

! **Equipment Alert**

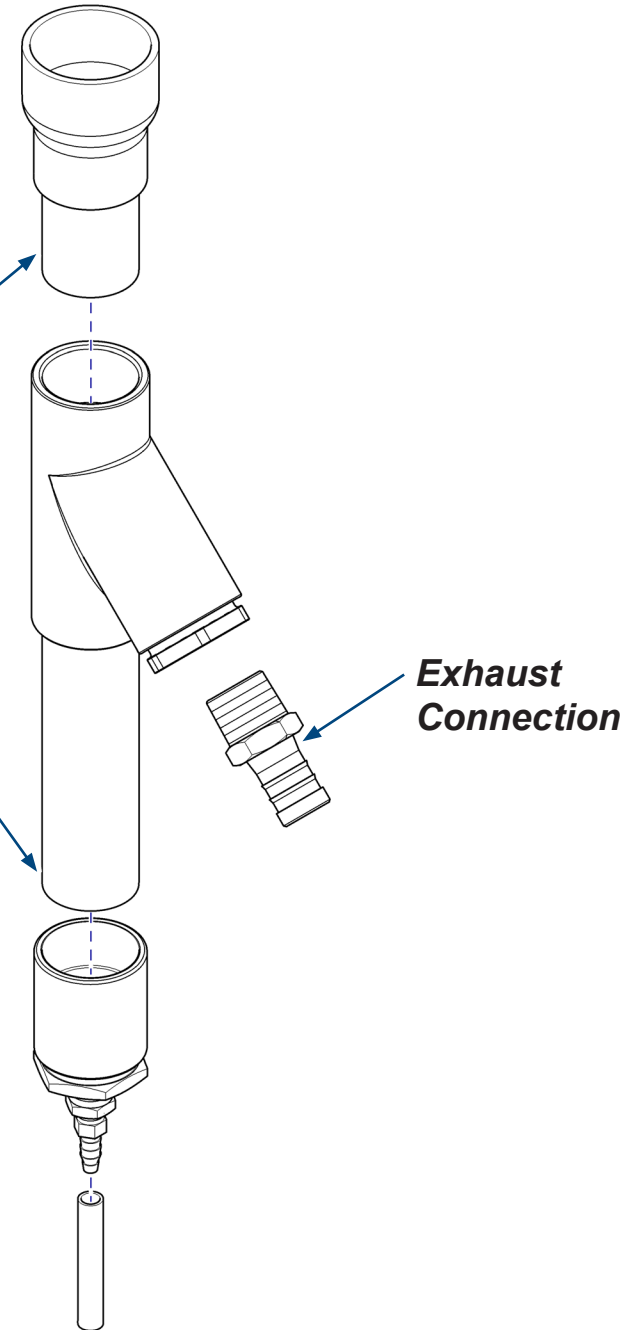
MUST Glue When Installed

**Optional
2" Adapter**

**Exhaust
Connection**

**Exhaust Trap Must Be Installed
or Warranty will be Voided**

**Refer to this Manual for installation
Instructions**





WARNING

Motors are thermally protected with automatic reset. Unit may start without warning.



Caution

Vac base unit weighs 355 lbs (161 kgs). Use care when moving to prevent personal injury. Raise leveling feet to roll base unit or use lift handles (77001455).

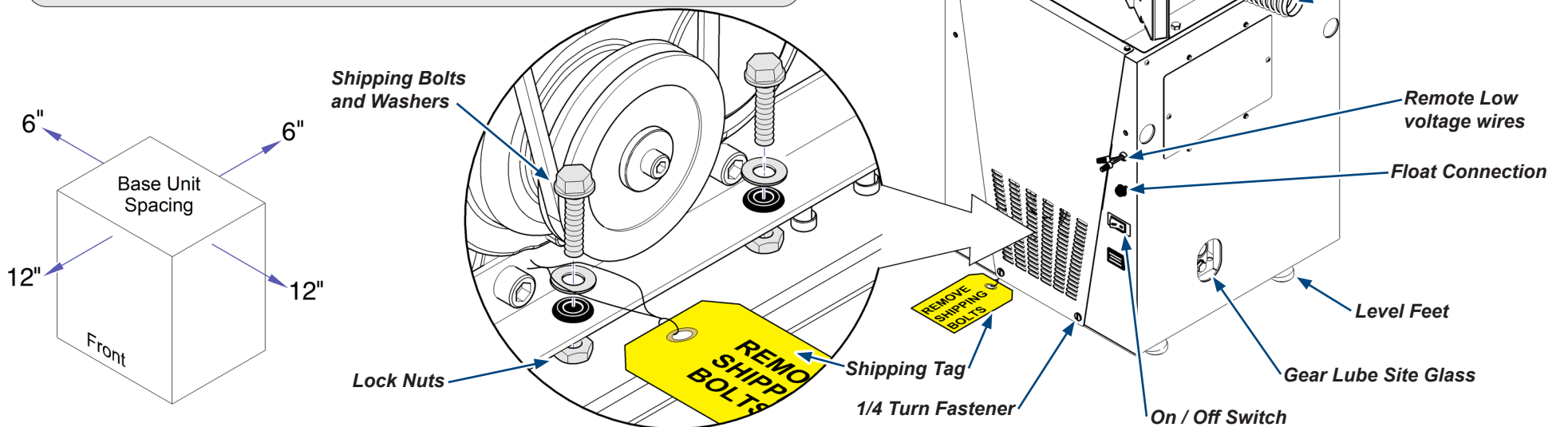


Equipment Alert

Vacuum system must be installed per local plumbing and electrical codes. Do not operate without cover.
Place vacuum system in a dry, well ventilated area on a solid, level surface. Verify all sides of base unit are not obstructed. Recommended - 6" inches on left and back side. Required - 12" inches on front and right side.

Pre-Install, remove shipping bolts...

- A) Unfasten front cover by turning each fastener 1/4 turn, counter clockwise.
- B) Lift front cover straight up to remove from side panels.
- C) Remove lock nuts, washers and bolts, replace front cover. Shipping hardware can be thrown away, they will not be reused.



