



Warewashing Systems

INSTALLATION, OPERATION, AND SERVICE MANUAL



AVENGER[®] HT/LT

AVENGER[®] SERIES UNDERCOUNTER DISHMACHINES

Avenger[®] HT/LT Manual • Rev W • 07610-003-34-01 • Issued: 05-02-07 • Revised: 07-29-16

MANUFACTURER'S WARRANTY

ONE YEAR LIMITED PARTS AND LABOR WARRANTY

ALL NEW JACKSON DISHWASHERS ARE WARRANTED TO THE ORIGINAL PURCHASER TO BE FREE FROM DEFECTS IN MATERIAL OR WORKMANSHIP, UNDER NORMAL USE AND OPERATION, FOR A PERIOD OF (1) ONE YEAR FROM DATE OF PURCHASE, BUT IN NO EVENT TO EXCEED (18) EIGHTEEN MONTHS FROM DATE OF SHIPMENT FROM THE FACTORY.

Jackson WWS agrees under this warranty to repair or replace, at its discretion, any original part which fails under normal use due to faulty material or workmanship during the warranty period, providing the equipment has been unaltered, and has been properly installed, maintained, and operated in accordance with the applicable factory instruction manual and failure is reported to an authorized service agency within the warranty period. This includes the use of factory-specified genuine replacement parts, purchased directly from a Jackson-authorized parts distributor or service agency. Use of generic replacement parts may create a hazard and void warranty certification.

The labor to repair or replace such failed part will be paid by Jackson WWS, within the continental United States, Hawaii, and Canada, during the warranty period provided a Jackson WWS authorized service agency, or those having prior authorization from the factory, performs the service. Any repair work by persons other than a Jackson WWS authorized service agency is the sole responsibility of the customer. Labor coverage is limited to regular hourly rates; overtime premiums and emergency service charges will not be paid by Jackson WWS.

Accessory components not installed by the factory carry a (1) one year parts warranty only. Accessory components such as table limit switches, pre-rinse units, etc. that are shipped with the unit and installed at the site are included. Labor to repair or replace these components is not covered by Jackson WWS.

This warranty is void if failure is a direct result from shipping, handling, fire, water, accident, misuse, acts of God, attempted repair by unauthorized persons, improper installation, if serial number has been removed or altered, or if unit is used for a purpose other than originally intended.

TRAVEL LIMITATIONS

Jackson WWS limits warranty travel time to (2) two hours and mileage to (100) one-hundred miles. Jackson WWS will not pay for travel time and mileage that exceeds this, or any additional fees—such as those for air or boat travel—without prior authorization.

WARRANTY REGISTRATION

To register your product, go to www.jacksonwws.com or call 1-888-800-5672. Failure to register your product will void the warranty.

REPLACEMENT PARTS WARRANTY

Jackson replacement parts are warranted for a period of (90) ninety days from date of installation or (180) one-hundred-eighty days from the date of shipment from the factory, whichever occurs first.

PRODUCT CHANGES AND UPDATES

Jackson WWS reserves the right to make changes in the design and specification of any equipment as engineering or necessity requires.

THIS IS THE ENTIRE AND ONLY WARRANTY OF JACKSON WWS. JACKSON'S LIABILITY ON ANY CLAIM OF ANY KIND, INCLUDING NEGLIGENCE, WITH RESPECT TO THE GOODS OR SERVICES COVERED HEREUNDER, SHALL IN NO CASE EXCEED THE PRICE OF THE GOODS OR SERVICES OR PART THEREOF WHICH GIVES RISE TO THE CLAIM.

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING FOR FITNESS OR MERCHANTABILITY, THAT ARE NOT SET FORTH HEREIN, OR THAT EXTEND BEYOND THE DURATION HEREOF. UNDER NO CIRCUMSTANCES WILL JACKSON WWS BE LIABLE FOR ANY LOSS OR DAMAGE, DIRECT OR CONSEQUENTIAL, OR FOR DAMAGES IN THE NATURE OF PENALTIES, ARISING OUT OF THE USE OR INABILITY TO USE ANY OF ITS PRODUCTS.

ITEMS NOT COVERED

THIS WARRANTY DOES NOT COVER CLEANING OR DELIMITING OF THE UNIT OR ANY COMPONENT SUCH AS, BUT NOT LIMITED TO, WASH ARMS, RINSE ARMS, OR STRAINERS AT ANYTIME. NOR DOES IT COVER ADJUSTMENTS SUCH AS, BUT NOT LIMITED TO, TIMER CAMS, THERMOSTATS, OR DOORS BEYOND (30) THIRTY DAYS FROM THE DATE OF INSTALLATION. IN ADDITION, THE WARRANTY WILL ONLY COVER REPLACEMENT WEAR ITEMS SUCH AS CURTAINS, DRAIN BALLS, DOOR GUIDES, OR GASKETS DURING THE FIRST (30) THIRTY DAYS AFTER INSTALLATION. ALSO, NOT COVERED ARE CONDITIONS CAUSED BY THE USE OF INCORRECT (NON-COMMERICAL) GRADE DETERGENTS, INCORRECT WATER TEMPERATURE OR PRESSURE, OR HARD WATER CONDITIONS.

REVISION HISTORY

Revision Letter	Revision Date	Made By	Applicable ECNs	Details
A	05-02-07	MAW	N/A	Release to Production.
B	05-22-07	JDD	7920	Changed Schematics to new color scheme.
29	08-06-07	MAW	7930	Updated Avenger HT Incoming plumbing supply.
C	10-07-07	MAW	PROCESS	Added Avenger LTH designation. Added 480 Volt Avenger HT.
	11-20-07	MAW	PROCESS	Corrected 480 Volt Avenger HT Components.
47 & 48	1-31-08	MAW	PROCESS	Updated Installation instructions. Replaced LTH with LT designation. Added vacuum switch assembly.
D	9-18-09	ARL	090902-1157-CW 090902-1201-CW	Updated Plumbing to show soldered pipe and new valve.
E	02-08-10	RLC	8151	Added fused universal timer as alternate in assemblies.
F	05-05-10	RLC	8157	Changed Squeeze tubes in HT Peripump Assembly.
G	06-18-10	RLC	QOF 385	Updated LTH schematic.
H	04-13-11	TC/LN	DEV 11-14	Converted to publisher format, made LT Heater an option.
I	09-12-11	CW	QOF-386	Adjusted timer programming chart.
J	02-09-12	RC	8215	Removed Bottom Panel from pg. 50.
K	04-18-12	RC	QOF-386	Added Energy Star logo.
L	06-07-12	RC	QOF-386	Added Rinse Gasket to HT Plumbing Assembly (pg. 38).
M	03-11-13	RC	QOF NDB-219	Update Jackson logo, and company name.
N	05-17-13	RC	QOF-386	Update wash/rinse tank capacities.
O	7-24-13	RC	QOF-386	Updated amperage charts and corrected Table Heading.
P	02-10-14	MHH	QOF-386	Updated manufacturer warranty. Removed "Stop" page. Corrected P/N on Ball Valve assy, pg. 40.
Q	05-23-14	MHH	8287	New bearing & part # on rinse arm assembly, pg. 43.
R	07-02-14	RC	QOF-NDB-266	Remove ventilation requirement information.
S	10-13-14	KAP	QOF-386	Changed part number on pg. 27 for 10 wire harness to 05999-003-87-88.
T	08-13-15	KAP	QOF-386	Updated new revision of 208-230 Volt Schematic on pg. 56.
U	09-18-15	KAP	N/A	Updated pressure regulator info on pg. 6 & 18. Replaced bottom panel P/N 05700-003-37-87 on pg. 49 & 50 with bottom straps P/N 05700-003-92-20. Updated door assembly on pg. 45 & 46.
V	01-25-16	JH	N/A	Updated schematic on pg. 59, replaced schematic on pg. 58 with a more legible version.
W	07-29-16	JH	N/A	Corrected P/N for items 3 & 5 on pg. 44. Changed Deliming Instructions pg. to be specific to both HT & LT units. Corrected water flow rates on pg. 3. Corrected P/N for item 2 on pg. 55. Added balloon & P/N for end-cap on pg. 41. Replaced illegible view on pg. 48 with legible version. Corrected P/N for items 4 & 5 on pg. 51. Added a Rinse Arm Bearing Kit service P/N to pg. 42. Corrected P/N for item 11 on pg. 23.



AVENGER HT

High-temperature, hot-water sanitizing, with a booster tank and detergent and rinse-aid chemical feeder pumps.

AVENGER LT

Low-temperature, chemical-sanitizing, with detergent, rinse-aid, and sanitizer chemical feeder pumps.

Model: _____

Serial No.: _____

Installation Date: _____

Service Rep. Name: _____

Phone Number: _____

Jackson WWS, Inc. provides technical support for all of the dishmachines detailed in this manual. We strongly recommend that you refer to this manual before making a call to our technical support staff. Please have this manual with you when you call so that our staff can refer you, if necessary, to the proper page. Technical support is not available on holidays. Contact technical support toll free at 1-888-800-5672.

Technical support is available for service personnel only.

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SCHEMATICS

Avenger HT 208-230 Volt, 60 HZ, Single- Phase 57
 Avenger HT 480 Volt, 60 HZ, Three-Phase 58
 Avenger LT 115 Volt, 60 HZ, Single-Phase 59

GUIDE TO THE SYMBOLS USED IN THIS MANUAL



- risk of injury to personnel.



- risk of damage to equipment.



- risk of electrical shock.



- reference data plate.



- caustic chemicals.



- lockout electrical power.

NOTICE - important note.

SPECIFICATIONS

AVENGER HT MACHINE DIMENSIONS

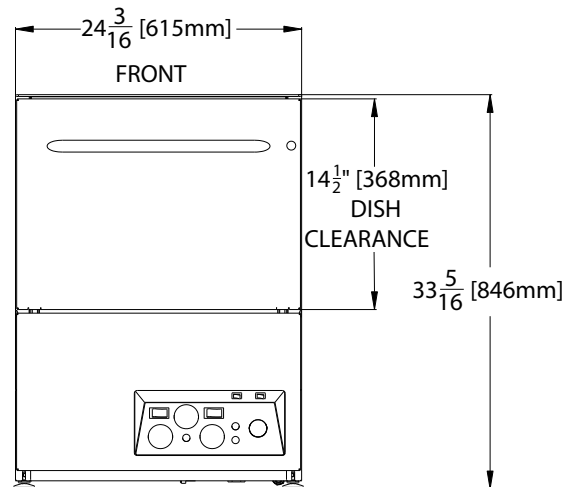
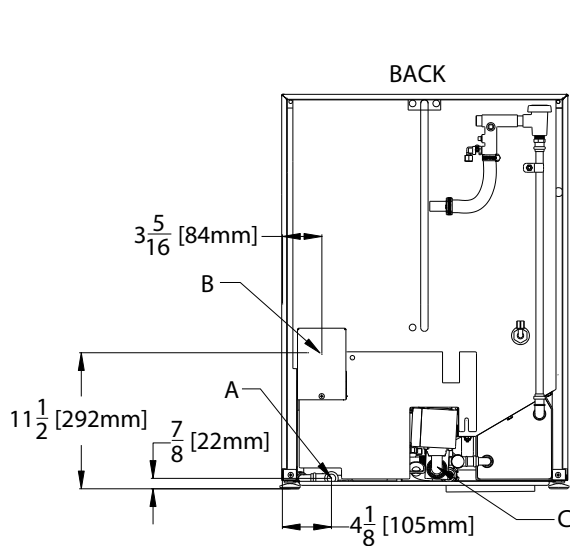
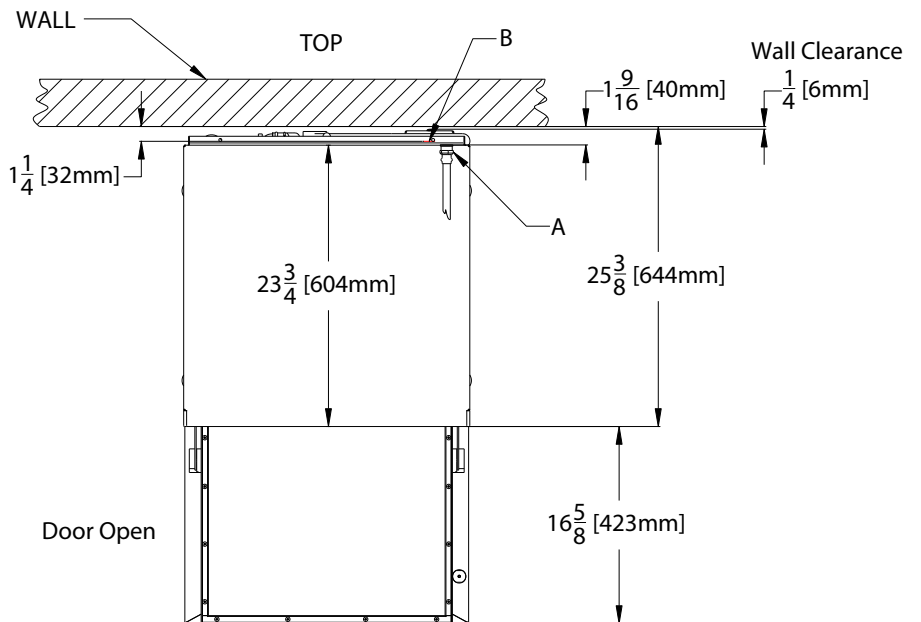
LEGEND:

A - Water Inlet - 1/2" Female Pipe Thread, 2 1/2" AFF (Connect to a true 1/2" ID water line)

B - Electrical Connection

C - Drain Connection - 6' coiled drain hose. Shipped inside machine. Must be installed no more than 24" AFF.

All dimensions from floor can be increased 1" with adjustable feet supplied.



*All dimensions are for reference only and are subject to change without notice.

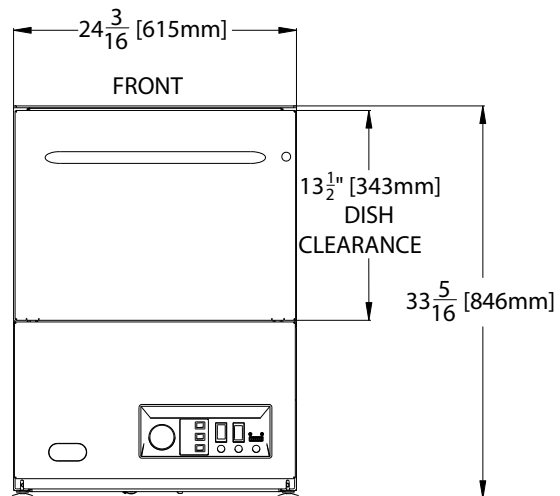
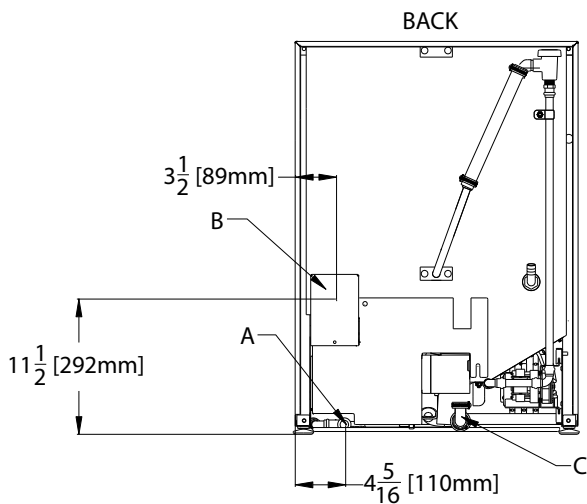
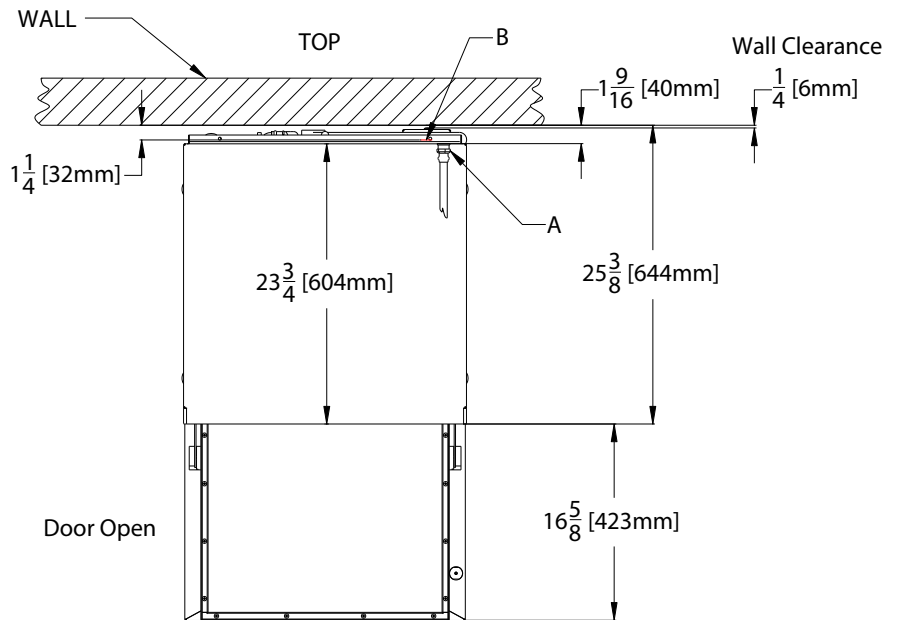
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B - Electrical Connection

C - Drain Connection - 6' coiled drain hose. Shipped inside machine. Must be installed no more than 24" AFF.

All dimensions from floor can be increased 1" with adjustable feet supplied.



*All dimensions are for reference only and are subject to change without notice.

Model Designation: AVENGER HT AVENGER LT

Operating Capacity:

Racks per Hour	24	24
Dishes per Hour	600	600
Glasses per Hour	834	864

Tank Capacity (Gallons):

Wash Tank	1.1	1.1
Rinse Tank	3.0	1.1

Electrical Loads (as applicable):

Wash Motor HP	0.75	0.75
Rinse Heater KW	8.2	N/A



NOTE: Always refer to the machine data plate for specific electrical and water requirements. The material provided on this page is for reference only and is subject to change without notice.

HOT WATER SANITIZING

Water Temperatures (°F):

Minimum Wash Temperature	150	N/A
Minimum Rinse Temperature	180	N/A
Minimum Incoming Water Temperature	110	N/A

CHEMICAL SANITIZING

Water Temperatures (°F):

Minimum Wash Temperature	N/A	120
Minimum Rinse Temperature	N/A	120
Incoming Water Temperature	N/A	120

Other Water Requirements:

Water Flow Pressure (PSI)	20	20
Flow Rate Minimum (GPM)	6.6	6.6
Water Line Size (NPT)	1/2"	1.2"
Drain Line Size (NPT)	1-3/8"	1-3/8"
Minimum Chlorine Required (PPM)	N/A	50

NOTICE



NOTE 1: MCA (Minimum Circuit Ampacity) = 125% x Largest Motor + FLA of all other motors + all other loads.

NOTE 2: MOP (Maximum Over-current Protective Device) = 225% x Largest Motor + FLA of all other motors + all other loads.

All electrical ratings provided in this manual are for reference only. Always refer to the machine data plate to get exact electrical information for this machine. All electrical work performed on machines should be done in accordance with applicable local, state, territorial, and national codes. Work should only be performed by qualified electricians and authorized service agents.

Note that all electrical wiring used in the AVENGER series of machines must be rated, at a minimum, for 212°F (100°C), and that only copper conductors are used.

Where applicable, heating element amperage draws have been adjusted for the assumed input voltage. The manufacturer assumes incoming voltages will be either 208 or 230 Volts. Some heating elements used in the machines are rated for other voltages, such as 240 Volts and 480 Volts. Always verify the amperage draw of the machine in operation when sizing circuit protection.

If the dishmachine is equipped with the optional rinse heater, note the rinse heater might have its own electrical connection and require a separate service. Amperage loads for motors and heaters are indicated on the machine data plate.

The electrical configurations of the AVENGER series of machines are as follows:

Available Electrical Characteristics:

- 115 Volt, 60 HZ, Single-phase
- 230 Volt, 60 HZ, Single-phase
- 208 Volt, 60 HZ, Single-phase
- 460 Volt, 60 HZ, Three-phase

Available Wash Tank Heaters:

- 8.2 kW (standard for AVENGER HT)

AVENGER HT
Electrical Characteristics

VOLTS	115	208	230	480
PHASE	1	1	1	3
FREQ	60	60	60	60
WASH MOTOR AMPS	13.2A	6.6 A	6.6 A	1.3A
RINSE HEATER AMPS	N/A	32.2 A	35.7 A	12.0 A
TOTAL LOAD	13.2A	38.8 A	42.3 A	13.3A

AVENGER LT
Electrical Characteristics

VOLTS	115
PHASE	1
FREQ	60
WASH MOTOR AMPS	13.2 A
RINSE HEATER AMPS	N/A
TOTAL LOAD	13.2

VISUAL INSPECTION

Do not throw away container if damage is evident!

Before installing the unit, check packaging and machine for damage. Damaged packaging might be an indication of damage to the machine. If there is any type of damage to both packaging and unit, do not throw away the packaging. The dishmachine has been inspected at the factory before shipping and is expected to arrive in new, undamaged condition. However, rough handling by carriers or others might result in damage to the unit while in transit. If this occurs, do not return the unit to the manufacturer. Instead, contact the carrier and ask them to send a representative to the site to inspect the damage and request that an inspection report be completed.

Contact the carrier within 48 hours of receiving the machine as well as the dealer that sold you the unit.

UNPACKING THE MACHINE

The machine should be unboxed and removed from the pallet before installing. Open the front door and remove all of the materials from inside. Once unpacked, verify there are no missing parts. If a part is missing, contact the manufacturer immediately.

LEVEL THE DISHMACHINE

The dishmachine is designed to operate while level. This is important to prevent any damage to the machine during operation and to ensure the best possible results. The unit comes equipped with adjustable bullet feet which can be turned using a pair of pliers. Verify the unit is level from front-to-back and side-to-side before making any electrical or plumbing connections.

PLUMBING THE DISHMACHINE

The plumber must flush the incoming water line!

All plumbing connections must be made to adhere to local, state, territorial, and national codes. The installing plumber is responsible for ensuring the incoming water lines are flushed of debris before connecting to the machine. Note that chips and materials from cutting processes can become lodged in the solenoid valves and prevent them from opening or closing. Any valves that are found to be fouled or defective because of foreign matter left in the water line, and any subsequent damage, are not the responsibility of the manufacturer.

