Operation Manual

Glastender®

A Family Company Manufacturing
In The USA Since 1969

GT-18 Series Glasswashers

GT-18, GT-18+1, GT-18+1L, GT-18+1R,
GT-18+2, GT-18+2-IC and GT-18+3
(manufactured after August 2006)

GT-18 Glasswasher Operation & Maintenance Video -
https://youtu.be/cE4lsnNNkvg?si=vKlOamq5fKjq1z4O

The GT-18 is a simple and effective glasswasher that, if properly maintained, will provide years of reliable service. This video provides a visual illustration of proper care and cleaning of the glasswasher.

GT-18

GT-18+2

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800.748.0423 · 989.752.4275 · Fax 989.752.4444 · https://glastender.com

MADE IN THE USA

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Terms and Conditions

https://www.glastender.com/support/documents/policies/terms-and-conditions

Warranty

IMPORTANT !! **Attention Service Companies** **IMPORTANT !!**

Please review the important warranty information found here:
https://www.glastender.com/support/documents/warranty/warranty-statement-form
If you believe a service call should be covered by the factory, please call 800-748-0423 for authorization 8AM - 5PM EST, Monday through Friday.

For replacement part information, visit:
https://www.glastender.com/support/parts

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Introduction

This manual describes the operational features of the GT-18, GT-18+1, GT-18+1L, GT-18+1R, GT-18+2, GT-18+2-IC and GT-18+3 model glasswashers. Please review this information before attempting installation and operation. Long term, trouble-free operation will follow if good housekeeping and maintenance procedures are followed.

For a video illustration of care and cleaning of the GT-18 visit https://glastender.com/pl/operation-manuals/gt-18.

Thank you for selecting Glastender, Inc. products.

What is a Glasswasher?

Glastender, Inc. has been manufacturing automatic glasswashers since 1969. Today, Glastender glasswashers have been installed around the world. But what is a glasswasher? It is simply a piece of machinery that washes glassware, which eliminates the need for human labor and the conventional three-compartment sink. The glasswasher is, in effect, a mechanized three-compartment sink. It “washes”, “rinses”, and “sanitizes” glassware.

Note the Simplicity:

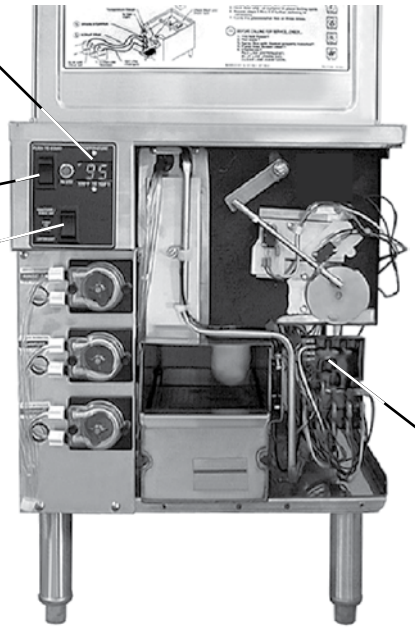
Function	Design
Wash	120ºF (48.9ºC) water and a preset portion of detergent join in the tank. During operation, 5 gallons per minute of hot soapy water are pumped in a forceful, but gentle, spray pattern across the moving glassware. When the wash cycle is complete, all water is drained. While the drain is still open, clean water pre-rinses the holding tank to prepare for the rinse and sanitize cycle.
Rinse and Sanitize	120ºF (48.9ºC) water and a preset portion of sanitizer and rinse aid join in the tank. During operation, 5 gallons per minute of rinse water are pumped in a forceful, but gentle, spray pattern across the moving glassware. At the end of the cycle, all water is drained so the next load can begin with fresh, clean water.

Please read on to learn more about this simple machine.

Utility Requirements and Connections

1. *General Plumbing*
   a. 1/2″ OD (or larger) copper to 3/8″ FMPT adapter provided
   b. Minimum water pressure is 25 PSI
   c. Maximum water pressure is 100 PSI. Install water pressure regulator if line pressure is over 100 PSI. Water valve on unit has built-in strainer and flow control to provide consistent volume between 25 and 100 PSI
   d. Install separate water shut-off valve
   e. Unit has built-in air gap - vacuum breaker is not required
   f. Maximum temperature is 150ºF (66ºC)
   g. Minimum temperature is 120ºF (49ºC)
   h. Consumption is 2-1/2 gallons per cycle
2. *Drain*
   a. 1-1/2″ tailpiece
   b. Use open type floor drain for maximum drainage
3. *Electrical*
   a. 120V, single phase, 60Hz, 6-foot grounded cord included
   b. Dedicated 15 amp circuit recommended
   c. Power requirements - 3.5 amps
4. *Detergent*
   a. Extra heavy duty, non-foaming, commercial liquid dishwashing detergent is required - .30% concentration
   b. Consult local chemical supplier to match detergent with local water conditions
5. *Sanitizer*
   a. Liquid chlorine bleach (sodium hypochlorite - 5.25% solution) adjusted to 50 ppm
6. *Rinse Aid*
   a. Liquid Rinse Aid adjusted for proper sheeting
7. *Installation Considerations*
   a. 1″ clearance required to remove top
   b. Front side service is essential
   c. Detergent, Sanitizer, and Rinse Aid containers are stored externally - six-foot lengths of tubing are provided. Storage for three one-gallon containers is required within five feet