Important Information

Intended Use

To provide vacuum suction during general examinations and procedures conducted by qualified dental professionals.

Electromagnetic Interference

This Midmark PowerVac® G is designed and built to minimize electromagnetic interference with other devices. However, if interference is noticed between another device and these units:

- Remove interfering device from room
- Increase separation between vacuum and interfering device
- Contact Midmark if interference persists

Disposal of Equipment

At the end of product life, the units, 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.

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 " Hg) to 1060hPa (31 "Hg)

Safety Symbols



WARNING

Indicates a potentially hazardous situation which could result in serious injury.



Caution

Indicates a potentially hazardous situation which may 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.

Safety Symbols continued...



Consult User Guide for important information.



Proper shipping orientation



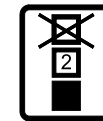
Fragile



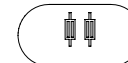
Protective earth ground



Keep Dry



Maximum stacking height (palliated units)



Fuse rating specification



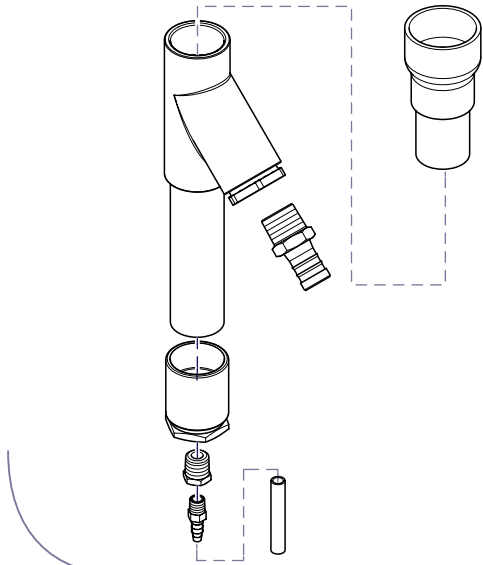
Caution hot surface

IPX0

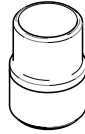
Ordinary Equipment

PowerVac® P Loose Parts

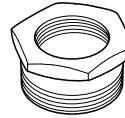
Exhaust Assembly Components**



Bushing - 1 1/2" NPT x 1 1/4" NPT, PVC*



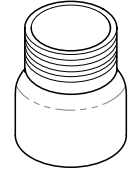
Bushing - 2" NPT x 1 1/2" FPT, PVC*



Adapter, 1 1/2" NPT x Socket, PVC*



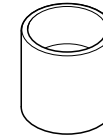
Coupling Reducer SOC 2" x 1 1/2" *



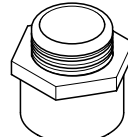
Nipple, 1 1/2" x 1 1/4" NPT*



Coupler, 1 1/2" SOC PVC*



Adapter, 1 1/2" NPT x Socket, PVC*



Extra Fittings for Hose Connections to Existing Pipes

Note

- * Included with Separator Loose Parts Kit - 002-1441-00
- ** Included with Base Loose Parts Kit - 002-10536-00

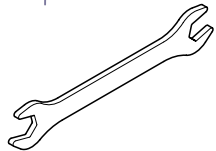


Equipment Alert

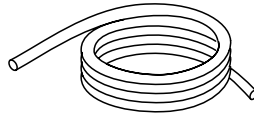
A sample bottle of Precision Clense Plus is packaged with the separator assembly, refer to care guide for instructions.

PowerVac P Parts

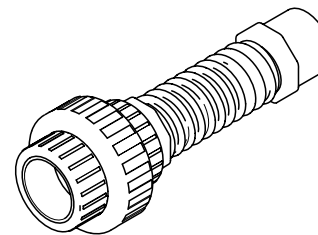
Garden Hose Adapter*
Refer to "Care Guide" on Base Unit or www.Midmark.com



