ClassicSeries® Wet-Ring Vacuums

Single Model Numbers:

CV3
CV3R
CV5
CV5R

Twin Model Numbers:

CV6
CV6R
CV10
CV10R

MIDMARK®

Service and Parts Manual

FOR USE BY MIDMARK TRAINED TECHNICIANS ONLY

SF-1915

Part No. 10546800 Rev.7/6/17

Style B

Back

Next

Table Of Contents

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

General Information

Symbols

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

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

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

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

In Section A, test the components in the order indicated. (ex. **1st** ✓ *then,* **2nd** ✓*)*

Refer to Section B for component testing procedures.

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

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

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

Indicates the function / component is not working at all.

Ordering Parts

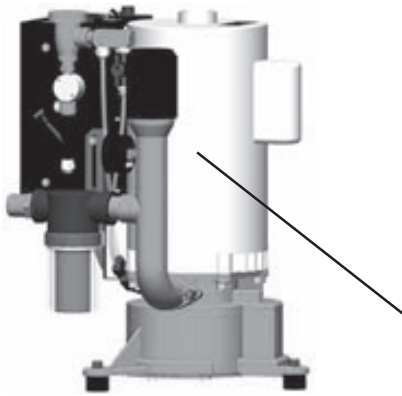
The following information is required when ordering parts:
- Serial number & model number
- Part number for desired part.
  [Refer to Exploded Views / Parts Lists section]

<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 Service Department with the required information.

Customer Service: 1-800-643-6275

Technical Service: 1-888-279-1260

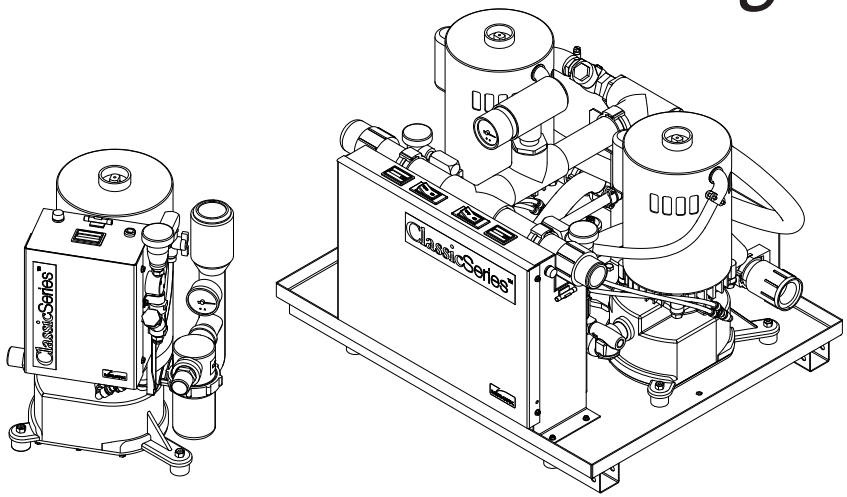


Serial / Model Number Location

General Information

Weights, Dimensions, Electrical Specifications

ClassicSeries® Wet-Ring Vacuums



AA186600

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

Model Identification / Compliance Chart

Model	Description	Complies To:		Electrical Supply Requirements:		
		UL 60601-1	CAN/CSA 22.2, #601.1-M90	VAC	Amps	Cycles (Hz)
CV3	ClassicSeries Wet-Ring Vacuum 3 User	X	X	Configurable		
				115	15	60
				208 / 230	8.2 / 7.5	60
				208 / 230	8.2 / 8.1	50
CV3R	ClassicSeries Wet-Ring Vacuum Recycler 3 User	X	X	Configurable		
				115	15	60
				208 / 230	8.2 / 7.5	60
				208 / 230	8.2 / 8.1	50
CV5	ClassicSeries Wet-Ring Vacuum 5 User	X	X	Configurable		
				208-230	13.1 / 11.9	60
				208-230	11.2 / 11.1	50
CV5R	ClassicSeries Wet-Ring Vacuum Recycler 5 User	X	X	Configurable		
				208-230	13.1 / 11.9	60
				208-230	11.2 / 11.1	50
CV6	ClassicSeries Wet-Ring Vacuum 6 User	X	X	Configurable (per pump)		
				115	15	60
				208 / 230	8.2 / 7.5	60
				208 / 230	8.2 / 8.1	50
CV6R	ClassicSeries Wet-Ring Vacuum Recycler 6 User	X	X	Configurable (per pump)		
				115	15	60
				208 / 230	8.2 / 7.5	60
				208 / 230	8.2 / 8.1	50
CV10	ClassicSeries Wet-Ring Vacuum 10 User	X	X	Configurable (per pump)		
				208 / 230	13.1 / 11.9	60
				208 / 230	11.2 / 11.1	50
CV10R	ClassicSeries Wet-Ring Vacuum Recycler 10 User	X	X	Configurable (per pump)		
				208 / 230	13.1 / 11.9	60
				208 / 230	11.2 / 11.1	50

General Information

LIMITED WARRANTY

SCOPE OF WARRANTY

Midmark Corporation ("Midmark") warrants to the original retail purchaser that it will repair or replace components of the domestic and international air compressor and vacuum products manufactured by Midmark (except for components not warranted under "Exclusions") that are defective in material or 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 applicable components. This limited warranty shall only apply to defects that are reported to Midmark within the applicable warranty period and which, upon examination by Midmark, prove to be defective. This warranty extends only to the first retail purchaser of a product, and is not transferable or assignable.

APPLICABLE WARRANTY PERIOD

The applicable warranty period, measured from the date of delivery to the original user, shall be as follows:

(1) PowerAir® oil-less compressors – Five (5) years or 3,500 hours of use, whichever occurs first. (2) PowerVac® dry vacuums – Five (5) years or 10,000 hours of use, whichever occurs first (except that the vacuum pump warranty term is ten (10) years or 20,000 hours of use, whichever occurs first). (3) PowerVac® G dry vacuums – Five (5) years or 10,000 hours of use, whichever occurs first (except that the vacuum pump warranty term is ten (10) years or 20,000 hours of use, whichever occurs first). (4) Classic Series® wet-ring vacuums – Five (5) years or 10,000 hours of use, whichever occurs first. (5) PowerMax surgical suction – Two (2) years.

OBTAINING WARRANTY SERVICE

Warranty service must be obtained through either Midmark or an authorized dealer in the Midmark product line for which warranty service is requested. Midmark may be contacted for warranty service inquiries or issues via email at www.midmark.com, by phone at 1-800-MIDMARK, by facsimile at 1-877-725-6495, or by mail to Midmark Corporation, 60 Vista Drive, P O Box 86, Versailles, Ohio 45380. It is the retail purchaser's obligation to arrange for delivery of a product to Midmark or one of its authorized dealers for warranty service, which delivery shall be at retail purchaser's expense. It is also the retail purchaser's obligation to comply with the warranty service instructions provided either by Midmark or its authorized dealer. The retail purchaser must provide Midmark with completed warranty registration information within thirty (30) days after purchase in order to obtain the benefits of this warranty.

EXCLUSIONS

This warranty does not cover and Midmark shall not be liable for the following:

(1) defects, damage, or other conditions caused, in whole or in part, by misuse, abuse, negligence, alteration, accident, freight damage, tampering, or failure to seek and obtain repair or replacement in a timely manner; (2) products which are not installed, used, and properly cleaned and maintained as required in the Midmark "Installation" and/or "Installation/Operation Manual" for the applicable product; (3) products considered to be of a consumable nature; (4) accessories or parts not manufactured by Midmark; (5) plastic, rubber, and other disposable parts, unless the defect is discovered at the time of delivery and disclosed to Midmark within five (5) days thereafter;

(6) charges by anyone for adjustments, repairs, replacement parts, installation, or other work performed upon or in connection with such products which are not expressly authorized in writing in advance by Midmark; (7) costs and expenses of routine maintenance and cleaning; and (8) representations and warranties made by any person or entity other than Midmark.

EXCLUSIVE REMEDY; CONSEQUENTIAL DAMAGES DISCLAIMER, MIDMARK'S ONLY OBLIGATION UNDER THIS WARRANTY IS THE REPAIR OR REPLACEMENT OF DEFECTIVE PARTS. MIDMARK SHALL NOT BE LIABLE FOR AND HEREBY DISCLAIMS ANY DIRECT, SPECIAL, INDIRECT, INCIDENTAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES OR DELAYS, INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFITS OR INCOME, LOSS OF USE, DOWNTIME, COVER, AND EMPLOYEE OR INDEPENDENT CONTRACTOR WAGES, PAYMENTS, AND BENEFITS.

NO AUTHORIZATION

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

WARRANTY DISCLAIMER

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 IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THIS WARRANTY IS LIMITED TO THE REPAIR OR REPLACEMENT OF DEFECTIVE PARTS.

STATUTE OF LIMITATIONS

No action may be brought against Midmark for breach of this limited warranty, an implied warranty, if any, or for any other claim arising out of or relating to the products, more than ninety (90) days following expiration of the limited warranty period.

RETURN GOODS PROCEDURE

All returns must be made through an authorized dealer. Units for repair should be sent to Midmark and packaged in the original shipping container if possible. Please contact our Customer Service Department prior to shipping the unit prepaid to receive authorization RMA number. Specify the RMA number on the outside of the box and label it to the attention of Repair Service Center. Ship to: Midmark Corporation, Plant A Returns Dept, Attn: Repair Service Center, 60 Vista Drive, Versailles OH 45380

Section A

Troubleshooting

Click on the Go To Page button and enter the desired page number. (Note: Letters are case sensitive, ex: A-2)

Troubleshooting

Theory of Operation

Fresh water flows through the water strainer assembly, solenoid valve and anti-siphon valve. (In recycler models water also flows through a water bypass valve.) The water is injected onto the pump seal to provide cooling and lubrication.

Water flows into the rotating impeller which creates a whirling ring of water inside the pump housing, isolating each chamber of the impeller.

The impeller is mounted off-center. As it turns, the space in each chamber expands and decreases once with each rotation. This creates low pressure on the inlet side and higher pressure on the outlet side.

On recycler models, water is forced out of the pump housing into the recycling chamber. Vacuum created at the intake port in the pump housing draws a steady stream of water from the water recycler. Recycled water mixes with the fresh water in the pump housing and the process is repeated. When the recycling chamber is full of water, any excess is exhausted out of the housing and through the waste line.

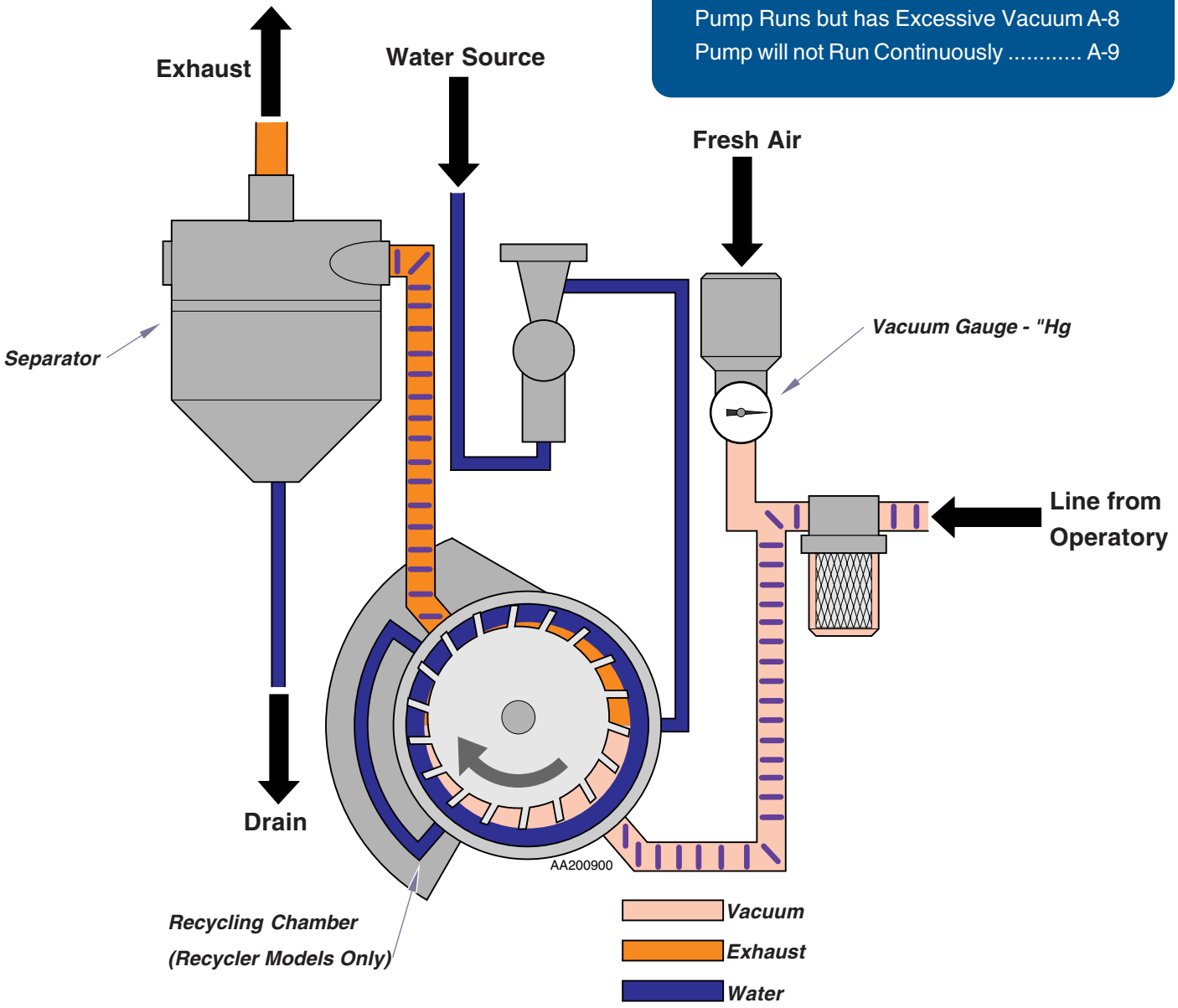
Non-recycler models are connected to the drain with all liquids exiting out of the housing and through the waste line.

Note: If water supply is interrupted, the pump will run at a reduced vacuum level.

Operating the pump without continuous fresh water flow will cause permanent damage to the housing seal.

Equipment Alert

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



Electrical Schematic

1 HP & 1 1/4HP MOTOR

Refer to: Wire Diagrams D-1
Go To Page: D-1

All 1HP and 1 1/4HP units are factory wired for 208-230 VAC. They can be rewired for 115 VAC.

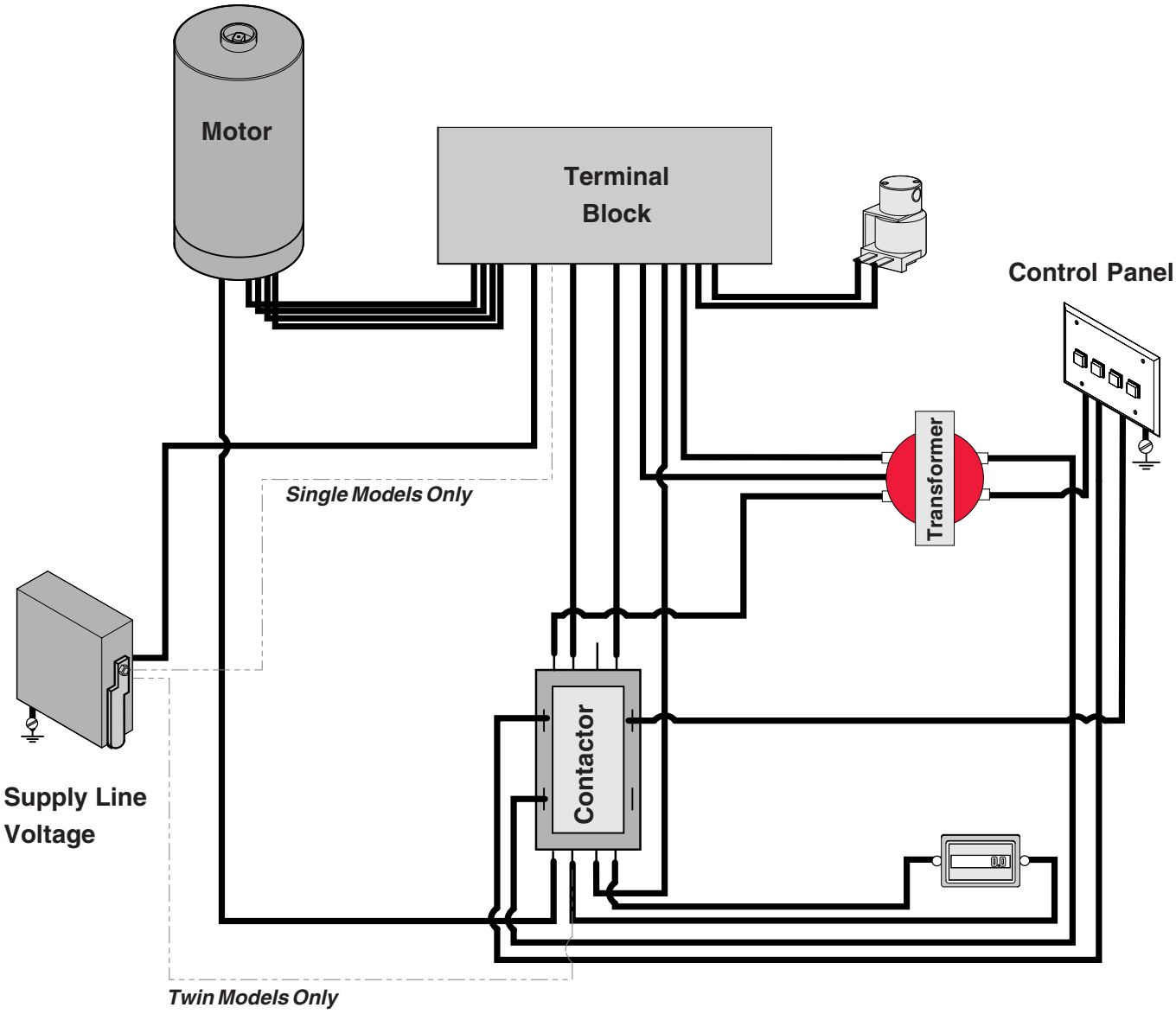
•Supply Line Voltage is always present on one side of the Contactor contacts.

• Line Voltage is also being supplied to the 240 / 24 VAC transformer energizing it.

•The Transformer supplies 24 VAC to the On/Off switch (Control Panel) on the wall and to one side of the 24 VAC Contactor Coil.

Single Motor Units
•When the On/Off switch is pushed to the on position the Contactor Coil is energized closing the contacts.

Twin Motor Units
•When the control panel On/Off switch is pushed, and the On/Off switches on the vacuum are in the On position, the contactor coils are energized closing the contacts. Line voltage is then supplied to the motor.



AA201000

Troubleshooting

Electrical Schematic

2 HP MOTOR

All 2 HP units are factory wired for 208-230 VAC.

•Supply Line Voltage is always present on one side of the Contactor contacts.

• Line Voltage is also being supplied to the 240 / 24 VAC transformer energizing it.

•The Transformer supplies 24 VAC to the On/Off switch (Control Panel) on the wall and to one side of the 24 VAC Contactor Coil.

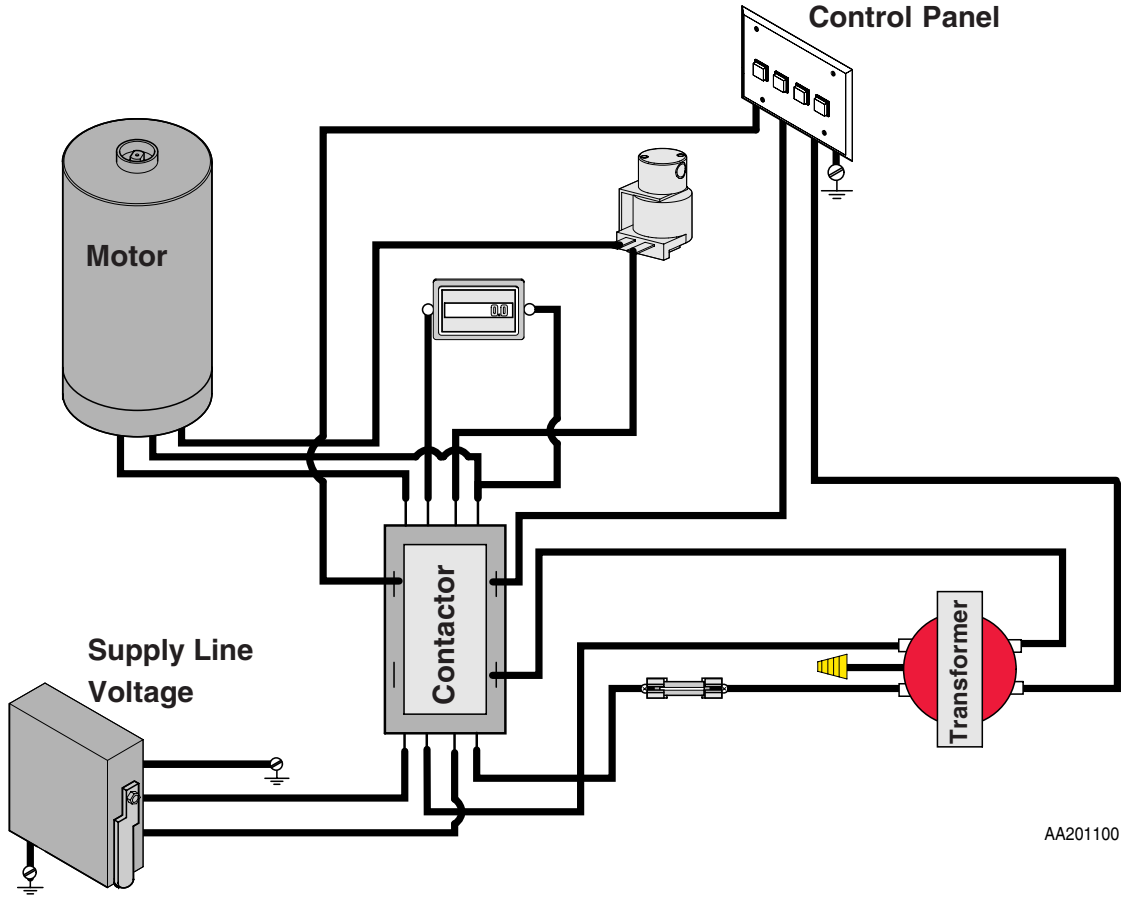
Single Motor Units

•When the On/Off switch is pushed to the on position the Contactor Coil is energized closing the contacts.

Twin Motor Units

•When the control panel On/Off switch is pushed, and the On/Off switches on the vacuum are in the On position, the contactor coils are energized closing the contacts. Line voltage is then supplied to the motor.

Refer to: Go To Page:
Wire Diagrams D-1



Troubleshooting

Vacuum System

Problem: *Motor will not Start when Turned ON*

Check Circuit Breaker *1st* ✓
Turn circuit breaker off then back on.

Check Fuse *2nd* ✓
Refer to: Section B Fuse

AA201200

Check Low Voltage *3rd* ✓
Refer to: Section B Low Voltage

Motor needs to be Replaced *4th* ✓
Contact Midmark Technical Service .

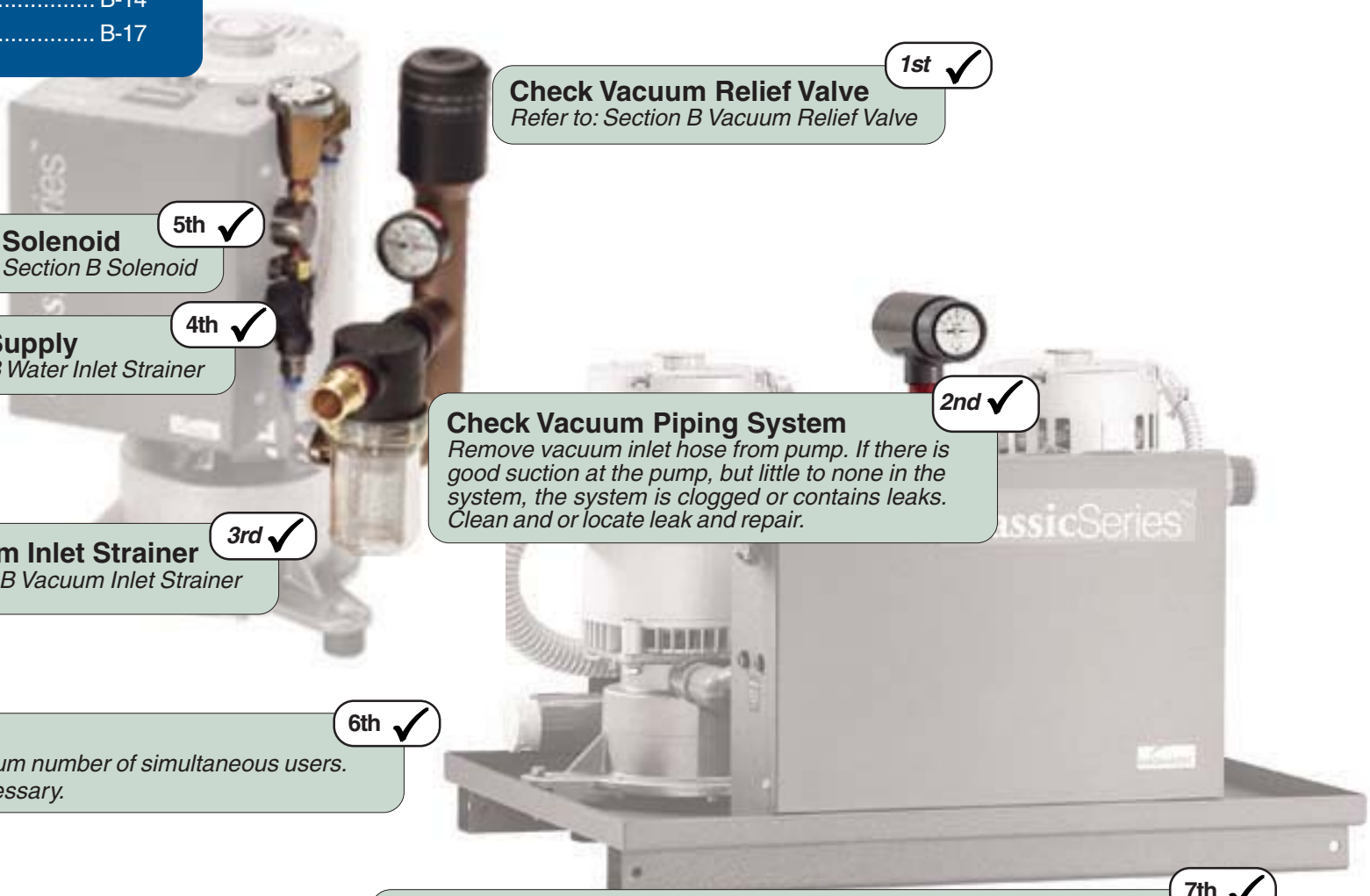
AA201300

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

Troubleshooting

Vacuum System

Problem: *Pump Runs but has Low Suction*



Check Vacuum Relief Valve — 1st ✓
Refer to: Section B Vacuum Relief Valve

Check Solenoid — 5th ✓
Refer to: Section B Solenoid

Check Water Supply — 4th ✓
Refer to: Section B Water Inlet Strainer

Check Vacuum Piping System — 2nd ✓
Remove vacuum inlet hose from pump. If there is good suction at the pump, but little to none in the system, the system is clogged or contains leaks. Clean and or locate leak and repair.

