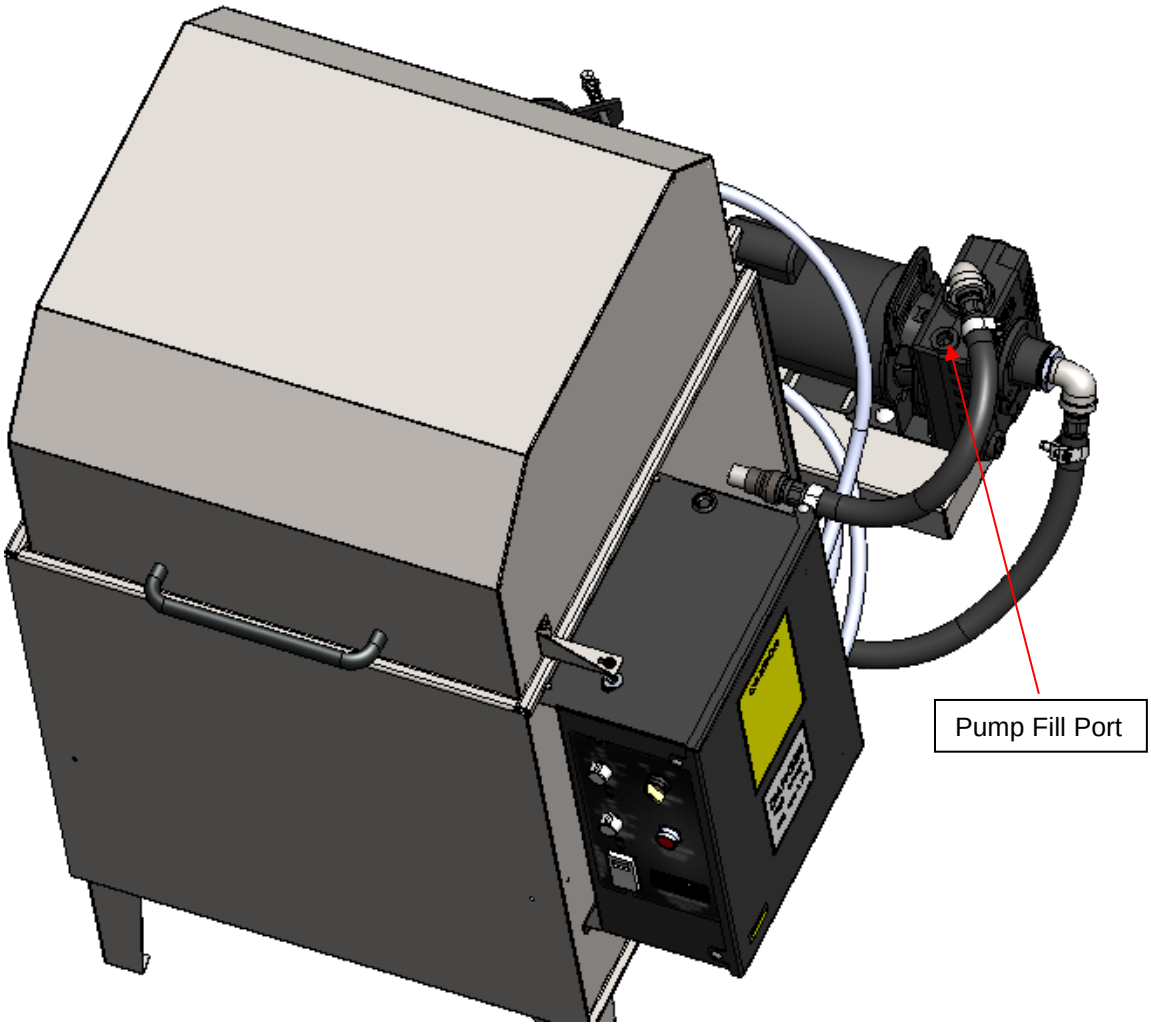
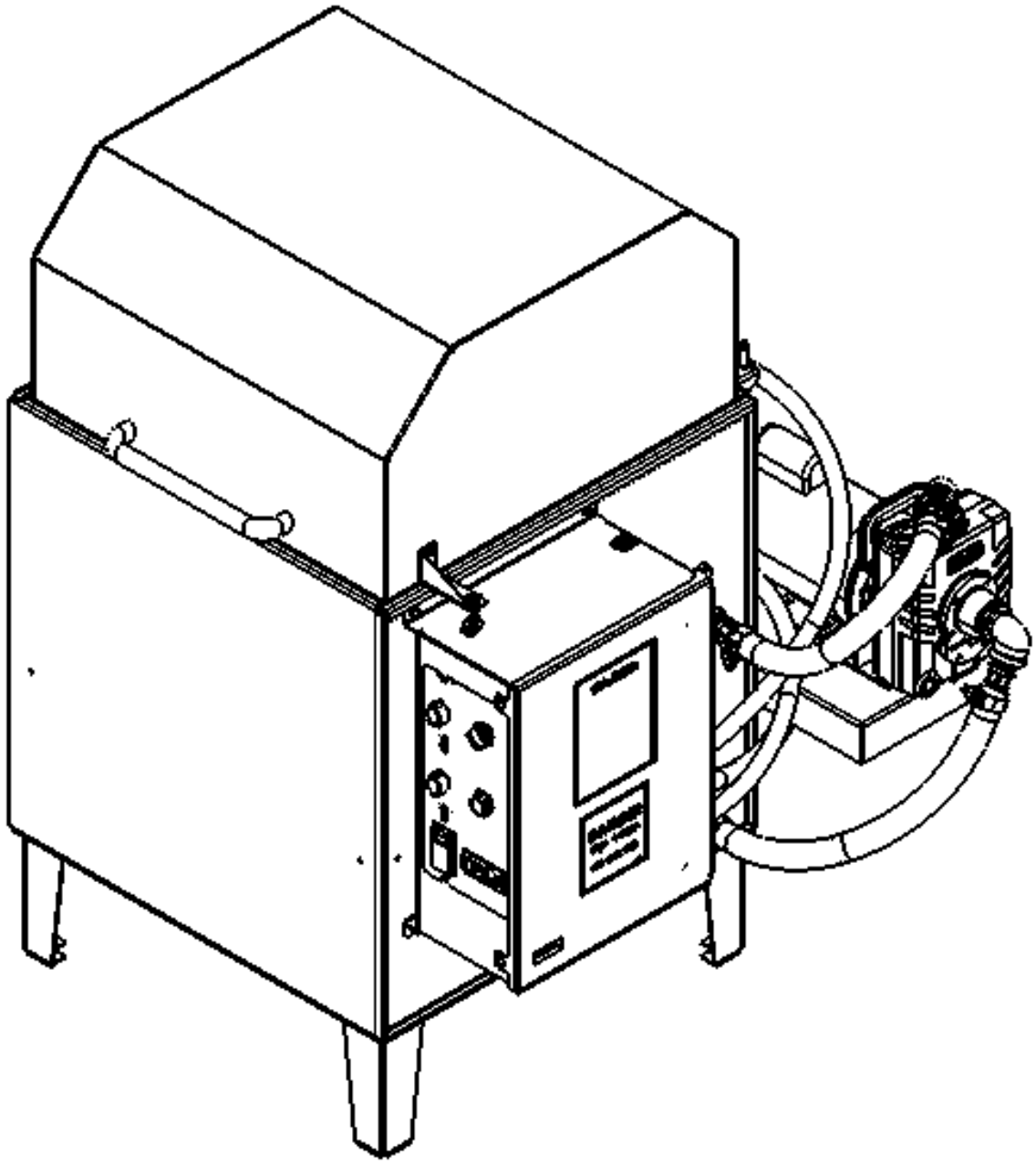
⚠ CAUTION ⚠

This parts washer is equipped with a self-priming pump. The priming feature requires pre-filling of the pump housing with water. On initial setup of the machine, after service, or after an extended period of inactivity, fill the pump's housing with water. Failure to do so may result in damage to the pump. If after turning on the wash cycle no spray can be heard inside the machine, immediately turn off the machine and refill the pump's housing. Repeat this until spraying can be heard inside the machine.





Model 9200

INSTRUCTION AND OPERATION MANUAL

AQUEOUS PARTS CLEANER

TABLE OF CONTENTS

I. Introduction

- Congratulations on the purchase of your Model 9200 Top Load Spray Washer!
- This unit is a heavy-duty spray washing cabinet designed to provide maximum cleaning power and reliability. This machines high capacity and automated cleaning abilities will eliminate the need for hazardous solvent which is harmful to employees and the environment. Automatic cleaning also reduces the amount of time spent manually cleaning parts. The operator simply places the parts on the turntable, closes the door, and starts the wash cycle. The parts automatically clean while rotating through multiple spray curtains of detergent and hot water.
- Read the entire manual before attempting to install or operate this machine.
- Carefully review the Safety Instructions and Information section and all CAUTION, WARNING, and DANGER information. This information will instruct you on how to use this equipment in a safe manner. Keep this manual along with the material Safety Data Sheets (SDS) for detergents in use. Always have this information in easy reach for the operator and all personnel working on or around the equipment.
- Familiarize yourself with the general Maintenance and Troubleshooting of the product. Follow these guidelines to help ensure a long and trouble-free experience. If there are any questions or concerns, please call your local dealer.
- The equipment described in this manual is subject to change. The manufacturer reserves the right to change equipment at any time as part of normal product improvement. Some improvements may have been made after this manual was printed. For the latest information on your equipment, contact the manufacturer.

II. Safety Instructions and Information

A. General Instructions

IMPORTANT SAFETY INSTRUCTIONS – SAVE THESE INSTRUCTIONS

- Read all instructions. Do not attempt to install or use this machine without reading this entire manual. Read and understand all labels, SDS, and this instruction manual before use. Use only as described in this manual. Use only manufacturer's recommended attachments.
- Read and understand the SDS of all chemicals you are introducing to the solution from washing parts.
- If you fail to read, understand, and follow all the procedures in this manual, you may cause or suffer personal injury.
- Do not operate equipment with a damaged cord or if the equipment has been dropped or damaged, until it has been examined by a qualified service person.
- If an extension cord is necessary, a cord with a current rating equal to or more than that of the equipment should be used. Cords rated for less current than the equipment may overheat. Care should be taken to arrange the cord so that it will not be tripped over or pulled.
- Always unplug equipment from electrical outlet when not in use. Never use the cord to pull the plug from the outlet. Grasp plug and pull to disconnect.
- Care must be taken as burns can occur from touching hot parts. Always wear PPE. Take precaution and wear thermally protective equipment that is suitable for wet environments. This machine is preset to 140°F but contains an adjustable thermostat with a range of 32°F to 212°F. It should not be run below 120°F to minimize chance of foaming and not above 180°F to prevent risk of cavitation. The liquid will be hot. Most surfaces will be hot. All parts removed from the machine will be hot.
- Always wear safety glasses or a full-face shield to protect against chemical splash. While aqueous washers use much safer chemicals, the liquid still contains detergents that can be harmful, the liquid is heated and may cause burns, and the washing and cleaning of parts contaminates the solution and introduces new chemicals to the solution. Everyday eyeglasses only have impact resistant lenses, they are not safety glasses.
- Keep hair, loose clothing, fingers, and all parts of body away from moving parts.
- Do **NOT** smoke, eat, or drink in the work area.
- To reduce the risk of fire, do not operate equipment in the vicinity of open containers of flammable liquids (gasoline). Do not spray aerosols into or around this machine. Install the equipment in an area away from heat, sparks, and open flame.
- Do not use compressed air to dry parts. Do not operate this product in a manner that will cause splashing or mist to form.
- In any emergency, turn off the unit.
- Keep cover closed whenever unit is not in use.
- Do not place parts or equipment on the electrical panel box. It is not designed to support heavy weight, and you run the risk of personal injury or damage to the product.
- Do **NOT** modify these machines.
- Disconnect power to the unit before maintenance or servicing of the equipment.

B. Safety

- **DANGER!** This is a HEATED device. This equipment is designed for use only with Aqueous Based Solutions. The use of any other solutions could potentially cause a hazardous condition including risk of fire or explosion. Do NOT add any other chemicals to the cleaning agent including, but not limited to mineral spirits, kerosene, fuel oil, gasoline, or chlorinated solutions.
- **DANGER!** NEVER operate electrical equipment inside of parts cleaner.
- **DANGER!** This machine may utilize HIGH VOLTAGE electricity. ALWAYS disconnect power to the unit before removal of the electrical panel cover. Obtain the services of a qualified electrician for all electrical work.
- Make sure the parts cleaner is connected to a properly grounded power source. Check serial plate for power requirements.
- **WARNING!** Avoid contact with eyes or skin. Wear protective eyewear, gloves, and clothing. Operation should be conducted in a manner, which prevents splashing, or spillage. Any spills should be promptly and properly cleaned up. Soak up all spills with absorbent material. Remove and dispose of all soaked material in accordance with regulatory requirements.
- **CAUTION!** Do NOT allow heater to operate unattended for long periods, such as evenings or weekends.
- **CAUTION!** This machine comes with a built-in door limit switch to protect the operator from injury. If the door is opened mid-cycle, the limit switch will cease all operation of the turntable and pump.
- **NEVER** modify or defeat the limit switch. An unsafe condition may occur if any unauthorized changes are made.

C. Fire

- Fire Extinguisher Type: ABC
- Use a fire extinguisher suitable for flammable liquids and electrical.
- Do NOT use water.
- Do NOT place flammable materials or aerosols on or near equipment.
- Keep the door closed when not in use.
- Be familiar with SDS and fire procedures of all chemicals used on and around the equipment and all chemicals introduced into the solution during the cleaning process.
- Always keep fire extinguisher and protective equipment accessible and near equipment.
- Contact your local fire department for further details.
- In an emergency, disconnect or unplug the electrical supply to the equipment.

D. First Aid (Medical instructions)

Please note that these First Aid precautions are for uncontaminated cleaning solutions only. Once the solution has been contaminated with oil, grease, antifreeze, etc., safety precautions should be adjusted according to the type of contaminant and the information presented within their SDS details.

- EYES:
  - Contact may cause slight to moderate irritation. For direct contact, flush eyes with water for 10-15 minutes or until the material have been removed.
  - Be sure to remove contact lenses if present and to lift the upper and lower lids during rinsing.
  - If irritation from vapors or mists develops, move the victim into fresh air. Get medical attention if irritation persists.
- SKIN:
  - Prolonged or repeated contact tends to remove skin oils, possibly leading to dermatitis.
  - Wash skin with soap and water. Remove contaminated clothing, rinse shoes, and launder clothing before reuse.
  - If irritation or pain develops or persists, seek medical attention.
- INHALATION (Breathing):
  - Prolonged exposure to concentrate-mist or vapor may cause mild irritation of nasal passages or throat. Remove to fresh air immediately.
  - Do not leave victim unattended. Get medical attention if irritation persists.
- INGESTION (Swallowing):
  - (Uncontaminated cleaning solution) Drink 4 to 8 ounces of water and seek medical attention.
  - <u>DO NOT</u> induce vomiting.

E. Environmental

Aqueous solutions become contaminated when used to clean grease, oils, grime, and other chemicals from parts. Used solution must be disposed of properly. Familiarize yourself with the SDS of the contaminants you are introducing from the cleaning process and follow disposal guidelines for these chemicals. Consult your local environmental management agency for additional guidance and other potentially hazardous materials compliance requirements.

- SPILLS:
  - Avoid spilling solution. Spilled solution can create slippery conditions, clean it up immediately. Close off area to traffic. Wear appropriate PPE to prevent eye and skin contact. Consult the SDS for instructions on clean up and disposal.
- LEAKS:
  - Contain leaks promptly. Notify local environmental authorities if necessary.
- DISPOSAL:
  - Follow SDS guidelines and the guidance and compliance requirements of your local environmental management agency.

III. Chemical Selection

- The selection and proper use of detergent is vital to both the cleaning performance and the operating life of the machine. Not all detergents are alike. Select the proper detergent based on the following criteria.

- The detergent must have rust inhibiting agents to protect any non stainless parts. Once rusting starts, it can be hard to stop.
- The detergent should be strong enough to remove the contaminant (s), but not so strong that it attacks the metal substrate.
- The detergent should leave only an acceptable amount of residue on the parts. For new parts, a “free rinsing” detergent may be required.
- To be used in a spray washer, the detergent needs to be “low foaming”.
- IMPORTANT! When installing the unit, do NOT fill the tank with water unless you have the time needed to heat the water to 140°F, add detergent, and run the wash cycle for at least two (2) hours to coat the pump and fittings.
- Detergents are characterized as “generally safe” on all metals. This is not an absolute guarantee. If the parts are critical, it is the customer’s responsibility to perform all metallurgical tests.
- Rust will occur if the wrong detergent is used, if the start-up procedure is not followed, or if the machine is not used on a regular basis.

IV. Installation

Floor plan layout should include adequate access for maintenance, service, and repair. Clearance should allow full opening and closing of the door without obstruction. Install your parts cleaner on a flat, level surface in an area provided with adequate ventilation. Local exhaust ventilation should be used in areas of high vapor concentration. Provisions for determining and maintaining adequate ventilation are the responsibility of the operator.

WARNING! This unit is NOT intended for outdoor operation

A. Shipping Damage

Upon arrival, inspect the crating and equipment for damage. If any damage is found, notify your carrier immediately and save all crating materials for the carrier’s inspector to examine. Failure to promptly report damage could result in denial of your claim.

