

**NOBLE SERIES**  
*ELECTRICALLY HEATED  
UNDERCOUNTER  
DISHMACHINES*

**INSTALLATION,  
OPERATION & SERVICE  
MANUAL**



FOR NOBLE MODEL(S):

**NOBLE UH30-E**







## REVISION HISTORY

Revision Letter	Revision Date	Made By	Applicable ECNs	Details
A	11-22-17	MAA	N/A	Release to production



**NOBLE UH30-E**

Undercounter dishmachine; high-temperature, hot-water sanitizing, with a booster tank and detergent and rinse-aid chemical feeder pumps.

Model: \_\_\_\_\_

Serial No.: \_\_\_\_\_

Installation Date: \_\_\_\_\_

Service Rep. Name: \_\_\_\_\_

Phone Number: \_\_\_\_\_

# TABLE OF CONTENTS

## GUIDES

Symbols .....	1
Abbreviations & Acronyms .....	1

## SPECIFICATIONS

Machine Dimensions .....	2
Operating Parameters .....	3
Electrical Requirements .....	4

## INSTRUCTIONS

Installation Instructions .....	5
	<i>Inspection</i> 5
<i>Unpacking</i> .....	5
<i>Plumbing</i> .....	5
<i>Water Supply Connections</i> .....	5
<i>Pressure Regulator</i> .....	6
<i>Shock Absorber</i> .....	6
<i>Connecting the Drain Line</i> .....	6
<i>Plumbing Check</i> .....	6
<i>Electrical Power Connections</i> .....	7
<i>Voltage Check</i> .....	7
<i>Surrounding Area</i> .....	7
<i>Temperature Setpoints</i> .....	7
<i>Leveling</i> .....	7
<i>Chemical Feeder Equipment</i> .....	8
<i>Preparing Chemical Feeder Pumps</i> .....	8
<i>Priming Chemical Feeder Pumps</i> .....	8
<i>Programming Chemical Feeder Pumps</i> .....	9
Operating Instructions .....	11
<i>Preparation</i> .....	11
<i>Power Up</i> .....	11
<i>Filling the Wash Tub</i> .....	11
<i>Ware Preparation</i> .....	12
<i>Washing a Rack of Ware</i> .....	12
<i>Operational Inspection</i> .....	14
<i>Shutdown &amp; Cleaning</i> .....	14
<i>Deliming</i> .....	16
<i>Detergent Control</i> .....	17

## MAINTENANCE

Preventative Maintenance .....	18
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# TABLE OF CONTENTS

## TROUBLE SHOOTING

Common Problems.....	20
----------------------	----

## PARTS

Terminal Block Box, 208/230 V .....	22
Terminal Block Box, 460 V .....	23
Control Kick Panel .....	24
Electrical Panel, 208/230 V .....	25
Electrical Panel, 460 V .....	26
Chemical Feeder Pump Assembly .....	27
Door Assembly .....	29
Miscellaneous Door Components .....	31
Wash & Motor Assembly .....	33
Rinse Manifold Assembly .....	35
Plumbing Options .....	36
Plumbing Assemblies .....	37
Rinse Tank Assembly .....	41
Stands & Components .....	43
Miscellaneous Parts .....	44

## SCHEMATICS

208/230 V, 50/60 Hz, 1 Phase.....	45
460 V, 60 Hz, 3 Phase .....	46

## SYMBOLS



- risk of injury to personnel.



- risk of damage to equipment.



- risk of electrical shock.



- reference data plate.



- caustic chemicals.



- ground wire.



- lockout electrical power.

**NOTICE** - important note.

## ABBREVIATIONS & ACRONYMS

**ANSI** - American National Standards Institute

**GHT** - Garden Hose Thread

**GPG** - Grains per Gallon

**GPM** - Gallons per Minute

**HP** - Horse Power

**Hz** - Hertz

**ID** - Inside Diameter

**kW** - Kilowatts

**NFPA** - National Fire Protection Association

**NPT** - National Pipe Thread

**OD** - Outside Diameter

**PRV** - Pressure Regulating Valve

**PSI** - Pounds per Square Inch

**V** - Volts



# SPECIFICATIONS

# MACHINE DIMENSIONS

**LEGEND:**

A - Electrical Connection

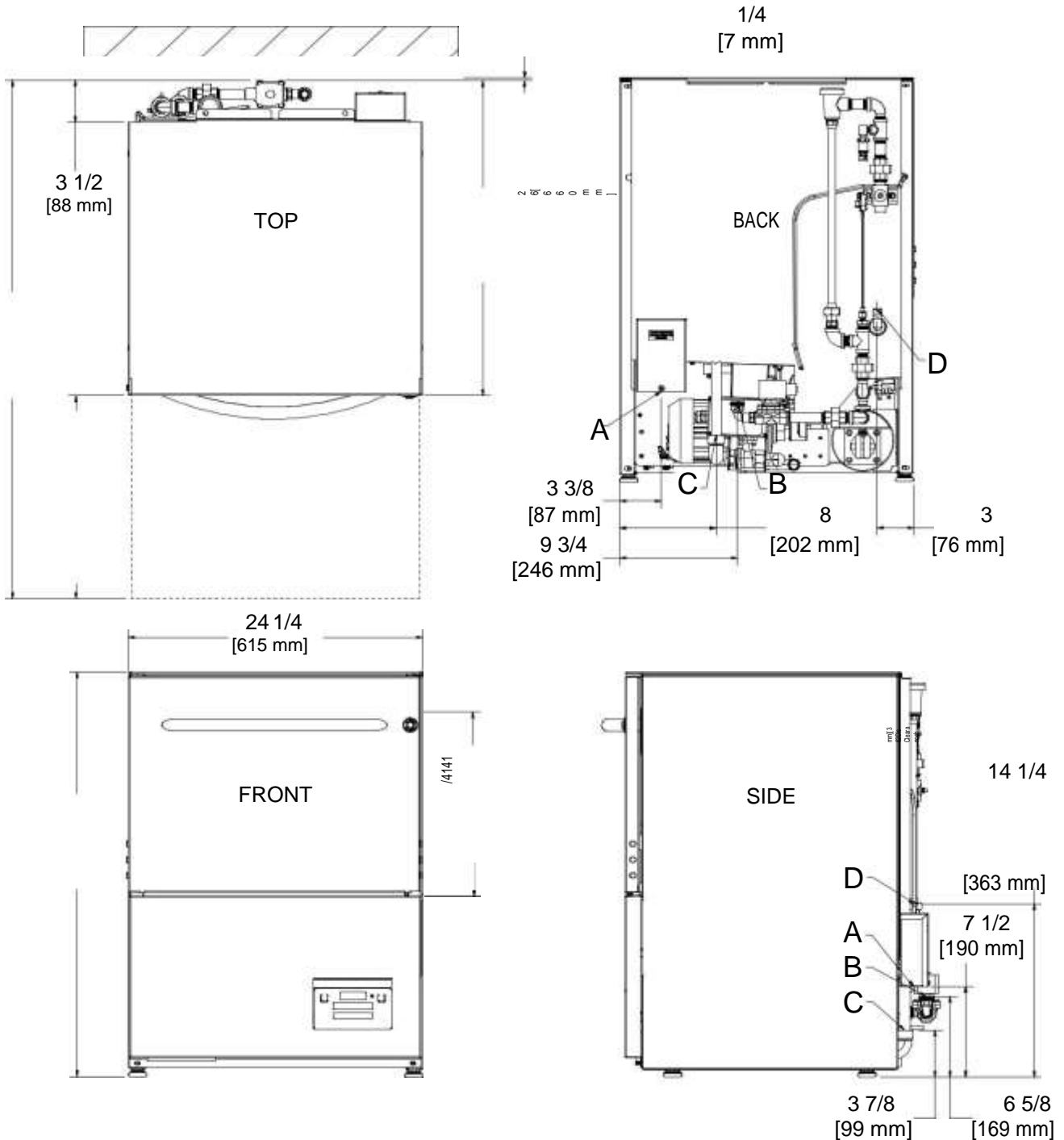
C - Drain Connection  
(1" ID, 1 3/8" OD)

B - Water Inlet

(3/4" Male GHT, connect to true  
1/2" ID line, 110 °F minimum)

D - Chemical Port

All dimensions from the floor can be increased 1" using the machine's adjustable feet.



**H30-E**

**Operating Capacity:**

Racks per Hour	27
Dishes per Hour	675
Glasses per Hour	972

**Tank Capacity (Gallons):**

Wash Tank	3
Rinse Tank	1



**NOTICE** 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.

**Water Temperatures (°F):**

Minimum Wash Temperature	155
Minimum Rinse Temperature	180
Minimum Incoming Water Temperature	110

**Other Water Requirements:**

Water Flow Pressure (PSI)	10
Flow Rate Minimum (GPM)	5.16
Water Line Size (NPT)	3/4" Male GHT Connect to true 1/2" ID Line
Drain Line Size (NPT)	1" ID 1 3/8" OD



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 must be rated, at a minimum, for 212 °F (100 °C) and that only copper conductors must be 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. Always verify the amperage draw of the machine in operation when sizing circuit protection.

Amperage loads for motors and heaters are indicated on the machine data plate.

The electrical configurations are as follows:

**Available Electrical Characteristics:**

- 208 V, 60 Hz, Single-phase
- 230 V, 60 Hz, Single-phase
- 460 V, 60 Hz, Three-phase

**Available Wash Motors:**

- 1 HP (208/230 V)
- 3/4 HP (460 V)

**Available Wash Tank Heaters:**

- 3.3 kW (208 V)/4 kW (230 V)
- 4 kW (460 V)

**Available Rinse Tank Heaters:**

- 4.1 kW (208 V)/5.45 kW (230 V)
- 5.45 kW (460 V)

**UH30-E Electrical Characteristics**

<b>VOLTS</b>	208	230	460
<b>PHASE</b>	1	1	3
<b>FREQ</b>	60	60	60
<b>WASH MOTOR AMPS</b>	5.0 A	5.0 A	1.4 A
<b>DRAIN PUMP</b>	0.6 A	0.6 A	0.6 A
<b>WASH HEATER AMPS</b>	15.9 A	17.4 A	6.3 A
<b>RINSE HEATER AMPS</b>	19.7 A	21.7 A	4.6 A
<b>TOTAL LOAD</b>	24.7 A*	26.7 A*	7.7 A*

\*The Noble UH30-E is designed so the heaters never run simultaneously. Total Load is based on the higher of the two loads.

## INSPECTION

*Do not throw away packaging if damage is evident!*

Before installing the machine, 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 machine 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 machine while in transit. If this occurs, do not return the machine 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 machine.

## UNPACKING

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

## PLUMBING

*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. 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 GPG, install a water softener or install the optional HTS-11 (scale prevention and corrosion control). See the Plumbing Options page for more information on the HTS-11.

## WATER SUPPLY CONNECTIONS: WATER HARDNESS HIGHER THAN 5 GPG

If water hardness is higher than 5 GPG and a water softener is not being used, install the HTS-11 into the water line (1/2" ID pipe size minimum) before the machine'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 PSI "flow" pressure at the recommended temperature indicated on the data plate. See the Plumbing Options page for more information on the HTS-11.

## WATER SUPPLY CONNECTION: WATER HARDNESS OF 5 GPG OR LOWER

If water hardness tests at 5 GPG or lower, install the water supply line (1/2" ID pipe size minimum) to the machine'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!*

See the Plumbing Options page.

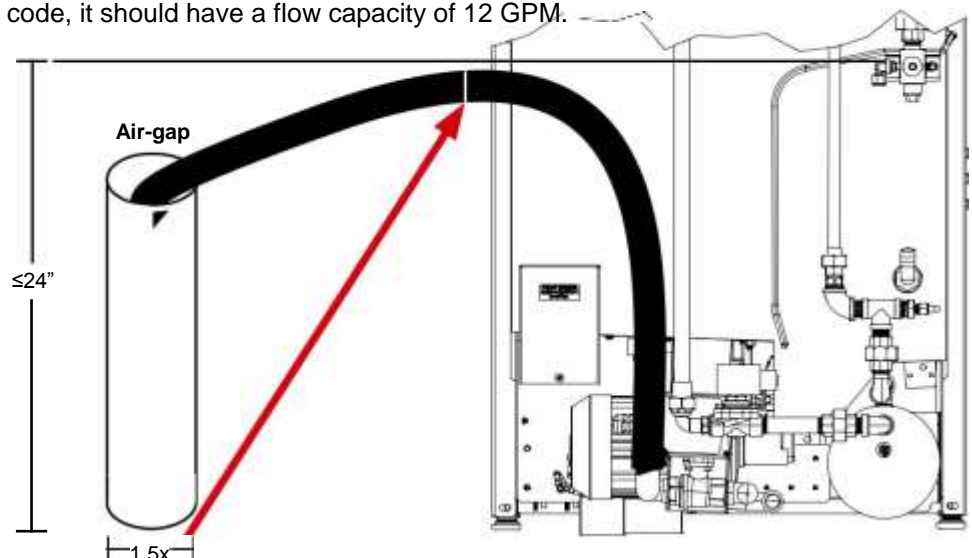
## SHOCK ABSORBER

A shock absorber (not supplied) should be installed on the incoming water line. This prevents water hammer or hydraulic shock—induced by the solenoid valve as it operates—from causing damage to the equipment.

See the Plumbing Options page.

## CONNECTING THE DRAIN LINE

The machine 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 dishmachine 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 at least 1.5 times larger than the drain hose. If a grease trap is required by code, it should have a flow capacity of 12 GPM.



## PLUMBING CHECK

After installing the incoming fill line and drain line, 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



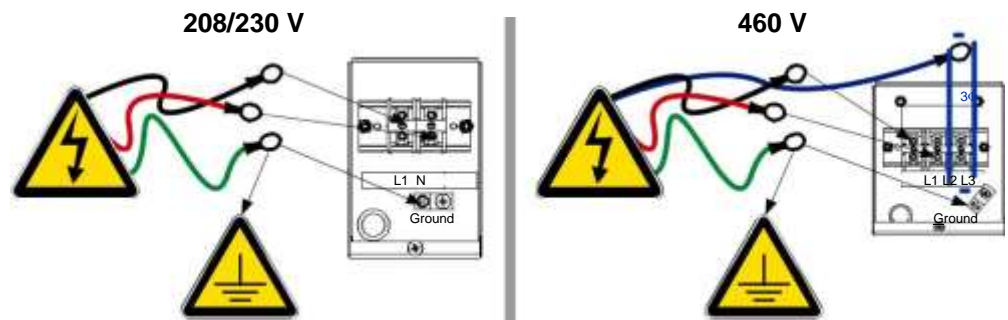
*Disconnect electrical power at the breaker or disconnect switch and tag-out in accordance with procedures and codes.*

*On the 460 V machine, the imbalanced wild leg goes to L3.*

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 on the left-front of the dishmachine. Refer to the data plate for machine operating requirements, machine voltage, total amperage, and serial number.

Remove the back panel and set aside. Remove the terminal block box cover. Install 3/4" conduit into the hole in the bottom of the terminal block box. Route power wires and connect to terminal block. Install the grounding wire onto the lug provided. "DE-OX" or another similar anti-oxidation agent should be used on all power connections.