A water hardness test must be performed.

A water hardness test must be performed to determine if the HTS-11 (scale prevention and corrosion control) needs to be installed. A hardness test kit can be found on the warning tag that is attached to the incoming plumbing connection on the back of the machine. If water hardness is higher than 5 Grain per Gallon (GPG), the HTS-11 will need to be installed. Please contact the manufacturer to purchase the HTS-11.

WATER SUPPLY CONNECTIONS: WATER HARDNESS GREATER THAN 5 GPG

If water hardness tests at greater than 5 GPG, install the HTS-11 into the water line (1/2" ID pipe size minimum) before the dishwasher's incoming water connection point using copper pipe. Observe proper inlet/outlet water directions. Flow directions are molded into the top of the head. It is recommended that a water shut-off valve be installed before installing the HTS-11 to allow access for service. Plumb from the HTS-11 outlet to the incoming water connection point using copper pipe (or order the 1/2" ID flexible hose kit offered by manufacturer). The water supply must be capable of a minimum of 10 Pounds per Square Inch (PSI) "flow" pressure at the recommended temperature indicated on the data plate. See "Shock Absorber" section.

WATER SUPPLY CONNECTION: WATER HARDNESS OF 5 GPG OR LESS

If water hardness tests at 5 GPG or less, install the water supply line (1/2" ID pipe size minimum) to the dishwasher's incoming water connection point using copper pipe (or order the 1/2" ID flexible hose kit offered by the manufacturer). It is recommended that a water shut-off valve be installed in the water line between the main supply and the machine to allow access for service. The water supply line must be capable of a minimum of 10 PSI "flow" pressure at the recommended temperature indicated on the data plate.

PRESSURE REGULATOR

The manufacturer has an optional water pressure regulator to accommodate areas where water pressure fluctuates or is higher than the recommended pressure. Take care not to confuse static pressure with flow pressure: static pressure is line pressure in a "no flow" condition (all valves and services are closed); flow pressure is the pressure in the fill line when the valve is opened during the cycle.

Take care not to confuse static pressure with flow pressure!

SHOCK ABSORBER

It is suggested that a shock absorber (not supplied) be installed on the incoming water line. This prevents water hammer (hydraulic shock)—induced by the solenoid valve as it operates—from causing damage to the equipment.

CONNECTING THE DRAIN LINE

The dishwasher has a pumped (pressure) drain capable of pumping waste water to a height of 24" above the floor to the kitchen's drain system. Each dishwasher is supplied with a drain hose. When installed, it will extend from the rear side of the machine. There must be an air-gap between the machine drain line and the floor sink or drain. If a grease trap is required by code, it should have a flow capacity of 12 GPM (Gallons per Minute).

PLUMBING CHECK After installing the incoming fill line and the drain line, slowly turn on the water supply to the machine. Check for any leaks and repair as required. All leaks must be repaired before operating the machine.

ELECTRICAL POWER CONNECTIONS



Disconnect electrical power supplies and tag out in accordance with appropriate procedures and codes at the disconnect switch to indicate the circuit is being serviced.

Electrical and grounding conductors must comply with the applicable portions of the National Electric Code ANSI/NFPA 70 (latest edition) and/or other electrical codes.

The data plate is located at the left-front side of the dishmachine. Refer to the data plate for machine operating requirements, machine voltage, total amperage, and serial number.

Remove the back panel to install the incoming power lines. This will require removing the screw at the bottom of the back panel with a phillips screwdriver. Remove the back panel and set aside. Install 3/4" conduit into the pre-punched holes in the back of the control box. Route power wires and connect to power block and grounding lug. Install the service wires (L1 and L2) to the appropriate terminals as they are marked on the terminal block. Install the grounding wire into the lug provided. It is recommended that "DE-OX" or another similar anti-oxidation agent be used on all power connections.

NOTICE

NOTE: For the Avenger HT: ensure the orange/white wires at the heater contactor are connected properly. They have been purposely disconnected at the factory to avoid damage to the heater element when there is no water in the booster heater.

VOLTAGE CHECK



Ensure that the "Power" switch is in the "OFF/DRAIN" position and apply power to dishmachine. Check the incoming power at the terminal block and ensure it corresponds with the voltage listed on the data plate. If not, contact a qualified service agency to examine the problem. Do not run dishmachine if voltage is too high or too low. Shut-off the service breaker and advise all proper personnel of the location of the breaker and any problems. Replace the control box cover and tighten-down the screws.

SURROUNDING AREA

This is a commercial dishmachine and reaches temperatures that can exceed those generated by a residential machine. Surrounding countertops, cabinets, flooring material, and subfloor material must be designed and/or selected with these higher temperatures in mind.

NOTICE

NOTE: Any damage to surrounding area that is caused by heat and/or moisture to materials that are not recommended for higher temperatures will not be covered under warranty or by the manufacturer.

THERMOSTATS

The thermostats on this dishmachine have been set at the factory. They should only be adjusted by an authorized service agent.

CHEMICAL FEEDER EQUIPMENT



CAUTION! Chlorine-based sanitizers can be detrimental to this machine if the chemical solution is too strong. See a chemical professional to ensure the dispenser is set-up correctly.

This equipment is not recommended for use with deionized water or other aggressive fluids. Use of deionized water or other aggressive fluids will result in corrosion and failure of materials and components and will void the manufacturer's warranty.

The bottom of the chemical container cannot be located any higher than 8" from the floor. If the unit is equipped with the 6" or 18" table stand, the highest position will be 14" or 26" from the floor, respectively. It is important to remember that if you decide to operate the unit in chemical-sanitizing mode, you must ensure an appropriate chlorine-based sanitizer is used in the final rinse line.

TO PREPARE CHEMICAL FEEDER PUMPS FOR OPERATION

The AVENGER HT dishmachine is supplied with detergent and rinse-aid chemical feeder pumps.

The AVENGER LT dishmachine is supplied with detergent, rinse-aid, and sanitizer chemical feeder pumps.

Locate the open ends of the chemical tubes with the tube stiffeners and place each one in the appropriate container.

- A. Red Tubing = Detergent
- B. Blue Tubing = Rinse-Aid
- C. White Tubing = Sanitizer

PRIMING CHEMICAL FEEDER PUMPS



Chemical feeder pumps need priming when the machine is first installed or if the chemical lines have been removed and air is allowed to enter.



CAUTION! Water must be in the sump and wash tank before chemicals are dispensed. Sanitizer in concentration is caustic and might cause damage without dilution.

1. Verify that the proper chemical tube stiffener inlet is in the proper container.
2. Use the prime switches located on the control panel at the bottom of the unit to prime each pump. The switches are clearly marked with which chemical feeder pump they are assigned to.
3. To prime the pumps, hold the switch in the momentary position until chemical can be observed entering the wash tank.
4. Detergent is dispensed as required during the wash cycle by the timer. The amount of detergent might need to be increased or decreased depending upon water quality and type of detergent.
5. Rinse-aid is dispensed as required into the final rinse. The amount of rinse-aid might need to be adjusted depending upon water hardness and results.
6. On the Avenger LT, sanitizer (either chlorine or iodine) is dispensed into the final rinse. The amount of sanitizer might need to be adjusted depending on the concentration and type of sanitizer used.
7. Please refer to the next page for instructions on adjusting the chemical feeder pumps on the universal timer.

WARNING: Some of the chemicals used in dishwashing may cause chemical burns if they come in contact with skin. Wear protective gear when handling these chemicals. If any skin comes in contact with these chemicals, immediately follow the instructions provided with the chemicals for treatment.

**PROGRAMMING
INSTRUCTIONS
FOR CHEMICAL
FEEDER PUMPS
(INSTALLATION
TECHNICIAN ONLY)**

To access the programming mode, the machine must be ON and idle (between cycles).

On the timer board, press and hold both the MOVE and ENTER buttons on the timer board simultaneously for two seconds.

The PROGRAM (PGM) light and light A will illuminate.

NOTE: Once in the programming mode, the MOVE button is used to scroll between the programming categories and the ENTER button is used to select the category.

Press the MOVE button to move the solid light to the desired location of FILL, RINSE AID, DETERGENT, or SANITIZER. Please note that options A, B, C and D are not adjustable outputs.

Press the ENTER button for the chosen category. Now, the (PGM) light will illuminate along with lights corresponding to the time values for the chosen category. The ACCEPT light will blink.

The PROGRAM light will illuminate.

To change the value of a parameter, use the MOVE button to illuminate the light next to the time option (time is measured in seconds). In the time categories, each second in use will light up. To deselect the option, press ENTER and the light will go off, press ENTER again and it will illuminate. Once you have set your time category, press the MOVE button until the ACCEPT light illuminates and press ENTER. This will save the changed parameters and exit the programming mode.

To change any other values, you will have to return to the programming mode. To revert back to a previous setting, you must return to that option and change the parameter back to the previous setting.

Once in the programming mode, if there have been no keypad inputs for approximately two minutes, the system will automatically exit out of the programming mode. Any changes to parameters will be saved when the programming mode is automatically exited.

The wash and drain cycles are not adjustable.

All time adjustments are in seconds. Refer to the chart on the following page for adjustable outputs.

**PROGRAMMING
INSTRUCTIONS
FOR CHEMICAL
FEEDER PUMPS
(CONTINUED)**

PGM	AVENGER HT	AVENGER LT
E	Not adjustable	Rinse-Aid
F	Rinse	Fill
G	Detergent	Sanitizer
H	Rinse-Aid	Detergent

TIMER PROGRAMMING BOARD

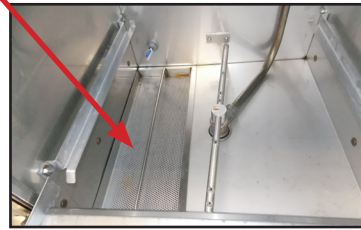
PGM		TIME IN SECONDS
	<input type="text"/>	
A	<input type="text"/>	8
B	<input type="text"/>	4
C	<input type="text"/>	2
D	<input type="text"/>	1
E	<input type="text"/>	0.8
F	<input type="text"/>	0.4
G	<input type="text"/>	0.2
H	<input type="text"/>	0.1
ACCEPT	<input type="text"/>	

MOVE

ENTER

PREPARATION Before operating the unit, verify the following:

1. Strainer is in place and clean.



2. Wash/rinse arms are screwed securely into place and end-caps are tight.



3. Wash/rinse arms rotate freely.
4. Chemical levels in chemical containers are correct.

POWER UP Before energizing the unit, ensure the "MAN. WASH/AUTO CYCLE" switch is in the "AUTO CYCLE" position. To energize the unit, turn on the power at the service breaker. The voltage should have been previously verified as being correct. If not, the voltage must be verified before energizing the unit.

FILLING THE WASH TUB 1. For the initial fill, close the door and flip the "OFF/POWER ON" switch to "POWER ON."



(Controls for LT shown.)

2. After the unit is filled, run through three cycles.
3. After the third cycle, the unit is ready for operation.

WARE PREPARATION

Proper preparation of ware will help ensure good results and fewer re-washes. If not done properly, ware might not come out clean and the efficiency of the dishmachine will be reduced. Putting unscrapped dishes into the machine affects its performance, so scraps should always be removed from ware before being loaded into a rack. Pre-rinsing and pre-soaking are good ideas, especially for silverware and casserole dishes.

Place cups and glasses upside-down in racks so they don't hold water during the cycle. The dishmachine sanitizes as well as cleans. To do this, ware must be properly prepared before being placed in the machine.

WASHING A RACK OF WARE

To wash a rack, open the door completely and slide the rack into the unit. Close the door, ensure the "MAN. WASH/AUTO CYCLE" switch is on "AUTO CYCLE," press the "Start" button, and the unit will start. After the machine has drained and the cycle light turns off, the cycle is complete.

OPERATIONAL INSPECTION

Based on use, the strainer might become clogged with soil and debris as the workday progresses. Operators should regularly inspect the strainer to ensure it has not become clogged. If clogged, it will reduce the washing capability of the machine. Instruct operators to clean out the strainer at regular intervals or as required by workload.

SHUTDOWN AND CLEANING

1. At the end of the workday, ensure the "OFF/POWER ON" switch is in the "POWER ON" position and the "MAN. WASH/AUTO CYCLE" switch is in the "AUTO CYLCE" position and close the door.



2. Flip the "OFF/POWER ON" switch to the "OFF/DRAIN" position. This will put the machine in shutdown mode which will let the machine drain completely before shutting off.



**SHUTDOWN AND
CLEANING**

3. Once the wash tub is drained and power light is off, remove the strainer.



4. Remove soil and debris from the strainer and set to the side.



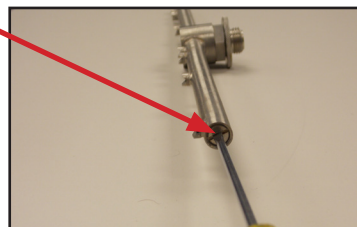
5. Unscrew the wash and rinse arms from their manifolds. Remove the end-caps and flush the arms with water. Use a brush to clean out the inside of the arms. If the nozzles appear to be clogged, use a toothpick to remove the obstruction.



6. Wipe the inside of the unit out, removing all soil and scraps.



7. Reassemble the wash/rinse arms.

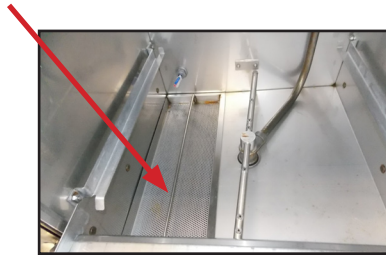


SHUTDOWN AND CLEANING

8. Replace the wash/rinse arms in the unit. The arms only need to be hand-tight; do not use tools to tighten them down.



9. Reinstall the strainer and close the door.



DELIMITING OPERATIONS

To proceed with the delime operation, follow the steps below. The tank capacities of the machine can be found in the Specifications section of this manual.

NOTICE

NOTE: *If this machine is equipped with an HTS-11 scale prevention and corrosion control device and lime is becoming a frequent problem, the cartridge needs to be replaced. To order a replacement cartridge, call the manufacturer.*

Avenger HT

1. Shut power off at the breaker and then disconnect or turn off chemical feeder pumps.
2. Remove rinse arms and place in sink with delimiting solution.
3. Follow the instructions on "Filling the Wash Tub."
4. Add delimiting solution per chemical supplier's instructions.
5. Close the door and flip the "MAN. WASH/AUTO CYCLE" switch to "MAN. WASH."
6. Run the machine for the length of time recommended by the chemical supplier.
7. Flip the "MAN. WASH/AUTO CYCLE" switch to "AUTO CYCLE."
8. Open the door and step away for 5 minutes.
9. Inspect the inside of the machine. If the machine is not delimited, run again.
10. When clean, drain and re-fill the machine.
11. Run two cycles in AUTO CYCLE to remove residual delimiting solution.
12. Flush rinse arms with water and replace.

Avenger LT

1. Follow the instructions on "Filling the Wash Tub."
2. Add delimiting solution per chemical supplier's instructions.
3. Close the door and flip the "MAN. WASH/AUTO CYCLE" switch to "MAN. WASH."
4. Run the machine for the length of time recommended by the chemical supplier.
5. Flip the "MAN. WASH/AUTO CYCLE" switch to "AUTO CYCLE."
6. Open the door and step away for 5 minutes.
7. Inspect the inside of the machine. If the machine is not delimited, run again.
8. When clean, drain and re-fill the machine.
9. Run two cycles in AUTO CYCLE to remove residual delimiting solution.

This equipment is not recommended for use with deionized water or other aggressive fluids. Use of deionized water or other aggressive fluids will result in corrosion and failure of materials and components. Use of deionized water or other aggressive fluids will void the manufacturer's warranty.

DETERGENT CONTROL

Detergent usage and water hardness are two factors that contribute greatly to how efficiently this dishmachine will operate. Using detergent in the proper amount can become a source of substantial savings. A qualified water treatment specialist can determine what is needed for maximum efficiency from the detergent.

1. Hard water greatly affects the performance of the dishmachine, causing the amount of detergent required for washing to increase. If the machine is installed in an area with hard water, the manufacturer recommends the installation of water treatment equipment.
2. Deposited solids from hard water can cause spotting that will not be removed with a drying agent. Treated water will reduce this occurrence.
3. Treated water may not be suitable for use in other areas of operation and it may be necessary to install a water treatment unit for the water going to the dishmachine only. Discuss this option with a qualified water treatment specialist.
4. Dishmachine operators should be properly trained on how much detergent is to be used per cycle. Meet with a water treatment specialist and detergent vendor to discuss a complete training program for operators.
5. Avenger dishmachines require that chemicals be provided for proper operation and sanitization. Contact a chemical supplier with any questions.
6. Water temperature is an important factor in ensuring that the dishmachine functions properly, and the machine's data plate details what the minimum temperatures must be for the incoming water supply, the wash tank, and the rinse tank. If minimum requirements are not met, there is a possibility that dishes will not be clean or sanitized.
7. Instruct dishmachine operators to observe the required temperatures and to report when they fall below the minimum allowed. A loss of temperature can indicate a larger problem.



**PREVENTATIVE
MAINTENANCE**

Jackson highly recommends that any maintenance and repairs not specifically discussed in this manual be performed only by QUALIFIED SERVICE PERSONNEL. Performing maintenance on your dishmachine may void your warranty, lead to larger problems, or even cause harm to the operator. So if you have a question or concern, do not hesitate to contact a QUALIFIED SERVICE AGENCY.

By following the operating and cleaning instructions in this manual, you should get the most efficient results from your machine. As a reminder, here are some steps to take to ensure that you are using the dishmachine the way it was designed to work:



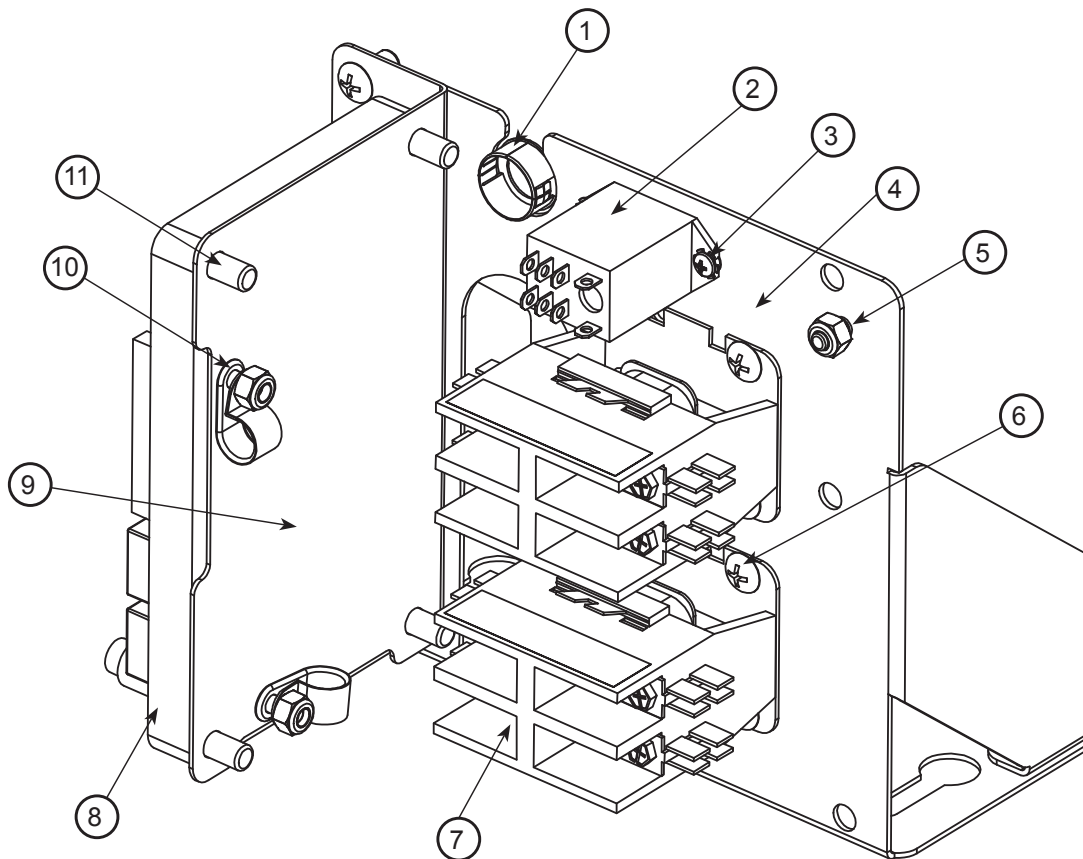
1. Ensure that the water temperatures match those listed on the machine data plate. There can be a variety of reasons why your water temperature could be too low.
2. Ensure that all strainers are clean and securely in place before operating the machine. When cleaning out strainers, do NOT beat them on waste cans. Wipe out strainers with a rag and rinse under a faucet if necessary. Use a toothpick to dislodge any stubborn debris.
3. Ensure that all wash/rinse arms are secure in the machine before operating.
4. Ensure that the standpipe is in position before operating.
5. Remove as much soil from dishes by hand as possible before loading into racks.
6. Do not overfill racks.
7. Ensure that glasses are placed upside-down in the rack.
8. Ensure that all chemicals being injected into machine have been verified at the correct concentrations.
9. Clean out the machine at the end of every workday per the Shutdown and Cleaning section of this manual.
10. Follow all safety procedures, whether listed in this manual or put forth by local, state, or national codes/regulations.