Main Section Front View



GT-18 Glasswasher with front panel removed

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Uncrating and Start-Up Instructions

The glasswasher is shipped in two cartons. After uncrating, follow this procedure:

1. Set in place and install top.
2. Place chemical Feed Lines into the proper chemical containers.
    a. Red is detergent.
    b. Blue is rinse aid.
    c. Clear is sanitizer.

WARNING: The chemicals used in commercial glasswashing are very harsh. Exposure to human skin can cause severe burns. Chemical containers should be stored in a manner and/or location that prevents them from spilling or splashing. Chemical containers must be secured. Please consult your chemical vendor to ensure proper storage or call the Glastender factory to purchase a clip-on chemical rail, part number 01000710.

3. After utility connections described above are completed, plug in glasswasher.
4. Depress Prime switches to fill Feed Lines. NOTE: Always cycle the machine after using the prime switches. Undiluted chemicals will damage stainless steel.
5. Cycle the glasswasher and check chemical settings.
6. If chemical adjustment is required, unplug glasswasher, remove front panel, and adjust chemicals as required using the Electronic Control Timer. See chemical adjustment procedure below.

Chemical Adjustment Procedure

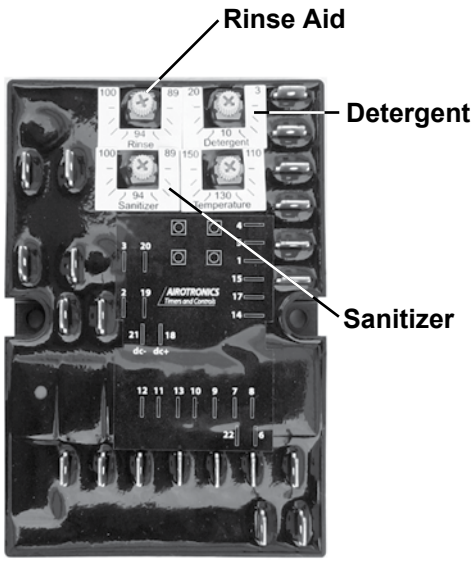
The chemical strengths should be tested with a professional test kit by the chemical supplier. Water samples should be taken during the wash cycle and the rinse cycle.

Detergent - .30% concentration
Sanitizer - 50 PPM (sodium hypochlorite [bleach])
Rinse Aid - until proper sheeting is achieved

Detergent: If the factory setting does not render the proper concentration, turn the detergent adjustment knob clockwise to increase or counterclockwise to decrease the dispense time. Repeat chemical testing procedure and adjust again if necessary.

Sanitizer: If the factory setting does not render the proper concentration, turn the sanitizer adjustment knob clockwise to increase or counterclockwise to decrease the dispense time. Repeat chemical testing procedure and adjust again if necessary.

Rinse Aid: If the factory setting does not render the proper level of sheeting, turn the rinse aid adjustment knob clockwise to increase or counterclockwise to decrease the dispense time. Run a test cycle to check wash results and adjust again if necessary.



Electronic Control Timer

7. Replace panel and plug in glasswasher. Cycle the glasswasher and check chemical settings. Repeat step 6 if necessary.

Operation

The GT-18 glasswasher has a two-minute cycle which consists of the following steps:

1. The drain will close, hot water fills the tank, and detergent dispenses.
2. At 15 seconds, the water recirculating pump starts.
3. At 20 seconds, hot water and detergent stop. NOTE: The detergent is adjustable so this timing may vary.
4. At 72 seconds, the water recirculating pump stops and the drain opens.
5. At 80 seconds, hot water flushes the tank.
6. At 85 seconds, the drain closes, hot water fills the tank, and sanitizer and rinse aid dispense.
7. At 98 seconds, the water recirculating pump starts.
8. At 105 seconds, hot water stops and sanitizer and rinse aid stop depending on the adjustment. NOTE**:** The sanitizer and rinse aid are adjustable so this timing may vary.
9. At 115 seconds the water recirculating pump stops and the drain opens. The cycle is complete.

