



ROTARY GLASSWASHER

INSTALLATION AND OPERATION INSTRUCTION MANUAL



(GWR-24)

MODEL:	ROTATION:
GWR-24	CLOCKWISE
GWR-24L	COUNTER-CLOCKWISE DOOR & CONTROLS ON LEFT
GWR-24R	CLOCKWISE DOOR & CONTROLS ON RIGHT



SERIAL NO.

[]



SERVICE INFORMATION

For future reference, record your dishwasher information in the box below.

Model Number _____	Serial Number _____	
Voltage _____	Hertz _____	Phase _____
Service Agent _____	Tel: _____	
Parts Distributor _____	Tel: _____	

SERVICE CONTACT INFORMATION

Krowne Metal Corporation
100 Haul Road
Wayne, NJ 07470

Toll-Free: (800) 631-0442
Phone: (973) 305-3300
Fax: (973) 872-1129
Email: service@krowne.com

ATTENTION:

The model no., serial no., voltage, Hz and phase are needed to identify your machine and to answer questions.

Please have this information ready if you call for service assistance.



WARRANTY REGISTRATION FORM

MODEL NO.: _____ SERIAL NO.: _____ INSTALL DATE: _____

NAME OF ESTABLISHMENT: _____ PHONE NO.: _____

ADDRESS: _____ CITY/STATE: _____ ZIP: _____

DEALER NAME: _____ CITY/STATE: _____

INSTALLATION COMPANY: _____

ADDRESS: _____

PHONE NO.: _____

CONTACT: _____

**PLEASE FAX TO (973) 872-1129 TO
COMPLETE REGISTRATION**

**YOU CAN ALSO REGISTER YOUR WARRANTY ONLINE
AT WWW.KROWNE.COM/WARRANTY-GW**

Krowne Metal Corporation

100 Haul Rd. Wayne, NJ 07470 • Toll Free: (800) 631-0442 • Fax: (973) 872-1129
sales@krowne.com • www.krowne.com • www.facebook.com/KrowneMetal • www.twitter.com/KrowneMetal

LIMITED WARRANTY

Krowne Metal Corporation, (herein referred to as "The Company"), 100 Haul Road, Wayne, New Jersey 07470 warrants machines, and parts, as set out below.

Warranty of Machines: The Company warrants all new machines of its manufacture bearing the name "Krowne Metal Corporation" to be free from defects in material and workmanship for a period of one (1) year after the date of installation or fifteen (15) months after the date of shipment by The Company, whichever occurs first. [See below for special provisions relating to glasswashers.] The registration card must be submitted by fax or online with The Company within ten (10) days after installation. If the registration is not submitted to The Company within such period, the warranty will expire after one year from the date of shipment.

The Company will not assume any responsibility for extra costs for installation in any area where there are jurisdictional problems with local trades or unions.

If a defect in workmanship or material is found to exist within the warranty period, The Company, at its election, will either repair or replace the defective machine or accept return of the machine for full credit; provided; however, as to glasswashers, The Company's obligation with respect to labor associated with any repairs shall end (a) 120 days after shipment, or (b) 90 days after installation, whichever occurs first. In the event that The Company elects to repair, the labor and work to be performed in connection with the warranty shall be done during regular working hours by The Company's authorized service technician. Defective parts become the property of The Company. Use of replacement parts not authorized by The Company will relieve The Company of all further liability in connection with its warranty. In no event will The Company's warranty obligation exceed The Company's charge for the machine. The following are not covered by The Company's warranty:

- a. Lighting of gas pilots or burners.
- b. Cleaning of gas lines.
- c. Replacement of fuses or resetting of overload breakers.
- d. Adjustment of thermostats.
- e. Adjustment of clutches.
- f. Opening or closing of utility supply valves or switching of electrical supply current.
- g. Cleaning of valves, strainers, screens, nozzles, or spray pipes.
- h. Performance of regular maintenance and cleaning as outlined in operator's guide.
- i. Damages resulting from water conditions, accidents, alterations, improper use, abuse, tampering, improper installation, or failure to follow maintenance and operation procedures.
- j. Wear on Pulper cutter blocks, pulse vanes, and auger brush.

Examples of the defects not covered by warranty include, but are not limited to: (1) Damage to the exterior or interior finish as a result of the above, (2) Use with utility service other than that designated on the rating plate, (3) Improper connection to utility service, (4) Inadequate or excessive water pressure, (5) Corrosion from chemicals dispensed in excess of recommended concentrations, (6) Failure of electrical components due to connection of chemical dispensing equipment installed by others, (7) 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, (8) Failure to comply with local building codes, (9) Damage caused by labor dispute.

Warranty of Parts: The Company warrants all new machine parts produced or authorized by The Company to be free from defects in material and workmanship for a period of 90 days from date of invoice. If any defect in material and workmanship is found to exist within the warranty period. The Company will replace the defective part without charge.

DISCLAIMER OF WARRANTIES AND LIMITATIONS OF LIABILITY. THE COMPANY'S WARRANTY IS ONLY TO THE EXTENT REFLECTED ABOVE. THE COMPANY MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED, TO ANY WARRANTY OF MERCHANTABILITY, OR FITNESS OF PURPOSE. THE COMPANY SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. THE REMEDIES SET OUT ABOVE ARE THE EXCLUSIVE REMEDIES FOR ANY DEFECTS FOUND TO EXIST IN THE COMPANY'S DISHWASHING MACHINES AND THE COMPANY'S PARTS, AND ALL OTHER REMEDIES ARE EXCLUDED, INCLUDING ANY LIABILITY FOR INCIDENTALS OR CONSEQUENTIAL DAMAGES.

The Company does not authorize any other person, including persons who deal in The Company's dishwashing machines to change this warranty or create any other obligation in connection with The Company's Dishwashing Machines.

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Installation

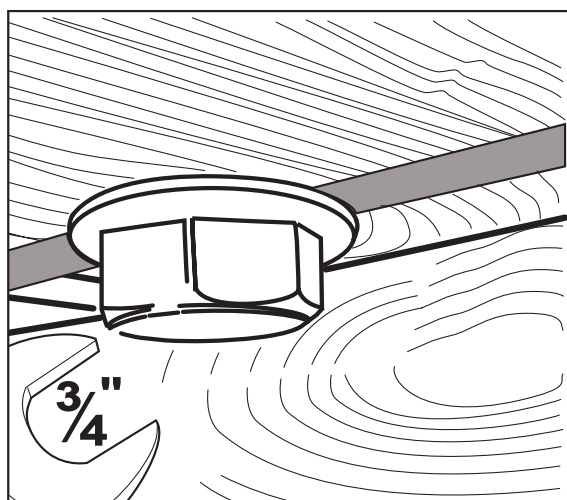
Unpacking

1. Move the glasswasher to its permanent location.
2. Open the door and remove the box marked "LEGS". The box contains (4) 6" [152cm] screw-in legs. These legs are threaded tightly into the base of the machine.
3. Remove (2) 1/2-13 x 2" bolts holding the glasswasher to the pallet.
4. Lift the front door off the bottom hinges and set carefully aside.
5. The illustrations below show one method to install the legs without lifting the glasswasher completely off the pallet.

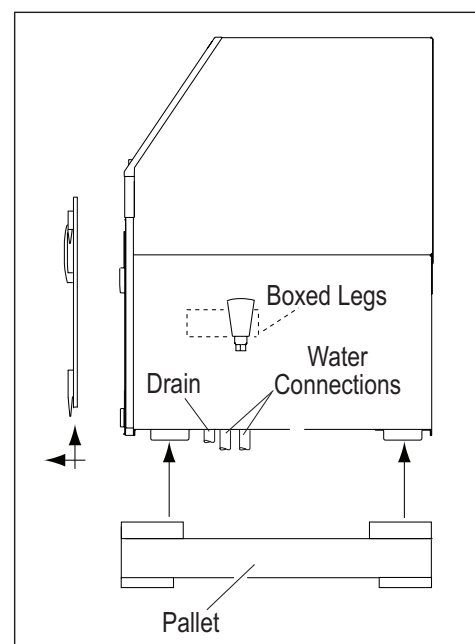
CAUTION!

The glasswasher water inlet plumbing and the drain piping extend below the pallet.

Use extreme care when moving the glasswasher to prevent damage to the glasswasher plumbing.



Remove the (2) pallet bolts holding the glasswasher to the pallet.

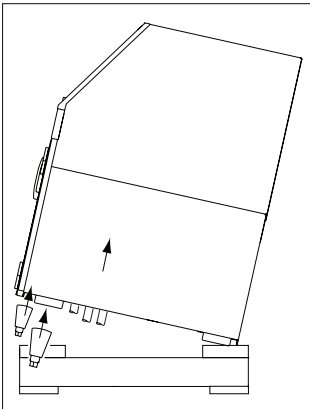


Glasswasher plumbing connections extend below the pallet.

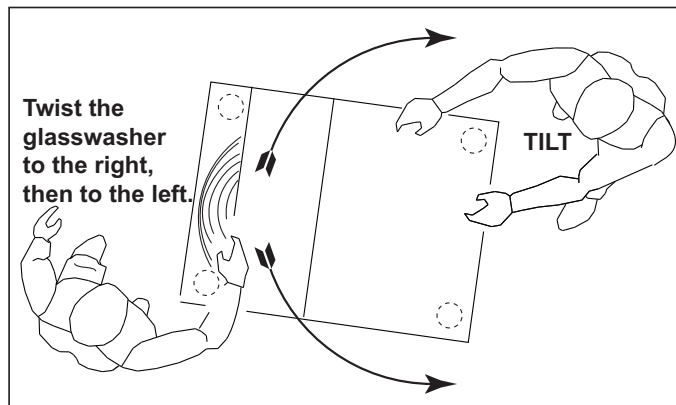
Installation *(continued)*

Unpacking *(continued)*

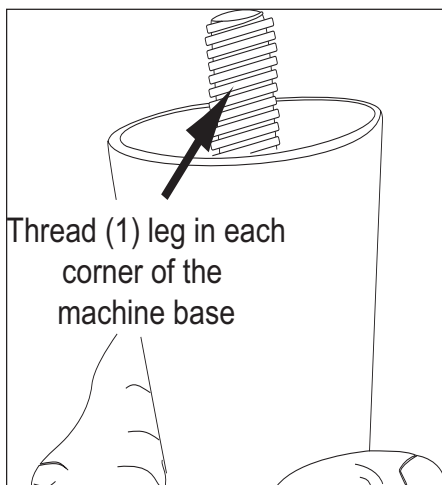
6. Use 2 people to move the machine in order to install the legs.
7. Have 1 person behind the glasswasher tilt it back as the person in front twists the machine to the right. This makes the front left leg mounting hole accessible.
8. Screw 1 of the legs tightly into place. Repeat this process for the remaining legs.
9. Lift the glasswasher off the pallet, and re-install the front door.
10. Level the glasswasher front-to-back and side-to-side by adjusting the leg bullet feet in or out.
11. Compare the site utilities with the data plate specifications. If they agree, then proceed with the installation according to the diagrams on the next page.
12. Remove the packing material in the glasswasher and discard, then remove any protective film on the machine.



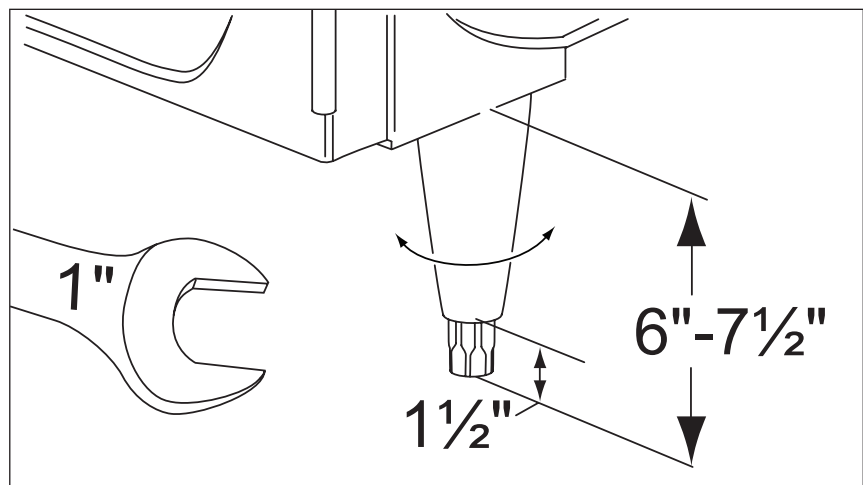
Tilt the machine back to clear plumbing connections.



Twist the machine to the right until the front right leg mounting hole is accessible.



Make sure to install the legs tightly.



