

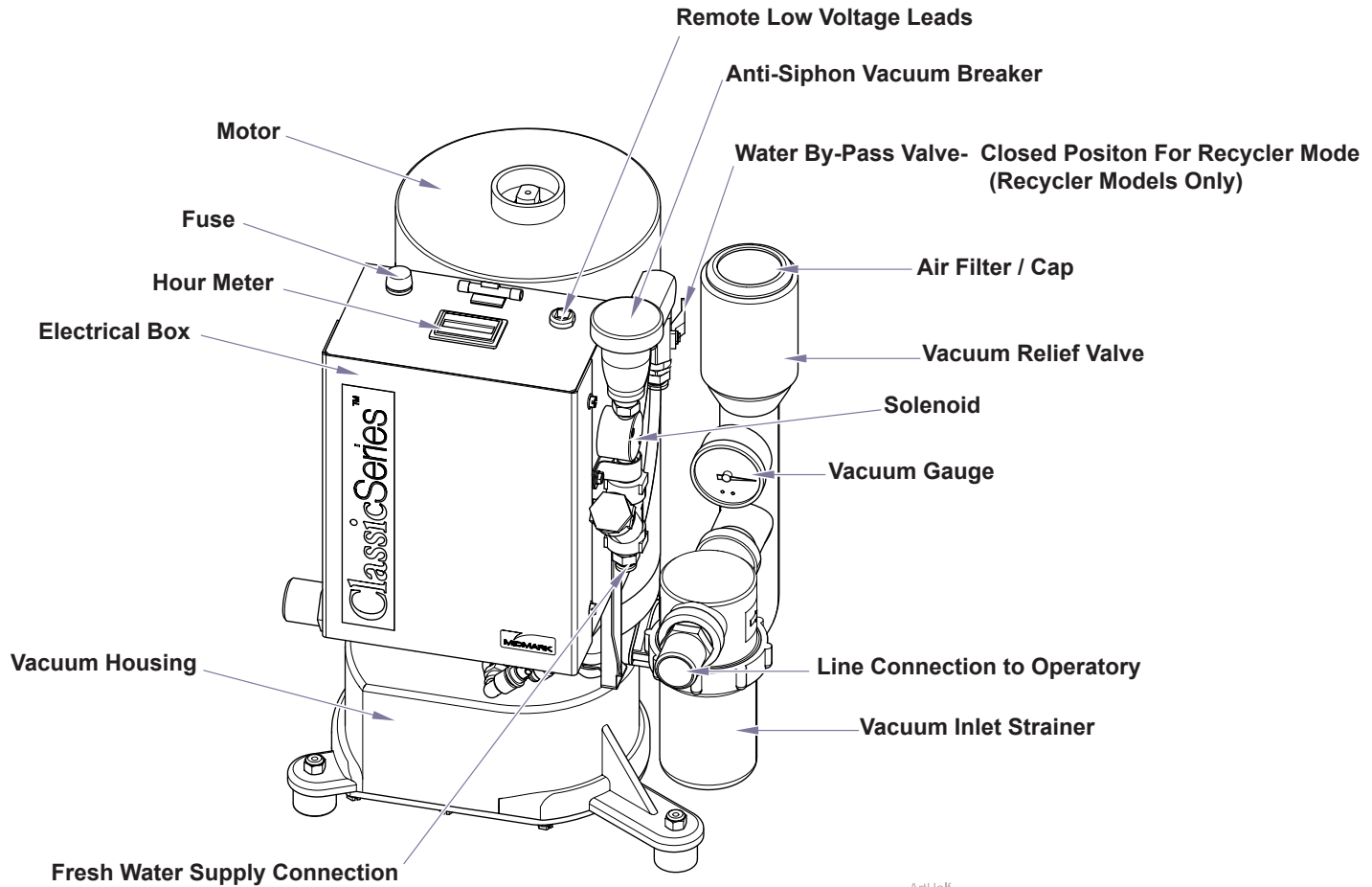
ClassicSeries® Dental Vacuum Installation

Applies to Models:
 Single Non-Recycler Models
 CV3, CV5
 Twin Non-Recycler Models
 CV6, CV10
 Single Recycler Models
 CV3R, CV5R
 Twin Recycler Models
 CV6R, CV10R

Equipment Alert



Wet-Ring Vacuum system must be installed per local plumbing and electrical codes. Allow Wet-Ring Vacuum system to reach room temperature before installing. Refer to “Site Requirements” and “Site Layout” in this manual for site restrictions and piping layout. Do not turn water by-pass valve. The valve is factory set for recycler mode in CLOSED position. (Refer to ClassicSeries® Service Information on technicallibrary.midmark.com for more information)



Art:Half

Single Recycler Model Shown

Wet-Ring Vacuum Site Requirements



Equipment Alert

Harmful odors, vapor contaminants and nitrous oxide gasses are vented out the top of the separator, while liquid waste flows out of the lower drain and into a "P"-Trap or floor sink. **Verify all local codes before installing.**

Models

Electrical	Single Models				Twin Models			
	CV3	CV3R	CV5	CV5R	CV6	CV6R	CV10	CV10R
Supply								
Voltage	115 or 208-230	115 or 208-230	208-230	208-230	115 or 208-230 (Each Pump)	115 or 208-230 (Each Pump)	208-230 (Each Pump)	208-230 (Each Pump)
Phase	Single Phase, 50 / 60 Hz							
Wire Size to Control Panel	18 / 3 Jacketed Bell Wire							
Branch Circuit Breaker Size	20 AMP (per each pump)							
Product Electrical Ratings								
115 VAC 50/60 HZ	15.0 AMPS	15.0 AMPS			15.0 AMPS	15.0 AMPS		
208/230 VAC 50/60 HZ	8.2 AMPS	8.2 AMPS	13.1 AMPS	13.1 AMPS	8.2 AMPS	8.2 AMPS	13.1 AMPS	13.1 AMPS

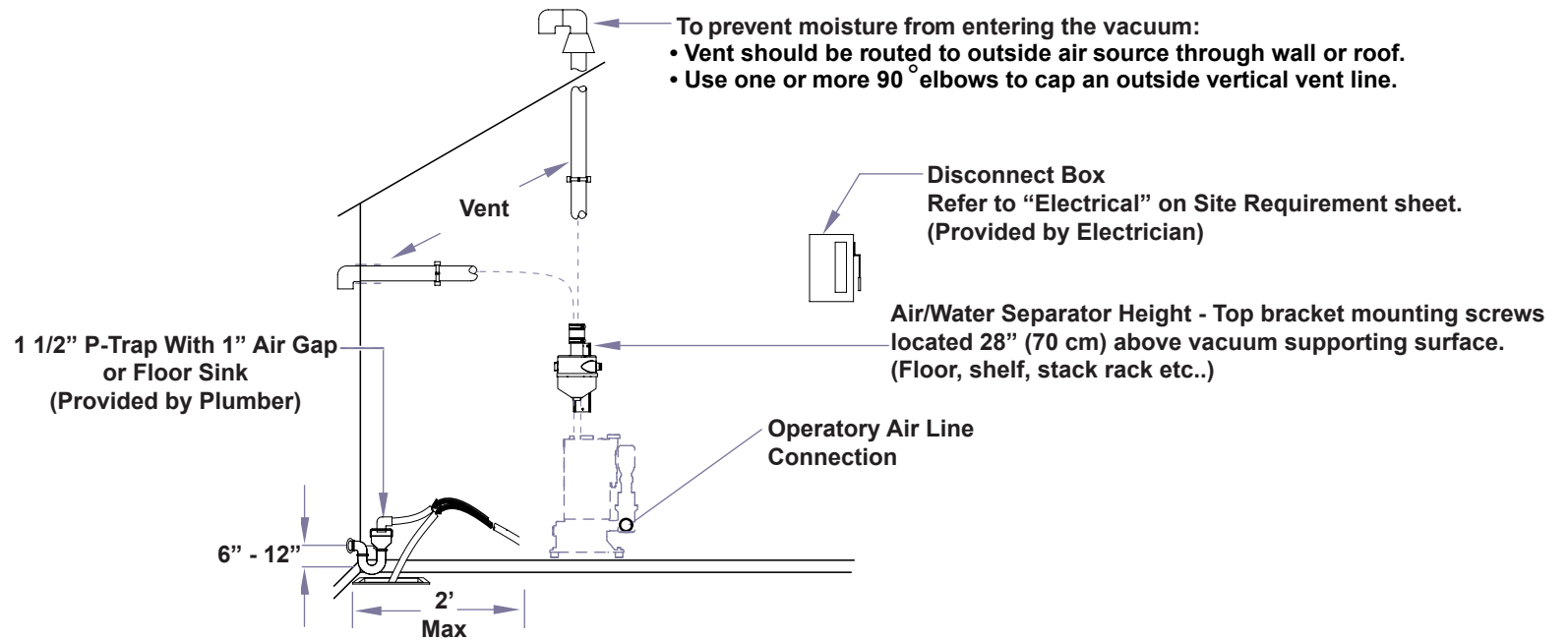
Plumbing

Intake (Suction Line)								
Type	PVC							
Line Sizing	1" Hose with 3/4" NPT Connection				1 1/2" Hose with 1 1/4" NPT Connection			
Water Source								
Type	Poly Tubing							
Line Sizing	1/2" NPT x 1/4"				1/2" NPT x 3/8"			
Pressure Range	20-120 psi / 1.4-8.3 bar							
Water Temperature Range	35-80° F / 2-12° C							
Separator	Small				Large			
Vent Size	2"							
Inlet Hose	3/4" NPT				1 1/4" NPT			
Drain Hose	3/4" NPT				1" NPT			
Platform Drain Hose								
Type	N/A				Clear Vinyl			
Size	N/A				3/8" OD			
Exhaust								
Type	PVC							
Line Sizing	1" Hose with 3/4" NPT Connection				1 1/2" Hose with 1 1/4" NPT Connection			

Environmental

Equipment Room Ambient Temperature - Operational	40° - 104° Fahrenheit / 4° - 40° Celsius
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Wet-Ring Vacuum Site Requirement Layout



Notes:

Important Information

Intended Use

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

Electromagnetic Interference

This Midmark Wet-Ring Vacuum 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
- Plug interfering device into an isolated circuit
- Increase separation between unit and interfering device
- Contact Midmark if interference persists

Disposal of Equipment

At the end of product life, the unit(s), accessory, 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: 40°F to 104°F (4°C to 37°C)
Relative Humidity 10% to 90% (non-condensing)
Atmospheric Pressure 500hPa to 1060hPa (0.49atm to 1.05atm)



Keep dry



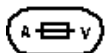
Consult User Guide for important information.