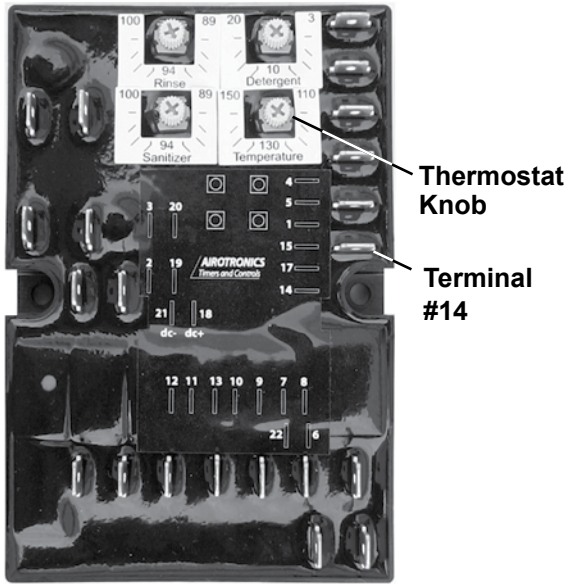
Thermostat Control

The Thermostat Control is pre-set by the factory to start the wash cycle when the water temperature reaches 130ºF. When the Start Switch is actuated the Thermostat Control will flush water through the glasswasher for two minutes or until 130ºF is reached. If 130ºF temperature is not reached within two minutes, the machine will automatically begin the cycle. If the glasswasher starts at the factory setting, no further adjustment is required.

If the machine is regularly experiencing a delay in the cycle start due to low incoming water temperature, the thermostat control can be adjusted down to as low as 120°F to help decrease the delay. Please note the factory recommends a minimum incoming water temperature of 130°F for best wash results.

***NOTES:**

1. A minimum incoming water temperature of 120ºF is required to achieve proper wash results.
2. The Digital Temperature Gauge reads approximately ten degrees below actual incoming water temperature. (The temperature gauge will be accurate when the water tank is full.)
3. Place a thermometer in the water stream at the water inlet to determine the incoming water temperature.



Do You Have Low Water Pressure?

Installations that have abnormally low water pressure may have trouble getting enough water into the glasswasher. Disconnect from the power source. Remove the red wire with white tracer at Terminal #14 on the master circuit board. Reconnect to the power source, resetting the circuit board. The overall cycle time will increase from 2 minutes to 2 minutes and 20 seconds. The additional 20 seconds will provide extra time to fill the tank during each of the wash and rinse cycles.

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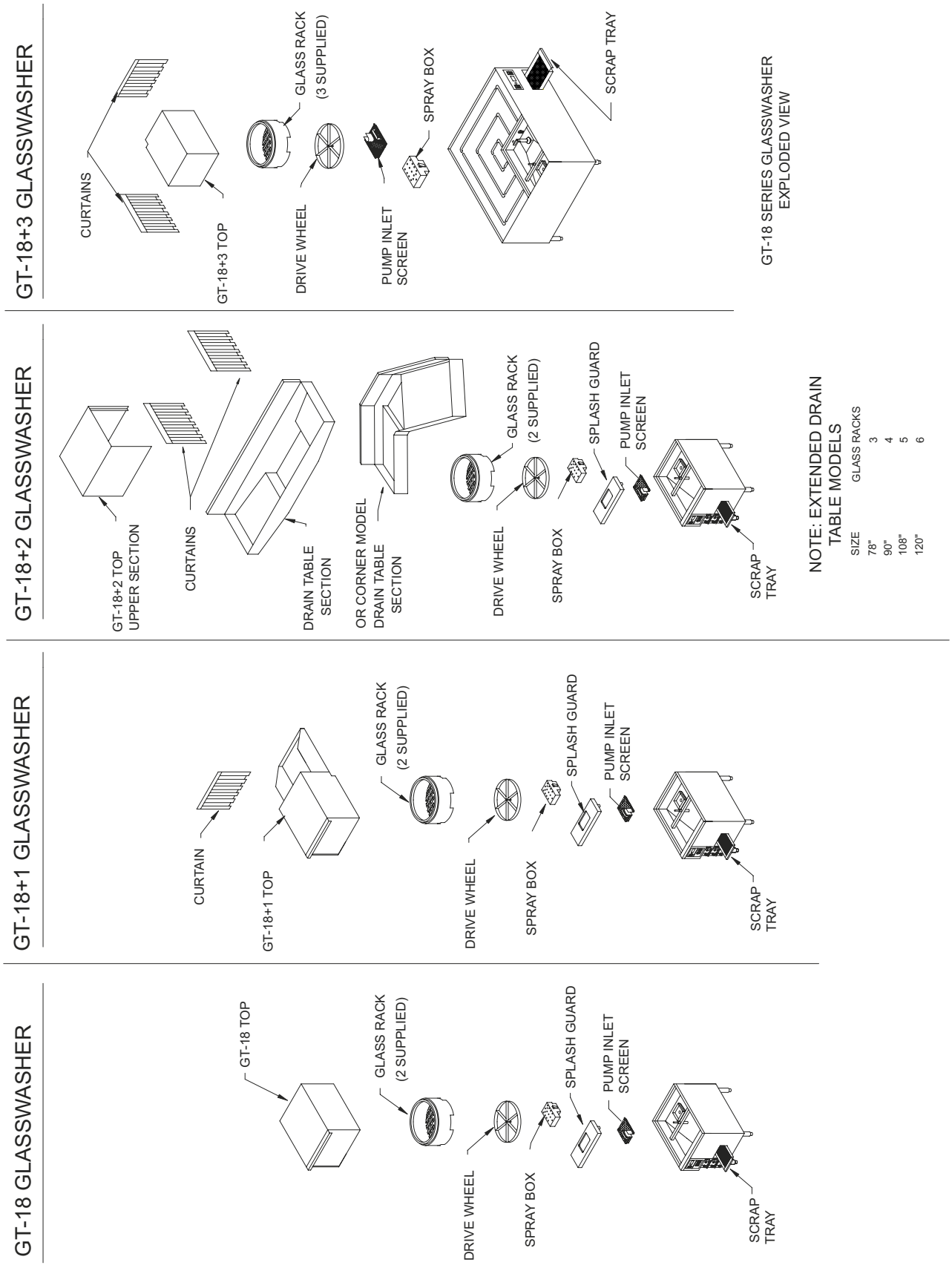
Exploded View of GT-18 Series Glasswashers