B. Unpacking

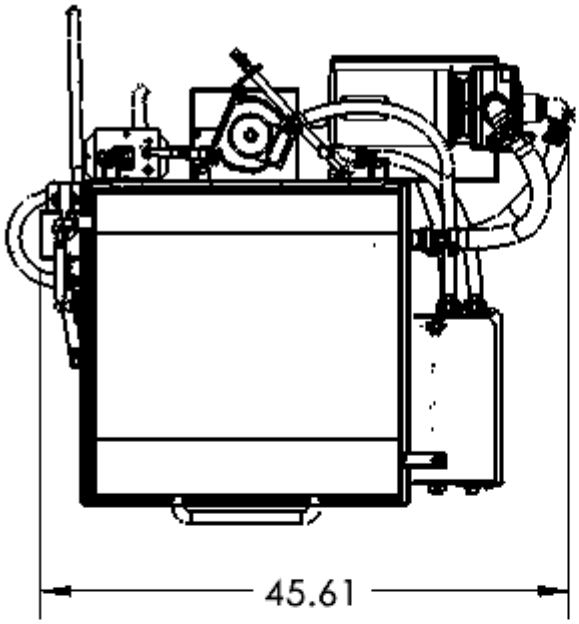
If no damage is found, proceed with breakdown of protective crating. Remove the Philips head wood screws securing the assembled crating. The equipment is now ready to be lifted off of the pallet and moved to its installation location.

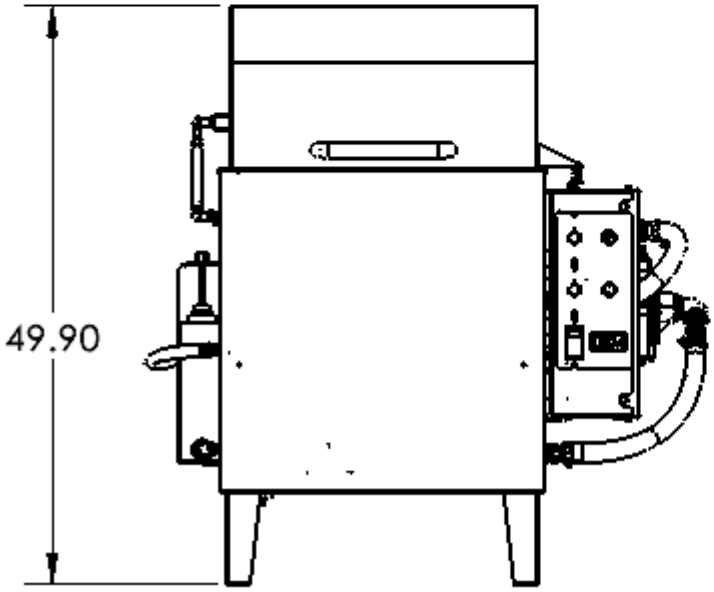
CAUTION! We recommend only moving the unit when completely empty. If the unit does need to be relocated, drain the tank completely, unlock the brakes and roll the unit to the new location.

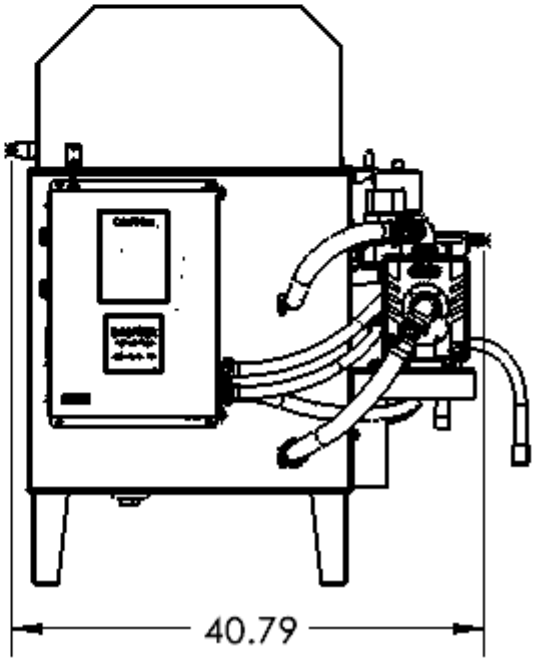
IMPORTANT! Inspect unit for loose nuts and bolts after shipping.

C. Location

i. Product Dimensions







- All dimensions are in inches.
- Dry Weight: 415 lbs
- Wet Weight: 665 lbs (at 30 gallons)
- Loaded Weight: 915 lbs (with 250 lbs. load)
- Footprint Pressure: 229 lbs. per leg

ii. Considerations

- Make sure the site is level and smooth
- The floor surface needs to be appropriate for supporting the weight and applied pressure of the unit.
- Plan space around the unit to allow access for maintenance, service, and repair. Refer to the clearance dimensions above as recommendations.
- Plan space in front of the unit to allow the door to fully open and close without interference.
- The unit typically creates a significant amount of steam. Make sure this steam will have no adverse effects on the surrounding area.
- The process of removing wet parts from the machine will inevitably result in some water or solution spilling on the floor. Consider traction mats around the machine and avoid placing the machine next to a walkway.

D. Electrical Specifications

115V 1PH

System:
Voltage: 110-120 VAC
Freq: 60 hz
Phase: 1 PH
Amperage: 30 A
Fuse: 30A Class J
For supply connections, use 10 AWG or larger wires suitable for at least 90°C (194°F)
Largest Motor:
HP: 1.5 HP
FLA: 18.2 A

208-240V 1PH

System:
Voltage: 208-240 VAC
Freq: 60 hz
Phase: 1 PH
Amperage: 45 A
Fuse: 45A Class J
For supply connections, use 6 AWG or larger wires suitable for at least 90°C (194°F)
Largest Motor:
HP: 1.5 HP
FLA: 9.2 A

208-240V 3PH

System:
Voltage: 208-240 VAC
Freq: 60 hz
Phase: 3 PH
Amperage: 50 A
Fuse: 60 Class J
For supply connections, use 6 AWG or larger wires suitable for at least 90°C (194°F)
Largest Motor:
HP: 1.5 HP
FLA: 4.67-4.22 A

<u>440-480V 3PH</u>

System:
Voltage: 440-480 VAC
Freq: 60 hz
Phase: 3 PH
Amperage: 35 A
Fuse: 35A Class J
For supply connections, use 10 AWG or larger wires suitable for at least 90°C (194°F)
Largest Motor:
HP: 1.5 HP
FLA: 2.11 A

E. Electrical Hook-Up

- The voltage, phase, and current draw of the machine are listed above and on the serial number plate. The wiring diagram is listed below in this manual in the Wiring Schematic section.
- **IMPORTANT!** Always seek the service of a qualified electrician for all electrical work.
- **IMPORTANT!** Shipping and handling may have loosened one or more wire connections. An electrician should inspect all screw connections and terminal connections before connecting power.
- **IMPORTANT!** After power is supplied, an electrician should check the rotation of all motors. The electrician should also be present during “start-up” in case a problem arises.

V. Machine Controls and Adjustments

A. Controls Overview

Wash Timer
- 0 to 60 minutes
- Turns on pump and turntable rotation
- Open lid shutoff safety switch protection

Turntable Jog Switch
- Selecting Jog allows the turntable to rotate without running the pump

Low Water Reset and Indicator
- When water level drops below the float level, the indicator light will illuminate.
- When illuminated the machine will not wash or heat
- Add water and push the button to reset the machine and gain wash and heat functionality back

Oil Skimmer Timer
- 0 to 60 minutes
- Powers IEC plug on rear of box when active which will power the unit's skimmer if equipped

7-Day Programmable Heater Timer
- ON / OFF Override functionality
- Programmable heating schedules
- Battery backup

Digital Thermostat
- Live read out of current temperature of fluid
- User settable from 100 °F to 175 °F

B. 7-day Timer

- Instructions for programing the timer can be seen below. The timer can be programmed so the unit begins heating before the workday begins and turns off at the end of the day without any action required by the user.

SAFETY SECTION

⚠ WARNING

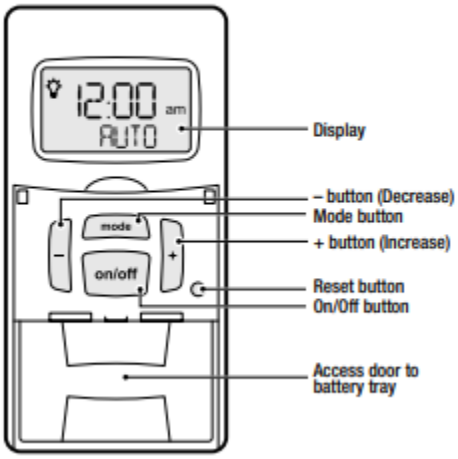
Risk of Fire or Electric Shock

- Disconnect power at the circuit breaker(s) or disconnect switch(es) before installing or servicing (including replacing the battery).
- Installation and/or wiring must be in accordance with national and local electrical code requirements.
- Use COPPER conductors ONLY.
- Do Not recharge, disassemble, heat above 212° F (100° C), crush, or incinerate the Lithium battery. Keep out of reach of children.
- Replace battery with Type CR2 only that is certified by Underwriters Laboratories (UL).
- Do NOT use timer to control devices that could have dangerous consequences due to inaccurate timing, such as: sun lamps, saunas, heaters, slow cookers, etc.

NOTICE

- Risk of timer damage due to leakage if weak battery is not replaced promptly.
- Dispose of product per local regulations for disposal of Lithium batteries.

TIMER INTERFACE



NOTES

Read these notes before continuing with the timer installation and programming process.

- The timer is battery-powered and does not need AC power for initial setup and programming. For new installations, it is recommended that you setup and program your timer before installing it.
- The battery controls the ON/OFF function ("clicking" sound) and maintains the time and date. The screen flashes BATT when the battery strength is low. When replacing the battery, disconnect AC power. You will have a few minutes to insert new batteries before the date and time settings are lost. All other settings will remain in memory, without battery or AC power.
- Each ON or OFF setting is an event. Each event must be programmed separately.
- The MODE menu includes SETUP, PGM (program), AUTO (automatic), RAND (random), and MAN (manual). AUTO and RAND modes do not appear on the menu options until the time of day is set and at least one ON or OFF event is programmed.
- All menus loop (repeat options when you get to the end of the menu). When in a specific Mode, press ON/OFF to loop within that Mode.
- When using the + or – buttons to change a flashing setting, hold the button to make the numbers scroll faster.
- When advancing to the next setting, the timer automatically saves the data from the previous screen whether you changed a setting or not. All settings save automatically after five minutes.

PROGRAMMING

Follow these steps for initial setup and programming of the ST01 Series and EI600 Series timers.

Clear All Existing Settings

When first setting the timer, it is recommended that any existing settings be cleared.

1. Press and hold ON/OFF button.
2. Using a paper clip or pen, press and release the RESET button. The timer displays INIT after approximately five seconds.
3. Release the ON/OFF button. All previous settings are removed.

Initial Setup

1. Press MODE until SETUP appears on the display.
2. Press ON/OFF to advance to the next menu item (HOUR).
3. Press + or - to adjust the flashing menu item (HOUR).
4. Press ON/OFF to advance to the next menu item (MINUTES).
5. Repeat steps 3 & 4 to set the MINUTES, YEAR, MONTH, and DATE.

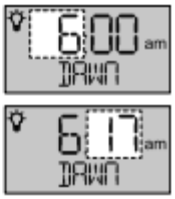
Note: *After setting the DATE, the current day of the week flashes. Verify the DAY. If wrong, press + or - to review and adjust the YEAR, MONTH, and DAY. Press ON/OFF to confirm.*

6. The DST selections (AUTO or MAN) flash on the display.
   - Press + to change the selection.
     - Select AUTO if your location observes DST.
     - Select MAN to disable automatic DST adjustment.
   - Press ON/OFF to confirm and advance to ZONE selection.

Note: *The remaining settings for initial setup (ZONE, DAWN, and DUSK settings) are only used for regulating Astronomic events. There is no need to adjust these settings if you are not scheduling an Astronomic event.*

7. The ZONE selections* (CENT, SOU, or NRTH) flash on the display.
   - Press + to change the selection to match your location on the map.
   - Press ON/OFF to confirm and advance to DAWN/DUSK selection.

Note: *Astronomic adjustment on this product is designed for the continental United States. Astronomic schedules are not recommended for locations substantially beyond the continental US borders, including Alaska. For southern Canada, select "NRTH" zone. For northern Mexico, select "SOU" zone. Please visit www.intermatic.com for other timer models offering expanded Astronomic geographic coverage.*



8. The hours digit of the current day's DAWN time flashes on the display.
   - Press + or - to adjust the hour, as necessary.
   - Press ON/OFF to confirm and advance to the DAWN minutes digit.
   - Press + or - to adjust the minutes, as necessary
   - Press ON/OFF to confirm and advance to the DUSK hours digit.
   - Use the same process for setting the DAWN time to set the time for DUSK.

Note: *Locate the current day's dusk and dawn times in a local paper or online. You may deliberately adjust DUSK and/or DAWN settings up to +/- 120 minutes, if desired, to cause Astronomic events to always occur a predictable amount of time before or after the actual dusk or dawn.*

9. The timer loops to the beginning of the SETUP mode.
   - Press ON/OFF repeatedly to review/revise your settings, or press MODE to exit SETUP.

Programming Events

Note: *Program ON and OFF events as separate events.*

1. Press MODE until PGM appears on the display.
2. Press ON/OFF to confirm. An event number flashes on the display.

Note: *If this is the first event, you will see 01.*

3. Press ON/OFF to confirm the event number. An event type flashes on the display.
4. Use + to select the event type.
   - ON - sets an ON event
   - SKIP - stops the event
   - OFF - sets an OFF event

5. Press ON/OFF to confirm. An event time type flashes on the display.
6. Use + to select a time type.
   - DAWN
   - DUSK
   - Fixed Time

Note: *To set a Fixed Time, press ON/OFF, then + or - to adjust the hour. Press ON/OFF. Use the same process to set minutes. Press ON/OFF to confirm.*

7. Press ON/OFF to confirm. A day selection flashes on the display.

8. Use + to select the days the event runs.
   - ALL - all seven days of the week
   - M-F - Monday through Friday
   - WKD - Saturday and Sunday
   - Individual day - select: SUN, MON, TUE, WED, THU, FRI, or SAT

9. Press ON/OFF to confirm. The display reads SAVE, then flashes the event number to indicate the event is saved.

Note: *To continue programming events, use + to advance to the next event number, then repeat steps 3 through 9.*

Selecting Operating Modes

AUTO	Timer operates per your programmed schedule of ON/OFF events.
RAND	Timer operates your schedule at +/- 15 minutes from the programmed time.
MAN	Operates like a manual ON/OFF switch, disregards any programmed events.

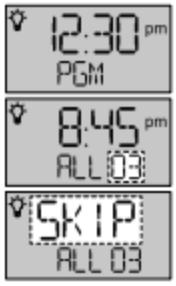
Note: *To set the timer to recognize your programmed events, press MODE to scroll to AUTO or RAND only.*

Reviewing/Changing Clock Time, Calendar, or Astronomic Settings

Repeat the steps under "Initial Setup" to review and make setting changes, as needed.

Changing Events

1. Press MODE until PGM appears on the display.
2. Press ON/OFF to confirm. An event number flashes. Use + to find the correct event number.
3. Press ON/OFF to confirm.
   - To change the ON/OFF status of an event, use + to select the event type.
     - ON - sets a previously OFF event to ON
     - SKIP - suppresses the selected event so it is not initiated by the timer. This is helpful for unusual programming needs, like vacation settings.
     - OFF - sets a previously ON event to OFF
   - To update an existing setting, press ON/OFF until the setting to be updated displays.
     - Press + to adjust the setting.
4. Press ON/OFF to cycle through the program until the display reads SAVE.
5. Press MODE to exit the programming menu.



C. Digital Thermostat

- The digital thermostat can be found next to the 7-day timer. Heating of the of the parts washer may take anywhere between 1 and 4 hours depending on surrounding environments temperature and what temperature the fluid is being heated to. See the below for instructions on how to set the thermostat.

FRONT OPERATION
PUSH BUTTONS

SET — Pushing SET once gives access to the SP. Pushing for 8 seconds gives way to the requested code. After entering the correct code, all parameters are accessible. This button alternates between text parameters and their value. It validates the modified parameters. When pressed with DOWN, it exits parameter programming.

Pressing this arrow allows the user to go to the next parameter or increase the value viewed on the display. When pressed for 8 seconds, it activates or deactivates defrosting.

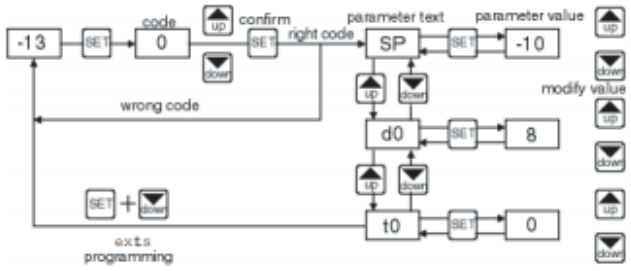
Pressing this arrow allows the user to go to the previous parameter or decreases the value viewed on the display. When pressed for 8 seconds, it activates or deactivates the continuous cooling cycle. When pressed simultaneously with SET, it exits the programming mode.