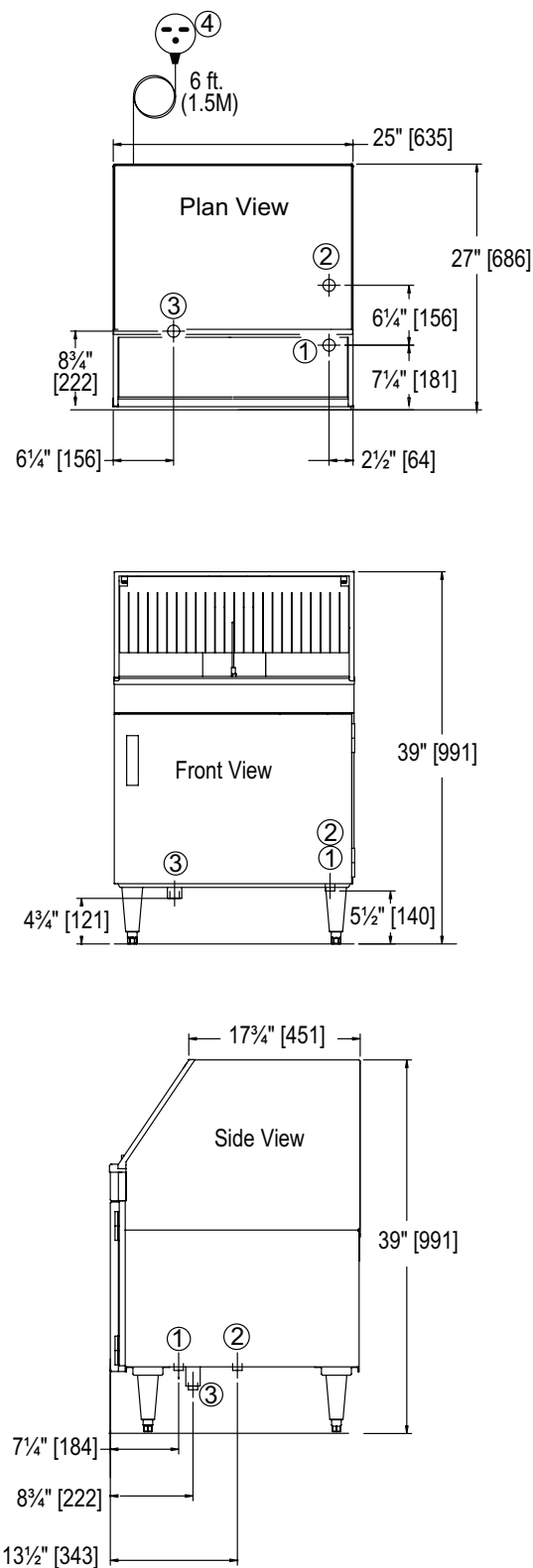
Level front-to-back and side-to-side

Utility Connections

ATTENTION

All utility connections must be performed by qualified people that will follow electric, plumbing, and sanitary codes and regulations.

- | | |
|----------|--|
| 1 | <p>Hot Water Connection:
 140-160°F/60-71°C
 ½" IPS
 Flow pressure 25-95 PSI [173-655 kPa].</p> <p>Install water shut-off valves and check-valves in the water inlet supply lines and <u>as close to the machine as possible</u>.</p> |
| 2 | <p>Cold Water Connection:
 75°F/24°C
 ½" IPS
 Flow pressure 25-95 PSI [173-655 kPa].</p> <p>Install water shut-off valves and check-valves in the water inlet supply lines and <u>as close to the machine as possible</u>.</p> |
| 3 | <p>Drain Connection:
 Gravity
 1½" Tailpiece (slip-fit)
 Maximum drain flow 3 US gallons/min [11L/min]</p> |
| 4 | <p>Electric Connection:
 208-230VAC/50-60HZ/1PH
 Min/Max 15A
 6 ft. /1.5 m flexible cord and plug supplied
 NEMA 6-15P electric outlet</p> |



Installation *(continued)*

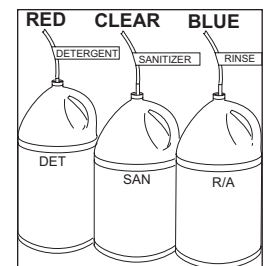
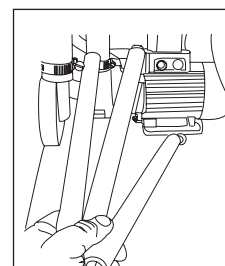
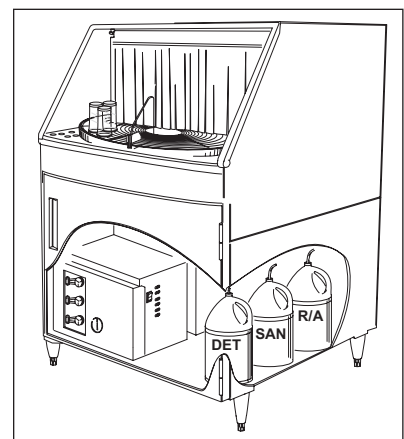
Chemicals

Glassware cleaning chemicals

1. A qualified chemical supplier should supply liquid detergent, sanitizer and rinse-aid for the glasswasher. The glasswasher manufacturer does not sell glassware washing chemicals.
2. A chemical's formulation and strength vary depending on the chemical supplier; therefore, the specifications given below are approximations only.
3. The glasswasher has 3 built-in chemical dispensing pumps for:
 - Detergent - Use a commercial grade non-chlorinated detergent specifically made for glasswashers. The recommended concentration of detergent should be .35%.
 - Sanitizer - 2 types of sanitizer may be used.
 - (5.25%) Sodium hypochlorite (chlorine bleach)** to provide a minimum concentration of 50 ppm in the final rinse. The 50 ppm concentration must be checked using test strips to make sure the proper concentration is maintained.
 - Iodophor (Iodine formulated with a rinse agent)**, to provide a minimum concentration of 12.5ppm in the final rinse. The 12.5 ppm concentration must be checked using test strips to make sure the proper concentration is maintained.
 - Rinse-aid - Consult your chemical supplier for the proper type of rinse-aid to use in the glasswasher.

Installing chemical supply containers and chemical pick-up tubes

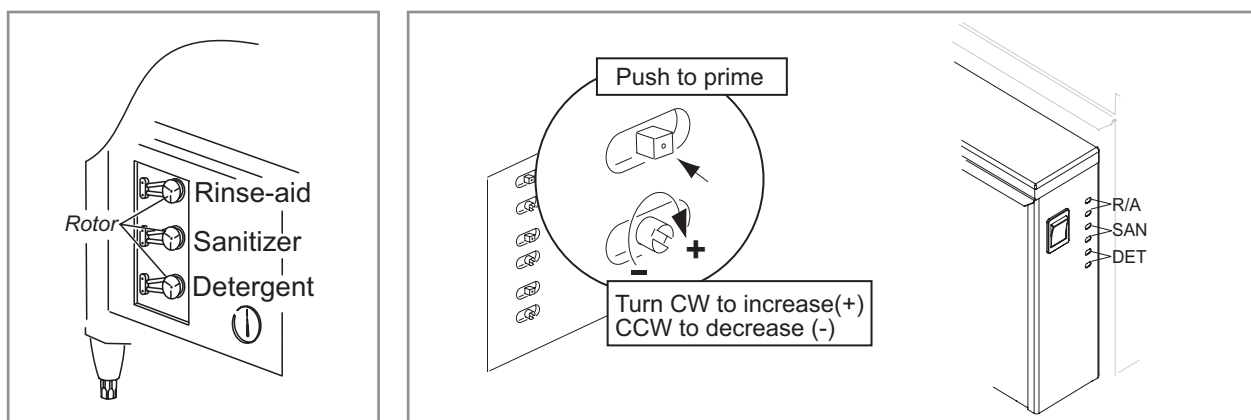
1. There is enough space inside the lower compartment to hold 3 one gallon containers for detergent, sanitizer, and rinse-aid. **The contents of each container must be marked clearly.**
2. The glasswasher comes equipped with 3 gray tubes, called stiffener tubes, and tubing for each chemical pump. The tubing inserted in the chemical container has a strainer.
3. The outlet tubes from the supply containers to the chemical pumps are marked with color-coded labels, they are:
 - RED - Detergent (DET)
 - CLEAR - Sanitizer (SAN)
 - BLUE - Rinse-aid (R/A)
4. Pull the stiffener tubes and chemical tubing forward and out of the compartment. Make sure the tubing is not tangled or kinked.
5. Insert the stiffener tube and pick-up tubing into its container and stow the supply containers in the lower compartment as shown to the right.



Installation *(continued)*

Priming the Chemical Injectors and Approximate Chemical Settings

Each chemical injector can be adjusted using its prime button and concentration adjusting screw. These controls are located on the right side of the control box located in the lower compartment of the glasswasher. The white injector rotors are visible through the control box window.



Chemical Injector Prime and Concentration Controls

ALL OF THE CHEMICAL SETTINGS BELOW ARE APPROXIMATIONS.

CONSULT A QUALIFIED CHEMICAL REPRESENTATIVE TRAINED IN THE USE OF THE TEST EQUIPMENT REQUIRED FOR TAKING SAMPLES AND PERFORMING ADJUSTMENTS.

1. Priming the Pumps:

Make sure the proper chemical pick-up tube is in its supply container, then push and hold the prime button until the detergent, sanitizer and rinse-aid feed tubes are full of chemical. Release the Prime button.

2. Approximate Chemical Settings:

The approximate chemical volume dispensed by the chemical injectors can be determined by counting the number of revolutions of the injector rotor.

Detergent - 1 revolution in 1-second of the detergent pump rotor ~ 0.35% concentration.

Sanitizer - 1 revolution in 5-seconds ~ 12.5 ppm of Iodophor or 50 ppm of chlorine.

Rinse-aid - 1 revolution in 8-seconds ~ the median volume recommended.

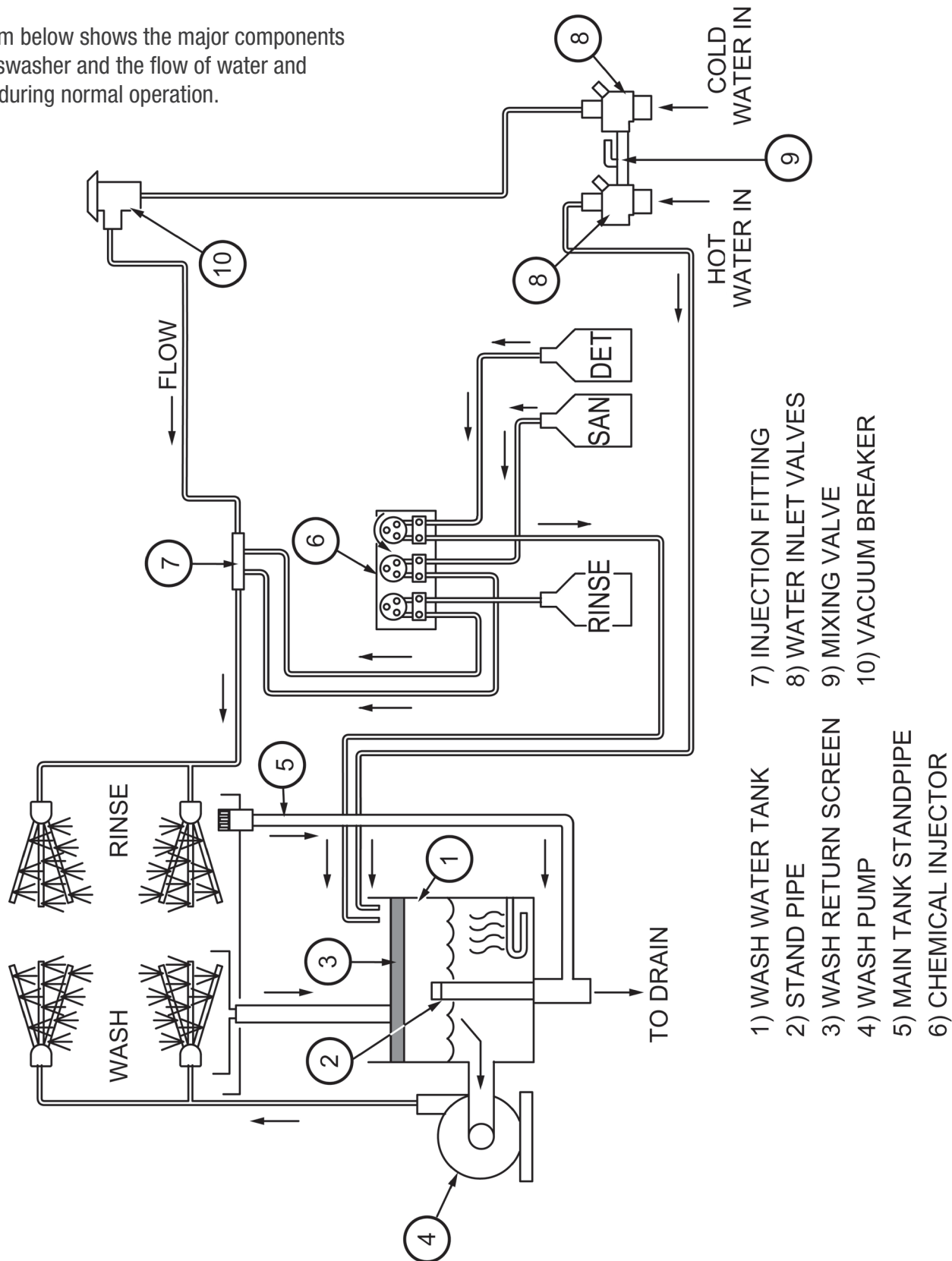
Turn the Injector Concentration screws clockwise to increase or counter-clockwise to decrease the volume of dispensed chemical.