Maximum stacking height (palletted units)



Proper shipping orientation



Fuse rating specification



Fragile



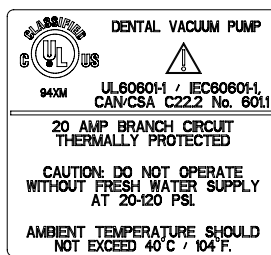
Caution hot surface



Protective earth ground

IPX0 Ordinary Equipment

This product has been evaluated with respect to electrical shock, fire & mechanical hazards only, in accordance with UL60601-1 and CAN/CSA C22.2 NO. 601.1.



061-1030-00

Safety Symbols



WARNING

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



CAUTION

Indicates a potentially hazardous situation which may 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.

Before you Install...

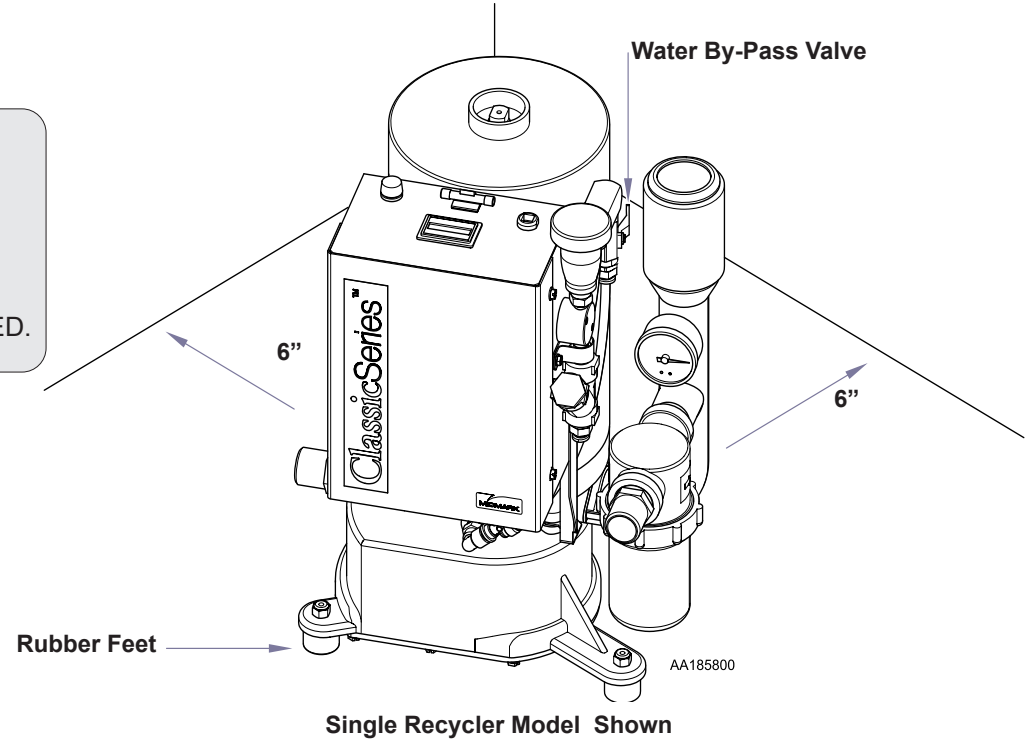
Pre-Install steps..

- Remove vacuum(s) from shipping platform.
- Move vacuum to a dry, well ventilated area on a solid, level surface.
- Verify all sides of Vac Unit are not obstructed.
- Unpack installation kit.
- Install rubber feet. (Single Pump Models Only)
- Verify water by-pass valve is in recycler position, CLOSED.



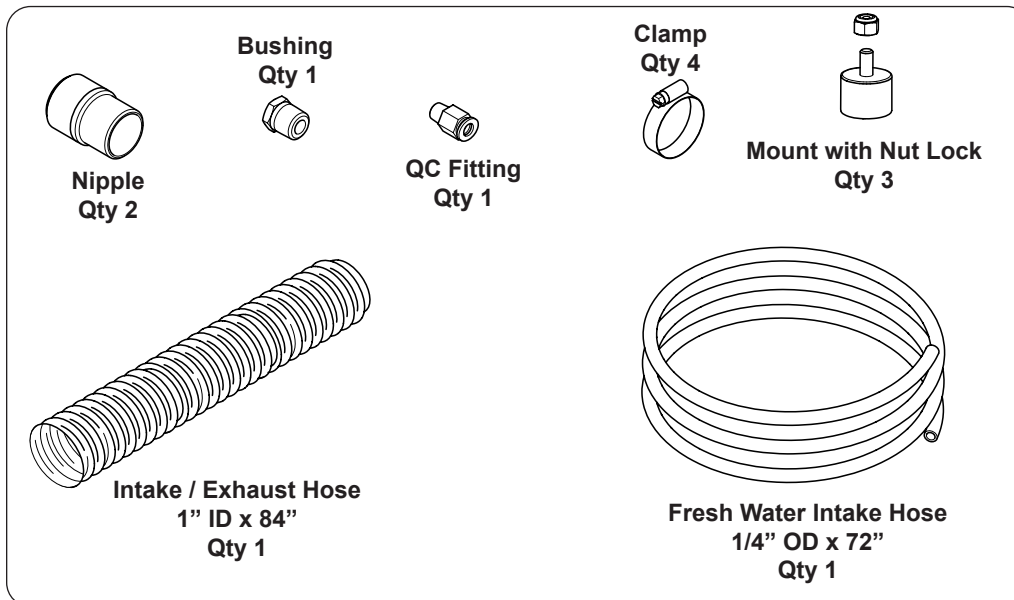
Equipment Alert

Scavenging polishing paste with abrasives, running the pump with no water supplied, using water with high mineral content, or water with excessive sediment can damage or reduce the lifespan of the pump and is not considered a defect in material or workmanship.