PROGRAMMING PARAMETERS

Access only to Set Point SP (without code protection):
- Press and release SET. SP text appears on the display.
- Press SET again. The real value is shown on the display.
- Modify the value using the UP and DOWN keys.
- Press SET to store the new SP value.
- Press SET and DOWN to quit programming, or wait 1 minute for the controller to TIMEOUT.

Access to all parameters (code protected):
- Press SET for 8 seconds. The access code value 00 is shown on the display.
- Using the UP and DOWN buttons, select the code (factory-set code is 00).
- Press SET to enter the code. If it is correct, the first parameter label will be shown on the display (SP).
- Move to the desired parameter with the UP and DOWN keys.
- Press SET to see the value.
- Modify the value with the UP and DOWN keys.
- Press SET to enter it, and exit to next parameter.
- Press SET and DOWN to quit programming, or wait 1 minute for the controller to TIMEOUT.

SETTING THE KEYBOARD CODE TO ZERO



The keyboard code can be set to zero by holding the SET key and turning the controller off then on again.

LED INDICATIONS

Out: This indicates that the compressor is connected. It waits the programmed minimum stop time of the compressor.
Def: This indicates that defrosting is activated.

MESSAGES DISPLAY

In normal operation, the probe temperature will be shown. In case of alarm or error, the following messages will be shown:
- Er- Memory error.
- -- Short-circuited probe error.
- oo- Open probe error.

	Description	Units	Range
SP	Set point	degrees	r1 to r2
r0	Differential or hysteresis	degrees	1 to 20°
r1	Lower value for set point	degrees	-50 to 150°C -58 to 302°F
r2	Higher value for set point	degrees	-50 to 150°C -58 to 302°F
d0	Heating or cooling control	option	Ht/Co
d2	Time for defrosting	minutes	0 to 59´
d8	Interval time between defrosting	hours	0 to 24
c0	Minimum stop time for compressor	minutes	0 to 59´
c1	Continuous cycle time	hours	0 to 24
c2	ON time of fault cycle	minutes	0 to 999
c3	OFF time of fault cycle	minutes	0 to 999
P1	Ambient probe adjustment	degrees	-10° to 10°
P4	Decimal point	option	yes/no
H5	Parameter access code	numeric	0 to 255
H6	Ambient probe type	option	ptc/ntc
t0	Maximum temperature on display	degrees	-50 to 150°C -58 to 302°F

PARAMETERS

PARAMETER DESCRIPTIONS

SP = Set Point. Temperature wished to regulate the machine. Can vary from r1 to r2.
r0 = Differential
For heating control if temperature is > SP then output is OFF. When the temperature drops to <SP - r0 the output is ON.
For cooling control if temperature is < SP then output is OFF. When the temperature increases to > SP + r0 the output is ON.
r1 = Lower Set Point Limit
r2 = Higher Set Point Limit
d0 = Heat or Cooling Control. Ht = heating control, Co = cooling control.
d2 = Defrosting Time Remaining, in minutes. If d2 = 0, defrosting will not start.
d8 = Interval Between Two Defrostings, in hours.
c0 = Minimum time for compressor to be OFF. Minimum time from when the compressor stops till it connects again.
c1 = Continuous Cycle Time. The remaining time for a continuous cold cycle.
c2 = ON time of fault cycle, during probe error.
c3 = OFF time of fault cycle, during probe error.
P1 = Ambient Probe Calibration. Offsets degrees to adjust the ambient probe.
P4 = Decimal Point. Display decimal point in normal operation. Always present in parameter menus.
H5 = Access Code to Parameters. Factory-set as 00.
H6 = Ambient Probe Type. Sets probe type to be NTC or PTC.
t0 = Temperature Display Limit. Maximum temperature shown on the display, although the real temperature can be greater.

OPERATION IN CASE OF ERROR

If the probe or thermostat memory should fail, the compressor will be connected for 5 minutes ON then 5 minutes OFF.

MAINTENANCE

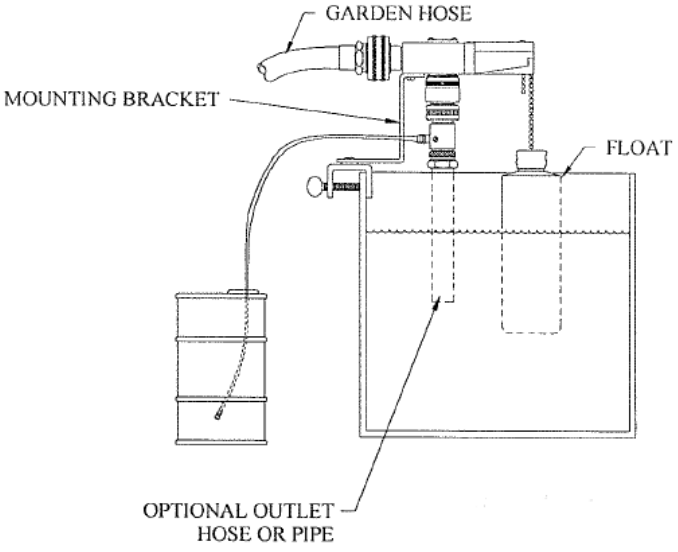
CLEANING

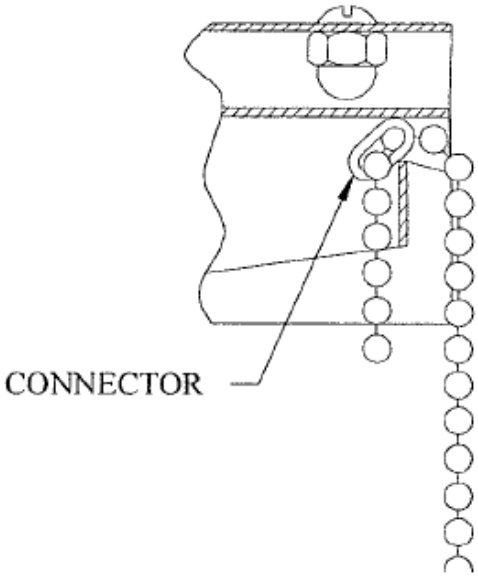
Clean the surface of the display controller with a soft, damp cloth. Never use abrasive detergents, petrol, alcohol or solvents.

D. Autofill

- Parts
  - Valve
  - Proportioner
  - Float and Chain
  - Mounting bracket and screws
  - Plastic tubing 8’ long with foot valve
  - Metering tip kit
- Installation
  - Attach garden hose. Valve may be mounted directly on a ½” pipe line by removing the inlet garden hose adapter. Plastic discharge tubing is supplied and must be used. The hose outlet should be below the bottom of the float.
  - Remove connector from the chain and run the chain through the open end of the lever until the top of the float is about 1” above the desired maximum fill level. Run the excel chain through the connector and snap it on the ball at the lever opening to hold the float in place.
  - Liquid chemical may be drawn directly from any size container. Use the plastic tubing for connecting the proportioner, first cutting to desired length, then slipping the ceramic weight and dropping the end with the weight and strainer into the container. Push the other end over the supply tubing fitting on the proportioner.
- Operation
  - Turn on the main water valve. At least 15 psi water pressure must be available to operate the level control. As the tank fills, chemical concentrate will be drawn up through the plastic supply tubing & mixed with incoming water. When the fluid level in the tank reaches 1” below the top of the float the valve will shut. When the tank level drops several inches, the valve will turn on again. Water flow is 3-1/2 gpm at 40 psi pressure.

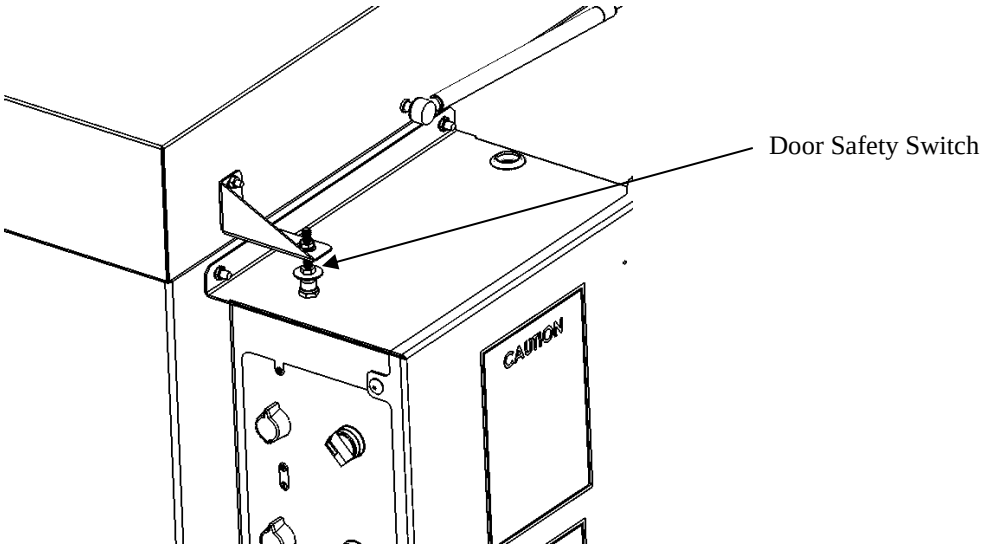
Metering Tip Color	Injection Rates for Viscosities Shown					
	1 cps		75 cps		200 cps	
	Oz/Gal	Ratio	Oz/Gal	Ratio	Oz/Gal	Ratio
Clear	0.30	430-1	0.22	592-1	0.13	864-1
Purple	0.48	265-1	0.32	406-1	0.24	524-1
Yellow	1.28	100-1	0.82	157-1	0.6	212-1
Green	1.67	77-1	1.29	99-1	1	128-1
Pink	2.36	54-1	1.65	77-1	1.25	103-1
Turquoise	3.76	34-1	2.55	50-1	1.85	69-1
Black	4.47	29-1	3.03	42-1	2.12	60-1
Gray	5.53	23-1	3.67	35-1	2.58	50-1
Red	7.00	18-1	4.79	27-1	2.79	46-1
Blue	8.78	15-1	5.39	24-1	3.06	42-1
Brown	10.95	12-1	6.49	20-1	3.35	38-1
White	14.19	9-1	7.08	18-1	3.46	37-1
Orange	17.58	7-1	7.91	16-1	3.71	35-1
Light Blue	21.75	6-1	8.66	15-1	3.9	33-1
Tan	27.98	5-1	9.15	14-1	4.11	31-1
No Tip	33.15	4-1	10.54	12-1	4.52	28-1





E. Adjustments

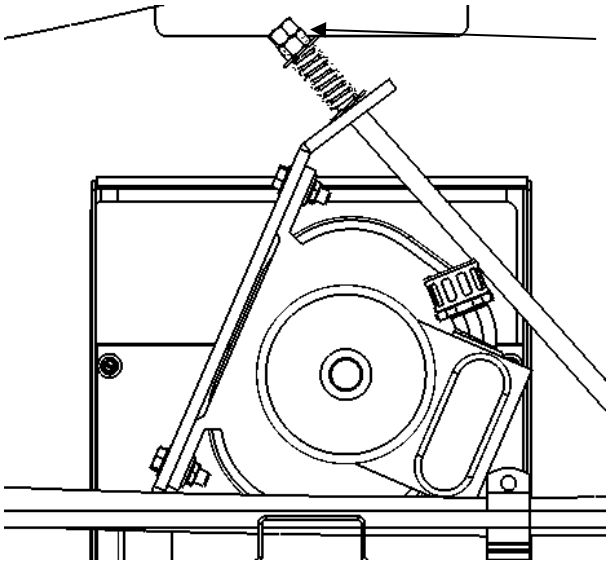
i. Door Safety Switch



- **IMPORTANT!** Proper setting of the depressor bolt is important in retaining correct switch function and unit operation. Proper function ensures operator safety. This depressor is pre-set and tested from the factory.

ii. Turntable Gear Motor Adjustment

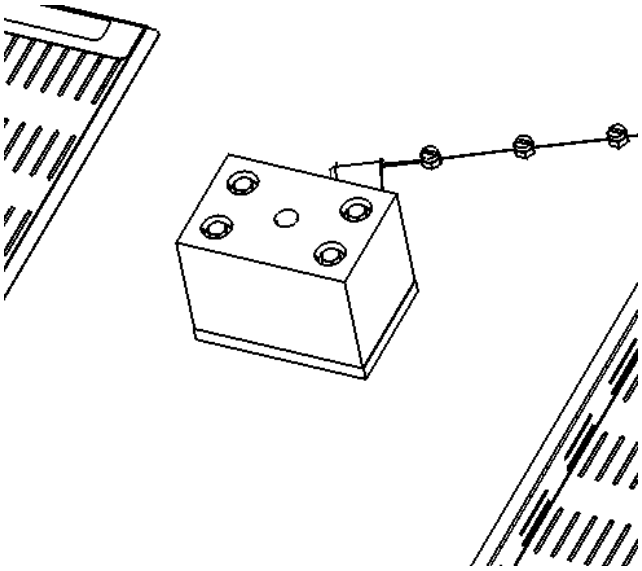
- **IMPORTANT!** This unit is equipped with a floating turntable drive system. This system consists of a high torque motor and a drive wheel with a rubberized contact surface. This rubber surface is a wear item. Periodically the spring tension for the drive system should be checked and adjusted as wear occurs.
- **CAUTION!** Never over tighten the spring adjuster on the drive system. Some compression range needs to remain to accommodate the variations in shape of the turntable. Over tightening can cause binding, excess wear, or damage. Set spring compression to a minimum of 1.25". The spring should never be set full tight.



Adjustable Tension System
- 3/8-24 Nuts
  - 9/16 Wrench for adjustment

iii. Bearing Block Position

- **IMPORTANT!** This unit is equipped with a center bearing block which the turntable rides on. This block is positioned in slots and tightened down using a 9/16" wrench. A combination of adjusting the position of the block and the tension of the gear motor allows the user to utilize the entire drive wheel as it wears over time.



VI. Start Up

IMPORTANT! Do not start this procedure without reading this entire manual first. Do not fill the wash tank or start this procedure unless you can spend the 3 to 4 hours necessary to fill the unit with water and detergent, heat the liquid to operating temperature, and run the wash cycle for at least 2 hours. Otherwise, rusting may occur.

IMPORTANT! If you encounter any problems during First Start Up, refer to the Adjustments and Troubleshooting sections of the manual. If problems persist, please contact your dealer for further assistance.

CAUTION! Never defeat the water level sensor and run the pump dry. Dry operation will overheat and damage the seals creating leaking and the need to repair/replace the pump. Always check liquid level before operation.

The First Start Up procedure is a first run procedure performed on a new unit or a unit that has not been used for an extended period. Follow the procedures below to prepare the unit for standard operation.

The First Start Up procedure begins after completion of the Installation process. All electrical connections have been checked, all nuts and bolts checked, and an electrician has set up and reviewed electrical and motor rotation.

1) Before connecting power to the unit, make sure the timer and heater switches are in the OFF position.
2) Fill the tank with water and detergent until it is just below the chip tray.
   - **MAX CAPACITY: 32 GAL (To the bottom of the chip tray)**
   - **MIN LEVEL: 23 GAL**

- **IMPORTANT!** Refer to the mix ratio listed on the detergent bottle. You can also refer to the detergent manufacturer website or contact the manufacturer directly to obtain mix ratio recommendations. The 32 gallons capacity will be a mix of water and detergent at the correct ratio.

3) Close the door power up the unit.
4) Test and verify the door safety switch prevents the wash pump from coming on when the door is open.
5) With the door closed, turn the pump timer ON by rotating the knob clockwise. The pump should turn on and begin spraying liquid.
6) Open the door slightly and verify that the pump and turntable stop. Open the door further and visually confirm.
7) Close the door fully and verify the pump and turntable resumes operation.
    - If the switch is not functioning properly, refer to the Adjustments section of Machine Controls and Adjustments for the adjustment procedure of safety switch. Also have the electrician verify wire connections to the switch.
    - If the switch does not function properly after adjustment and validation of wiring connections, do **NOT** use the machine, and contact your dealer for further assistance.
8) Turn on the heating by programming the 7-day heating timer and setting the digital thermostat to the desired temperature. See the Machine and Controls section for additional instructions. You should be able to hear an audible “click” from the contactors inside the electrical control box. The audible “click” indicates the contactors is functioning.
    - **IMPORTANT!** Allow approximately 2 hours for the water temperature to reach 140°F (factory preset). Once at temperature, the heater will shut off automatically. The heating system will automatically regulate the temperate via a thermostat.
9) Run the pump for approximately 15 minutes to mix the detergent into solution. Walk around the machine and inspect for any leaks. The unit is leak tested by the manufacturer during tank fabrication and final function testing, but it is worthwhile to perform an on-site check prior to normal operation.
10) Continue running the unit for approximately 2 hours to allow the detergent to coat the pump and fitting surfaces. This is necessary to prevent rusting of these components. The detergent has rust inhibitors that will coat and protect the parts. Upon completion, the unit is ready for standard operation.

VII. Operation

IMPORTANT! Any person operating this machine shall first read and understand this instruction manual fully. Pay careful consideration to all of the prior sections in this manual. An operator should have good understanding of the machine. Be familiar with all the chemicals used and take the necessary safety precautions when working with and around the machine.

A. Preparation and Inspection

1) Before starting the unit in the morning, walk around and inspect for damage or leaks.
2) Open the door and check liquid level and top off with water and detergent at the correct mix ratio
3) Inspect the spray arms and turntable for wear or damage. Inspect door function.