## VOLTAGE CHECK



Apply power to machine. 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 the machine if voltage is too high or too low. Advise all proper personnel of the location of the breaker and any problems. Replace the terminal block box cover and tighten-down the screws.

## SURROUNDING AREA

*Damage to materials not recommended for higher temperatures will not be covered under warranty or by the manufacturer.*

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

## TEMPERATURE SETPOINTS

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

## LEVELING

A level machine is important to prevent any damage to the machine during operation and to ensure the best possible results. The machine comes equipped with adjustable bullet feet which can be turned using a pair of pliers. Since this machine is an undercounter unit, it should be leveled as close as possible to the unit's location before it is pushed under the counter.

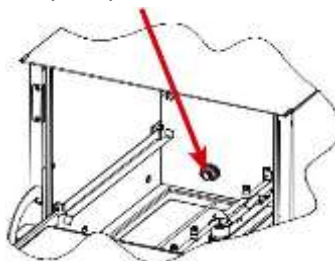
## CHEMICAL FEEDER EQUIPMENT

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" respectively from the floor.

*Using deionized water or other aggressive fluids will result in corrosion and failure of components and will void the warranty.*



**CAUTION!** Chemical tube must not extend past port into wash chamber.



## PREPARING CHEMICAL FEEDER PUMPS

This machine is supplied with detergent and rinse-aid 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

## PRIMING CHEMICAL FEEDER PUMPS

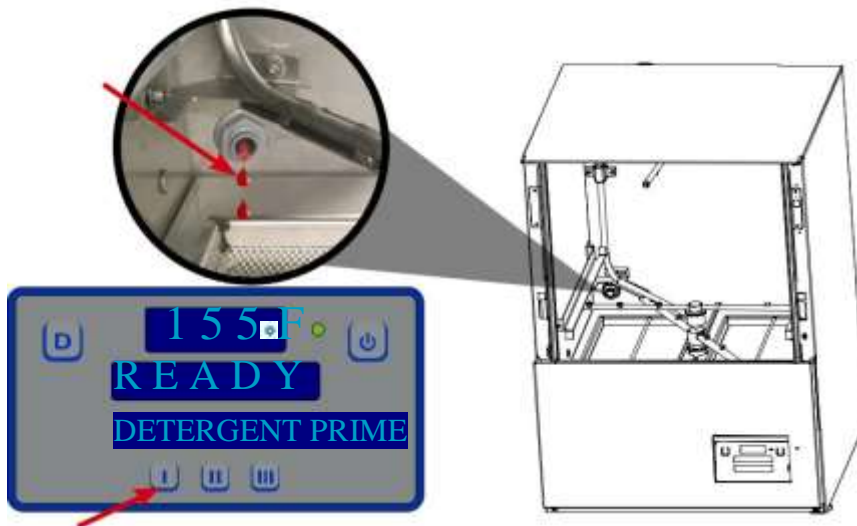
Chemical feeder pumps need priming when the machine is first installed or if the chemical lines have been removed and air was allowed to enter.



**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.

**CAUTION!** Water must be in the sump and wash tank before dispensing chemicals.

1. Verify that the proper chemical tube stiffener inlet is in the proper container.
2. To prime the detergent pump, press the I button until the chemical is seen entering the wash tank. The amount of detergent might need to be adjusted depending on water quality and type of detergent.





- PRIMING CHEMICAL FEEDER PUMPS** 3. To prime the rinse-aid pump, press the II button and hold for one minute. The amount of rinse-aid might need to be adjusted depending on water hardness and results.



4. Please refer to the section below for instructions on adjusting the amount of chemicals being dispensed.

**PROGRAMMING CHEMICAL FEEDER PUMPS** To access the programming mode, the machine must be ON and "READY" (between cycles).

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

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

**NOTICE** *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, or DETERGENT. 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.



**PROGRAMMING  
CHEMICAL  
FEEDER PUMPS**

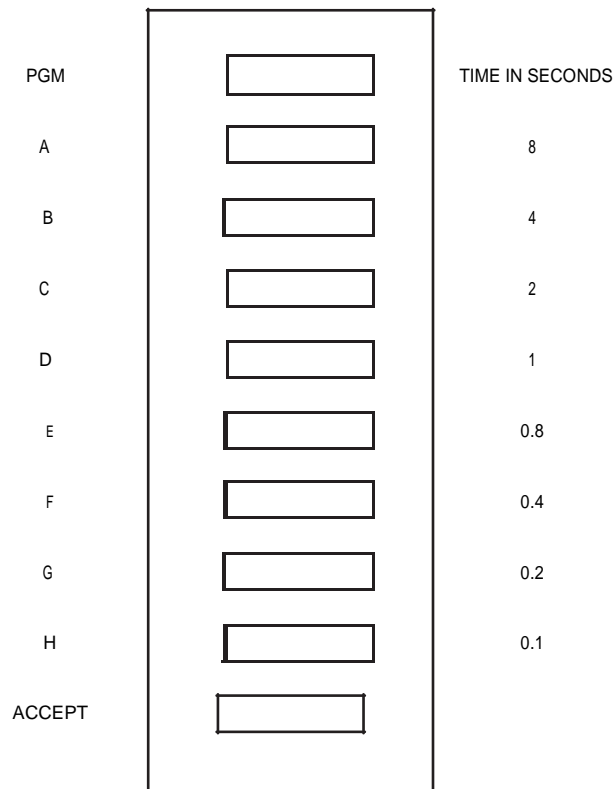
To change any other values, you will have to return to the programming mode. To revert back to a previous setting, you must return to that option and change the parameter back to the previous setting.

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 lost 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 below for adjustable outputs.

PGM	Nobel UH30-E
E	Not adjustable
F	Rinse
G	Detergent
H	Rinse-Aid

TIMER PROGRAMMING BOARD

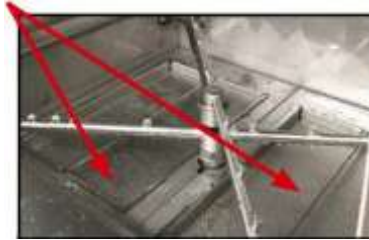


MOVE

ENTER

**PREPARATION** Before operating the machine, verify the following:

1. Strainers are in place and clean.



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



3. Wash and rinse arms rotate freely.
4. Chemical levels are correct.

**POWER UP** To energize the machine, turn on the power at the service breaker. The voltage should have been previously verified as correct. If not, the voltage must be verified before energizing the machine.

**FILLING THE WASH TUB** 1. Press the "Power" button.



2. The machine will automatically begin the fill cycle.
3. Once the wash tub is filled, the machine is ready for operation.
4. Wait for wash temperature to display at least 155 °F and for the status to display "READY" before operating the machine.



**WARE PREPARATION**

Proper ware preparation helps 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. 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 machine sanitizes as well as cleans. To do this, ware must be properly prepared before being placed in the machine.

**WASHING A RACK OF WARE**

1. Follow the Filling the Wash Tub section, ensuring temperature is at least 155 °F and the status displays "READY."



2. Open the door completely.
3. Slide the rack into the machine.



4. Close the door.
5. Choose the cycle.



- |   |   |  |
|---|---|--|
| <p>Cycle I<br/>100 Seconds<br/>Normally-soiled Ware</p> | <p>Cycle II<br/>168 Seconds<br/>Heavily-soiled Ware</p> | <p>Cycle III<br/>268 Seconds<br/>Extremely-soiled Ware</p> |
|---|---|--|

If Cycle II or Cycle III is chosen, the machine will stay in that cycle until another is chosen.

**WASHING A  
RACK OF WARE**

6. Press the "Start" button and the machine will begin the wash cycle.



*Temperature shown is the minimum required temperature.*



7. After the wash cycle is complete, the machine will automatically enter the rinse cycle.

*Temperature shown is the minimum required temperature.*

10



PSI

8. Once the rinse cycle is complete, the machine will automatically enter the sanitize cycle.



9. After the sanitize cycle is complete, the machine will automatically go back to being "READY" for operation and simply pressing the "Start" button will begin another cycle.



**OPERATIONAL INSPECTION**

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

**SHUTDOWN & CLEANING**

1. Close the door and turn the machine off by pushing the “Power” button.



2. The drain pump will activate and empty the machine of water.
3. When draining stops, remove and clean the strainers and set aside.



4. Unscrew the wash and rinse arms from their manifolds.



5. Verify the nozzles and arms are free from obstruction. If clogged, remove end-caps, clean nozzles with a brush, and flush with fresh water.



**SHUTDOWN &  
CLEANING**

*Use a screwdriver to ensure  
end-caps are tight.*

6. Replace end-caps and use a screwdriver to ensure they are tight.



7. Ensure the float is free of debris.



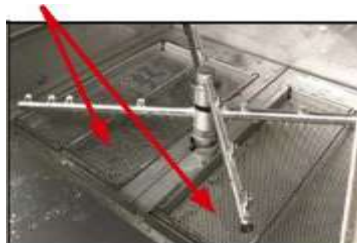
8. Spray or wipe out interior of machine.



9. Replace wash and rinse arms.



10. Replace the strainers and ensure they are laying flat.



11. Use stainless steel polish to clean and protect outside of machine.

**DELIMING** In order to maintain the machine at its optimum performance level, lime and corrosion deposits must be removed. The frequency for delimiting will be based on water conditions. A delimiting solution is available from your chemical supplier. Read and follow all instructions on the label.

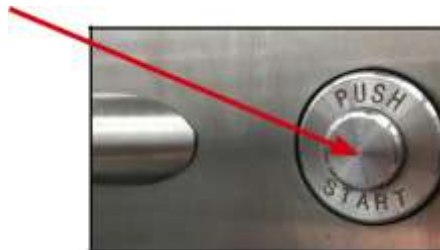
*If this machine is equipped with an HTS-11 scale prevention and corrosion control device and lime is becoming a frequent problem, the cartridge needs to be replaced. To order a replacement cartridge, see the Plumbing Options page.*

To delimit the dishmachine:

1. Remove the rinse arms and place in sink with delimiting solution (leave for the amount of time recommended by the chemical supplier).
2. Replace the rinse arms.
3. Follow the Filling the Wash Tub section of this manual.
4. Open the door and add the amount of delimiting solution recommended by the chemical supplier.
5. Close the door and press the "Delime" button on the display. The status will display "DELIME."



6. Press the "Start" button.



7. The machine will delimit, drain, and refill.
8. Wait five minutes, then inspect the machine. If the machine is not delimited, run again.
9. When clean, press the "Delime" button. The status will display "READY."
10. Run the machine through two regular cycles to remove residual delimiting solution.
11. The machine is now ready for normal operation.

**DETERGENT CONTROL** Detergent usage and water hardness are two factors that contribute greatly to how efficiently this machine operates. 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 machine, 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 might not be suitable for use in other areas of operation and it might be necessary to install a water treatment unit for the water going to the machine only. Discuss this option with a qualified water treatment specialist.
4. Machine 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. Certain machine models require that chemicals be provided for proper operation. Some models might require the installation of third-party chemical feeders to introduce those chemicals to the machine. The manufacturer does not recommend or endorse any brand name of chemicals or chemical dispensing equipment. Contact a chemical supplier for questions.
6. Some machines come equipped with integral solid detergent dispensers. These dispensers are designed to accommodate detergents in a certain-sized container. If applicable, relate this to a chemical supplier upon first contacting them.
7. Water temperature is an important factor in ensuring that the machine 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.
8. Instruct machine 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**

The manufacturer of this machine highly recommends that any maintenance and repairs not specifically discussed in this manual only be performed by qualified service personnel. Performing maintenance on the machine may void a warranty.

By following the operating and cleaning instructions in this manual, users should get the most efficient results from the machine. As a reminder, here are some steps to ensure that the machine is used properly:



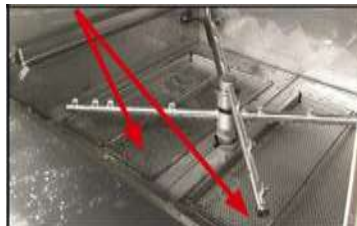
1. Ensure that the water temperatures match those listed on the machine data plate (on the front-left of machine).



2. Remove as much soil as possible from ware before loading into racks.



3. Ensure that strainers are in place, laying flat in tub, and free of soil and debris before operating the machine. To clean strainers, wipe them out with a rag and rinse under a faucet. For stubborn debris, a toothpick can be used. Do not beat strainers on waste cans; once bent, they will not work properly.



4. Ensure that all wash and rinse arms are secure in the machine before operating.



**PREVENTATIVE  
MAINTENANCE**


5. Do not overfill racks.
6. Ensure that glasses are placed upside-down in the rack.



7. Ensure that all chemicals being injected into machine have been verified at the correct concentrations.
8. Clean the machine at the end of every workday (see "Shutdown and Cleaning" section).
9. If hard water is present, install an HTS-11 into the water line connecting to the dishmachine (see the "Plumbing" section).
10. Always contact a qualified service agency whenever a serious problem arises.
11. Follow all safety procedures, whether listed in this manual or put forth by local, state, or national codes/regulations.