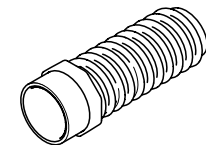
Foot Wrench 1/2" Twin Opened End**



1" x 8' low pressure Exhaust Hose Assembly**



Intake Hose Assembly*



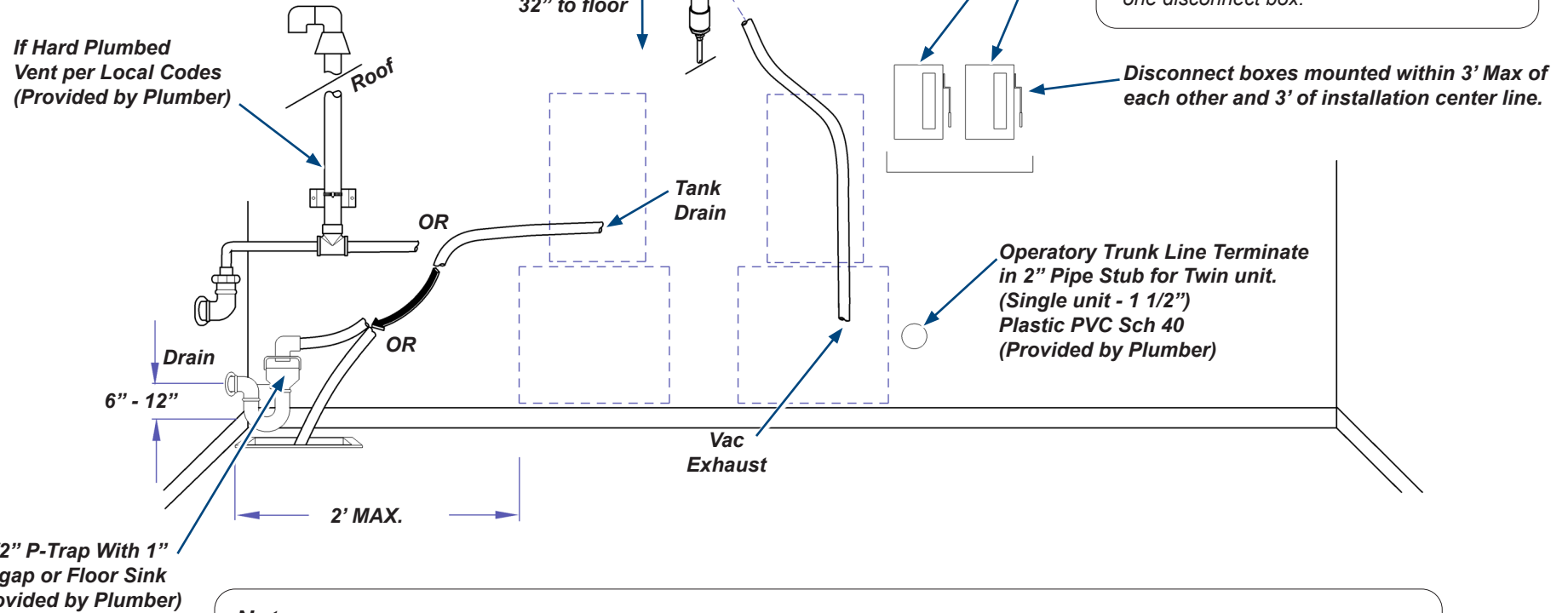
Drain Hose Assembly*

PowerVac® Site Requirements

| | | | |
|--|--|---|---|
| Plumbing | Exhaust Line | <i>Single Models P3, P5, P7</i> | <i>Twin Models P6, P10, P14</i> |
| | Type | PVC Sch 40, CPVC Sch 80, Copper or Galvanized Steel | CPVC Sch 80, copper or Galvanized Steel |
| | Size | 1-1/2" for up to 15' exhaust line length 2" for greater than 15' exhaust line length | 2" for all exhaust line lengths |
| | Termination | 1 1/2" PVC Sch 40 | |
| | Intake (Suction) Line | <i>Single Models P3, P5, P7</i> | <i>Twin Models P6, P10, P14</i> |
| | Type | PVC Sch 40 Pipe Recommended - for Main Trunk and Branch Lines | |
| | Line Size | Refer to: "Vacuum Plumbing Layout Recommendations", document 004-1130-00. | |
| | Pump Termination | 1 1/2" | 2" |
| | Drain | <i>Single Models P3, P5, P7</i> | <i>Twin Models P6, P10, P14</i> |
| | Type | Floor Drain or 1 1/2" PVC Sch 40 P-Trap | |
| Flow Capacity | Minimum 25 Gallons per Minute | | |
| Tank Wash Supply | 3/4" Garden Hose Fitting Provided per Tank for Non-Permanent Supply Water Connection | | |
| Electrical <i>Note: All PowerVac® models electrically designed to be sold in U.S.A. or Canada.</i> | Boxes | <i>Single Models P3, P5, P7</i> | <i>Twin Models P6, P10, P14</i> |
| | Supply | (1) 208 - 230 Volt, Single Phase, 60Hz | (2) 208 - 230 Volt, Single Phase, 60Hz |
| | User Supplied Fused Disconnect Switch Box <i>Note: Boxes to be located within 6' of Vacuum Unit(s).</i> | 1 @ 30 AMP Required | 2 @ 30 AMP Required |
| | Supply Leads | <i>Single Models P3, P5, P7</i> | <i>Twin Models P6, P10, P14</i> |
| Leads (12 GA Wires) | (1) 6' Supply Conduit Provided | (2) 6' Supply Conduits Provided | |
| Environmental | Temperature | <i>Single Models P3, P5, P7</i> | <i>Twin Models P6, P10, P14</i> |
| | Equipment Room Vent | Continuous-run 800 CFM Fan | Continuous-run 1600 CFM Fan |
| | Heat Output | 4500 BTU/HR | 9000 BTU/HR |
| | Equipment Room Ambient Temperature | 40° to 104° F 4° to 40° C | |
| | Note: All PowerVac® models are recommended to be installed and operated in a thermostatically or otherwise stable ambient temperature environment. Forced air and HVAC input should be used in addition to an exhaust fan if normal ambient temperatures vary from specified operating temperature range. | | |

PowerVac® Site Requirement Layout - Elevation View

Note
 Exhaust trap to be located approximately 32" from floor.
 The black vac exhaust hose can be put into a loop.



See "Exhaust Installation" located in this manual for more details. (Provided by Plumber)

Disconnect Box 230V 30 AMP Single Phase 60 Hz Circuit with approved ground required. 1 EA motor (2 in system shown) (Provided by Electrician)

Note
 Twin Unit Shown, a single unit only requires one disconnect box.

Disconnect boxes mounted within 3' Max of each other and 3' of installation center line.

Operatory Trunk Line Terminate in 2" Pipe Stub for Twin unit. (Single unit - 1 1/2") Plastic PVC Sch 40 (Provided by Plumber)

Note
 Ventilation required to maintain room temperature range of 40° to 104° F or 4° to 40° C with 4500 BTU/HR per vacuum heat output.

