



*Warewashing Systems*

# INSTALLATION, OPERATION, AND SERVICE MANUAL



**CONSERVER® XL2 DISHMACHINES**

Conserver XL2 Manual • 07610-002-10-23-X

# CONSERVER®

**MANUFACTURER'S LIMITED WARRANTY  
(APPLICABLE ONLY IN THE UNITED STATES AND CANADA)**

**WARRANTY REGISTRATION:**

To register your Jackson Dishmachine's warranty go to [jacksonwws.com/warranty](http://jacksonwws.com/warranty) or call 1-888-800-5672. Failure to register the Dishmachine will void the warranty.

**ONE YEAR LIMITED PARTS AND LABOR WARRANTY**

For a period of one (1) year from date of original installation of a new Jackson Dishmachine (but in no event to exceed eighteen (18) months from date of shipment from Jackson's factory), Jackson WWS, Inc. (Jackson) will repair or replace, at its discretion, any original part that proves defective in materials or workmanship at the time the Dishmachine was purchased; provided that (i) the Dishmachine has not been altered, (ii) the Dishmachine has been properly installed, maintained, and operated under normal use conditions and in accordance with the applicable installation, operation and service manual available on the Jackson website, and (iii) a warranty claim is reported to a Jackson Authorized Service Agency within the warranty period. This warranty includes replacement with Jackson 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 shall void this warranty.

**THIS WARRANTY DOES NOT APPLY OUTSIDE THE UNITED STATES AND CANADA.**

Jackson will pay the labor to repair or replace a defective original part as a part of the warranty, provided that a Jackson Authorized Service Agency performs the labor. Any repair or replacement work by anyone other than a Jackson Authorized Service Agency is the sole responsibility of the purchaser. Labor coverage is limited to regular hourly rates; Jackson will not pay overtime premiums or emergency service charges.

Accessory components (such as table limit switches, pressure regulators, and drain water tempering kits) that are not installed by Jackson at the factory and are shipped with the Dishmachine carry only a (1) one-year parts warranty. Labor to repair or replace these components is not included in the warranty or covered by Jackson. Booster heaters not manufactured by Jackson are not covered by this warranty but are warranted by their respective manufacturers.

This warranty is void if any defect or failure is a direct result from shipping, handling, fire, water, accident, alteration, modification, misuse, abuse, flood, acts of God, burglary, casualty, attempted repair by unauthorized persons, use of replacement parts not authorized by Jackson, improper installation, installation not in accordance with local electrical and plumbing codes, if the serial number has been removed or altered, if the Dishmachine is used for any purpose other than originally intended, or if the equipment is installed for residential use.

Jackson does not authorize any other entity or person, including, without limitation, any entity or person who deals in Jackson Dishmachines, to change this warranty or create any other obligation in connection with Jackson Dishmachines.

**TRAVEL LIMITATIONS:**

Jackson limits warranty travel time to the customer site within 50 miles of the Jackson authorized service agent's office and during regular business hours. Jackson will not pay for travel time and mileage that exceeds these limits, or any fees such as those for air or boat travel without prior authorization.

**REPLACEMENT PARTS WARRANTY:**

For a period of (90) ninety days from the date of installation by a Jackson Authorized Service Agency (but in no event to exceed (180) one-hundred-eighty days from the date of purchase from a Jackson Authorized Parts Distributor or Service Agency), Jackson will repair or replace, at its discretion, any Jackson genuine replacement parts that prove defective in materials or workmanship at the time the replacement parts were installed. This warranty does not include paying the labor to repair or replace the replacement part. This warranty is subject to all conditions, exclusions and limitations applicable to the Dishmachine.

**MANUFACTURER'S LIMITED WARRANTY (CONT.)  
(APPLICABLE ONLY IN THE UNITED STATES AND CANADA)**

**PRODUCT CHANGES:**

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

**DISCLAIMER OF WARRANTIES:**

**THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY, THAT ARE NOT SET FORTH HEREIN, OR THAT EXTEND BEYOND THE DURATION HEREOF.**

**LIMITATION OF REMEDIES AND LIABILITIES:**

**YOUR SOLE AND EXCLUSIVE REMEDY UNDER THIS LIMITED WARRANTY SHALL BE PRODUCT REPAIR OR REPLACEMENT AS PROVIDED HEREIN.**

**UNDER NO CIRCUMSTANCES WILL JACKSON BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, OR FOR DAMAGES IN THE NATURE OF PENALTIES. JACKSON'S LIABILITY ON ANY CLAIM OF ANY KIND 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.**

**ITEMS NOT COVERED:**

THIS WARRANTY DOES NOT COVER (1) ADJUSTMENTS INCLUDING, BUT NOT LIMITED TO, TIMER CAMS, THERMOSTATS, DOORS, TANK HEATER ADJUSTMENTS OR CLUTCHES; (2) AIR FREIGHT OR OVERNIGHT FREIGHT; (3) ANY AMOUNT EXCEEDING ORIGINAL PURCHASE PRICE; (4) CLEANING OF DRAIN VALVES, GAS LINES, RINSE/WASH NOZZLES, STRAINERS, SCREENS, OR SPRAY PIPES; (5) CLEANING OR DELIMING OF THE DISHMACHINE OR ANY COMPONENT INCLUDING, BUT NOT LIMITED TO, WASH ARMS, RINSE ARMS AND STRAINERS; (6) CONDITIONS CAUSED BY THE USE OF INCORRECT (NON-COMMERCIAL) GRADE DETERGENTS; (7) CORROSION FROM CHEMICALS DISPENSED IN EXCESS OF RECOMMENDED CONCENTRATIONS; (8) COSMETIC DAMAGE, INCLUDING BUT NOT LIMITED TO, SCRATCHES, DENTS, CHIPS, AND OTHER DAMAGE TO THE DISHMACHINE FINISHES, UNLESS SUCH DAMAGE RESULTS FROM DEFECTS IN MATERIALS AND WORKMANSHIP AND IS REPORTED TO JACKSON WITHIN (30) THIRTY DAYS FROM THE DATE OF INSTALLATION; (9) DAMAGE CAUSED BY LABOR DISPUTE; (10) DAMAGES RESULTING FROM IMPROPER CONNECTION TO UTILITY SERVICE; (11) DAMAGES RESULTING FROM WATER CONDITIONS, INADEQUATE OR EXCESSIVE WATER PRESSURE, ACCIDENTS, ALTERATIONS, IMPROPER USE, ABUSE, HANDLING, OVERLOADS, TAMPERING, IMPROPER INSTALLATION OR FAILURE TO FOLLOW MAINTENANCE AND OPERATING PROCEDURES; (12) DISCOLORATION, RUST OR OXIDATION OF SURFACES RESULTING FROM CAUSTIC OR CORROSIVE ENVIRONMENTS, INCLUDING, BUT NOT LIMITED TO, HIGH SALT CONCENTRATIONS, HIGH MOISTURE OR HUMIDITY, OR EXPOSURE TO CHEMICALS; (13) ELECTRIC BOOSTERS, FEED LINES, FLEX HOSE, FUSES, GARBAGE DISPOSALS, OR GAS PILOTS; (14) EXCESSIVE LIME, MINERAL, OR ALKALINE BUILDUP; (15) EXPENSES DUE TO DISCONNECTION, DELIVERY, RETURN AND REINSTALLATION; (16) FAILURE OF ELECTRICAL COMPONENTS DUE TO CONNECTION OF CHEMICAL DISPENSING EQUIPMENT INSTALLED BY OTHERS; (17) FAILURE OF FACILITY WATER HEATER TO MAKE TEMPERATURE; (18) FAILURE TO MAINTAIN WATER HARDNESS LOWER THAN 3.0 GRAINS, PH BETWEEN 7.0 AND 8.5 AND TOTAL DISSOLVED SOLIDS BELOW 250 PPM; (19) FAILURE TO COMPLY WITH LOCAL ELECTRICAL BUILDING CODES; (20) LEAKS OR DAMAGE RESULTING FROM SUCH LEAKS CAUSED BY THE INSTALLER, INCLUDING THOSE AT MACHINE TABLE CONNECTIONS, OR BY CONNECTION OF CHEMICAL DISPENSING EQUIPMENT INSTALLED BY OTHERS; (21) OPENING OR CLOSING OF UTILITY SUPPLY VALVES OR SWITCHING OF ELECTRICAL SUPPLY CURRENT; (22) PERFORMANCE OF REGULAR MAINTENANCE AND CLEANING AS OUTLINED IN THE OPERATOR'S GUIDE; (23) REMOVAL OR REINSTALLATION OF INACCESSIBLE DISHMACHINES OR BUILT-IN FIXTURES THAT INTERFERE WITH SERVICING, REMOVAL OR REPLACEMENT OF THE DISHMACHINE; (24) REPLACEMENT WEAR ITEMS INCLUDING, BUT NOT LIMITED TO, CURTAINS, DRAIN BALLS, DOOR GUIDES, GASKETS, O-RINGS, SEALS, SQUEEZE TUBES, AND BEARINGS; (25) RESIDENTIAL USE; (26) USE WITH UTILITY SERVICE OTHER THAN THAT DESIGNATED ON THE RATING PLATE.

## REVISION HISTORY

Revision	Date	Made by	Process	Details
F	5-7-04	MAW	7040	Added new logo. Changed to new layout. Added new parts for the redesigned Conservor XL unit.
G	11-8-06	MAW	N/A	Added instructions and schematics for use with universal timers.
H	11-28-07	MAW	7107, 7257, 7478, 7293, 7553, 7122, 7447, 7559, 7258, 7518	Converted to centered layout with bottom date stamp for revisions. Combined installation and technical manuals. Added bowl option and new style control box for universal timers. Combined installation & service manuals into one: obsolete I/O manual 7610-002-04-66.
I	9-22-09	ARL	N/A	Corrected shim kit part number on pg. 57.
J	3-20-12	RLC	8226	Made Buzzers optional.
K	5-22-12	RLC	QOF 386	Updated parts.
L	3-7-13	RLC	NBD-219	Update Manufacturer Information. Updated Pump assembly view.
M	8-21-13	RLC	8271	Added magnet cover.
N	8-18-14	KAP	8305	Updated P/N on pg. 54.
O	8-29-14	KAP	N/A	Removed part on pg. 50. Corrected P/N 05700-021-34-38 pg. 50. Updated part on pg. 52.
P	9-15-14	KAP	QOF 386	Updated P/N 8 and 8a on pg. 39. 05700-003-25-02 and 05700-003-25-03.
Q	4-19-16	JH	8369	Removed the XL, AXL, AXL2, AXL2-CML, and AXL2-CMR units from the manual. Changed Hood and Controls on the XL2 to new design. Removed list of Service Repair Centers. Updated the Hood Assembly, pg. 35. Removed references to old/new styles and parts associated with the old style. Removed 60 Hz motor assembly from pg.45. Changed P/Ns of 60 Hz motor assembly and parts on pg. 46. Added new 3/4" plumbing, new air-gap, and new air-gap insert to pg. 42. Removed vacuum breaker repair kit from pg. 44.
R	4-17-17	JH	8417 8497	Changed timer from 05945-111-35-32 to 05945-004-11-78. Added Delay Timer and Delay Timer Cover to Control Box. Audited manual and corrected all incorrect P/Ns. Complete update of the manual to new format.
S	8-28-17	JH	N/A	Corrected Cantilever Arm part number. Added 115 V Chemical Feeder Pump Assemblies to the Control Box pages. Removed assembly numbers from Chemical Feeder Pump Components page and referenced Control Box pages.
T	11-15-17	JH	N/A	Changed picture of machine on the cover. Removed references to optional machine cycles.
U	1-29-21	JH	8709 8756	Updated dimensional drawings. Replaced CAM Timer with Electronic Cycle Timer. Updated plumbing. Replaced peri-pumps with new assemblies. Updated schematics.
V	5-31-22	JH	22-1202 22-1223	Updated Chemical Feeder Pump Components section with black dot roller. Added in-line fuse for drain solenoid to Control Box page. Updated schematic.
W	12-23-22	JH	8900	Updated peri-pumps with black components. Separated pump components section into 115 V and 208/230 V.
X	2-12-24	JH	23-2273	Updated lower control decal P/N. Revised Wash Motors section.



## **Conserver® XL2 Series**

### **Conserver XL2**

Low-temperature, chemical-sanitizing, dual-rack dishmachine.

### **Conserver XL2-CML**

Low-temperature, chemical-sanitizing, dual-rack dishmachine with left-hand feed-through.

### **Conserver XL2-CMR**

Low-temperature, chemical-sanitizing, dual-rack dishmachine with right-hand feed-through.

The manufacturer 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 open 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.

# TABLE OF CONTENTS

## GUIDES

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

## SPECIFICATIONS

XL2 Dimensions .....	2
XL2-CML Dimensions .....	3
XL2-CMR Dimensions .....	4
Table Dimensions .....	5
Operating Capacities .....	6
Electrical Requirements .....	7

## INSTALLATION

Installation Instructions .....	8
<i>Inspection</i> .....	8
<i>Unpacking</i> .....	8
<i>Leveling</i> .....	8
<i>Plumbing</i> .....	8
<i>Water Supply Connections</i> .....	9
<i>Pressure Regulator</i> .....	9
<i>Shock Absorber</i> .....	9
<i>Connecting the Drain Line</i> .....	9
<i>Plumbing Check</i> .....	9
<i>Electrical Power Connections</i> .....	10
<i>Thermostats</i> .....	10
<i>Voltage Check</i> .....	10
<i>Preparing Chemical Pumps</i> .....	10
<i>Priming Chemical Pumps</i> .....	11
<i>Cycle Timer Instructions</i> .....	12

## OPERATION

Operating Instructions .....	16
<i>Preparation</i> .....	16
<i>Power Up</i> .....	16
<i>Filling the Wash Tub</i> .....	17
<i>First Rack</i> .....	18
<i>Ware Preparation</i> .....	18
<i>Washing a Rack of Ware</i> .....	18
<i>Operational Inspection</i> .....	18
<i>Shutdown and Cleaning</i> .....	19
<i>Deliming</i> .....	21

# TABLE OF CONTENTS

## MAINTENANCE

Preventative Maintenance .....	22
--------------------------------	----

## TROUBLESHOOTING

Troubleshooting .....	23
-----------------------	----

## PARTS

Control Box .....	27
Chemical Feeder Pump Components .....	29
Hood Assembly .....	31
Cantilever Arm .....	33
Tub Assembly – Left-front .....	35
Tub Assembly – Right-front .....	36
Frame Assembly .....	37
Wash Motors .....	38
Inlet Plumbing Assembly .....	40
Solenoid Valve Repair Kit .....	41
Plumbing Options .....	42
Wash Manifold Assembly .....	43
Miscellaneous Parts .....	45

## SCHEMATICS

XL2/CML/CMR 115 V, 60 Hz, Single-phase .....	46
XL2/CML/CMR 208/230 V, 50/60 Hz, Single-phase .....	47

## SYMBOLS



- Risk of Injury to Personnel



- Risk of Damage to Equipment



- Risk of Electrical Shock



- Caustic Chemicals



- Reference Data Plate



- Lockout Electrical Power

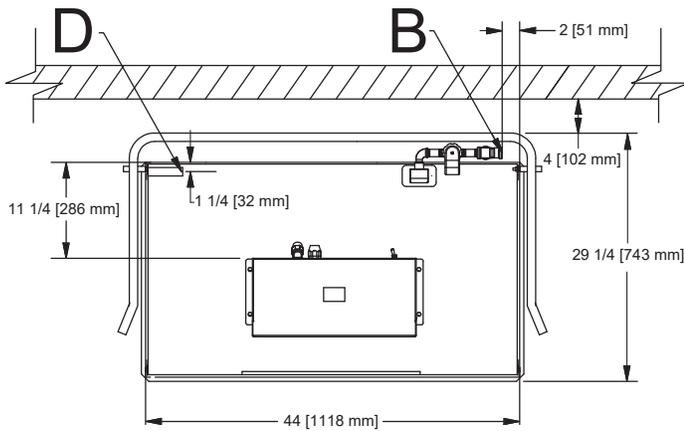
**NOTICE** - Important Note



- Instructions Hyperlink

## ABBREVIATIONS & ACRONYMS

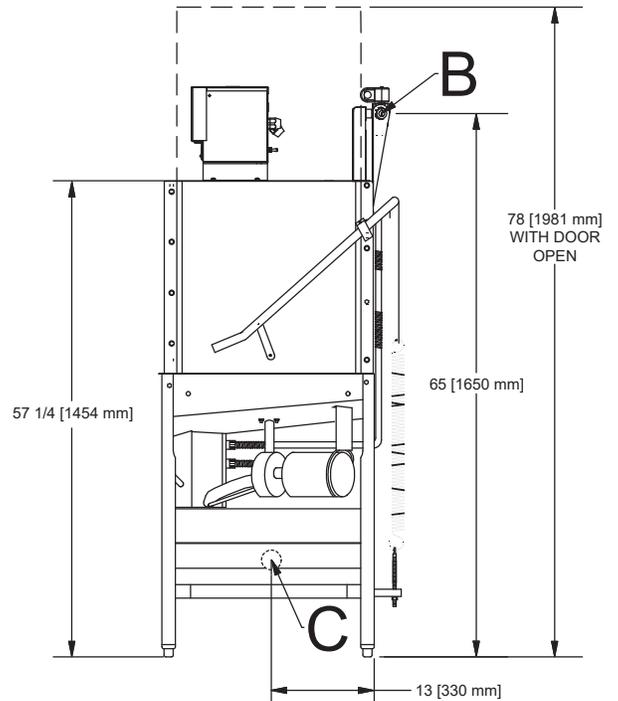
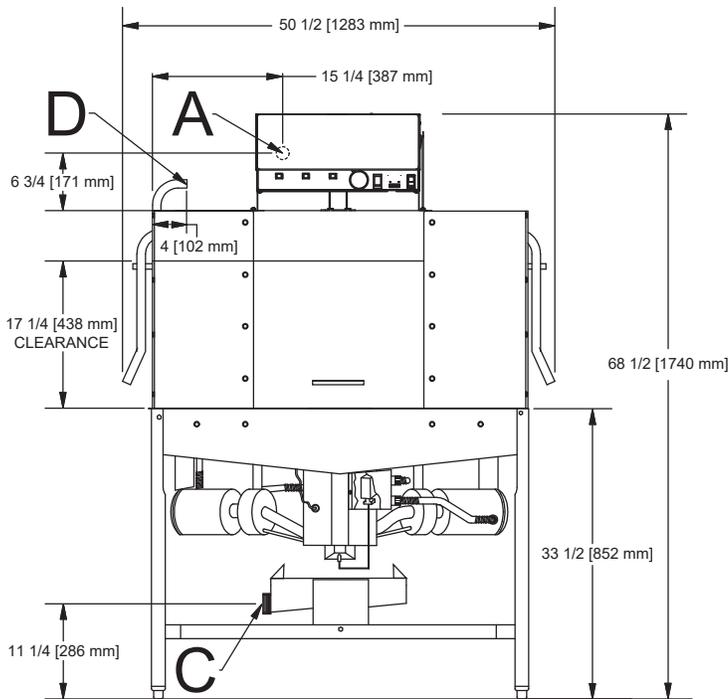
**ANSI** - American National Standards Institute  
**CFM** - Cubic Feet per Minute  
**GHT** - Garden Hose Thread  
**GPH** - Gallons per Hour  
**GPM** - Gallons per Minute  
**GPG** - Grains per Gallon  
**GPR** - Gallons per Rack  
**HP** - Horse Power  
**Hz** - Hertz  
**ID** - Inside Diameter  
**kW** - Kilowatts  
**LPM** - Liters per Minute  
**NFPA** - National Fire Protection Association  
**NPT** - National Pipe Thread  
**PSI** - Pounds per Square Inch  
**V** - Volts

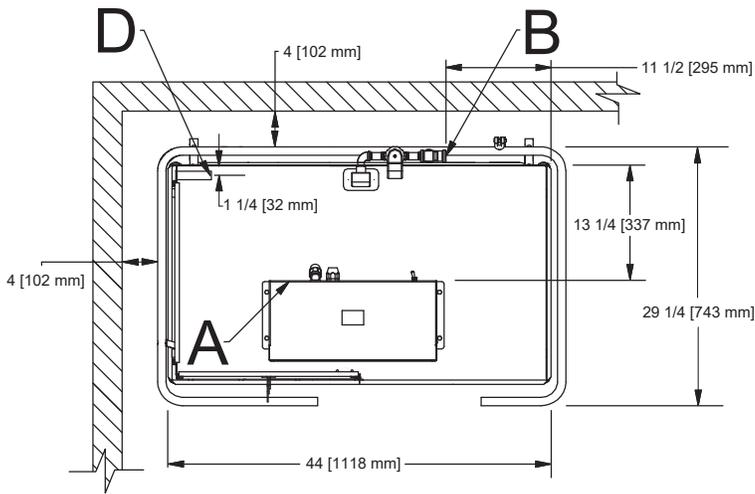


**LEGEND**

- A - Electrical Connection
- B - Water Inlet (3/4" NPT)
- C - Drain Connection (2" NPT)
- D - Chemical Connection

All dimensions from the floor can be increased 1 1/8" using the machine's adjustable feet.

