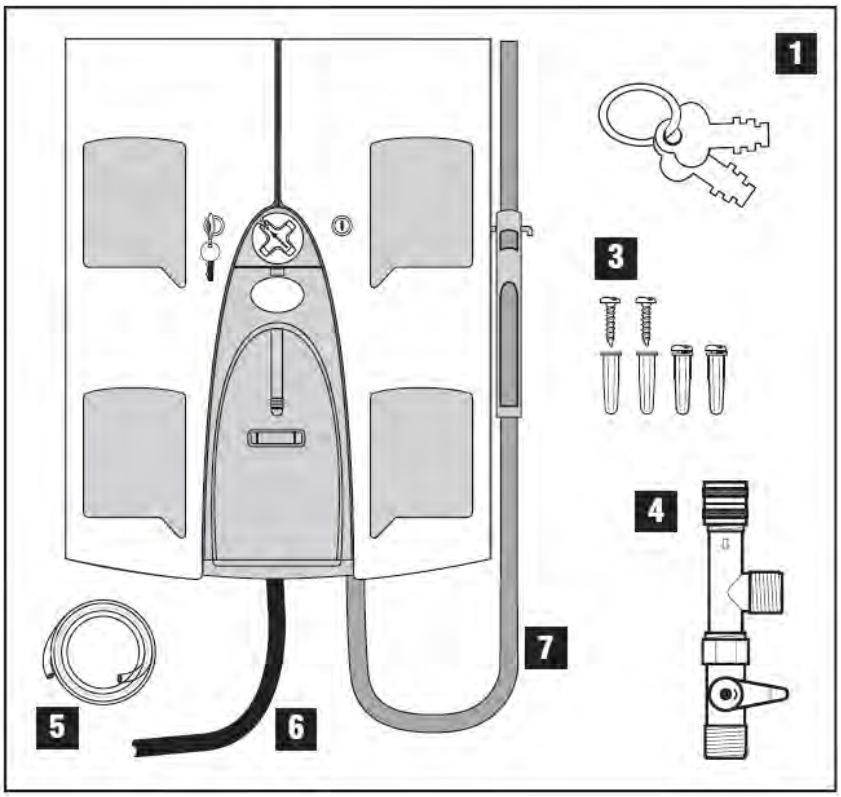
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QUATTROSELECT™/MC

OWNER'S GUIDE

GUIA DEL PROPIETARIO

GUIDE DU PROPRIÉTAIRE



English

CONTENTS (See Illustration A)

1. Locking cabinet and 2 keys
2. Owner's manual that includes drilling template on pages 2 and 3
3. Mounting kit that includes four screws and anchors
4. Tap Connection Filter Valve (attached to water inlet hose)
5. Drip Tray Drainage Tube (8' - 2.44 m)
6. Water Inlet Hose (4' - 1.22 m)
7. Remote Filling Hose and Gun (8' - 2.44 m)

SAFETY INSTRUCTIONS

WEAR protective clothing and eyewear when dispensing chemical or other materials.
ALWAYS observe safety and handling instructions on product labels and Material Safety Data Sheets.
ALWAYS direct discharge stream away from you and other persons.
ALWAYS dispense cleaners and chemicals in accordance with instructions. Exercise CARE when maintaining equipment.
KEEP equipment clean for proper operation.
ATTACH only to a tap water outlet that has a pressure between 30-85 PSI (170-580 kPa), a minimum volume of 2.0 gal./min. (7.6 L/min) and temperature between 40-120˚F (4-49˚C). Please note that a pressure regulator is required for pressures above 85 PSI (580 kPa). See your local Diversey Representative or Distributor for details.
DO NOT use any water supply hoses or fittings other than those supplied with the *QuattroSelect*™/MC dispenser.
ALWAYS assemble equipment according to instruction procedures. Be sure all components are firmly screwed or latched into position.

Español

CONTENIDO (Vea ilustración A)

1. Gabinete de cerradura y 2 llaves
2. Manual del propietario que incluye la plantilla para taladrar los agujeros en las páginas 2 y 3
3. Juego de montaje que incluye cuatro tornillos y fijadores de los tornillos a la pared

INSTRUCCIONES DE SEGURIDAD

USE ropa de protección y protección para los ojos al distribuir los productos químicos u otros materiales.
SIEMPRE observe las instrucciones de manipul ación y las medidas de seguridad en las etiquetas del producto
y en las Hojas de información de seguridad del material.
SIEMPRE dirija el chorro de descarga alejado de su cuerpo y de otras personas.
SIEMPRE distribuya los limpiadores y productos químicos de acuerdo con las instrucciones. Ponga en práctica la PRECAUCIÓN debida al realizar el mantenimiento de su equipo.
MANTENGA el equipo limpio para un funcion miento correcto.
CONECTE el sistema solamente a una salida de agua con una presión de 170 a 580 kPa (30 a 85 lb/pulg2), un volumen mínimo de 7,6 l/min (2.0 gal./min) y una temperatura entre 4° y 49°C (40° y 120°F). Nota: Se requiere la instalación de un regulador de presión para niveles de presión superiores a 580 kPa (85 lb/pulg2). Para informarse, consulte a su representante Diversey o distribuidor en su región.
NO USE ninguna manguera de suministro de agua o ningún accesorio que no sean los que se han suministrado con el dispensador
QuattroSelect™/MC.
SIEMPRE ensamble el equipo de acuerdo con los procedimientos señalados en las instrucciones. Asegúrese de que todos los componentes estén firmemente atornillados o trabados en su posición.

Français

CONTENU (Voir l'illustration A)

1. Armoire distributrice à serrure, avec 2 clés
2. Manuel du propriétaire qui comprend un gabarit de perçage aux pages 2 et 3
3. Trousse de montage qui comprend quatre vis et quatre chevilles

DIRECTIVES DE SÉCURITÉ

PORTER des vêtements de protection et des lunettes de sécurité lors de la distribution des produits chimiques et d'autres matières.
TOUJOURS respecter les directives de sécurité et de manutention figurant sur les étiquettes de produits et sur les fiches signalétiques.
TOUJOURS diriger le jet de décharge dans la direction opposée de soi-même et des autres personnes.
TOUJOURS faire la distribution des nettoyants et des produits chimiques conformément aux directives. Faire preuve de **PRUDENCE** lors de l'entretien des appareils.
GARDER l'équipement propre afin d'en assurer le bon fonctionnement.
RACCORDER uniquement à une sortie d'eau dont la pression s'établit entre 170 et 580 kPa (30-85 livres par pouce carré), avec un volume minimal de 7,6 L/min (2 gal./min.) et une température de 4° à 49° C (40-120°F). Veuillez noter que la pose d'un régulateur de pression est requise pour les pressions supérieures à 580 kPa (85 livres par pouce carré). Se renseigner auprès du représentant Diversey ou du distributeur de la région.
NE PAS UTILISER des tuyaux d'approvisionnement d'eau ou de raccords autres que ceux fournis avec le distributrice *QuattroSelect*™/MC.
TOUJOURS monter l'équipement selon les directives fournies. S'assurer que tous les composants sont fermement visés ou verrouillés en place.

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▼ POSITION DOTTED LINE 66” (168 cm) FROM THE FLOOR - DRILL HOLES 16” APART ▼ COLOQUE LA LÍNEA DE PUNTOS A 168 cm (66”) DEL PISO

DRILLING TEMPLATE• PLANTILLADEPE

TOOLS NEEDED FOR INSTALLATION

■ Phillips-head screwdriver ■ Drill and 5/16” (8 mm) drill bit ■ Pencil ■ Level ■ Tape measure ■ Goggles ■ Rubber gloves

SPACE REQUIREMENTS FOR UNIT

Height – 24.25 (62 cm)
Width – 18.5 (47 cm)
Depth – 7.5 (19 cm)
Weight (with product) – 45 lbs. (16kg)

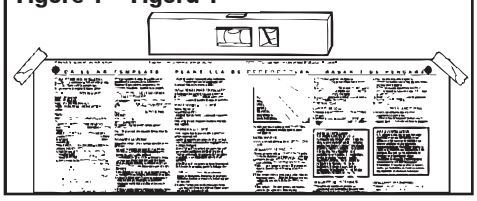
HANGING THE UNIT

Survey the room, or area and choose a wall surface that is:

- Capable of sustaining a 45 pound (16 kg) load.
- Free of hidden utilities such as water pipes or electrical wiring.
- Within 4 feet (1.22 m) of a water supply that has a pressure between 30-85 PSI (170-580 kPa), a minimum volume of 2.0 gal./min. (7.6 l/min.) and temperature between 40-120°F (4-49°C)
- Within 6 feet (1.8 m) of a floor drain or sink. If a drain is not available, drain into a bucket.

1. Place the unit against the wall to determine the mounting height. Ideally, the bottom of the unit should be 48” (120 cm) off the floor.
2. Mark 4 points for the mounting screws through 4 holes in the back of the unit (at minimum 66” [168 cm] from the floor for the top two holes).
3. Position the drilling template over the points marked on the wall.
4. Adjust the template, so it is centered and level on the wall. (See figure 1.)
5. Secure the template to the wall with a piece of tape.
6. Drill the 4 holes. (See figure 2.)
7. Push the anchors into each hole (if needed). (See figure 3.)
8. Place a screw without washer into top anchors and tighten the screws leaving a 1/4” (6 mm) gap from the wall. (See figure 3.)
9. Slide the key holes in the unit over the top screw heads. (See figure 4.)
10. Insert bottom screws with washers and then tighten all screws.
11. Make sure drip tray is secure to install optional drainage hose, cut off top of the hose fitting on the bottom drip tray and insert drip tray tube. (See Figure 6).

Figure 1 • Figura 1



HERRAMIENTAS QUE SE REQUIEREN PARA LA INSTALACIÓN

■ Destornillador de cabeza Phillips ■ Taladro y broca de 8 mm (5/16”) ■ Lápiz ■ Nivel ■ Cinta de medir ■ anteojos de protección ■ Guantes de goma

REQUERIMIENTOS DE ESPACIO POR UNIDAD

Altura – 62 cm (24.25 pulg.)
Ancho – 47 cm (18.5 pulg.)
Profundidad – 19 cm (7.5 pulg.)
Peso (con producto instalado) – 16 kg (45 lb)

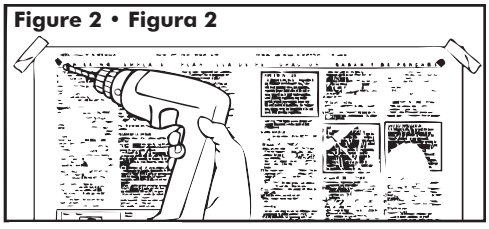
COLGANDO LA UNIDAD

Inspeccione el local o área y escoja la superficie de una pared que:

- sea capaz de sostener una carga de 16 kg (45 lbs.);
- esté libre de instalaciones empotradas tales como tuberías de agua o cables eléctricos;
- esté a una distancia de 1,22 metros (4 pies) del suministro de agua que tiene una presión de 170 a 580 kPa (30-85 PSI), un volumen mínimo de 7,6 l/min (2.0 gal./min.) y una temperatura entre 4 y 49°C (40-120°F).
- se ubique a una distancia de 1,8 metro (6 pies) de un sumidero o fregadero. Si no hay sumidero en el suelo, vacíe el producto en una cubeta.

1. Coloque la unidad contra la pared para determinar la altura de montaje. Idealmente, la base de la unidad debe estar a 120 cm (48 pulgadas) de separación del piso.
2. Marque 4 puntos para los tornillos de montaje mediante cuatro agujeros en la parte posterior de la unidad (mínimo 168 cm / 66 pulgadas del piso a los dos agujeros superiores).
3. Coloque en posición la plantilla para taladrar encima de los puntos marcados en la pared.
4. Ajuste la plantilla de modo que quede en el centro y nivelada con la pared (Véase dibujo 1).
5. Asegure la plantilla a la pared con un pedazo de cinta adhesiva.
6. Taladre los cuatro agujeros (Véase dibujo 2).
7. Presione un fijador dentro de cada agujero (de ser necesario) (Véase dibujo 3).
8. Coloque un tornillo sin arandela en cada fijador superior y apriete los tornillos, dejando un espacio de 6 mm (1/4 pulg.) desde la pared. (Véase figura 3)
9. Deslice los agujeros guías en la unidad sobre las cabezas de los tornillos superiores. (Véase figura 4)
10. Inserte los tornillos interiores con arandela y luego apriete todos los tornillos.
11. Asegúrese de que la bandeja para goteos esté sujetada a fin de instalar la manguera de desagüe opcional; corte la parte superior de la conexión de la manguera a la bandeja para goteos. Inserte la bandeja para goteos. (Véase figura 6)

Figure 2 • Figura 2



OUTILS REQUIS POUR L’INSTALLATION

■ Tournevis à tête carrée ■ Perceuse et mèche de 8 mm (5/16”) ■ Crayon ■ Niveau ■ Ruban à mesurer ■ Lunettes de protection ■ Gants en caoutchouc

ESPACE REQUIS POUR L’UNITÉ

Hauteur – 62 cm
Largeur – 47 cm
Profondeur – 19 cm
Poids (avec du produit installé) – 16 kg

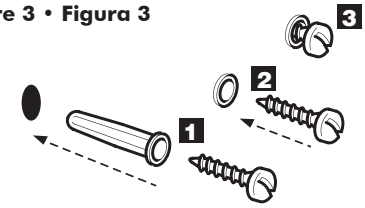
SUSPENSION DE L’UNITÉ

Revoir l’espace dans la pièce ou l’aire et choisir une surface murale qui soit :

- capable de supporter une charge de 16 kg (45 lbs.);
- sans installations cachées comme les tuyaux d’eau ou le câblage électrique;
- à une distance de 1,22 mètre ou moins d’une sortie d’eau fournissant une pression d’eau entre 170 et 580 kPa, un volume minimal de 7,6 l/min et une température entre 4° et 49° C.
- à une distance de 1,8 mètres d’un tuyau d’évacuation au sol ou d’un évier. S’il n’y a pas d’évier, faire le vidange dans un seau.