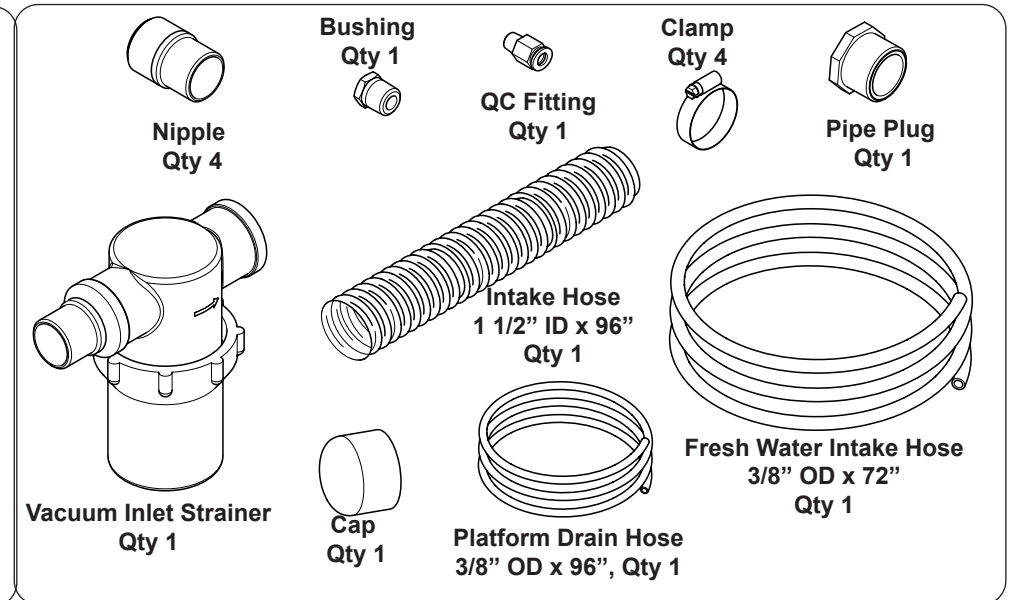


Install Kits

Single Models



Twin Models



Installation

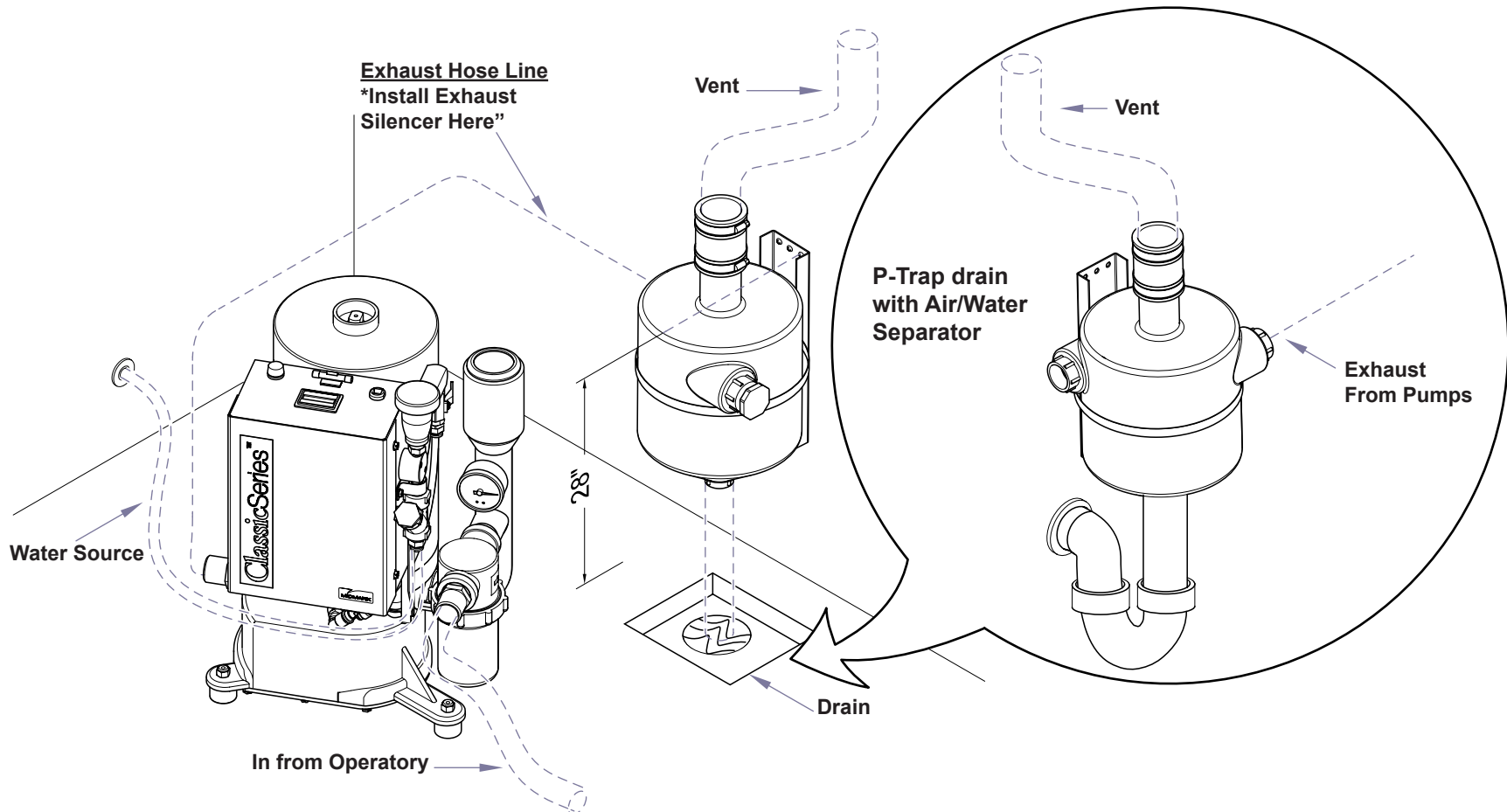
Plumbing Connections - Single Models with Air/Water Separator

Single Models Air/Water Plumbing...

- A. Mount Separator 28" (70 cm) above vacuum supporting surface.
- B. Install exhaust silencer into 1" exhaust hose from vacuum to P-trap if applicable.
If not using an exhaust silencer...
- C. Connect exhaust hose from vacuum to separator.
- D. Connect 3/4" hose from separator to drain or P-trap.
- E. Connect 2" PVC to top of separator and out to vent.
- F. Connect 1/4" poly tube from vacuum to water supply.
- G. Connect 3/4" NPT fitting and hose clamp from vacuum line to operator.

Note

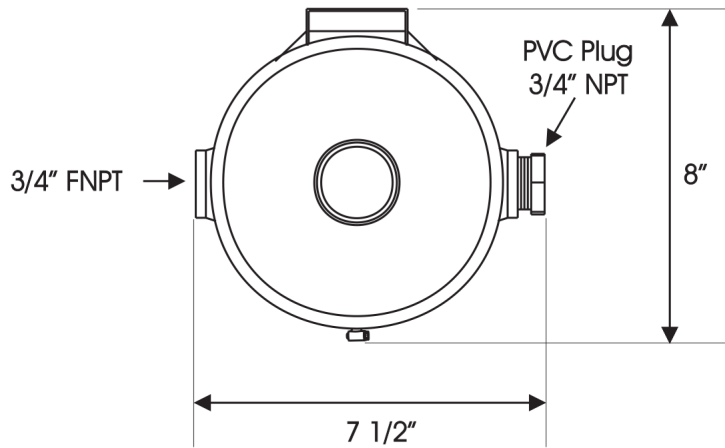
Exhaust silencer installation is an optional for the Wet-Ring Vacuums. Wet-Ring Vacuums are operational without exhaust silencer.



Installation

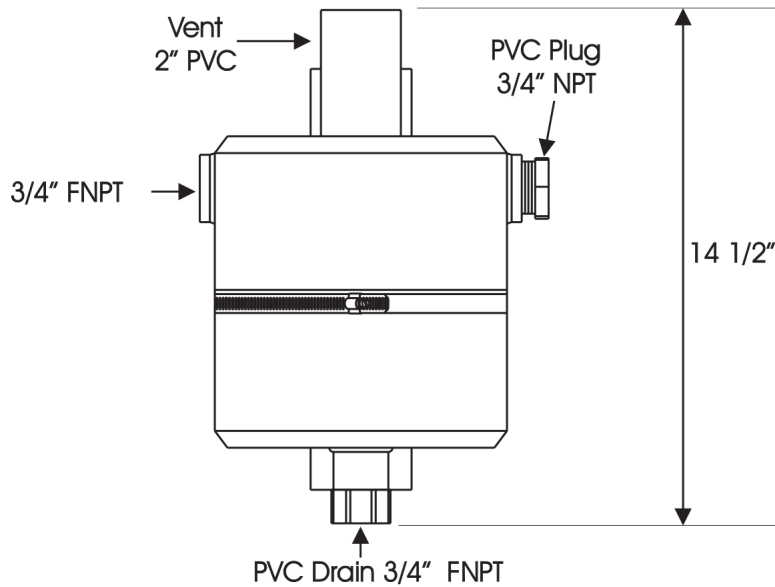
Plumbing Connections - Single Models with Air/Water Separator - continued

Top View

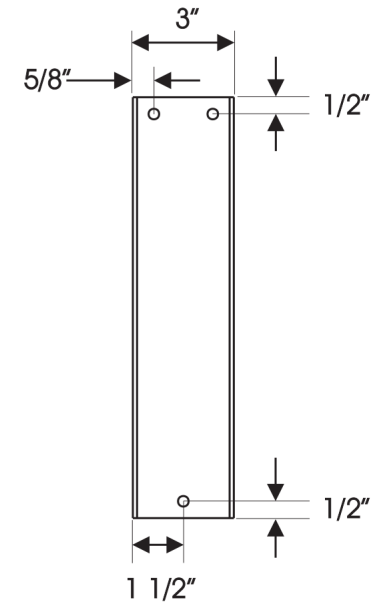
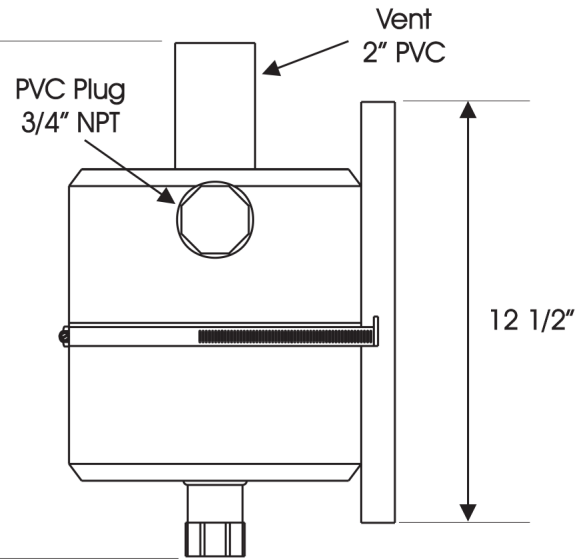