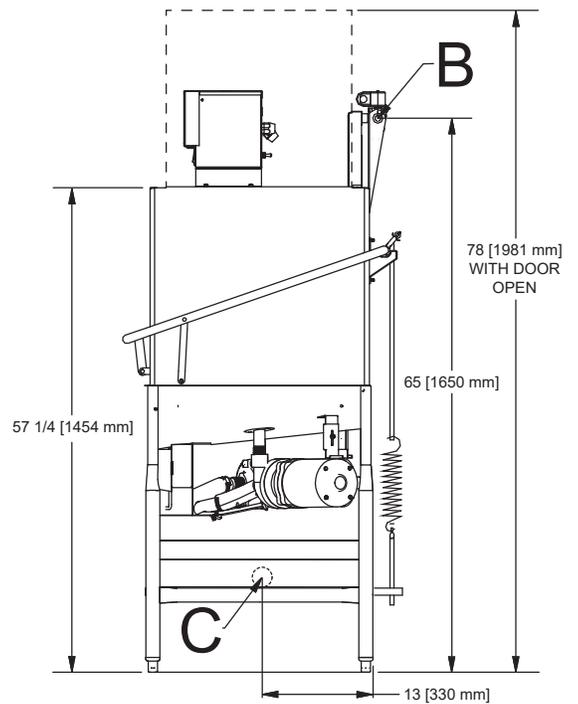
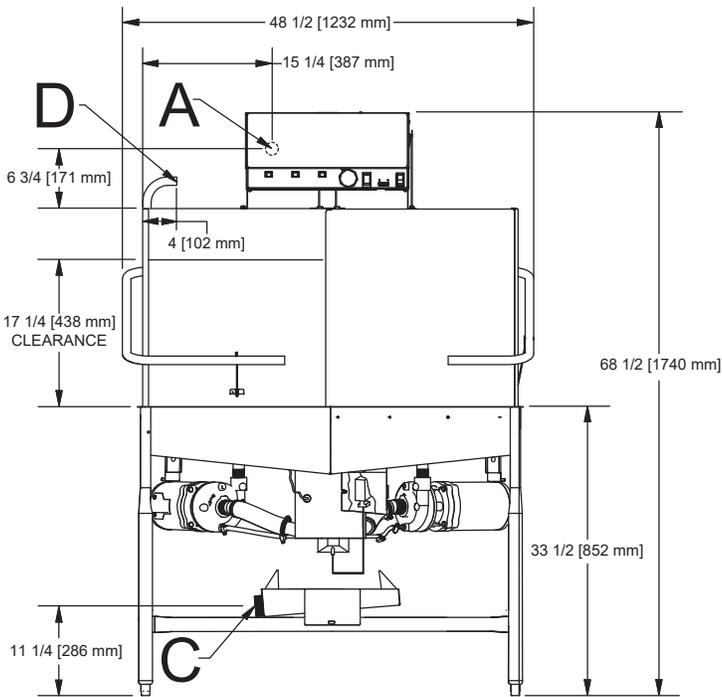


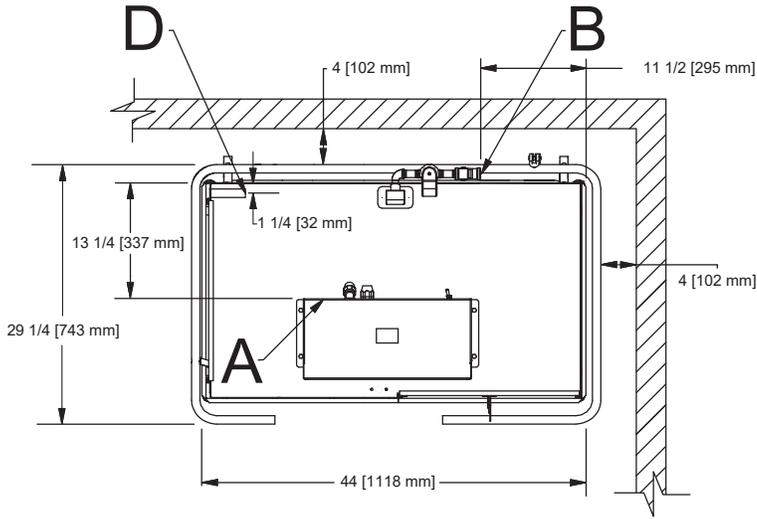


**LEGEND**

- A - Electrical Connection
- B - Water Inlet (3/4" NPT)
- C - Drain Connection (2" NPT)
- D - Chemical Connection

All dimensions from the floor can be increased 1 1/8" using the machine's adjustable feet.

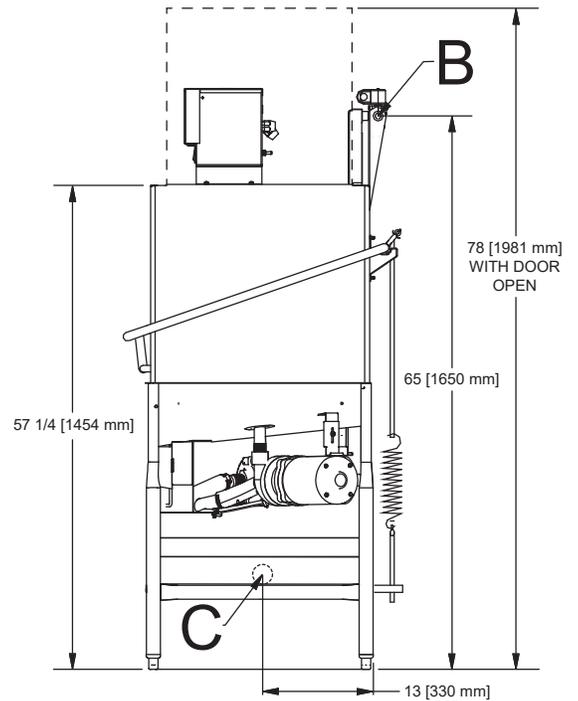
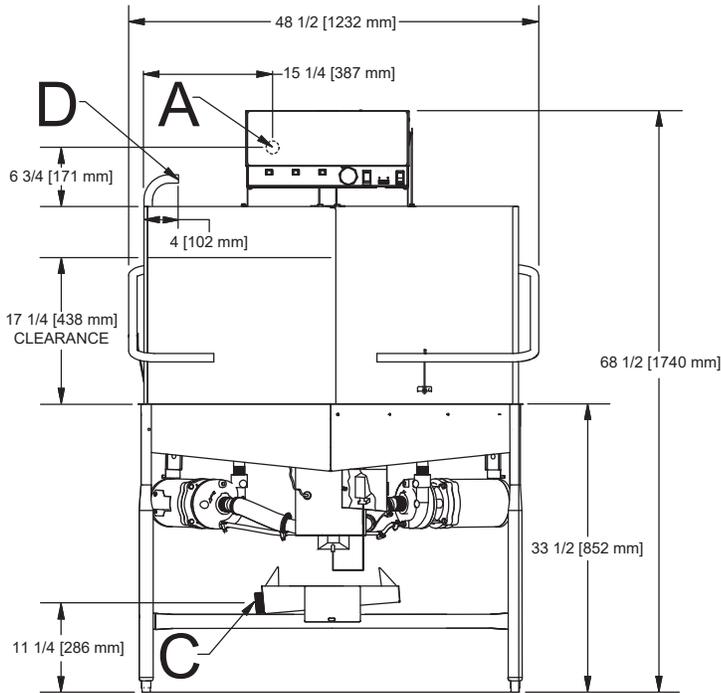




**LEGEND**

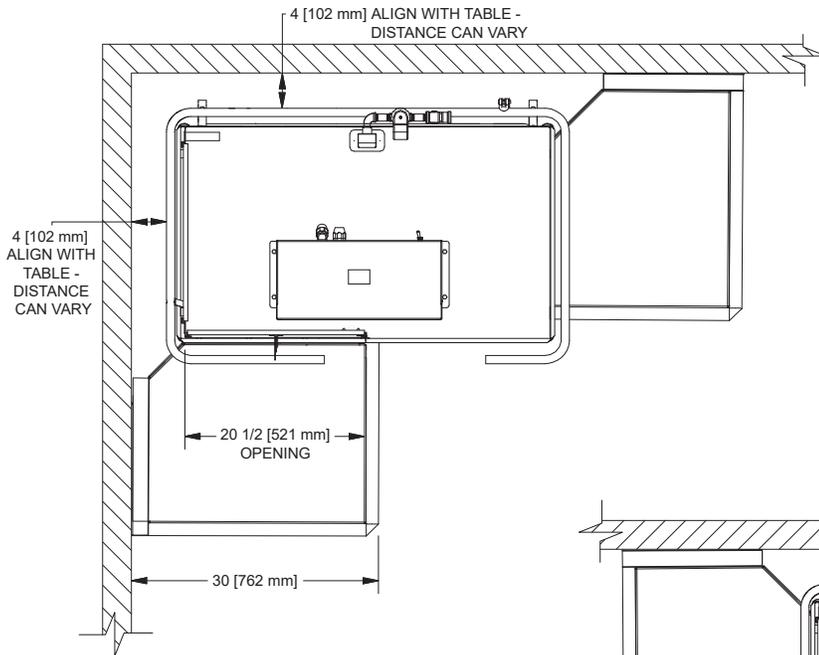
- A - Electrical Connection
- B - Water Inlet (3/4" NPT)
- C - Drain Connection (2" NPT)
- D - Chemical Connection

All dimensions from the floor can be increased 1 1/8" using the machine's adjustable feet.

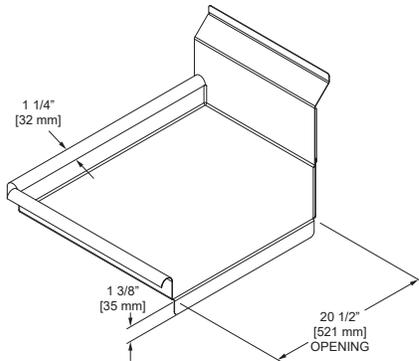
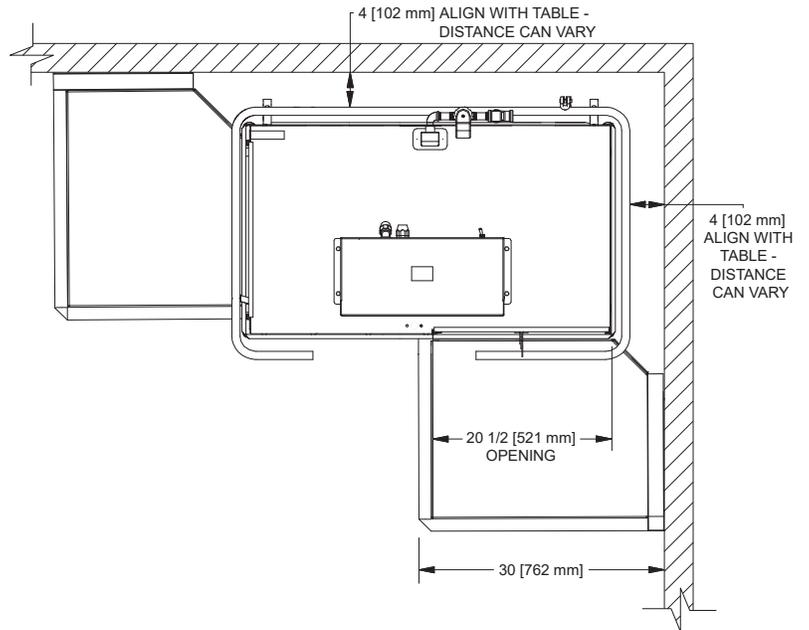


**CORNER INSTALLATION (CML/CMR ONLY)**

**XL2-CML**

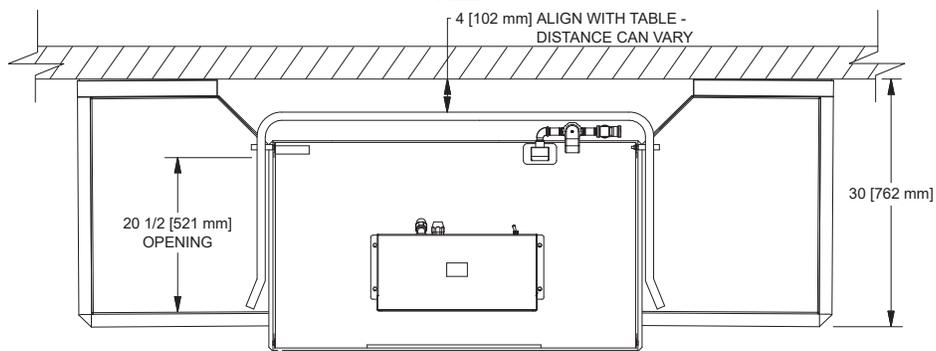


**XL2-CMR**



**STRAIGHT-THROUGH INSTALLATION (XL2 ONLY)**

**XL2**



**Model Designation:** **XL2**

**Operating Capacity:**

Racks per Hour without Load Time	82
Racks per Hour with Load Time	78
Dishes per Hour without Load Time	2050
Dishes per Hour with Load Time	1950
Glasses per Hour without Load Time	2952
Glasses per Hour with Load Time	2808

**Tank Capacity:**

Wash Tank (gallons)	3.1
Wash Tank (liters)	11.7

**Electrical Loads (as applicable):**

Wash Motor HP	1.0
---------------	-----

**Operating Times (seconds):**

Wash	53
Rinse	14
Dwell	20
Total Cycle Time	87
With Load Time	92

**NOTICE** Always refer to the machine data plate for specific electrical and water requirements.  
 The material provided in this manual is for reference only and is subject to change without notice.

**Water Temperatures (°F):**

Wash Temperature (minimum/recommended)	120/140
Rinse Temperature (minimum/recommended)	120/140
Inlet Temperature (minimum/recommended)	120/140

**Other Water Requirements:**

Water Flow Pressure (PSI)	20 +/- 5
GPH	87.05
GPR	1.06
Water Line Size (NPT)	3/4"
Drain Line Size (NPT)	2"
Minimum Chlorine Required (PPM)	50

**NOTICE**



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.

**Available Electrical Characteristics:**

- 115 V, 60 Hz, Single-phase
- 208-230 V, 60 Hz, Single-phase
- 208-230 V, 50 Hz, Single-phase

**XL2  
Electrical Characteristics**

<b>VOLTS</b>	115	208-230	208-230
<b>PHASE</b>	1	1	1
<b>FREQ</b>	60	60	50
<b>WASH MOTOR LOAD</b>	10.0 A	5.0 A	7.8 A
<b>WASH MOTOR 2 LOAD</b>	10.0 A	5.0 A	7.8 A
<b>TOTAL LOAD</b>	20.0 A	10.0 A	15.6 A

## INSPECTION

*Do not throw away the container if damage is evident!*

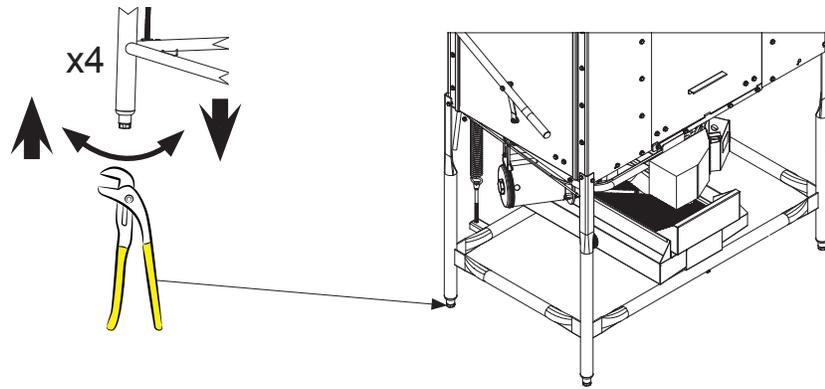
Before installing the machine, check the packaging and machine for damage. If the packaging is damaged, the machine might also be damaged. If there is damage to both the packaging and machine, do not throw away the packaging. The machine has been inspected and packed at the factory and is expected to arrive to you in new, undamaged condition. However, rough handling by carriers or others might result in damage to the machine while in transit. If so, 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 complete an inspection report. You must contact the carrier and the dealer that sold you the machine within 48 hours of receiving the machine.