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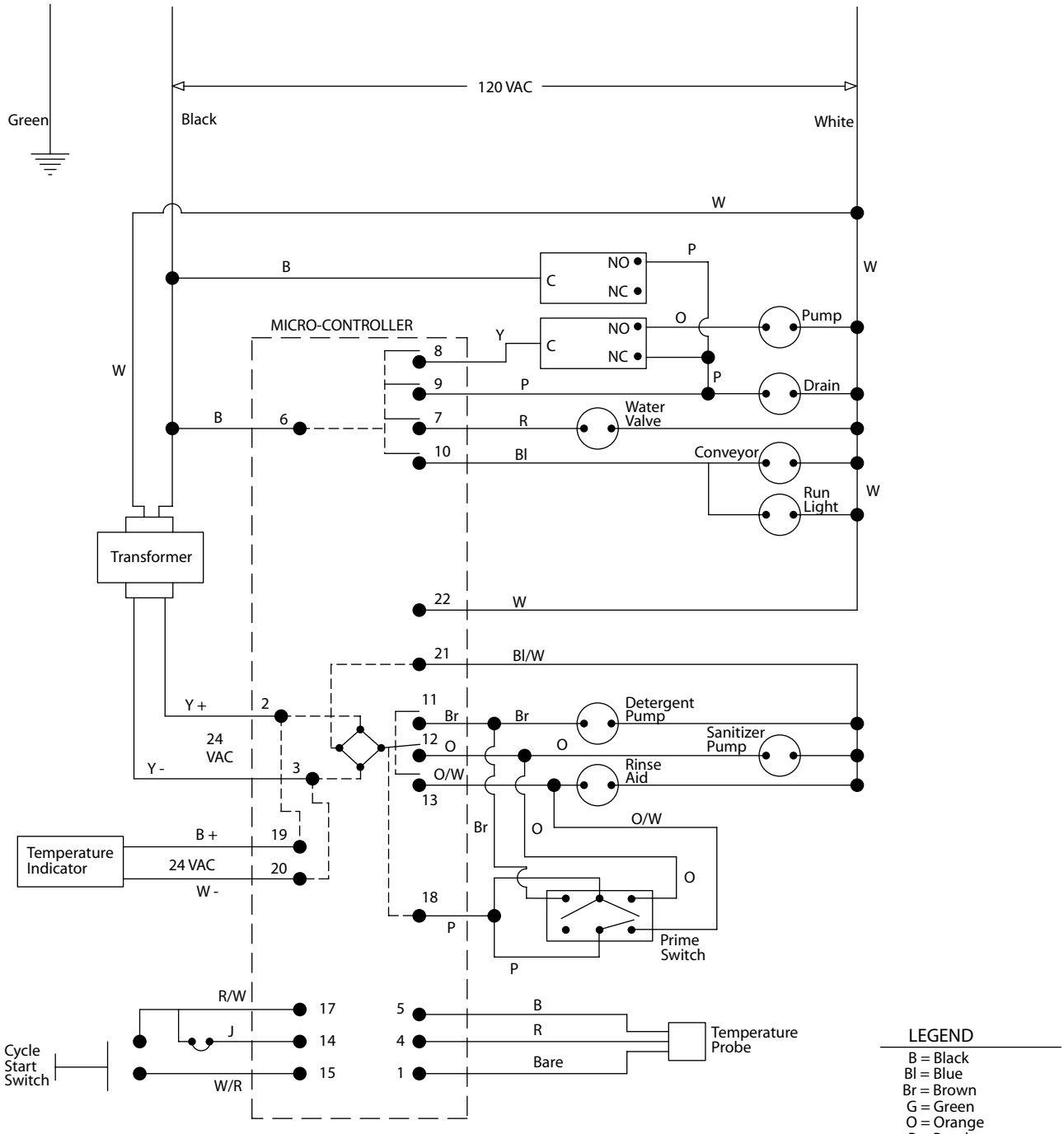
GT-18 Wiring Diagram