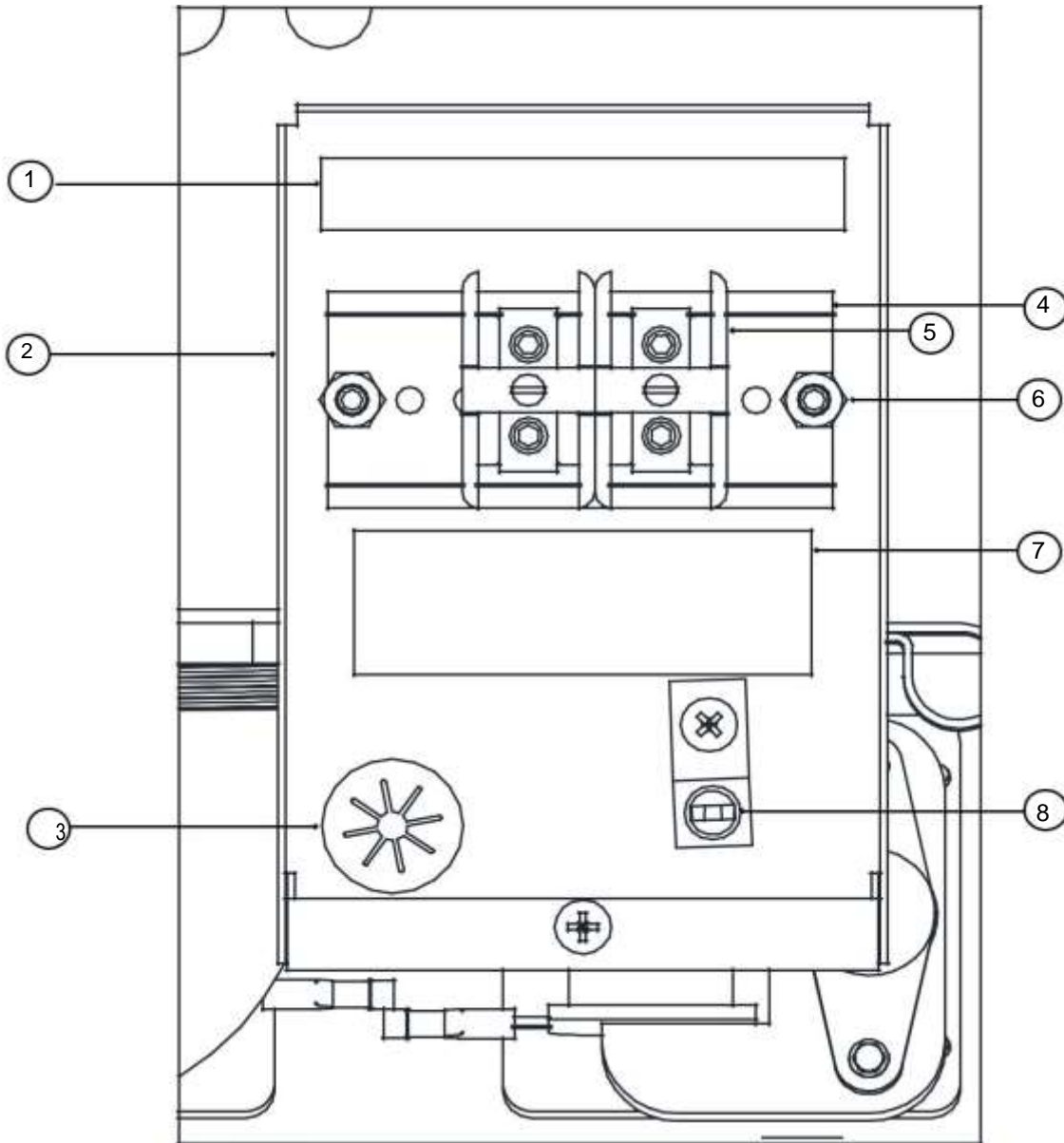
**WARNING!** Inspection, testing, and repair of electrical equipment should only be performed by qualified service personnel. Certain procedures in this section require electrical tests or measurements while power is applied to the machine. Exercise extreme caution at all times. If test points are not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

PROBLEM	POSSIBLE CAUSE	REMEDY
Water overflow from bottom of door.  	<ol style="list-style-type: none"> <li>1. Clogged drain.</li> <li>2. Machine not level.</li> <li>3. Excessive inlet pressure.</li> <li>4. Detergent foaming.</li> <li>5. Wash or rinse arm end-cap missing.</li> </ol>	<ol style="list-style-type: none"> <li>1. Remove obstruction.</li> <li>2. Level machine or increase height to the front.</li> <li>3. Install pressure regulating valve or adjust if one is present. Ensure flow meets data plate specification.</li> <li>4. Reduce detergent quantity.</li> <li>5. Replace.</li> </ol>
Wash motor doesn't operate on wash.	<ol style="list-style-type: none"> <li>1. Loose or broken wires.</li> <li>2. Defective "Start" button.</li> <li>3. Defective motor contactor.</li> </ol>	<ol style="list-style-type: none"> <li>1. Reconnect or replace wires in motor.</li> <li>2. Adjust button or replace.</li> <li>3. Replace.</li> </ol>
Little or no water coming through the rinse assemblies.	<ol style="list-style-type: none"> <li>1. Limed-up rinse heads or piping.</li> <li>2. Low water pressure.</li> </ol>	<ol style="list-style-type: none"> <li>1. Delime rinse heads.</li> <li>2. Increase pipe size to machine. Adjust pressure regulating valve.</li> </ol>

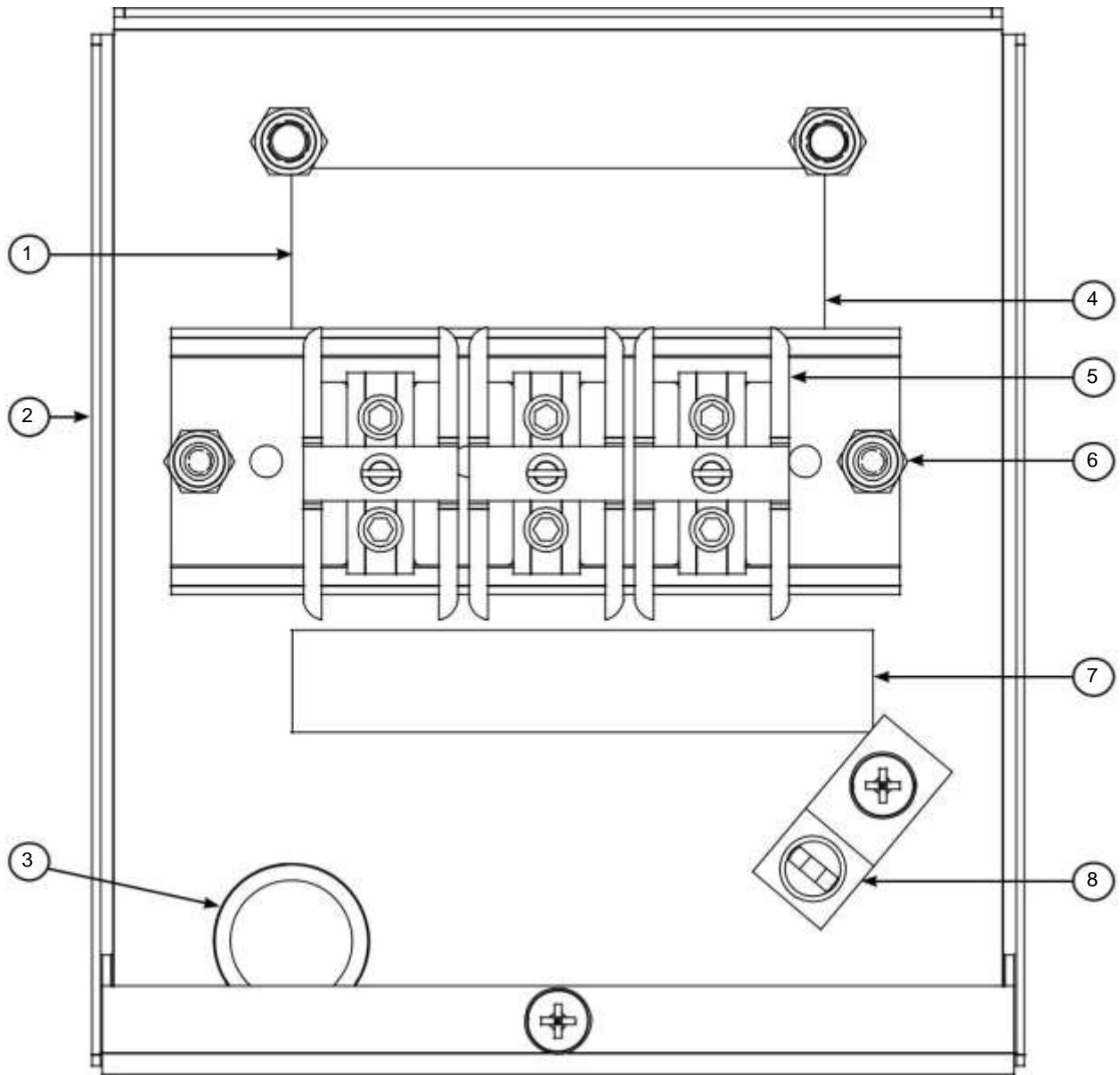


**WARNING!** Inspection, testing, and repair of electrical equipment should only be performed by qualified service personnel. Certain procedures in this section require electrical tests or measurements while power is applied to the machine. Exercise extreme caution at all times. If test points are not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

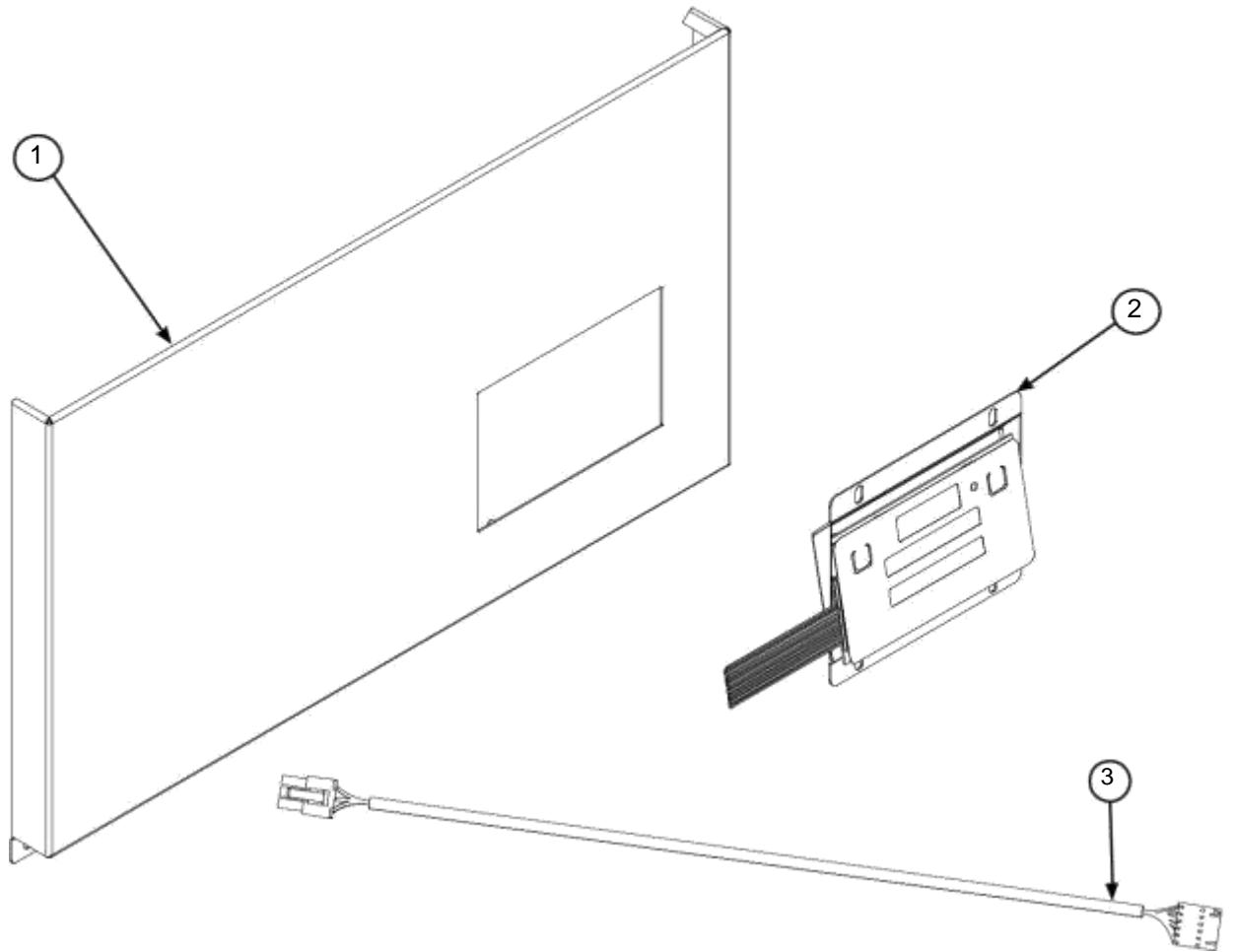
PROBLEM	POSSIBLE CAUSE	REMEDY
Rinse water runs continuously with breaker turned off.	<ol style="list-style-type: none"> <li>1. Defective plunger in solenoid valve.</li> <li>2. Defective diaphragm in solenoid valve.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace plunger.</li> <li>2. Replace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



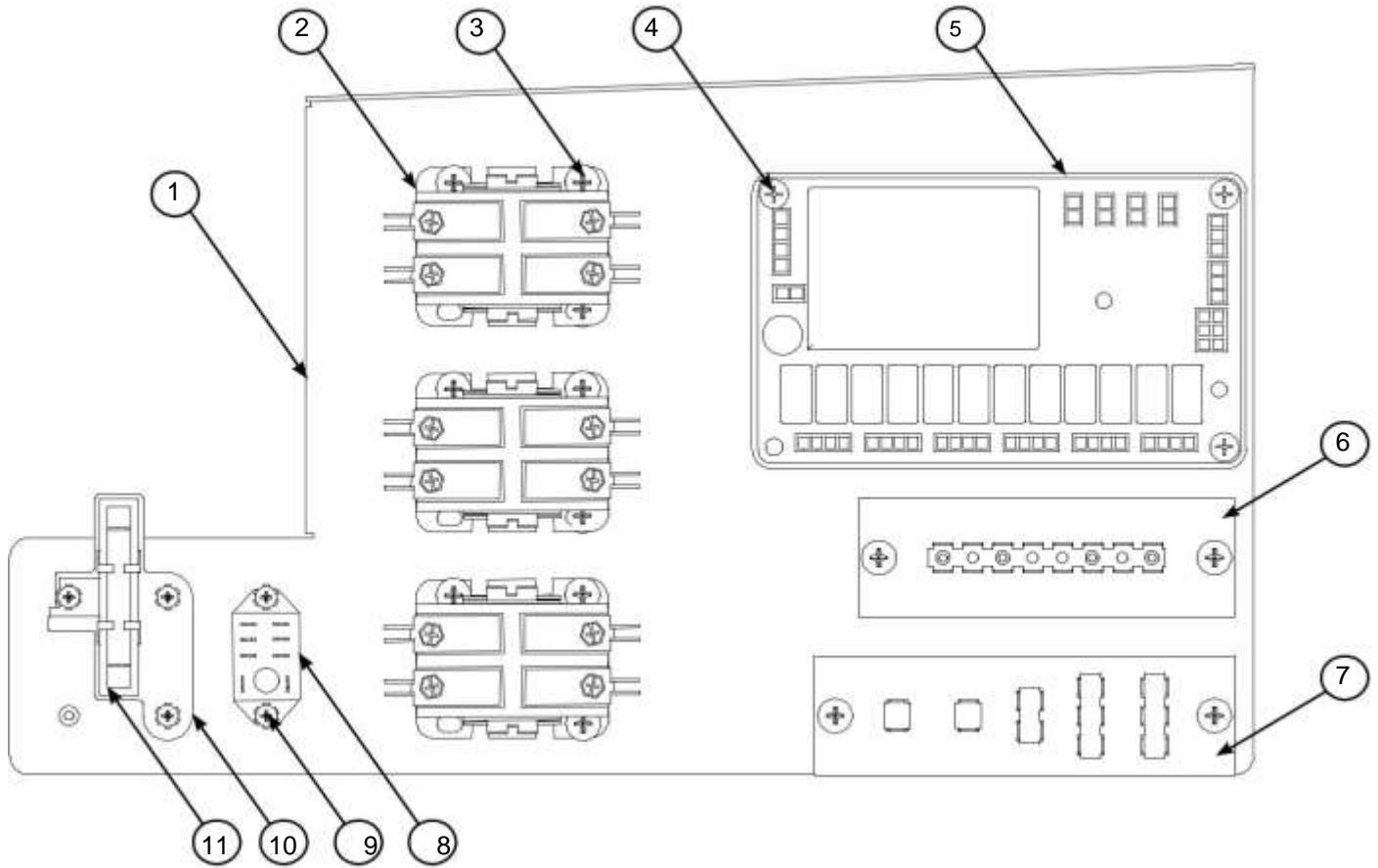
ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Power Connection Decal	09905-011-47-35
2	1	Terminal Block Box	05700-003-27-69
	1	Terminal Box Cover (not shown)	05700-003-27-70
3	1	Strain Relief	05975-003-37-56
4	1	Terminal Block Track	05700-000-43-60
5	2	Terminal Block	05940-500-02-19
6	2	Locknut, 10-24 Hex with Nylon Insert	05310-373-01-00
7	1	Decal, L1, N	09905-011-62-72
8	1	Ground Lug	05940-200-76-00



ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Power Connection Decal	09905-011-47-35
2	1	Terminal Block Box	05700-004-44-79
	1	Terminal Box Cover (not shown)	05700-004-44-80
3	1	Strain Relief	05975-210-03-00
4	1	Terminal Block Track	05700-004-44-72
5	3	Terminal Block	05940-500-02-19
6	2	Locknut, 8-32 Low Profile	05310-004-23-83
7	1	Decal, L1, L2, L3	09905-101-12-66
8	1	Ground Lug	05940-200-76-00



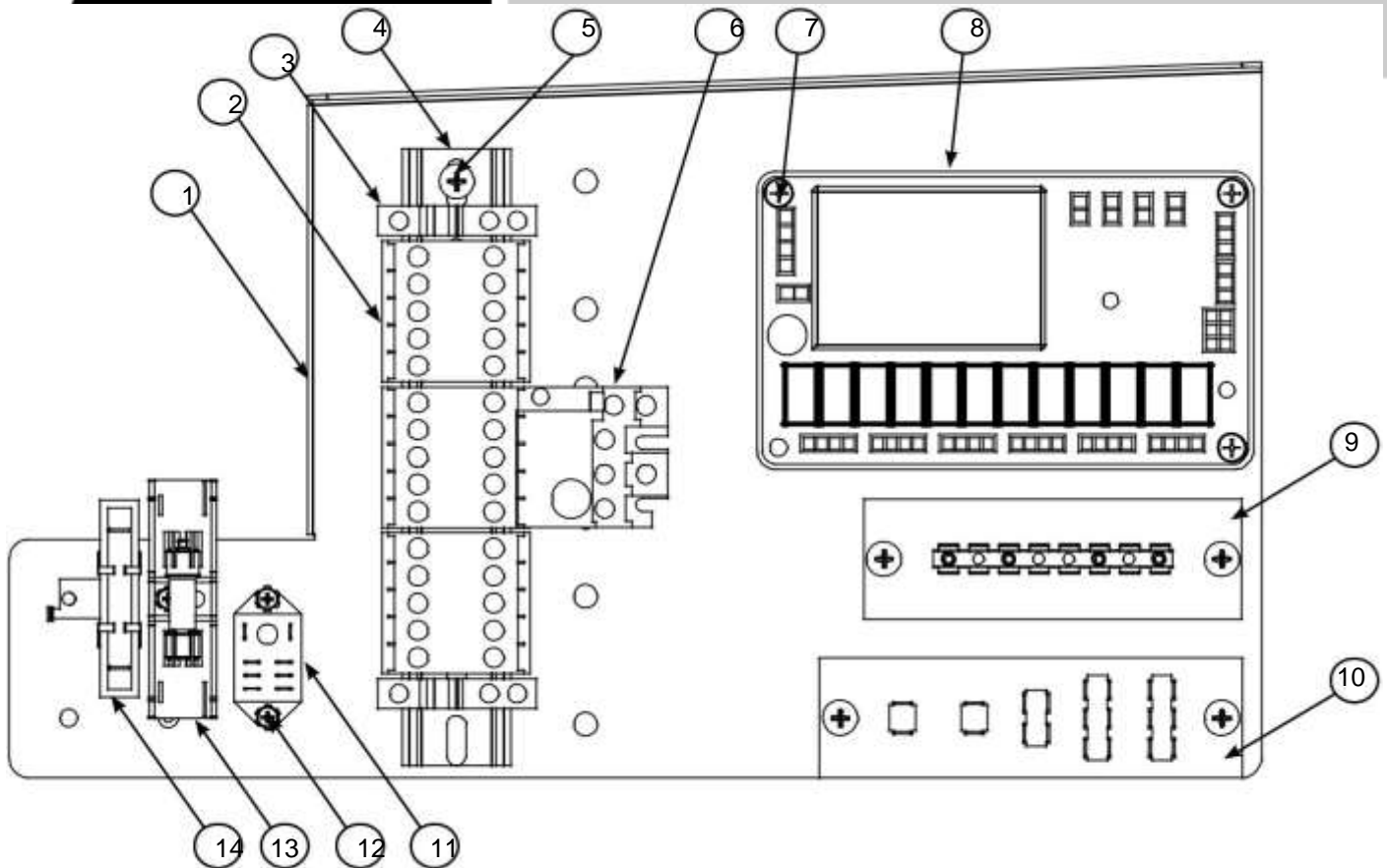
ITEM	QTY	DESCRIPTION	PART NUMBER
		Complete Control Kick Panel Assembly	05700-004-41-87
1	1	Control Kick Panel	05700-004-41-86
2	1	Display Assembly	05700-004-19-47
3	1	Communication Cable	05700-004-33-64



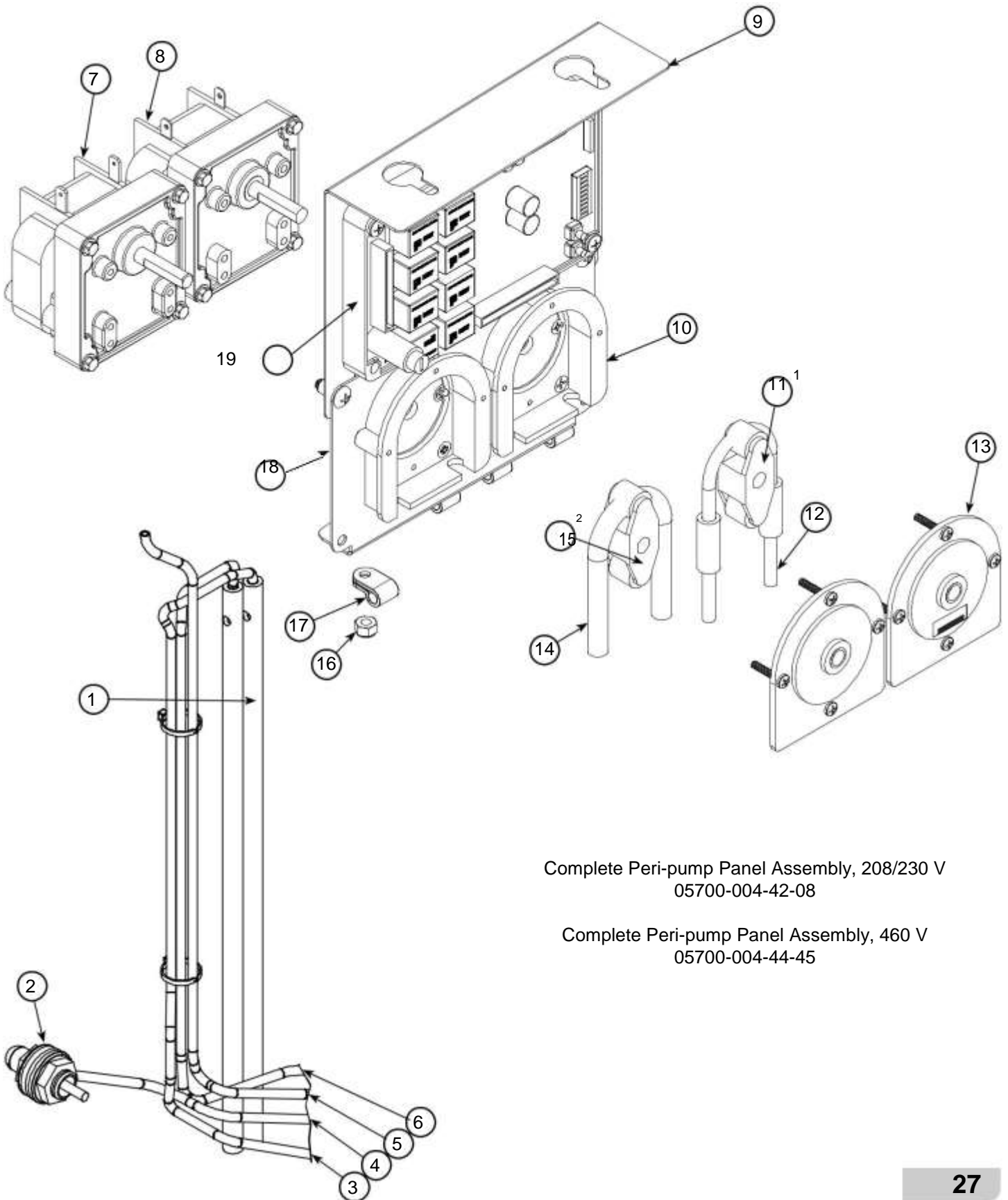
ITEM	QTY	DESCRIPTION	PART NUMBER
		Complete Electrical Panel Assembly, 208/230 V	05700-004-42-07
1	1	Electrical Panel	05700-004-40-63
2	3	Contactors, 208/230 V	05945-002-74-20
3	13	Screw, 10-32 x 5/8"	05305-003-02-12
4	3	Screw, 10-32 x 1"	05305-002-19-42
5	1	PCB, Electronic Control	05945-004-36-34
6	1	Terminal Board	05940-004-21-34
7	1	Terminal Board	05940-002-78-97
8	1	Relay	05945-111-89-75
9	5	Screw, 6-32 x 3/8"	05305-002-25-91
10	1	Bracket, Resistor Mount	05700-004-44-51
11	1	Resistor, Wire Wound Power, 1/4" Tabs	05935-004-44-44



# ELECTRICAL PANEL, 460 V



ITEM	QTY	DESCRIPTION	PART NUMBER
		Complete Electrical Panel Assembly, 460 V	05700-004-44-50
1	1	Electrical Panel	05700-004-40-63
2	3	Contactor, 460 V	05945-111-60-07
3	2	End-cap, Contactor	05940-111-60-30
4	1	Dinrail, 7 3/4"	05700-002-79-13
5	6	Screw, 10-32 x 5/8"	05305-003-02-12
6	1	Overload	05945-111-60-08
7	3	Screw, 10-32 x 1"	05305-002-19-42
8	1	PCB, Electronic Control	05945-004-36-34
9	1	Terminal Board	05940-004-21-34
10	1	Terminal Board	05940-002-78-97
11	1	Relay	05945-002-47-41
12	3	Screw, 6-32 x 3/8"	05305-002-25-91
13	1	Fuse Holder	05920-011-72-89
14	1	Resistor, Wire Wound Power, 1/4" Tabs	05935-004-44-44



Complete Peri-pump Panel Assembly, 208/230 V  
05700-004-42-08

Complete Peri-pump Panel Assembly, 460 V  
05700-004-44-45

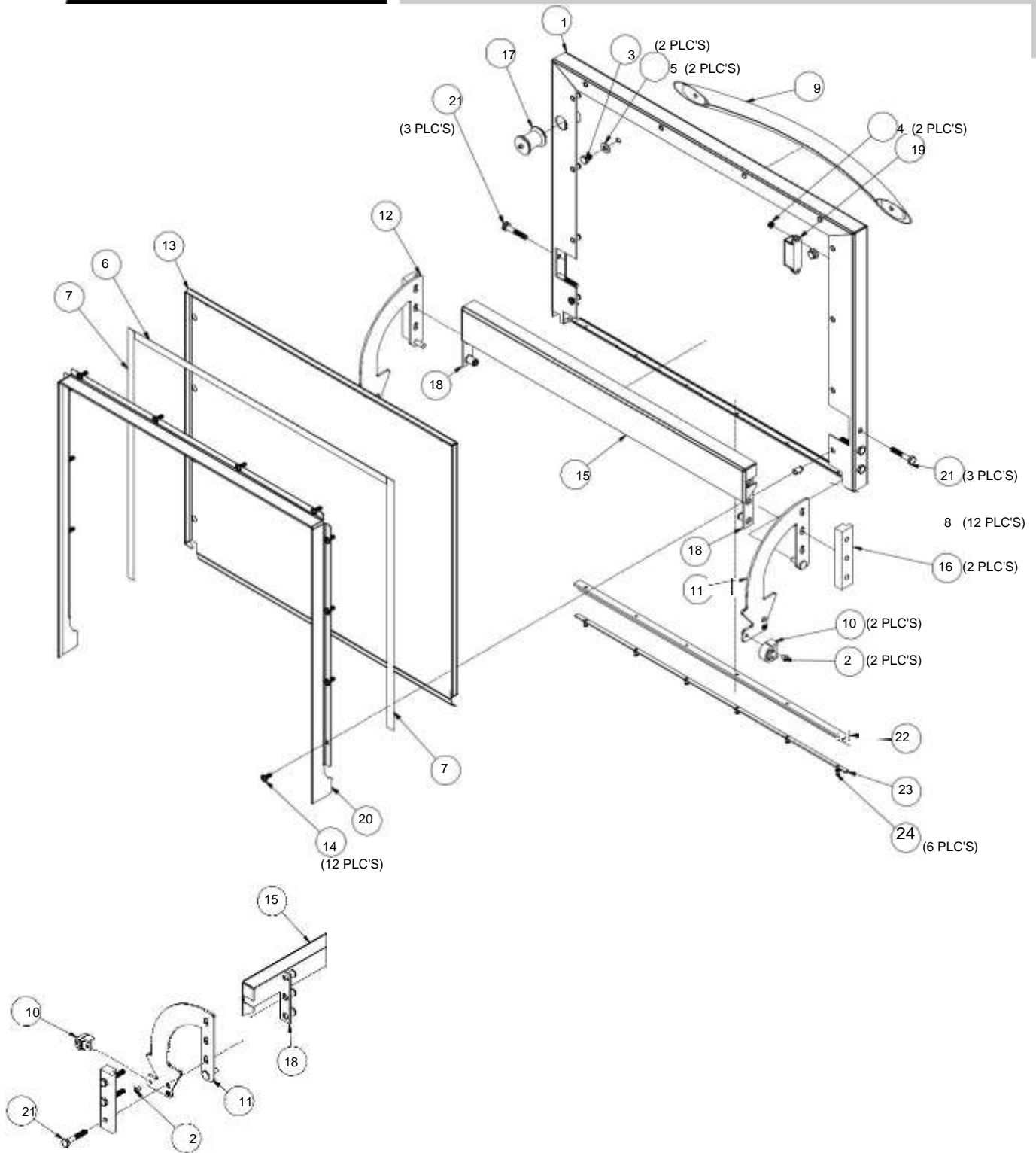
# CHEMICAL FEEDER PUMP ASSEMBLY

ITEM	QTY	DESCRIPTION	PART NUMBER
1	2	Stiffener, Chemical Tube	05700-002-66-49
2	1	Chemical Port Assembly	05700-004-30-86
3	1	Tubing, Red, 1/4" x 120"	05700-011-37-15
4	1	Tubing, Red, 1/4" x 80"	05700-011-37-14
5	1	Tubing, Clear, 1/8" x 120"	05700-002-76-14
6	1	Tubing, Clear, 1/8" x 48"	05700-002-76-15
7	1	Complete Peri-pump Assembly, 36 RPM, 208/230 V	05700-003-78-74
	1	Motor Only, Peri-pump, 36 RPM, 208/230 V	04320-111-47-47
	1	Complete Peri-pump Assembly, 36 RPM, 460 V	05700-002-96-08
	1	Motor Only, Peri-pump, 36 RPM, 460 V	04320-111-35-14
8	1	Complete Peri-pump Assembly, 14 RPM, 208/230 V	05700-002-72-48
	1	Motor Only, Peri-pump, 14 RPM, 208/230 V	04320-111-47-46
	1	Complete Peri-pump Assembly, 14 RPM, 460 V	05700-002-96-09
	1	Motor Only, Peri-pump, 14 RPM, 460 V	04320-111-35-13
9	1	Panel, Outer Control	05700-004-41-89
10	2	Pump Housing	04320-111-37-09
11 <sub>1</sub>	1	Roller, Black Plastic	04320-111-65-27
	1	Roller, Red Plastic (36 RPM, 460 V assembly only)	04320-111-36-70
12	1	Tube, 8", 208/230 V	05700-011-65-21
	1	Tube, 8", 460 V	05700-011-76-41
13	2	Pump Cover	04320-111-37-08
14	1	Tube, 8", 208/230 V	05700-003-22-89
	1	Tube, 8", 460 V	05700-111-35-29
15 <sub>2</sub>	1	Roller, White Plastic	04320-002-82-28
16	4	Locknut, 10-24 Hex with Nylon Insert	05310-373-01-00
17	4	P-clamp, 1/4"	05975-002-61-42
18	1	Plate, Peri-pump	05700-004-36-03
19	1	Universal Timer	05945-003-75-23

<sub>1</sub> On the 460 V machine, the 36 RPM peri-pump assembly uses the red roller. So for the 460 V machine, this would be item #15 on the previous page.