1. Tenir l’unité contre le mur afin de déterminer la hauteur de l’installation. Idéalement, le bas de l’armoire devrait se situer à 120 cm (48 po) au-dessus du sol.
2. Marquer 4 points pour la position des vis de montage à travers les 4 trous dans l’arrière de l’appareil (les trous du haut se trouvant à 168 cm/66 po au minimum à partir du sol).
3. Positionner le gabarit de perçage par-dessus les points marqués sur le mur.
4. Rajuster la position du gabarit afin qu’il soit centré et nivelé sur le mur (voir la figure 1).
5. Fixer le gabarit au mur avec un morceau de ruban adhésif.
6. Percer les quatre trous (voir la figure 2).
7. Insérer une cheville dans chacun des trous (selon le besoin) (voir la figure 3).
8. Insérer une vis sans rondelle dans chacune des chevilles supérieures et resserrer les vis, en laissant un entrefer de 6 mm à partir du mur (Voir la Figure 3).
9. Faire glisser les trous de guidage de l’armoire par-dessus la tête des vis. (Voir la figure 4.)
10. Insérer les vis inférieures avec rondelle puis resserrer toutes les vis.
11. S’assurer que l’égouttoir est bien fixé en place pour recevoir le tube d’évacuation facultatif. Trancher la partie supérieure du raccord sur l’égouttoir, puis y insérer le tube d’évacuation.

Figure 3 • Figura 3



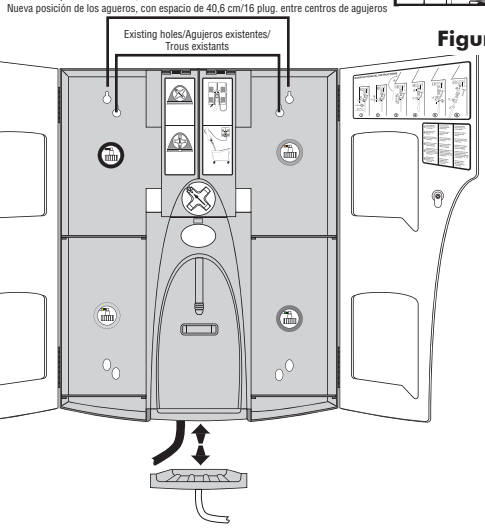


Figure 4 • Figura 4

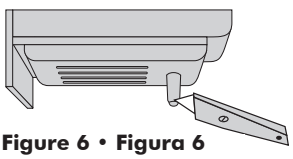
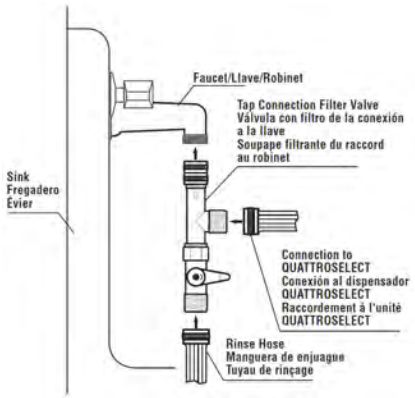


Figure 6 • Figura 6

Figure 5 • Figura 5



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▼ POSITIONNER LA LIGNE POINTILLÉE À UNE DISTANCE DE 168 cm (66") DU PLANCHER

ERFORACIÓN • GABARITDEPERÇAGE

WATER HOOK-UP

NOTICE TO INSTALLER

Diversey is not responsible to any distributor or customer for compliance with local plumbing codes and regulations regarding proper installation of the unit or cross connections to public water supplies. Local plumbing regultions may require a particular backflow prevention device or a different method of installation. The customer must always verify that installation of the unit meets local plumbing regulations.

1. Attach Filter Valve with water in-let hose to water supply (see figure 5).
2. Refer to the "Notice to Installer" (in box above) for local plumbing code compliance.
3. If a Flo-Thru unit is needed to help ensure that the water leading to the unit is turned off after use, please call 1-800-492-4422.

INSTALLATION OF PRODUCTS

1 Open the doors with the key and place the bottles inside the dispenser with main labels toward you.
2 Remove the caps from the bottles and tighten the caps containing the feed tubes onto the bottles.
3 Turn on water supply at the sink.
4 Turn selector valve to point at a product. Activate the bucket fill gun to prime the chemical feed line, waiting two seconds to fill the feed line.
5 Turn selector to the rinse position (at "6 o'clock" or pointing straight down) and dispense water for two seconds to flush the unit.
6 Turn selector valve to next product and repeat for each product.
7 Close the covers and lock the unit.

OPERATION

The unit is now ready for use. To dispense products, follow these 4 easy steps:
1. Select Product. Rotate the yellow selector knob so it points to the product desired. Be sure it "clicks" into position.
2. To Fill Bottle. Place filling tube securely into the neck of the bottle. Use base of bottle to push yellow activation lever which initiates product flow. Release activation lever when bottle is full.
3. To Fill Bucket or Auto-Scrubber, use the yellow remote filling hose gun. When the end of the tube is securely into tank or bucket, squeeze the gun to initiate product flow. When desired fill level is reached, release handle to stop product flow. The remote fill gun can be clipped onto the side of most buckets... be sure that it is stable before releasing your hand. The remote gun can be locked on by sliding the ring over the depressed lever. Reverse this process to make sure hose drains all product released.
4. Rinse unit between uses to help allieviate potential product cross contamination. Rinse feature can also be used for obtaining non-potable rinse water through the unit.

Drip Tray:

Excess product that falls into the the drip tray can be disposed in 2 different ways:
1. When full, it can be removed, emptied and replaced.
2. A drain tube can be added to the bottom of the drip tray by cutting off the barb and attaching the tube. Run tube to appropriate drain. (See figure 6.)

SERVICING INFORMATION

For additional information or assistance, please contact your Diversey representative, or call 1-800-558-2332.

CONEXIÓN DE AGUA

AVISO AL INSTALADOR

Diversey no se hace responsable ante los distribuidores o ante los clientes por el obedecimiento a los códigos y regulaciones locales de plomería con respecto al modo apropiado de instalación de la unidad o de las conexiones vinculadas con el suministro de agua público. Las regulaciones locales de plomería pueden requerir dispositivos adicionales de prevención de retroflujo o diferentes métodos de instalación. El cliente siempre debe verificar que la instalación de la unidad siga las regulaciones locales de plomería.

1. Conecte la válvula con filtro y la manguera de admisión de agua al suministro de agua. (Véase figura 6)
2. Remítase al Aviso al Instalador (en la caja por arriba) para asegurar el obedecimiento a los códigos locales de plomería.
3. Si se requiere un dispositivo Flo-Thru para ayudar a asegurar de que el agua de admisión esté apagada después del cada uso, llame por favor al 1-800-492-4422.

INSTALACIÓN DE LOS PRODUCTOS

1 Abra las puertas con la llave y coloque las botellas dentro del dispensador con las etiquetas principales mirando hacia usted.
2 Quite las tapas de las botellas. Enrosque las tapas de color de los tubos de alimentación sobre las botellas.
3 Abra el suministro de agua de la pileta de lavar.
4 Gire la válvula selectora para que apunte hacia el producto deseado. Active la pistola para llenar cubetas a fin de cebar el tubo de alimentación; espere dos segundos para que el tubo de alimentación se llene.
5 Gire el selector hacia la posición de enjuague y distribuya el agua durante dos segundos para limpiar con una descarga de agua la unidad.
6 Gire la válvula del selector hacia el próximo producto y repita la operación para cada producto.
7 Cierre la cubierta y trabe la unidad.

FUNCIONAMIENTO

Ahora la unidad está lista para usarse. Para la distribución de productos, siga estes 4 pasos fáciles:
1. Seleccione el producto. Gire el botón selector amarillo para que apunte hacia el producto deseado. Asegúrese de que se trabe en su lugar.
2. Para llenar botellas: Inserte el tubo de llenado firmemente en el cuello de la botella. Use la base de la botella para presionar la palanca de activación de color amarillo, que provoca el flujo de producto. Suelte la palanca de activación una vez que la botella está llenada.
3. Para llenar cubetas o máquinas talladoras: Use la pistola de llenado de color amarillo. Cuando el extremo del tubo se haya insertado firmemente en el tanque o cubeta, exprime la pistola para provocar el flujo de producto. Cuando se alcance el nivel de llenado deseado, suelte el gatillo de la pistola para cortar el flujo de producto.

La pistola de llenado puede ser sujetada al lado de la mayoría de cubetas; asegúrese de que esté firmemente en su lugar antes de soltar el gatillo de la pistola.

Al deslizar la anilla sobre la palanca abajada, puede bloquear en posición la pistola de llenado. Use este proceso en sentido inverso para asegurarse de que la manguera vacíe todo el producto distribuido.

4. Enjuague la unidad después de cada uso para ayudar a prevenir toda intercontaminación potencial de los productos. La función de enjuague se utiliza también para obtener agua de enjuague no potable con la unidad.

Bandeja para Goteos:

Hay 2 maneras diferentes para eliminar el exceso de producto que cae en la bandeja para goteos:
1. Retire y vacíe la bandeja para goteos llenada, y luego regrésela a su lugar.
2. Sujete un tubo de vaciado al fondo de la bandeja para goteos cortando la lengüeta y conectando el tubo. Tienda el tubo al desagüe apropriado. (Véase figura 6)

INFORMACIÓN SOBRE LOS SERVICIOS

Para obtener información adicional o asistencia, haga el favor de ponerse en contacto con su representante de Diversey o llame al teléfono: 1-800-558-2332.

RACCORDEMENT À LA PRISE D'EAU

AVIS À L'INSTALLATEUR

Diversey ne peut être tenue responsable face aux distributeurs ou aux clients en ce qui concerne la conformité aux codes de plomberie ou aux règlements municipaux gérissant l'installation correcte de l'unité ou la connexion aux canalisations d'eau publiques. Il est possible que les règlements de plomberie de la municipalité exigent l'installation de dispositifs d'antirefoulement supplémentaires ou d'autres techniques d'installation. Il incombe au client de toujours vérifier que l'installation de l'unité se conforme aux règlements de plomberie municipaux.

1. Raccorder la soupape filtrante avec tuyau d'admission de l'eau (Voir la Figure 5).
2. Se reporter à l'Avis à l'installateur (dans l'encart ci-dessus) quant à la conformité au Code de plomberie municipal.
3. Si la pose d'un dispositif Flo-Thru s'avère nécessaire pour assurer que l'alimentation en eau est coupée, prière de composer le 1-800-492-4422.

INSTALLATION DES PRODUITS

1 Ouvrir les portes avec la clé et mettre les bouteilles à l'intérieur de la distributrice, les étiquettes face à soimême.
2 Enlever les capuchons des bouteilles et visser les capuchons des tubes d'alimentation sur les bouteilles.
3 Ouvrir l'eau à l'évier.
4 Tourner la soupape de sélection pour qu'elle pointe à un produit. Activer le mécanisme de remplissage de seaux afin d'amorcer le tube d'alimentation en produit chimique; attendre deux secondes pour que le tube d'alimentation soit rempli.
5 Tourner la soupape de sélection à la position et distribuer l'eau pendant deux secondes pour rincer l'appareil.
6 Tourner la soupape de sélection pour choisir le prochain produit et répéter pour chaque produit à utiliser.
7 Fermer le couvercle et verrouiller l'unité.