GT-18 Wiring Diagram

LEGEND

B = Black
Bl = Blue
Br = Brown
G = Green
O = Orange
P = Purple
R = Red
W = White
Y = Yellow
J = Jumper
Bl/W = Blue W/White
R/W = Red W/White
O/W = Orange W/White

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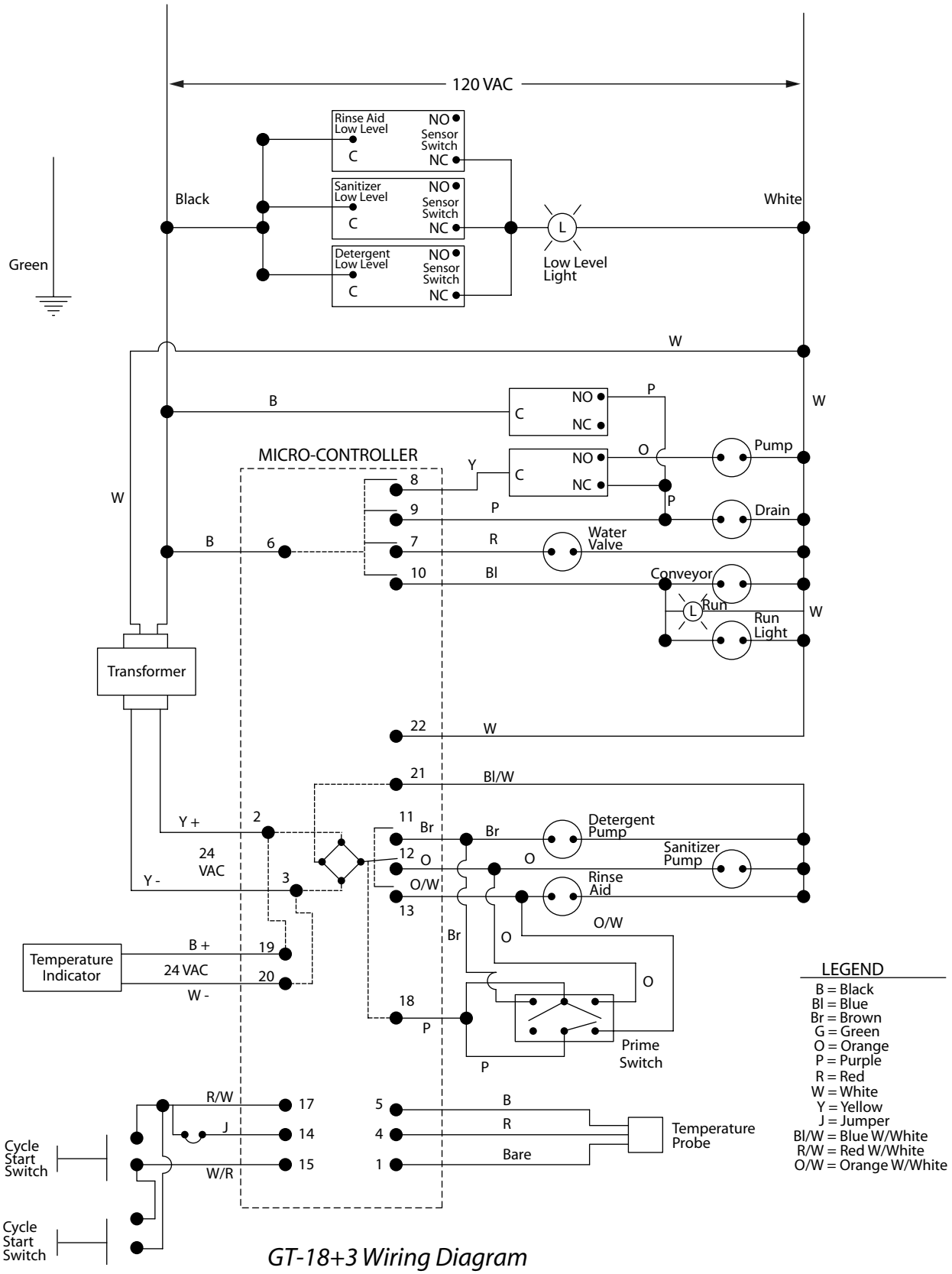
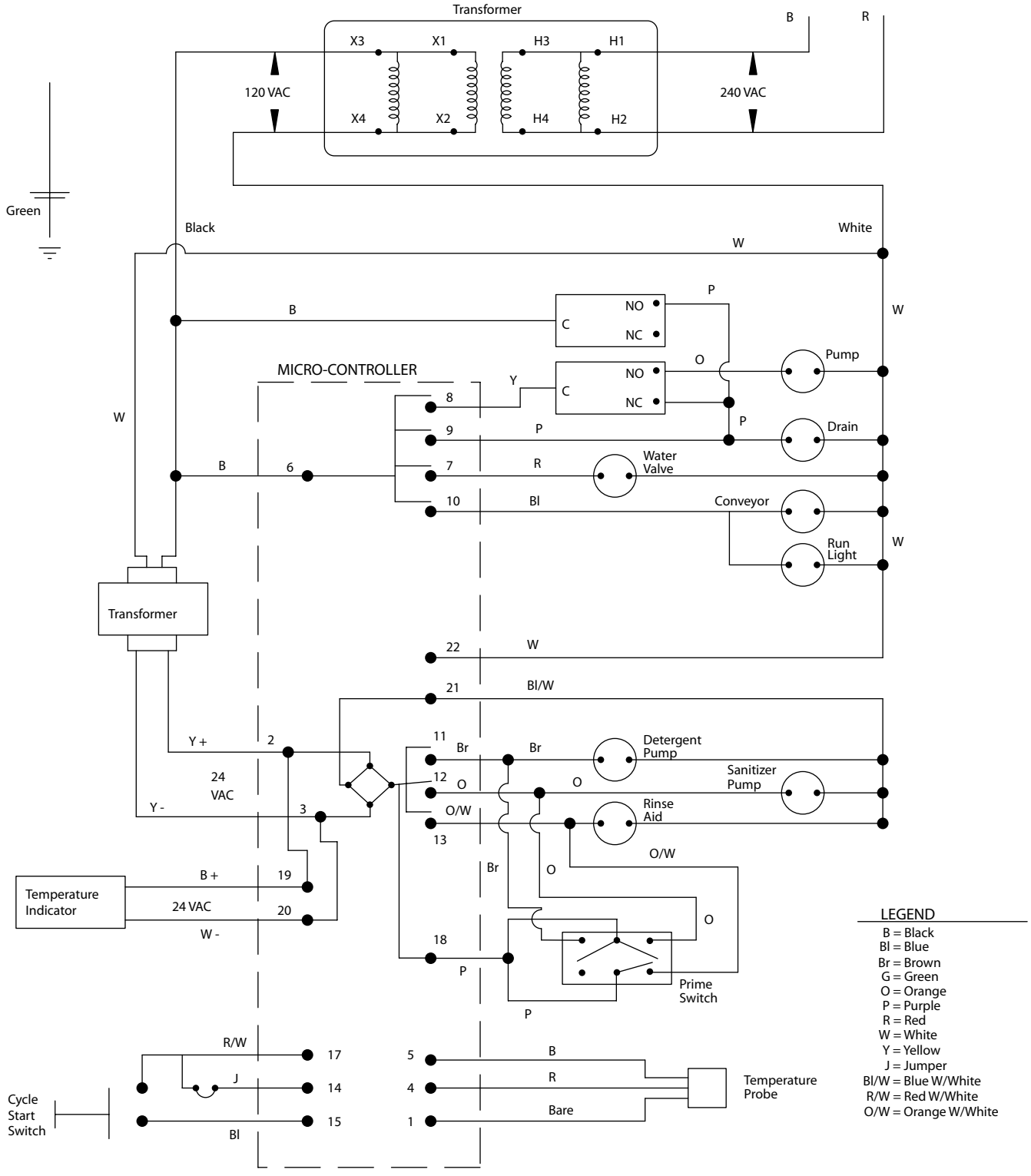
GT-18+3 Wiring Diagram



GT-18+3 Wiring Diagram

GT-18 with Export Transformer Wiring Diagram



GT-18 with Export Transformer Wiring Diagram

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Useful Information About Water, Detergent, and Sanitizer

Water Conditions

Your water supply fits one of the following descriptions.
Greater detergent consumption is required with “hard” water.