Plumbing & Exhaust Installation for Single Models



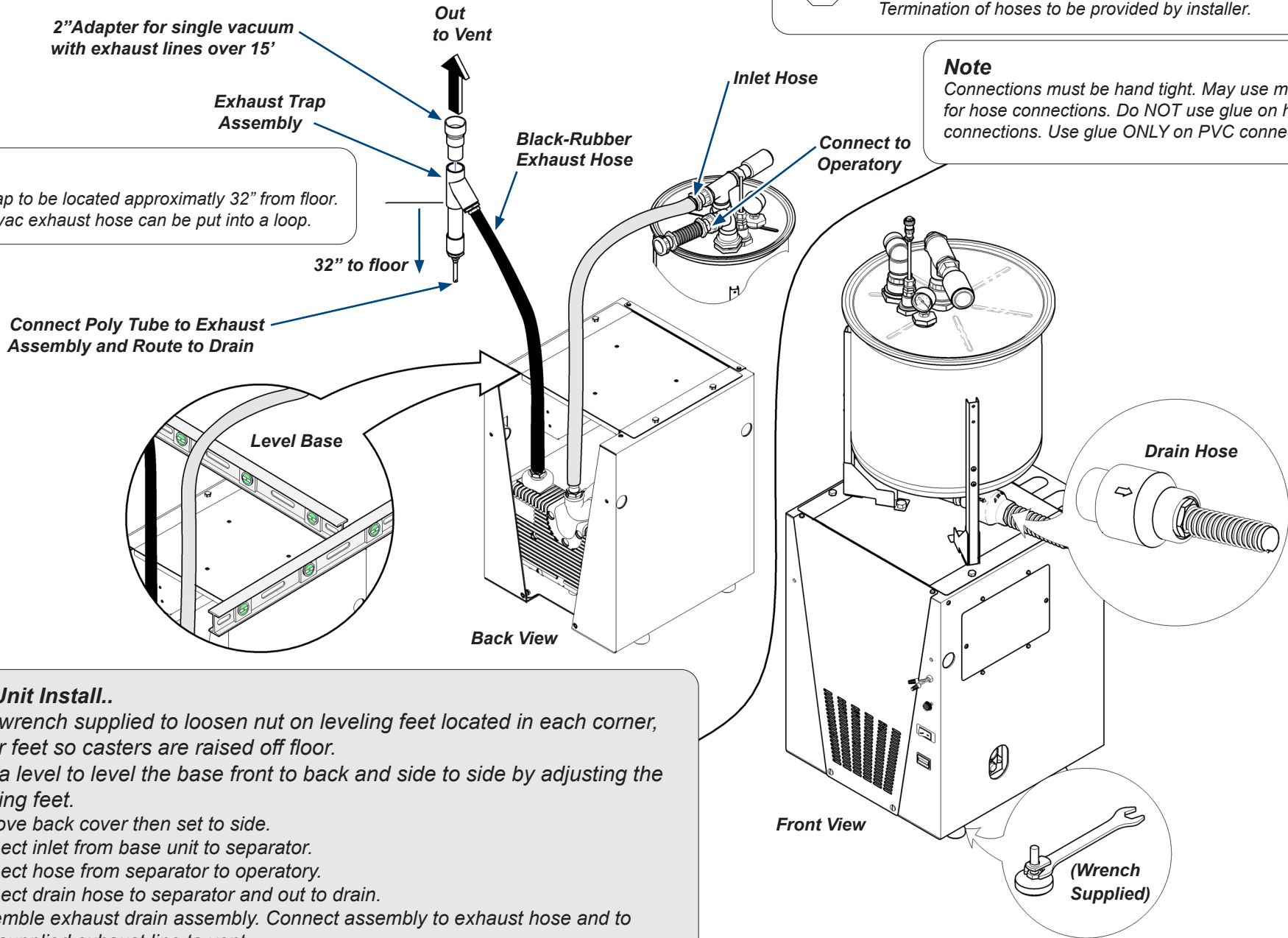
Equipment Alert

Verify all local codes before installing Inlet and Drain hoses. Termination of hoses to be provided by installer.

Note

Connections must be hand tight. May use mild soap for hose connections. Do NOT use glue on hose connections. Use glue ONLY on PVC connections.

Note
Exhaust trap to be located approximately 32" from floor. The black vac exhaust hose can be put into a loop.



Single Unit Install..

- A) Use wrench supplied to loosen nut on leveling feet located in each corner, lower feet so casters are raised off floor.
- B) Use a level to level the base front to back and side to side by adjusting the leveling feet.
- C) Remove back cover then set to side.
- D) Connect inlet from base unit to separator.
- E) Connect hose from separator to operator.
- F) Connect drain hose to separator and out to drain.
- G) Assemble exhaust drain assembly. Connect assembly to exhaust hose and to user supplied exhaust line to vent.
- H) Connect fan wire harness. Replace back cover.

Note: Do not cut or shorten hose, "High Temp".

(Continue with Single Model on "Electrical Connections" Page)

