PowerVac®

Model Numbers:

Single Vac Units

P3

P5

P7

Twin Vac Units

P6

P10

P14

Earlier Version ***Current Version***

MIDMARK®

Service and Parts Manual

FOR USE BY MIDMARK TRAINED TECHNICIANS ONLY

Table Of Contents

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

Symbols

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

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

Note
Amplifies a procedure, practice, or condition.

Indicates that the component the check mark appears beside should be tested before replacing it.
In Section A, test the components in the order indicated.
(ex. ***1st*** ✓ then, ***2nd*** ✓)

Refer to Section B for component testing procedures.

These symbols are used throughout 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 / component is not working at all.

Ordering Parts

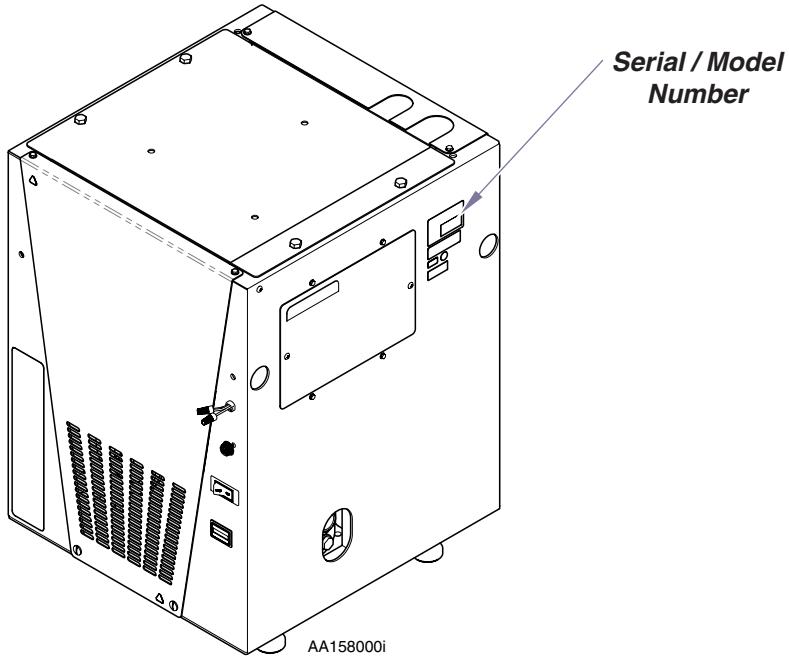
The following information is required when ordering parts:

- Serial number & model number
- Part number for desired part.
  [Refer to Exploded Views / Parts Lists section]

<u>Non-warranty</u> 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 until 5:00 pm EST [Monday - Friday]
Phone: 1-(800)-Midmark

Model / Serial Number Location



General Information

Weights, Dimensions, Electrical Specifications

Classifications: Class 1, Type B Applied Part

	Model P3	Model P5	Model P7	Model P6	Model P10	Model P14	Evacuation Control Box (Optional)
Max Users	3-5	5-7	7-10	6-10	10-14	14-20	N/A
Vac Unit H x W x D	26" x 19.5" x 18.5"	26" x 19.5" x 18.5"	26" x 19.5" x 18.5"	26" x 39" x 18.5"	26" x 39" x 18.5"	26" x 39" x 18.5"	N/A
Separator H x W x D	32" x 22" x 22"	32" x 22" x 22"	32" x 22" x 22"	32" x 22" x 22"	32" x 22" x 22"	32" x 22" x 22"	5" x 5.5" x 6"
Actual Weight (lbs)	Vac Unit - 355 Separator - 47	Vac Unit - 355 Separator - 47	Vac Unit - 355 Separator - 47	Vac Units - 710 Separators - 94	Vac Units - 710 Separators - 94	Vac Units - 710 Separators - 94	2
Total HP	2	2	2	4	4	4	N/A
Voltage	208 / 230	208 / 230	208 / 230	208 / 230	208 / 230	208 / 230	115 VAC
Amps	11.4	11.4	11.4	22.8	22.8	22.8	3
Hertz	60	60	60	60	60	60	60
Recommended Breaker Size (Amps) (Min. 20 Amp ea.)	30	30	30	2 x 30	2 x 30	2 x 30	15
Inlet Connection Size (in.)	1 1/2"	1 1/2"	1 1/2"	2"	2"	2"	N/A
Fuses	1/8 A, 250V Type T	1/8 A, 250V Type T	1/8 A, 250V Type T	1/8 A, 250V Type T	1/8 A, 250V Type T	1/8 A, 250V Type T	1/4A, 250V, Type T 3A, 250V, Type T
Drain Connection Size (in.)	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	N/A

Model Identification / Compliance Chart - PowerVac®

Model	Description	Serial Number Prefix	Complies To:		Electrical Supply Requirements:		
			UL 60601--1	CAN/CSA 22.2, #601.1-M90	VAC	Amps	Cycles (Hz)
P3	PowerVac® Dry Vacuum System - Single - 3 User	V	X	X	208-230	11.4	60
P5	PowerVac® Dry Vacuum System - Single - 5 User	V	X	X	208-230	11.4	60
P7	PowerVac® Dry Vacuum System - Single - 7 User	V	X	X	208-230	11.4	60
P6	PowerVac® Dry Vacuum System - Twin - 6 User	V	X	X	208-230	22.8	60
P10	PowerVac® Dry Vacuum System -Twin - 10 User	V	X	X	208-230	22.8	60
P14	PowerVac® Dry Vacuum System - Twin - 14 User	V	X	X	208-230	22.8	60

Warranty Information

LIMITED WARRANTY

SCOPE OF WARRANTY
Midmark Corporation ("Midmark") warrants to the original purchaser its new PowerVac® products and components (except for components not warranted under "Exclusions") manufactured by Midmark to be free from defects in material and workmanship under normal 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 installation for the original user, shall be five (5) years or 10,000 usage hours (whichever comes first) for all warranted products and components and ten (10) years or 20,000 usage hours (whichever comes first) for the pump only.

EXCLUSIONS
This warranty does not cover and Midmark shall not be liable for the following: (1) repairs and replacements because of misuse, abuse, negligence, alteration, accident, freight damage, or tampering; (2) products which are not installed, used, and properly cleaned as required in the Midmark "Installation" manual and or PowerVac® Care Guide for this applicable product; (3) products considered to be of a consumable nature; (4) accessories or parts not manufactured by Midmark; (5) charges by anyone 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.

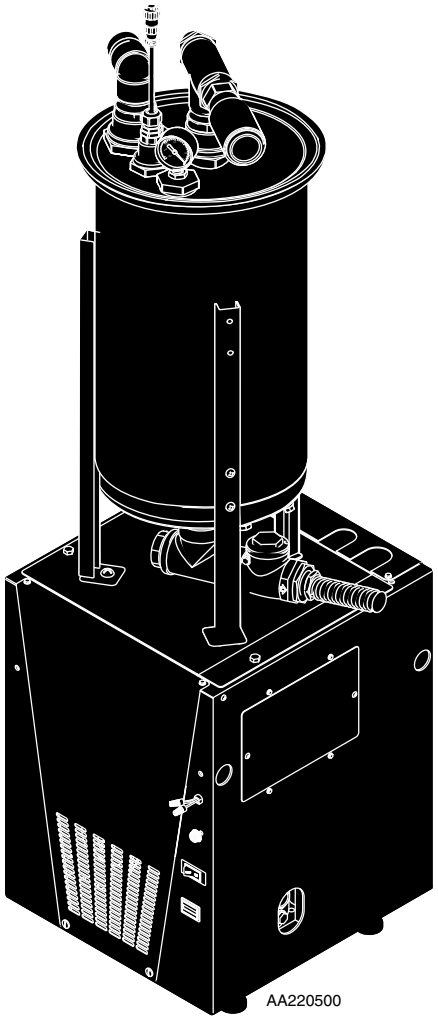
EXCLUSIVE REMEDY
Midmark's only obligation under this warranty is the repair or replacement of defective parts. Midmark shall not be liable for any direct, special, indirect, incidental, exemplary, or consequential damages or delay, including, but not limited to, damages for loss of profits or loss of use.

NO AUTHORIZATION
No person or firm is authorized to create for Midmark any other obligation or liability in connection with the products.

THIS WARRANTY IS MIDMARK'S ONLY WARRANTY AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS 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.

Section A

Troubleshooting


AA220500

Troubleshooting

Vacuum System Operation

Operatory waste (air, solids and liquids) is pulled into the separator through the inlet hose by the rotary claw pump in the vacuum base unit.

Air is separated from liquids and solids. Air then flows into the pump and out through the exhaust hose.

Fresh air is pumped in through the Vacuum Relief Valve to the pump and out through the exhaust. (When ports are opened in the operatories the VRV closes to compensate.)

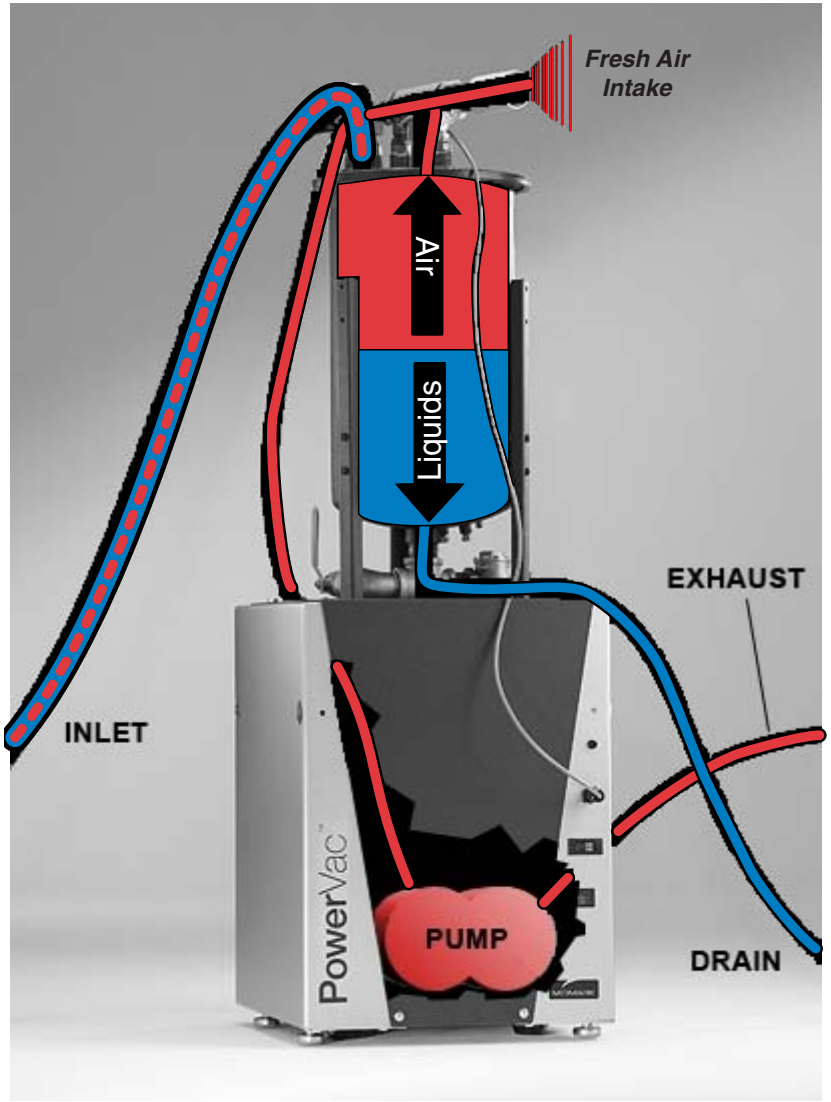
The check valve connected below the drain port allows the unit to drain liquids and solids upon removal of vacuum from the chamber when the pump / motor shuts off.

The fan(s), hour meter and vacuum pump start to run when power is supplied by the wall switch. The fan(s) and hour meter then begin to cycle with the vacuum pump / motor. The float switches control the pump motor by a 24 vac relay via motor contactor.

The upper and lower reed switch floats interact as a latching circuit with the internal relay to release upon drain below the bottom float.

Refer To: **Go To Page:**
Low or No Suction A-9

Earlier Version Shown

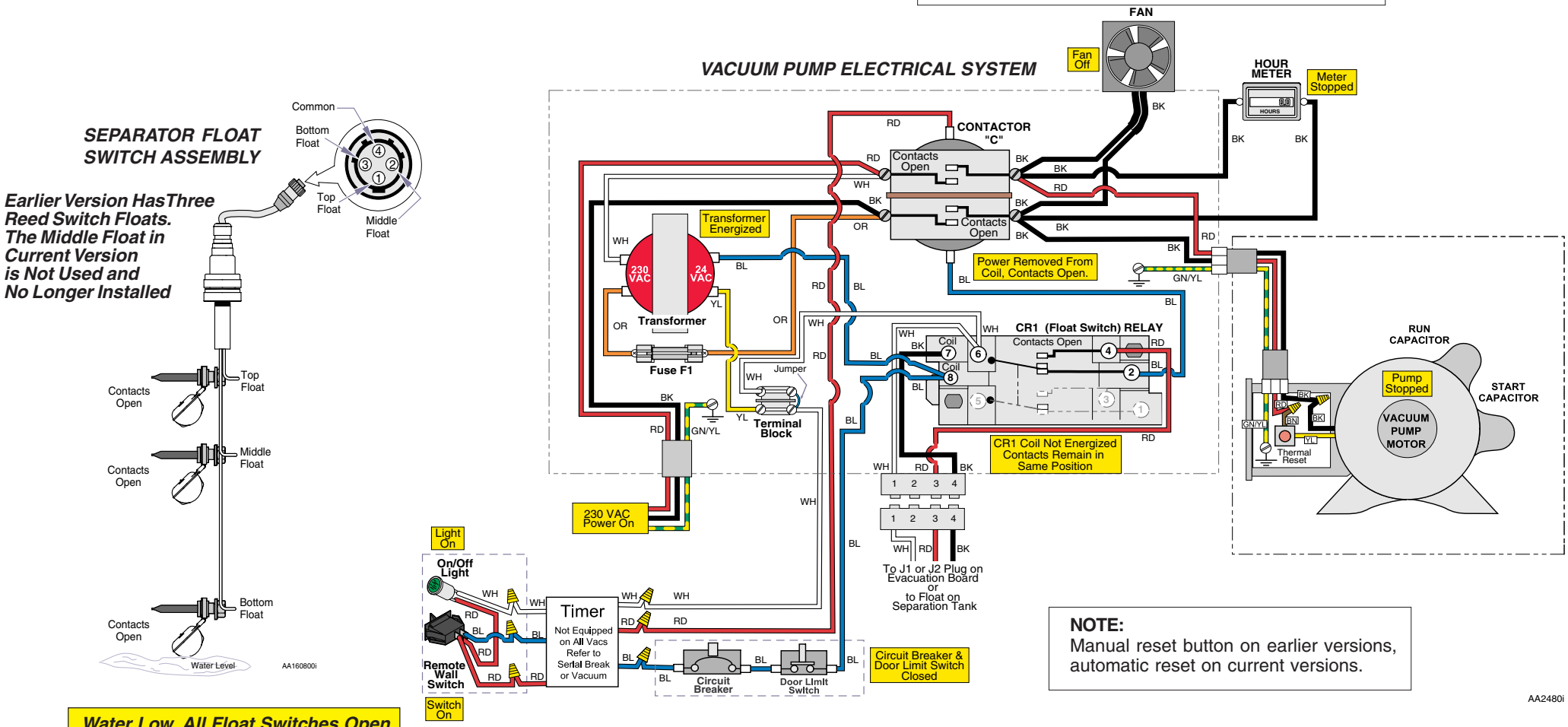


Electrical System *(Power to System Wall Switch Open All Float Switches Open)*

- Power (230 VAC) is on supplying Line Voltage to the Vacuum Pump Electrical System.
- 230 V is applied to the 230 V / 24 V Transformer energizing it.
- 24 V is applied from one side of Transformer, to the Terminal Block.
- From the Terminal Block, 24 V is applied to Terminal 6 of CR1 Relay, thru CR1 normally closed contacts (6 & 2) to one side of the coil on Contactor “C”, also to J1 & J2 Plug (pin 1), and thru the Timer to one side of the Wall On / Off Light.
- 24 V is also applied thru the closed Door Limit Switch,Circuit Breaker & Timer to one side of the Wall On/Off Switch.

Refer To: **Go To Page:**
Motor will not Run A-10
Motor Cutting Out A-11

NOTE:
Some units have dual fans that are wired in parallel.



NOTE:
Manual reset button on earlier versions, automatic reset on current versions.

AA2480i

Water Low, All Float Switches Open

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

Power to System

 Rev 11/2/15

Troubleshooting

Electrical System - continued (Wall Switch On, Power to System, All Float Switches Open)

- Remote Wall Switch is turned on, the On / Off Light comes on.
- 24 V is applied to the other side of the coil of Contactor "C", energizing the coil and closing its contacts.
- The Fan(s), Hour Meter, and Vacuum Pump run.

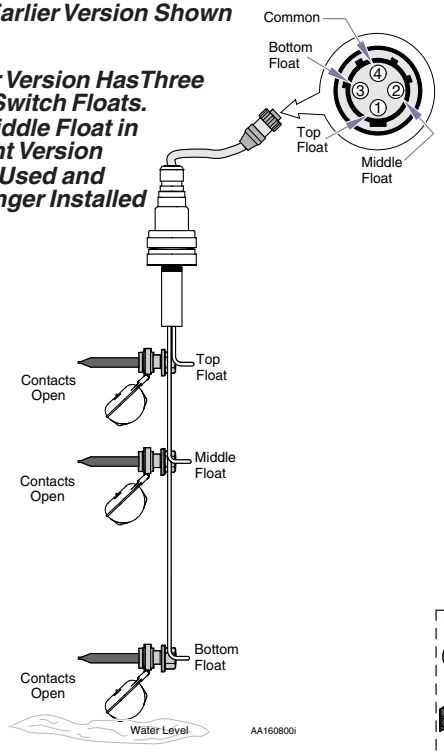
*Electrical System - continued (Wall Switch **OFF**, Power to System, All Float Switches Open, **Timer ON**)*

- Remote Wall Switch is turned off, the Timer turns on and starts to measure two hours.
- The Timer will run the Vacuum for one minute every two hours while the Remote Wall Switch is turned off by completing the 24 V circuit to the Contactor "C" coil.

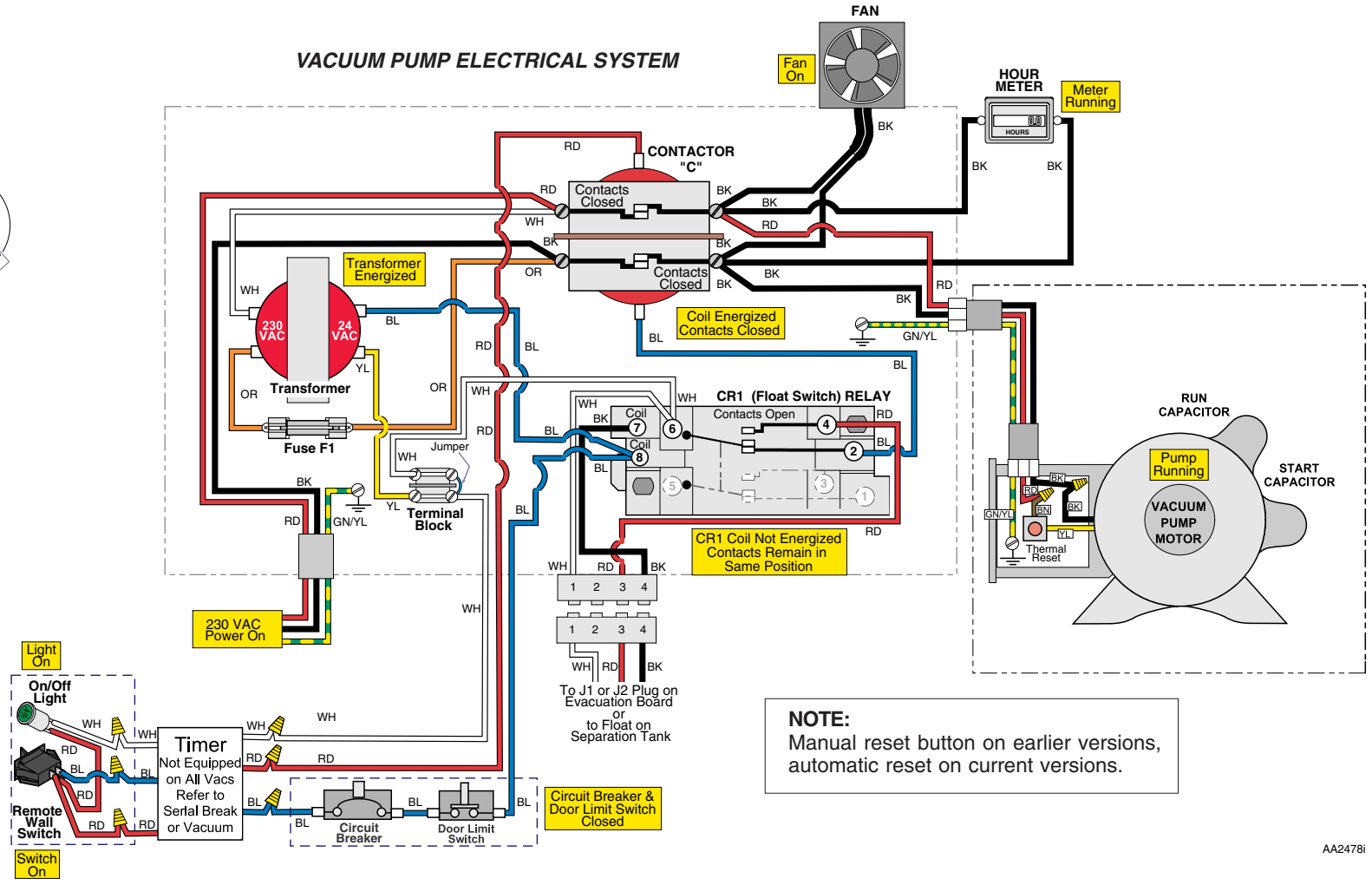
NOTE:
Some units have dual fans that are wired in parallel.

SEPARATOR FLOAT SWITCH ASSEMBLY
Earlier Version Shown

Earlier Version HasThree Reed Switch Floats. The Middle Float in Current Version is Not Used and No Longer Installed



VACUUM PUMP ELECTRICAL SYSTEM



NOTE:
Manual reset button on earlier versions, automatic reset on current versions.

Water Low, All Float Switches Open

Wall Switch On

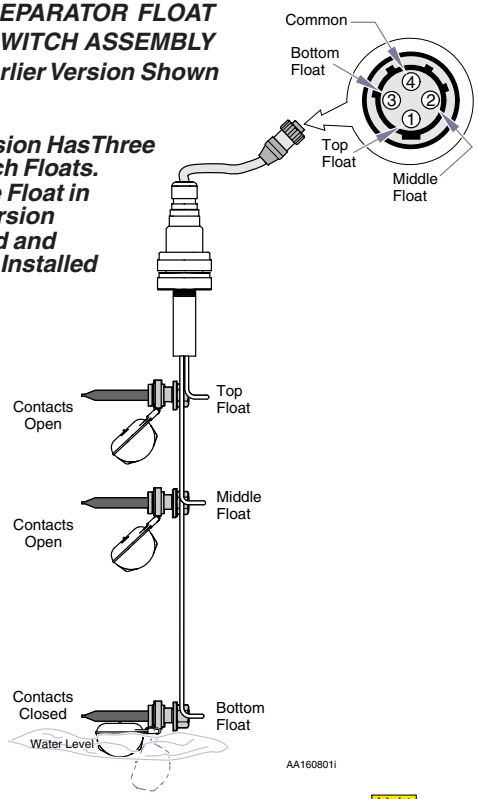
Models: ***All***
Serial Numbers:

Electrical System - *continued* *(Water Rises, Bottom Float Switch Closes, Middle and Top Switches Remain Open.)*

- Contactor “C” contacts remain closed.
- The Fan(s), Hour Meter, and Vacuum Pump continue to run.

SEPARATOR FLOAT SWITCH ASSEMBLY Earlier Version Shown

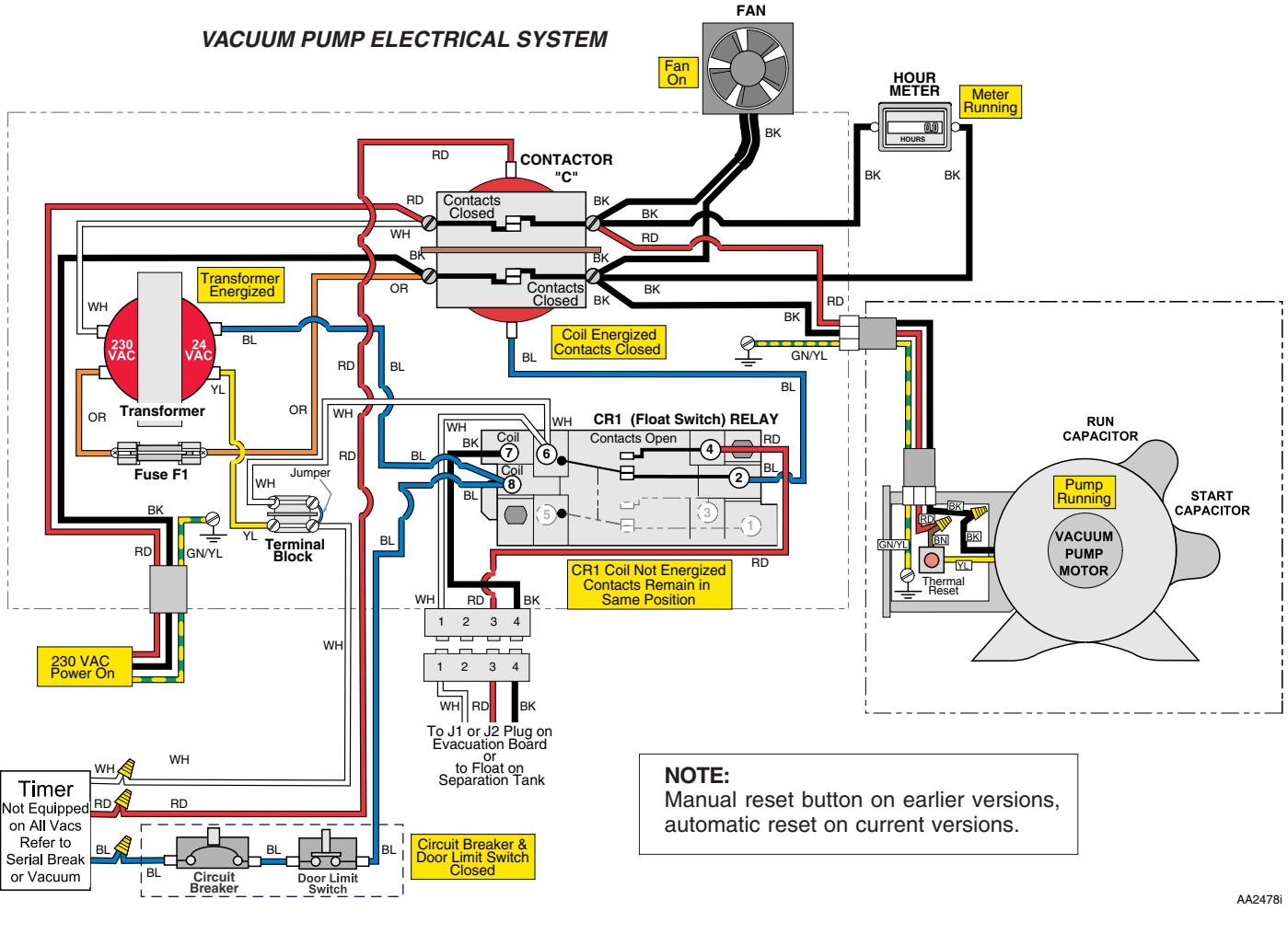
Earlier Version Has Three Reed Switch Floats. The Middle Float in Current Version is Not Used and No Longer Installed



Bottom Float Switch Closed, Middle and Top Remain Open.

NOTE:
Some units have dual fans that are wired in parallel.

VACUUM PUMP ELECTRICAL SYSTEM



NOTE:
Manual reset button on earlier versions, automatic reset on current versions.

AA2478i

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

Bottom Float Switch Closed

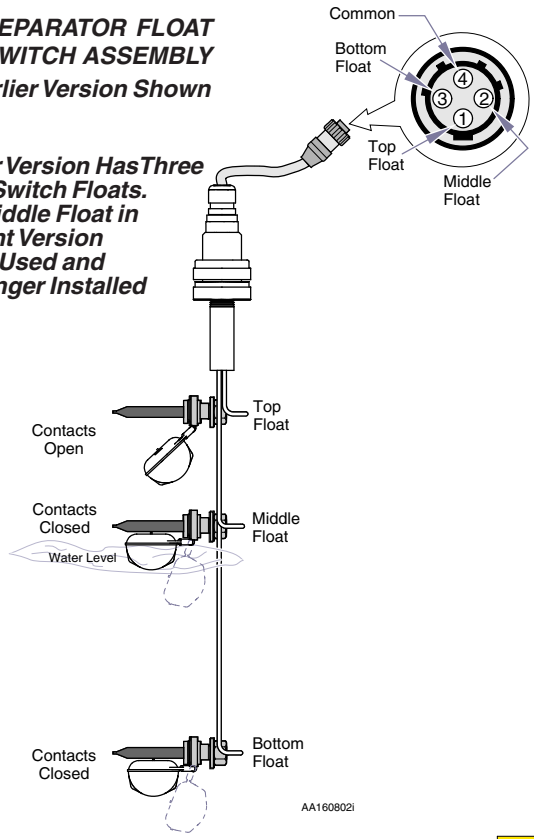
 Rev 11/2/15

Troubleshooting

Electrical System - *continued* *(Water Reaches Middle Float, Middle and Bottom Float Switches are Closed, Top Switch Remains Open.)*

- Contactor “C” contacts remain closed.
- The Fans, Hour Meter, and Vacuum Pump continue to run.

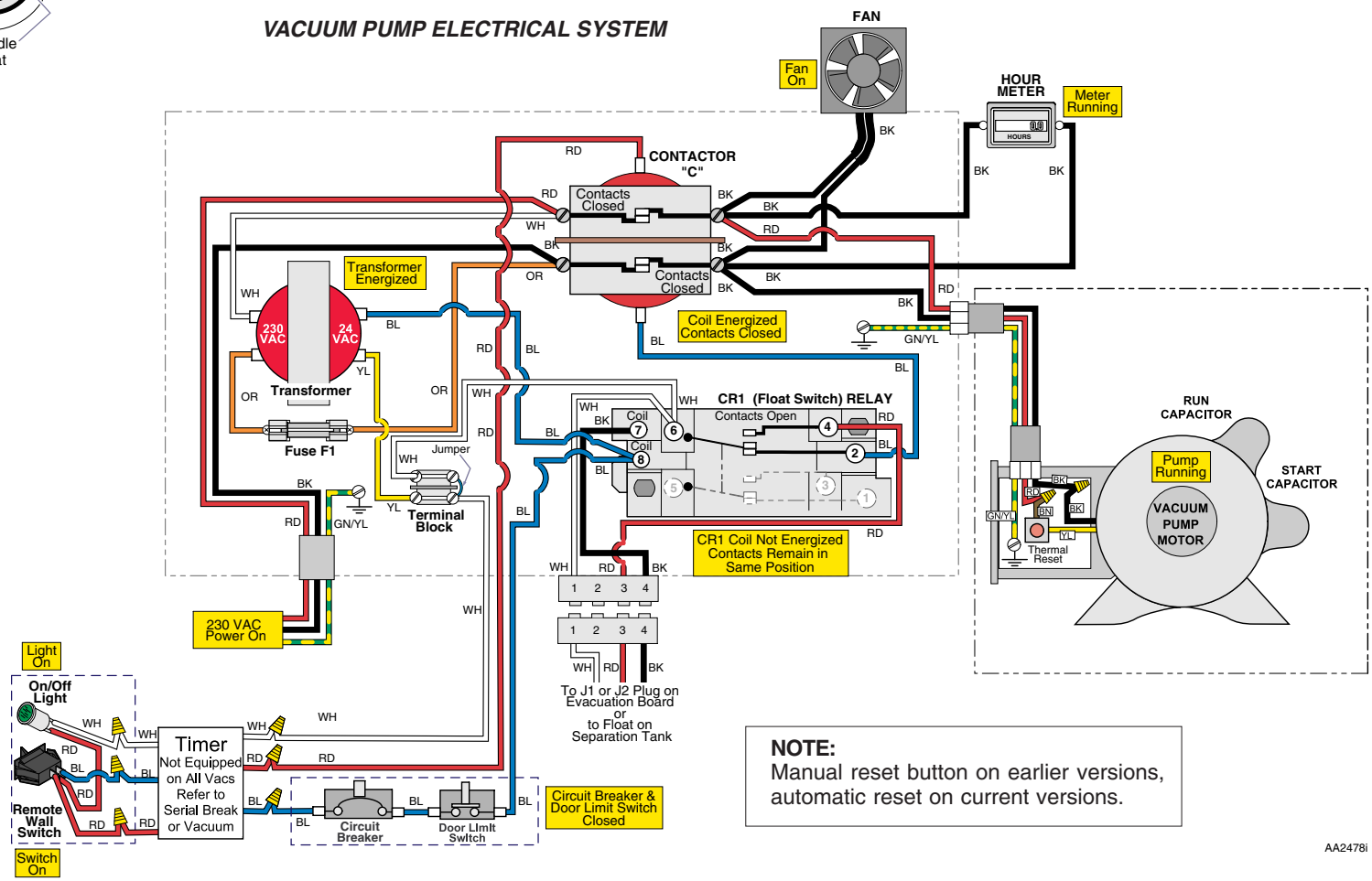
SEPARATOR FLOAT SWITCH ASSEMBLY
Earlier Version Shown



Middle and Bottom Float Switches are Closed, Top Remains Open.

NOTE:
Some units have dual fans that are wired in parallel.

VACUUM PUMP ELECTRICAL SYSTEM



NOTE:
Manual reset button on earlier versions, automatic reset on current versions.

AA2478i

Middle Float Switch Closed

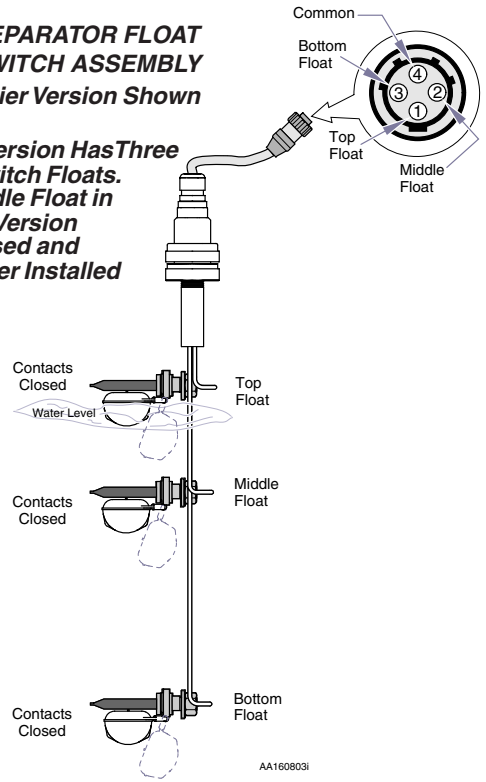
Models: ***All***
Serial Numbers:

Electrical System - *continued* (Water Reaches Top Float, All Float Switches are Closed.)

- The Top Float Switch sends 24v to the coil of CR1 Float Switch Relay changing the contacts position.
- Power is removed from the coil of Contactor "C", opening its contacts.
- The Fan(s), Hour Meter, and Vacuum Pump stop running.
- CR1 Float Switch Relay remains energized through its own normally closed tips (6&4) and the bottom float swich (pin 3) of J1& J2
- The Collection tank starts to Drain, Pump remains off until Bottom Float Switch opens interupting 24v to the CR1 Float Switch Relay coil.
- CR1 Float Switch Relay returns to its nornal state energizing Contactor "C", the Vacuum Pump, Fan(s) Motors, and Hour Meter restart .

SEPARATOR FLOAT SWITCH ASSEMBLY
Earlier Version Shown

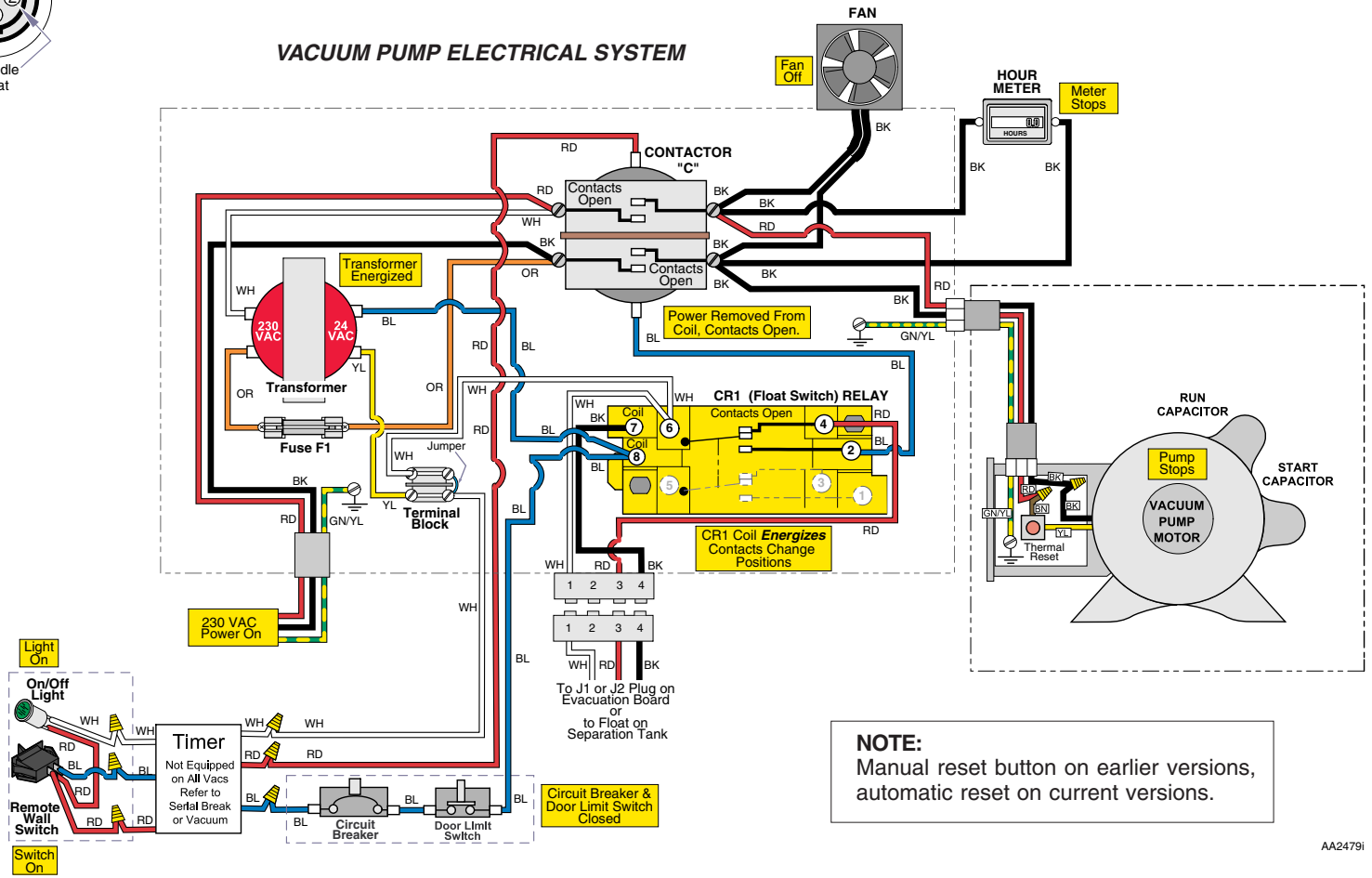
Earlier Version HasThree Reed Switch Floats. The Middle Float in Current Version is Not Used and No Longer Installed



All Float Switches are Closed.

NOTE:
Some units have dual fans that are wired in parallel.

VACUUM PUMP ELECTRICAL SYSTEM



NOTE:
Manual reset button on earlier versions, automatic reset on current versions.

AA2479i

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

Top Float Switch Closed

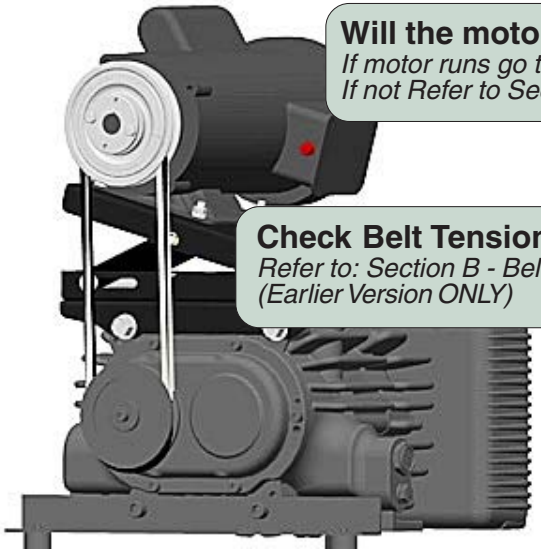
Troubleshooting

Vacuum System

Problem: *Operatory has low or no suction.*

Refer To:	Go To Page:
Motor will not Run	A-9
Belt	B-2
Check Valve	B-6
Vacuum Relief Valve	B-9
Exhaust	B-12

Earlier Version Shown



Will the motor start? 1st ✓
If motor runs go to 2nd check.
If not Refer to Section A - Motor will not run.

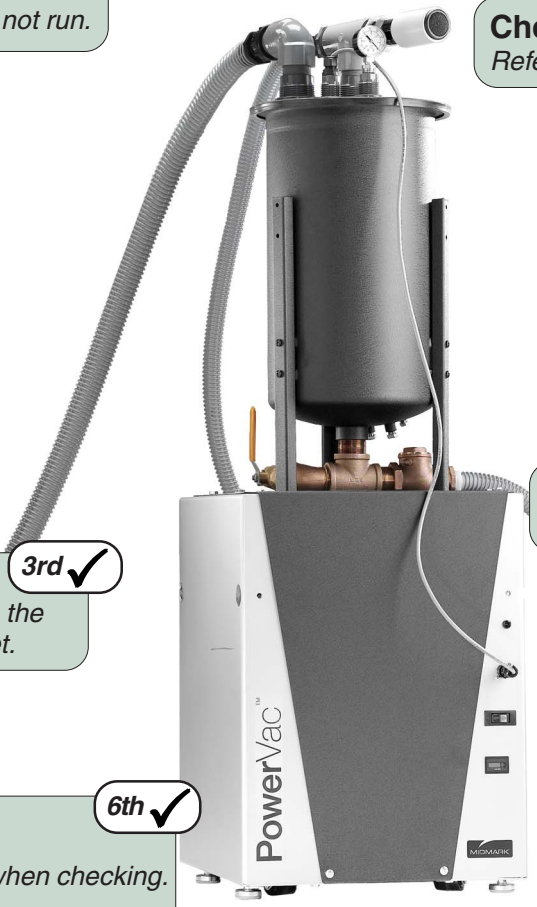
Check Belt Tension. 2nd ✓
Refer to: Section B - Belt.
(Earlier Version ONLY)

Check Hoses and Bulkhead Fittings. 3rd ✓
Check for leaks, kinks and loose connections in the hoses, bulkhead fittings and separator lid gasket.

Check Drain Line for Suction. 4th ✓
Refer to: Section B - Check Valve.

Check Vacuum Relief Valve. 5th ✓
Refer to: Section B - Vacuum Relief Valve.

Check Exhaust. 6th ✓
Remove exhaust line to see if suction increases.
Unclog or replace exhaust line if suction increased when checking.
Refer to: Section B - Exhaust



Earlier Version Shown

Low or No Suction with Motor Running

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

Troubleshooting

Vacuum System

Problem: *Motor will not run.*

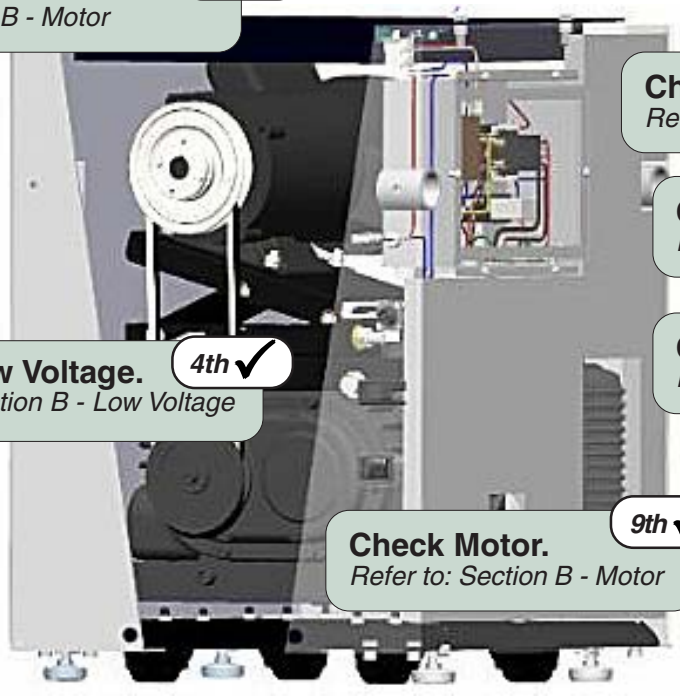
Earlier Version Shown

Check Float. 6th ✓
Refer to: Section B - Float

Is Pump locked up? 1st ✓
Refer to: Section B - Pump

Check Door Limit Switch. 3rd ✓
Refer to: Section B - Door Limit Switch

Reset Thermal Overload. 2nd ✓
Refer to: Section B - Motor



Check Fuse. 5th ✓
Refer to: Section B - Fuse

Check Relay. 7th ✓
Refer to: Section B - Relay

Check Contactor. 8th ✓
Refer to: Section B - Contactor

Check Low Voltage. 4th ✓
Refer to: Section B - Low Voltage

Check Motor. 9th ✓
Refer to: Section B - Motor

Earlier Version Shown

Models: / Serial Numbers:	All

Motor Not Running

Troubleshooting

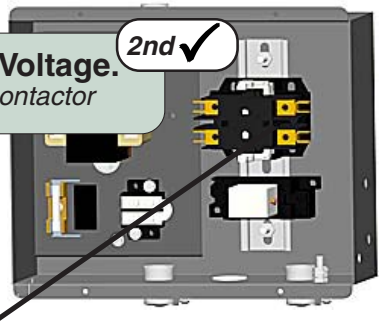
Vacuum System

Problem: *Motor cutting out or running at a reduced speed.*

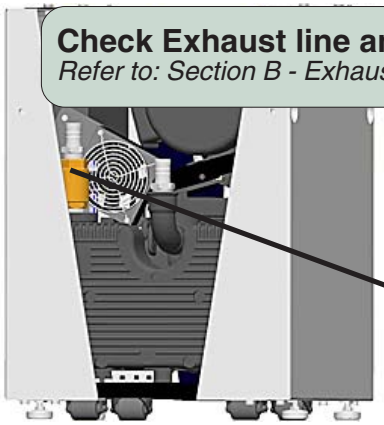
Refer To: — **Go To Page:**
Contactor B-25
Pump B-44
Exhaust B-12
Motor B-42

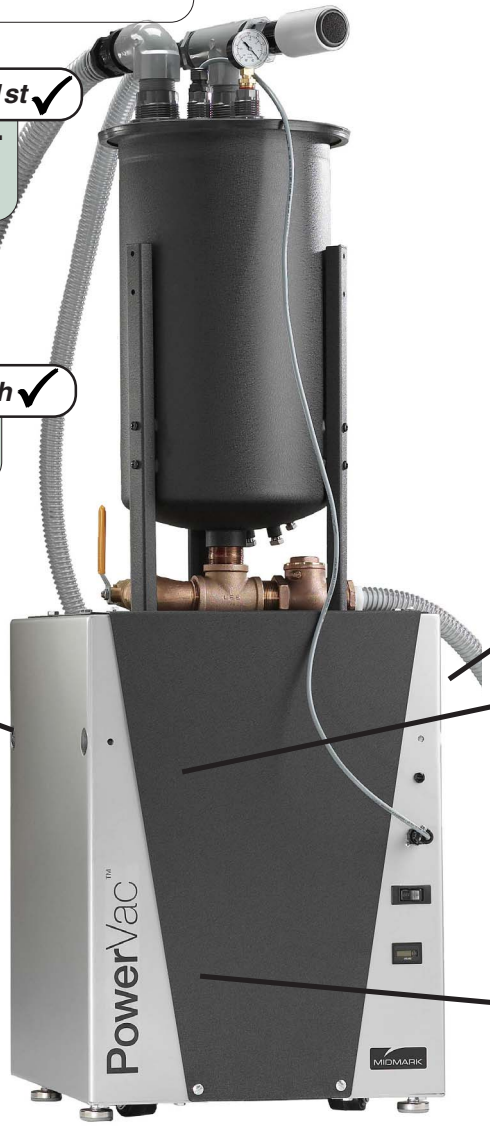
1st ✓ Check Equipment Room Temperature.
Temperature should be - 40° to 104° Fahrenheit - 4 to 37 Celsius

2nd ✓ Check Contactor Voltage.
Refer to: Section B - Contactor



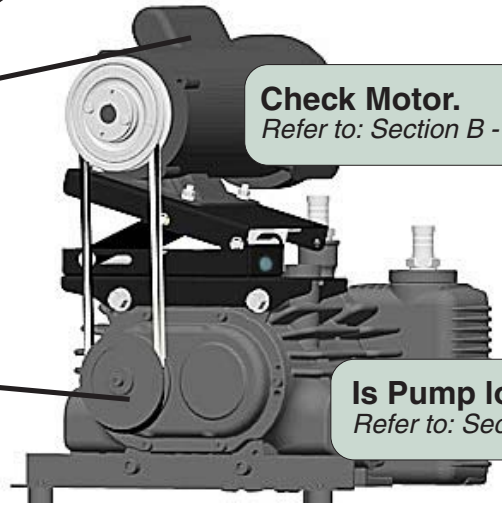
4th ✓ Check Exhaust line and valve.
Refer to: Section B - Exhaust





5th ✓ Check Motor.
Refer to: Section B - Motor

3rd ✓ Is Pump locked up?
Refer to: Section B - Pump



Earlier Version Shown

Motor Cutting Out

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

Electrical System for Accessory - Liquid Evacuation Pump

The Liquid Evacuation Pump is an optional accessory for the PowerVac®.

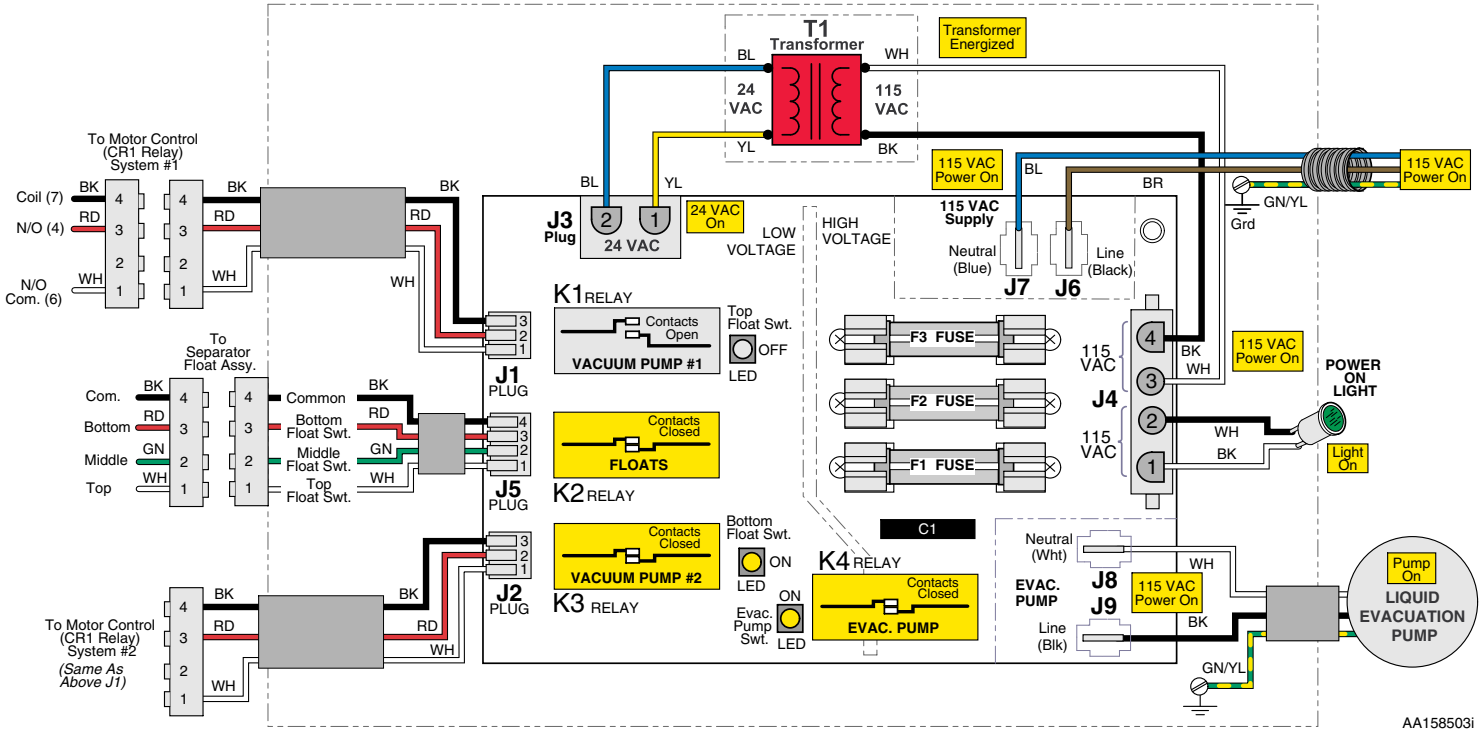
- 115 VAC is applied to the 115V / 24V Transformer energizing it.
- 24 VAC is applied from one side of the Transformer to the J3 plug.
- When the water level reaches the *Bottom* float switch, K3 relay contact closes.
- When the water level reaches the *Middle* float switch, K2 & K4 relay contact close. Power is supplied to J8 and J9 terminals, energizing the Liquid Evacuation Pump.

NOTE:
The Liquid Evacuation Pump will continue to run until the water level drops below the *Bottom* float switch, opening K3 & K4 relay contacts.

If the *Top* float closes, K1 relay contacts close, and its LED is on, a problem is occurring with the system.
Check for a restriction in the lines, pump not functioning, or PC board problem.

Optional Liquid Evac Pump Must use a Three Float Assembly

Liquid Evacuation Pump Electrical System shown when the Bottom & Middle Float Switches are Closed and Pump is running. (Liquid Evac Pump is Optional)



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

Liquid Evac Pump Electrical

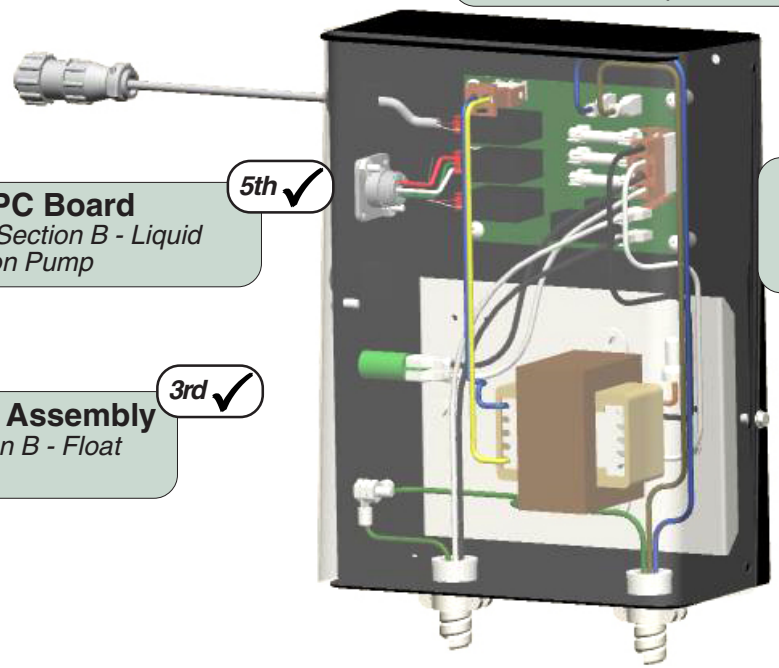
Troubleshooting

Evacuation Pump System

Problem: *Evacuation Pump will not run.*

Refer To: **Go To Page:**

Check Low Voltage to PC Board (2nd ✓)
Refer to: Section B - Liquid Evacuation Pump



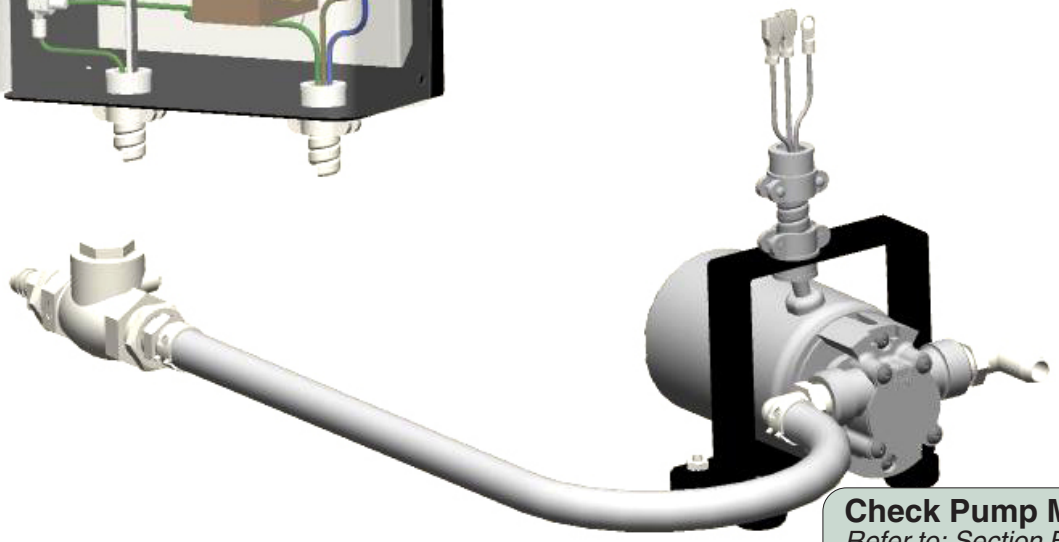
Check PC Board (5th ✓)
Refer to: Section B - Liquid Evacuation Pump

Check Supply Voltage to PC Board (1st ✓)
Refer to: Section B - Liquid Evacuation Pump

Check Thermal Motor Protector (4th ✓)
Refer to: Section B - Liquid Evacuation Pump

Check Float Assembly (3rd ✓)
Refer to: Section B - Float Assembly

Earlier Version Shown



Earlier Version Shown

Check Pump Motor (6th ✓)
Refer to: Section B - Liquid Evacuation Pump

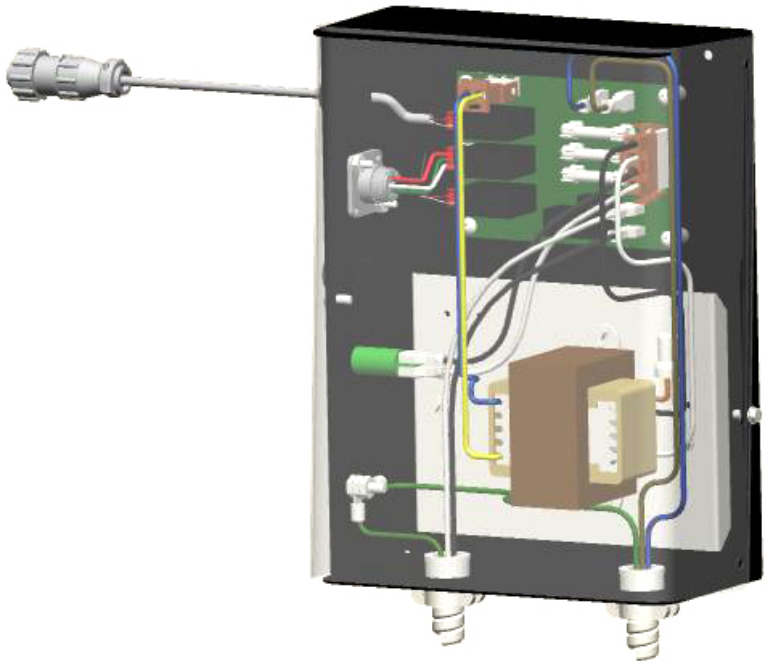
Evacuation Pump Will Not Run

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

Evacuation Pump System

Problem: *Evacuation Pump runs but does not remove liquid from Separator.*

Refer To: Go To Page:
Liquid Evacuation Pump.....B-53-B-56



Check Supply Voltage to Pump — 4th ✓
Supply voltage is low.
Refer to: Section B - Liquid Evacuation Pump

Check for Obstructions in Outlet of Separator / Lines. — 2nd ✓
Refer to: Section B - Liquid Evacuation Pump

Check Pump Location — 5th ✓
Pump should be positioned as close as possible below the separator.