3. The detergent chemical setting must be performed when the hot-water fill solenoid valve is open. The hot-water valve is open when the power switch is in the ON position during initial fill and when the detergent tank float assembly calls for hot water

The sanitizer and the rinse-aid setting can be performed whenever the cold-water fill solenoid valve is open. The cold-water fill valve is open whenever the glasswasher power switch is ON and the conveyor is turning. A separate rinse-aid is not needed when Iodophor is used as a sanitizer. Turn the Injector Concentration Screw fully counter-clockwise until the rinse-aid injector rotor stops turning.

Flow Diagram

The diagram below shows the major components of the glasswasher and the flow of water and chemicals during normal operation.

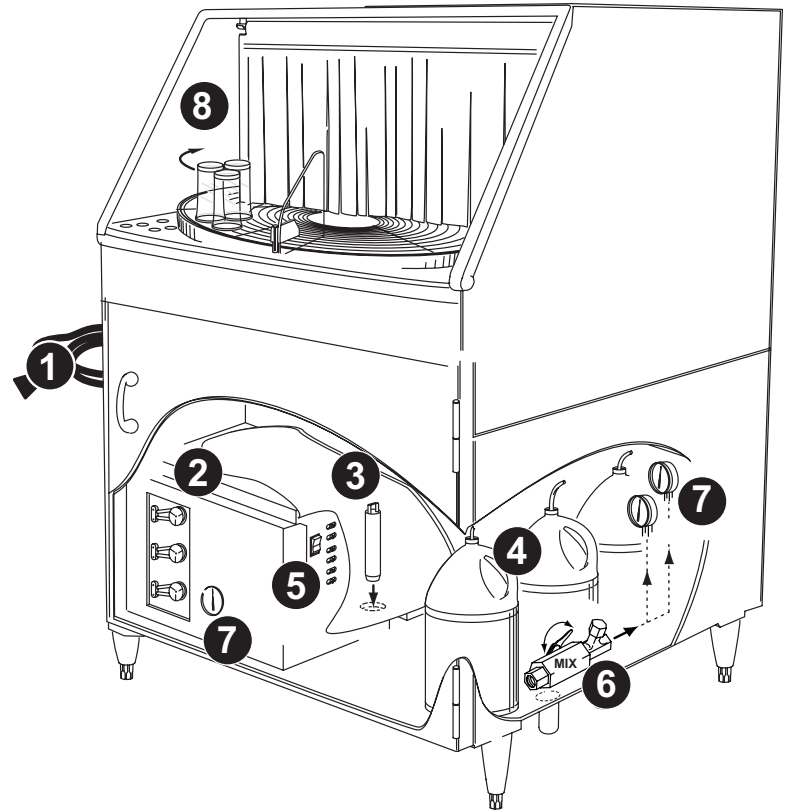


- 1) WASH WATER TANK
- 2) STAND PIPE
- 3) WASH RETURN SCREEN
- 4) WASH PUMP
- 5) MAIN TANK STANDPIPE
- 6) CHEMICAL INJECTOR
- 7) INJECTION FITTING
- 8) WATER INLET VALVES
- 9) MIXING VALVE
- 10) VACUUM BREAKER

Quick Operation Guide

The glass washing machine is designed to automatically wash a wide variety of glassware.

The glass washer consists of a wash section and rinse section. Glasses rotate on a conveyor through each section. A wash tank in the lower compartment holds heated wash water. The water level in the wash tank is maintained by a float and cam-operated switch. The wash tank water temperature is controlled by a heater and a thermostat. The rinse water is supplied from the cold water supply. Chemicals are automatically dispensed by built-in chemical pumps



1

Plug machine power cord into a 208-230VAC/60/1.15.A wall receptacle. Turn main power and water service ON.

2

Remove lower wash tank scrap screen.

3

Install the drain/overflow tube into the drain located at the front of the wash tank bottom. Re-install the scrap screen removed in Step 2.

4

Pull the chemical pick-up tubes out of the machine. Place tube into its supply container. Colored labels I.D. each tube.

5

Make sure a glass is against the conveyor stop switch. Push the rocker switch UP to the ON position until the wash tank is full of water.

Then, push and hold each chemical Prime button until chemical supply tubes are full.

Prime R/A
Prime Sani
Prime Det.

6

The incoming cold water supply temperature must be a minimum temperature of 75°F/24°C. Adjust the temperature of the incoming cold water temperature by opening or closing the mixing valve located between the hot water and the cold water solenoid valves.

7

Check the cold water temperature gauge and the cold water pressure gauge as you adjust the mixing valve. The minimum temperature should be 75°F/24°C. The pressure gauge should read a flowing pressure of 4-6 psi/24-36 kPa. Check the wash tank temperature gauge for 140°F/60°C-160°F/71°C.

Pressure
Temperature
Wash Tank Heat

8

Place glassware on the conveyor. The conveyor stops automatically when the clean glassware operates the conveyor stop switch.

Operation *(continued)*

Assembling the Glasswasher

1. Make sure the power switch is in the OFF position.
2. Install the wash arms and rinse spray arms. The spray arms have locating notches in the end of each arm. Push the spray arm straight into the hub. Do not twist.
3. Install the conveyor assembly as follows:
 - Insert the conveyor into the wash chamber keeping the rear raised.
 - Pull the conveyor forward until it meshes with the drive gear located at the front of the wash chamber.
 - Continue to pull the conveyor forward as you lower it on the pivot.
4. Install the stainless steel cylinder in the center of the conveyor.
5. Install the conveyor shut-off assembly (plexiglass divider).
6. Install the right and left hand tray.
7. Install the curtain assembly.
8. Install the upper and lower scrap screens.
9. Install the standpipe in the detergent tank.
Twist slightly to make sure it seats securely in the drain.
10. Install the drain tray/waste collector (if equipped). Make sure the drain fitting is secure.
11. Make sure the chemical supply containers are full.
12. Close the door.

Filling the Wash Tank

1. Ensure that the overflow/drain tube is in place in the detergent tank.
2. Flip power on-off/flush switch to the "ON" position. The water will fill until the proper water level is reached.
3. The water temperature is controlled by a tank heater and an adjustable thermostat. The thermostat should be set for a minimum of 140°F/60°C.

Operating Instructions

1. Ensure that chemical supply containers are full.
2. Detergent is fed into the detergent in controlled amounts detergent dispensing pump. Use detergent at a strength recommended by your chemical supplier.
3. Open the front door and flip the on/off/flush switch to the "ON" position. The detergent tank will fill automatically.
4. Load glasses on the conveyor. The conveyor will stop when the glasses contact the conveyor shut-off switch.

Cleaning Instructions

The cleaning instructions are attached to the inside of the glasswasher front door.

Daily Cleaning or After 8 Hours of Operation:

1. Make sure that any glasses on the conveyor are clean, then remove them from the conveyor.
2. Push the On/Off/Flush switch on the right-hand side of the glasswasher control box to the Off position.
3. Remove the splash curtain from the curtain hooks located at each end of the splash curtain rod.
4. Remove the (2) stainless steel conveyor guards located at each corner of the glasswasher and the plexiglass stop assembly.
5. Remove the cylindrical stainless steel conveyor guard located in the center of the glasswasher.
6. Remove the conveyor by lifting the rear of the conveyor while pulling it forward to disengage the conveyor drive gear located at the right front corner of the wash chamber.
7. Take these parts to a sink, and wash in hot soapy water using a soft brush and cloth, then rinse with fresh water and set aside to air dry.

**DO NOT CLEAN WITH HARSH DETERGENTS OR ABRASIVE SCOURING PADS.
DO NOT STRIKE THE CONVEYOR ON THE FLOOR OR ANY HARD SURFACE.**

8. Clean the wash chamber interior with hot soapy water, then rinse with fresh water. Wipe the interior with a soft cloth. Allow the wash chamber to air dry overnight.
9. Remove the upper scrap screen, remove large debris in a trash can, take screen to a sink and flush screen with fresh water.

DO NOT STRIKE SCREENS ON HARD SURFACES.

10. Remove the lower scrap screen, remove large debris in a trash can, take screen to a sink and flush clean with fresh water.
11. Remove the stainless steel wash tank cover; clean with hot soapy water at a the wash sink. Wipe clean and dry.
12. Remove the detergent wash tank drain/overflow to drain the tank, then flush the tank with fresh water and wipe with a clean cloth.
13. Reassemble the glasswasher in reverse order for continued operation, or leave disassembled overnight to aid drying.

DO NOT LEAVE WATER IN THE GLASSWASHER OVERNIGHT.

Weekly Cleaning, After 7 Days or 56 Hours of Operation:

1. Complete 1-12 in the Daily Cleaning above.
2. Remove chemical supply containers if they are stowed inside the glasswasher, wipe any chemical spills with a damp cloth. Detergent and sanitizer (Chlorine) are corrosive on metal and must be removed as much as possible.
3. Check the inlet chute on the right-side of the detergent tank and flush with fresh warm water to clean any chemical residue.
4. Check chemical supply lines. If a line(s) are restricted, remove the pick-up tube(s) from the container(s), then insert each pick-up tube in separate container(s) filled with fresh warm water.
5. PUSH and HOLD the PRIME BUTTON labeled for the matching chemical tube until the water moves freely through the supply tubing. Repeat for each chemical making sure that the warm water is fresh and free of any other chemical.
6. Return the the pick-up tube(s) to the chemical container matching the label on the supply tube(s), then PUSH and HOLD the PRIME BUTTON for the matching chemical(s) until the chemical moves freely through the supply tube(s).
7. Inspect the chemical dispensing pumps visible behind the plexiglass window located on the front of the control box. PUSH and HOLD each PRIME BUTTON. One white wheel behind the window for each PRIME BUTTON pushed and held.
8. Find the spray tube assemblies, (3 spray tubes each) located in the wash chamber. There are (2) assemblies in the top and (2) assemblies in the bottom. Pull (1) assembly at a time. Check the black O-ring on the spray tube hub for damage, replace if missing.
9. Insert and twist the small brass drill bit (reamer) in the each spray tube hole to clean. Insert and twist the large drill on the wood handle. Push the large reamer down the length of the spray tubes. Insert and twist the long brush in each spray tube to remove loose debris. Flush the spray tube assembly, then reinstall in the glasswasher. Repeat for each spray tube assembly.
10. Reassemble the glasswasher in reverse order for continued operation, or leave disassembled overnight to aid drying.



Troubleshooting

The following troubleshooting guide can help identify a problem and provide a solution. Inspect your glasswasher before you contact an authorized service representative.

Problem	Cause(s)	Solution(s)
Glasswasher will not turn ON.	Main breaker/fuse box OFF	Turn breaker/fuse box ON.
	Disconnect fuse blown/breaker tripped.	Turn breaker/fuse box ON. Replace fuse/Reset Breaker.
	Glasswasher ON/OFF switch OFF. Power cord unplugged.	Flip ON/OFF switch ON. Plug-in power cord.
	Clean glass(es) touching the conveyor shut-off switch.	Remove clean glasses from the rinse-side of the glasswasher.
Conveyor will not rotate.	Conveyor center hub out of position.	Reposition the conveyor.
	Conveyor support(s) out of position and/or broken.	Reposition or replace support(s).
	Drive gear out of position.	Reposition drive gear.
	Gear teeth on conveyor worn or broken.	Replace the conveyor.
	Gear teeth on drive gear worn or broken.	Replace drive gear.
	Object jamming the conveyor.	Remove object.
Conveyor will not stop rotating.	Conveyor drive motor defective.	Authorized service agent may replace conveyor drive motor.
	Conveyor stop switch needs adjustment or switch is defective.	Authorized Service Agent may adjust or replace switch.
Conveyor rotates in wrong direction.	The drive motor is turning the conveyor backward.	Authorized Service Agent may remove drive motor rotate motor stator 180° and re-install.
Upper scrap screen is hard to remove.	Large debris, such as broken glass is on screen.	Remove conveyor and lower spray arm(s). Remove debris.
	Scrap screen bent and/or broken.	Authorized Service Agent may repair or replace damaged screen.
	Door magnet broken or missing.	Replace door magnet.
Front door will not close remain closed.	Door bent or broken.	Straighten or replace door.
	Floor is not level.	Use bubble level and turn bullet feet in/out to adjust machine level.
Glasswasher not level or rocks back and forth.	Leg(s) are not screwed firmly into machine base.	Tighten leg(s) or replace.