Check Vacuum Inlet Strainer — 3rd ✓
Refer to: Section B Vacuum Inlet Strainer

Verify Pump Size — 6th ✓
Check specifications for maximum number of simultaneous users. Upgrade vacuum system if necessary.

Twin Models - Low Suction Shown on Only One Pump Gauge — 7th ✓
Intake Check Valves need to be cleaned or replaced.
Refer to: Section B Intake Check Valves

Troubleshooting

Vacuum System

Problem: *Pump Runs but has Excessive Vacuum*

Refer To: **Go To Page:**
Vacuum Relief Valve B-6

1st ✓

Check Vacuum Relief Valve
Refer to: Section B Vacuum Relief Valve

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

Troubleshooting

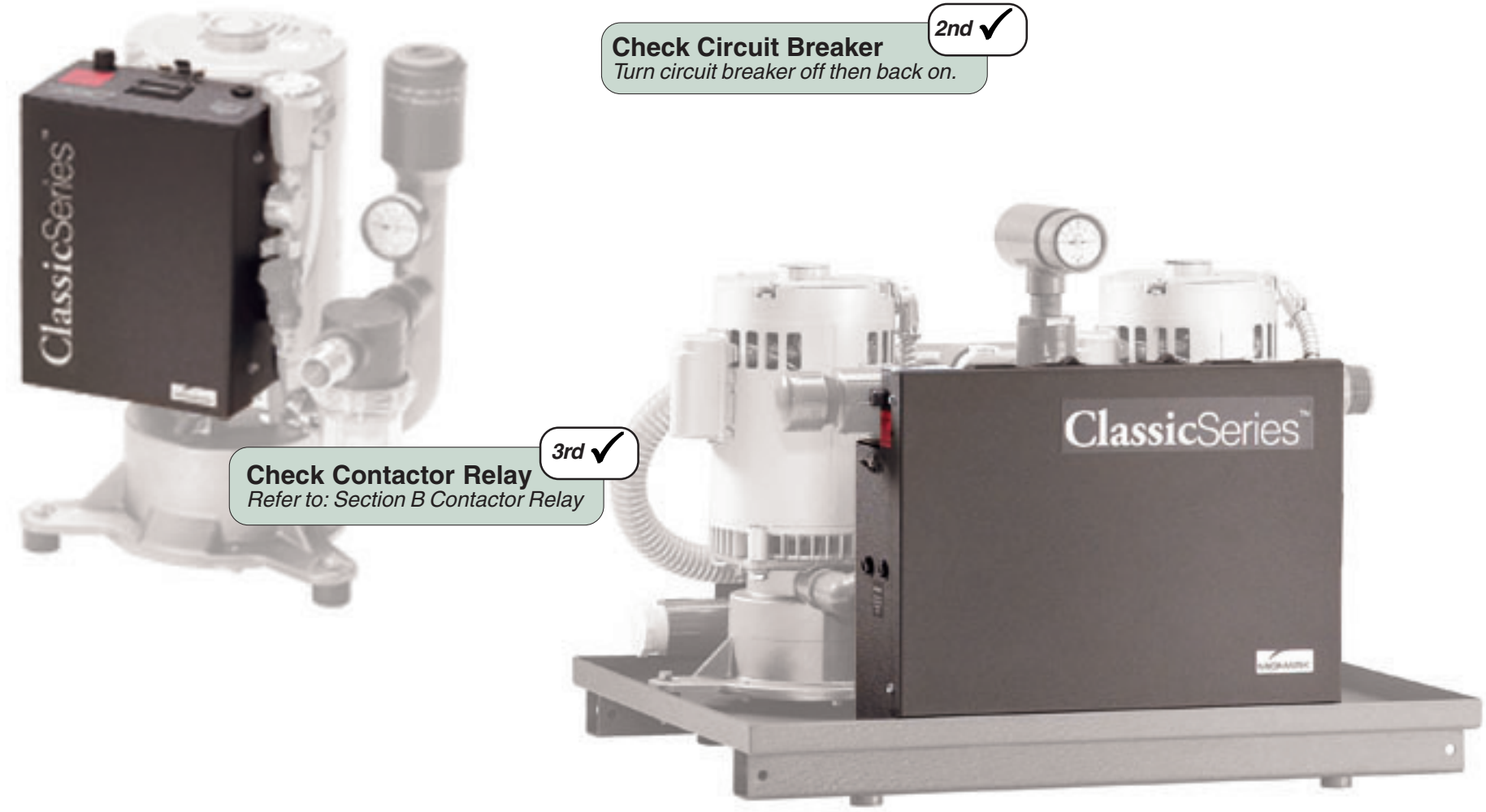
Vacuum System

Problem: *Pump will not Run Continuously*

Refer To: **Go To Page:**

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

Check Circuit Breaker 2nd ✓
Turn circuit breaker off then back on.



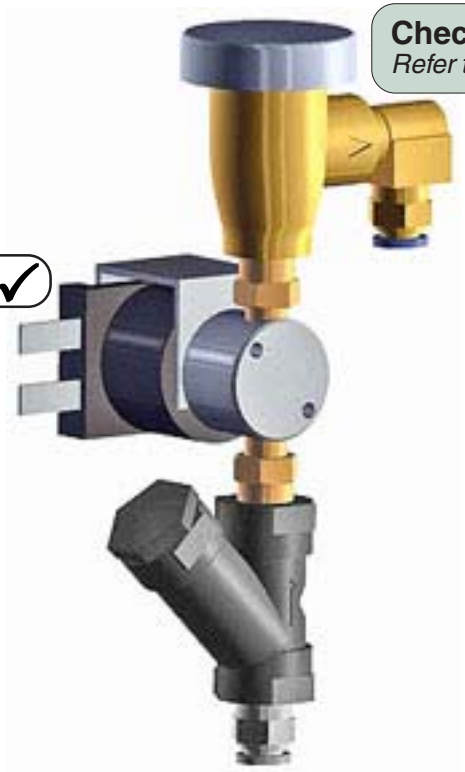
Check Contactor Relay 3rd ✓
Refer to: Section B Contactor Relay

Troubleshooting

Vacuum System

Problem: *Pump is Leaking*

Refer To:	Go To Page:
Solenoid	B-14
Vacuum Breaker	B-16



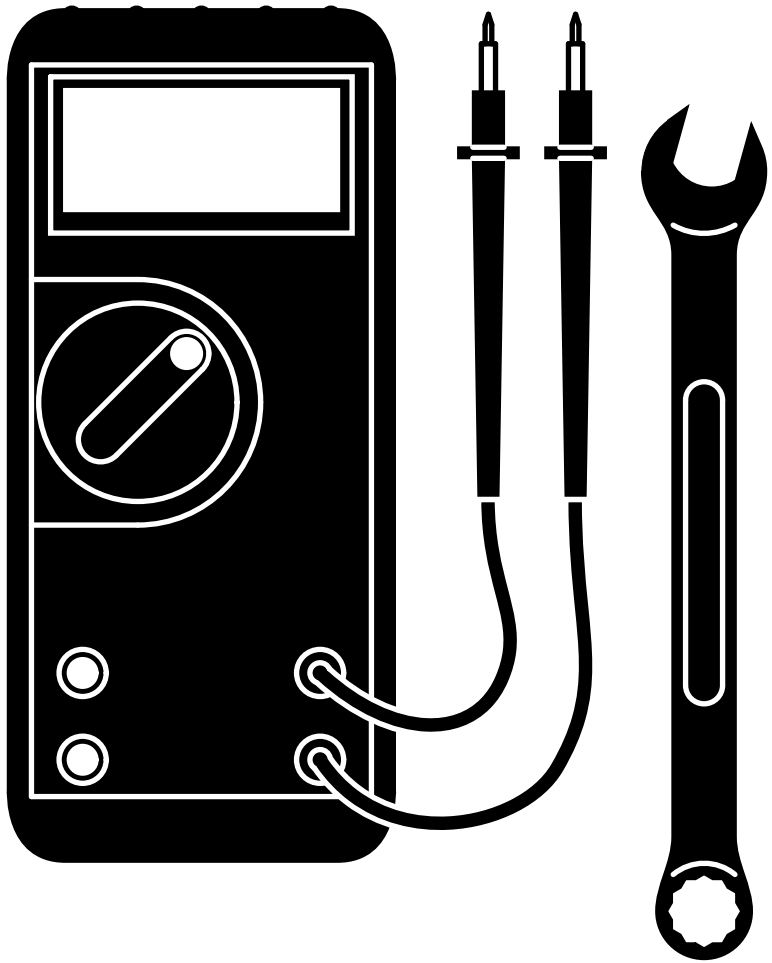
Check Vacuum Breaker *2nd* ✓
Refer to: Section B Vacuum Breaker

Check Solenoid *1st* ✓
Refer to: Section B Solenoid

Models: *All*
Serial Numbers:

Section B

Testing & Repair



Click on the Go To Page button and enter the desired page number.
(Note: Letters are case sensitive, ex: A-2)

Testing & Repair

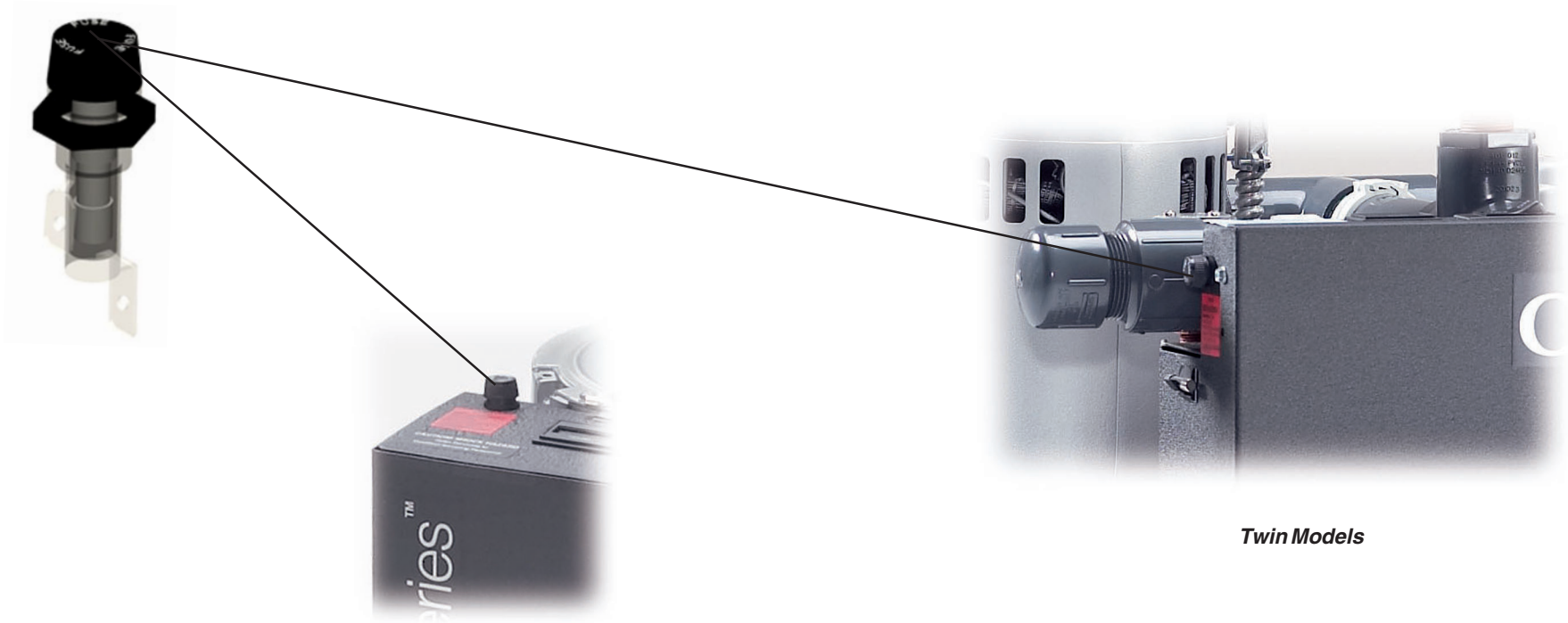
Fuse

Refer to: Go To Page:
Check Fuse B-3

Function and Location

The fuse protects the low voltage control system against overload failure, mainly short circuits. It is located in the electrical box and accessed on top of the electrical box on single models and the side of the twin models.

WARNING
For continued protection against risk of fire, replace the fuse with a 1/3 amp 250V Slo-Blo type only.



Single Models

Twin Models

Fuse

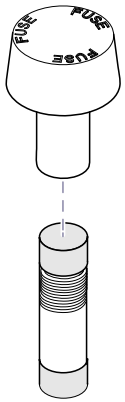
Models: ***All***
Serial Numbers:

Fuse

Check

Refer to: **Go To Page:**
Function and Location B-2

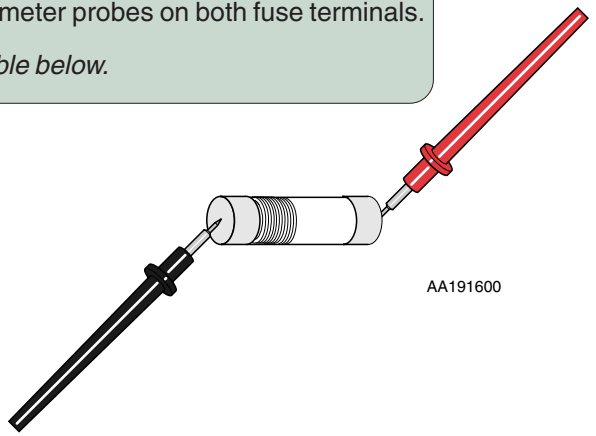
Step 1: Turn power off.



Step 2: Remove fuse from electrical box.
Push in and turn cap counter clockwise.

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

Note: Refer to table below.



Meter Reading	*Status*	*Required Action*
OL - off line		Replace Fuse *1/3 amp 250V Slo-Blo fuse*
Continuity checks ok Visually looks ok		Fuse is Good

Step 4: Reinstall into electrical box.
Push in and turn cap clockwise until it locks in place.

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

Testing & Repair

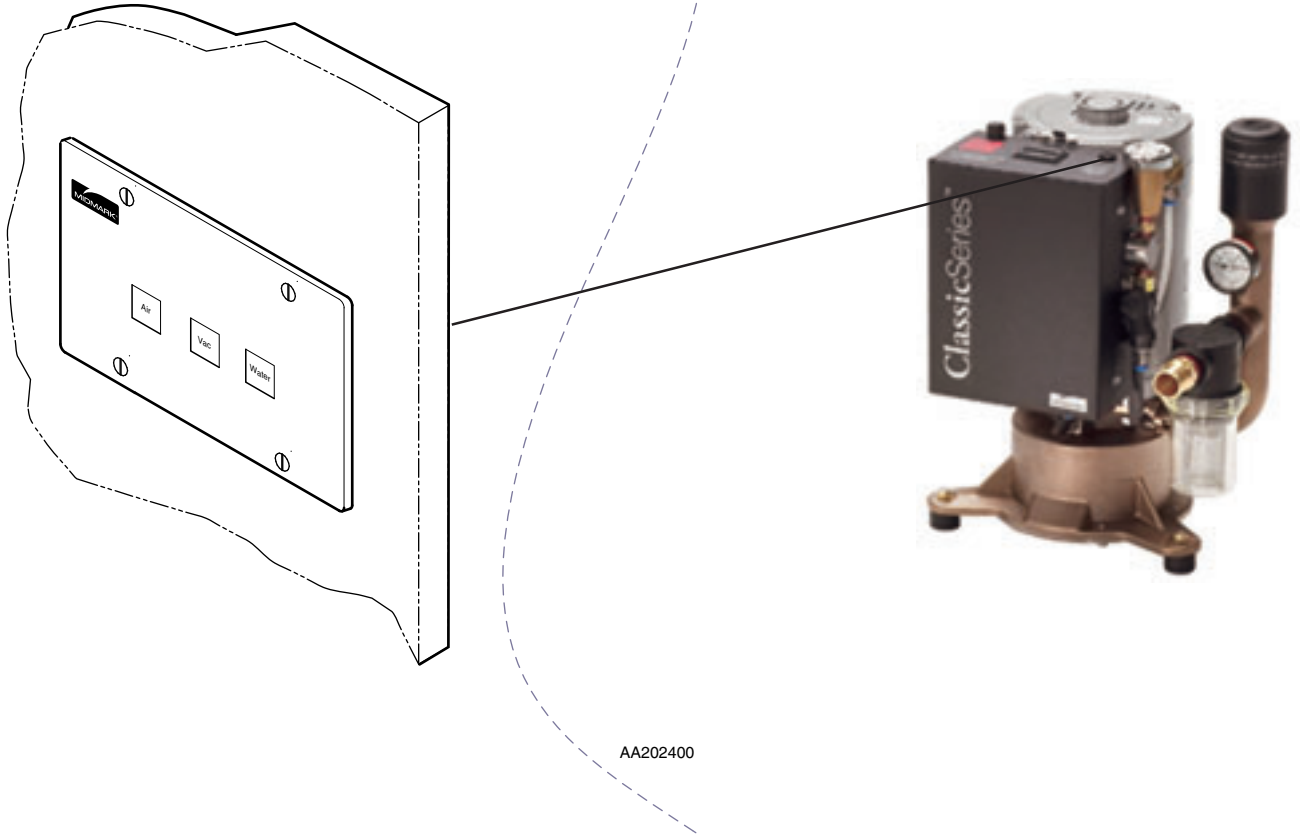
Low Voltage - Control Panel

Refer To: **Go To Page:**
Testing B-5
Wiring Diagrams D-1
Exploded Views E-1

Function and Location

The Control Panel will allow the user to control the dental equipment from the office area. It supplies power to the relay switch. Red, White and Blue wire connections for control panel are located on top of Single models and side of Twin models electrical boxes.

**Note: Relay Switch is always live unless Low Voltage is turned off.*



AA202400

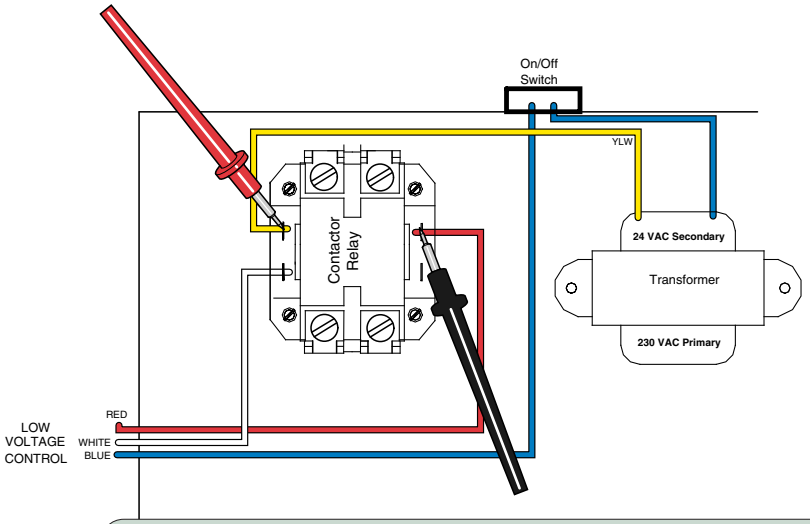
Testing & Repair

Low Voltage - Master Control Panel

Testing

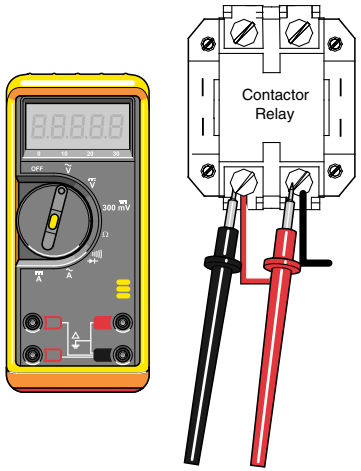
Caution
When testing components with power on use care to prevent electrical shock.

Step 1: Remove electrical box cover.
Check for broken or loose wiring.
Refer to: Section C Electrical Box Cover



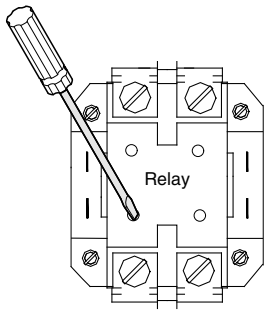
Step 3: Check Low Voltage .
Place meter probes on Yellow and Red wires (low voltage) at Contactor connections.

Note: Verify reading is 24 volts.



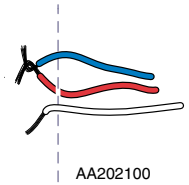
Step 2: Check high voltage on contactor relay.
- Set meter to V.
- Place meter probes on front, red and black wires.

Note: Verify reading is 230 volts.



Step 4: Insert screwdriver into relay to start manually.

Note: if system starts, replace contactor relay.



Meter Reading	Status	Required Action
High Voltage = < Line Voltage		Replace Contactor Relay
Low Voltage = < 24 Volts		Replace Transformer
High Voltage = Line Voltage		Contactor Relay - OK
Low Voltage = 24 Volts		Transformer - OK

Step 5: Bypass the remote switch to verify it is not defective.
Disconnect the Red, White and Blue wires from the remote switch.
Connect the Blue and Red wires together.

Models: All
Serial Numbers:

Testing & Repair

Vacuum Relief Valve

Refer To: **Go To Page:**
Adjustment B-7

Location and Function

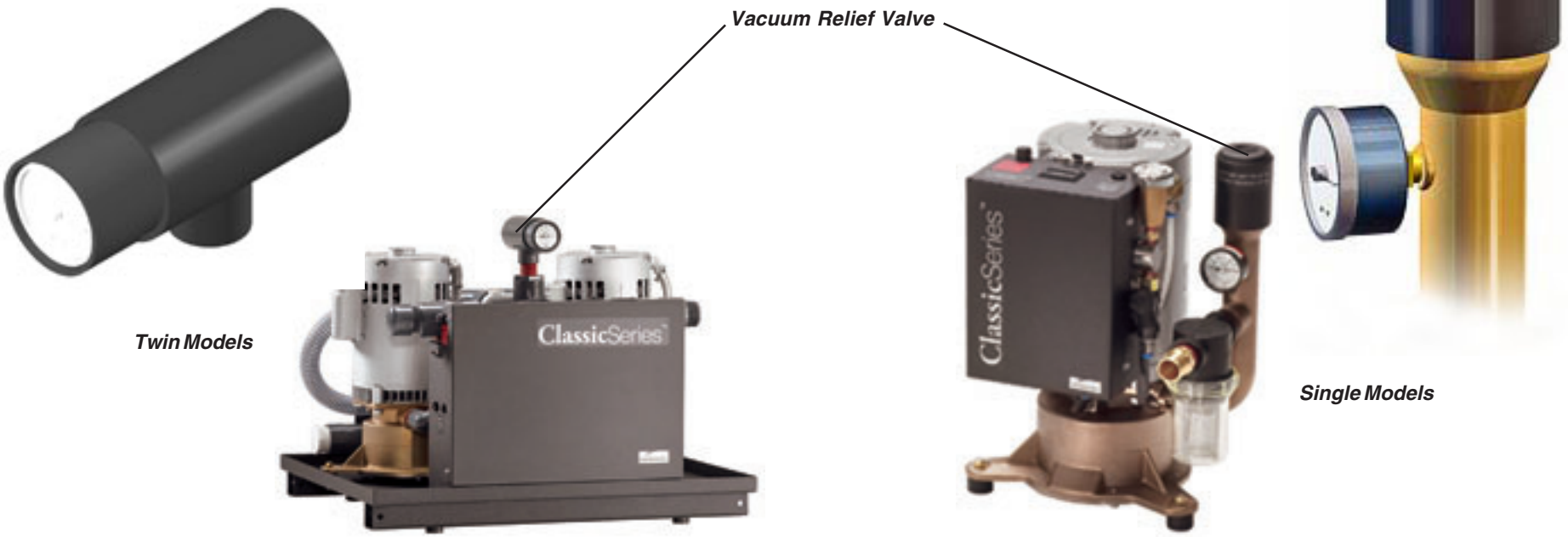
The Vacuum Relief Valve regulates the vacuum pressure in the ClassicSeries® Wet-Ring vacuums.

Recommended range for the system is from 10" to 12"Hg.

The system is preset at the factory for 10"Hg.

The Vacuum Relief Valve is located on top of the intake manifold assembly.