FONCTIONNEMENT

L'unité est maintenant prête à utiliser. Pour la distribution des produits, suivre ces quatre étapes faciles :
1. Sélectionner le produit. Tourner la pomme de sélection jaune pour qu'elle pointe au produit désiré. S'assurer qu'elle tombe en position avec un déclic.
2. Pour remplir les bouteilles : Insérer le tube de remplissage fermement dans le goulot de la bouteille. Utiliser la base de la bouteille pour presser le levier d'activation jaune, lequel amorce le débit de produit. Lâcher le levier d'activation une fois que la bouteille est remplie.
3. Pour remplir les seaux ou l'autorécureuse : Utiliser le pistolet de remplissage jaune. Une fois que l'extrémité du tube est fermement insérée dans le réservoir ou le seau, presser le pistolet afin d'amorcer le débit de produit. Après avoir atteint le niveau désiré, lâcher le levier pour couper le débit de produit.

Le pistolet peut être attaché au côté de la plupart des seaux... il s'agit de s'assurer qu'il est en position stable avant de lâcher prise.

On peut bloquer le pistolet en position en faisant glisser l'anneau par-dessus le levier abaissé. Inverser le processus afin de s'assurer que le tuyau vidange tout le produit distribué.

4. Rincer l'unité entre utilisations afin d'empêcher toute intercontamination potentielle des produits. Cette fonction de rinçage peut aussi servir à distribuer de l'eau de rinçage non potable avec l'unité.

Égouttoir :

On peut assurer l'élimination du produit excédentaire qui tombe dans l'égouttoir de deux façons différentes :
1. Une fois rempli, on peut l'enlever, le vider et le remettre en place.
2. On peut ajouter un tube d'évacuation au fond de l'égouttoir en coupant l'ardillon et en raccordant le tube. Filer le tube au tuyau approprié. (Voir la Figure 6.)

RENSEIGNEMENTS SUR L'ENTRETIEN

Pour obtenir des renseignements supplémentaires ou de l'aide, veuillez consulter votre représentant Diversey ou composer le 1-800-558-2332.

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WARRANTY

The *QuattroSelect*™/MC dispenser, except for hoses, is warranted against defective material and workmanship for one year from date of purchase. This warranty excludes failure caused by physical abuse.

The *QuattroSelect*™/MC dispenser is designed for use with Diversey products only. Use of other products may be hazardous and will void warranty. Non-Diversey products cannot be used in this unit.

DIVERSEY DISCLAIMS ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

GARANTÍA

Excepto las mangueras, el dispensador *QuattroSelect*™/MC tiene garantía de un año contra defectos del material y
manufactura a partir de la fecha de adquisición. Esta garantía excluye defectos causados por maltrato físico del equipo.

El dispensador *QuattroSelect*™/MC está diseñado para ser usado sólo con productos de Diversey. El empleo de otros productos puede resultar peligroso y anulará la garantía. No se pueden usar con esta unidad productos otros que productos marca Diversey.

DIVERSEY EXCLUYE TODA GARANTÍA DE COMERCIABILIDAD O CONVENIENCIA PARA UN FIN EN PARTICULAR.

GARANTIE

La distributrice *QuattroSelect*™/MC, à l'exception des tuyaux, est garantie pour un an à compter de la date d'achat contre toute défectuosité et tout vice de fabrication. Cette garantie exclut les pannes causées par les abus physiques du système.

La distributrice *QuattroSelect*™/MC est conçue pour être utilisée uniquement avec des produits de Diversey. L'utilisation d'autres produits peut être dangereuse et annulera la présente garantie. Il ne faut pas utiliser des produits autres que ceux de marque Diversey dans cette distributrice.

DIVERSEY DÉSAVOUE TOUTE GARANTIE QUANT AU CARACTÈRE COMMERCIALISABLE DU PRODUIT OU À SON UTILISATION APPROPRIÉE À DES FINS PARTICULIÈRES.

TROUBLESHOOTING & REPAIR GUIDE • GUÍA PARA LA RÁPIDA SOLUCIÓN DE PROBLEMAS Y REPARACIÓN • GUIDE DE DÉPANNAGE ET DE RÉPARATION

PROBLEM • POSSIBLE CAUSE • *SOLUTION*

1. PROBLEM: No solution discharge

a. Water supply turned off at the source
   - *Open water supply*

2. PROBLEM: No concentrate draw

a. Concentrate bottle is empty
   - *Replace container*

b. Water pressure and flow from the water supply is less than 30 PSI (170 kPa) and 2.0 GPM (7.6 L per minute)
   - *Increase water pressure and flow from supply*

c. Chemical feed line is not secure on both ends
   - *Secure feedline on both ends*

d. Chemical feed line is pinched or twisted
   - *Straighten feed line*

e. Concentrate bottle overcap is loose
   - *Tighten overcap until snug*

f. Concentrate will draw with the same bottle from a different position
   - *Turn selector and try again*

g. Wrong product being discharged
   - *Check selector for product selection*

3. PROBLEM: Chemical feedline not holding prime

a. Check valve is not working properly
   - *Replace chemical feed line assembly and make sure the ring and feedline matches the color indicated on the back of the cabinet*

4. PROBLEM: If unit still does not function properly
   - *Remove and replace Eductor assembly (see instructions on unit). Replacements to Eductor Assembly kits available. Contact your Diversey representative.*

PROBLEMA • CAUSA POSIBLE • *SOLUCION*

1. PROBLEMA: No se puede descargar la solución

a. Se cerró el suministro de agua de la toma.
   - *Abrir el suministro de agua.*

2. PROBLEMA: El concentrado no pasa al sistema

a. La botella del concentrado está vacía.
   - *Reemplazar el recipiente.*

b. La presión de agua y el flujo de agua son inferiores a 170 kPa (30 libras por pulgada cuadrada) y a 7,6 L (2 galones) por minuto respectivamente.
   - *Incremente la presión de agua y de flujo proveniente del suministro.*

c. El tubo de alimentación del producto químico no está bien fijado a ambos extremos.
   - *Fiji las extremidades del tubo de alimentación del producto químico.*

d. El tubo de alimentación del producto químico está horadado o torcido.
   - *Enderezar el tubo de alimentación.*

e. La tapa de la botella del concentrado no está bien cerrada.
   - *Cerrar bien la tapa.*

f. Es posible bombear el producto concentrado con la misma botella desde una posición diferente.
   - *Remplazar el mecanismo de descarga.*

g. Se descarga el producto incorrecto.
   - *Revise el selector para la selección del producto.*

3. PROBLEMA: El tubo de alimentación del producto químico pierde presión después de cebarse

a. La válvula de retención no está trabajando correctamente.
   - *Reemplace el tubo de alimentación de producto químico y asegúrese de que el color de la anilla y tubo de alimentación correspondan a aquello indicado en la parte posterior del armario.*

4. PROBLEMA: Si la unidad continúa funcionando mal
   - *Quite y reemplace el dispositivo de descarga (véanse las instrucciones sobre la unidad). Se hallan disponibles juegos de dispositivos de descarga de repuesto. Comuníquese con su representante Diversey.*

PROBLÈME • CAUSE POSSIBLE • *SOLUTION*

1. PROBLÈME : Pas de décharge de solution

a. L'alimentation d'eau est fermée à la source.
   - *Ouvrir l'alimentation d'eau.*

2. PROBLÈME : Refoulement du concentré dans le système

a. La bouteille de concentré est vide.
   - *Remplacer le contenant.*

b. La pression d'eau et le débit d'eau sont inférieurs à 170 kPa (30 lb/po2 2) et à 7.6 L/min (2.0 gal./min) respectivement.
   - *Augmenter la pression d'eau et le débit d'eau à partir de la source.*

c. Le tube d'alimentation de produit chimique n'est pas fixé aux deux extrémités.
   - *Bien fixer les extrémités du tube d'alimentation de produit chimique.*

d. Le tube d'alimentation de produit chimique est pincé ou tordu.
   - *Dresser le tube d'alimentation.*

e. Le capuchon de la bouteille de concentré est mal serré.
   - *Bien serrer le capuchon.*

f. Il est possible de pomper du produit concentré à partir d'une bouteille dans une position différente.
   - *Remplacer le mécanisme de décharge.*

g. Le mauvais produit est distribué.
   - *Vérifier la soupape de sélection pour le choix de produit.*

3. PROBLÈME : Le tube d'alimentation perd de la pression après l'amorçage

a. La soupape d'arrêt ne fonctionne pas correctement.
   - *Remplacer l'ensemble de tube d'alimentation de produit chimique; s'assurer que la couleur de l'anneau et du tube d'alimentation correspond à la couleur indiquée sur l'arrière de l'armoire.*

4. PROBLÈME : L'unité ne fonctionne pas toujours convenablement
   - *Enlever et remplacer le dispositif 'échappement (voir les instructions sur l'unité). On peut obtenir des trousses de montage du dispositif d'échappement supplémentaires. Communiquez avec votre représentant Diversey.*

QUESTIONS? CALL 1-800-558-2332

¿PREGUNTAS? LLAME AL 1-800-558-2332

QUESTIONS? COMPOSER LE 1-800-558-2332

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ORDER LIST 0

NO. 823 CART, CLEANING

HOME > CLEANING > CLEANING CARTS & ACCESSORIES > JANITORIAL CLEANING CARTS WITH BINS - HIGH-CAPACITY



EXECUTIVE SERIES:

No

Qty 1

Add to List

Where To Buy

JANITORIAL CLEANING CART WITH BINS - HIGH-CAPACITY

SKU: FG9T7300BLA

The Rubbermaid Commercial High-Capacity Janitorial Cleaning Cart with Bins is a complete system solution for your cleaning needs.

- 40% more storage space than traditional carts minimizes trips for additional supplies and maximizes staff productivity.
- Mop bucket platform with securing grooves keeps WaveBrake® or microfiber charging buckets securely attached to cart.
- Durable 8" ball bearing wheels and quiet 4" casters makes maneuverability easy and quiet for workers.
- 30-quart removable bins offer more organization and the ability to prestock cleaning supplies for the upcoming shift.
- Interchangeable handles and removable platform allow user to easily expand or reduce the footprint of the cart to meet specific cleaning and storage needs.

DETAILS

Rubbermaid Commerical Products High-Capacity Janitorial Cleaning Cart provides removable storage bins that offers more storage organization while leaving room for customization.

Features and Benefits:

- 40% more storage space than traditional carts minimizes trips for additional supplies and maximizes staff productivity.
- Mop bucket platform with securing grooves keeps WaveBrake® or microfiber charging buckets securely attached to cart.
- Durable 8" ball bearing wheels and quiet 4" casters makes maneuverability easy and quiet for workers.
- 30-quart removable bins offer more organization and the ability to prestock cleaning supplies for the upcoming shift.
- Interchangeable handles and removable platform allow user to easily expand or reduce the footprint of the cart to meet specific cleaning and storage needs.
- Rubber tool grips and hooks securely hold up to 5 stick goods, while hooks hold up to 4 safety signs.
- Expansive storage space with removable bins and caddies let staff restock before they clean, increasing productivity by eliminating search time for additional supplies.
- Compact size fits great in space-constrained areas; with a high capacity-to-footprint ratio, only 22" wide.

SPECIFICATIONS

	U.S.	Metric
Product Packaging Length	49.75 in	126.37 cm
Product Packaging Width	22.29 in	56.62 cm
Product Packaging Height	44.13 in	112.08 cm
Product Packaging Weight	55.00 lb	24.95 kg
UPC	00086876180589	
Case Pack Length	22.88 in	58.10 cm
Case Pack Width	39.50 in	100.33 cm
Case Pack Height	25.88 in	65.72 cm
Case Pack Weight	60.00 lb	27.27 kg
UCC	00086876180589	
Case Pack Quantity	1	
Color	Black	
Material Type	Plastic	
Country of Origin	USA	