Check Suction Line Into Pump — 1st ✓
Check for leaks.
Avoid "looping" suction pipe as it could trap air.
Suction line should not be more than 6 ft. in length.

Check Discharge Line from Pump — 6th ✓
Do not run a discharge head of greater then 35 ft. (15 Psi).

Check Evac. Pump Impeller for Obstructions or Damage. — 3rd ✓
Refer to: Section B - Liquid Evacuation Pump

Earlier Version Shown

Models:	All
Serial Numbers:	

Evacuation Pump Runs but Will Not Pump

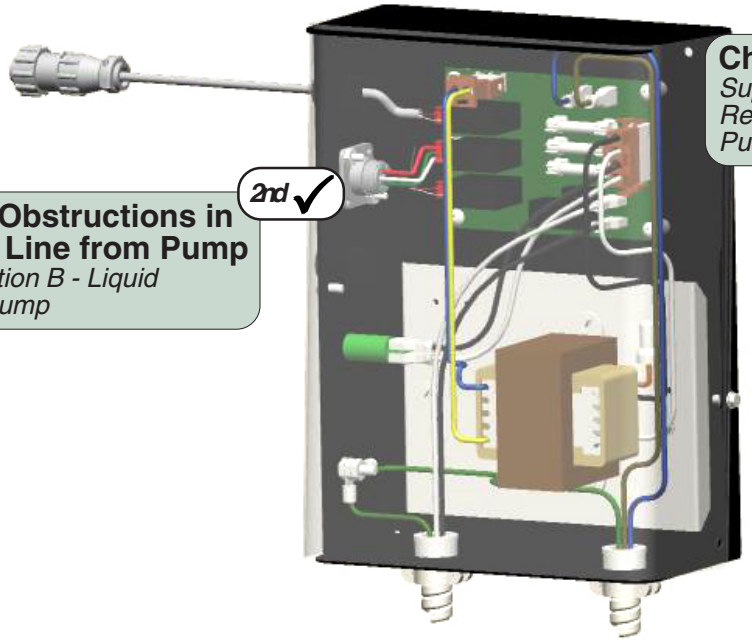
Troubleshooting

Evacuation Pump System

Problem: *Evacuation Pump Motor keeps tripping on Thermal Overload.*

Check Ambient Temperature at Motor 6th ✓
Temperature should not exceed 104° F (40° C) around pump.

Refer To: **Go To Page:**
Liquid Evacuation Pump B-52

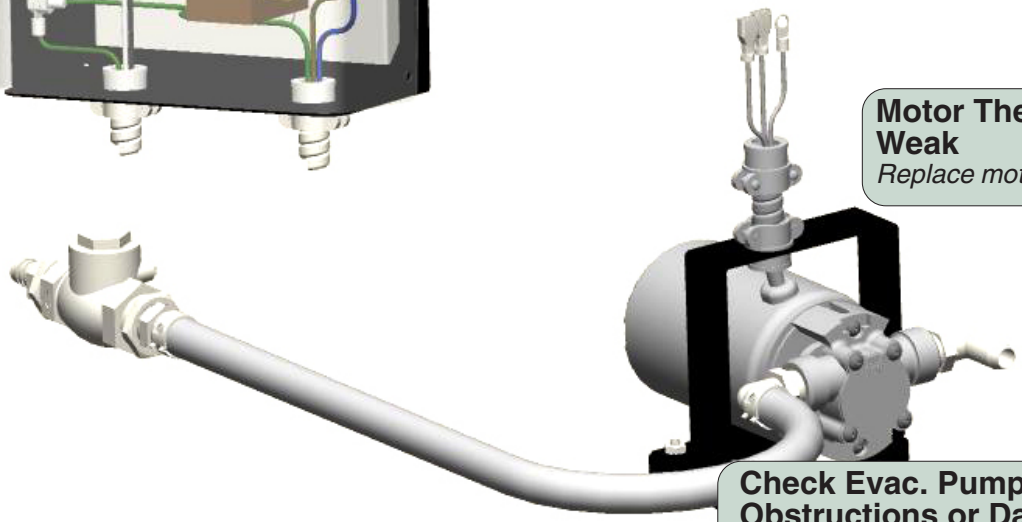


Check Supply Voltage to Pump 1st ✓
Supply voltage is low.
Refer to: Section B - Liquid Evacuation Pump

Check for Obstructions in Discharge Line from Pump 2nd ✓
Refer to: Section B - Liquid Evacuation Pump

Check Pump Location 5th ✓
Pump should be positioned as close as possible below the separator.
Suction line should not be more than 6 ft. in length.

Motor Thermal Protector Weak 7th ✓
Replace motor pump.



Check Discharge Line from Pump 3rd ✓
Do not run a discharge head of greater then 35 ft. (15 Psi).

Check Evac. Pump Impeller for Obstructions or Damage. 4th ✓
Refer to: Section B - Liquid Evacuation Pump

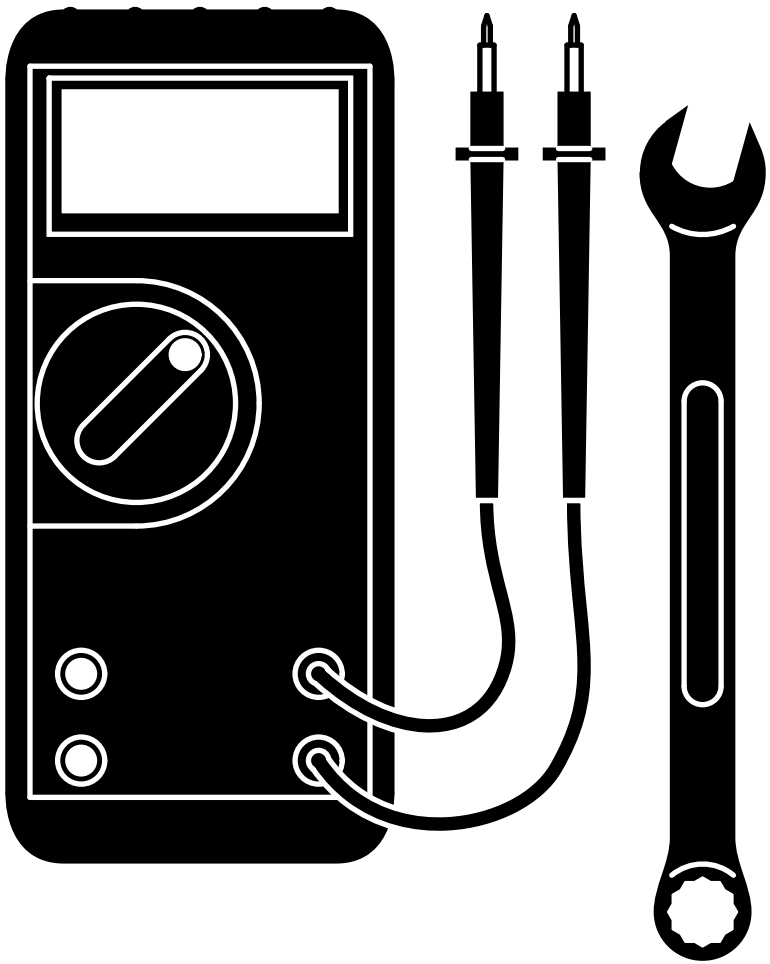
Earlier Version Shown

Evacuation Pump Keeps Tripping on Thermal Protector

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

Section B

Testing & Repair



Components: **Go To Page:**

Testing & Repair

Belt

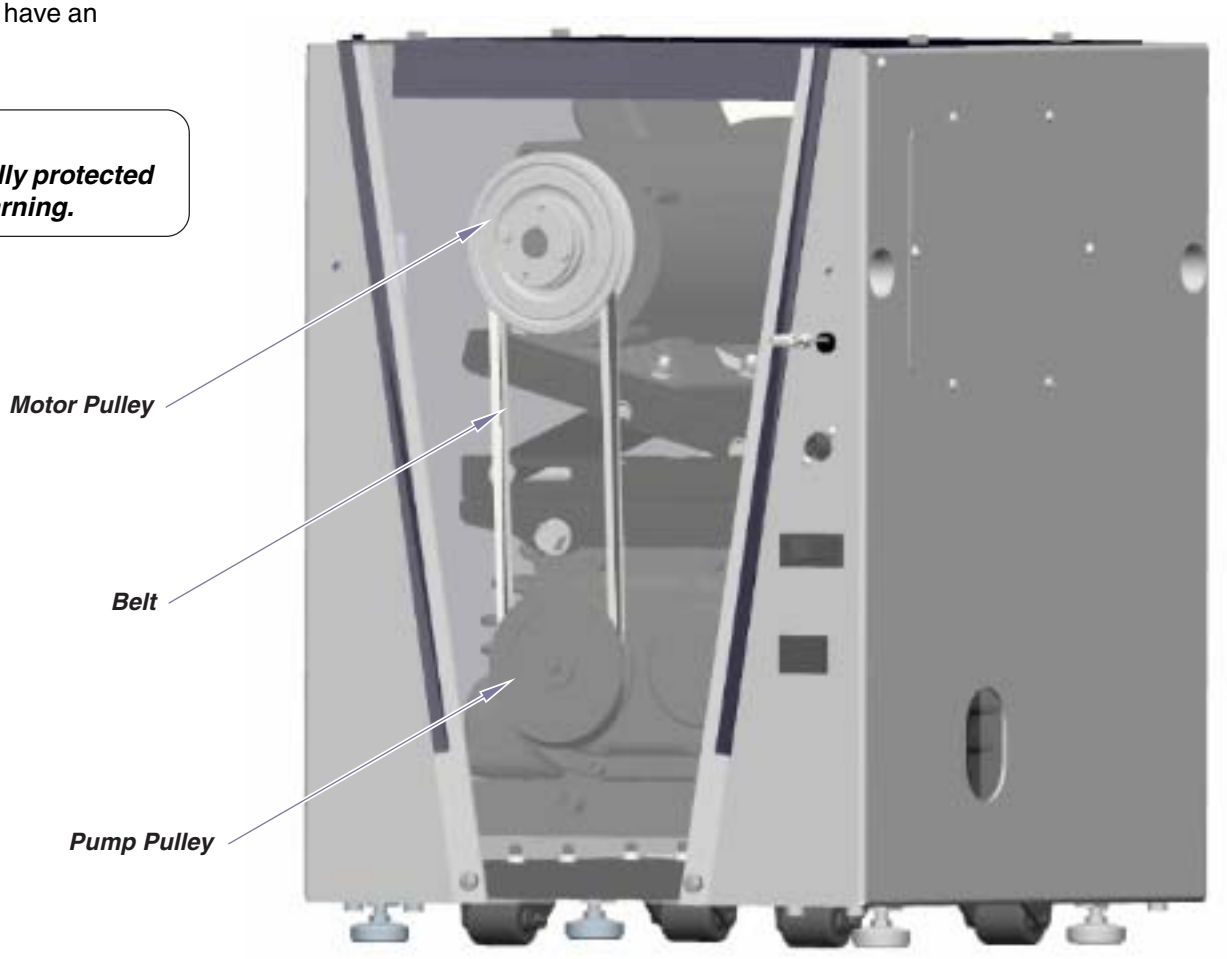
Refer to: **Go To Page:**
Belt Adjustment (Tension) B-3
Belt Replacement (Earlier Version) B-4
Belt Replacement (New Version) B-5

Location & Function

The Belt runs on a motor pulley system operating the pump. Belt should never have nicks, cracks or any visible damage, this will affect performance.

Earlier versions of the PowerVac® the belt will need adjusting from time to time. Newer versions of the PowerVac® have an auto tensioner.

WARNING
Motors installed after 12/08 are thermally protected with automatic reset. Unit may start without warning.



Earlier Version Shown

AA162300i

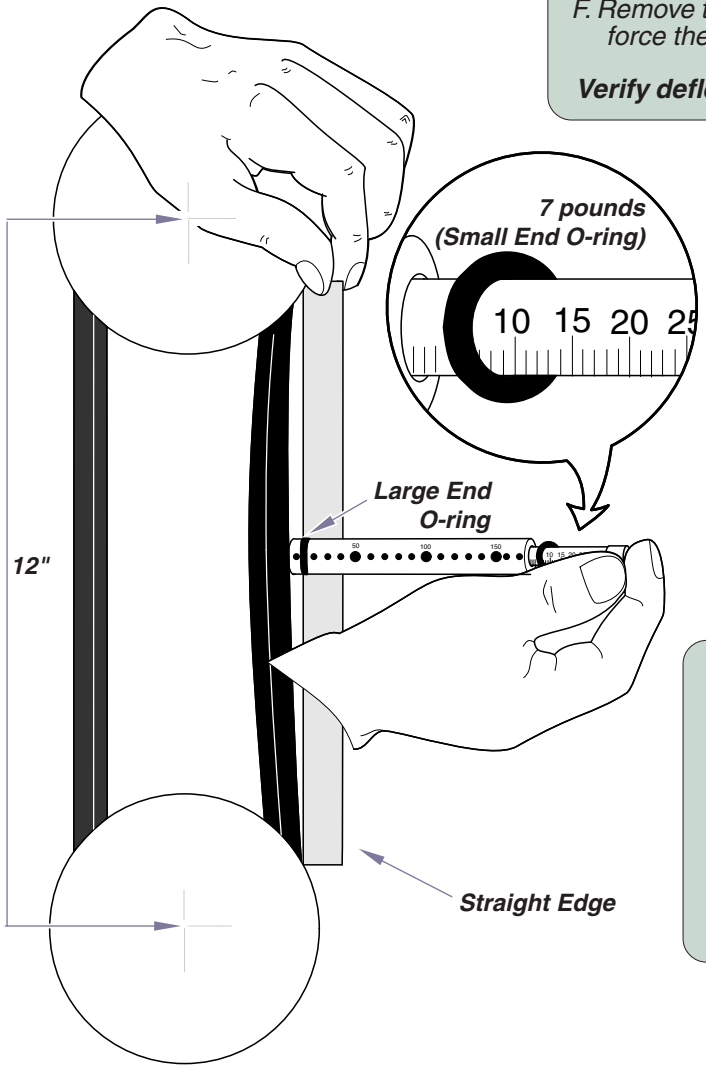
Belt

Checking and Adjusting Belt Tension (Earlier Versions Only)

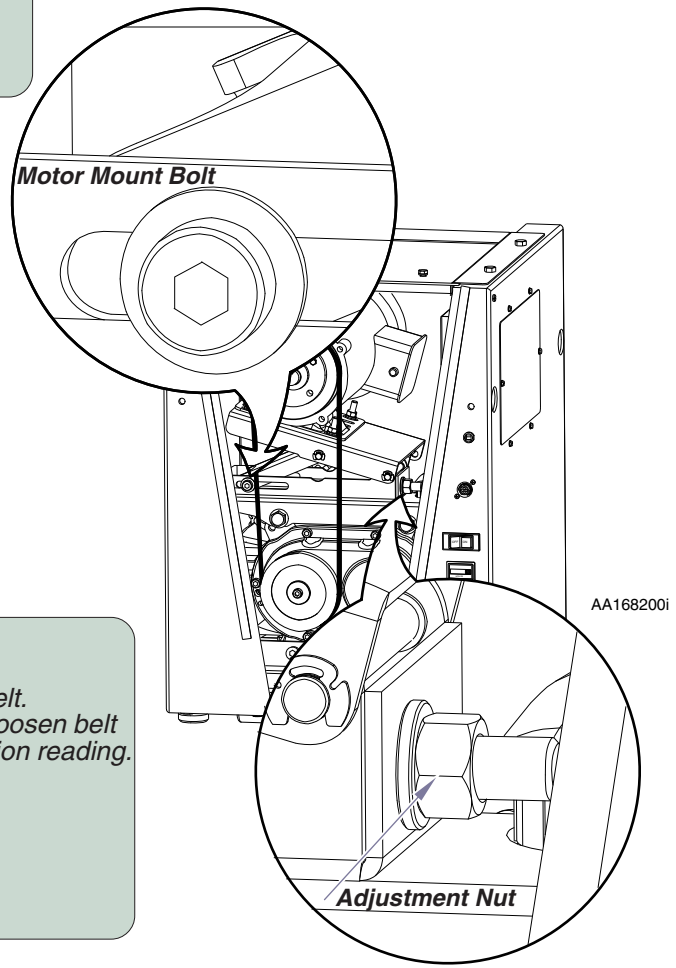
Check belt tension using belt tension checker...
A. Remove front cover. Refer to: Section C Front Cover.
*B. Position o-ring on large end of tension checker to 12" (use **"Inches of Span Length"** increments on checker).*
C. Slide o-ring on small shaft to 0 pounds.
D. Align straight edge with belt.
E. Apply force on the plunger until o-ring on large shaft is even with straight edge.
F. Remove the tension checker and read the defection force the small o-ring was moved to.

Verify deflection reading is 7 lbs.

Refer to: **Go To Page:**
Belt Location and Function B-2
Belt Replacement (Earlier Version) B-4
Belt Replacement (New Version) B-5
Front Cover C-2



WARNING
Motors installed after 12/08 are thermally protected with automatic reset. Unit may start without warning.



If adjustment is needed...
A. Loosen Motor Mount Bolt.
B. Move adjustment nut clockwise to tighten belt.
C. Move adjustment nut counter clockwise to loosen belt
D. Use belt tension checker to recheck deflection reading.
E. Tighten motor mount bolt.
F. Replace front cover.

If no adjustment is needed...
A. Tighten motor mount bolt.
B. Replace front cover.

Models: / Serial Numbers:	P3	P5	P7
	0611P3P0000 to 0801P3P0611 V245092 to V317654	0611P5P0000 to 0801P5P0240 V245092 to V317641	0611P7P0000 to 0712P7P0104 V245092 to V317634

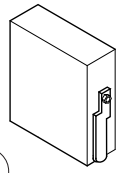
Testing & Repair

Belt

Replacement (Earlier Versions Only)

WARNING
Motors installed after 12/08 are thermally protected with automatic reset. Unit may start without warning.

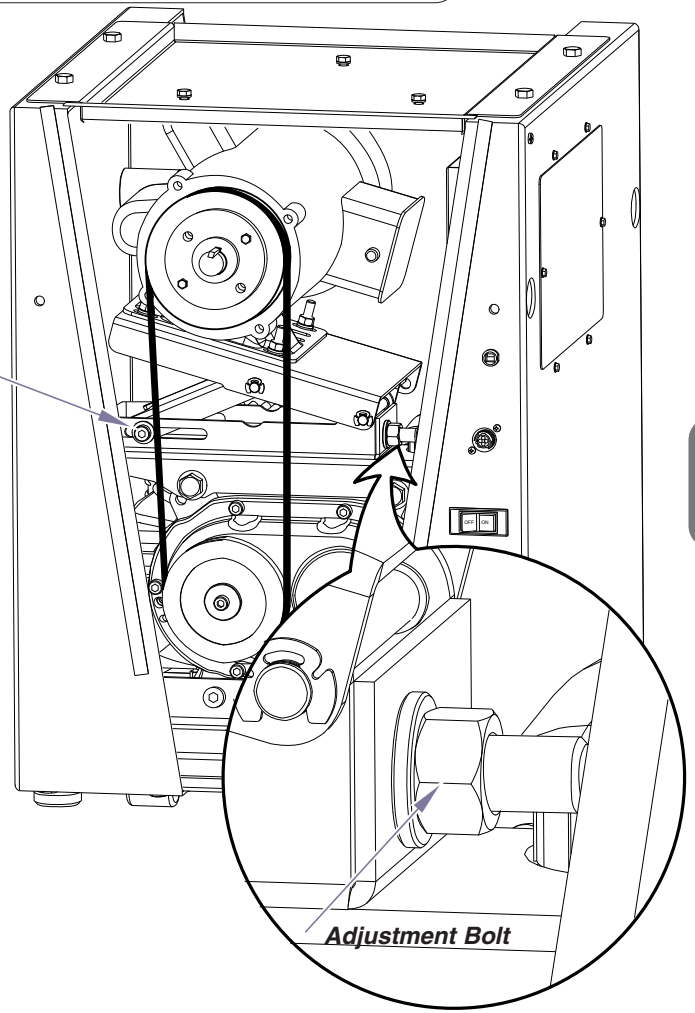
Removal
Step 1: Disconnect power at on/off switch and main power supply box.



Caution
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.

Refer to: — **Go To Page:**
Belt Location and Function B-2
Belt Adjustment (Earlier Version) B-3
Belt Replacement (New Version) B-5
Front Cover C-2

Removal
Step 2: Remove front cover.
Refer to: Section C - Front Cover



Removal
Step 3: Loosen motor mount bolt and adjustment bolt.

Removal
Step 4: Remove belt.

Installation
Step 5: Replace belt.

Installation
Step 6: Tighten adjustment bolt and motor mount bolt.

Installation
Step 7: Set belt tension.
Refer to: Section B - Belt Adjustment

Installation
Step 8: Replace front cover.

AA162700i

Installation
Step 9: Connect power.

Models: / Serial Numbers:	P3	P5	P7
	0611P3P0000 to 0801P3P0611 V245092 to V317654	0611P5P0000 to 0801P5P0240 V245092 to V317641	0611P7P0000 to 0712P7P0104 V245092 to V317634

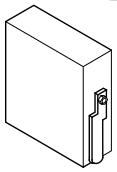
Testing & Repair

Belt

Replacement
(Newer Versions Only)

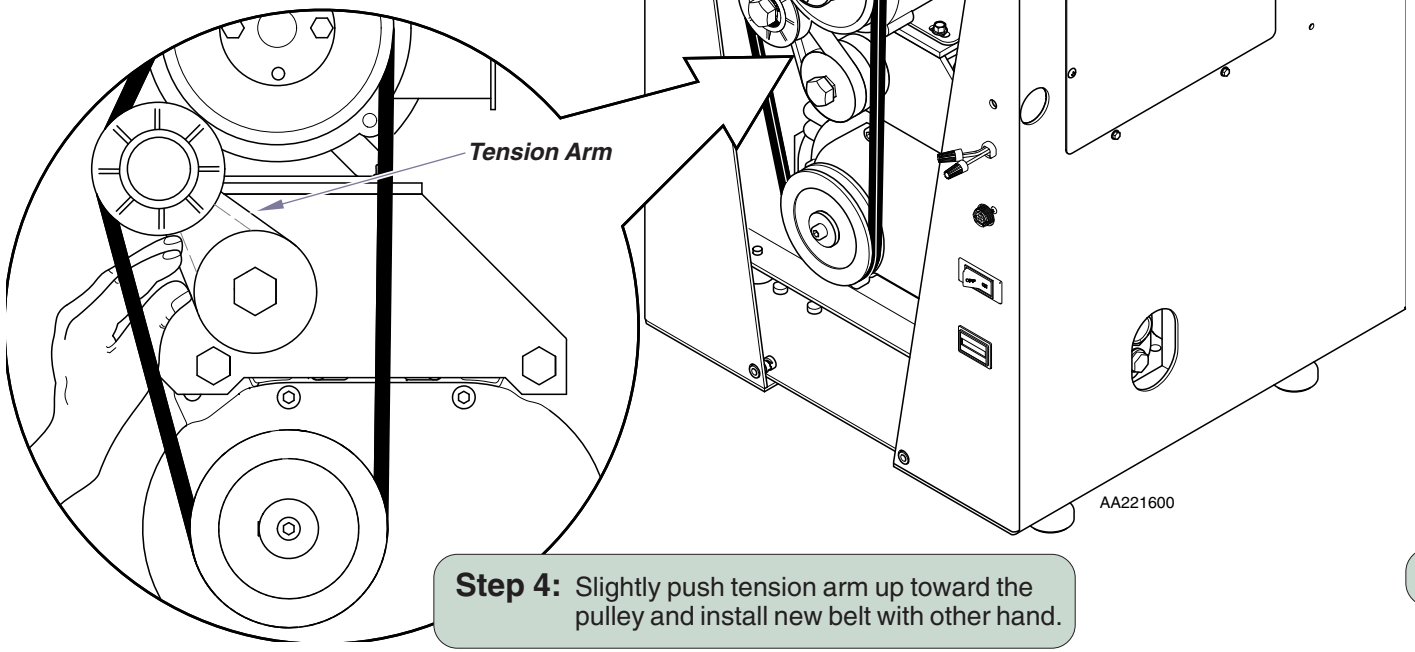
WARNING
Motors installed after 12/08 are thermally protected with automatic reset. Unit may start without warning.

Step 1: Disconnect power at on/off switch and main power supply box.



Step 2: Remove front cover.
Refer to: Section C Front Cover

Step 3: Slightly push tension arm up toward the pulley and remove belt with other hand.



Step 4: Slightly push tension arm up toward the pulley and install new belt with other hand.

Step 5: Replace front cover.

Models:	P3	P5	P7	All
Serial Numbers:	0802P3P0612 thru Present	0801P5P0241 thru Present	0712P7P0105 thru Present	V785000 thru Present

Testing & Repair

Check Valve

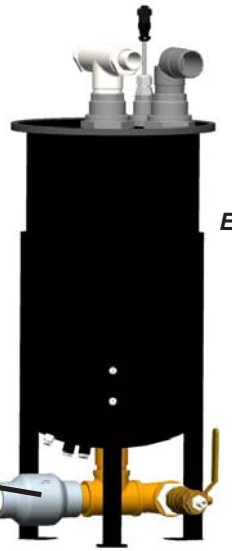
Refer to: **Go To Page:**
Check Valve Test B-7
Check Valve Replacement B-8

Location and Function

The Check Valve located in the drain allows the separator to drain upon removal of vacuum pressure. When the pump is not running, the valve opens, allowing liquids to drain. If the pump is running the valve closes to keep air in the drain from back flushing into the system.

Each vacuum pump in a multiple pump installation requires a check valve to be installed into the intake line.

This prevents loss of suction pressure when one pump in the system is turned off. If no check valve is present, flow will be allowed through he "off" pump, creating a loss suction of the rest of the system.

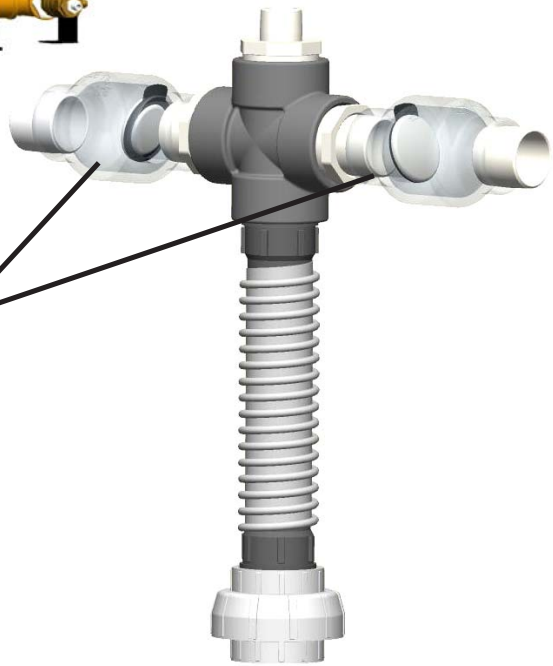


Earlier Version Shown

Vacuum Pressure keeps Valve Closed when Pump is Running

Located at bottom drain on all units

When Pump Stops Valve Opens for Liquids and Solids to Drain



Multiple Units have two additional check valves, located in the Tee Assembly

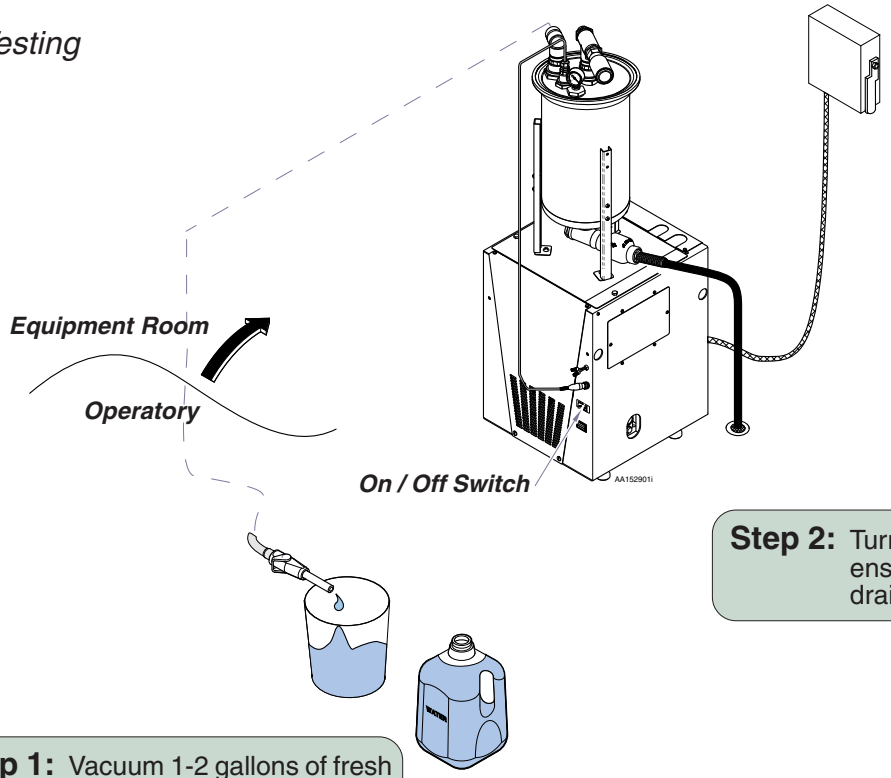
Note: *When installing check valve in horizontal position, confirm the hinge for the flapper is on top of the valve.*

Testing & Repair

Check Valve

Testing

Refer to: **Go To Page:**
Check Valve Location and Function B-6
Check Valve Replacement B-8



Step 1: Vacuum 1-2 gallons of fresh water into system through operatory lines.

Step 2: Turn vacuum off and ensure that water drains from separator.

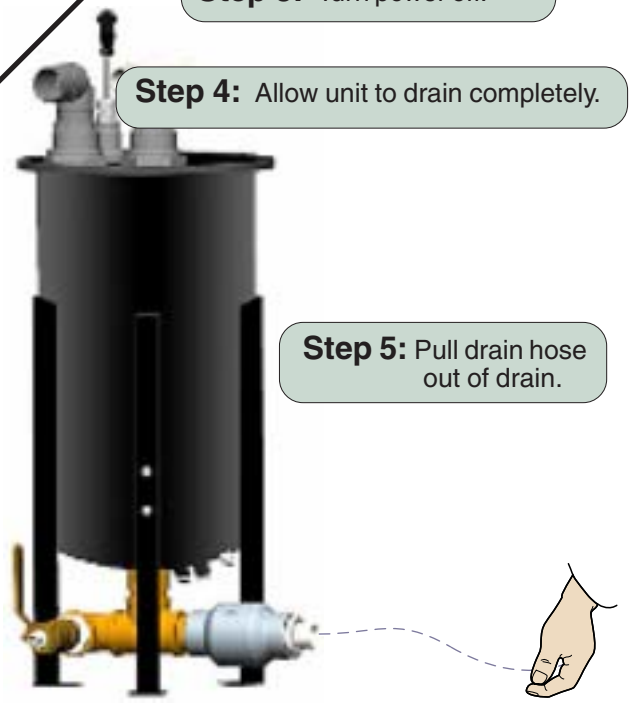
Note: *If water does not drain out, remove lid and see if valve is clogged. (If so flush and clean tank, if not replace valve.) If water drains out, continue with next test on step 3.*

Step 3: Turn power off.

Step 4: Allow unit to drain completely.

Step 5: Pull drain hose out of drain.

Earlier Version Shown



Step 6: Turn power on and place hand over end of drain hose.

Note: *If you feel suction check valve is stuck, replace check valve. If no suction is felt then check valve is good.*

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

Testing & Repair

Check Valve

Replacement

All Units

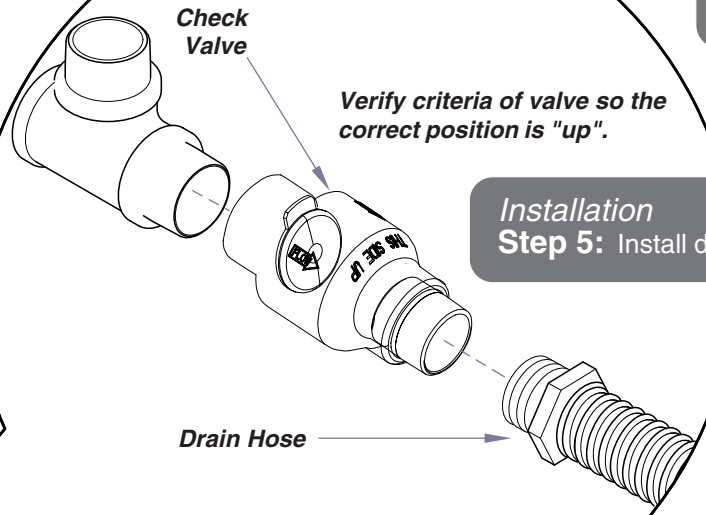
Removal
Step 1: Turn power off.

Earlier Version Shown

AA162900i

Removal
Step 2: Remove drain hose from check valve.

Removal
Step 3: Unscrew check valve.



Installation
Step 4: Install check valve.

Installation
Step 5: Install drain hose to check valve.

Installation
Step 6: Turn power on and place hand over end of check valve.

Note: *Verify you do NOT feel any suction.*

Refer to: **Go To Page:**

Check Valve Location and Function B-6
Check Valve Test B-7

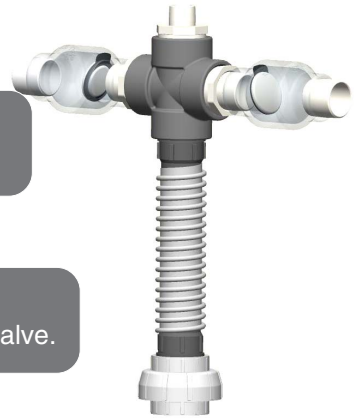
Twin Units

Removal
Step 1: Turn power off.

Removal
Step 2: Remove drain hose from check valve.

Removal
Step 3: Unscrew check valve.

Twin Unit Tee Assembly Check Valves



Installation
Step 4: Install check valve.

Installation
Step 5: Install drain hose to check valve.

Vacuum Relief Valve

Refer to: **Go To Page:**
VRV Adjustment B-10
VRV Replacement B-11

Location and Function

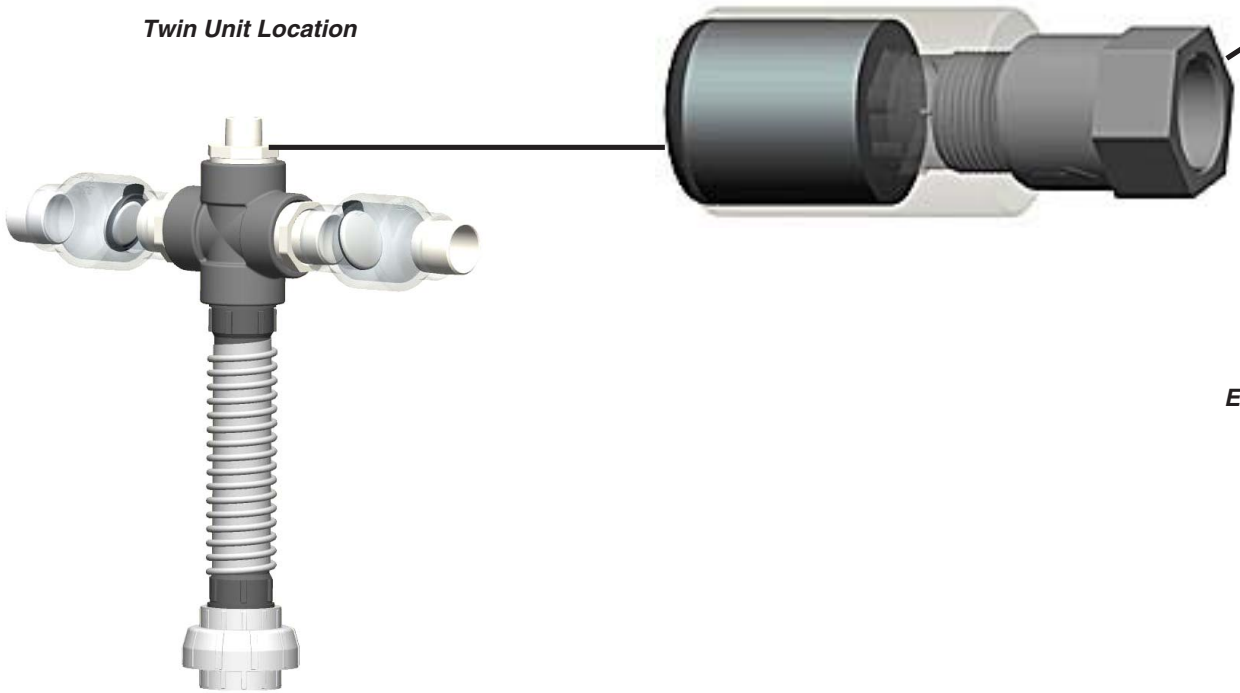
The Vacuum Relief Valve regulates the vacuum pressure in the PowerVac®
.

The Vacuum Relief Valve has a 1" NPT male fitting on one side and 1" NPT female fitting on the other side.

The valve is adjustable up to 18"Hg.
Recommended range for the system vacuum is from 10" to 18"Hg. The valve is preset at the factory for 12" Hg.

The Vacuum Relief Valve is located on top of the separator tank in the "T" Fitting on Single Models and in the center of the mounted "T" assembly on the Twin Models.

Twin Unit Location



Single Unit Location

Earlier Version Shown

Testing & Repair

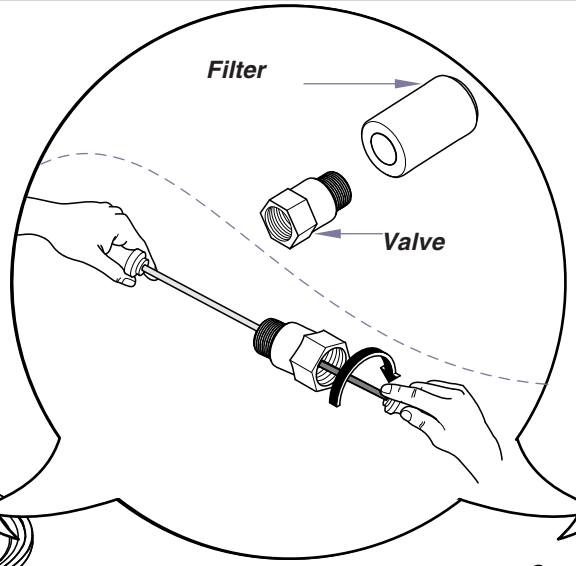
Vacuum Relief Valve

Adjustment

Refer to: **Go To Page:**
VRV Location and Function B-9
VRV Replacement B-11

Step 1: Turn power off.

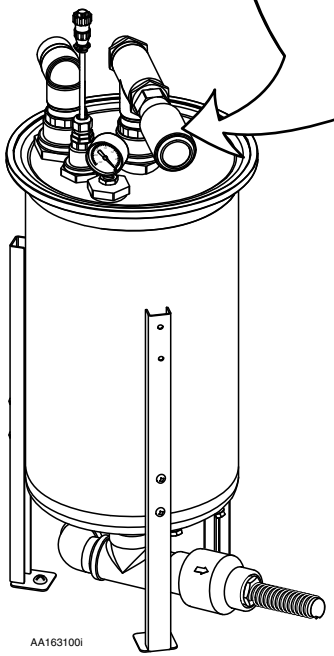
Step 2: Remove the filter and valve by unscrewing from tee-fitting.



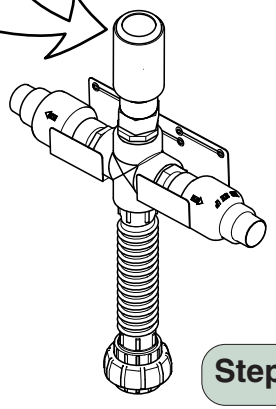
Step 3: Adjust the center mounted screw inside the valve.

Note: *Use 1/4 inch nutdriver and phillips screwdriver. Each full clockwise turn increases the vacuum level by approximately 2 inch Hg.*

Single Unit Location



Twin Unit Location



Step 4: Install filter and valve.

Note: *Recommended Range is 10" Hg - 18 Hg.*
Vacuum is preset at 12" Hg.
If reading is low check for leaks or open operatory lines.

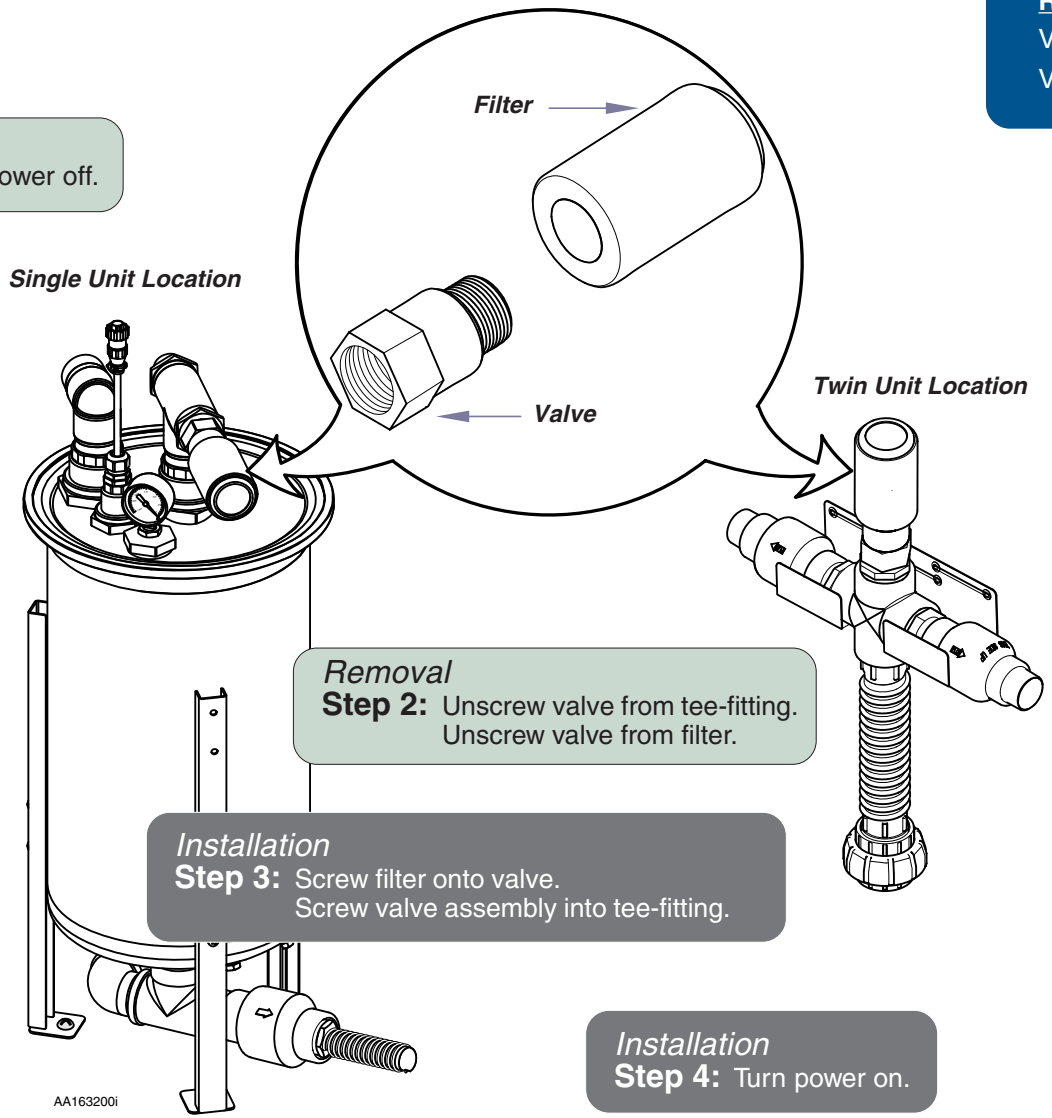
Earlier Version Shown

Vacuum Relief Valve

Replacement

Refer to: **Go To Page:**
VRV Location and Function B-9
VRV Adjustment B-10

Removal
Step 1: Turn power off.



Earlier Version Shown

Removal
Step 2: Unscrew valve from tee-fitting.
Unscrew valve from filter.

Installation
Step 3: Screw filter onto valve.
Screw valve assembly into tee-fitting.

Installation
Step 4: Turn power on.

Installation
Step 5: Perform Adjustment.
Refer to: Section B - VRV Adjustment

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

Vacuum Relief Valve

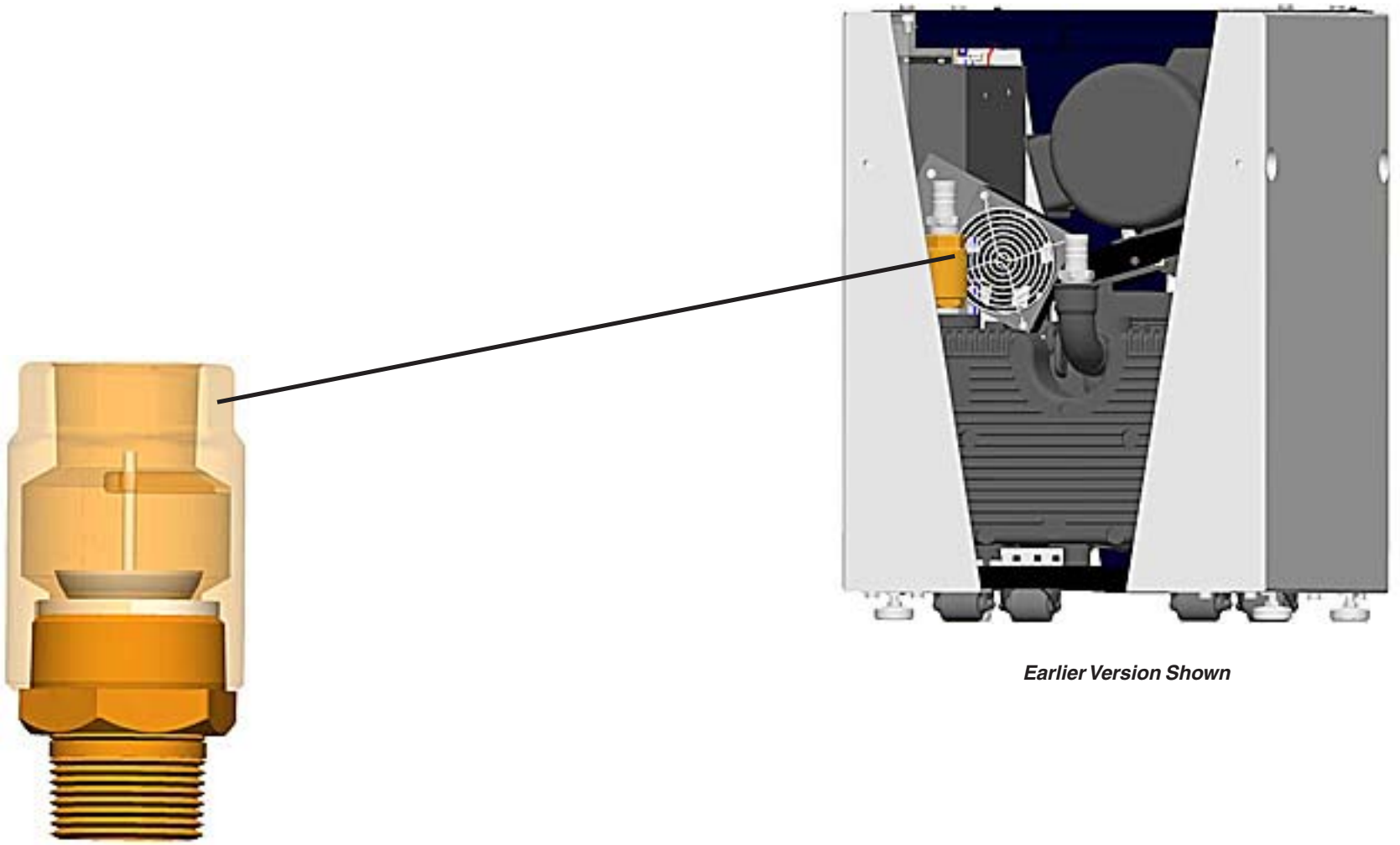
Testing & Repair

Exhaust Valve

Refer to: **Go To Page:**
Exhaust Valve Check B-13
Exhaust Valve Replacement B-14

Location and Function

The exhaust check valve provides protection for the pump. It prevents moisture from entering the pump from the exhaust line.



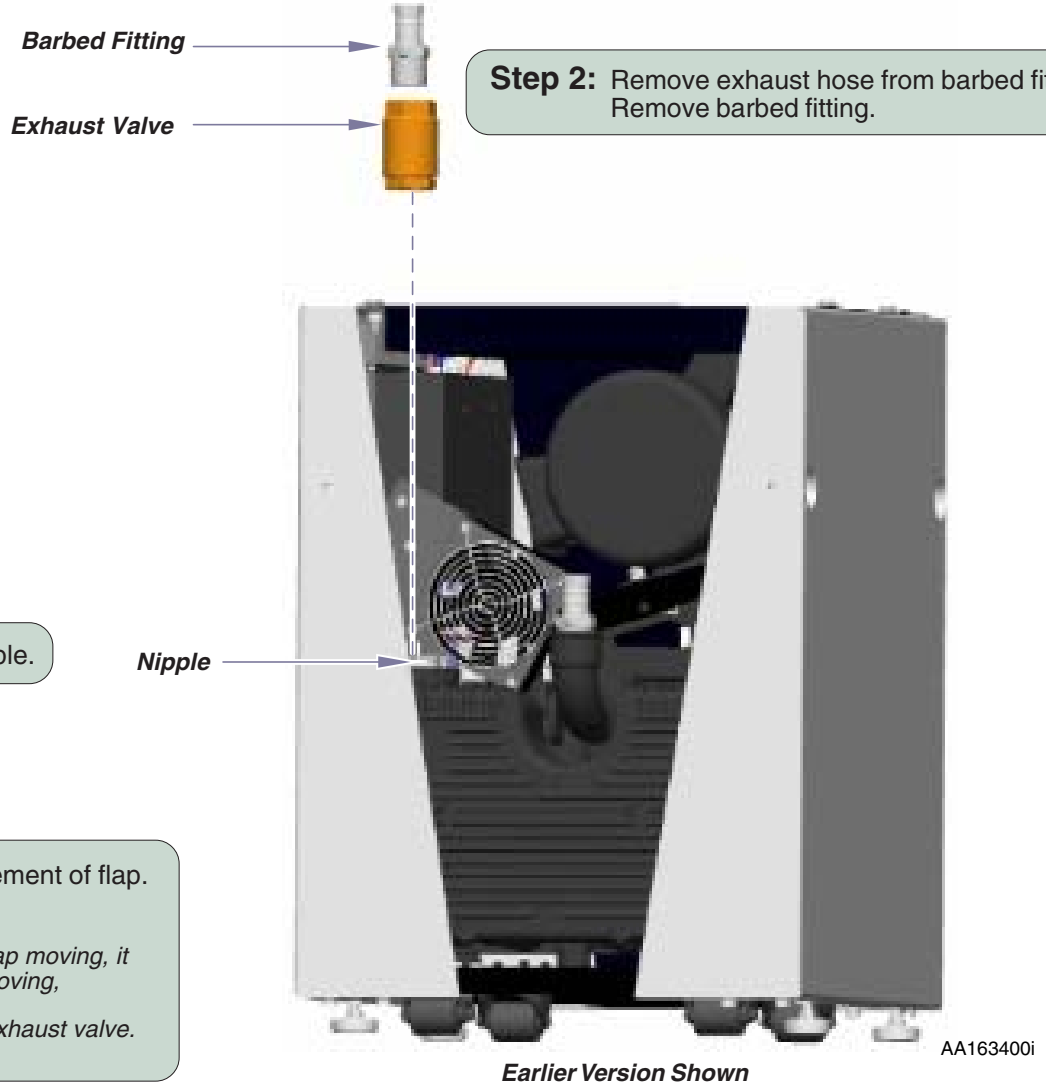
Earlier Version Shown

Exhaust Valve

Refer to: **Go To Page:**
Exhaust Valve Location and Function ... B-12
Exhaust Valve Replacement B-14

Check

Step 1: Turn power off.



Earlier Version Shown

Step 2: Remove exhaust hose from barbed fitting. Remove barbed fitting.

Step 3: Remove exhaust valve from nipple.

Step 4: Shake valve and listen for movement of flap.

Note: *If you are able to hear the valve flap moving, it is good. If valve is stuck and not moving, remove valve and clean.*
If valve will not work, replace the exhaust valve. Refer to: Section B Replacement

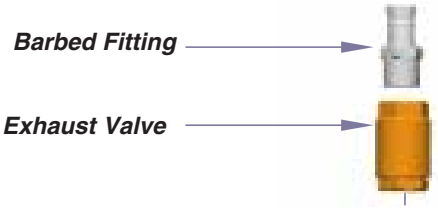
Testing & Repair

Exhaust Valve

Refer to: Go To Page:
Exhaust Valve Location and Function .. B-12

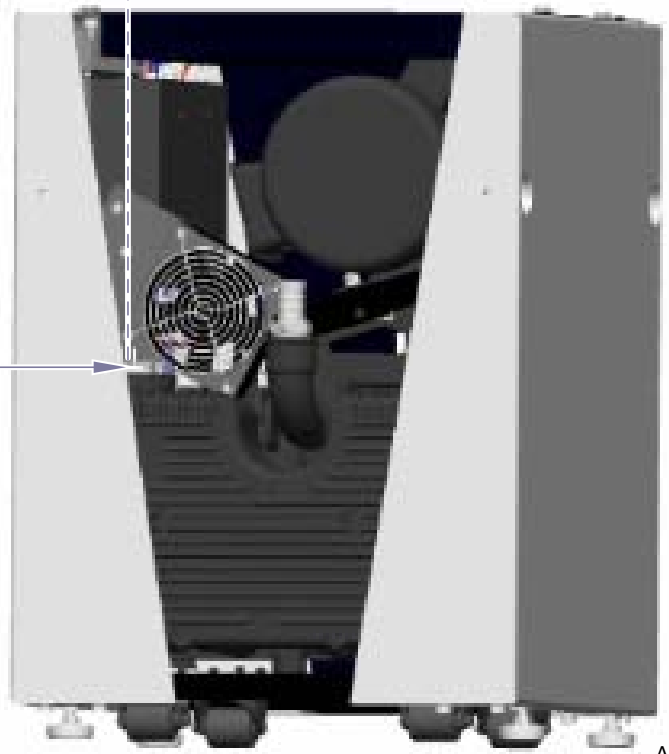
Replacement

Removal
Step 1: Turn power off.



Removal
Step 2: Remove exhaust hose from barbed fitting. Remove barbed fitting.

Installation
Step 5: Screw barbed fitting into exhaust valve. Connect exhaust hose to barbed fitting.



Earlier Version Shown

AA163400i

Removal
Step 3: Remove exhaust valve from nipple.

Installation
Step 4: Screw new exhaust valve onto nipple.

Installation
Step 6: Turn power on.

Float Assembly

Refer to: *Go To Page:*
Check Float B-16
Replace Float B-17

Location and Function

The Float Assembly contains three Float (Reed) Switches mounted on a bracket at different intervals.

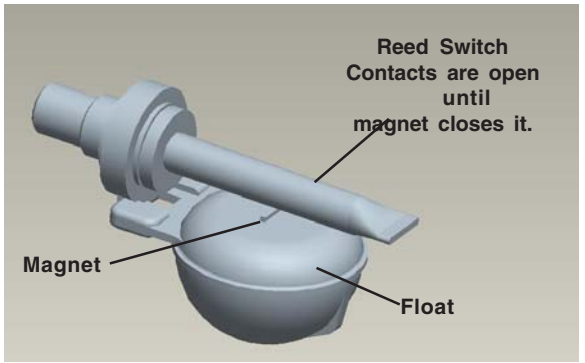
The Reed Switch has contacts that remain open until the liquid in the separator rises, causing the float to rise until the magnet contacts the Reed Switch.

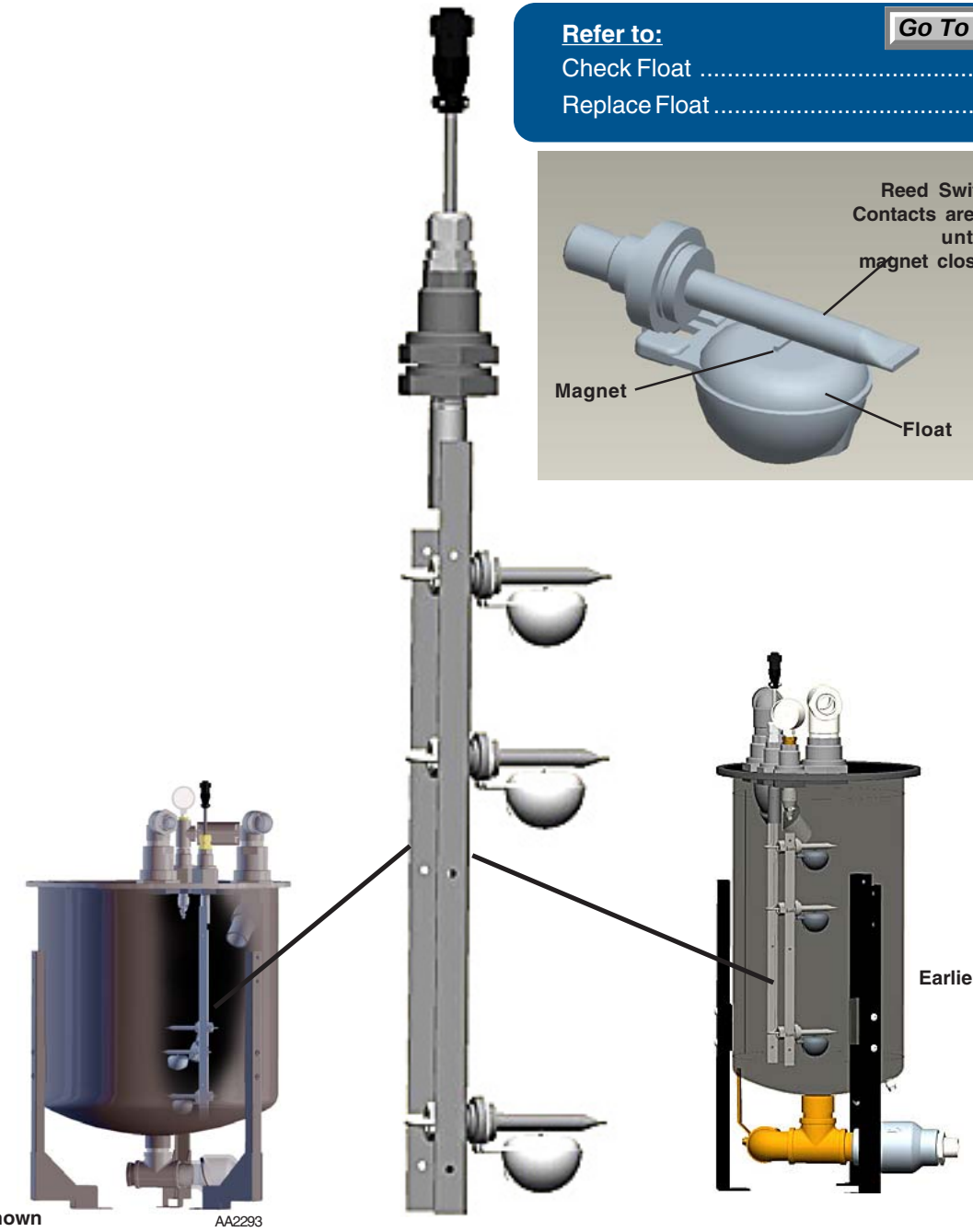
When the magnet contacts the Reed Switch, the open contacts inside the reed close.