4) Verify there has been no modification or alteration to the unit which could introduce risk of harm

5) Verify there is no Lockout/Tagout or other notifications indicating the unit is damaged and dangerous to use.

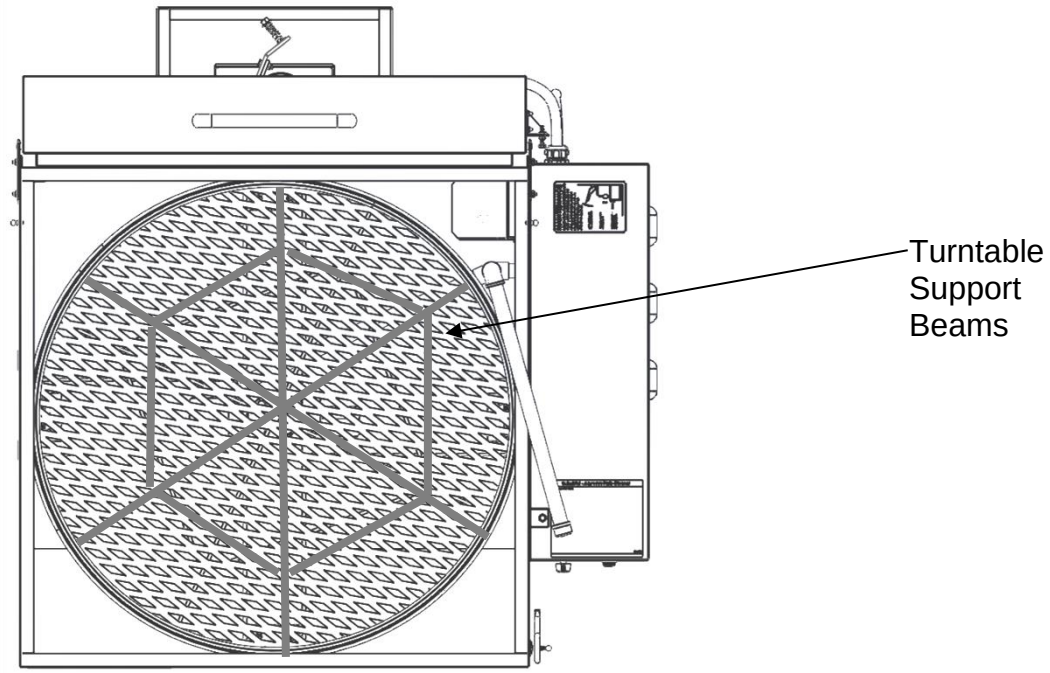
6) Turn on the heating utilizing the 7-day timer and digital thermostat. Listen for the "click" from the contactor to verify heating is operational.

7) Perform a quick check of pump function and door safety switch. Do not run for an extended period while cold due to risk of foaming. Turn the pump on and listen for spray operation. Open the door slightly and verify the pump and turntable shut off. Close the door and turn the pump switch knob to the off position.

8) Waiting approximately 2 hours for full heat up of liquid. The unit is now at operating temperature and can begin normal operation.

- **CAUTION!** Do NOT operate the unit until the liquid is up to operating temperature. Not doing so will generate foaming. Also, detergent cleaning performance is temperature dependent. The liquid must be hot to clean optimally.

B. Loading



DANGER! The maximum loading capacity of this unit is 250lbs. This rating is a distributed load rating. This weight must be distributed evenly across the turntable to achieve the 250lbs capacity rating safely.

IMPORTANT! The working height of this unit is approximately 20". Do not place parts taller than 20" into this unit. The spray pattern will have a limited working height and cleaning performance may degrade when attempting to wash a taller part with the upper spray bar moved out of the way.

1) Verify no obstructions are in front of door before opening.
2) Carefully place parts into the parts washer.

- **MAXIMUM DISTRIBUTED LOAD: 250 LBS**
- When loading small and numerous parts, always distribute the weight evenly across the turntable.
- Very small parts may need to be contained within their own basket or mesh container to prevent them from falling through the turntable grate and to keep them from getting blown off the turntable by the washer spray.
- When loading large and heavy part, always center the part on the turntable. If more than one large and heavy part is loaded, evenly distribute them on the turntable and place them over one of the main support bars of the turntable visible under the grating.
- If a very large and heavy part must be lowered onto the turntable unevenly, make sure the first contact point of the part is located over a main support bar of the turntable. Then continue to lower the part onto the turntable and make sure the part is centered when completely lowered.

3) Grasp the door handle and close door to ready the machine for the wash operation.

C. Wash Cycle

CAUTION! Never run the wash cycle without first properly heating the liquid. Foaming will occur with cold liquid which could cause dangerous conditions. The minimum safe temperature for operation is 120°F. Always let the unit reach operating temperature before beginning a wash cycle.

IMPORTANT! This unit is equipped with a 60-minute wash cycle timer. When starting a wash cycle, always turn past the 10-minute mark and then turn the timer to the desired wash time.

1) Turn the pump time past the 10-minute mark and then to the desired wash time. This will turn on the pump and turntable drive motor.
   - **IMPORTANT!** At any point during the wash cycle, you can open the door. Open the door slightly, wait 3 seconds for the spray to stop, and continue to open the door. When you shut the door, the wash cycle will automatically continue. Note, the timer does not stop when the door is open and will continue to count down. You will have to add the time lost when open.
2) Upon completion, the pump and turntable motor will automatically shut off.
3) Open the door and inspect the part(s). Determine if additional washing or position adjustment is necessary. If additional washing is necessary, close the door and restart the wash cycle process.
   - **IMPORTANT!** While wash time alone can improve cleanliness, other factors influence cleaning performance. Cleaning performance of aqueous detergent is temperature sensitive. Cleaning performance typically improves at higher temperatures. The type of contaminant you are trying to remove may also be temperature sensitive and require an elevated temperature to effectively clean. The contaminant you are trying to remove may be detergent chemical sensitive and may require a specialized detergent designed to specifically target that type of contaminant.

D. Unloading

CAUTION! Parts will be HOT after the wash cycle and will be at or near the set operating temperature of the unit. Contact temperatures may exceed 140°F. Always wear proper protective equipment when handling washed parts. Expect high heat, liquid contact, and possible splash.

1) Verify there are no obstructions in front of door before opening.
2) Carefully remove parts. Pay careful attention to loading balance as you remove parts.
    - **CAUTION!** Parts may be slippery and difficult to hold when wet. When removing parts, drip from parts may wet the floor and may create hazardous walking conditions.
3) Grasp the handle and swing the door to close.

E. Shut Off

1) Once the operation timer has reached zero, the pump and turntable motor are automatically shut off. No additional action is required by the operator during the workday.
2) It is recommended the heat switch remains in the ON position during the entire work period to maintain operating temperature. Heating may be left ON for as long as is beneficial for the work environment including overnight if the washer is required immediately the next workday.
3) When not using the unit for extended periods of time, turn the heater switch to OFF. With the operation timer and heater switch both in the OFF position, the unit will use nearly no power, although electrical components remain energized. You may also shut off the main breaker power to the unit during inactive times.
    - **IMPORTANT!** When planning to shut off heating and letting the liquid cool, keep in mind the time it takes to reheat the liquid before you can begin further use. The decision of turning off heating should be made with the allowance of reheating time prior to next use.

VIII. Maintenance and Service

Following a proper maintenance schedule is crucial for machine performance and life. Neglect can cause poor operation or damage to components. Below is a recommended maintenance schedule. The needs of your machine and liquid solution will be unique to your operating environment. Track and adapt this recommendation to suit your specific needs. Proper and consistent maintenance is key in maintaining a healthy, high performing machine.

A. Daily

- Inspect spray nozzles and clean out any clogs.
    - If clogs are present a small pick or pipe cleaner can use to clear the blockage
    - If there is a problem with clogged spray holes becomes regular, manifolds may need to be flushed. Remove pipe caps of the spraying system. Run a brief 30 to 60 second wash cycle to flush out any sediment. Also, sludge from the tank may need to be removed.

- **CAUTION!** Running a longer wash cycle with the pipe caps removed could damage the pump motor

B. Weekly

- Check the chip trays for debris. The chip trays can be easily removed, cleaned, and reinstalled.
- Check liquid level float switch for free operation. If it does not move freely or is jammed, clean debris off the tube and float to regain free motion.
  - **IMPORTANT!** Make sure the water level sensor is not "jammed". The float should rise and fall effortlessly with the water level. If the float is jammed, the machine will not get an accurate water reading, and serious damage could be incurred to the pump and heaters if the liquid level becomes too low!
- Check turntable tension adjustment.

C. Monthly

- Check bearing block wear as discussed in the Adjustments sections
- Check rubber turn table drive wheel.
- Check all external hoses and plumbing for leaks or weaknesses and replace if necessary. Check the hoses during the wash cycle to see if bubbles form in the hose lining.

D. Use Dependent

i. Solution

Solution and machine maintenance are crucial to the performance of this machine. We recommend that the solution is monitored daily, and records are kept. This will provide a "baseline" of "clean" readings and will help determine when it may be time clean out the tank. This preventative maintenance will save your company time, effort, and money. Below is a sample maintenance report that is used to great extent to maintain the solutions.

ii. Sludge

IMPORTANT! Removing oil and sludge regularly can greatly promote the life of the cleaning solution and the effectiveness of the machine. Sludge sits on the bottom and cannot be seen. Clean out the tank within the first week of operation to get an idea of how fast sludge will form for your specific parts cleaning operation. Depending on the application, some businesses have to clean-out sludge at least weekly, while others can wait months.

1) Disconnect power to the machine.
2) Drain water to a holding tank or drum.
3) Scrape out any sludge from the bottom of the tank. Be careful not to damage heating elements or level sensor while cleaning the bottom of the tank. Waste sludge should be contained and handled according to the laws and regulations of the region

E. Sample Maintenance Schedule

Model: _____ Current Detergent: _____

Month: _____ Date Loaded: ____/____/_____

Water Analysis: Wash Tank Rinse Tank (circle one)

DATE	__/__/__	__/__/__	__/__/__	__/__/__
Tested By				
pH				
Conductivity				
ppm				
% Detergent				
Rubber Wheel Condition				

- A pH/conductivity meter, and an alkalinity titration kit are readily available and easy to use tools that will help monitor the status of the bath. Contact the detergent supplier regarding easy ways to test detergent concentration.
- The chart can be modified to include any relevant data that is necessary to run the machine. (Some items on this chart may not apply to all machines.) The chart should also include a section labeled “Comments”. Any maintenance performed on the machine, or the solution (e.g., changing the solution, adding detergent) can be recorded in this section, including the name of the involved personnel and the date.
- **IMPORTANT!** All service personnel shall read and familiarize themselves with this instruction manual. The service technician should follow all safety procedures and be familiar with machine operation, maintenance, and troubleshooting.
- Record and maintain contact information of your local dealer and service representative.
- Electrical troubleshooting and repair should be performed by a certified electrician. Contact your dealer for a local representative. If no recommended personnel are available, any industrial electrician local to your area can service this product. Replacement parts list and wiring schematics are listed later in this manual.

IX. Troubleshooting

IMPORTANT! All advanced troubleshooting should be performed by a certified electrician.

A. No power to the unit

1) Verify the unit is wired correctly.
2) Check the main circuit breakers in the supply circuit. If a breaker is tripped, reset and try operating the unit. If the breaker trips again, contact an electrician to troubleshoot the cause.
3) Check the main fuses on the unit. If any fuses are blown, replace and restart the unit. Monitor for additional failure. If fuses continue to blow, contact an electrician to troubleshoot the cause.

B. The unit has power, the heat works, but the pump does not turn on

1) Inspect the door safety switch. Verify that it is being fully depressed when the door is closed. If not, adjust the door safety switch following the procedure in the ADJUSTMENTS section of MACHINE CONTROLS AND ADJUSTMENTS.
2) Inspect the pump timer and verify it has been adjusted past the 10-minute mark. Does the timer count down?
3) Have an electrician inspect the pump timer and door safety switch for proper operation and determine if either component requires replacement. A DMM on the Ohm setting can easily verify if these components are functional.
4) Check wiring connections and verify no loose connections to the motors
5) Check contactor function. There should be an audible “click” and visual movement of the plastic piece at the center of the contactor indicator when the coil closes the contacts.
6) If the contactor does not seem to operate, have an electrician verify the contactor coil is receiving the correct voltage. If the correct voltage is supplied to the coil inputs and the contactor does not close, then contactor is faulty and needs replacing.
7) Check for any obstruction that may prevent motor rotation.
8) PUMP MOTOR
9) Verify there is no blockage in the pump impeller.
10) Have an electrician check output voltage from the contactor supplying the motor. Verify the motor is wired correctly and is receiving electricity. If electricity is being supplied to the motor and it still does not function, the motor is likely damaged and requires replacing.

C. The unit has power, the pump works, but the heat does not turn on

1) Verify the heater 7-day timer is active. A hollow light bulb on the display should appear if active. Reference the 7-day timer instructions in the Machine Controls and Adjustments section of this manual.
2) Verify the thermostat temperature is set properly and that it has not been adjusted too low. Reference the digital thermostat instructions in the Machine Controls and Adjustments section of this manual.

3) Check contactor function. There should be an audible “click” and visual movement of the plastic piece at the center of the contactor indicator when the coil closes the contacts.

4) If the contactor does not seem to operate, have an electrician verify the contactor coil is receiving the correct voltage. If the correct voltage is supplied to the coil inputs and the contactor does not close, then contactor is faulty and needs replacing.

5) If the contactor functions, have an electrician inspect the output voltage from the contactor. Verify the heaters are receiving electricity. Inspect the wiring connections to the heaters.

6) If the heater is properly wired and is being supplied electricity from the contactor output, the heater may be damaged and requires replacement. Swap out one heater with a new heater and test the unit.

D. The unit’s pump works, but the turntable is not rotating

1) Verify the gear motor is rotating. If it is rotating, but the turntable is not spinning, reference the adjustments section of this manual.

2) If the gear motor is not rotating, check that neither fuse in the gear motor fuse block is missing or blown. Replace if need be. This fuse should only blow if the gear motor is in a locked rotor state. If nothing is physically preventing the gear motor from spinning and the fuses continue to blow, replace the motor.

3) If the fuses are not blown, check the wiring for bad connections. Reference the wiring diagram in this manual.

E. The unit has power, but does not heat or wash

1) Check to see if the low water level light is on. If it is, add water to the tank and push the button to reset.

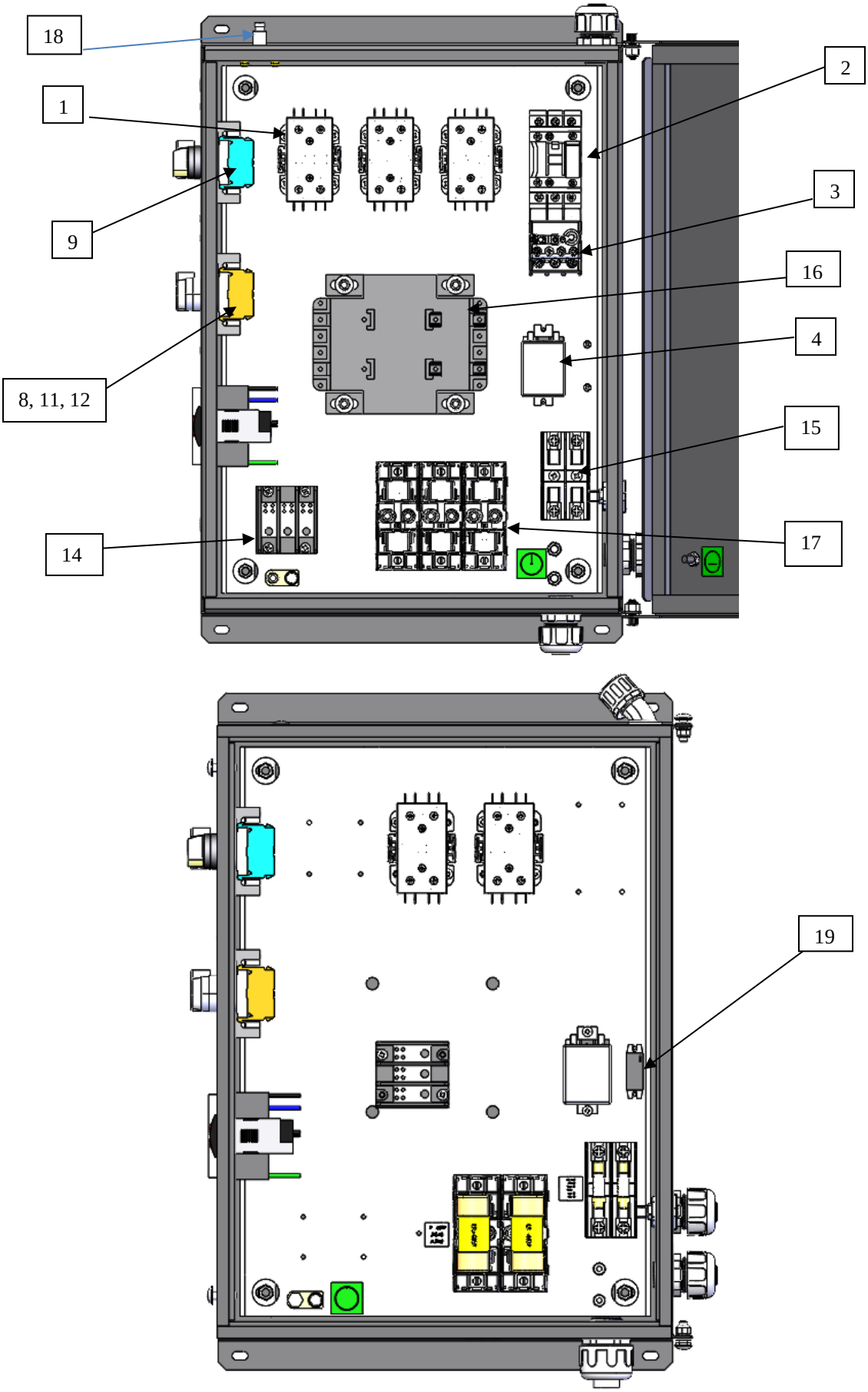
2) If the light is not on, reference section C and section D. It is possible that the heating and wash cycle not working are independent of each other.