## UNPACKING

While removing the machine from the packaging, ensure that there are no missing parts. If an item is missing, contact the manufacturer immediately.

## LEVELING

The machine must be level in its operating location to prevent damage to the machine during operation and to ensure the best results. The machine comes with four adjustable bullet feet, which can be turned using a pair of channel locks (or by hand if the machine can be raised safely). Ensure that the machine is level from side-to-side and front-to-back before making any connections.



## PLUMBING

Plumbing connections must comply with all applicable local, state, and national plumbing codes. The plumber is responsible for ensuring that the incoming water line is thoroughly flushed before connecting it to any component of the machine. It is very important to remove all foreign debris from the water line that might potentially get trapped in the valves or cause an obstruction. Any valves that are fouled as a result of foreign matter left in the water line—and any expenses resulting from this fouling—are not the responsibility of the manufacturer.

*The plumber MUST flush the incoming water line!*

*A water hardness test must be performed.*

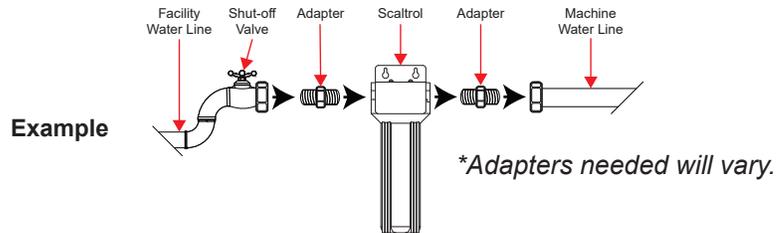
A water hardness test must be performed to determine if a water treatment system needs to be installed.

## INSTALLATION

## INSTRUCTIONS

### WATER SUPPLY CONNECTIONS: WATER HARDNESS HIGHER THAN 3 GPG

If water hardness tests higher than 3 GPG, install the Scaltrol Water Treatment system (see the Plumbing Options page) into the water line before the machine's incoming water connection point. A water shut-off valve should be installed to allow access for service.



### WATER SUPPLY CONNECTIONS: WATER HARDNESS LOWER THAN 3 GPG

If water hardness tests lower than 3 GPG, install the water supply line directly to the machine's incoming water connection point. A water shut-off valve should be installed to allow access for service.

### PRESSURE REGULATOR

*Take care not to confuse static pressure with flow pressure!*

The manufacturer recommends the installation of a pressure regulating valve (PRV) in the incoming water line to ensure proper flowrate at all times and offers these devices as options (see the Plumbing Options page). 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.

### SHOCK ABSORBER

The manufacturer also recommends the installation of a shock absorber in the incoming water line and offers these devices as options (see the Plumbing Options page). This prevents line hammer/hydraulic shock—induced by the solenoid valve as it operates—from causing damage to the equipment.

### CONNECTING THE DRAIN LINE

These machines have gravity discharge drains. All piping to the machine must be 2" NPT and must not be reduced. There must also 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 5 GPM.

### PLUMBING CHECK

After installing the incoming fill line and 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 at the breaker or disconnect switch and lockout /tagout in accordance with procedures and codes.**

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.

Refer to the machine data plate for machine operating requirements, machine voltage, total amperage, and serial number.

1. Remove control box top.
2. Install conduit into pre-punched holes in back of control box.
3. Route power wires and connect to terminal block and grounding lug.
4. Install service wires to the appropriate terminals as they are marked on terminal block.
5. Install grounding wire into lug provided.
6. Apply anti-oxidation product to—and tighten—all power connections.

## VENTILATION

This machine may be operated with or without an exhaust hood depending on local or state codes.

## THERMOSTATS

The thermostats on these machines have been set at the factory. They should only be adjusted by authorized service personnel.

## VOLTAGE CHECK



1. Ensure power switch is in the OFF position and apply power to the machine.
2. Check the incoming power at terminal block and ensure it corresponds to voltage listed on the data plate. If not, contact a qualified service agency to examine the problem.

**CAUTION!** Do not run the machine if voltage is too high or too low (refer to applicable electrical codes).

3. Shut off the service breaker and mark it as being for the machine.
4. Advise all proper personnel of any problems and of the location of the service breaker. Replace control box cover.

## PREPARING CHEMICAL FEEDER PUMPS

These machines are supplied with detergent, rinse-aid, and sanitizer chemical feeder pumps.

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

- Red Tubing = Detergent
- Blue Tubing = Rinse-aid
- White Tubing = Sanitizer



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

## PRIMING CHEMICAL FEEDER PUMPS

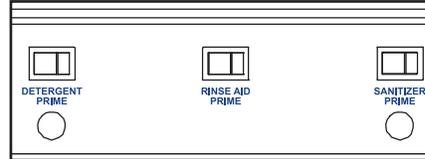


**WARNING!** Some of the chemicals used in dishwashing might cause chemical burns if they come in contact with skin. Wear protective gear when handling these chemicals. If any contact with skin occurs, immediately follow the treatment instructions provided with the chemicals.

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.

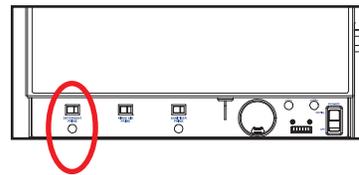
**CAUTION!** Water must be in the sump and wash tank before chemicals are dispensed.

1. Verify proper chemical tube with stiffener is in the proper container.
2. Use toggle switches on front of control box to prime each pump. There are three priming switches:

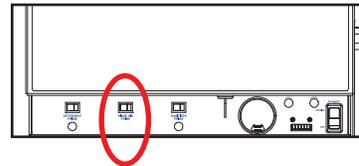


3. To prime the pumps, hold the switch in the momentary position until the chemical is seen entering the sump.

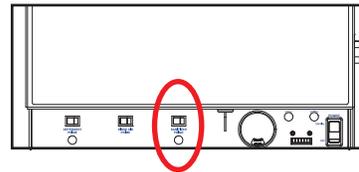
- Detergent:



- Rinse-aid:



- Sanitizer:



4. Detergent is dispensed during the wash cycle. The amount of detergent might need to be adjusted depending on water quality and type of detergent.
5. Rinse-aid is dispensed during the final rinse. The amount of rinse-aid might need to be adjusted depending on water hardness and results.
6. Sanitizer is dispensed during the final rinse. The amount of sanitizer might need to be adjusted depending on the concentration and type of sanitizer used.
7. Refer to next section for instructions on adjusting the chemical feeder pumps.

# INSTALLATION

# CYCLE TIMER INSTRUCTIONS

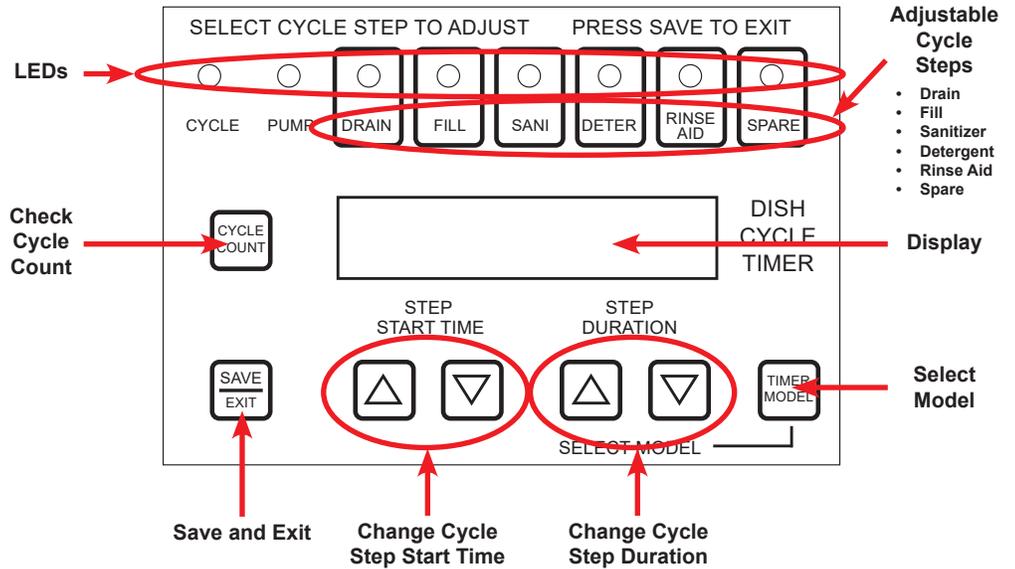
## OVERVIEW

### NOTICE

Machines with serial numbers before 20F386545 have the old CAM timer. See [earlier manual](#).

The timer accepts user input and provides feedback on the status of the dishmachine.

Cycle steps are the different sub-cycles (fill, drain, etc.) of the total wash cycle.



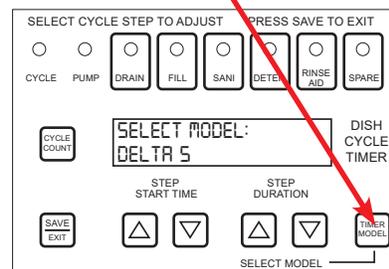
## POWERING ON

The display will read "JACKSON WWS" and the firmware version when powered on. This is the Default/Home screen.

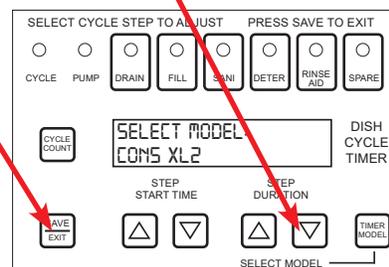
- If inactive for 15 seconds the blue backlight will turn off.
- If inactive for 30 seconds the display will turn off.
- Inactivity timer will reset if any button is pushed.
- Push any button while inactive and the display will turn on and show the Home screen.

## SELECTING MODEL

1. With the display on, press **TIMER MODEL**. Display will show "SELECT MODEL" and the currently-active model.



2. Select correct model using **ARROW** buttons under **STEP DURATION**.
3. Press **SAVE/EXIT**.



**Model**  
CONS XL2

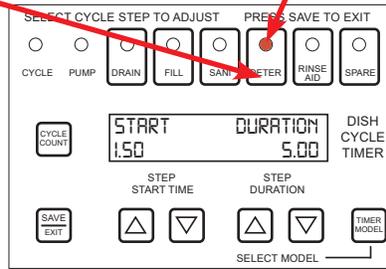
## CHANGING CYCLE STEP TIMES

The first two steps (CYCLE and PUMP) are fixed and can't be adjusted. All other steps are adjustable.

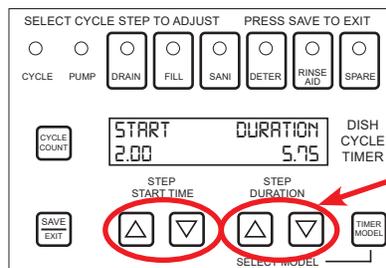
Timing of the total wash cycle begins when an open door is closed (or when START is pressed on Delta 5-E). Machine returns to IDLE after one full cycle.

Change is also saved if inactive for 10 seconds or any other button is pressed.

1. Press button for step being changed. The LED for that step will come on.

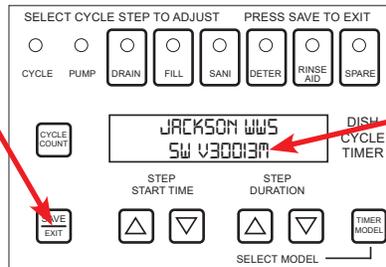


2. Change STEP START TIME or STEP DURATION using ARROW buttons (adjustments are made in 0.25-second increments).



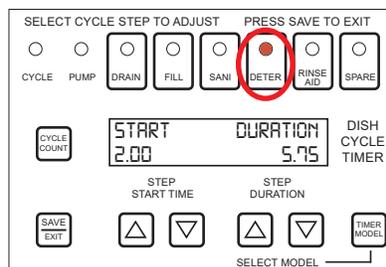
Hold ARROW buttons for rapid change (slew).

3. Press SAVE/EXIT to save the change and exit.



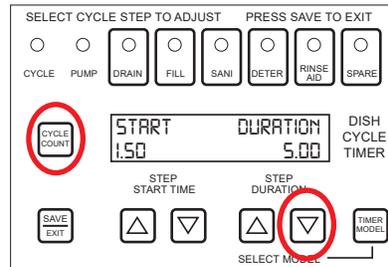
"M" = Modified Timing  
"F" = Factory Defaults

4. Repeat with other steps as needed.
5. To review current settings for a given step, press button for that step during IDLE. Its current STEP START TIME and STEP DURATION will be displayed.

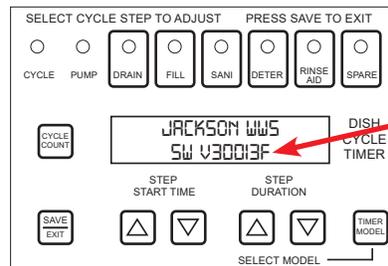


## RESETTING TO FACTORY DEFAULTS

1. Press and hold CYCLE COUNT button and DOWN ARROW button (under STEP DURATION) simultaneously for 3–4 seconds.



2. Resets all settings to factory defaults for the active model. Cycle count is unaffected by the reset.
3. Firmware version on the Home screen shows "F" at the end, indicating the timer is now set to factory defaults for the active model.

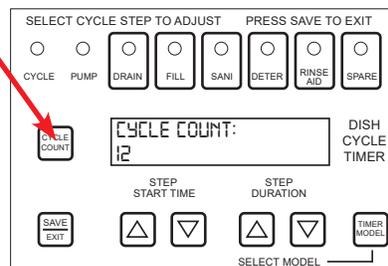


"M" = Modified Timing  
"F" = Factory Defaults

*Firmware version changes, so number will be different depending on when timer was installed.*

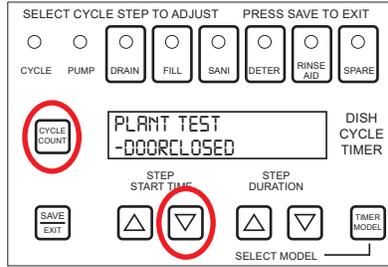
## CHECKING CYCLE COUNT

1. Press CYCLE COUNT button. Cycle count will show on display.



## PLANT TEST MODE

1. Press and hold CYCLE COUNT button and DOWN ARROW button (under STEP START TIME) simultaneously for 3–4 seconds.



2. Press and hold the DRAIN button. The DRAIN output stays on while the button is held. The output turns off when the button is released. Repeat for the other seven buttons (use SAVE/EXIT to activate CYCLE output, use CYCLE COUNT to activate PUMP output). Second row of display shows outputs and inputs that are active.

*After 15 seconds of no button being pressed, the timer exits the plant test mode.*

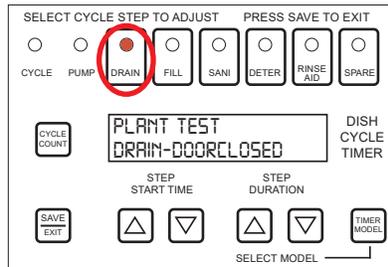
*If more than one input is on, the first letters of each will show (e.g. "Drain-DH" indicates the DRAIN output and DoorClosed and Heavy inputs are on).*

### Outputs

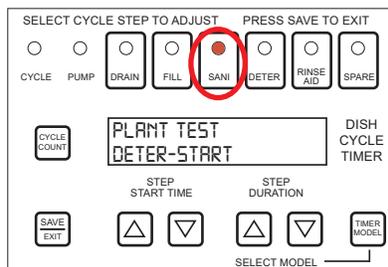
Cycle  
Wash  
Drain  
Fill  
Sani  
Deter  
Rinse  
Spare

### Inputs

DoorClosed  
Start



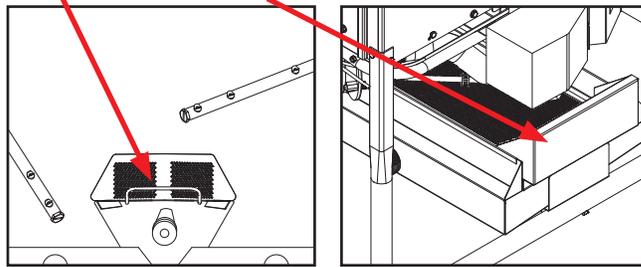
3. Plant test mode can also be used to prime chemicals if the machine has no priming function. Open door and press and hold the SANI button until sanitizer is seen entering the wash sump/tank and no air is in the line.



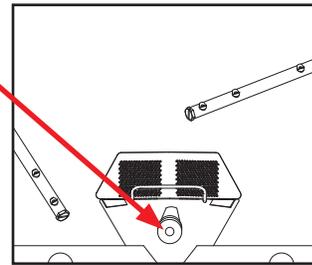
4. Repeat for DETER and RINSE AID buttons.

**PREPARATION** Before operating machine, verify:

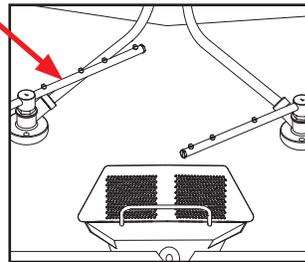
1. Sump strainer and pan strainer are in place and clean.



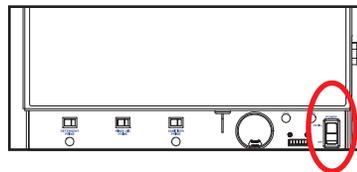
2. Drain stopper is installed.



3. Wash/rinse arms are installed, secure, and rotate freely.

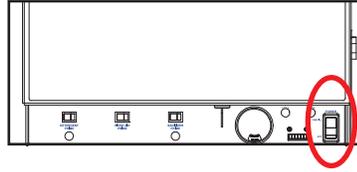


**POWER UP** To place the machine in standby, flip "OFF/ON/FILL" switch to "ON" position.

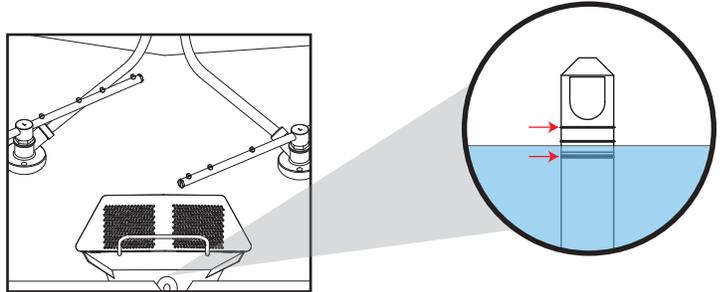


**FILLING THE WASH TUB**

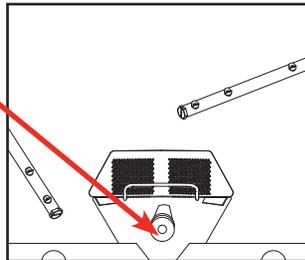
1. For initial fill, close door and depress and hold "OFF/ON/FILL" switch in FILL position for approximately 8–10 seconds.