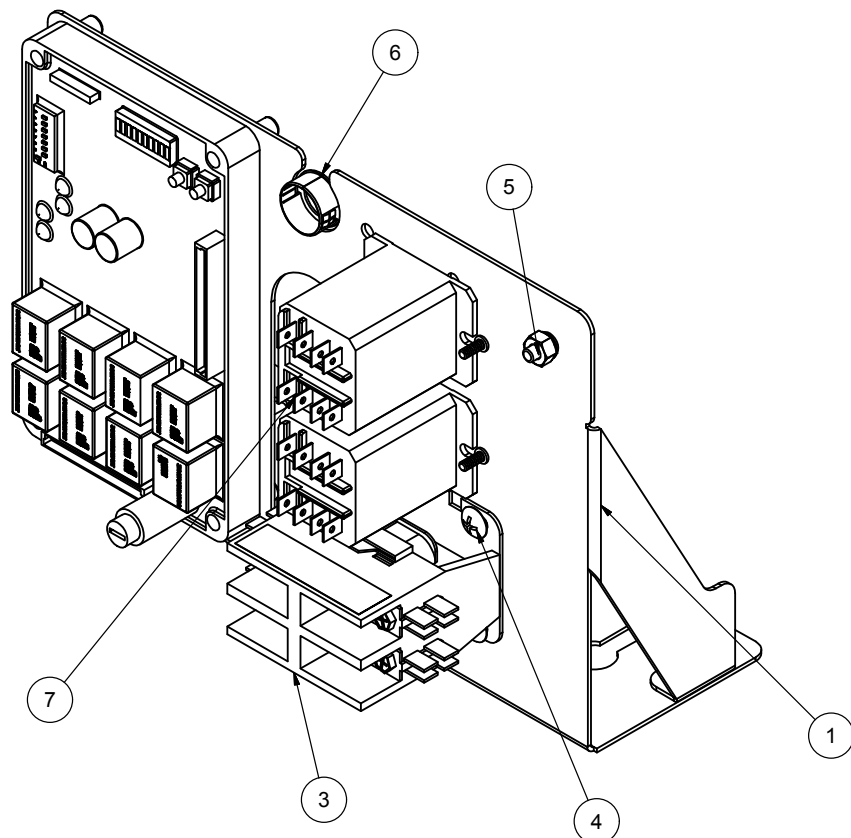
WARNING: Inspection, testing, and repair of electrical equipment should only be performed by qualified service personnel. Certain procedures in this section require electrical tests or measurements while power is applied to the machine. Exercise extreme caution at all times. If test points are not easily accessible, disconnect power, attach test equipment, and reapply power to test. When replacing electrical parts, disconnect power at source circuit breaker.

PROBLEM	POSSIBLE CAUSE	REMEDY
Water overflow from bottom of door.	<ol style="list-style-type: none"> 1. Clogged drain. 2. Machine not level. 3. Excessive inlet pressure. 4. Detergent foaming. 5. Wash/rinse arm end-cap missing. 	<ol style="list-style-type: none"> 1. Remove obstruction. 2. Level machine or increase height to the front. 3. Install pressure regulator or adjust if one is present. Ensure flow meets data plate specification. 4. Reduce detergent quantity. 5. Replace.
Wash motor doesn't operate on delime wash.	<ol style="list-style-type: none"> 1. Loose or broken wires. 2. Defective "MAN. WASH/AUTO CYCLE" switch. 3. Defective motor starting relay. 4. Machine in FAULT mode and locked out. 	<ol style="list-style-type: none"> 1. Reconnect or replace wires in motor. 2. Verify "MAN. WASH/AUTO CYCLE" switch triggers input on PLC. If not, check wiring/replace membrane. 3. Replace. 4. Review fault screen for active faults.
No water comes through the arms when the "MAN. WASH/AUTO CYCLE" switch is depressed.	<ol style="list-style-type: none"> 1. Water not turned on. 2. Defective solenoid valve 	<ol style="list-style-type: none"> 1. Turn water on. 2. Replace solenoid valve.
Little or no water coming through the wash/rinse assemblies.	<ol style="list-style-type: none"> 1. Limed-up heads or piping. 2. Low water pressure. 	<ol style="list-style-type: none"> 1. Delime heads. 2. Adjust pressure regulator (not supplied), or increase pipe size to machine.
Rinse water runs continuously with breaker turned off.	<ol style="list-style-type: none"> 1. Defective plunger in solenoid valve. 2. Defective diaphragm in solenoid valve. 	<ol style="list-style-type: none"> 1. Replace. 2. Replace diaphragm.

PROBLEM	POSSIBLE CAUSE	REMEDY
Wash temperature not at required temperature range.	<ol style="list-style-type: none"> 1. Water level low. 2. RTD setpoint too slow. 3. Defective RTD. 4. Wash heater defective. 5. Defective heater contactor R1. 	<ol style="list-style-type: none"> 1. Check water level. If low, run new fill cycle. 2. Check fault screen. Adjust wash temperature setpoint 3. Replace. 4. Replace heater element. 5. Replace.
Rinse water not at required temperature range.	<ol style="list-style-type: none"> 1. Incoming rinse water does not meet minimum criteria indicated on machine data plate. 2. RTD is defective. 3. Rinse heaters damaged. 4. Setpoint screens set low. 	<ol style="list-style-type: none"> 1. Adjust as required. 2. Replace if necessary. 3. Check amperages. Replace if necessary. 4. Adjust rinse tank setpoint.
Machine doesn't drain when power button is pressed.	<ol style="list-style-type: none"> 1. Drain clogged. 2. Defective drain valve. 	<ol style="list-style-type: none"> 1. Remove obstruction. 2. Replace.
No indication of pressure.	<ol style="list-style-type: none"> 1. Water turned off. 2. Transducer disconnected. 3. Pressure transducer defective. 	<ol style="list-style-type: none"> 1. Turn water on. 2. Verify wiring. 3. Replace pressure transducer.



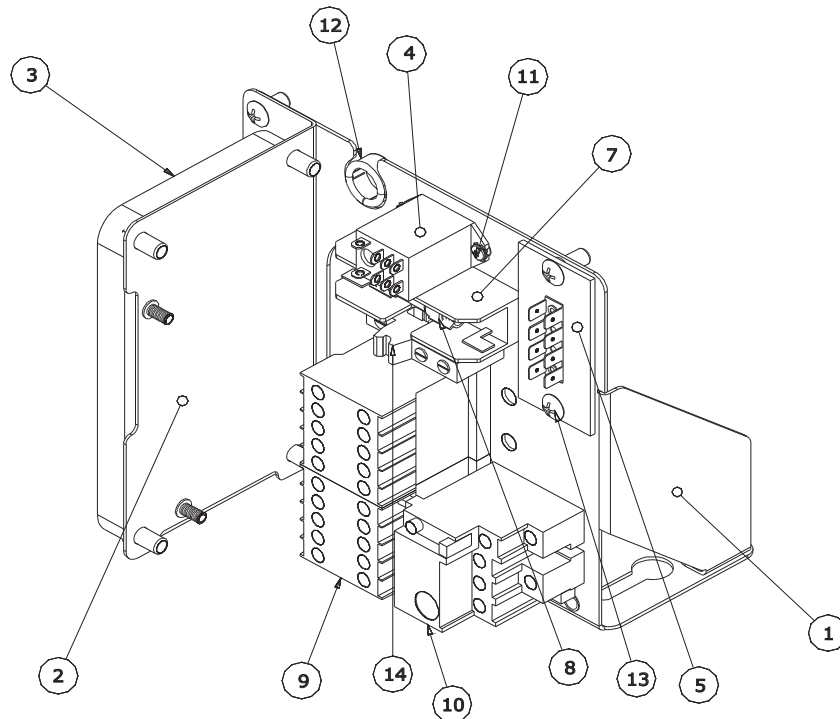
ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Heyco Open/Closed Busing .875	5975-003-35-21
2	1	Relay, Omron	05945-111-89-75
3	2	Screw, 6-32 X 3/8	05305-002-25-91
4	1	Control Panel Weldment	05700-003-31-48
5	3	Locknut, Nylon	05310-373-01-00
6	8	Screw, 10-32 X 3/8	05305-173-12-00
7	2	Contactator, 240V	05945-002-74-20
8	1	Universal Timer	05945-003-33-09
	1	Fused Universal Timer (not shown)	05945-003-75-23
9	1	Timer Mounting Bracket (Avenger HT Only)	05700-003-36-05
10	1	P Clamp 1/4"	05975-002-61-42
	1	Locknut. 6-32 w/ Nylon Insert	05310-373-03-00
11	4	Screw, 10-32 X 1	05305-002-19-42



ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	W- Control Panel LT with Heater	05700-003-45-73
2	1	Timer, Universal Polytron	05945-003-33-09
3	2	Contactors, 115V, 30A	05945-109-05-69
4	1	Screw, 10-32 3/8" Long Phil Truss	05700-003-31-48
5	3	Locknut, 10 -24 S/S Hex w/ Nylon Ins.	05305-173-12-00
6	8	Heyco Open/Closed Busing .875	5975-003-35-21
7	2	Relay, 20A	5945-002-90-51

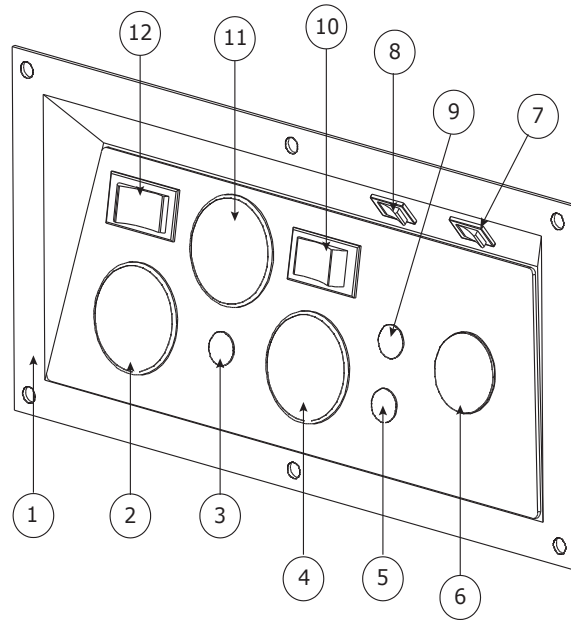
AVENGER HT 480V CONTROL PANEL

PARTS



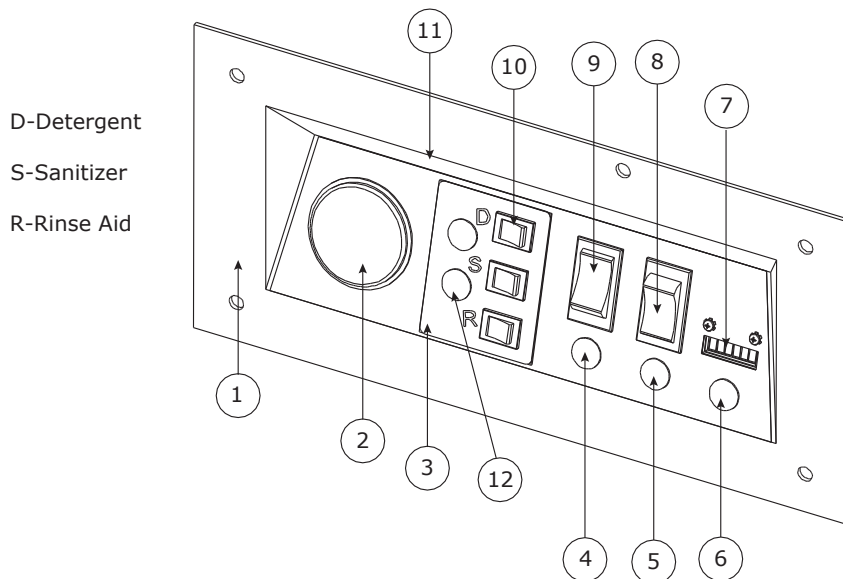
ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Electrical Panel Weldment	05700-003-37-46
2	1	Timer, Bracket Assembly	05700-003-36-05
3	1	Timer, Universal	05945-003-33-09
*	1	Fused Universal Timer (Alternate Construction)	05945-003-75-23
	1	Fuse	05920-003-75-24
	1	9 Wire Harness	05999-003-75-81
	1	10 Wire Harness	05999-003-87-88
4	1	Relay	05945-002-47-41
5	1	Terminal Board	05940-021-94-85
6	1	Track, Terminal Block	05700-003-37-49
7	1	Fuse Holder	05920-011-72-89
8	1	Fuse, 1/4 AMP	05920-002-75-95
9	2	Contactor	05945-111-60-07
10	1	Overload	05945-111-60-08
11	2	Screw, 6-32 X 3/8" w/ External T Washer	05305-002-25-91
12	1	Open/Closed Bushing, 7/8"	05975-003-35-21
13	6	Screw, 10-32 X 3/8" Long Phil Truss Head	05305-173-12-00
14	2	End Clamp	05950-111-60-30
15	1	Transformer (not shown)	05950-011-50-70

AVENGER HT

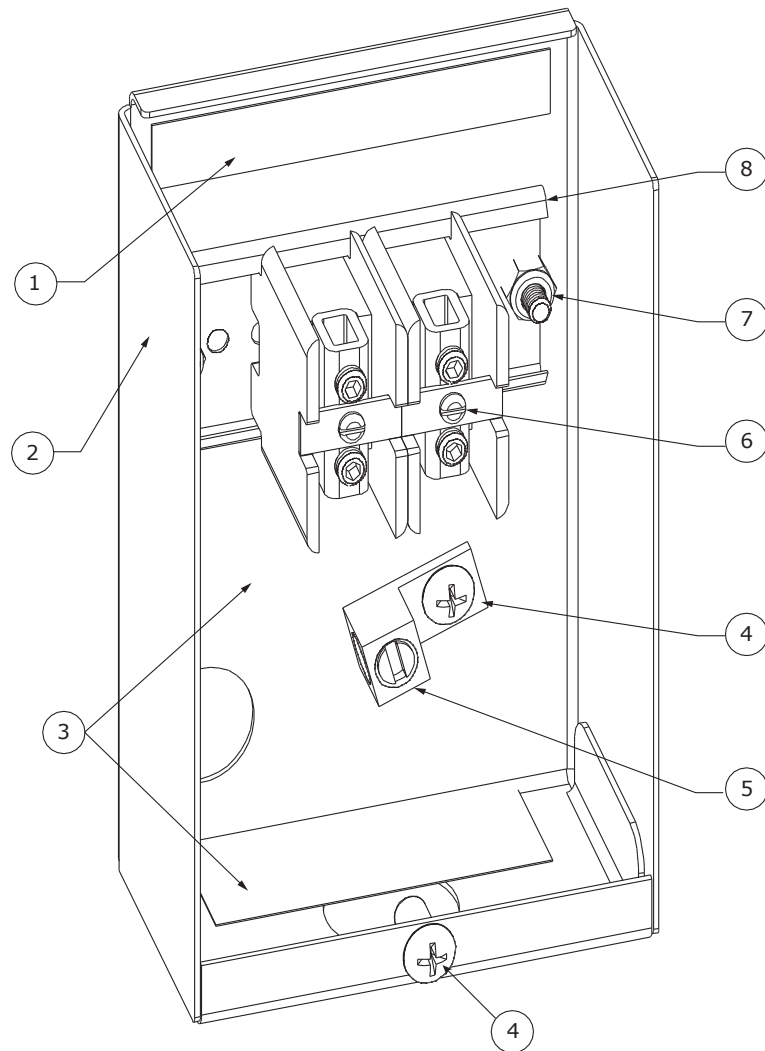


ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Control Panel	09330-003-31-66
	1	Decal, Control Panel	09905-003-31-65
	6	Locknut, 1/4"-20 S/S Hex w/ Nylon Insert	05310-374-01-00
2	1	Thermometer, 48" Rinse	06685-111-68-48
3	1	Light, Amber	05945-111-44-44
4	1	Thermometer, 96" Wash	06685-111-68-49
5	1	Light, Red	05945-111-44-45
6	1	Window Plug	05975-003-31-72
7	1	Switch, Red	05930-011-49-54
8	1	Switch, Detergent	05930-011-49-54
9	1	Light, Green	05945-111-44-43
10	1	Switch, On-Off	05930-301-49-00
11	1	Gauge, 0-100 PSI with Green Zone	06680-011-86-42
	1	Bell Adapter, 1/4 NPT X 1/8 FNPT	04730-003-33-02
	1	Hose, Pressure Gauge	04730-003-33-39
12	1	Switch, Auto-Manual	05930-011-49-55
**	1	Kick Plate Weldment (not shown)	05700-003-32-91
**	1	Complete Control Panel Assembly	05700-003-31-64
**	1	Wire Harness	05999-003-34-61

AVENGER LT

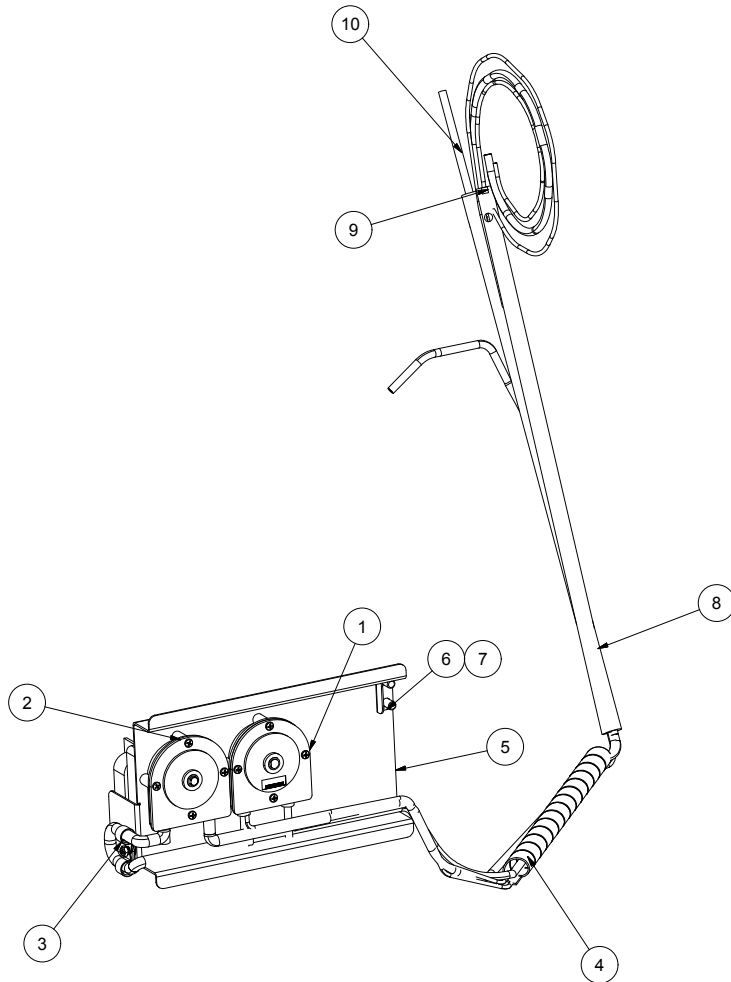


ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Control Panel	09330-041-73-90
	1	Decal, Control Panel	09905-031-73-95
	6	Locknut, 1/4"-20 S/S Hex w/ Nylon Insert	05310-374-01-00
2	1	Thermometer, 48" Rinse	06685-111-68-48
3	1	Plate, Switch Mounting	05700-011-80-40
	1	Decal, Prime Switch	09905-011-49-52
	1	Locknut, 6-32 Hex w/ Nylon Insert	05310-373-03-00
4	1	Light, Red	05945-111-44-45
5	1	Light, Amber	05945-111-44-44
6	1	Light, Green	05945-111-44-43
7	1	Counter, 115V	05990-111-35-38
	2	Screw, 4-40 X 1/4" Phillips Pan Head	05305-002-32-38
9	1	Switch, Auto-Manual	05930-011-49-55
10	3	Switch, On-Off	05930-301-49-00
11	2	Buzzer, 115V (not shown)	05990-003-36-12
	2	Screw, 6-32 X 3/8 Pan Phillips Head	05305-171-07-00
12	1	Light, Red	05945-504-07-18
**	1	Kick Plate Weldment (not shown)	05700-003-53-14
**	1	Complete Control Panel Assembly	05700-003-34-23
**	1	Wire Harness	05999-003-34-62



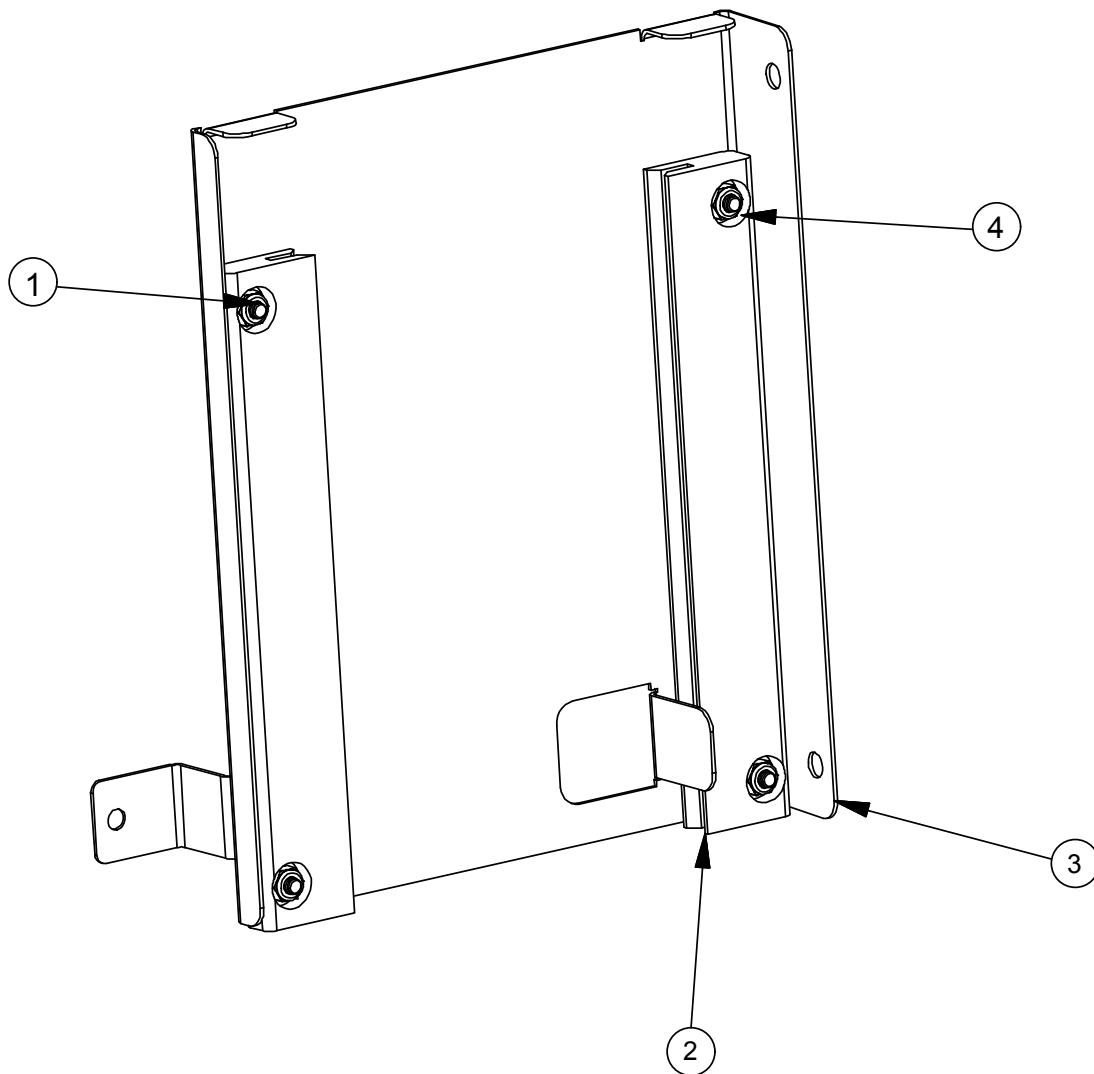
ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Decal, Power Connections	09905-011-47-35
2	1	Terminal Block Box	05700-003-27-69
	1	Terminal Box Cover (not shown)	05700-003-27-70
3	1	Decal, Copper Conductors	09905-011-62-72
4	2	Screw, 10-32 X 1/2"	05305-011-39-36
5	1	Ground Lug	05940-200-76-00
6	2 3	Terminal block 480V	05940-500-02-19
7	1	Locknut, 10-24 S/S Hex with Nylon Insert	05310-373-01-00
8	1	Terminal Block Track	05700-000-43-60