PN- 77000115
Air/Water Separator
Single Pumps

Front View



Side View



Installation

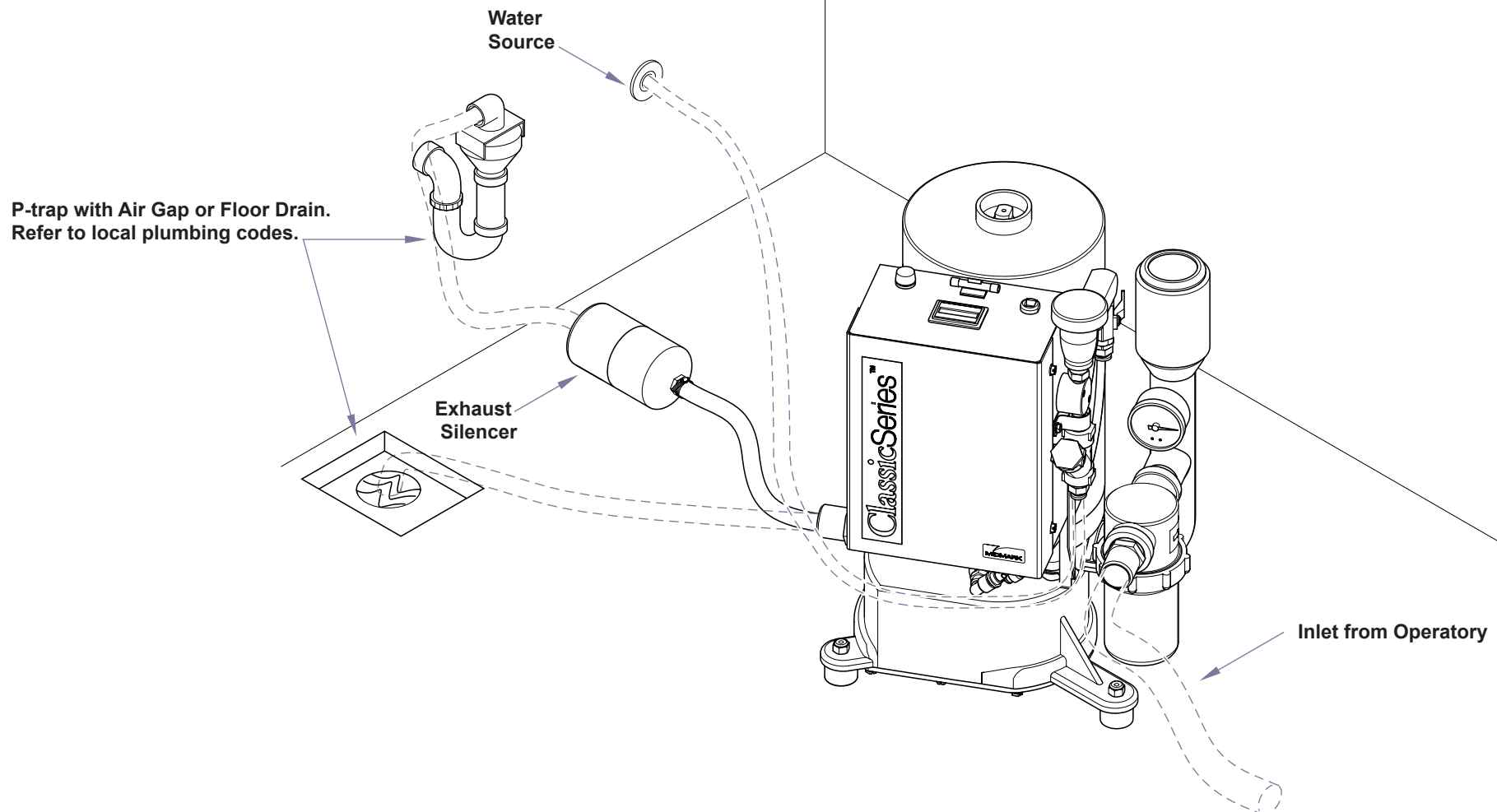
Plumbing Connections - Single Models without Air/Water Separator

Single Model Plumbing...

- A. Install exhaust silencer into 1" exhaust hose from vacuum to P-trap if applicable.
If not using an exhaust silencer....
- B. Install 1" exhaust hose from vacuum to P-trap or floor drain.
- C. Connect 1/4" poly tube from vacuum to water supply.
- D. Connect 3/4" NPT fitting and hose clamp to vacuum line from operator.

Note

Exhaust silencer installation is an optional for the Wet-Ring Vacuums. Wet-Ring Vacuums are operational without exhaust silencer.



Installation

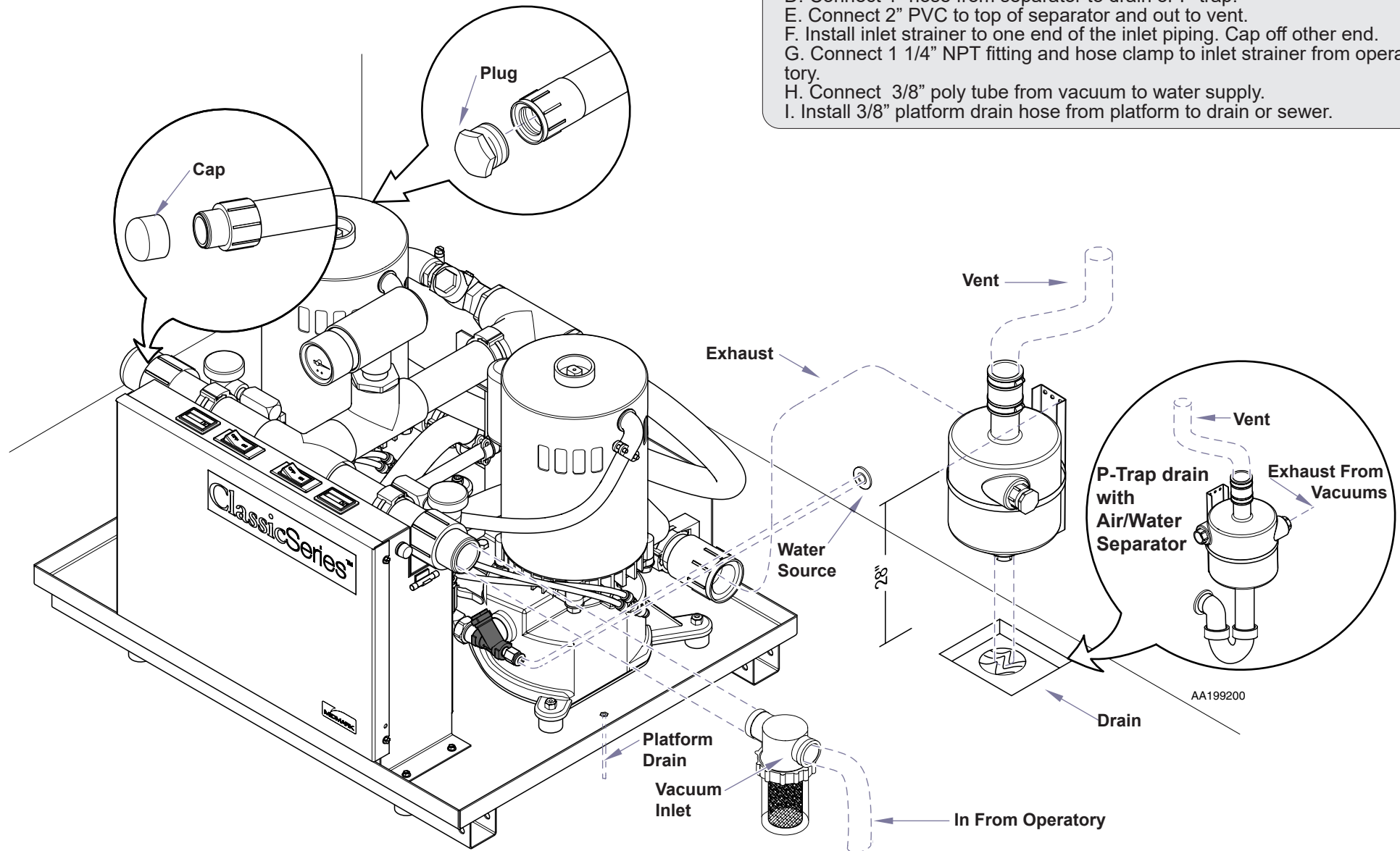
Plumbing Connections - Twin Models with Air/Water Separator

Note

Exhaust and inlet connections can be installed on either the RH or LH sides. Install hose connections to one end and plug/cap the other end.

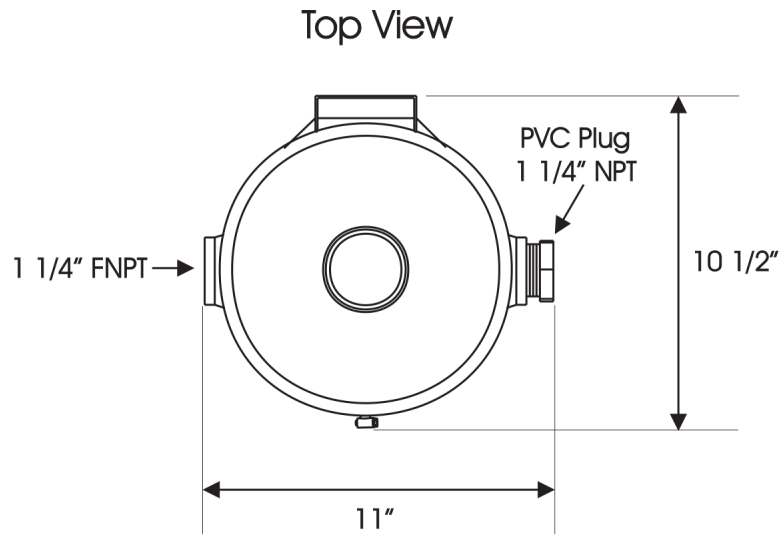
Twin Model Plumbing...

- A. Mount Separator 28" (70 cm) above vacuum supporting surface.
- B. Connect exhaust hose from exhaust to separator.
- C. Install plug in exhaust end not in use.
- D. Connect 1" hose from separator to drain or P-trap.
- E. Connect 2" PVC to top of separator and out to vent.
- F. Install inlet strainer to one end of the inlet piping. Cap off other end.
- G. Connect 1 1/4" NPT fitting and hose clamp to inlet strainer from operator.
- H. Connect 3/8" poly tube from vacuum to water supply.
- I. Install 3/8" platform drain hose from platform to drain or sewer.