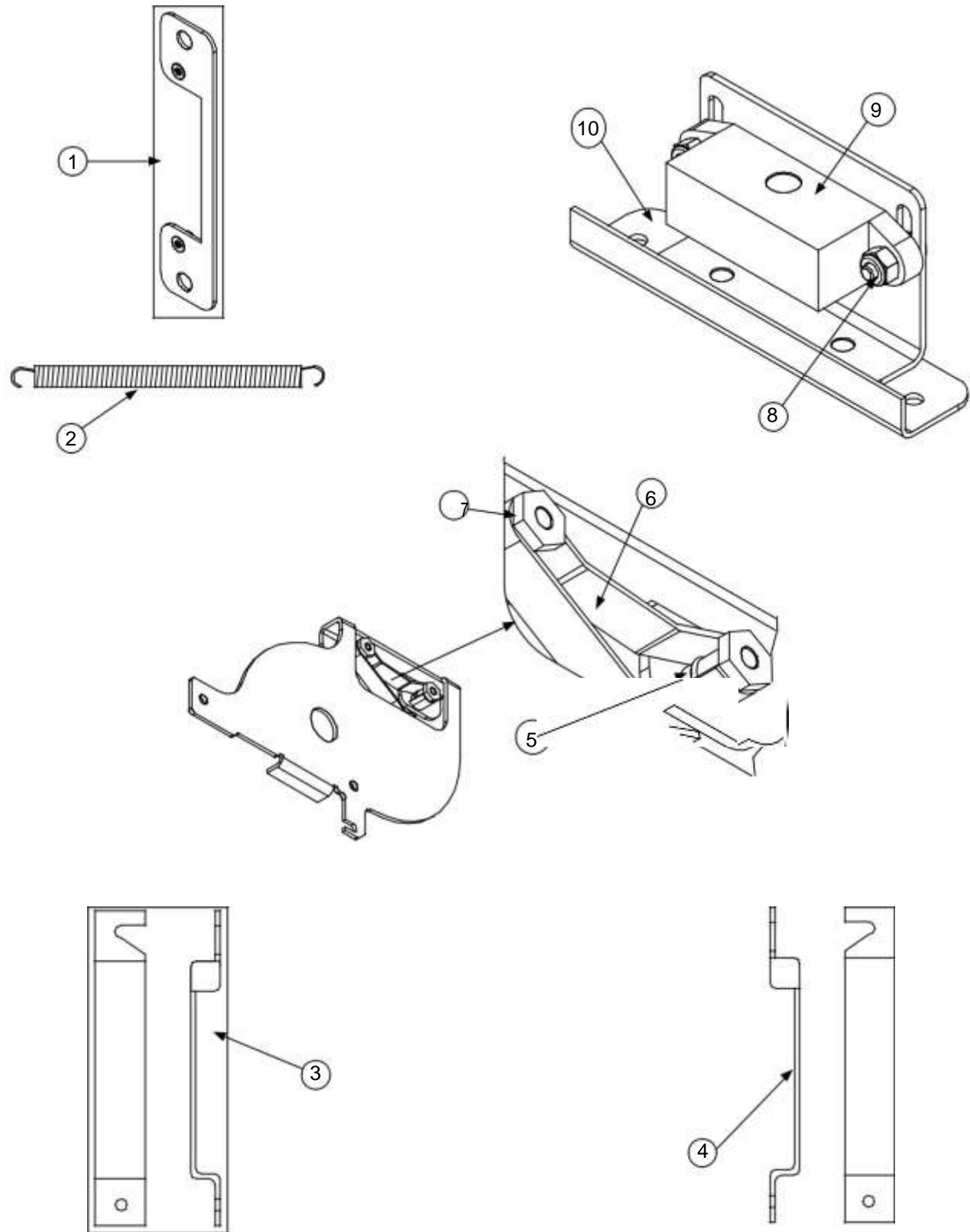
<sub>2</sub> On the 460 V machine, the 14 RPM peri-pump assembly uses the white roller. So for the 460 V machine, this would be item #11 on the previous page.

# DOOR ASSEMBLY



# DOOR ASSEMBLY

ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Outer Door Weldment	05700-004-36-55
2	2	Screw, 10-32 x 1/4"	05305-173-01-00
3	2	Bolt, 1/4-20 x 3/8" Hex	05305-274-20-00
4	2	Locknut, 6-32 Hex with Nylon Insert	05310-373-03-00
5	2	Washer, 1/4-20 ID	05311-174-01-00
6	1	Gasket, Door 20"	05330-003-58-35
7	2	Gasket, Door 17 1/8"	05330-003-58-36
8		Item intentionally left blank.	
9	1	Door Handle	05700-003-26-62
10	2	Stop, Door Hinge	05700-003-32-55
11	1	Hinge, Left	05700-003-32-71
12	1	Hinge, Right	05700-003-32-72
13	1	Inner Door	05700-003-33-21
14	12	Screw, 10-32 x 1/2" Pan Phillips Head	05305-002-32-57
15	1	Baffle, Door	05700-003-33-38
16	2	Hinge Spacer	05700-003-33-42
17	1	Switch Assembly	05700-003-34-80
18	2	Retaining Plate	05700-011-44-37
19	1	Magnet	05930-002-88-42
20	1	Channel, Door Seal	05700-003-55-49
21	6	Screw, 1/4-20 x 1 1/2" Hex	05305-274-23-00
22	1	Gasket, Door L	05330-004-36-05
23	1	Gasket Clamp	05700-004-36-56
24	6	Pop Rivet, 1/8" x 3/8"	05320-003-06-98

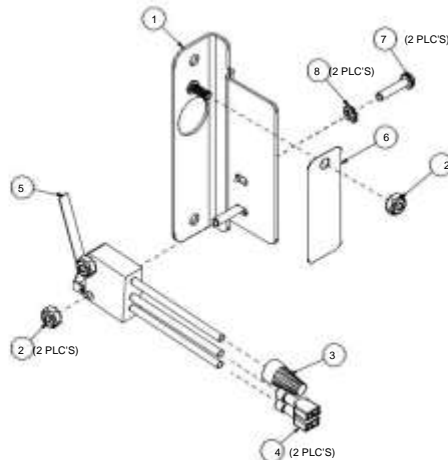


# MISCELLANEOUS DOOR COMPONENTS

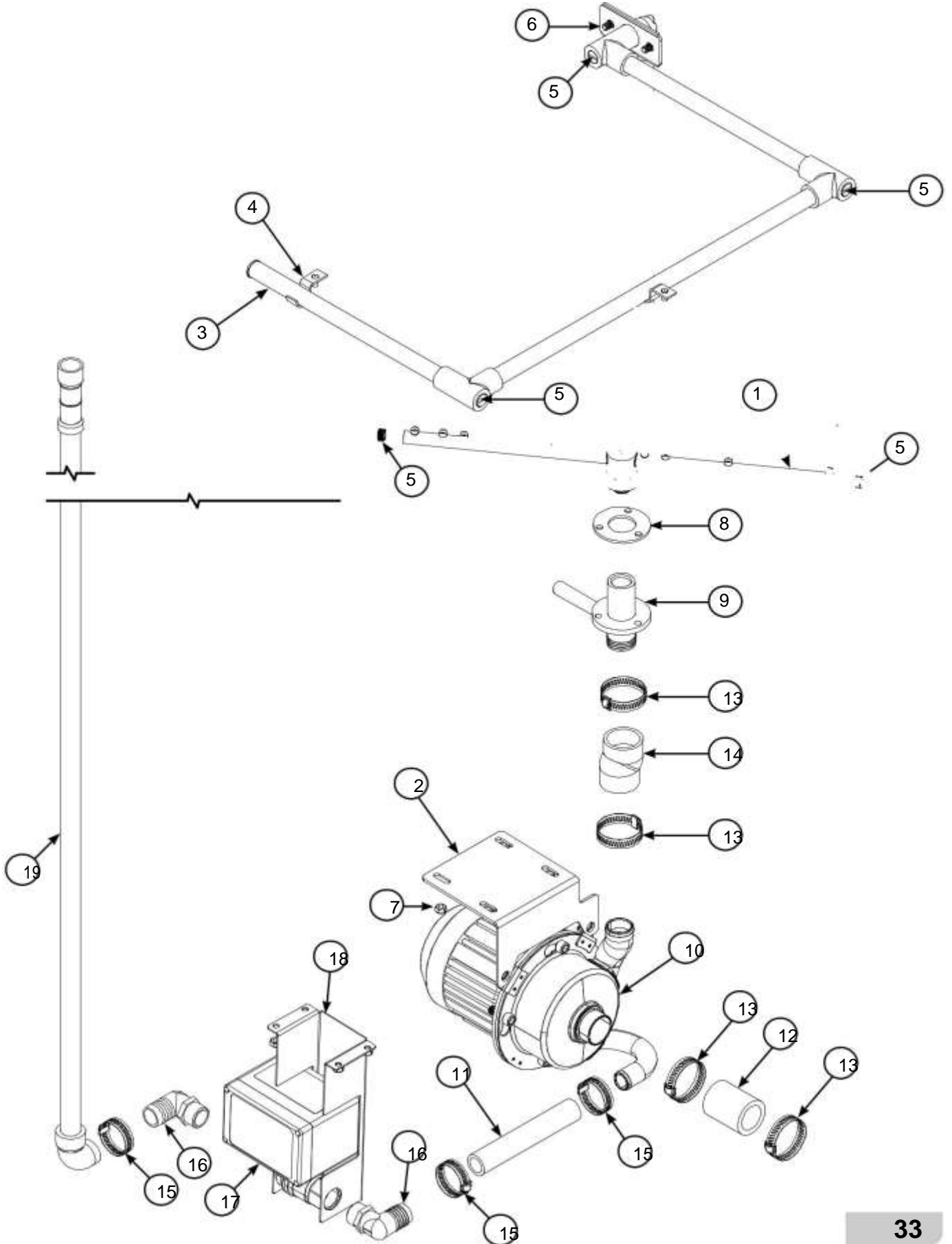
ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Switch Mounting Plate Assembly	05700-003-33-54
2	1	Door Spring	05700-003-32-85
3	1	Cover, Left Hinge Weldment	05700-004-36-80
4	1	Cover, Right Hinge Weldment	05700-004-36-81
		Hinge Components secured with Locknut, 1/4-20 Hex with Nylon Insert	05310-374-01-00
5	2	O-ring	05330-003-32-34
6	1	Latch Spring	05700-003-32-32
7	2	Latch Nut	05700-003-32-33
8	2	Locknut, 6-32 Hex with Nylon Insert	05310-373-03-00
	2	Screw, 6-32 x 1/4"	05305-171-01-00
9	1	Door Switch	05930-003-31-44
10	1	Door Switch Bracket	05700-003-31-43
	1	Door Switch & Bracket Assembly	05700-003-32-21

## Complete Cycle Switch Assembly

05700-004-36-00



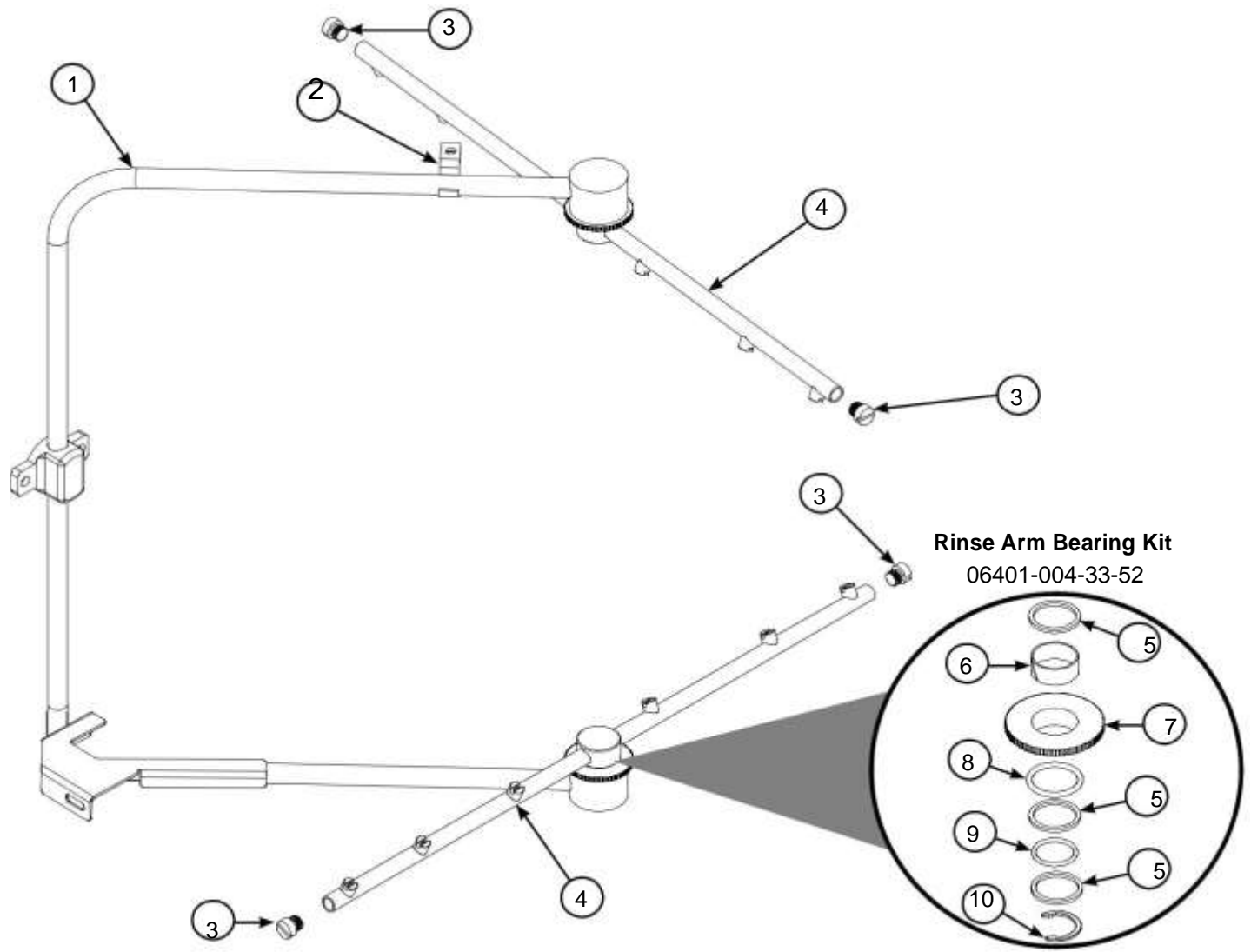
ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Switch, Cover Plate	05700-004-35-99
2	3	Nut, Lock 6-32 Hex with Nylon Insert	05310-373-03-00
3	1	Wire Nut, Blue Metal	05945-111-01-00
4	2	Terminal, .187 Pink Reel	05940-111-46-18
5	1	Door Switch	05930-303-38-00
6	1	Lever Spring, Start Button	05700-004-35-98
7	2	Screw, 6-32 x 5/8"	05305-011-39-85
8	2	Lockwasher, #6 Ext.Tooth	05311-271-02-00