When the top float switch closes, the fan, hour meter and vacuum pump stop running until the bottom float opens and the cycle starts again.

The upper and lower floats interact as a latching circuit with the internal relay to release upon drain below the bottom float. The magnet in the float is to activate the reed switch within the stem.

If the PowerVac® has a Liquid Evacuation Pump (Accessory) installed, it begins running when the middle float switch closes, avoiding the vacuum pump shut-off that would occur if the liquid level closed the top switch.





Earlier Versions had Three Reed Switch Floats. The Middle Float was for the Liquid Evac Pump Option. If You Have a Liquid Evac Pump Connected to the PowerVac you Must Replace Float With a Three Reed Switch Float Assembly. If There is No Evac Pump Connected to the PowerVac, You can Replace the Float With a Two Reed Switch Float Assembly.

Testing & Repair

Float Assembly

Earlier Versions had Three Reed Switch Floats. The Middle Float was for the Liquid Evac Pump Option. If You Have a Liquid Evac Pump Connected to the PowerVac you Must Replace Float With a Three Reed Switch Float Assembly. If There is No Evac Pump Connected to the PowerVac, You can Replace the Float With a Two Reed Switch Float Assembly.

Refer to: **Go To Page:**
Float Location and Function B-15
Replace Float B-17
Rinse Separator Tank B-58
Relay Test B-32

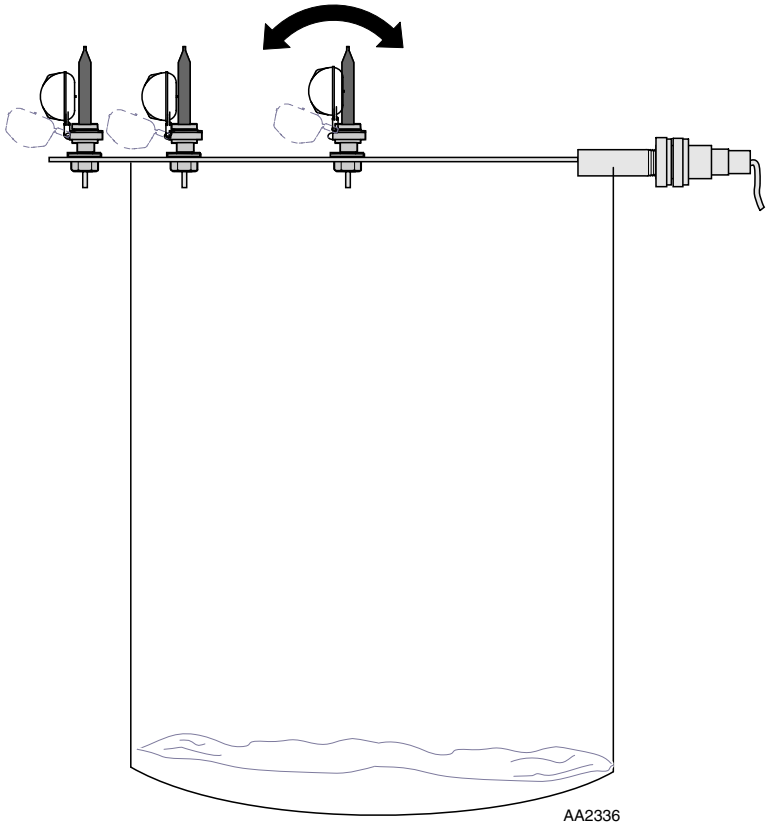
Check

To check float switches...

Note: If pump is not running, unplug float from base unit. If pump doesn't start running, test relay (Section B) if pump starts running, continue with float checks...

A) Turn power off and plug float into base unit.
B) Remove gasket on separator lid.
C) Lift lid/float assembly out of tank and lay across top of tank.
D) Turn power on.
E) Move floats to down position.
F) Raise bottom float to reed swtich, then raise top float to reed swtich. Motor should stop after top switch is raised.
G) Move top float down first, then lay bottom float down. Motor should not start until bottom float is down.

Note: Floats should move freely, if float does not work properly, replace the float assembly.



Current Version Shown

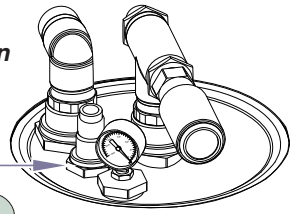
Note: *If no water in separator, but still runs when unplugged from vacuum base unit, float maybe stuck.*

Testing & Repair

Float Assembly

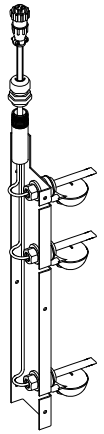
Replacement

Earlier Versions had Three Reed Switch Floats. The Middle Float was for the Liquid Evac Pump Option. If You Have a Liquid Evac Pump Connected to the PowerVac you Must Replace Float With a Three Reed Switch Float Assembly. If There is No Evac Pump Connected to the PowerVac, You can Replace the Float With a Two Reed Switch Float Assembly.



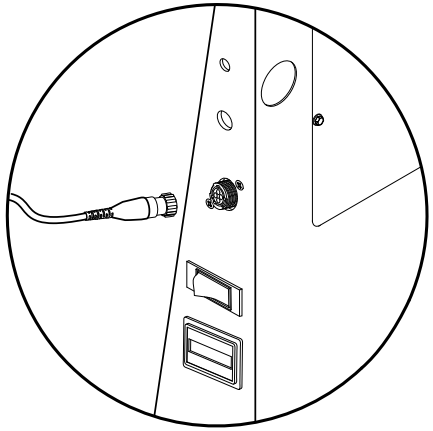
Refer to: | **Go To Page:**
Float Location and Function B-15
Check Float B-16

Removal
Step 3: Lift separator lid.
Hold onto float underneath lid.
Loosen float cord fitting on top of separator.
Float will come down into your hand.

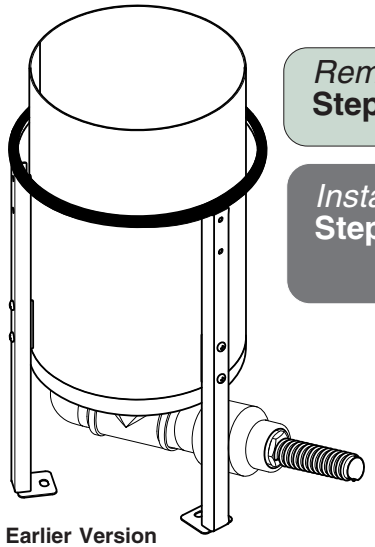


Installation
Step 4: Insert new float assembly up through separator lid.
Tighten float cord fitting on top of separator.

Removal
Step 1: Turn power off.
Unplug float cord.



Installation
Step 6: Plug in float cord to vacuum base unit.
Turn power on.



Earlier Version Shown

Removal
Step 2: Pull gasket down off separator lid.

Installation
Step 5: Set lid on separator.
Install gasket.

AA163700i

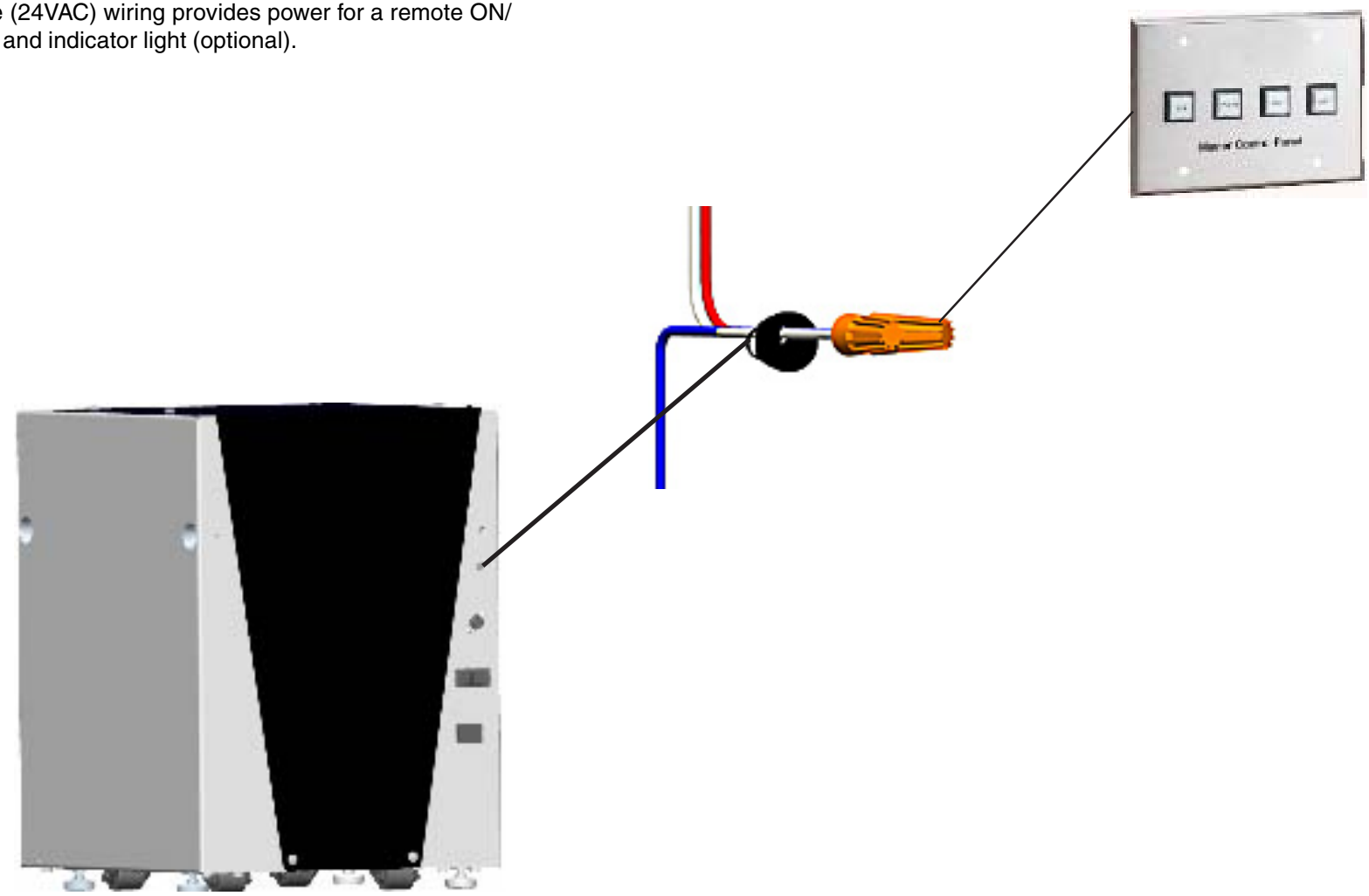
Testing & Repair

Master Control Panel and Low Voltage

Refer to: **Go To Page:**
Master Control Panel Test B-19
Low Voltage Test B-20

Location and Function

Wiring for Remote ON/OFF Switch, Master Control Panel
Low voltage (24VAC) wiring provides power for a remote ON/OFF switch and indicator light (optional).



AA163400i ***Earlier Version Shown***

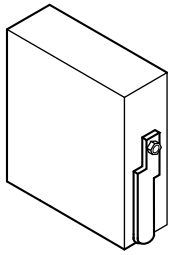
Master Control Panel

Test

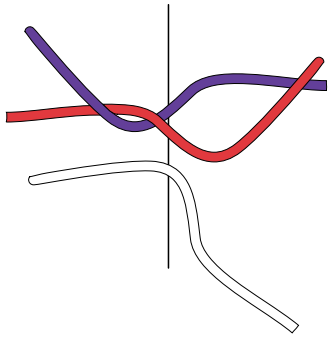
Caution
When testing components with power on use care to prevent electrical shock.

Refer to: **Go To Page:**
Location and Function B-18
Low Voltage Test B-20

Step 1: Disconnect power at on/off switch and main power supply box.



Step 2: Bypass the remote switch to verify it is not defective. Disconnect the Red and Blue wires from the remote switch. Connect the Blue and Red wires together.



Step 3: Connect power to the PowerVac®
Turn the On/Off switch On.

Note: *If the fan, hour meter and pump start running then replace the remote switch.*

Earlier Version Shown

AA163500i

Testing & Repair

Low Voltage

Test

Caution
When testing components with power on use care to prevent electrical shock.

Refer to: **Go To Page:**
Location and Function B-18
Master Control Panel Testing B-19
Access Procedrues C-1

Step 1: Turn power off.

Step 2: Remove electrical cover.

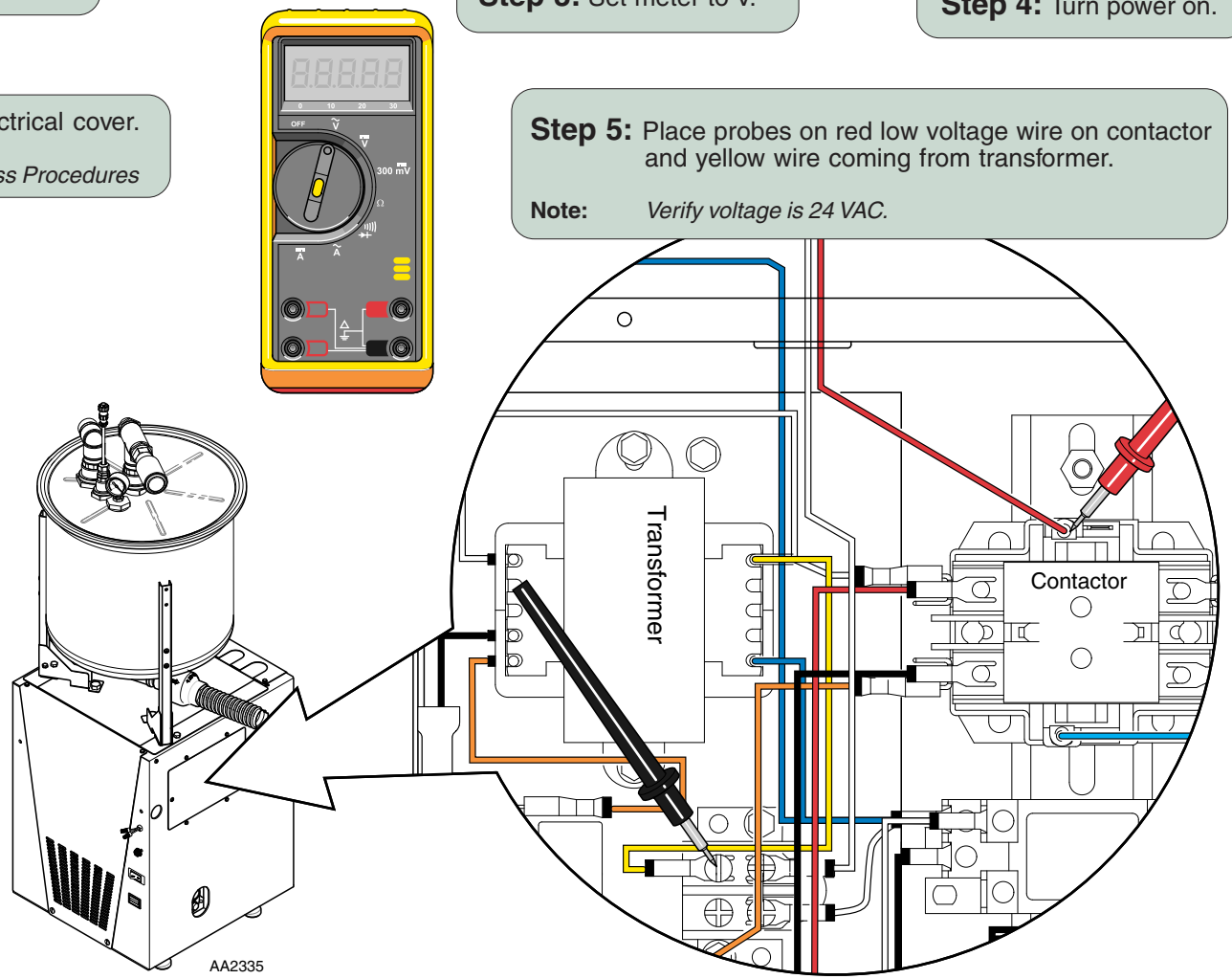
Refer to: Section C Access Procedures

Step 3: Set meter to $\tilde{V}$.

Step 4: Turn power on.

Step 5: Place probes on red low voltage wire on contactor and yellow wire coming from transformer.

Note: *Verify voltage is 24 VAC.*



Door Limit Switch & PowerVac® Circuit Breaker (ON/OFF Switch)

Refer to: **Go To Page:**
Door Limit Switch Testing B-22
Circuit Breaker (On/Off) Testing B-23
Door Limit Switch Replacement B-24
Circuit Breaker Replacement (On/Off) B-25

Location & Function

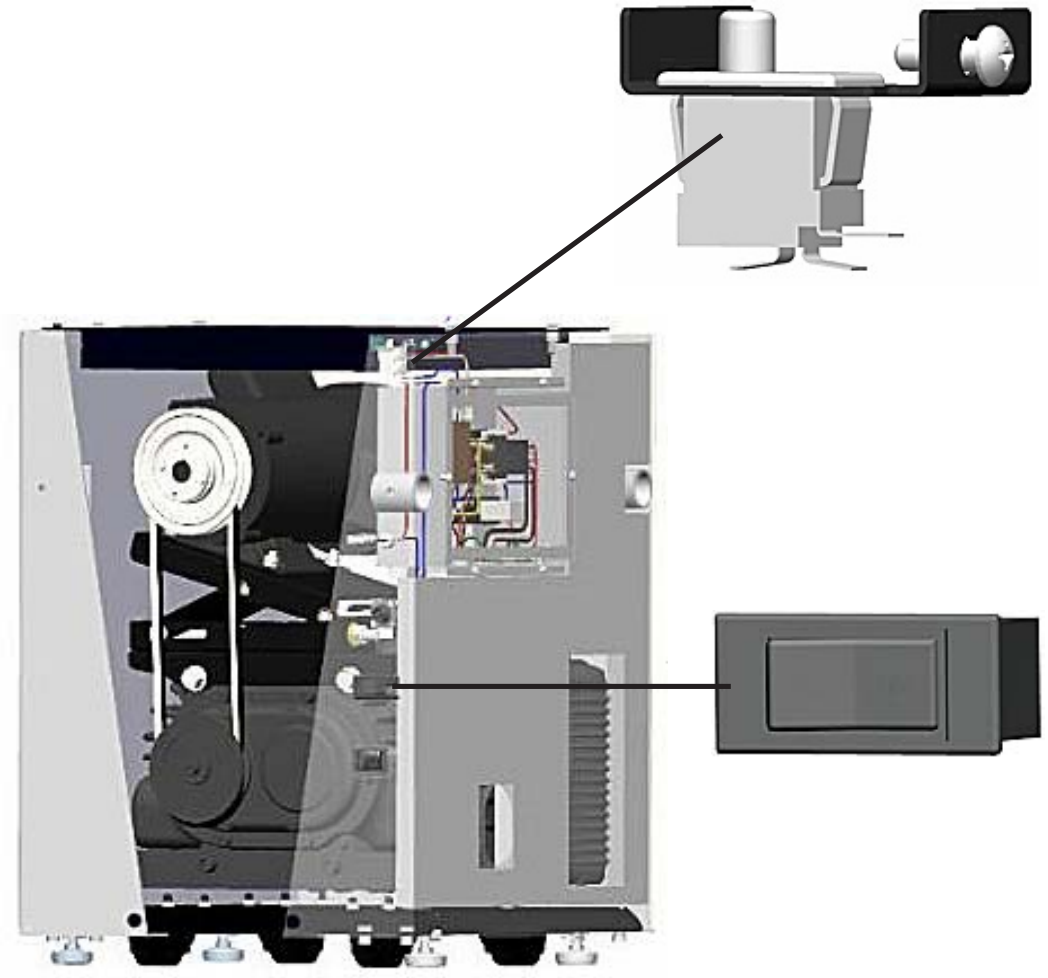
With facility power (230 VAC) supplied to the system....
The transformer continuously supplies 24 VAC to the normally-open door limit switch.

With the front access cover in place...
The plastic bumper on the top right side of the access cover, trips the door limit switch causing it to close.

When the limit switch is closed, 24 VAC flows thru the switch to the PowerVac® circuit breaker *(ON / OFF Switch)*. With the circuit breaker switch ON, current is supplied to the remote wall switch *(if applicable)*.

Note: *If the facility does not have a remote wall switch, the PowerVac® circuit breaker serves as the ON/OFF switch for the system.*

When the front access cover is removed...
The door limit switch opens and stops current flow to the PowerVac® circuit breaker. This is a safety feature that prevents the system from operating with the cover removed.



Earlier Version Shown

Testing & Repair

Door Limit Switch

Testing

Step 1: Turn power off.

Step 2: Remove front cover.
Refer to: Section C Front Cover.

Refer to: **Go To Page:**

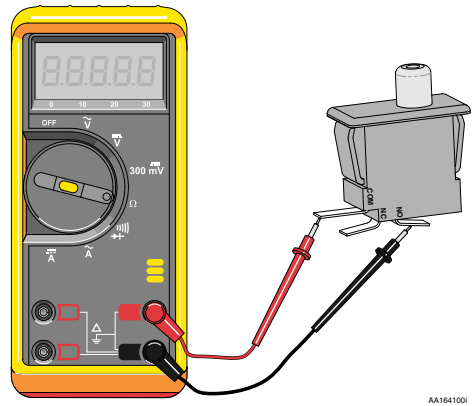
Caution

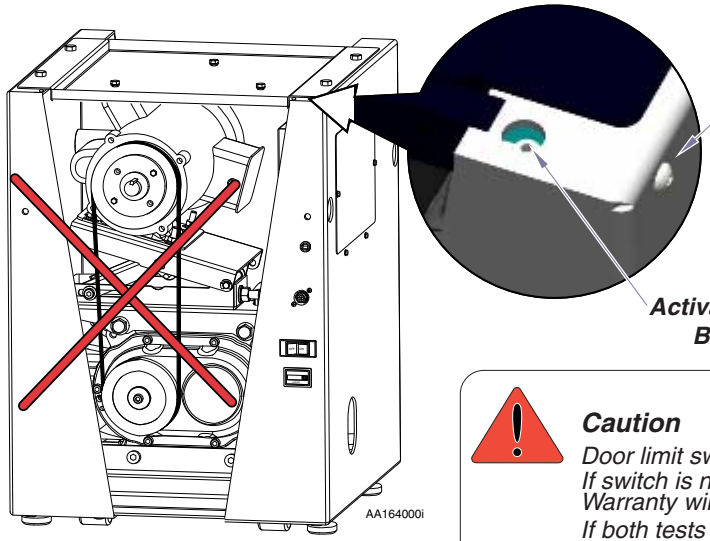
During this step, the motor belt and pulley may spin with front cover off.
Stay clear and keep everything out of the vacuum base!

Step 3: Turn power on and depress activation button with a screwdriver.

Note: *If motor starts up, quickly take pressure off switch.*
Plastic bumper may be obstructed or damaged.
Check plastic bumper on door for damage.
If it is damaged, switch it with plastic bumper on opposite side of door until a replacement can be ordered.
If motor doesn't start, continue with step 4.

Step 4: Turn power off.





Caution
When testing components with power on use care to prevent electrical shock.

Step 5: Remove mounting screw for door limit switch. Disconnect electrical leads.

Limit Switch Test

Step 6: Test continuity. Set meter to **Ω.**
Place meter probes on ***COM*** *and* ***NO*** terminals.

Note: *Check switch 'tripped' and 'untripped'.*

Caution

Door limit switch is a safety device.
If switch is not working, do not bypass.
Warranty will be void if switch is bypassed.
If both tests fail, it must be replaced!

Step 7: Install front cover.

With switch 'untripped'...

Meter Reading	*Status*	*Required Action*
OL		Limit switch - OK
less than 5 Ω		Replace switch

With switch 'tripped'...

Meter Reading	*Status*	*Required Action*
OL		Replace switch
less than 5 Ω		Limit switch - OK

Circuit Breaker (ON/OFF Switch)

Testing

Step 1: Turn power off.

Step 2: Remove front cover.
Refer to: Section C Front Cover.

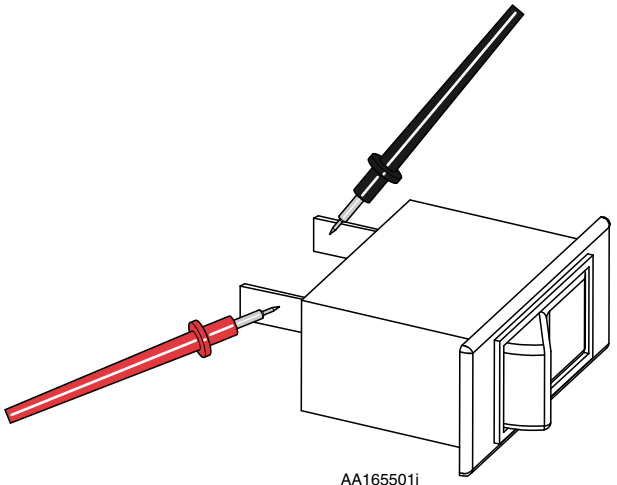
Caution
When testing components with power on use care to prevent electrical shock.

Refer to: — **Go To Page:**
Door Limit / Circuit Breaker Function B-19
Door Limit Switch Testing B-20
Door Limit Switch Replacement B-22
Circuit Breaker Replacement (On/Off) .. B-23
Front Cover C-2

Circuit Breaker Test

Step 3: Test continuity. Set meter to **Ω.**
Disconnect leads from switch terminals.
Place meter probes on ***COM*** *and* ***NO*** terminals.

Note: *Check switch 'tripped' and 'untripped'.*


AA165501i

Step 4: Connect switch leads.
Install front cover.

With switch 'tripped'...

Meter Reading	*Status*	*Required Action*
OL		Replace Circuit Breaker
less than 5 Ω		Circuit Breaker is Good

Meter Reading	*Status*	*Required Action*
OL		Circuit Breaker is Good
less than 5 Ω		Replace Circuit Breaker

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

Testing & Repair

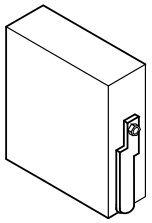
Door Limit Switch

Replacement

Caution
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.
Vacuum system must not have power when front cover is off base unit.

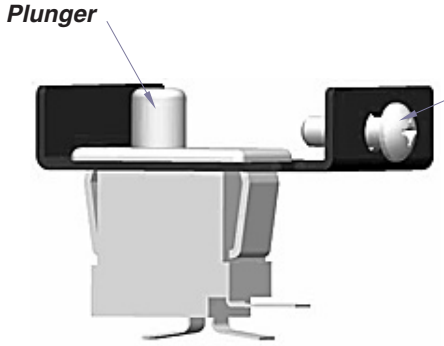
Refer to: | **Go To Page:**
Door Limit / Circuit Breaker Function .. B-21
Door Limit / Circuit Breaker Testing B-22
Circuit Breaker (On/Off) Testing B-23
Circuit Breaker Replacement (On/Off) B-25
Front Cover C-2

Removal
Step 1: Disconnect power at on/off switch and main power supply box.

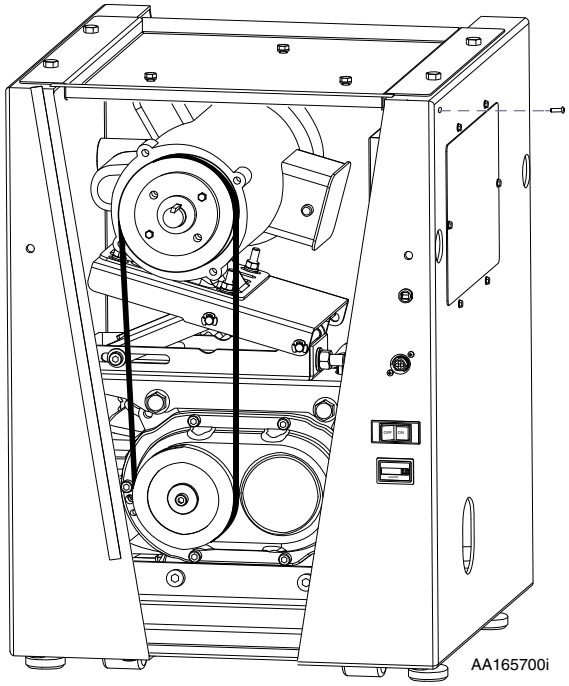


WARNING
Motors installed after 12/08 are thermally protected with automatic reset. Unit may start without warning.

Removal
Step 3: Disconnect wires from limit switch.



Removal
Step 2: Remove front cover.
Refer to: Section C Front Cover



Installation
Step 6: Connect wiring to limit switch.

Removal
Step 4: Remove mounting screw and pull out limit switch and bracket. Remove switch from bracket.

Installation
Step 5: Align limit switch with hole in side panel and plunger away from mounting screws. Install mounting screw as shown.

Installation
Step 7: Install front cover.

Installation
Step 8: Turn power source on.

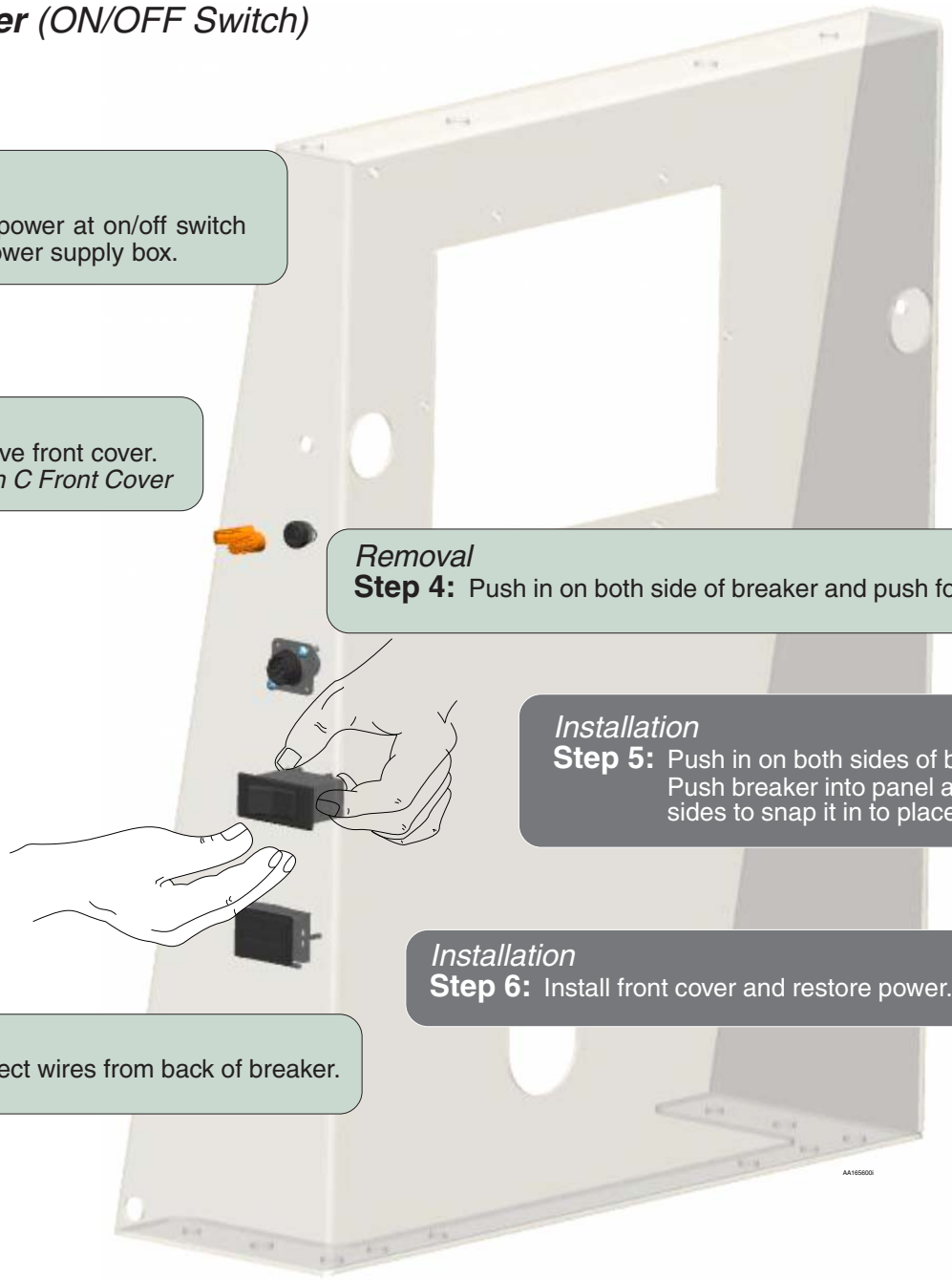
Circuit Breaker *(ON/OFF Switch)*

Replacement

Refer to: **Go To Page:**
Door Limit / Circuit Breaker Function B-19
Door Limit Switch Test B-20
Circuit Breaker (On/Off) Testing B-21
Door Limit Switch Replacement B-22
Front Cover C-2

Removal
Step 1: Disconnect power at on/off switch and main power supply box.

Removal
Step 2: Remove front cover.
Refer to: Section C Front Cover



Removal
Step 4: Push in on both side of breaker and push forward to pull out of panel.

Installation
Step 5: Push in on both sides of breaker. Push breaker into panel and release sides to snap it in to place.

Installation
Step 6: Install front cover and restore power.

Removal
Step 3: Disconnect wires from back of breaker.

Models: All
Serial Numbers:

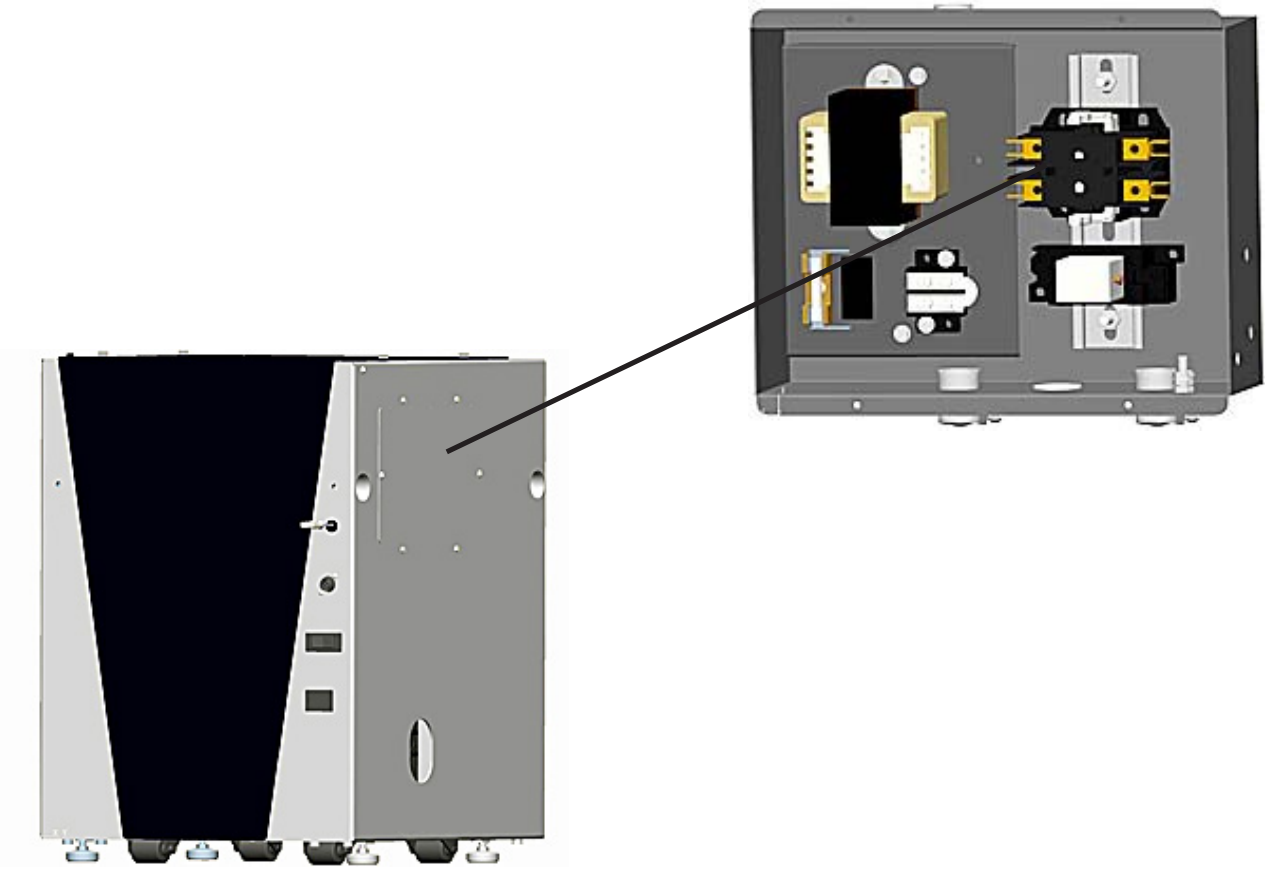
Testing & Repair

Contactor

Refer to: **Go To Page:**
Contactor Testing B-27

Location and Function

When the PowerVac® is turned on either by the remote wall switch or vacuum unit on/off switch, the Contactor is energized. It sends current to the fan, hour meter and pump, turning them on.



Earlier Version Shown

Testing & Repair

Contactor

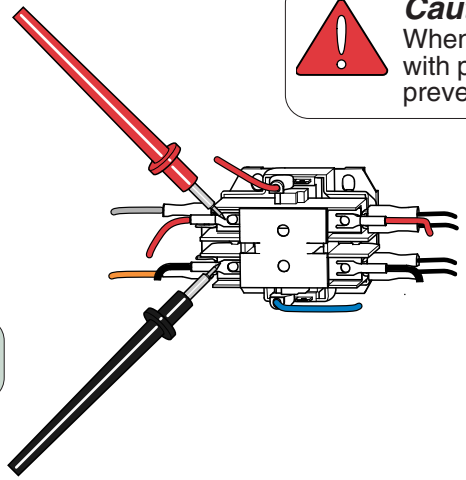
Test

Caution
When testing components with power on use care to prevent electrical shock.

Refer to: **Go To Page:**
Contactor Location and Function B-26
Electrical Cover C-4

Step 1: Turn power off.

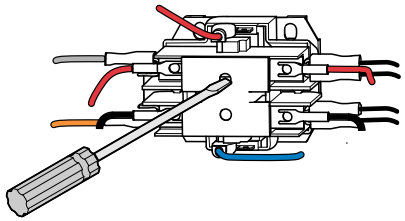
Step 2: Remove electrical cover.
Refer to Section C: Electrical Cover.



Step 3: Turn power on.

Step 4: Check high voltage on contactor.
- Set meter to V̂.
- Place meter probes on front, left side red and black wires.

Note: Verify reading is line volts.

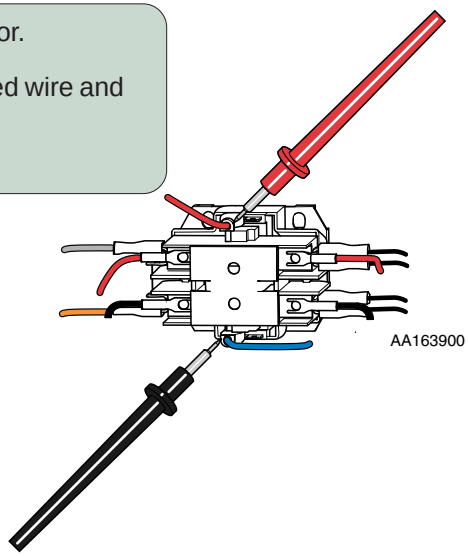


Step 6: Insert screwdriver to start manually.

Note: if system starts, replace contactor.

Step 5: Check voltage across contactor.
- Set meter to V.
- Place meter probes on top red wire and bottom black wire.

Note: Verify reading is 24 volts.



Step 7: Install electrical cover.

Note: Line Voltage shoud be 208 - 230 VAC with circuit loaded (equipment running)

Meter Reading	*Status*	*Required Action*
Line Volts *(Left side check)*		Contactor OK
24 Volts *(Top and Bottom check)*		Contactor OK

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

Contactor

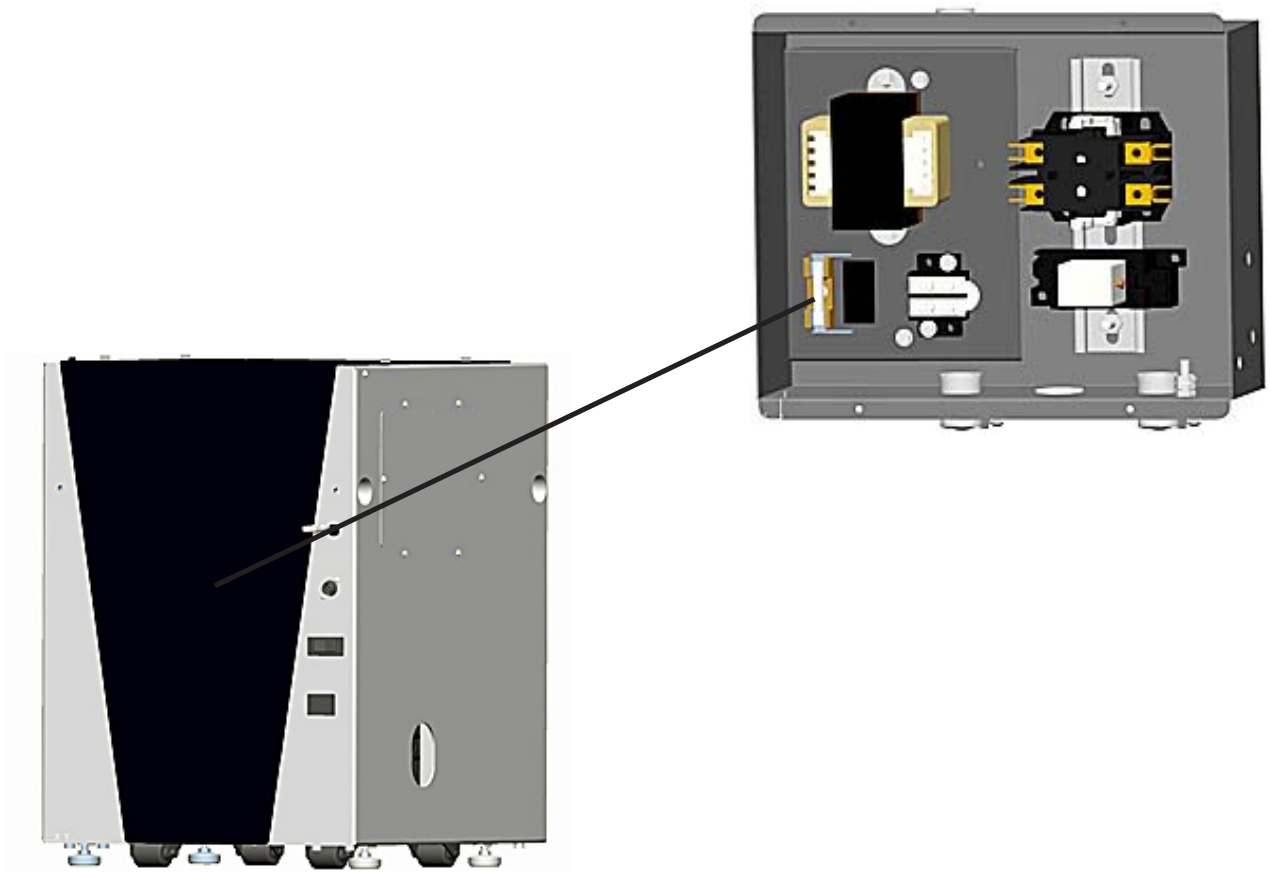
Testing & Repair

Fuse

Refer to: **Go To Page:**
Fuse Testing B-29
Fuse Replacement B-30

Location and Function

The fuse limits the electrical current from the transformer to the contactor. It interrupts the electrical currents in the case of an overload.
Only replace fuse with 1/8 amp, 250 volt, Slo Blo, fuse.



Earlier Version Shown

Fuse

Testing

Refer to: **Go To Page:**
Fuse Location and Function B-28
Fuse Replacement B-30
Electrical cover C-4

Step 1: Turn power off.

Step 2: Remove electrical cover.
Refer to Section C: Electrical Cover.

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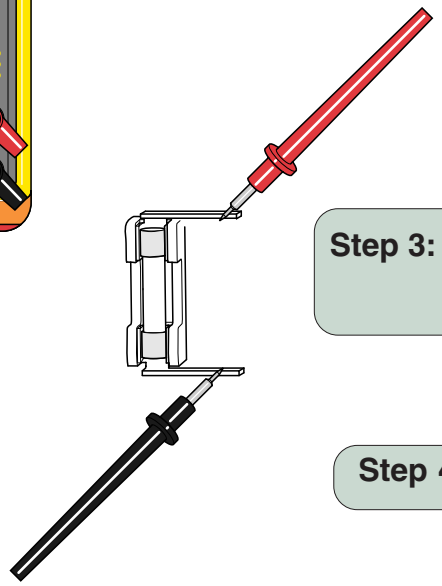


Step 3: Remove terminal leads.
Test continuity. Set meter to **Ω.**
Place meter probes on both fuse terminals.

Step 4: Visually check fuse to see if it is burnt or broken.

Meter Reading	*Status*	*Required Action*
OL - off line Burnt or Broken		Replace Fuse
Continuity checks ok Visually looks ok		Fuse is Good

Step 5: Install electrical cover.

Testing & Repair

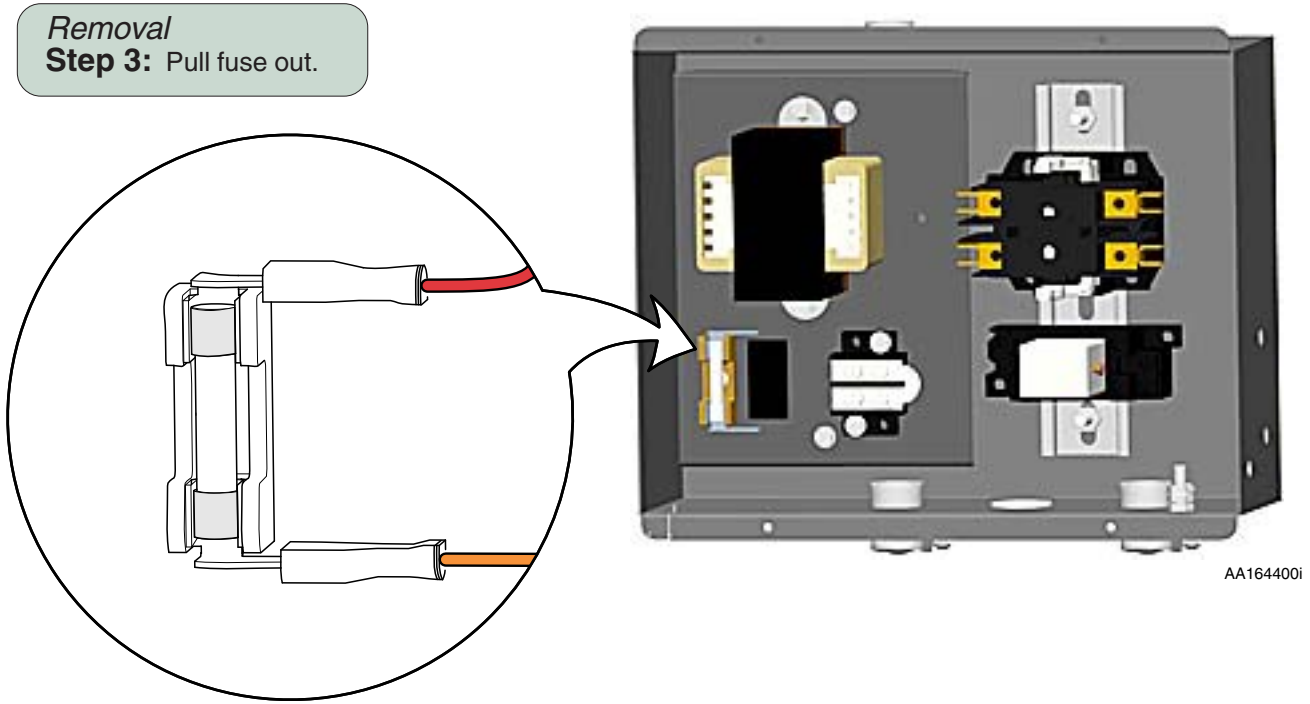
Fuse

Replacement

Removal
Step 1: Turn power off.

Removal
Step 2: Remove electrical cover.
Refer to: Section C - Electrical Cover

Removal
Step 3: Pull fuse out.



Installation
Step 4: Insert new fuse and perform continuity test.
Refer to: Section B Fuse Test

Installation
Step 5: Install electrical cover.

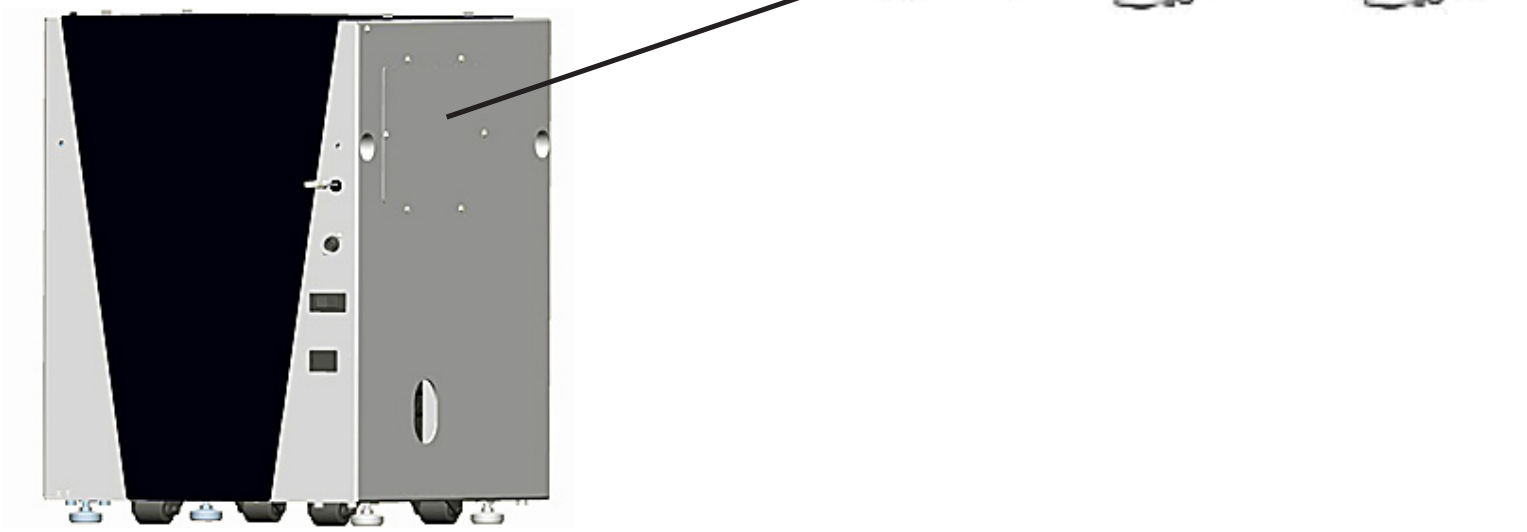
Refer to: **Go To Page:**
Fuse Location and Function B-28
Fuse Testing B-29
Electrical cover C-4

Relay

Refer to: **Go To Page:**
Relay Testing B-32
Relay Replacement B-33

Location and Function

Power is disconnected from the Contactor when the relay is energized by the top float switch closing (water level reaching top float switch).
The PowerVac® electrical system can be checked by pressing the test button on the side. If the unit shuts down, the rest of the electrical system is functioning properly.



Earlier Version Shown

Testing & Repair

Relay

Test

Note: *If the motor is **not shutting off** when the top collection tank float is actuated, check relay by pressing the Test Button.*
*If the motor is **not running**, By-Pass Relay to check operation.*

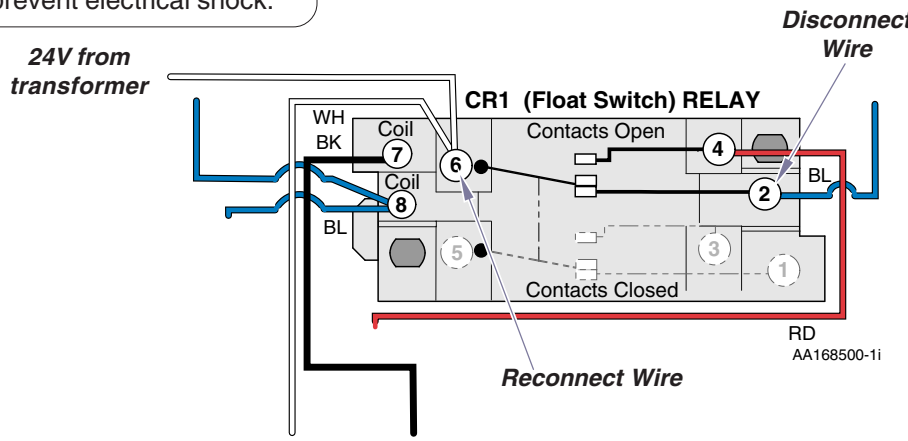
Refer to: **Go To Page:**

Caution
When testing components with power on use care to prevent electrical shock.

Relay Test Button. (Motor not off with top float actuated)

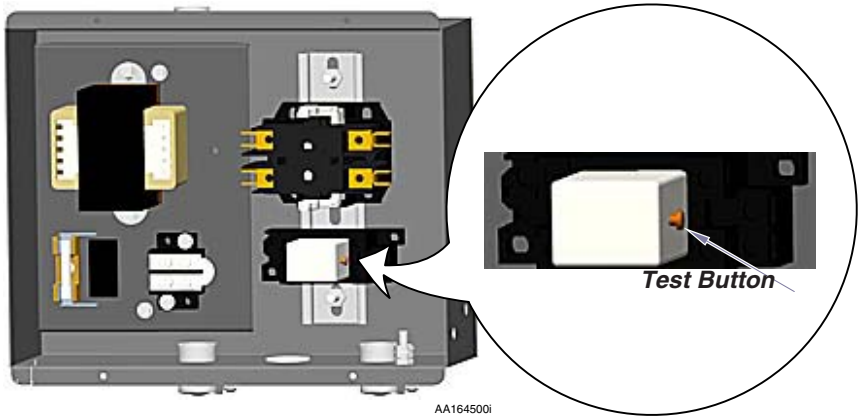
Step 1: Turn power off.
Step 2: Remove electrical cover. *Refer to Section C: Electrical Cover.*
Step 3: Verify all wire connections are secure to relay.
Step 4: Turn power on.
Step 5: Push in test button on side of relay, if unit shuts down, relay is bad.

Note: *If the unit does not shut down when top float is activated, but shuts off properly when the relay test button is pressed, the coil in the relay is likely defective (barring any other wiring issues). The light on the relay is only an indicator that there is power to the coil.*



By-Pass Relay Test

Step 1: Turn power off.
Step 2: Disconnect blue wire from Relay(2) and connect wire to left side of Relay(6) which has a direct feed from the transformer.
Step 3: Turn power on.



Test Results	Status	Required Action
Unit Starts when Relay Is By-Passed		Replace Relay
With the Top Collection Tank Float Actuated, Unit Only Shuts OFF When Relay Test Button is Depressed		Replace Relay

Relay

Models: All
Serial Numbers:

Relay

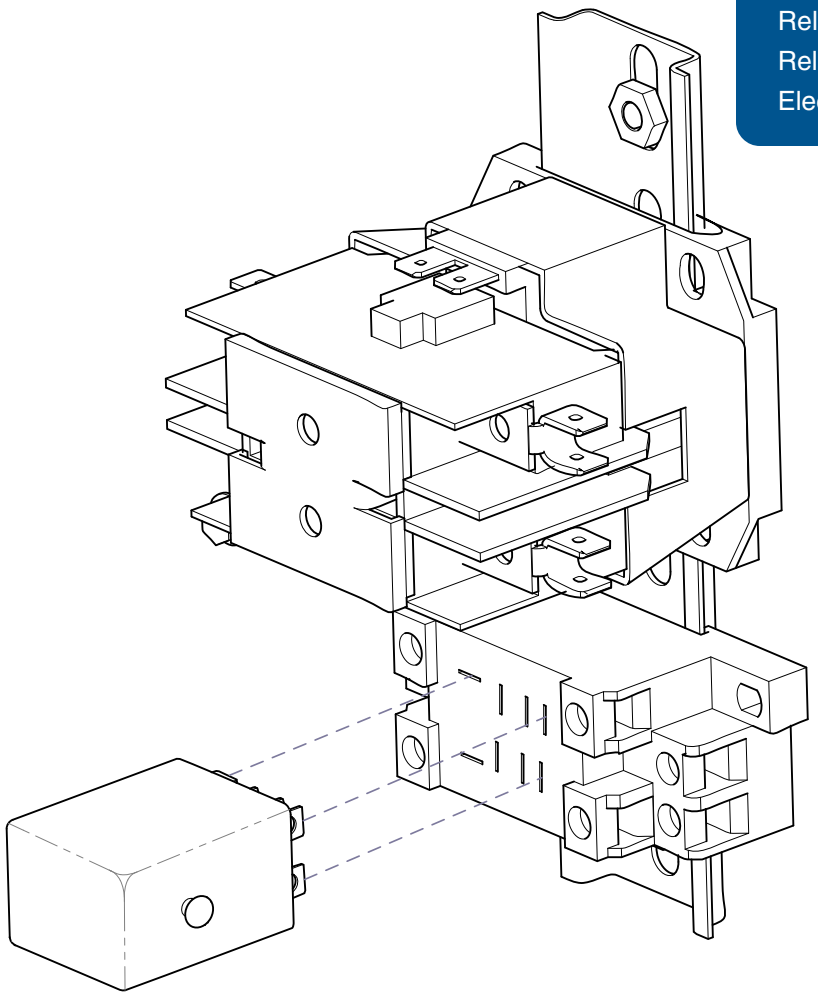
Replacement

Refer to: **Go To Page:**
Relay Location and Function B-30
Relay Testing B-31
Electrical cover C-4

Removal
Step 1: Disconnect power at on/off switch and main power supply box.

Removal
Step 2: Remove electrical cover.
Refer to Section C: Electrical Cover.

Removal
Step 3: Unplug relay from base.



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Installation
Step 5: Install electrical cover.

Installation
Step 4: Plug in new relay. Restore power.
Push in test button to verify unit shuts down after turning power on.