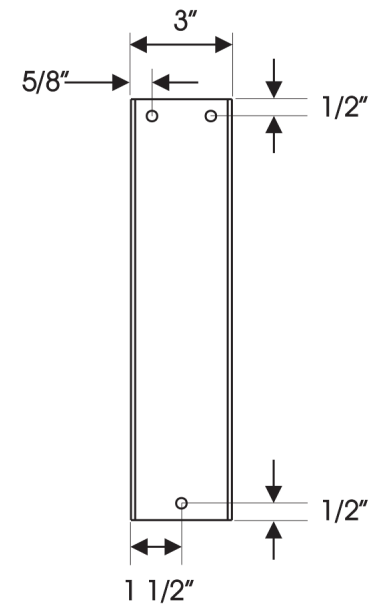
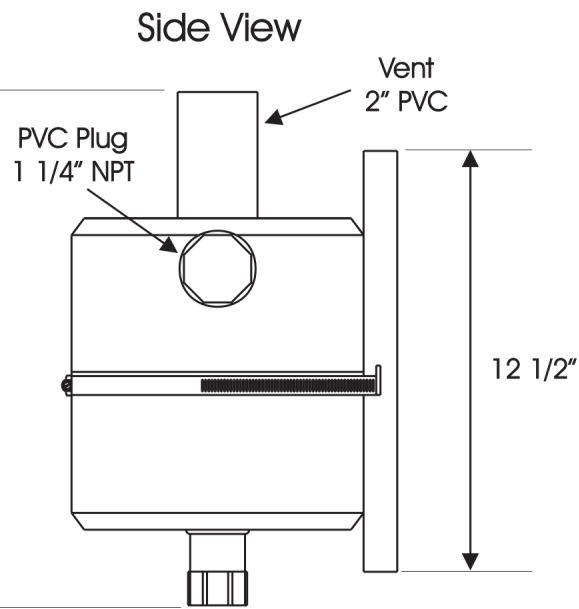
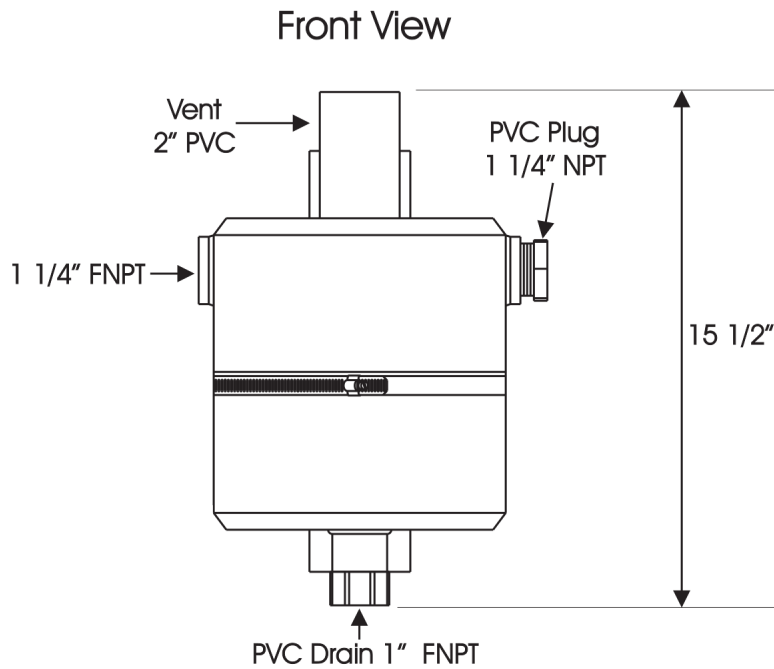


Installation

Plumbing Connections - Twin Models with Air/Water Separator - continued

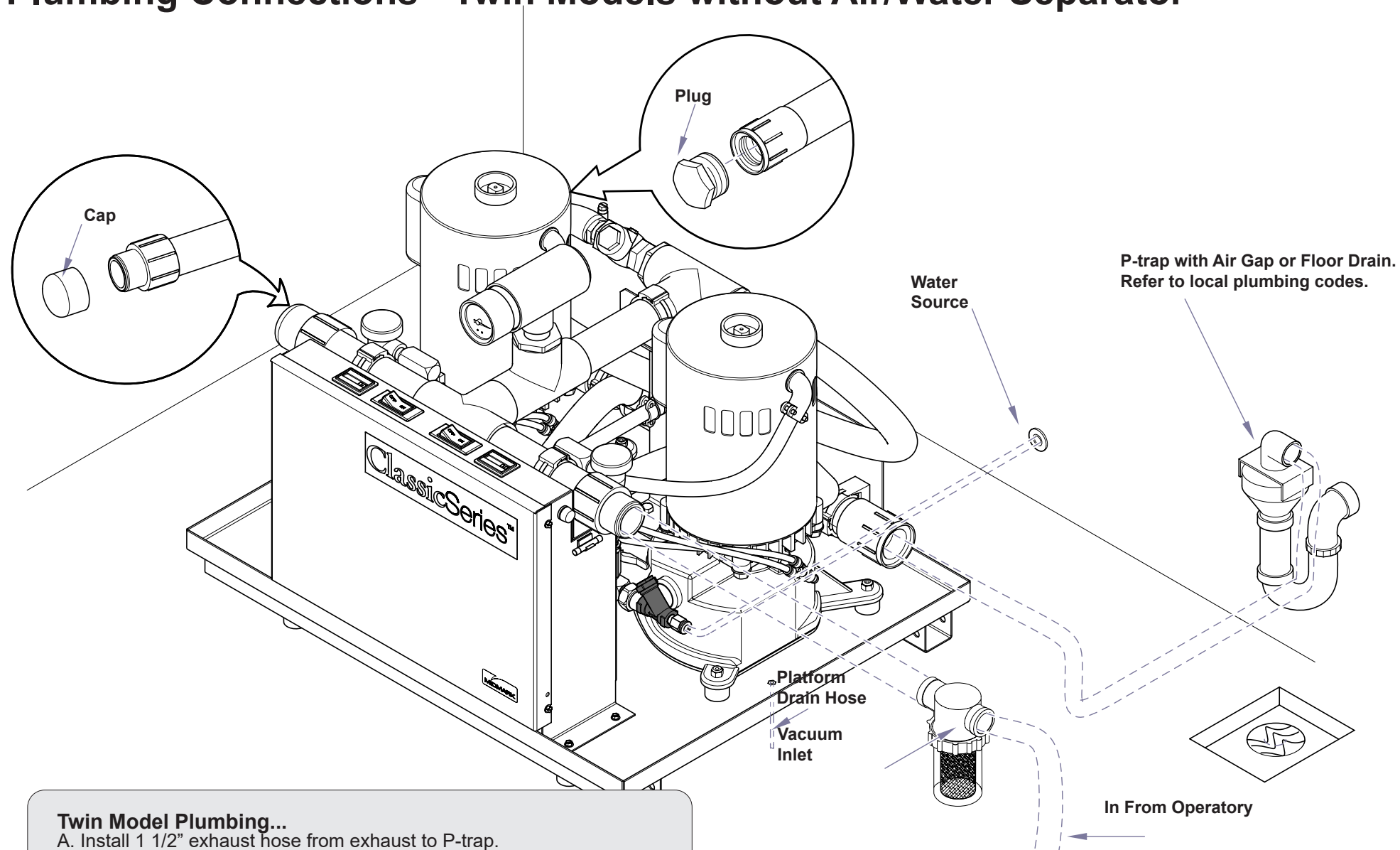


PN- 77000246
Air/Water Separator
Dual Pumps



Installation

Plumbing Connections - Twin Models without Air/Water Separator



Twin Model Plumbing...

- A. Install 1 1/2" exhaust hose from exhaust to P-trap.
- B. Install plug in exhaust end not in use.
- C. Connect 3/8" poly tube from vacuum to water supply.
- D. Install inlet strainer to one end of the inlet piping. Cap off other end.
- E. Connect 1 1/4" NPT fitting and hose clamp to inlet strainer from operator.
- F. Install 3/8" platform drain hose from platform to drain or sewer.

Installation - Single Models

Electrical - Convert 1 1/4 HP model to 115 Voltage (if applicable)

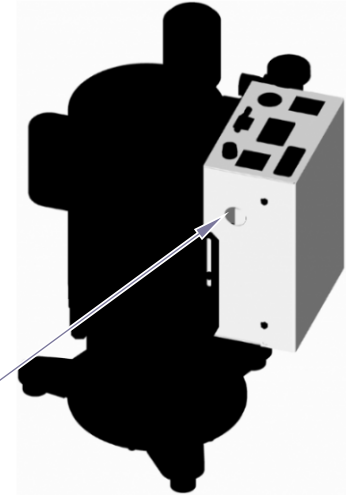
Note

CV3 and CV3R Models are factory configured for 208-230 Volt operation and can be rewired to operate on 115 Voltage. All vacuum systems are to be installed according to local electrical codes. Refer to Specification Sheet for Electrical Ratings located in this manual.