**Replacement instructions are provided with the part. They are also available on Documark.com, or by clicking on the link in the blue box.*



Twin Models

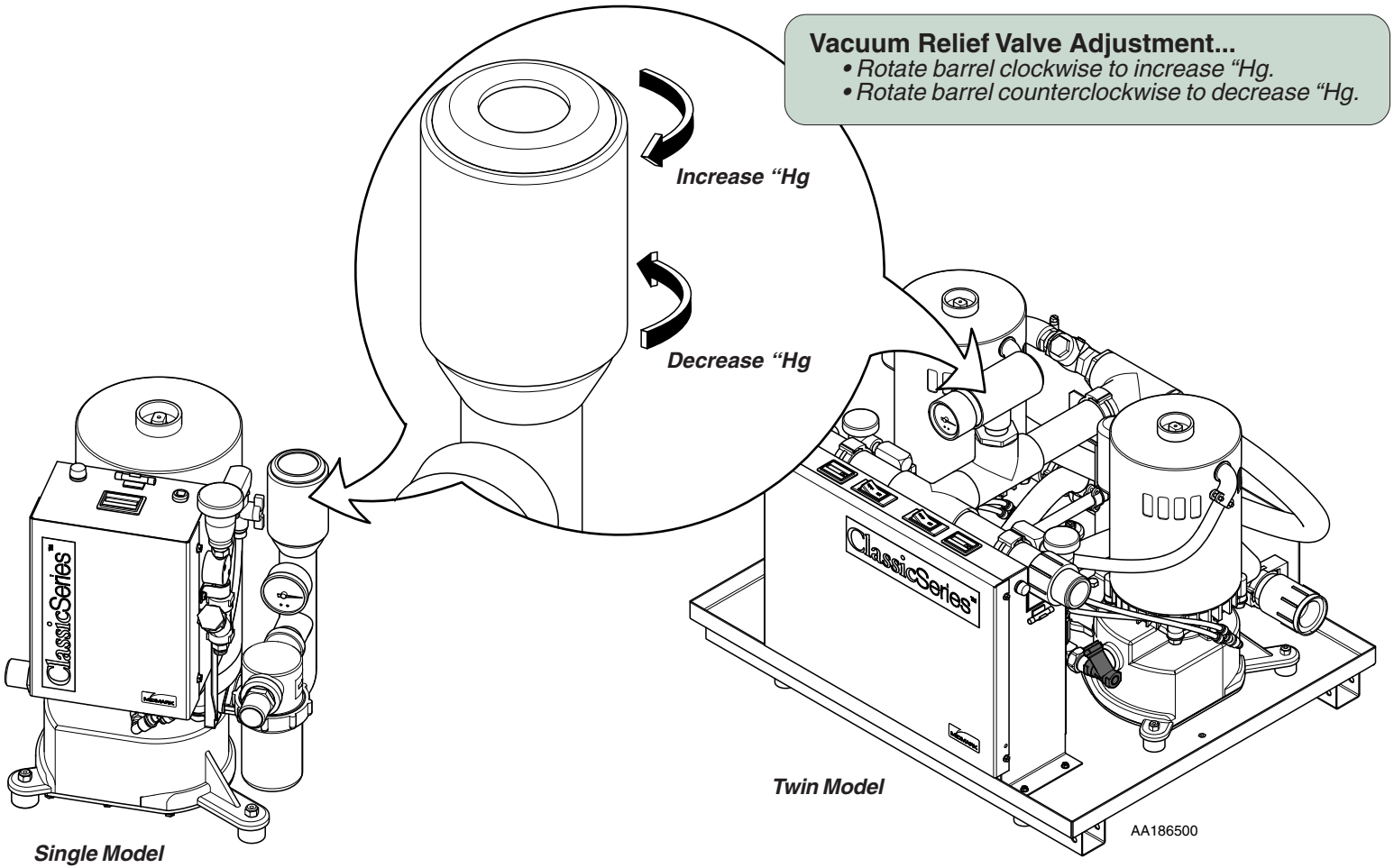
Single Models

Vacuum Relief Valve

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

Vacuum Relief Valve

Adjustment



Models: All
Serial Numbers:

Vacuum Relief Valve

Testing & Repair

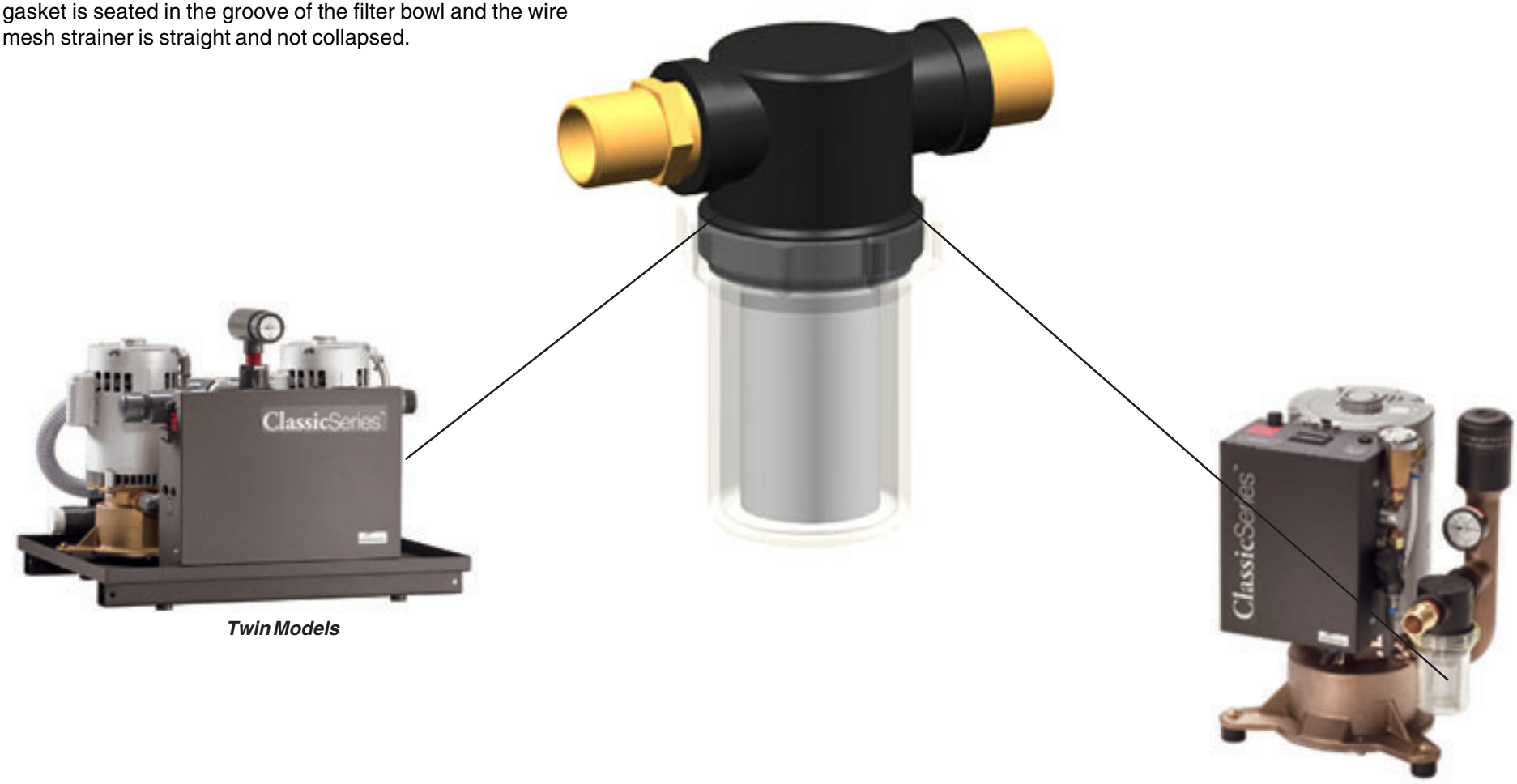
Vacuum Inlet Strainer

Refer To: **Go To Page:**
Clean B-9
Exploded Views E-1

Location and Function

The vacuum inlet strainer keeps solid waste from going into the pump from the operatory line.

Empty and clean the inlet strainer everyday. Make sure gasket is seated in the groove of the filter bowl and the wire mesh strainer is straight and not collapsed.



Twin Models

Single Models

Vacuum Inlet Strainer

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

Testing & Repair

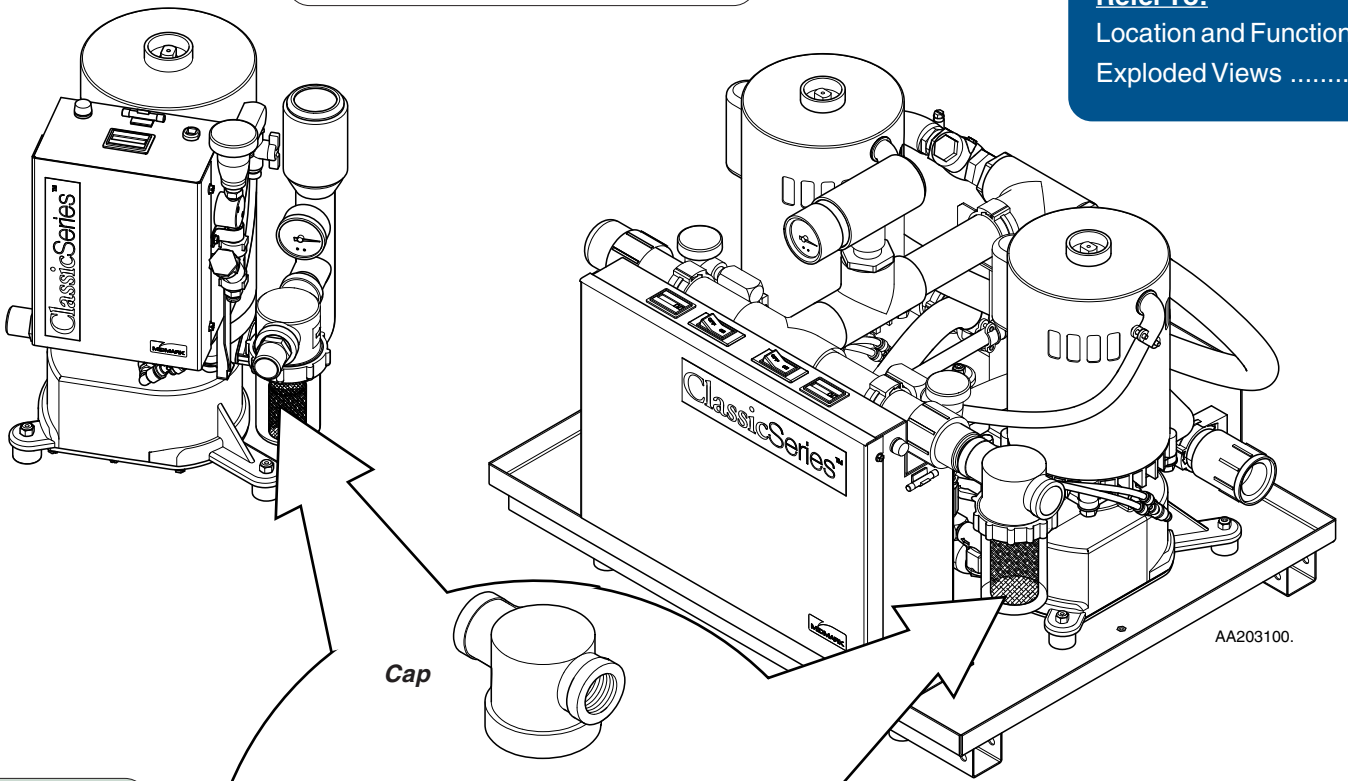
Vacuum Inlet Strainer

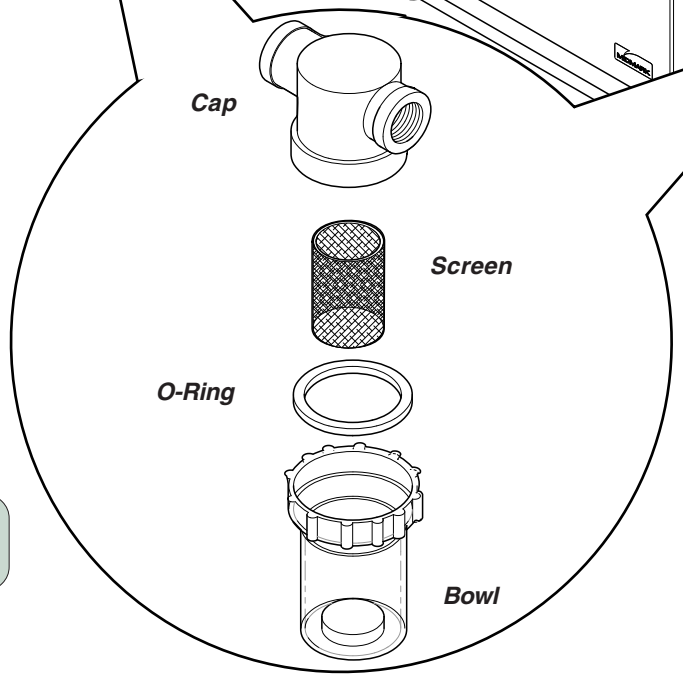
Attention:
If screen collapses, it must be replaced.

Refer To: | **Go To Page:**
Location and Function B-8
Exploded Views E-1

Clean

Step 1: Turn power off.





Step 2: Remove filter bowl.
Remove screen and o-ring.

Step 3: Clean filter bowl and screen.
Seat o-ring into groove.

Step 4: Install filter bowl.

Step 5: Turn power on.

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

Vacuum Inlet Strainer

Testing & Repair

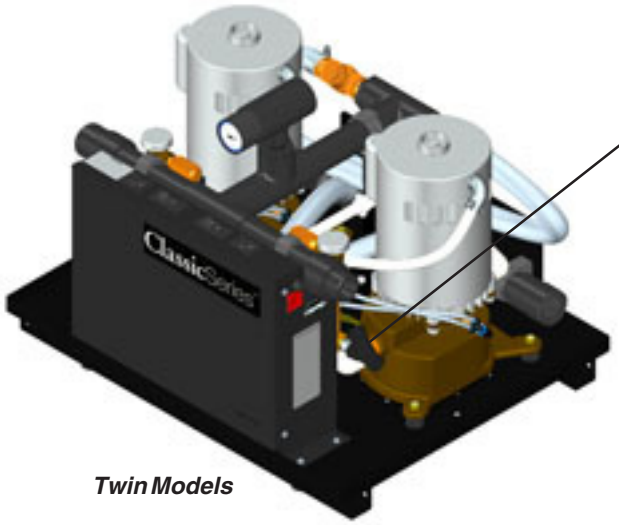
Water Inlet Strainer

Refer To: **Go To Page:**
Clean B-11
Exploded Views E-1

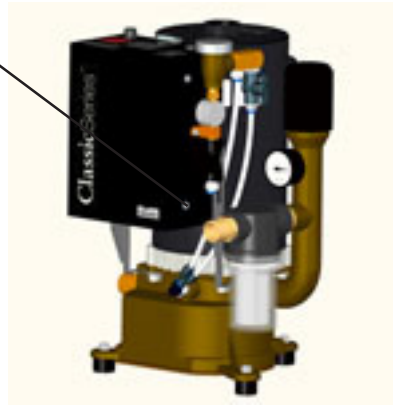
Location and Function

The water inlet has a small wire mesh strainer in it which helps eliminate rust, solder wastes and other water contamination. Clean yearly, or as needed.

Water Inlet Strainer



Twin Models



Single Models

Water Inlet Strainer

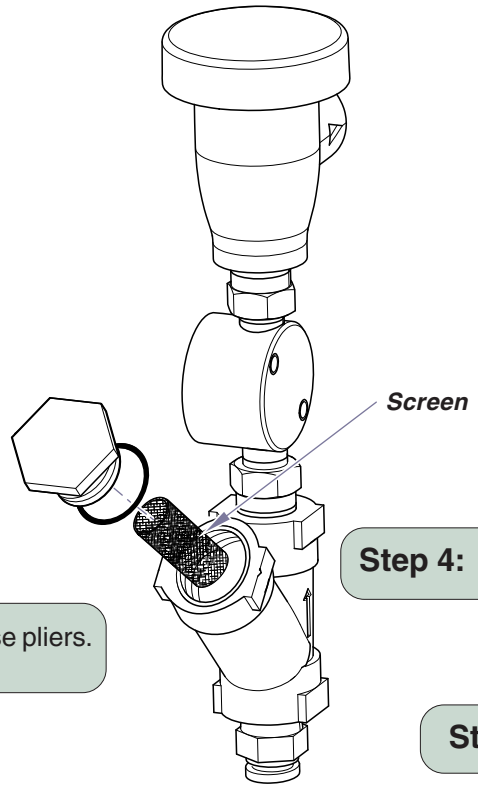
Models: ***All***
Serial Numbers:

Water Inlet Strainer

Clean

Step 1: Turn power off.

Step 2: Remove cap from strainer housing.



Step 3: Remove screen with needle nose pliers. Clean screen.

Step 4: Replace strainer and cap.

Step 5: Turn power on.

AA203300

Testing & Repair

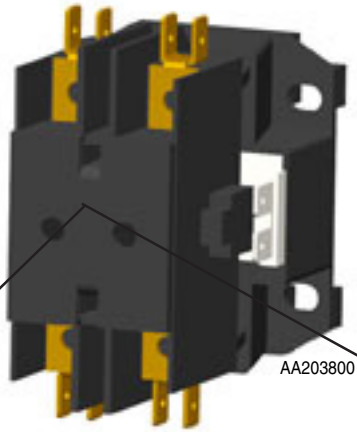
Contactor Relay

Refer To: **Go To Page:**
Contactor Relay B-13
Section D Wire Diagrams D-1

Location and Function

When the ClassicSeries® Wet-Ring Vacuum is turned on either by the remote wall switch or vacuum unit on/off switch on Twin models , the Contactor is energized. It sends current to the hour meter, solenoid valve and pump, turning them on.

The Contactor is located in the electrical box.



AA203800

Twin Models

Single Models

Contactor Relay

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

Testing & Repair

Contactor Relay

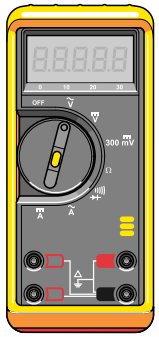
Test

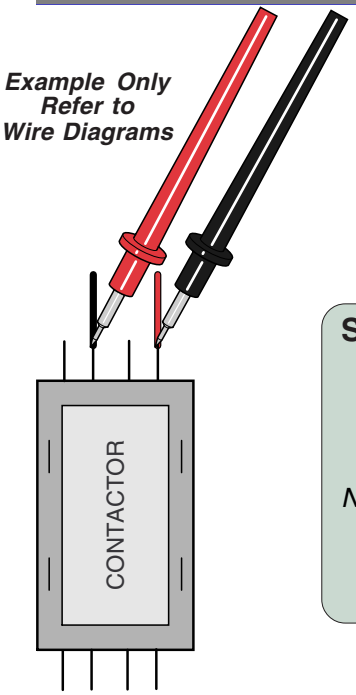
Step 1: Turn power off.

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

Step 3: Turn power on.

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





Example Only Refer to Wire Diagrams

Step 4: Check High Voltage on Contactor.
- Set meter to V̂.

1 HP Models
- Place meter probes on two bottom wire connections.

2 HP Models
- Place meter probes on two top wire connections.

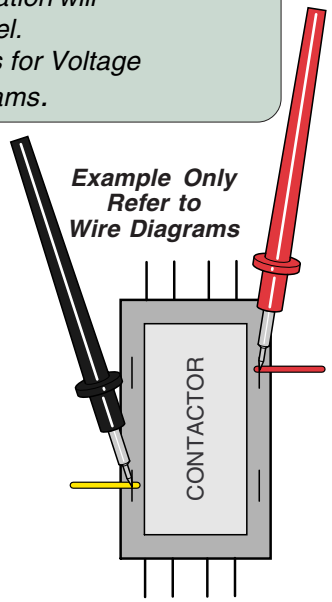
Reading: 115VAC or 208-230VAC depending on model.

Note: Refer to: Specifications for Voltage & Section D wire diagrams.

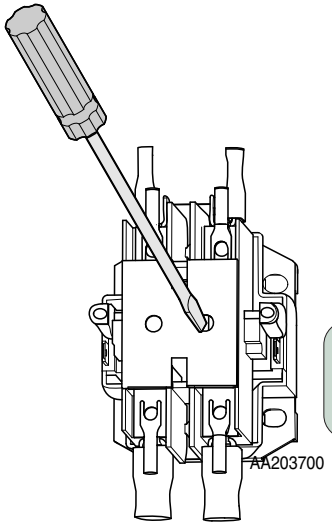
Step 5: Check voltage across contactor.
- Set meter to V̂.
- Place meter probes on right and left side, red and yellow wires.

Reading: 24VAC

Note: Red and Black wire location will vary depending on model. Refer to: Specifications for Voltage & Section D wire diagrams.



Example Only Refer to Wire Diagrams



Step 6: Insert screwdriver to start manually.

Note: if system starts, replace contactor.

Step 7: Install electrical cover.

Meter Reading	*Status*	*Required Action*
115VAC or 208-230VAC Depending on Model		Contactor OK
24 VAC *(Side check)*		Transformer OK
Less than 115V or 208-230V / *Less than 24V*		Replace Contactor

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

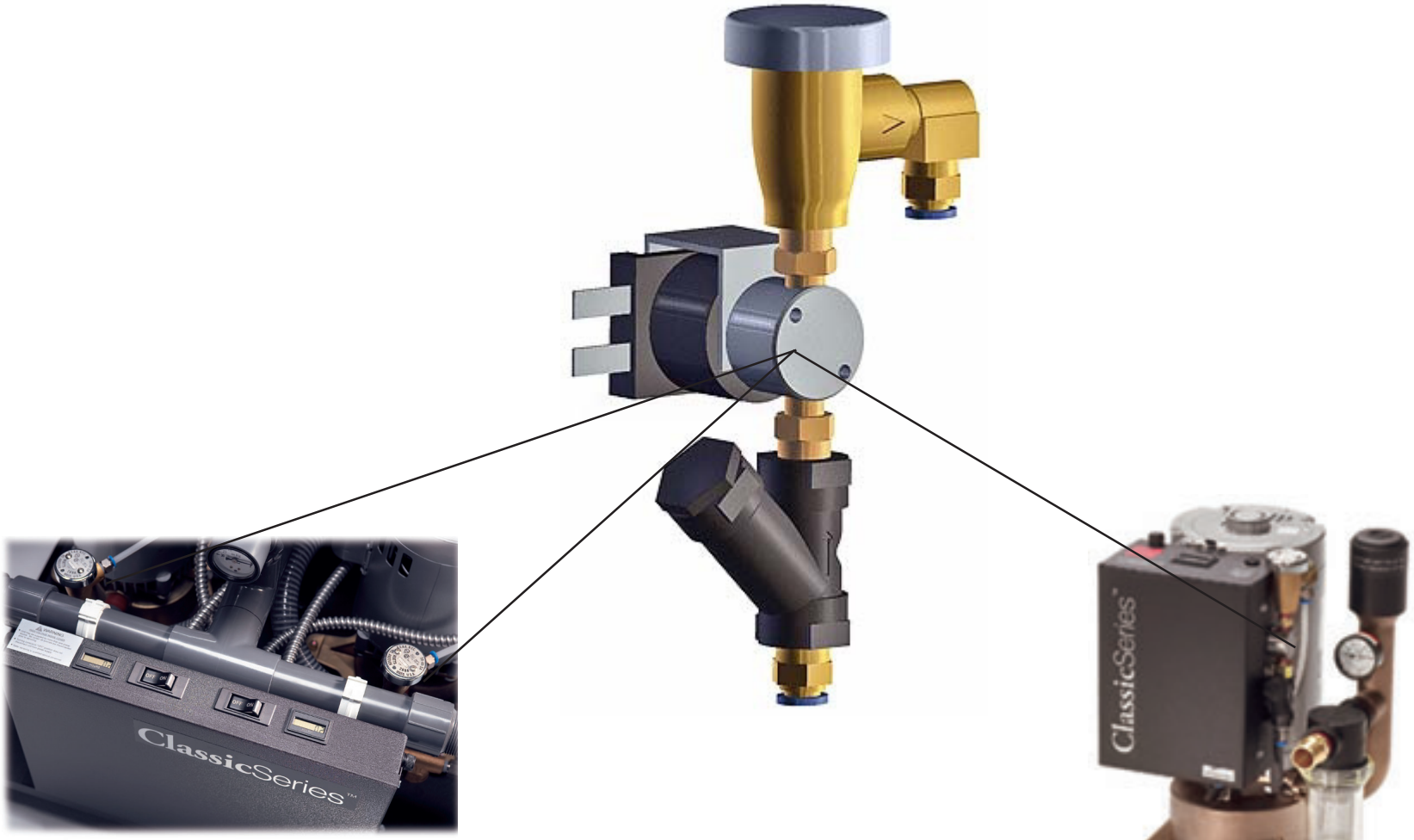
Testing & Repair

Solenoid

Refer to: **Go To Page:**
Test Solenoid B-15

Location and Function

When the motor is turned on the solenoid valve opens and allows water to flow into the pump.



Twin Models

Single Models

Solenoid

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

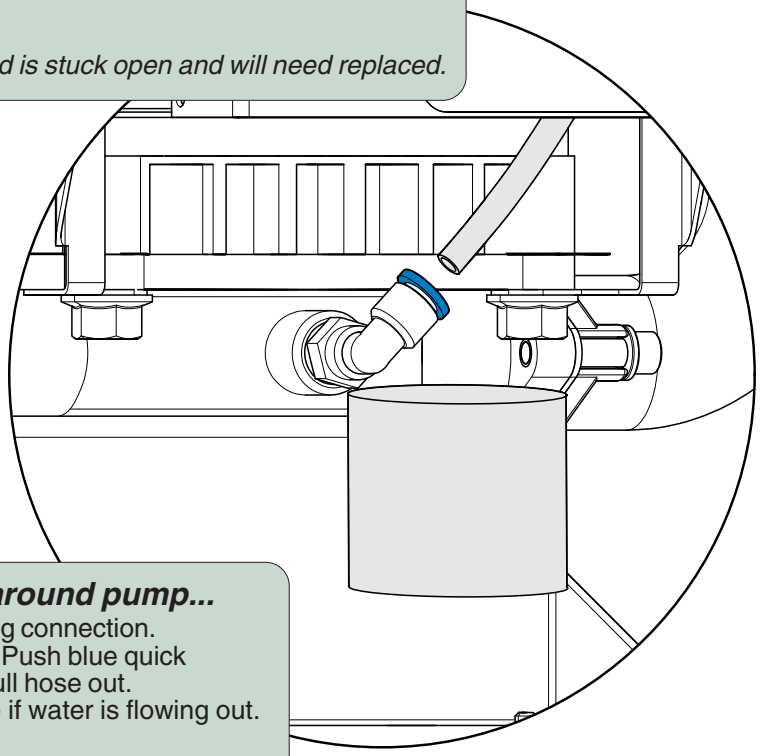
Testing & Repair

Solenoid

Test

If there is water standing around pump...
Step 1: Shut pump off.
Place cup under tube/housing connection.
Disconnect tube at housing. Push blue quick connect toward fitting and pull hose out.

Note: If water is flowing out, solenoid is stuck open and will need replaced.



If there is NO water standing around pump...
Step 2: Place cup under tube/housing connection.
Disconnect tube at housing. Push blue quick connect toward fitting and pull hose out.
Shut pump on and off to see if water is flowing out.

Note: If water is flowing out, check voltage.