Description	Grains Per Gallon	Parts Per Million
Soft	Less than 1.0	Less than 17.1
Slightly Hard	1.0 to 3.5	17.1 to 60
Moderately Hard	3.5 to 7.0	60 to 120
Hard	7.0 to 10.5	120 to 180
Very Hard	10.5 and over	180 and over

Detergent Titrating Instructions

An Alkalinity Test Kit, as recommended by your chemical supplier, is required for proper chemical adjustment. Follow kit instructions to test.

Sanitizer Titrating Instructions

Operate glasswasher to allow sanitizer levels to stabilize. With Conveyor removed and Conveyor Switch “On”, dip Chlorine test strip into Rinse Tank near Rinse Spray Box for one (1) second. Then immediately compare the strip to the scale on the side of the test strip container tube. Adjust sanitizer (bleach) to 50 PPM.

Important note: Glasswashers are **NOT** water conditioners. Consult local water conditioning experts to determine your specific water condition.

Important Information About Chemicals

The GT-18 glasswasher has chemical pumps that automatically dispense chemicals into the machine. The detergent and sanitizer chemicals are supplied by a chemical vendor. Since the type of chemicals and the condition of water varies by region, the chemical pumps are not pre-set at the factory. *The chemical pumps must be adjusted at start-up to achieve the proper titration levels or the machine may not produce good wash results.* Typically, the chemical vendor is responsible for adjusting the chemical pumps.

Since detergent and sanitizer chemicals play an important role in the performance of a glasswasher, understanding how the chemical pumps work and how to maintain them is very important. Reviewing the following information will help ensure the proper operation of your glasswasher and its chemical pumps:

1. CAUTION: Always cycle the machine after using the prime switches to rinse out the wash/rinse tank. Undiluted chemicals will damage stainless steel.

2. The chemical feed lines must be properly placed inside the appropriate chemical container. Damaged chemical lines will spill chemicals on the machine and floor and create poor wash results.

3. Every glasswasher requires chemical pump adjustment and titrating by a chemical vendor. Poor wash results will occur if the chemicals are not in proper concentration (see the operation manual for proper concentration levels).

4. Glasswasher chemicals are highly caustic and will cause severe burns when they contact human skin. These same caustic chemicals will also corrode stainless steel and destroy machine components. A glasswasher should be checked regularly for chemical leaks and any leaks should be corrected immediately.

5. All of the chemical tubing on a glasswasher should be inspected regularly and replaced at least once per year. The highly caustic chemicals cause the chemical tubing to get brittle, and since leaking chemicals destroy glasswasher components, it is good preventative maintenance to replace chemical tubing often. The various tubing includes the lower tubing assembly or main chemical feed line, the pump squeeze tube (especially susceptible to damage), and the upper tubing assembly from the pump to the glasswasher tank.

6. Chemical vendors that deliver chemicals to your establishment are typically responsible for adjusting the chemical levels in your glasswasher. They are also helpful for assisting you with chemical tubing inspection and replacement. Nothing removes your responsibility for proper maintenance, but the chemical vendor will help.

Tips for Trouble-Free Operation

1. **NEVER, NEVER** wash ash trays in the glasswasher. Since ashes are smaller than the opening in the Pump Inlet Screens, ashes, could adhere to glasses. Also, with ashes recirculating in the wash water, the cleaning effectiveness of the detergent is greatly reduced. The final result of washing ash trays is dirty glasses.

2. For best results, run glasswasher full of glassware. This keeps the water and detergent consumption to a minimum.

3. Water spotting can occur when glassware is placed on flat surfaces after washing thus preventing air to assist the drying process. Make sure the proper shelf liner or drying surface is used.

4. The maximum glass height is ten (10) inches to fit through the Top Section of the glasswasher. Keep this in mind when ordering beer pitchers and wine carafes.

5. Glasses which have been frequently washed by hand may have deposits of invisible “film.” Although initially appearing clean, these glasses may show unsightly signs of “dirt” after passing through the glasswasher. This unsightly condition will exist until the film is removed with frequent passes through the glasswasher, or it may be necessary to use a de-liming agent to clean glassware.

6. Do not place wet glasses into glass chillers or frosters. Allow glasses to dry and sanitizer odors to dissipate first.

7. Changing detergents may require readjustment of the Detergent Pump to maintain .30% detergent concentration. A greater volume of low strength detergent is required to maintain the proper level.

8. Only Glastender, Inc. replacement parts should be used. Components from other suppliers may result in machine malfunctions.

Please consult your Glastender, Inc. service agent if service or technical assistance is required. The factory is also available to answer any operational questions.