**Complete Chemical Feeder
Pump Assembly
05700-003-32-03**

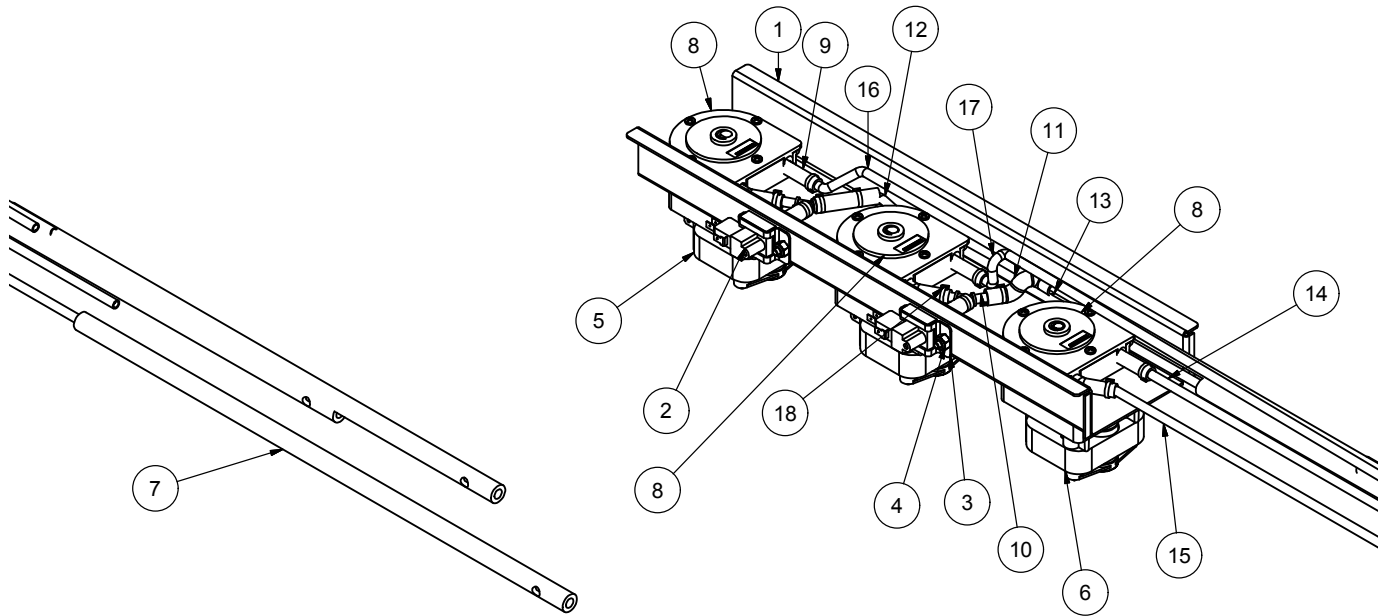


ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	A-Peri Pump, 14 RPM	05700-002-72-82
2	1	A-Peri Pump, 36 PRM 240V/Red Tygoprene	05700-003-78-74
3	2	Strap, Nylon Loop	04320-002-71-22
4	1	CW 750 PE UV Black 8924 12"	05700-003-33-63
5	1	W Peripump Slide	05700-003-33-48
6	1	A-Stop Bracket	05700-003-36-24
7	2	Screw, 10-32 X 3/8" Long Phil Truss	05305-173-12-00
8	2	Tube Stiffener	05700-003-33-60
9	1	Tie, 4" PLT 1-M Panduit Cable	05700-003-33-58
10	1	A-Tube, Blue 1/4 X 22" Polyethylene	05700-011-86-78

Complete Avenger HT Peripump Track Assembly
05700-003-33-46

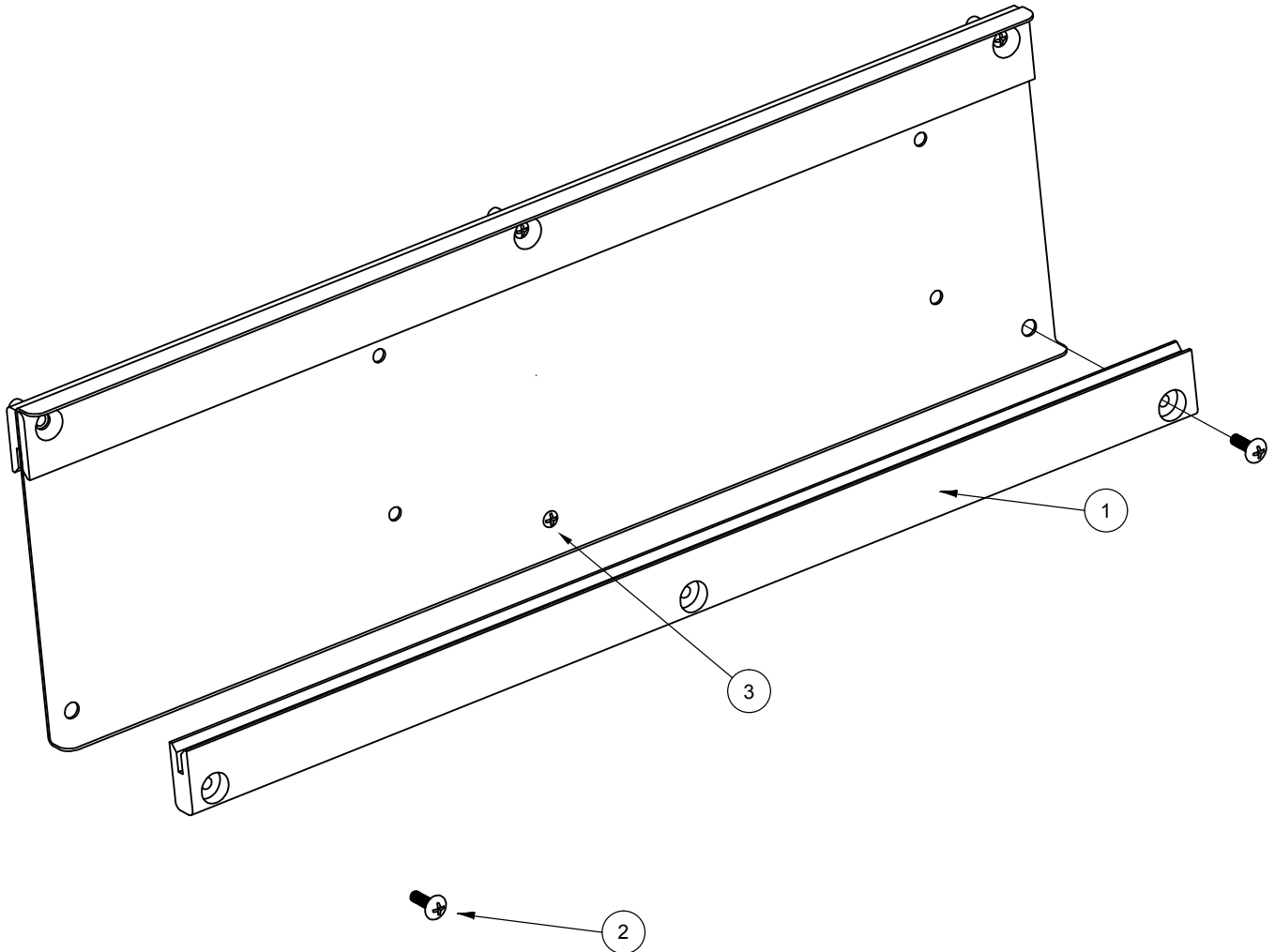


ITEM	QTY	DESCRIPTION	PART NUMBER
1	4	Screw, 10-32 X 5/8" PH Truss HD	05305-003-02-12
2	2	Track, Peripump HT	05700-003-33-44
3	1	A-Track Mount HT	05700-003-33-52
4	4	Locknut, 10-32 With Nylon Insert	05310-373-02-00

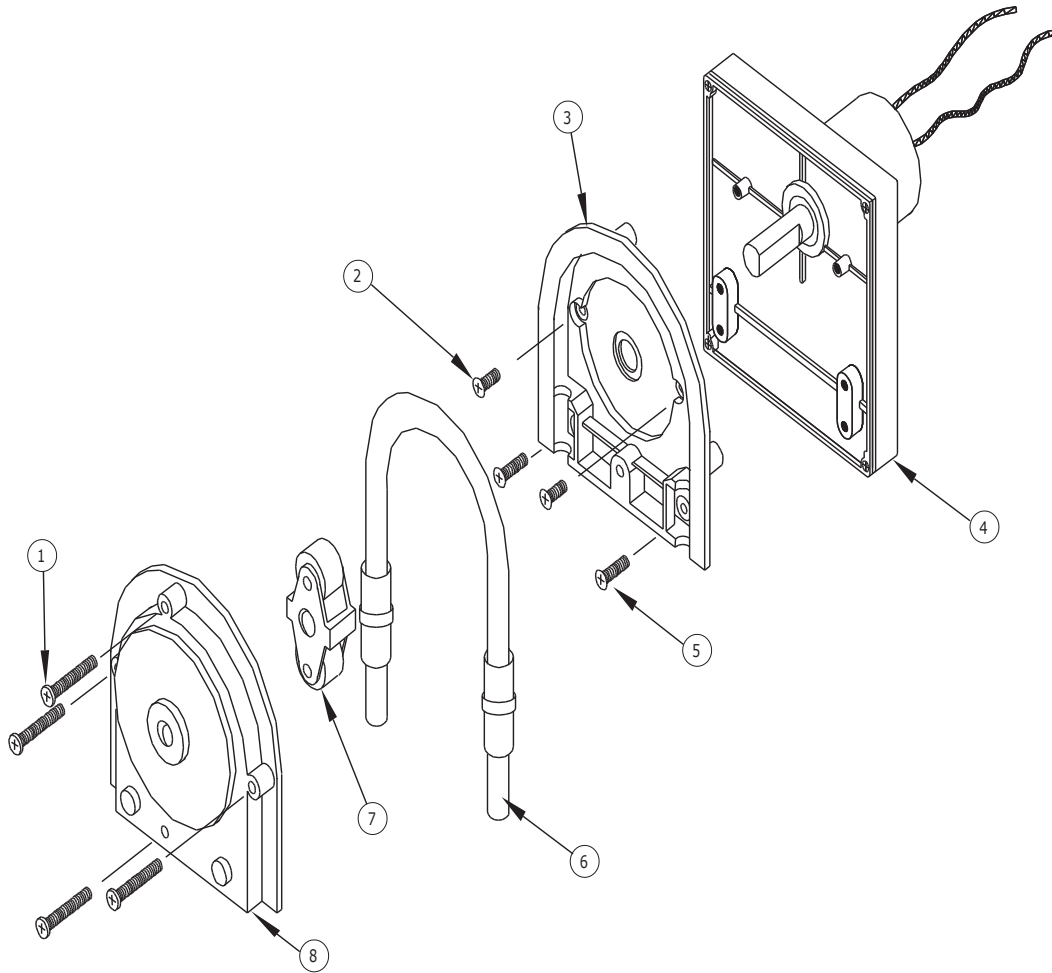


ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	W-Peri Pump Channel	05700-003-53-25
2		Switich, Vaccum	06685-003-36-13
3		F-Pressure Switich Bracket	05700-003-53-03
4		Lockenut, 10-24 S/S Hex W/ Nylon Inserts	05310-373-01-00
5		Motor, 105-3036-2 36 RPM	04320-111-35-14
6		Motor, 14 RPM Peri Pump	04320-111-35-13
7		A-Kit, Peri Pump Assy W/ White Roller	04320-002-83-90
8		Tube Stiffener	05700-002-66-49
9		Tube, Tygoprene XL60 3/16 X 8 9657-25	05700-003-22-89
10		Wye, 1/4" Barbed PVDF	04730-003-36-14
11		Tubing, Clear 5/16 ID	04710-003-53-26
12		A-Tubing, 1/4 X 100 Red	05700-003-03-45
13		A-Tubing, 1/4 X 100 Long White	05700-003-20-67
14		A-Tube, 1/4 OD X 48 Blue Plastic	05700-002-62-11
15		A-Tubing, 1/4 X 100 Long Blue	05700-003-20-68
16		A-Tube, 1/4 OD X 48 Red Plastic	05700-002-62-12
17		A-Tubing, 1/4 X 48 White Plastic	05700-002-62-13
18		Tie, 4" PLT1M-M Panduit Cable	05945-602-01-16

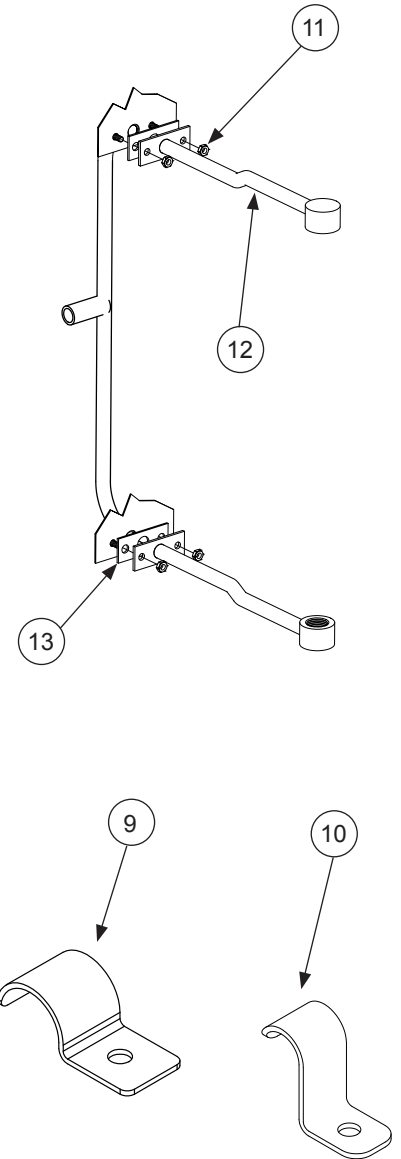
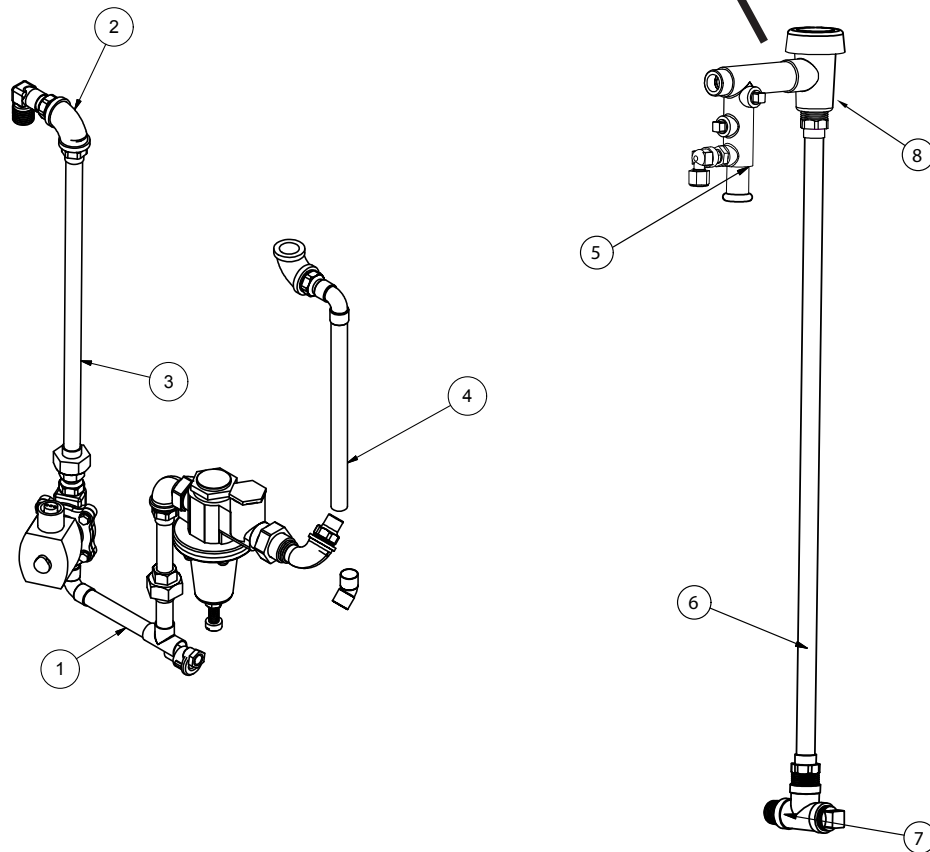
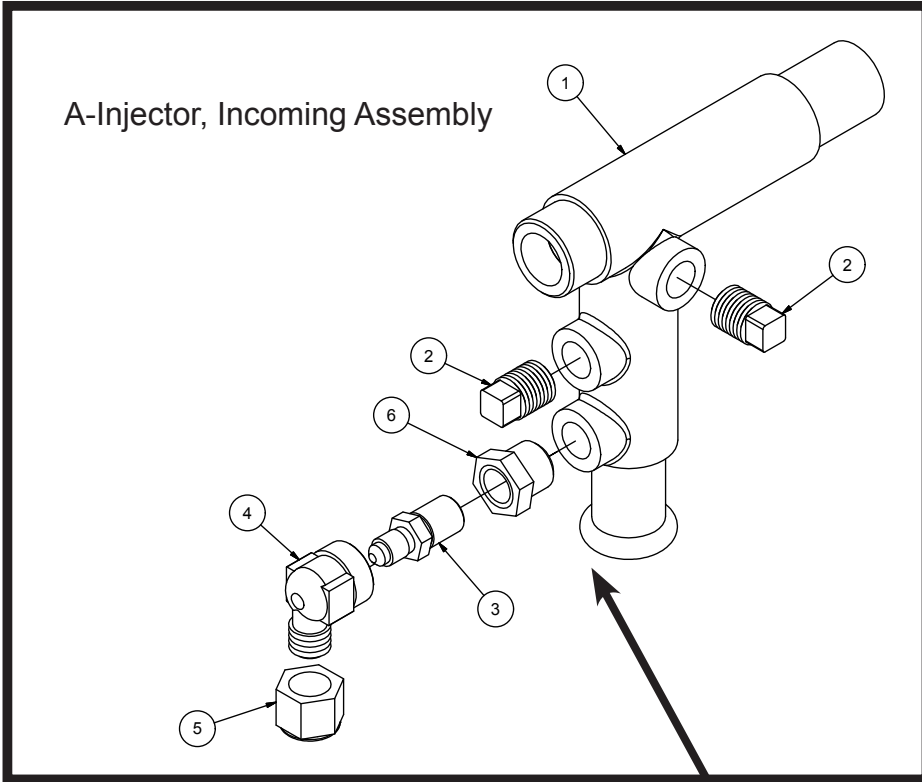
Complete Avenger LT Peripump Track Assembly
05700-003-33-31



ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Bracket, Track Mounting	05700-003-33-30
2	2	Track, Peripump	05700-003-33-29
3	6	Screw, 10-32 X 5/8" Truss Head	05305-003-02-12



ITEM	QTY	DESCRIPTION	PART NUMBER
1	4	Screw, 6-32 X 3/4" Phillips Pan Head	05305-011-37-05
2	2	Screw, 8-32 X 3/8" Phillips Pan Head	05305-011-37-07
3	1	Rear Housing	04320-111-37-09
4	1	Motor, 14 RPM 115V Rinse Aid Feeder Pump	04320-111-35-13
	1	Motor, 14 RPM 240V Rinse Aid Feeder Pump	04320-111-47-46
	1	Motor, 36 RPM 115V Detergent/Sanitizer Feeder Pump	04320-111-35-14
	1	Motor, 36 RPM 240V Detergent/Sanitizer Feeder Pump	04320-111-47-47
5	2	Screw, 8-32 X 1/2" Phillips Pan Head	05305-011-37-06
6	1	Tygoprene Tube	05700-03-22-89
7	1	Roller, Black	04320-111-65-27
	1	Roller, White	04320-002-82-28
8	1	Front Housing	04320-111-37-08



A-INJECTOR, INCOMING ASSEMBLY

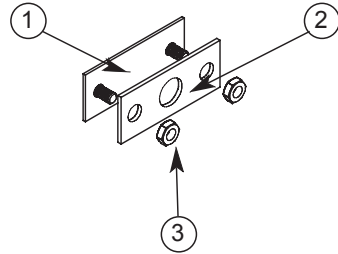
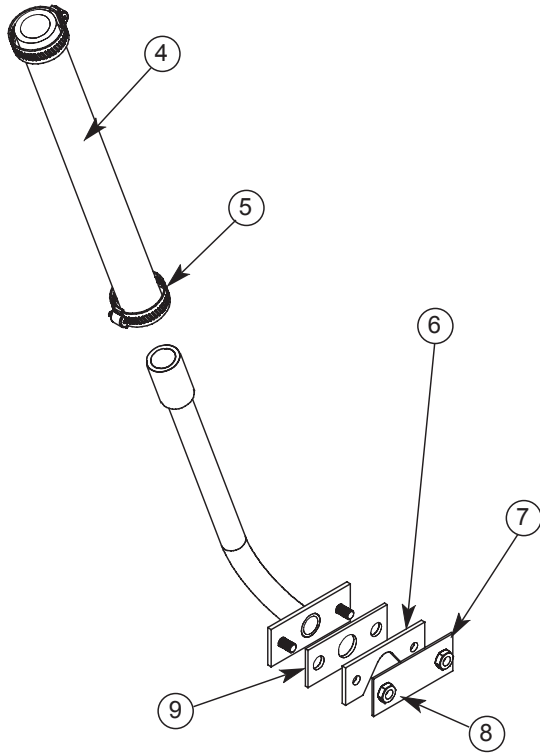
ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	W-Weld, Injector Machined	05700-031-41-83
2	2	Plug, 1/4 211 P-4 Brass	04730-209-01-00
3	1	Valve, Check	04820-111-51-14
4	1	Ftg, Outlet Elbow (ECO9218-8044)	04820-111-51-18
5	1	Nut, Tube 1/8PP Jaco P-0-2-SPEC Ecolab #92008002	04730-011-59-45
6	1	Bushing, 1/4 X 1/8 Stainless	04730-003-05-61