Meter Reading	*Status*	*Required Action*
115V		Solenoid OK
less than 115V		Replace Solenoid

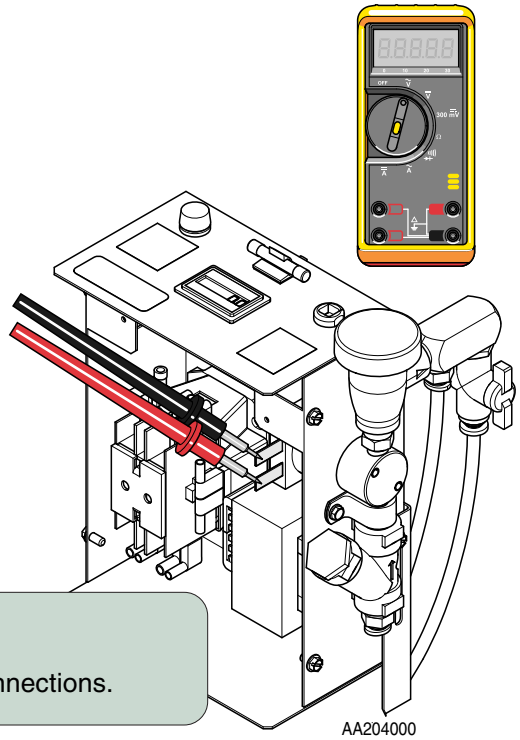
Refer to: **Go To Page:**
Section C Access Procedures C-1
Section D Wire Diagrams D-1

Voltage Check...
Step 3: Turn power off.

Step 4: Remove electrical cover.
Refer to Section C: Electrical Cover.

Step 5: Turn power on.

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



AA204000

Step 6: Check Voltage on Coil.
- Set meter to V̂.
- Place meter probes on two coil connections.

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

Solenoid

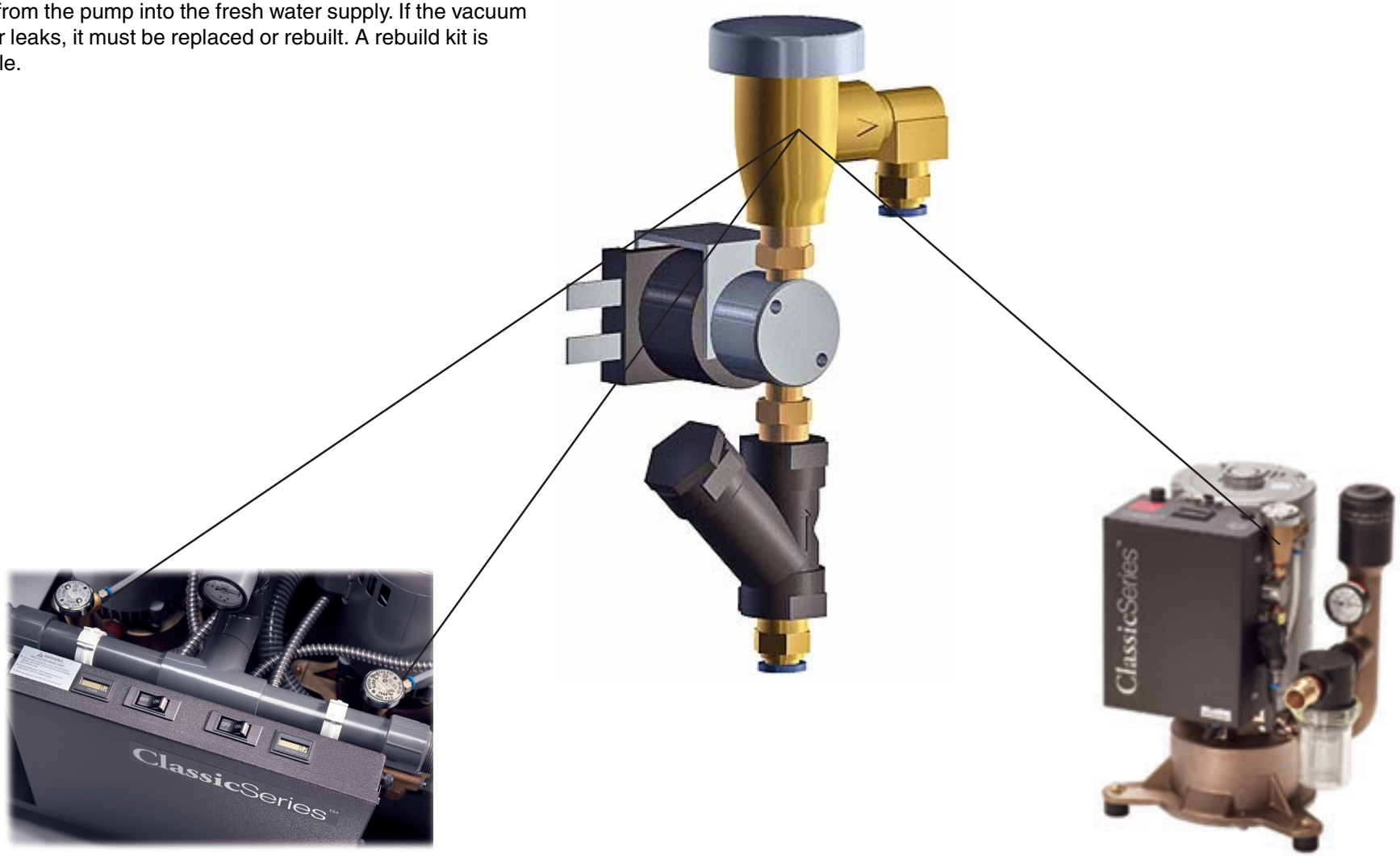
Testing & Repair

Vacuum Breaker

Refer to: **Go To Page:**
Section E - Parts Lists E-1

Function and Location

The vacuum breaker prevents contaminated water from being drawn from the pump into the fresh water supply. If the vacuum breaker leaks, it must be replaced or rebuilt. A rebuild kit is available.



Twin Models

Single Models

Vacuum Breaker

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

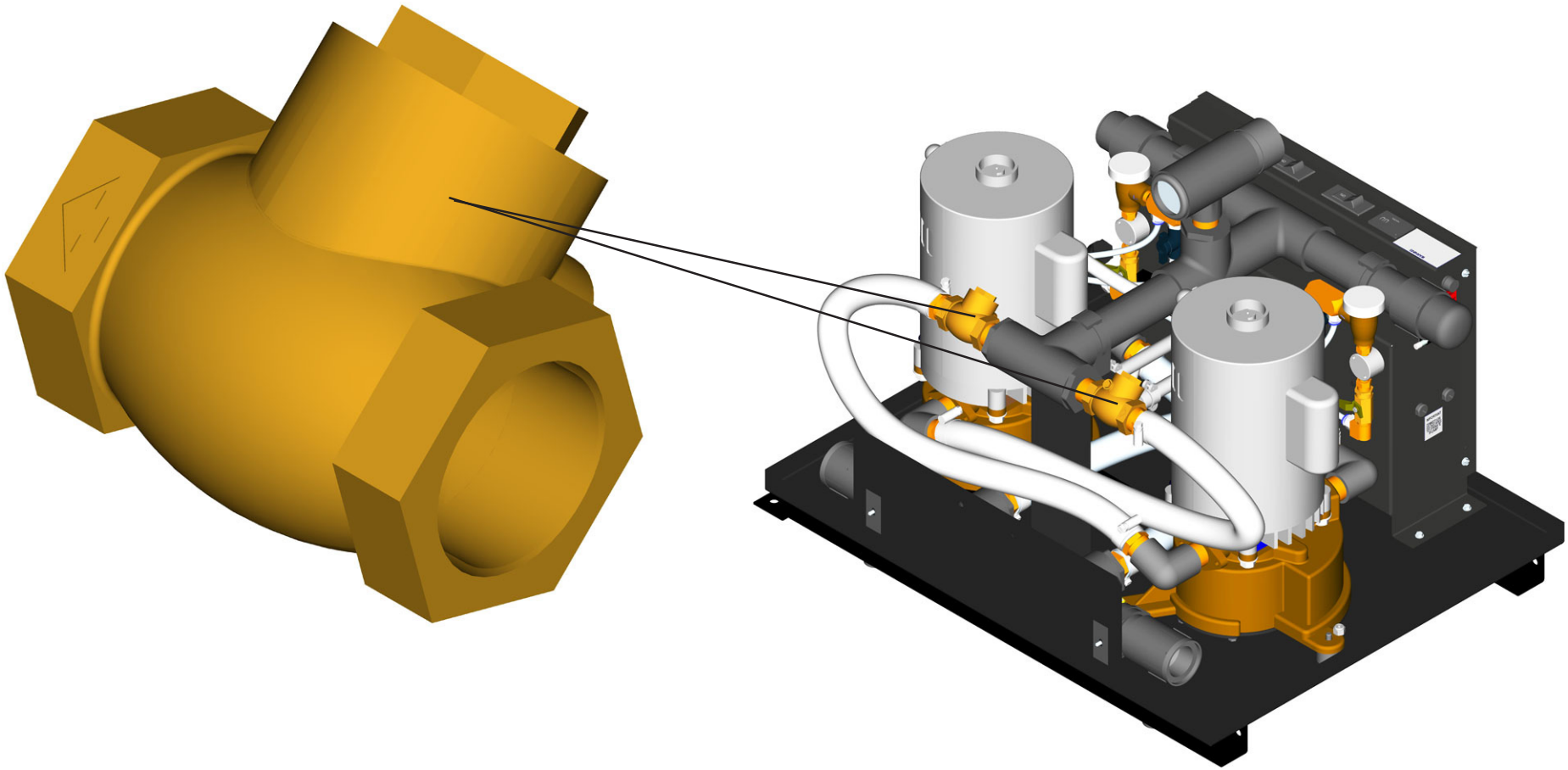
Intake Check Valve

Refer to: **Go To Page:**
Clean Intake Valve B-17

Function and Location

Each pump on a twin model require a check valve to be installed at a 45 degree angle 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 the "off" pump, creating a loss suction of the rest of the system.



Testing & Repair

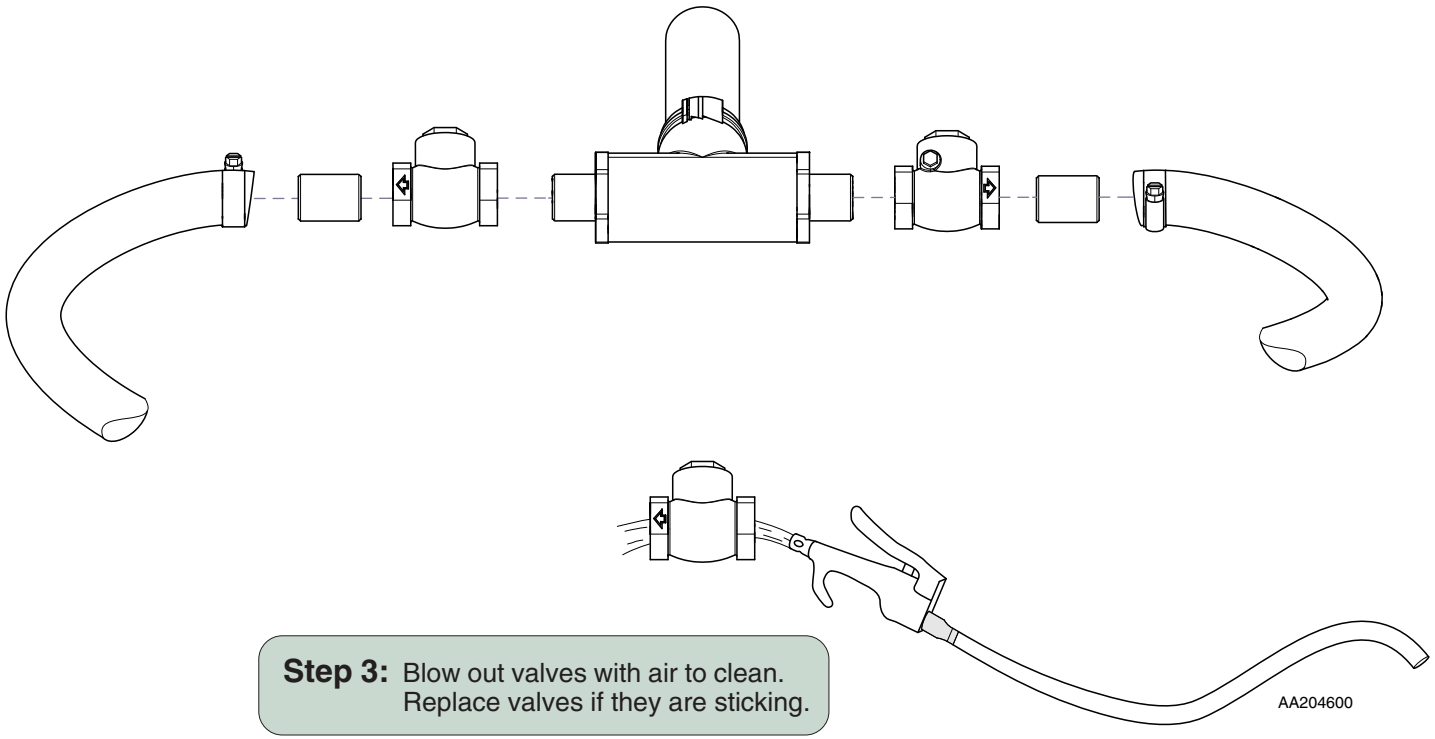
Intake Check Valve

Clean

Refer to: Section E - Parts Lists E-1
Go To Page:

Step 1: Disconnect power.

Step 2: Remove air line tubing from check valves. Disconnect check valves from tee fitting.

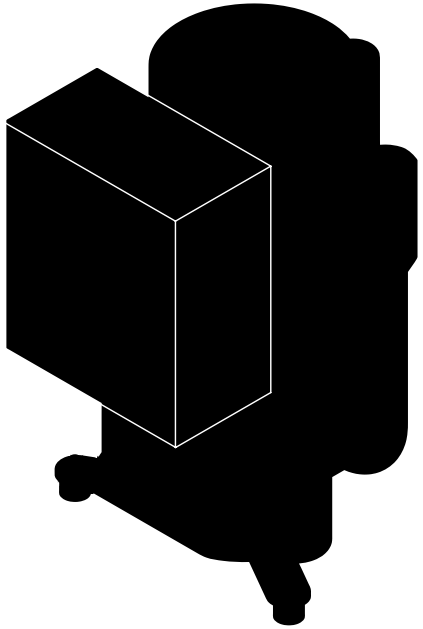


Step 3: Blow out valves with air to clean. Replace valves if they are sticking.

Section C

Access Procedures

Click on the Go To Page button and enter the desired page number.
(Note: Letters are case sensitive, ex: A-2)



Access Procedures

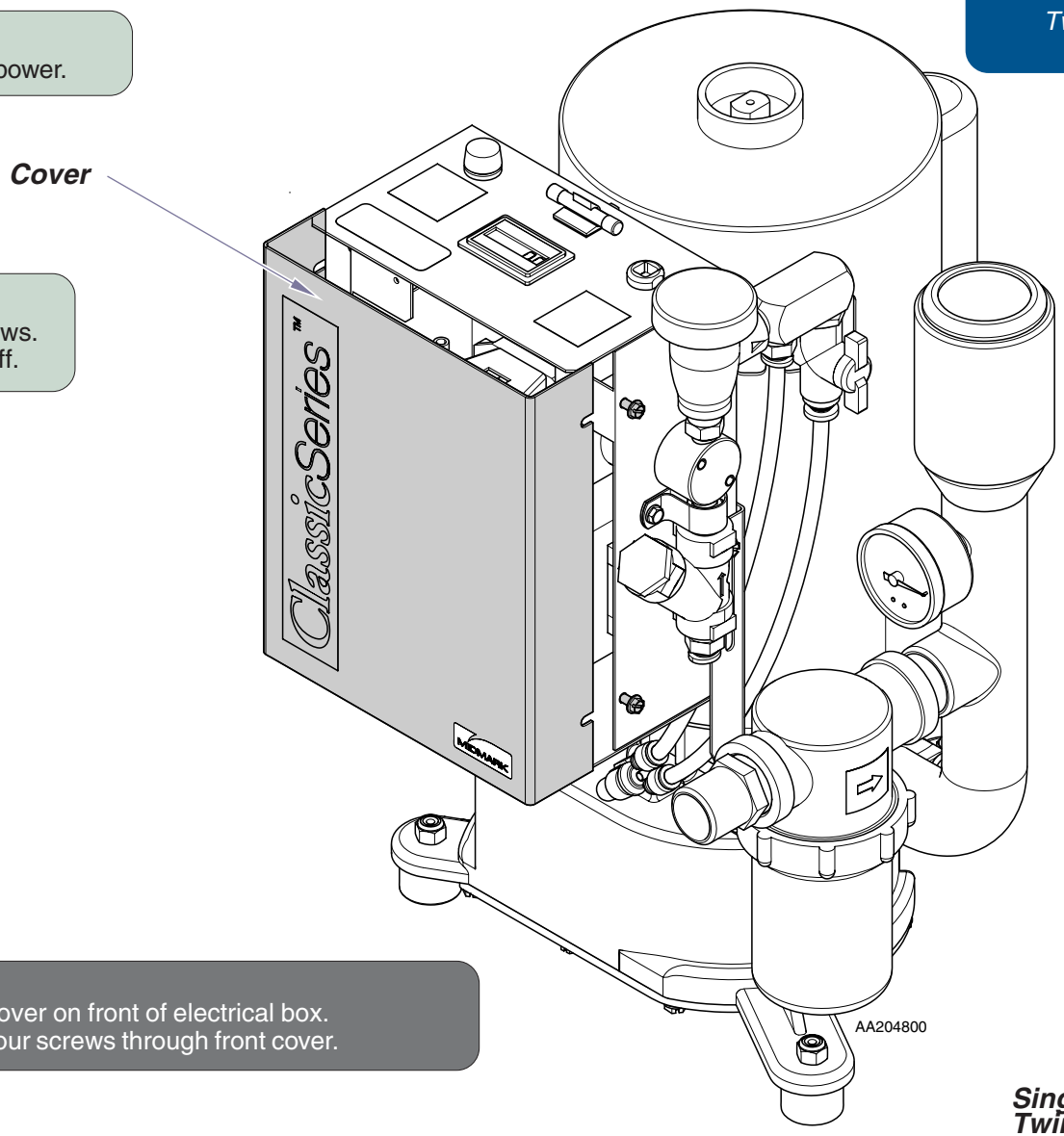
Electrical Box Cover

Removal/Installation

Refer To: Go To Page:
Exploded Views / Part Numbers:
Single Models E-2
Twin Models E-3

Removal
Step 1: Disconnect power.

Removal
Step 2: Loosen screws.
Pull cover off.



Installation
Step 1: Secure cover on front of electrical box.
Tighten four screws through front cover.

Single Model Shown
Twin Models have the same procedure

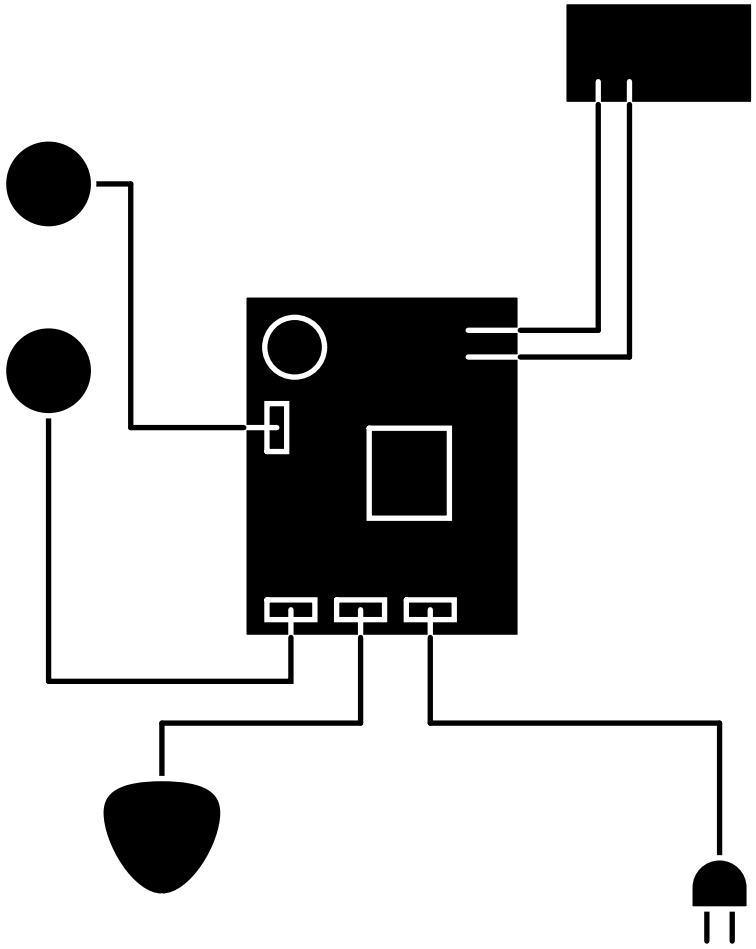
Electrical Box Cover

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

Section D

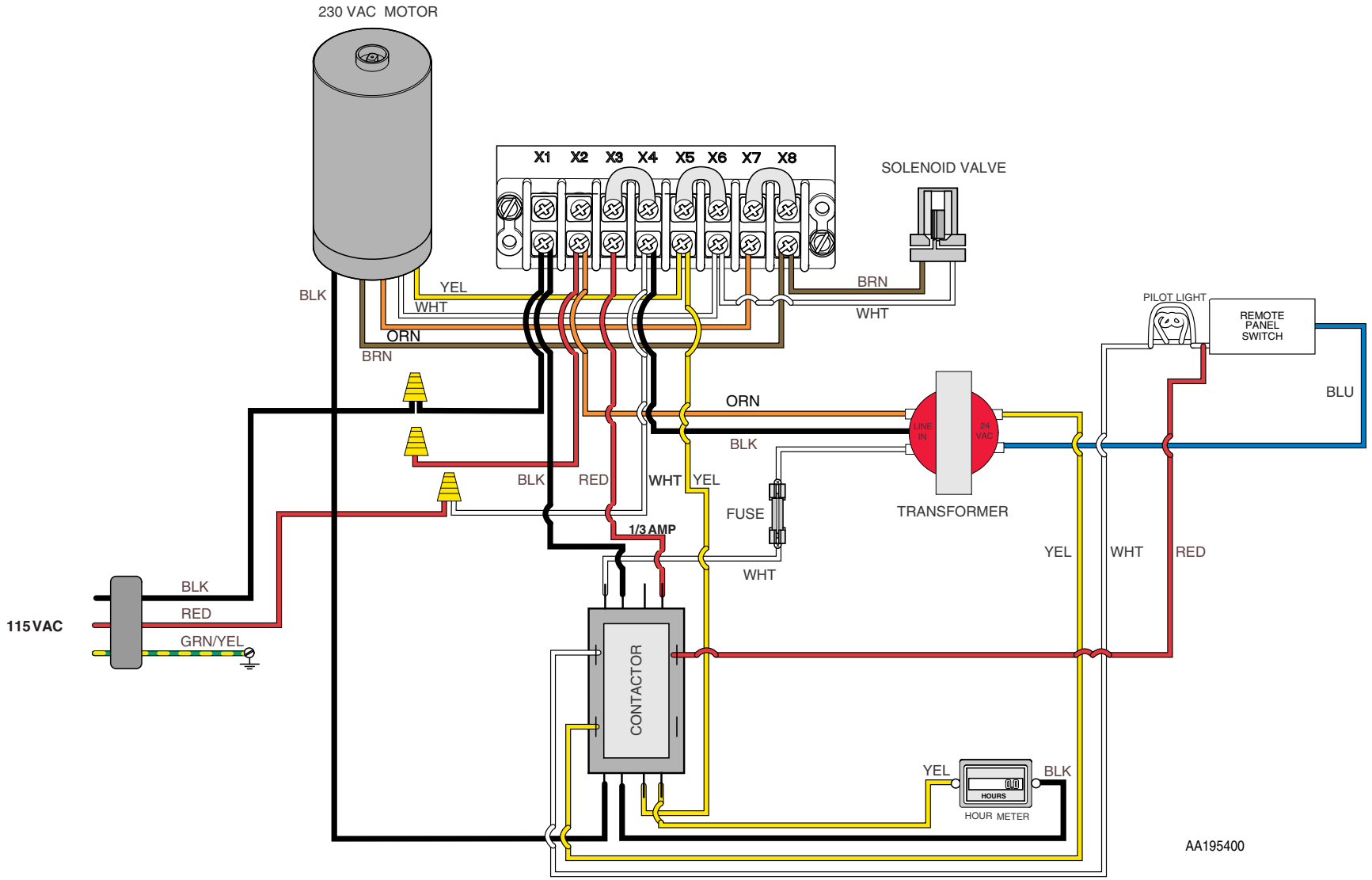
Wiring Diagrams

Click on the Go To Page button and enter the desired page number.
(Note: Letters are case sensitive, ex: A-2)



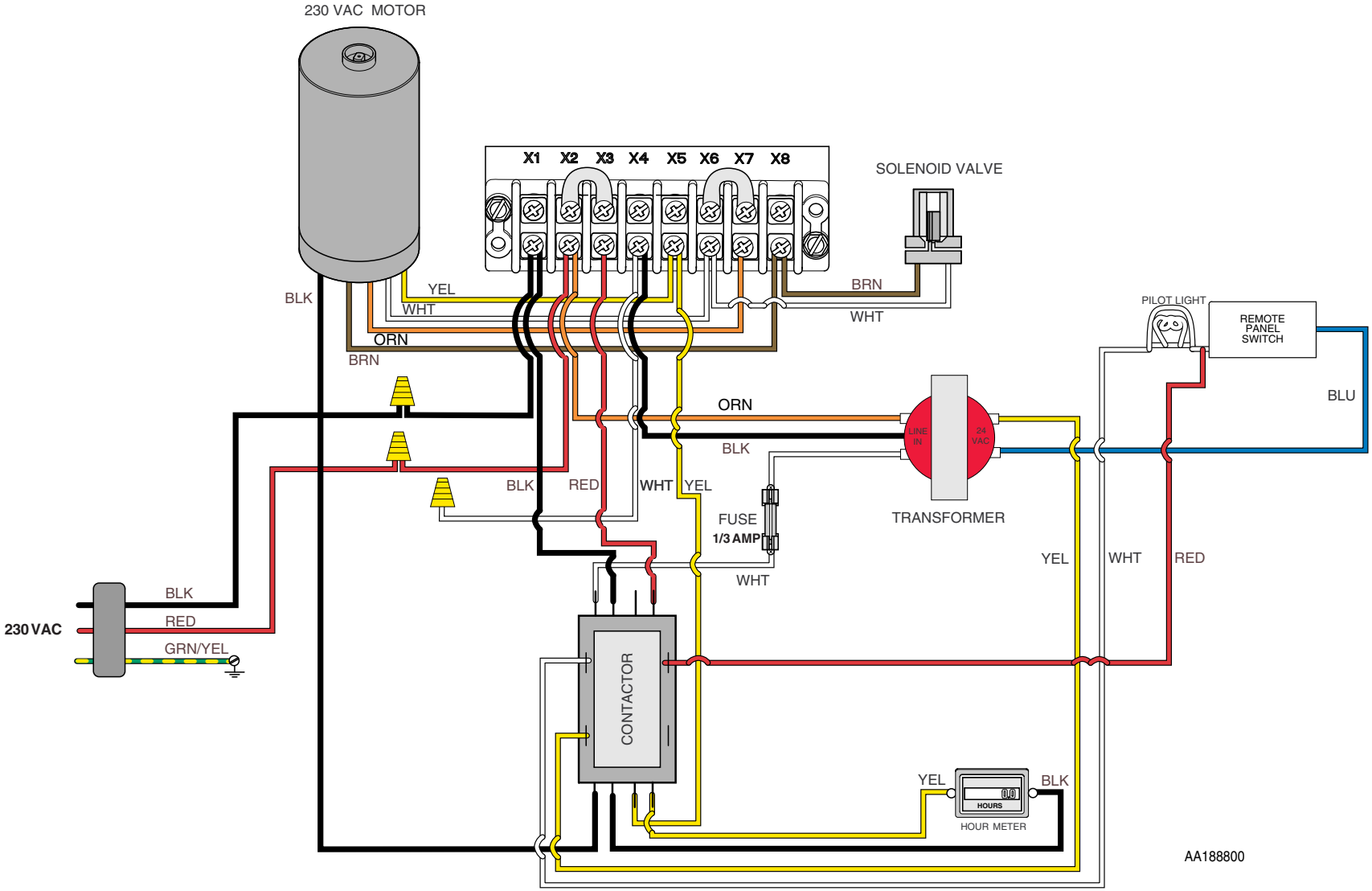
Wiring Diagrams

ClassicSeries® Wet-Ring Vacuum
Single - 1 HP & 1 1/4 115 Volts



Wire Kit - 002-1463-00 Includes all loose wires
Note: Wires connected to a component min one end are not included.