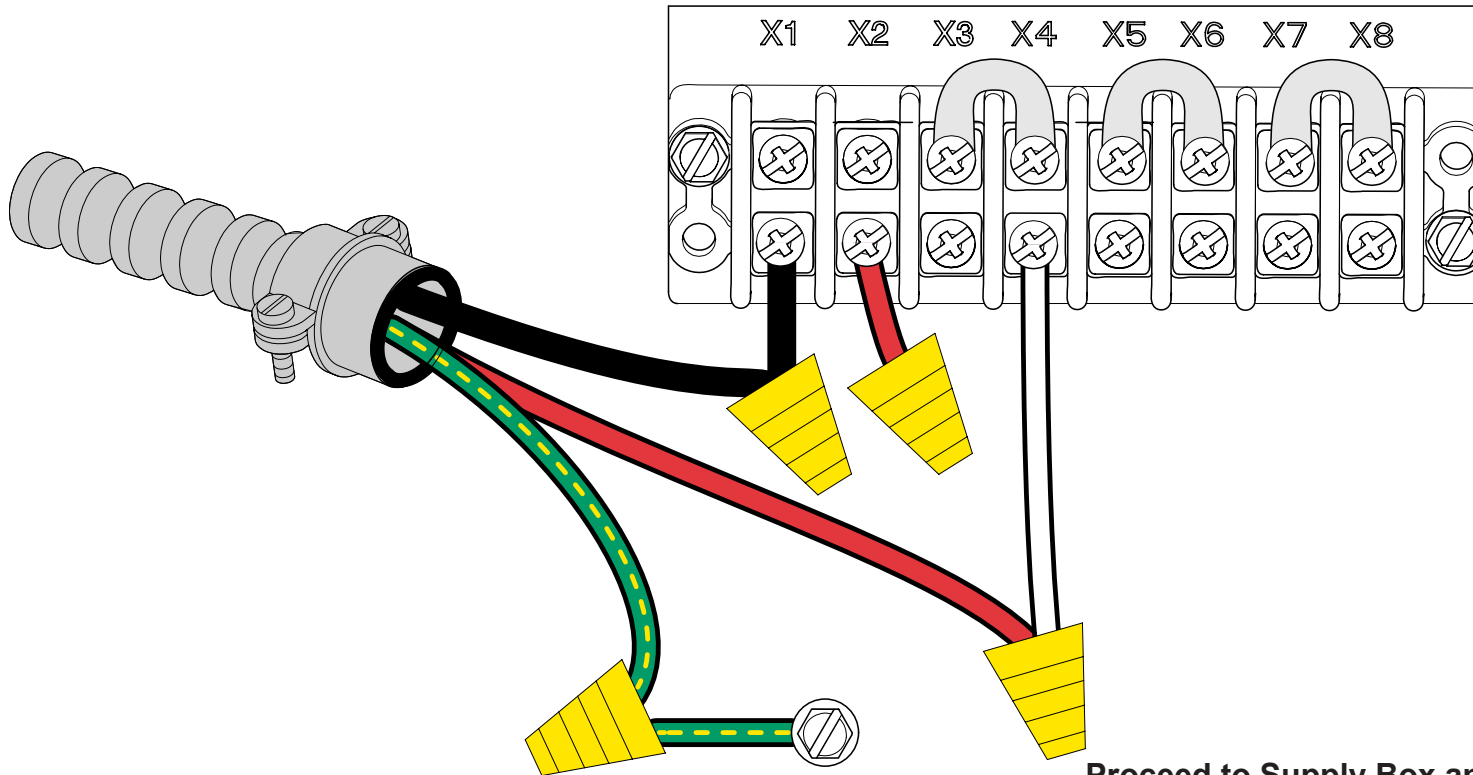
To convert 1 1/4 HP Motor from 208-230V to 115V...

- A. Loosen screws on electrical box to remove cover.
- B. Install line voltage conduit with conduit connector in side of vacuum electrical box.
- C. Connect line voltage to leads at terminals X1 (Black) and X4 (White-Neutral).
- D. Connect ground wire to ground (green/yellow) lead.
- E. Remove all three jumpers from terminal block and relocate at ...
 - X3 and X4
 - X5 and X6
 - X7 and X8

Conduit Entry



115 Voltage Configuration



Proceed to Supply Box and Remote Panel Installation

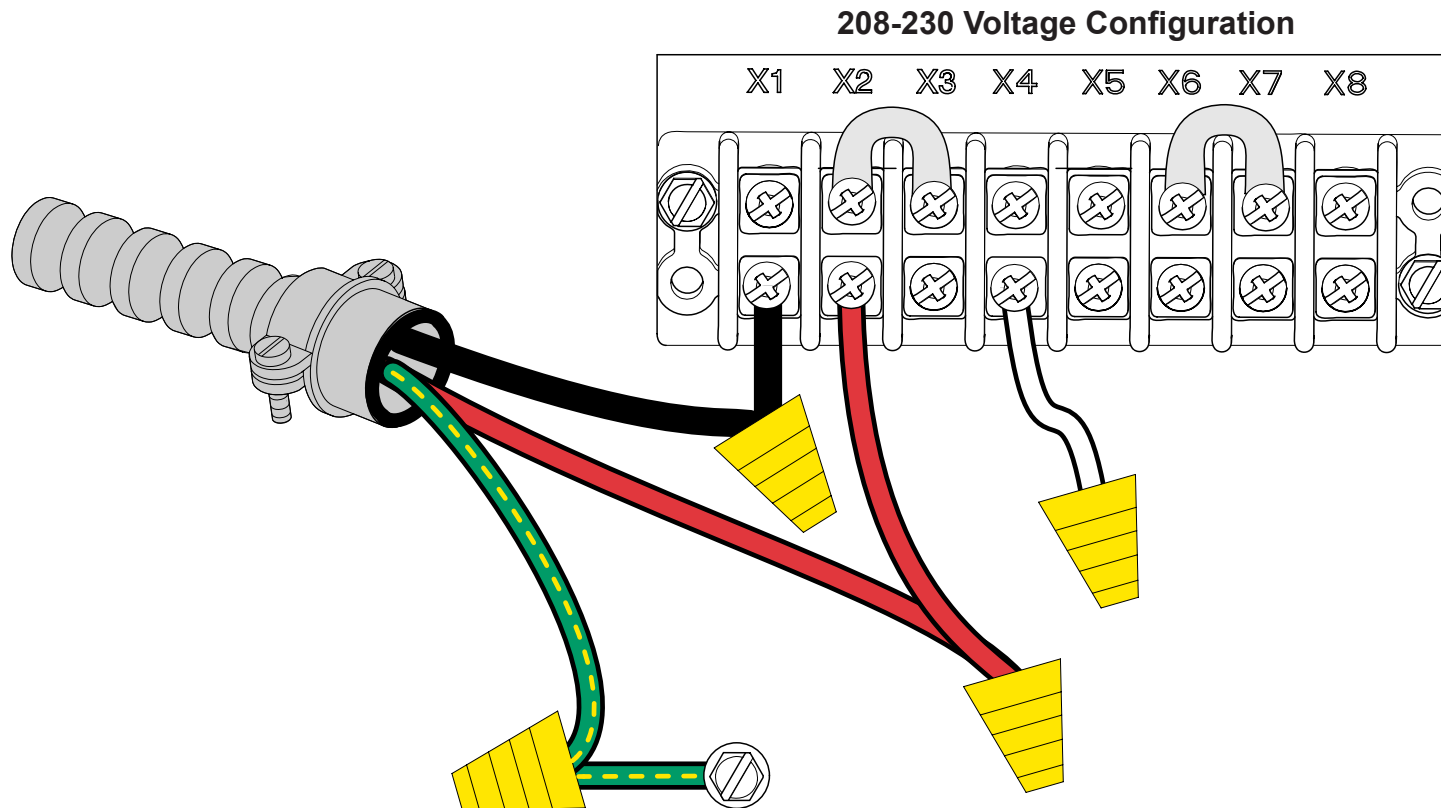
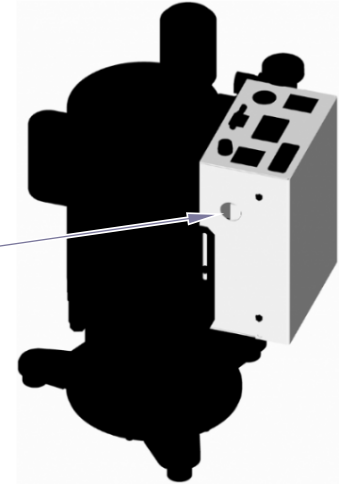
Installation - Single Models

Electrical Connections for 1 1/4 HP 208-230 Voltage

To connect 1 1/4 HP Motor to 208-230V ...

- A. Loosen screws on electrical box to remove cover.
- B. Install line voltage conduit with conduit connector in side of vacuum electrical box.
- C. Connect line voltage to leads at terminals X1 (Black) and X2 (Red).
- D. Connect ground wire to ground (green/yellow) lead.
- E. Verify jumper locations ...
 - X2 and X3
 - X6 and X7