NOTE:
USE TEFLON TAPE ON THREADS, DO NOT USE PIPE DOPE

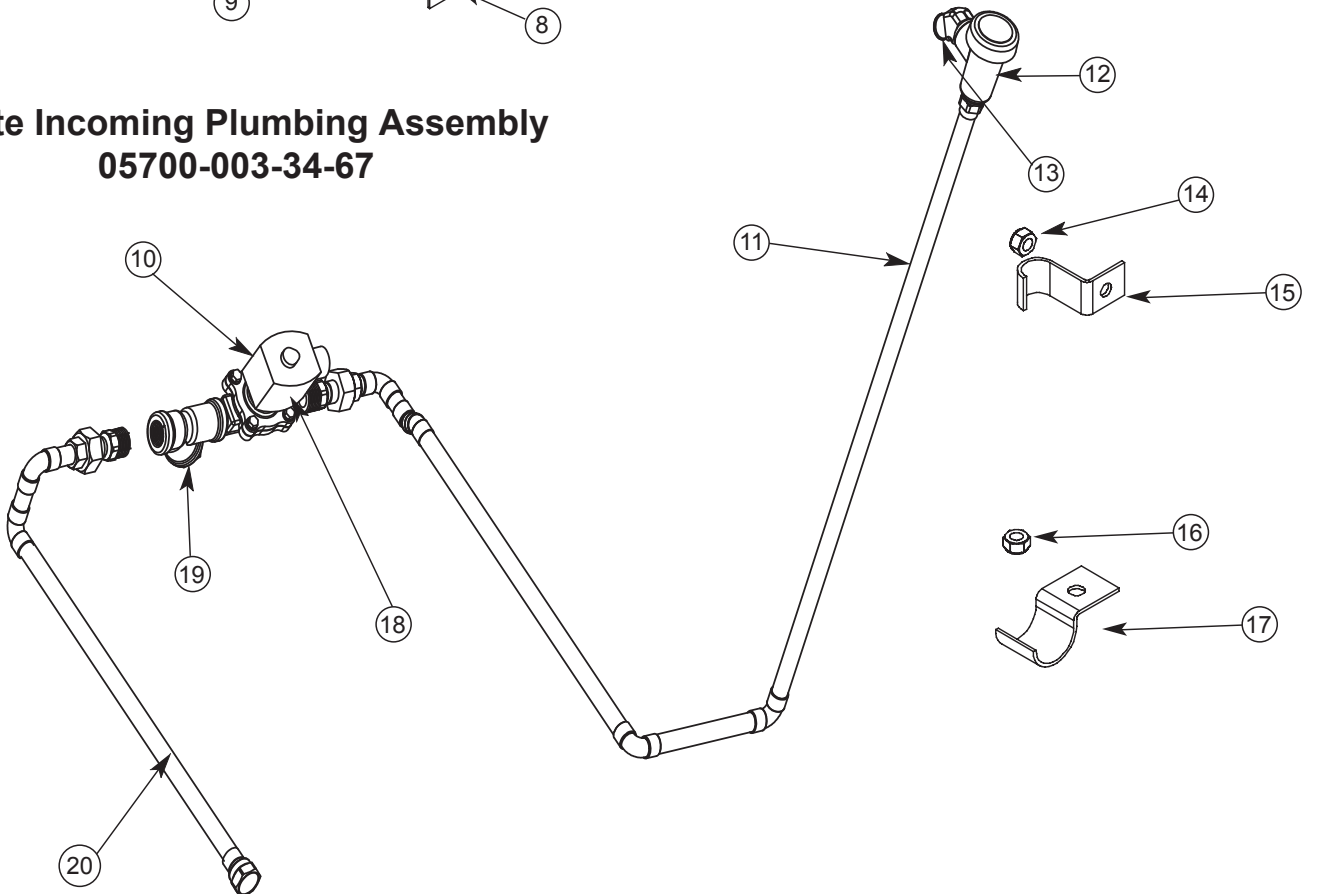
PLUMBING ASSEMBLIES

ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	1/2 " Plumbing Section	05700-003-32-17
2	1	A-Plumbing, Inlet Booter	05700-003-33-97
3	1	A-Plumbing, Inlet Vavle-Booster	05700-003-33-98
4	1	A-Plumbing, Inlet Hook-Up	05700-003-33-99
5	1	A-Injector, Incoming Assembly	05700-003-22-01
6	1	Assy, Avenger HT Vaccum Break	05700-003-32-15
7	1	Vac BRKR 1/2 Brass Bon.EDP-0336402	04820-003-06-13
8	1	Nipple-1/2 Close Brass	04730-207-15-00
9	2	Clamp, Pipe	05700-000-35-05
10	1	Clamp, Pipe	05700-011-38-62
11	2	Lock Nut 1/4-20 S/S	05310-374-01-00
12	2	Rinse Hub Weldment	05700-021-38-31
13	2	Rinse Gasket	05330-111-42-81

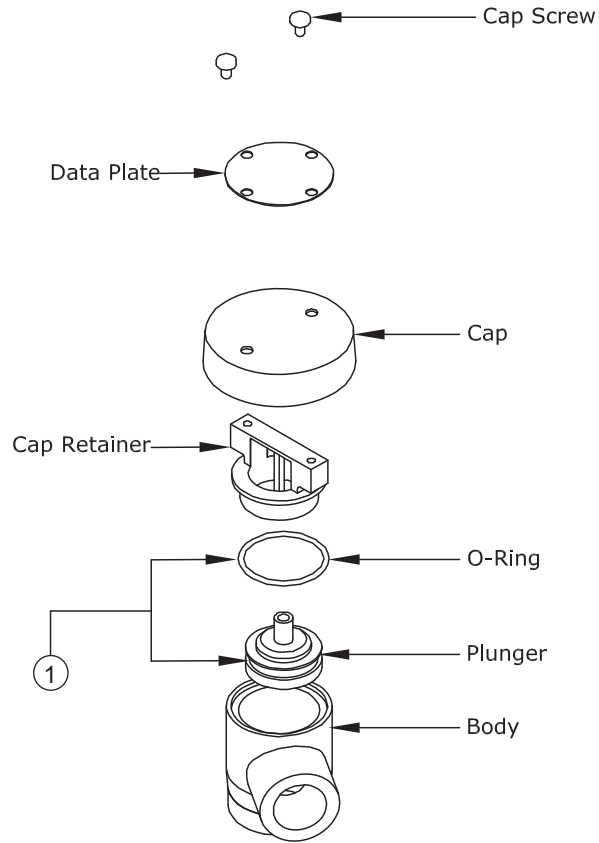
Connects to
45 Deg. Elbow



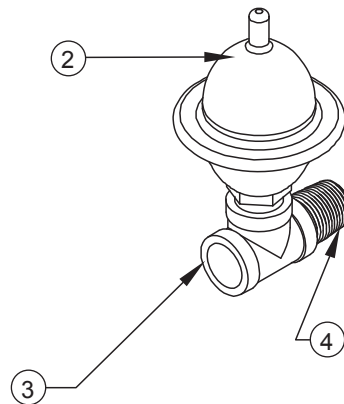
**Complete Incoming Plumbing Assembly
05700-003-34-67**



ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Plate, Rinse Weldment	05700-011-82-73
2	1	Gasket, Rinse	05330-111-42-81
3	2	Locknut, 1/4"-20 S/S Hex w/ Nylon Insert	05310-374-01-00
4	1	Injector hose, 3/4" x 11"	05700-003-29-68
5	2	Clamp, Hose	04730-719-06-09
6	1	Plate, Deflector	05700-002-62-49
7	1	Plate, Rinse	05700-011-82-86
8	2	Locknut, 1/4"-20 S/S Hex w/Nylon Insert	05310-374-01-00
9	1	Gasket, Rinse	05330-111-42-81
10	1	Incoming Plumbing Assembly	05700-003-34-66
11	1	Vacuum Breaker Tubing Assembly	05700-003-34-36
12	1	Vacuum Breaker	04820-003-06-13
13	1	Elbow, 45° 1/2" NPT x 3/4" Hose	04730-003-29-22
14	1	Locknut, 1/4"-20 Hex w/Nylon Insert	05310-374-01-00
15	1	Clamp, Pipe	05700-011-38-62
16	1	Locknut, 1/4"-20 Hex w/Nylon Insert	05310-374-01-00
17	2	Clamp, Pipe	05700-000-35-05
18	1	Valve, Solenoid 1/2" 110 Volt	04810-003-71-55
19	1	Y-Strainer	04730-217-01-00
20	1	Incoming Connection Plumbing	05700-003-34-65



Complete Vacuum Breaker Assembly

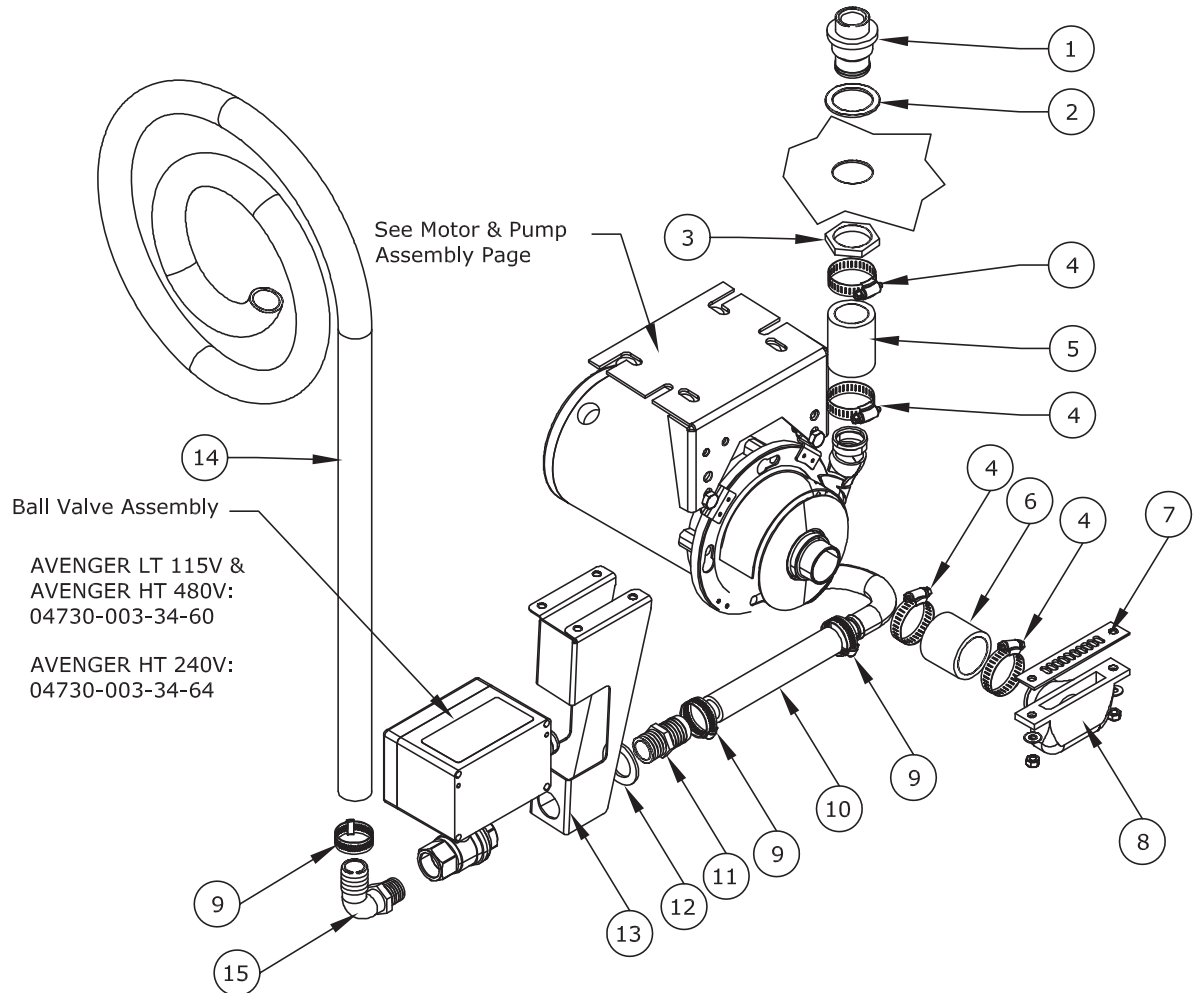
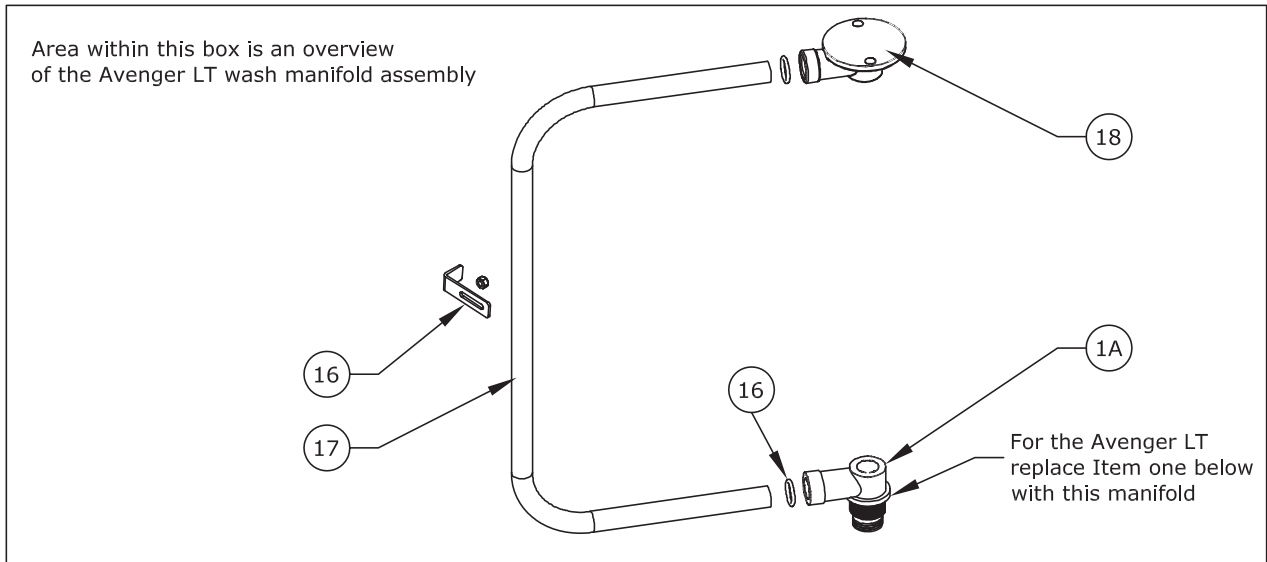


VACUUM BREAKER & WATER ARRESTOR

PARTS

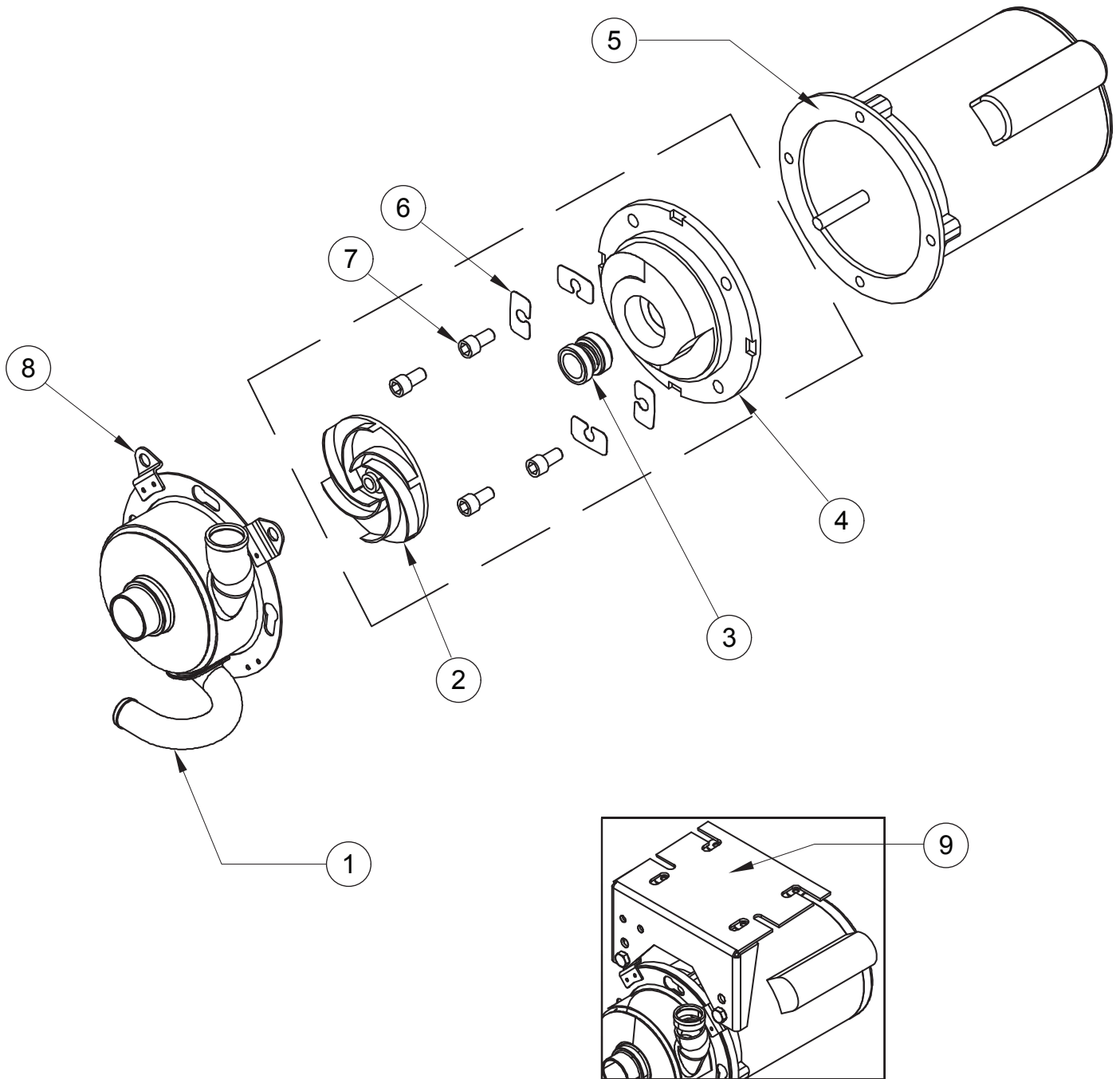
ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Components of Repair Kit	06401-003-06-23
		Complete Vacuum Breaker Assembly 1/2" NPT	04820-003-06-13
2		Water Hammer Arrestor	05700-002-64-67
3	1	Tee 1/2" X 1/2" 1/2"	04730-211-27-00
4	1	Close Nipple 1/2" NPT	04730-207-15-00

WASH MOTOR/DRAIN PLUMBING/AVENGER LT WASH MANIFOLD ASSEMBLY



WASH MOTOR/DRAIN PLUMBING/AVENGER LT WASH MANIFOLD ASSEMBLY

ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Hub, Discharge Machine (Avenger HT Shown)	05700-021-37-90
1A	1	Lower, Wash Manifold (Avenger LT)	05700-021-52-80
2	1	Gasket, Manifold	05330-200-23-00
3	1	Nut, Jam 1-1/2" -12 NPT	05700-000-86-23
4	4	Hose Clamp, 1-5/16"-2 1/4" #28	04730-719-01-37
5		Hose, 1-1/4" X 2-1/4" Reinforced	05700-011-44-48
6	1	Hose, Bottom Manifold Pump	05700-001-22-92
7		Gasket, Suction Adaptor	05330-003-32-82
8	1 2 3	Casting, Suction Adaptor Washer, S/S 1/4"-20 I.D. Locknut, 1/4"-20 S/S	09515-031-39-86 05311-174-01-00 05310-374-01-00
9		Clamp, 3/16" to 1-1/2"	04730-719-06-09
10		Hose, 8" Straight Drain	04720-003-27-95
11		Hosebarb, 1"X 3/4" NPT Polypropylene	04730-011-65-86
12		Spacer, Drain Valve	05700-003-31-93
13		Bracket, Drain Valve Support	05700-003-31-74
14		Hose, 1" I.D. X Ten Feet Long	05700-011-39-72
15		Hose barb, 90 Degree 1" X 3/4" NPT	04730-011-65-87
16		O-Ring, Manifold	05330-111-35-15
17		Tube, Wash Manifold	05700-002-13-75
18		Upper Wash Manifold	05700-031-34-82
19		Bracket, Manifold Tube Positioning Locknut 1/4"-20 S/S	05700-011-34-63 05310-374-01-00



Complete Pump & Motor Assembly, 60 HZ With Bracket
05700-003-31-57

Complete Pump & Motor Assembly, 60 HZ No Bracket
06105-002-72-75

Pump Only Assembly, 60 HZ (Area indicated within box, Casing is included)
05700-002-79-50