DOCUMENTS

Assembly Instructions

PDF DOWNLOAD

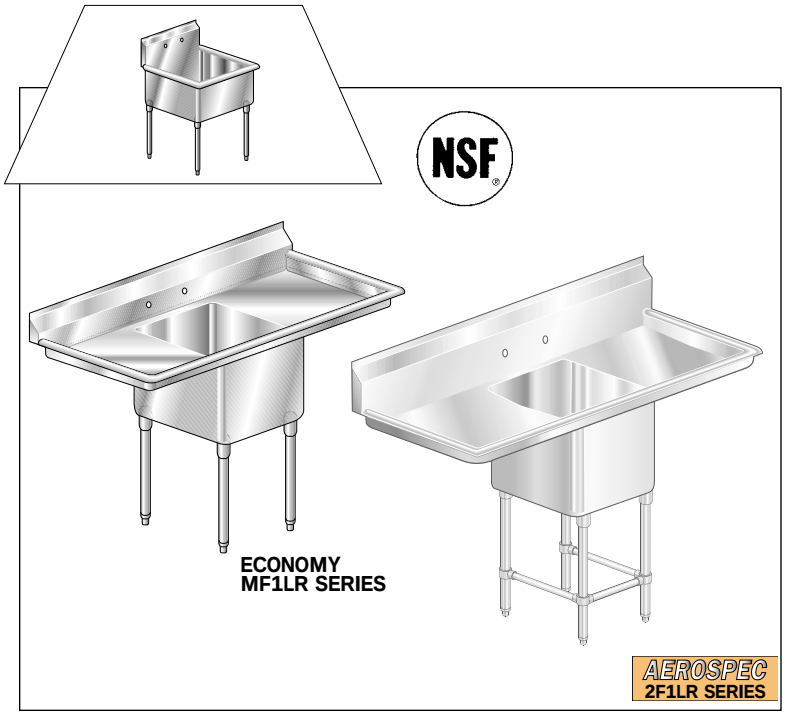
RELATED PRODUCTS

Need Help? **800-347-9800**

NSF SINKS

F1LR SERIES, One Compartment with Two Drainboards

NO. 825 TABLE, WORK, STAINLESS STEEL



Quantity	ECONOMY MF1 Model #	DELUX 3F1 Model #	AEROSPEC 2F1 Model #
21" WIDE			
____	MF1–2116–18LR	3F1–2116–18LR	2F1–2116–18LR
____	MF1–2116–24LR	3F1–2116–24LR	2F1–2116–24LR
____	MF1–2116–30LR	3F1–2116–30LR	2F1–2116–30LR
____	MF1–2116–36LR	3F1–2116–36LR	2F1–2116–36LR
20" WIDE			
____	MF1–2020–20LR	3F1–2020–20LR	2F1–2020–20LR
____	MF1–2020–24LR	3F1–2020–24LR	2F1–2020–24LR
____	MF1–2020–30LR	3F1–2020–30LR	2F1–2020–30LR
____	MF1–2020–36LR	3F1–2020–36LR	2F1–2020–36LR
24" WIDE			
____	MF1–2418–18LR	3F1–2418–18LR	2F1–2418–18LR
____	MF1–2418–24LR	3F1–2418–24LR	2F1–2418–24LR
____	MF1–2418–30LR	3F1–2418–30LR	2F1–2418–30LR
____	MF1–2418–36LR	3F1–2418–36LR	2F1–2418–36LR
24" WIDE			
____	MF1–2424–18LR	3F1–2424–18LR	2F1–2424–18LR
____	MF1–2424–24LR	3F1–2424–24LR	2F1–2424–24LR
____	MF1–2424–30LR	3F1–2424–30LR	2F1–2424–30LR
____	MF1–2424–36LR	3F1–2424–36LR	2F1–2424–36LR
30" WIDE			
____	MF1–3020–20LR	3F1–3020–20LR	2F1–3020–20LR
____	MF1–3020–24LR	3F1–3020–24LR	2F1–3020–24LR
____	MF1–3020–30LR	3F1–3020–30LR	2F1–3020–30LR
____	MF1–3020–36LR	3F1–3020–36LR	2F1–3020–36LR

MATERIAL

BODY

- MF –16 gauge 304 stainless steel bowl, 430 body.
- 3F –16 gauge 304 stainless steel.
- 2F –14 gauge 304 stainless steel. (AEROSPEC)

LEGS

- 1⅝" O.D. 16 gauge 304 series stainless steel tubing, complete with 1" adjustable impact resistant white metal feet.

DESIGN FEATURES

- All sinks are fully cartoned.
- Easily assembled.
- Drainboards pitched ¼" for positive drainage.

EXCLUSIVE AERO SAFETY EDGE

- Sink hemmed on the roll and backsplash to eliminate cuts from rough edges.

CONSTRUCTION

- ***Exclusive 14" bowl depth on all models (consultant's spec).***
- ***Custom style fabricated bowl for true gauge integrity.***
- All sinks have a ¾" radius at all intersecting planes (consultant's spec).
- Stainless steel gusset is machine welded 360 deg. to a stainless steel triangular plate.
- Gusset plate is fully welded directly underneath the sink for support.
- Polished to a #4 blended finish.
- All sinks with drainboards 30" or longer equipped with 2 stainless steel 1⅝" O.D. legs with stainless steel gussets and white metal feet.

PLUMBING

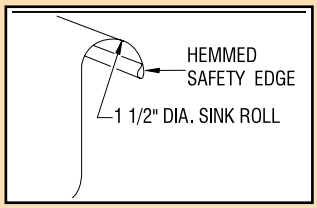
- Water supply is ½" hot and cold.
- Faucet holes are 8" o.c. (Faucets not included. See accessories).

AEROSPEC

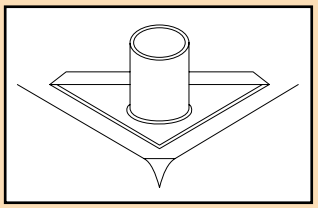
Includes all of the above and the following:

- Full 10" backsplash instead of standard 7".
- Stainless steel feet in lieu of white metal.
- Legs have stainless steel crossbracing with aluminum castings at all intersections.

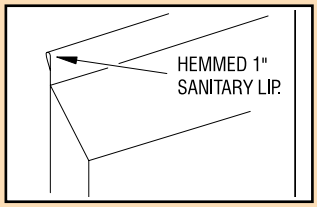
CUSTOM SIZES AVAILABLE



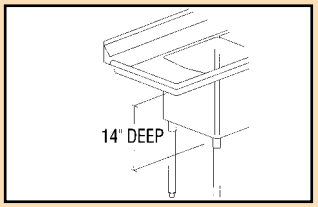
Exclusive Aero Safety Edge



Fully Welded Gusset Assembly



1" Sanitary Lip



14" Custom-Style Bowl

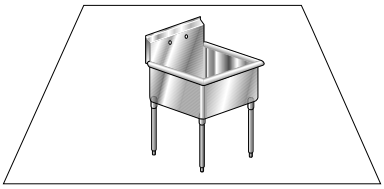
CONSULTANT'S SPECS AT PRODUCTION PRICES

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DIMENSIONAL SPECIFICATIONS

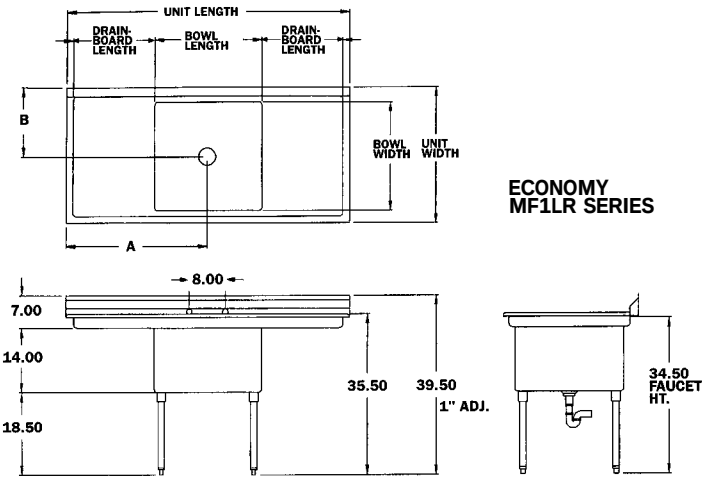
F1LR SERIES, NSF Sinks, One Compartment, Two Drainboards



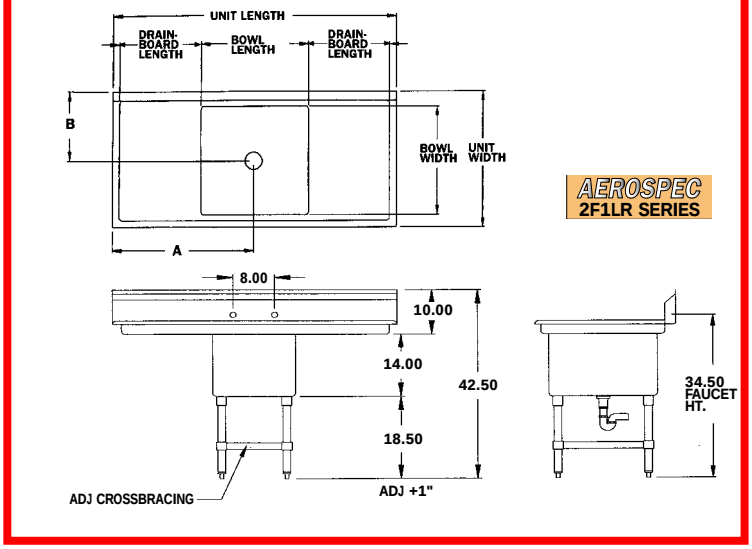
■ Supplied with stainless steel drain basket and strainer.

NSF

CUSTOM SIZE 30X78 (2F1-3020-78LR



ECONOMY
MF1LR SERIES



AEROSPEC
2F1LR SERIES

BOWL Width	BOWL Length	UNIT Width	UNIT Length	DRAIN BOARD Length	A Drain	B Drain	ECONOMY MF1 Model #	DELUX 3F1 Model #	AEROSPEC 2F1 Model #	Ship Weight	Cubic Feet	Sets, Faucet Holes
21" WIDE												
21	16	27	57	18	27.5	13.75	MF1–2116–18LR	3F1–2116–18LR	2F1–2116–18LR	85	13	ONE
21	16	27	67	24	33.5	13.75	MF1–2116–24LR	3F1–2116–24LR	2F1–2116–24LR	90	15	ONE
21	16	27	79	30	39.5	13.75	MF1–2116–30LR	3F1–2116–30LR	2F1–2116–30LR	95	16	ONE
21	16	27	91	36	45.5	13.75	MF1–2116–36LR	3F1–2116–36LR	2F1–2116–36LR	100	18	ONE
20" WIDE												
20	20	26	63	20	31.5	13.25	MF1–2020–20LR	3F1–2020–20LR	2F1–2020–20LR	100	15	ONE
20	20	26	71	24	35.5	13.25	MF1–2020–24LR	3F1–2020–24LR	2F1–2020–24LR	105	17	ONE
20	20	26	83	30	41.5	13.25	MF1–2020–30LR	3F1–2020–30LR	2F1–2020–30LR	110	19	ONE
20	20	26	95	36	47.5	13.25	MF1–2020–36LR	3F1–2020–36LR	2F1–2020–36LR	115	21	ONE
24" WIDE												
24	18	30	59	18	28.5	13.75	MF1–2418–18LR	3F1–2418–18LR	2F1–2418–18LR	95	13	ONE
24	18	30	69	24	34.5	13.75	MF1–2418–24LR	3F1–2418–24LR	2F1–2418–24LR	100	15	ONE
24	18	30	81	30	40.5	13.75	MF1–2418–30LR	3F1–2418–30LR	2F1–2418–30LR	105	17	ONE
24	18	30	93	36	46.5	13.75	MF1–2418–36LR	3F1–2418–36LR	2F1–2418–36LR	110	19	ONE
24" WIDE												
24	24	30	63	18	31.5	15.25	MF1–2424–18LR	3F1–2424–18LR	2F1–2424–18LR	105	17	ONE
24	24	30	75	24	37.5	15.25	MF1–2424–24LR	3F1–2424–24LR	2F1–2424–24LR	110	19	ONE
24	24	30	87	30	43.5	15.25	MF1–2424–30LR	3F1–2424–30LR	2F1–2424–30LR	115	21	ONE
24	24	30	99	36	49.5	15.25	MF1–2424–36LR	3F1–2424–36LR	2F1–2424–36LR	120	23	ONE
30" WIDE												
30	20	36	63	18	31.5	18.25	MF1–3020–20LR	3F1–3020–20LR	2F1–3020–20LR	115	18	ONE
30	20	36	71	24	35.5	18.25	MF1–3020–24LR	3F1–3020–24LR	2F1–3020–24LR	120	21	ONE
30	20	36	83	30	41.5	18.25	MF1–3020–30LR	3F1–3020–30LR	2F1–3020–30LR	125	24	ONE
30	20	36	95	36	47.5	18.25	MF1–3020–36LR	3F1–3020–36LR	2F1–3020–36LR	130	26	ONE

All dimensions are typical (tol. ±½"). • For Accessories and Options see pages FS-7A, FS-7B.

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MX6101DHG

Full Size Metal Exchange Cart

Hinged Doors with Glass Inserts. Also pictured: Suture Module, Locking six inch Metal Drawer, and three FifoGlide™ Catheter Modules.
26"D x 45.12"W x 78"H

Massmedicalstorage.com

Rubbermaid® Square Brute® Trash Can - 40 Gallon, Red



14% bigger. Large-capacity trash can fits neatly in corners and along walls.

- Heavy-duty plastic construction resists denting, bending and cracking.
- Molded-in handles nest securely for side-by-side use.
- USDA compliant. NSF certified.
- Use recommended Clear and Black Liners.
- Brute® Trash Can Lid and Dolly available.

More Images

MODEL NO.	DESCRIPTION	SIZE L x W x H	WT. (LBS.)	PRICE EACH			ADD TO CART	
				1	3	5+		
H-3493R	40 Gallon	23 x 23 x 29"	14	$64	$62	$60	1	ADD

Additional Info Accessories/Parts Email Page Add to Favorites Request a Catalog

Rubbermaid® Square Brute® Trash Can Lid – 40 Gallon, Red



Enlarge

Snap-shut lid protects dry goods or seals trash. Controls odors.