Cleaning Instructions

Regular maintenance of your Glastender glasswasher will extend its useful life and lower the service costs. The top section of a GT-18 glasswasher is removable to ease regular maintenance. Also, the following parts are removable for daily cleaning:

1. Spray Box
2. Splash Guard
3. Pump Inlet Screen
4. Drain Stopper (Overflow hole to rear)
5. Scrap Tray

The daily cleaning procedure consists of the following steps:

1. With machine not operating, remove Spray Box, Spray Box Gasket and Pump Inlet Screen.
2. Remove all debris.
3. Wipe the interior of tank with a damp cloth. For more stubborn soil or stains, you may scrub the interior of the tank with a Scotch-Brite® pad. Do **NOT** use steel wool.
4. Rinse the interior with clean water.
5. Rinse and scrub clean the Spray Box, Spray Box Gasket, and Pump Inlet Screen as necessary and reinstall into machine.
6. Check Detergent, Sanitizer, and Rinse Aid Containers. Refill or replace if empty.
7. Visually inspect the Detergent Inlet after the drain has closed and water begins to fill the tank. You should notice detergent intermittently dripping. Approximately 85 seconds later, visually inspect the Sanitizer and Rinse Aid Inlets after the drain has closed and water begins to fill the tank. You should notice sanitizer and rinse aid intermittently dripping.
8. Your glasswasher is now ready for operation.

Deliming Procedure

When the interior is coated with a white chalky substance, perform the following Deliming Procedure (after daily cleaning has been completed):

1. Place empty Glass Rack on drive wheel.
2. Push Start Switch.
3. Catch the detergent in a cup and dispose.
4. Pour one cup of deliming agent in the glasswasher. WARNING! Most deliming agents are hazardous. Follow all instructions very carefully!
5. Do not open the door until the cycle is complete.
6. Repeat steps 1 thru 5 if further deliming is necessary.
7. Cycle the glasswasher two or three times.

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Trouble Shooting Guide

Trouble or Situation	Cause	Remedy
A. Unit does not run	1. No power (Power light "off.")	1. Check power source.
	2. Defective start switch	2. Replace start switch.
	3. Wire connections poor, loose, or broken.	3. Re-crimp and/or replace wire connection.
B. Unit experiences a long delay (up to two minutes) before beginning a cycle.	1. Incoming water does not reach minimum operating temperature.	1. See Thermostat Control information on page 4 and check temperature of water source.
C. Conveyor runs but holding tank not filling	1. Water "off."	1. Turn water "on."
	2. Bad water valve.	2. Test valve, replace if necessary.
D. Conveyor moves intermittently	1. Loose belt.	1. Tighten belt by first loosening the four motor mount towards front and retighten bolts. Caution: Excessive belt tension could cause drive motor failure.
E. Water recirculating, conveyor not moving	1. Obstruction in tank area	1. Remove obstruction.
	2. Conveyor not engaged with conveyor drive shaft.	2. Rotate conveyor until it engages.
	3. Defective drive motor.	3. Replace drive motor.
	4. Defective or loose belt.	4. Replace or tighten belt.
F. Water not recirculating	1. Completely plugged pump inlet screen.	1. Clean pump inlet screen.
	2. Defective recirculating pump.	2. Replace recirculating pump.
G. Water leaking from recirculating pump housing - water on floor	1. Defective pump seal.	1. Replace pump seal.
	2. Pump housing cracked.	2. Replace housing.
H. Glasses slimy or soapy at end of cycle	1. Sanitizer feed line in detergent container.	1. Clean line and place in proper container.
	2. Improper Rinse Aid setting.	2. Adjust chemical setting (see page 3).
I. Recirculating water pressure low	1. Spray box not latched properly.	1. Latch spray box properly.
	2. Partially plugged pump inlet screen.	2. Clean pump inlet screen. Refer to cleaning instructions.
	3. Missing or worn spray box gasket.	3. Replace gasket.
J. Detergent, sanitizer, and/or rinse aid not feeding properly	1. Chemical container is empty.	1. Refill or replace container(s).
	2. Feed lines will not fill.	2. Replace defective parts. Notes: The detergent, sanitizer, or rinse aid product advances in the line on each stroke of the pump. The product should hold position between strokes. If the product falls back toward the supply container, one or more of the following conditions may exist: a. Debris in pump, b. Split feed line, or c. Bad pump tube. Replace parts as necessary.
K. Poor washing results	1. Clogged spray nozzles and dirty holding tank.	1. Clean unit. See cleaning instructions.
	2. Detergent container empty.	2. Fill container.
	3. Poor water conditions.	3. Have filter or softener installed.
	4. Chemicals not adjusted properly.	4. Call chemical technician.
	5. No hot water.	5. Check temperature of water source.