3) After troubleshooting in section C and section D have been explored, and still the heat and wash cycle do not function. Validate the wiring inside the control box and that no loose wires are present. Validate that the float relay, low level reset button / light, and float switch are all functioning properly. Repair any faulty wiring connections or replace any component that has failed.

X. Replacement Parts / Optional Parts

A. Control Box Components

#	Part Number	Description	115V 1PH	230V 1PH	230V 3PH	460V 3PH
1	05698	Contactor, 2 Pole, 208-240 Coil		X	X	X
	05770	Contactor, 2 Pole, 110-120V Coil	X			
2	05751	Contactor, 3 Pole, 208-240 Coil			X	X
3	05804	Relay, Thermal Overload 4-6.3A			X	
	05862	Relay, Thermal Overload 1.8-2.8A				X
4	04447	Relay, DPDT 110-120V Coil	X			
	12-10300	Relay, DPDT 208-240V Coil		X	X	X
5	12-11025	Timer, 0-60min (Wash and Skimmer)	X	X	X	X
6	05711	Timer, 7-day (Heater)	X	X	X	X
7	05707	Thermostat, Digital 230V		X	X	X
	05781	Thermostat, Digital 115V	X			
8	05704	Contact Block, NC	X	X	X	X
9	05747	Contact Block, NO	X	X	X	X
10	05701	Button, Momentary Illuminated Red	X	X	X	X
11	05705	Housing, LED 208-240V		X	X	X
	05819	Housing, LED 110-120V	X			
12	05702	LED, Red 208-240V		X	X	X
	05818	LED, Red 110-120V	X			
13	05706	Switch, 2-Pos Spring Return Selector	X	X	X	X
14	12-08472-01	Distribution Block, 3 Pole 600V	X	X	X	X
15	12-11684	Fuse Block, 2 Pole 30A 600V Midget	X	X	X	X
16	05713	Transformer, 500VA				X
17	01208	Fuse Block, 3 Pole 60A 600V (Qty 1.5 req.)		X	X (Qty 1.5)	X (Qty 1.5)
	12-10820	Fuse Block, 2 Pole 30A 600V	X			
18	12-11080	Switch, Momentary Push Button		X	X	X
19	05925	Relay, SPDT 110-120V Coil	X			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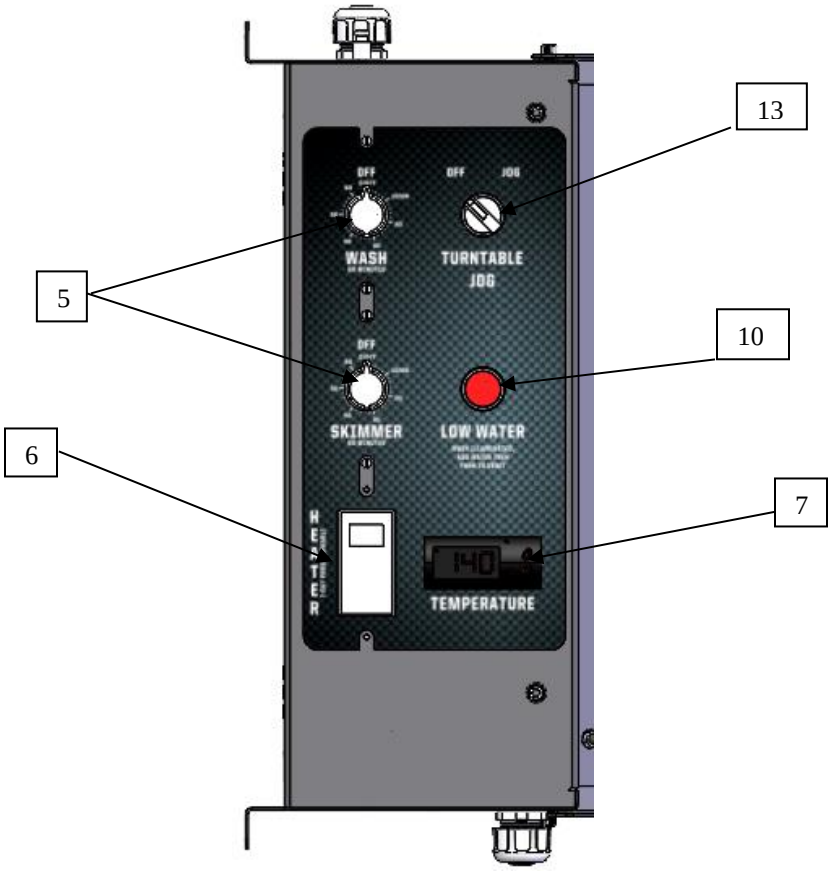
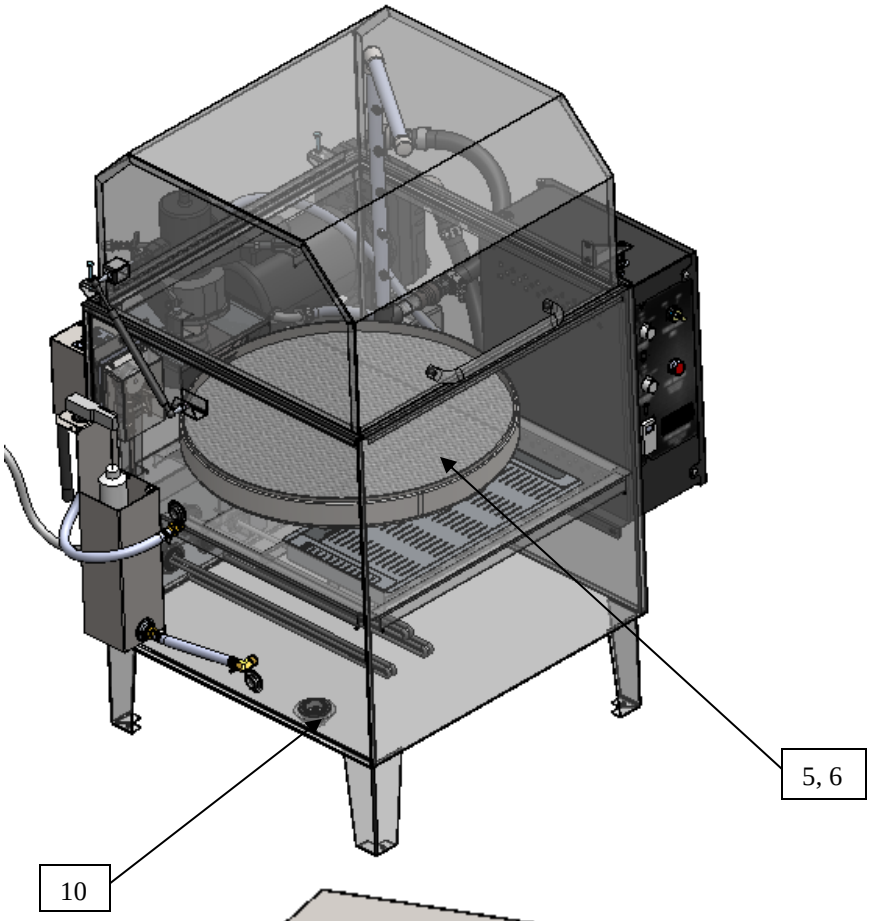


B. Other Components

#	Part Number	Description	115V 1PH	230V 1PH	230V 3PH	460V 3PH
1	05789	Pump, 1.5 HP 115V/230V 1PH	X	X		
	05790	Pump, 1.5 HP 230V/460V 3PH			X	X
2	02-11020	Gear Motor, Turntable Drive	X	X	X	X
3	63466	Assy, Turntable Gear Motor Drive	X	X	X	X
4	02-11194	Drive Wheel, Turntable	X	X	X	X
5	61604/S	Turntable, 24” 9200	X	X	X	X
6	193454	Bearing Block	X	X	X	X
7	12-12034	Heater, 6kW 230V	Qty 1	Qty 1		
	12-12033	Heater, 4.5kW 230V			Qty 3	
	12-12035	Heater, 6kW 460V				Qty 3
8	12-11086	Float Switch	X	X	X	X
9	65009	Cover, Heater	X	X	X	X

10	64313	Chip Tray	X	X	X	X
11	12-10329	Skimmer Motor	X	X	X	X
12	64860	Skimmer Assembly	X	X	X	X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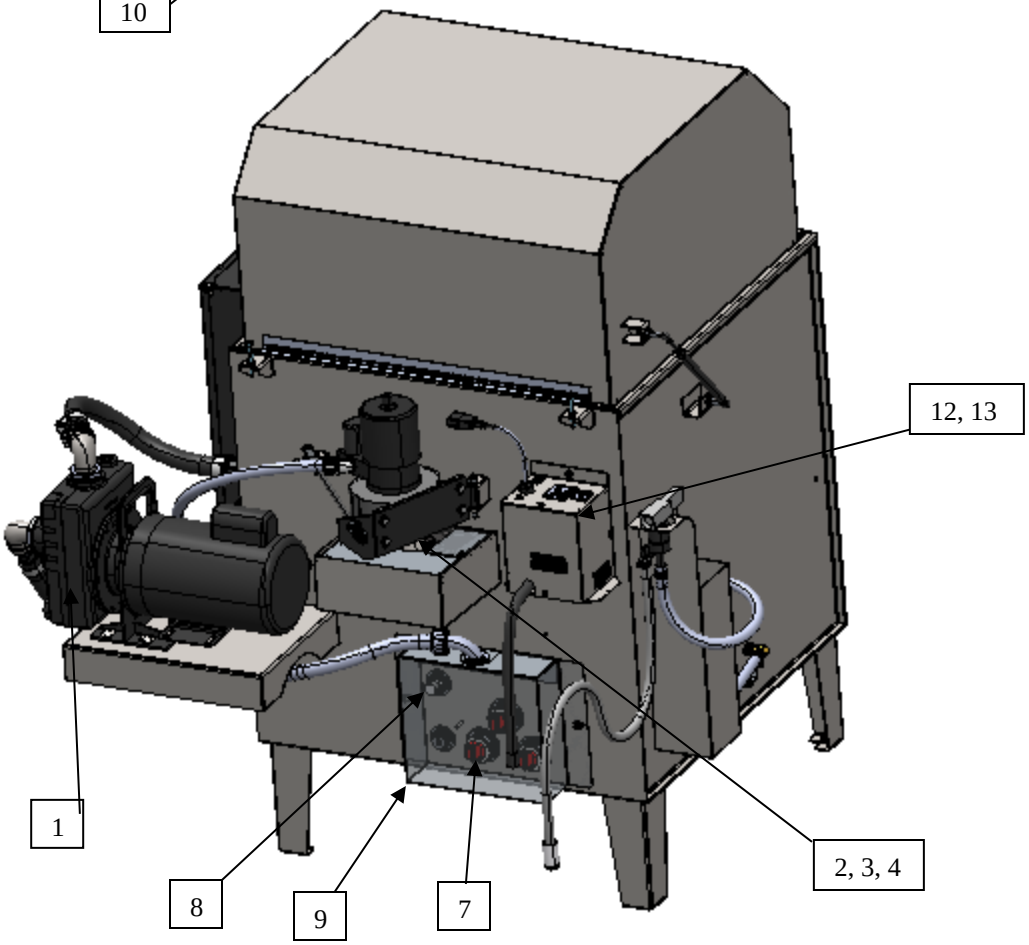
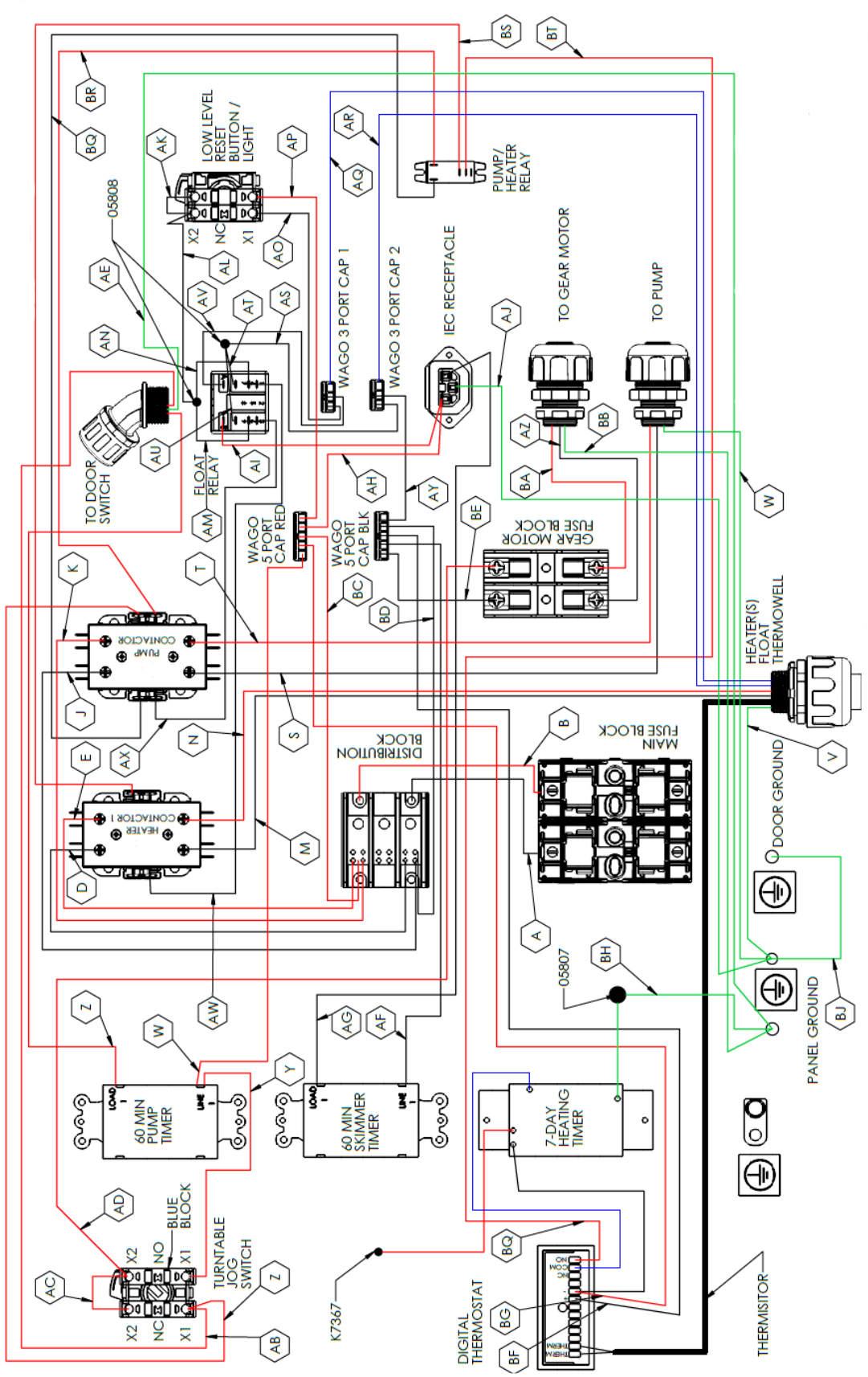
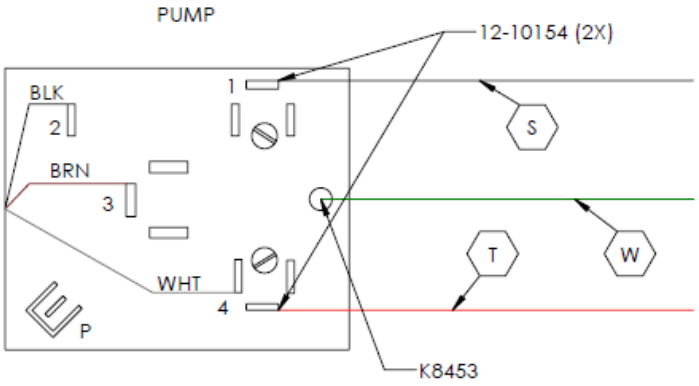