Problem	Cause(s)	Solution(s)
Water sprays out the front of the glasswasher.	Splash curtain is missing, positioned incorrectly or damaged.	Re-install the splash curtain or replace the splash curtain.
	Spray arm(s) are damaged or missing.	Replace spray arm(s).
	Glass(es) interferes with splash curtain.	Reload glass(es).
	Clogged spray arm(s) makes water come out in wrong direction.	Clean the spray arm(s).
Poor washing results.	Water volume from wash and/or rinse spray arm(s) low.	Clean spray arm(s).
	Water level in detergent tank low.	Re-install drain/overflow tube in wash tank. Service Agent must adjust water level switch until water level is below top of overflow.
	Water level float ball stuck or filling with water.	Clean float ball, replace if filling with water.
	Water level switch defective.	Authorized service agent may replace switch.
	Detergent and/or rinse-aid supply low.	Refill chemical supplies.
	Wash pump and/or water valve(s) and/or line strainers clogged or defective.	Authorized service agent may replace wash pump and/or solenoid valve(s). Clean line strainers.
	Detergent tank temperature low.	Raise incoming water temperature or adjust thermostat for 140°F/60°C in detergent tank.
Chemical supply container(s) fill with water.	Chemical injectors out of adjustment.	Contact chemical supplier to calibrate settings.
	Peristaltic tube(s) are stretched or worn on the glasswasher chemical pump(s).	Inspect and replace tube(s).
	Flow control washer in cold water solenoid valve is defective.	Contact service agent to repair solenoid valve.

Problem	Cause(s)	Solution(s)
Water temperature below 145°F/66°C in detergent tank.	Detergent tank thermostat temperature setting low.	Increase thermostat setting to 145°F/66°C
	Thermostat is defective.	Authorized service agent may replace thermostat.
	Detergent tank heater is defective.	Authorized service agent may replace detergent tank heater.
	Incoming water temperature is below 140°F/60°C.	Raise incoming water temperature to 140°F/60°C.
Water leaking under glasswasher.	Pump water seal defective.	Authorized service agent may replace pump seal.
	Glasswasher drain line is clogged.	Clean drain line.
	Upper wash compartment drain screen is clogged.	Clean drain screen.
	Detergent tank drain screen is clogged.	Clean detergent tank drain screen.
	Building drain line is clogged.	Clean building drain line.
	Condensation is forming on the underside of wash compartment.	Open rinse water mixing valve until temperature of water 70°F/21°C
	Vacuum breaker at rear of glasswasher leaking.	Replace vacuum breaker.

Problem	Cause(s)	Solution(s)
Water flows into glasswasher when ON/OFF switch is in the OFF position.	Flowing water supply line pressure measured at the glasswasher exceeds 95 psi [655 kPa].	Incoming water pressure must be 5 PSI/35 kPa on pressure gauge located on right-side of glasswasher lower compartment
	Defective solenoid valve(s).	Authorized service agent may rebuild or replace the solenoid valve(s).
	Defective AUTO-FILL switch.	Service agent replace the switch.
Chemical(s) are not flowing into the glasswasher.	Rinse water pressure too high	Reduce flowing water pressure measured at the glasswasher below 95 psi [655 kPa].
	Chemical container(s) are empty.	Refill the container(s).
	Chemical supply line(s) are clogged.	Remove the supply line(s) from the chemical containers and flush with warm water.
	Chemical supply and/or pump tube(s) are broken.	Replace supply line(s) and/or pump tube(s).
	No power to chemical dispensing pump(s).	Authorized service agent may replace chemical dispensing pump.
	Dispensing pump is defective.	Authorized service agent must inspect and repair
	Chemical pumps out of adjustment	Chemical supplier must adjust chemical pumps.