2. Open door and verify water level is correct. Water must be between two lines on drain stopper. After this, water level is controlled by timer preset at the factory.



3. Verify drain stopper is preventing wash tub water from pouring out excessively. There might be slight leakage from drain hole. Verify there are no other leaks on machine before proceeding further.



4. Wash tub must be completely filled before operating wash pump to prevent damage to components. Once wash tub is filled, machine is ready for operation.

**FIRST RACK**

The first rack of ware can quickly reduce the temperature of the wash tank. The first rack will sometimes need to be run again. Any time the machine hasn't been operated for an extended period of time this is possible, but unlikely, and depends on the type of ware, its temperature, and the ambient temperature of the kitchen area. To ensure proper operation, always observe wash and rinse temperatures when first starting the machine.

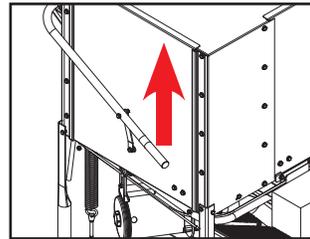
**WARE PREPARATION**

Proper preparation of ware is essential for the smooth, efficient operation of the machine. Proper preparation also results in fewer re-washes and uses substantially less detergent. Remove all solid food and scraps from ware and spray with pre-rinse hose before placing in the machine.

Place cups and glasses upside-down in racks so they don't hold water during the cycle. Pre-soak flatware in warm water to assist in removing food. Load plates and saucers in the same direction, with the food surface facing the unload end of the machine.

**WASHING A RACK OF WARE**

To wash a rack, open door completely (avoid hot water dripping from the door) and slide rack into the machine. Close door and the machine will start automatically. Once the cycle is complete, open door (again careful of the dripping hot water) and remove rack of clean ware. Replace with a rack of soiled ware and close door. The next cycle starts automatically.

**OPERATIONAL INSPECTION**

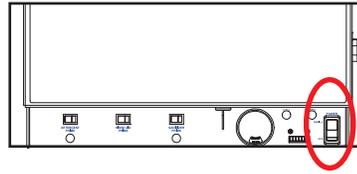
**CAUTION! Do NOT beat strainers to remove soil and debris!**

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

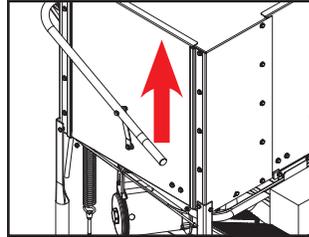
**SHUTDOWN  
& CLEANING**



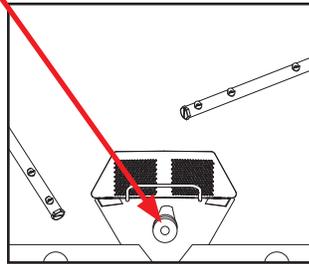
1. Turn machine off by flipping “OFF/ON/FILL” switch to “OFF” position.



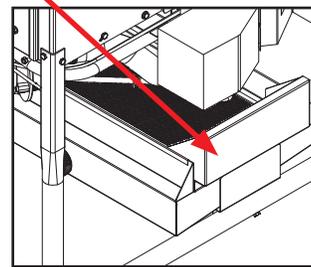
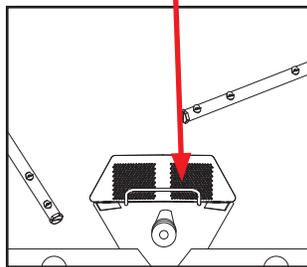
2. Open door.



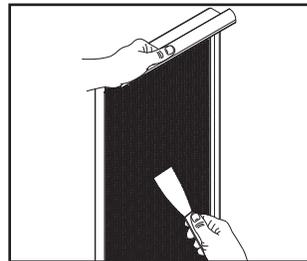
3. Remove drain stopper and allow tub to drain (**WARNING!** Wash tank water will be hot).



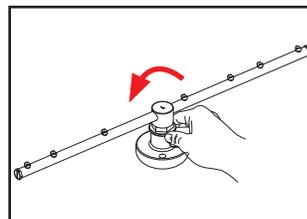
4. Remove sump strainer and pan strainer.



5. Use a hand-scraper to scrape foodsoil into a trash basket.

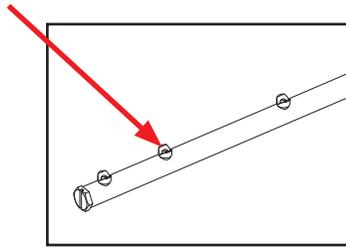


6. Rinse and replace.
7. Unscrew wash/rinse arms from manifolds.

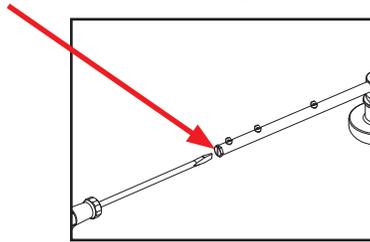


**SHUTDOWN  
& CLEANING**

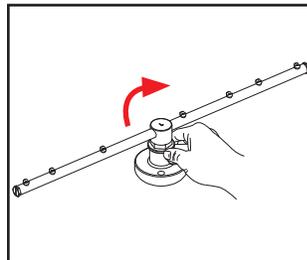
8. Verify nozzles and arms are free from obstruction. If clogged, remove end-caps, clean nozzles with a brush, and flush with fresh water.



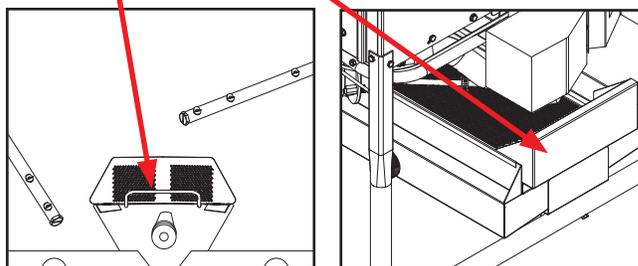
9. Replace end-caps and ensure they've been tightened.



10. Spray or wipe out interior of machine.  
11. Replace wash/rinse arms.

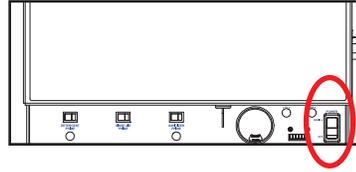


12. Ensure sump strainer and pan strainer are clean and securely in place.

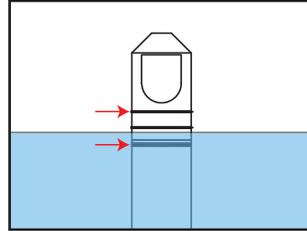


13. Use stainless steel polish to clean and protect the outside of machine.

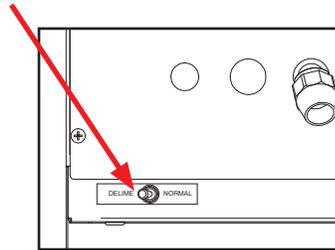
- DELIMING** 1. Flip “OFF/ON/FILL” switch to “ON” position.



2. Close door and hold “OFF/ON/FILL” switch in “FILL “ position for approximately 8-10 seconds.  
3. Water must be between two lines on drain stopper.



4. Add deliming solution per chemical supplier’s instructions.  
5. Close door.  
6. Flip NORMAL/DELIME switch on back of control box to DELIME.



7. Run machine period of time recommended by chemical supplier.  
8. Wait five minutes, then inspect inside of machine. If machine is not delimed, run again.  
9. Flip NORMAL/DELIME switch to NORMAL.  
10. Run two cycles to remove residual deliming solution.  
11. Drain and re-fill machine.



**CAUTION!** *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.*

## PREVENTATIVE MAINTENANCE



The manufacturer highly recommends that any maintenance and repairs not specifically discussed in this manual be performed only by qualified service personnel.

**WARNING!** *Unqualified personnel performing maintenance on the machine may void the warranty, lead to larger problems, or cause harm to the operator.*



### CAUTION!

***Do NOT beat strainers to remove debris!***

Following the operating and cleaning instructions in this manual will result in the most efficient results from the machine. As a reminder, here are some steps to take to ensure the machine is being used the way it was designed to work:

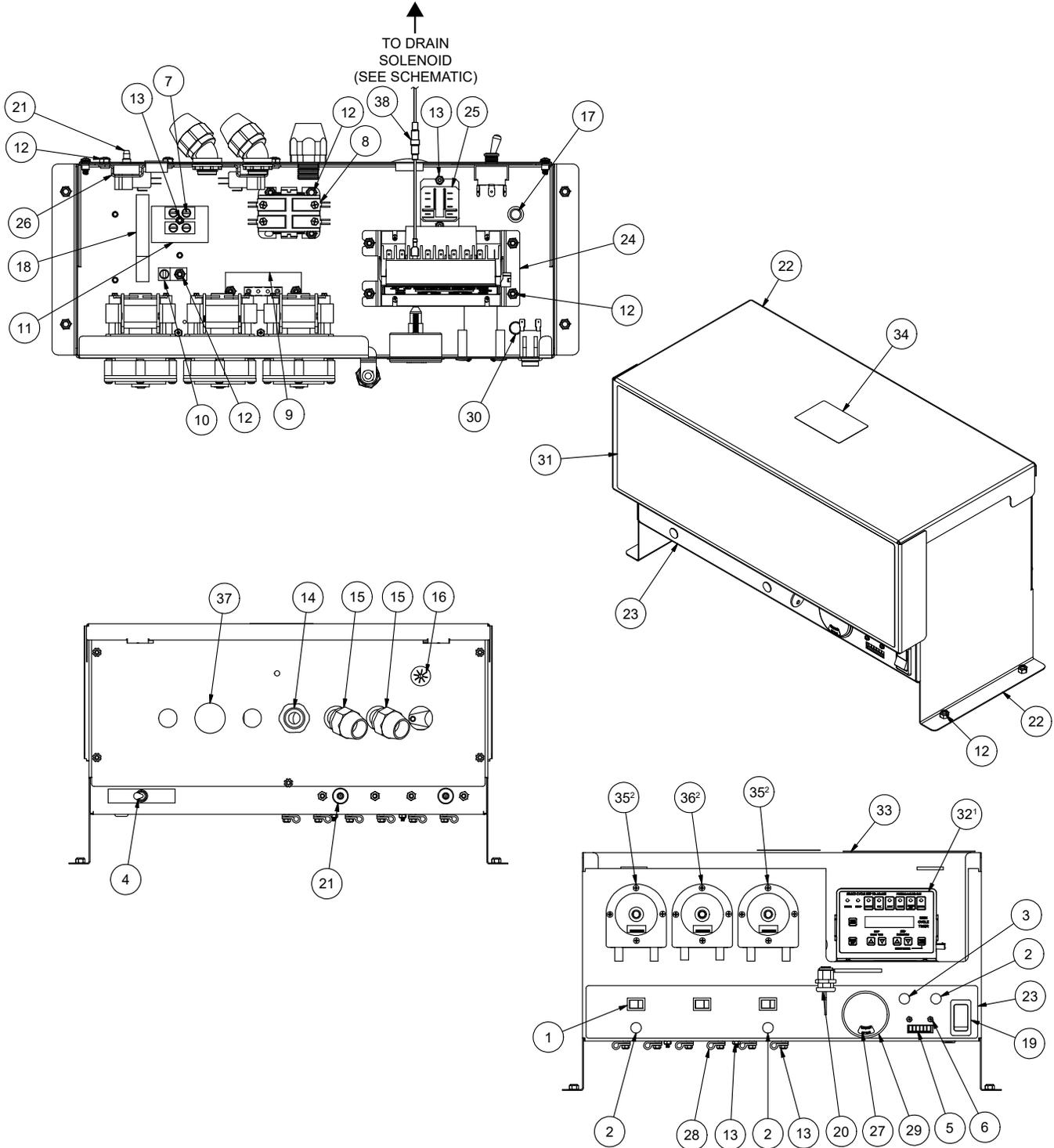
1. Ensure water temperatures match those listed on the machine data plate. A loss of temperature can indicate a larger problem.
2. Ensure all strainers are clean and securely in place before operating the machine. When cleaning out strainers, do NOT beat them on waste cans. Wipe out strainers with a rag and rinse with water if necessary. Use a toothpick to dislodge any stubborn debris.
3. Ensure all wash and rinse arms are secure in the machine before operating.
4. Ensure 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 glasses are placed upside-down in the rack.
8. Ensure all chemicals being injected into the machine are at correct concentrations.
9. Clean the machine at the end of every day/shift 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.

OBSERVATION	POSSIBLE CAUSE	REMEDY
Dishmachine will not run, no voltage at wash relay terminals L1 and T1.	<ol style="list-style-type: none"> <li>1. Service disconnect switch off or faulty.</li> <li>2. Branch circuit breaker tripped/fuse blown.</li> <li>3. Loose or broken connection to dishmachine.</li> </ol>	<ol style="list-style-type: none"> <li>1. Turn disconnect on.</li> <li>2. Reset or replace.</li> <li>3. Tighten or replace connections.</li> </ol>
Machine will not run in "ON" position unless cam timer is moved off the "home" position.	<ol style="list-style-type: none"> <li>1. Door switch shorted out.</li> <li>2. Faulty control relay.</li> <li>3. Faulty "cycle reset" microswitch in cam timer.</li> </ol>	<ol style="list-style-type: none"> <li>1. With the door open, check for voltage between ORANGE/WHITE door switch and neutral. If 120 V, replace the door switch.</li> <li>2. With the door open, check for voltage between connections #9 and #3 on control relay. If 120 V, replace control relay.</li> <li>3. Replace microswitch.</li> </ol>
Machine will not run in "ON" position but works in Delime mode.	<ol style="list-style-type: none"> <li>1. Faulty cycle reset cam microswitch.</li> <li>2. Faulty cam timer motor.</li> <li>3. Faulty control relay.</li> <li>4. Faulty NORMAL/DELIME switch.</li> </ol>	<ol style="list-style-type: none"> <li>1. With the switch in the Normal position, rotate the cams manually off the home position. Check the voltage between the ORANGE and BLACK/WHITE wires on the cycle reset switch. If it is 120 V, then the switch is open and should be replaced.</li> <li>2. If cam timer is not rotating, check the voltage to the motor. If voltage is present when the door is closed, replace the motor.</li> <li>3. Check the voltage across contacts #9 and #6. If 120 V when the door is closed, replace the relay.</li> <li>4. In the NORMAL position, check the voltage between WHITE/BLACK and WHITE/RED wires to switch. If 120 V, replace the switch.</li> </ol>
Machine will not run. Wash pump motor will run if wash relay is depressed manually (nothing else works).	<ol style="list-style-type: none"> <li>1. Open door switch.</li> <li>2. Faulty control relay.</li> </ol>	<ol style="list-style-type: none"> <li>1. With door closed, measure voltage between BLUE and WHITE/BLACK wires on terminals #6 and #9 of the relay. If 120 V, replace the relay.</li> <li>2. Measure between the BLACK wires on terminals #6 and #9 of the relay. If 120 V, replace the relay. Measure between the WHITE/BLACK wire on terminal 4 and the ORANGE/WHITE wire on terminal 7 of the relay. If 120 V, replace relay.</li> </ol>
Machine will not run in "ON" position or in Delime mode.	<ol style="list-style-type: none"> <li>1. Door switch is defective.</li> <li>2. Faulty OFF/ON/FILL switch.</li> <li>3. Faulty NORMAL/DELIME switch.</li> </ol>	<ol style="list-style-type: none"> <li>1. With door open, check for voltage between ORANGE/WHITE door switch and neutral. If 120 V, replace the door switch.</li> <li>2. With switch ON, check voltage between BLACK and WHITE/BLACK wires to switch. Replace the switch if 120 V.</li> <li>3. In the NORMAL position, check the voltage between WHITE/BLACK and WHITE/RED wires to switch. If 120 V, replace the switch.</li> </ol>
Machine cycles continuously.	<ol style="list-style-type: none"> <li>1. Cycle reset switch loose.</li> <li>2. Faulty cycle reset switch.</li> </ol>	<ol style="list-style-type: none"> <li>1. Reposition switch assembly, bend metal lever if necessary.</li> <li>2. Measure between BLACK/YELLOW and ORANGE wires on "cycle reset" switch while timer is rotating. As the switch lever drops into home position you should measure 120 V. If not, adjust or replace the switch.</li> </ol>
Machine fills continuously even with no power applied to the machine.	<ol style="list-style-type: none"> <li>1. Incorrect pressure.</li> <li>2. Water inlet solenoid valve allowing water into machine.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check water pressure during fill, pressure must be 15 PSI.</li> <li>2. Repair or replace water inlet solenoid valve.</li> </ol>