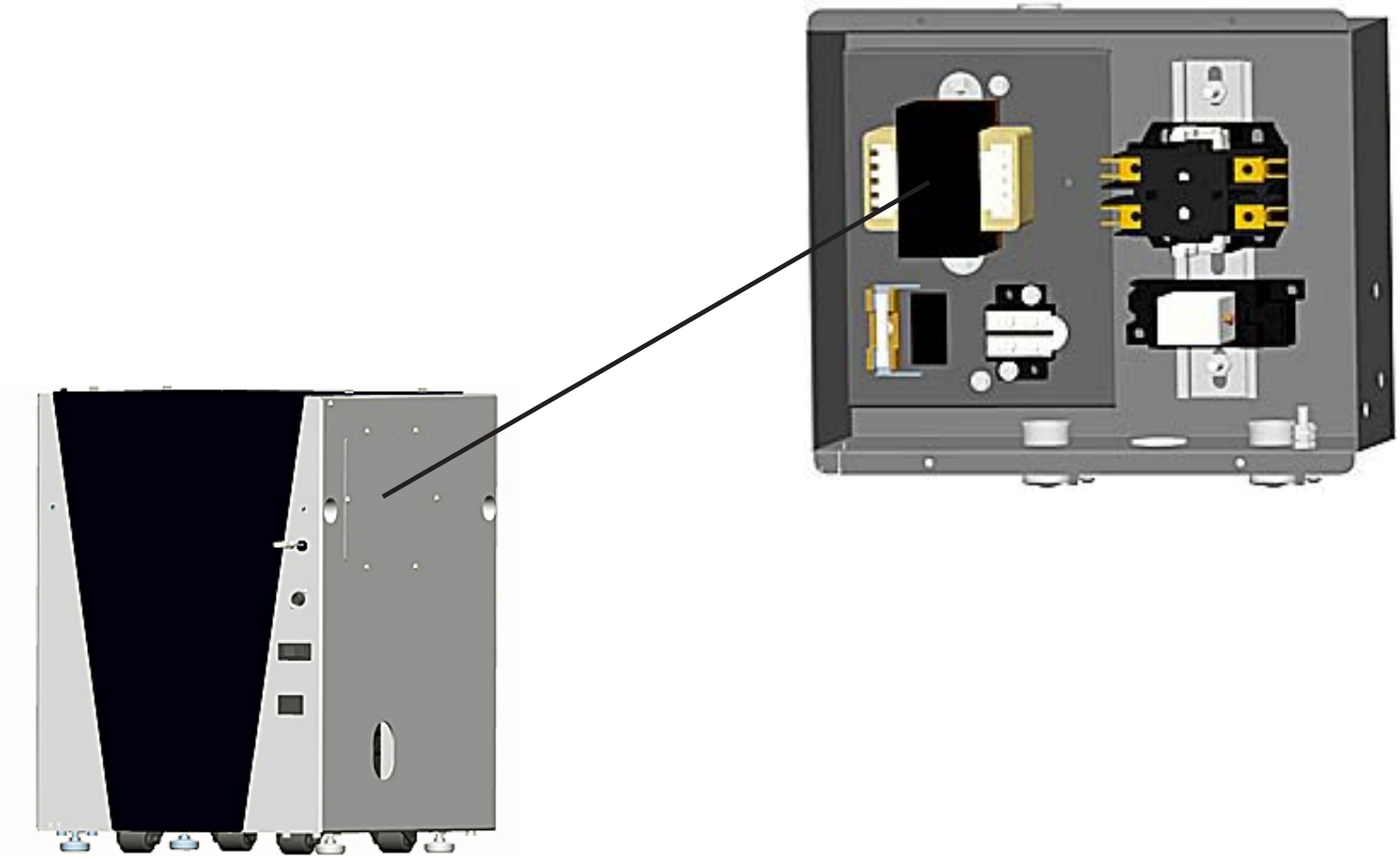
Testing & Repair

Transformer

Refer to: **Go To Page:**
Transformer Testing B-35
Transformer Replacement B-36

Location and Function

The Transformer steps the 230 VAC supply down to 24 VAC. This is the voltage at the relay and terminal block.



Earlier Version Shown

Testing & Repair

Transformer

Testing

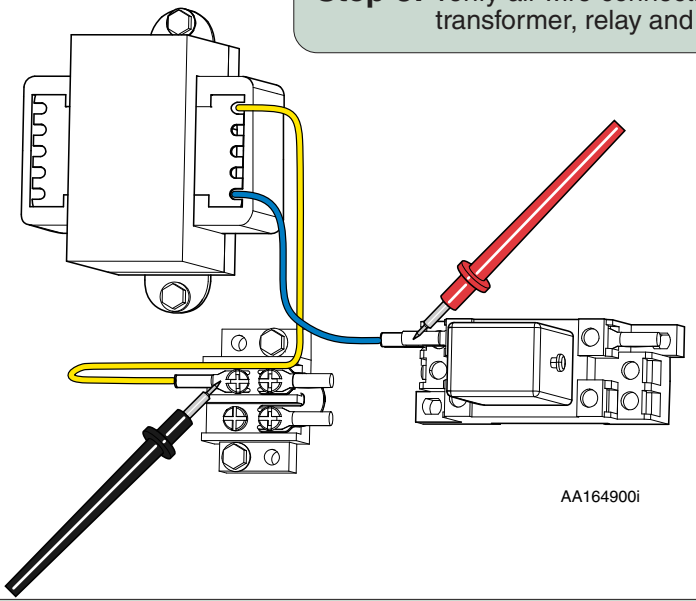
Caution
When testing components with power on use care to prevent electrical shock.

Refer to: **Go To Page:**
Transformer Location and Function B-34
Transformer Replacement B-36
Electrical cover C-4

Step 1: Turn power off.

Step 2: Remove electrical cover.
Refer to Section C: Electrical Cover.

Step 3: Verify all wire connections are secure to transformer, relay and terminal block.



Step 4: Feel transformer to verify it is not hot.
If it is hot, allow it to cool off.

Note: Transformer has a internal non-resetting overload fuse. If transformer is hot to touch, allow to cool before testing. If it's hot check ambient operating temp and input / output voltage. Verify abient room temperature doesn't exceed 104° Fahrenheit (37 Celsius).

Step 5: Turn power on.

Step 6: Check low voltage on transformer connections.
- Set meter to V.
- Place meter probe on yellow wire connection from transformer to terminal block.
- Place meter probe on blue wire connection from transformer to relay.

Note: Verify reading is 24 volts (-2 / +4).

Meter Reading	*Status*	*Required Action*
Exceeds 24 Volts -2 / +4		Replace Transformer
Within 24 Volts -2 / +4		Transformer is Good

Step 7: Install electrical cover.

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

Testing & Repair

Transformer

Replacement

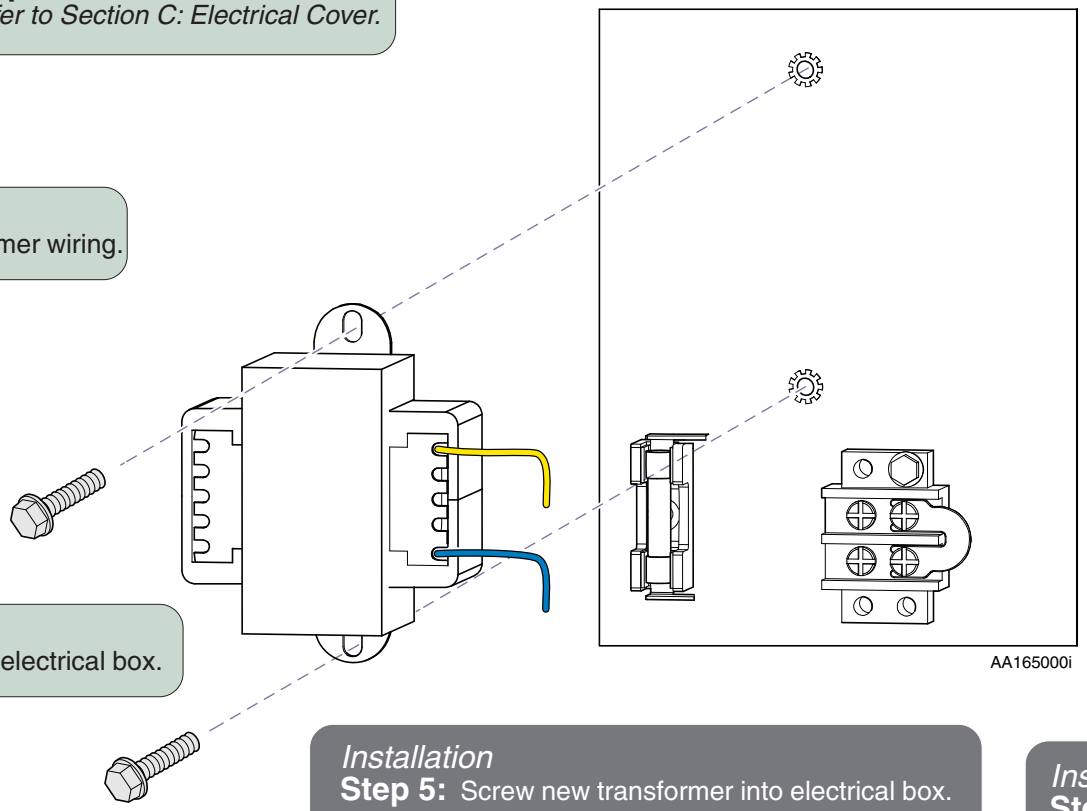
Refer to: **Go To Page:**
Transformer Location and Function B-33
Transformer Testing B-35
Electrical cover C-4

Removal
Step 1: Disconnect power at on/off switch and main power supply box.

Removal
Step 2: Remove electrical cover.
Refer to Section C: Electrical Cover.

Removal
Step 3: Disconnect all transformer wiring.

Removal
Step 4: Unscrew transformer from electrical box.



Installation
Step 5: Screw new transformer into electrical box.

Installation
Step 6: Connected wiring.

Installation
Step 7: Install electrical cover. Resotre power.

Fans

Refer to: **Go To Page:**
Fan Testing B-38
Fan Replacement (Earlier Version) B-39
Fan Replacement (New Version) B-40

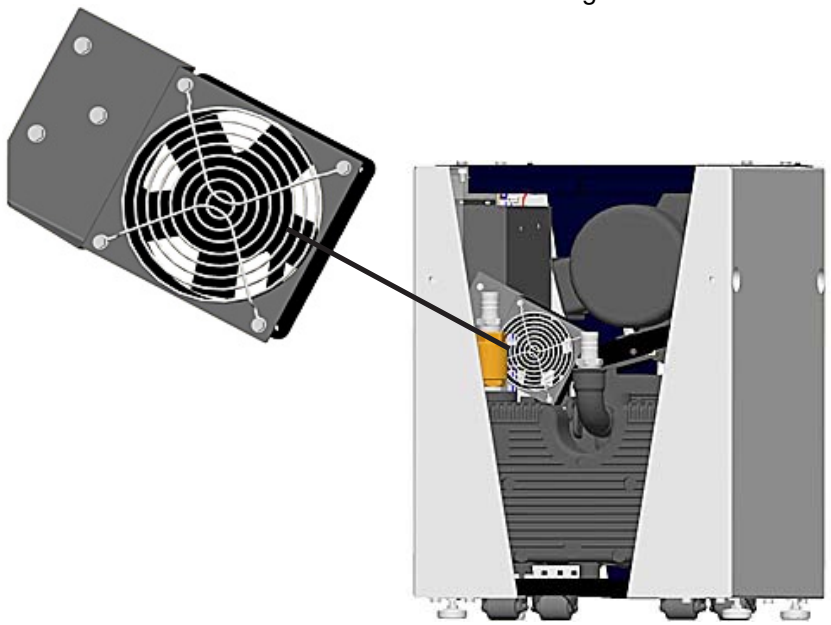
Location and Function

Depending on the version of PowerVac® you have, single or dual fans are used to cool the base unit by circulating air whenever the pump is running. The ON/OFF function of the fans are controlled by the CR1 relay.

With the CR1 Relay OPEN (light OFF), 230 VAC is supplied to the fan(s) thru Contactor "C". When voltage is applied to the fan(s), the fan(s) is energized.+

With the CR1 Relay CLOSED (light ON) there is no current flow to the Contactor "C" or to the fan(s). The fan(s) do not run.

Fans in the earlier version of PowerVac® models are located on a mounting bracket above the pump. Dual fans on newer versions are located on the back cover and are wired in parallel with the same electrical box connections as the single fan unit.



Earlier Version

New Version

Testing & Repair

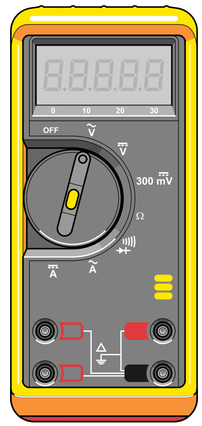
Fan

Testing (if fan is not running)

Step 1: Disconnect power at on/off switch and main power supply box.

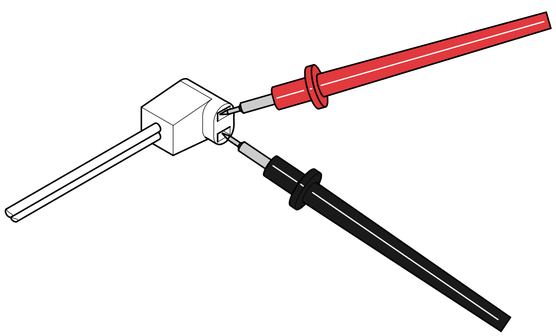
Step 2: Newer Versions - Remove back cover. *Refer to Section C: Back Cover.*

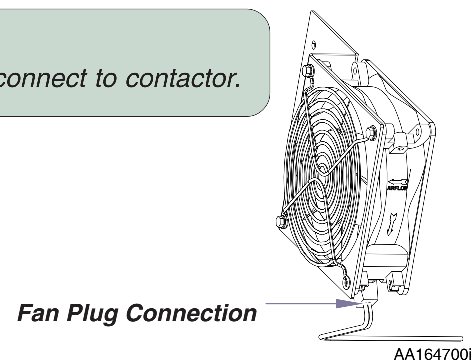
Step 3: Set meter to $\tilde{V}$.



Caution
When testing components with power on use care to prevent electrical shock.

Step 4: Unplug harness from fan. Turn power on at base unit and supply power box.
Note: Verify pump is running. If pump is not running, Check for 230 volts where fan(s) connect to contactor.





Step 5: Verify fan harness connection to contactor is tight and not loose. Check voltage in fan harness.

Note: Verify reading is 230 volts.

Meter Reading	Required Action
230 Volts	Replace Fan
<230 Volts	Replace Harness

Fan

Replacement (Earlier Versions Only)

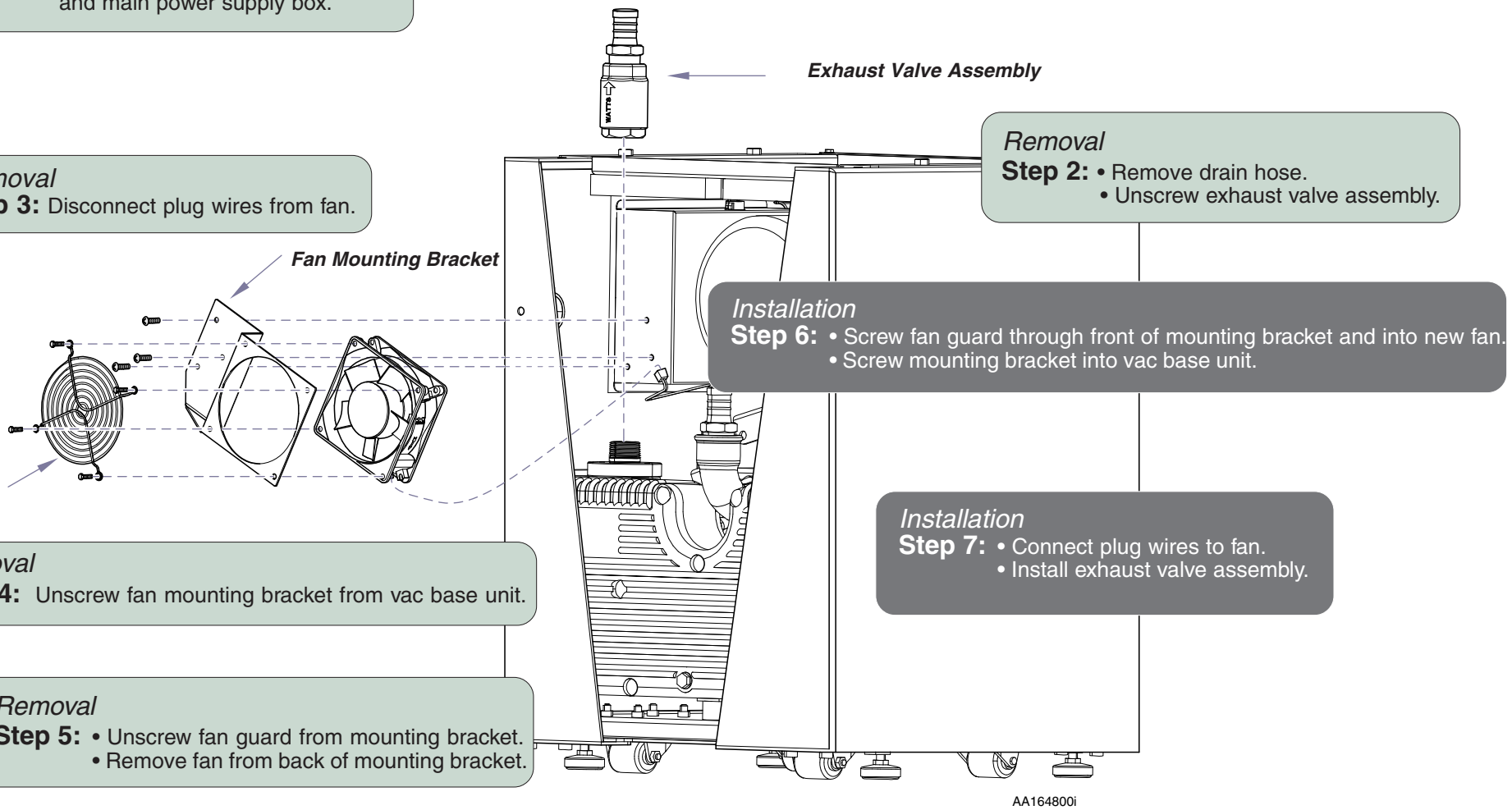
Refer to: **Go To Page:**
Fan Location and Function B-37
Fan Testing B-38
Fan Replacement (New Version) B-39
Electrical cover C-4

Removal
Step 1: Disconnect power at on/off switch and main power supply box.

Removal
Step 3: Disconnect plug wires from fan.

Removal
Step 4: Unscrew fan mounting bracket from vac base unit.

Removal
Step 5: • Unscrew fan guard from mounting bracket.
• Remove fan from back of mounting bracket.



Removal
Step 2: • Remove drain hose.
• Unscrew exhaust valve assembly.

Installation
Step 6: • Screw fan guard through front of mounting bracket and into new fan.
• Screw mounting bracket into vac base unit.

Installation
Step 7: • Connect plug wires to fan.
• Install exhaust valve assembly.

Testing & Repair

Fans

Replacement

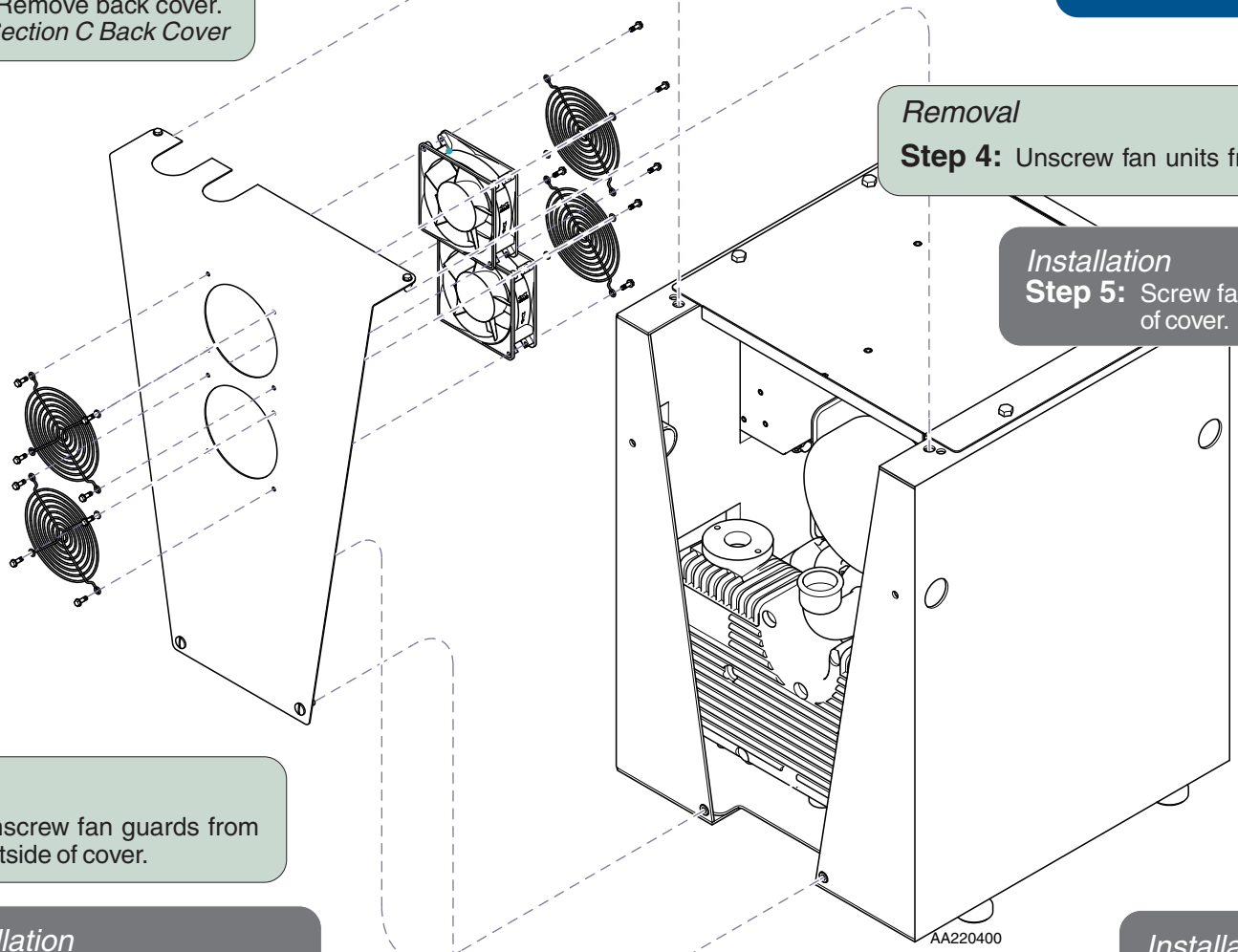
Removal
Step 1: Disconnect power at on/off switch and main power supply box.

Removal
Step 2: Remove back cover.
Refer to: Section C Back Cover

Refer to: **Go To Page:**

Removal
Step 4: Unscrew fan units from inside of cover.

Installation
Step 5: Screw fan units onto inside of cover.



Removal
Step 3: Unscrew fan guards from outside of cover.

Installation
Step 6: Screw fan guards onto outside of cover.

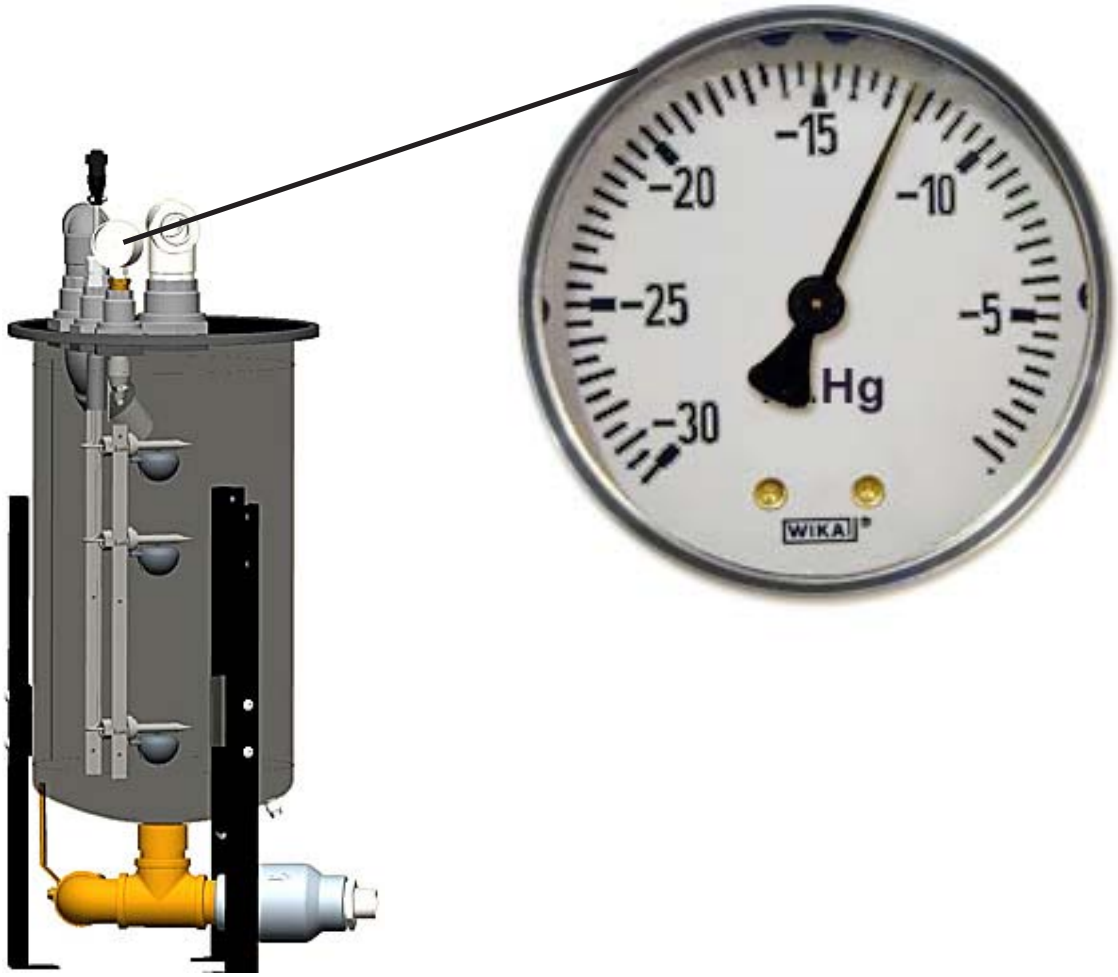
Installation
Step 7: Replace back cover. Restore power.

Gauge

Refer to: Go To Page:
Gauge Replacement B-42

Location and Function

The Vacuum Gauge has a 1/4" NPT fitting and a range from 0 to -30 In./Hg. graduated in increments of 0.5 In./Hg. Recommended range for the system vacuum is 10"Hg to 18"Hg. The system is preset at the factory for 12"Hg.



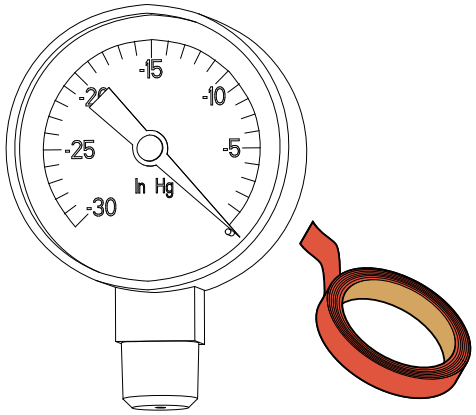
Earlier Version Shown

Testing & Repair

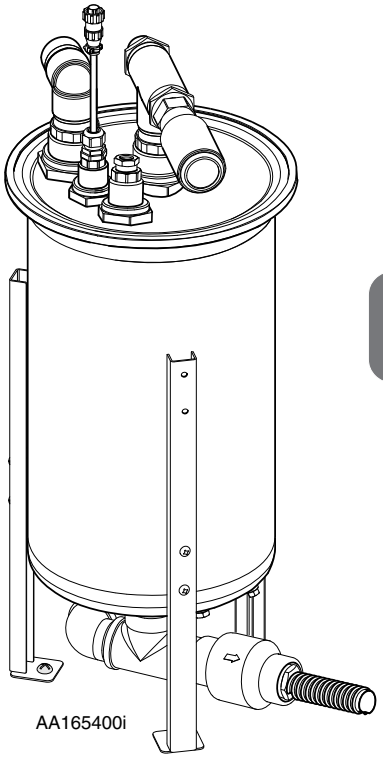
Gauge

Replacement

Removal
Step 1: Turn power off.



Removal
Step 2: Unscrew gauge from fitting.



Earlier Version Shown

Installation
Step 3: Apply teflon tape to threads on new gauge.

Installation
Step 4: Screw new gauge into fitting.

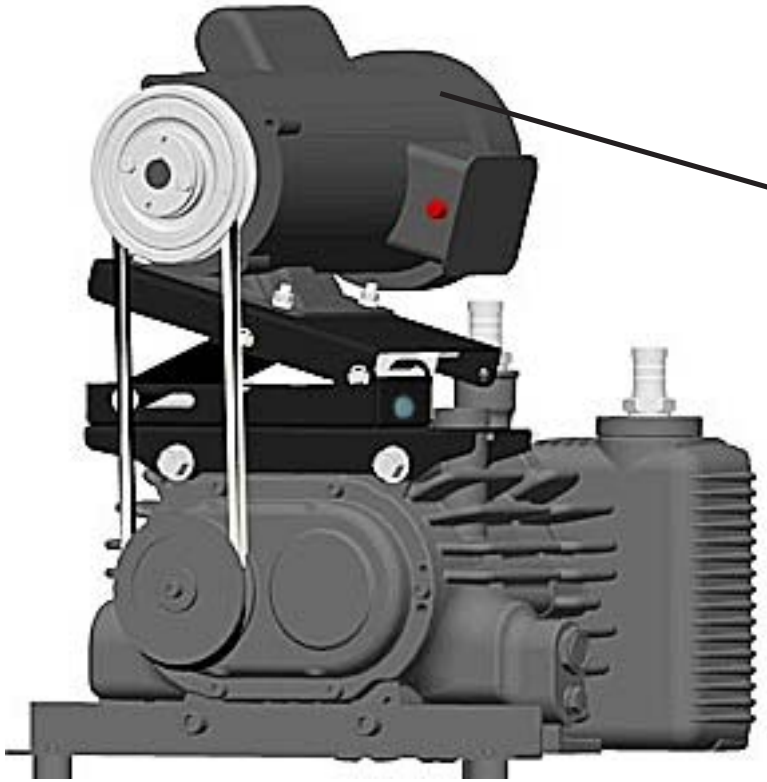
Refer to: **Go To Page:**
Gauge Location and Function B-41

Motor

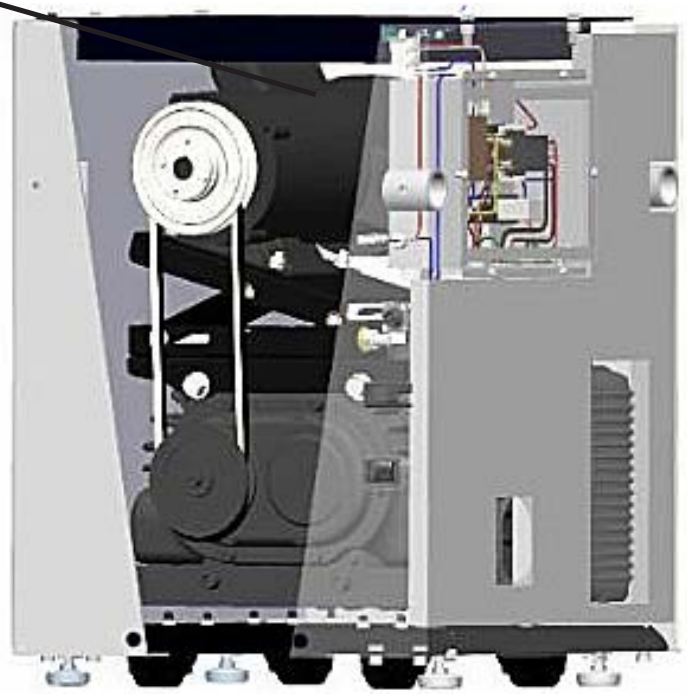
Location & Function

The electric motor is located on an adjustable motor mount and is easily accessible. A thermal overload switch is located on the side of the motor (Red Button). The belt driven motor is a 2 HP single phase, 208-230 volt motor.

Earlier Version Shown



Earlier Version Shown



WARNING
Motors installed after 12/08 are thermally protected with automatic reset. Unit may start without warning.

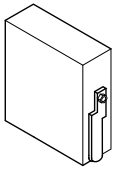
Testing & Repair

Motor

Caution
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.
Capacitors must be discharged before touching to remove.

Check

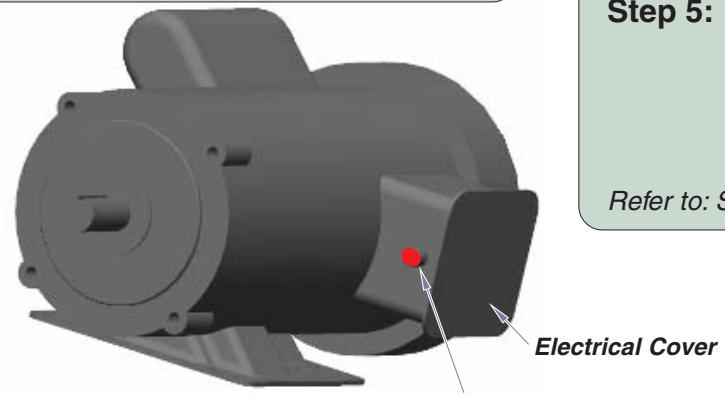
Step 1: Turn off power at on/off switch and power supply box.



Step 2: Remove front cover. Remove belt and verify motor pulley spins freely. If it doesn't, replace motor, bearing is out in motor. If it does, continue checks.

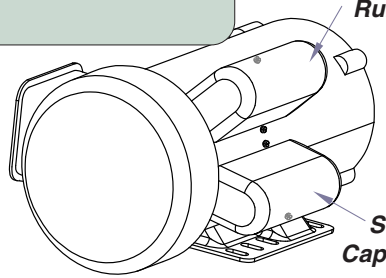
Refer to: Section C - Front Cover

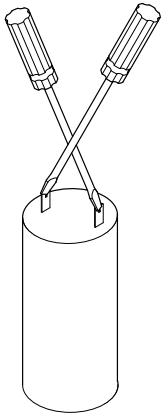
Wire Connections
Step 3: Remove electrical cover off motor. Verify all wires are connected.



Capacitor
Step 5: Replace Capacitor.
- Access start and run capacitor by removing top cover and capacitor covers off motor.
- Discharge capacitors by touching two screwdrivers to two contacts on a capacitor and to each other.

Refer to: Section C Top Cover



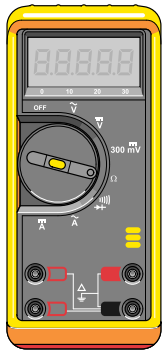


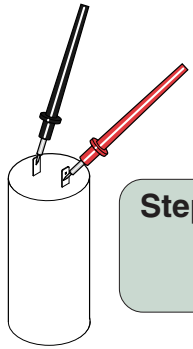
Reset Thermal Overload - Earlier Version Only
Step 4:
- Allow motor to cool.
- Press thermal overload button.
- Install front cover.
- Connect Power.

Note: Manual reset button on earlier versions only, current versions have automatic reset.

Step 6: Set meter to highest Ω reading.

WARNING
Motors installed after 12/08 are thermally protected with automatic reset. Unit may start without warning.





Step 7: Place meter probes on capacitor connectors.

Meter Reading	Status	Required Action
"O" or "Open" Reading		Replace Capacitor
Start Low and Increases		Capacitor - OK

Refer to: | **Go To Page:**
Motor Location and Function B-42
Belt B-2
Front Cover C-2
Top Cover C-3
Earlier Versions
Motor Replacement (Removal) B-44
Motor Replacement (Installation) B-45
Motor Mount Adjustment B-46
Newer Versions
Motor Replacement (Removal) B-47
Motor Replacement (Installation) B-48

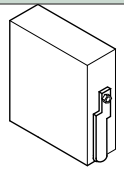
Testing & Repair

Motor (Removal)

Caution
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.

Replacement (Earlier Versions Only)

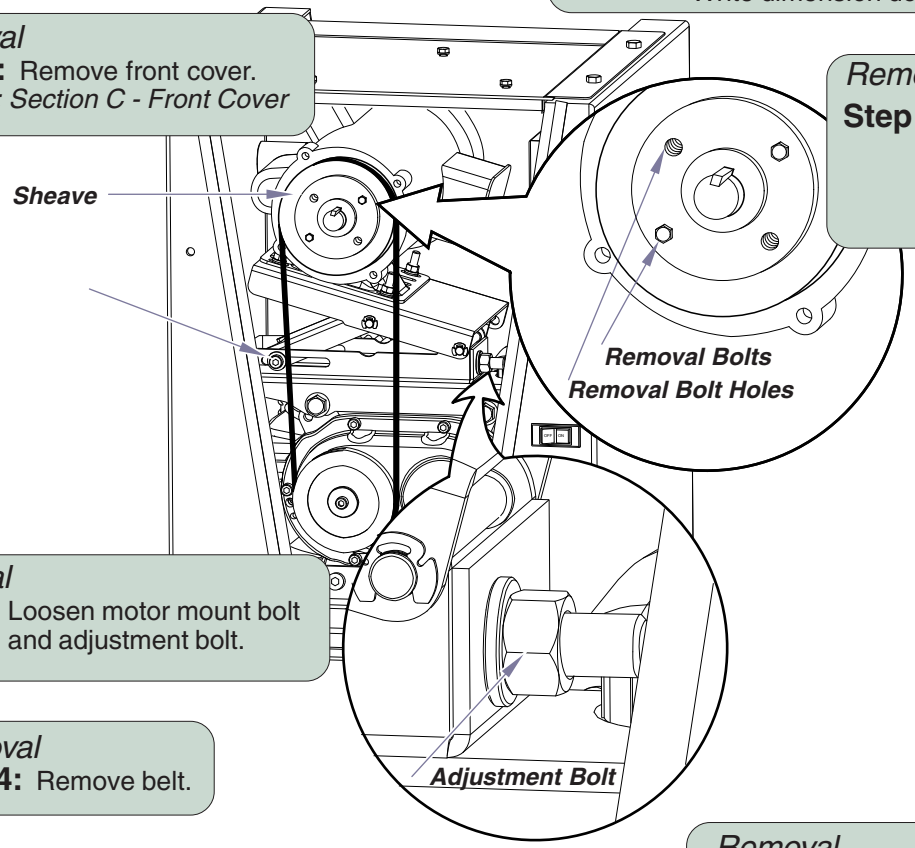
Removal
Step 1: Disconnect power at on/off switch and main power supply box



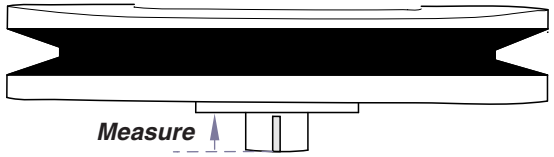
Removal
Step 2: Remove front cover.
Refer to: Section C - Front Cover

Removal
Step 3: Loosen motor mount bolt and adjustment bolt.

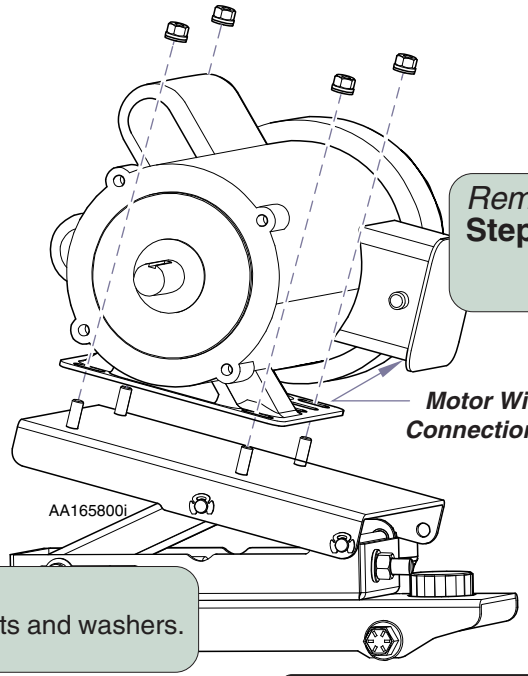
Removal
Step 4: Remove belt.



Removal
Step 5: Measure end of shaft to face of top pulley. Write dimension down.



Removal
Step 6:
- Unscrew removal bolts from hub through holes.
- Screw bolts into threaded removal holes alternately to pull sheave off tapered hub.



Removal
Step 7: Disconnect motor wires from vac unit.

Removal
Step 8: Remove motor nuts and washers. Remove motor.

Models: / Serial Numbers:	P3	P5	P7
	0611P3P0000 to 0801P3P0611 V245092 thru V784999	0611P5P0000 to 0801P5P0240 V245092 thru V784999	0611P7P0000 to 0712P7P0104 V245092 thru V784999

Testing & Repair

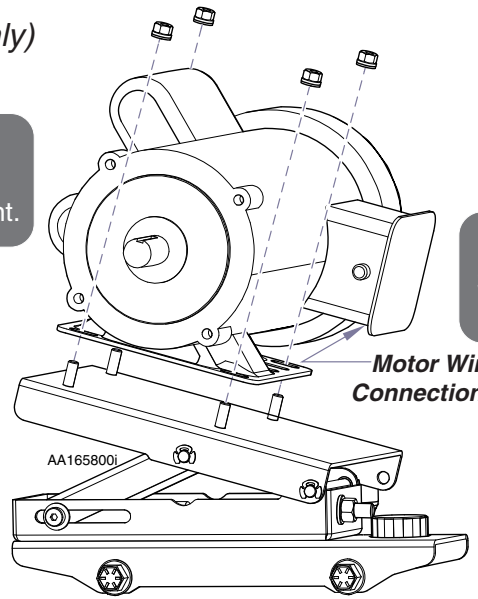
Motor (Install)

Replacement (Earlier Versions Only) (Continued)

Refer to: — **Go To Page:**

Motor Location and Function B-42
Motor Checks B-43
Motor Replacement (Removal) B-44
Belt B-2
Front Cover C-2

Installation
Step 9: Install new motor, nuts and washers onto motor mount.



Installation
Step 10: Connect motor wires from vac unit to motor.

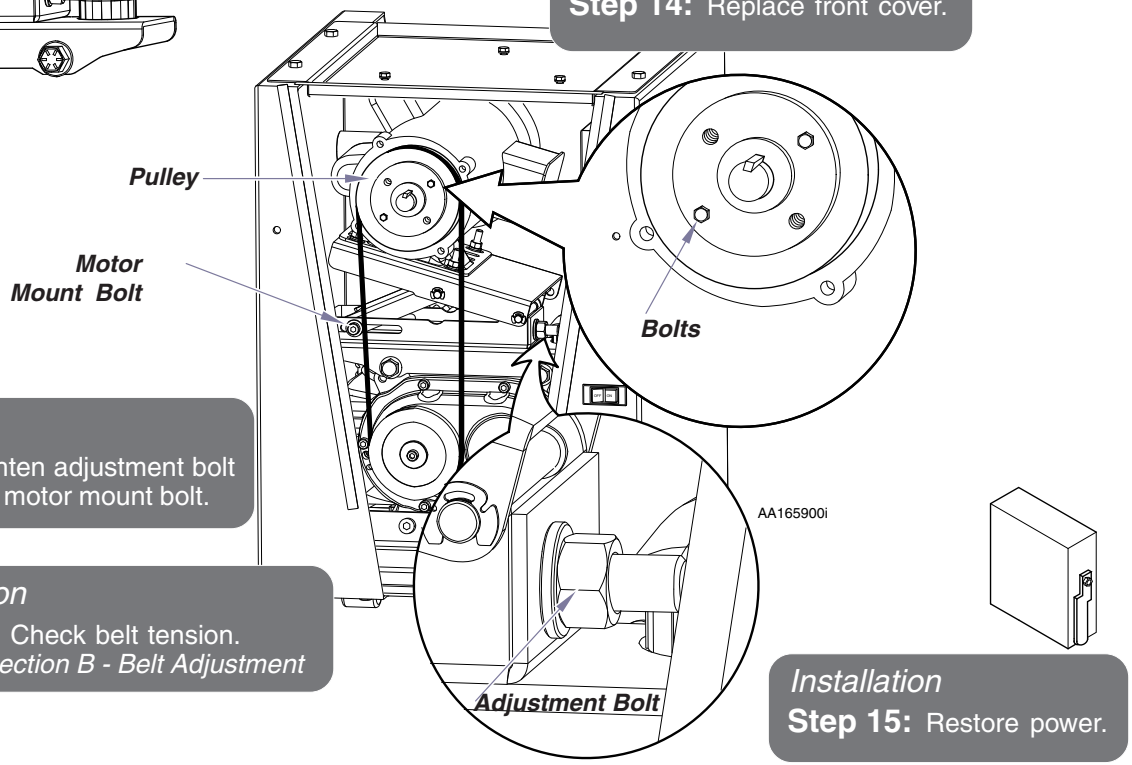
Equipment Alert
For proper pulley alignment and function dimension measured should equal what you measured with the old pulley.

Installation
Step 11: Align key stock and install pulley and belt. Measure end of shaft to face to sheave.

Installation
Step 12: Tighten adjustment bolt and motor mount bolt.

Installation
Step 13: Check belt tension.
Refer to: Section B - Belt Adjustment

Installation
Step 14: Replace front cover.



Installation
Step 15: Restore power.

Motor

Models: / Serial Numbers:	P3	P5	P7
	0611P3P0000 to 0801P3P0611 V245092 thru V784999	0611P5P0000 to 0801P5P0240 V245092 thru V784999	0611P7P0000 to 0712P7P0104 V245092 thru V784999

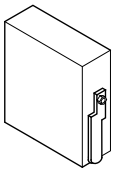
Testing & Repair

Motor

Adjustment (Earlier Versions Only)

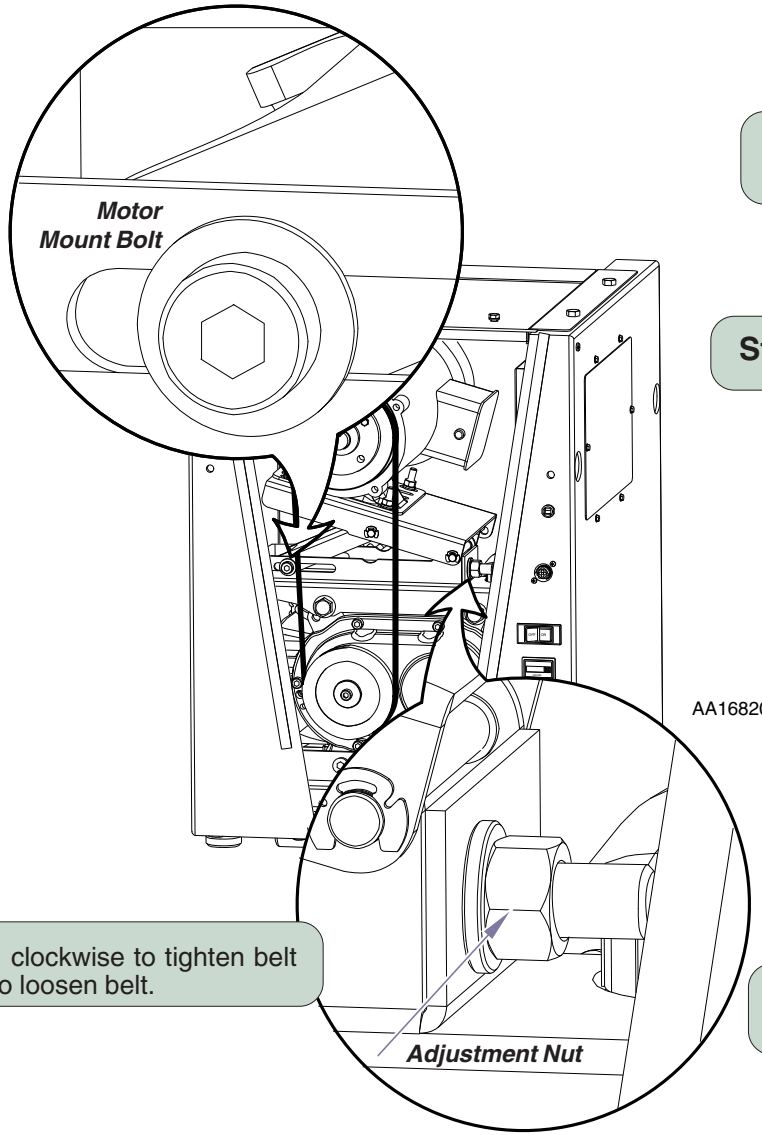
Refer to: **Go To Page:**
Front Cover C-2
Belt B-2

Step 1: Disconnect power at on/off switch and main power supply box.



Step 2: Remove front cover.
Refer to: Section C - Front Cover

Step 3: Loosen motor mount bolt.



Step 4: Move adjustment nut clockwise to tighten belt or counter clockwise to loosen belt.

Step 5: Check belt tension.
Refer to: Section B - Belt

Step 6: Tighten motor mount bolt.

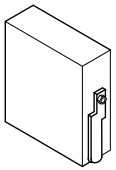
Step 7: Replace front cover. Restore power.

Testing & Repair

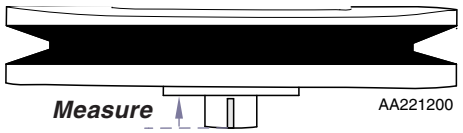
Motor

Replacement (New Versions Only)

Removal
Step 1: Disconnect power at on/off switch and main power supply box.



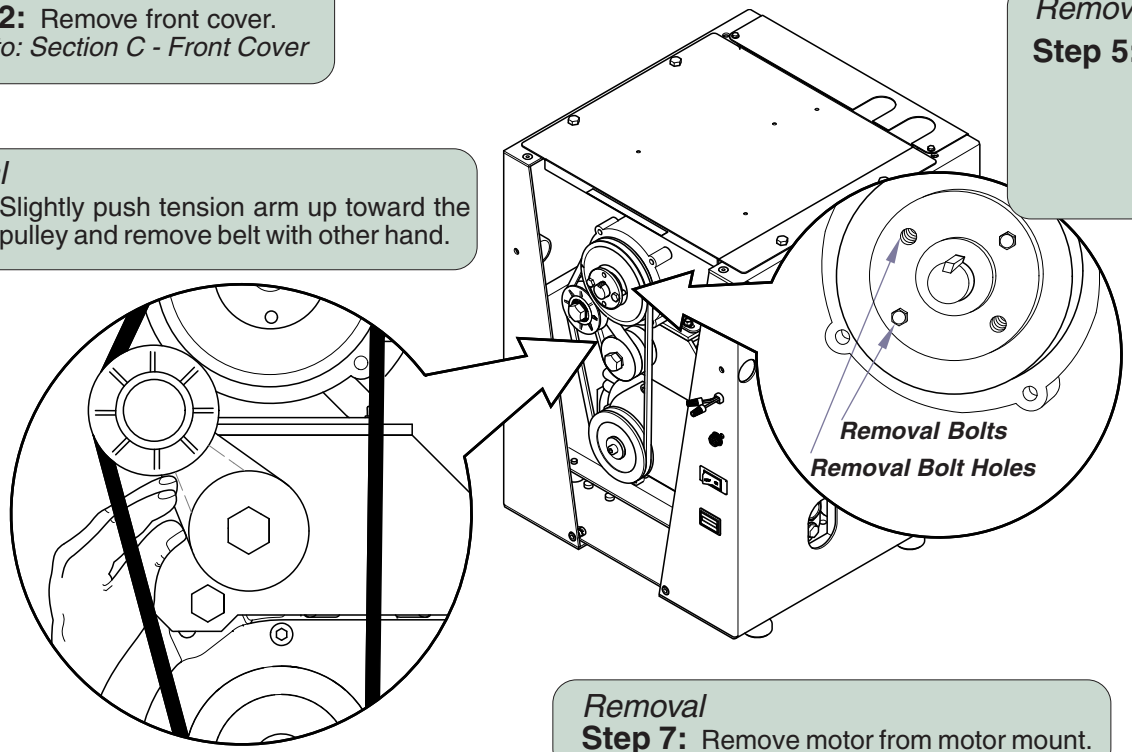
Removal
Step 3: Measure end of shaft to face of top pulley. Write dimension down.



Refer to: **Go To Page:**
Motor Location and Function B-42
Motor Checks B-43
Motor Replacement (Removal) B-48
Belt B-2
Front Cover C-2

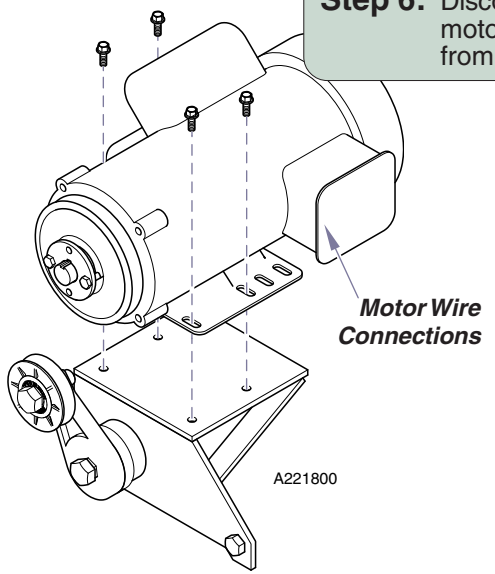
Removal
Step 2: Remove front cover.
Refer to: Section C - Front Cover

Removal
Step 4: Slightly push tension arm up toward the pulley and remove belt with other hand.



Removal
Step 5: Remove pulley from motor.
- Unscrew removal bolts from hub through holes.
- Screw bolts into threaded removal holes alternately to pull sheave off tapered hub.

Removal
Step 6: Disconnect motor wires from vac unit.



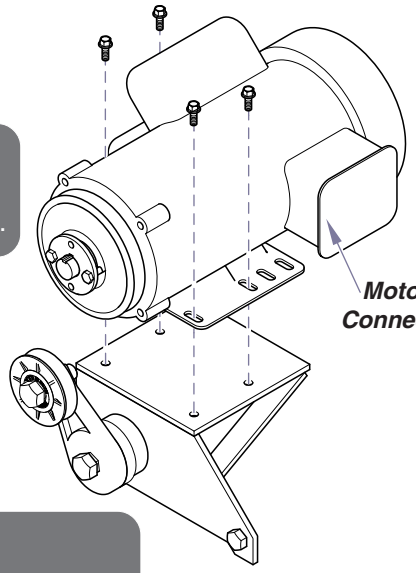
Removal
Step 7: Remove motor from motor mount.

Motor (Install)

Replacement (New Versions Only)
(Continued)

Refer to: **Go To Page:**
Motor Location and Function B-42
Motor Checks B-43
Motor Replacement (Removal) B-47
Belt B-2
Front Cover C-2

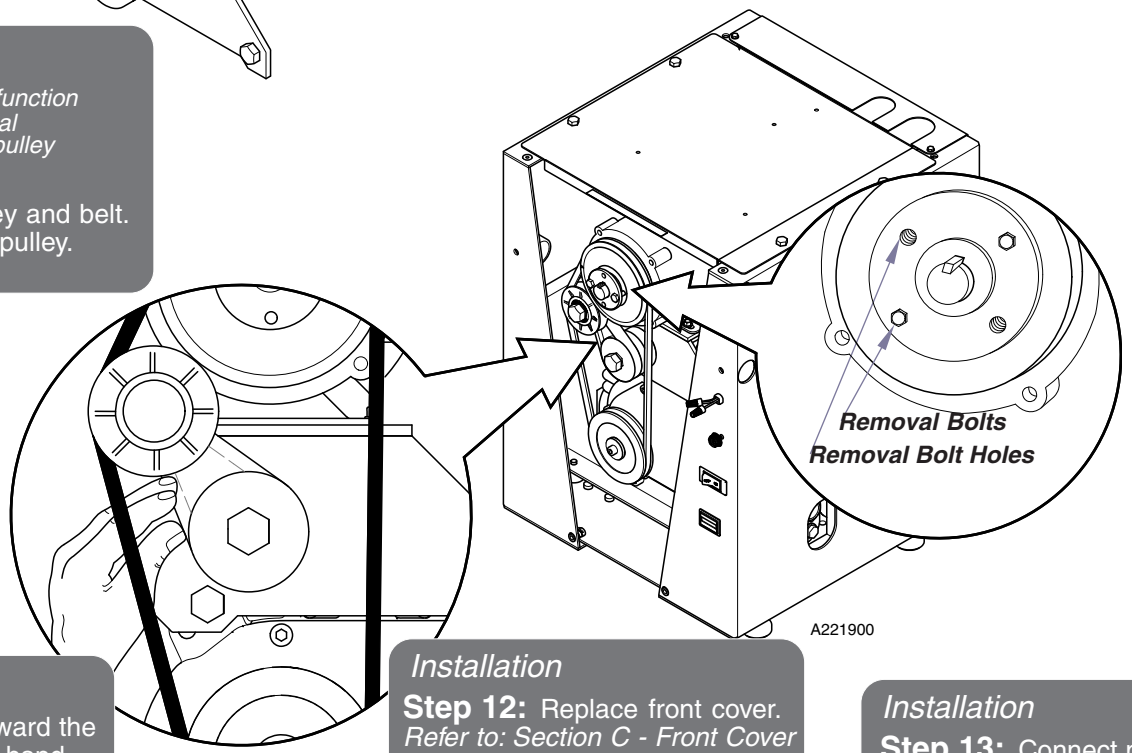
Installation
Step 8: Install new motor, nuts and washers onto motor mount.



Installation
Step 9: Connect motor wires from vac unit to motor.

Equipment Alert
For proper pulley alignment and function dimension measured should equal what you measured with the old pulley

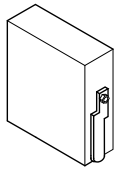
Installation
Step 10: Align key stock and install pulley and belt. Measure end of shaft to face to pulley.



Installation
Step 11: Slightly push tension arm up toward the pulley and install belt with other hand.

Installation
Step 12: Replace front cover.
Refer to: Section C - Front Cover

Installation
Step 13: Connect power.



Models:	P3	P5	P7	All
Serial Numbers:	0802P3P0612 to Present	0801P5P0241 to Present	0712P7P0105 to Present	V785000 thru Present

Testing & Repair

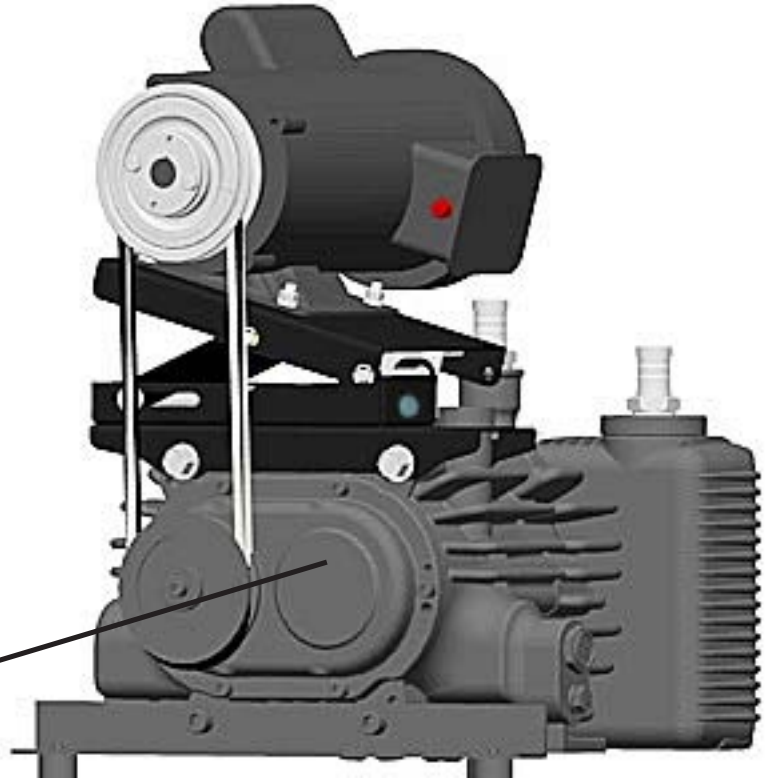
Pump

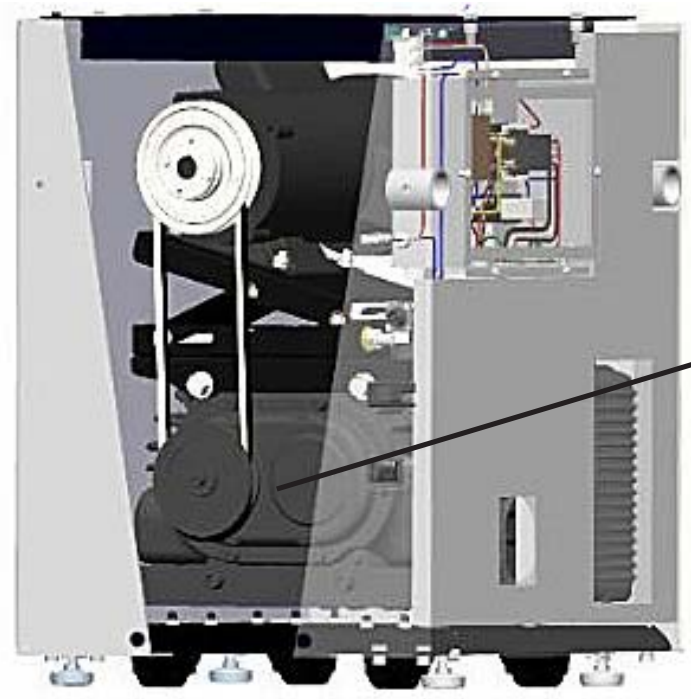
Refer to: **Go To Page:**
Pump Checks B-51
Pump - Change Gear Lube B-52

Location & Function

The "dry" vacuum pump requires no lubricant in the pumping chamber. The pump is a dual rotary claw type, belt driven by a 2 HP single phase, 208-230 volt motor.

Earlier Version Shown





Earlier Version Shown

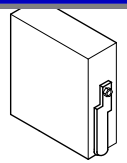
Pump

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

Testing & Repair

Pump

Step 1: Disconnect power at on/off switch and main power supply box.