003-1586-00

Exhaust Install - Twin Models



Equipment Alert

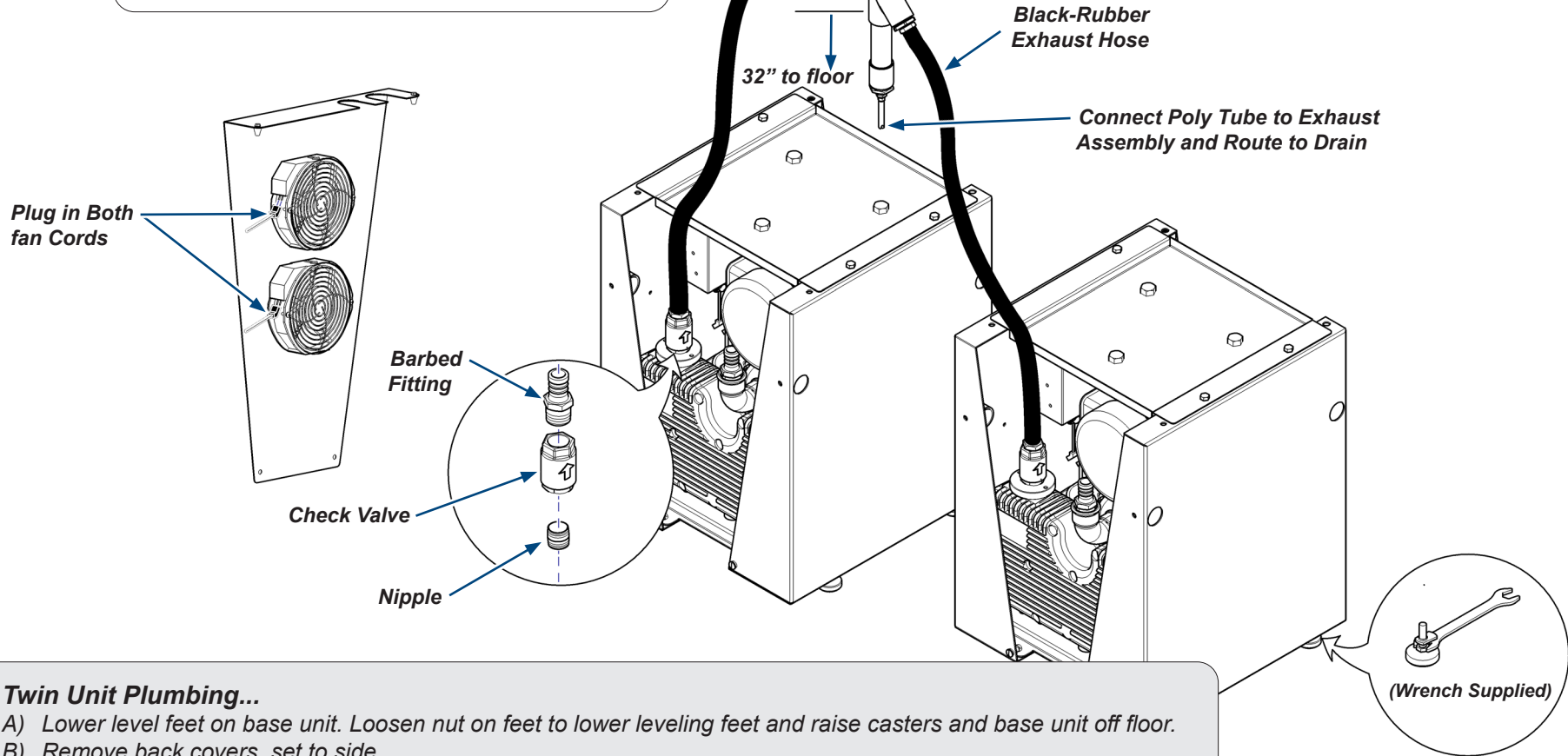
Verify all local codes before installing Inlet and Drain hoses. Termination of hoses to be provided by installer.

Note

Connections must be hand tight. May use mild soap for hose connections. Do NOT use glue on hose connections. Use glue ONLY on PVC connections.

Note

Exhaust trap to be located approximately 32" from floor. The black vac exhaust hose can be put into a loop.



Twin Unit Plumbing...

- A) Lower level feet on base unit. Loosen nut on feet to lower leveling feet and raise casters and base unit off floor.
- B) Remove back covers, set to side.
- C) Install a reducer and barbed fitting into each end of brass tee.
- D) Install nipple, check valve, and barb fitting into exhaust outlet. **Arrow on check valve must point up.**
- E) Connect two black-rubber exhaust hoses from base unit to barbed fittings.
- F) Assemble exhaust drain assembly. Connect assembly to exhaust hose and to user supplied exhaust line to vent.
- F) Connect fan wire harness. Replace back cover.

Note: Do not cut or shorten hose, "High Temp".

Continue with Twin Model on Page 9

Plumbing Install - Twin Models



Equipment Alert

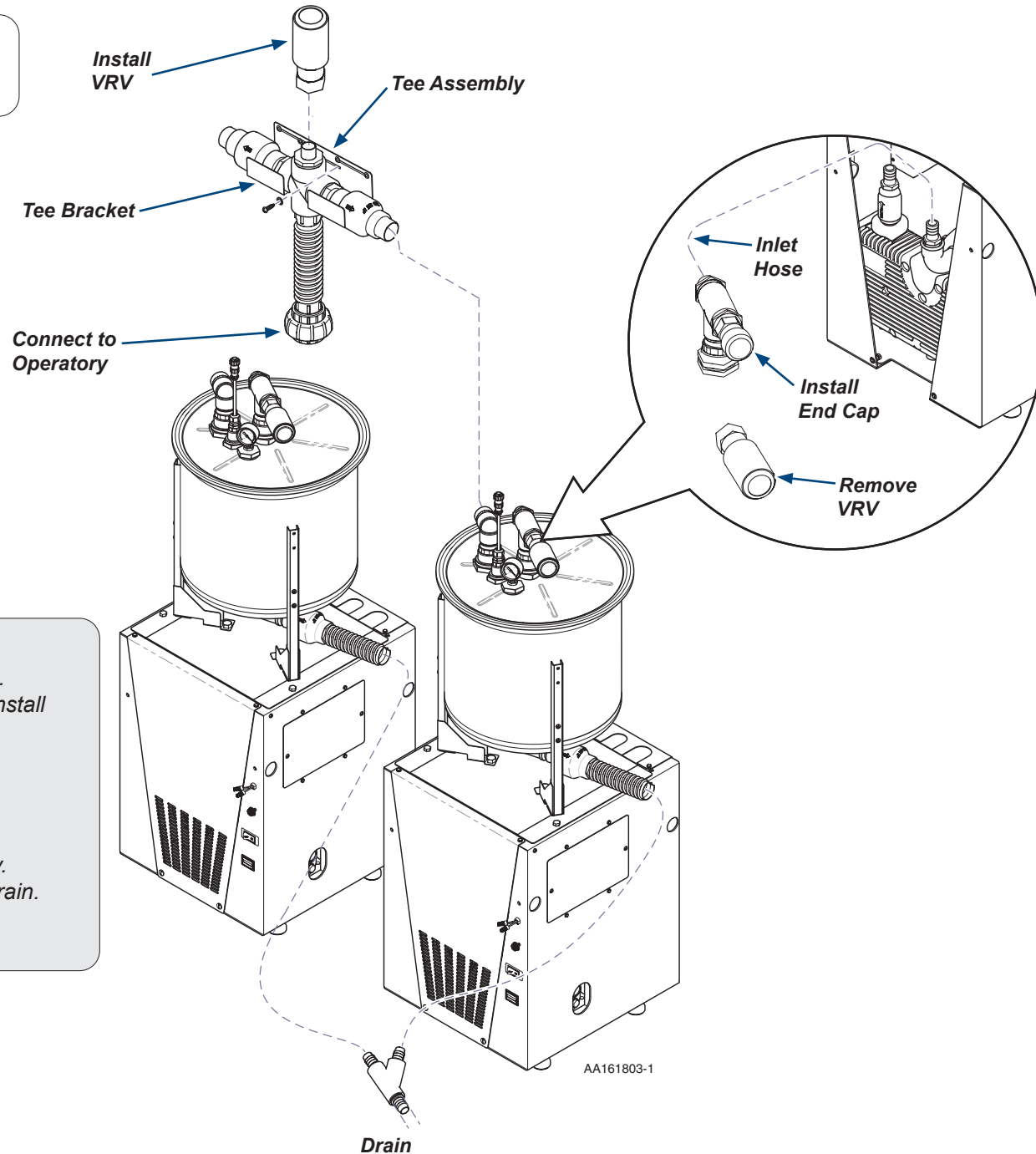
Verify all local codes before installing Inlet and Drain hoses. Termination of hoses to be provided by installer.