OBSERVATION	POSSIBLE CAUSE	REMEDY
Machine will not fill, other functions work.	<ol style="list-style-type: none"> <li>1. Y-strainer plugged.</li> <li>2. Water valve turned off.</li> <li>3. Faulty solenoid valve diaphragm.</li> <li>4. Faulty solenoid coil.</li> <li>5. Faulty fill microswitch.</li> <li>6. Faulty OFF/ON/FILL switch.</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean strainer.</li> <li>2. Turn on water valve.</li> <li>3. Replace diaphragm, clean foreign material out of valve body and orifices.</li> <li>4. If coil has voltage but no continuity, replace coil (continuity is measured across coil connectors with wires removed).</li> <li>5. Will not fill during cycle only. During fill, measure between the ORANGE and WHITE/GREEN wires. If 120 V, adjust or replace switch.</li> <li>6. Depress switch, measure between BLACK and WHITE/GREEN wire. If 120 V, replace switch.</li> </ol>
Machine fills continuously, only when the power is on.	<ol style="list-style-type: none"> <li>1. Faulty fill microswitch.</li> <li>2. Cam timer stalled in fill position.</li> <li>3. Shorted OFF/ON/FILL switch.</li> </ol>	<ol style="list-style-type: none"> <li>1. Repair/replace switch.</li> <li>2. If cam timer is not rotating, check the voltage to the timer motor. If 120V when door is closed, replace the timer motor.</li> <li>3. Check voltage between BLACK and WHITE/GREEN connections of the switch in the "ON" position. If you do not read 120 V, replace switch.</li> </ol>
Wash motor does not run. Other functions work, but the wash motor runs only when the wash relay is manually pushed down.	<ol style="list-style-type: none"> <li>1. Faulty control relay.</li> <li>2. Faulty wash relay.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check the voltage across relay contacts #7 and #4. If 120 V during the wash cycle, replace the relay.</li> <li>2. Check voltage at relay coil between ORANGE/BLACK and WHITE wires. If you read 120 V, coil is faulty. Replace the relay.</li> </ol>
Wash motor does not run even when the wash relay is manually depressed; other functions work.	<ol style="list-style-type: none"> <li>1. Loose wire connections to motor, delime switch, or from contactors.</li> <li>2. Mechanical binding in pump.</li> <li>3. Faulty wash motor.</li> <li>4. Faulty wash relay.</li> <li>5. High or low voltage problem.</li> </ol>	<ol style="list-style-type: none"> <li>1. Tighten wires.</li> <li>2. On end of motor, opposite pump, remove endcap. With large slot type screwdriver, fit into slot in end of shaft. Turn to dislodge. Run motor as normal. If it still does not run, replace motor.</li> <li>3. If the motor has the correct incoming voltage and the pump is okay, replace the motor.</li> <li>4. With the wash relay pushed in, check the voltage between T1 and L1 of the relay. If 120 V, replace the relays.</li> <li>5. Check voltage at motor and at power terminal block. Compare to electrical specifications.</li> </ol>
Wash motor runs continuously.	<ol style="list-style-type: none"> <li>1. The NORMAL/DELIME switch is in the Delime position.</li> <li>2. Wash relay contacts are welded closed.</li> <li>3. Cam timer stalled in wash or rinse cycle.</li> <li>4. Wash motor microswitch faulty.</li> </ol>	<ol style="list-style-type: none"> <li>1. Place the switch in the Normal position.</li> <li>2. Turn machine off. If wash relay doesn't release, replace contactor.</li> <li>3. If cam timer is not rotating, check the voltage to the timer motor. If no voltage when the door is closed, check wires and/or replace motor.</li> <li>4. Tighten connections, make sure switch makes contact, replace if necessary.</li> </ol>
Machine will not hold water.	<ol style="list-style-type: none"> <li>1. Faulty drain ball.</li> <li>2. Obstructed drain hole.</li> <li>3. Drain linkage is binding.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace drain ball.</li> <li>2. Clear obstruction.</li> <li>3. Repair drain mechanism parts.</li> </ol>

OBSERVATION	POSSIBLE CAUSE	REMEDY
Machine runs with door open.	<ol style="list-style-type: none"> <li>1. Door switch shorted.</li> <li>2. Faulty wash relay (wash relay contacts welded closed).</li> <li>3. Faulty control relay.</li> </ol>	<ol style="list-style-type: none"> <li>1. With machine off, open doors, and with both wires to door switch unplugged, measure continuity between wires on switch. If there is continuity, replace the switch.</li> <li>2. Turn machine off, if wash relay doesn't release, replace contactor.</li> <li>3. With power off, remove WHITE/RED and BLACK/YELLOW wires from control relay terminals #9 and #6. If there is continuity, replace relay.</li> </ol>
Low pumped water pressure.	<ol style="list-style-type: none"> <li>1. Water level is too low.</li> <li>2. Sump strainer clogged.</li> <li>3. Wash arms clogged.</li> <li>4. Obstruction in pump housing or wash manifold.</li> <li>5. Pump impeller worn or broken.</li> </ol>	<ol style="list-style-type: none"> <li>1. Increase fill time on cam timer, or decrease drain timer, or increase incoming water pressure.</li> <li>2. Clean strainer.</li> <li>3. Clean arms and jets.</li> <li>4. Disassemble and clear.</li> <li>5. Replace the pump impeller.</li> </ol>
Sanitizer pump doesn't run during the cycle or through the use of the prime switch.	<ol style="list-style-type: none"> <li>1. Loose motor terminal wire.</li> <li>2. Faulty sanitizer pump motor.</li> </ol>	<ol style="list-style-type: none"> <li>1. Tighten connections.</li> <li>2. If you read 120 V at the sanitizer motor terminals during the sanitizer feed cycle, replace the motor.</li> </ol>
Machine keeps tripping the service breaker.	<ol style="list-style-type: none"> <li>1. Power supply shorted to ground.</li> <li>2. Faulty door switch or detergent safety switch.</li> <li>3. Pump impeller jammed.</li> <li>4. Wash pump motor faulty.</li> <li>5. Circuit breaker is too small.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check for loose wires or burned connections.</li> <li>2. Check for loose or wet connections at switch and at wire connectors. Bypass switch to verify that switch is problem; replace if required.</li> <li>3. Clear impeller.</li> <li>4. Check motor voltage and amp load. If amp load is over 12 A, replace the motor.</li> <li>5. Replace with properly-sized breaker. Refer to the data plate.</li> </ol>
Machine will not drain.	<ol style="list-style-type: none"> <li>1. Loose wire connection.</li> <li>2. Drain hole/strainer obstructed.</li> <li>3. Not enough time to drain.</li> <li>4. Drain linkage binding.</li> <li>5. Faulty drain microswitch on timer.</li> <li>6. Faulty drain microswitch on timer.</li> <li>7. Drain solenoid defective.</li> </ol>	<ol style="list-style-type: none"> <li>1. Tighten wires to timer drain microswitch.</li> <li>2. Clear obstructions.</li> <li>3. Adjust fill cam on timer and/or the drain cam.</li> <li>4. Repair drain parts.</li> <li>5. With power off and the drain cam on the timer in the home position, remove the WHITE/YELLOW wire from the microswitch.</li> <li>6. Measure the continuity between the ORANGE wire on the microswitch and the tab that the WHITE/ YELLOW wire is attached onto. If there is no continuity, replace the microswitch.</li> <li>7. Check for voltage at solenoid valve during the drain cycle. Replace if voltage is present.</li> </ol>
Sanitizer pump runs continuously.	<ol style="list-style-type: none"> <li>1. Shorted sanitizer microswitch on cam timer.</li> <li>2. Shorted prime switch.</li> <li>3. Loose or broken wire.</li> <li>4. Faulty sanitizer microswitch on cam timer.</li> </ol>	<ol style="list-style-type: none"> <li>1. If there is not 120 V between the ORANGE and GREY wires on the sanitization pump motor microswitch when switch is out of the home position, replace the switch.</li> <li>2. If there is not 120 V between GREY and WHITE/RED wires to prime switch, replace the switch. Sanitizer pump does not run during the cycle, but runs when primed.</li> <li>3. Tighten connections to microswitch.</li> <li>4. When sanitizer cam is in home position, measure voltage between ORANGE and GREY wires on the microswitch. If 120 V, replace switch.</li> </ol>

OBSERVATION	POSSIBLE CAUSE	REMEDY
Prime switch does not activate sanitizer pump.	<ol style="list-style-type: none"> <li>1. Faulty prime switch.</li> <li>2. Faulty delime switch.</li> </ol>	<ol style="list-style-type: none"> <li>1. With the prime switch in the prime position, check for voltage between the GREY and WHITE/RED wires to switch. If 120 V, replace the switch.</li> <li>2. With the delime switch in the DELIME position, check for voltage between the WHITE/BLACK and WHITE/RED wires to the delime switch. If 120 V, replace the delime switch.</li> </ol>
Detergent not feeding; rinse-aid feeds okay.	<ol style="list-style-type: none"> <li>1. Misadjusted cam.</li> <li>2. Faulty detergent microswitch on cam timer.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust detergent cam on cam timer.</li> <li>2. When the detergent cam is in the home position, measure voltage between ORANGE and GREY/ WHITE wires. If 120 V, replace the microswitch.</li> </ol>
Rinse-aid not feeding, detergent feeds okay.	<ol style="list-style-type: none"> <li>1. Misadjusted cam.</li> <li>2. Faulty rinse-aid microswitch on cam timer.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust rinse-aid cam on cam timer.</li> <li>2. When the rinse aid cam is in the home position, measure the voltage between the ORANGE and ORANGE/YELLOW wires. If 120 V, replace the microswitch.</li> </ol>
Sanitizer pump does not run during the cycle, but runs when primed.	<ol style="list-style-type: none"> <li>1. Loose or broken wire.</li> <li>2. Faulty sanitizer microswitch on cam timer.</li> </ol>	<ol style="list-style-type: none"> <li>1. Tighten connections to microswitch.</li> <li>2. When sanitizer cam is in home position, measure voltage between ORANGE and GREY wires on the microswitch. If 120 V, replace switch.</li> </ol>

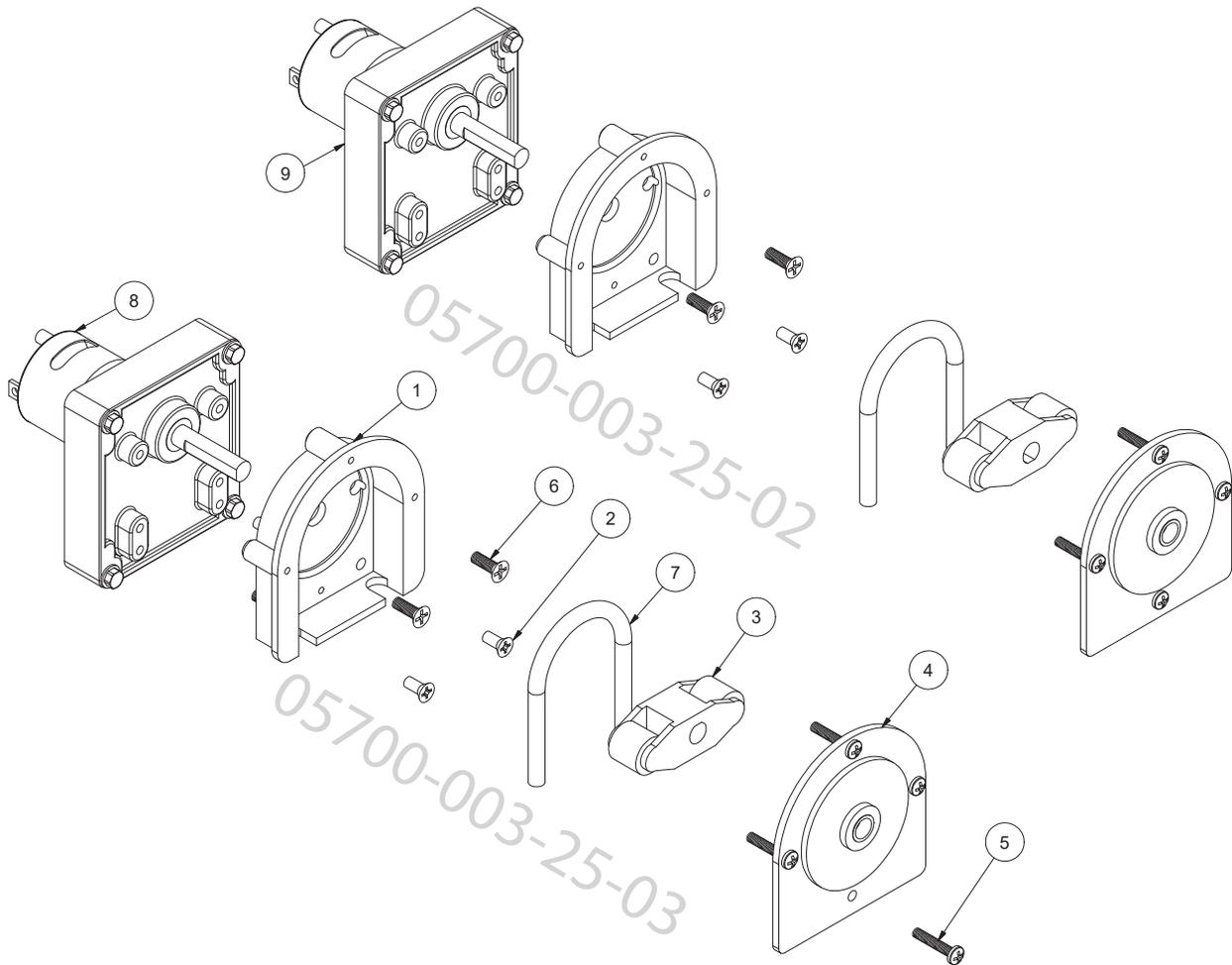


ITEM	QTY	DESCRIPTION	PART NUMBER
1	3	Switch, Prime	05930-011-49-54
2	3	Light, Red	05945-504-07-18
3	1	Light, Green	05954-504-08-18
4	1	Switch, Delime	05930-301-21-18
5	1	Cycle Counter	05990-111-35-38
6	2	Screw, 4-40 x 1/4" Phillips Pan Head with Washer	05305-002-32-38

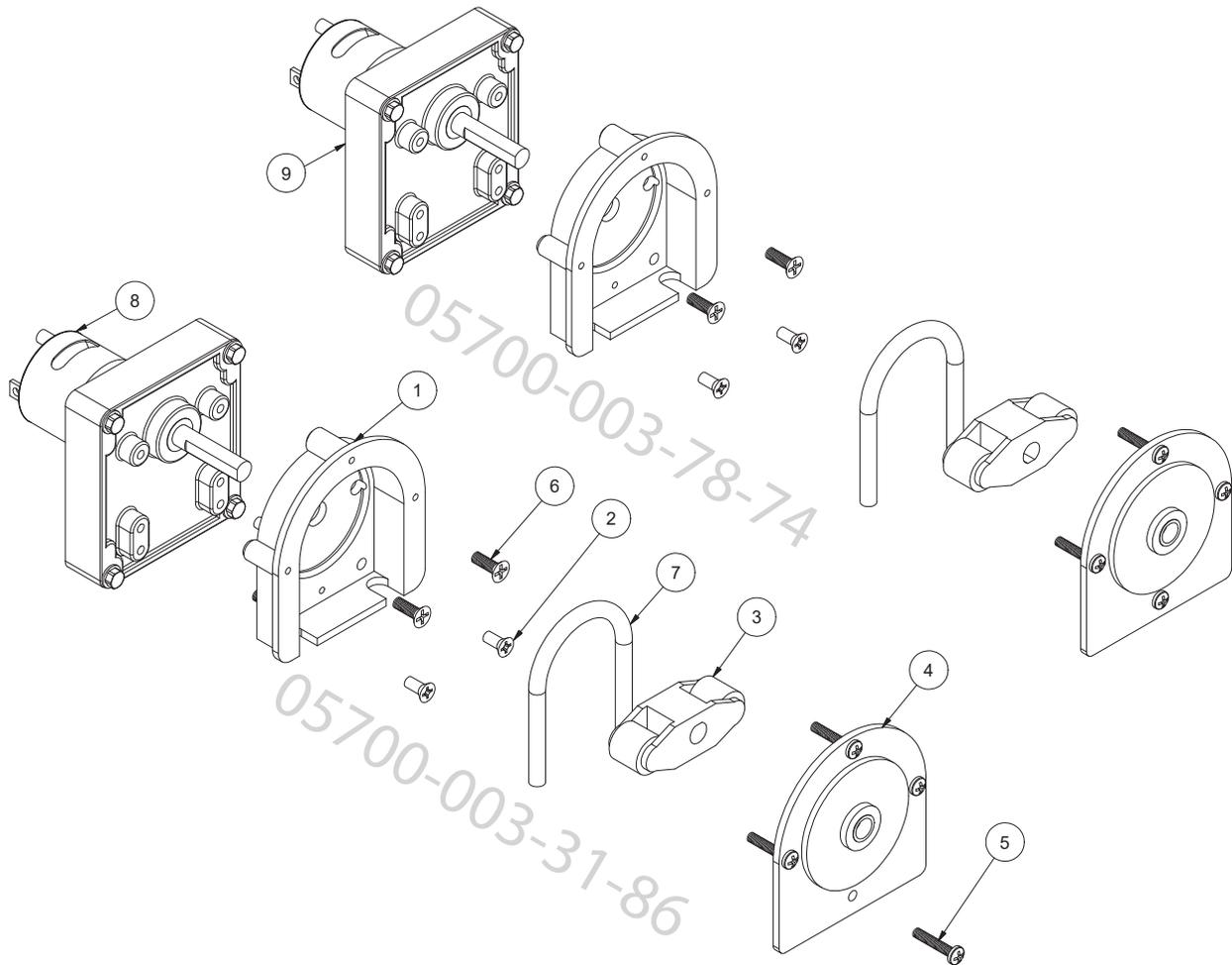
ITEM	QTY	DESCRIPTION	PART NUMBER
7	1	Terminal Block	05940-500-09-61
8	1	Contactor, 115 V, 30 A	05945-109-05-69
9	1	Terminal Board	05940-021-94-85
10	1	Lug, Ground	05940-200-76-00
11	1	Spacer, Terminal Block	05700-011-40-05
12	18	Lock Nut, 10-24 SS Hex with Nylon Insert	05310-373-01-00
13	11	Locknut, 6-32 Hex with Nylon Insert	05310-373-03-00
14	1	Fitting, 1/2", Plastic	05975-011-45-13
15	2	Fitting, 1/2", 45-degree, Plastic	05975-011-45-23
16	1	Bushing, Heyco Split	05975-200-40-00
17	1	Grommet, 1/2" OD x 3/8"	05325-011-46-73
18	1	Decal, Power Connection	09905-011-47-64
19	1	Switch, Power	05930-111-38-79
20	1	Lock, Control Box	05340-102-01-00
21	2	Switch, Pressure	06685-003-36-13
22	1	Control Box	05700-003-81-49
23	1	Decal, Lower Control	09905-005-03-49
24	1	Bracket, Timer Mounting	05700-004-08-77
25	1	Relay, Pole 115 V	05945-111-35-19
26	2	Bracket, Pressure Switch	05700-004-08-99
27	1	Decal, Wash/Rinse Temperature	09905-002-82-46
28	6	P Clamp	05975-002-61-42
29	1	Thermometer	06685-111-68-49
30	1	Plug, 1/2"	04730-011-60-22
31	1	Decal, Conserver Upper	09905-004-53-76
32 <sup>1</sup>	1	Timer, Electronic Cycle	05700-004-88-53
33	1	Decal, Electronic Timer Guide	09905-004-69-92
34	1	Decal, Warning—Disconnect Power	09905-004-08-16
35 <sup>2</sup>	2	Chemical Feeder Pump Assembly, 36 RPM, 115 V Chemical Feeder Pump Assembly, 36 RPM, 230 V	05700-003-25-02 05700-003-78-74
36 <sup>2</sup>	1	Chemical Feeder Pump Assembly, 14 RPM, 115 V Chemical Feeder Pump Assembly, 14 RPM, 230 V	05700-003-25-03 05700-003-31-86
37	1	Plug, Dome	05975-002-29-94
38	1 1	Fuse Holder Assembly, In-line Fuse, In-line 1 A (not shown)	05920-004-55-23 05920-004-55-14

<sup>1</sup>Machines with serial numbers before 20F386545 have the old CAM timer. See [earlier manual](#).