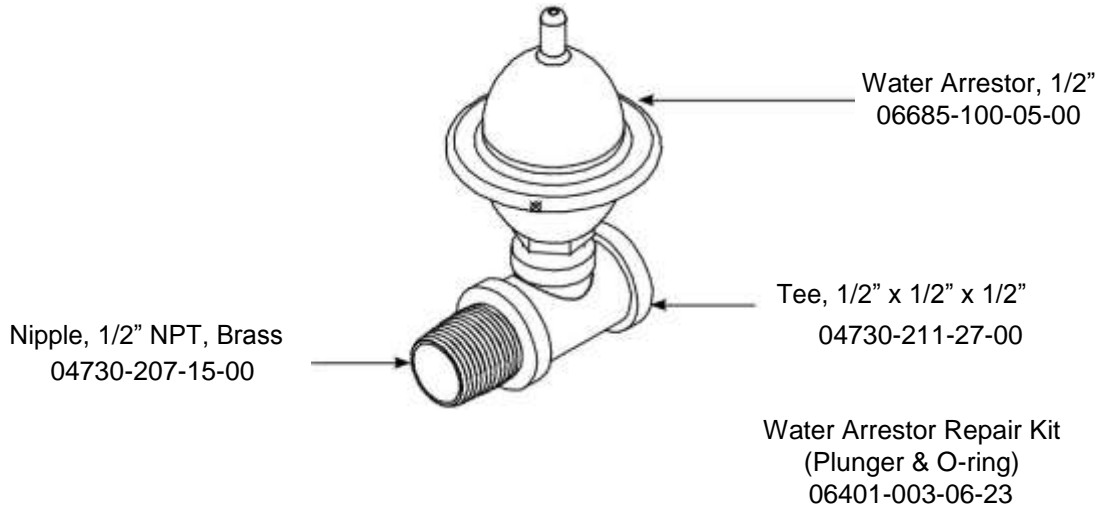
# WASH & MOTOR ASSEMBLY

ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Wash Arm Assembly	05700-021-39-23
2	1	Motor Support	05700-004-40-61
3	1	Wash Halo	05700-004-42-21
4	2	Pipe Clamp	05700-000-35-06
5	5	Wash Arm End-cap	05700-003-31-59
6	2	Screw, 1/4-20 x 1/2"	05307-011-36-96
7	4	Locknut, 1/4-20 Hex with Nylon Insert	05310-374-01-00
8	1	Manifold Gasket	05330-002-34-77
9	1	Wash Hub	05700-004-43-04
10	1	Pump and Motor, 208/230 V	06105-004-35-22
	1	Pump and Motor, 460 V	06105-003-52-78
11	1	Discharge Hose, 5/8" x 8"	05700-004-46-28
12	1	Hose, 1 1/4" x 2 3/4"	05700-011-44-48
13	4	Clamp, 1 1/16" to 2"	04730-719-18-00
14	1	Hose, Manifold Bottom	05700-001-22-92
15	3	Clamp, 13/16" to 1 1/2"	04730-719-06-09
16	2	Hosebarb, 90-Degree, 3/4" x 1"	04730-011-65-87
17	1	Drain Valve Assembly, 208/230 V	04730-003-33-64
	1	Drain Valve Assembly, 460 V	04730-003-34-60
18	1	Bracket, Drain Valve Support, 208/230 V	05700-004-35-85
	1	Bracket, Drain Valve Support, 460 V	05700-004-42-01
19	1	Drain Hose	04720-004-32-00

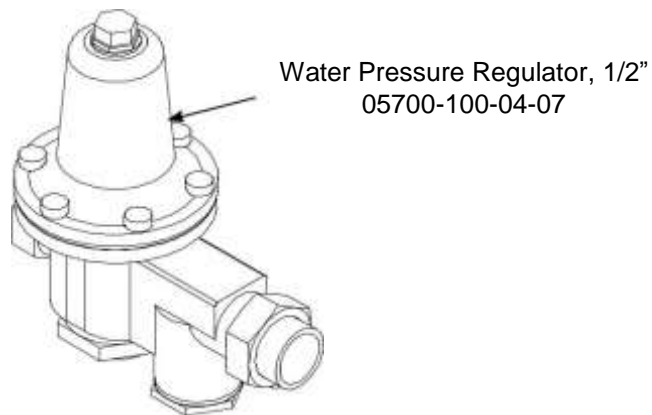


ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Complete Rinse Manifold Assembly	05700-004-40-58
2	1	Pipe Clamp	05700-000-35-06
3	4	Rinse Arm End-cap	04730-111-60-41
4	2	Complete Rinse Arm Assembly	05700-004-39-39
	2	Rinse Arm	05700-004-38-75
5	3	Washer, Rinse Arm	05330-011-42-10
6	2	Bearing, Rinse Arm	03120-004-12-13
7	1	Bushing, Rinse Head	05700-021-33-84
8	1	O-ring	05330-002-60-69
9	1	Retaining Ring	05330-004-32-57
10	1	Retaining Ring, Rinse Head Bushing	05340-112-01-11

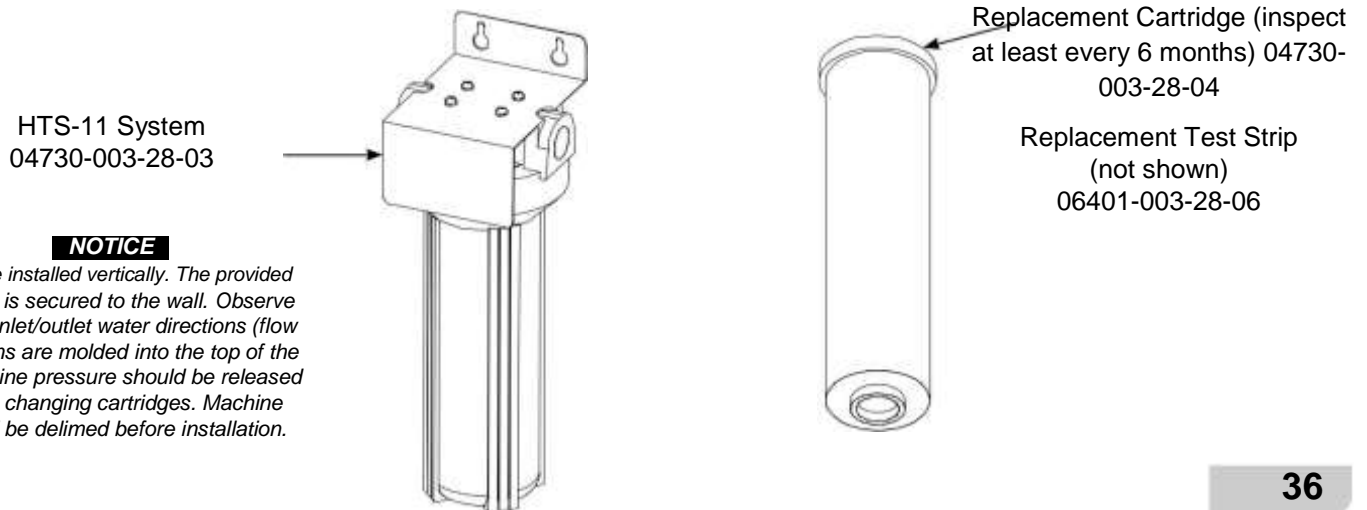
**SHOCK ABSORBER (WATER ARRESTOR) OPTION**



**PRESSURE REGULATOR OPTION**

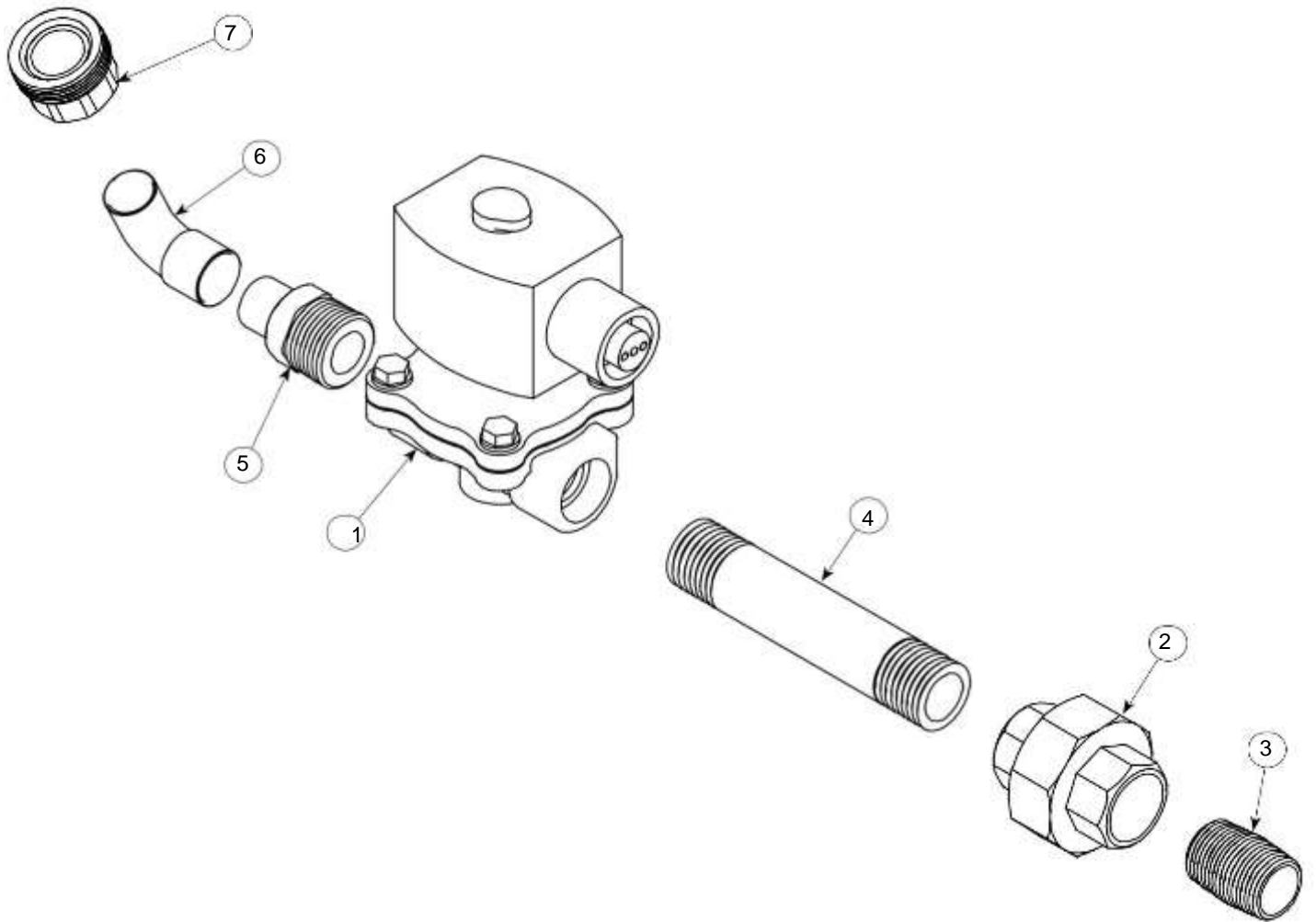


**HTS-11 OPTION**



**NOTICE**

*Must be installed vertically. The provided bracket is 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 before changing cartridges. Machine should be delimed before installation.*