Complete Pump & Motor Assembly, 480V 60 HZ With Bracket
05700-003-52-80

Complete Pump & Motor Assembly, 480V 60 HZ No Bracket
06105-003-52-78

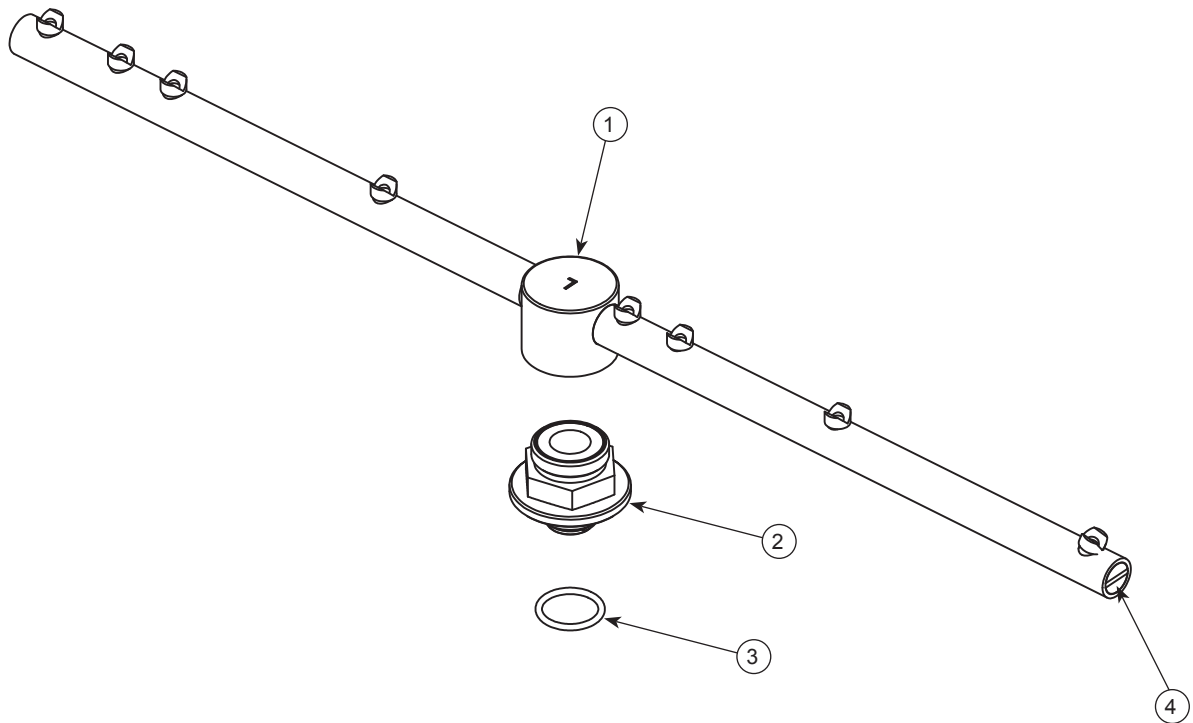
ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Pump Casing S/S, 60 HZ	05700-002-85-00
2	1	Impeller Assembly, 60 HZ	05700-002-81-86
3	1	Mechanical Seal, 60 HZ	05330-002-34-22
4	1	Seal Plate, 60 HZ	05700-002-81-87
	1	Case O-Ring, 60 HZ	05330-002-81-83
	1	Drain Plug (Not Shown)	04730-002-81-89
5	1	Motor Only, 208-230V, 60 HZ	06105-002-79-61
	1	Motor Only, 460V, 60 HZ	06105-003-52-64
6	1	Shim Kit	05700-002-82-58
7	1	Case Capscrew	05305-002-81-88
8	2	Bolt, 3 /8"	05311-276-03-00
	2	Lock washer, 3 /8"	05311-276-01-00
	2	Nut Hex, 3 /8"-16	05310-276-01-00
9	1	Mounting Bracket	05700-003-31-58

COMPLETE WASH ARM ASSEMBLY

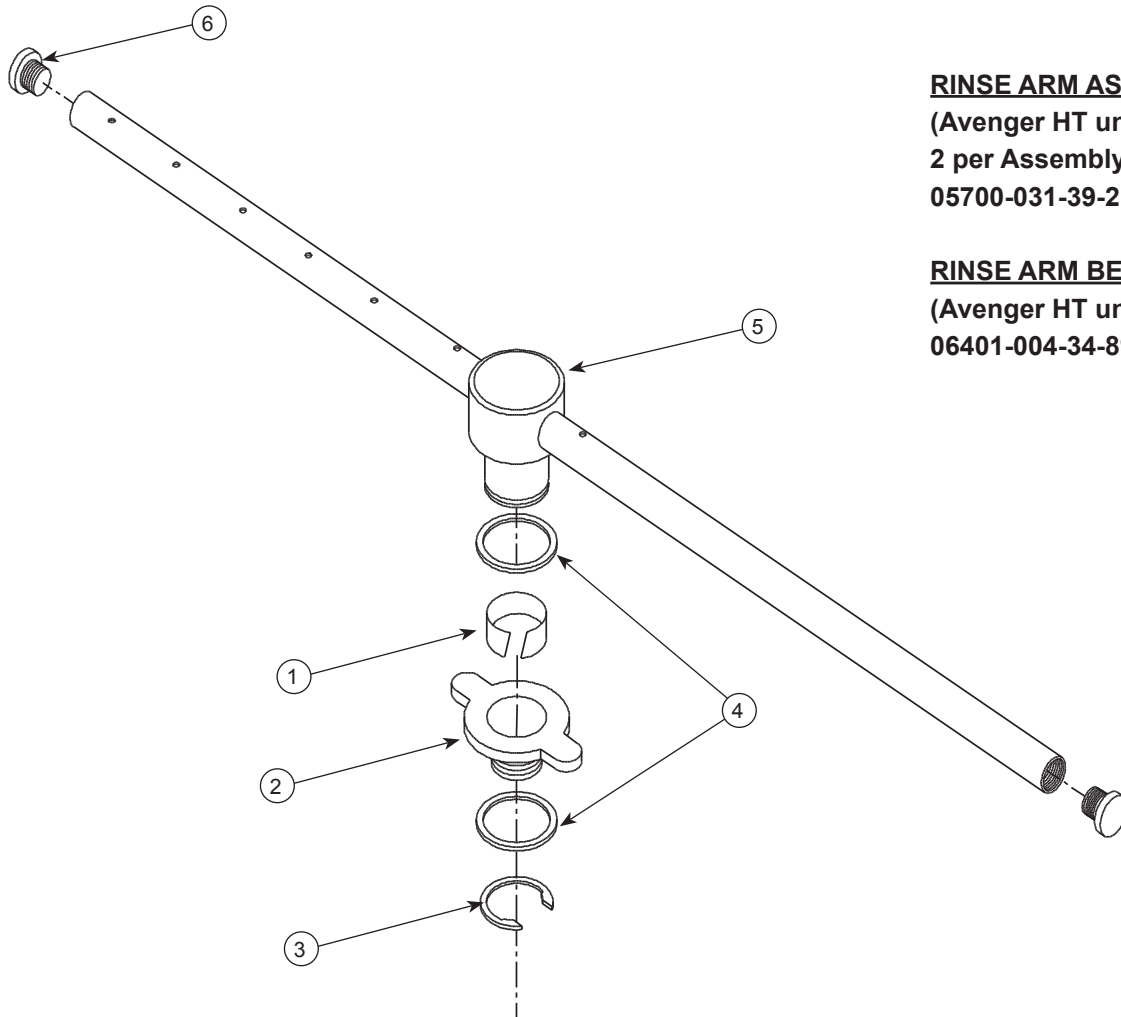
2 Per Avenger LT

1 Per Avenger HT

P/N 05700-021-39-23



ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Wash Arm w/End-cap	05700-021-46-58
2	1	Bearing, Assembly	05700-021-35-97
3	1	O-Ring	05330-002-60-69
4	2	End-cap, Wash Arm	05700-003-31-59



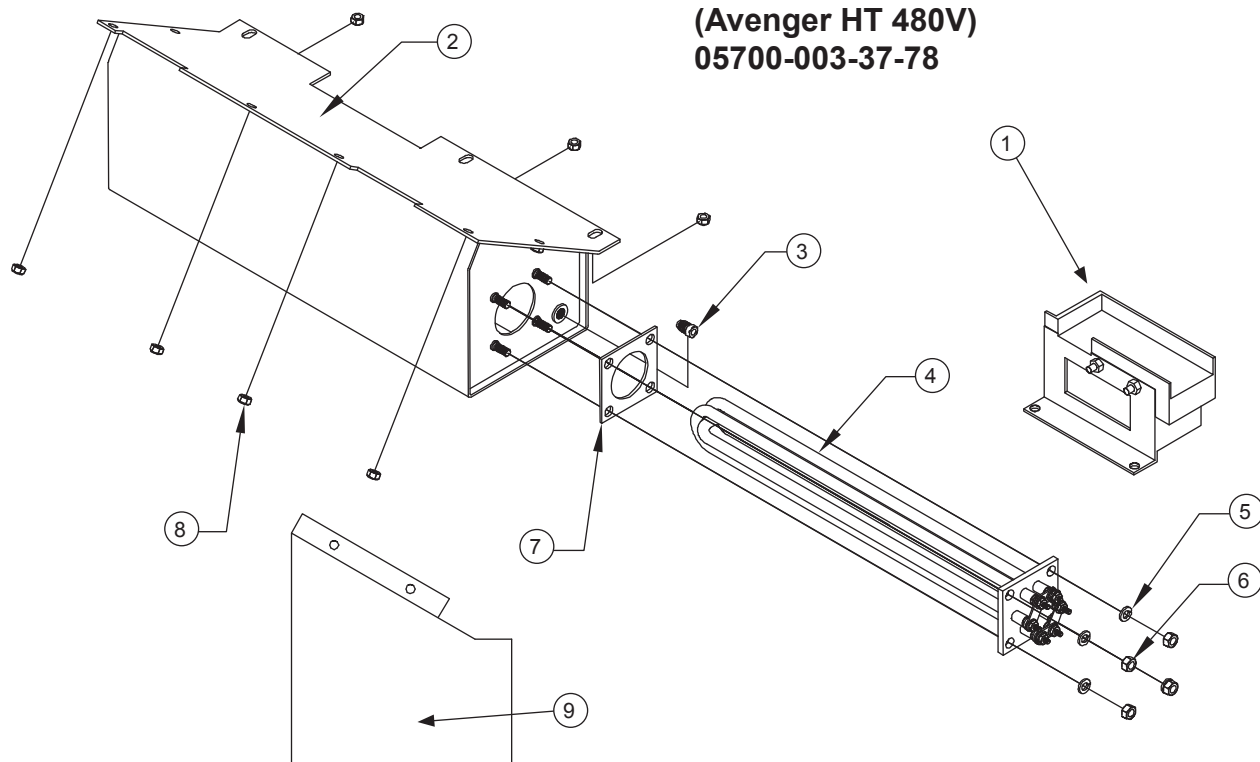
RINSE ARM ASSEMBLY
 (Avenger HT units ONLY)
 2 per Assembly
 05700-031-39-21

RINSE ARM BEARING KIT
 (Avenger HT units ONLY)
 06401-004-34-89

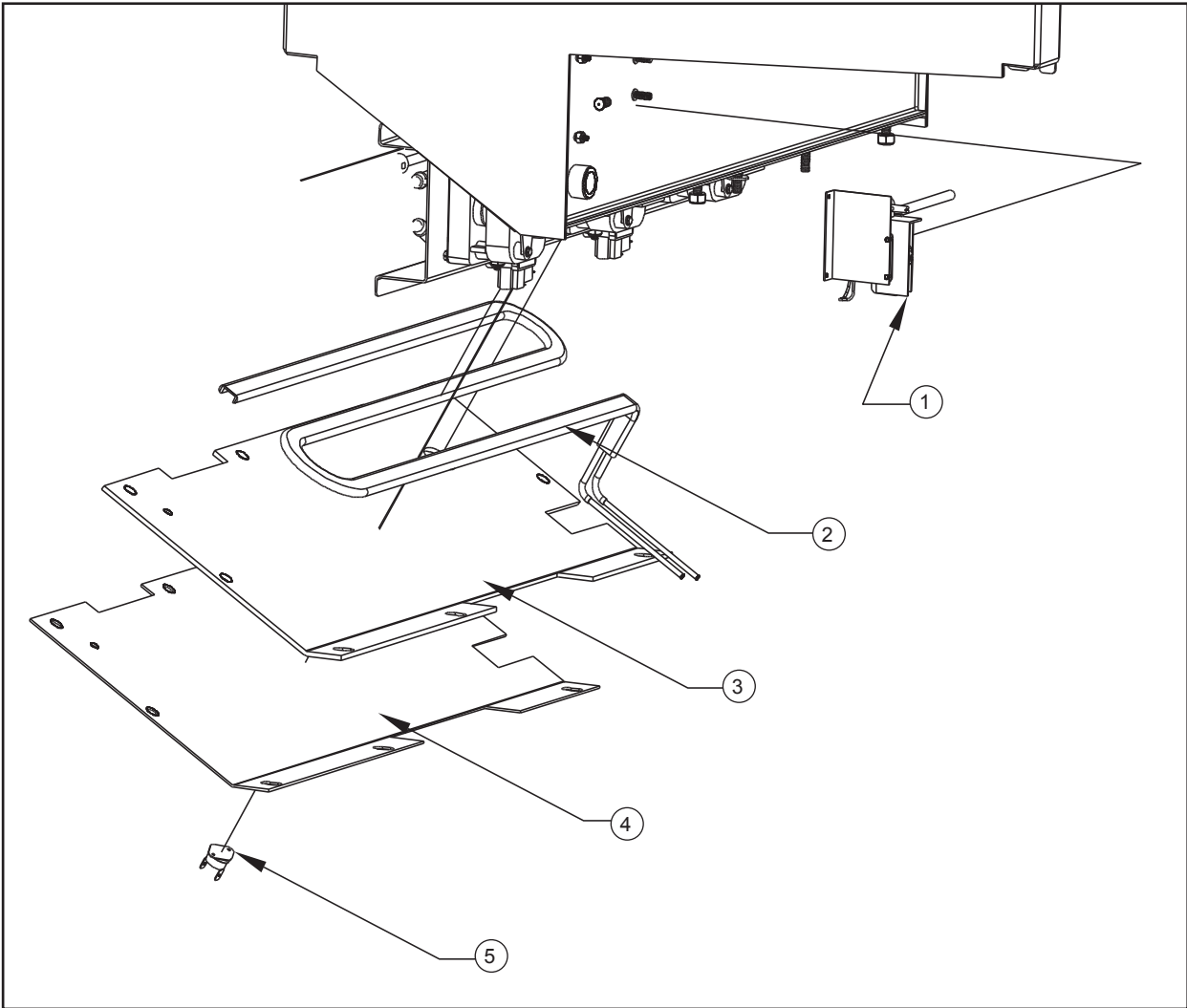
ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Bearing, Rinse Arm	03120-004-12-13
2	1	Bushing, Rinse Head	05700-021-33-84
3	1	Ring, Retaining, Rinse Head Bushing	05340-112-01-11
4	1	Washer, Rinse Arm	05330-011-42-10
	1	O-Ring (Not Shown)	05330-002-60-69
5	1	Rinse Arm	05700-031-38-30
6	2	End-cap, Rinse Arm	04730-111-60-41

COMPLETE RINSE TANK ASSEMBLY
(Avenger HT 208-230V)
05700-003-31-94

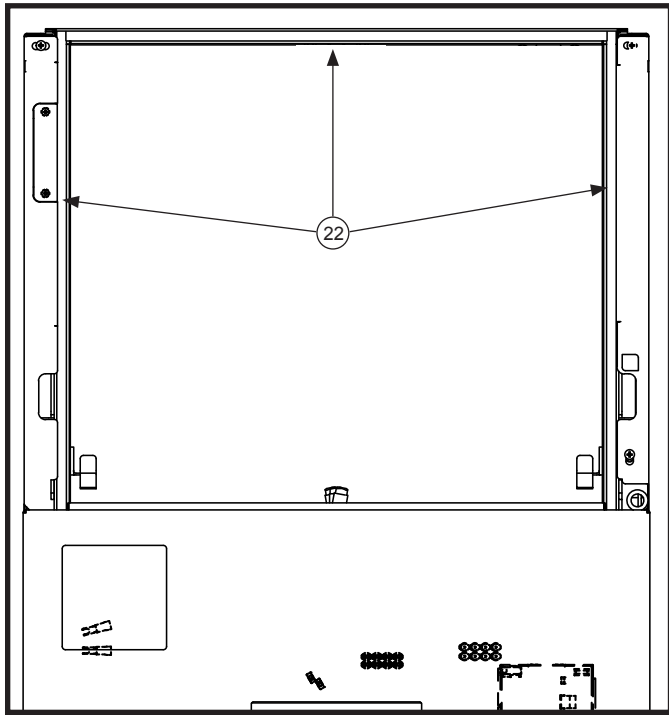
COMPLETE RINSE TANK ASSEMBLY
(Avenger HT 480V)
05700-003-37-78



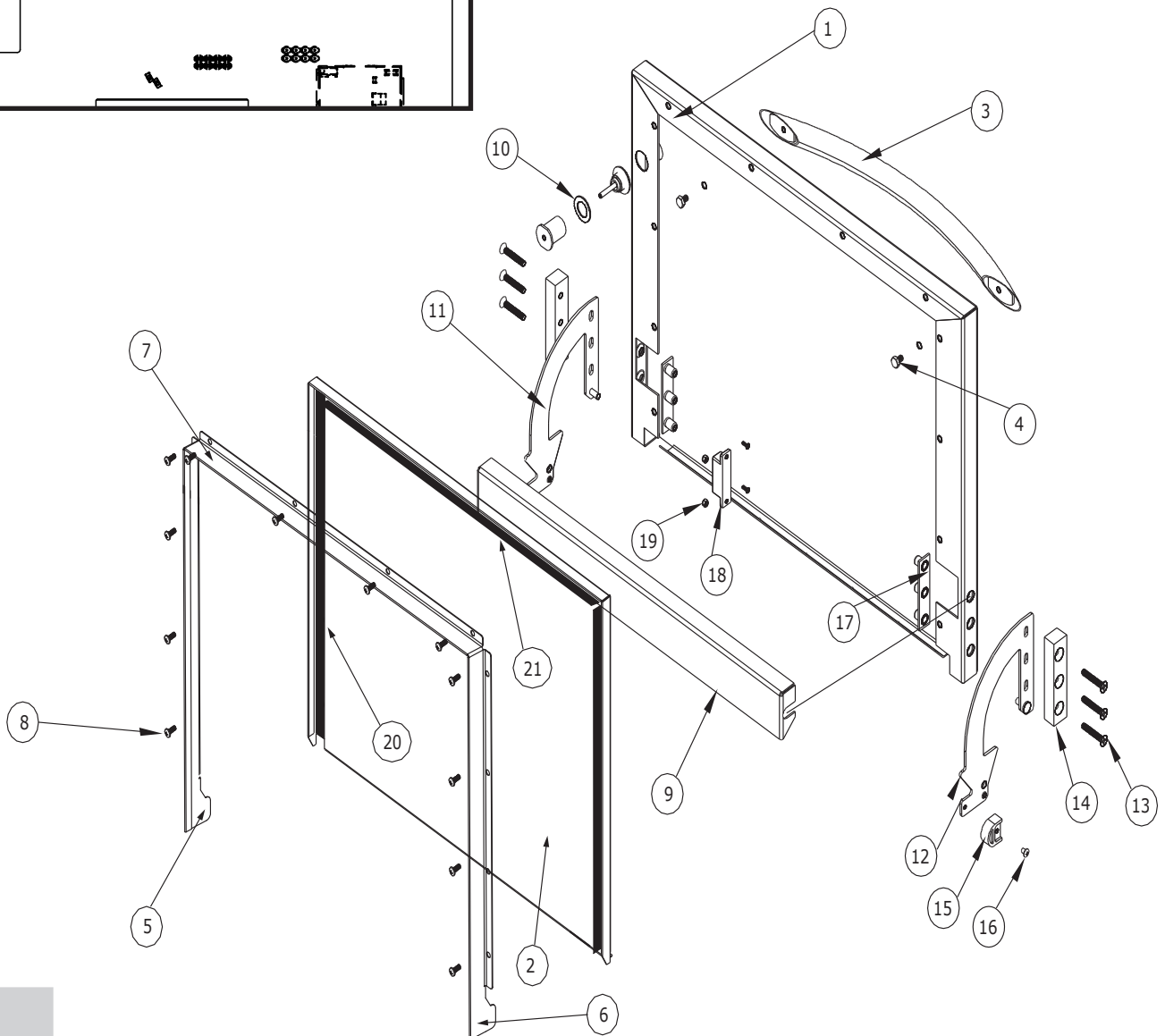
ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Thermostat	05930-003-06-48
2	1	Rinse Tank Weldment	05700-003-31-95
3	1	Fitting, 1/4" Imperial Brass	05310-924-02-05
4	1	208-230 Volt Heater	04540-111-43-21
	1	480 Volt Heater	04540-002-29-82
5	4	Lock Washer, 5 /16" Split	05311-275-01-00
6	4	Nut, 5 /16"-18 S/S Hex	05310-275-01-00
7	1	Gasket, Heater	05330-011-47-79
8	9	Locknut, 1 /4"-20 S/S Hex with Nylon Insert	05310-374-01-00
9	1	Dielectric Cover	05700-001-40-50



ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Wash Thermostat	05930-003-13-65
2	1	Heater, Fire Bar	04540-003-46-27
3	1	Insulation Paper 1/8"	08115-003-46-30
4	1	Heater Cover Plate	05700-003-46-37
5	1	High Limit Thermostat	05930-003-46-77