Check

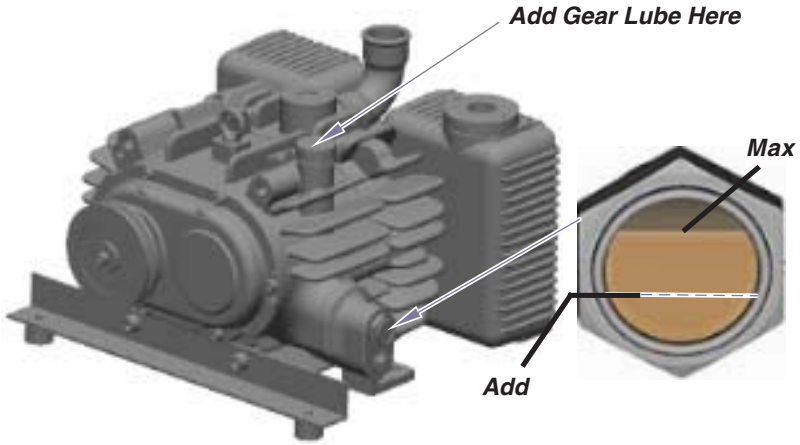
Step 2: Check pulley to see if locked up.
- Use belt to check pulley.
- Try to work pulley loose, turn with hand.

Note: If pulley does not move, continue with Steps 3, 4 and 5.

Refer to: | **Go To Page:**
Pump, Location and Function B-50
Pump, Change Gear Lube B-52
Front Cover C-2

Step 3: Check gear lubricant level.
Add if below 1/3 full. Use only Midmark gear lube P/N 064-0028-01.
Remove inlet hose to add gear lube.

Note: If you have added gear lube two times or more during the past year, call Dealer for service. If gear lube is not light yellow /clear opaque color, it will need to be changed. Refer to: Section B - Pump, Change Gear Lube.



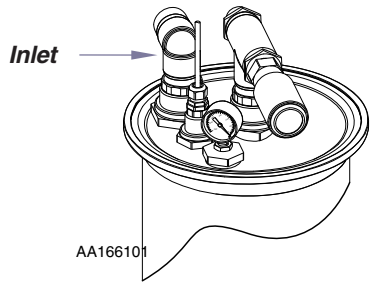
To Drain Pump

Step 4: Check for water in pump.
- Remove drain bolt off pump & barb fitting at the bottom of the exhuast p-trap to release any water inside.
- When pump & p-trap are done draining replace drain bolt and barb fitting.

Note: Water may flood out, set funnel under bolt hole to move water from pump into a bucket or tray.

After Draining Pump You Must...

Step 5:
- Remove inlet hose either at pump or at separator.
- Pour 2 ounces (1/4 cup) of conditioning fluid (002-1910-02) into pump and let soak. or WD-40 if unavailable
- Try to work pulley loose as fluid migrates through pump.
- If pump will not free up order Timer/Conditioning Fluid Kit (002-1910-01) and Socket kit (002-1911-00)
- If pumps rotates freely restore power and start vacuum. Order Timer/Conditioning Fluid Kit (002-1910-01) if needed.



Models: All
Serial Numbers:

Testing & Repair

Pump

Change Gear Lube

The PowerVac® gear lube should be changed every 10 years. It will take approximately 2/3 of a quart of Midmark PN 064-0028 which can be ordered in a quart or a liter.

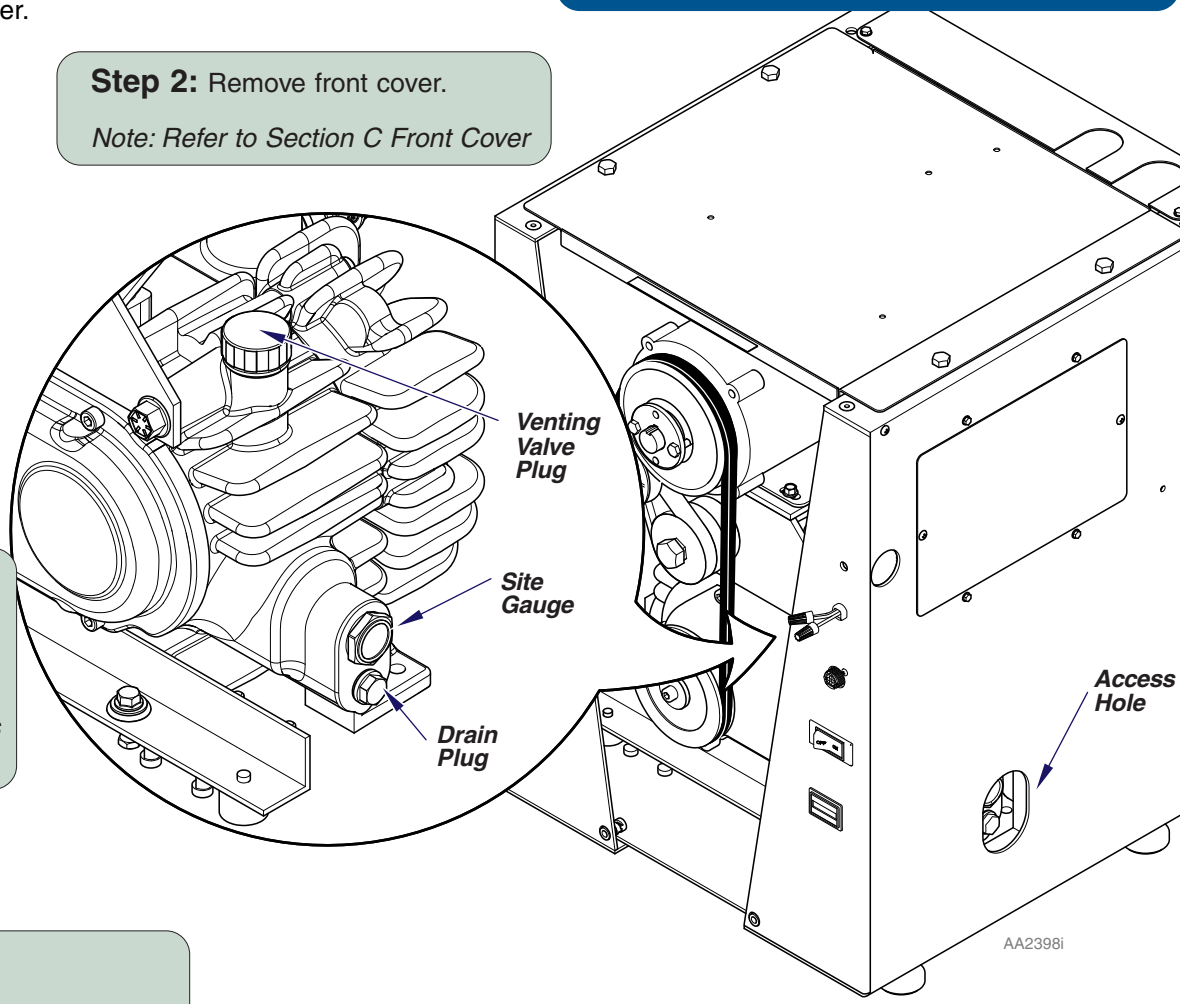
Refer to: **Go To Page:**
Pump Location and Function B-50
Pump - Check B-51
Front Cover C-2

Step 1: Run PowerVac for 5-10 minutes.
Disconnect main power supply to the PowerVac.

Step 2: Remove front cover.

Note: Refer to Section C Front Cover

Step 3: Remove venting valve plug.



Step 4: Siphon gear lube out from venting valve hole.

Note: If you do not have a siphon hose, you may access the drain plug located below the site gauge. Place a oil absorbant mat under drain hole and funnel the gear lube out the side access hole in housing into a drain tray.

Step 5: Fill in new gear lube until the level is slightly above the middle of the site gauge.
Verify seal ring on vent valve is undamged.
Replace vent valve plug and or drain plug.
Clean any gear lube that leaked on inside or outside housing.

Note: Dispose of gear lube in compliance with applicable regulations.

Step 6: Replace front cover.
Connect main power supply.
Run pump for 5 minutes and recheck the gear lube on the site gauge.

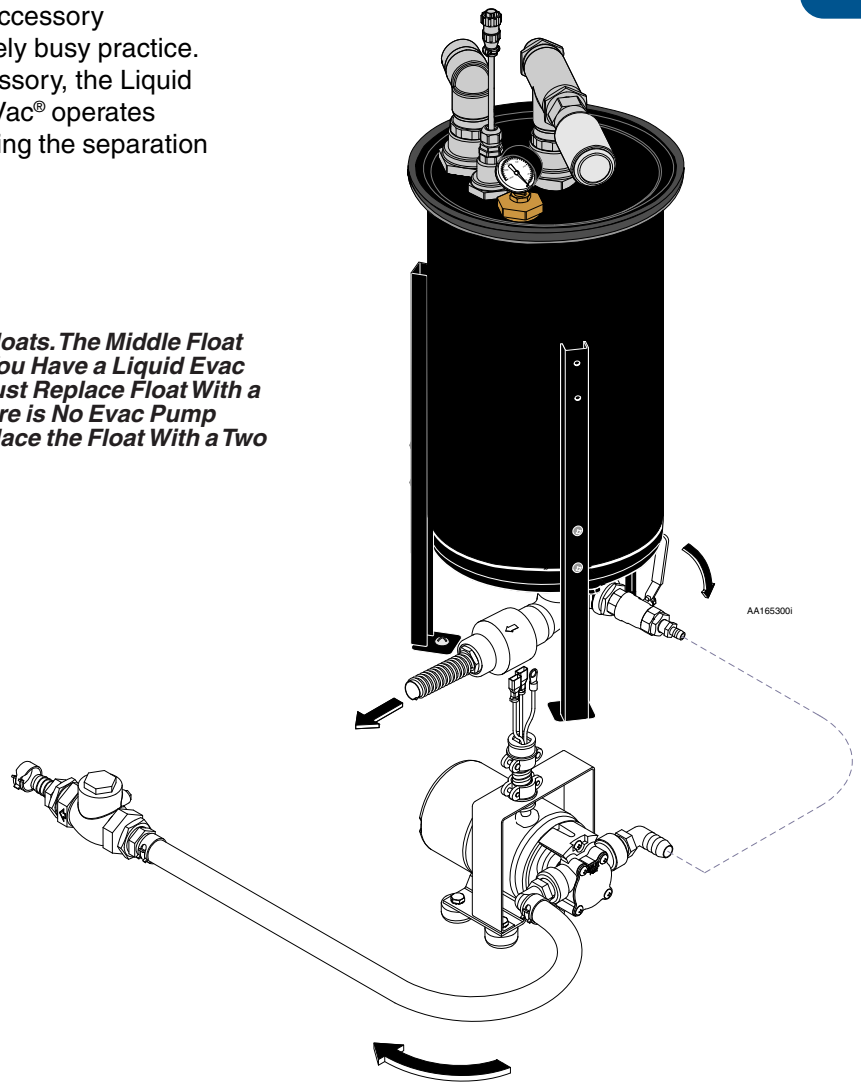
Liquid Evacuation Pump (Accessory)

Refer to: *Go To Page:*
Evacuation Pump Tests .....B-53 thru B-57

Function

The PowerVac® Liquid Evacuation Pump Accessory provides additional security for an extremely busy practice. Easily installed as OEM or as a later accessory, the Liquid Evacuation Pump ensures that the PowerVac® operates without interruption by automatically draining the separation tank periodically throughout the day.

Earlier Versions had Three Reed Switch Floats. The Middle Float was for the Liquid Evac Pump Option. If You Have a Liquid Evac Pump Connected to the PowerVac you Must Replace Float With a Three Reed Switch Float Assembly. If There is No Evac Pump Connected to the PowerVac, You can Replace the Float With a Two Reed Switch Float Assembly.



Earlier Version Shown

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

Liquid Evacuation Pump

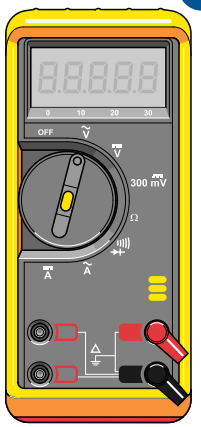
Testing & Repair

Liquid Evacuation Pump (Accessory)

Testing (Power On, Float Switches Open, No LED's On)

Note: *All Electrical leads are not shown for the purpose of clarity.*

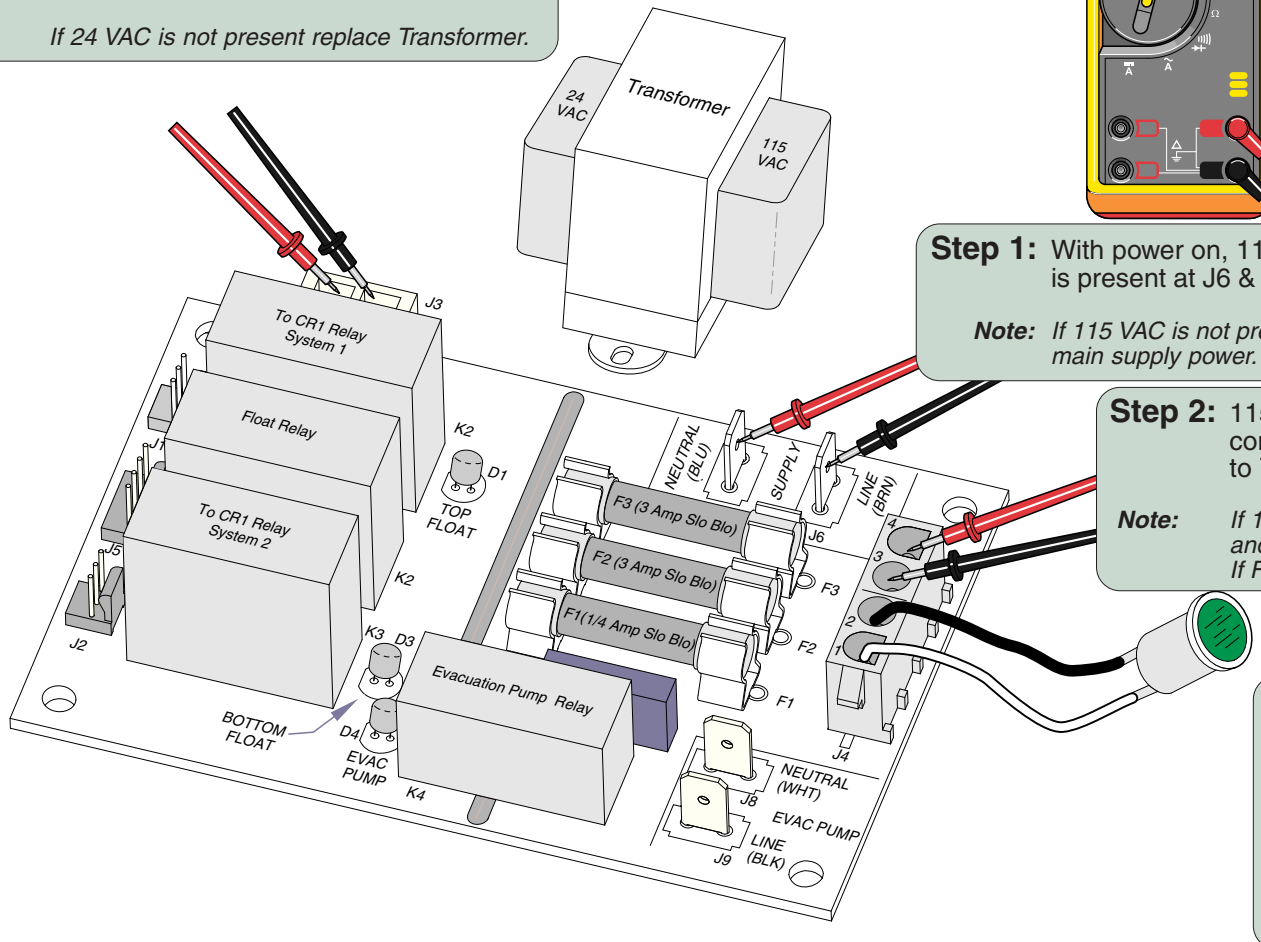
Refer to: Evacuation Pump Tests .....B-53 thru B-57 — **Go To Page:**



Caution
When testing components with power on use care to prevent electrical shock.

Step 4: 24 VAC should be present at J3 plug connector 1 (yellow wire) and 2 (blue wire) from Transformer.

Note: *If 24 VAC is not present replace Transformer.*



Step 1: With power on, 115 VAC is present at J6 & J7.

Note: *If 115 VAC is not present check main supply power.*

Step 2: 115 VAC should be present at plug connector 4 (Blk wire) and 3 (white wire) to Transformer.

Note: *If 115 VAC is not present check fuse F1 and F3 and replace if necessary.*
If F1 & F3 fuses are good replace PC Board.

Step 3: 115 VAC should be present at plug connector 1 (Blk wire) and 2 (white wire) to Power On Light. Light should be on.

Note: *If 115 VAC is not present check fuse F1 and F3 and replace if necessary.*
If 115 VAC is present but light is not on, replace light.
If F1 & F3 fuses and light are good replace PC Board.

AA165103i

Liquid Evacuation Pump

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

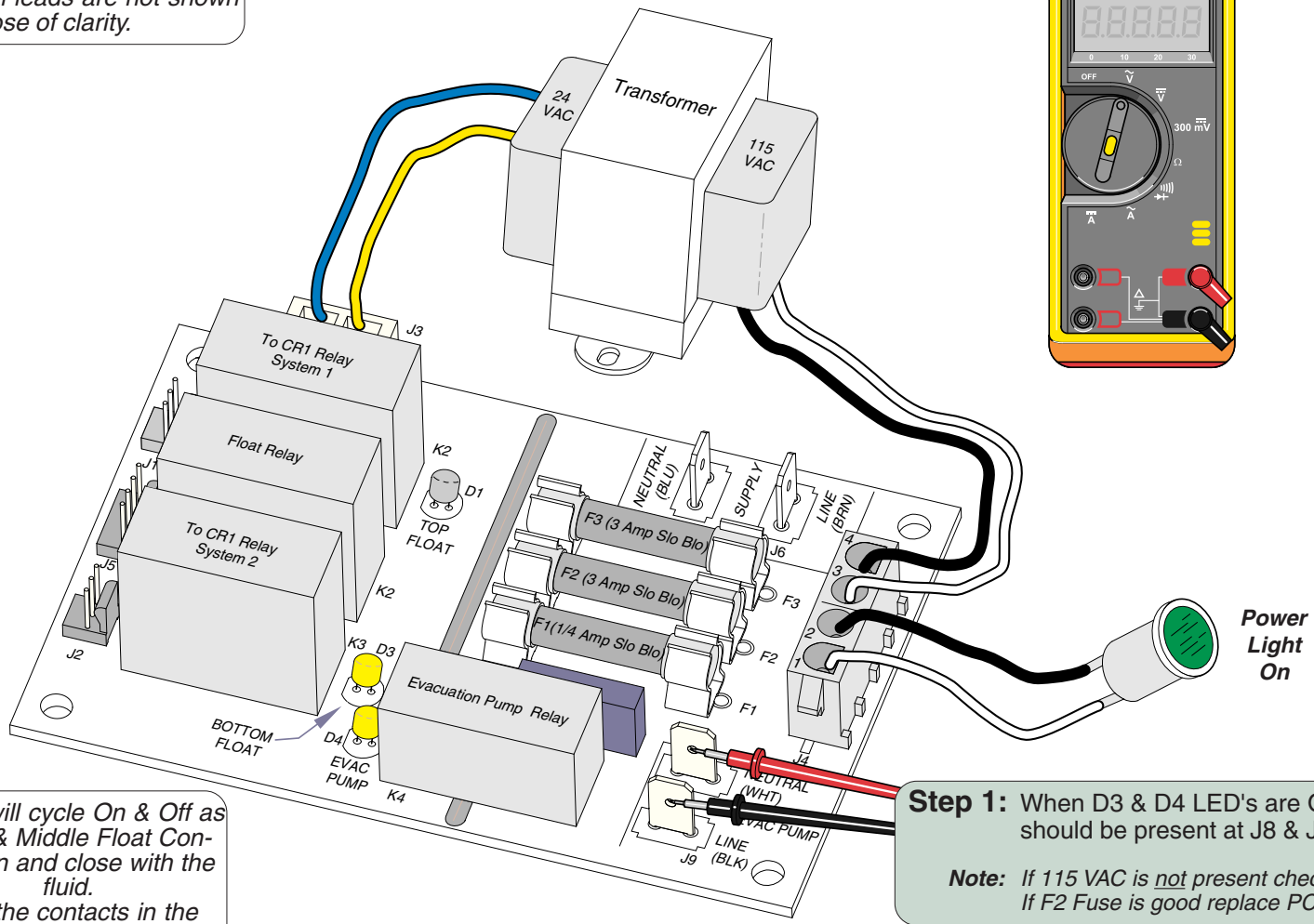
Liquid Evacuation Pump (Accessory)

Testing (Power On, Bottom & Middle Float Switches Closed, K4 Evac. Pump Relay coil energized)

Caution
When testing components with power on use care to prevent electrical shock.

Refer to: **Go To Page:**
Evacuation Pump Tests .....B-53 thru B-57

Note: *All Electrical leads are not shown for the purpose of clarity.*



Note: • *LED's D3 & D4 will cycle On & Off as the Bottom & Middle Float Controls open and close with the level of the fluid.*
• *When D4 is On, the contacts in the Evac. Relay (K4) close and power will be present at J8 & J9 to run the Evac. Pump.*

Step 1: When D3 & D4 LED's are On 115 VAC should be present at J8 & J9.

Note: *If 115 VAC is not present check Fuse F2. If F2 Fuse is good replace PC Board.*

AA165101i

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

Testing & Repair

Liquid Evacuation Pump (Accessory)

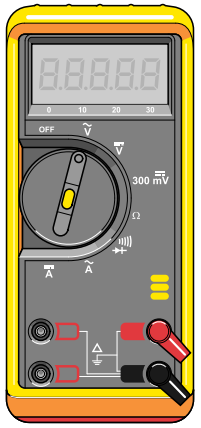
Testing (Power on, All [D1, D3, D4] LED's on. Bottom, Middle, and Top float switches closed. K4 Evac. Pump Relay coil energized.)

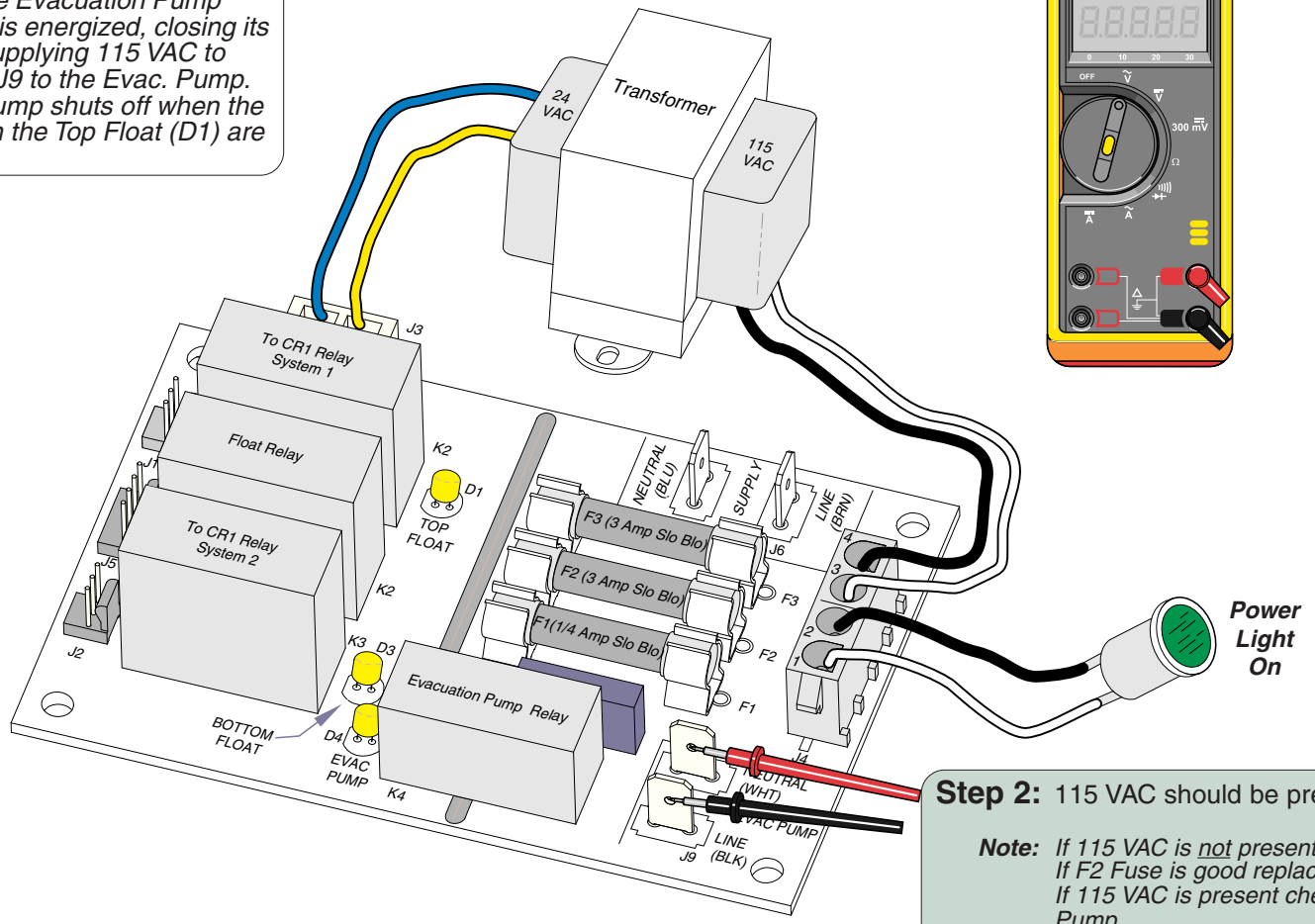
Note: *All Electrical leads are not shown for the purpose of clarity.*

Refer to: **Go To Page:**
Evacuation Pump Tests .....B-53 thru B-57

Note:
- *When all three LED's (D1, D3, D4) are on, it indicates the Separator Tank is full of liquid.*
- *D4 indicates the Evacuation Pump Relay coil (K4) is energized, closing its contacts and supplying 115 VAC to terminals J8 & J9 to the Evac. Pump.*
- *The Vacuum Pump shuts off when the contacts (K1) in the Top Float (D1) are closed.*

Caution
When testing components with power on use care to prevent electrical shock.





Step 2: 115 VAC should be present at J8 & J9.

Note: *If 115 VAC is <u>not</u> present check Fuse F2. If F2 Fuse is good replace PC Board. If 115 VAC is present check Evacuation Pump.*

AA165100i

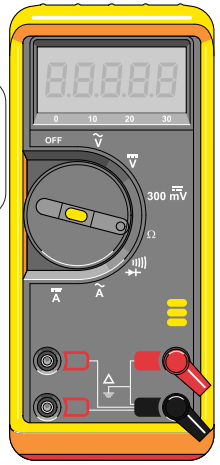
Liquid Evacuation Pump (Accessory)

Testing Liquid Evacuation Pump Assembly

Note: *The motor has a thermal protection that will open, removing power to the motor should it overheat.*
Ambient temperature around the pump should not exceed 104°F (40°C).

Refer to: **Go To Page:**
Evacuation Pump Tests .....B-53 thru B-57

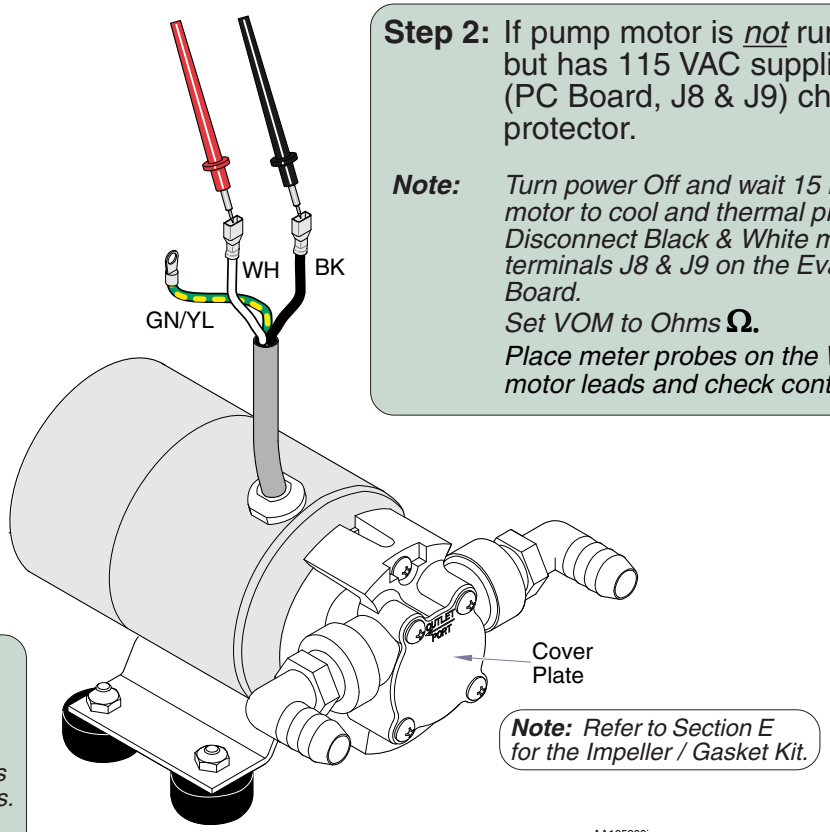
Caution
When testing components with power on use care to prevent electrical shock.



Note: *A full Separator Tank may be due to an obstruction in the outlet side of the system. Assure nothing is obstructing the flow of the discharge from the tank and Evac. Pump during operation.*

Step 1: If pump motor is running but not pumping fluid.

Note: *Turn power off to Evac. Pump.*
Check for restrictions / obstruction in the lines connected to the pump and remove obstacles. Remove cover plate (four screws) and check impeller for obstructions or wear. Replace if necessary.



AA165200i

Step 2: If pump motor is *not* running but has 115 VAC supplied to it (PC Board, J8 & J9) check thermal protector.

Note: *Turn power Off and wait 15 minutes to allow motor to cool and thermal protector to reset. Disconnect Black & White motor leads from terminals J8 & J9 on the Evac. Pump PC Board.*
Set VOM to Ohms **Ω.**
Place meter probes on the White and Black motor leads and check continuity.

Note: *Refer to Section E for the Impeller / Gasket Kit.*

Meter Reading	*Status*	*Required Action*
OL		Winding or Thermal Protector (TP) Stays Open. Replace Motor Pump
Continuity checks OK (20 to 30 ohms, cold reading)		Thermal protector is closed. Winding is within ohms range. Motor is ok.

Testing & Repair

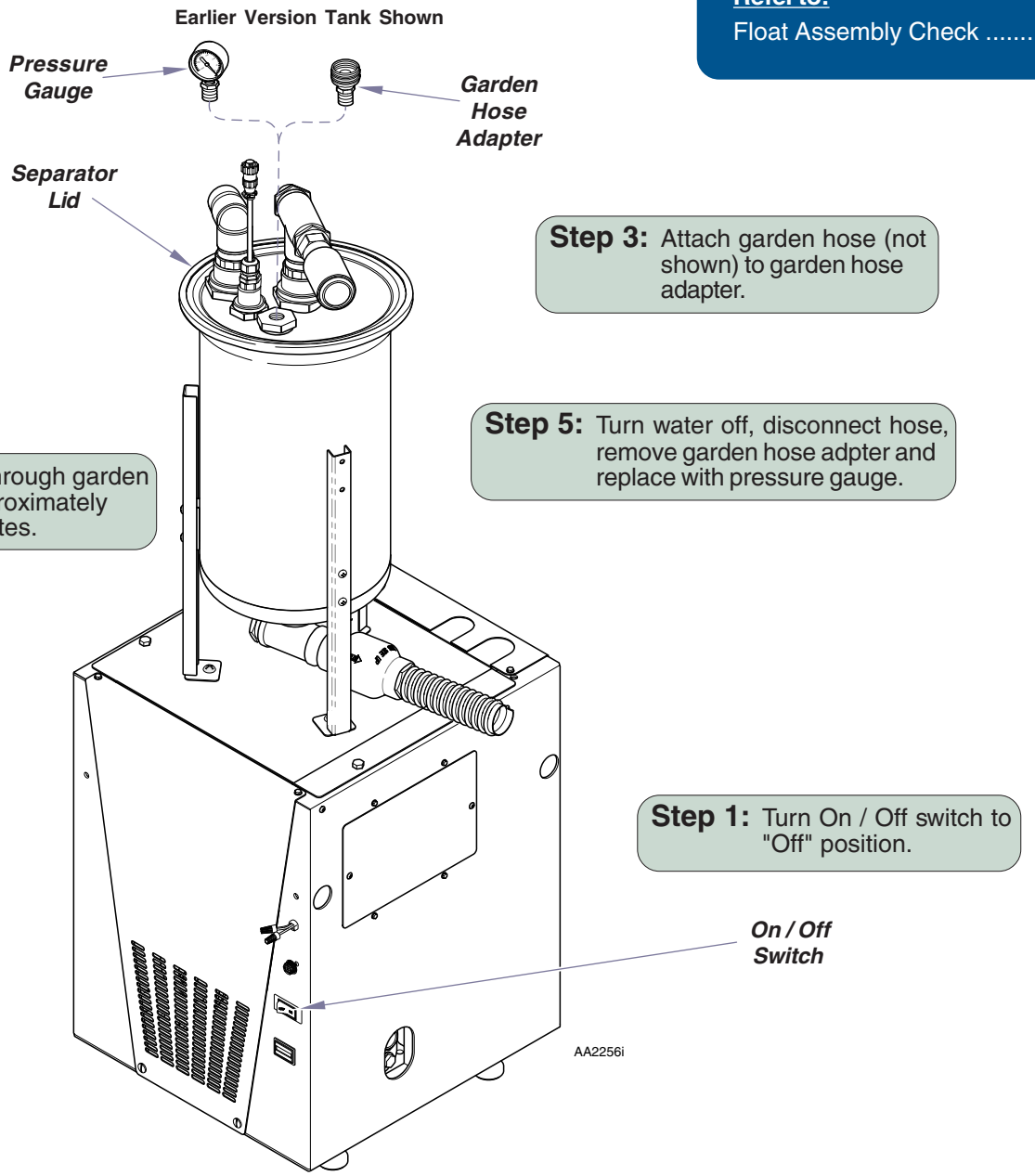
Separator Tank

Rinsing Separator Tank Assembly

Refer to: **Page**
Float Assembly Check .....B-15 thru B-17

Step 2: Remove pressure gauge from separator lid and temporarily replace with garden hose adapter.

Note: *Garden hose adapter was supplied as a loose part when this unit was purchased.*



Step 3: Attach garden hose (not shown) to garden hose adapter.

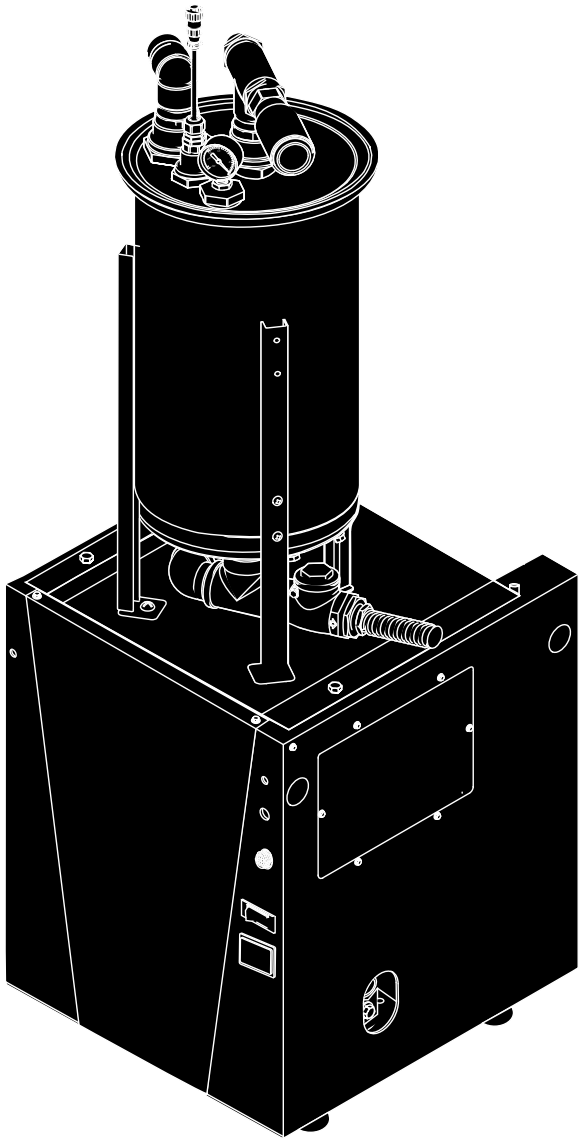
Step 4: Run water through garden hose for approximately five (5) minutes.

Step 5: Turn water off, disconnect hose, remove garden hose adpter and replace with pressure gauge.

Step 1: Turn On / Off switch to "Off" position.

Section C

Access Procedures



Access Procedures

Front Cover

Removal / Installation

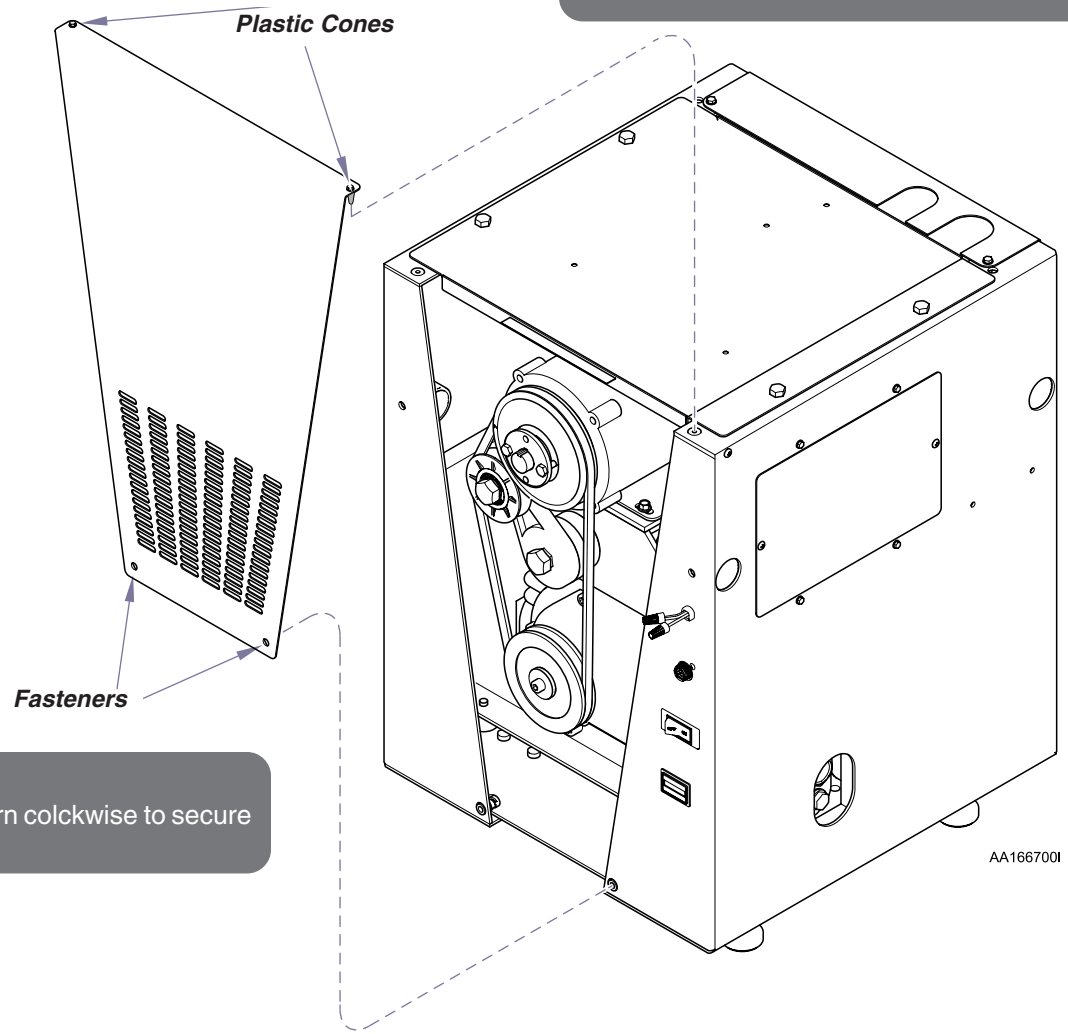
Caution

Power must be disconnected when removing front cover. 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.

Step 1: Unfasten front cover by turning each fastener 1/4 turn, counter clockwise.

Removal
Step 2: Lift front cover straight up to free plastic cones from holes in side panels.

Installation
Step 3: Align plastic cones to holes in side panels.



Installation
Step 4: Turn fasteners 1/4 turn colckwise to secure front cover.

Front Cover

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

Access Procedures

Top Cover

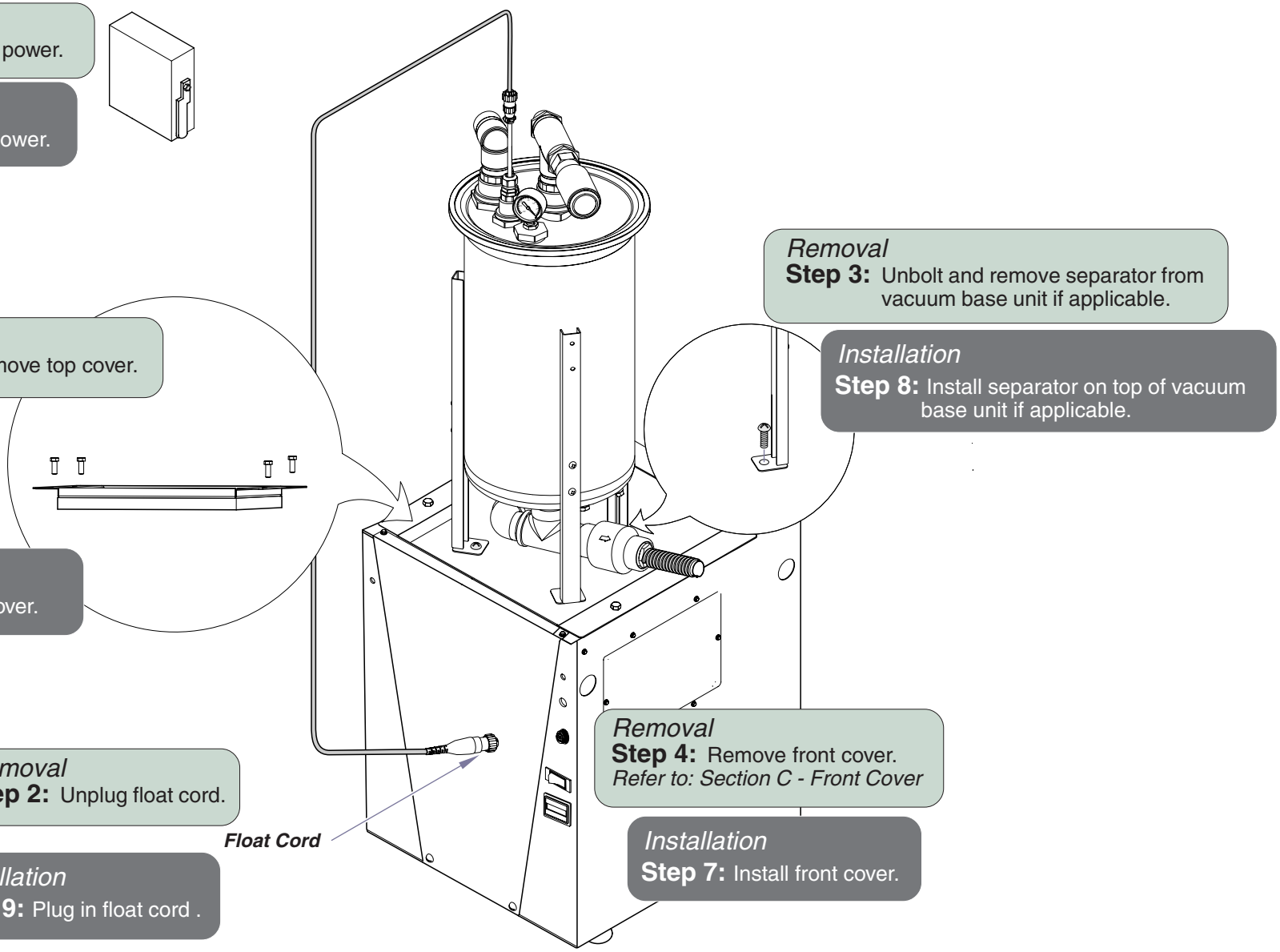
Removal / Installation

Caution
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.

Removing & Installing: Go To Page:
Front Cover C-2

Removal
Step 1: Disconnect power.

Installation
Step 10: Connect power.



Removal
Step 3: Unbolt and remove separator from vacuum base unit if applicable.

Installation
Step 8: Install separator on top of vacuum base unit if applicable.

Removal
Step 5: Unbolt and remove top cover.

Installation
Step 6: Install top cover.

Removal
Step 2: Unplug float cord.

Installation
Step 9: Plug in float cord .

Removal
Step 4: Remove front cover.
Refer to: Section C - Front Cover

Installation
Step 7: Install front cover.

Models: All
Serial Numbers:

Top Cover

Access Procedures

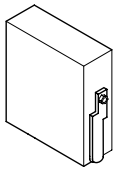
Electrical Cover

Removal / Installation

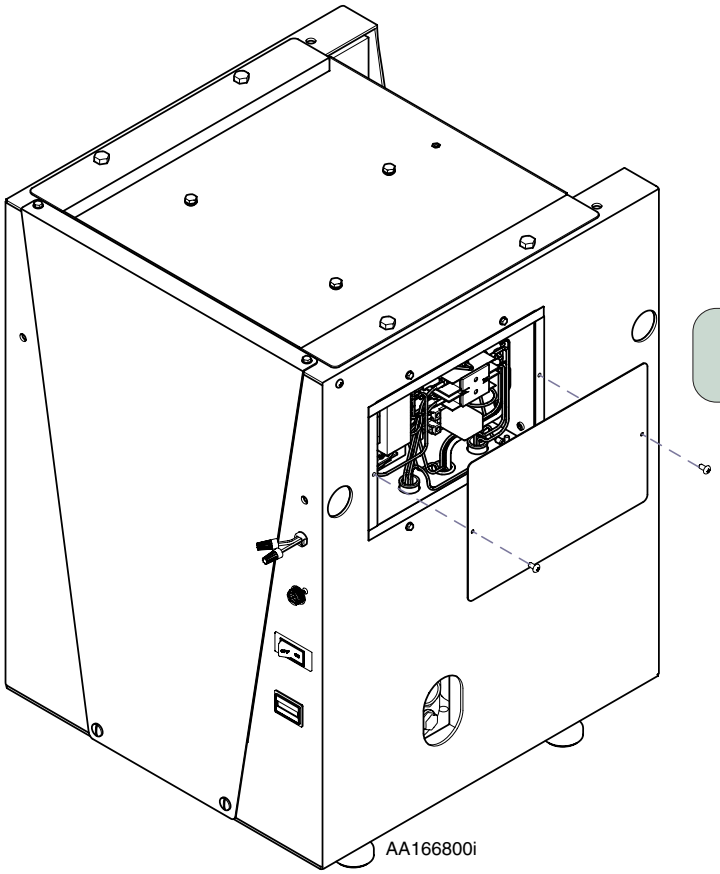
Caution
The On/Off switch controls only the secondary circuit power. The main power source must be turned off to remove all power in the control box.

Removal
Step 1: Disconnect power.

Installation
Step 6: Connect power.



Caution
When testing components with power on use care to prevent electrical shock.



Removal
Step 2: Remove two screws from electrical panel.

Installation
Step 5: Install two screws.

Removal
Step 3: Remove electrical panel.

Installation
Step 4: Install electrical panel.

Electrical Cover

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

Access Procedures

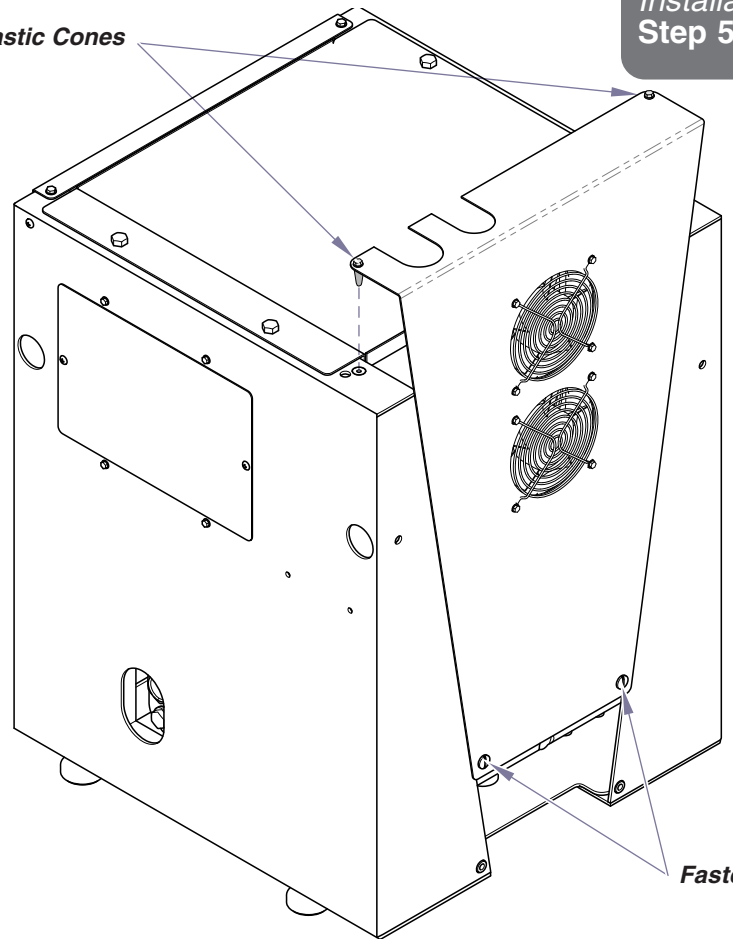
Back Cover

Removal / Installation

Removal
Step 2: Lift back cover straight up to free plastic cones from holes in side panels.

Installation
Step 5: Align plastic cones to holes in side panels.

Plastic Cones



Note
If there are hex head mounting bolts in rear cover, it has been installed using a retrofit kit. Unscrew all four bolts to remove rear cover.

Removal
Step 3: Unplug both fans.

Installation
Step 4: Plug in both fans.

Caution

Power must be disconnected when removing back cover. 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.

Step 1: Disconnect power supply. Unfasten back cover by turning each fastener 1/4 turn, counter clockwise.

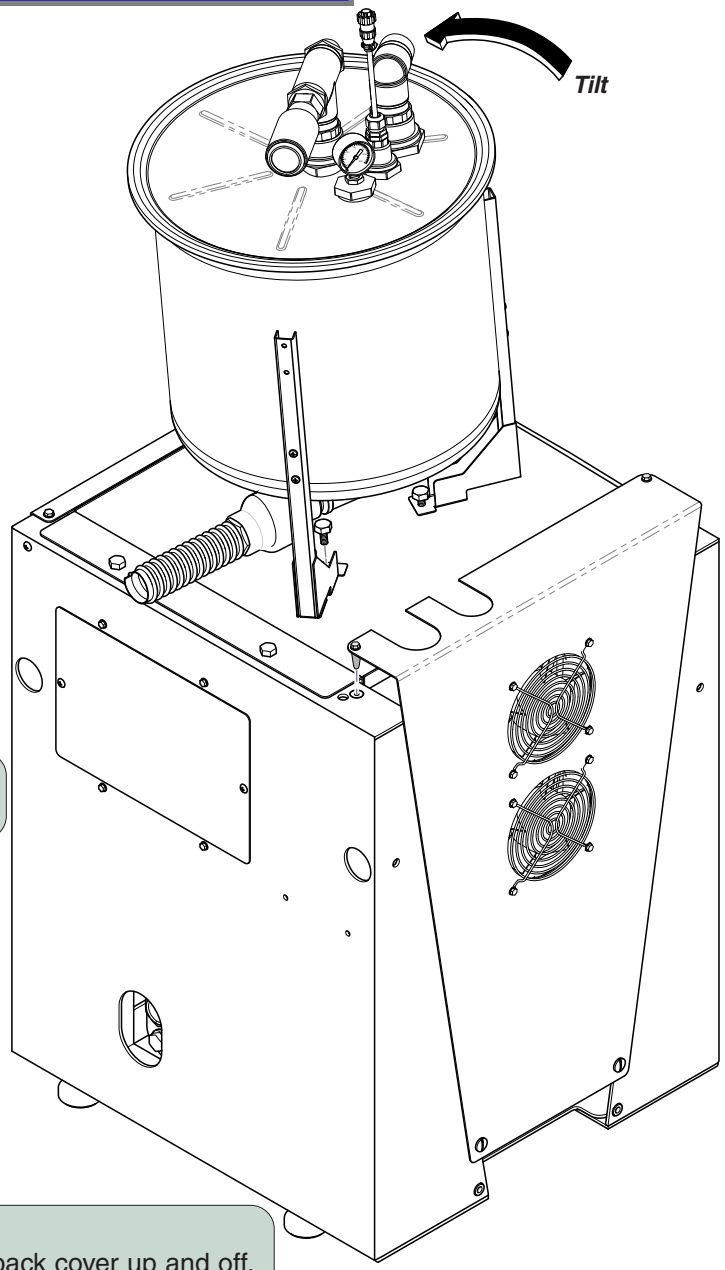
Installation
Step 6: Turn fasteners 1/4 turn colckwise to secure back cover.

Models:	P3	P5	P7	All
Serial Numbers:	0802P3P0612 to Present	0801P5P0241 to Present	0712P7P0105 to Present	V785000 thru Present

Back Cover

Access Procedures

Removal
Step 1: Loosen front two bolts. Remove rear bolts.



Removal
Step 2: Remove rear bolt.

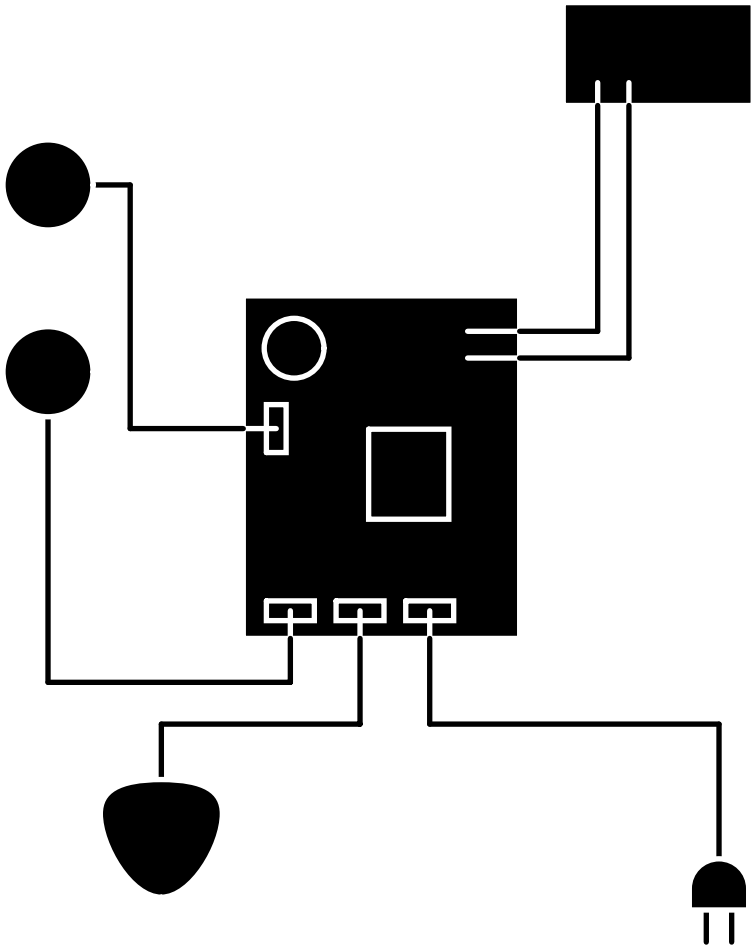
Removal
Step 3: Tilt tank forward and pull back cover up and off.

Step 4: Reverse steps 1 thru 3 to install.