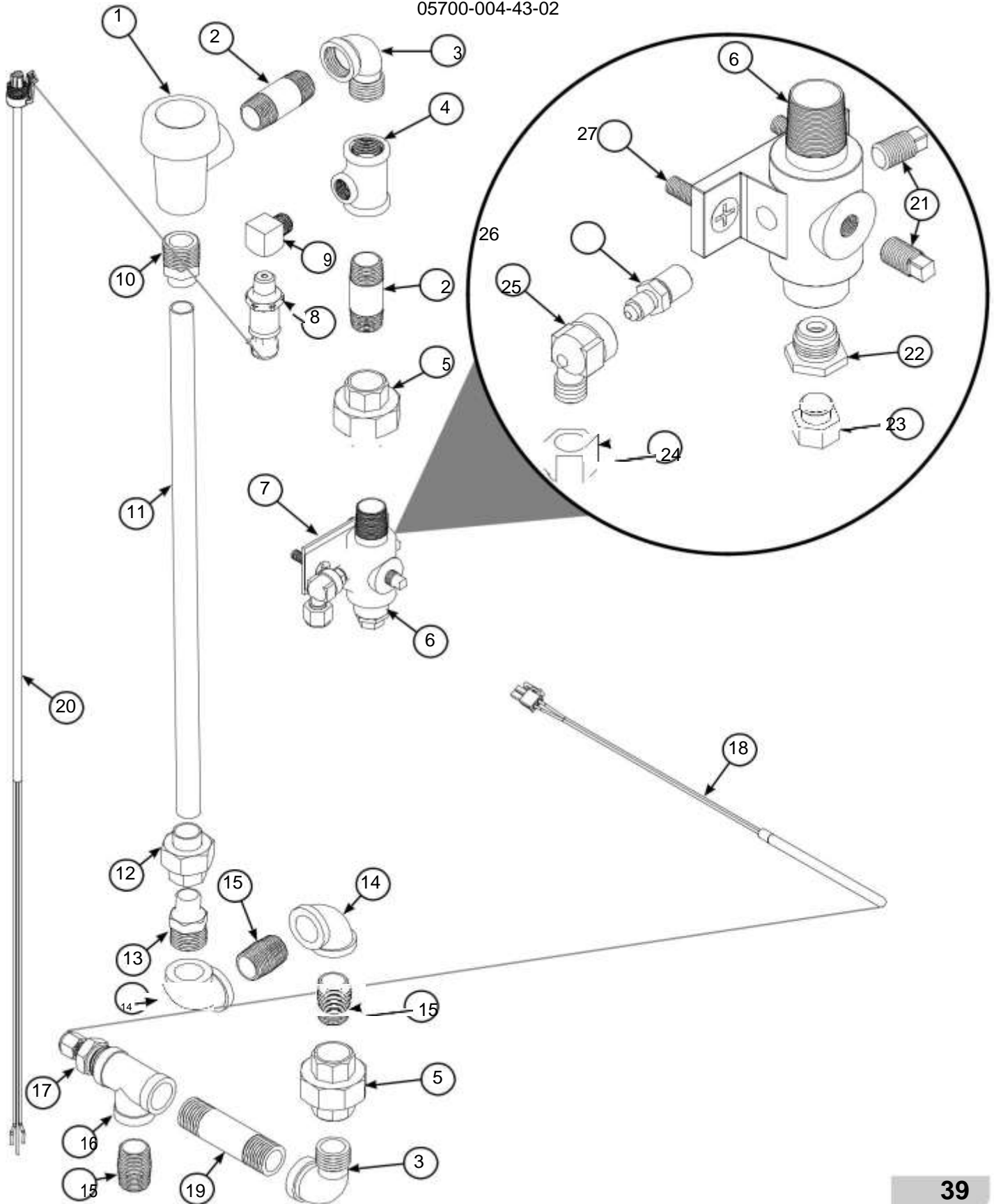


ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Valve, 1/2", 208/230 V	04810-003-71-56
	1	Valve, 1/2", 460 V	04810-003-71-55
2	1	Union, 1/2" x 1/2" Brass	04730-003-62-44
3	1	Nipple, 1/2" Close Brass	04730-207-15-00
4	1	Nipple, 1/2" x 4" NPT Brass	04730-207-04-00
5	1	Adapter, 1/2" Fitting, Male	04730-011-59-53
6	1	Elbow, 1/2"	04730-406-31-01
7	1	Hose Adapter	04720-004-24-68

Complete Inlet Plumbing Assembly, 208/230 V  
05700-004-09-03

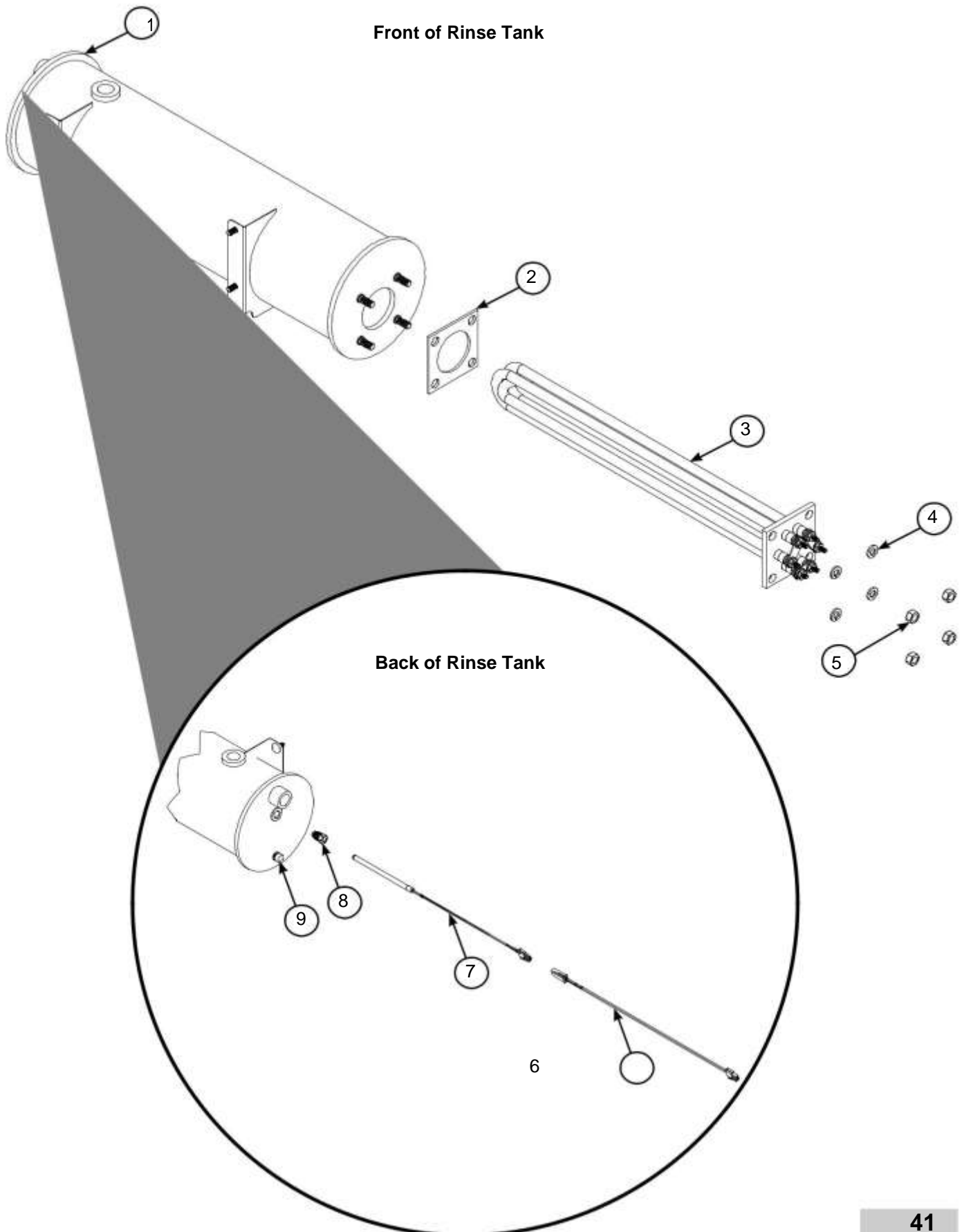
Complete Inlet Plumbing Assembly, 460 V  
05700-004-44-40

Complete Plumbing Assembly  
05700-004-43-02



# PLUMBING ASSEMBLIES

ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Vacuum Breaker, 1/2" Brass	04820-003-06-13
2	2	Nipple, 1/2" Brass, 2" Long	04730-207-19-00
3	2	Elbow, 90-Degree, 1/2" Street Brass	04730-206-08-00
4	1	Tee, 1/2" x 1/2" x 1/4"	04730-002-22-56
5	2	Union, 1/2" x 1/2" Brass	04730-003-62-44
6	1	Complete Rinse Injector Assembly	05700-004-43-86
	1	Rinse Injector	09515-004-22-73
7	1	Gasket, Rinse Manifold	05330-003-75-91
8	1	Pressure Transducer	05945-004-17-01
9	1	Elbow, 90-Degree, 1/4" x 1/4" Brass	04730-003-77-83
10	1	Adapter, Male	04730-401-03-01
11	1	Copper Tube, 1/2" x 15 1/2"	05700-000-97-23
12	1	Union	04730-412-05-01
13	1	Adapter, Male, 1/2" Fitting	04730-011-59-53
14	2	Elbow, 90-Degree, 1/2" Brass	04730-011-42-96
15	3	Nipple, 1/2" Brass	04730-207-15-00
16	1	Tee, 1/2" Brass	04730-211-27-00
17	1	Compression Fitting, 1/2" x 1/4"	04730-004-36-38
18	1	Thermistor Probe, 4" with 18" Cable	06685-004-34-58
19	1	Nipple, Brass 1/2" x 3"	04730-004-20-10
20	1	Harness, Transducer	05700-004-33-62
21	2	Plug, 1/8" Brass	04730-209-07-37
22	1	Adapter	05700-002-29-75
23	1	Thermostat Fitting, Brass	05700-011-73-73
24	1	Nut, Tube, 1/8"	04730-011-59-45
25	1	Fitting, Outlet Elbow	04820-111-51-18
26	1	Check Valve	04820-111-51-14
27	2	Screw, 1/4-20 x 1"	05305-011-81-58

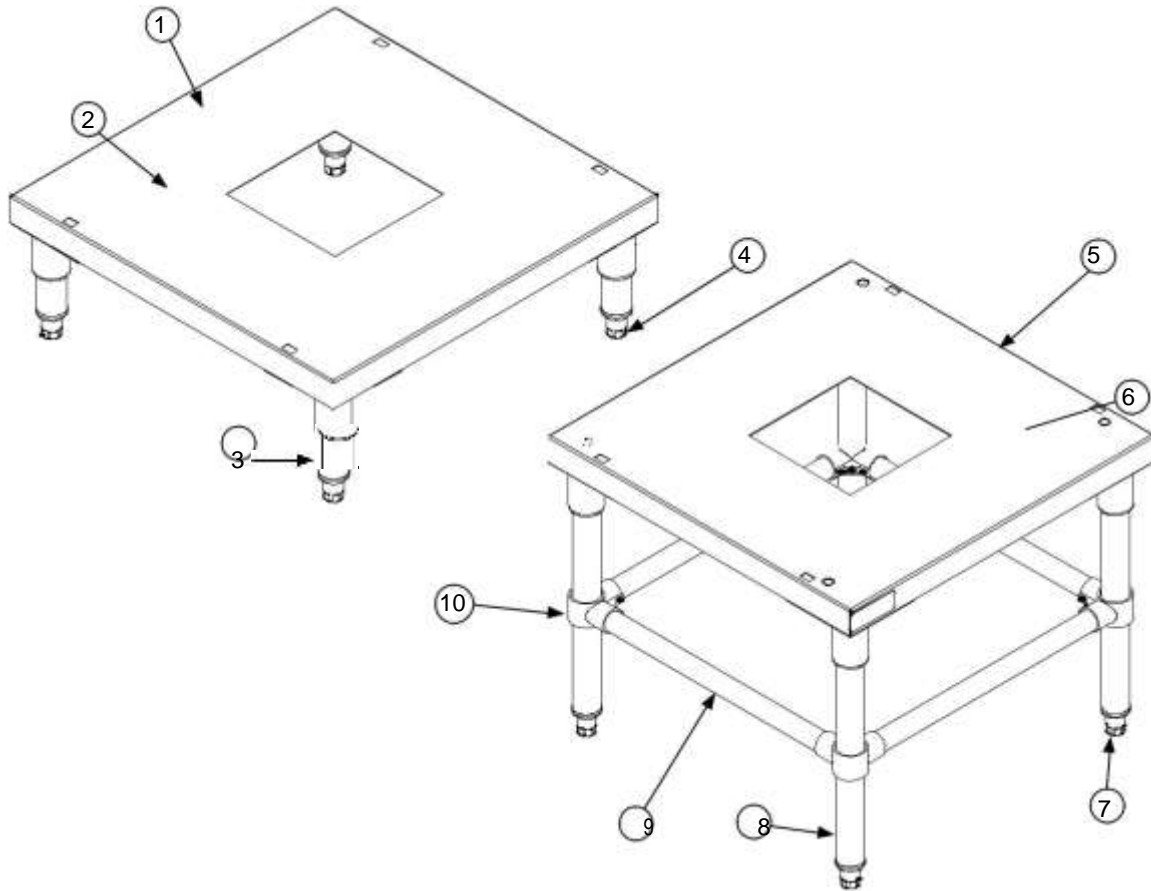




ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Rinse Tank, 208/230 V	05700-004-41-88
	1	Rinse Tank, 460 V	05700-004-44-46
2	1	Heater Gasket	05330-011-47-79
3	1	Rinse Heater, 5.45 kW, 208-230 V	04540-004-45-12
	1	Rinse Heater, 5.45 kW, 460 V	04540-121-65-99
4	4	Lockwasher, Split 5/16"	05311-275-01-00
5	4	Nut, Hex 5/16-18	05310-275-01-00
6	1	Cable, Temperature Probe	05700-004-33-23
7	1	Thermistor Probe, 4" with 18" Cable	06685-004-34-58
8	1	Fitting, 1/4", Brass Nut/Sleeve	05310-924-02-05
9	1	Plug, 1/4" Brass	04730-209-01-00

**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.

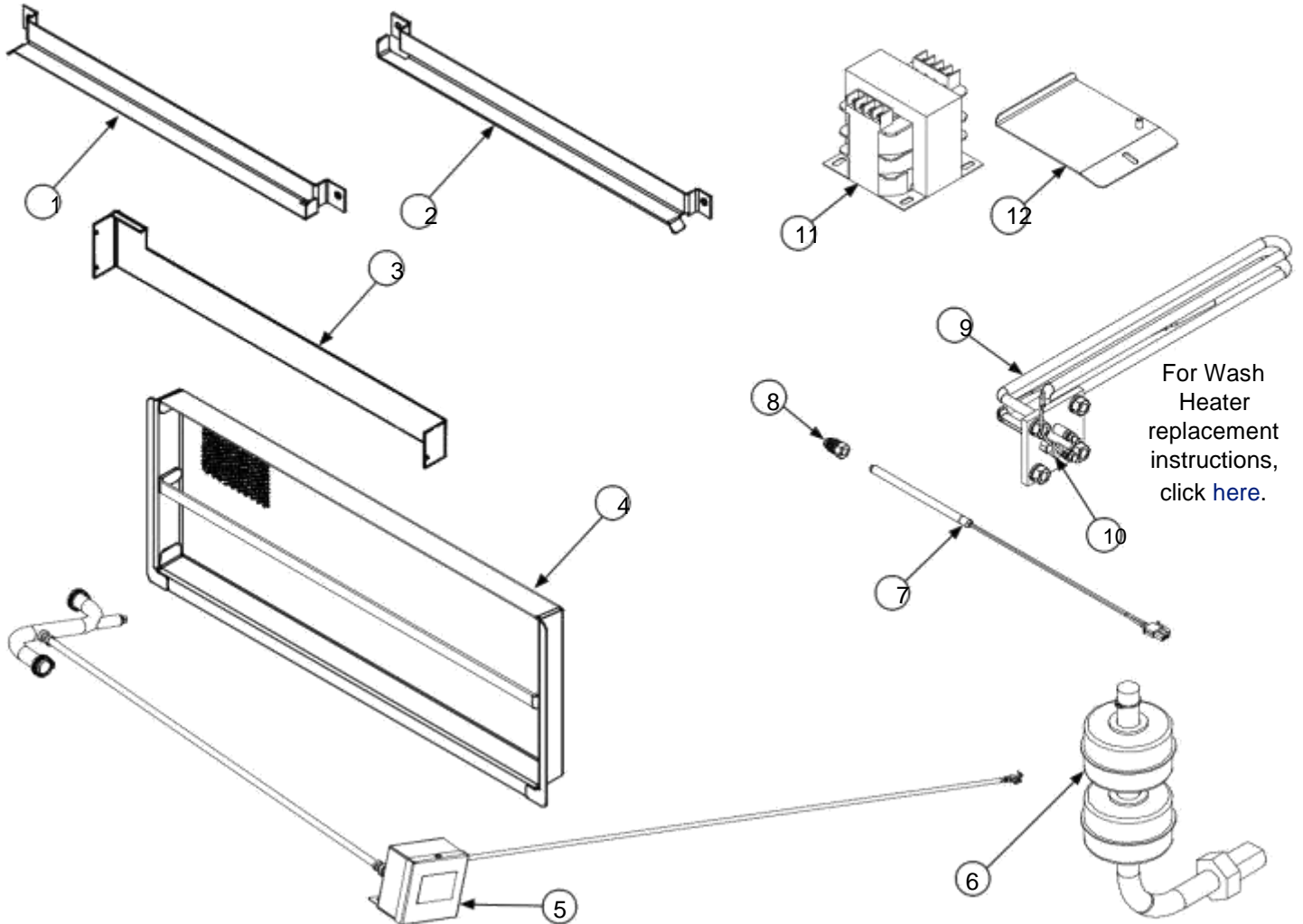


ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	6" Stand Assembly	05700-003-34-24
2	1	Stand	05700-002-88-82
3	4	6" Leg	05700-021-61-10
4	4	Bullet Foot	05340-108-01-03
5	1	18" Stand Assembly	05700-003-34-25
6	1	Stand	05700-002-88-82
7	4	Bullet Foot	05340-108-01-03
8	4	18" Leg	05700-002-89-47
9	4	Cross Brace	05700-003-25-90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