Note

Connections must be hand tight. May use mild soap for hose connections. Do NOT use glue on hose connections. Use glue ONLY on PVC connections.

Twin Unit Plumbing Continued..

- A) Mount tee assembly bracket, place tee assembly on bracket.
- B) Remove both vacuum relief valves (VRV) from separators, install replacement caps.
- C) Install one VRV to top of tee assembly.
- D) Connect inlet hoses from base units to separators.
- E) Connect inlet hose from each separator to tee assembly.
- F) Connect inlet hose from tee assembly to operator
- G) Connect each drain hose to separator check valve assembly.
- H) Connect each drain hose to drain tee assembly and out to drain.



(Continue with Twin Model on "Electrical Connections" Page)

Electrical Install - ALL Models

Electrical Connections...

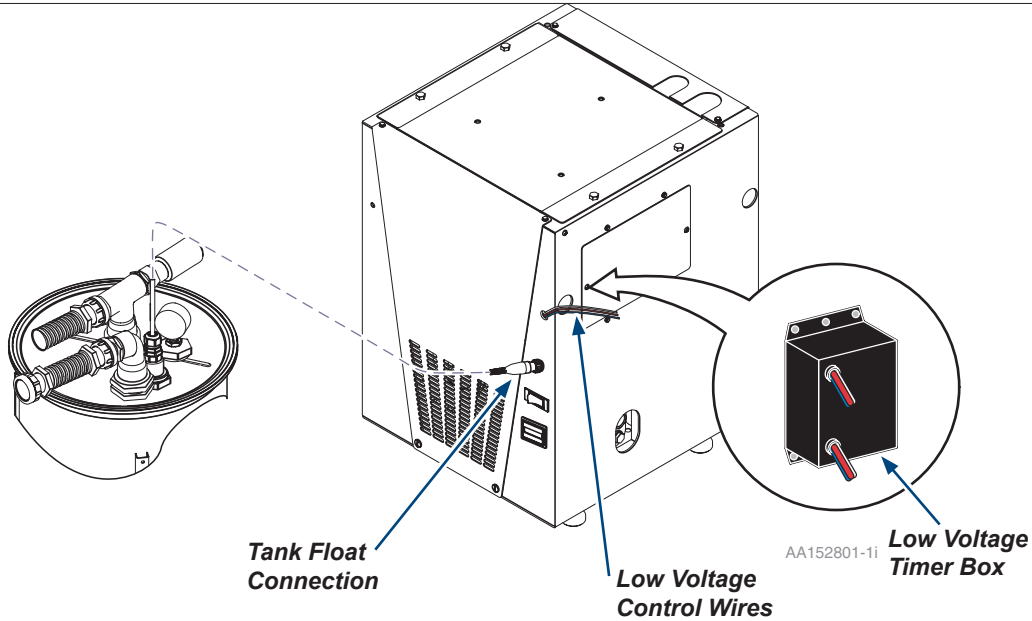
- A) Connect tank float harness connector to the front of the vacuum base.
- B) Connect low voltage control wires to low voltage timer box and master control panel by color as labeled.
- C) Hard wire power supply conduit (back of base unit) to user supplied electrical boxes).

Note: Refer to "Control Panel Cross Wiring" chart to connect Low Voltage wires.



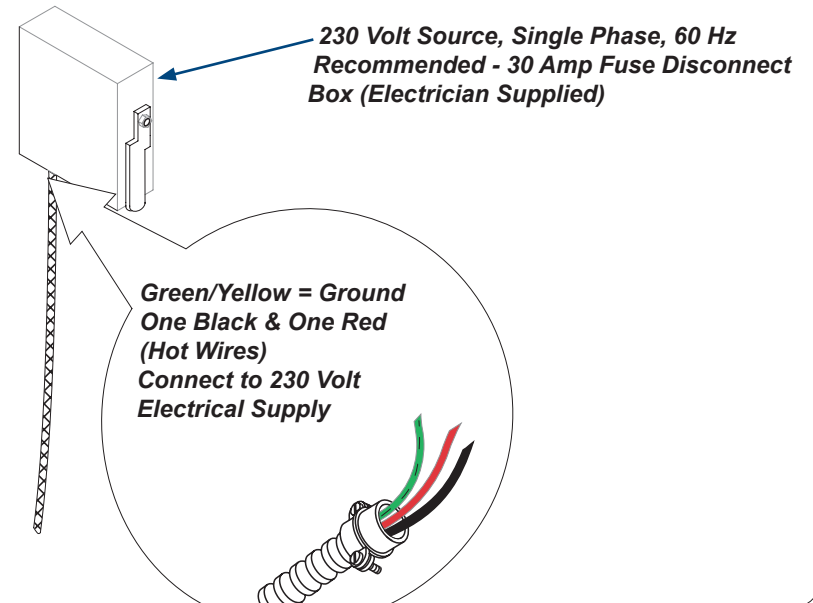
Equipment Alert

Pump must have line voltage present and be turned on & off with the low voltage circuit in order for the timer to work properly.
DO NOT modify the length of the cables used on the separator tank floats.