ClassicSeries® Wet-Ring Vacuum
Single - 1 HP & 1 1/4 HP 208-230 Volts

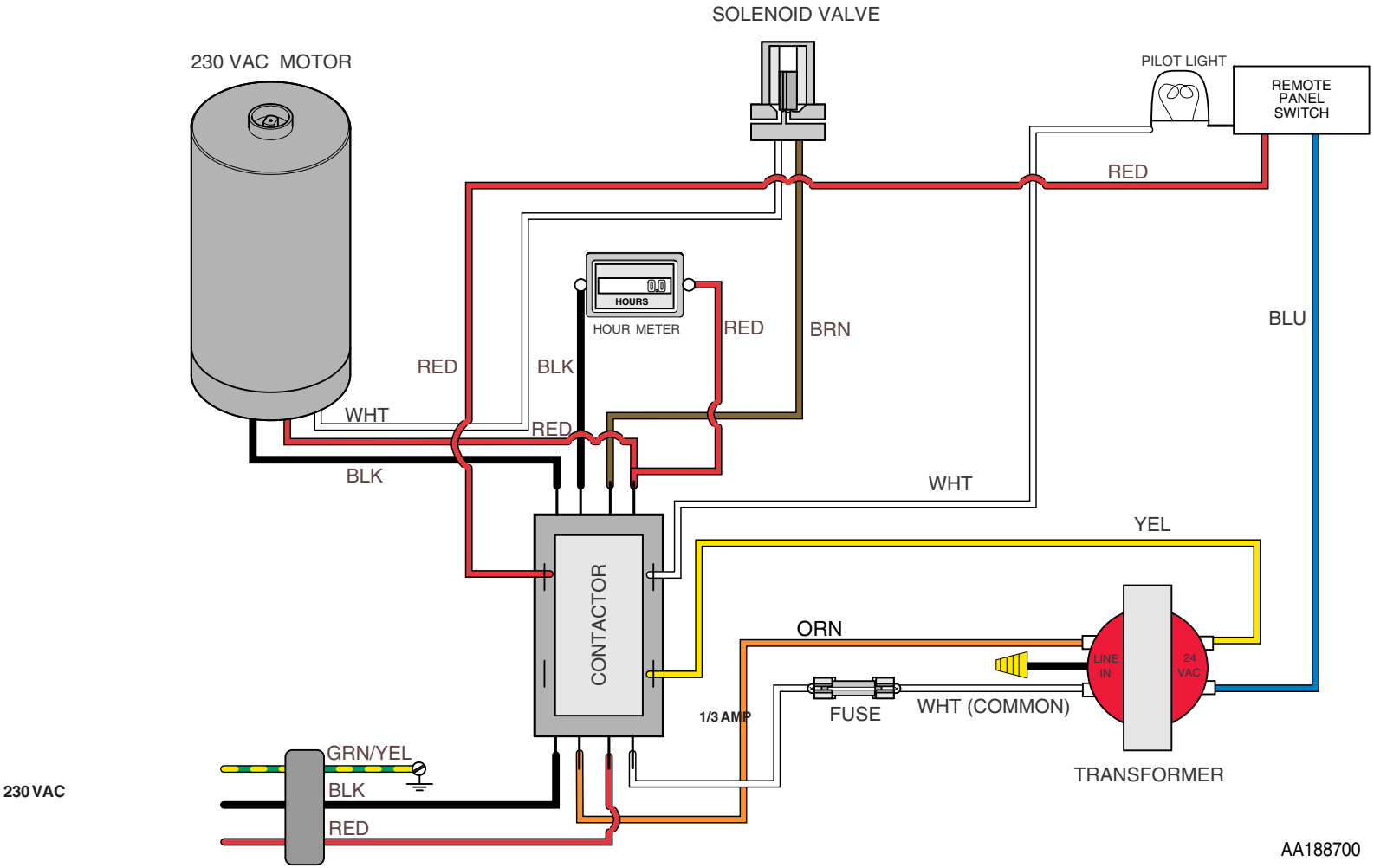


Wire Kit - 002-1463-00 Includes all loose wires
Note: Wires connected to a component min one end are not included.

Models:	***CV3 and CV3R can be configured for 115V or 208-230V***
Serial Numbers:	*All*

Wiring Diagrams

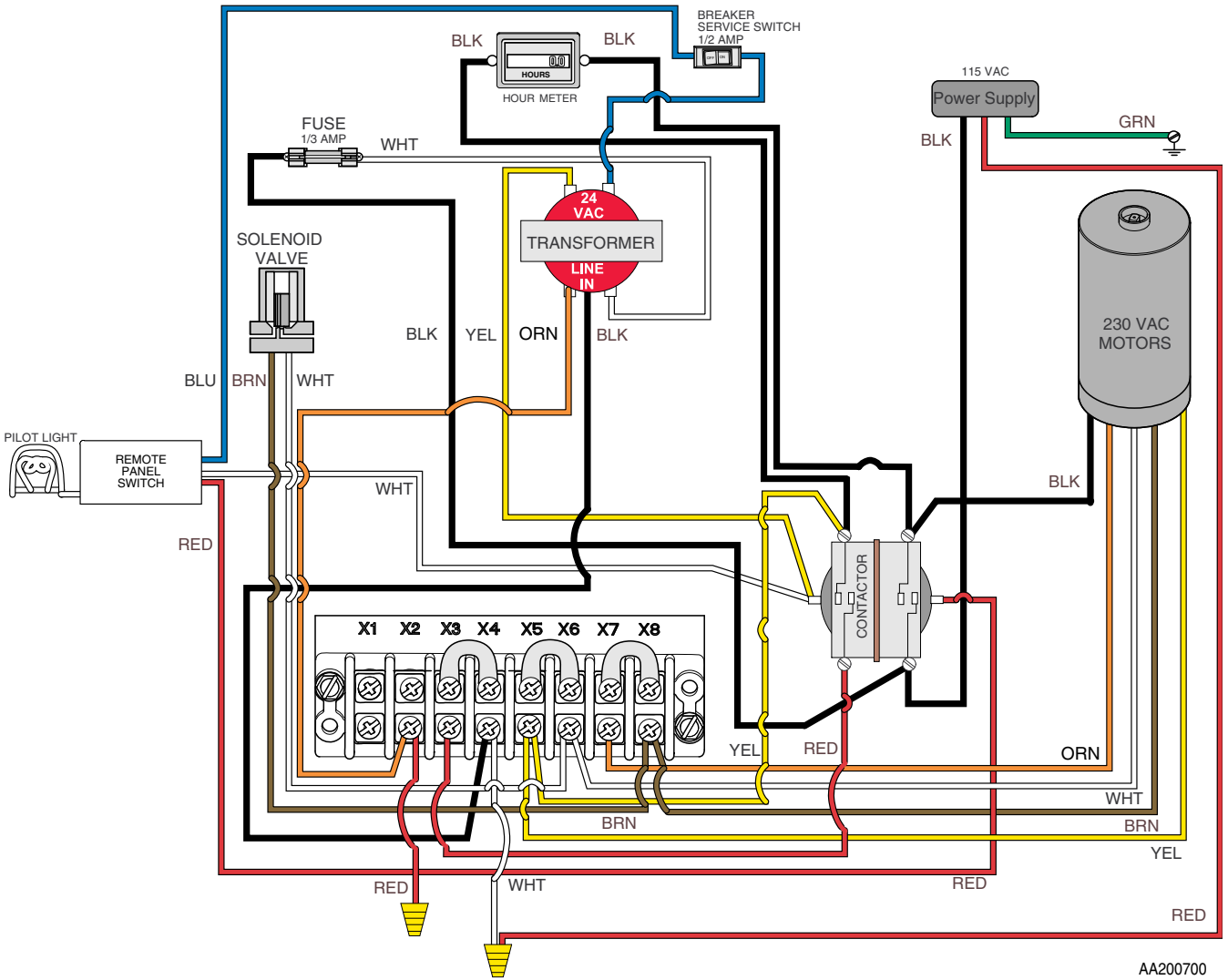
ClassicSeries® Wet-Ring Vacuum
Single - 2 HP 208-230 Volts



Wire Kit - 002-1464-00 Includes all loose wires.
Note: Wires connected to a component min one end are not included.

Wiring Diagrams

ClassicSeries® Wet-Ring Vacuum
Twin - 1 HP & 1 1/4 HP 115 Volts

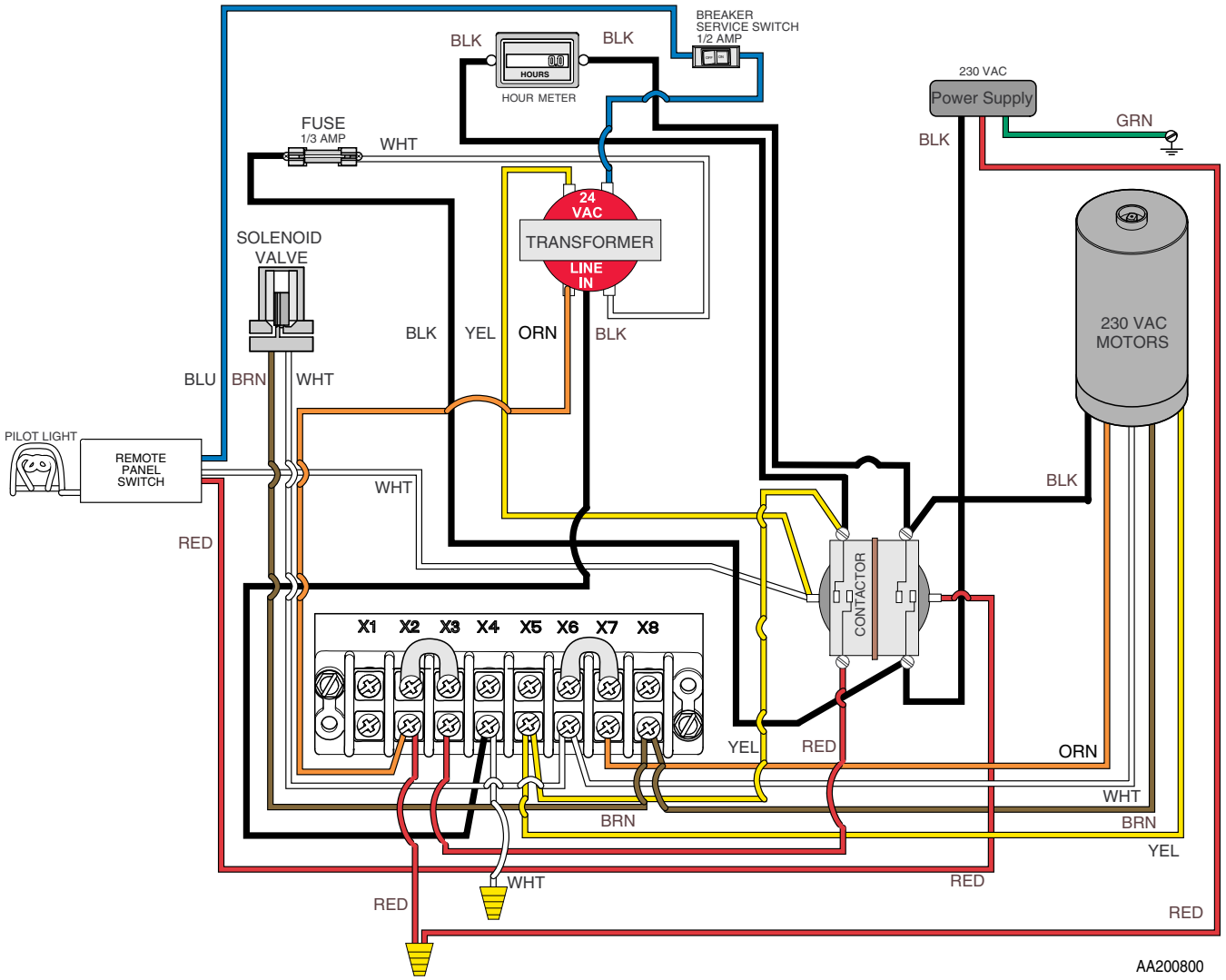


Wire Kit - 002-1465-00 Includes all loose wires.
Note: Wires connected to a component min one end are not included.

Models:	***CV6 and CV6R can be configured for 115V or 208-230V***
Serial Numbers:	*All*

Wiring Diagrams

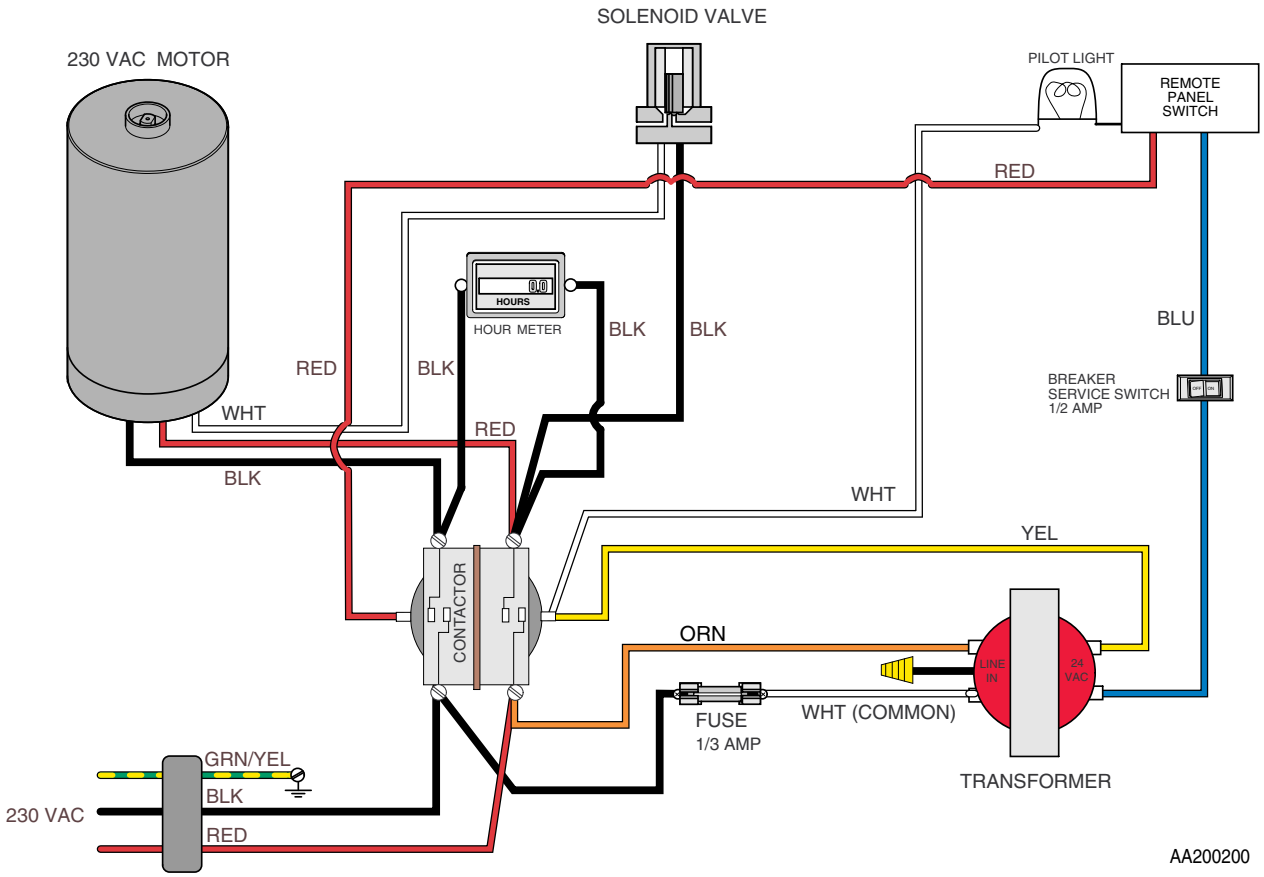
ClassicSeries® Wet-Ring Vacuum
Twin - 1 HP & 1 1/4 HP 208-230 Volts



Wire Kit - 002-1465-00 Includes all loose wires.
Note: Wires connected to a component min one end are not included.

Wiring Diagrams

ClassicSeries® Wet-Ring Vacuum
Twin - 2 HP 208-230 Volts

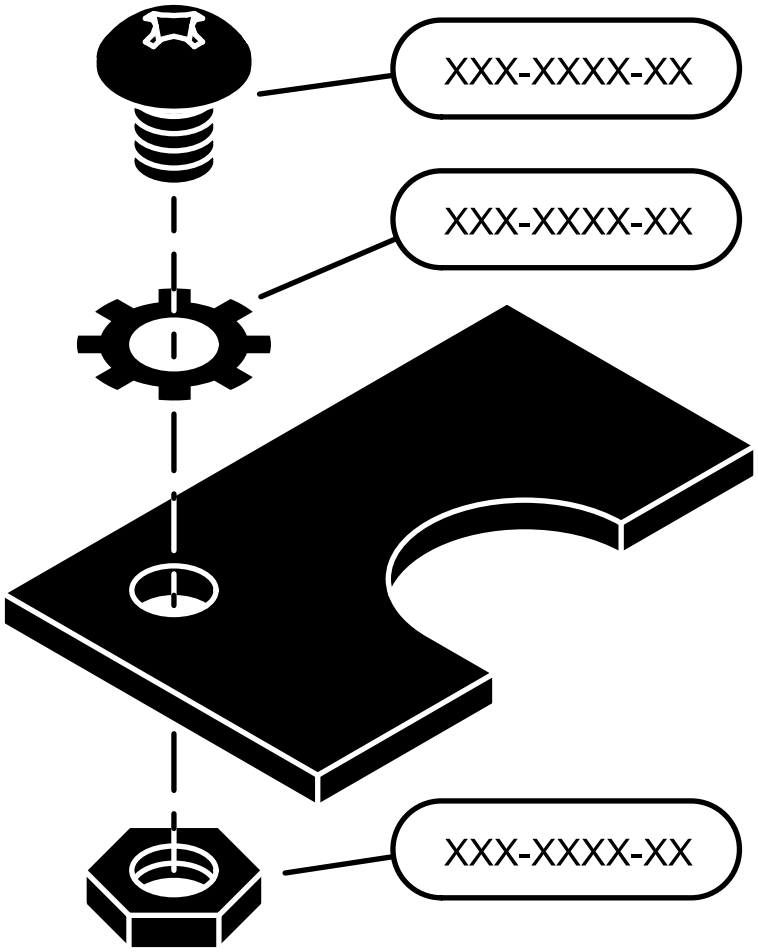


Wire Kit - 002-1466-00 Includes all loose wires.
Note: Wires connected to a component min one end are not included.

Section E

Exploded Views & Parts Lists

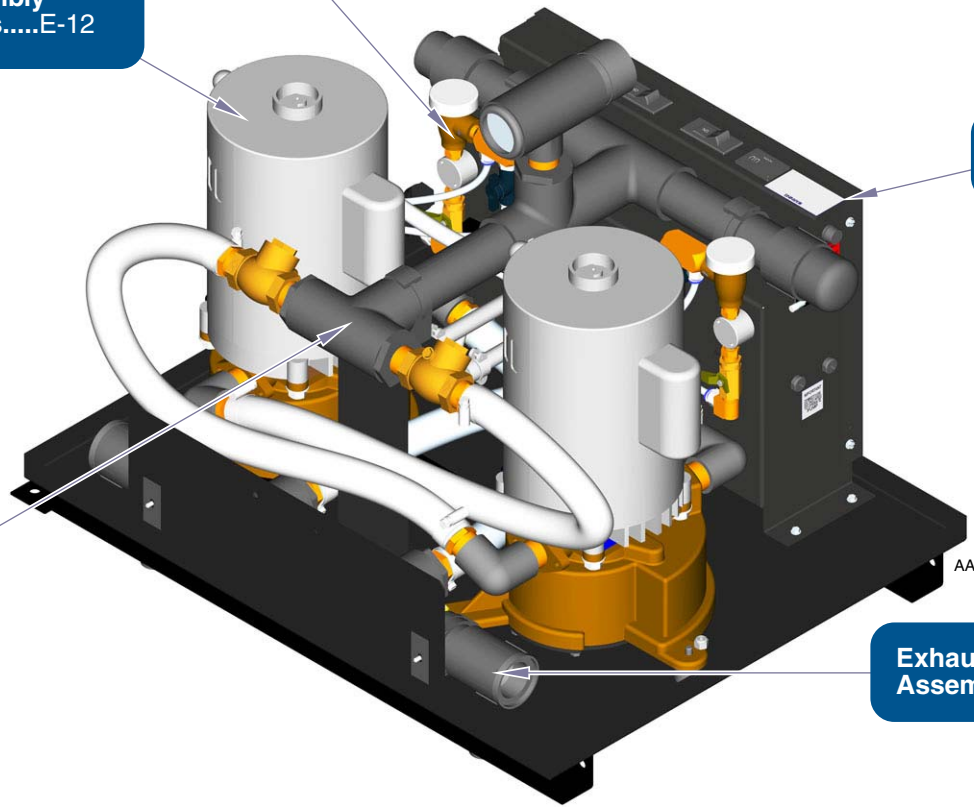
Click on the Go To Page button and enter the desired page number.
(Note: Letters are case sensitive, ex: A-2)