- USDA compliant. NSF certified.
- Use with 40 Gallon Square Brute® Trash Can. Sold separately.

MODEL NO.	DESCRIPTION	SIZE L x W x H	WT. (LBS.)	PRICE EACH			ADD TO CART
				1	3	5+	
H-3495R	40 Gallon	24 x 24 x 2"	4	$21	$20	$19	1 ADD

Additional Info Email Page Add to Favorites Request a Catalog

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SECTION 123623 – PLASTIC LAMINATE COUNTERTOPS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes the following Work:
   1. Provide self-edged plastic-laminate countertops and back/side splashes at all countertop locations not specified and/or scheduled as solid surface countertops.

B. Related Requirements:
   1. Section 064116 “Plastic Laminate Clad Architectural Cabinets” for substrate.
   2. Section 123661 "Solid Surface Fabrications" for locations of solid surface countertops and fabrications.

1.2 ACTION SUBMITTALS

A. Product Data and installation Instructions: For each type of product, including panel products, high-pressure decorative laminates and ABS edging.

B. Shop Drawings: Project specific shop drawings indicating sizes and dimensions. Show materials, finishes, front edge and back/side splash profiles, methods of joining, and dimensional locations of cutouts for plumbing fixtures, equipment and accessories.
   1. Use Plumbing Fixture and associated Veterinary Office Equipment templates, and accessory data sheet information for preparation of Shop Drawings.
   2. Indicate locations of all laminate joints.
   3. Indicate locations of field joining of shop fabricated solid surface pieces.

C. Samples:
   1. Verification samples for plastic laminates.

1.3 INFORMATIONAL SUBMITTALS

A. Woodwork Quality Standard Compliance Certificates: AWI Quality Certification Program certificates or WI Certified Compliance Program certificates.

1.4 QUALITY ASSURANCE

A. Fabricator Qualifications: Certified participant in AWI's Quality Certification Program or Licensee of WI's Certified Compliance Program.

B. Installer Qualifications: Fabricator of products: Certified participant in AWI's Quality Certification Program or Licensee of WI's Certified Compliance Program.

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1.5 FIELD CONDITIONS

A. Environmental Limitations: Do not deliver or install countertops until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.

PART 2 - PRODUCTS

2.1 PLASTIC-LAMINATE COUNTERTOPS & SPLASHES

A. Quality Standard: Unless otherwise indicated, comply with the "Architectural Woodwork Standards" for grades indicated for construction, installation, and other requirements.

B. Grade Custom.

C. High-Pressure Decorative Laminate: NEMA LD 3, Grade HGS.

D. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
   1. Formica Corporation.
   2. Wilsonart International Holdings, Inc. or approved equal.

E. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:
   1. As selected by the County or their designated representative from manufacturer's full range.
   2. Provide a maximum of (3) three colors/patterns as selected by the County or their designated representative.

F. Edge Treatments:
   1. ABS edged with color and texture matching laminate surfaces.
   2. Build up countertop thickness to 1-1/2 inches (38.1 mm) at front, back, and ends.

G. Backer Sheet: Provide plastic-laminate backer sheet, NEMA LD 3, Grade BKL, on underside of countertop substrate as a balancing sheet.

H. Paper Backing: Provide paper backing on underside of countertop substrate.

2.2 WOOD MATERIALS

A. Wood Products: Provide materials that comply with requirements of referenced quality standard unless otherwise indicated.
   1. Wood Moisture Content: 5 to 10 percent.

B. Composite Wood and Agrifiber Products: Provide materials that comply with requirements of referenced quality standard for each type of woodwork and quality grade specified unless otherwise indicated.

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1. Medium-Density Fiberboard: ANSI A208.2, Grade 130, made with binder containing no urea formaldehyde.
2. Softwood Plywood: DOC PS 1.

C. Core Material at Sinks: Medium-density fiberboard made with exterior glue or exterior-grade plywood. Provide additional bridgework or bracing where required for deflection control.

2.3 ACCESSORIES

A. Grommets for Cable Passage through Countertops: 2-inch (50.8 mm) OD, black molded-plastic grommets and matching plastic caps with slot for wire passage.
1. Product: Subject to compliance with requirements, provide "OG series" by Doug Mockett & Company, Inc.; or approved equal grommet.

2.4 MISCELLANEOUS MATERIALS

A. Adhesives: Do not use adhesives that contain urea formaldehyde.

B. VOC Limits for Installation Adhesives and Sealants: Use products that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
1. Wood Glues: 30 g/L.
2. Multipurpose Construction Adhesives: 70 g/L.
3. Structural Wood Member Adhesive: 140 g/L.
4. Architectural Sealants: 250 g/L.

2.5 FABRICATION

A. Fabricate countertops and splashes to dimensions, profiles, and details indicated. Unless otherwise indicated, provide front and end overhang of 1 inch over the face of base cabinets.
1. Sequence top laminate over edge laminate to reduce joint visibility and potential delamination.
2. Locate laminate joints at most non-visible locations, away from work and “wet” areas.
3. Stagger countertop joints and back splash joints at least 24 inches (609.9 mm)

B. Complete fabrication, including assembly, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

C. Shop cut openings to maximum extent possible to receive appliances, plumbing fixtures, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.
1. Seal edges of openings in countertops with a coat of varnish.

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PART 3 - EXECUTION

3.1 PREPARATION

A. Before installation, condition countertops to average prevailing temperature and humidity conditions in installation areas.

3.2 INSTALLATION

A. Grade: Install countertops to comply with same grade as item to be installed.

B. Assemble countertops and complete fabrication at project site to the extent that it was not completed in the shop.
   1. Provide cutouts for appliances, plumbing fixtures, electrical work, and similar items.

C. Field Jointing: Prepare edges to be joined in shop so Project-site processing of top and edge surfaces is not required.
   1. Secure field joints in plastic-laminate countertops with concealed clamping devices located within 6 inches of front and back edges and at intervals not exceeding 24 inches. Tighten according to manufacturer's written instructions to exert a constant, heavy-clamping pressure at joints.

D. Install countertops level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch (3.175 mm) in 96 inches (2438.4 mm).

E. Scribe and cut countertops to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.

F. Countertops: Anchor securely by screwing through corner blocks of base cabinets or other supports into underside of countertop.
   1. Secure backsplashes to tops with concealed metal brackets at 16 inches (406.4 mm) o.c. or to walls with adhesive.
   2. Only where specifically directed by the County or their designated representative**:** Seal junctures of stools, tops, splashes, and windows and walls with mildew-resistant silicone sealant or another permanently elastic sealing compound recommended by countertop material manufacturer.

END OF SECTION 123623

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SECTION 123661.16 - SOLID SURFACING COUNTERTOPS AND WINDOW SILLS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Solid surface material countertops.
   2. Solid surface material backsplashes.
   3. Solid surface material end splashes.
   4. Solid surface material apron fronts.
   5. Window Sills

1.2 ACTION SUBMITTALS

A. Product Data: For countertop materials and sinks.

B. Shop Drawings: For countertops and sills. Show materials, finishes, edge and backsplash profiles and methods of joining.

C. Samples: For each type of material exposed to view.

PART 2 - PRODUCTS

2.1 SOLID SURFACE COUNTERTOP AND SILL MATERIALS

A. Solid Surface Material: Homogeneous-filled plastic resin complying with ICPA SS-1.
   1. Manufacturers:
      a. Avonite Surfaces
      b. E.I. Du Pont
      c. Formica
      d. Or equal and approved
   2. Type: Provide Standard type or Veneer type made from material complying with requirements for Standard type, as indicated unless Special Purpose type is indicated.
   3. Integral Sink Bowls: Comply with CSA B45.5/IAPMO Z124.
   4. Colors and Patterns: As selected by the County or their designated representative from manufacturer's full range.

B. Particleboard: ANSI A208.1, Grade M-2 / Grade M-2-Exterior Glue.

C. Plywood: Exterior softwood plywood complying with DOC PS 1, Grade C-C Plugged, touch sanded.

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2.2 COUNTERTOP FABRICATION

A. Fabricate countertops according to solid surface material manufacturer's written instructions and to the AWI/AWMAC/WI's "Architectural Woodwork Standards."
   1. Grade: Custom.

B. Configuration:
   1. Front: Straight, slightly eased at top with radius edge with apron, 1-1/2-inch (38-mm) laminated bullnose.
   2. Backsplash: Straight, slightly eased at corner.
   3. End Splash: Matching backsplash. Reference drawings for location.

C. Countertops and Window Sills: 1/4-inch- (6.4-mm-) thick, solid surface material laminated to 3/4-inch- (19-mm-) thick particleboard with exposed edges faced with 1/4-inch- (6.4-mm-) thick, solid surface material.

D. Backsplashes: 1/2-inch- (12.7-mm-) thick, solid surface material.

E. Joints: Fabricate countertops without joints.

F. Joints: Fabricate countertops in sections for joining in field.

G. Cutouts and Holes:
   1. Undercounter Plumbing Fixtures: Make cutouts for fixtures in shop using template or pattern furnished by fixture manufacturer. Form cutouts to smooth, even curves.

2.3 INSTALLATION MATERIALS

A. Adhesive: Product recommended by solid surface material manufacturer.

B. Sealant for Countertops: Comply with applicable requirements in Section 079200 "Joint Sealants."

PART 3 - EXECUTION

3.1 INSTALLATION

A. Fasten countertops by screwing through corner blocks of base units into underside of countertop. Predrill holes for screws as recommended by manufacturer.

B. Fasten subtops to cabinets by screwing through subtops into cornerblocks of base cabinets. Shim as needed to align subtops in a level plane.

C. Secure countertops to subtops with adhesive according to solid surface material manufacturer's written instructions.

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D. Bond joints with adhesive and draw tight as countertops are set. Mask areas of countertops adjacent to joints to prevent adhesive smears.

E. Install backsplashes and end splashes by adhering to wall and countertops with adhesive.

F. Install aprons to backing and countertops with adhesive.

G. Complete cutouts not finished in shop. Mask areas of countertops adjacent to cutouts to prevent damage while cutting. Make cutouts to accurately fit items to be installed, and at right angles to finished surfaces unless beveling is required for clearance. Ease edges slightly to prevent snipping.

H. Apply sealant to gaps at walls; comply with Section 079200 "Joint Sealants."

END OF SECTION 123661.16

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SECTION 124813 - ENTRANCE FLOOR MATS – (WALK OFF MATS)

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Entrance floor mat material where indicated on Drawings.

1.2 ACTION SUBMITTALS

A. Product Data and installation instructions: For each type of product and accessory.

B. Shop drawings: Submit shop drawings showing layout, profiles and product components, including anchorage, accessories, finish colors, patterns and textures.

C. Samples: Selection samples for each mat color.

1.3 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.4 QUALITY ASSURANCE

A. Installer: Installer should be highly experienced in performing work of this section, having previously done work similar to that required for this project.

PART 2 - PRODUCTS

2.1 ENTRANCE FLOOR MATS, GENERAL

A. Regulatory Requirements: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines for Buildings and Facilities and all other regulations of authorities having jurisdiction.

2.2 RESILIENT ENTRANCE MATS

A. Provide the following product OR equal and approved:
1. Soft Grid by Mats Inc. or;
2. Vinyl drop-thru panel 100% pre-consumer recycled content in black, 32% pre-consumer content in a Foot Grille format.

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a. Material and type: Open web vinyl grid; 3/8” thick.
b. Size and quantity: Provide mat sections as required for delineated area(s).
c. Color: Black.
d. Provide “J” Frame to perimeter of finish floor / concrete slab recess where provided on drawing.

PART 3 - EXECUTION

3.1 PREPARATION

A. Prior to start of mat installation, confirm that substrate floor level will align and afford a code compliant transition to all adjacent interior and exterior finish floor materials. If levels do not align and meet installation requirements, provide approved floor leveling material to set correct elevation alignments.
   1. Provide a 7/16” recess in the finish floor slab to permit flush installation of SoftGrid Mat with “J” frame around perimeter of opening.
   2. Confirm that surrounding finish floors are in place prior to start of work or will be set at code required elevation alignments.
   3. Seal concrete substrate and/or floor leveling material to prevent concrete deterioration from water or dampness.

3.2 INSTALLATION

A. Install recessed mat to comply with manufacturer's written instructions and the following:
   1. Set top of mat at height recommended by manufacturer for most effective shoe/paw cleaning action.
   2. Install top of mat surface flush with the top of the surrounding finish flooring and butted against each other.
   3. Coordinate tops of mat surfaces with bottoms of any doors that swing across mats to provide clearance between door and mat.

B. Install mats without gaps between mat sections or gaps between mat sections and surrounding finish flooring. Provide an installation free of cupping or binding. Provide a nominal 1/8” maximum gap at perimeter for thermal expansion.

C. Do not cut or trim mat sections without prior approval by the County or their designated representative.

D. Install grid direction as directed by the County or their designated representative or as indicated on the reviewed Submittal.