Section D

Wiring Diagrams

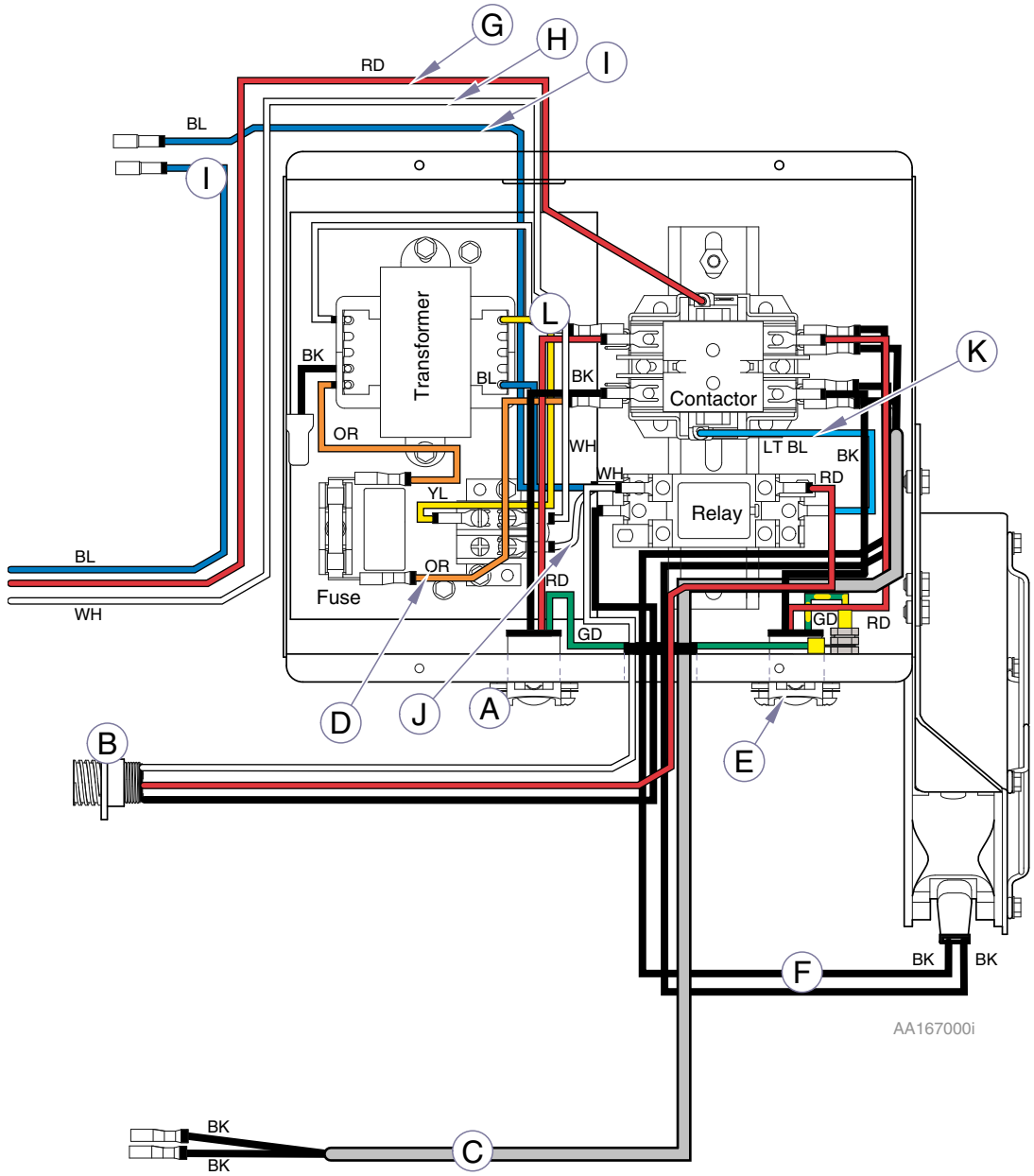
**** Indicates multiple pages due to model / serial number break(s)***



Wiring Diagrams

Refer To: Go To Page:
Electrical Parts/Hardware E-11

Wire Harness	From:	To:	Part Number
A	Power Supply	Electrical Box	**015-1896-00**
B	Float Plug	Electrical Box	**029-3792-00**
C	Hour Meter Cable	Electrical Box	**015-2028-00**
D	Fuse	Contactor	**015-2032-00** Jumper Wire
E	Electrical Box	Motor	**015-2027-00**
F	Fan	Contactor	**015-2052-00**
G	Low Voltage Connection	Contactor	**015-2033-00**
H	Low Voltage Connection	Terminal Block	**015-2024-00**
I	Low Voltage Connection	Relay	**015-2026-00**
J	Terminal Block	Relay	**015-2031-00** Jumper Wire
K	Contactor	Relay	**015-2030-00** Jumper Wire

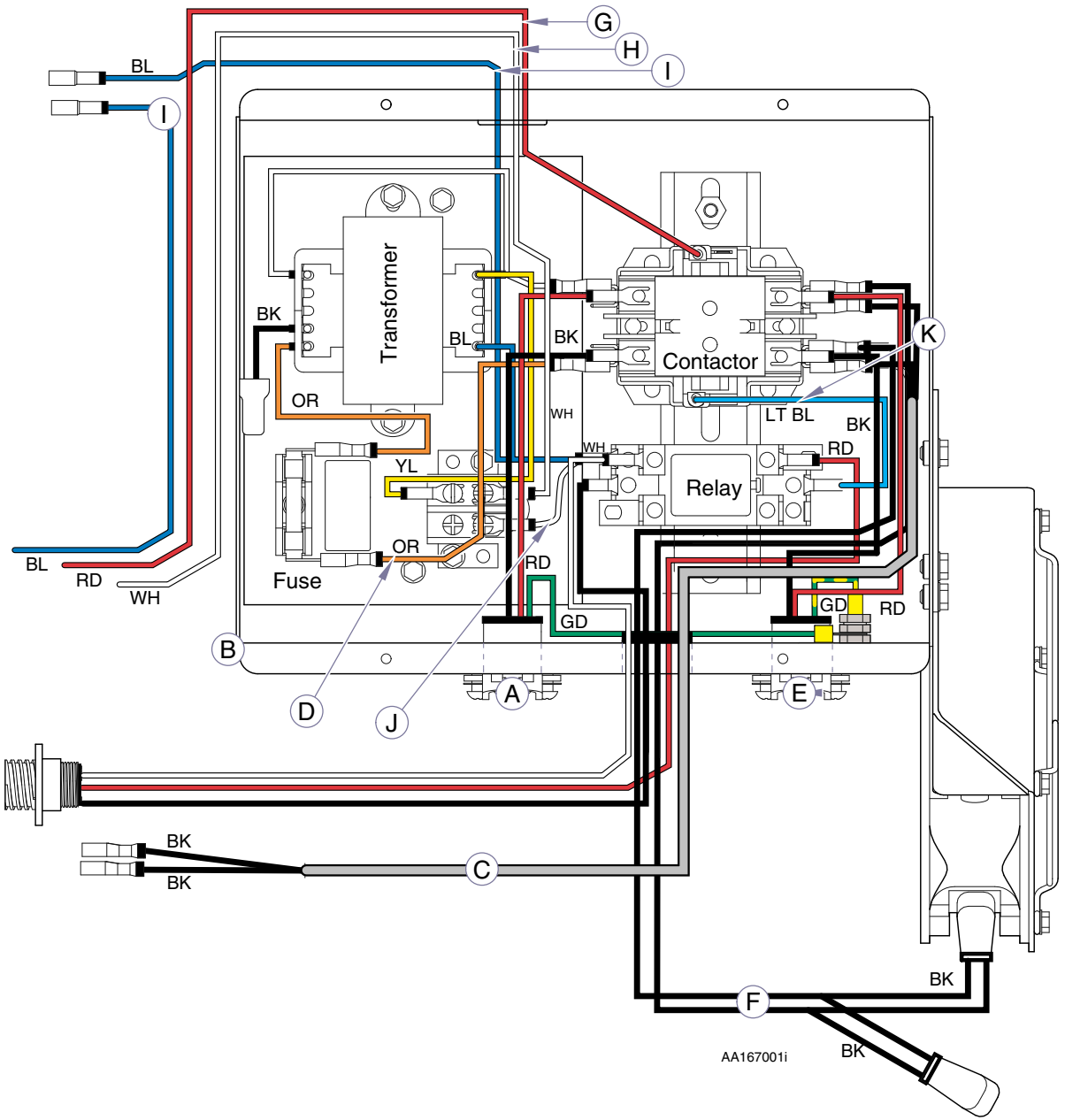


Models:	P3	P5	P7
Serial Numbers:	0611P3P0000 to 0801P3P0611 V245092 to V784999	0611P5P0000 to 0801P5P0240 V245092 to V784999	0611P7P0000 to 0712P7P0104 V245092 to V784999

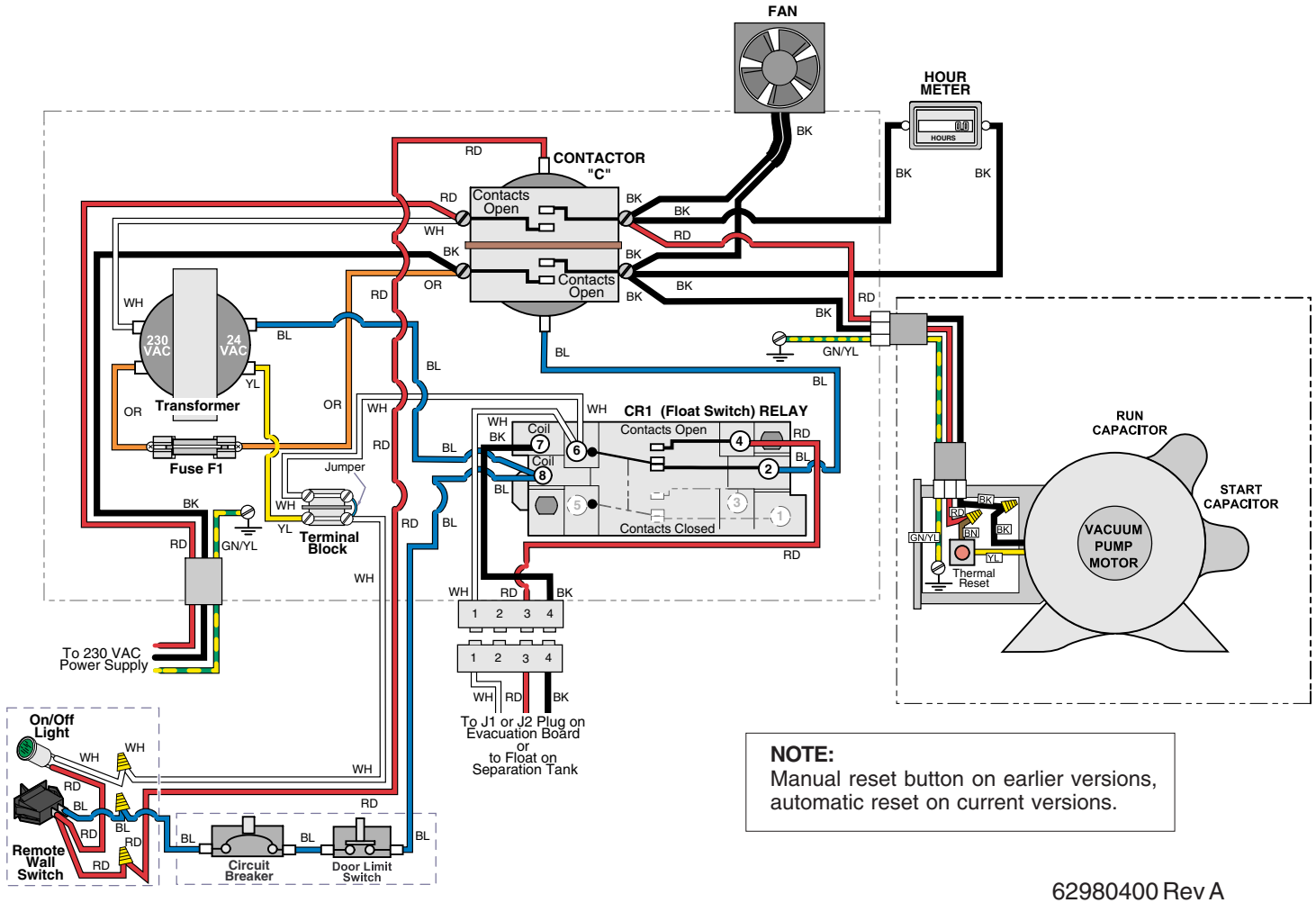
Wiring Diagrams

Refer To: Go To Page:
Electrical Parts/Hardware E-11

Wire Harness	From:	To:	Part Number
A	Power Supply	Electrical Box	**015-1896-00**
B	Float Plug	Electrical Box	**029-3792-00**
C	Hour Meter Cable	Electrical Box	**015-2028-00**
D	Fuse	Contactor	**015-2032-00** Jumper Wire
E	Electrical Box	Motor	**015-2027-00**
F	Fan	Contactor	**10571800**
G	Low Voltage Connection	Contactor	**015-2033-00**
H	Low Voltage Connection	Terminal Block	**015-2024-00**
I	Low Voltage Connection	Relay	**015-2026-00**
J	Terminal Block	Relay	**015-2031-00** Jumper Wire
K	Contactor	Relay	**015-2030-00** Jumper Wire



Wiring Diagrams

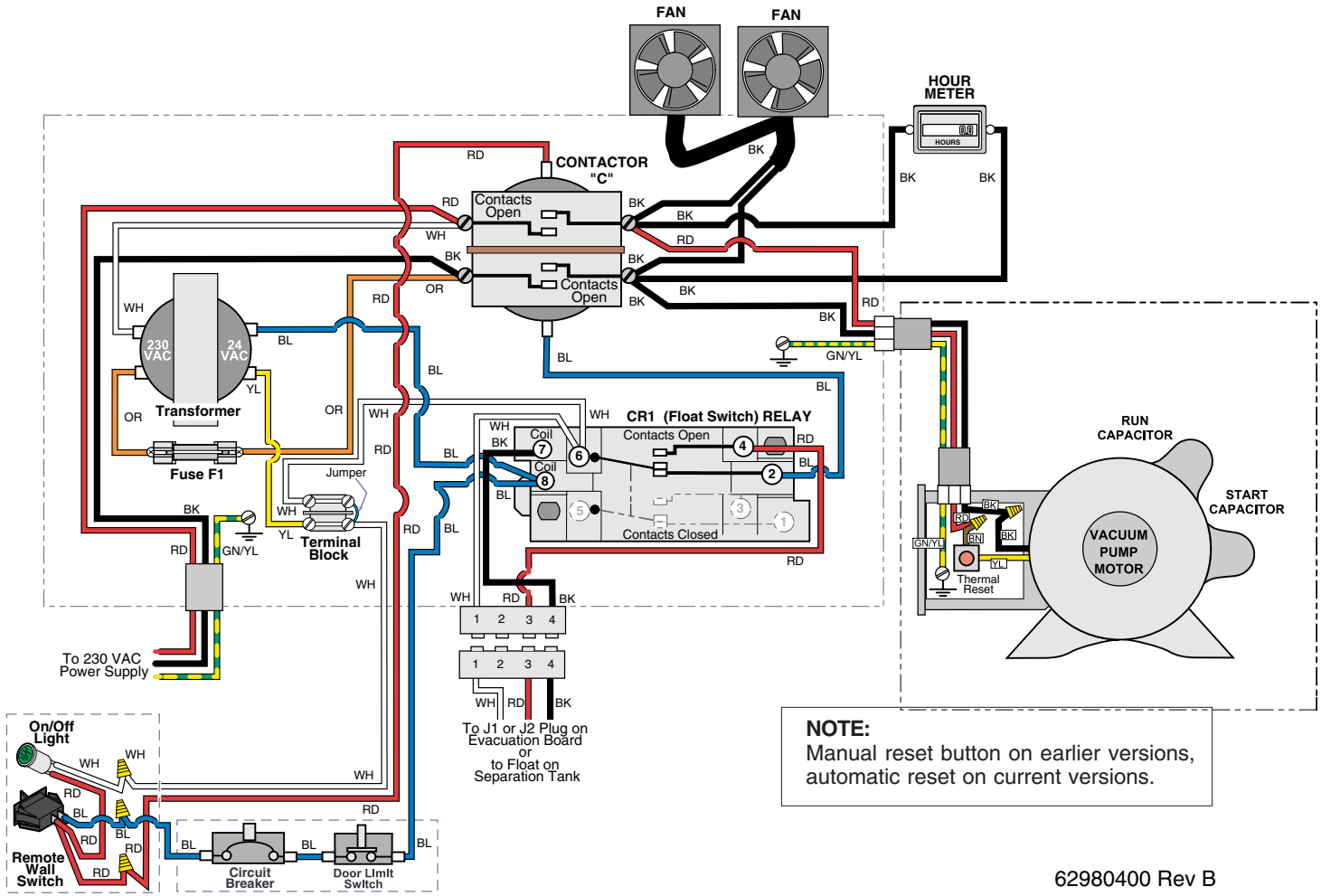


NOTE:
Manual reset button on earlier versions, automatic reset on current versions.

62980400 Rev A

Models: / Serial Numbers:	P3	P5	P7
	0611P3P0000 to 0801P3P0611 V245092 to V784999	0611P5P0000 to 0801P5P0240 V245092 to V784999	0611P7P0000 to 0712P7P0104 V245092 to V784999

Wiring Diagrams

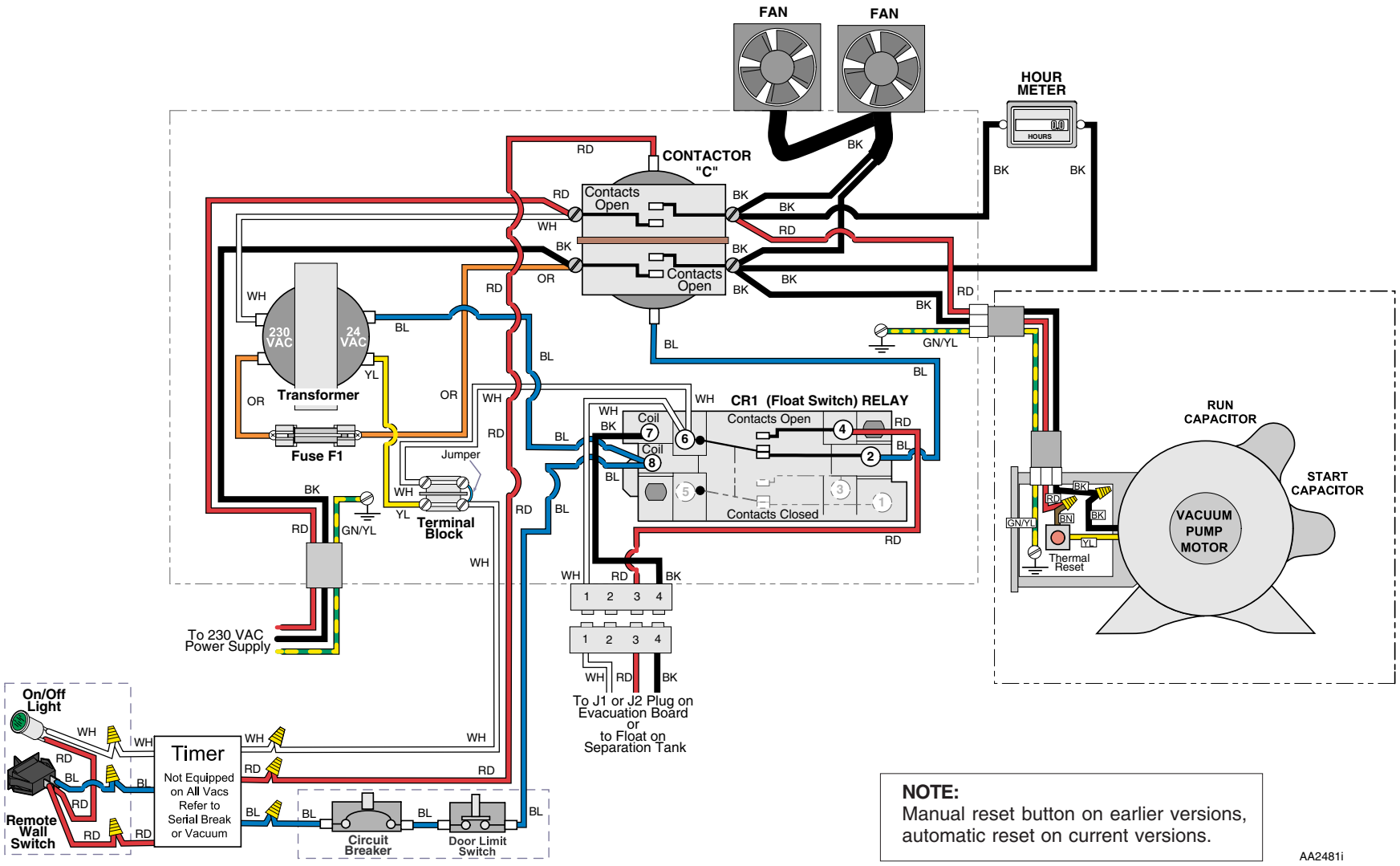


NOTE:
Manual reset button on earlier versions, automatic reset on current versions.

62980400 Rev B

Models:	P3	P5	P7	All
Serial Numbers:	0802P3P0612 to V1648734	0801P5P0241 to V1648734	0712P7P0105 to V1648734	V785000 thru V1648734

Wiring Diagrams



NOTE:
Manual reset button on earlier versions, automatic reset on current versions.

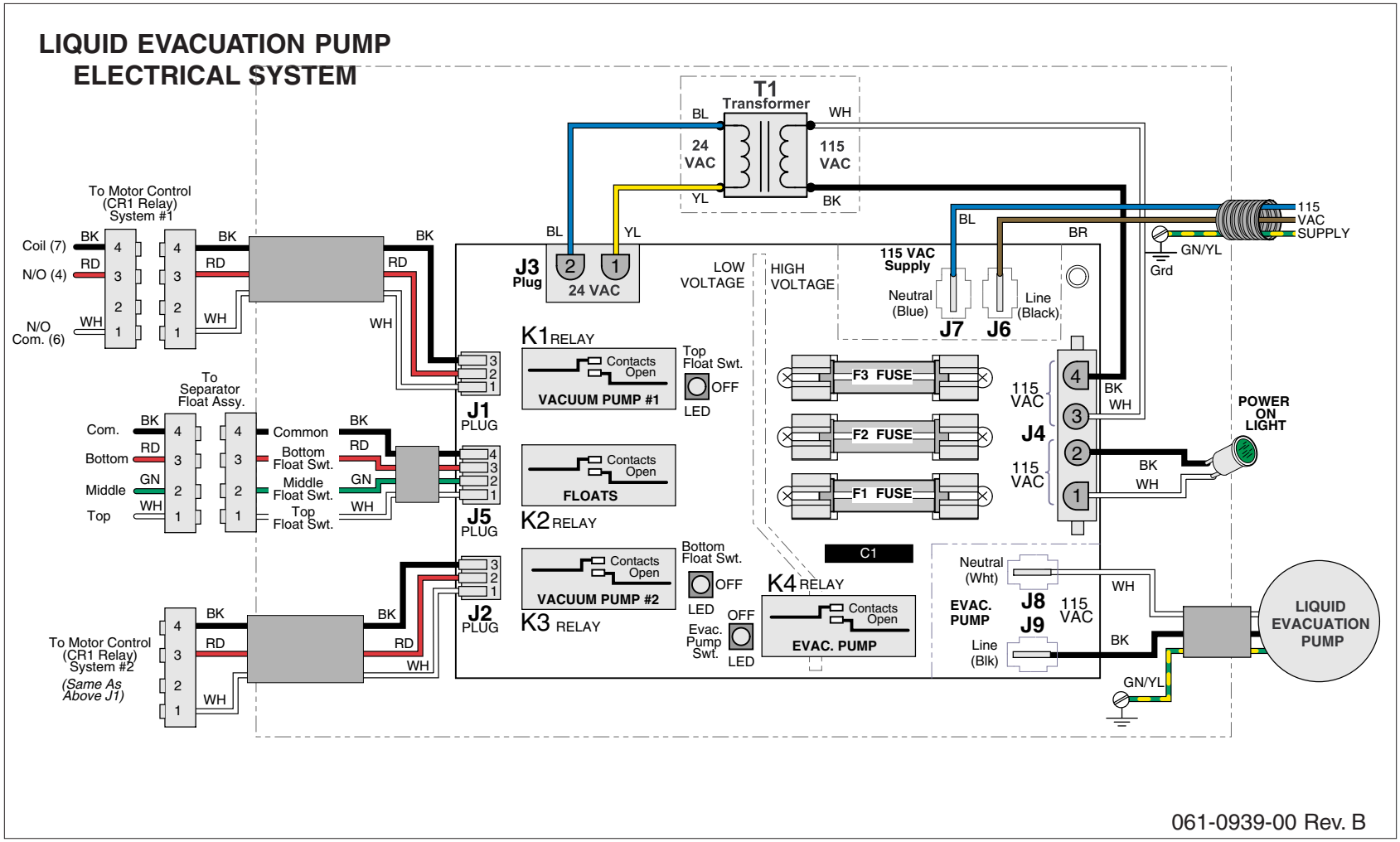
AA2481i

 Rev 11/2/15

Wiring Diagrams

Refer To: Go To Page:
Liquid Evacuation Pump Repair Kit E-14

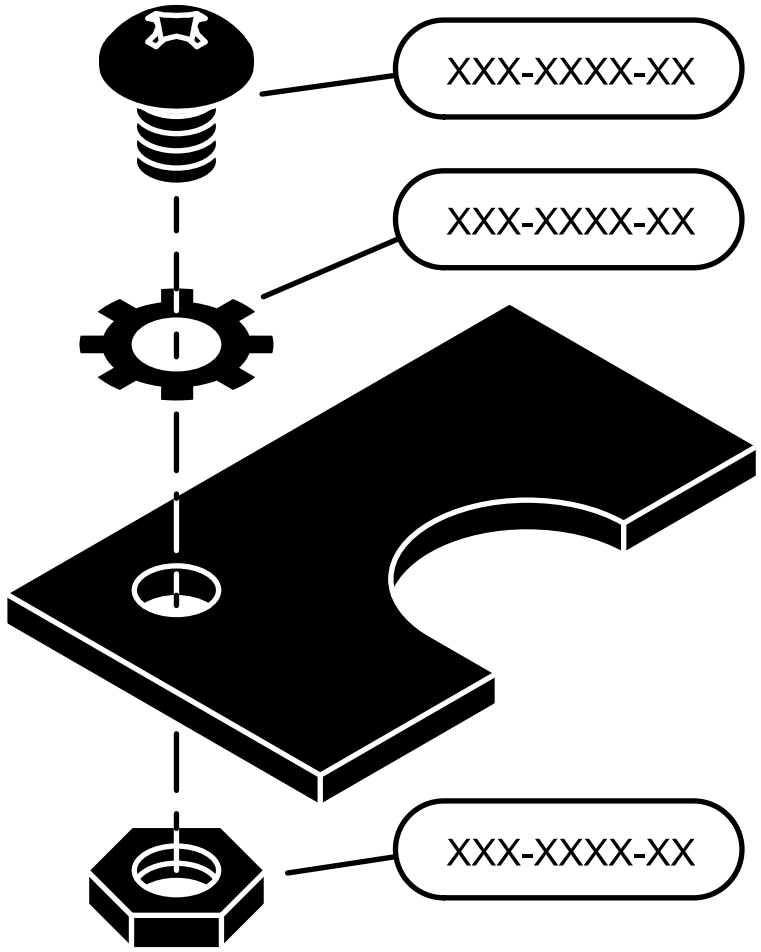
Earlier Versions had Three Reed Switch Floats. The Middle Float was for the Liquid Evac Pump Option. If You Have a Liquid Evac Pump Connected to the PowerVac you Must Replace Float With a Three Reed Switch Float Assembly. If There is No Evac Pump Connected to the PowerVac, You can Replace the Float With a Two Reed Switch Float Assembly.



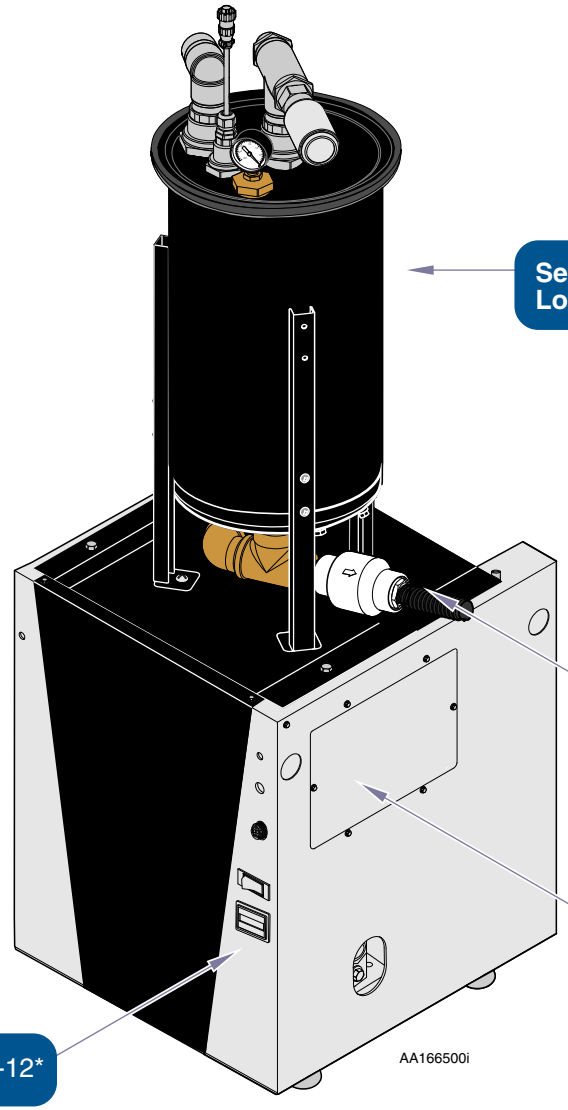
061-0939-00 Rev. B

Section E

Exploded Views & Parts Lists



PowerVac®
P3
P5
P7



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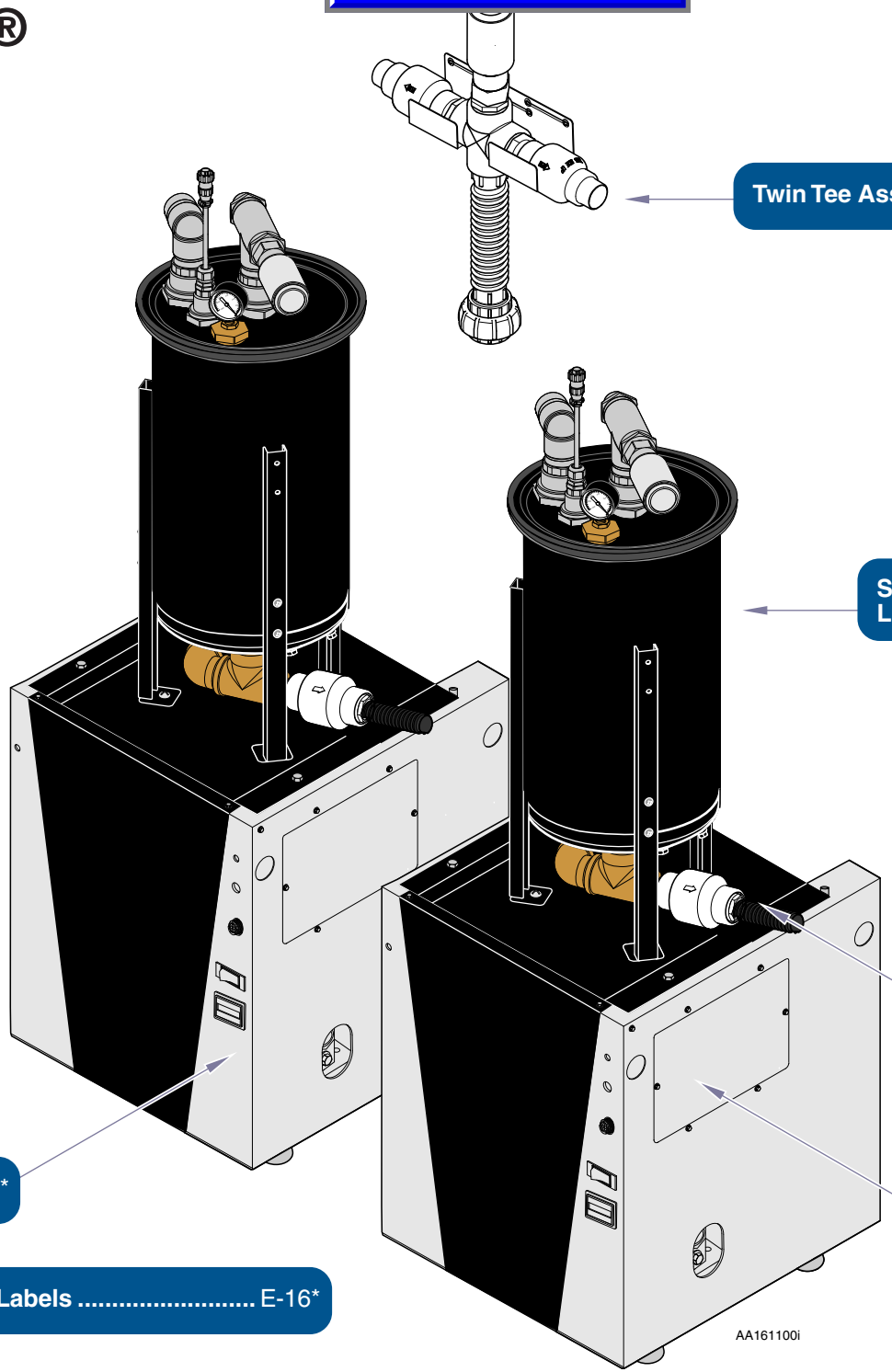
PowerVac®
P6
P10
P14



Twin Tee Assembly E-7

Separator Assembly ... E-5*
Loose parts E-6*

Vacuum Base Unit E-9*
Loose parts E-10*
Shipping Bolt Assy E-17

Fan Assembly E-13*

Drain Assembly E-8*

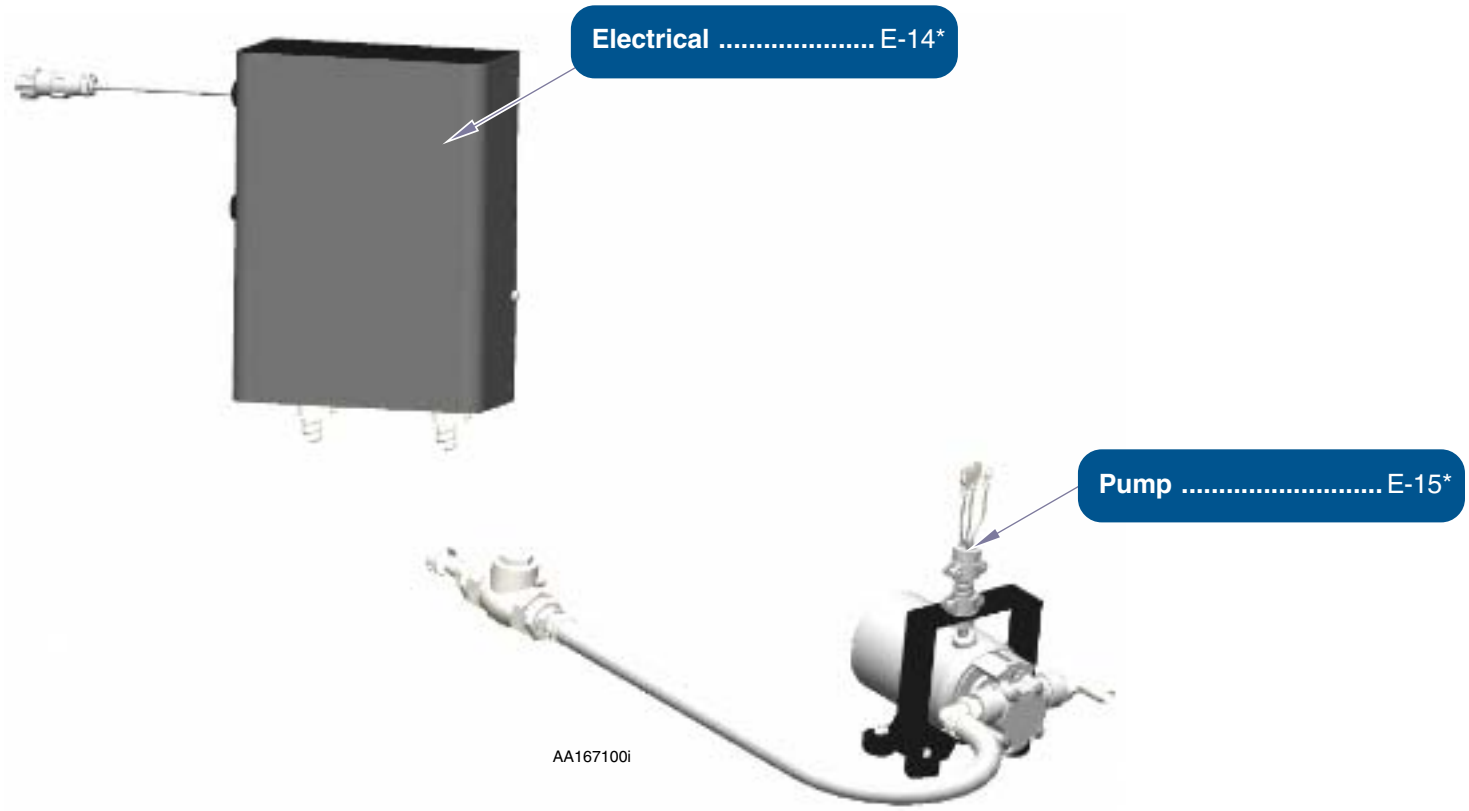
Front Panel Controls .. E-12*

Electrical Box E-12*

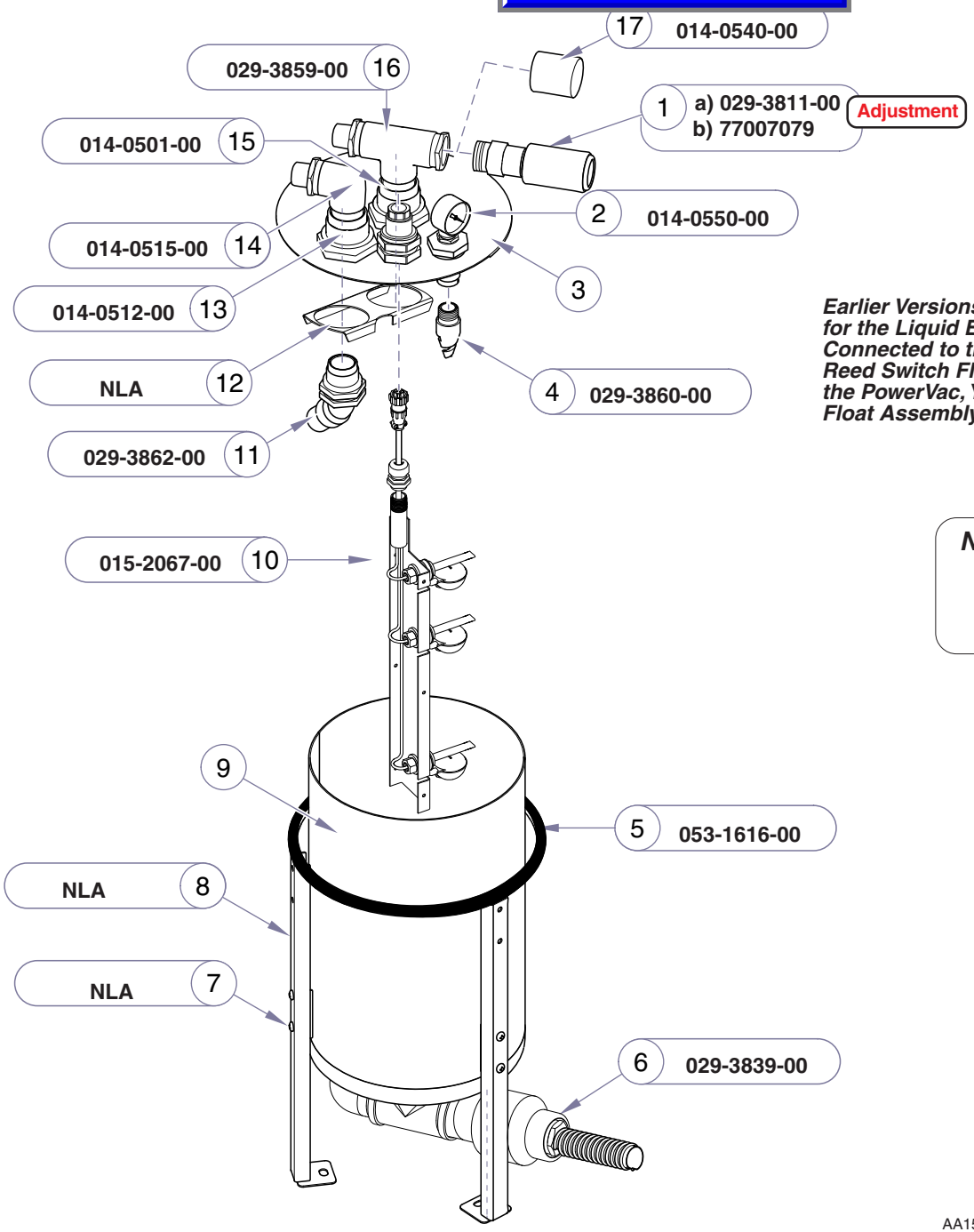
Labels E-16*

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

Liquid Evacuation Pump *(Accessory)*



Earlier Version Shown



AA157600i

Refer To: **Go To Page:**
Drain Assembly E-8
Vacuum Relief Valve . Adjustment B-9

Earlier Versions had Three Reed Switch Floats. The Middle Float was for the Liquid Evac Pump Option. If You Have a Liquid Evac Pump Connected to the PowerVac you Must Replace Float With a Three Reed Switch Float Assembly. If There is No Evac Pump Connected to the PowerVac, You can Replace the Float With a Two Reed Switch Float Assembly. See Next Page for Two Float Assembly PN

Note

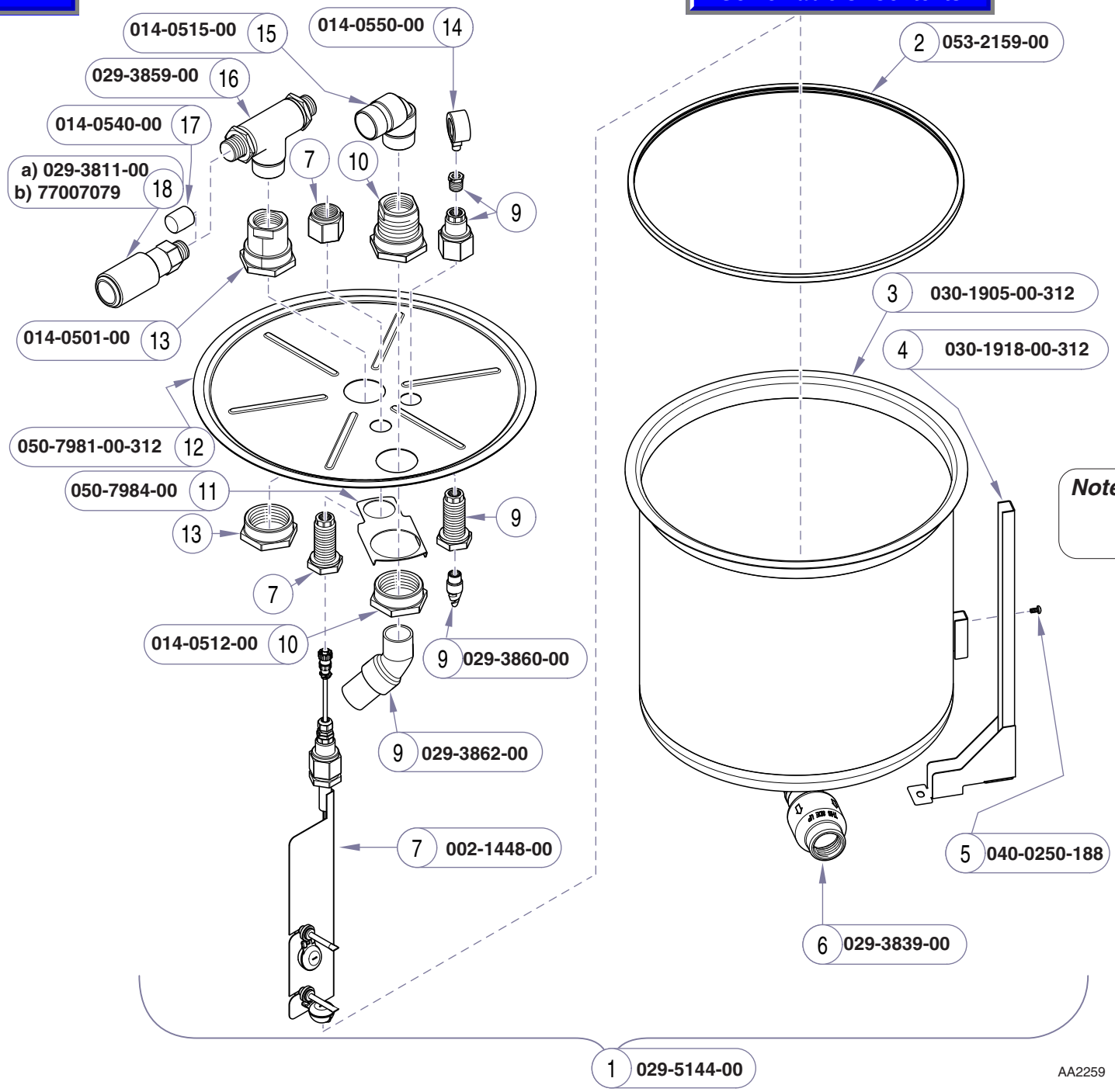
Single models require one separator assembly.
Twin models require two separator assemblies.
NLA = No Longer Available

Item	Description	Qty.
1	Vacuum Relief Valve	
	(Twin Unit location is on Tee Assembly)	
	a) Valve with Filter	1
	b) Filter Only	1
2	Gauge Vac 2" x 1/4" NPT	1
3	**NLA -** (*Replace with 029-5144-00*)	Ref
4	Wash Down Fitting	1
5	Gasket	1
6	Refer to: Drain Assembly	Ref
7	**NLA -**1/4" 20 x 1/2" Pan Head Phillips 'TT'	6
8	**NLA -**Legs	3
9	**NLA -** (*Replace with 029-5144-00*)	Ref
10	Float Assembly	1
11	Bulkhead Assembly w/45	1
12	Bracket	1
13	Pipe Nipple 1-1/2" NPT	1
14	Elbow 90, 1-1/2" NPT	1
15	Bulkhead Fitting 1-1/2"	1
16	Tee Fitting	1
17	Cap *(Twin Units Only)*	1

Always Specify Model & Serial Number

Models: *Serial Numbers:*	***P3*** *V245092 to V975824* *0611P3P0000 thru Present*	***P5*** *V245092 to V975824* *0611P5P0000 thru Present*	***P7*** *V245092 to V975824* *0611P7P0000 thru Present*

Separator



Refer To: Go To Page:
Drain Assembly E-8
Vacuum Relief Valve Adjustment . B-9

Earlier Versions had Three Reed Switch Floats. The Middle Float was for the Liquid Evac Pump Option. If You Have a Liquid Evac Pump Connected to the PowerVac you Must Replace Float With a Three Reed Switch Float Assembly. If There is No Evac Pump Connected to the PowerVac, You can Replace the Float With a Two Reed Switch Float Assembly. See Next Previous Page for Three Float Assembly PN

Note

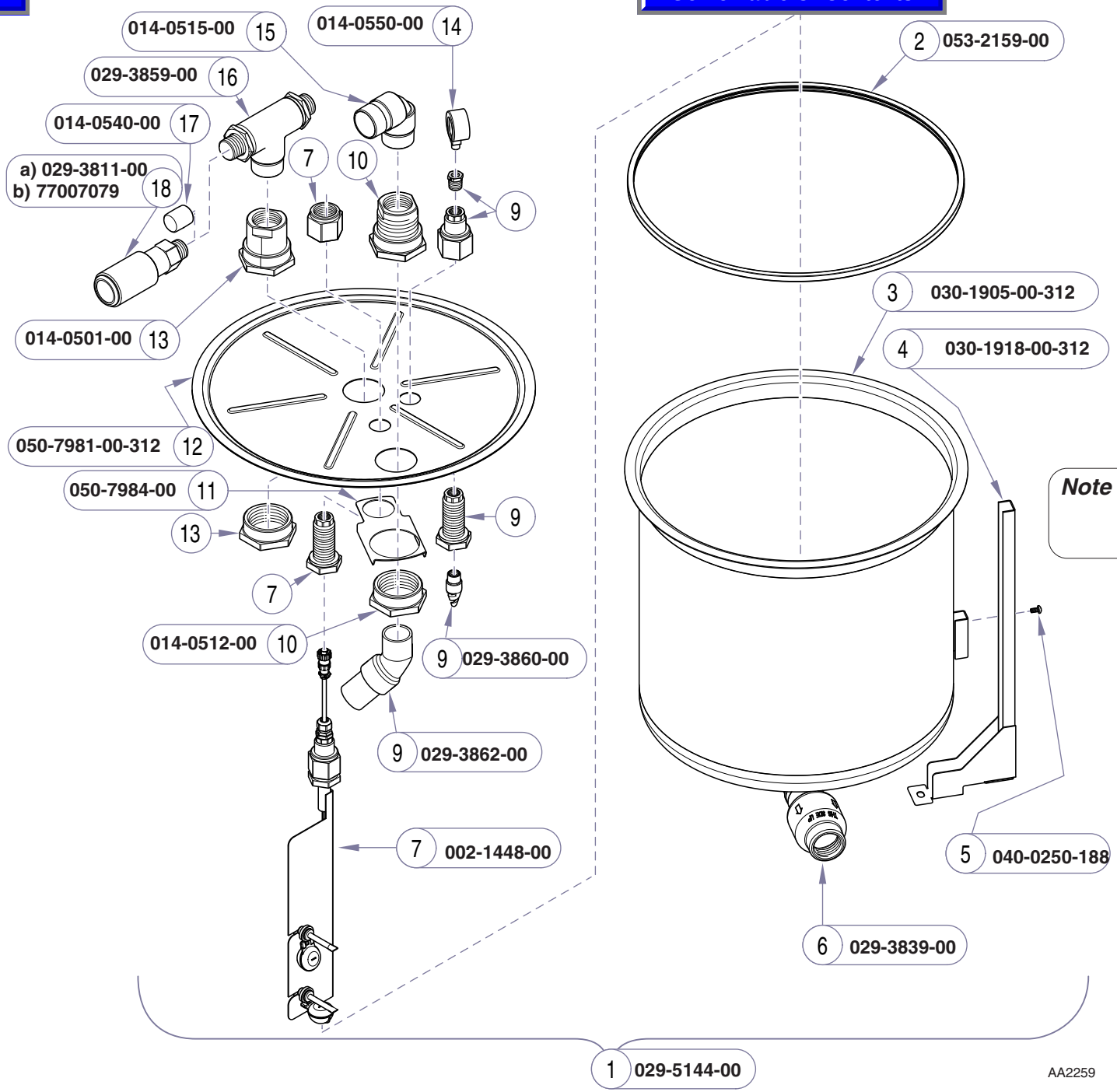
Single models require one separator assembly.
Twin models require two separator assemblies.

Item	Description	Qty.
1	Separator Assembly *(includes items 2-17)*	1
2	• Gasket	1
3	• Tank	1
4	• Legs	3
5	• 1/4" 20 x 1/2" 'TT'	6
6	• Refer to: Drain Assembly	Ref
7	• Float Assembly	1
8	• Bulkhead Assembly w/45	1
9	• Wash Down Fitting	1
10	• Pipe Nipple 1-1/2" NPT	1
11	• Bracket	1
12	• Separator Lid	1
13	• Bulkhead Fitting 1-1/2"	1
14	• Gauge Vac 2" x 1/4" NPT	1
15	• Elbow 90, 1-1/2" NPT	1
16	• Tee Fitting	1
17	• Cap *(Twin Units Only)*	1
18	• Vacuum Relief Valve *(Twin Unit location is on Tee Assembly)*	
	a) Valve Assembly with Filter	1
	b) Filter Only	1

Always Specify Model & Serial Number

Separator

Models: / Serial Numbers:	P3	P5	P7
	V975825 to V1465490	V975825 to V1465490	V975825 to V1465490



Refer To: **Page**
Drain Assembly E-8
Vacuum Relief Valve Adjustment . B-9

Earlier Versions had Three Reed Switch Floats. The Middle Float was for the Liquid Evac Pump Option. If You Have a Liquid Evac Pump Connected to the PowerVac you Must Replace Float With a Three Reed Switch Float Assembly. If There is No Evac Pump Connected to the PowerVac, You can Replace the Float With a Two Reed Switch Float Assembly. See Next Previous Page for Three Float Assembly PN

Note

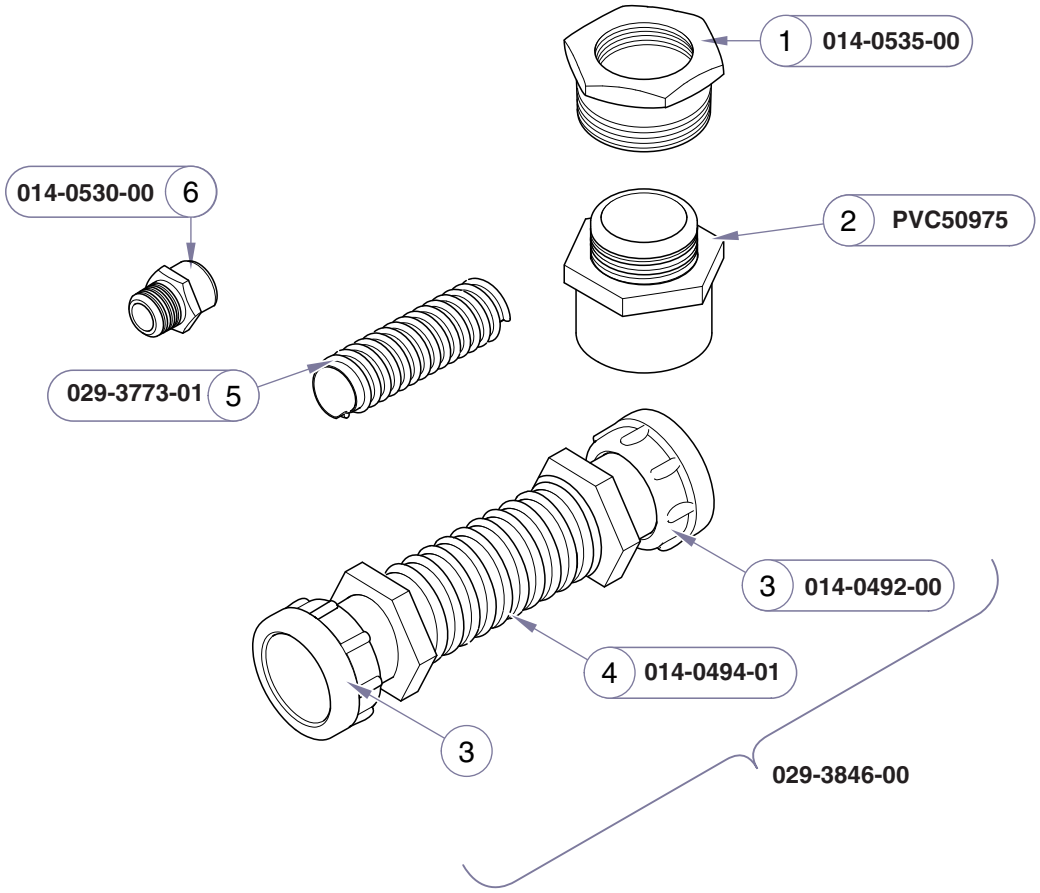
Single models require one separator assembly.
Twin models require two separator assemblies.

Item	Description	Qty.
1	Separator Assembly *(includes items 2-17)*	1
2	• Gasket	1
3	• Tank	1
4	• Legs	3
5	• 1/4" 20 x 1/2" 'TT'	6
6	• Refer to: Drain Assembly	Ref
7	• Float Assembly	1
8	• Bulkhead Assembly w/45	1
9	• Wash Down Fitting	1
10	• Pipe Nipple 1-1/2" NPT	1
11	• Bracket	1
12	• Separator Lid	1
13	• Bulkhead Fitting 1-1/2"	1
14	• Gauge Vac 2" x 1/4" NPT	1
15	• Elbow 90, 1-1/2" NPT	1
16	• Tee Fitting	1
17	• Cap *(Twin Units Only)*	1
18	• Vacuum Relief Valve *(Twin Unit location is on Tee Assembly)*	
	a) Valve Assembly with Filter	1
	b) Filter Only	1

Always Specify Model & Serial Number

Beginning Serial Number Label on Separator Tanks

Models: / ***Serial Numbers:***	***P3***	***P5***	***P7***
	V1465491 to present	*V1465491 to present*	*V1465491 to present*



AA161300i

Item	Description	Qty.
	(includes items 1 thru 8)	
1	Bushing 2" MPT x 1 1/2" FPT *(Exhaust)*	1
2	Adapter 1 1/2" *(PVC)*	1
	Hose Assembly *(includes items 3 & 4)*	
3	Swivel Connector	2
4	Intake Hose 1 1/2" x 6'	1
5	Drain Hose 1" x 6'	1
6	Garden Hose Adapter	1
7	Pipe Nipple *(Threaded, Plastic)*	1

Always Specify Model & Serial Number

Separator Loose Parts

Models: ***All***
Serial Numbers: ***Up to Production Date 5/3/2006***

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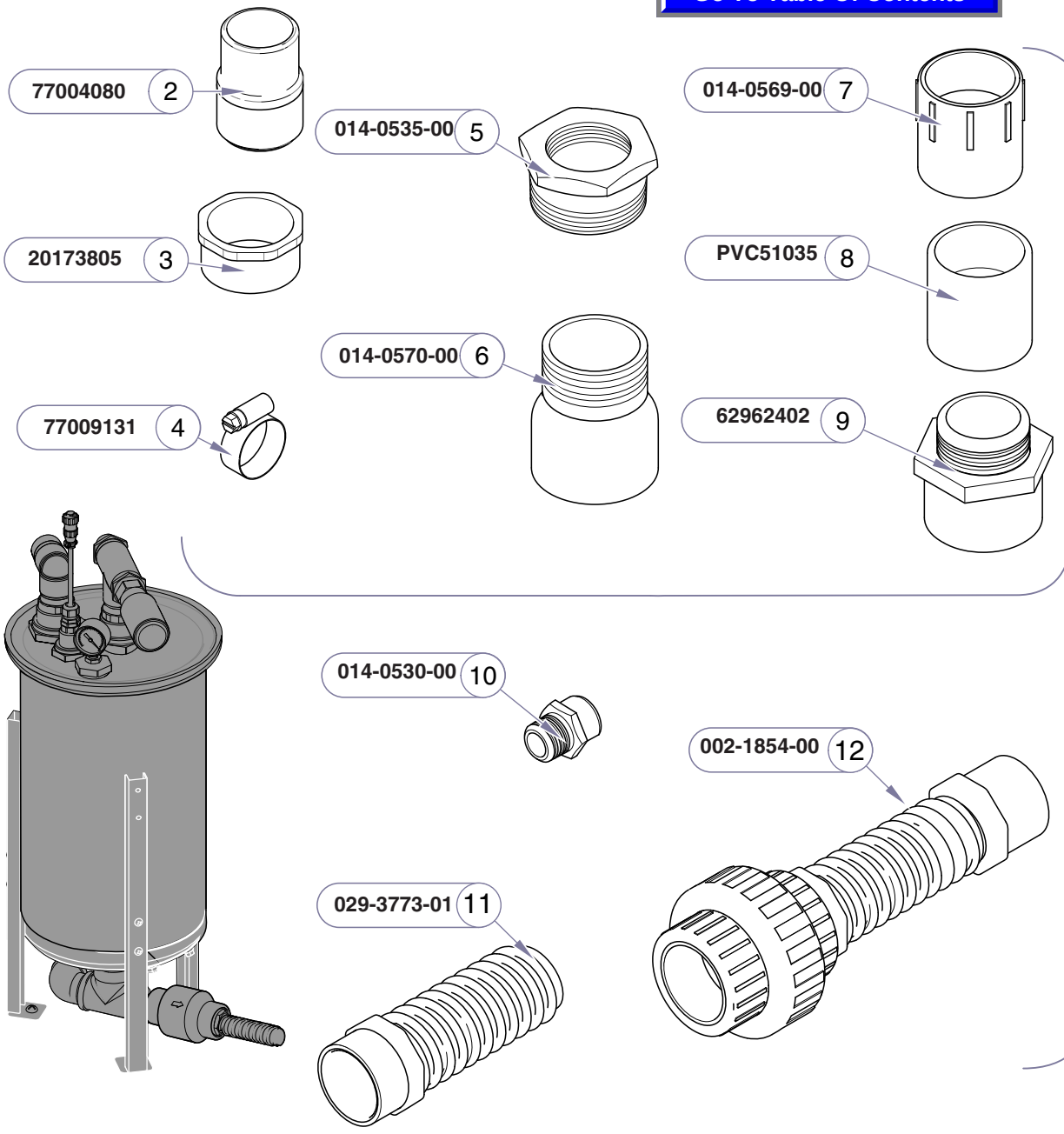
Refer To: Page
Vacuum Relief Valve . Adjustment B-9



Top Section are Extra Fittings for Intake and VRV Hose Connections to Existing Pipes from Separator

Note

This loose parts kit is only for separator components only.