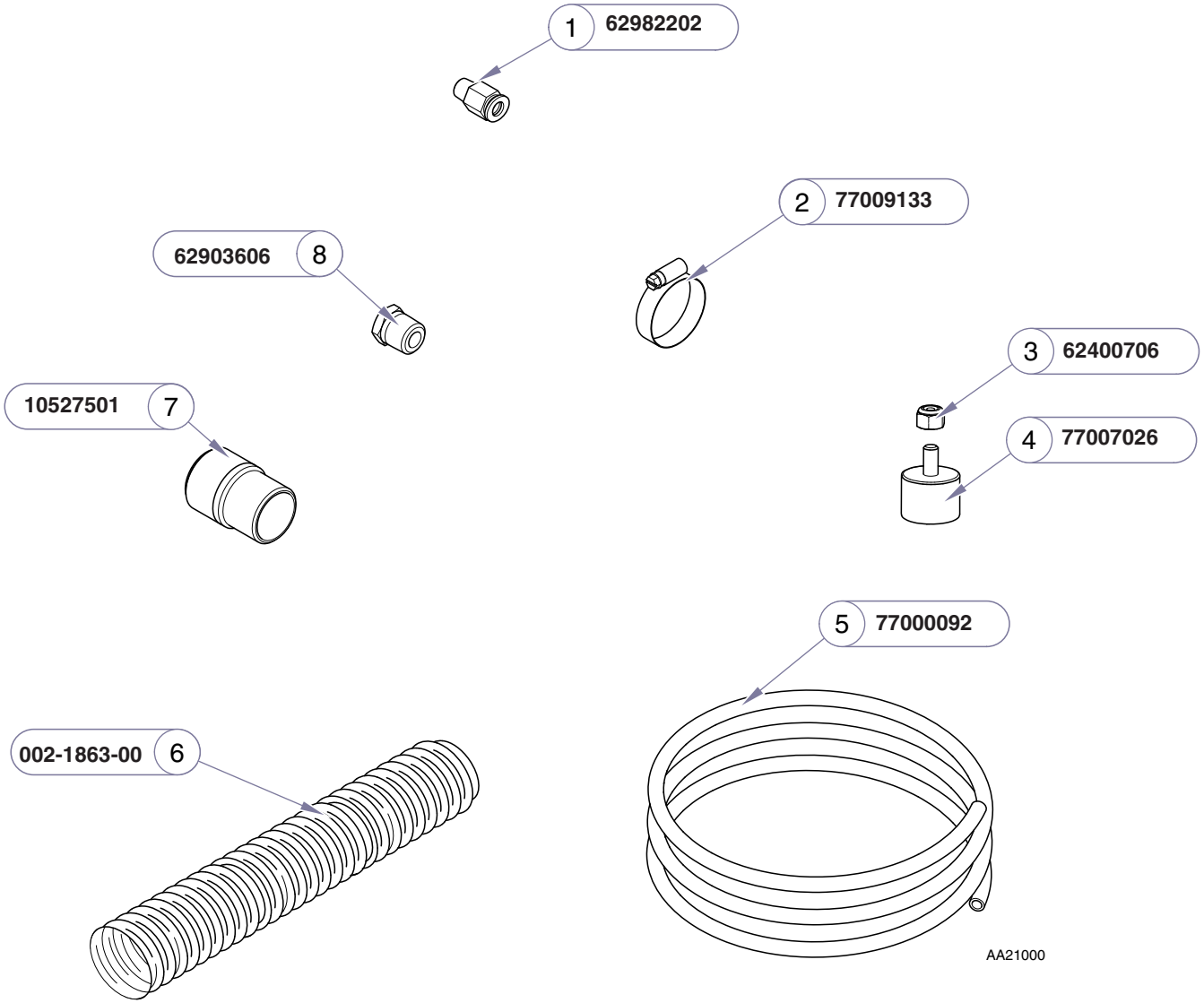
ClassicSeries®
CV3
CV3R
CV5
CV5R

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

ClassicSeries®
CV6
CV6R
CV10
CV10R



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



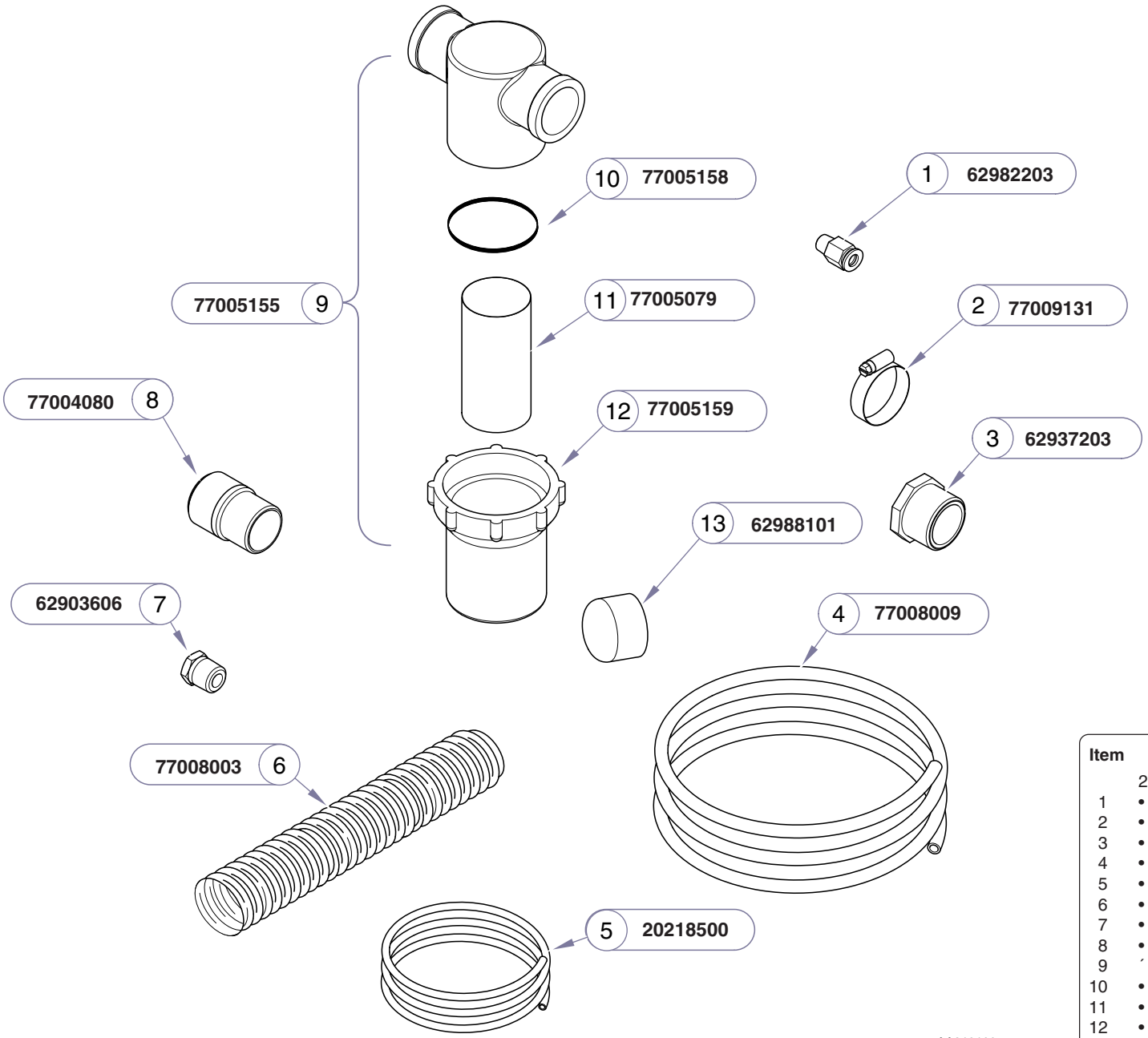
Item	Description	Qty.
	77000145 Kit *(includes items 1 - 7)*	
1	• Quick Connect Fitting *(1/4"QC x 1/4")*	1
2	• Clamp *(1")*	4
3	• Lock Nut	3
4	• Rubber Feet	3
5	• Poly Tube *(1/4" OD x 6')*	1
6	• Exhaust Hose *(1" ID x 8')*	1
7	• Nipple *(3/4" NPT)*	2
8	• Bushing *(1/2"M x 1/4F)*	1

Always Specify Model & Serial Number

Single Vacuum Installation Kit

Models: *Serial Numbers:*	***CV3*** *0705CV30001 thru Present*	***CV3R*** *0705CV3R0001 thru Present*	***CV5*** *0705CV50001 thru Present*	***CV5R*** *0705CV5R0001 thru Present*	***All*** *V785000 thru Present*

 Rev 8/14



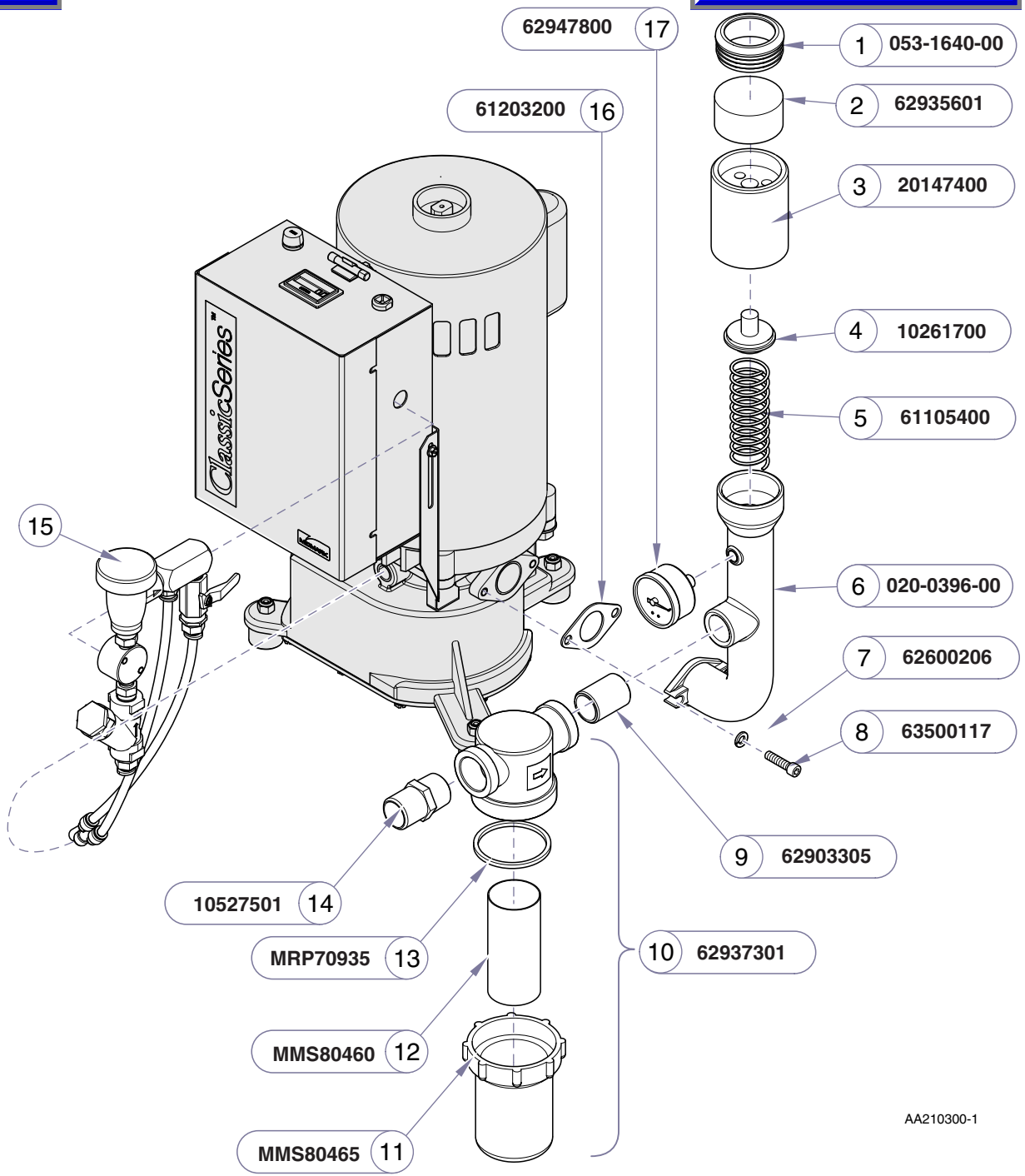
Item	Description	Qty.
	20204600 Kit *(includes items 1 - 9)*	
1	• Quick Connect Fitting *(3/8"QC x 1/4")*	2
2	• Clamp *(2")*	4
3	• Pipe Plug *(1 1/4" NPT)*	1
4	• Poly Tube *(3/8" OD x 5')*	1
5	• Drain Hose *(3/8" OD x 8' [sold in inches)*	96
6	• Intake Hose *(1 1/2"ID x 8')*	1
7	• Bushing *(1/2" MNPT x 1/4" FNPT)*	1
8	• Nipple, PVC *(1 1/4")*	4
9	´ • In-Line Strainer Assembly	1 set
10	• • Gasket	1
11	• • Strainer	1
12	• • Bowl	1
13	Cap (1 1/4" NPT)	1

Always Specify Model & Serial Number

Models: Serial Numbers:	***CV6*** *0705CV60001 thru Present*	***CV6R*** *0705CV6R0001 thru Present*	***CV10*** *0705CV10001 thru Present*	***CV10R*** *0705CV10R0001 thru Present*	***All*** *V785000 thru Present*

Twin Platform Installation Kit

 Rev 11/6/15



Refer To: **Go To Page:**
Vacuum Solenoid Assembly E-7

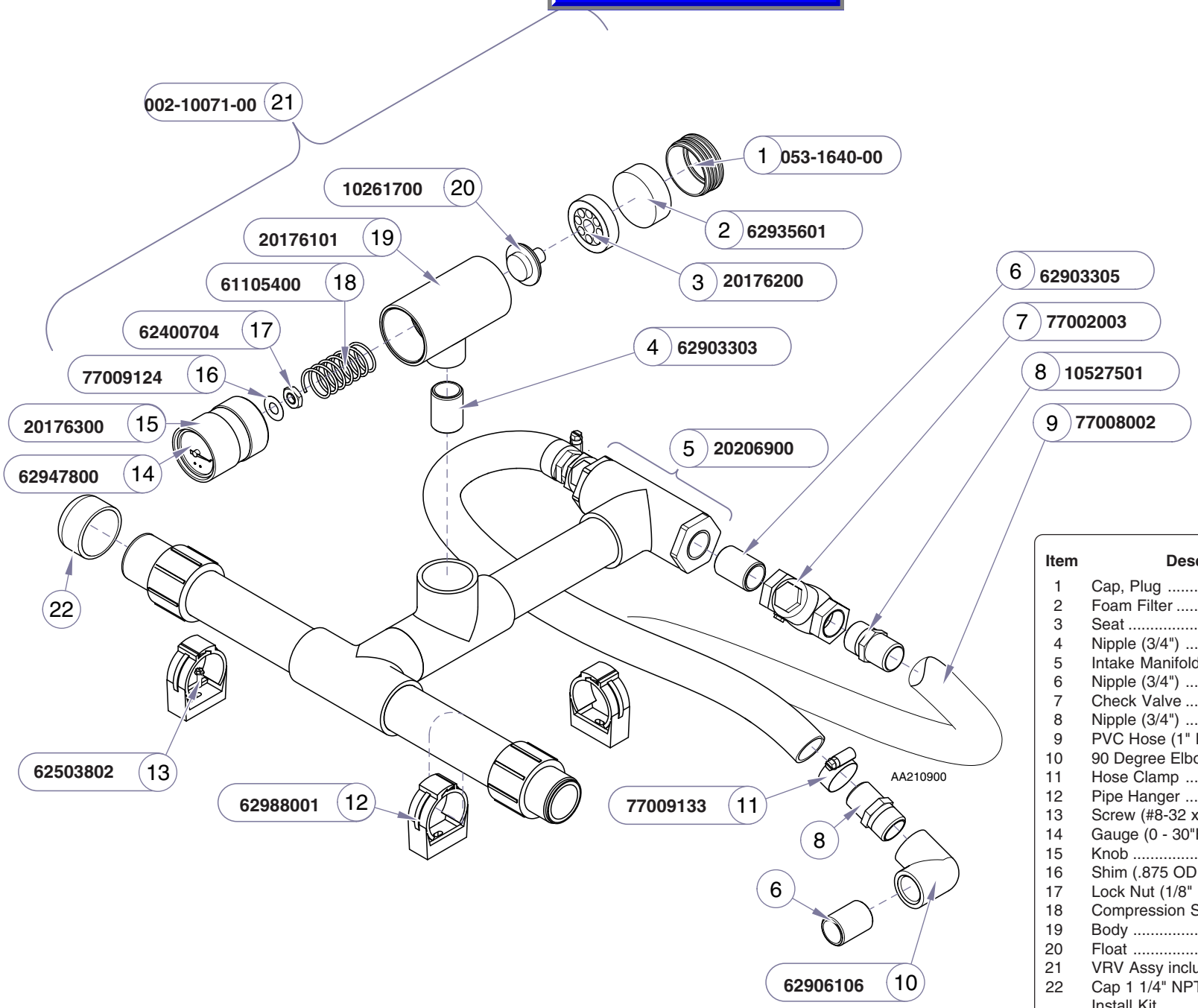
Item	Description	Qty.
1	2" Black Plug	1
2	VRV Foam Filter *(2" OD x 1"L)*	1
3	VRV Body	1
4	VRV Float	1
5	Compression Spring	1
6	Intake Manifold	1
7	Lock Washer *(1/4 PLD)*	2
8	Screw *(1/4"-20 x 1")*	2
9	Nipple *(3/4")*	1
10	Vacuum Inlet Strainer Assembly	1
11	Bowl	1
12	Strainer	1
13	Gasket	1
14	Nipple *(3/4")*	1
15	"Refer to Vacuum Solenoid Assembly"	1
16	Manifold Gasket	1
17	Pressure Gauge	1

Always Specify Model & Serial Number

Single Vacuum Intake Assembly

Models: *Serial Numbers:*	***CV3*** *0705CV30001 thru Present*	***CV3R*** *0705CV3R0001 thru Present*	***CV5*** *0705CV50001 thru Present*	***CV5R*** *0705CV5R0001 thru Present*	***All*** *V785000 thru Present*

 Rev 7/6/17

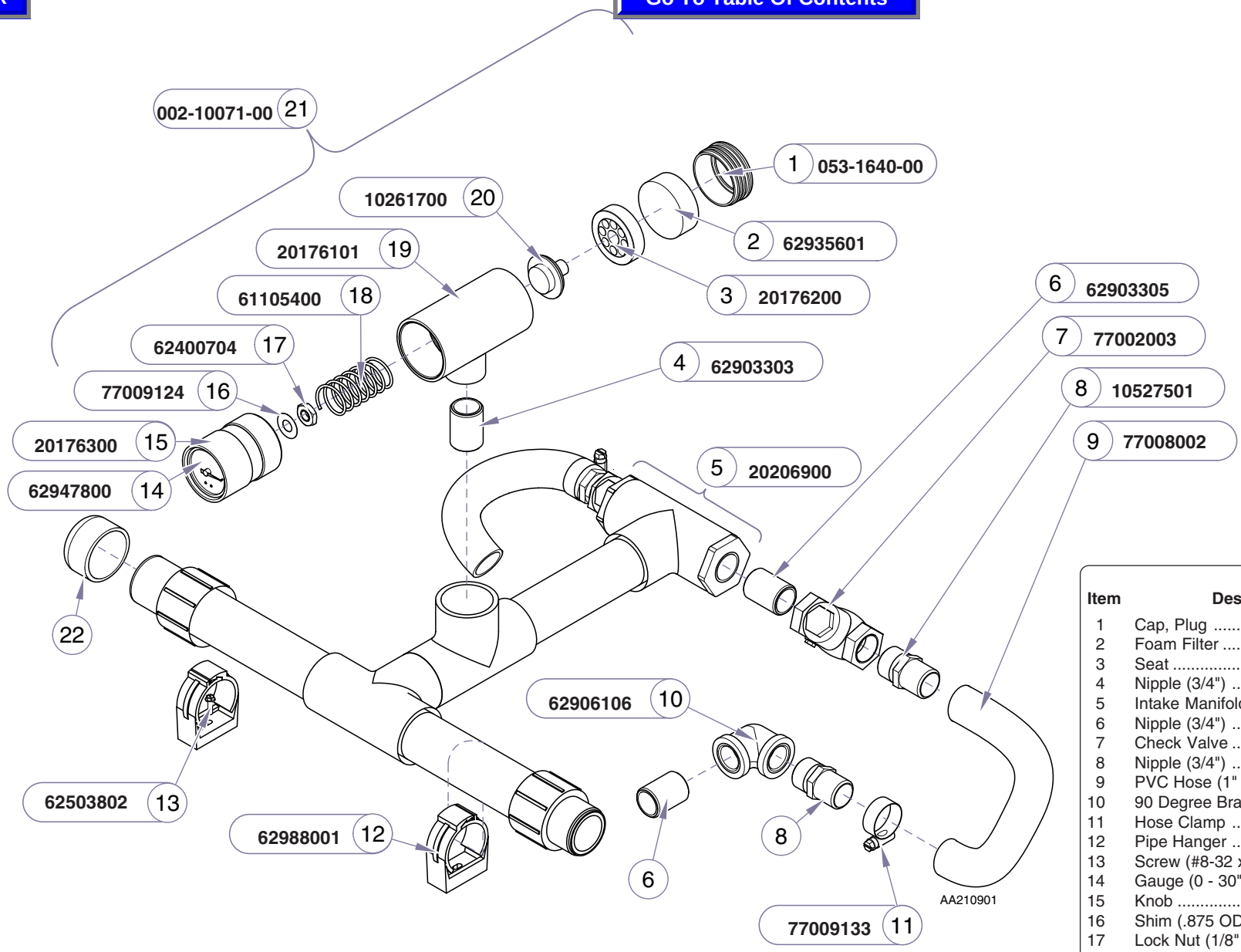


Item	Description	Qty.
1	Cap, Plug	1
2	Foam Filter	1
3	Seat	1
4	Nipple (3/4")	1
5	Intake Manifold Assembly	1
6	Nipple (3/4")	4
7	Check Valve	2
8	Nipple (3/4")	2
9	PVC Hose (1" ID x 26")(sold by the inch)	2
10	90 Degree Elbow	2
11	Hose Clamp	4
12	Pipe Hanger	3
13	Screw (#8-32 x 5/8")	3
14	Gauge (0 - 30"Hg)	1
15	Knob	1
16	Shim (.875 OD x .406 ID x .010 THK)	1
17	Lock Nut (1/8" NPT)	1
18	Compression Spring	1
19	Body	1
20	Float	1
21	VRV Assy includes Items 1-3 & 15-21	1
22	Cap 1 1/4" NPT.. Refer to: Twin Platform Install Kit	1

Always Specify Model & Serial Number

Models: *Serial Numbers:*	***CV6*** *0705CV60001 thru 0902CV60228*	***CV6R*** *0705CV6R0001 thru 0903CVR0777*	***CV10*** *0705CV10001 thru 0902CV100109*	***CV10R*** *0705CV10R0001 thru 0902CV10R0401*

Twin Intake Manifold Assembly



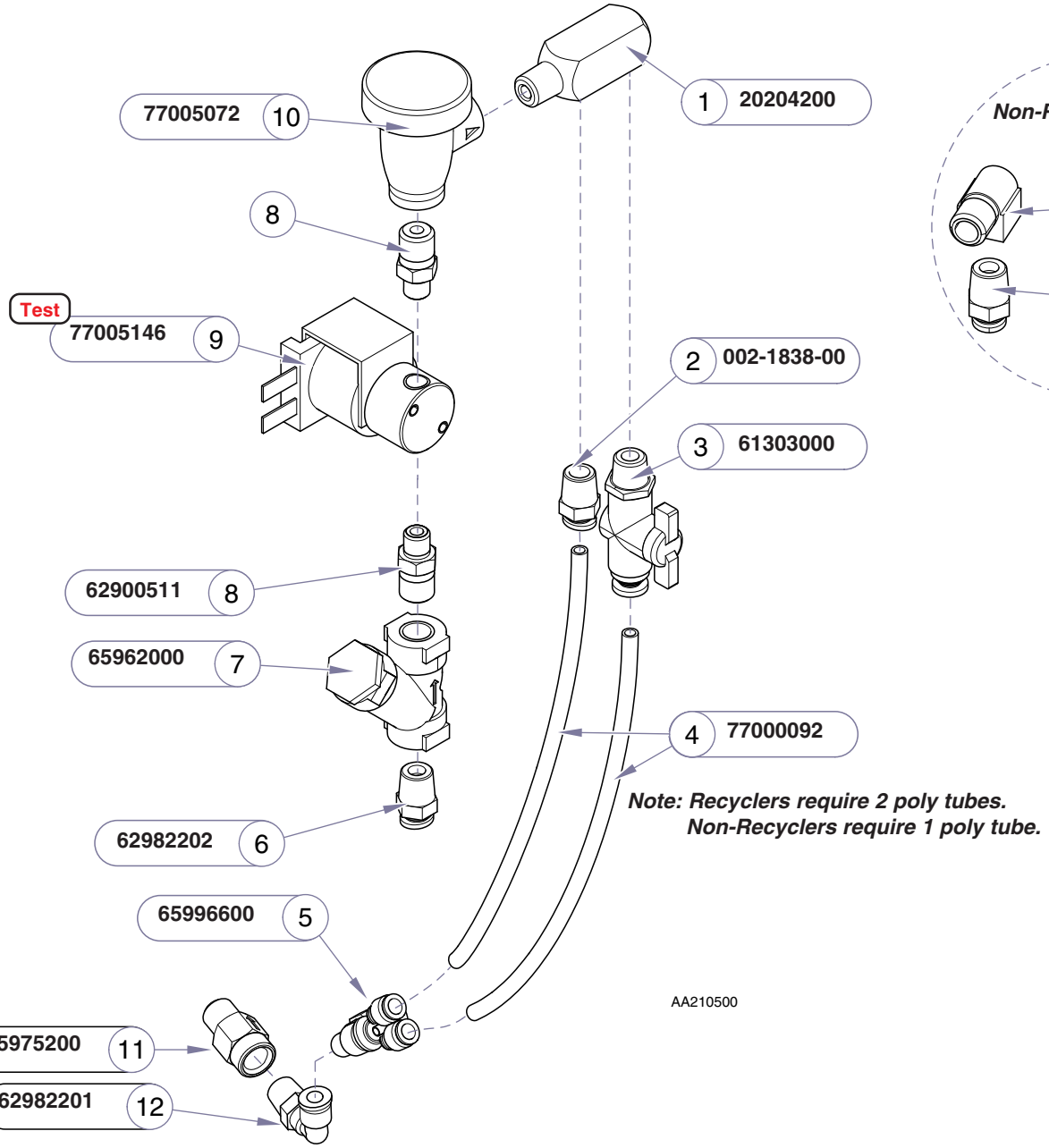
Item	Description	Qty.
1	Cap, Plug	1
2	Foam Filter	1
3	Seat	1
4	Nipple (3/4")	1
5	Intake Manifold Assembly	1
6	Nipple (3/4")	4
7	Check Valve	2
8	Nipple (3/4")	2
9	PVC Hose (1" ID x 17")(sold by the inch)	2
10	90 Degree Brass Elbow	2
11	Hose Clamp	4
12	Pipe Hanger	3
13	Screw (#8-32 x 5/8")	3
14	Gauge (0 - 30"Hg)	1
15	Knob	1
16	Shim (.875 OD x .406 ID x .010 THK)	1
17	Lock Nut (1/8" NPT)	1
18	Compression Spring	1
19	Body	1
20	Float	1
21	VRV Assy includes Items 1-3 & 15-21	1
22	Cap 1 1/4" NPT.. Refer to: Twin Platform Install Kit	1

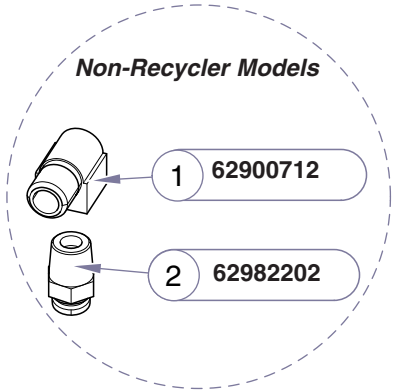
Always Specify Model & Serial Number

Twin Intake Manifold Assembly

Models: / Serial Numbers:	CV6	CV6R	CV10	CV10R	All
	0903CV60229 thru Present	0903CVR0785 thru Present	0902CV100111 thru Present	0902CV10R0404 thru Present	V785000 thru Present

Refer To: **Page**
Solenoid B-14





Note: Recyclers require 2 poly tubes. Non-Recyclers require 1 poly tube.