E. Install mats to afford removal and cleaning by Owner.

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3.3 PROTECTION

A. After completing installation, provide construction phase protection. Maintain protection until construction traffic has ended and Project is near Substantial Completion.

END OF SECTION 124813

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SECTION 134900 -X-RAY PROTECTION

PART 1 - GENERAL

1.1 SUMMARY

A. The requirements for furnishing and installing X-Ray Protection Materials including lead backed gypsum wallboard, lead lined doors, lead lining of door frames.

B. Comply with any applicable requirements of local, regulatory agencies where safety standards or criteria exceed NCRP Report Numbers 49 and 147.

1.3 BASIS OF DESIGN:

A. The Owner, Jefferson County Animal Care Facility, is to obtain the services of a qualified Radiation Physicist to determine the required thickness and placement of lead shielding.

B. Fabricator-Installer Qualifications:
1. Fabricator-Installer shall be experienced in and equipped for work of fabrication and installation equal to standards specified.
2. The contractor shall furnish evidence of Fabricator- Installer having not less than ten (10) years' experience in successful fabrication-installation of radiation protection similar to work specified herein utilizing properly trained personnel with good hygiene practices and proper lead handling training and procedures.
3. Fabricator-Installer shall furnish proof of insurance certifying Fabricator-Installer is specifically insured in the fabrication and installation of X-ray Protection Materials for Shielding.

A. Product Data: Submit manufacturers printed data and specifications for each item of radiation shielding and accessories proposed for use and indicate compliance with all applicable building and safety codes.

1.5 DELIVERY, STORAGE AND HANDLING

A. Lead lined Doors and Frames: Comply with requirements of Section 083449-Radiation Shielding Doors and Frames.

B. Lead lined Wood Doors: Comply with requirements of Section 081416 -Flush Wood Doors as applicable. Specifically Section 083449 – Radiation Shielding Doors and Frames.
1. Product Handling: Keep flat until ready to use. *NEVER* store outdoors, *NEVER* store in sun or near moisture.

C. Lead Backed Gypsum Wallboard: Comply with requirements of Section 092900- Gypsum Board.
1. Product Handling: Keep flat until ready to use. *NEVER* store outdoors, *NEVER* store in sun or near moisture.

A. Manufacturers:

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1. Ray-Bar Engineering Corporation, Ray-Bar Engineering Corporation, · www.raybar.com.
2. Or other recognized domestic manufacturer regularly engaged in the production of X-Ray Protection Materials for a minimum of 10 years.

2.2 MATERIALS AND FABRICATION

A. Lead Sheet: In compliance with Federal Specification QQ-L-201f, Grade C, 99.9% pure, and ASTM B 749, Type L5 1121. Thickness as indicated on Lead Protection Schedule, to 7'0" high, minimum national standard on walls (unless otherwise noted).

B. Lead Backed Gypsum Board: Manufactured in accordance with ASTM C 36, and as follows:
1. Sheet Size: Width and length as required for support spacing to prevent cracking during handling. Not to exceed 4'0" X 10'0", Type X Standard (RB-LBG), also available in Abuse Resistant (AR), Mold Resistant (MR), Water Resistant (WR) and High Impact (HI) gypsum panels where required.
2. Thickness: Not less than 5/8" inch - unless otherwise indicated.
3. A single thickness of unpierced lead sheet must be laminated to the back of gypsum board units with lead thickness value clearly identified on each sheet. Lead thickness as indicated on Lead Protection Schedule. Provide minimum 1-1/2" wide lead batten strips for lapping at all vertical joints and inside and outside vertical corners, same height and lead thickness as on lead backed gypsum board.

C. Fire rated lead backed 5/8" gypsum board (type RB-LBG) to be utilized at any fire rated lead lined partitions (such as partition design U430) and identified with proper yellow U.L Label laminated on actual lead side indicating shielding material manufacturer and current fire resistance listing and U.L. classification per the current U.L. certification directory and as tested in accordance with the standard fire test of building construction and materials per ANSI / UL263 (ASTM E119, NFPA 251). There are absolutely no substitutions allowed by UL.
1. Accessories and Fasteners: Manufacturer's standards, maintaining the equivalent protection as the system. Lead shielding of fasteners: size, type and design as recommended by the manufacturer of protection system such as lead discs or tabs, or simply 1-1/4" long steel screws when appropriate per NCRP Report No. 147 and approved by physicist of record for 1/16" / 4# lead areas or less.

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D. Lead Lined Wood Doors:
   1. Comply with applicable requirements of Section 081416, "Flush Wood Doors" as applicable.
   2. Fabricate doors of solid core flush construction with one or more continuous unpierced lead sheets to make up total lead thickness as indicated. Apply lead sheet continuously from top to bottom and edge to edge. Lead lining may be constructed in core or between core and cross banding at manufacturer's option. Lead must be the same thickness as the partition in which door occurs in. Top of door to be clearly marked with manufacturers name and lead thickness.
   3. Shield cutouts for lock sets with sheet lead lapping, lead lining of lock sets or door lining, of equal thickness lead as used in door of same opening.

E. Lead lined Hollow Metal Door Frames:
   1. Comply with requirements of Section 081113-Hollow Metal Frames.
   2. Provide additional reinforcements and internal supports to adequately carry weight of lead lined doors. Perform all such work before installation of any lead lining into frames.
   3. Line inside of frames with unpierced strips of sheet lead of not less than same thickness as lead in doors and walls in which installed. Form lead sheet to match contour of frame on radiation exposure side of frame, continuous in each jamb and across head and overlap into formed stop. Form lead shields around areas prepared to receive hardware. Fabricate lead lining wide enough to maintain an effective 1/2" minimum overlap lap with lead of same thickness value as adjoining shielding.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Lead Backed Gypsum Wallboard
   1. Apply gypsum board vertically with long edges parallel to supports and lead lining facing supports and lead lining facing supports. Provide blocking at end joints. Install lead strips minimum 1-1/2 inches wide and same height and thickness as gypsum board lead lining to inside of face of supports and blocking where all vertical joints, inside and outside corners occur. Secure lead batten strips to studs, lead shielding to 7'0" high, minimum national standard on walls (unless otherwise noted). No untrained persons or trades to occupy room or work area during any lead material installation per OSHA requirements.
   2. Secure gypsum board to supports with fasteners spaced as recommended by board manufacturer. Drive fasteners slightly below exposed surface and shield with either lead discs, tabs or internally with 1-1/2" wide batten strips, or simply 1-1/4" long steel screws when appropriate per NCRP Report No. 147 and specifically approved by project physicist of record.
   3. Refer to Section 092900 for joint treatment and preparation for taping and finishing.

3.2 BUILT-IN ITEMS

A. Lead lined Doors: Refer to Section 081416, "Flush Wood Doors" for installation requirements.
   1. Finish hardware is specified in Section 087100, "Finish Hardware".
   2. Locksets are to be lead lined.

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B. Built-In Items: Where other built-in items penetrate lead lining, provide lead shield of same thickness as in surrounding wall partition as required to maintain continuity of shielding system. Install in strict accordance with manufacturer's instructions and recommendations.

C. Where outlet boxes, junction boxes, ducts, conduit and similar items prevent the use of shields, provide lead sleeves or lead lining or backing as required with proper overlaps.
   1. Provide lead lining, sleeves, shields and other protections of equivalent thickness of lead as used in the wall partition shielding system that each penetration occurs in.
   2. Properly clean up and disposal or recycle all sheet lead trimmings and debris. Never dispose of lead materials in general trash or refuse.

3.3 CERTIFICATION

A. Upon completion of X-ray Shielding, Manufacturer / Fabricator and Installer shall furnish a certificate of compliance stating that all materials are in accordance with this specification and the physicist shielding report.

3.4 TESTING

A. After the X-Ray equipment has been installed and placed in operating condition or with a similar adjustable radiation source, prior to occupancy and use, the radiation shielding will be tested by the original calculating project health radiation physicist of record at Owners expense.

END OF SECTION 134900 X-RAY PROTECTION

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SECTION 142123.16 – MACHINE ROOM-LESS ELECTRIC TRACTION PASSENGER ELEVATORS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes machine-room-less electric traction passenger elevators.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include Product Data for car enclosures, hoistway entrances, and operation, control, and signal systems.

B. Shop Drawings:

1. Include plans, elevations, sections, and large-scale details indicating service at each landing, coordination with building structure, relationships with other construction, and locations of equipment.
2. Indicate maximum dynamic and static loads imposed on building structure at points of support, and maximum and average power demands.

C. Samples: For each type of exposed finish involving color selection.

1.3 INFORMATIONAL SUBMITTALS

A. Seismic Qualification Certificates: For elevator equipment, accessories, and components, from manufacturer.

B. Manufacturer Certificates: Signed by elevator manufacturer certifying that hoistway and pit layout and dimensions, as indicated on Drawings, and electrical service including standby power generator, as shown and specified, are adequate for elevator system being provided.

1.4 CLOSEOUT SUBMITTALS

A. Operation and maintenance data.

B. Inspection and Acceptance Certificates and Operating Permits: As required by authorities having jurisdiction for normal, unrestricted elevator use.

C. Continuing Maintenance Proposal: Submit a continuing maintenance proposal from Installer to Owner, in the form of a standard five-year maintenance agreement, starting on date initial maintenance service is concluded.

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1.5 WARRANTY

A. Manufacturer's Special Warranty: Manufacturer agrees to repair, restore, or replace elevator work that fails in materials or workmanship within specified warranty period.

1. Warranty Period: 5 year(s) from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by but not limited to one of the following:

1. Mitsubishi Electric Corporation.
2. Otis Elevator Co.
3. Schindler Elevator Corp.

2.2 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with ASME A17.1/CSA B44.

B. Accessibility Requirements: Comply with requirements for accessible elevators in the United States Access Board's ADA-ABA Accessibility Guidelines and with ICC A117.1.

C. Seismic Performance: Elevator system shall withstand the effects of earthquake motions determined according to ASCE/SEI 7 and shall comply with elevator seismic requirements in ASME A17.1/CSA B44.

1. Project Seismic Design Category: B.
2. Elevator Component Importance Factor: 1.5.
3. Design earthquake spectral response acceleration short period (Sds) for Project is S_s = 0.2 second.
4. Provide earthquake equipment required by ASME A17.1/CSA B44.
5. Provide seismic switch required by ASCE/SEI 7.

2.3 ELEVATORS

A. Elevator System, General: Manufacturer's standard elevator systems. Unless otherwise indicated, manufacturer's standard components shall be used, as included in standard elevator systems and as required for complete system.

B. Elevator Description:

1. Group Number: 1.
2. Elevator Number(s): H.C. Elevator

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3. Rated Load: 2500 lb (1135 kg).
4. Freight Loading Class for Service Elevator(s): Class A.
5. Rated Speed: 200 fpm (1.0 m/s).
6. Operation System: Selective-collective automatic operation.
7. Auxiliary Operations:
    a. Standby power operation.
    b. Battery-powered automatic evacuation.
    c. Earthquake Emergency Operation: Comply with requirements in ASME A17.1/CSA B44.
    d. Automatic dispatching of loaded car.
    e. Nuisance-call cancel.
    f. Loaded-car bypass.
    g. Distributed parking.
    h. Off-peak operation.
    i. Automatic operation of lights and ventilation fans.

8. Security Features: Keyswitch operation, Car-to-lobby feature.
9. Dual Car-Control Stations: Provide two car-control stations in each elevator; equip only one with required keyswitches if any.
10. Car Enclosures:
    a. Inside Width: Not less than 68 inches (1727 mm) from side wall to side wall.
    b. Inside Depth: Not less than 51 inches (1295 mm) from back wall to front wall (return panels).
    c. Inside Height: Not less than 93 inches (2362 mm) to underside of ceiling.
    d. Front Walls (Return Panels): Satin stainless steel, No. 4 finish.
    e. Car Fixtures: Satin stainless steel, No. 4 finish.
    f. Side and Rear Wall Panels: Satin stainless steel, No. 4 finish.
    g. Reveals: Satin stainless steel, No. 4 finish.
    h. Door Faces (Interior): Satin stainless steel, No. 4 finish.
    i. Ceiling: Satin stainless steel, No. 4 finish.
    j. Handrails: 1-1/2 inches (38 mm) round satin stainless steel, No. 4 finish, at sides and rear of car.
    k. Floor: Manufacturer's standard resilient sheet vinyl.
    l. Floor prepared to receive resilient flooring (specified in Section 096516 "Resilient Sheet Flooring").

11. Hoistway Entrances:

    a. Width: 36 inches (914 mm).
    b. Height: 84 inches (2134 mm).
    c. Type: Single-speed side sliding.
    d. Frames at First Floor: Satin stainless steel, No. 4 finish.
    e. Frames at Other Floors: Satin stainless steel, No. 4 finish.
    f. Doors and Transoms at First Floor: Satin stainless steel, No. 4 finish.
    g. Doors and Transoms at Other Floors: Satin stainless steel, No. 4 finish.