Conduit Entry



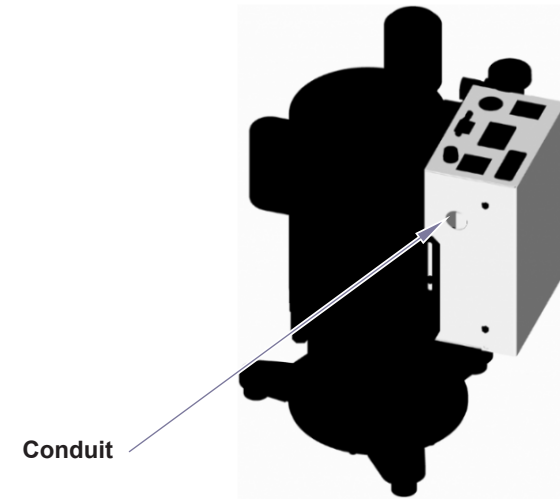
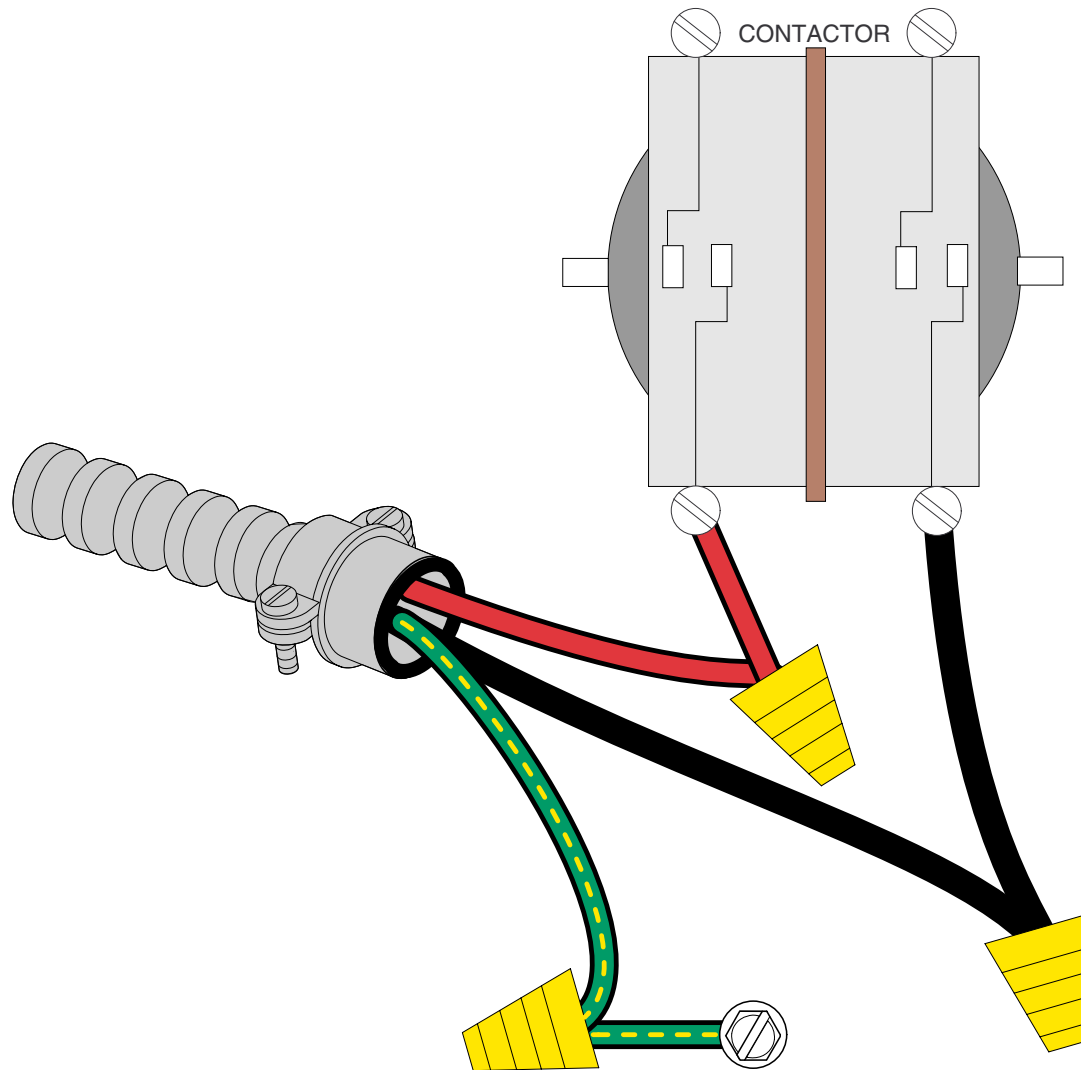
Proceed to Supply Box and Remote Panel Installation

Installation - Single Models

Electrical Connections - 2 HP 208-230 Voltage

To connect 2Hp Motor to 208-230V ...

- A. Loosen screws on electrical box to remove cover.
- B. Install line voltage conduit with conduit connector in side of vacuum electrical box.
- C. Connect line voltage to Red and Black contactor leads.
- D. Connect ground wire to ground (green/yellow) lead.



Conduit

Proceed to Supply Box and Remote Panel Installation

Installation - Twin Models

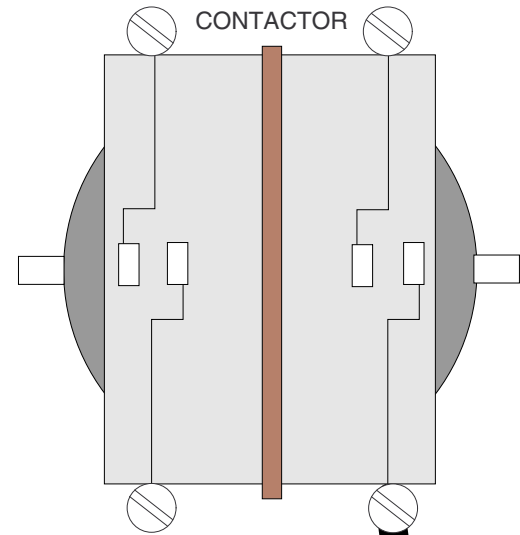
Electrical Connections - Convert 1 1/4 HP models to 115 Voltage (if applicable)

Note

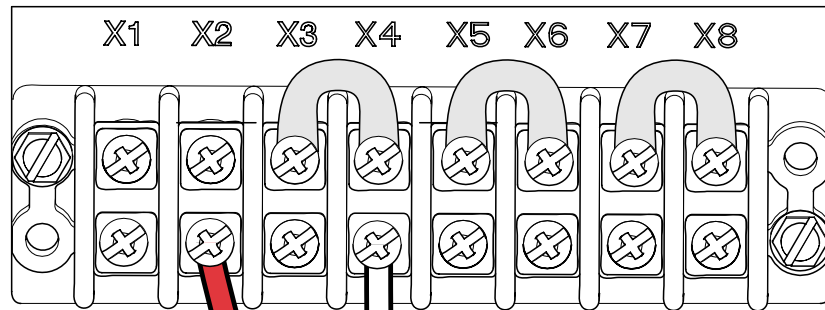
CV6 and CV6R Models are factory configured for 208-230 Volt operation and can be rewired to operate on 115 Voltage. All vacuum systems are to be installed according to local electrical codes. Refer to Specification Sheet for Electrical Ratings located in this manual.

To convert 1 1/4 HP Motor from 208-230V to 115V...

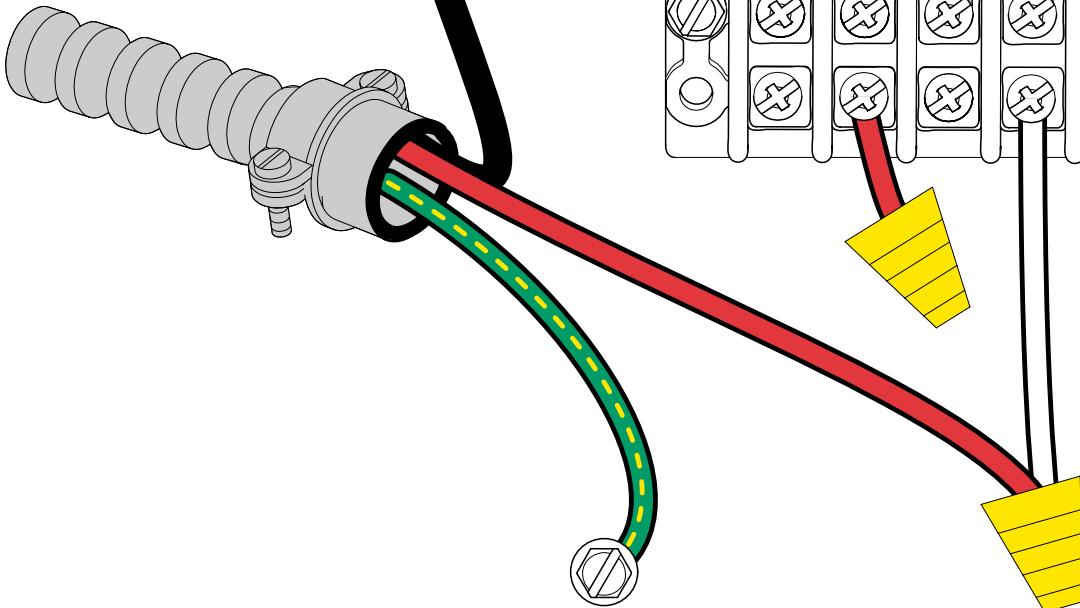
- A. Loosen screws on electrical box to remove cover.
- B. Disconnect red line voltage wire from red jumper. Replace nut on red jumper wire.
- C. Connect red voltage wire with white jumper from X4.
- D. Remove all three jumpers from terminal block and relocate at ...
 - X3 and X4
 - X5 and X6
 - X7 and X8



115 Voltage Configuration



AA200100



Proceed to Supply Box and Remote Panel Installation

Installation

Electrical Connections - Supply Box and Remote Panel

Electrical Connections...

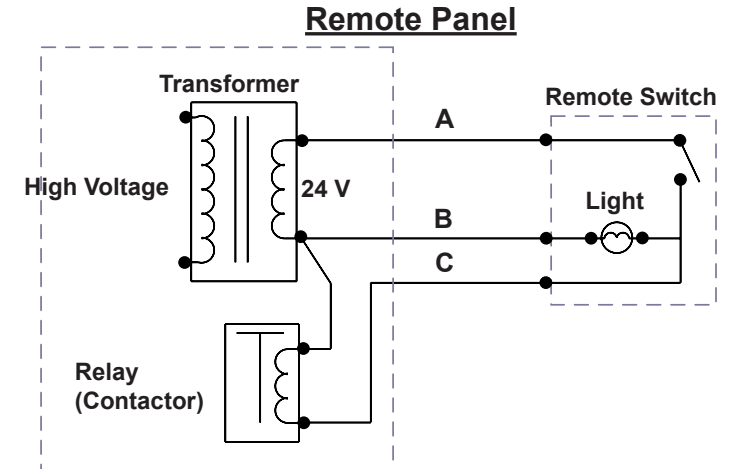
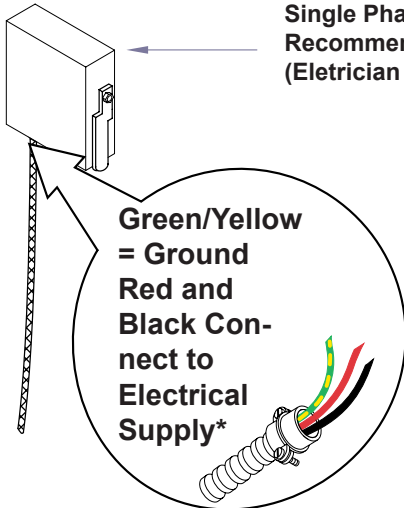
- A. Connect conduit cable(s) to user supplied electrical box(s).
- B. Connect remote panel wires to Low Voltage Control wires if applicable.