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SERVICE REPLACEMENT PARTS

Base Assembly 22

Conveyor, Guides, Curtains 24

Wash Hubs, Spray Arms 26

Conveyor Stop Switch 28

Drive Motor Assembly 30

Vacuum Breaker Assembly 32

Wash Pump and Piping 34

Inlet Plumbing 36

Sanitizer Plumbing 38

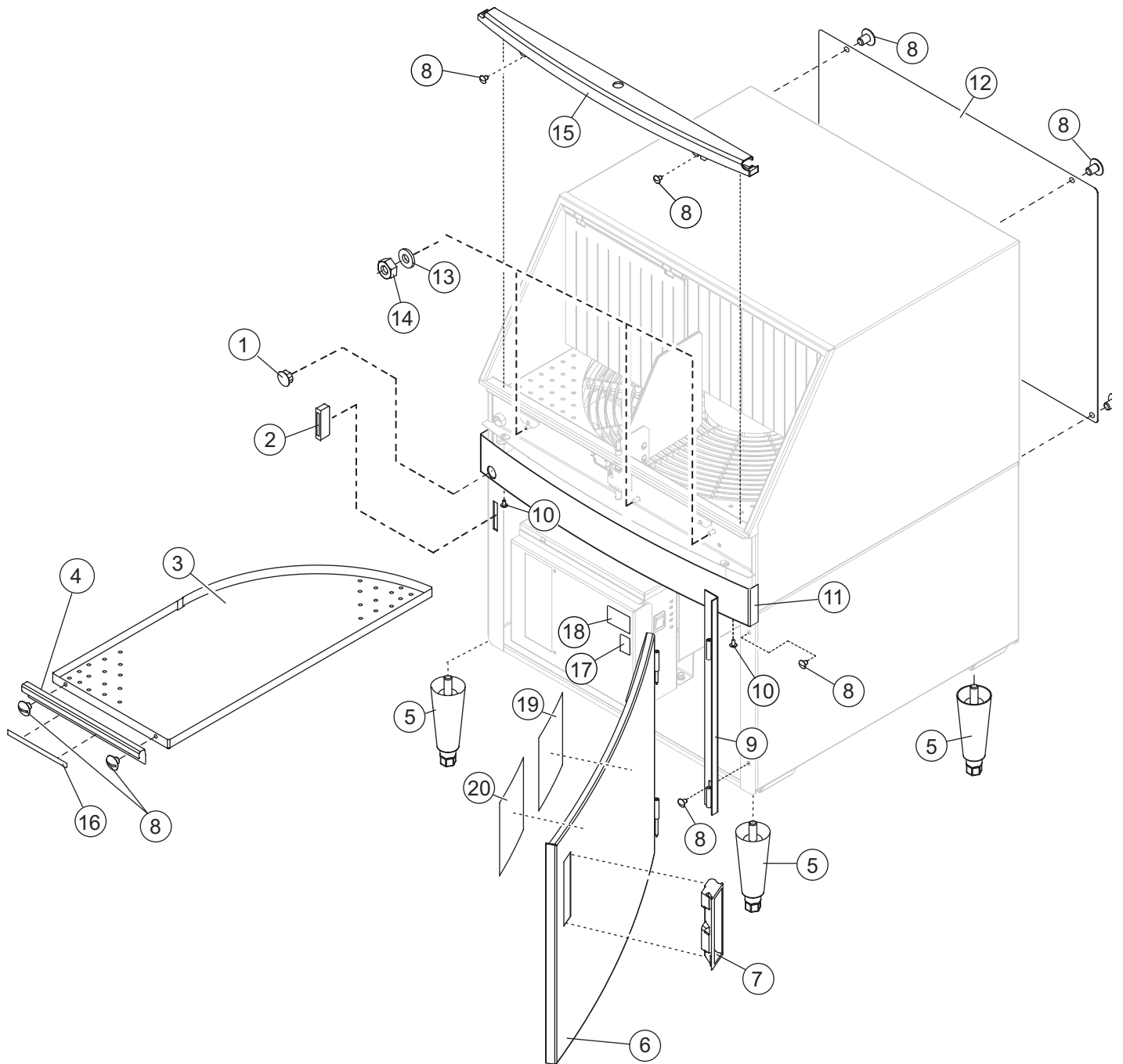
Detergent Tank Assembly 40

Control Box Assembly 42

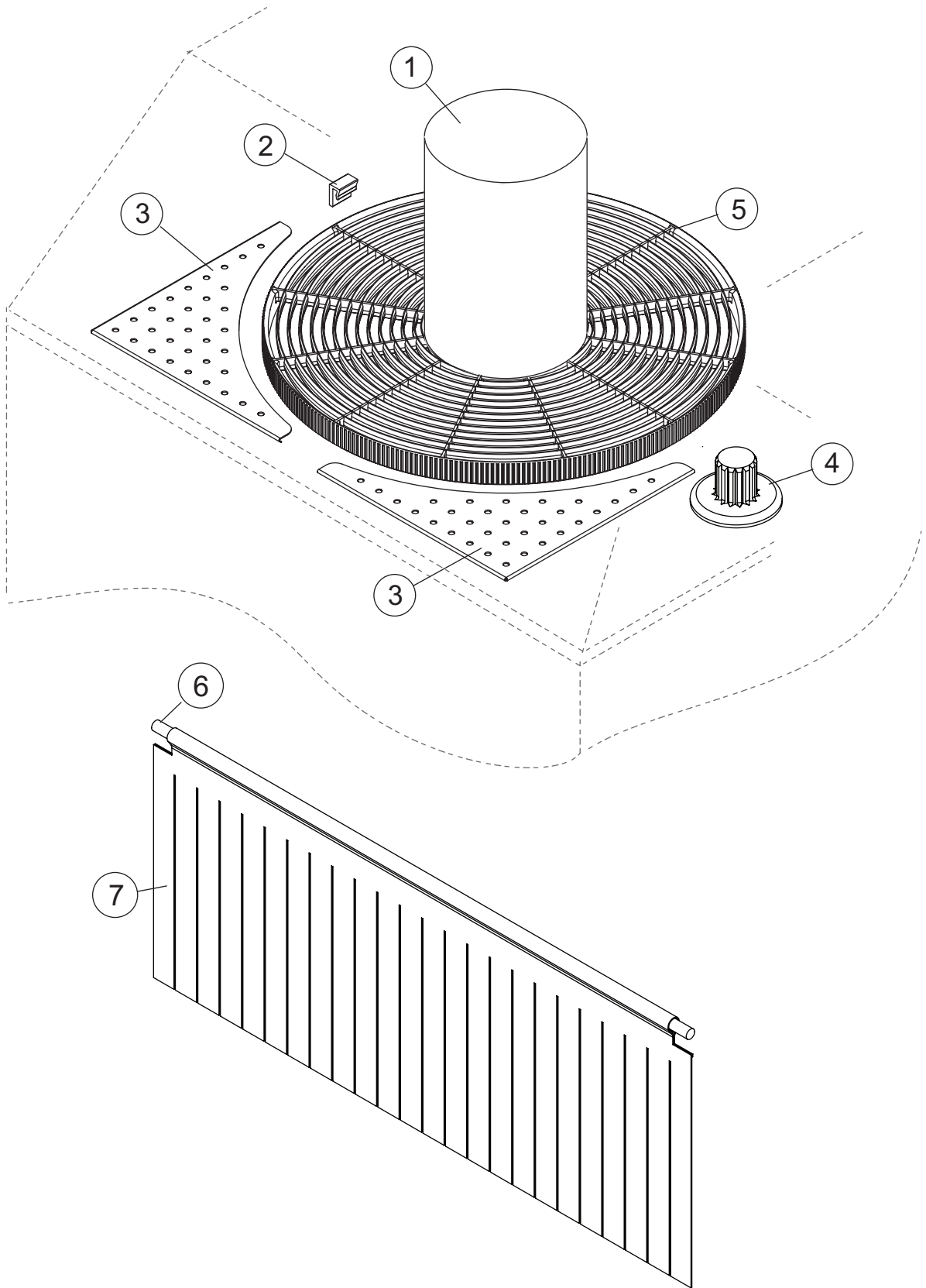
Options and Accessories 44

Electrical Schematic 46



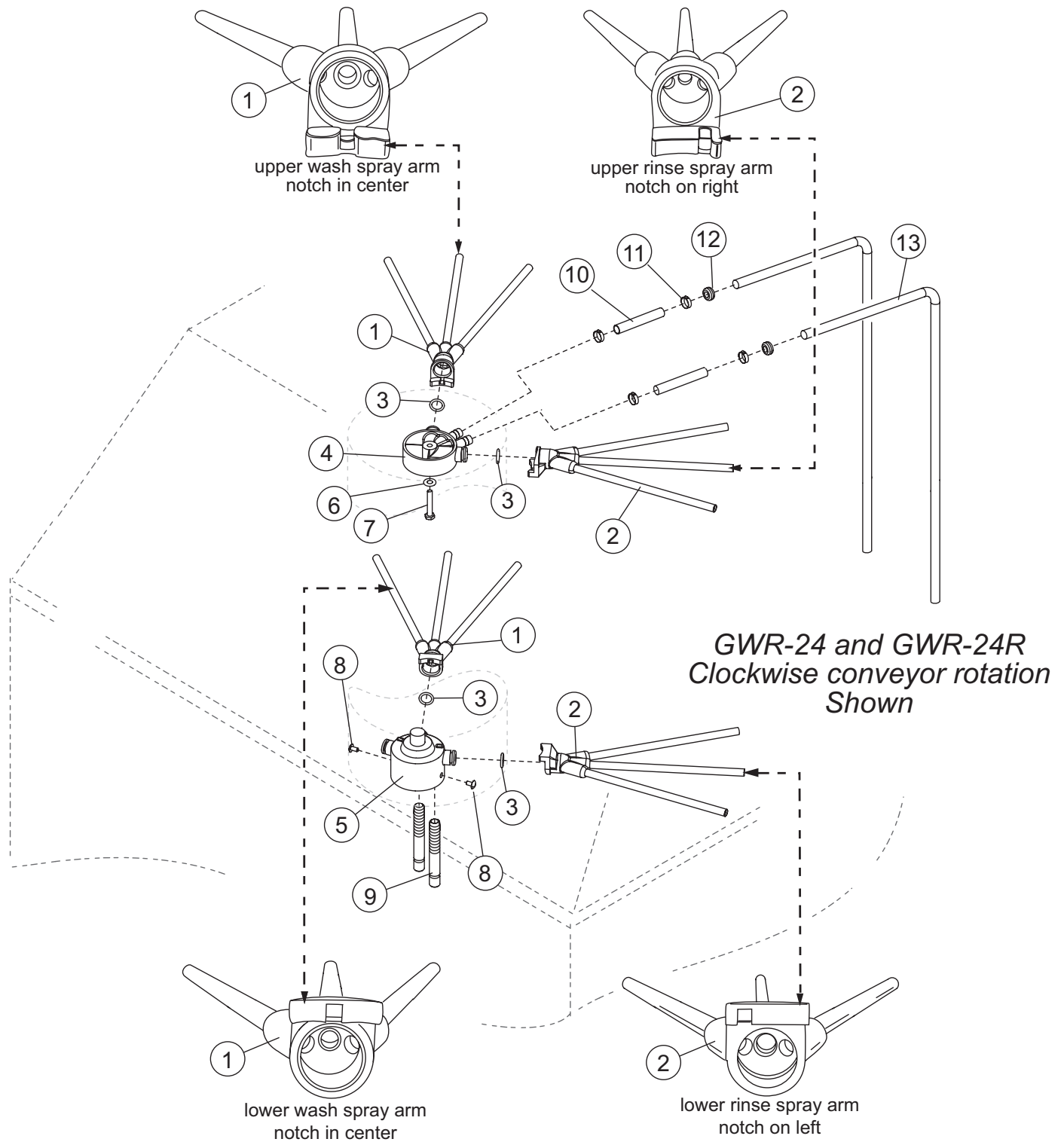


Item No.	Qty.	Part No.	Description
1	1	GW-2100	Cap Plug, 1"
2	1	GW-2101	Magnetic Door Catch
3	1	GW-2102	Wash Tank Scrap Screen
4	1	GW-2103	Wash Tank Scrap Screen Handle
5	4	GW-1706	Leg, NP W/SST Hex Foot
6	1	GW-2104	Door Assy.
7	1	GW-2105	Door Handle
8	10	GW-1103	Screw, 10-32 x 3/8" Truss Head
9	1	GW-2106	Door Bracket Assy.
10	2	GW-1507	Screw, Truss Slot 10-32 x 3/8" SST
11	1	GW-2107	Curved Facia Cap Bracket
12	1	GW-2108	Rear Panel
13	2	GW-2109	Flat Washer 1/4"
14	2	GW-2110	1/4-20 Nylon Lock Nut
15	1	GW-2111	Curved Facia Cap
16	1	GW-2112	Label, (Clean Screens Daily)
17	1	GW-2113	Label, (Warning...)
18	1	GW-2114	Data Plate Label
19	1	GW-2115	Cleaning Instructions Label
20	1	GW-2116	Electrical Schematic Label



Item No.	Qty.	Part No.	Description
1	1	GW-2200	Conveyor Hub
2	4	GW-2201	Conveyor Guide Block
3	2	GW-2202	Conveyor Tray
4	1	GW-2203	Drive Gear
5	1	GW-2204	Conveyor
6	1	GW-2205	Curtain Rod (3/8"D x 24"L)
7	1	GW-2206	Curtain





Item No.	Qty.	Part No.	Description
*1	2	GW-2300	Wash Arm GWR-24, GWR-24R
---	2	GW-2301	Wash Arm GWR-24L (CCW Only)
*2	2	GW-2302	Rinse Arm GWR-24, GWR-24R
---	2	GW-2303	Rinse Arm GWR-24L (CCW Only)
3	4	GW-2304	O-Ring
4	1	GW-2305	Top Manifold
5	1	GW-2306	Bottom Manifold
6	1	GW-2307	Flat Washer, 1/4"
7	2	GW-2308	Bolt, 1/4-20 x 1-1/2"
8	2	GW-1507	Screw, Truss Slot 10-32 x 3/8" SST
9	2	GW-2309	Bottom Manifold Inlet Tube
10	AR	GW-2310	Braided Hose, 3/8"
11	4	GW-2311	Gear Clamp #6
12	2	GW-2312	Grommet
13	1	GW-2313	3/8" SST Tube

Note:

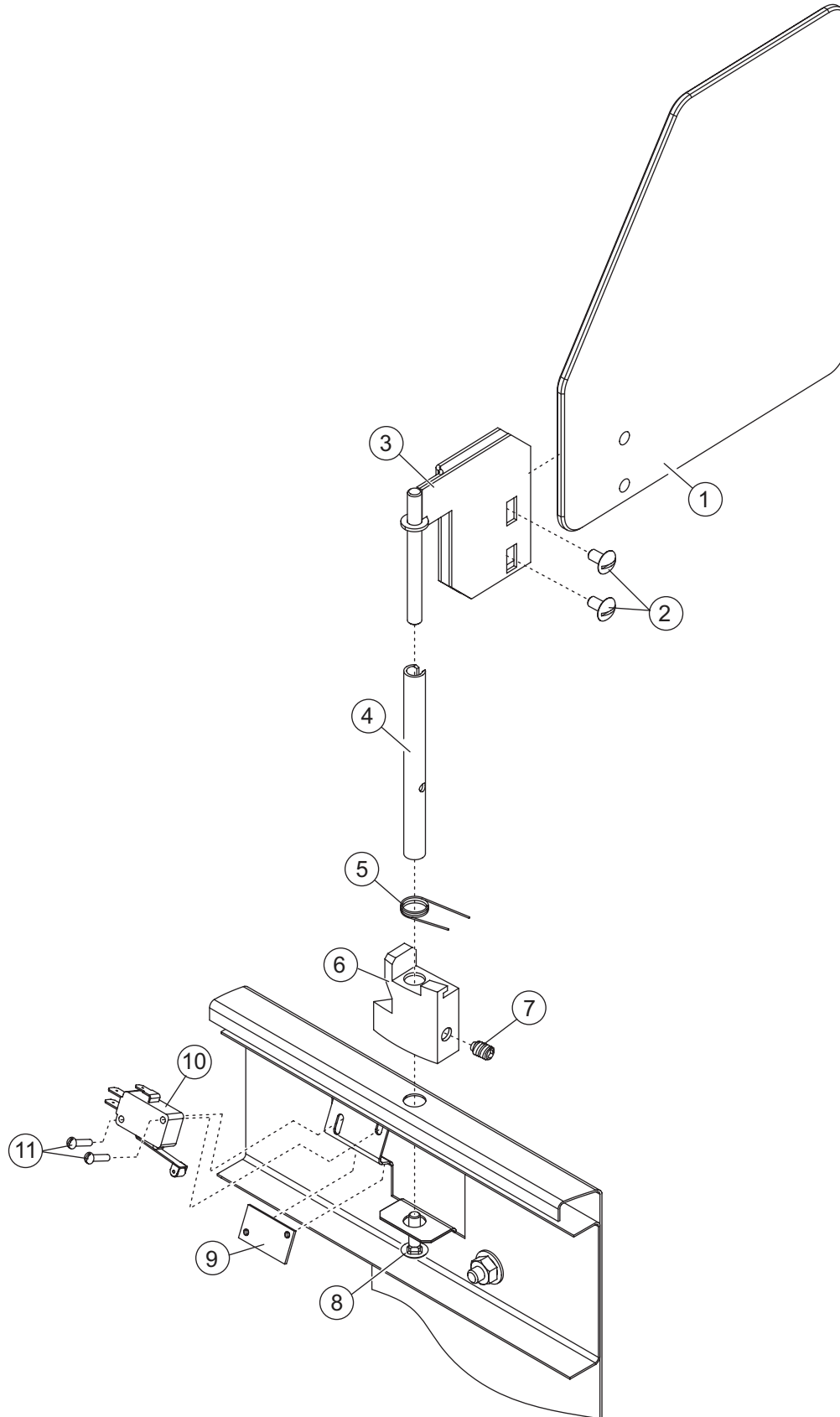
*Wash and rinse spray arms have notches to make sure they are installed correctly. The illustration on page 20 is for the clockwise conveyor rotation Models GWR-24 and GWR-24R.

The GWR-24L conveyor rotation is counter-clockwise.

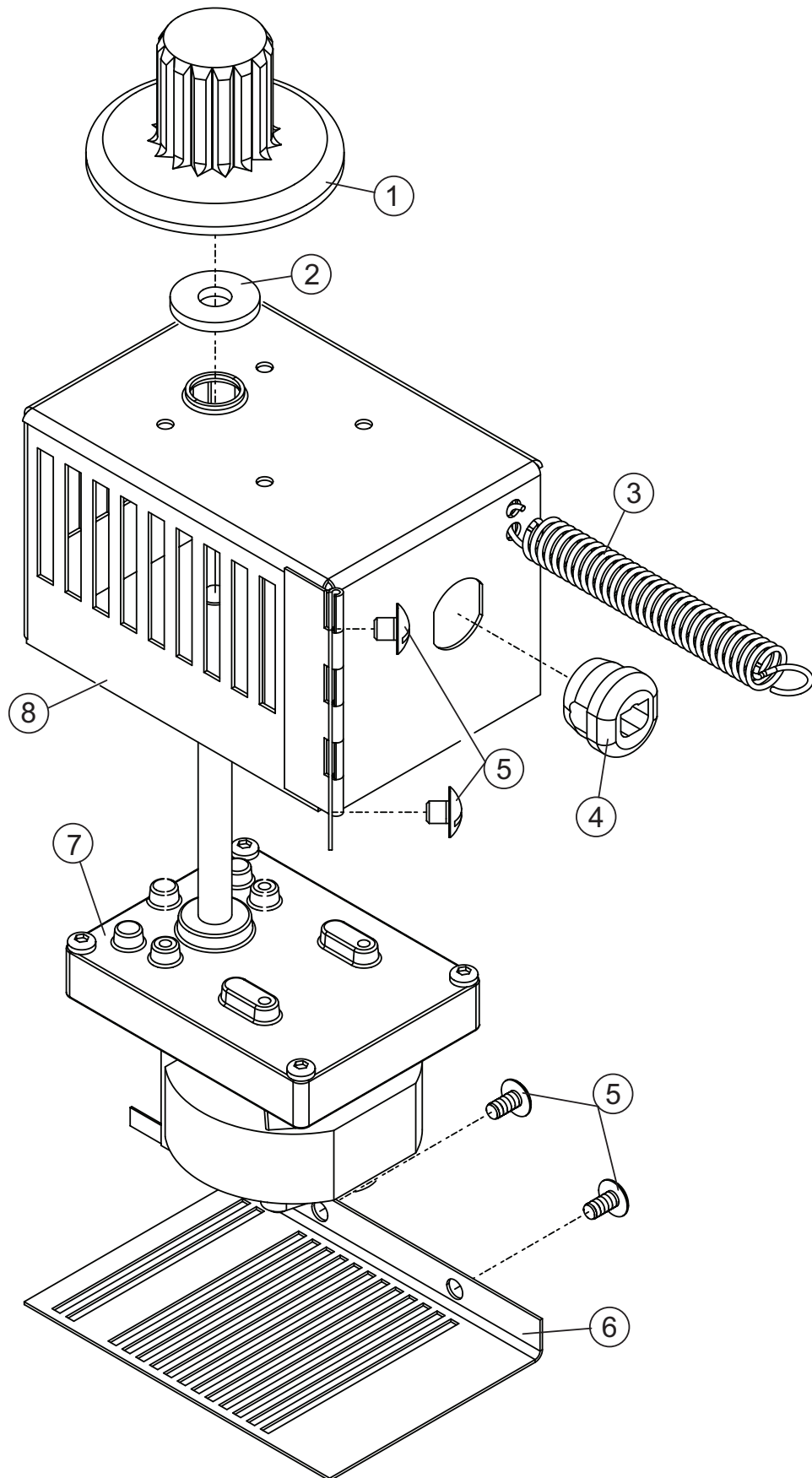
The location of the wash and rinse spray arms are different than the models mentioned above.

Make sure that you know the correct Model No. of the machine before ordering parts.

Read the Item No. descriptions carefully to avoid mistakes when ordering wash and rinse spray arms.