12, 13
1
8
9
7
2, 3, 4

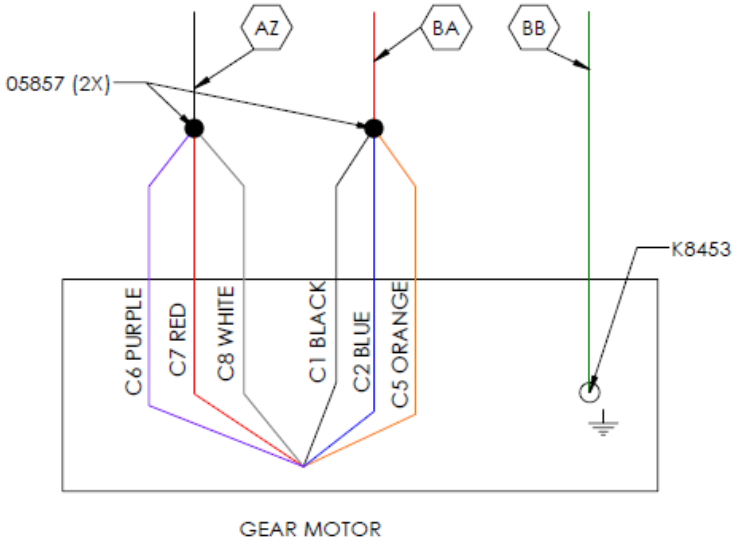
XI. Wiring Schematics

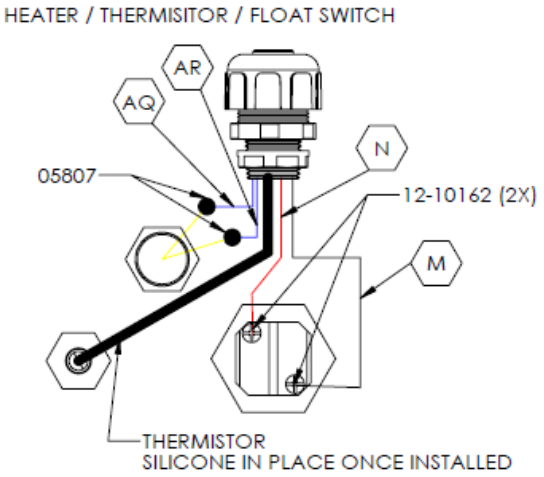
A. 115V 1PH



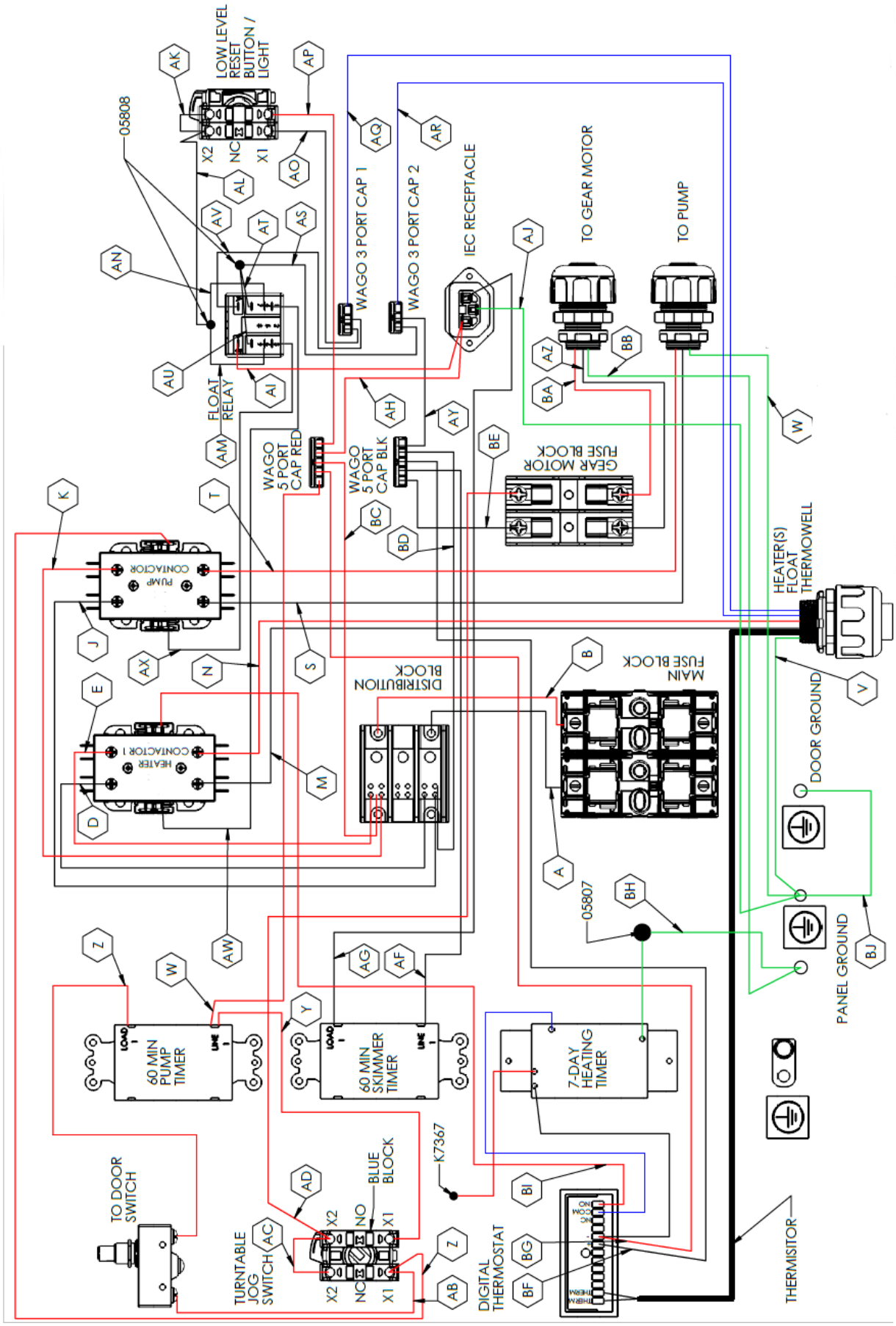
Wire	AWG	Color	From	Terminal	To	Terminal
A	6	Black	Fuse Block	3/8 strip	Distribution Block	3/8 strip
B	6	Red	Fuse Block	3/8 strip	Distribution Block	3/8 strip
D	10	Black	Distribution Block	3/8 strip	Heater Contactor 1 L1	3/8 strip
E	10	Red	Distribution Block	3/8 strip	Heater Contactor 1 L2	3/8 strip
J	10	Black	Distribution Block	3/8 strip	Pump Contactor L1	3/8 strip
K	10	Red	Distribution Block	3/8 strip	Pump Contactor L2	3/8 strip
M	10	Black	Heater Contactor 1 T1	3/8 Strip	Heater 1	12-10162
N	10	Red	Heater Contactor 1 T2	3/8 Strip	Heater 1	12-10162
S	10	Black	Pump Contactor T1	3/8 strip	Pump	12-10154
T	10	Red	Pump Contactor T2	3/8 strip	Pump	12-10154
V	10	Green	Panel Ground Stud	12-10162	Tank/Heater Ground	12-10162
W	10	Green	Panel Ground Stud	12-10162	Pump	12-10162
X	16	Red	60 min Pump Timer Line	3/8 strip	Wago 5 Port Cap	3/8 strip
Y	16	Red		3/8 strip	Turntable Jog Switch NO X1	3/8 strip
Z	16	Red	60 min Pump Timer Load	3/8 strip	Door Switch	K8453
AA	16	Red	Turntable Jog Switch NC X1	3/8 strip	Pump Contactor Coil	2410
AB	16	Red		3/8 strip	Door Switch	K8453
AC	16	Red	Turntable Jog Switch NO X2	3/8 strip	Turntable Jog Switch NC X2	3/8 strip
AD	16	Red		3/8 strip	Gear Motor Fuse Block	3/8 strip
AE	16	Green	Panel Ground Stud	K8453	Door Switch	K8453
AF	16	Black	60 min Skimmer Timer Line	3/8 strip	Wago 5 Port Cap	3/8 strip
AG	16	Black	60 min Skimmer Timer Load	2410	IEC Receptable	2410
AH	16	Red	IEC Receptacle	2411	Wago 5 Port Cap	3/8 strip
AI	16	Red	IEC Receptacle	2410	Float Relay Coil	02300
AJ	16	Green	IEC Receptacle	2410	Panel Ground Stud	K8453
AK	16	Black	Low Level Reset Button NC X2	3/8 strip	Low Level Reset Light	3/8 strip
AL	16	Black		3/8 strip	Wago 3 Port Cap	05808
AM	16	Black	Float Relay (6)	02300		
AN	16	Black	Float Relay (4)	02300		
AO	16	Black	Low Level Reset Button NC X1	3/8 Strip	Wago 3 Port Cap 1	3/8 strip
AP	16	Red	Low Level Rest Light	3/8 Strip	Wago 5 Port Cap	3/8 strip
AQ	16	Blue	Wago 3 Port Cap 1	3/8 Strip	Float Switch	3/8 strip
AR	16	Blue	Wago 3 Port Cap 2	3/8 Strip	Float Switch	3/8 strip
AS	16	Black	Wago 3 Port Cap 2	3/8 Strip	Wago 3 Port Cap	05808
AT	16	Black	Float Relay (7)	02300		
AU	16	Black	Float Relay (9)	02300		
AV	16	Black	Float Relay Coil	02300	Wago 3 Port Cap 1	3/8 strip
AW	16	Black	Heater Contactor 3 Coil	2410	Float Relay (1)	02300
AX	16	Black	Pump Contactor Coil	2410	Float Relay (3)	02300
AY	16	Black	Wago 3 Port Cap 2	3/8 strip	Wago 5 Port Cap	3/8 strip
AZ	16	Black	Gear Motor Fuse Block	3/8 strip	Rear Junction Box / Gear Motor	3/8 strip
BA	16	Red	Gear Motor Fuse Block	3/8 strip	Rear Junction Box / Gear Motor	3/8 strip
BB	16	Green	Panel Ground Stud	K8453	Gear Motor	K8453
BC	16	Red	Distribution Block	3/8 strip	Wago 5 Port Cap	3/8 strip
BD	16	Black	Distribution Block	3/8 strip	Wago 5 Port Cap	3/8 strip
BE	16	Black	Gear Motor Fuse Block	3/8 strip	Wago 5 Port Cap	3/8 strip
BF	16	Black	Digital Thermostat (+)	3/8 strip	Wago 5 Port Cap	3/8 strip
BG	16	Red	Digital Thermostat (-)	3/8 strip	Wago 5 Port Cap	3/8 strip
					7-Day Heating Timer Black Wire	3/8 strip
			Digital Thermostat COM		7-Day Heating Timer Blue Wire	3/8 strip
					7-Day Heating Timer Red Wire	K7367
BH	16	Green	Panel Ground Stud	K8453	7-Day Heating Timer Green Wire	05807
BJ	10	Green	Panel Ground Stud	12-10162	Door Ground Stud	12-10162
BQ	16	Black	Pump Contactor Coil	2410	Heater/Pump Relay Coil	02300
BR	16	Red	Pump Contactor Coil	2410	Heater/Pump Relay Coil	02300
BS	16	Red	Digital Thermostat NO	3/8 strip	Heater/Pump Relay COM	02300
BT	16	Red	Heater Contactor 1 Coil	2410	Heater/Pump Relay NC	02300


PUMP
12-10154 (2X)
BLK
2
1
S
BRN
3
T
W
WHT
4
P
K8453

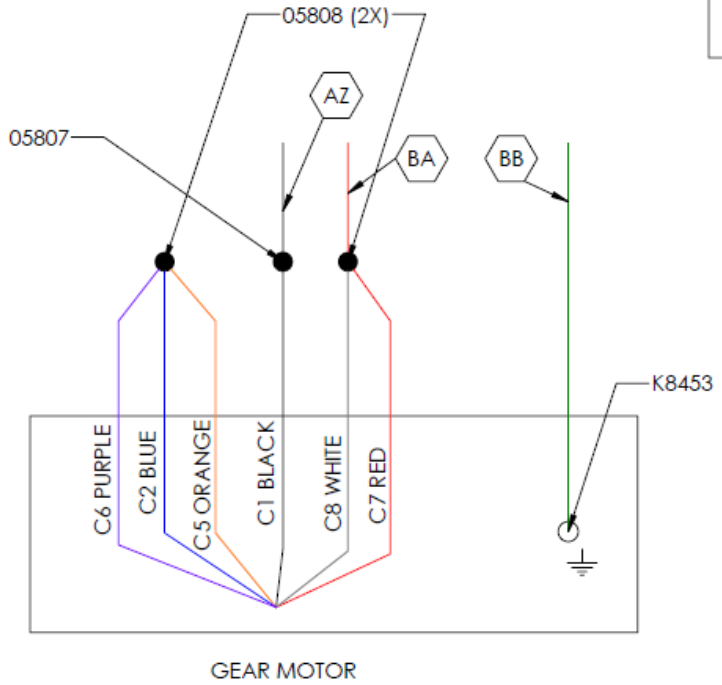

AZ
BA
BB
05857 (2X)
K8453
C6 PURPLE
C7 RED
C8 WHITE
C1 BLACK
C2 BLUE
C5 ORANGE
GEAR MOTOR


HEATER / THERMISITOR / FLOAT SWITCH
AR
AQ
N
05807
12-10162 (2X)
M
THERMISTOR
SILICONE IN PLACE ONCE INSTALLED

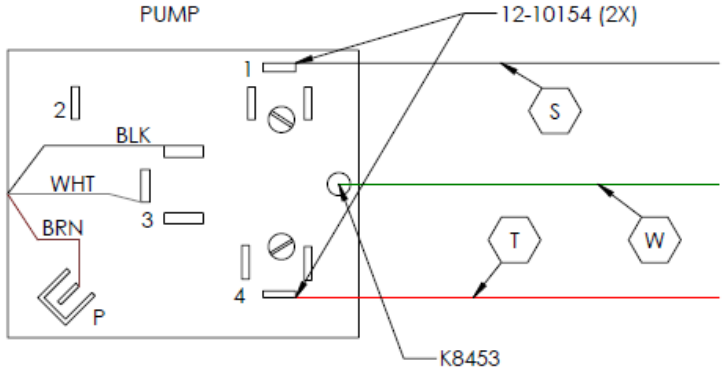
B. 208-240V 1 PH

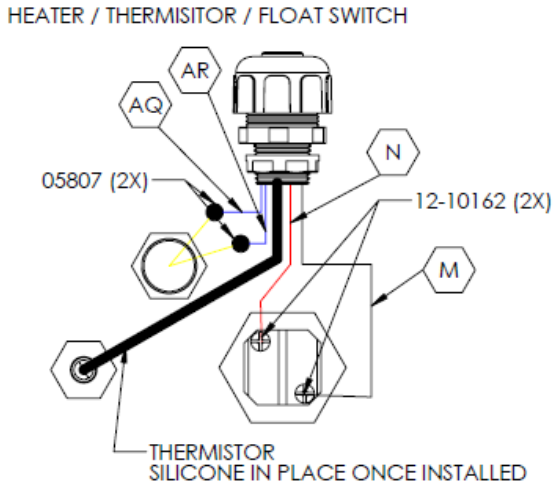


Wire	AWG	Color	From	Terminal	To	Terminal
A	6	Black	Fuse Block	3/8 strip	Distribution Block	3/8 strip
B	6	Red	Fuse Block	3/8 strip	Distribution Block	3/8 strip
D	10	Black	Distribution Block	3/8 strip	Heater Contactor 1 L1	3/8 strip
E	10	Red	Distribution Block	3/8 strip	Heater Contactor 1 L2	3/8 strip
J	10	Black	Distribution Block	3/8 strip	Pump Contactor L1	3/8 strip
K	10	Red	Distribution Block	3/8 strip	Pump Contactor L2	3/8 strip
M	10	Black	Heater Contactor 1 T1	3/8 Strip	Heater 1	12-10162
N	10	Red	Heater Contactor 1 T2	3/8 Strip	Heater 1	12-10162
S	10	Black	Pump Contactor T1	3/8 strip	Pump	12-10154
T	10	Red	Pump Contactor T2	3/8 strip	Pump	12-10154
V	10	Green	Panel Ground Stud	12-10162	Tank/Heater Ground	12-10162
W	10	Green	Panel Ground Stud	12-10162	Pump	12-10162
X	16	Red	60 min Pump Timer Line	3/8 strip	Wago 5 Port Cap	3/8 strip
Y	16	Red		3/8 strip	Turntable Jog Switch NO X1	3/8 strip
Z	16	Red	60 min Pump Timer Load	3/8 strip	Door Switch	K8453
AA	16	Red	Turntable Jog Switch NC X1	3/8 strip	Pump Contactor Coil	2410
AB	16	Red		3/8 strip	Door Switch	K8453
AC	16	Red	Turntable Jog Switch NO X2	3/8 strip	Turntable Jog Switch NC X2	3/8 strip
AD	16	Red		3/8 strip	Gear Motor Fuse Block	3/8 strip
AF	16	Black	60 min Skimmer Timer Line	3/8 strip	Wago 5 Port Cap	3/8 strip
AG	16	Black	60 min Skimmer Timer Load	3/8 strip	IEC Receptable	2410
AH	16	Red	IEC Receptacle	2411	Wago 5 Port Cap	3/8 strip
AI	16	Red	IEC Receptacle	2410	Float Relay Coil	02300
AJ	16	Green	IEC Receptacle	2410	Panel Ground Stud	K8453
AK	16	Black	Low Level Reset Button NC X2	3/8 strip	Low Level Reset Light	3/8 strip
AL	16	Black		3/8 strip	Wago 3 Port Cap	05808
AM	16	Black	Float Relay (6)	02300		
AN	16	Black	Float Relay (4)	02300		
AO	16	Black	Low Level Reset Button NC X1	3/8 Strip	Wago 3 Port Cap 1	3/8 strip
AP	16	Red	Low Level Rest Light	3/8 Strip	Wago 5 Port Cap	3/8 strip
AQ	16	Blue	Wago 3 Port Cap 1	3/8 Strip	Float Switch	3/8 strip
AR	16	Blue	Wago 3 Port Cap 2	3/8 Strip	Float Switch	3/8 strip
AS	16	Black	Wago 3 Port Cap 2	3/8 Strip	Wago 3 Port Cap	05808
AT	16	Black	Float Relay (7)	02300		
AU	16	Black	Float Relay (9)	02300		
AV	16	Black	Float Relay Coil	02300	Wago 3 Port Cap 1	3/8 strip
AW	16	Black	Heater Contactor Coil	2410	Float Relay (1)	02300
AX	16	Black	Pump Contactor Coil	2410	Float Relay (3)	02300
AY	16	Black	Wago 3 Port Cap 2	3/8 strip	Wago 5 Port Cap	3/8 strip
AZ	16	Black	Gear Motor Fuse Block	3/8 strip	Rear Junction Box	3/8 strip
BA	16	Red	Gear Motor Fuse Block	3/8 strip	Rear Junction Box	3/8 strip
BB	16	Green	Panel Ground Stud	K8453	Rear Junction Box	3/8 strip
BC	16	Red	Distribution Block	3/8 strip	Wago 5 Port Cap	3/8 strip
BD	16	Black	Distribution Block	3/8 strip	Wago 5 Port Cap	3/8 strip
BE	16	Black	Gear Motor Fuse Block	3/8 strip	Wago 5 Port Cap	3/8 strip
BF	16	Black	Digital Thermostat (+)	3/8 strip	Wago 5 Port Cap	3/8 strip
BG	16	Red	Digital Thermostat (-)	3/8 strip	Wago 5 Port Cap	3/8 strip
					7-Day Heating Timer Black Wire	3/8 strip
			Digital Thermostat COM		7-Day Heating Timer Blue Wire	3/8 strip
					7-Day Heating Timer Red Wire	K7367
BH	16	Green	Panel Ground Stud	K8453	7-Day Heating Timer Green Wire	05807
BI	16	Red	Digital Thermostat NO	3/8 strip	Heater Contactor 1 Coil	2410
BJ	10	Green	Panel Ground Stud	12-10162	Door Ground Stud	12-10162