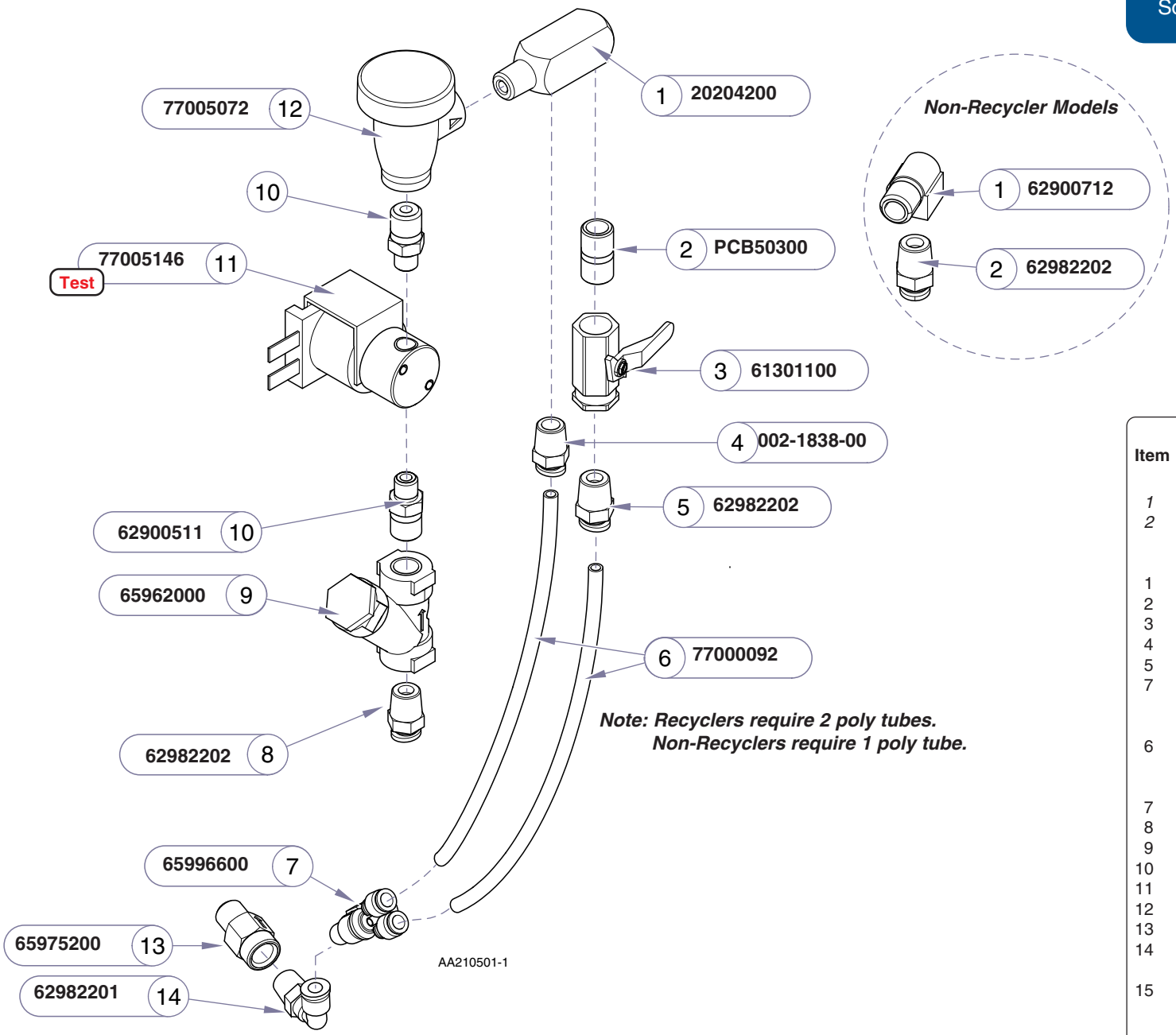
Item	Description	Qty
	Non-Recycler Models	
1	*Elbow*	*1*
2	*Quick Connect*	*1*
	Recycler Models	
1	Double Street Elbow	1
2	Flow Control Assembly	1
3	Ball Valve	1
5	Y-Quick Connect Fitting	1
	All Models	
4	Poly Tube *(1/4" OD)(sold by the inch)*	AR
6	Quick Connect Fitting	1
7	Y-Strainer	1
8	Nipple *(1/4" NPT x /8" NPT)*	2
9	Solenoid	1
10	Vacuum Breaker	1
11	Check Valve	1
12	90 Degree Elbow	1
	Not Shown	
13	Vacuum Breaker repair Kit (77005073)	1

Always Specify Model & Serial Number

Models: Serial Numbers:	***CV3*** *0705CV30001 thru 0902CV30702*	***CV3R*** *0705CV3R0001 thru 0902CV3R1136*	***CV5*** *0705CV50001 thru 0901CV50372*	***CV5R*** *0705CV5R0001 thru 0902CV5R0807*

Single Vacuum Solenoid Assembly

Refer To: Go To Page:
Solenoid B-14

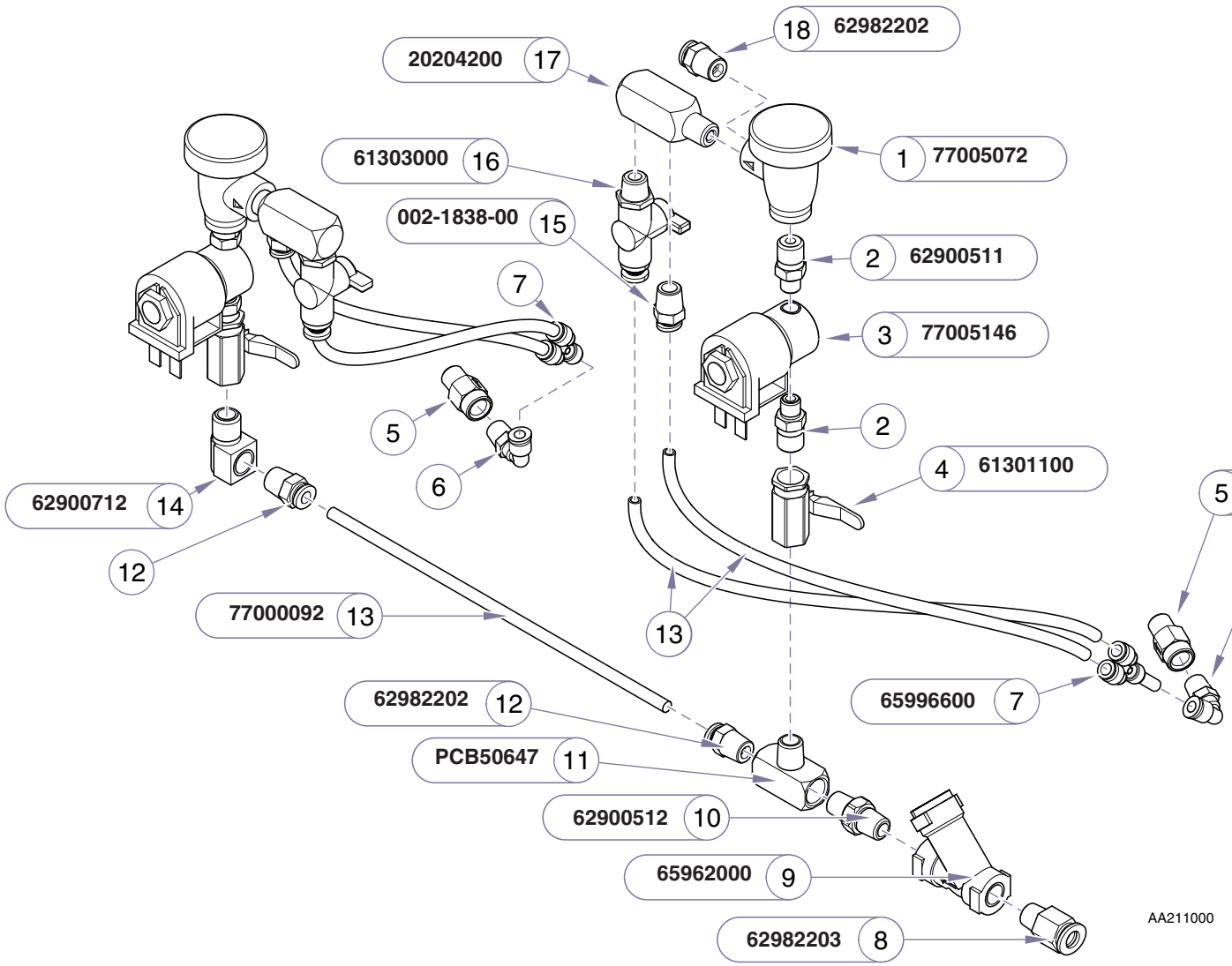


Item	Description	Qty
	Non-Recycler Models	
1	*Elbow*	*1*
2	*Quick Connect*	*1*
	Recycler Models	
1	Double Street Elbow	1
2	Nipple	1
3	Shut-Off Valve	1
4	Flow Control Assembly	1
5	QC Connector	1
7	Y-Quick Connect Fitting	1
	All Models	
6	Poly Tube *(1/4" OD)(sold by the inch)* (CV3 - 11"), (CV3R - 9.5" & 11"), (CV5 - 12.5"), (CV5R - 11" & 12.5")	AR
7	Y-Quick Connect Fitting	1
8	Quick Connect Fitting	1
9	Y-Strainer	2
10	Nipple *(1/4" NPT x /8" NPT)*	2
11	Solenoid	1
12	Vacuum Breaker	1
13	Check Valve	1
14	90 Degree Elbow	1
	Not Shown	
15	Vacuum Breaker repair Kit (77005073)	1

Always Specify Model & Serial Number

Single Vacuum Solenoid Assembly

Models: Serial Numbers:	***CV3*** *0903CV30706 thru Present*	***CV3R*** *0903CV3R1139 thru Present*	***CV5*** *0901CV50373 thru Present*	***CV5R*** *0902CV5R0809 thru Present*	***All*** *V785000 thru Present*

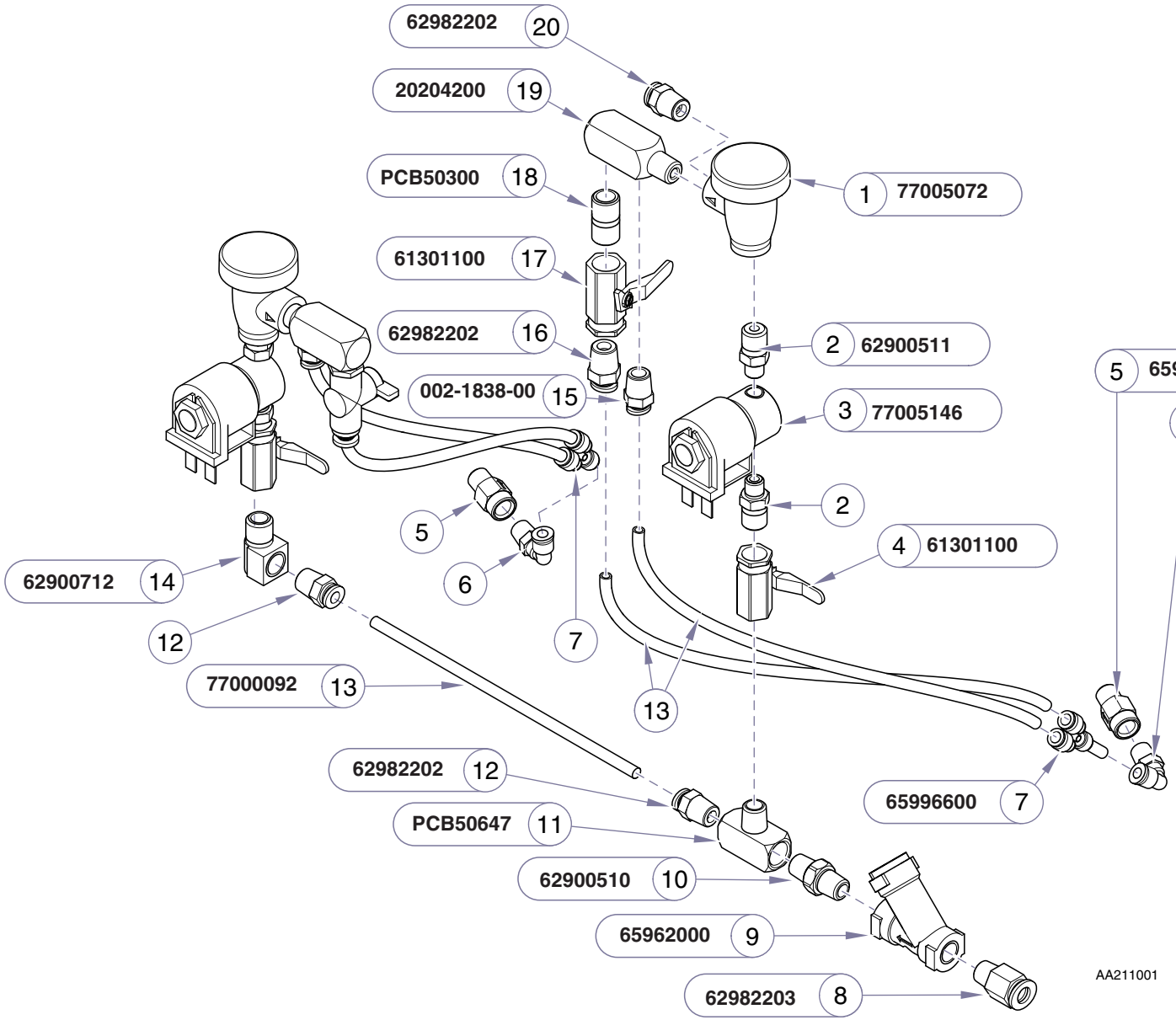


Item	Description	Qty.
1	Vacuum Breaker	2
2	Adapter	4
3	Solenoid	2
4	Shut-off Valve	2
5	Check Valve	2
6	90 Degree Elbow	2
7	Y-Quick Connect Fitting (Recycler Only)	2
8	Quick Connect	1
9	Y-Strainer	1
10	Nipple *(1/4" NPT x 1/4" NPT)*	1
11	Tee Run *(1/4")*	1
12	Quick Connect	2
13	Poly Tubing *(1/4" OD)(sold by the inch)*	AR
14	Elbow, Street *(1/4" NPT)*	1
15	Flow Control Assembly	1
16	Ball Valve (Recycler Only)	1
17	Double Street Elbow (Recycler Only)	1
18	Quick Connect (Non-Recycler Only)	1
	Not Shown	
19	Vacuum Breaker repair Kit (77005073)	1

Always Specify Model & Serial Number

Models: *Serial Numbers:*	***CV6*** *0705CV60001 thru 0902CV60228*	***CV6R*** *0705CV6R0001 thru 0903CV6R0777*	***CV10*** *0705CV10001 thru 0902CV100109*	***CV10R*** *0705CV10R0001 thru 0902CV10R0401*

Twin Vacuum Solenoid Assembly



Item	Description	Qty.
1	Vacuum Breaker	2
2	Adapter	4
3	Solenoid	2
4	Shut-off Valve	2
5	Check Valve	2
6	90 Degree Elbow	2
7	Y-Quick Connect Fitting (Recycler Only)	2
8	Quick Connect	1
9	Y-Strainer	1
10	Nipple *(1/4" NPT x 1/4" NPT)*	1
11	Tee Run *(1/4")*	1
12	Quick Connect	12
13	Poly Tubing *(1/4" OD)(sold by the inch)*	AR
	CV6 - 11"(x2) & 12.5"	
	CV6R - 11" & 12.5"(x4)	
	CV10 - 11"(x2) & 12.5"	
	CV10R - 11" & 12.5"(x4)	
14	Elbow, Street *(1/4" NPT)*	1
15	Flow Control Assembly	1
16	QC Connector	2
17	Shut-Off Valve (Recycler Only)	2
18	Nipple	2
19	Double Street Elbow (Recycler Only)	2
20	Quick Connect (Non-Recycler Only)	2
	Not Shown	
21	Vacuum Breaker repair Kit (77005073)	1

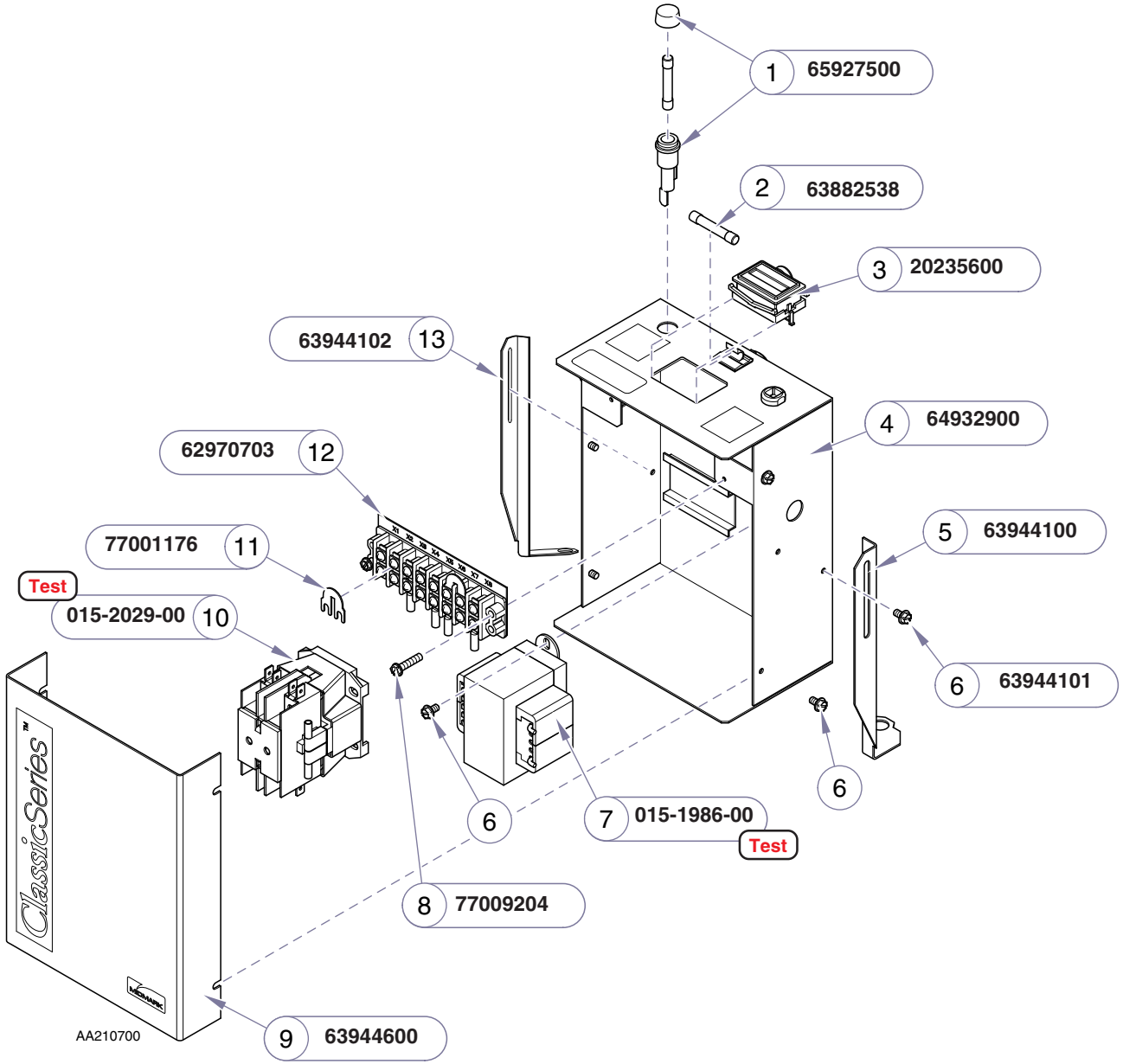
Always Specify Model & Serial Number

E-9.1

Twin Vacuum Solenoid Assembly

Models: Serial Numbers:	***CV6*** *0903CV60229 thru Present*	***CV6R*** *0903CV6R0785 thru Present*	***CV10*** *0902CV100111 thru Present*	***CV10R*** *0902CV10R0404 thru Present*	***All*** *V785000 thru Present*

 Rev 9/29/16



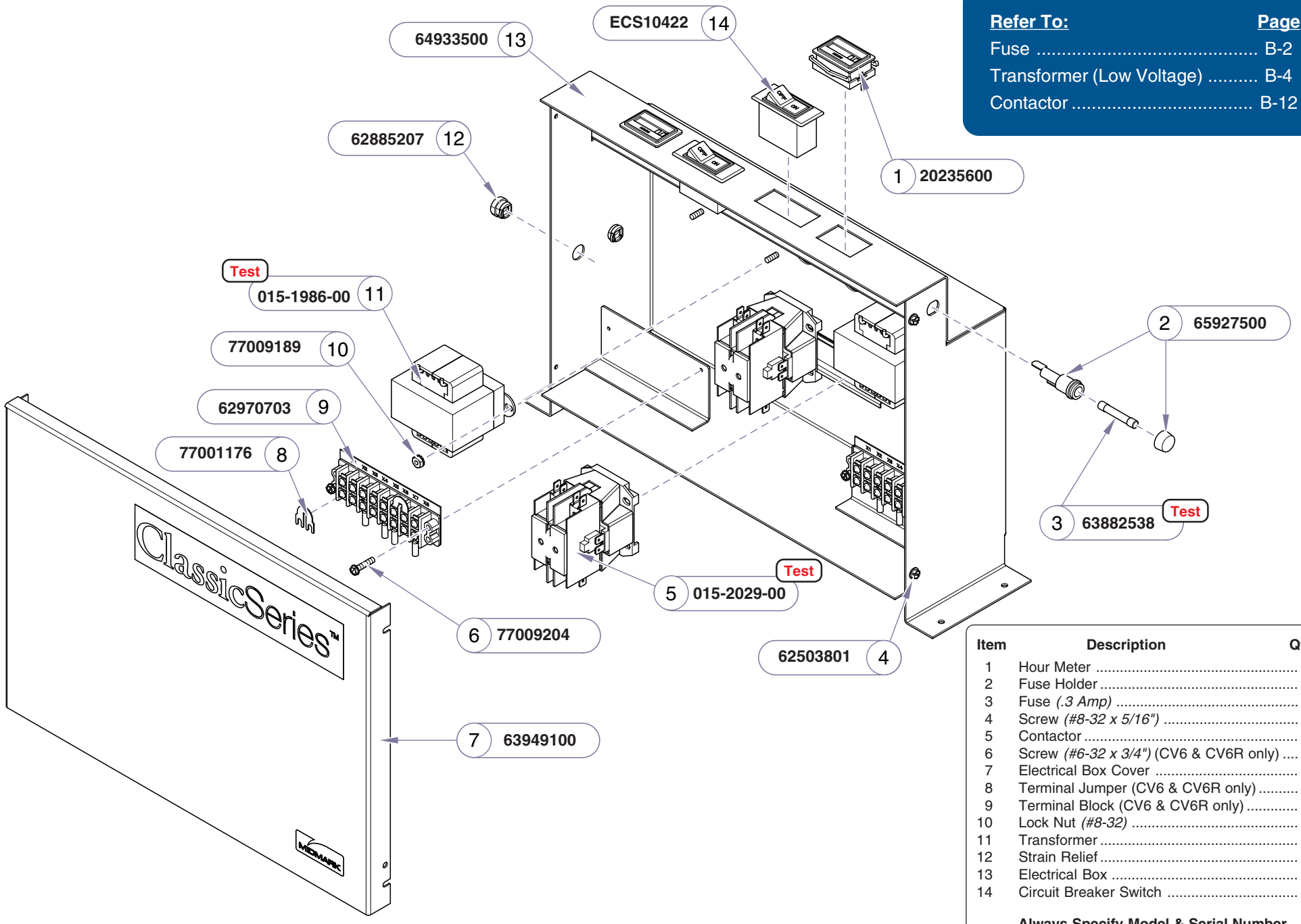
Note: CV5 / CV5R

Item	Description	Qty.
1	Fuse Holder	1
2	Fuse *(.3 Amp)*	2
3	Hour Meter	1
4	Electrical Box	1
5	Right Hand Bracket	1
6	Screw *(#8-32 x 5/16")*	8
7	Transformer	1
8	Screw (#6-32 x 3/4") (CV3 & CV3R only)	2
9	Electrical Box Cover	1
10	Contactor	1
11	Terminal Jumper (CV3 & CV3R only)	3
12	Terminal Block (CV3 & CV3R only)	1
13	Left Hand Bracket	1

Always Specify Model & Serial Number

Models: *Serial Numbers:*	***CV3*** *0705CV30001 thru Present*	***CV3R*** *0705CV3R0001 thru Present*	***CV5*** *0705CV50001 thru Present*	***CV5R*** *0705CV5R0001 thru Present*	***All*** *V785000 thru Present*

Single Electrical Box



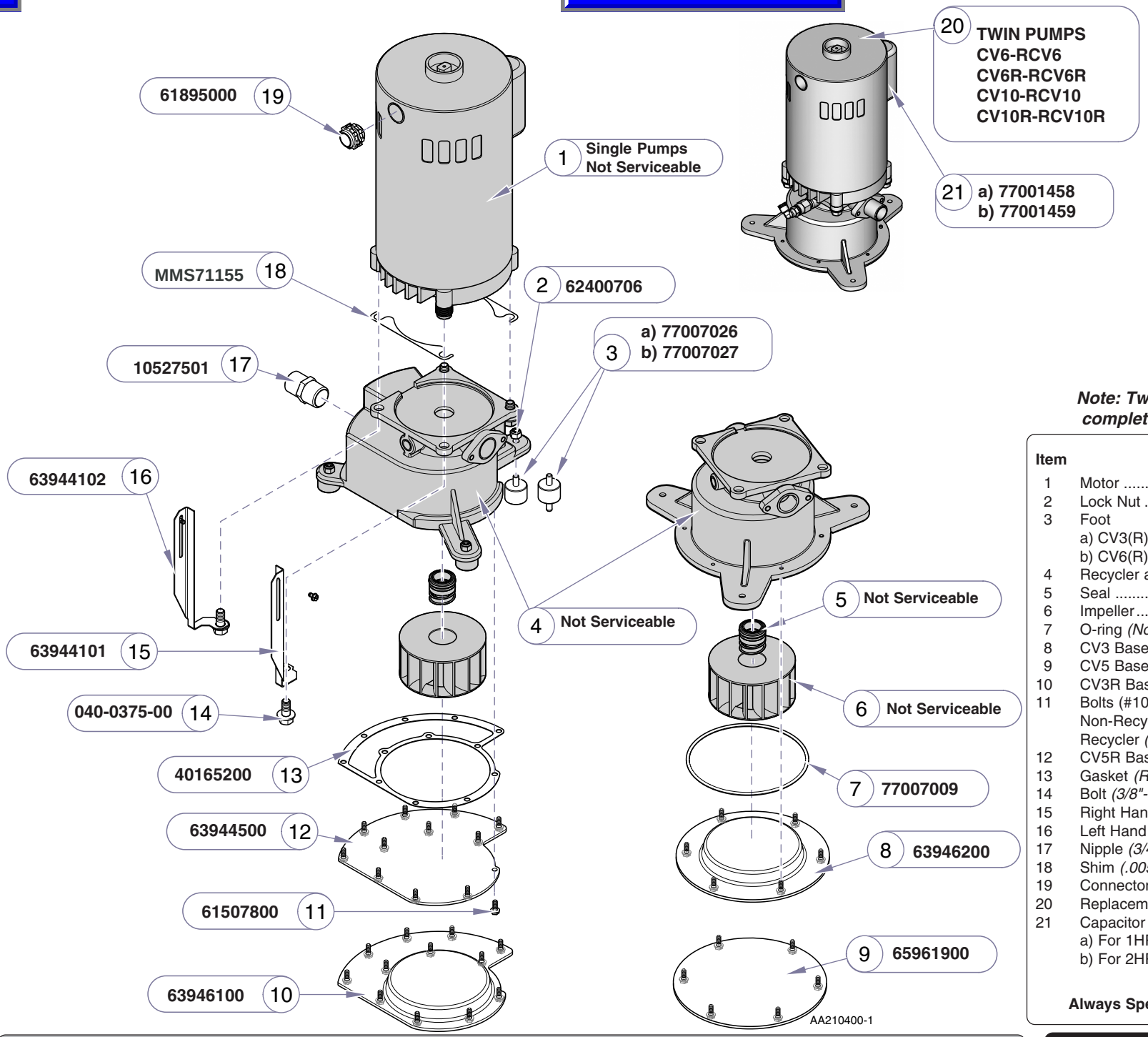
AA210600

Item	Description	Qty.
1	Hour Meter	2
2	Fuse Holder	2
3	Fuse *(.3 Amp)*	4
4	Screw *(#8-32 x 5/16")*	4
5	Contactor	2
6	Screw *(#6-32 x 3/4")* (CV6 & CV6R only)	4
7	Electrical Box Cover	1
8	Terminal Jumper (CV6 & CV6R only)	6
9	Terminal Block (CV6 & CV6R only)	2
10	Lock Nut *(#8-32)*	4
11	Transformer	2
12	Strain Relief	2
13	Electrical Box	1
14	Circuit Breaker Switch	2