12. Hall Fixtures at First Floor: Satin stainless steel, No. 4 finish.
13. Hall Fixtures at Other Floors: Satin stainless steel, No. 4 finish.

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14. Additional Requirements:

    a. Provide inspection certificate in each car, mounted under acrylic cover with frame made from satin stainless steel, No. 4 finish.
    b. Provide hooks for protective pads in all cars and two complete set(s) of full-height protective pads.

2.4 TRACTION SYSTEMS

A. Elevator Machines: Permanent magnet, variable-voltage, variable-frequency, ac-type hoisting machines and solid-state power converters.

1. Provide regenerative system.
2. Provide regenerative system that complies with the IgCC.
3. Limit total harmonic distortion of regenerated power to 5 percent per IEEE 519.
4. Provide means for absorbing regenerated power when elevator system is operating on standby power.
5. Provide line filters or chokes to prevent electrical peaks or spikes from feeding back into building power system.

B. Fluid for Hydraulic Buffers: Fire-resistant fluid.

C. Machine Beams: Provide steel framing to support elevator hoisting machine and deflector sheaves from the building structure. Comply with Section 055000 "Metal Fabrications" for materials and fabrication.

D. Guides: Roller guides or polymer-coated, nonlubricated sliding guides. Provide guides at top and bottom of car and counterweight frames.

2.5 OPERATION SYSTEMS

A. General: Provide manufacturer's standard microprocessor operation systems as required to provide type of operation indicated.

B. Basic operation systems for a single car (selective-collective operation) are defined in ASME 17.1/CSA B44 and do not require further specification..

C. Auxiliary Operations:

1. Single-Car Standby Power Operation: On activation of standby power, car is returned to a designated floor and parked with doors open. Car can be manually put in service on standby power, either for return operation or for regular operation, by switches in control panel located at main lobby. Manual operation causes automatic operation to cease.
2. Single-Car Battery-Powered Automatic Evacuation: If power fails and car is at a floor, it remains at that floor, opens its doors, and shuts down. If car is between floors, it moves

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to the next floor above or below, opens its doors, and shuts down. System includes rechargeable battery and automatic recharging system.

3. Off-Peak Operation: During periods of low traffic, half of the elevators in a group shall be taken out of service and switched to sleep, low power mode.
4. Automatic Operation of Lights and Fan: When elevator is stopped and unoccupied with doors closed, lighting, ventilation fan, and cab displays are de-energized after five minutes and are re-energized before car doors open.
5. Independent Service: Keyswitch in car-control station removes car from group operation and allows it to respond only to car calls. Key cannot be removed from keyswitch when car is in independent service. When in independent service, doors close only in response to door close button.

D. Security features shall not affect emergency firefighters' service.

1. Keyswitch Operation: Push buttons are activated and deactivated by security keyswitches at car-control stations.

2.6 DOOR REOPENING DEVICES

A. Infrared Array: Provide door reopening device with uniform array of 36 or more microprocessor-controlled, infrared light beams projecting across car entrance. Interruption of one or more light beams shall cause doors to stop and reopen.

B. Nudging Feature: After car doors are prevented from closing for predetermined adjustable time, through activating door reopening device, a loud buzzer shall sound and doors shall begin to close at reduced kinetic energy.

2.7 CAR ENCLOSURES

A. General: Provide enameled or powder-coated steel car enclosures to receive removable wall panels, with removable car roof, access doors, power door operators, and ventilation.

1. Provide standard railings complying with ASME A17.1/CSA B44 on car tops where required by ASME A17.1/CSA B44.

B. Materials and Finishes: Manufacturer's standards, but not less than the following:

1. Enameled or Powder-Coated Steel Wall Panels: Flush, formed-metal construction; fabricated from cold-rolled steel sheet. Provide with factory-applied enamel or powder-coat finish; colors as selected by the County or their designated representative from manufacturer's full range.
2. Stainless-Steel Wall Panels: Flush, formed-metal construction; fabricated from stainless-steel sheet.
3. Stainless-Steel Doors: Flush, hollow-metal construction; fabricated from stainless-steel sheet.
4. Sight Guards: Provide sight guards on car doors.
5. Sills: Extruded or machined metal, with grooved surface, 1/4 inch (6.4 mm) thick.

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6. Luminous Ceiling: Fluorescent light fixtures and ceiling panels of translucent acrylic or other permanent rigid plastic.
7. Metal Ceiling: Flush panels, with low-voltage LED downlights in] each panel. Align ceiling panel joints with joints between wall panels.
8. Light Fixture Efficiency: Not less than 35 lumens/W.
9. Ventilation Fan Efficiency: Not less than 3.0 cfm/W (1.4 L/s per W).

2.8 HOISTWAY ENTRANCES

A. Hoistway Entrance Assemblies: Manufacturer's standard horizontal-sliding, door-and-frame hoistway entrances complete with track systems, hardware, sills, and accessories. Frame size and profile shall accommodate hoistway wall construction.

1. Where gypsum board wall construction is indicated, frames shall be self-supporting with reinforced head sections.

B. Fire-Rated Hoistway Entrance Assemblies: Door and frame assemblies shall comply with NFPA 80 and be listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction based on testing at as close-to-neutral pressure as possible according to NFPA 252 or UL 10B.

1. Fire-Protection Rating: 1 hour with 30-minute temperature rise of 450 deg F (250 deg C).

C. Materials and Fabrication: Manufacturer's standards, but not less than the following:

1. Enameled or Powder-Coated Steel Frames: Formed from cold- or hot-rolled steel sheet. Provide with factory-applied enamel or powder-coat finish; colors as selected by the County or their designated representative from manufacturer's full range.
2. Stainless-Steel Frames: Formed from stainless-steel sheet.
3. Star of Life Symbol: Identify emergency elevators with star of life symbol, not less than 3 inches (76 mm) high, on both jambs of hoistway door frames.
4. Stainless-Steel Doors and Transoms: Flush, hollow-metal construction; fabricated from stainless-steel sheet.
5. Sight Guards: Provide sight guards on doors matching door edges.
6. Sills: Extruded or machined metal, with grooved surface, 1/4 inch (6.4 mm) thick.
7. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107/C 1107M.

2.9 SIGNAL EQUIPMENT

A. General: Provide hall-call and car-call buttons that light when activated and remain lit until call has been fulfilled. Provide vandal-resistant buttons and lighted elements illuminated with LEDs.

B. Car-Control Stations: Provide manufacturer's standard recessed car-control stations. Mount in return panel adjacent to car door unless otherwise indicated.

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1. Provide "No Smoking" sign matching car-control station, either integral with car-control station or mounted adjacent to it, with text and graphics as required by authorities having jurisdiction.

C. Emergency Communication System: Two-way voice communication system, with visible signal, which dials preprogrammed number of monitoring station and does not require handset use. System is contained in flush-mounted cabinet, with identification, instructions for use, and battery backup power supply.

D. Firefighters' Two-Way Telephone Communication Service: Provide telephone jack in each car and required conductors in traveling cable for firefighters' two-way telephone communication service.

E. Car Position Indicator: Provide illuminated, digital-type car position indicator, located above car door or above car-control station. Also, provide audible signal to indicate to passengers that car is either stopping at or passing each of the floors served. Include travel direction arrows if not provided in car-control station.

F. Hall Push-Button Stations: Provide one hall push-button station at each landing.

G. Hall Lanterns: Units with illuminated arrows; but provide single arrow at terminal landings. Provide one of the following:

1. Manufacturer's standard wall-mounted units, for mounting above entrance frames.
2. Units mounted in both jambs of entrance frame.

H. Hall Annunciator: With each hall lantern, provide audible signals indicating car arrival and direction of travel. Signals sound once for up and twice for down.

I. Standby Power Elevator Selector Switches: Provide switches, as required by ASME A17.1/CSA B44, where indicated. Adjacent to switches, provide illuminated signal that indicates when normal power supply has failed.

J. Fire-Command-Center Annunciator Panel: Provide panel containing illuminated position indicators for each elevator, clearly labeled with elevator designation; include illuminated signal that indicates when elevator is operational and when it is at the designated emergency return level with doors open. Provide standby power elevator selector switch(es), as required by ASME A17.1/CSA B44, adjacent to position indicators. Provide illuminated signal that indicates when normal power supply has failed.

K. Emergency Pictorial Signs: Fabricate from materials matching hall push-button stations, with text and graphics as required by authorities having jurisdiction, indicating that in case of fire, elevators are out of service and exits should be used instead. Provide one sign at each hall push-button station unless otherwise indicated.

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2.10 FINISH MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, commercial steel, Type B, exposed, matte finish.

B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, commercial steel, Type B, pickled.

C. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 304.

D. Stainless-Steel Bars: ASTM A 276, Type 304.

E. Stainless-Steel Tubing: ASTM A 554, Grade MT 304.

F. Aluminum Extrusions: ASTM B 221 (ASTM B 221M), Alloy 6063.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Sound Isolation: Mount rotating and vibrating equipment on vibration-isolating mounts to minimize vibration transmission to structure and structure-borne noise due to elevator system.

B. Lubricate operating parts of systems, including ropes, as recommended by manufacturers.

C. Leveling Tolerance: 1/8 inch (3 mm), up or down, regardless of load and travel direction.

D. Set sills flush with finished floor surface at landing. Fill space under sill solidly with nonshrink, nonmetallic grout.

E. Locate hall signal equipment for elevators as follows unless otherwise indicated:

1. For groups of elevators, locate hall push-button stations between two elevators at center of group or at location most convenient for approaching passengers.
2. Place hall lanterns either above or beside each hoistway entrance.
3. Mount hall lanterns at a minimum of 72 inches (1829 mm) above finished floor.

3.2 FIELD QUALITY CONTROL

A. Acceptance Testing: On completion of elevator installation and before permitting elevator use (either temporary or permanent), perform acceptance tests as required and recommended by ASME A17.1/CSA B44 and by governing regulations and agencies.

3.3 PROTECTION

A. Temporary Use:

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1. Elevator car is not to be used for construction purposes:
2. Provide car with temporary enclosure, either within finished car or in place of finished car, to protect finishes from damage.
3. Provide other protective coverings, barriers, devices, signs, and procedures as needed to protect elevator and elevator equipment.
4. Engage elevator Installer to provide full maintenance service.
5. Engage elevator Installer to restore damaged work, if any, so no evidence remains of correction. Return items that cannot be refinished in the field to the shop, make required repairs and refinish entire unit, or provide new units as required.

3.4 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to operate, adjust, and maintain elevator.

3.5 MAINTENANCE SERVICE

A. Initial Maintenance Service: Beginning at Substantial Completion, maintenance service shall include 60 months' full maintenance by skilled employees of elevator Installer. Include monthly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper elevator operation at rated speed and capacity.

END OF SECTION 142123.16

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SECTION 321826 – ARTIFICIAL GRASS SURFACING (KG-1)

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes:
   1. The furnishing and installation of artificial grass surfacing and accessory materials as indicated on the Construction Drawings.
   2. Provision of associated excavation, fill, compaction grading and drainage course.

1.2 ACTION SUBMITTALS

A. Product Data and Installation Instructions: Submit for each product and accessory product or material including:
   1. One (1) copy of the most recent installation reference list for projects of similar scope to this project completed in last five years.
   2. One (1) 12”x12” loose sample of proposed synthetic grass product.
   3. One (1) of the product warranty for proposed synthetic grass product.
   4. One (1) copy of their maintenance instructions. These instructions will include all necessary instructions for the proper care and maintenance of the newly installed synthetic turf system.
   5. One (1) copy of edge details of proposed installation and terminations of synthetic grass playground system.
   6. One (1) copy of a signed letter from synthetic grass vendor certifying that the proposed synthetic grass product is manufactured in the USA.

B. Shop Drawings: Project specific installation details indicating material attachment that resists maximum wind loads conforming to wind exposure design criteria as required by authorities having jurisdiction.

C. Samples: Submit verification samples for each product and accessory product.

1.3 INFORMATIONAL SUBMITTALS

A. Warranty: Manufacturer’s warranty.

1.4 CLOSEOUT SUBMITTALS

A. Submit maintenance data for each product and material.

1.5 PERFORMANCE

A. The components, as well as the installation methods utilized, shall be designed and executed in a manner to hold up to the unique challenges dogs present.

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B. Subgrade, base, and drainage construction as specified in Section 2 and Section 3 of this document.

C. The synthetic grass surface shall be specifically designed, manufactured and installed for the intended use as a commercial/high use dog surfacing solution.

D. Plastic perimeter boards (typically 2” x 4” set vertically) are to surround the entire area for anchoring of the turf. The top edge of this surface is to be a minimum of 1/2” below any adjacent solid surfaces where there could be foot traffic.

E. Stainless steel staples, 1” in length, are to be used to anchor the synthetic turf to the perimeter boards.

F. The materials as hereinafter specified shall withstand full climatic exposure in the location of the play yard/dog run, be resistant to insect infestation, rot, fungus, mold and mildew, shall also withstand ultra-violet rays and extreme heat, and allow the free flow of water vertically through the sub-surface below.