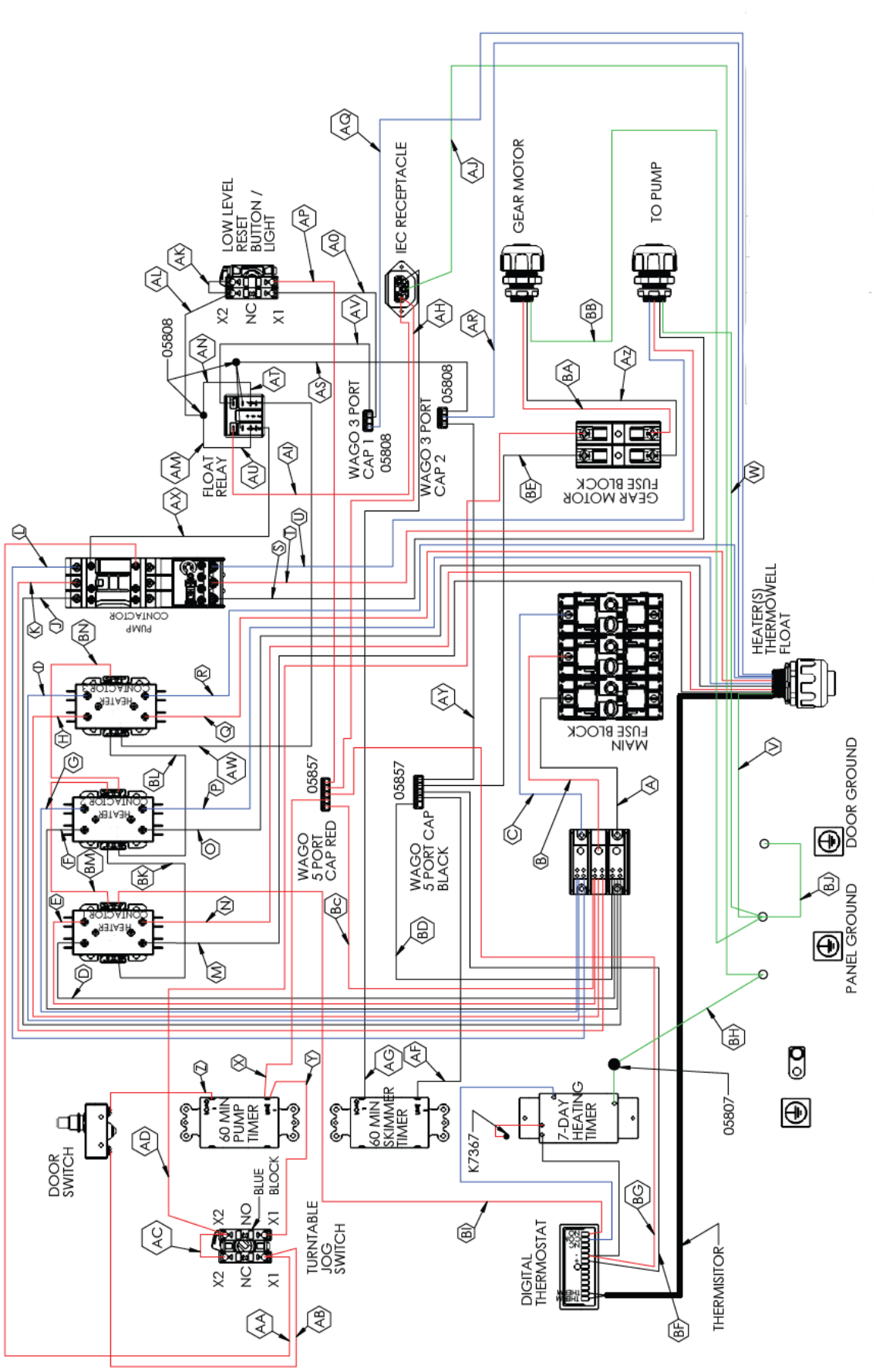

05808 (2X)
AZ
05807
BA
BB
K8453
C6 PURPLE
C2 BLUE
C5 ORANGE
C1 BLACK
C8 WHITE
C7 RED

GEAR MOTOR

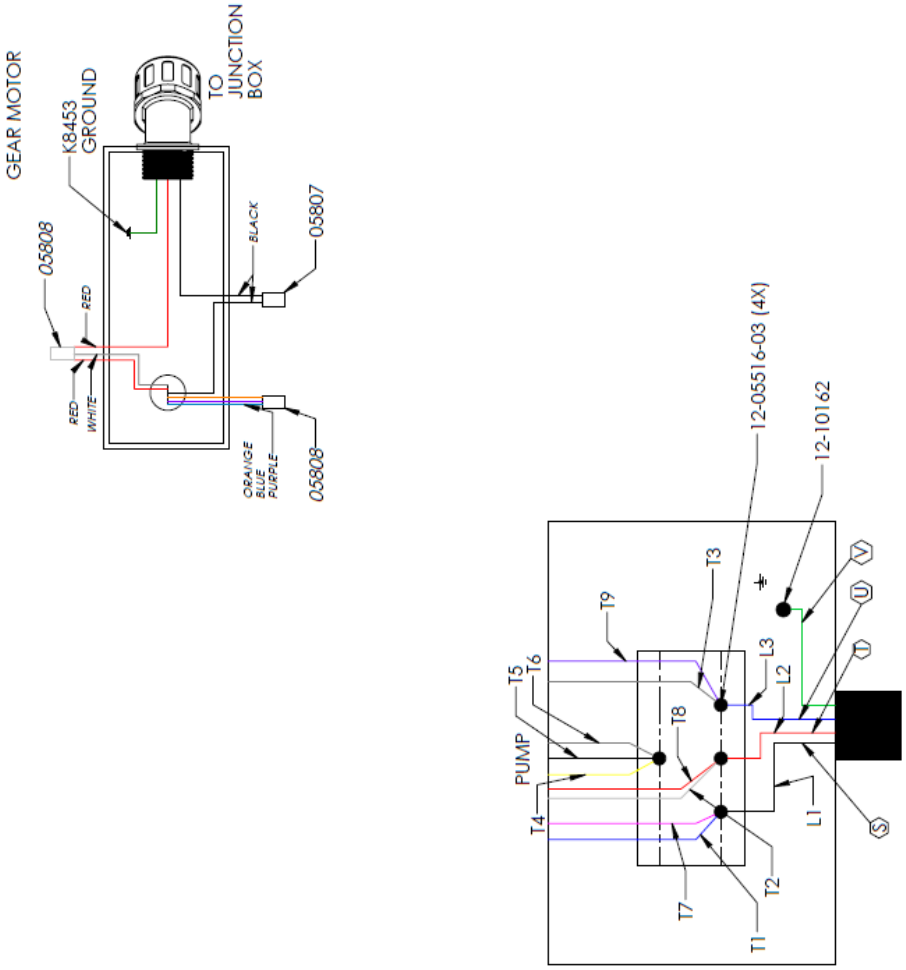

PUMP
12-10154 (2X)
1
2
BLK
WHT
3
BRN
P
4
S
T
W
K8453

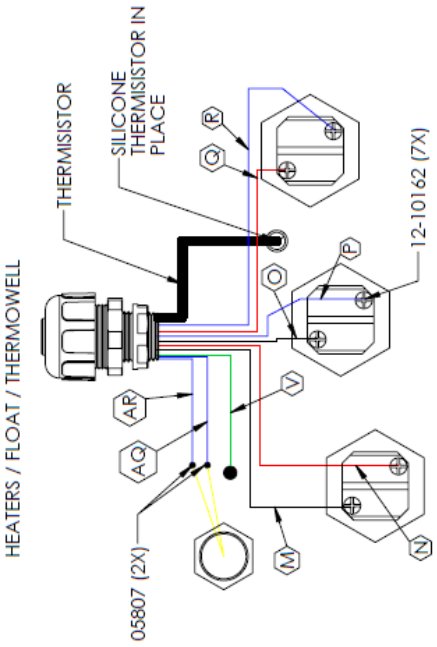

HEATER / THERMISITOR / FLOAT SWITCH
AR
AQ
N
05807 (2X)
12-10162 (2X)
M
THERMISTOR
SILICONE IN PLACE ONCE INSTALLED

C. 208-240V 3 PH

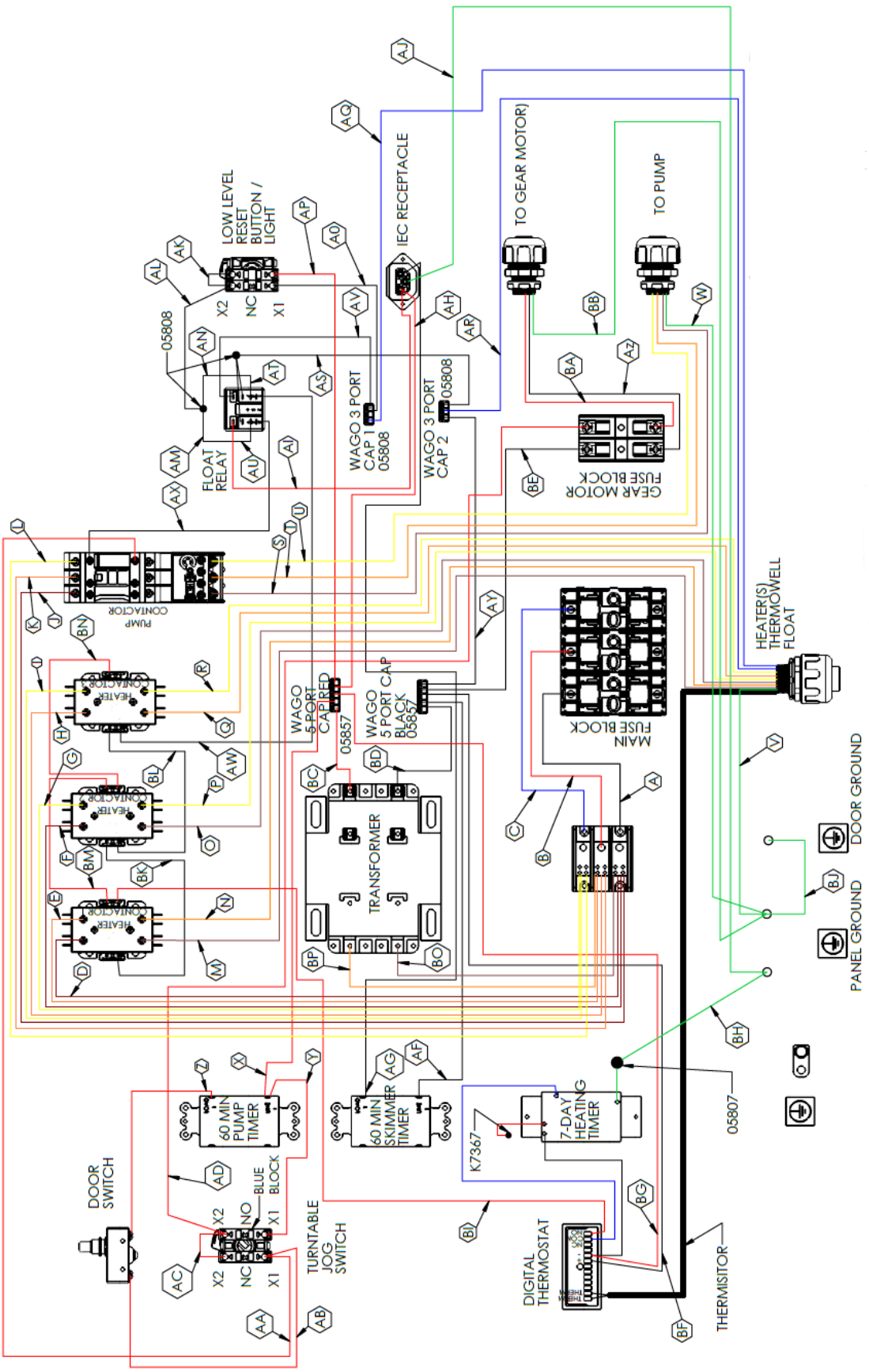


Wire	AWG	Color	From	Terminal	To	Terminal
A	6	Black	Fuse Block	3/8 strip	Distribution Block	3/8 strip
B	6	Red	Fuse Block	3/8 strip	Distribution Block	3/8 strip
C	6	Blue	Fuse Block	3/8 strip	Distribution Block	3/8 strip
D	10	Black	Distribution Block	3/8 strip	Heater Contactor 1 L1	3/8 strip
E	10	Red	Distribution Block	3/8 strip	Heater Contactor 1 L2	3/8 strip
F	10	Black	Distribution Block	3/8 strip	Heater Contactor 2 L1	3/8 strip
G	10	Blue	Distribution Block	3/8 strip	Heater Contactor 2 L2	3/8 strip
H	10	Red	Distribution Block	3/8 strip	Heater Contactor 3 L1	3/8 strip
I	10	Blue	Distribution Block	3/8 strip	Heater Contactor 3 L2	3/8 strip
J	10	Black	Distribution Block	3/8 strip	Pump Contactor L1	3/8 strip
K	10	Red	Distribution Block	3/8 strip	Pump Contactor L2	3/8 strip
L	10	Blue	Distribution Block	3/8 strip	Pump Contactor L3	3/8 strip
M	10	Black	Heater Contactor 1 T1	3/8 Strip	Heater 1	12-10162
N	10	Red	Heater Contactor 1 T2	3/8 Strip	Heater 1	12-10162
O	10	Black	Heater Contactor 2 T1	3/8 Strip	Heater 2	12-10162
P	10	Blue	Heater Contactor 2 T2	3/8 Strip	Heater 2	12-10162
Q	10	Red	Heater Contactor 3 T1	3/8 Strip	Heater 3	12-10162
R	10	Blue	Heater Contactor 3 T2	3/8 Strip	Heater 3	12-10162
S	10	Black	Pump Contactor T1	3/8 strip	Pump	12-05516-03
T	10	Red	Pump Contactor T2	3/8 strip	Pump	12-05516-03
U	10	Blue	Pump Contactor T3	3/8 strip	Pump	12-05516-03
V	10	Green	Panel Ground Stud	12-10162	Tank/Heater Ground	12-10162
W	10	Green	Panel Ground Stud	12-10162	Pump	12-10162
X	16	Red	60 min Pump Timer Line	3/8 strip	Wago 5 Port Cap	3/8 strip
Y	16	Red		3/8 strip	Turntable Jog Switch NO X1	3/8 strip
Z	16	Red	60 min Pump Timer Load	3/8 strip	Door Switch	K8453
AA	16	Red	Turntable Jog Switch NC X1	3/8 strip	Pump Contactor Coil	3/8 strip
AB	16	Red		3/8 strip	Door Switch	K8453
AC	16	Red	Turntable Jog Switch NO X2	3/8 strip	Turntable Jog Switch NC X2	3/8 strip
AD	16	Red		3/8 strip	Gear Motor Fuse Block	3/8 strip
AF	16	Black	60 min Skimmer Timer Line	3/8 strip	Wago 5 Port Cap	3/8 strip
AG	16	Black	60 min Skimmer Timer Load	3/8 strip	IEC Receptable	2410
AH	16	Red	IEC Receptacle	2411	Wago 5 Port Cap	3/8 strip
AI	16	Red	IEC Receptacle	2410	Float Relay Coil	02300
AJ	16	Green	IEC Receptacle	2410	Panel Ground Stud	K8453
AK	16	Black	Low Level Reset Button NC X2	3/8 strip	Low Level Reset Light	3/8 strip
AL	16	Black		3/8 strip	Wago 3 Port Cap	05808
AM	16	Black	Float Relay (6)	02300		
AN	16	Black	Float Relay (4)	02300		
AO	16	Black	Low Level Reset Button NC X1	3/8 Strip	Wago 3 Port Cap 1	3/8 strip
AP	16	Red	Low Level Rest Light	3/8 Strip	Wago 5 Port Cap	3/8 strip
AQ	16	Blue	Wago 3 Port Cap 1	3/8 Strip	Float Switch	3/8 strip
AR	16	Blue	Wago 3 Port Cap 2	3/8 Strip	Float Switch	3/8 strip
AS	16	Black	Wago 3 Port Cap 2	3/8 Strip	Wago 3 Port Cap	05808
AT	16	Black	Float Relay (7)	02300		
AU	16	Black	Float Relay (9)	02300		
AV	16	Black	Float Relay Coil	02300	Wago 3 Port Cap 1	3/8 strip
AW	16	Black	Heater Contactor Coil	2410	Float Relay (1)	02300
AX	16	Black	Pump Contactor Coil	3/8 strip	Float Relay (3)	02300
AY	16	Black	Wago 3 Port Cap 2	3/8 strip	Wago 5 Port Cap	3/8 strip
AZ	16	Black	Gear Motor Fuse Block	3/8 strip	Rear Junction Box	3/8 strip
BA	16	Red	Gear Motor Fuse Block	3/8 strip	Rear Junction Box	3/8 strip
BB	16	Green	Panel Ground Stud	K8453	Rear Junction Box	3/8 strip
BC	16	Red	Distribution Block	3/8 strip	Wago 5 Port Cap	3/8 strip
BD	16	Black	Distribution Block	3/8 strip	Wago 5 Port Cap	3/8 strip
BE	16	Black	Gear Motor Fuse Block	3/8 strip	Wago 5 Port Cap	3/8 strip
BF	16	Black	Digital Thermostat (+)	3/8 strip	Wago 5 Port Cap	3/8 strip
BG	16	Red	Digital Thermostat (-)	3/8 strip	Wago 5 Port Cap	3/8 strip
					7-Day Heating Timer Black Wire	3/8 strip
			Digital Thermostat COM		7-Day Heating Timer Blue Wire	3/8 strip
					7-Day Heating Timer Red Wire	K7367
BH	16	Green	Panel Ground Stud	K8453	7-Day Heating Timer Green Wire	05807
BI	16	Red	Digital Thermostat NO	3/8 strip	Heater Contactor 1 Coil	2410
BJ	10	Green	Panel Ground Stud	12-10162	Door Ground Stud	12-10162
BK	16	Black	Heater Contactor 1 Coil	2410	Heater Contactor 2 Coil	2410
BL	16	Black	Heater Contactor 2 Coil	2410	Heater Contactor 3 Coil	2410
BM	16	Red	Heater Contactor 1 Coil	2410	Heater Contactor 2 Coil	2410
BN	16	Red	Heater Contactor 2 Coil	2410	Heater Contactor 3 Coil	2410


GEAR MOTOR
K8453
GROUND
TO
JUNCTION
BOX
05808
RED
BLACK
05807
RED
WHITE
ORANGE
BLUE
PURPLE
05808
12-05516-03 (4X)
12-10162
T9
T3
T5
T6
T8
L3
L2
PUMP
T4
T7
T2
L1
T1
V
U
T
S

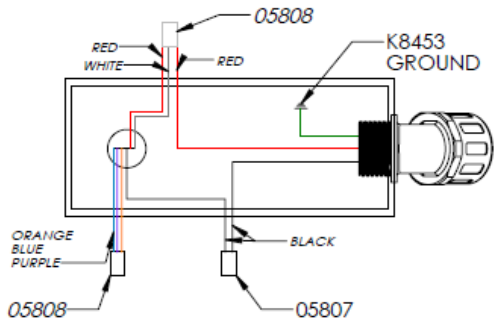

HEATERS / FLOAT / THERMOWELL
THERMISTOR
SILICONE
THERMISISTOR IN
PLACE
12-10162 (7X)
05807 (2X)
R
Q
P
O
V
AR
AQ
M
N

D. 440-480V 3PH

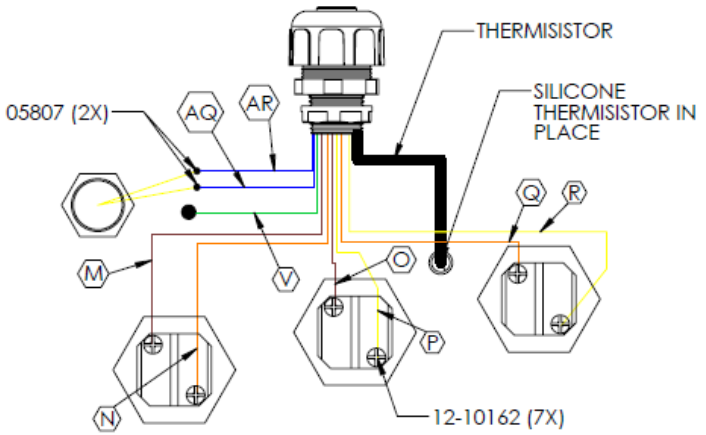


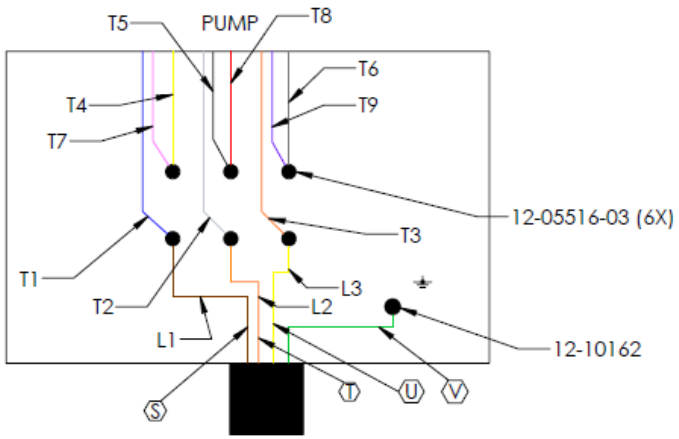
Wire	AWG	Color	From	Terminal	To	Terminal
A	6	Black	Fuse Block	3/8 strip	Distribution Block	3/8 strip
B	6	Red	Fuse Block	3/8 strip	Distribution Block	3/8 strip
C	6	Blue	Fuse Block	3/8 strip	Distribution Block	3/8 strip
D	10	Brown	Distribution Block	3/8 strip	Heater Contactor 1 L1	3/8 strip
E	10	Orange	Distribution Block	3/8 strip	Heater Contactor 1 L2	3/8 strip
F	10	Brown	Distribution Block	3/8 strip	Heater Contactor 2 L1	3/8 strip
G	10	Yellow	Distribution Block	3/8 strip	Heater Contactor 2 L2	3/8 strip
H	10	Orange	Distribution Block	3/8 strip	Heater Contactor 3 L1	3/8 strip
I	10	Yellow	Distribution Block	3/8 strip	Heater Contactor 3 L2	3/8 strip
J	10	Brown	Distribution Block	3/8 strip	Pump Contactor L1	3/8 strip
K	10	Orange	Distribution Block	3/8 strip	Pump Contactor L2	3/8 strip
L	10	Yellow	Distribution Block	3/8 strip	Pump Contactor L3	3/8 strip
M	10	Brown	Heater Contactor 1 T1	3/8 Strip	Heater 1	12-10162
N	10	Orange	Heater Contactor 1 T2	3/8 Strip	Heater 1	12-10162
O	10	Brown	Heater Contactor 2 T1	3/8 Strip	Heater 2	12-10162
P	10	Yellow	Heater Contactor 2 T2	3/8 Strip	Heater 2	12-10162
Q	10	Orange	Heater Contactor 3 T1	3/8 Strip	Heater 3	12-10162
R	10	Yellow	Heater Contactor 3 T2	3/8 Strip	Heater 3	12-10162
S	10	Brown	Pump Contactor T1	3/8 strip	Pump	12-05516-03
T	10	Orange	Pump Contactor T2	3/8 strip	Pump	12-05516-03
U	10	Yellow	Pump Contactor T3	3/8 strip	Pump	12-05516-03
V	10	Green	Panel Ground Stud	12-10162	Tank/Heater Ground	12-10162
W	10	Green	Panel Ground Stud	12-10162	Pump	12-10162
X	16	Red	60 min Pump Timer Line	3/8 strip	Wago 5 Port Cap	3/8 strip
Y	16	Red		3/8 strip	Turntable Jog Switch NO X1	3/8 strip
Z	16	Red	60 min Pump Timer Load	3/8 strip	Door Switch	K8453