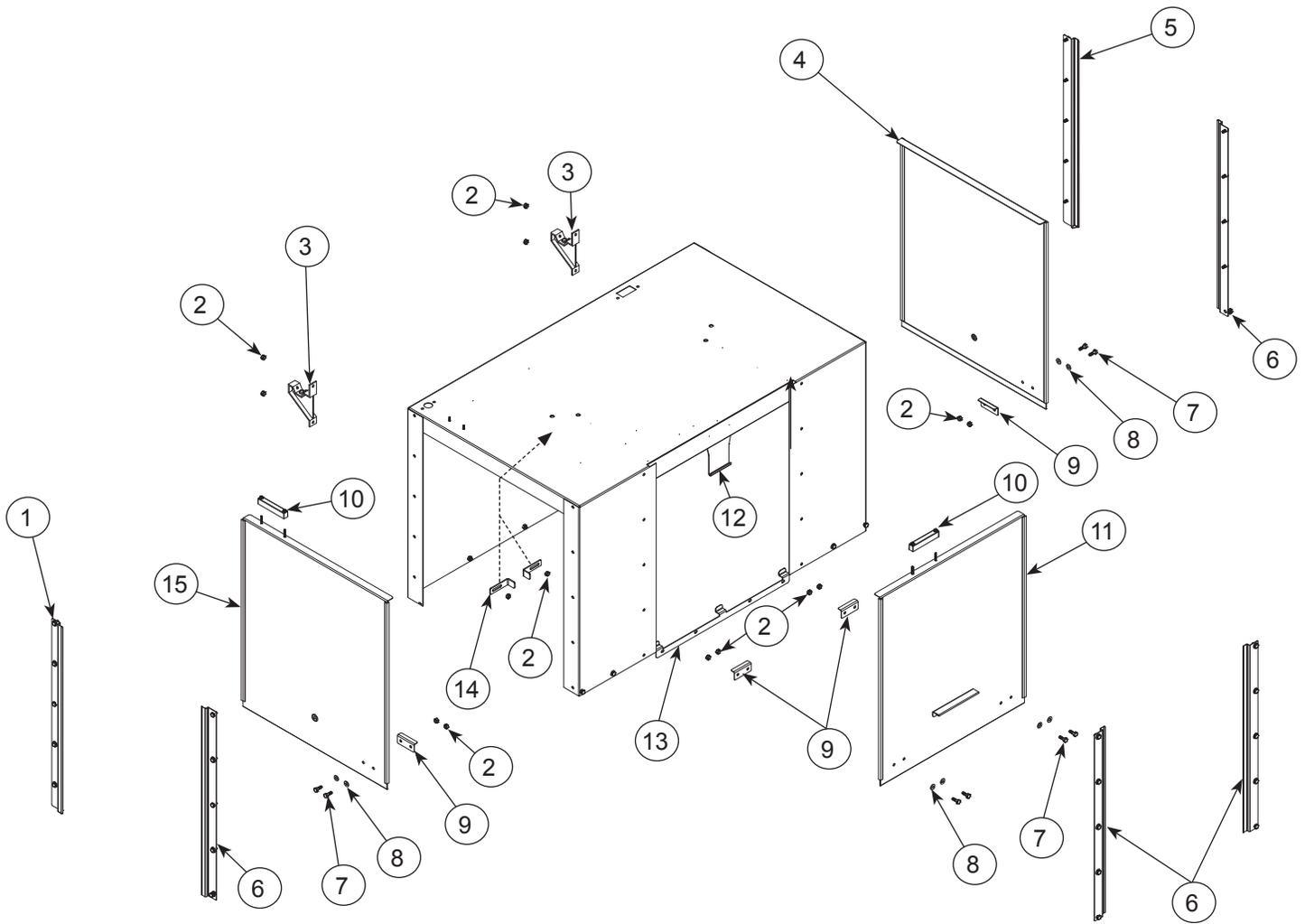
<sup>2</sup>See next section for components.



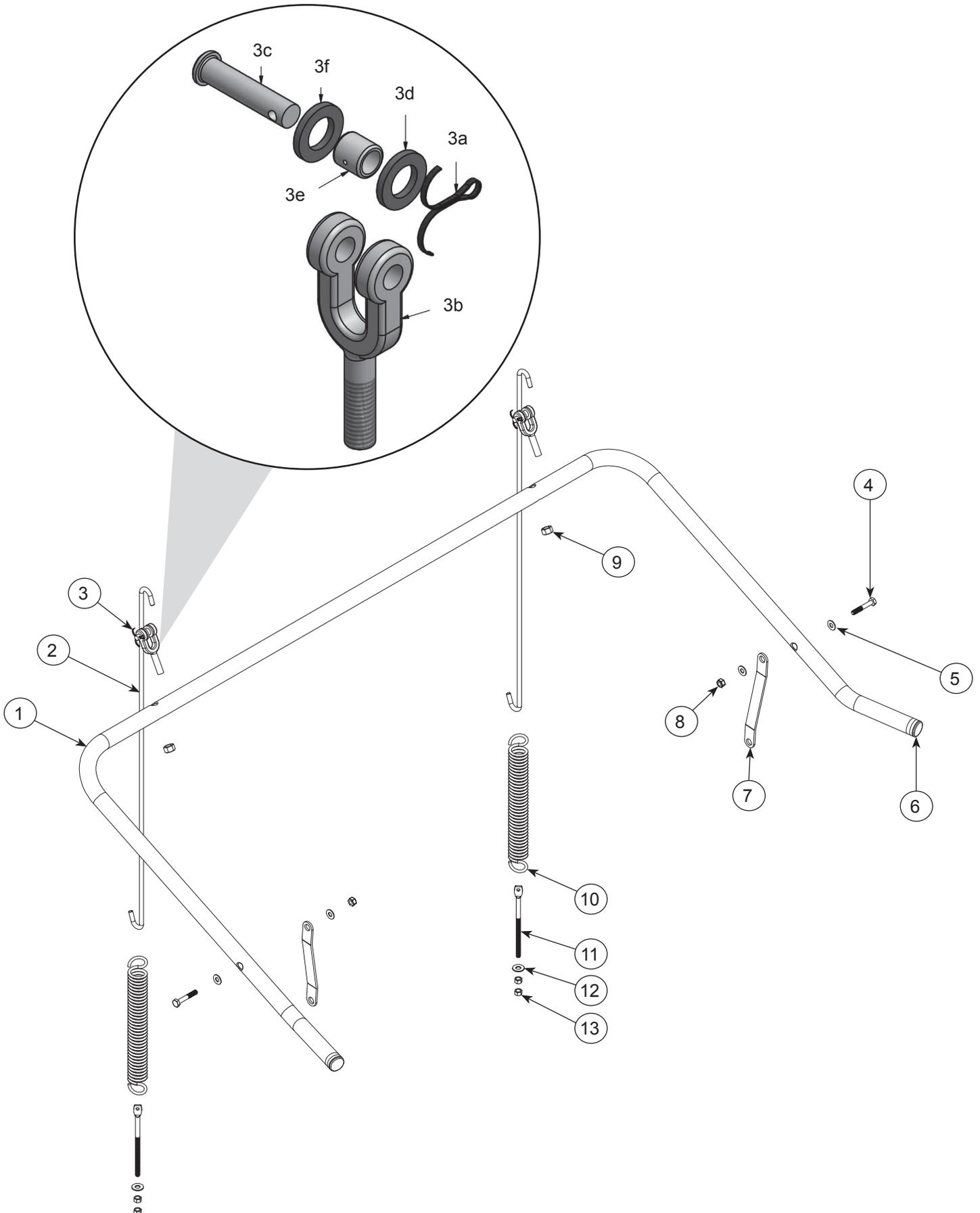
ITEM	QTY	DESCRIPTION	PART NUMBER
1	2	Pump Housing	04320-111-37-09
2	4	Screw, 8-32 x 3/8" Phillips	05305-011-37-07
3	1	Roller, Plastic	04320-002-82-28
4	2	Pump Cover	04320-111-37-08
5	8	Screw, 6-32 x 3/4" Phillips	05305-011-37-05
6	4	Screw, 8-32 x 1/2" Phillips	05305-011-37-06
7	1	Tube, Squeeze, 8"	05700-003-22-89
8	1	Motor, 14 RPM	04320-111-35-13
9	1	Motor, 36 RPM	04320-111-35-14



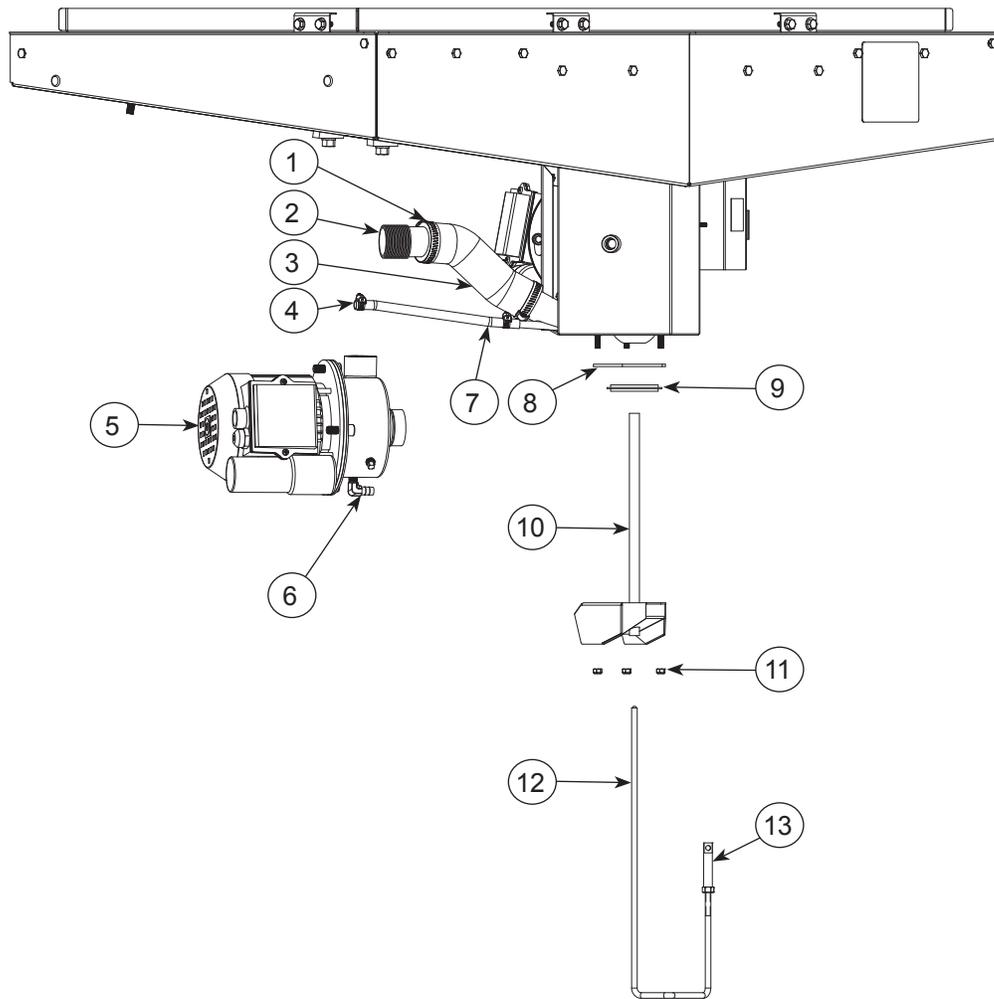
ITEM	QTY	DESCRIPTION	PART NUMBER
1	2	Pump Housing	04320-111-37-09
2	4	Screw, 8-32 x 3/8" Phillips	05305-011-37-07
3	1	Roller, Plastic	04320-002-82-28
4	2	Pump Cover	04320-111-37-08
5	8	Screw, 6-32 x 3/4" Phillips	05305-011-37-05
6	4	Screw, 8-32 x 1/2" Phillips	05305-011-37-06
7	1	Tube, Squeeze, 8"	05700-003-22-89
8	1	Motor, 14 RPM	04320-111-47-46
9	1	Motor, 36 RPM	04320-111-47-47



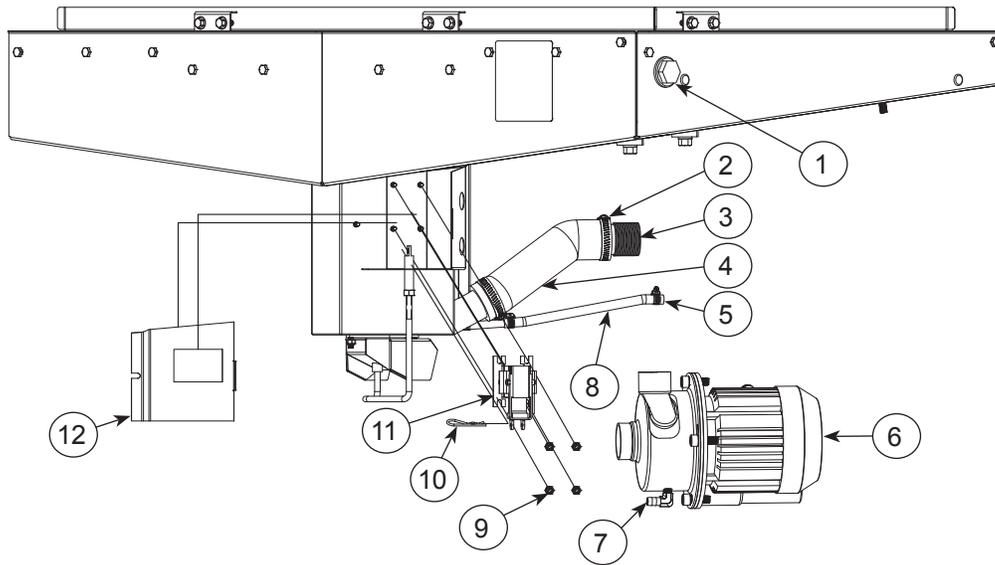
ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Door Guide, Left Rear	05700-021-84-71
2	14	Lock Nut, 1/4-20 with Nylon Insert	05310-374-01-00
3	2	Bracket, Cantilever Support	09515-003-15-64
4	1	Door Assembly, Right Side	05700-004-14-11
5	1	Door Guide, Right Rear	05700-021-84-70
6	4	Door Guide	05700-021-44-94
7	8	Bolt, Hex Head 1/4-20 x 3/4"	05305-274-04-00
8	8	Washer, 1/4" ID SS	05311-174-01-00
9	4	Door Stop	05700-011-46-30
10	2	Door Switch	05930-111-51-69
11	1	Front Door Assembly Front Door Assembly with Studs	05700-004-07-52 05700-003-04-64
12	1	Door Catch	05700-011-46-50
13	1	Front Door Stop	05700-021-60-27
14	2	Manifold L-Bracket	05700-011-34-63
15	1	Door Assembly, Left Side Door Weldment Only, Left Side	05700-004-07-51 05700-003-02-98



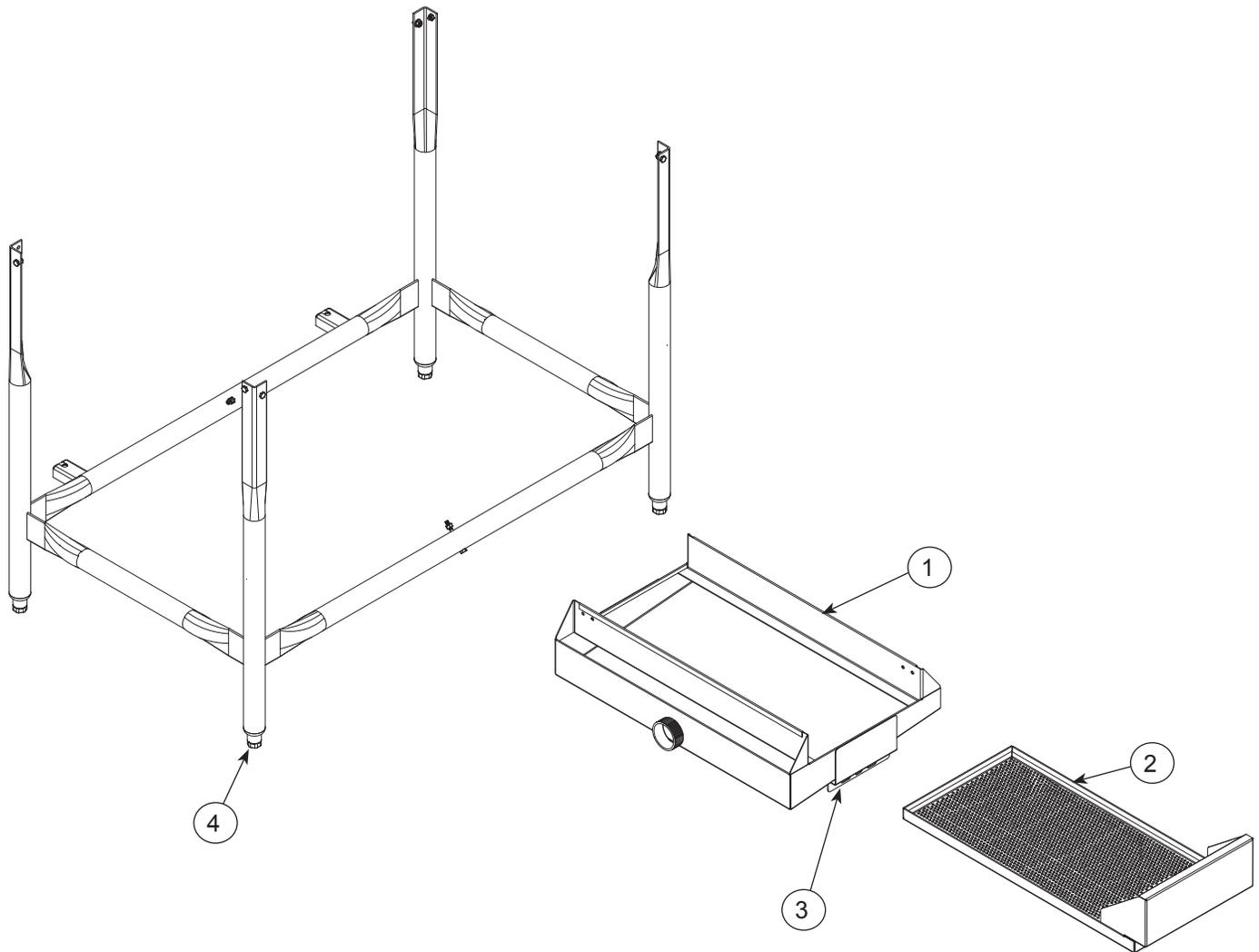
ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Complete Cantilever Arm Assembly Cantilever Arm	05700-002-60-64 05700-002-60-65
2	2	Rod, Spring Universal	05700-003-67-39
3	2	Yoke Assembly	05700-000-75-77
3a	1	Cotter Pin	05315-207-01-00
3b	1	Yoke	05700-000-75-78
3c	1	Clevis Pin	05315-700-01-00
3d	2	Nylon Washer	05311-369-03-00
3e	1	Bushing	03120-100-03-00
4	2	Screw, Cap 1/4-20 x 1 5/8"	05305-004-23-57
5	4	Washer, 1/4" ID SS	05311-174-01-00
6	2	Plug, Cantilever	05340-011-35-00
7	2	Cantilever Arm Connector	05700-011-90-99
8	2	Lock Nut, 1/4-20 with Nylon Insert	05310-374-01-00
9	2	Lock Nut, 3/8-16 SS	05310-256-04-00
10	2	Spring, Cantilever	05340-109-02-00
11	2	Bolt, Hanger Eye 3/8-16	05306-956-05-00
12	2	Washer, 3/8" ID x 7/8" OD	05311-176-02-00
13	4	Nut, Hex 3/8-16 SS	05310-276-01-00