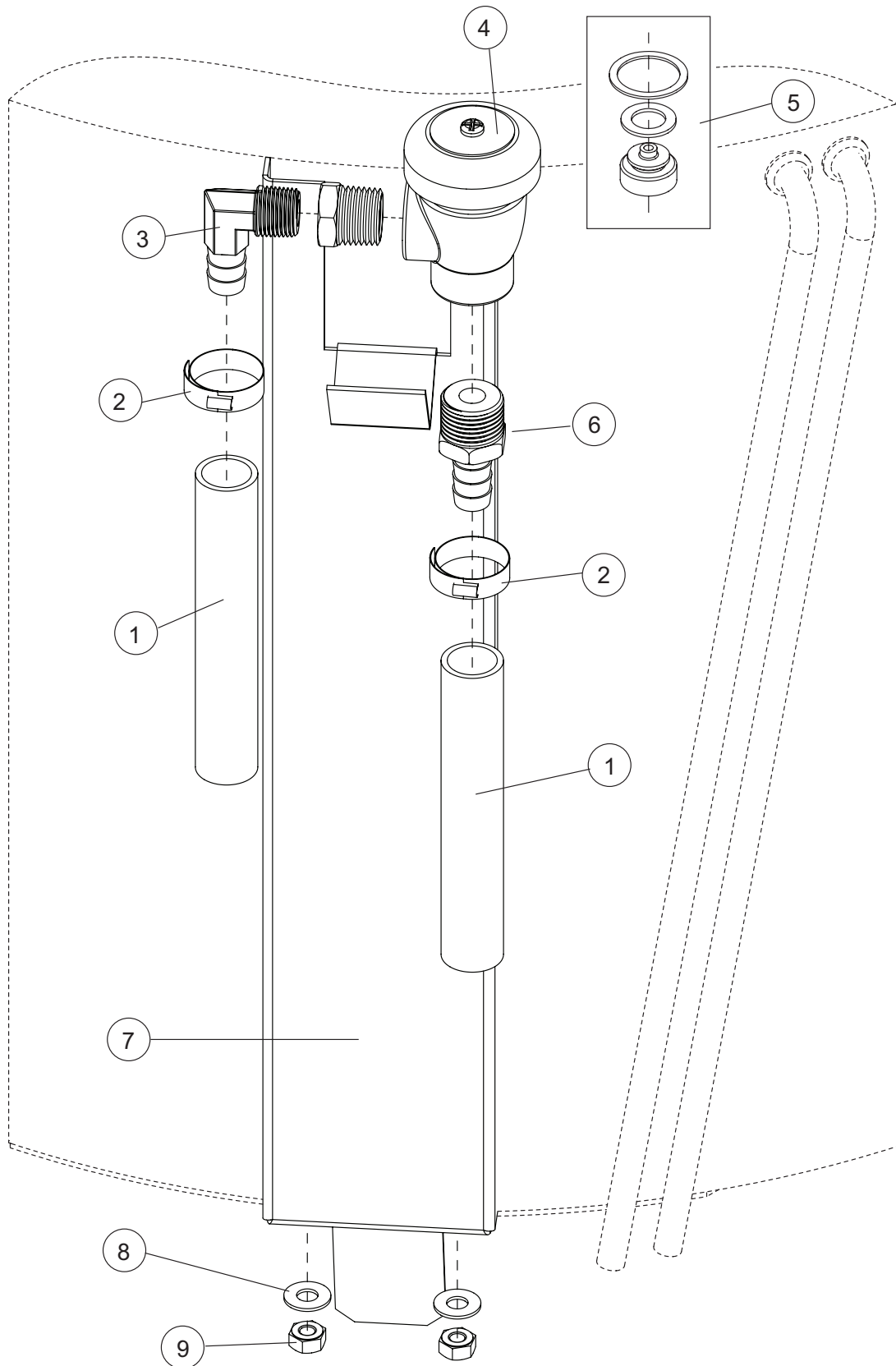


Item No.	Qty.	Part No.	Description
1	1	GW-2400	Divider Plate
2	2	GW-1507	Screw, Truss Slot 10-32 x 3/8" SST
3	1	GW-2401	Shut-Off Arm Assy.
4	1	GW-2402	Conveyor Shut-Off Shaft
5	1	GW-2403	Spring
6	1	GW-2404	Conveyor Shut-Off Cam
7	1	GW-2405	Dog-Point Screw 1/4-20 x 1/2"
8	1	GW-2406	Carriage Bolt 10-24 x 1/2"
9	1	GW-2407	Switch Nut Plate
10	1	GW-2408	Switch 15A
11	2	GW-2409	Screw 4-40 x 1/2"
---	1	GW-2410	Shut-Off Assembly (Includes Items 1,2,3)



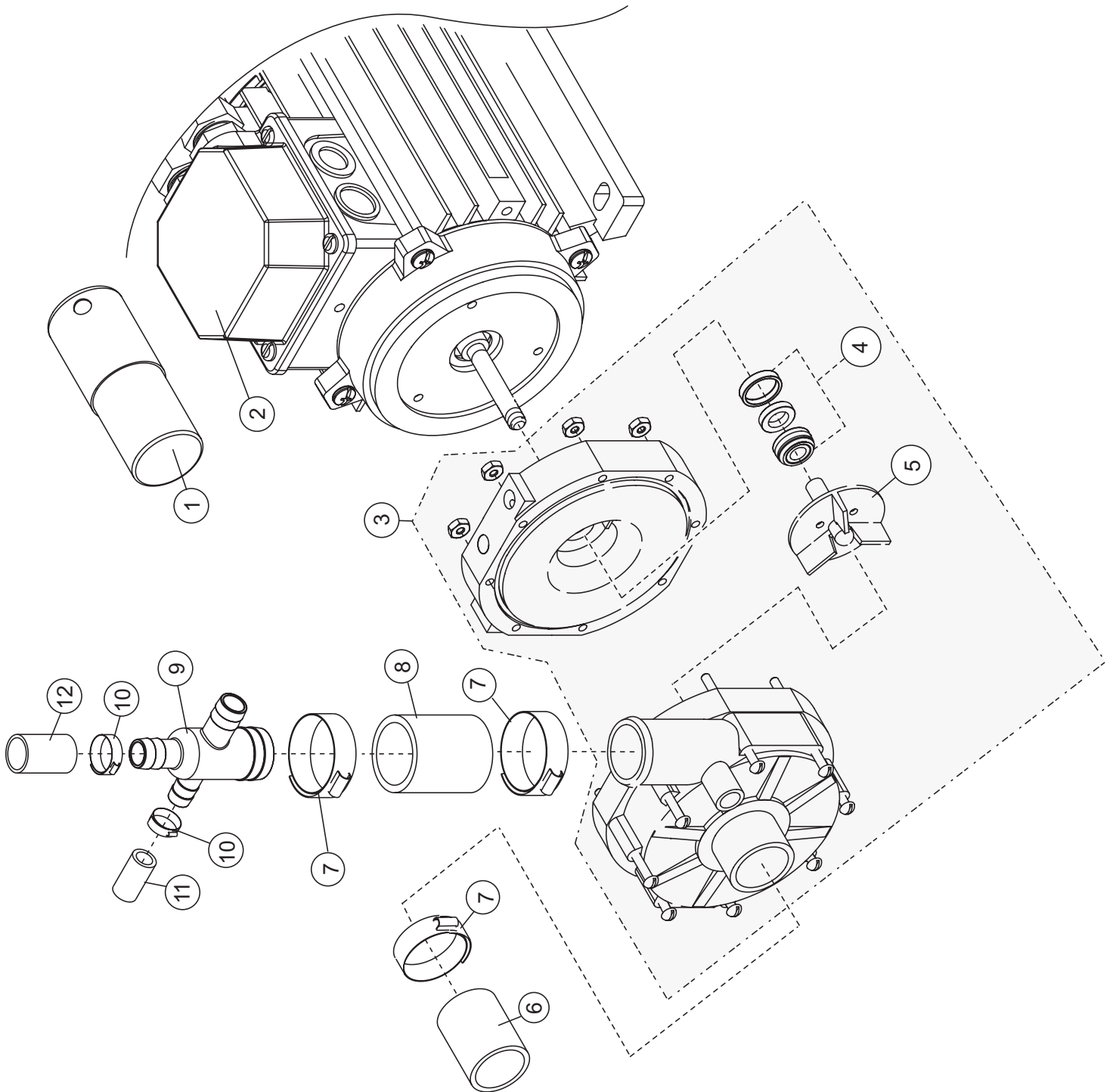
Item No.	Qty.	Part No.	Description
1	1	GW-2500	Drive Gear
2	1	GW-2501	Water Slinger
3	1	GW-2502	Extension Spring
4	1	GW-2503	Snap Bushing
5	4	GW-1507	Screw, Truss Slot 10-32 x 3/8" SST
6	1	GW-2504	Drive Motor Housing Cover
7	1	GW-2505	Drive Motor
8	1	GW-2506	Drive Motor Housing



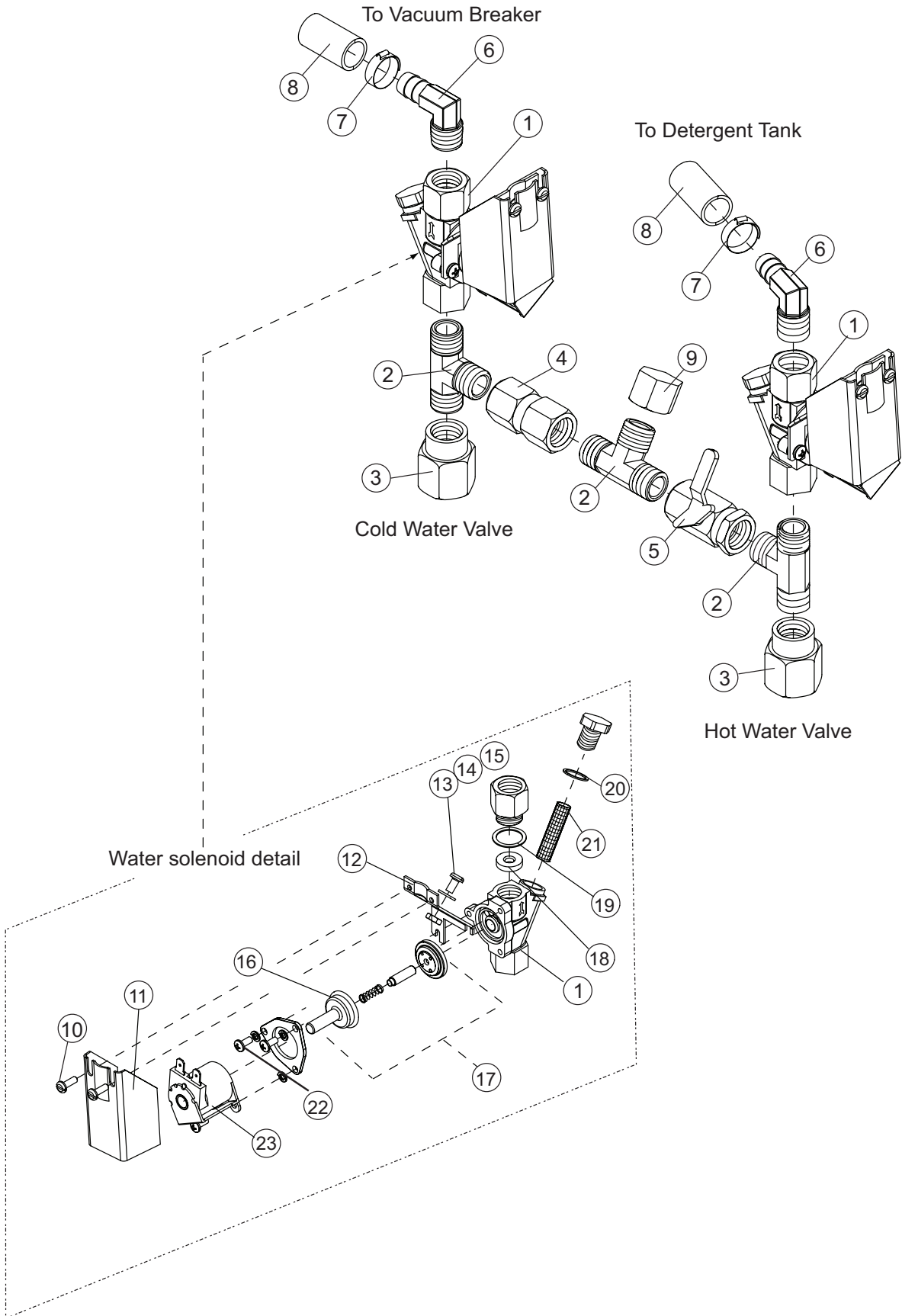


Item No.	Qty.	Part No.	Description
1	A/R	GW-2600	1/2" I.D. Braided Hose
2	2	GW-1316	Clamp, Gear, Min. 5/16" Max. 7/8" SST
3	1	GW-1521	Elbow, 90 Degrees, 3/8 MPT x 1/2" Hose
4	1	GW-2601	1/2" Vacuum Breaker
5	1	GW-2602	Vacuum Breaker Repair Kit
6	1	GW-2603	1/2" MPT x 1/2" Hose Barb
7	1	GW-2604	Plumbing Support
8	2	GW-2605	Washer, Flat 1/4"
9	2	GW-2606	Nylon Locknut 1/4-20