OPEN DOOR VIEW OF MACHINE

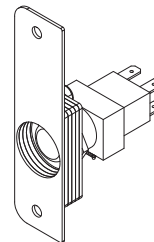


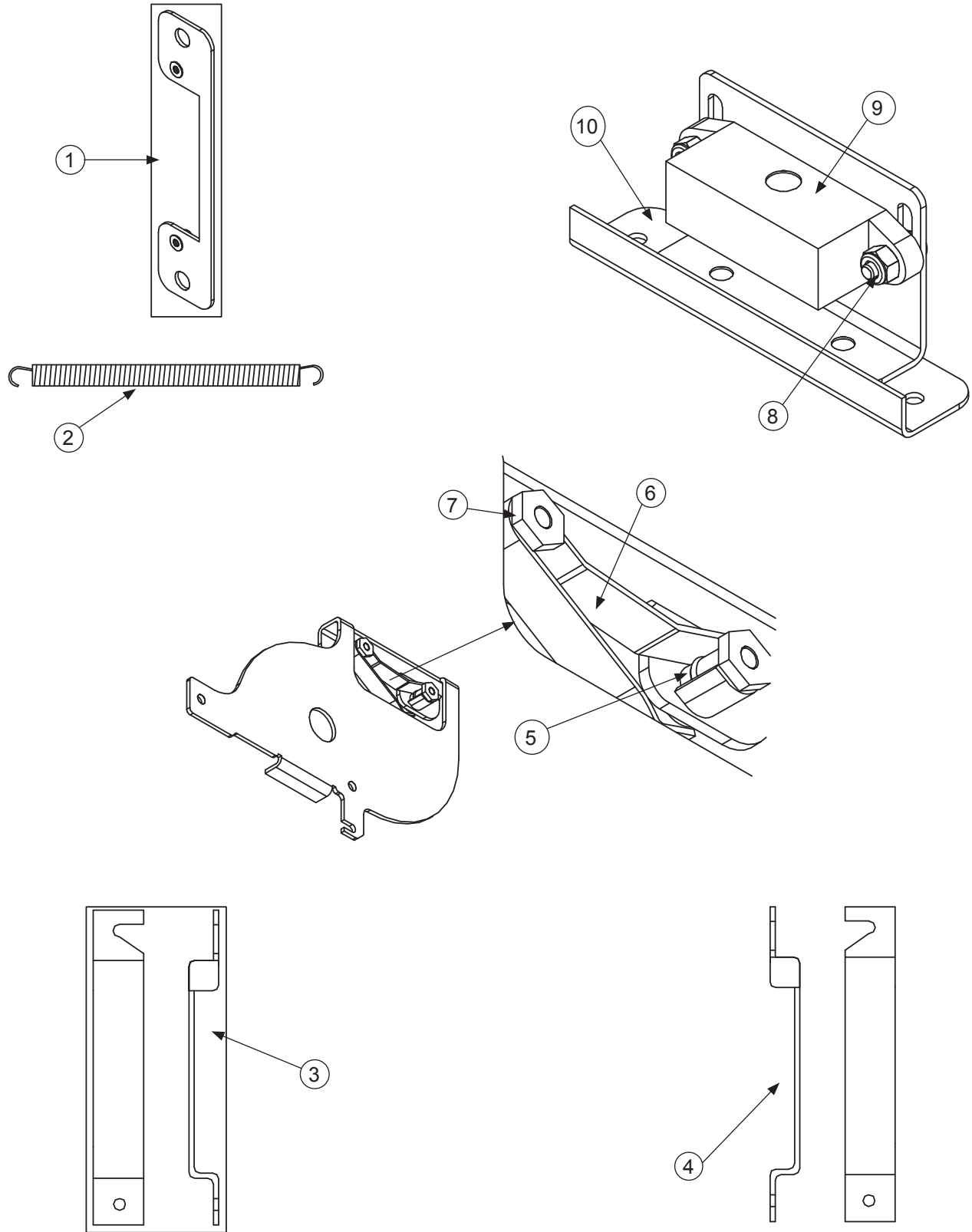
ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Outer Door Weldment	05700-003-33-37
2	1	Inner Door Weldment	05700-003-33-21
3	1	Door Handle	05700-003-26-62
4	2	Bolt, 1/4"-20 X 3/8" Long	05305-274-20-00
5	1	Channel, Right Seal	05700-003-33-19
6	1	Channel, Left Deal	05700-003-33-20
7	1	Channel, Top Seal	05700-003-33-22
8	12	Screw, 10-32 X 1/2" Pan Phillips Head	05305-011-44-52
9	1	Baffle, Door	05700-003-33-38
10	1	Start Switch Assembly	05700-003-34-80
11	1	Hinge, Right Weldment	05700-003-32-72
12	1	Hinge, Left Weldment	05700-003-32-71
13	6	Screw, 1/4"-20 X 1-1/2" Pan Phillips Head	05305-011-44-50
14	2	Hinge Spacer	05700-003-33-42
15	2	Stop, Door Hinge	05700-003-32-55
16	2	Screw, Number 10 Pan Head 18-8 S/S X 1/2"	05305-173-01-00
17	2	Retaining Plate Assembly	05700-011-44-37
18	1	Magnet, Reed Switch	05930-002-68-53
19	2	Lock Nut, 6-32 S/S Hex W/ Nylon Insert	05310-373-03-00
20	2	Gasket, Door 17 1/8"	05330-003-58-36
21	1	Gasket, Door 20"	05330-003-58-35
22	4ft*	Seal, Door Silicone	05330-004-14-08

***Note: Item #22 is Raw Material cut to size:**

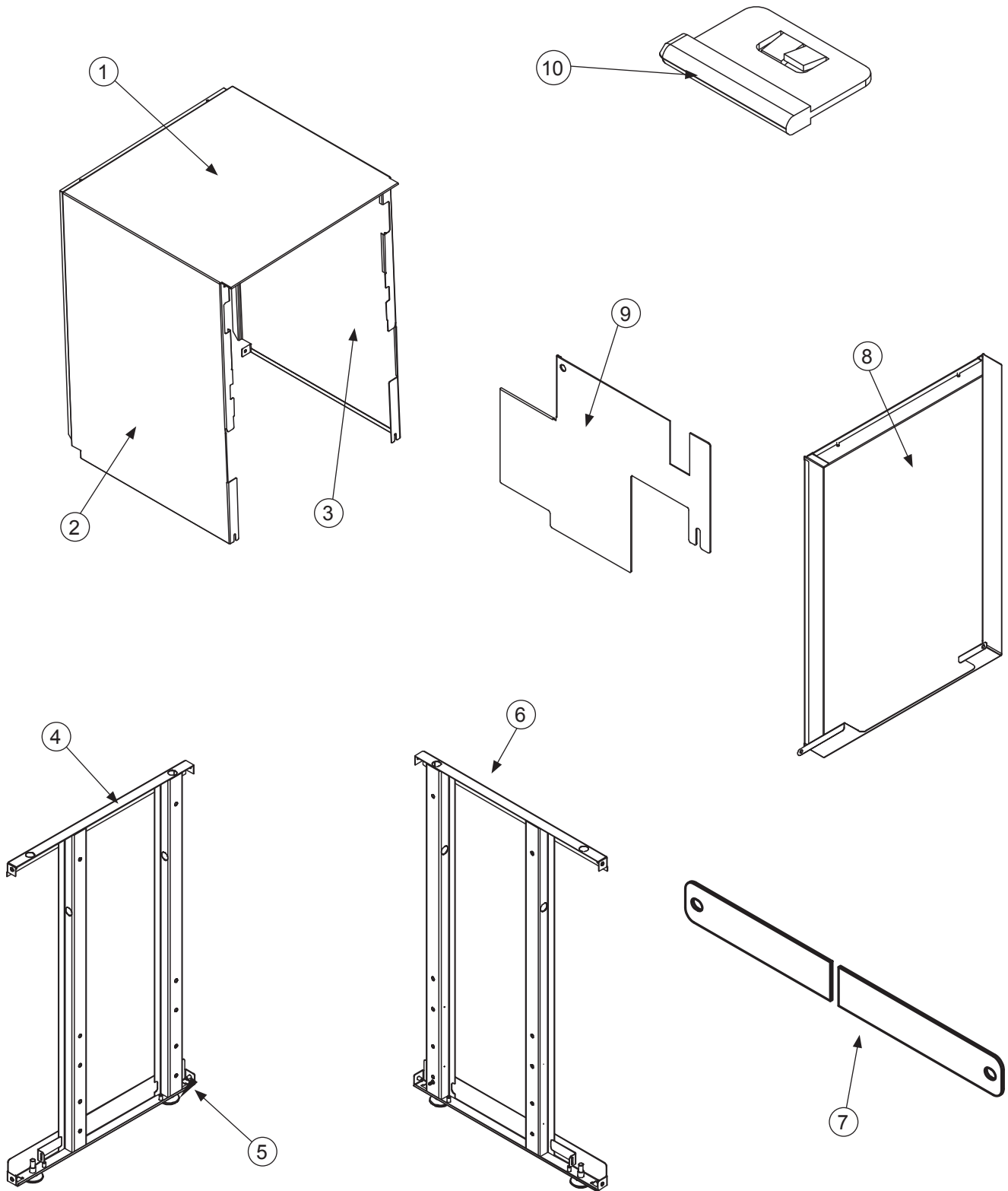
Top - 20"
Sides - 21"

Complete Switch Mount Assembly
06401-004-47-76

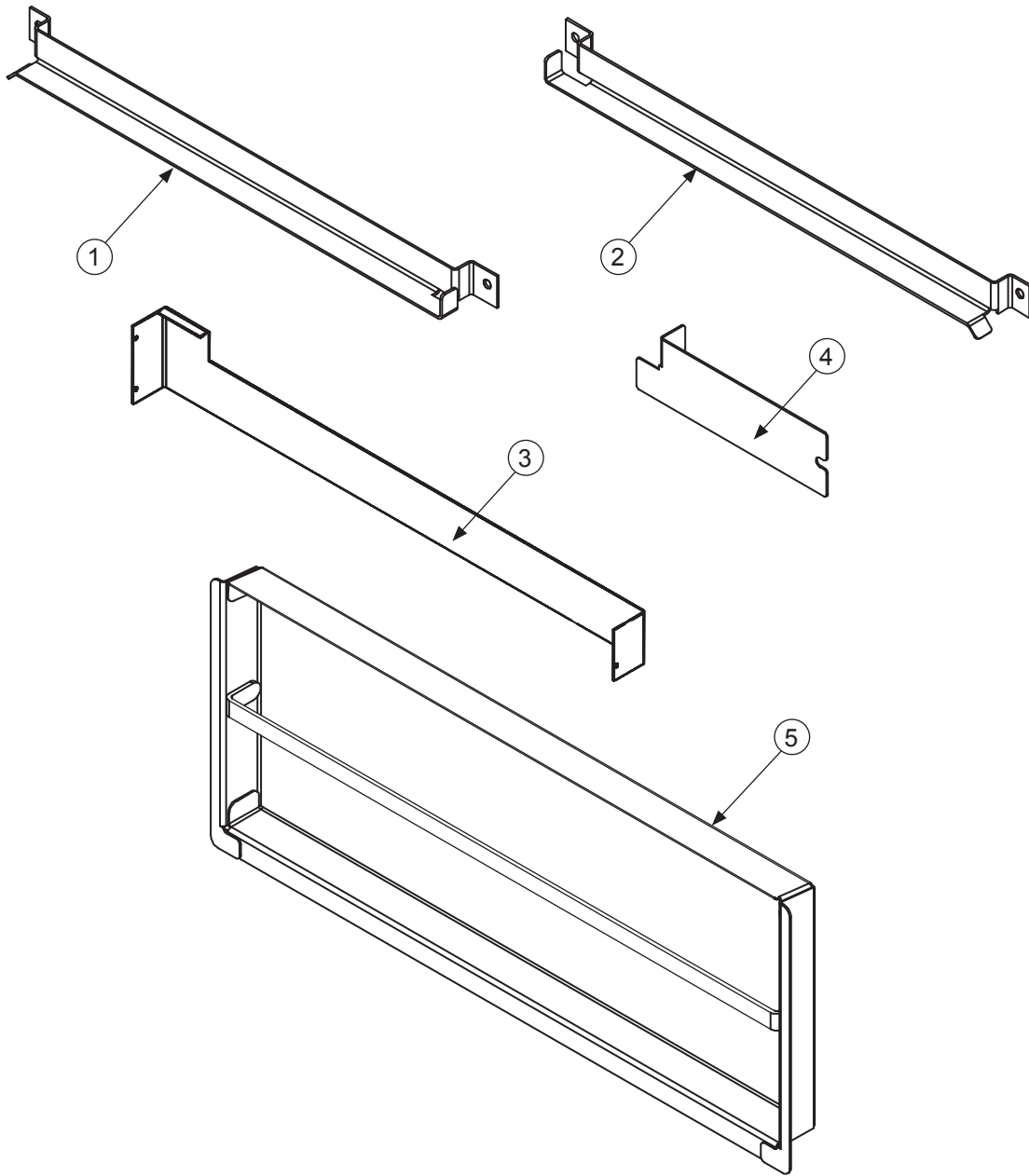




ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Switch Mounting Plate Assembly	05700-003-33-54
2	1	Door Spring	05700-003-32-85
3	1	Cover, Left Hinge Weldment	05700-002-18-41
4	1	Cover, Right Hinge Weldment	05700-002-18-42
		Hinge Components secured with: Locknut, 1/4"-20 S/S Hex with Nylon Insert	05310-374-01-00
5	2	O-Ring	05330-003-32-34
6	1	Latch Spring	05700-003-32-32
7	2	Latch Nut	05700-003-32-33
8	2	Hardware: Locknut, 6-32 S/S Hex with Nylon Insert	05310-373-03-00
	2	Screw, 6-32 X 1/4" Flat Head	05305-171-01-00
9	1	Door Switch	05930-003-31-44
10	1	Door Switch Bracket	05700-003-31-43
		Door Switch & Bracket Assembly	05700-003-32-21

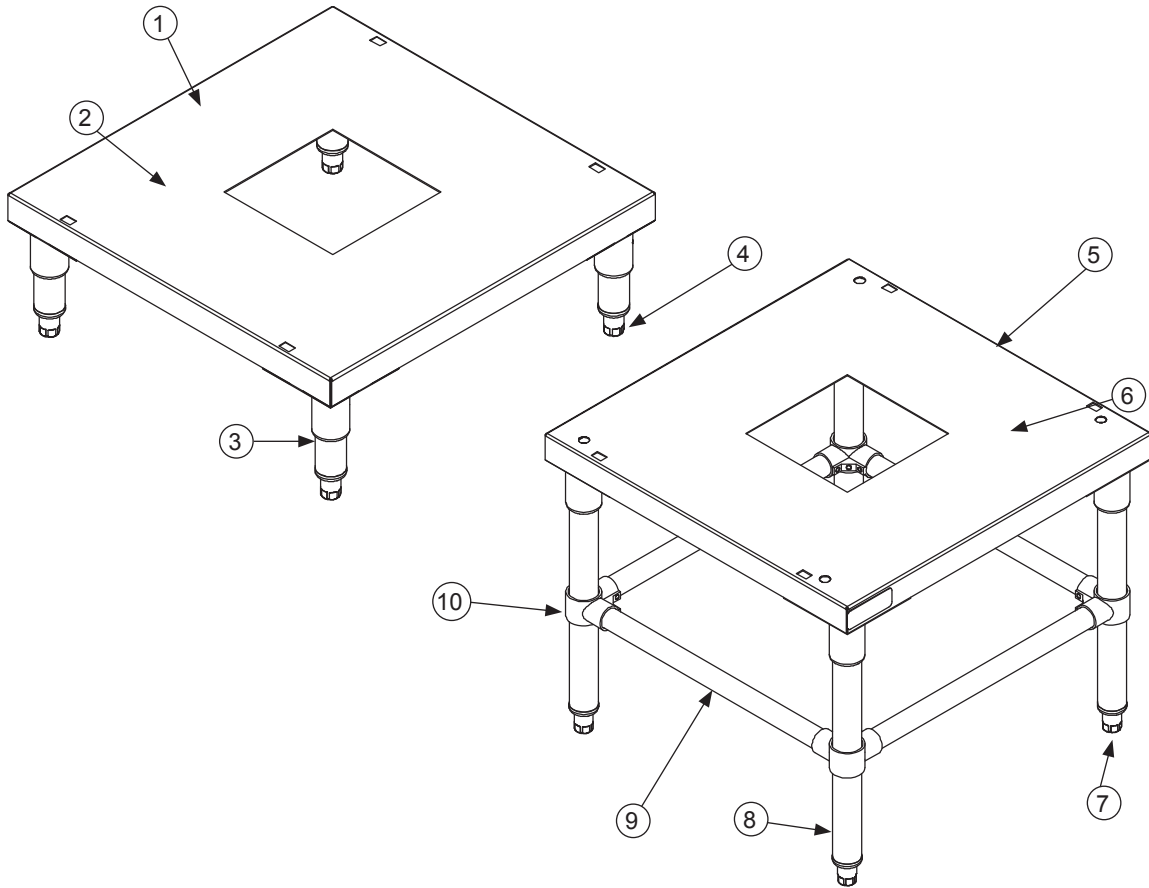


ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Top Shroud Weldment	05700-003-37-06
2	1	Left Shroud Weldment	05700-003-37-04
3	1	Right Shroud Weldment	05700-003-37-05
4	1	Left Frame Weldment	05700-003-31-91
5	1	Swivel Feet	05340-108-02-00
6	1	Right Frame Weldment	05700-003-31-90
	4	Hardware: Nut, 1/4"-20 Serrated Hex	05310-959-03-00
	4	Nut, 5/16"-18 Cad Spine	05310-959-03-00
7	2	Bottom Strap	05700-003-92-20
8	1	Optional Back Panel	05700-003-33-55
9	1	Standard Back Panel	05700-003-36-35
10	2	Shroud Plug	05700-003-32-50



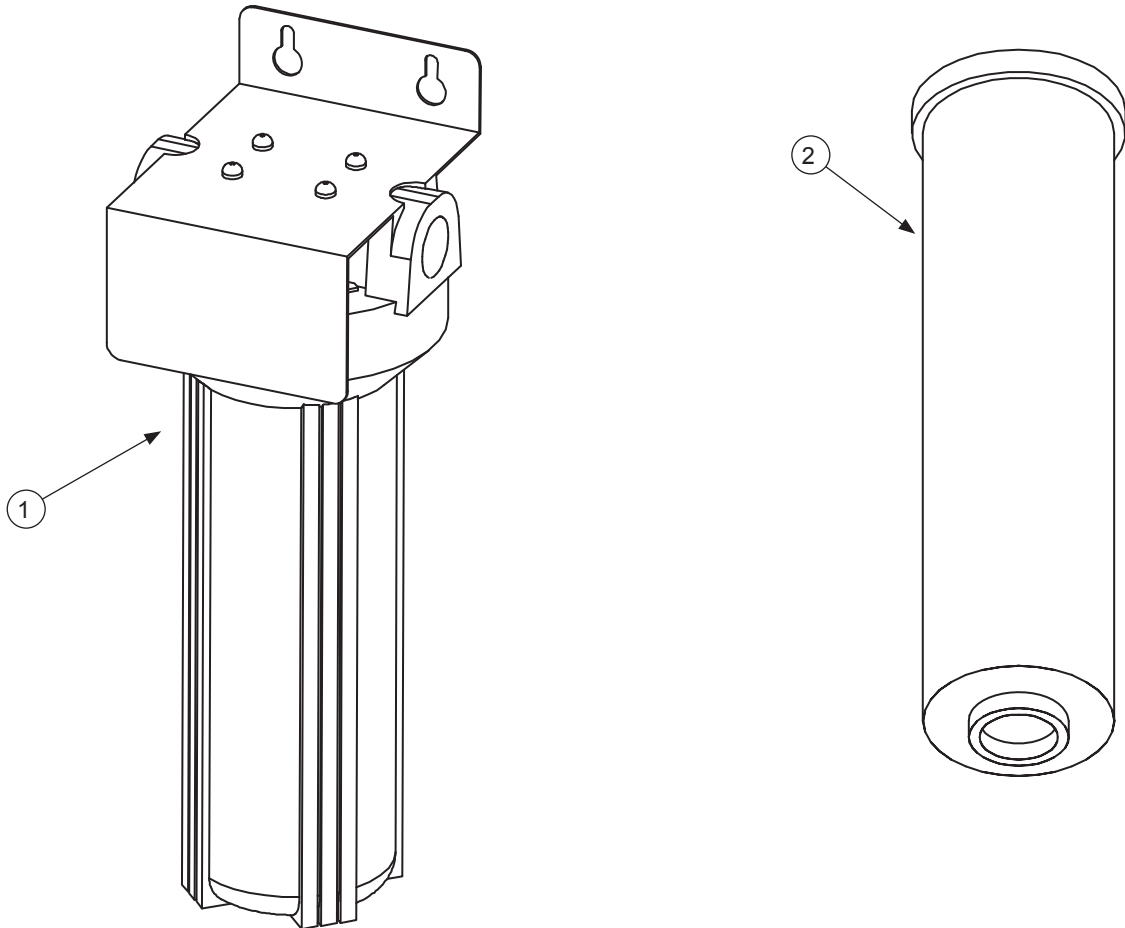
ITEM	QTY	DESCRIPTION	PART NUMBER
		Components secured with: Locknut, 1/4"-20 S/S Hex with Nylon Insert	05310-374-01-00
1	1	Rail, Left Rack	05700-031-37-88
2	1	Rail, Right Rack	05700-031-37-88
3	1	Splash Shield	05700-003-33-51
4	1	Strainer Spacer	05700-002-70-60
		Attaches with: Nut, Nylon Wing, 1/4"-20	05310-994-01-00
5	1	Strainer Weldment	05700-031-35-81

INSTALLATION INSTRUCTIONS: To install the stand, first remove the adjustable feet from the machine. Place machine on table and use the square mounting holes to line up the machine. Re-insert the adjustable feet through bottom of table top and tighten to lock machine to table.



ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	6" Stand Assembly	05700-003-34-24
2	1	Stand	05700-002-88-82
3	4	6" Leg	05700-021-61-10
4	4	Bullet Foot	05340-108-01-03
5	1	18" Stand Assembly	05700-003-34-25
6	1	Stand	05700-002-88-82
7	4	Bullet Foot	05340-108-01-03
8	4	18" Leg	05700-002-89-47
9	4	Cross Brace	05700-003-25-90
10	4	Cross Member Bracket	04730-003-25-89

INSTALLATION INSTRUCTIONS: Must be installed vertically. The provided bracket is to be secured to the wall. Observe proper inlet/outlet water directions. Flow directions are molded into the top of the head. Line pressure should be released prior to changing cartridges. De-liming of equipment prior to installation is recommended but not required.