Control Panel Cross Wiring

| Brand | Wire | | |
|----------------|--------|-----------|--------|
| | A | B (Light) | C |
| Midmark® | Blue | White | Red |
| Air Techniques | Yellow | Brown | Orange |
| Den-Tal-Ez | Black | Brown | Yellow |
| Matrx® | Red | Blue | White |



Equipment Alert

All vacuum systems are to be installed according to local electrical codes.
Never operate the equipment without complete and proper grounding.
Refer to specification sheet for electrical ratings in this manual.

Installation for ALL Models - Check and Test



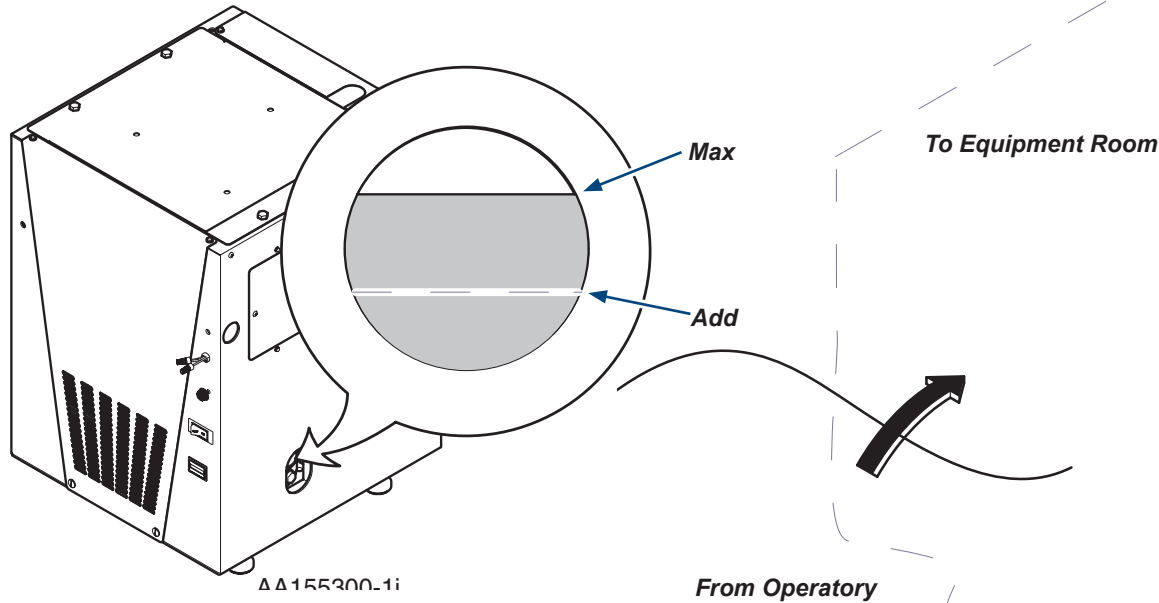
WARNING

The On/Off switch controls only the secondary circuit power.
The main power source must be turned off to remove all power in the control box.
Too high vacuum level can cause injury and or operatory equipment failure.



Equipment Alert

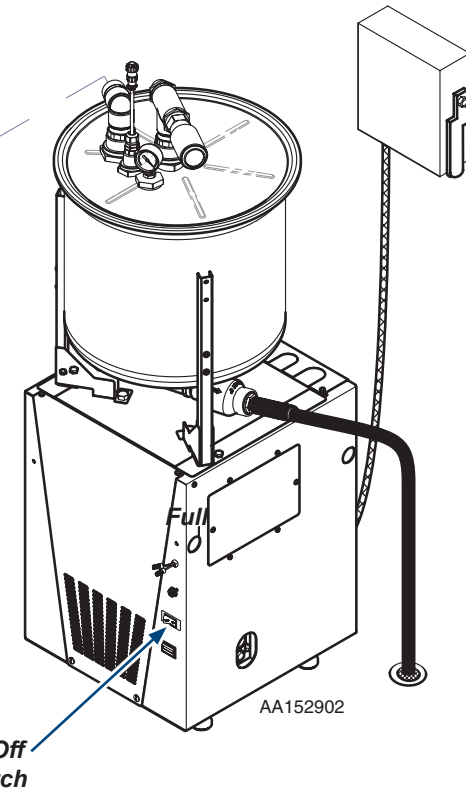
Do Not introduce foaming cleansers into vacuum system



AA155200-1i

From Operatory

To Equipment Room



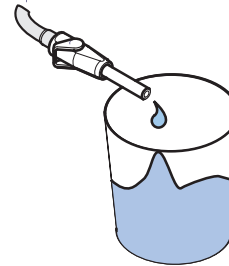
AA152902

On/Off
Switch

To Test...

- Check gear lube level on site glass. Add if below 1/3 full. Only use Midmark lube, PN 064-0028-01.
- Start Vacuum.
- Spray soapy water to check for leaks on external plumbing parts.
- Check the vacuum gauge. Vacuum level range is 6" Hg to 18" Hg.
- Vacuum 1-2 gallons of fresh water into system through operatory lines. Run vacuum for 15 min.
- Turn vacuum off and ensure that water drains from separator without leaks.

Note: Vacuum will not run without front cover.



Note

Midmark recommends operation at factory preset of 12" Hg. If reading is low check for leaks or open operatory lines prior to adjusting.