G. The seams of all system components shall provide a permanent, tight, secure, and hazard free surface.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: The installer must be approved by manufacturer for installation.

1.7 PRE-INSTALLATION COORDINATION CONFERENCE

A. Within 2 weeks of completion of the artificial grass surfacing substrate, the installer shall schedule and conduct a pre-installation coordination conference at the job site or if approved by the County or their designated representative, via conference telephone, to review all Work requirements and locations.
   1. Required Attendees:
      a. General Contractor.
      b. Civil Engineer.
      c. Owner or Owner’s (decision making) Representative.
      d. Vendor and manufacturer’s representative for the artificial grass surfacing.
   2. Confirm wind exposure design criteria and attachment requirements for materials to resist wind loads.
   3. Confirm associated excavation, fill, compaction grading and drainage course will be ready for installation.
   4. Review edge conditions and details.

1.8 QUALITY ASSURANCE

A. The synthetic grass vendor must provide competent workmen skilled in this type of dog surface installation. The synthetic grass vendor shall provide a qualified installation foreman to coordinate and review the component parts of the synthetic grass system. Foreman shall be introduced to owner or owner’s representative prior to start of construction.

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B. The synthetic grass vendor and installer must be experienced with no less than six completed commercial dog installations (2500sf or greater) where a knitted synthetic grass surface was installed. Installer must be competent in the installation of this material, including attachment of seams and proper trimming and attaching techniques prior to the start of turf installation.

1.9 WARRANTY

A. Special Warranties: Provide manufacturer's standard form in which manufacturer agrees to repair or replace products or materials that fail in materials or workmanship within specified warranty period.
   1. Warranty Period: Provide manufacturer’s standard 8 year warranty, from date of Substantial Completion.
   2. Warrant that the materials installed meet or exceed the product specifications and be from a single source (certified by manufacturer) covering workmanship and all materials.
   3. Assure the availability of exact or substantially the same replacement materials for the synthetic grass system for the full warranty period.
   4. Include general wear and damage caused by UV degradation

1.10 DELIVERY, STORAGE AND HANDLING

A. Coordinate delivery with construction schedule to prevent damage and installation delays.

B. Coordinate size of access and route to place of installation to prevent delay of installation due to physical impediments.
   1. If handling by crane or lift, raise and support products and materials as required by manufacturer so as to prevent damage.
   2. Disperse materials at roof top to prevent roof or deck overloading.
   3. Protect adjacent roof areas from damage.

C. Store products and materials in a protected area and in original protective packaging until time of installation.

D. Prevent damage and theft of materials.

PART 2 - PRODUCTS

2.1 MANUFACTURER & PRODUCTS

A. Manufacturer: Subject to compliance with requirements, provide products by the following:
   1. Basis of Design - Dupont ForeverLawn K9Grass Classic.

B. Products: Subject to compliance with requirements, provide the following products:
   1. Synthetic Grass System:
      a. Pile Weight: 72 oz/sy
      b. Face Yarn Type: Primary: Polyethylene; Secondary: Heat set textured nylon monofilament containing antimicrobial agent
      c. Yarn Count: Primary 5,000/4; Secondary 4,200/8

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d. Pile Height (knitted): 3/4 inch
e. Color: Primary: Summer Green; Secondary: Turf Green
f. Construction: Knitted Antimicrobial Protection: AlphaSan (manufactured into yarn)
g. Tufting Gauge: N/A – knitted product
h. Backing: Flow-through knitted backing with light acrylic coating
i. Seaming: Turf Adhesive
j. Total Product Weight: 87 oz /sy (+/- 2 oz)
k. Finished Roll Width: 15 feet (4.6 m)
l. Finished Roll Length: Up to 150 feet (45.72 m)

2. The synthetic grass shall be delivered in 15-foot-wide rolls. The rolls will be laid out and installed as specified in the site layout and equipment placement drawings.
3. All seams shall be installed and secured with approved turf adhesive. Seams secured with stitching alone shall not be acceptable.
4. No Infill material is to be used.
5. Base and Attaching Components: Base is to be prepared using plastic 2" x 4" plastic board and secured using 1" length →|" crown stainless steel staples. Turf is to be secured around all edges. (Manufacturer's standard perimeter nailer boards to secure materials to concrete walls sidewalks and open earth perimeters).
   a. Provide edging and fastening to prevent material uplift and dislodgement. Secure and fasten to resist maximum anticipated wind loads. Conform to requirements of authorities having jurisdiction.

PART 3 - EXECUTION

3.1 PREPARATION - INSPECTION

A. Verify field conditions for production of Shop Drawing Submittals. Inspect conditions in which Work is to be performed. Inform the County or their designated representative in writing of any conditions that would be detrimental to the completion of the Work of this Specification Section. Do not start Work until all conditions are satisfactory.

B. Start of Work signifies acceptance of conditions and responsibility to complete the Work of this Section.

C. Identify hoisting and material staging areas so as to not obstruct site areas or overload roofing, roof insulation or roof structure.

3.2 INSTALLATION, GENERAL

A. Base and Drainage System: The synthetic grass base contractor shall strictly adhere to the installation procedures outlined under this section and by the engineer's drawings. Any variance from these requirements must be accepted in writing, by the synthetic grass vendor, and submitted to the owner or owner's representative, verifying that the changes do not adversely affect the performance or warranty.

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B. Excavation: Existing ground cover shall be excavated to the depth established on the excavation plan. The subgrade shall also be compacted to a minimum of a 90% compaction rate. The artificial grass designed specifically for dogs! M0955 Rev. 6/16

C. Plastic nailer board: The synthetic turf perimeter fastening structure shall be installed before the drainage aggregate.
   1. Install a synthetic nailer board around perimeter and all penetrating objects. Nailer board shall be flush to grade (or as specified in site detail drawings) when adjacent to soft surface (i.e. natural grass, mulch). Nailer board shall be 1/2" below grade when adjacent to hard surface (i.e. concrete or tile).
   2. This shall be the responsibility of the synthetic turf base contractor. See synthetic turf edge attachment detail.

D. Base Drainage Aggregate: Installation of the free draining base aggregate of 3/8" to 5/8" clean compactable angular stone (any mix with fines in excess of 20% must be approved by manufacturer), shall follow procedures provided. If the sub-base does not permit liquids to freely percolate, auxiliary drainage is required. Base material must be installed to a minimum depth of 3 inches. The drainage network and its existing elevations shall not be disrupted through ground pressures from trucks, dozers or by any other means.
   1. The stone shall be left firm and compacted while allowing the porosity and drainage capabilities of the aggregate profile.
   2. The free draining base course should be designed to meet local soil and weather conditions. It must be installed to a minimum depth of 3" with an overall compaction rate of at least 90%.

3.3 SYNTHETIC GRASS SYSTEM INSTALLATION: After a final inspection of the stone base by the synthetic grass contractor and the Owner's Representative, the synthetic turf installation shall begin. The synthetic grass product shall be delivered in 15-foot-wide rolls.

A. Synthetic grass rolls shall be joined via adhesive bond seaming and reinforced with specialty turf adhesive where necessary.
   1. Seams shall be flat, tight and permanent with no separation or fraying.
   2. Grass rolls must be installed with pile leaning the same direction.

B. Synthetic Turf Perimeter Attachment:
   1. After final layout and seaming of the synthetic grass product, the synthetic turf material shall at a minimum be secured to the top of plastic nailer board firmly anchored to sidewalk, curb, wall or by re-bar making up the perimeter of the synthetic turf area. As an alternate installation method the synthetic turf may be wrapped over the edge of the curb nailer board and secured the full depth of the nailer board.
   2. The turf shall be attached to plastic nailer board by stainless steel staples, screws, and/or nails.
   3. Soil or surfacing material outside of the defined synthetic turf area shall be backfilled against turf wrapped perimeter edge and have zero transition edge to synthetic turf unless otherwise specified.
   4. Concrete and solid surfaces should be 1/2" higher than the top of the board.

C. Infill Application: It is imperative that no in-fill is utilized with synthetic turf used with dogs.

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D. Install products and materials to resist wind uplift and dislodgement.

3.4 POST INSTALLATION INSTRUCTION

A. Review maintenance instructions and demonstrate cleaning procedures.

END OF SECTION 321826

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SECTION 323100 – EXTERIOR FENCES AND GATES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes welded wire fencing system and swinging gates at dog exercise yards.

B. Cast-In-Place Concrete" for fence and gate post footings.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product specified.

B. Shop Drawings: Include project specific plans, elevations, sections, details, and attachments to other work and substrates.

C. Verification Samples: For each polyester-coated product and for each color and texture specified, in 6-inch (150-mm) lengths for components and on full-sized units for accessories.

D. Qualification Data: Specified installer's qualification data and references.

1.3 INFORMATIONAL SUBMITTALS

A. Sample of each manufacturer's warranty.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Experienced Installer, approved by manufacturer, who has completed fencing projects of similar scope and complexity, able to submit a minimum of 3 references.

B. Single Source: Provide all fence and gate components from the specified manufacturers.

1.5 DELIVERY, STORAGE AND HANDLING

A. Coordinate delivery with construction schedule to prevent damage and installation delays.

B. Coordinate size of access and route to place of installation to prevent delay of installation due to physical impediments.

1. If handling by crane or lift, raise and support products and materials as required by manufacturer so as to prevent damage.

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C. Store products and materials in a protected area and in original protective packaging until time of installation.

1.6 WARRANTY

A. Warranty: Each manufacturer's standard warranty in which manufacturer agrees to repair or replace components of fences and gates that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, strength of materials and deterioration of metals, metal finishes, and other materials beyond normal weathering.
2. Warranty Period: Minimum 5 years from date of Substantial Completion.

B. Warranties specified in this Section shall stand separate and in force and shall not be limited by any Construction Guarantee or Warranty indicated in the Division 1 Supplementary Conditions issued for this Project.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Accessibility Standard: Where required, comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines for Buildings and Facilities and ICC A117.1.

B. At gates which are components of egress exits, provide latching that complies with requirements of authorities having jurisdiction.

1. If gates are a component of a means of egress, do not provide a means or devices to allow gates to be locked from the direction of egress.
2. Swing gates in the direction of egress unless otherwise indicated on drawings.

2.2 MANUFACTURERS & PRODUCTS

A. Manufacturer: Subject to compliance with requirements, provide products by the following manufacturer:
1. Omega II Fence Systems, a division of Metaltech – Omega, Inc.

B. Products: Subject to compliance with requirements, provide the following products:

1. Omega Architectural Series:
a. Standard, (not face mounted), Mesh Panels: Welded steel wire fabric with 1.97 inch x 6 inch (50mm x 150 mm) mesh openings, fabricated from 6 gauge (4.88 mm) ASTM A 641 (1989 Class 1 pre-galvanized wire, with bent reinforcing V folds spaced according to fence fabric height.

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b. Fence & Gate Post Framing: Cold rolled galvanized 1008 grade steel meeting ASTM 500 and A 787-01, 2 x 2 inches (50 x 50 mm) typical, as required for fence height and lateral loads.
c. Gate Framing: Cold rolled galvanized steel tube, 16 gauge (1.6 mm), fabricated from manufacturer's standard sized components.
d. Caps, Fittings, Fasteners, Hardware: Manufacturer's standard components necessary for a complete fence and gate installation. Provide self-latching gates.
e. Finish & Color: Manufacturer's standard 4 mil thick polyester powder coating; Color, RAL 9004, Signal Black.
f. Height: Nominal 6 foot (304.8 mm) height for fencing and gates.

2. Fasteners: Provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M or of Type 304 stainless steel.

PART 3 - EXECUTION

3.1 PREPARATION - INSPECTION

A. Verify field conditions for production of Shop Drawing Submittals. Inspect conditions in which Work is to be performed. Inform the County or their designated representative in writing of any conditions that would be detrimental to the completion of the Work of this Specification Section. Do not start Work until all conditions are satisfactory.

B. Start of Work signifies acceptance of conditions and responsibility to complete the Work of this Section.

C. Identify hoisting and material staging areas so as to not obstruct site areas or overload any roofing, roof insulation or roof structure.

3.2 INSTALLATION

A. Install product and materials in accordance with manufacturer's recommendations and requirements.

B. Install fence and gate components level, square and plumb without waves, misalignments or defects.

C. Install fence fabric with flush cut wire fabric edge at top and spiked edge at bottom.

D. Install the bent reinforcing V folds either oriented toward the "inside" or "outside" of the fenced-in area, as directed by the County or their designated representative.

E. Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach fabric as for fencing. Attach hardware using tamper-resistant or concealed means. Adjust hardware for smooth operation and lubricate where necessary. Provide manufacturer's anti-sag hardware and cable where required for sag prevention.

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F. Gates: Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and any locks engage accurately and securely without forcing or binding.

END OF SECTION 323113

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