Item	Description	Qty.
1	*Separator Loose Parts (includes items 2 thru 12)*	
2	• Nipple, PVC, 1 1/4"	1
3	• Busing, PVC, 1 1/2" NPM x 1 1/4" NPT	1
4	• Clamp, Worm Gear, 2"	1
5	• Bushing 2" NPT x 1.5" FPT, *(PVC)*	1
6	• Coupling Reducer SOC 2" x 1"	1
7	• Adapter, 1 1/2" NPT x Socket, *(PVC)*	1
8	• Coupler 1 1/2" SOC 2" x 1" *(PVC)*	1
9	• Adapter, 1 1/2" NPT x Socket, *(PVC)*	1
10	• Garden Hose Adapter	1
11	Drain Hose Assembly, 1 1/2" I.D..	1
12	Intake Hose Assembly, 1 1/2" I.D.	1

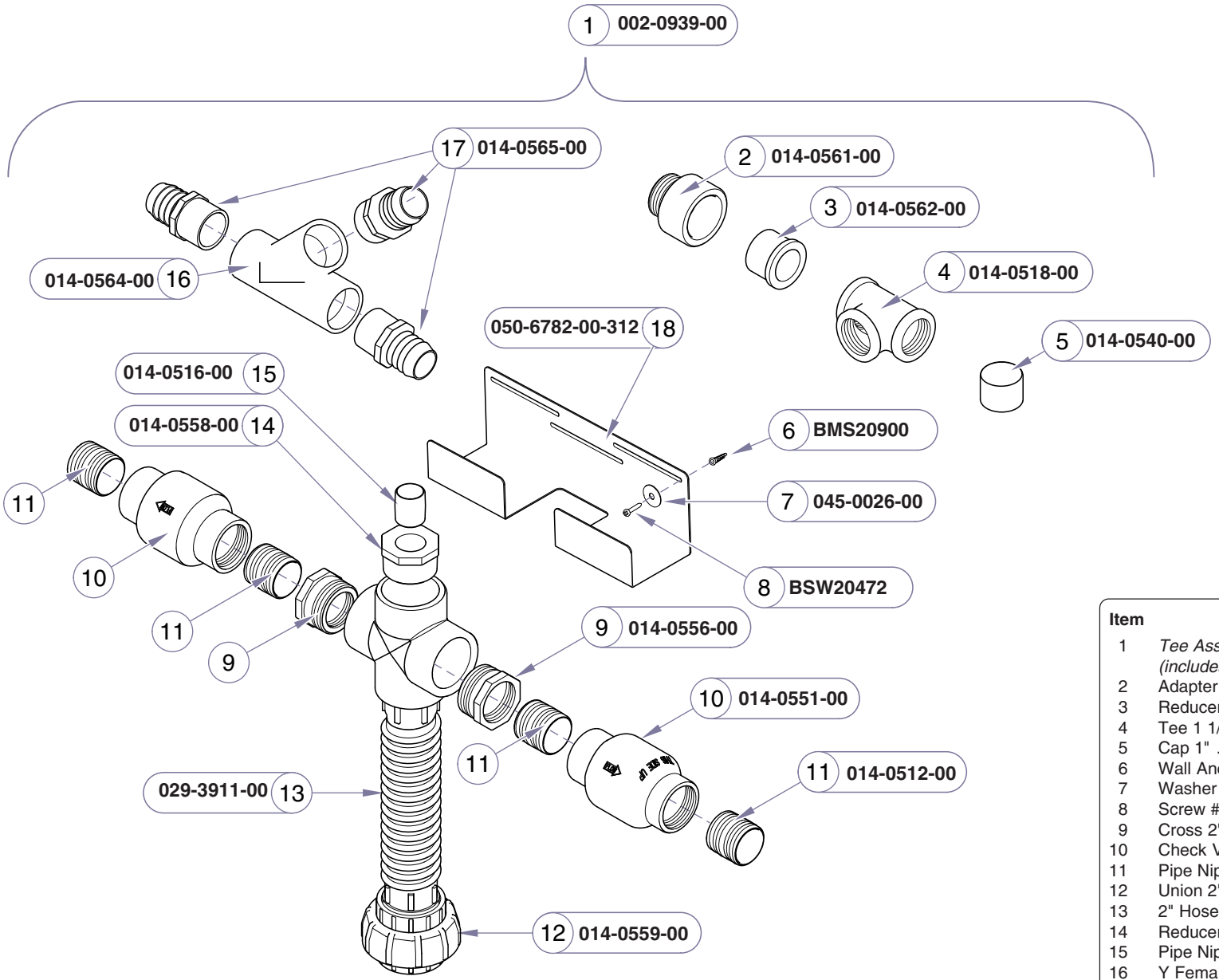
Always Specify Model & Serial Number

AA161302i

Separator Loose Parts

Models: / Serial Numbers:	P3	P5	P7	All
	0611P3P0000 to Present	0611P5P0000 to Present	0611P7P0000 to Present	V785000 thru Present

Rev. 04-1-16



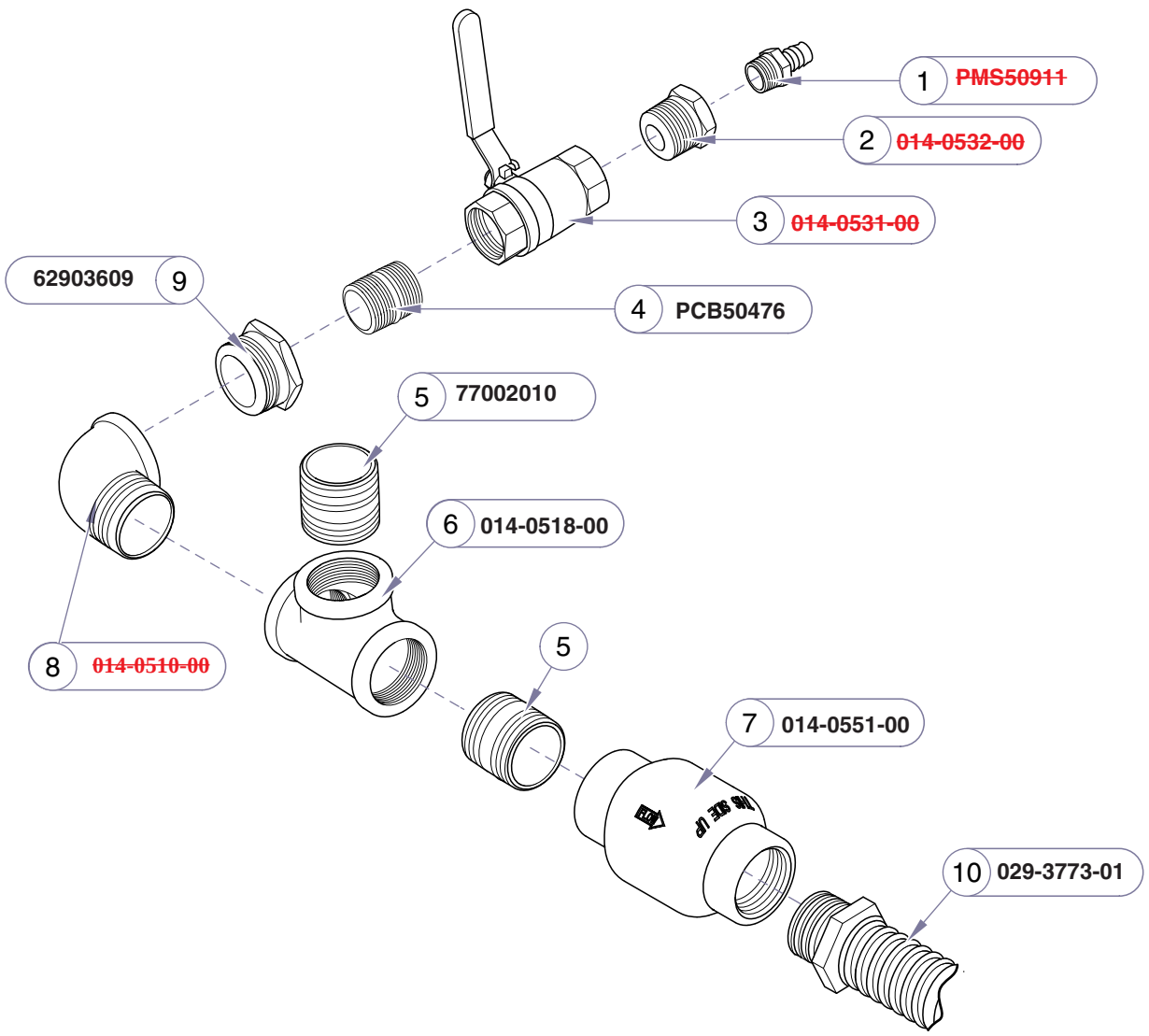
AA167200i

Item	Description	Qty.
1	*Tee Assembly (Single to Twin Dry Vac Kit) (includes items 1 thru 18)*	
2	Adapter 2" MIPT x SOC	1
3	Reducer Bushing 2" x 1 1/2"	1
4	Tee 1 1/2" FPT Brass	1
5	Cap 1"	2
6	Wall Anchor 3/16" x 1 1/4"	5
7	Washer Fender 1/4 Bolt x 1" O.D.	5
8	Screw #8 x 1 1/2" Pan	5
9	Cross 2" NPT	1
10	Check Valve	2
11	Pipe Nipple 1 1/2" NPT	4
12	Union 2" NPT x 2" NPT	1
13	2" Hose Assembly	1
14	Reducer Busting 2" x 1"	1
15	Pipe Nipple 1" NPT	1
16	Y Female Fitting 1 1/2"	1
17	Barb Fitting *(1 1/2" Hose)*	3
18	Bracket	1

Always Specify Model & Serial Number

Models: / ***Serial Numbers:***	***P6*** / ***All***	***P10*** / ***All***	***P14*** / ***All***

Tee Assembly



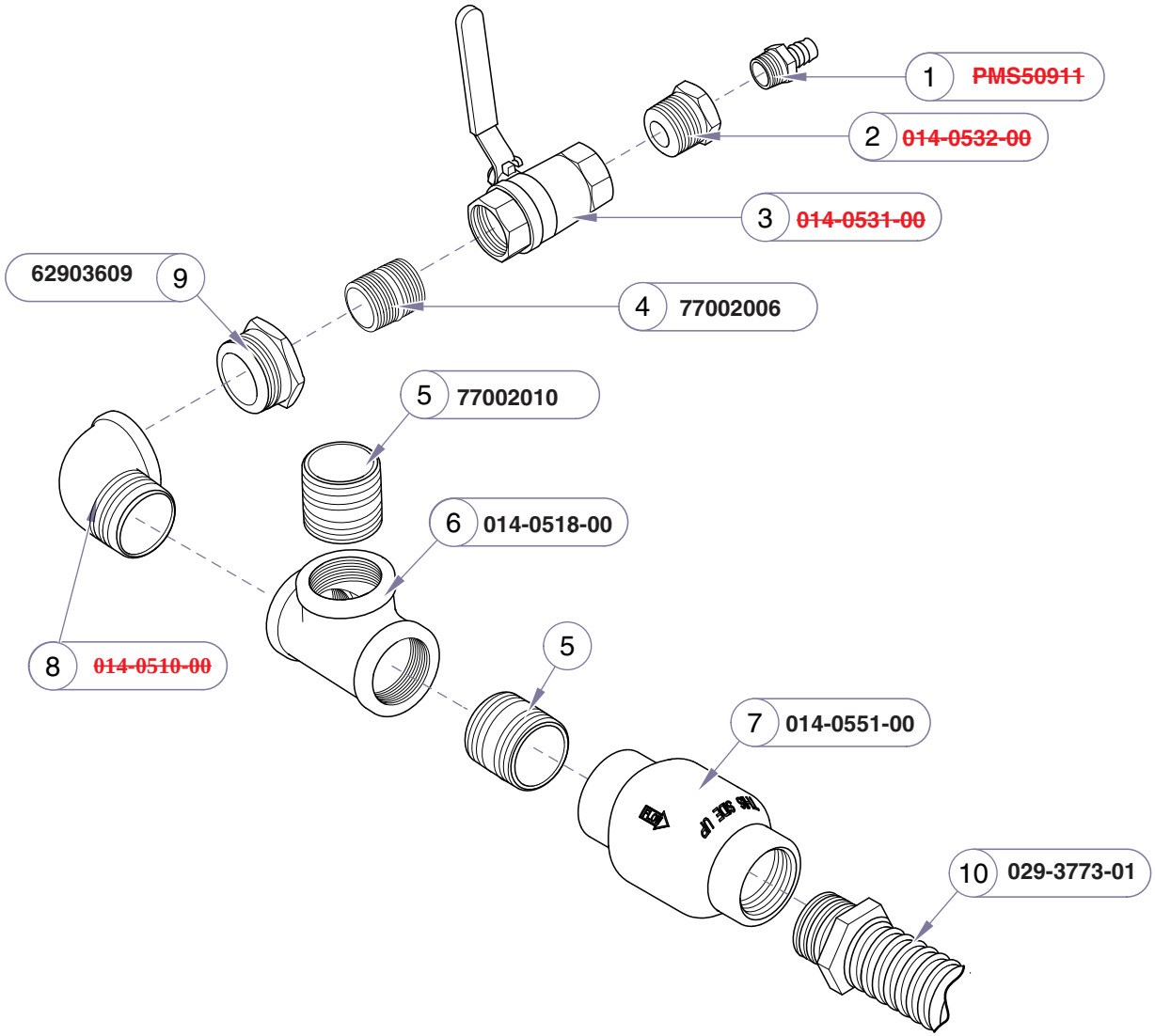
AA161200i

Item	Description	Qty.
	029-3839-00 Drain Assembly *(includes items 1 thru 10)*	
1	Barb Connector 1/2 MPT (NLA)	1
2	Bushing 1 x 1/2 NPT (NLA)	1
3	Ball Valve (NLA)	1
4	Nipple 1"	1
5	Nipple 1 1/2"	2
6	Tee 1 1/2" FPT	1
7	Check Valve 1 1/2"	1
8	Elbow, ST, 1 1/2" NPT(NLA)	1
9	Reducer 1 1/2 NPT x 1" NPT	1
10	Drain Hose	1
11	Loctite 542 Sealant *(10566800 - Not Shown)*	

Always Specify Model & Serial Number

Drain Assembly

Models: / Serial Numbers:	P3	P5	P7
	V245092 to V317654	V245092 to V317641	V245092 to V317634



AA161201i

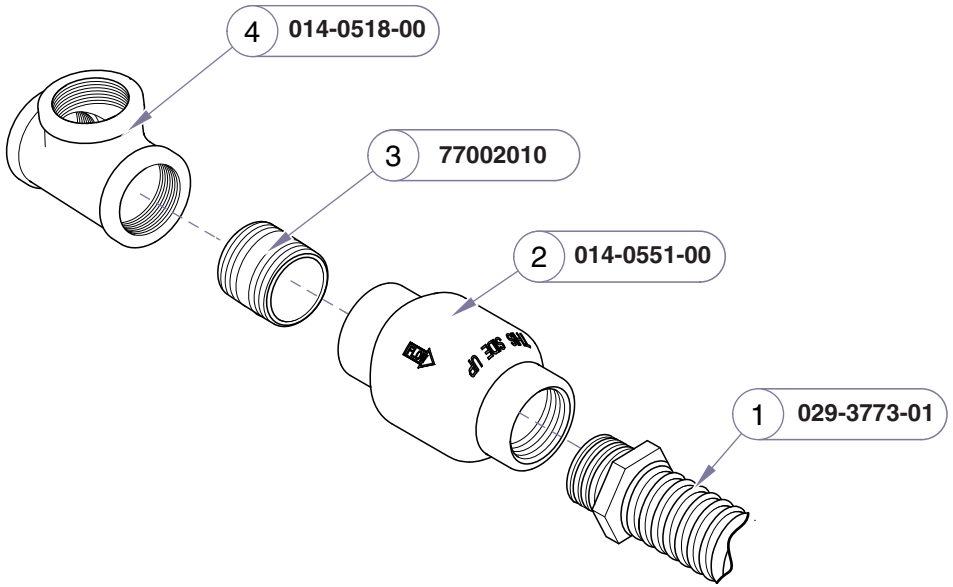
Item	Description	Qty.
	029-3839-00 Drain Assembly *(includes items 1 thru 10)*	
1	Barb Connector 1/2 MPT (NLA)	1
2	Bushing 1 x 1/2 NPT(NLA)	1
3	Ball Valve (NLA)	1
4	Nipple 1"	1
5	Nipple 1 1/2"	2
6	Tee 1 1/2" FPT	1
7	Check Valve 1 1/2"	1
8	Elbow, ST, 1 1/2" NPT(NLA)	1
9	Reducer 1 1/2 NPT x 1" NPT	1
10	Drain Hose	1
11	Loctite 542 Sealant *(10566800 - Not Shown)*	

Always Specify Model & Serial Number

Models: / ***Serial Numbers:***	***P3***	***P5***	***P7***
	0611P3P0000 to 0804P3P0751	*0611P5P0000 to 0804P5P0310*	*0611P7P0000 to x0804P7P0134*

Drain Assembly

E-8.1



AA161202i

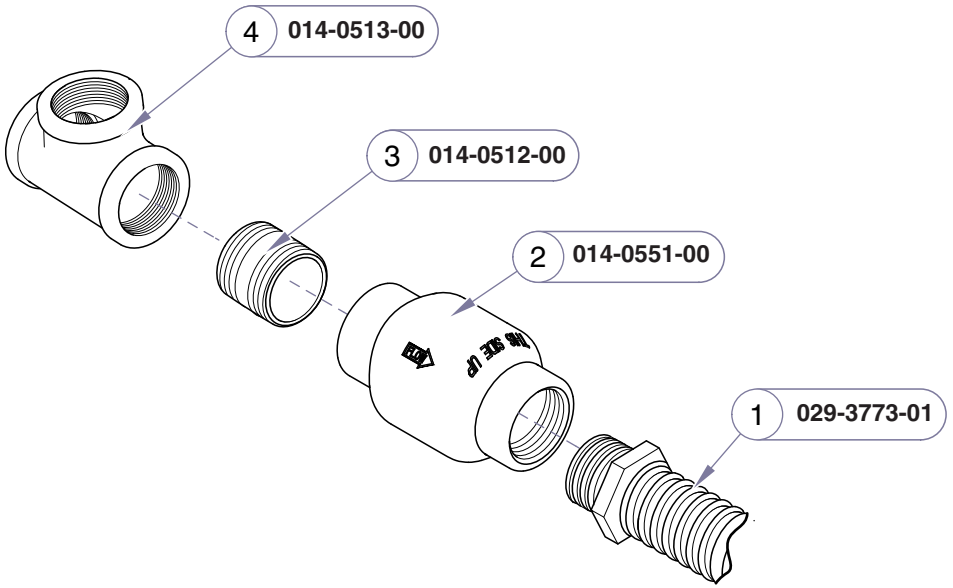
Item	Description	Qty.
	029-3839-00 Drain Assembly *(includes items 1 thru 10)*	
1	Drain Hose	1
2	Check Valve 1 1/2"	1
3	Nipple 1 1/2"	1
4	Tee 1 1/2" FPT	1

Always Specify Model & Serial Number

Drain Assembly

Models: / Serial Numbers:	P3	P5	P7	All
	0804P3P00752 thru V1651590	0804P5P0311 thru V1651590	0804P7P0135 thru V1651590	V785000 thru V1651590

 Rev 4/1/16



Item	Description	Qty.
	029-3839-00 Drain Assembly *(includes items 1 thru 10)*	
1	Drain Hose	1
2	Check Valve 1 1/2"	1
3	Nipple 1 1/2"	1
4	Tee 1 1/2" FPT	1

Always Specify Model & Serial Number

Models:	P3	P5	P7	All
Serial Numbers:	V1651591 thru Present	V1651591 thru Present	V1651591 thru Present	V1651591 thru Present

Drain Assembly

E-8.3

 Rev 4/1/16

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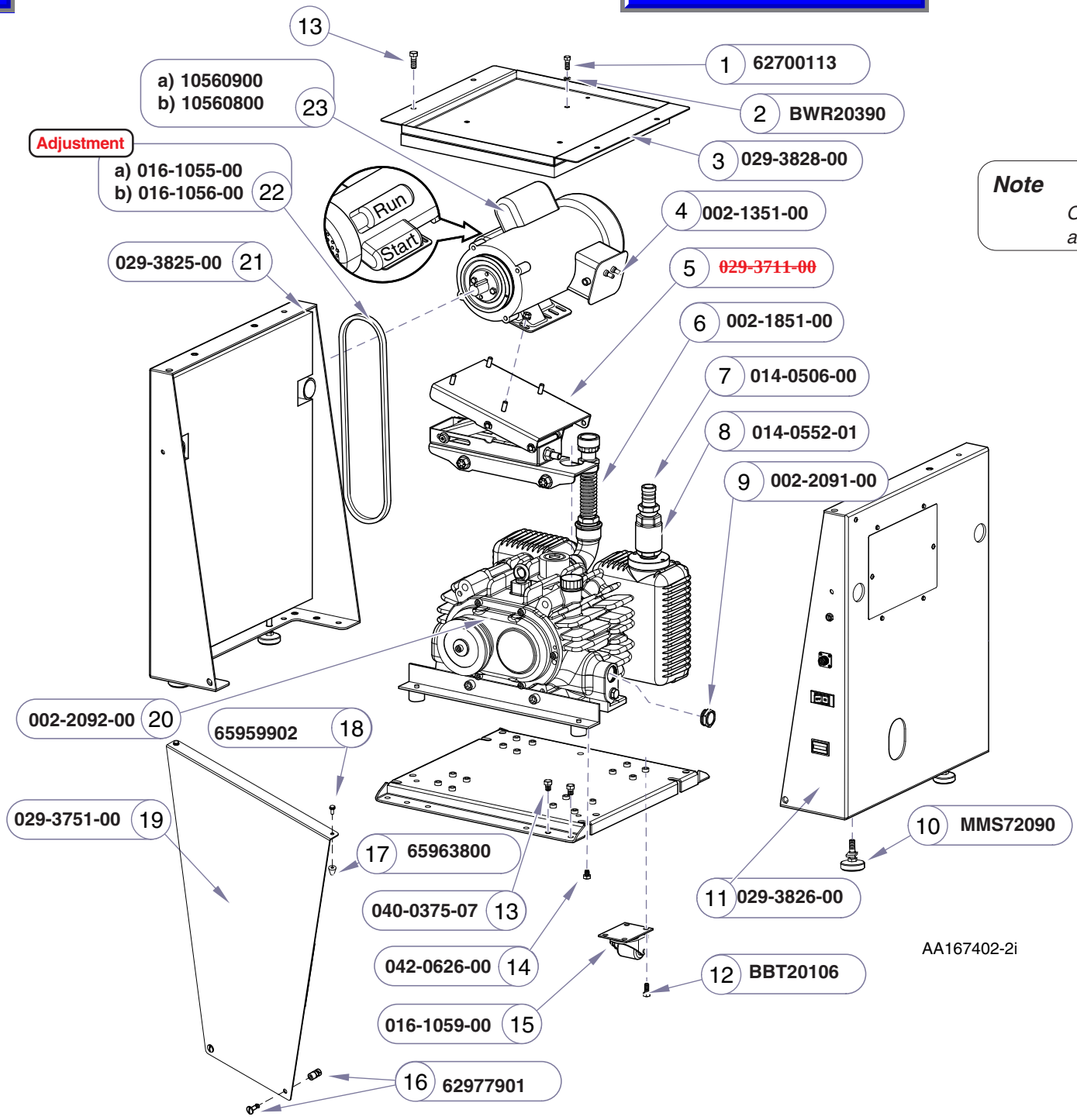


Refer To: **Page**
Belt B-2

Note

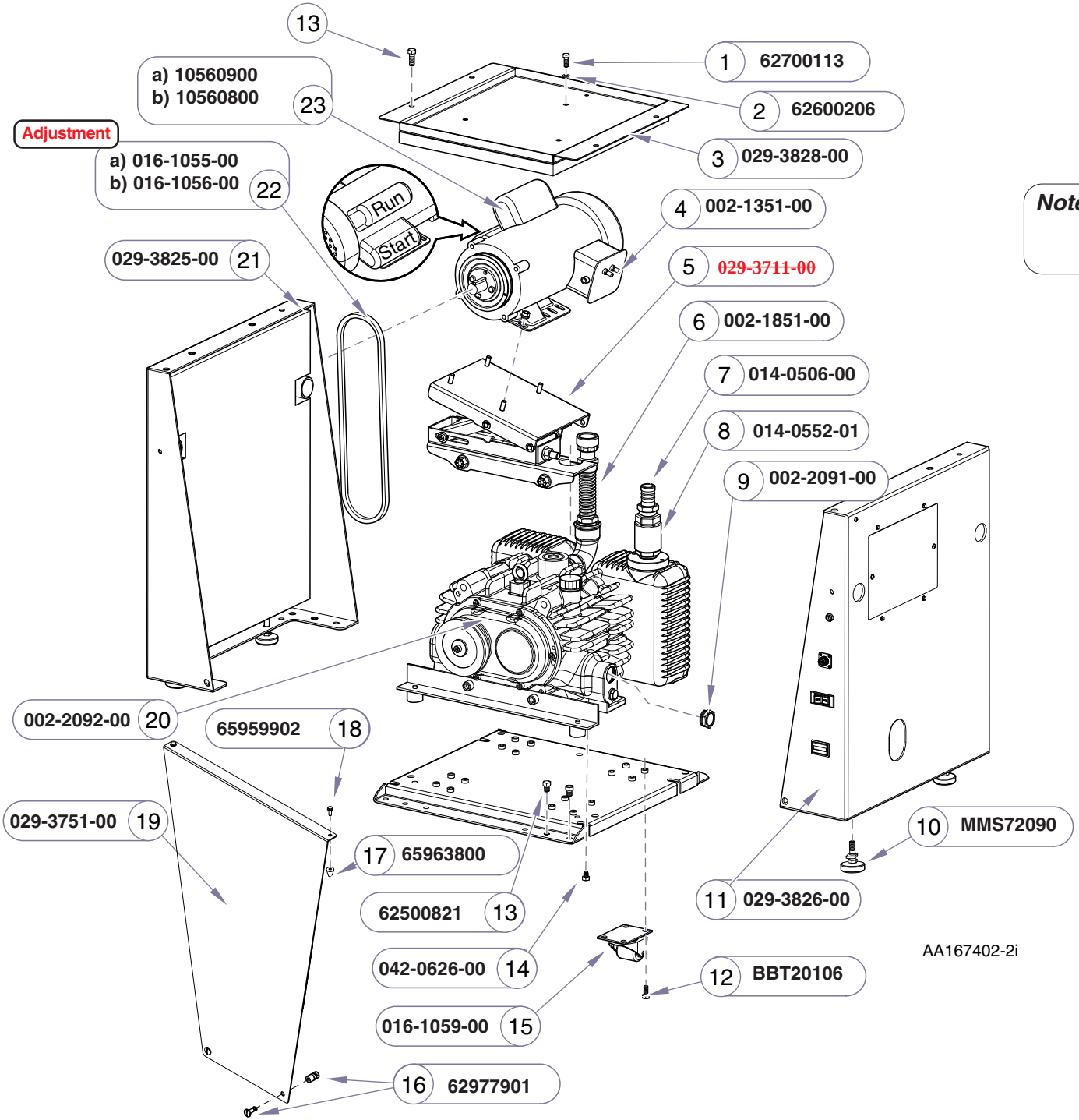
Old style motor shown, new motor has internal automatic thermal overload.

Item	Description	Qty.
1	1/4" -20 Hex Head Bolt	3
2	1/4" Lock Washer	3
3	Top Cover Assembly	1
4	Motor	1
5	Motor Mount Assembly	1
6	1" ID Hose Assembly	1
7	1" Fitting x 1" NPT	2
8	Exhaust Check Valve	1
9	Sight Glass (Torque to 132 in/lbs)	1
10	Leveling Feet-Slide	4
11	Right Panel	1
12	5/16"-18 x 3/4" Hex Head Bolt	16
13	3/8"-16 x 1/2" Hex Head Bolt	12
14	M8 x 10MM Hex Head Bolt	3
15	Casters	4
16	Fastener 1/4 turn	2
17	Tapered pin	2
18	Hex washer head screw #10 x 1/2"	2
19	Front Cover Assembly	1
20	Pump (includes item 7, 9, & bottom plate)	1
21	Left Panel Assembly	1
22	a) Belt Models - P3, P5, P6, P10	1
	b) Belt Models - P7, P14	1
23	Capacitors	
	a) Run (60uF +/-6%, 370VAC, 50/60Hz)	1
	b) Start (295-355uF, 125VAC, 50/60Hz)	1
	***Not Shown**	
24	*Gear Lube *(064-0028-01)*	
25	*Belt Tension Checker Tool *(016-1064-00)*	
26	*Touch Up Paint (Brush-On 067-0053-02-366)	
27	*Touch Up-Paint (Aerosol 067-0053-01-366)	

Always Specify Model & Serial Number

Models: / ***Serial Numbers:***	***P3***	***P7***	***P5***
	V245092 to V317654	*V245092 to V317634*	*V245092 to V317641*

Vacuum Base Unit



Refer To: **Page**

Belt B-2

Note

Old style motor shown, new motor has internal automatic thermal overload.

Item	Description	Qty.
1	1/4" -20 Hex Head Bolt	3
2	1/4" Lock Washer	3
3	Top Cover Assembly	1
4	Motor	1
5	Motor Mount Assembly	1
6	1" ID Hose Assembly	1
7	1" Fitting x 1" NPT	2
8	Exhaust Check Valve	1
9	Sight Glass (Torque to 132 in/lbs)	1
10	Leveling Feet-Slide	4
11	Right Panel	1
12	5/16"-18 x 3/4" Hex Head Bolt	16
13	3/8"-16 x 1/2" Hex Head Bolt	12
14	M8 x 10MM Hex Head Bolt	3
15	Casters	4
16	Fastener 1/4 turn	2
17	Tapered pin	2
18	Hex washer head screw #10 x 1/2"	2
19	Front Cover Assembly	1
20	Pump (includes item 7, 9, & bottom plate)	1
21	Left Panel Assembly	1
22	a) Belt Models - P3, P5, P6, P10	1
	b) Belt Models - P7, P14	1
23	Capacitors	
	a) Run (60uF +/-6%, 370VAC, 50/60Hz)	1
	b) Start (295-355uF, 125VAC, 50/60Hz)	1
	***Not Shown**	
24	*Gear Lube *(064-0028-01)*	
25	*Belt Tension Checker Tool *(016-1064-00)*	
26	*Touch Up Paint (Brush-On 067-0053-02-366)	
27	*Touch Up-Paint (Aerosol 067-0053-01-366)	

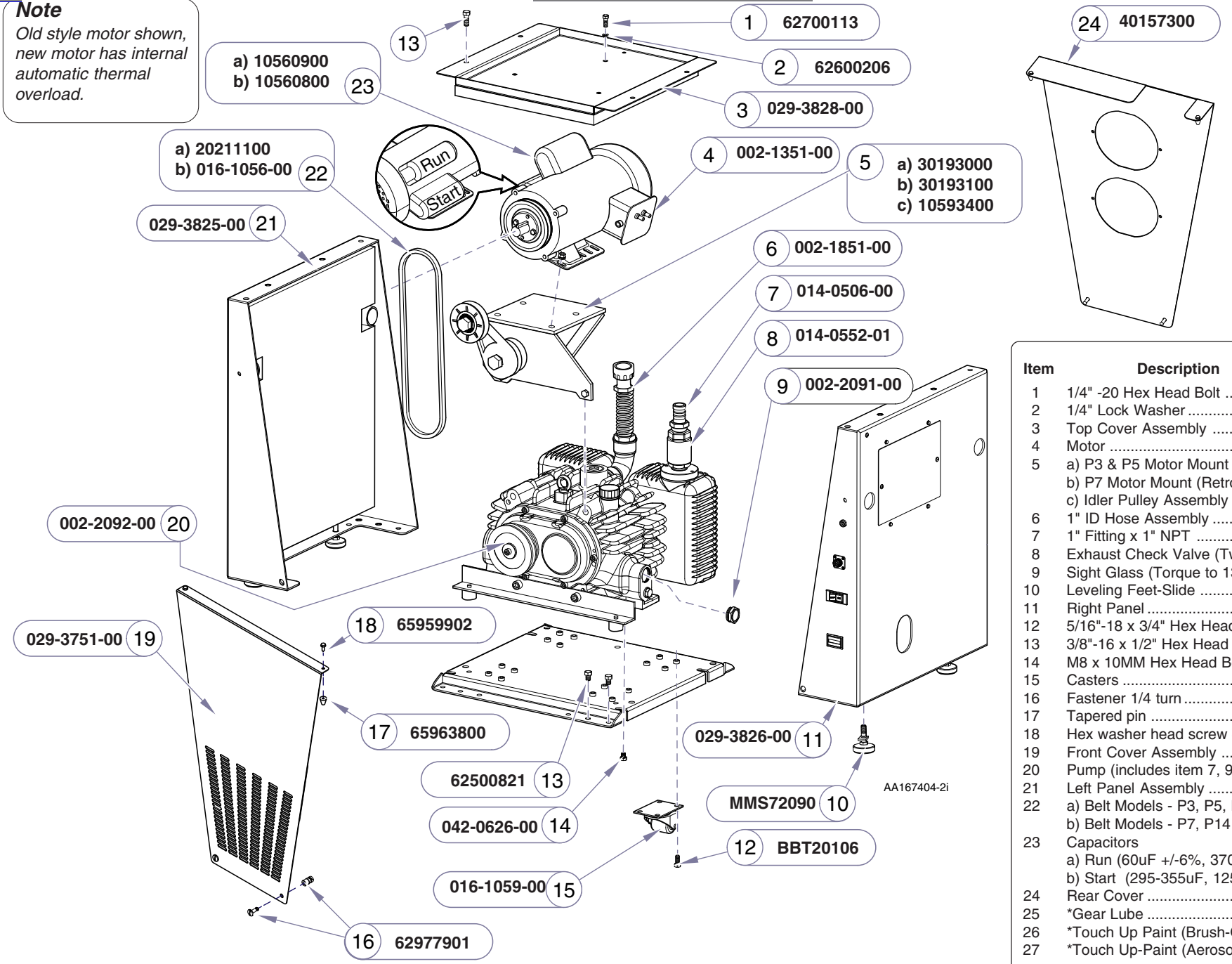
Always Specify Model & Serial Number

E-9.1

Vacuum Base Unit

Models:	***P3***	***P5***	***P7***
Serial Numbers:	*0611P3P0000 to 0801P3P0611*	*0611P5P0000 to 0801P5P0240*	*0611P7P0000 to 0712P7P0104*

Note
Old style motor shown, new motor has internal automatic thermal overload.



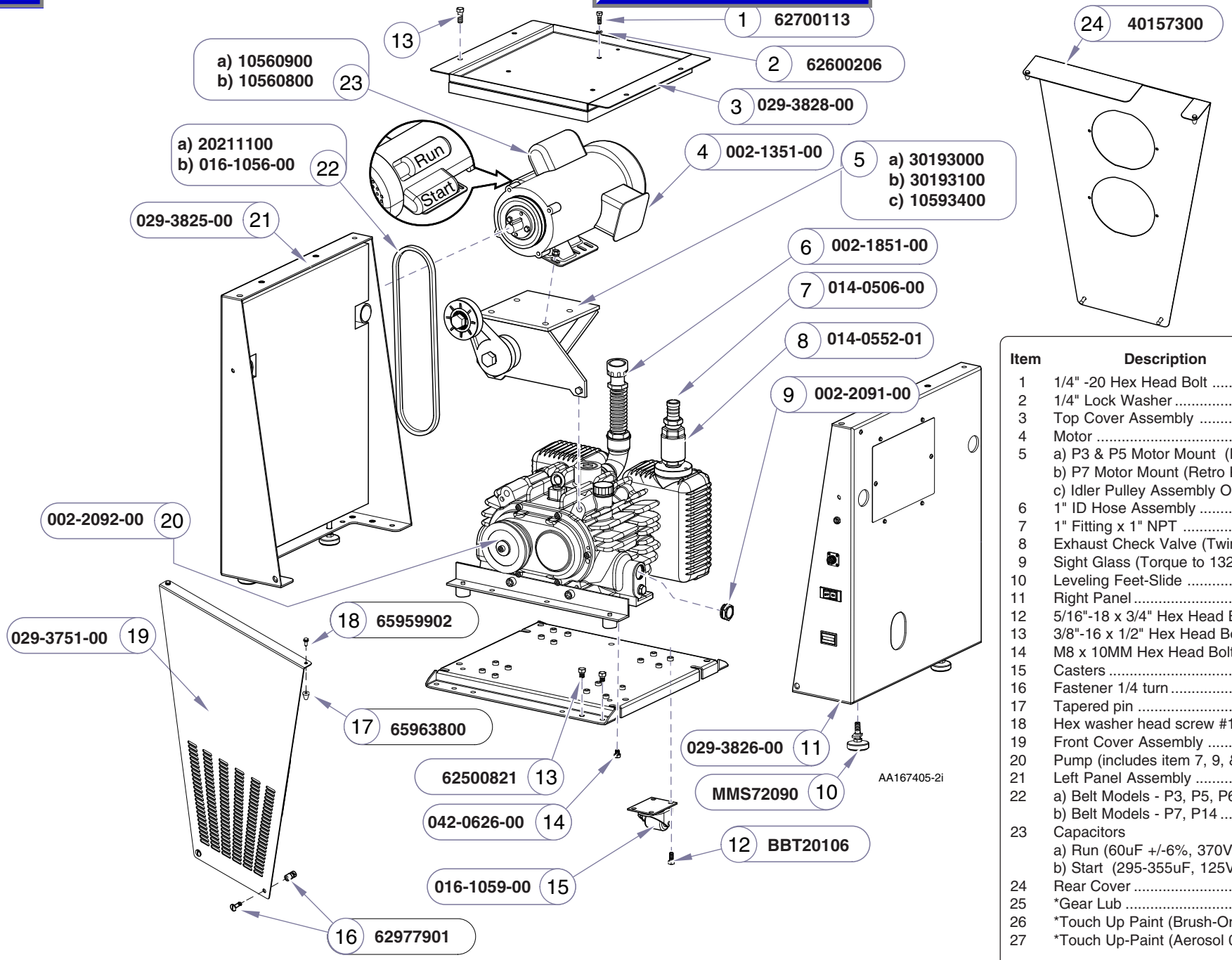
** Not Shown*

Item	Description	Qty.
1	1/4" -20 Hex Head Bolt	3
2	1/4" Lock Washer	3
3	Top Cover Assembly	1
4	Motor	1
5	a) P3 & P5 Motor Mount (Retro Kit)	1
	b) P7 Motor Mount (Retro Kit)	1
	c) Idler Pulley Assembly Only	1
6	1" ID Hose Assembly	1
7	1" Fitting x 1" NPT	2
8	Exhaust Check Valve (Twin Units Only)	1
9	Sight Glass (Torque to 132 in/lbs)	1
10	Leveling Feet-Slide	4
11	Right Panel	1
12	5/16"-18 x 3/4" Hex Head Bolt	16
13	3/8"-16 x 1/2" Hex Head Bolt	12
14	M8 x 10MM Hex Head Bolt	3
15	Casters	4
16	Fastener 1/4 turn	2
17	Tapered pin	2
18	Hex washer head screw #10 x 1/2"	2
19	Front Cover Assembly	1
20	Pump (includes item 7, 9, & bottom plate)	1
21	Left Panel Assembly	1
22	a) Belt Models - P3, P5, P6, P10	1
	b) Belt Models - P7, P14	1
23	Capacitors	
	a) Run (60uF +/-6%, 370VAC, 50/60Hz)	1
	b) Start (295-355uF, 125VAC, 50/60Hz)	1
24	Rear Cover	1
25	*Gear Lube	*(064-0028-01)*
26	*Touch Up Paint (Brush-On 067-0053-02-366)	
27	*Touch Up-Paint (Aerosol 067-0053-01-366)	

Always Specify Model & Serial Number

Models: / Serial Numbers:	P3	P5	P7
	0802P3P0612 to 0905P3P1203	0801P5P0241 to 0902P5P0526	0712P7P0105 to 0902P7P0232

Vacuum Base Unit



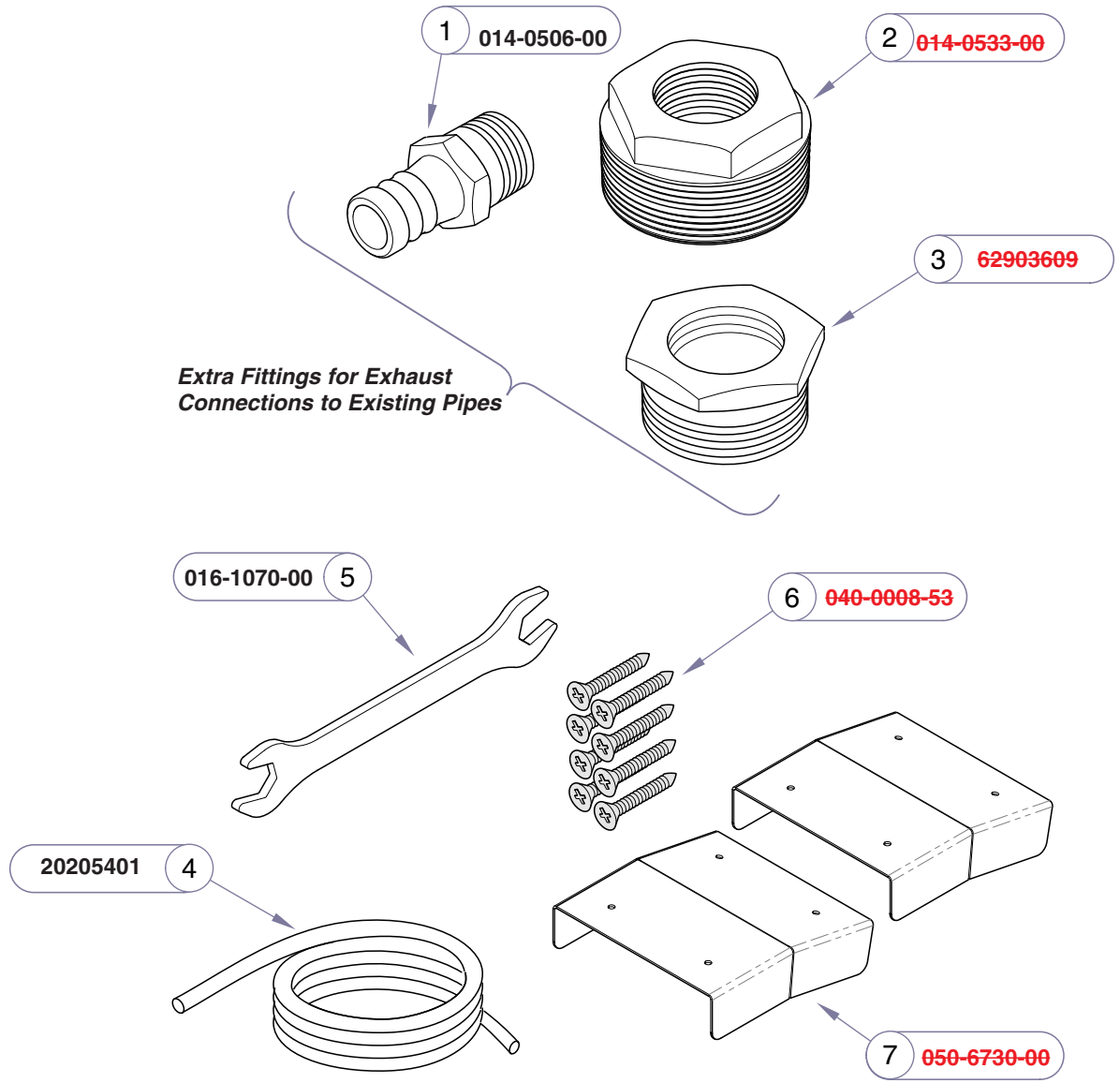
*Not Shown

Item	Description	Qty.
1	1/4" -20 Hex Head Bolt	3
2	1/4" Lock Washer	3
3	Top Cover Assembly	1
4	Motor	1
5	a) P3 & P5 Motor Mount (Retro Kit)	1
	b) P7 Motor Mount (Retro Kit)	1
	c) Idler Pulley Assembly Only	1
6	1" ID Hose Assembly	1
7	1" Fitting x 1" NPT	2
8	Exhaust Check Valve (Twin Units Only)	1
9	Sight Glass (Torque to 132 in/lbs)	1
10	Leveling Feet-Slide	4
11	Right Panel	1
12	5/16"-18 x 3/4" Hex Head Bolt	16
13	3/8"-16 x 1/2" Hex Head Bolt	12
14	M8 x 10MM Hex Head Bolt	3
15	Casters	4
16	Fastener 1/4 turn	2
17	Tapered pin	2
18	Hex washer head screw #10 x 1/2"	2
19	Front Cover Assembly	1
20	Pump (includes item 7, 9, & bottom plate)	1
21	Left Panel Assembly	1
22	a) Belt Models - P3, P5, P6, P10	1
	b) Belt Models - P7, P14	1
23	Capacitors	
	a) Run (60uF +/-6%, 370VAC, 50/60Hz)	1
	b) Start (295-355uF, 125VAC, 50/60Hz)	1
24	Rear Cover	1
25	*Gear Lub *(064-0028-01)*	
26	*Touch Up Paint (Brush-On 067-0053-02-366)	
27	*Touch Up-Paint (Aerosol 067-0053-01-366)	

Always Specify Model & Serial Number

Vacuum Base Unit

Models:	P3	P5	P7	All
Serial Numbers:	0905P3P1204 to Present	0902P5P0527 to Present	0902P7P0233 to Present	V785000 thru Present

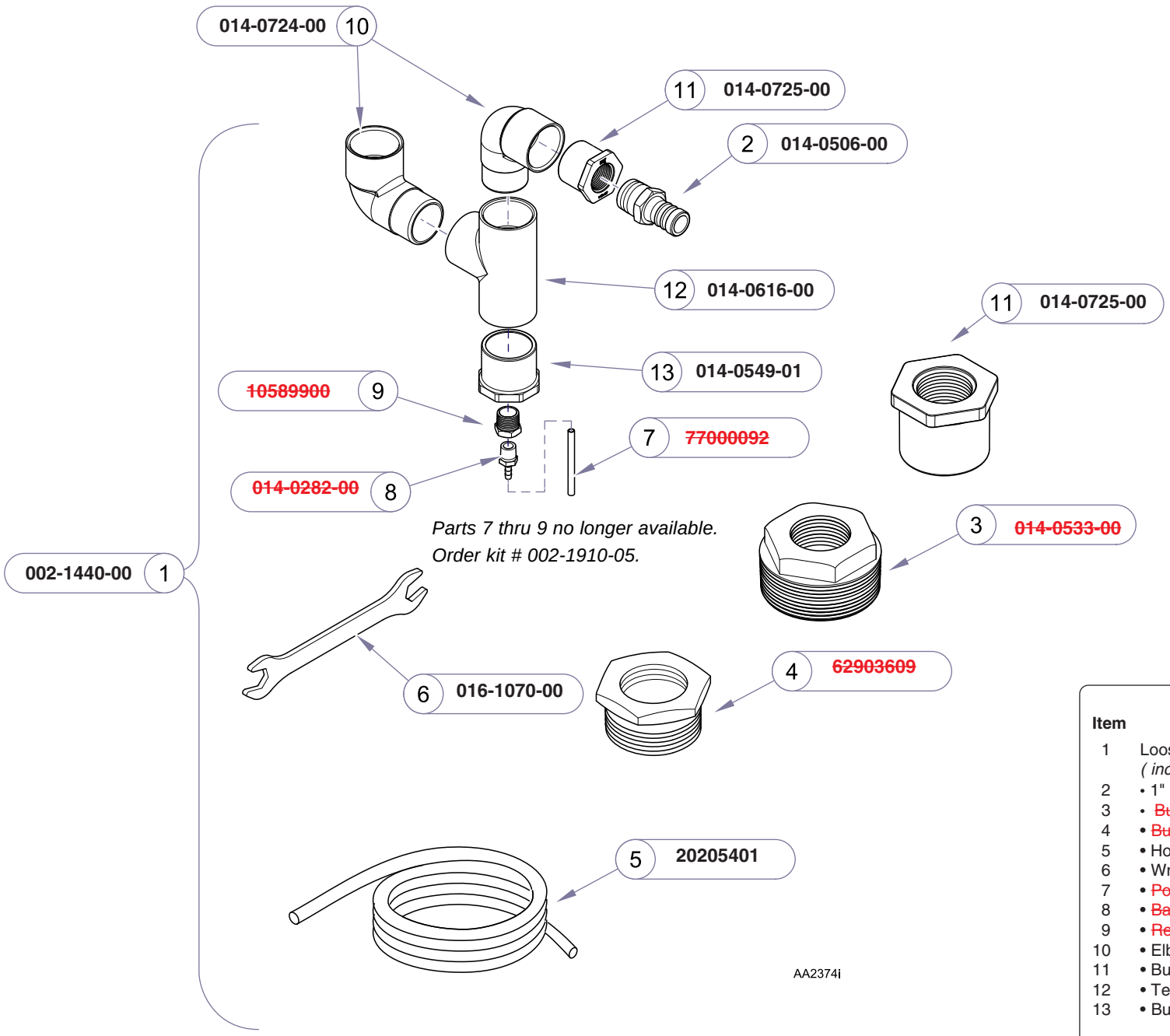


AA168101i

Item	Description	Qty.
1	1" Fitting x 1" MPT	1
~~2~~	~~Bushing 1" FPT x 2" MPT (NLA)~~	~~1~~
~~3~~	~~Bushing 1" FPT x 1 1/2" MPT (NLA)~~	~~1~~
4	Hose 1" x 8' Low Pressure EPDM (Exhaust)	1
5	Wrench, Twin Open-End 1/2"	1
~~6~~	~~#8 x 1 1/2" Fl Head PHL Screw (NLA)~~	~~8~~
~~7~~	~~Skid Removal Brackets (NLA)~~	~~2~~

Always Specify Model & Serial Number

Models:	P3	P5	P7	All Models
Serial Numbers:	0611P3P0000 to Present	0611P5P0000 to Present	0611P7P0000 to Present	V245092 thru V1219385

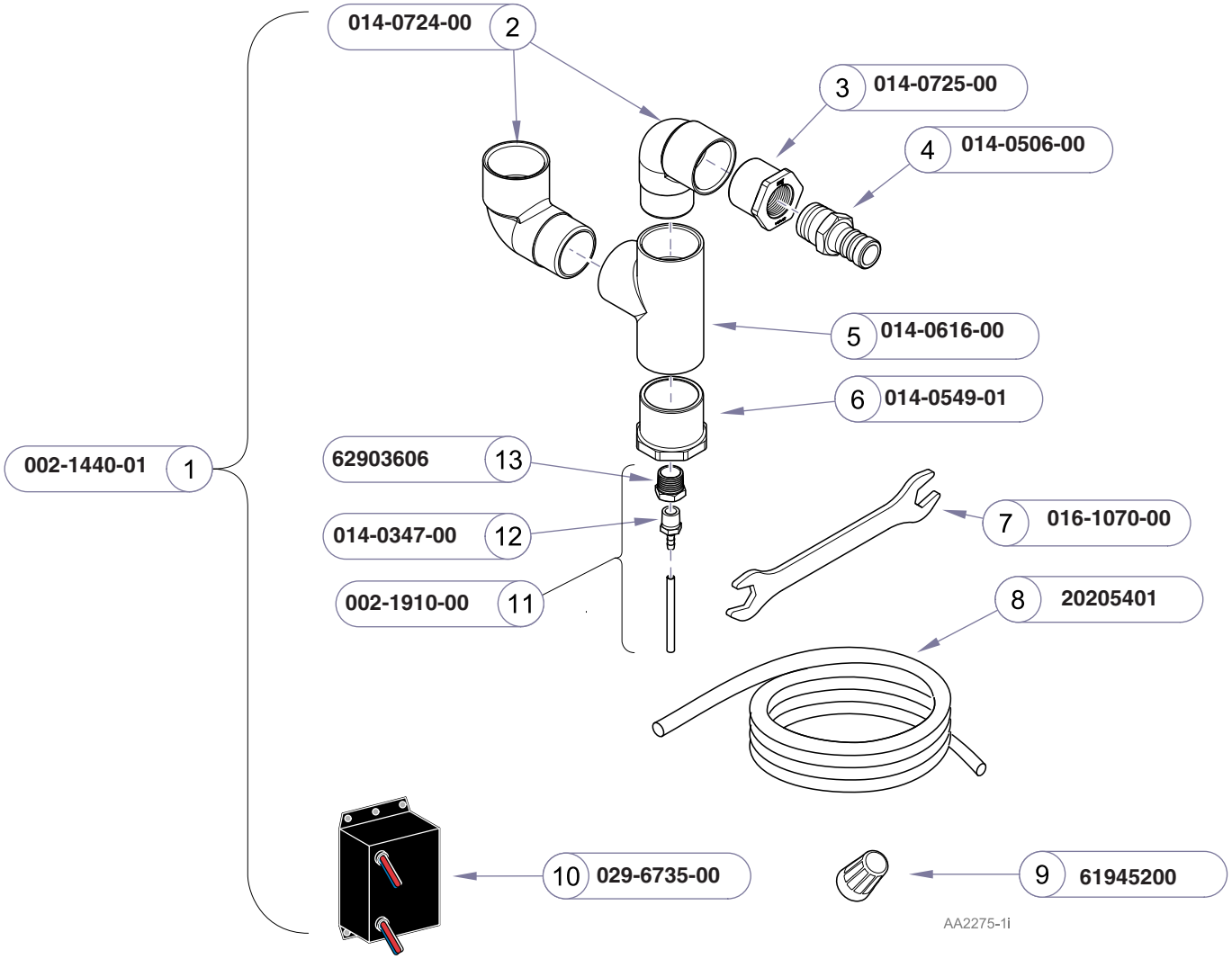


Item	Description	Qty.
1	Loose Parts *(includes items 1 - 13)*	
2	• 1" Fitting x 1" MPT	1
3	• ~~Bushing 1" FPT x 2" MPT (NLA)~~	~~3~~
4	• ~~Bushing 1" FPT x 1 1/2" MPT (NLA)~~	~~1~~
5	• Hose	1
6	• Wrench, Twin Open-End 1/2"	1
7	• ~~Poly Flo Tubing (NLA)~~	~~12 ft~~
8	• ~~Barbed Fitting, Male (NLA)~~	~~1~~
9	• ~~Reducer, 1/2" NPT-1/8" NPT (NLA)~~	~~1~~
10	• Elbow, 1.5", PVC, Sch 40	2
11	• Bushing, 1.5" x 1", PVC, Sch 40	1
12	• Tee, 1.5", PVC, Sch 40	1
13	• Bushing, 1.5" x .5", PVC, Sch 40	1

Always Specify Model & Serial Number

Vacuum Loose Parts

Models: ***All***
Serial Numbers: *V1219386 thru V1648734*



Item	Description	Qty.
1	Loose Parts *(includes items 1 - 13)*	
2	• Elbow, 1.5", PVC, Sch 40	2
3	• Bushing, 1.5" x 1", PVC, Sch 40	1
4	• 1" Fitting x 1" MPT	1
5	• Tee, 1.5", PVC, Sch 40	1
6	• Bushing, 1.5" x .5", PVC, Sch 40	1
7	• Wrench, Twin Open-End 1/2"	1
8	• Hose, Exhaust	1
9	• Connector,Wire (Blue)	4
10	• Assy, Timer PCB Enclosure	1
11	• 3/8" Drain Tube Kit (Includes 12 & 13)	12 ft
12	• Barbed Fitting, Male	1
13	• Reducer, 1/2" NPT-1/8" NPT	1

Always Specify Model & Serial Number

Note

Single models require one vacuum assembly.
Twin models require two vacuum assemblies.

Models: ***All***
Serial Numbers: ***V1648735 to Present***

Vacuum Loose Parts **E-10.2**

 Rev 9/18/17

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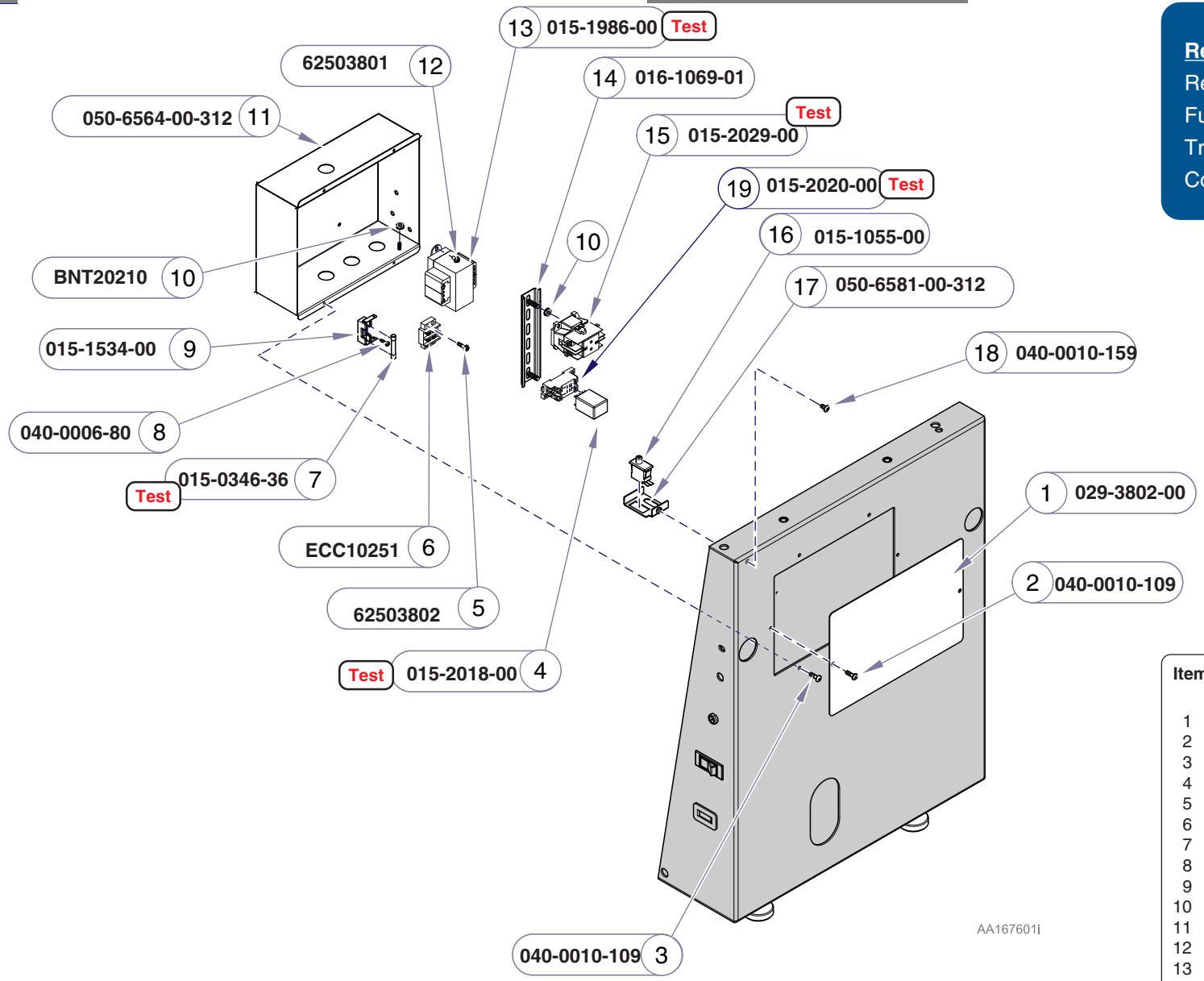


Refer To: **Go To Page:**

Relay .. Test	.....	B-30
Fuse .. Test	.....	B-27
Transformer .. Test	.....	B-33
Contactor .. Test	.....	B-25

Note

Single models require one vacuum assembly.
Twin models require two vacuum assemblies.