ITEM	QTY	DESCRIPTION	PART NUMBER
1	2	Hose Clamp, Regular, 1 5/16" x 2 1/4"	04730-719-18-00
2	1	Pump Inlet Nipple	05700-021-33-50
3	1	Hose, 1 1/2" ID x 7 3/4"	05700-111-33-52
4	2	Hose Clamp, Mini, 7/16" x 25/32"	04730-011-36-05
5	1	Wash Motor	See Wash Motors
6	1	Hose Barb Fitting, 3/8" x 1/8" Male	04730-002-18-96
7	1	Hose, 3/8" ID x 12" Long	05700-002-69-73
8	1	Spillway Gasket	05700-111-34-52
9	1	Drain Seat Insert	05700-004-37-18
10	1	Spillway Weldment	05700-003-52-13
11	3	Locknut, 10-24 S/S Hex with Nylon Insert	05310-373-01-00
12	1	Drain Link Assembly	05700-002-38-21
13	1	Drain Link Connector	05700-002-38-10

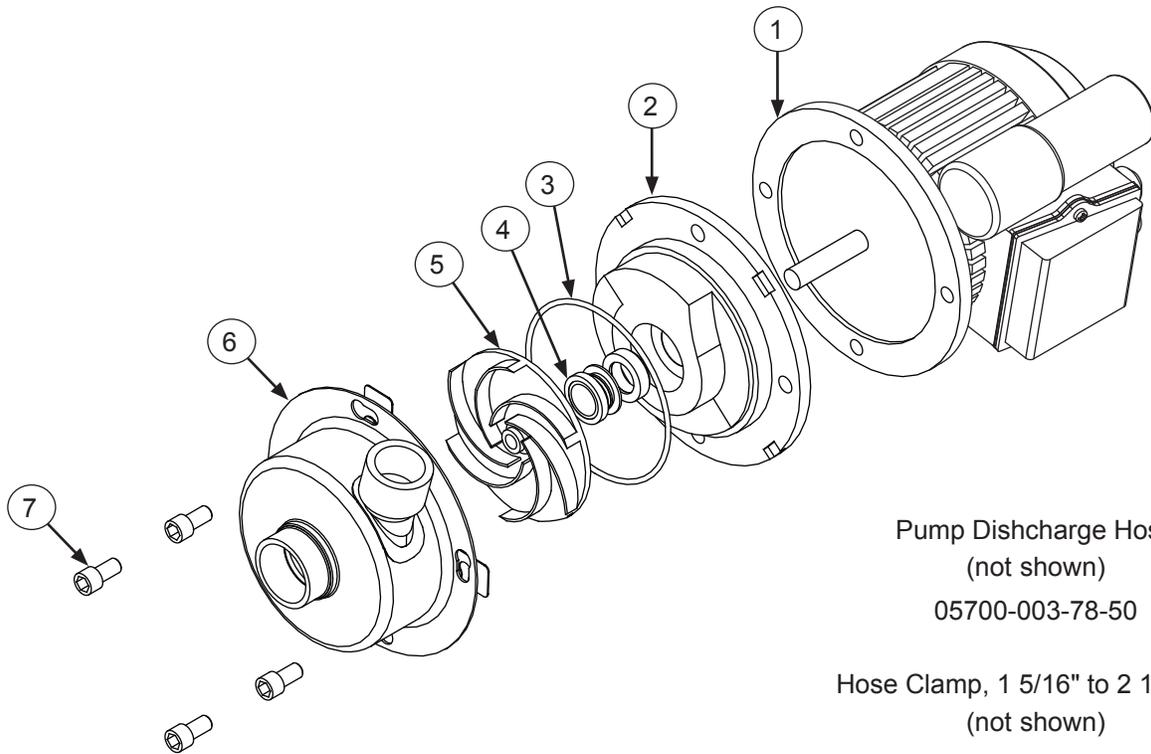


ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Plug	04730-011-60-21
2	2	Hose Clamp, Regular, 1 5/16" x 2 1/4"	04730-719-18-00
3	1	Pump Inlet Nipple	05700-021-33-50
4	1	Hose, 1 1/2" ID x 7 3/4"	05700-111-33-52
5	2	Hose Clamp, Mini, 7/16" x 25/32"	04730-011-36-05
6	1	Wash Motor	See Wash Motors
7	1	Hose Barb Fitting, 3/8" x 1/8" Male	04730-002-18-96
8	1	Hose, 3/8" ID x 12" Long	05700-002-69-73
9	4	Locknut, 10-24 S/S Hex with Nylon Insert	05310-373-01-00
10	1	Cotter Pin 1/8" x 1"	05315-002-15-39
11	1	Drain Solenoid, 115 V	04810-200-11-00
12	1	Drain Solenoid Box Cover	05700-031-33-27



ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Accumulator	05700-031-66-24
2	1	Accumlator Strainer	05700-021-47-17
3	1	Accumulator Stop Clip	05700-011-49-11
4	4	Adjustable Bullet Foot	05340-108-01-03

**60 Hz**

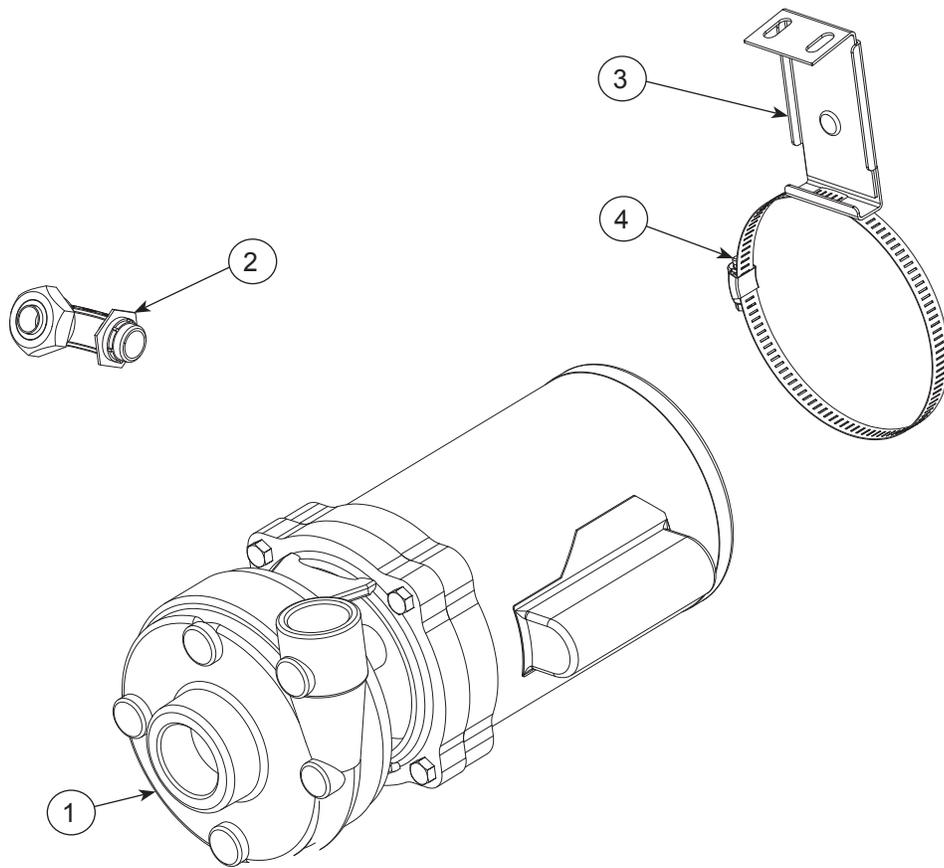


Pump Discharge Hose  
(not shown)  
05700-003-78-50

Hose Clamp, 1 5/16" to 2 1/4" S/S  
(not shown)  
04730-719-18-00 (2 required)

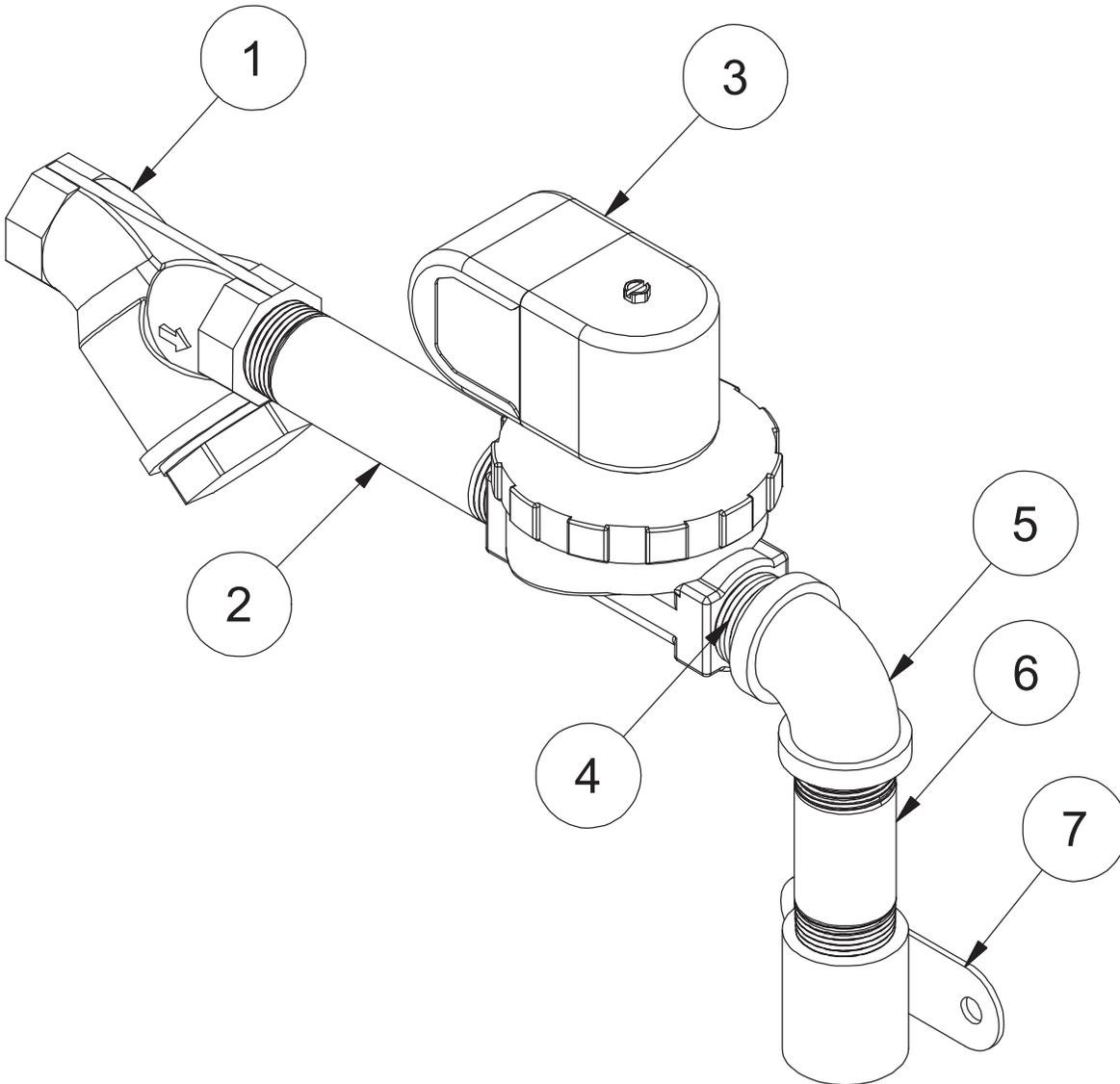
ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Pump & Motor Assembly, 1 HP/115-230 V/60 Hz Motor Only	06105-004-24-80 06105-004-32-04
2	1	Seal Plate	05700-002-81-87
3	1	Case O-ring	05330-002-81-83
4	1	Mechanical Seal	05330-002-34-22
5	1	Impeller Assembly	05700-002-81-86
6	1	Pump Casing	05700-002-85-01
7	1	Case Capscrew	05305-002-81-88

50 Hz

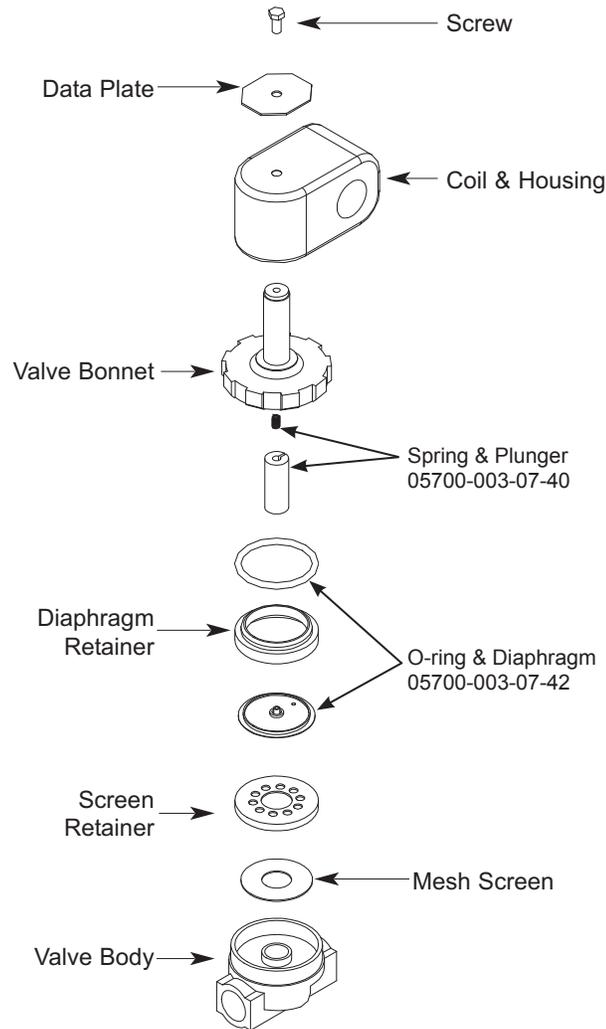


ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Motor, 1 HP/230 V/50 Hz	06105-002-19-87
2	1	Liquidtight Connector, 90-degree	05975-111-01-00
3	1	Pump Support Assembly	05700-002-05-88
4	1	Clamp, 5 5/8"– 6"	04730-011-34-90

Complete Inlet Plumbing Assembly, 3/4"  
05700-004-49-05



ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Y-Strainer	04730-717-02-06
2	1	Nipple, Brass, 3/4" x 4 1/2"	04730-004-04-53
3	1	Solenoid Valve, 3/4"	04810-100-03-18
4	1	Nipple, Brass, 3/4" x 1 3/8"	04730-207-34-00
5	1	Y-Strainer	04730-717-02-06
6	1	Elbow, Brass, 3/4" 90-degree	04730-206-13-00
7	1	Coupling, Water Inlet	05700-004-41-15



**Complete 115 Volt Solenoid Valve Assembly**  
 04810-100-53-00  
**Coil & Housing only**  
 04810-200-01-18

**Complete 230 Volt Solenoid Valve Assembly**  
 04810-100-03-18  
**Coil & Housing only**  
 04810-200-02-18

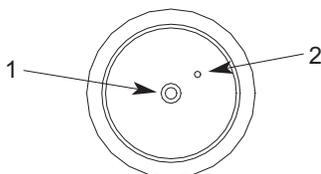
**TO TAKE THE SOLENOID VALVE APART**

**DISASSEMBLY** - These valves may be taken apart by unscrewing the bonnet and the enclosing tube assembly from the valve body assembly. After unscrewing, carefully lift off the bonnet and enclosing tube assembly. Don't drop the plunger. The o-ring seal and diaphragm cartridge can now be lifted out. Be careful not to damage the machined faces while the valve is apart.

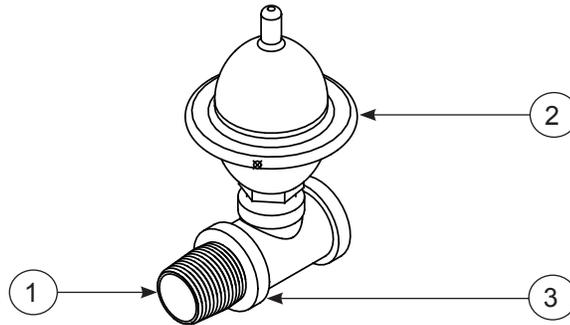
**TO REASSEMBLE** - Place the diaphragm cartridge in the body with the pilot port extension UP. Hold the plunger with the synthetic seat against the pilot port. Make sure the o-ring is in place, then lower the bonnet and enclosing tube assembly over the plunger. Screw the bonnet assembly snugly down on the body assembly.