# PARTS

# MISCELLANEOUS PARTS

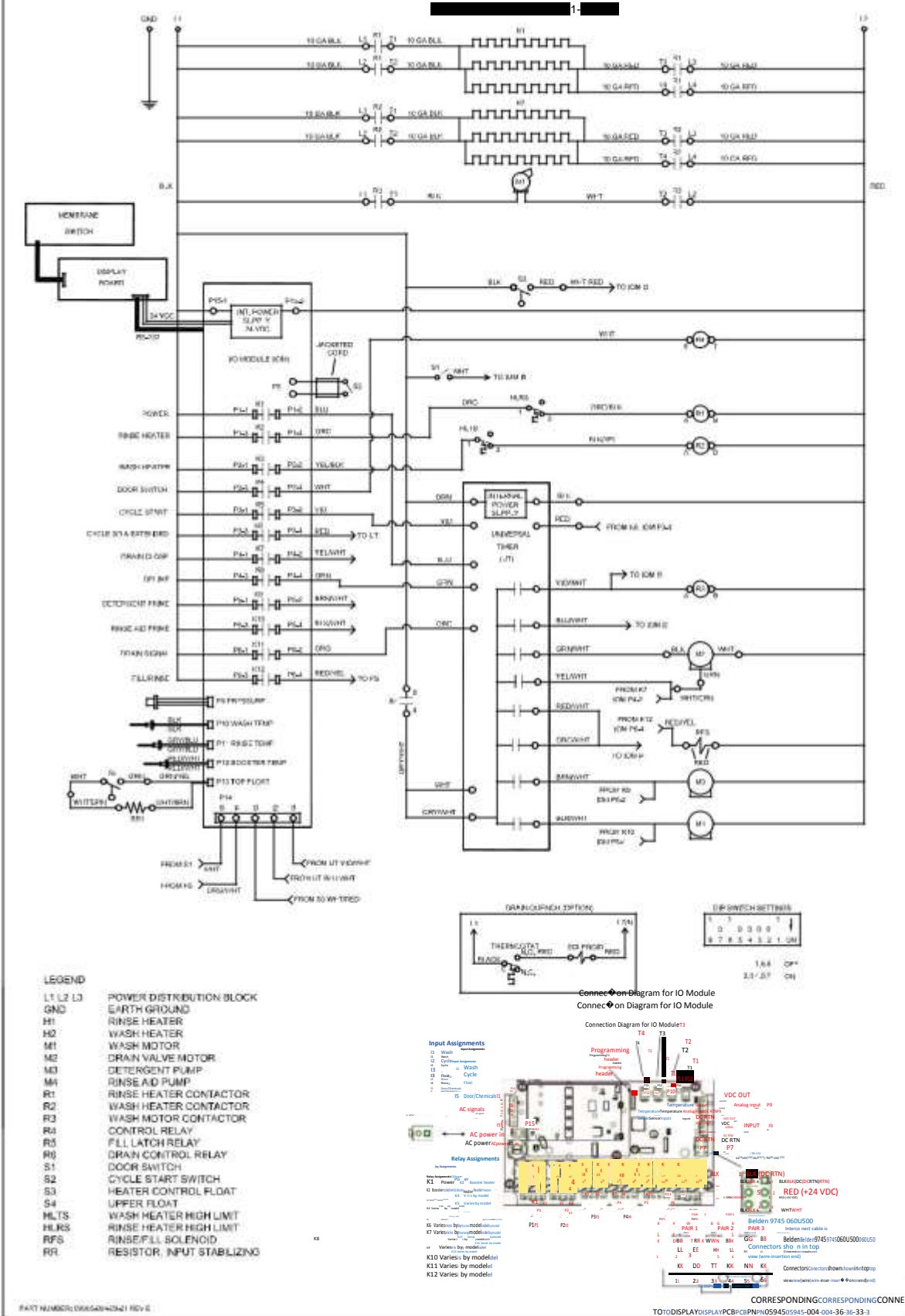
Parts are not shown to scale in relation to each other.



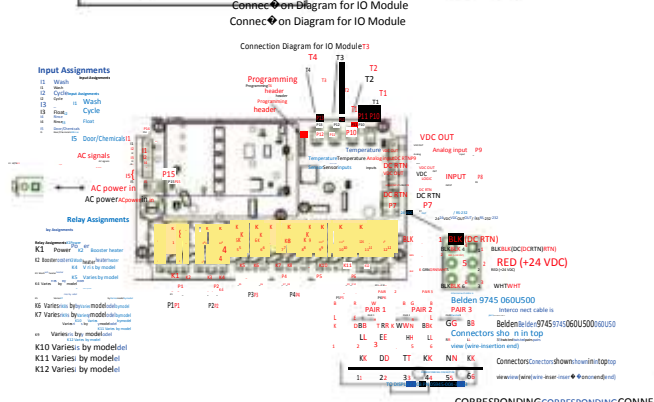
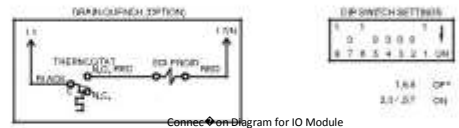
For Wash Heater replacement instructions, click [here](#).

ITEM	QTY	DESCRIPTION	PART NUMBER
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	05700-004-09-43
5	1	Drain Quench Kit	06401-002-59-99
6	1	Dual Float Switch	06680-121-70-16
7	1	Thermistor Probe, 4" with 18" Cable	06685-004-34-58
8	1	Probe Fitting, 1/4" Brass	05310-924-02-05
9	1	Wash Heater, 4 kW, 208-230 V	04540-003-99-44
	1	Wash Heater, 4 kW, 460 V	04540-004-12-29
10	1	Thermostat, Hi-limit	05930-004-33-12
11	1	Transformer, 460 V	05950-011-50-70
12	1	Transformer Bracket, 460 V	05700-004-44-55

**Nobel UH30-E  
SCHEMATIC**



- LEGEND**
- LT, L2, L3 POWER DISTRIBUTION BLOCK
  - GND EARTH GROUND
  - H1 RINSE HEATER
  - H2 WASH HEATER
  - M1 WASH MOTOR
  - M2 DRAIN VALVE MOTOR
  - M3 DETERGENT PUMP
  - M4 RINSE AID PUMP
  - R1 RINSE HEATER CONTACTOR
  - R2 WASH HEATER CONTACTOR
  - R3 WASH MOTOR CONTACTOR
  - R4 CONTROL RELAY
  - R5 FILL LATCH RELAY
  - R6 DRAIN CONTROL RELAY
  - S1 DOOR SWITCH
  - S2 CYCLE START SWITCH
  - S3 HEATER CONTROL FLOAT
  - S4 UPPER FLOAT
  - MLTS WASH HEATER HIGH LIMIT
  - HLRS RINSE HEATER HIGH LIMIT
  - RFS RINSE/FILL SOLENOID
  - RF RESISTOR, INPUT STABILIZING



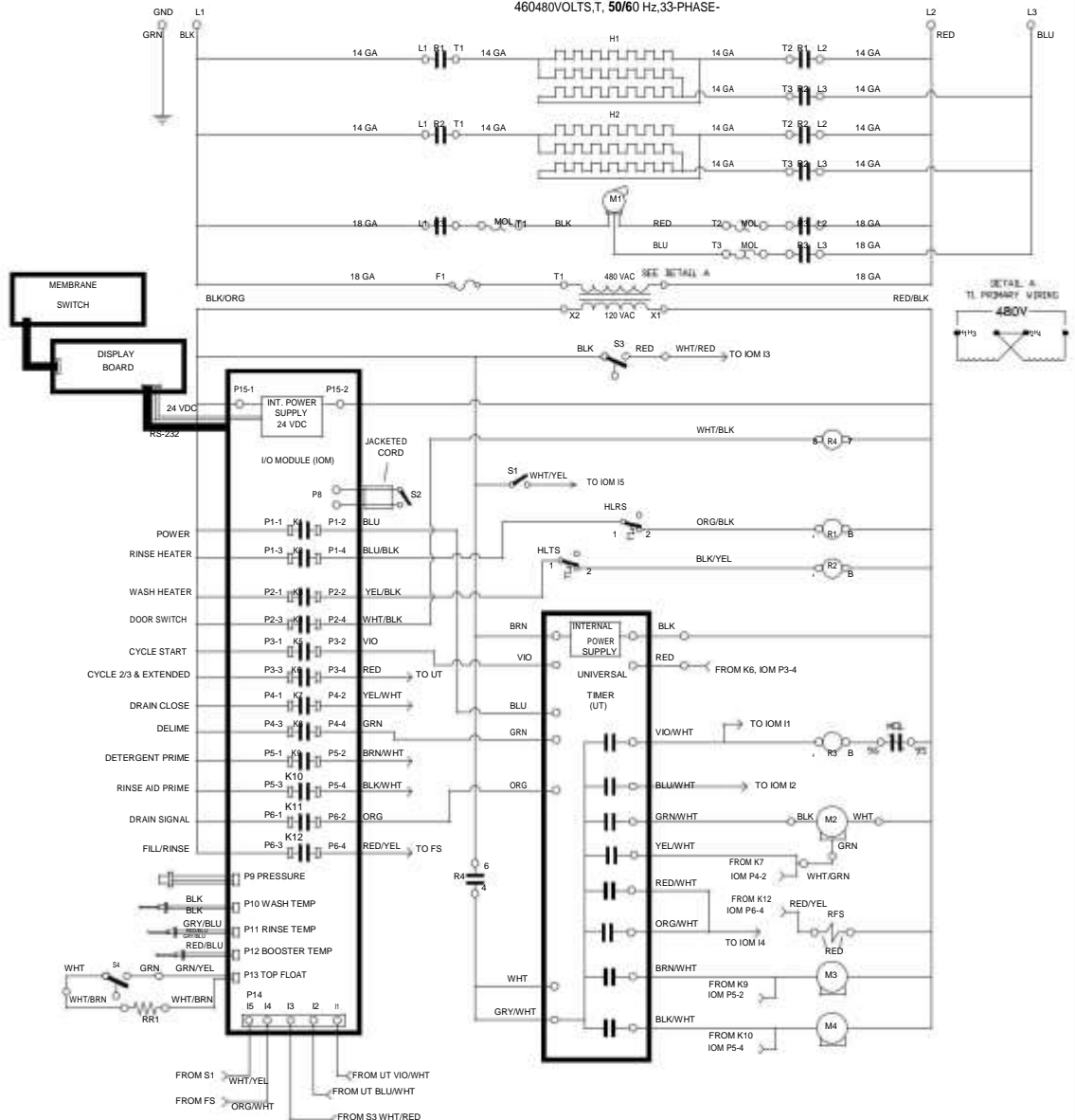
PART NUMBER: 006526+2921 REV 6

TOTODSPLAYDISPCBP:CFP:059450993-004-004-36-33-3

# 460 V, 60 HZ, 3-PHASE

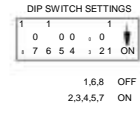
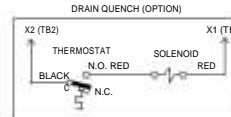
## Nobel UH30-E SCHEMATIC

460/480VOLTS, 50/60 Hz, 3-PHASE-



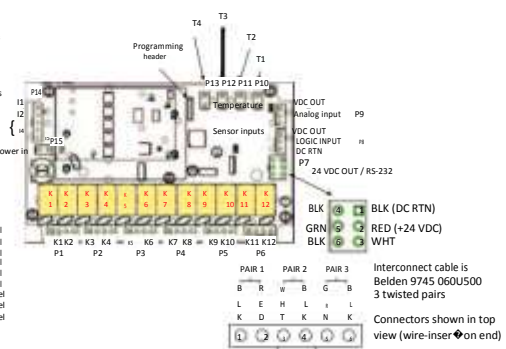
### LEGEND

- L1 L2 L3 POWER DISTRIBUTION BLOCK
- GND EARTH GROUND
- H1 RINSE HEATER
- H2 WASH HEATER
- M1 WASH MOTOR
- M2 DRAIN VALVE MOTOR
- M3 DETERGENT PUMP
- M4 RINSE AID PUMP
- R1 RINSE HEATER CONTACTOR
  
- R3 WASH MOTOR CONTACTOR
- R4 DRAIN CONTROL RELAY
- R5 FILL LATCH RELAY
- R6 DRAIN CONTROL RELAY
- S1 DOOR SWITCH
- S2 CYCLE START SWITCH
- S3 HEATER CONTROL FLOAT
- S4 UPPER FLOAT
- HLTS WASH HEATER HIGH LIMIT
- HLRS RINSE HEATER HIGH LIMIT
- RFS RINSE/FILL SOLENOID
- RR RESISTOR, INPUT STABILIZING
- F1 FUSE, CONTROL
- TB TERMINAL BLOCK



Connect on Diagram for IO Module

- Input Assignments**
  - I1 Wash
  - I2 Cycle
  - I3 Float
  - I4 Rinse
  - I5 Door/Chemicals
  - AC signals
- Relay Assignments**
  - K2 Booster heater
  - K3 Wash heater
  - K4 Varies by model
  - K5 Varies by model
  - K6 Varies by model
  - K7 Varies by model
  - K8 Varies by model
  - K9 Varies by model
  - K10 Varies by model
  - K11 Varies by model
  - K12 Varies by model





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