Note: 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, located in this manual.

Supply Box

***1 1/4 HP Models**
 115 Volt Source
 OR
 208-230 Volt Source
 Single Phase, 50/60 Hz
 Recommended - 20 Amp Fuse Disconnect Box
 (Electrician Supplied)

***2 HP Models**
 208-230 Volt Source
 Single Phase, 50/60 Hz
 Recommended - 20 Amp Fuse Disconnect Box
 (Electrician Supplied)



Control Panel Wiring Cross Reference			
BRAND	WIRE		
	A	B (light)	C
Midmark	Blue	White	Red
Air Techniques	Yellow	Brown	Orange
DentalEZ	Black	Brown	Yellow
Apollo	Blue	White	Red
Matrix	Red	Blue	White

Installation Check & Test



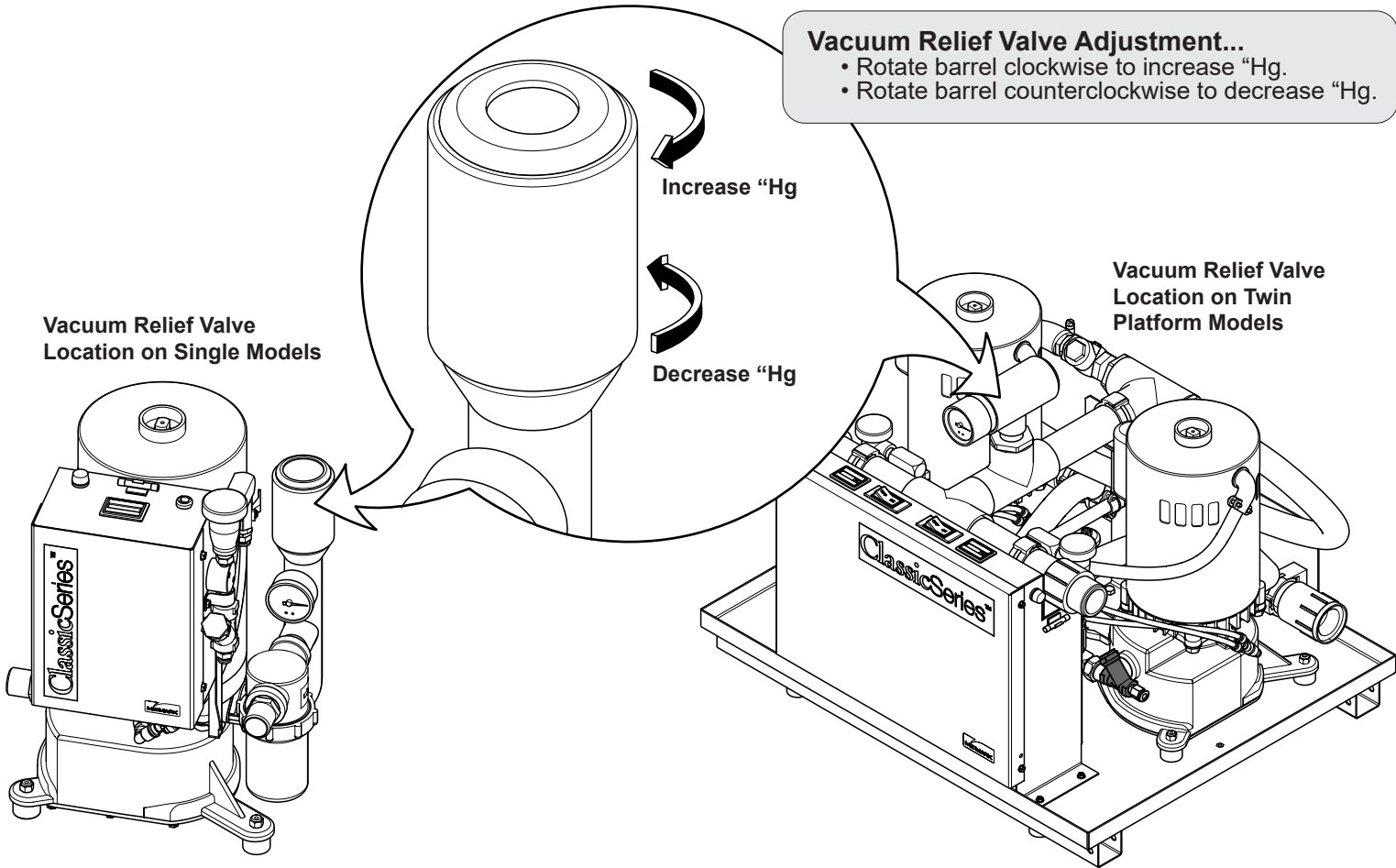
Equipment Alert

Perform Checks before operation.
Turn only one vacuum on at a time while checking.
Operating vacuum without full pressure water supply will result in serious seal damage.

Initial Start-up Checks, Verify...

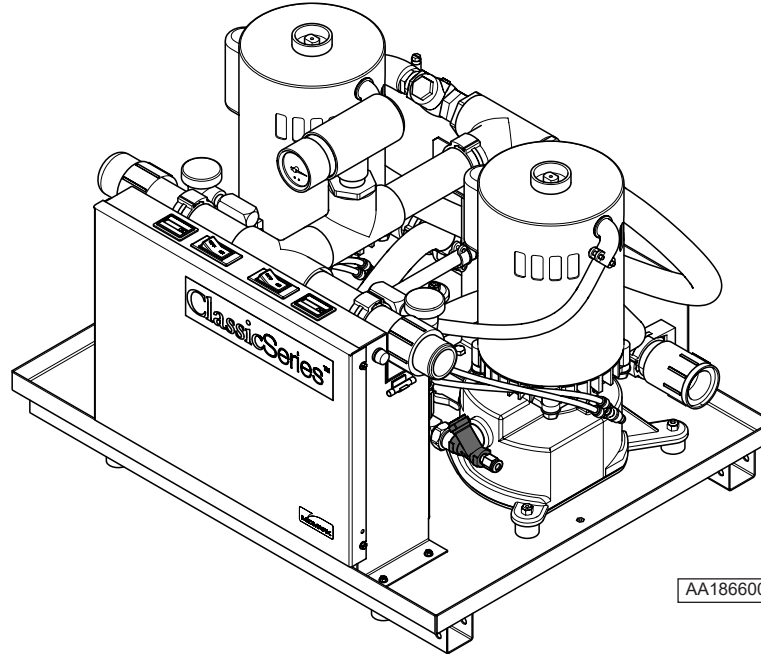
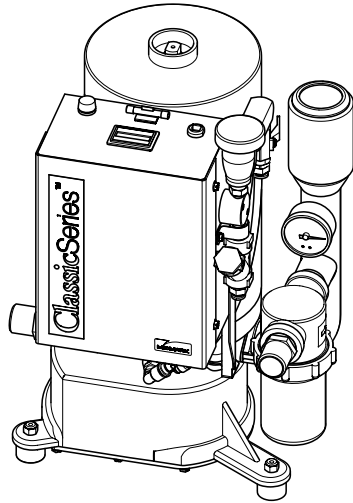
- A. All water supply valves are "OPEN"
- B. Exhaust hoses have water flowing through each pump and no leaks are present.
- C. Check vacuum gauge to ensure it reads 10 "Hg.

Note: If necessary perform Vacuum Relief Valve adjustment as shown below.



Specification Sheet

ClassicSeries® Wet-Ring Vacuums



Vacuum Model	Max. Users	Width (IN.)	Depth (IN.)	Height (IN.)	Weight (LBS.)	Total HP	Voltage (50/60 Hertz)	Breaker Size per Pump (Amps)	Inlet Connection Size (IN.)	Drain Connection Size (IN.)	Fresh Water Connection Size (FNPT)
CV3	3	12"	13"	15"	54	1 1/4	115 / 208-230	20	1"	1"	1/2"
CV3R	3	12"	13"	15"	56	1 1/4	115 / 208-230	20	1"	1"	1/2"
CV5	5	12"	13"	17"	63	2	208-230	20	1"	1"	1/2"
CV5R	5	12"	13"	17"	65	2	208-230	20	1"	1"	1/2"
CV6	6	25 1/2"	20"	18 1/2"	134	2 1/2	115 / 208-230	20	1 1/4"	1 1/4"	1/2"
CV6R	6	25 1/2"	20"	18 1/2"	134	2 1/2	115 / 208-230	20	1 1/4"	1 1/4"	1/2"
CV10	10	25 1/2"	20"	18 1/2"	154	4	208-230	20	1 1/4"	1 1/4"	1/2"
CV10R	10	25 1/2"	20"	18 1/2"	154	4	208-230	20	1 1/4"	1 1/4"	1/2"