AA	16	Red	Turntable Jog Switch NC X1	3/8 strip	Pump Contactor Coil	3/8 strip
AB	16	Red		3/8 strip	Door Switch	K8453
AC	16	Red	Turntable Jog Switch NO X2	3/8 strip	Turntable Jog Switch NC X2	3/8 strip
AD	16	Red		3/8 strip	Gear Motor Fuse Block	3/8 strip
AF	16	Black	60 min Skimmer Timer Line	3/8 strip	Wago 5 Port Cap	3/8 strip
AG	16	Black	60 min Skimmer Timer Load	2410	IEC Receptable	2410
AH	16	Red	IEC Receptacle	2411	Wago 5 Port Cap	3/8 strip
AI	16	Red	IEC Receptacle	2410	Float Relay Coil	02300
AJ	16	Green	IEC Receptacle	2410	Panel Ground Stud	K8453
AK	16	Black	Low Level Reset Button NC X2	3/8 strip	Low Level Reset Light	3/8 strip
AL	16	Black		3/8 strip	Wago 3 Port Cap	05808
AM	16	Black	Float Relay (6)	02300		
AN	16	Black	Float Relay (4)	02300		
AO	16	Black	Low Level Reset Button NC X1	3/8 Strip	Wago 3 Port Cap 1	3/8 strip
AP	16	Red	Low Level Rest Light	3/8 Strip	Wago 5 Port Cap	3/8 strip
AQ	16	Blue	Wago 3 Port Cap 1	3/8 Strip	Float Switch	3/8 strip
AR	16	Blue	Wago 3 Port Cap 2	3/8 Strip	Float Switch	3/8 strip
AS	16	Black	Wago 3 Port Cap 2	3/8 Strip	Wago 3 Port Cap	05808
AT	16	Black	Float Relay (7)	02300		
AU	16	Black	Float Relay (9)	02300		
AV	16	Black	Float Relay Coil	02300	Wago 3 Port Cap 1	3/8 strip
AW	16	Black	Heater Contactor Coil	2410	Float Relay (1)	02300
AX	16	Black	Pump Contactor Coil	3/8 strip	Float Relay (3)	02300
AY	16	Black	Wago 3 Port Cap 2	3/8 strip	Wago 5 Port Cap	3/8 strip
AZ	16	Black	Gear Motor Fuse Block	3/8 strip	Rear Junction	3/8 strip
BA	16	Red	Gear Motor Fuse Block	3/8 strip	Rear Junction	3/8 strip
BB	16	Green	Panel Ground Stud	K8453	Rear Junction	3/8 strip
BC	16	Red	Transformer Output 2	3/8 strip	Wago 5 Port Cap	3/8 strip
BD	16	Black	Transformer Output 1	3/8 strip	Wago 5 Port Cap	3/8 strip
BE	16	Black	Gear Motor Fuse Block	3/8 strip	Wago 5 Port Cap	3/8 strip
BF	16	Black	Digital Thermostat (+)	3/8 strip	Wago 5 Port Cap	3/8 strip
BG	16	Red	Digital Thermostat (-)	3/8 strip	Wago 5 Port Cap	3/8 strip
					7-Day Heating Timer Black Wire	3/8 strip
			Digital Thermostat COM		7-Day Heating Timer Blue Wire	3/8 strip
					7-Day Heating Timer Red Wire	K7367
BH	16	Green	Panel Ground Stud	K8453	7-Day Heating Timer Green Wire	05807
BI	16	Red	Digital Thermostat NO	3/8 strip	Heater Contactor 1 Coil	2410
BJ	10	Green	Panel Ground Stud	12-10162	Door Ground Stud	12-10162
BK	16	Black	Heater Contactor 1 Coil	2410	Heater Contactor 2 Coil	2410
BL	16	Black	Heater Contactor 2 Coil	2410	Heater Contactor 3 Coil	2410
BM	16	Red	Heater Contactor 1 Coil	2410	Heater Contactor 2 Coil	2410
BN	16	Red	Heater Contactor 2 Coil	2410	Heater Contactor 3 Coil	2410
BO	16	Brown	Distribution Block	3/8 strip	Transformer Input 1	3/8 Strip
BP	16	Orange	Distribution Block	3/8 strip	Transformer Input 2	3/8 strip

GEAR MOTOR



HEATERS / FLOAT / THERMOWELL





		NAME	DATE	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/32 ANG: MACH ± 2° BEND ±2° TWO PLACE DECIMAL ± .02	DRAWN	BJB	4/8/2022	FOUNTAIN IN
	CHECKED	-	-	
	ENG APPR	-	-	

XII. Warranty

LIMITED WARRANTY AND LIMITATION OF REMEDIES AND DISCLAIMER.

(1)Fountain Industries, LLC "Fountain" warrants the Equipment to be free from defects in material and manufacture and to conform to specifications for the Equipment at the time of shipment. This warranty is applicable only if the Equipment is installed, operated and maintained in accordance with factory recommendations and procedures, including, but not limited to, the use of Fountain's approved solutions or accessories. If any Equipment fails to conform to the specifications or samples or any defect in material or manufacture appears within twelve (12) months from the date of initial purchase by end user Fountain's entire liability, and Customer's or end user's exclusive remedy, shall be, to either repair or replace such defective Equipment, at Fountain's option, within a reasonable time after written notification thereof and return of the defective Equipment to Fountain.

(2) THIS WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY, THE IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, ANY IMPLIED WARRANTY ARISING OUT OF COURSE OF DEALING OR OF PERFORMANCE, CUSTOM OR USAGE OF TRADE EXCEPT OF TITLE AND AGAINST PATENT INFRINGEMENT.

(3) LIMITATION OF LIABILITIES; TIME LIMIT FOR FILING ACTION. NEITHER PARTY SHALL UNDER ANY CIRCUMSTANCES BE LIABLE TO EACH OTHER FOR DAMAGES OF ANY KIND, INCLUDING, WITHOUT LIMITATION, DIRECT, INDIRECT, INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS, REVENUE OR BUSINESS) RESULTING FROM OR IN ANY WAY RELATED TO THE EQUIPMENT, ANY OF CUSTOMER'S PURCHASE ORDERS, THESE TERMS AND CONDITIONS OR THE TERMINATION OR NONRENEWAL THEREOF.

FOUNTAIN'S LIABILITY ON ANY CLAIM OF ANY KIND (INCLUDING NEGLIGENCE) FOR ANY LOSS OR DAMAGE ARISING OUT OF OR RESULTING FROM THIS AGREEMENT, OR FROM THE PROFORMANCE OR BREACH THEREOF, OR FROM THE EQUIPMENT FURNISHED HEREUNDER SHALL IN NO CASE EXCEED THE PRICE OF THE SPECIFIC EQUIPMENT WHICH GIVES RISE TO THE CLAIM. ALL SUCH LIABILITY SHALL TERMINATE UPON THE EXPIRATION OF THE WARRANTY PERIOD AS STATED HEREIN.

These limitations apply regardless of whether such damages are sought based on breach of contract, negligence, strict liability in tort or any other legal theory.

(4) Any action for breach of warranty or any other obligation under these Terms and Conditions must be commenced within one (1) year from the purported date of breach.

(5) Each limitation on liability or remedy set forth in these Terms and Conditions is independent of any other limitation or if they are otherwise held to be unenforceable, that shall not affect the validity of any other such limitation or remedy.

Fountain assumes no liability for any claims for injury or damages to persons or property arising from any chemical manufactured by Customers or by any third party vendors for use in any Fountain's equipment.

Terms or conditions contained in any Customer purchase order or similar document that in any manner purport to alter, modify, change, or suspend these terms shall be deemed excluded from such purchase order and expressly waived by the Customer.

This limited warranty does not cover or include any consumable/wearable products, such as filters or brushes, associated with such equipment.

Fountain assumes no liability for any unauthorized modifications carried out to the equipment not strictly recommended by the factory procedures or recommendations.

This limited warranty is not transferable, and does not cover any general equipment maintenance, demonstration, installation, routine servicing, calibration or customization of any equipment.

No person is authorized to alter or extend this limited warranty unless made in writing and signed by an authorized officer of Fountain.

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INDUSTRIES

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