Always Specify Model & Serial Number

Twin Electrical Box

Models: *Serial Numbers:*	***CV6*** *0705CV60001 thru Present*	***CV6R*** *0705CV6R0001 thru Present*	***CV10*** *0705CV10001 thru Present*	***CV10R*** *0705CV10R0001 thru Present*	***All*** *V785000 thru Present*



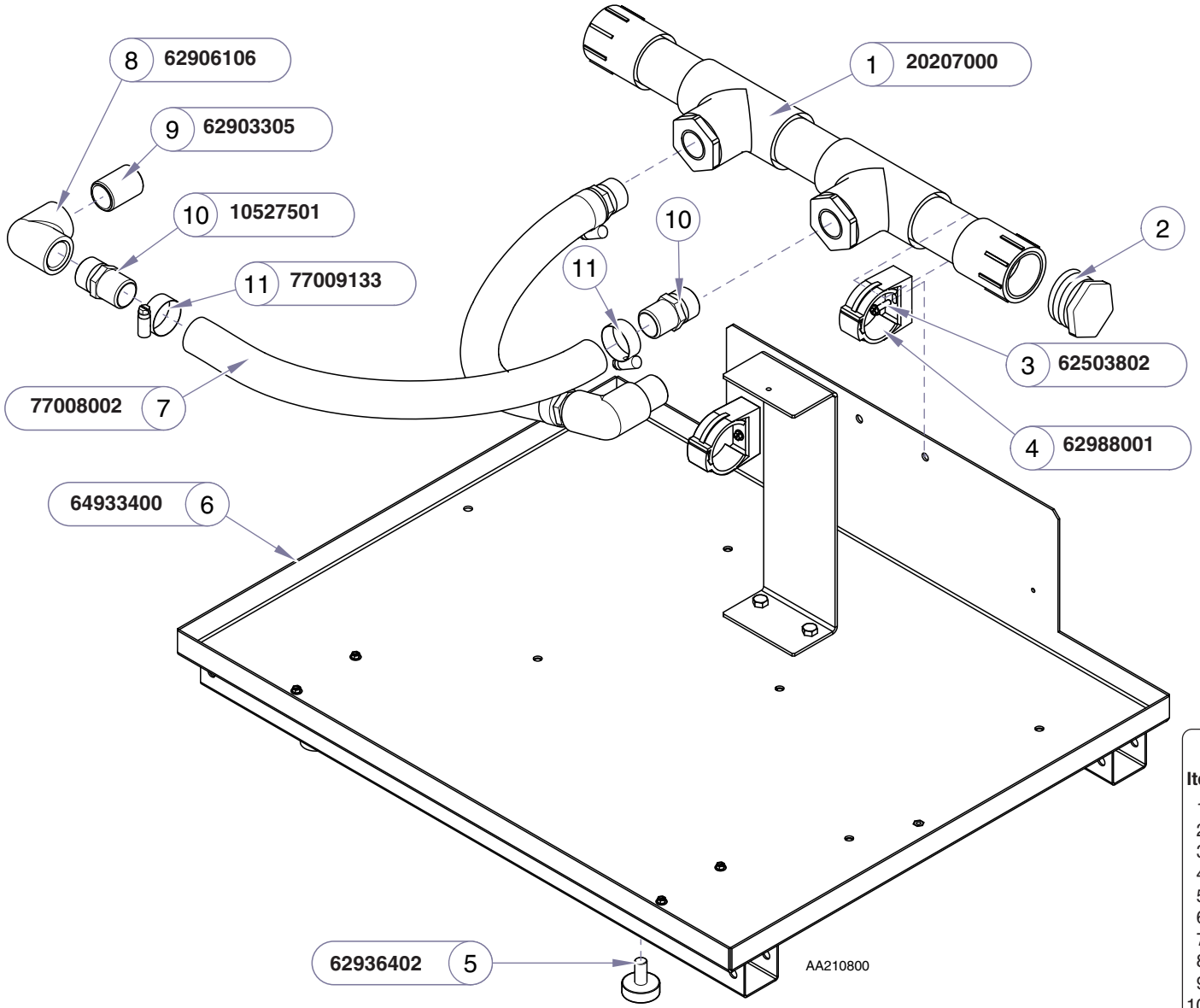
Note: Twin units require two complete mtor/pump assemblies.

Item	Description	Qty.
1	Motor	1
2	Lock Nut	3
3	Foot	
	a) CV3(R) CV5(R)	3
	b) CV6(R) CV10(R)	3
4	Recycler and Non-Recycler Housings	1
5	Seal	1
6	Impeller	1
7	O-ring *(Non-Recycler Only)*	1
8	CV3 Baseplate	1
9	CV5 Baseplate	1
10	CV3R Baseplate	1
11	Bolts (#10-24 x 1/2")	
	Non-Recycler *(CV3 & CV5)*	6
	Recycler *(CV3R & CV5R)*	12
12	CV5R Baseplate	1
13	Gasket *(Recycler Only)*	1
14	Bolt *(3/8"-16 x 3/4")*	4
15	Right Hand Bracket *(Single Units Only)*	1
16	Left Hand Bracket *(Single Units Only)*	1
17	Nipple *(3/4")*	1
18	Shim *(.005)*	*Varies*
19	Connector	1
20	Replacement Pumps	*(Twin Units Only)*
21	Capacitor	
	a) For 1HP motors	1
	b) For 2HP motors	1

Always Specify Model & Serial Number

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

Pump Assembly Components

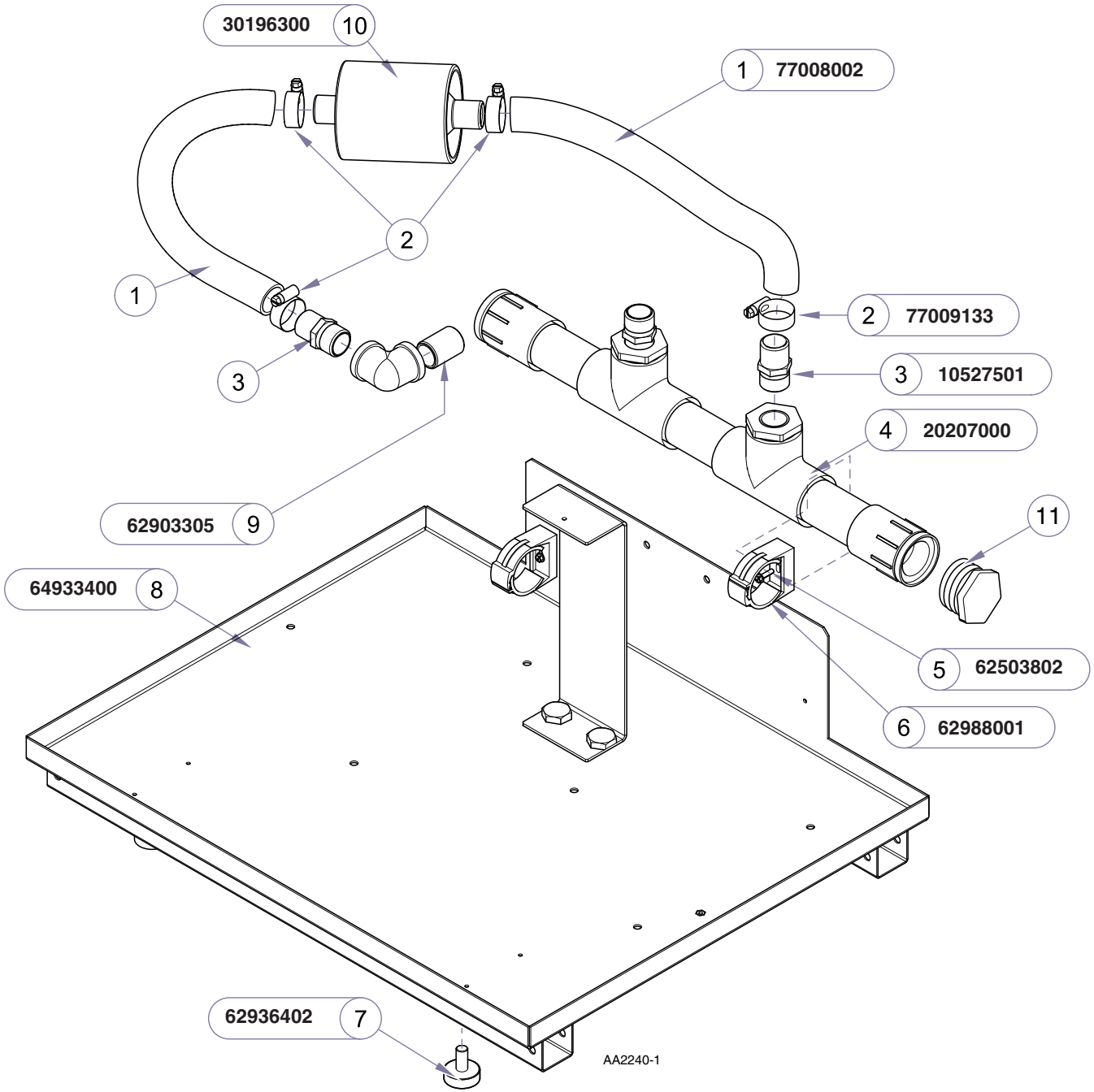


Item	Description	Qty.
1	Exhaust Manifold	1
2	Pipe Plug ... Refer to: Twin Platform Install kit	
3	Screw (#8-32 x 5/8")	2
4	Pipe Hanger	2
5	Rubber Foot	4
6	Platform	1
7	PVC Hose 1" ID (sold by the inch)	AR
8	90 Degree Elbow	2
9	Nipple (3/4")	2
10	Nipple (3/4")	4
11	Clamp	4

Always Specify Model & Serial Number

Twin Exhaust Manifold Assembly

Models: *Serial Numbers:*	***CV6*** *0705CV60001 thru 0808CV60180*	***CV6R*** *0705CV6R0001 0808CV6R0594*	***CV10*** *0705CV10001 thru 0808CV100080*	***CV10R*** *0705CV10R0001 thru 0808CV10R0308*



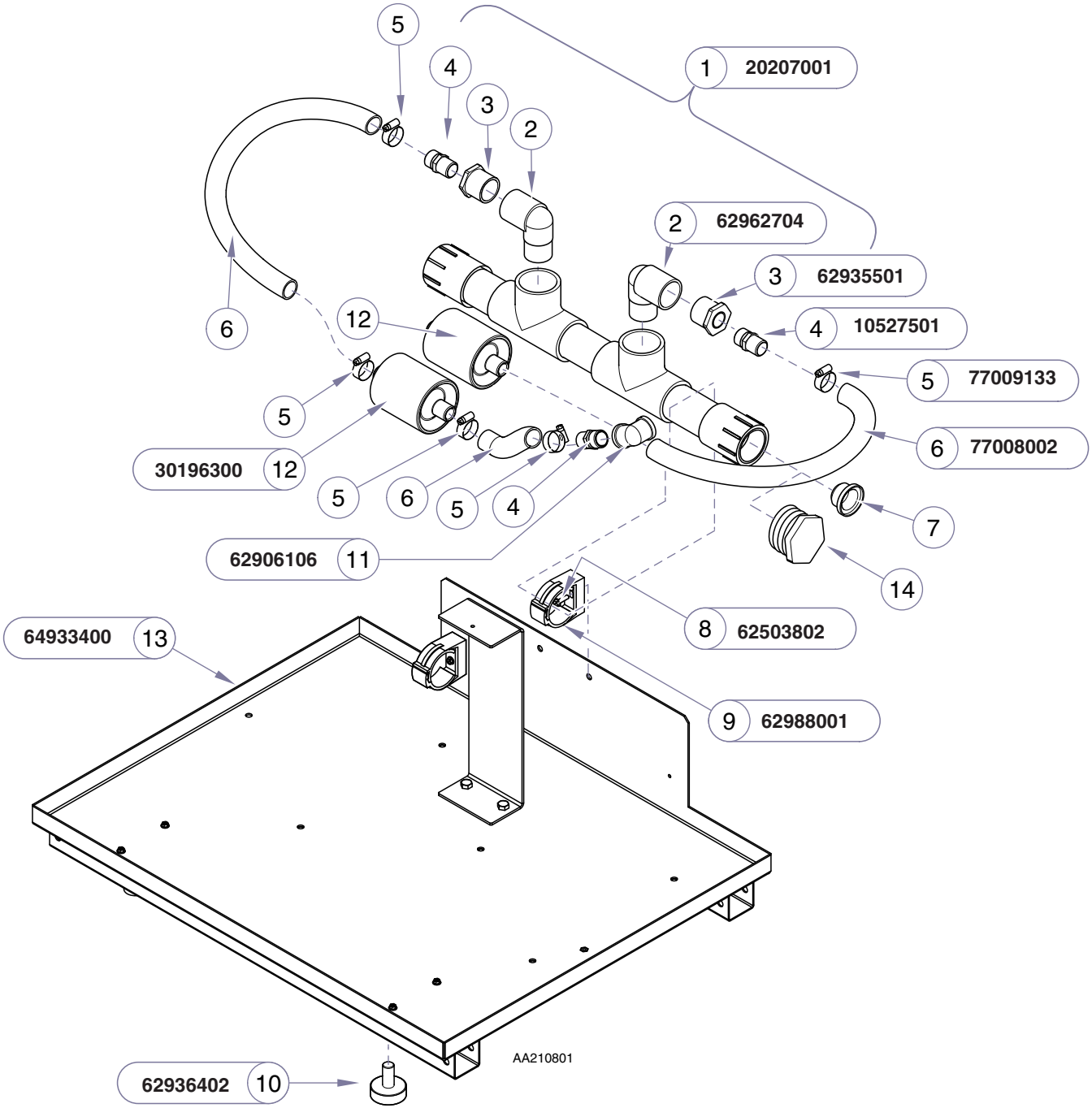
Item	Description	Qty.
1	PVC Hose 1" ID (sold by the inch)	AR
2	Clamp	8
3	Nipple (3/4")	4
4	Exhaust Manifold	1
5	Screw	2
6	Pipe Hanger	2
7	Rubber Foot	4
8	Platform	1
9	Nipple (3/4")	2
10	Exhaust Sliencer	2
11	Pipe Plug ... Refer to: Twin Platform Install kit	

Always Specify Model & Serial Number

Models: *Serial Numbers:*	***CV6*** *0808CV60181 thru 0902CV60228*	***CV6R*** *0809CV6R0595 thru 0903CV6R0777*	***CV10*** *0808CV100081 thru 0902CV100109*	***CV10R*** *0808CV10R0308 thru 0902CV10R0401*

Twin Exhaust Manifold Assembly

E-13.1



Item	Description	Qty.
1	Exhaust Manifold	1
	Includes Items 2 thru 4	
2	• Elbow	2
3	• Reducer	2
4	• Nipple	AR
5	Clamp	8
6	PVC Hose 1"ID (sold by the inch) long- 24" (x2) Short- 3" (x2)	AR
7	Shipping Cap used on early units *Note: Plug thrown away during installation.*	
8	Pipe Hanger	2
9	Screw	2
10	Rubber Foot	4
11	Elbow	2
12	Exhaust Sliencer	2
13	Platform	1
14	Pipe Plug ... Refer to: Twin Platform Install kit	

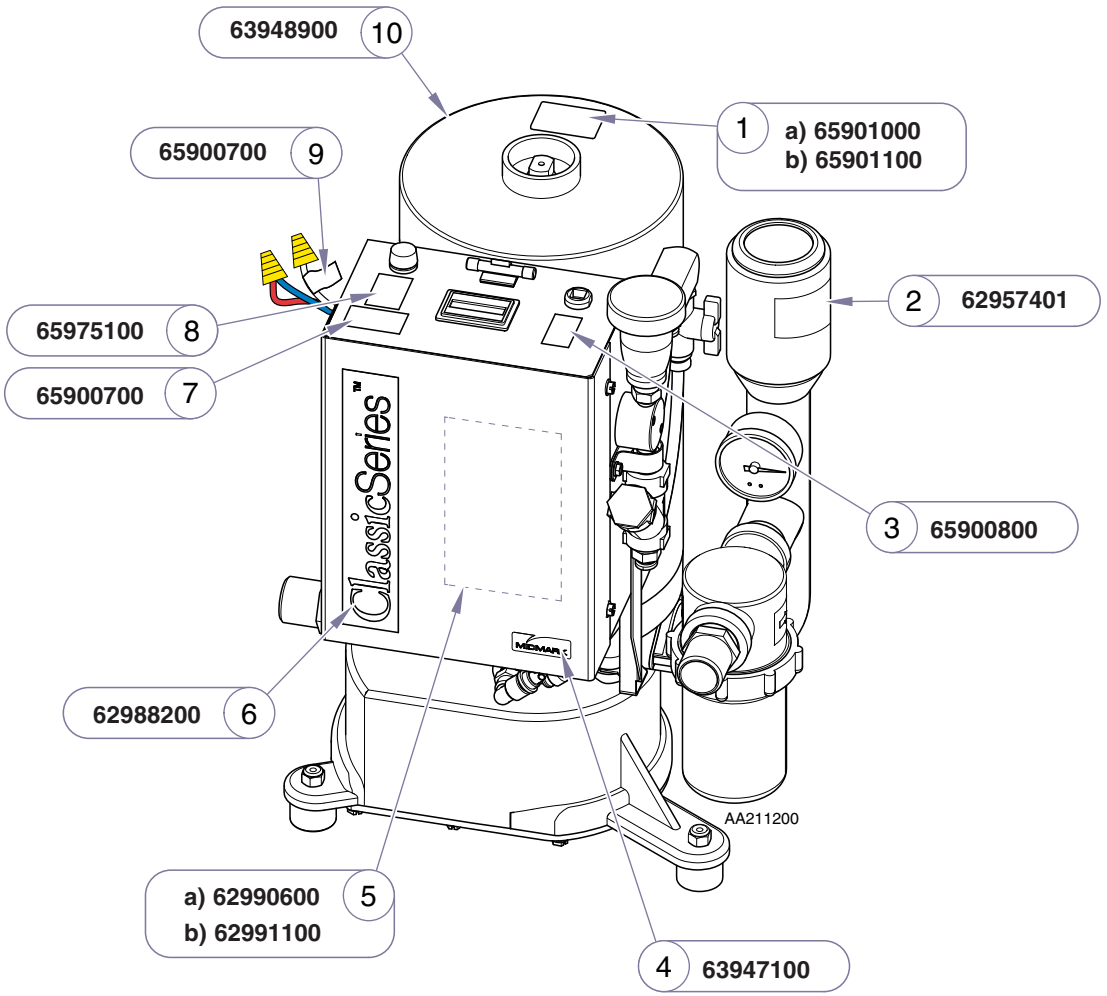
Always Specify Model & Serial Number

E-13.2

Twin Exhaust Manifold Assembly

Models: *Serial Numbers:*	***CV6*** *0903CV60229 thru Present*	***CV6R*** *0903CV6R0785 thru Present*	***CV10*** *0902CV100111 thru Present*	***CV10R*** *0902CV10R0404 thru Present*	***All*** *V785000 thru Present*

 Rev 07/6//17

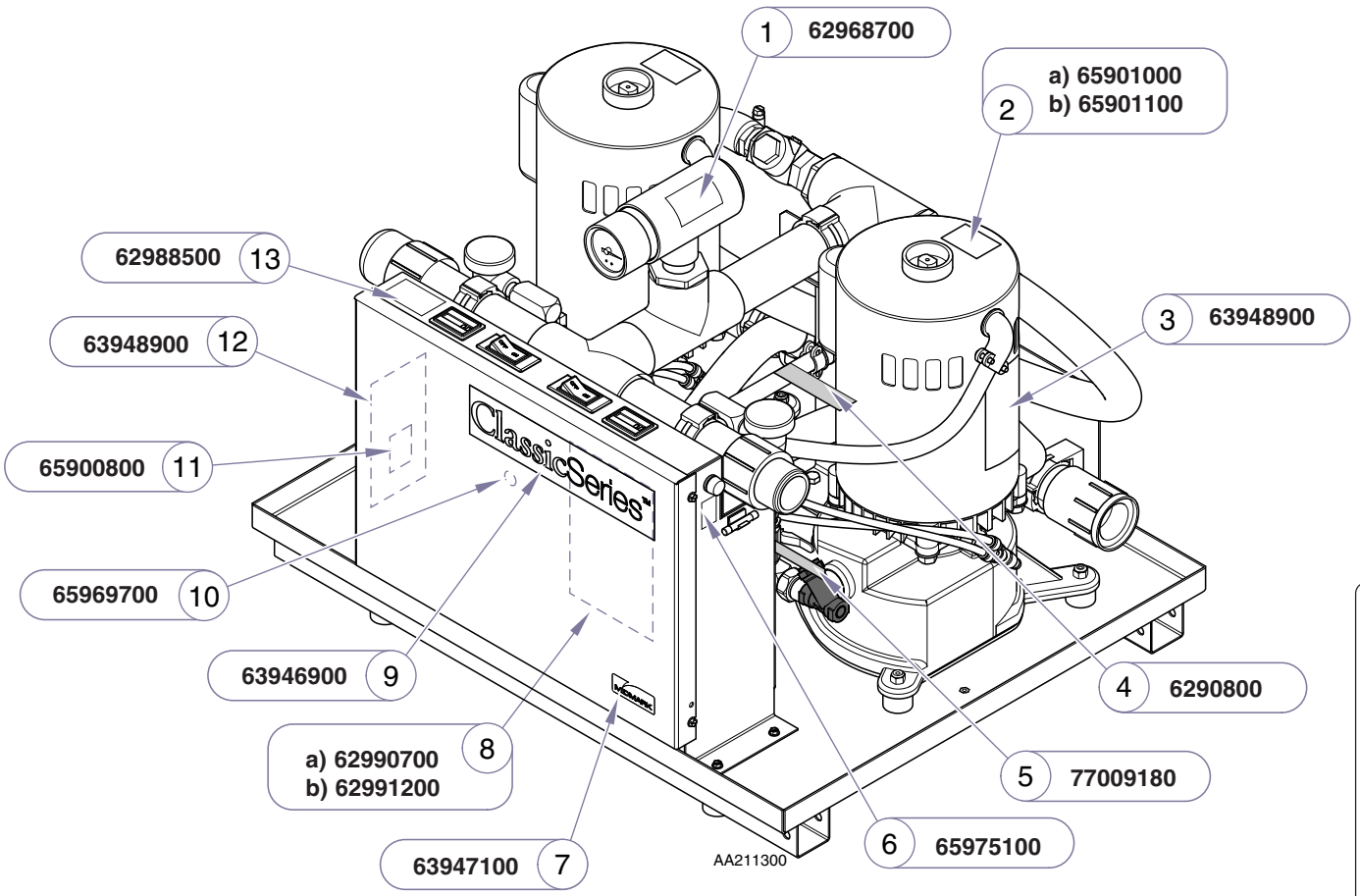


Item	Description	Qty.
1	a) 1 HP Decal	1
	b) 2 HP Decal	1
2	VRV, Factory Set Label	1
3	Low Voltage	1
4	Midmark Logo	1
5	Electrical Diagram (Inside Cover)	
	a) CV3 and CV3R	1
	b) CV5 and CV5R	1
6	ClassicSeries® Label	1
7	Caution, Shock Label	1
8	Fuse Replacement Lab	1
9	24V Light Label	1
10	Serial Number Label	1
	Not Shown	
11	77009180 - Caution Tag	1
12	77009306 - 220VAC Con, Tag	1

Always Specify Model & Serial Number

Models: *Serial Numbers:*	***CV3*** *0705CV30001 thru Present*	***CV3R*** *0705CV3R0001 thru Present*	***CV5*** *0705CV50001 thru Present*	***CV5R*** *0705CV5R0001 thru Present*	***All*** *V785000 thru Present*

Single Model Label Locations



Item	Description	Qty.
1	VRV Factory Set Label	1
2	a) 1 HP Decal	1
	b) 2 HP Decal	1
3	Serial Number Label	1
4	Electrical Hookup Label	1
5	Caution Tag	1
6	Fuse Replacement Label	1
7	Midmark Logo	1
8	Electrical Diagram (Inside Cover)	
	CV6 / CV6R	1
	CV10 / CV10R	1
9	ClassicSeries® Label	1
10	Earth (Ground) Label	1
11	Low Voltage	1
12	Platform Serial Label	1
13	Platform Warning Label	1
	Not Shown	
14	65976800 Hot Neutral Wire	15
15	MPM60658 24V Light Label	1

Always Specify Model & Serial Number

Twin Model Label Locations

Models: *Serial Numbers:*	***CV6*** *0705CV60001 thru Present*	***CV6R*** *0705CV6R0001 thru Present*	***CV10*** *0705CV10001 thru Present*	***CV10R*** *0705CV10R0001 thru Present*	***All*** *V785000 thru Present*

COMMENTS

The Technical Publications Department of Midmark Corporation takes pride in its manuals. We are sure that our manuals will fill all your needs when you are performing scheduled maintenance, servicing, or repairs on a Midmark product. However, if you find any errors or feel there should be a change, addition, or deletion to the manuals, please let us know. We will correct any errors that we are made aware of and we will review requests for changes, additions, or deletions to the manuals and incorporate those requests deemed appropriate. If you see something in one of our manuals that you like or dislike, please let us know. Also, if there is something you feel we could do to produce a better manual, please let us know.

If an error is found, please list the page and paragraph/figure in which the error was found along with a brief description of what the error is. If the correction to the error is known, please include that information also. If a change, addition, or deletion is being requested, please list the page and paragraph/figure needing the change, along with a brief description of how you feel the paragraph/figure should be changed.

Please fax or mail a copy of this completed comment sheet to:

Midmark Corporation
ATTN: Technical Publications Dept.
60 Vista Drive
Versailles, Ohio 45380
Fax: (937) 526-8316

Page Number	Paragraph/Figure	Description

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:

SERVICE PARTS FAX ORDERING FORM

(Do not tear out this page. Photo copy this page for use only.)

MIDMARK®

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** _____

Subject to change without notice.
Refer to www.Documark.com for the latest revision.

Midmark Corporation
60 Vista Drive
P.O. Box 286
Versailles, OH 45380-0286
937-526-3662
Fax 937-526-5542

www.midmark.com

MIDMARK®

Because we care.