**Possible Problems:**

1. Pilot port extension #1 clogged. Clean hole.
2. Hole #2 Clogged. Pass heated straight pin through hole.

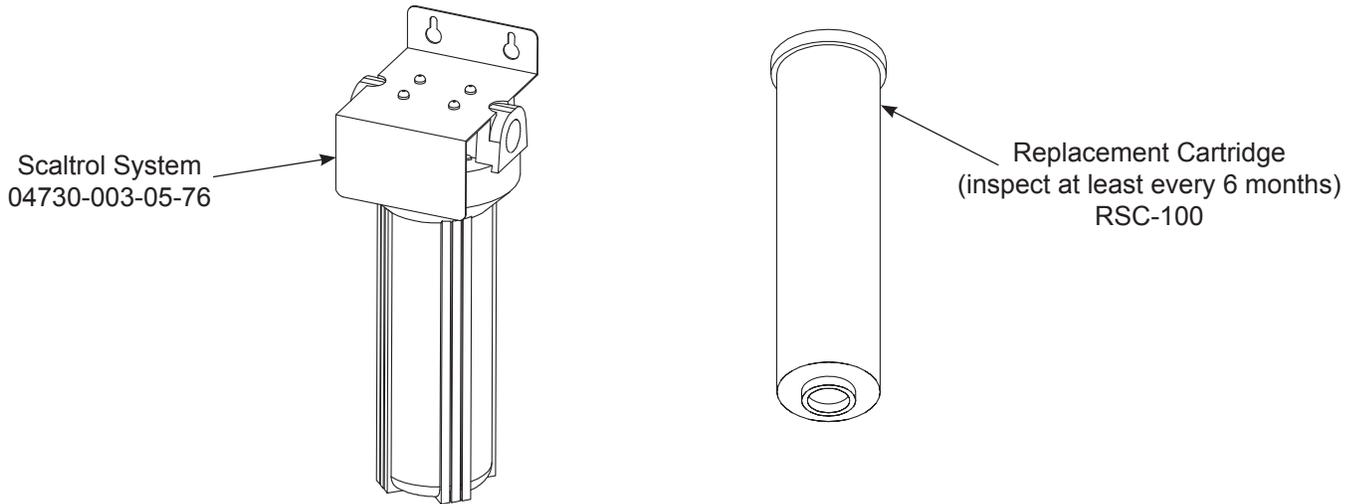


**SHOCK ABSORBER (WATER ARRESTOR) OPTION**

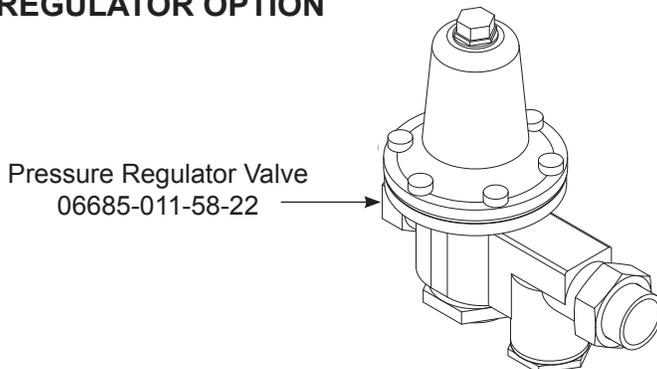


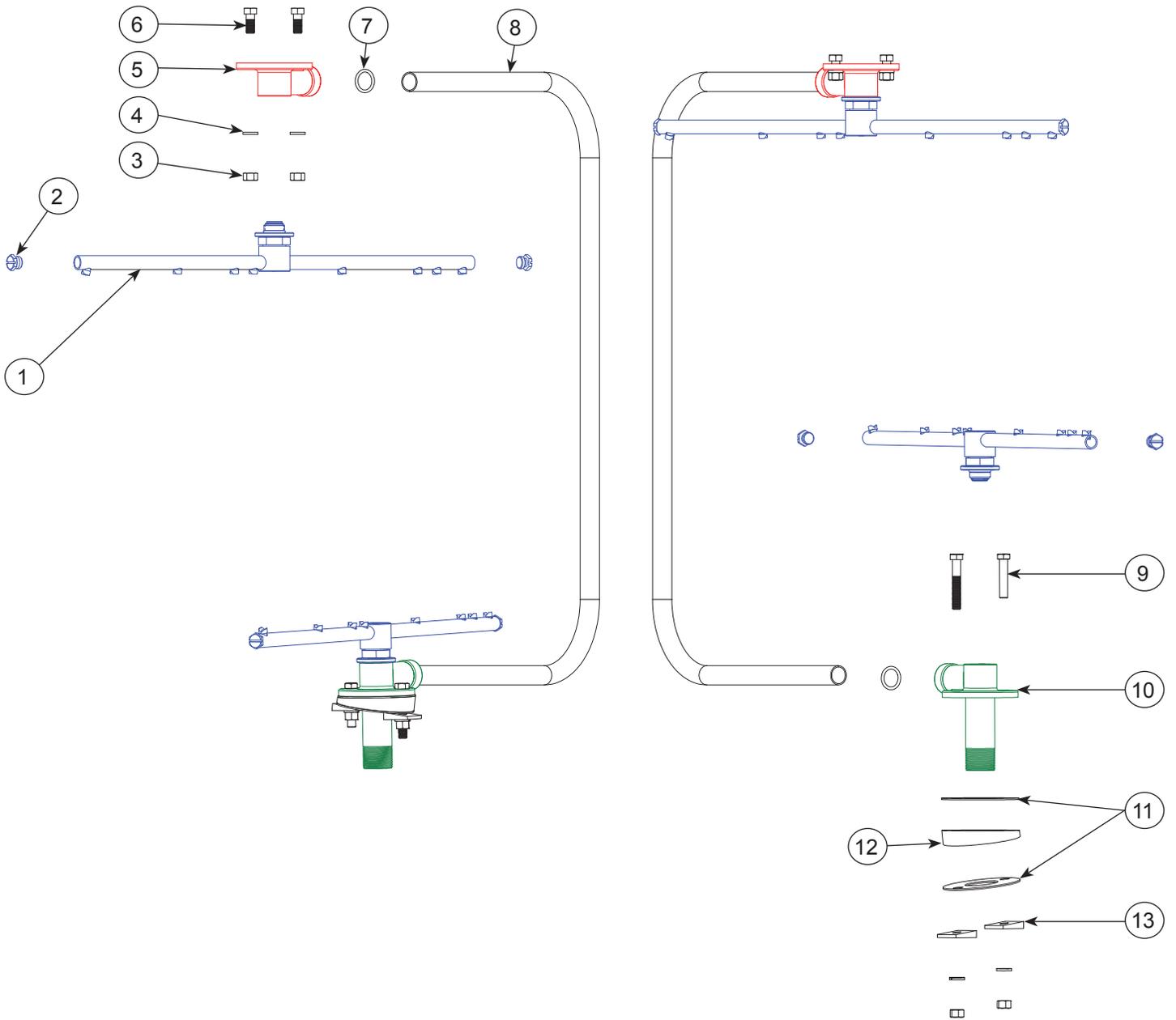
ITEM	QTY	DESCRIPTION	PART NUMBER
	1	Complete Water Arrestor Assembly, 3/4"	05700-002-61-29
1	1	Nipple, 3/4" NPT, Close, Brass	04730-207-34-00
2	1	Water Arrestor	06685-100-05-00
3	1	Tee, 3/4" x 3/4" x 1/2"	04730-211-06-00

**WATER TREATMENT OPTION**



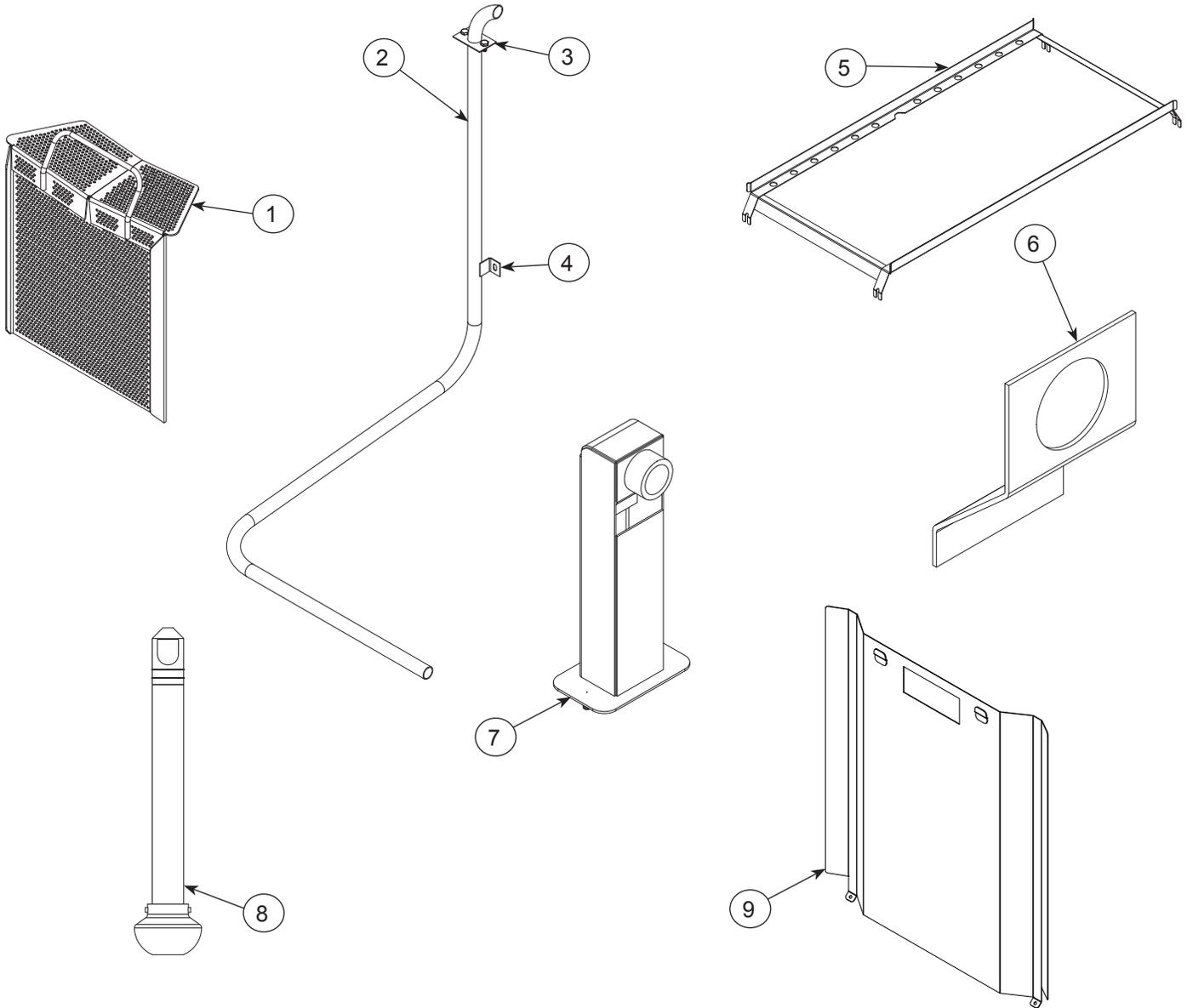
**PRESSURE REGULATOR OPTION**





ITEM	QTY	DESCRIPTION	PART NUMBER
1	4	Wash Arm	05700-002-57-98
2	8	End-cap (included with arm but can order separately)	05700-011-35-92
3	8	Hex Nut 3/8"	05310-276-01-00
4	8	Lockwasher	05311-276-01-00
5	2	Upper Manifold	05700-031-34-82
6	4	Hex Head Bolt 3/8-16 x 7/8"	05306-011-36-95
7	4	O-Ring	05330-111-35-15
8	2	Manifold	05700-031-34-59
9	4	Hex Head Bolt 3/8" x 1 3/4"	09515-003-15-64
10	2	Lower Wash Manifold	05700-031-46-00
11	4	Wash Manifold Gasket	05700-111-35-03
12	2	Wash Manifold Wedge	09515-011-46-61
13	4	Square Bevel Washer 3/8"	05311-011-35-36

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

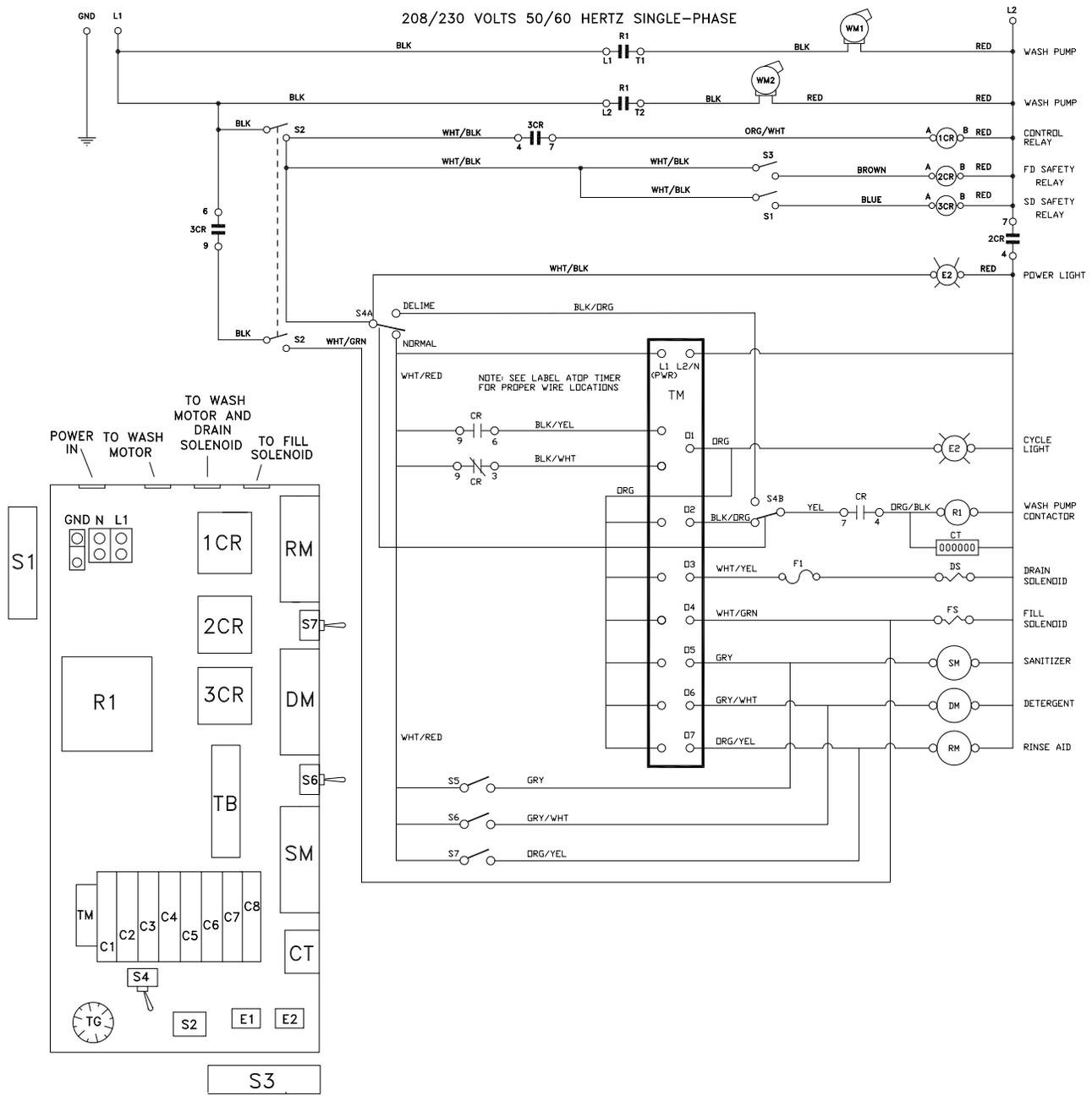


ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Intake Sump Strainer	05700-031-45-26
2	1	Injection Tube	05700-002-21-52
3	1	Injection Tube Gasket	05700-011-45-36
4	1	Injection Tube Bushing	05975-002-47-54
5	1	Rack Guide	05700-031-45-92
6	1	Air-gap Insert, 3/4"	05700-004-34-43
7	1	Air-gap, 3/4"	05700-004-34-42
8	1	Standpipe	05700-031-35-55
9	1	False Panel Kit False Panel Only	05700-003-12-93 05700-002-51-66



**CONSERVER XL2/WF II SCHEMATIC**

208/230 VOLTS 50/60 HERTZ SINGLE-PHASE



**LEGEND**

- WM WASH PUMP MOTOR
- DM DETERGENT PUMP MOTOR - 36 RPM
- RM RINSE AIDE PUMP MOTOR - 14 RPM
- SM SANITIZER PUMP MOTOR - 36 RPM
- TM TIMER MOTOR
- DV DRAIN VALVE
- R1 WASH RELAY
- 1CR CONTROL RELAY
- 2CR FRONT DOOR SAFETY SWITCH RELAY
- 3CR SIDE DOOR SAFETY SWITCH RELAY
- S1 SERVICE DISCONNECT
- S2 OFF/ON/FILL SWITCH
- S3 FRONT DOOR SWITCH
- S4 SIDE DOOR SWITCH
- S5 DELIME SWITCH
- S6 SANITIZER PRIME SWITCH
- S7 DET/RIN PRIME SWITCH
- E1 CYCLE LIGHT
- E2 POWER LIGHT
- DS DRAIN SOLENOID
- FS FILL SOLENOID
- CT CYCLE COUNTER
- C1 CYCLE MICROSWITCH
- C2 RESET MICROSWITCH
- C3 OFF/DRAIN MICROSWITCH
- C4 WASH MICROSWITCH
- C5 DRAIN MICROSWITCH
- C6 FILL MICROSWITCH
- C7 SANITIZER MICROSWITCH
- C8 DETERGENT MICROSWITCH
- C9 RINSE ADDITIVE MICROSWITCH
- TG TEMPERATURE GAUGE
- F1 DRAIN SOLENOID FUSE 1 AMP

**CYCLE TIMING**

STEP	WASH	DETER	DRAIN	FILL	RINSE AID	SANI	RINSE
START TIME	0.00	1.50	42.00	57.00	58.25	58.25	65.00
DURATION	42.00	5.00	14.75	8.00	4.25	5.00	25.00

09905-004-88-56-B





Jackson WWS, Inc. • 6209 N. US Hwy 25E • Gray, KY 40734 USA  
1.888.800.5672 • [www.jacksonwws.com](http://www.jacksonwws.com)