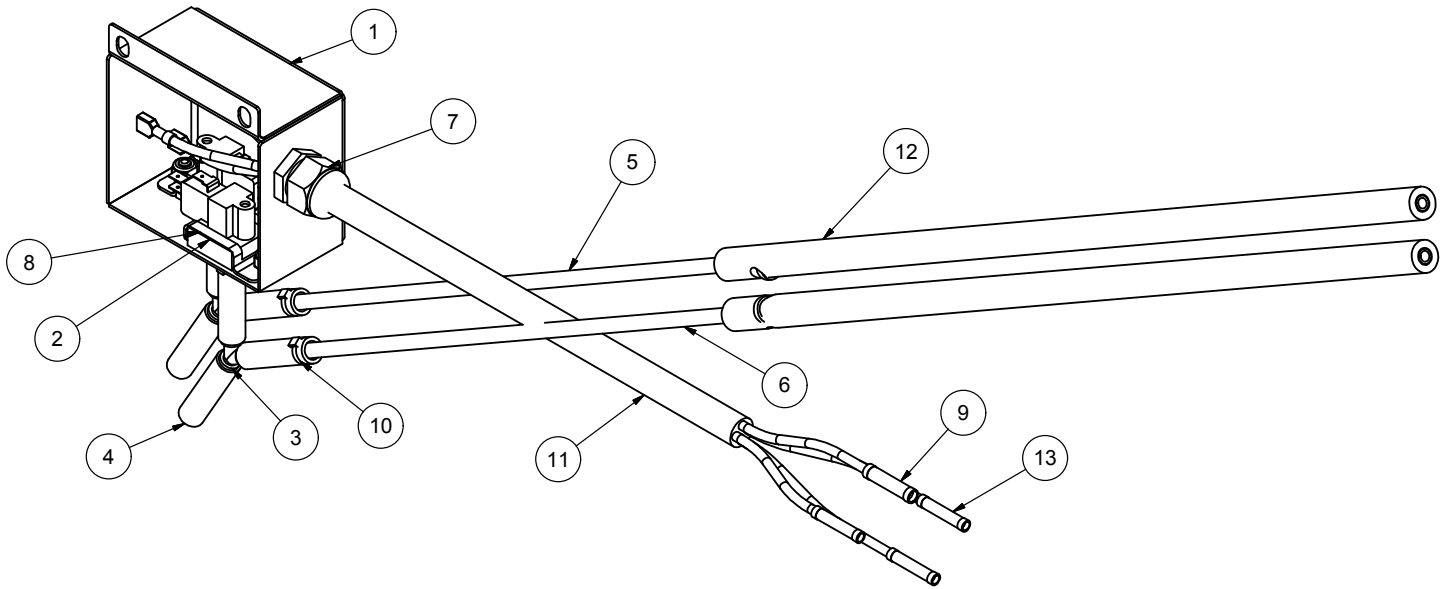


ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Kleenaware HTS-11 System	04730-003-28-03
2	1	Replacement Cartridge (Inspect at least every 6 months)	04730-003-28-04
		Replacement Test Strip (not shown)	06401-003-28-06

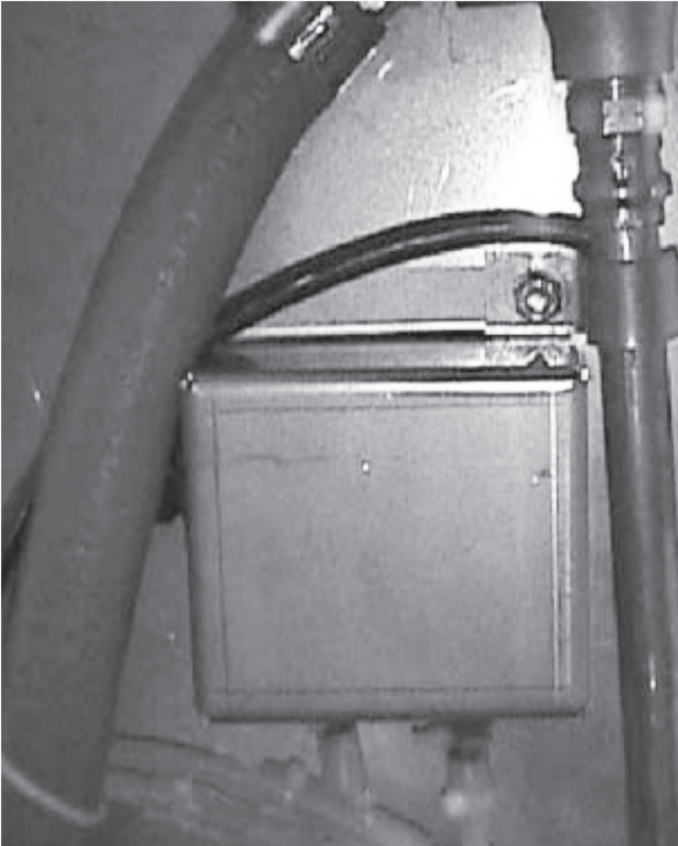
A GO Box is a kit of the most needed parts for a particular model or model family to successfully effect a repair in the first call 90% or more of the time.

ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Rinse Thermostat	05930-003-06-48
2	1	Contactor/Heater	05945-002-74-20
3	1	Pump Seat	05330-002-34-22
4	1	Pump Gasket O-Ring	05330-002-81-83
5	1	Door Switch (Reed)	05930-003-31-44
6	1	Relay, 220-240-Volt	05945-111-89-75
7	1	Relay, 115 Volt	05945-002-47-41
8	2	Switch, Det/Rinse Aid Prime	05930-011-49-54
9	2	Switch, On/Off	05930-301-49-00
10	2	Switch, Auto/Manual	05930-011-49-55
11	1	Fill Solenoid Valve 1/2"	04810-100-09-18
12	1	Vacuum Breaker	04820-003-06-13
13	1	Timer, Universal	05945-003-33-09
14	4	Washer Rinse Arm	05330-011-42-10
15	2	Ring, Retaining	05340-112-01-11
16	2	Bearing Assembly, Wash Arm	05700-021-35-97
17	2	Squeeze Tube, 3/16"	05700-111-35-29
18	2	Squeeze Tube	05700-011-76-41
19*	1	Pump & Motor Assembly	06105-002-72-75

* Special pricing when purchased with a GO BOX. Call for details.



ITEM	QTY	DESCRIPTION	PART NUMBER
		Complete Assembly	05700-003-55-98
1	1	Box, Vacuum Switch	05700-003-55-96
2	2	Switch, Vacuum	06685-003-36-13
3	2	Wye, 1/4" Barbed PVDF	04730-003-36-14
4	6	Tubing, Clear 5/16 ID	04710-003-53-26
5	1	A-Tube, Red 1/4 OD X 100 Long	05700-003-03-45
6	1	A-Tube, White 1/4 OD X 100 Long	05700-003-03-45
7	1	Fitting, Liquidtite .231 X .394 Heyco	05700-003-20-67
8	2	F-Pressure Switch Bracket	05700-003-53-03
9	2	Splice, Blue Butt	05940-200-11-44
10	6	Locknut, 10-24 X 3/8 Phillips Truss	05945-602-01-16
11	14	A-Cable, 18 GA/5 Con 46"	05700-003-55-97
12	3	Tube Stiffener	05700-002-66-49
13	2	Splice, Red Butt	05940-200-26-00



Back of machine showing use of existing mounting hardware for installation of vacuum switch assembly.

Remove locknut on plumbing support bracket and mount switch box over existing stud. Reinstall bracket and route red and white tubes behind blue hose as shown.

Route gray cable down back and under the tub along inlet plumbing, remove wires from existing pressure switches and connect to gray cable per note below.

Detergent Switch (Red Tube)

1. Connect black wire from gray cable to black/yellow wire from switch.
2. Connect brown wire from gray cable to blue wire from switch.

Sanitizer Switch (White Tube)

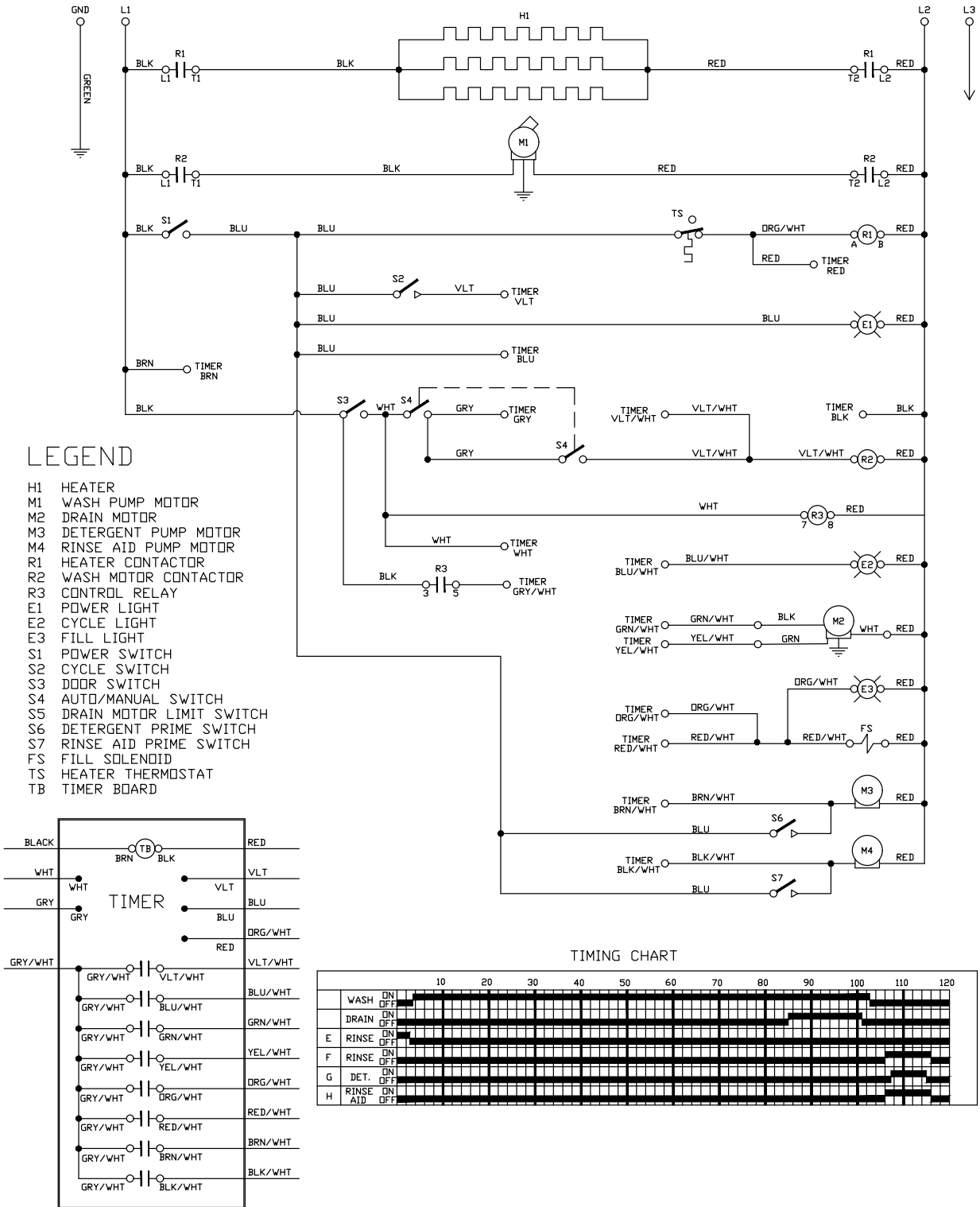
1. Connect white wire from gray cable to white/yellow wire from switch.
2. Connect red wire from gray cable to blue wire from switch.



After cutting the existing red & white tube approximately 12" above the gray tube stiffener, insert the cut ends into the clear tubes as shown.

White
Red

208-230 VOLT, 60 HZ, SINGLE-PHASE

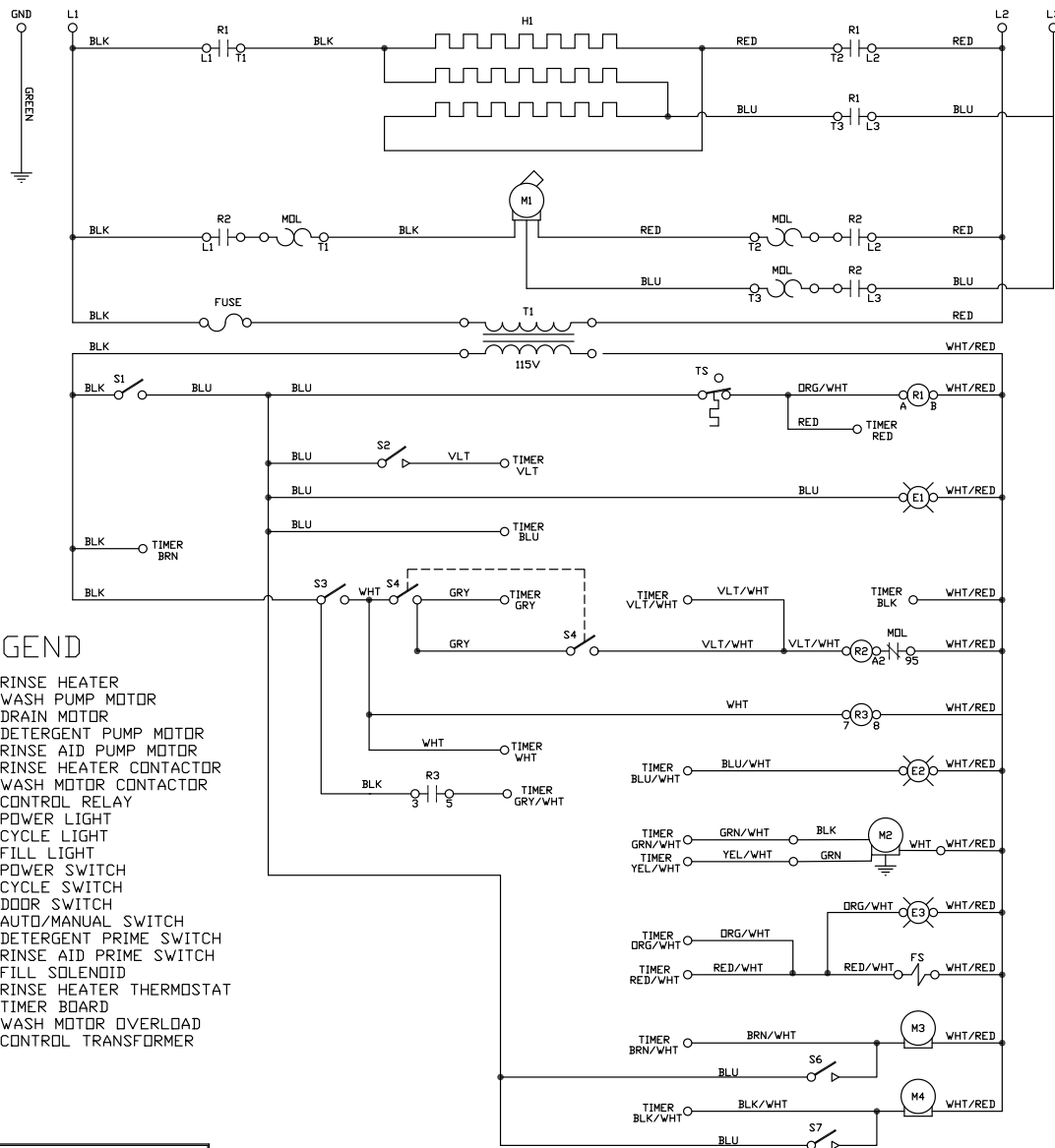


09905-003-67-25 C

AVENGER HT

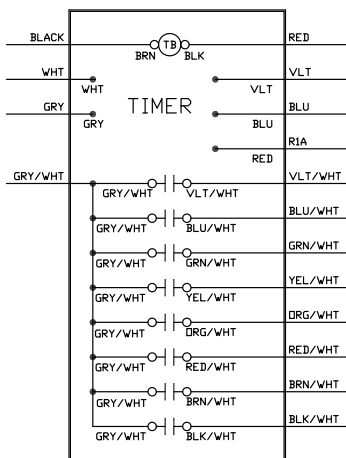
SCHEMATICS

480 VOLT, 60 HZ, THREE-PHASE

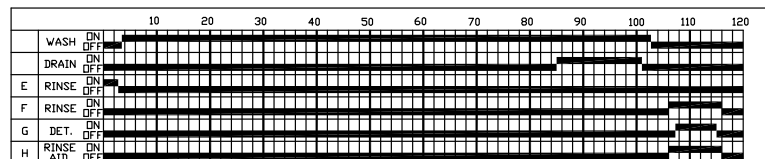


LEGEND

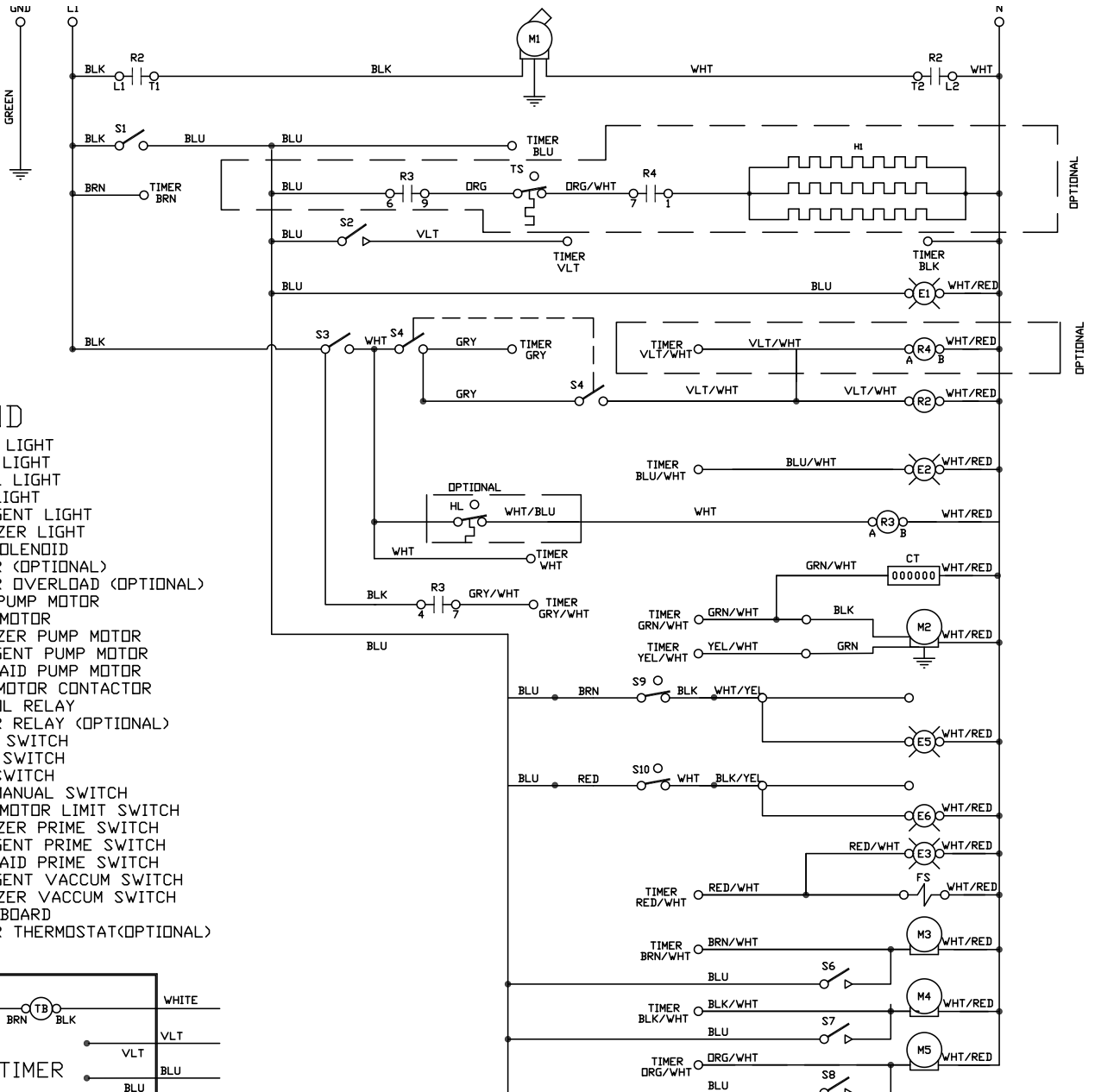
- H1 RINSE HEATER
- M1 WASH PUMP MOTOR
- M2 DRAIN MOTOR
- M3 DETERGENT PUMP MOTOR
- M4 RINSE AID PUMP MOTOR
- R1 RINSE HEATER CONTACTOR
- R2 WASH MOTOR CONTACTOR
- R3 CONTROL RELAY
- E1 POWER LIGHT
- E2 CYCLE LIGHT
- E3 FILL LIGHT
- S1 POWER SWITCH
- S2 CYCLE SWITCH
- S3 DOOR SWITCH
- S4 AUTO/MANUAL SWITCH
- S6 DETERGENT PRIME SWITCH
- S7 RINSE AID PRIME SWITCH
- FS FILL SOLENOID
- TS RINSE HEATER THERMOSTAT
- TB TIMER BOARD
- MDL WASH MOTOR OVERLOAD
- T1 CONTROL TRANSFORMER



TIMING CHART

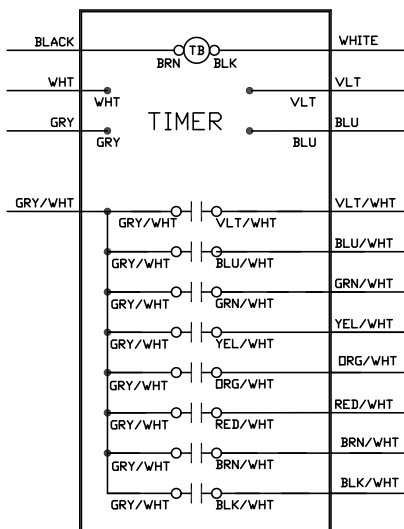


115 VOLT, 60 HZ, SINGLE-PHASE

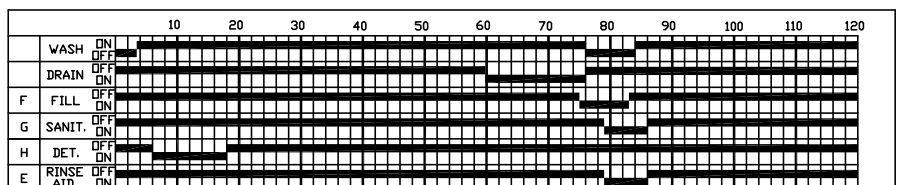


LEGEND

- E1 POWER LIGHT
- E2 CYCLE LIGHT
- E3 MANUAL LIGHT
- E4 AUTO LIGHT
- E5 DETERGENT LIGHT
- E6 SANITIZER LIGHT
- FS FILL SOLENOID
- H1 HEATER (OPTIONAL)
- HL HEATER OVERLOAD (OPTIONAL)
- M1 WASH PUMP MOTOR
- M2 DRAIN MOTOR
- M3 SANITIZER PUMP MOTOR
- M4 DETERGENT PUMP MOTOR
- M5 RINSE AID PUMP MOTOR
- R2 WASH MOTOR CONTACTOR
- R3 CONTROL RELAY
- R4 HEATER RELAY (OPTIONAL)
- S1 POWER SWITCH
- S2 CYCLE SWITCH
- S3 DOOR SWITCH
- S4 AUTO/MANUAL SWITCH
- S5 DRAIN MOTOR LIMIT SWITCH
- S6 SANITIZER PRIME SWITCH
- S7 DETERGENT PRIME SWITCH
- S8 RINSE AID PRIME SWITCH
- S9 DETERGENT VACCUM SWITCH
- S10 SANITIZER VACCUM SWITCH
- TB TIMER BOARD
- TS HEATER THERMOSTAT (OPTIONAL)



TIMING CHART





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