Installation for ALL Models - Vacuum Relief Valve Adjustment

Note

Vacuum level range is 10" Hg - 18"Hg

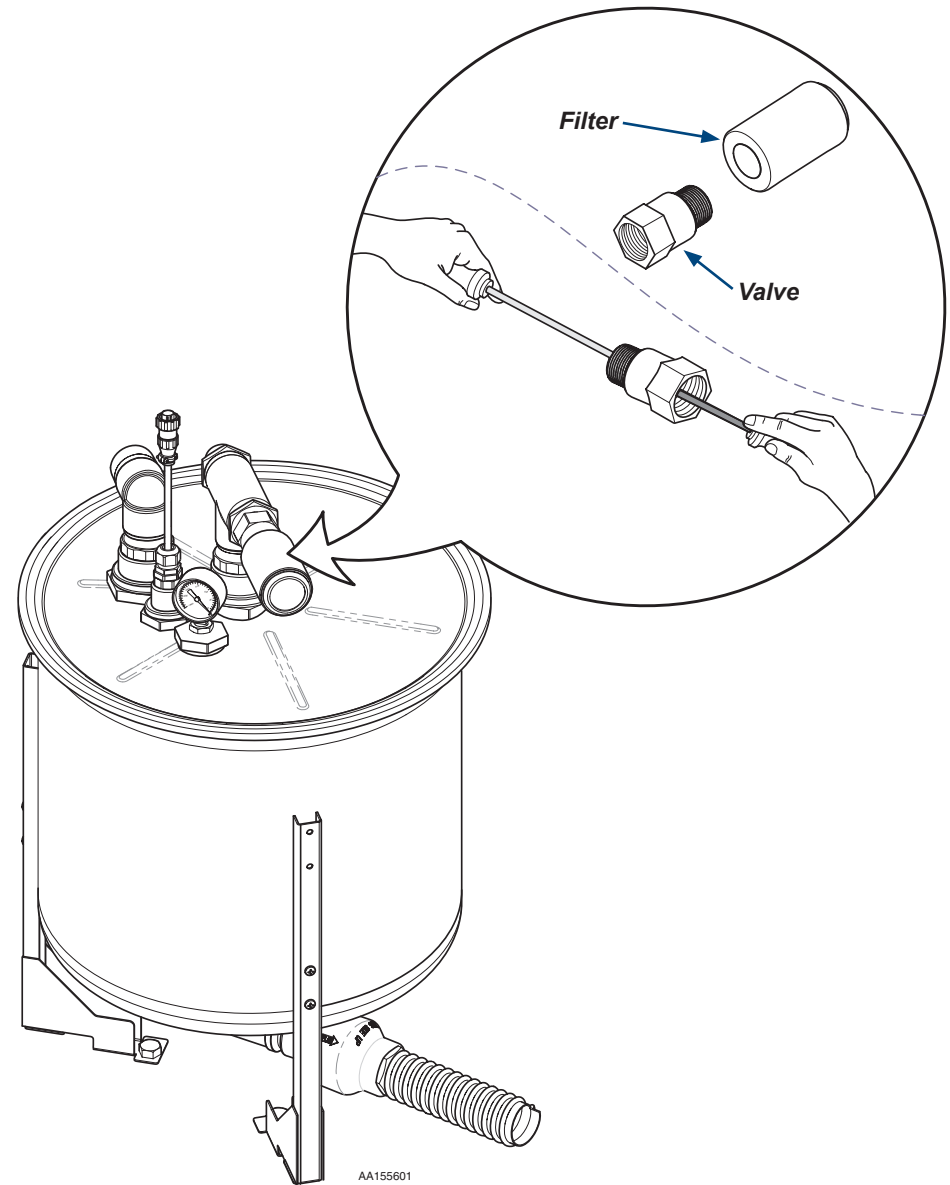
Midmark recommends operating at factory preset of 12" Hg.

If reading is low check for leaks or open operatory lines.

Vacuum Adjustment

Note: Adjust Vacuum level only if needed.

- A) Remove the filter and valve.
- B) Use 1/4" nut driver and a phillips screw driver to adjust the center mounted screw inside valve. Each full clockwise turn increases the vacuum level by approximately 2 inches of Hg.
- C) Install filter and valve



Installation is Complete

PowerVac® Specification Sheet

| Model | Max Users | Base Unit HxWxD | Separator HxWxD | Actual Weight (LBS.) Each | Total HP | Voltage | Amps | Hertz | Recommended Breaker Size (Amps) | Inlet Connection Size (IN.) | Fuses | Drain Connection Size (IN.) |
|-------|-----------|----------------------------------|------------------------------|-----------------------------------|----------|---------|------|-------|---------------------------------|-----------------------------|-----------------------|-----------------------------|
| P3 | 3-5 | 26 x 19.5 x 18.5 Each | 34 x 22 x 22 Each | Base Unit - 355 Separator - 49 | 2 | 208-230 | 11.4 | 60 | 30 | 1 1/2" | 1/8 A, 250V Type T | 1 1/2" |
| P5 | 5-7 | 26 x 19.5 x 18.5 Each | 34 x 22 x 22 Each | Base Unit - 355 Separator - 49 | 2 | 208-230 | 11.4 | 60 | 30 | 1 1/2" | 1/8 A, 250V Type T | 1 1/2" |
| P7 | 7-10 | 26 x 19.5 x 18.5 Each | 34 x 22 x 22 Each | Base Unit - 355 Separator - 49 | 2 | 208-230 | 11.4 | 60 | 30 | 1 1/2" | 1/8 A, 250V Type T | 1 1/2" |
| P6 | 6-10 | 26 x 19.5 x 18.5 Each (qty 2) | 34 x 22 x 22 Each (qty 2) | Base Unit - 355 Separator - 49 | 2 | 208-230 | 22.8 | 60 | 2 x 30 | 2" | 1/8 A, 250V Type T | 1 1/2" |
| P10 | 10-14 | 26 x 19.5 x 18.5 Each (qty 2) | 34 x 22 x 22 Each (qty 2) | Base Unit - 355 Separator - 49 | 2 | 208-230 | 22.8 | 60 | 2 x 30 | 2" | 1/8 A, 250V Type T | 1 1/2" |
| P14 | 14-20 | 26 x 19.5 x 18.5 Each (qty 2) | 34 x 22 x 22 Each (qty 2) | Base Unit - 355 Separator - 49 | 2 | 208-230 | 22.8 | 60 | 2 x 30 | 2" | 1/8 A, 250V Type T | 1 1/2" |



Equipment Alert

Verify all sides of base unit are not obstructed. Recommended - 6" inches on left and back side. Required - 12" inches on front and right side.