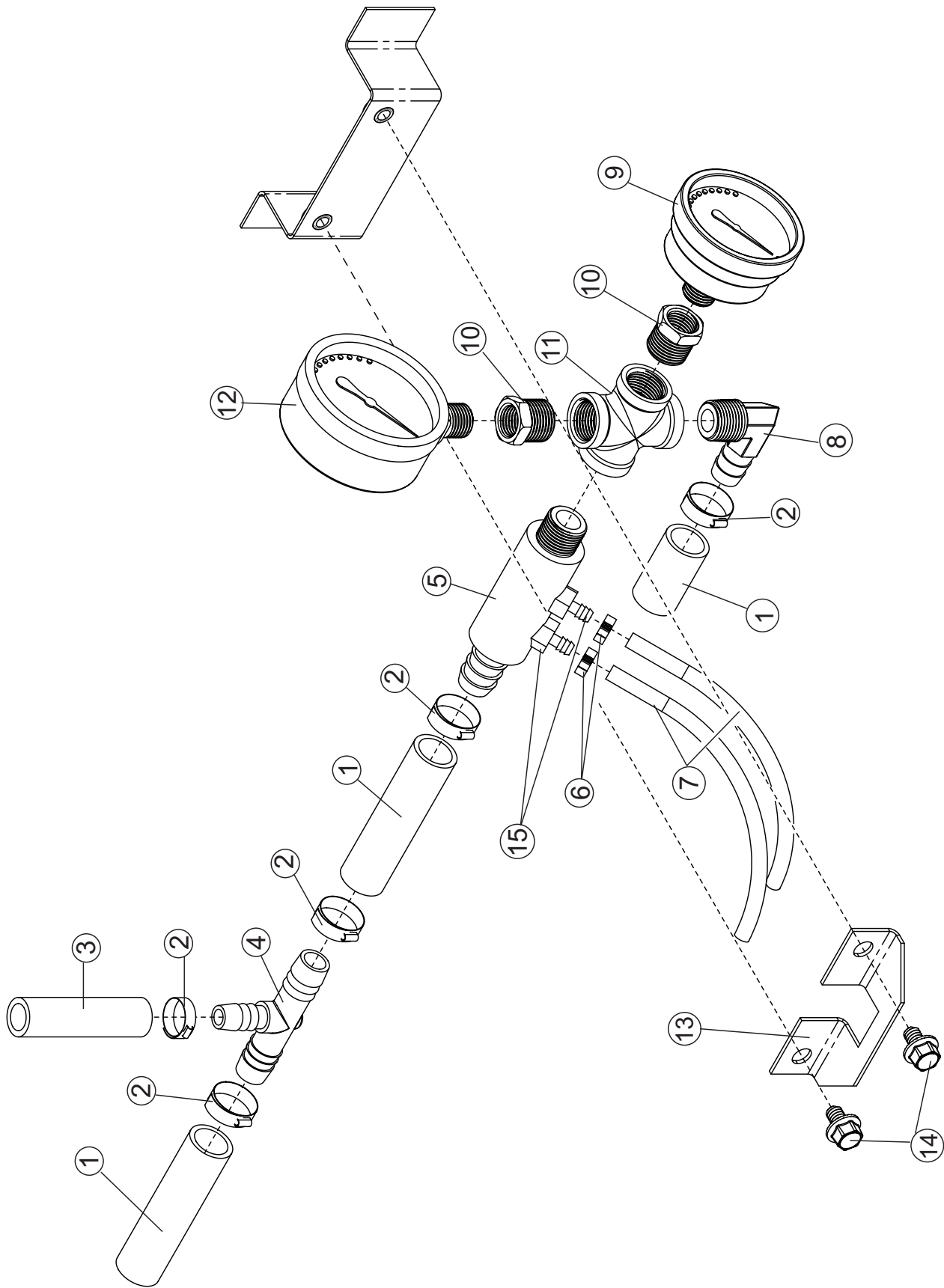




Item No.	Qty.	Part No.	Description
1	1	GW-2700	Motor Capacitor 6.3uF, 370VAC
*2	1	GW-2701	Wash Pump/Motor Assy. Complete (230V/50-60Hz/1Ph)
3	1	GW-2702	Pump Kit (Items 4 & 5 are Included in the Kit)
4	1	GW-2703	Wash Pump Shaft Seal
5	1	GW-2704	Wash Pump Impeller
6	6"	GW-2705	Hose 1" ID x 1-1/4" OD
7	AR	GW-2706	Hose Clamp #6
8	6"	GW-2707	Braided Hose 1" ID
9	1	GW-2708	Pump Hose Connector
10	AR	GW-1316	Clamp, Gear Min 5/16" Max. 7/8" SST
11	AR	GW-2708	Braided Hose 1/2"
12	AR	GW-2709	Braided Hose 3/8"

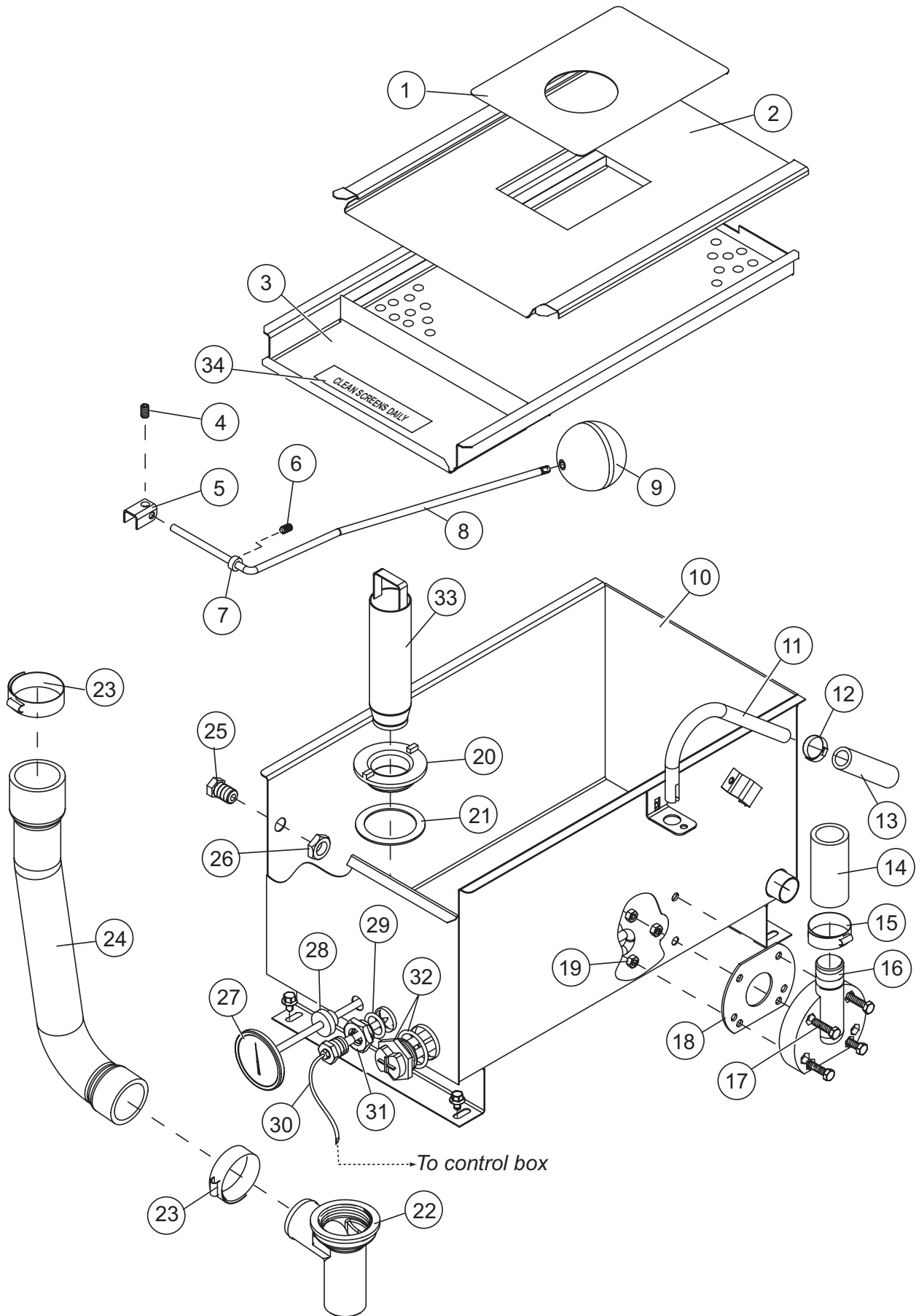


Item No.	Qty.	Part No.	Description
1	2	GW-2800	Solenoid Valve, 230VAC/60 Hz
2	3	GW-2801	3/8" MPT Tee
3	1	GW-2802	3/8" Fem x 1/2" Adapter
4	1	GW-2803	3/8" Check Valve
5	1	GW-2804	Mixing Valve
6	2	GW-1521	Elbow, 90 Degrees, 3/8 MPT x 1/2" Hose
7	2	GW-1316	Clamp, Gear Min 5/16" Max. 7/8" SST
8	A/R	GW-2805	1/2" I.D. Braided Hose
9	1	GW-2806	Brass Cap
10	2	GW-1917	Screw, 8-32 x 1/2" Pan Hd. Phil SST
11	2	GW-2807	Cable Clamp Cover
12	2	GW-2808	Cable Clamp Assy.
13	2	GW-2809	Screw 10-32 x 3/8" Brass
14	2	GW-1112	Washer, Lock #10 Ext. Tooth Brass
15	2	GW-1113	Nut, 10-32 Brass
16	1	GW-1514	Guide
17	A/R	GW-1515	Kit, Rebuild Valve
18	1	GW-2810	Flow Washer (2.6 Gpm)
19	1	GW-1518	Gasket
20	1	GW-1519	Washer, Seal
21	1	GW-1520	Strainer Screen, Solenoid Valve
22	2	GW-1511	Screw, 8-32 x 1/2", Slot, RH SST
23	1	GW-2811	Coil, Solenoid Valve, 230VAC/60

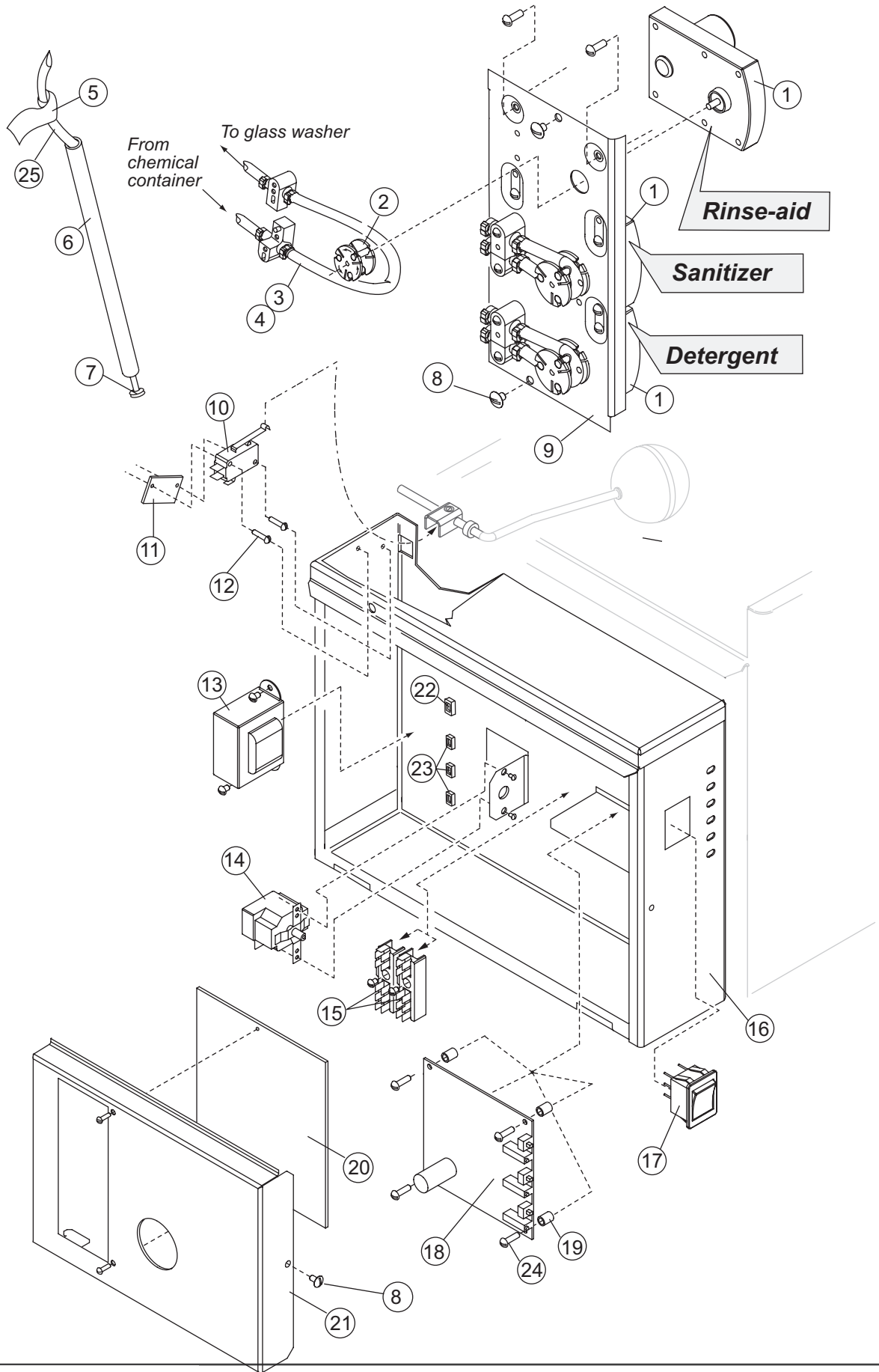


Item No.	Qty.	Part No.	Description
1	AR	GW-2900	1/2" I.D. Braided Hose
2	5	GW-1316	Clamp, Gear Min 5/16" Max. 7/8" SST
3	AR	GW-2901	3/8" I.D. Braided Hose
4	1	GW-2902	1/2" x 1/2" x 3/8" Tee
5	1	GW-2903	Injector Barb Fitting
6	2	GW-1608	Tie, Cable 4"
7	AR	GW-1604	Hose, 1/8" ID x 1/4" OD PVC
8	1	GW-1521	Elbow, 90 Degrees, 3/8 MPT x 1/2" Hose
9	1	GW-2904	Thermometer
10	2	GW-2905	3/8" x 1/4" Reducer Bushing
11	1	GW-2906	3/8" FPT Cross Connector
12	1	GW-2907	0-30 PSI Pressure Gauge
13	1	GW-2908	Plumbing Clamp
14	2	GW-1013	Bolt, Hex Head Flange, 1/4-20 x 3/8" SST
15	2	GW-2909	1/8" Hose Barb Fitting