AA167601i

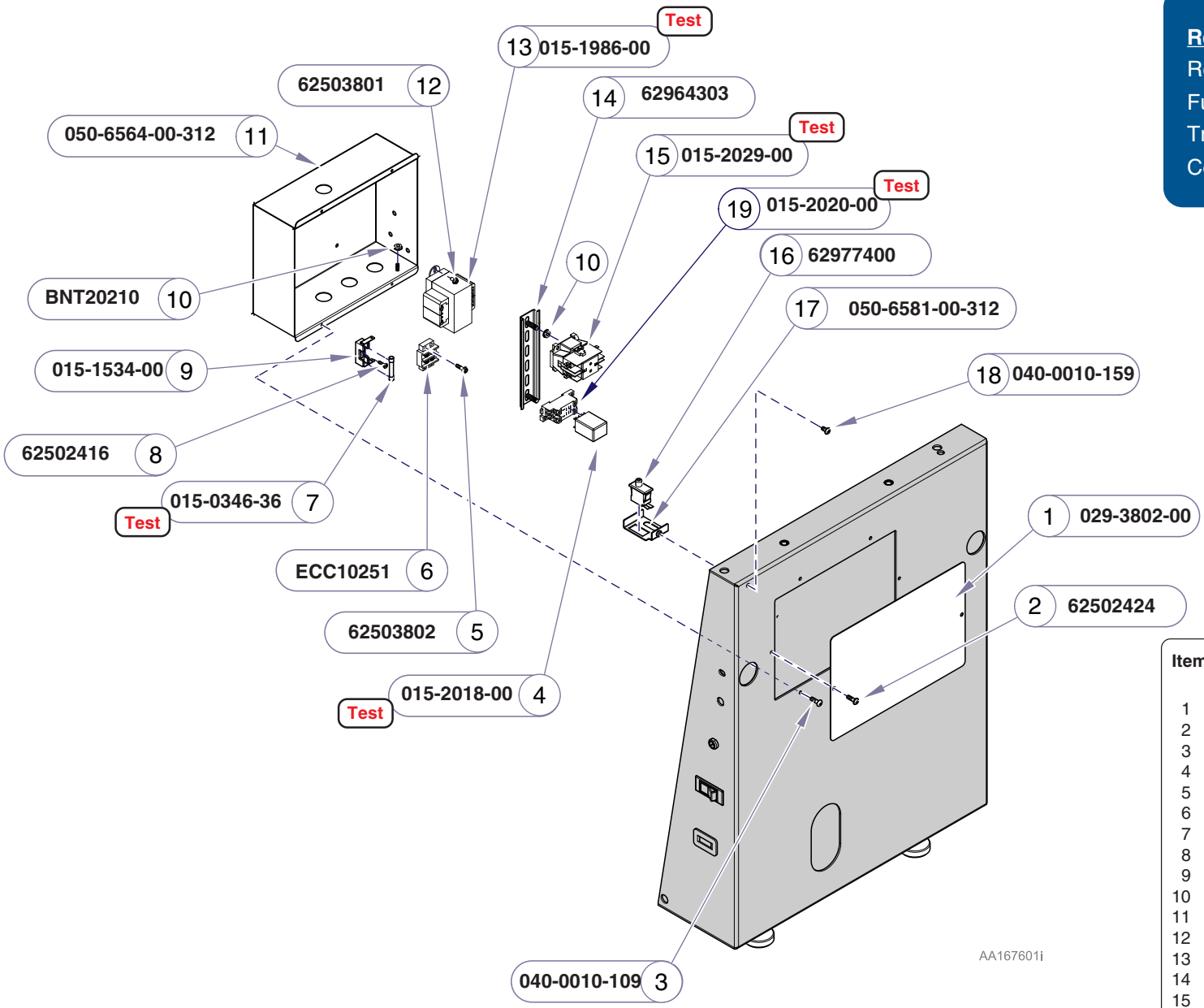
Item	Description	Qty.
1	Electrical Cover	1
2	#10 -24 x 3/8 Pan Head Screw	2
3	#8 x 3/8 Serrated Head Metal Screw	4
4	Relay DPDT, General Purpose	1
5	Screw *(#8-32 x 5/8")*	2
6	Terminal Block	1
7	Fuse 1/8A, 1/4 X 1-1/4, Type T SLO-BLO	1
8	Screw	1
9	Fuseblock, 1/4in X 1-1/4in FUSE	1
10	Nut Keps 10/32	5
11	Electrical Box	1
12	Screw *(#8-32 x 5/16")*	2
13	Transformer, 240V, 50/60 HZ	1
14	Din-3 Rail, 5.8"	1
15	Contactor	1
16	Door Limit Switch	1
17	Mounting Bracket *(Limit Switch)*	1
18	#10-24 x 5/8 Pan Head Type "TT"	1
19	Track, Mount, DPDT Relay Socket	1

Always Specify Model & Serial Number

Models: *Serial Numbers:*	***P3*** *V245092 to V317654*	***P5*** *V245092 to V317641*	***P7*** *V245092 to V317634*

Electrical Box Assembly

Rev 12/30/15



Refer To: *Go To Page:*

Relay .. Test B-30
Fuse .. Test B-27
Transformer .. Test B-33
Contactor .. Test B-25

Item	Description	Qty.
1	Electrical Cover	1
2	#10 -24 x 3/8 Pan Head Screw	2
3	#8 x 3/8 Serrated Head Metal Screw	4
4	Relay DPDT, General Purpose	1
5	Screw *(#8-32 x 5/8")*	2
6	Terminal Block	1
7	Fuse 1/8A, 1/4 X 1-1/4, Type T SLO-BLO	1
8	Screw	1
9	Fuseblock, 1/4in X 1-1/4in FUSE	1
10	Nut Keps 10/32	5
11	Electrical Box	1
12	Screw *(#8-32 x 5/16")*	2
13	Transformer, 240V, 50/60 HZ	1
14	Din-3 Rail, 5.8"	1
15	Contactor	1
16	Door Limit Switch	1
17	Mounting Bracket *(Limit Switch)*	1
18	#10-24 x 5/8 Pan Head Type "TT"	1
19	Track, Mount, DPDT Relay Socket	1

Always Specify Model & Serial Number

Note

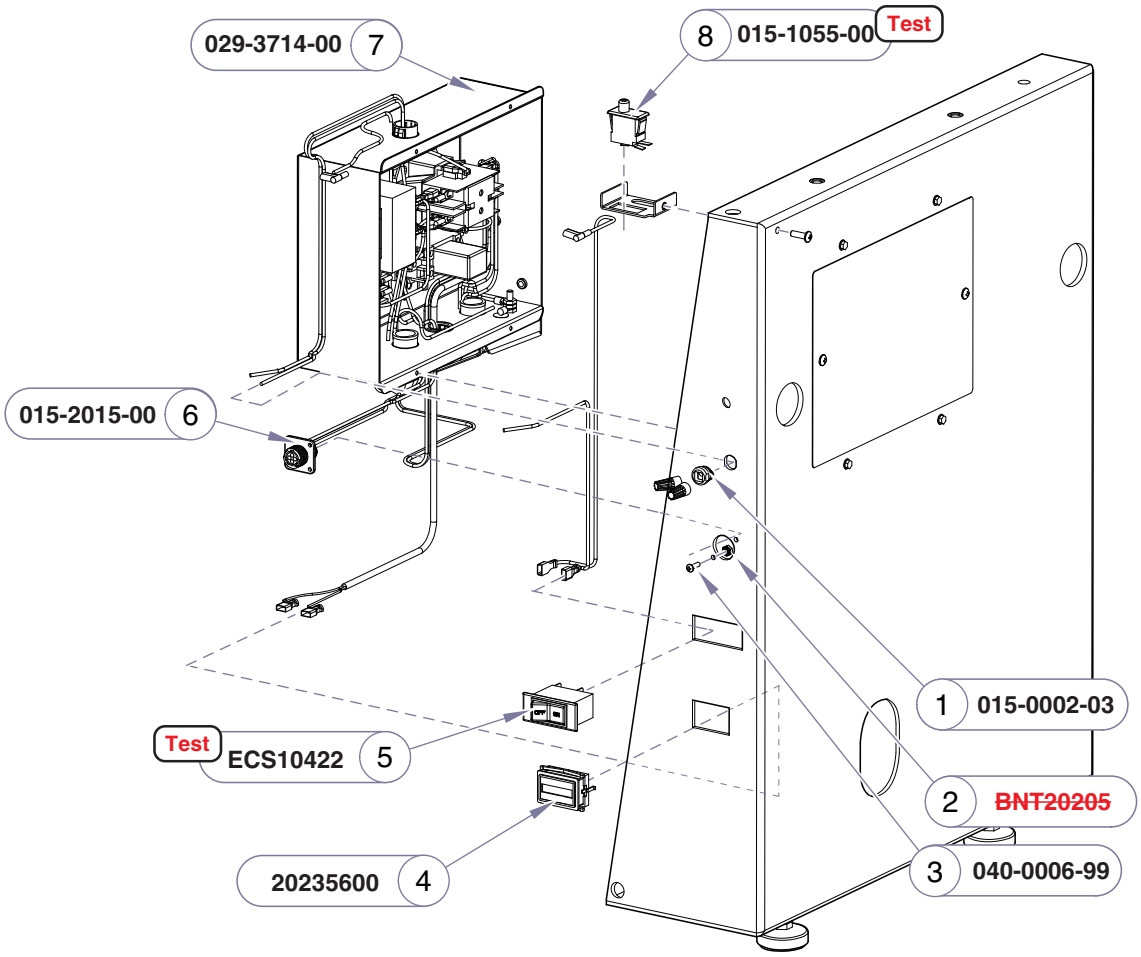
Single models require one vacuum assembly.
Twin models require two vacuum assemblies.

AA167601i

Electrical Box Assembly

Models: *Serial Numbers:*	***P3*** *0611P3P0000 to Present*	***P5*** *0611P5P0000 to Present*	***P7*** *0611P7P0000 to Present*	***All*** *V785000 thru Present*

Refer To: **Go To Page:**
On/Off Switch .. Test B-20
Door Limit Switch ... Test B-20



AA167500i

Note

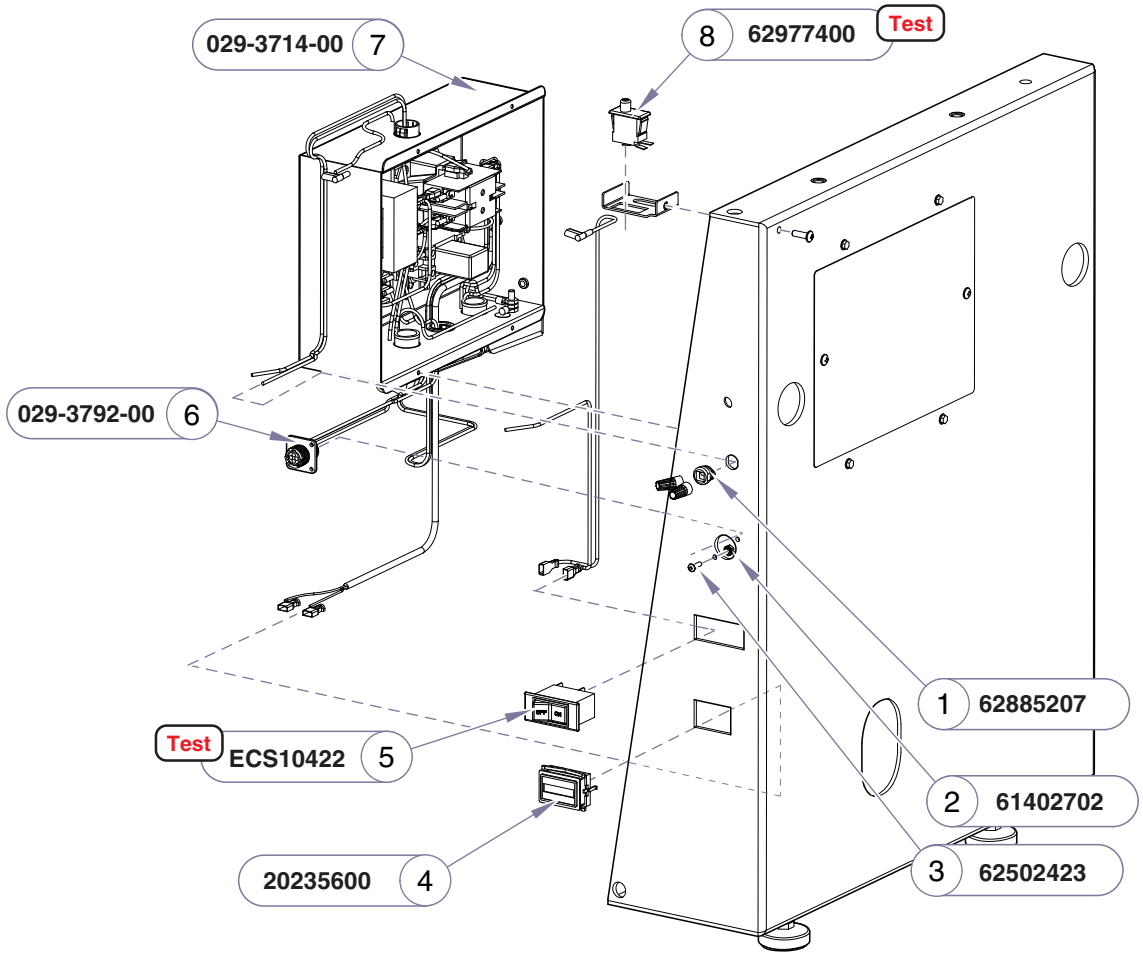
Single models require one vacuum assembly.
Twin models require two vacuum assemblies.

Item	Description	Qty.
1	Strain Relief Bushing	1
2	Nut Keps 6/32 (NLA)	2
3	Screw 6/32 x 1/2"	2
4	Hour Meter	1
5	On/Off Switch *(Circuit Breaker)*	1
6	Receptacle, Amp Mini CPC, 11/4 Reverse	1
7	Electrical Box Assembly	1
	Refer to: Electrical Box Assembly	REF
8	Door Limit Switch	1

Always Specify Model & Serial Number

Models: / ***Serial Numbers:***	***P3***	***P5***	***P7***
	V245092 to V317654	***V245092 to V317641***	***V245092 to V317634***

Refer To: **Go To Page:**
On/Off Switch (Test) B-20
Door Limit Switch (Test) B-20



AA167500i

Item	Description	Qty.
1	Strain Relief Bushing	1
2	Nut Keps 6/32	2
3	Screw 6/32 x 1/2"	2
4	Hour Meter	1
5	On/Off Switch *(Circuit Breaker)*	1
6	Receptacle, Amp Mini CPC, 11/4 Reverse	1
7	Electrical Box Assembly	1
	Refer to: Electrical Box Assembly	REF
8	Door Limit Switch	1

Always Specify Model & Serial Number

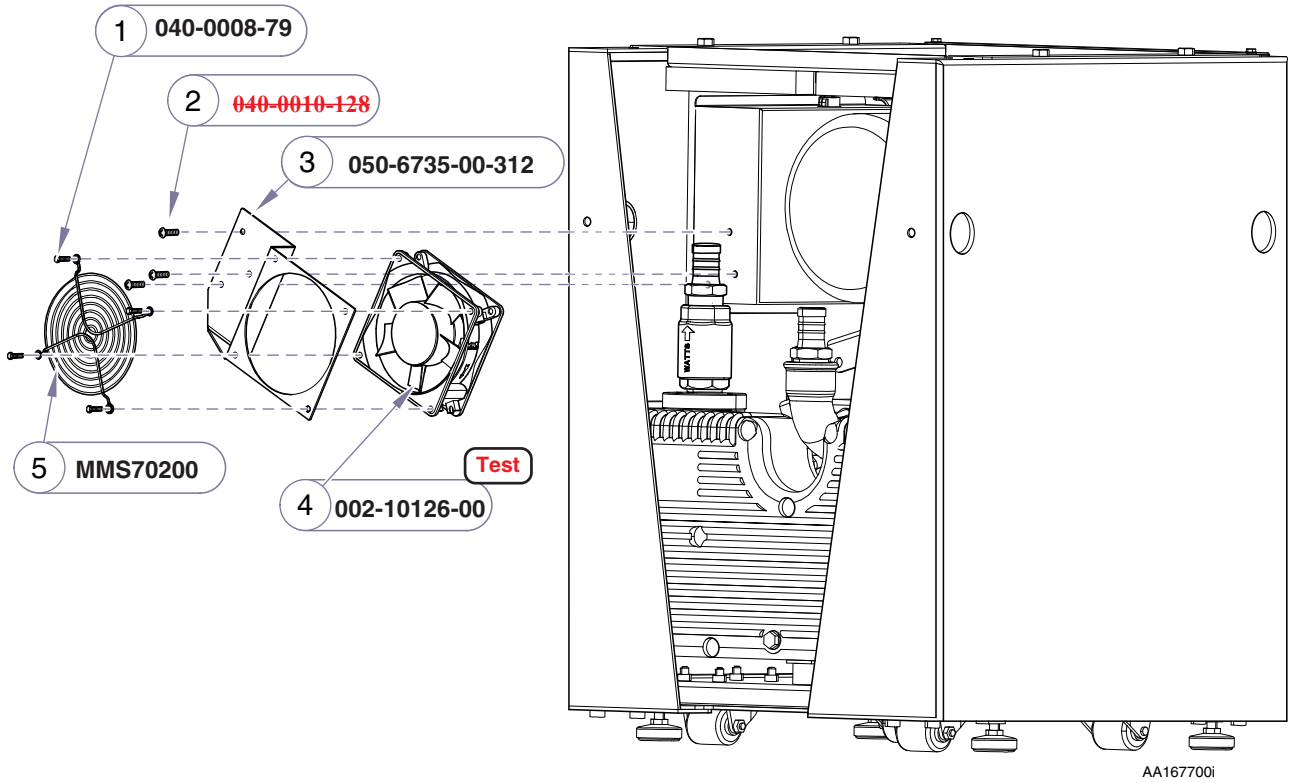
Note

Single models require one vacuum assembly.
Twin models require two vacuum assemblies.

Front Panel Controls

Models:	***P3***	***P5***	***P7***	***All***
Serial Numbers:	*0611P3P0000 to Present*	*0611P5P0000 to Present*	*0611P7P0000 to Present*	*V785000 thru Present*

Refer To: **Page**
Fan ... Test B-36



Item	Description	Qty.
1	Screw 8/32" x 1/2" Hex Head	4
2	Screw 1#10-24 x 1/4"	3
3	Bracket, Fan Mount Dry Vacuum	1
4	Fan, 230V	1
5	Fan Guard	1

Always Specify Model & Serial Number

Note

Single models require one vacuum assembly.
Twin models require two vacuum assemblies.

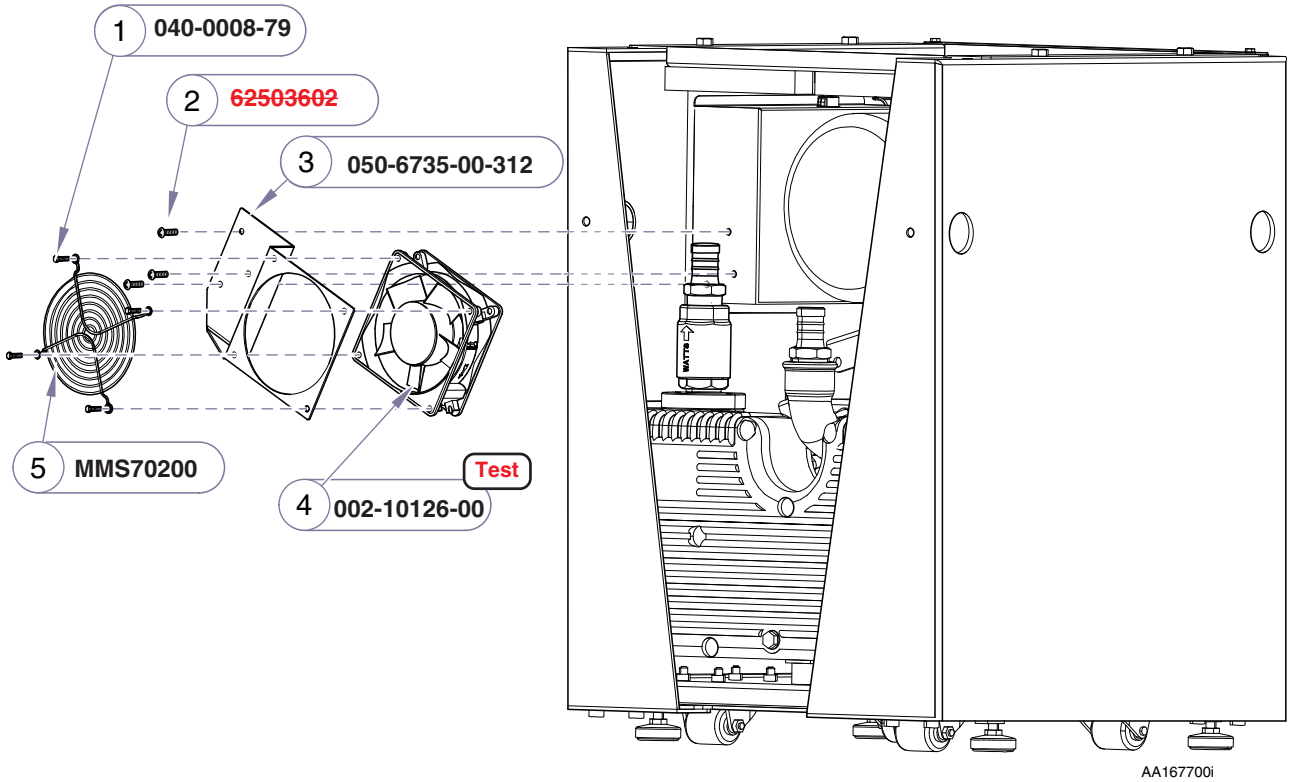
AA167700i

Models: / ***Serial Numbers:***	***P3***	***P5***	***P7***
	V245092 to V317654	***V245092 to V317641***	***V245092 to V317634***

Fan Assembly

Refer To:
Fan ... Test B-36

Go To Page:



Item	Description	Qty.
1	Screw 8/32" x 1/2" Hex Head	4
2	Screw 1#10-24 x 1/4"	3
3	Bracket, Fan Mount Dry Vacuum	1
4	Fan, 230V	1
5	Fan Guard	1

Always Specify Model & Serial Number

Note

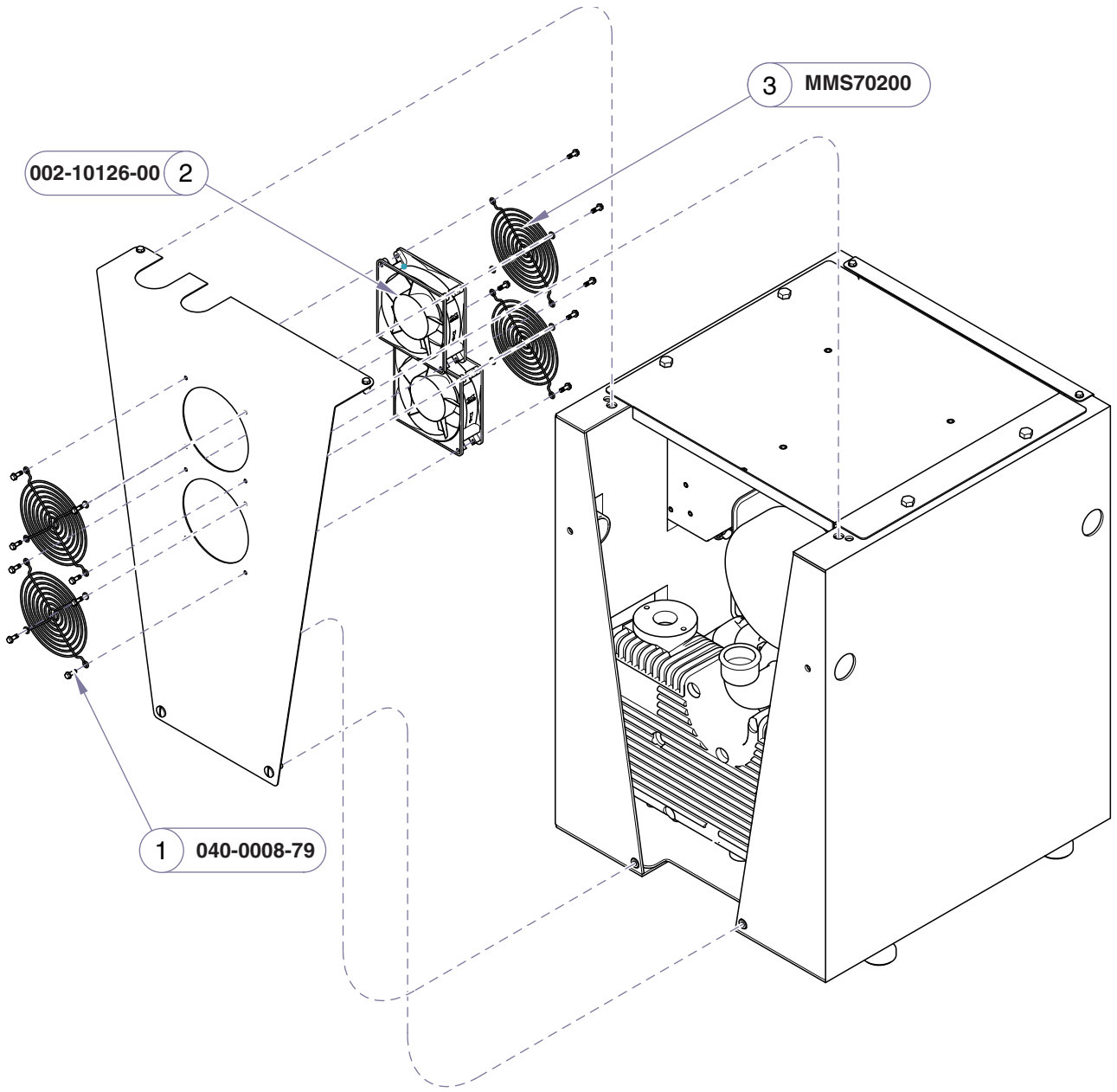
Single models require one vacuum assembly.
Twin models require two vacuum assemblies.

AA167700i

Fan Assembly

Models: *Serial Numbers:*	***P3*** *0611P3P0000 to 0801P3P0611*	***P5*** *0611P5P0000 to 0801P5P0240*	***P7*** *0611P7P0000 to 0712P7P0104*

Refer To: Fan ... Test ..... **Go To Page:** B-36



AA221700

Item	Description	Qty.
1	Screw 8/32" x 1/2" Hex Head	16
2	Fan, 230V	1
3	Fan Guard	1

Always Specify Model & Serial Number

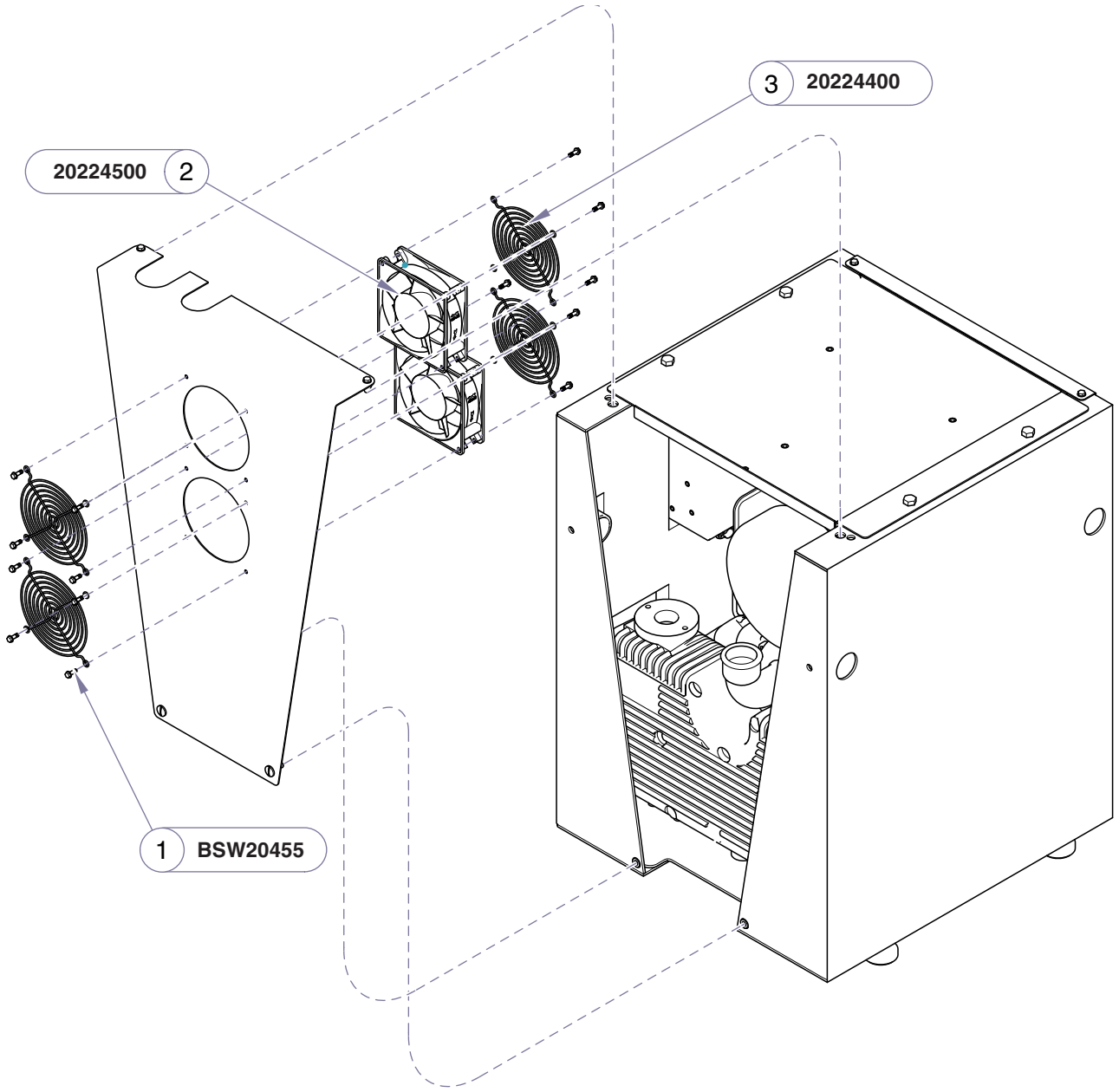
Models: / Serial Numbers:	P3	P5	P7
	0802P3P0612 to 0806P3PO828	0801P5P0241 to 0807P5PO372	0712P7P0105 to 0807P7PO160

Fan Assembly

E-13.2

 Rev 4/26/17

Refer To: Fan ... Test ..... **Go To Page:** B-36



AA221700

Item	Description	Qty.
1	Screw 8/32" x 1/2" Hex Head	16
2	Fan, 230V	1
3	Fan Guard	1

Always Specify Model & Serial Number

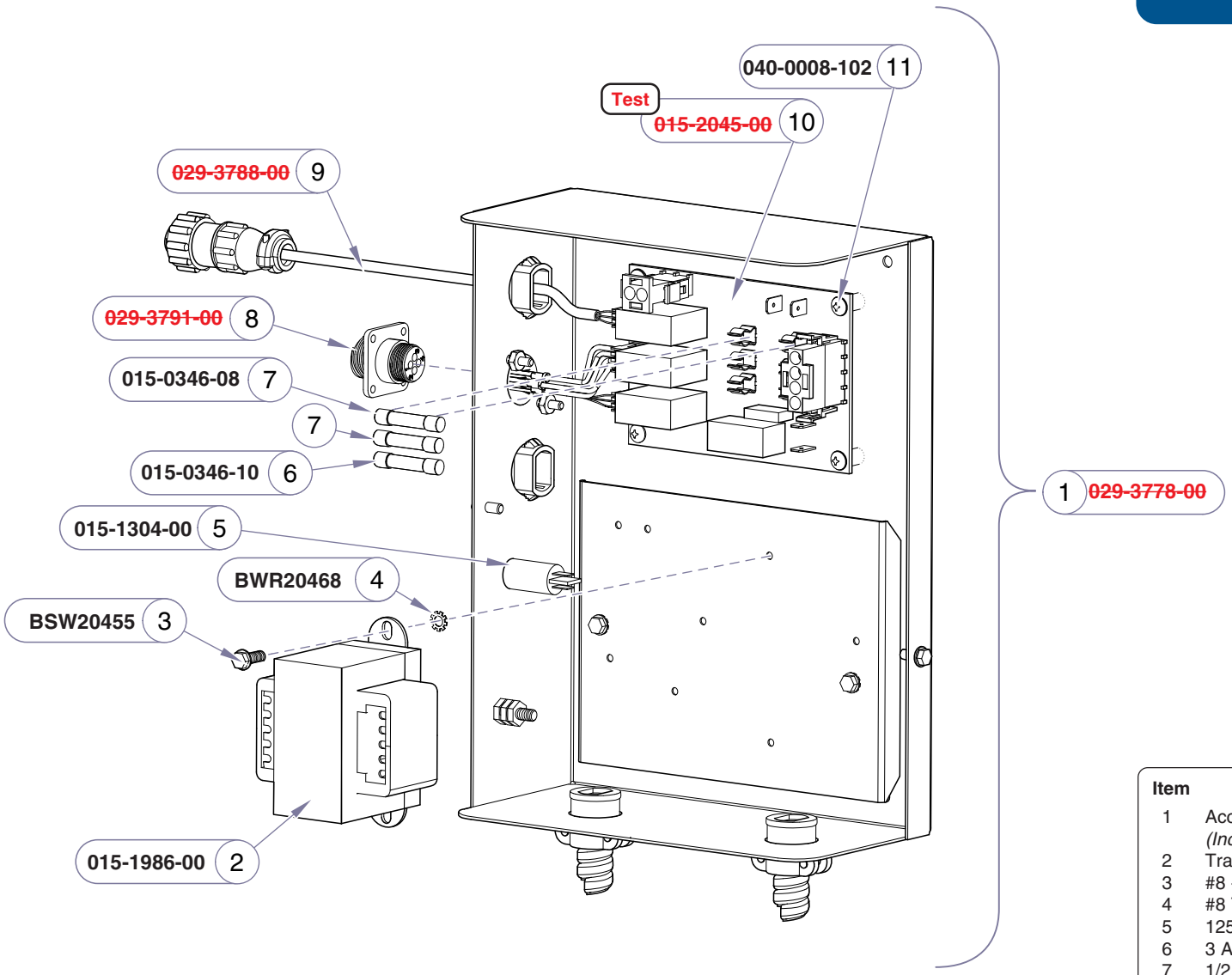
E-13.3

Fan Assembly

Models: / Serial Numbers:	P3	P5	P7	All
	0806P3PO829 to Present	0807P5PO373 to Present	0807P7PO161 to Present	V785000 thru Present

 Rev 4/1/16

Refer To: Liquid Evacuation Pump .. Test .. **Go To Page:** B-52



AA168000i

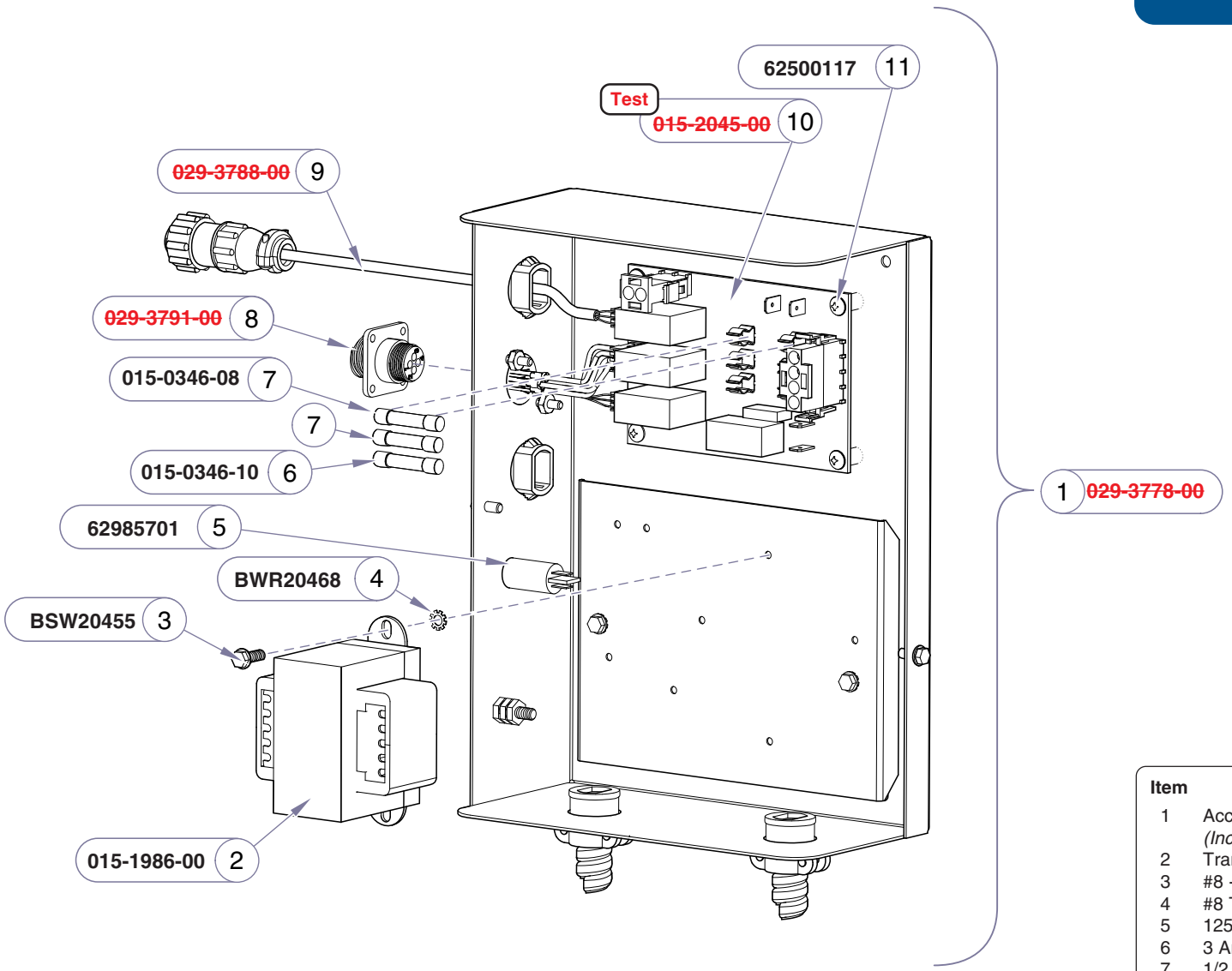
Item	Description	Qty.
1	Accessory Control Box Assembly (NLA) *(Includes Items 2 - 10)*	1
2	Transformer	1
3	#8 - 32 x 1/2" TYP Hex Screw	2
4	#8 Tooth Lock Washer	2
5	125 VAC Pilot Light	1
6	3 Amp Slow Blo Fuse	1
7	1/2 Amp Slow Blo Fuse	2
8	Socket (NLA)	1
9	Cord Assemby (NLA)	1
10	PC Board (NLA)	1
11	#8-32 x 3/8" Pan Head PHL Screw	4

Always Specify Model & Serial Number

Models: ***All***
Serial Numbers: ***Production Date 3-13-2006 to 11-6-2006***

Electrical Accessory Box
Liquid Evacuation Pump

Refer To: Liquid Evacuation Pump .. Test .. B-52 **Go To Page:**



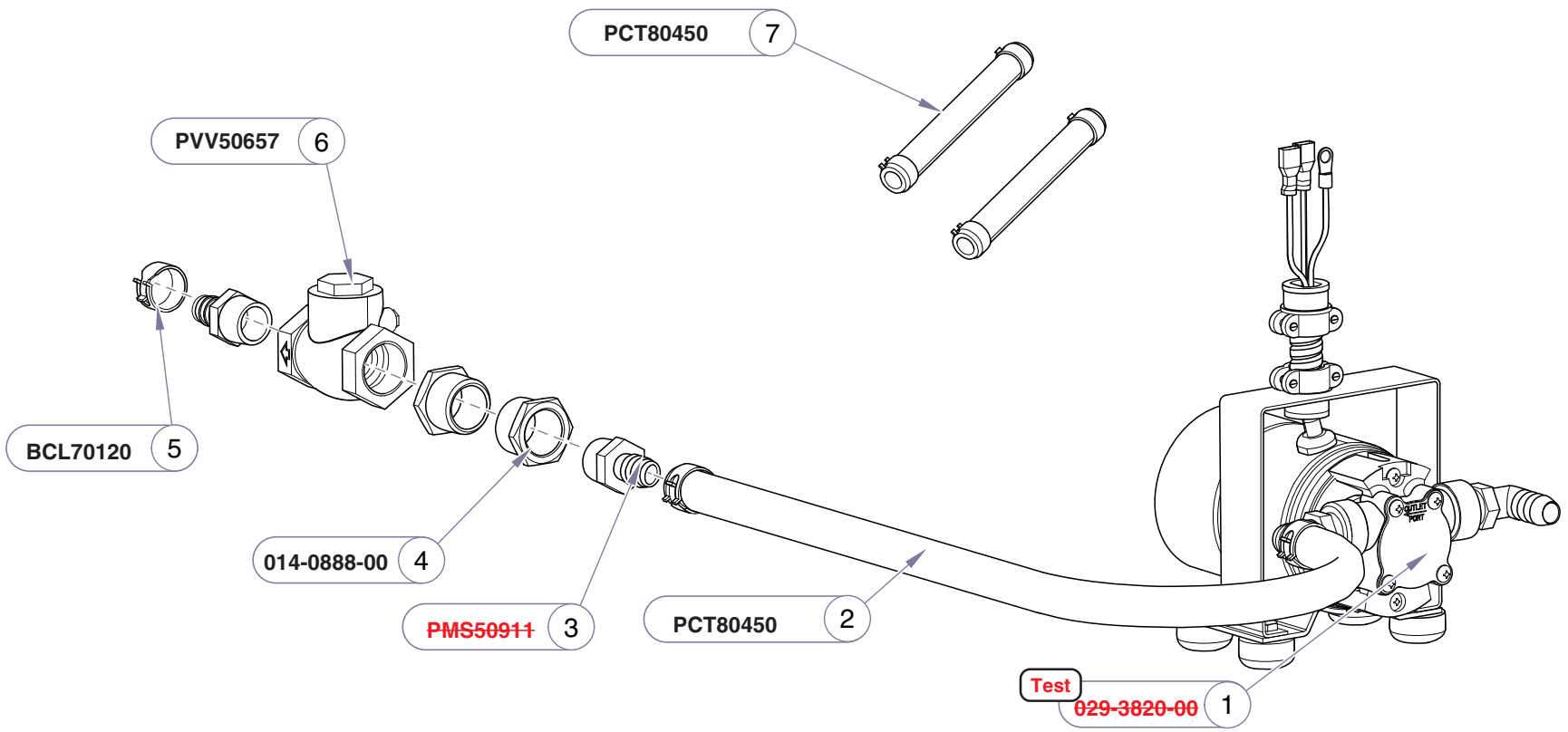
AA168000i

Item	Description	Qty.
1	Accessory Control Box Assembly (NLA) *(Includes Items 2 - 10)*	1
2	Transformer	1
3	#8 - 32 x 1/2" TYP Hex Screw	2
4	#8 Tooth Lock Washer	2
5	125 VAC Pilot Light	1
6	3 Amp Slow Blo Fuse	1
7	1/2 Amp Slow Blo Fuse	2
8	Socket and Harness Assembly (NLA)	1
9	Cord Assemby (NLA)	1
10	PC Board (NLA)	1
11	#8-32 x 3/8" Pan Head PHL Screw	4

Always Specify Model & Serial Number

Models: ***All***
Serial Numbers: ***Production Date 11-06-2006 to Present***

Refer To: **Page**
Liquid Evacuation Pump . Test ... B-52



AA167900i

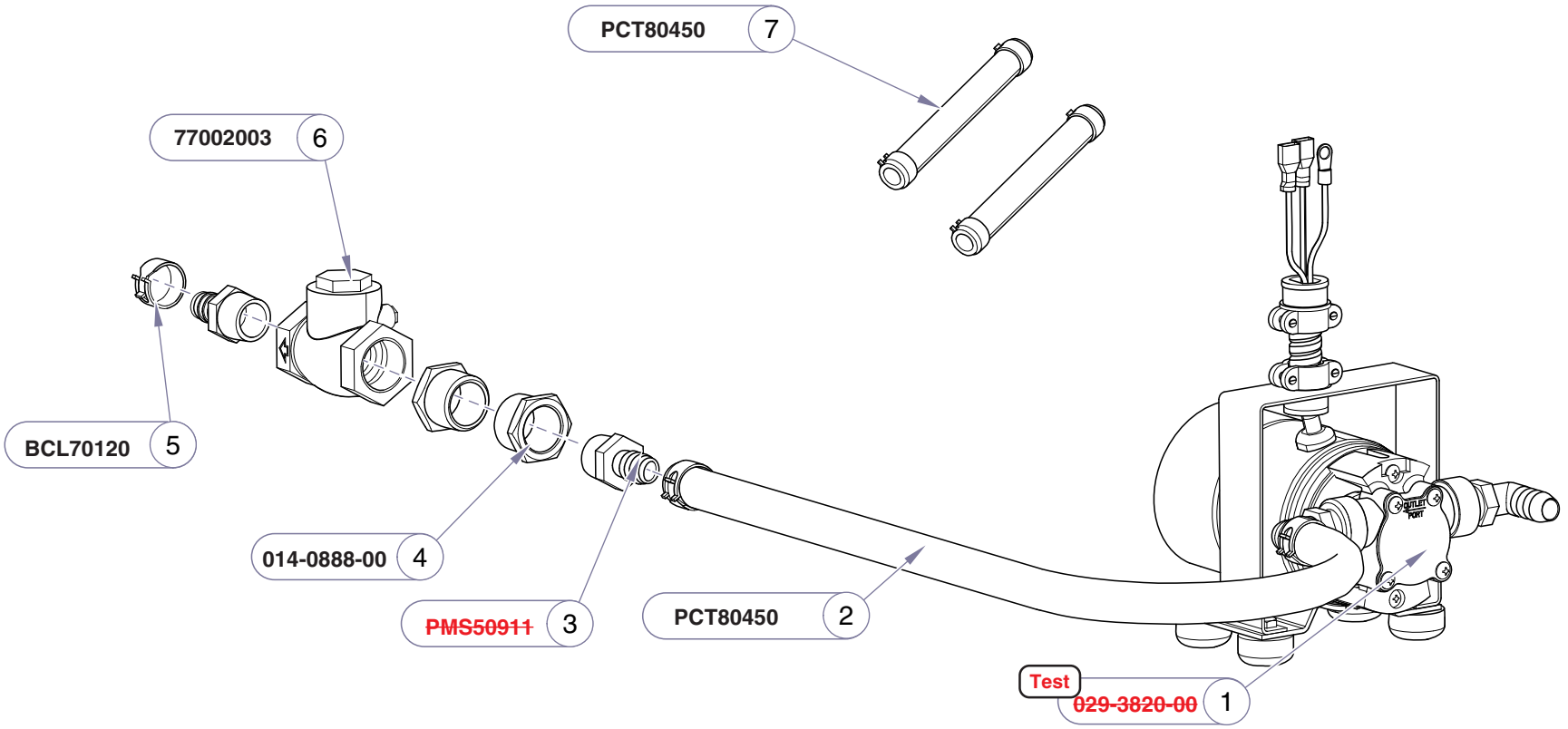
Item	Description	Qty.
1	Evacuation Pump (NLA)	1
2	1/2" Clear Hose 11" (by the foot)	1
3	ST 1/2 x 1/2" (NLA)	2
4	Reducer 3/4" NPT - 1/2" NPT	2
5	Spring Clamp	7
6	Check Valve	1
7	1/2" Clear Hose, 72" (by the foot)	2

Always Specify Model & Serial Number

Models: ***All***
Serial Numbers: ***Production Date 3-13-2006 to 11-6-2006***

Liquid Evacuation Pump

Refer To: **Page**
Liquid Evacuation Pump . Test ... B-52



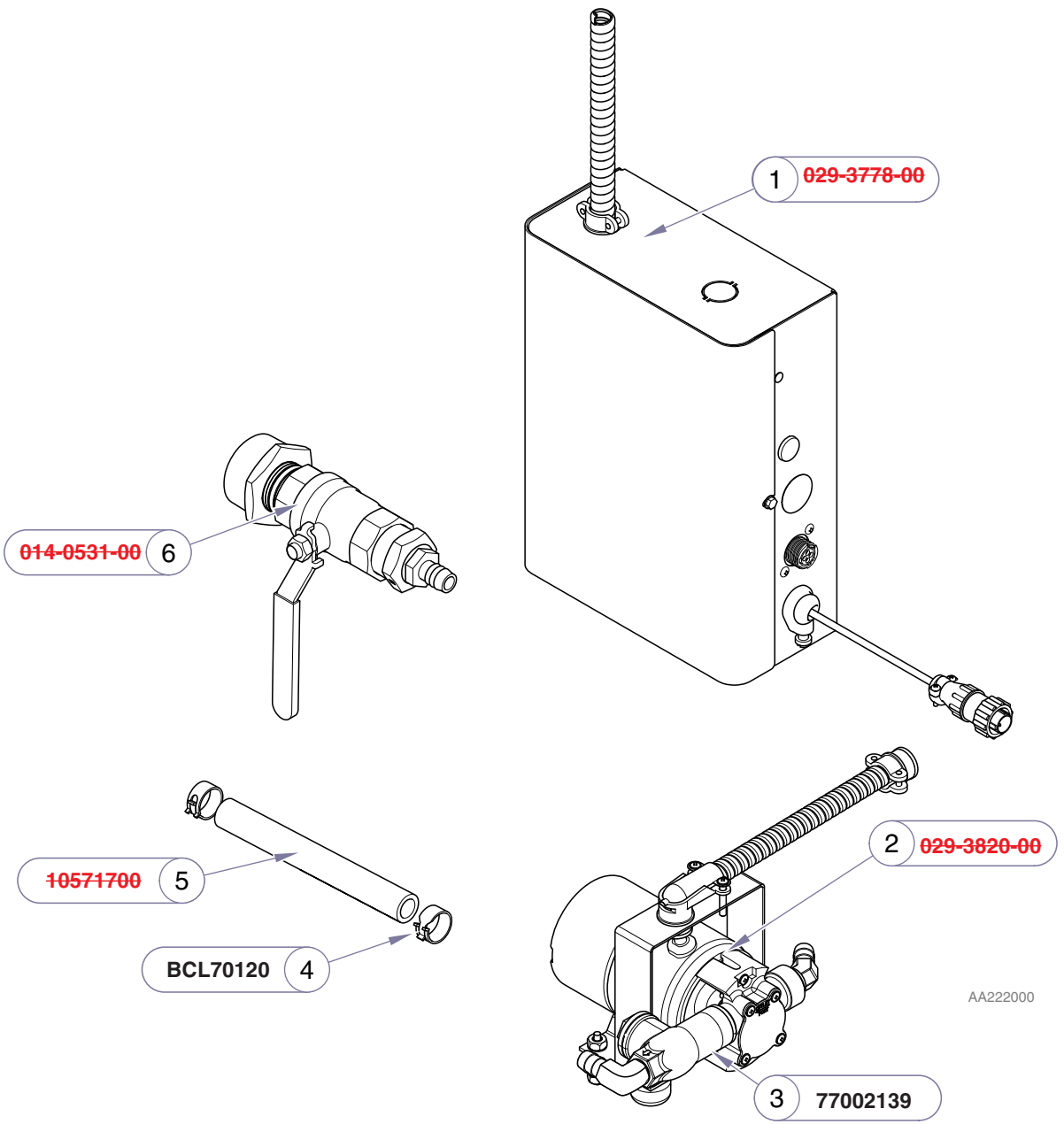
AA167900i

Item	Description	Qty.
1	Evacuation Pump (NLA)	1
2	/2" Clear Hose 11" (by the foot)	1
3	ST 1/2 x 1/2" (NLA)	2
4	Reducer 3/4" NPT - 1/2" NPT	2
5	Spring Clamp	7
6	Check Valve	1
7	1/2" Clear Hose, 72" (by the foot)	
2		

Always Specify Model & Serial Number

Models: ***All***
Serial Numbers: ***Production Date 11-06-2006 to 2-29-2008***

Refer To: Liquid Evacuation Pump . Test ... **Page** B-52

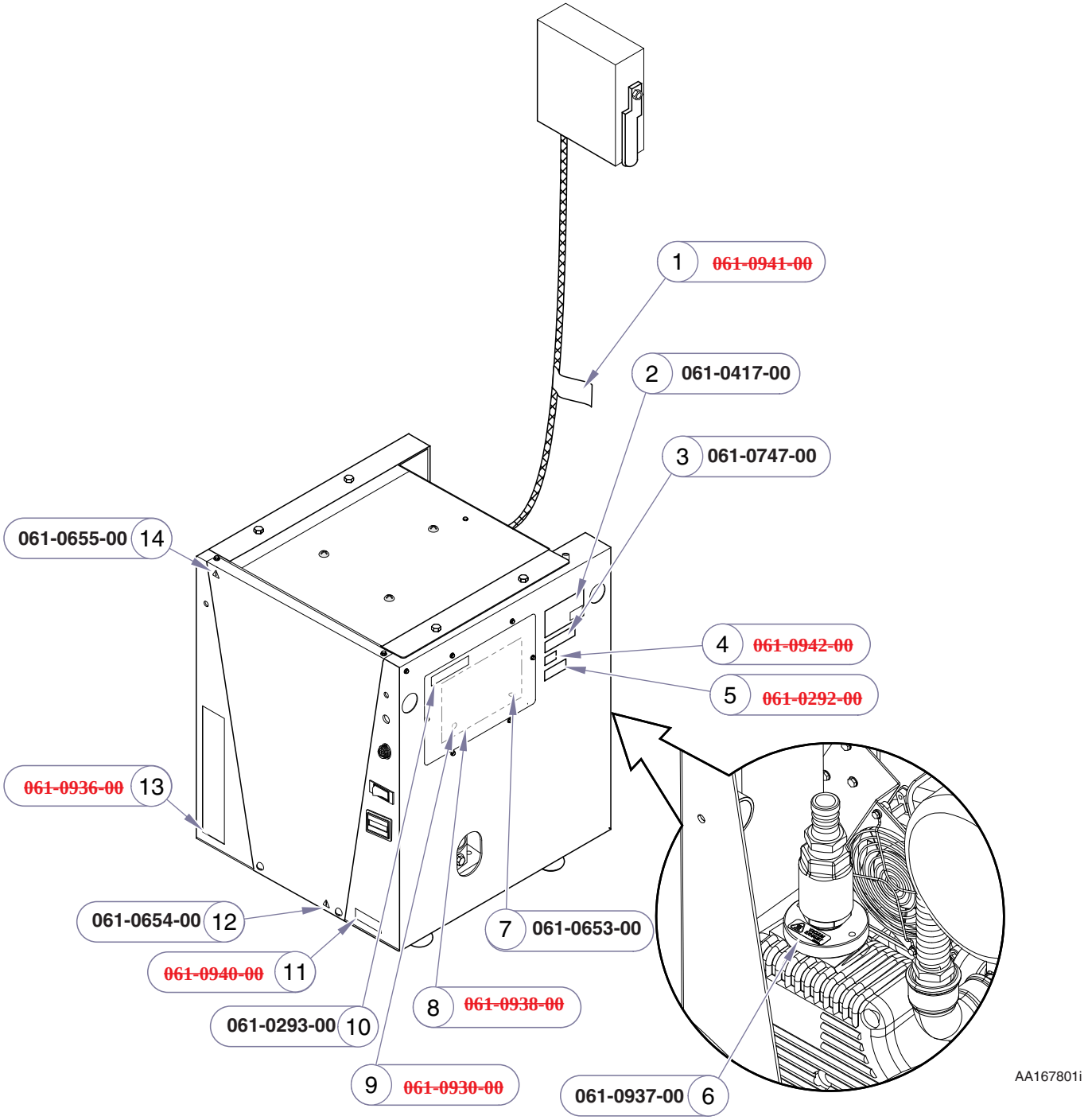


Item	Description	Qty.
002-0938-00 Sep Auto Drain with Controls		
	Items 1 thru 6	
002-0938-01 NLA	Sep Auto Drain without Controls	
	Items 2 thru 6	
1	Control/Electrical Box (NLA)	1
2	Evacuation Pump Assembly (NLA)	1
3	3/8" Check Valve	2
4	Clamp *(.5 Spring Steel)*	2
5	Hose *(1/2"ID x 72"L Wire Reinforced)(NLA)*	2
6	Ball Valve (NLA)	1

Always Specify Model & Serial Number

Models: ***All***
Serial Numbers: ***Production Date 2-29-2008 to Present***

Liquid Evacuation Pump **E-15.2**



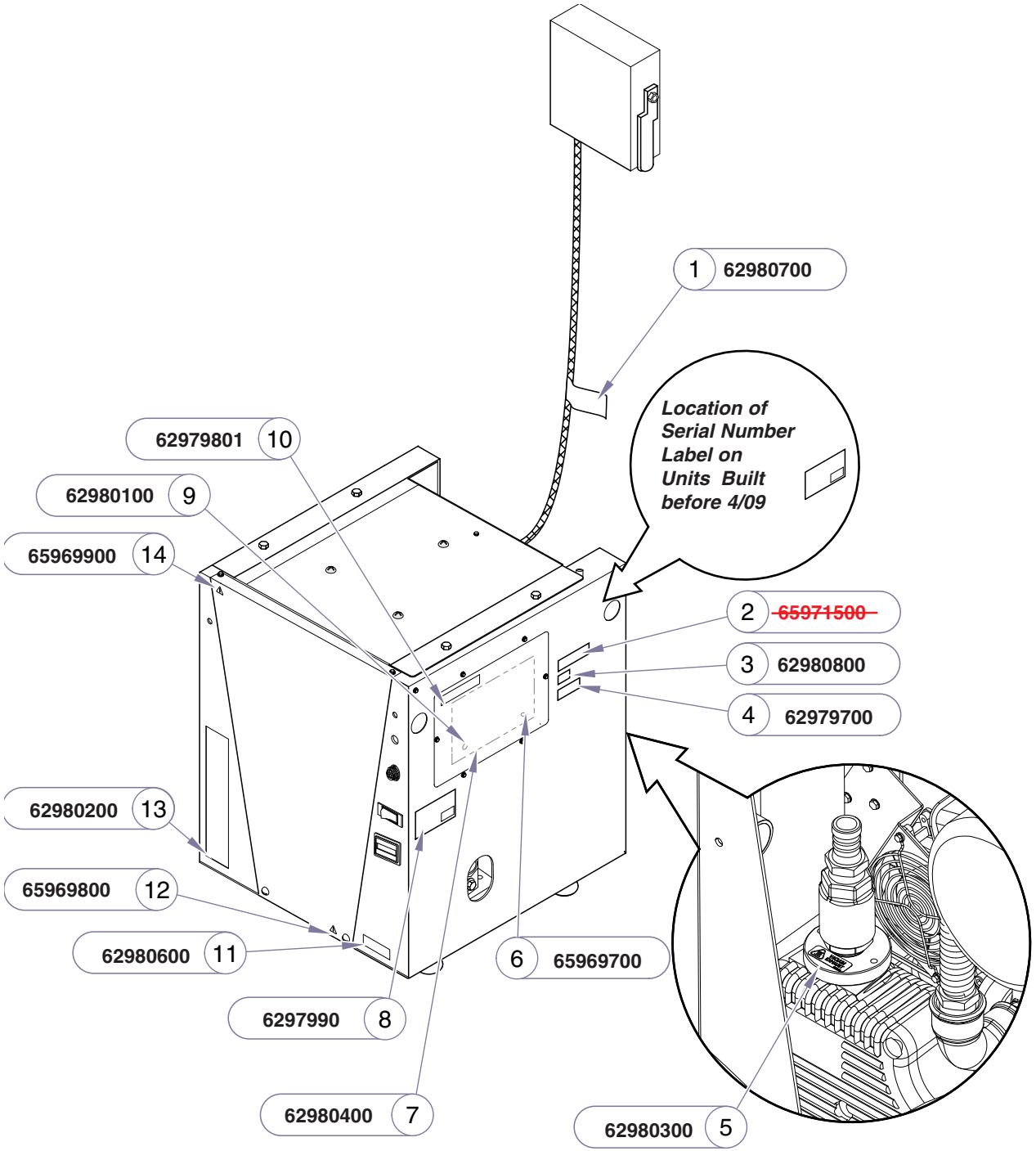
Item	Description	Qty.
1	Input Voltage Label	1
2	Serial Number Label	1
3	C.U.S. Classification Label	1
4	IPOX Label	1
5	Patent Pending Label	1
6	Vacuum Exhaust Label	1
7	Earth (Ground) Label	1
8	Vacuum Schematic	1
9	Fuse Replacement Label	1
10	Caution Label	1
11	Midmark Logo	1
12	Caution Label	1
13	PowerVac Label	1
14	Hot Surface Label	1

Always Specify Model & Serial Number

Labels

Models: / *Serial Numbers:*	*P3*	*P5*	*P7*
	V245092 to V317654	*V245092 to V317641*	*V245092 to V317634*

 Rev 1/07



Item	Description	Qty.
1	Input Voltage Label	1
2	No Longer Avalible - Classification Label	1
3	IPOX Label	1
4	Patent Pending Label	1
5	Vacuum Exhaust Label	1
6	Earth (Ground) Label	1
7	Vacuum Schematic	1
8	Serial Number Label	1
9	Fuse Replacement Label	1
10	Caution Label	1
11	Midmark Logo	1
12	Caution Label	1
13	PowerVac Label	1
14	Hot Surface Label	1

Always Specify Model & Serial Number

Models:	P3	P5	P7	All
Serial Numbers:	0611P3P0000 to Present	0611P5P0000 to Present	0611P7P0000 to Present	V785000 thru Present

Labels

E-16.1

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Page Number	Paragraph/Figure	Description

SERVICE PARTS FAX ORDERING FORM

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MIDMARK®

ATTENTION: CUSTOMER SERVICE DEPARTMENT

IMPORTANT NOTES:

1) ***Use this form for all non-warranty orders only***. *Warranty orders must be telephoned in (1-800-643-6275).*

2) *FAX numbers to send order to:*

1-877-725-6495

3) *All emergency orders must be received @ Midmark by 1:00 pm EST.*

4) *All underlined headings should be filled in prior to submittal.*

ADDITIONAL COMMENTS:

DATE: ____ / ____ / _____ **TIME:** _____ am pm

METHOD OF SHIPMENT: _____

PRIORITY:

☐ **NON-EMERGENCY ORDER {to ship within 72 hours if part(s) are in stock.}**

☐ **EMERGENCY ORDER {to ship within 24 hours if part(s) are in stock.} [see note 3]**

DEALER P.O. #: _____

ACCOUNT #: _____

MODEL #:	**SERIAL #:**	**SALES ORDER #** (if applicable)

NAME: _____

ADDRESS: _____

CITY: _____ **STATE:** ____ **ZIP:** _____

CONTACT: _____

PHONE: _____

FAX #: _____

SHIP TO: _____

LINE #	PART NUMBER	QTY.	DESCRIPTION	COLOR (if applicable)

CREDIT CARD INFORMATION

CARD TYPE _____ **CARD #**_____-_____-_____-_____ **EXP. DATE** _____ / _____ / _____

NAME ON CARD _____ **SIGNATURE**_____

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