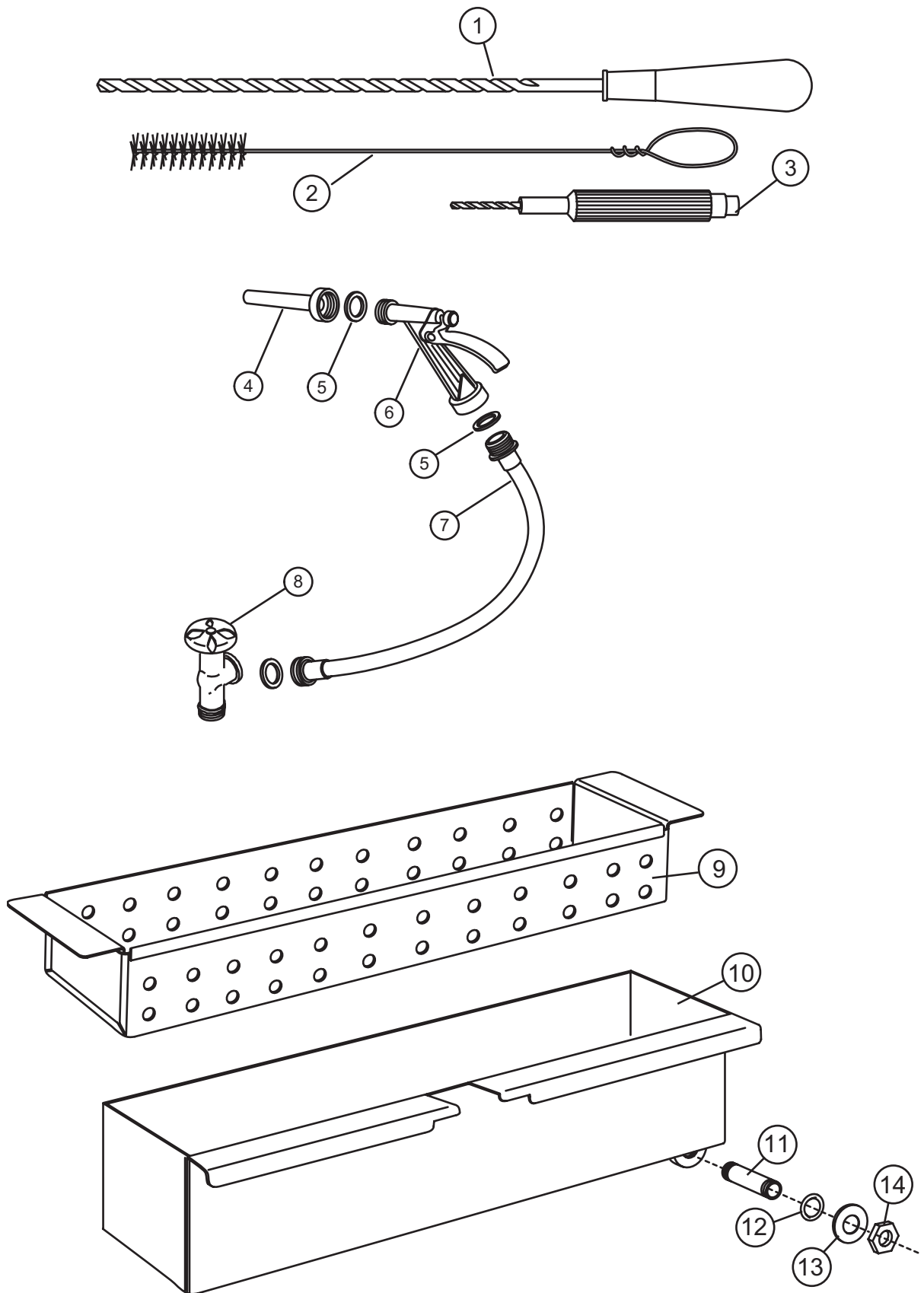




Item No.	Qty.	Part No.	Description
1	1	GW-3000	Steam Cover
2	1	GW-3001	Detergent Tank Cover
3	1	GW-3002	Detergent Tank Screen
4	1	GW-3003	Set Screw 1/4-20
5	1	GW-3004	Float Cam
6	2	GW-3005	Set Screw 6-40
7	2	GW-3006	Cam Bushing (Set Screw Included)
8	1	GW-3007	Float Rod
9	1	GW-3008	Float Ball
10	1	GW-3009	Detergent Tank
11	1	GW-3010	Water Inlet Tube
12	1	GW-1316	Clamp, Gear, Min. 5/16" Max. 7/8" SST
13	AR	GW-3011	Braided Hose 1/2"
14	6"	GW-3012	PVC Hose 1" ID x 1-3/8" OD
15	1	GW-3013	Gear Clamp 1"
16	1	GW-3014	Elbow Flange
17	4	GW-3015	Bolt M6 x 25mm (metric)
18	1	GW-3016	Inlet Chute Gasket
19	4	GW-3017	Nut, M6 (Metric)
20	1	GW-3018	Molded Drain Seat
21	1	GW-3019	Drain Gasket
22	1	GW-1313	Molded Drain Tee
23	2	GW-3020	Clamp, Hose 1-1/2" Gear-Type SST
24	1	GW-3021	Molded Drain Hose
25	1	GW-3022	Float Rod Bushing
26	1	GW-3023	1/4" NPS NP Brass Nut
27	1	GW-3024	Stem Thermometer 8"
28	1	GW-1403	Thermometer Seal
29	1	GW-1210	O-Ring
30	1	GW-3025	Thermostat, Wash Tank
31	1	GW-3026	Thermostat Adapter
32	1	GW-3027	Detergent Tank Heater 3kW
33	1	GW-3028	Detergent Tank Standpipe
34	1	GW-3029	Label (Clean Screens Daily)



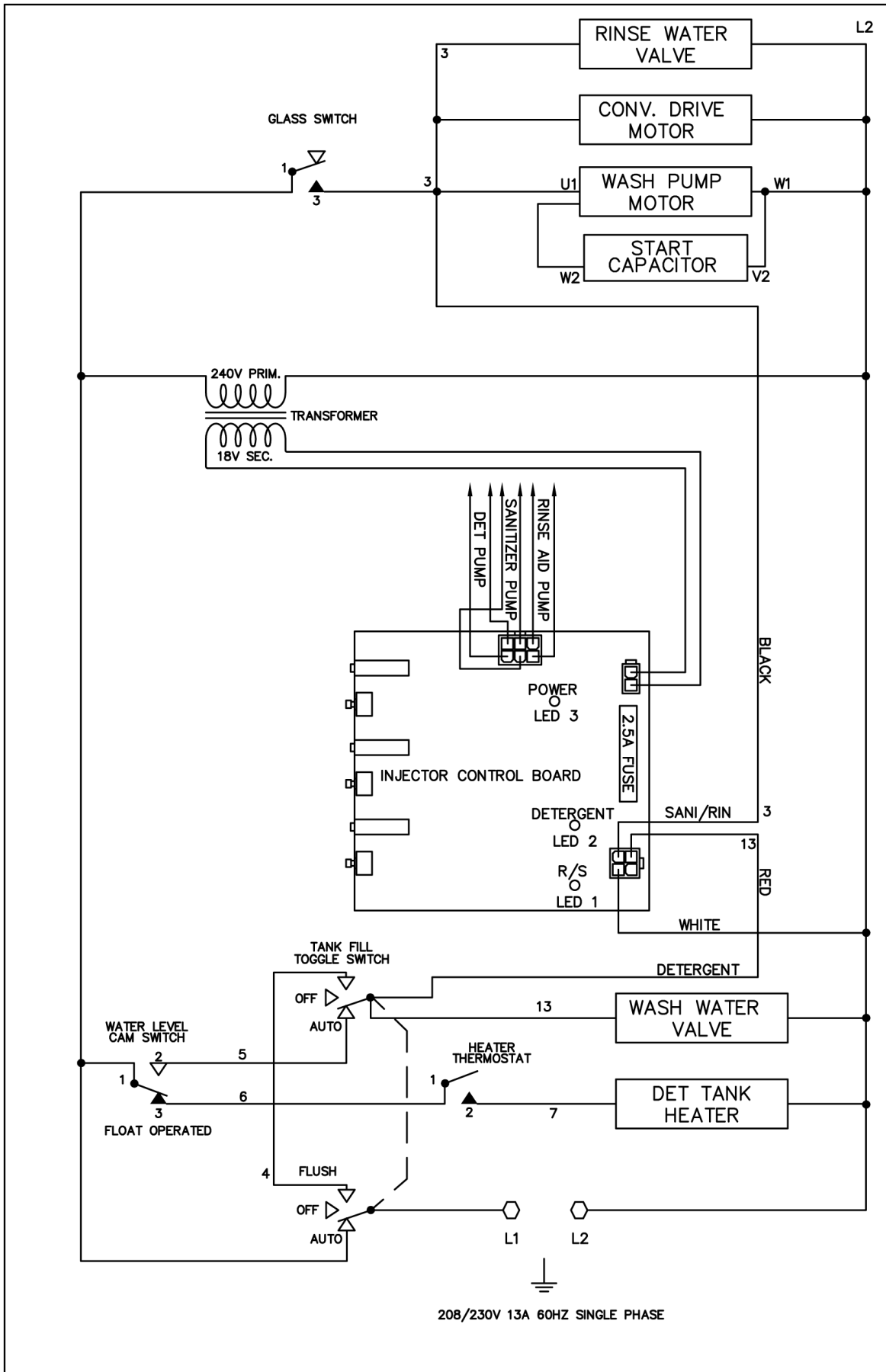
Item No.	Qty.	Part No.	Description
1	3	GW-3100	Injector Motor, 140RPM 12VDC
2	3	GW-1909	Rotor, Assembly
3	2	GW-1916	Tube, Element Assy. 45CC
4	1	GW-3101	Element Tube 15CC (R/A)
5	1	GW-1908	Label, Detergent
---	1	GW-3102	Chemical Tube Sanitizer Label
---	1	GW-1911	Label, Rinse-Aid
6	3	GW-1913	Tube, 1/2" ID x 11-7/8" Lg Stiffener
7	3	GW-3103	Strainer
8	12	GW-3104	Screw 10-32 x 1/4"
9	1	GW-3105	Chemical Pump Panel
10	1	GW-3106	Water Level Switch 15A
11	1	GW-3107	Switch Nut Plate 4-40
12	2	GW-3108	Screw, 4-40 x 5/8"
13	1	GW-3109	Transformer, 240VAC/18VAC, 30VA
14	1	GW-1210	Thermostat, Wash Tank
15	2	GW-3110	Terminal Board 11-PNT
16	1	GW-3111	Control Box
17	1	GW-3112	Rocker Switch On/Off/Flush
18	1	GW-3113	Motor Control Circuit Board
19	4	GW-3114	Control Circuit Board Spacer
20	1	GW-3115	Control Box Cover Window
21	1	GW-3116	Control Box Cover
22	1	GW-3117	Strain Relief Bushing (Large)
23	3	GW-3118	Strain Relief Bushing (1/2")
24	4	GW-3119	Screw, 6-32 x 1/2"
25	AR	GW-1604	Hose, 1/8" ID x 1/4" OD (Rinse Aid & Sanitizer)



Item No.	Qty.	Part No.	Description
1	1	GW-3200	Tube Scraper
2	1	GW-3201	Tube Brush
3	1	GW-3202	Jet Reamer (Comes with Drill)

Item No.	Qty.	Part No.	Description
4	1	GW-3203	Wash Down Nozzle
5	1	GW-1321	Washer, Garden Hose
6	1	GW-3204	Nozzle
7	1	GW-3205	1/2" x 10' Hose Assy.
8	1	GW-3206	Faucet
---	1	GW-3207	Wash Down Hose Kit (Includes Items 4-8)

Item No.	Qty.	Part No.	Description
---	1	GW-3208	Drain Tray and Waste Collector Kit (Includes Items 9-14)
9	1	GW-3209	Drain Tray
10	1	GW-3210	Drain Screen
11	1	GW-3211	Nipple, 3/8" x 1/2" SST
12	1	GW-3212	O-Ring
13	1	GW-3213	Washer, 1-5/16" x 5/8" x .08"
14	1	GW-3214	Locknut



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