



CX20

Technical Manual

CX20 | CX20H | CX20VG | CX20HVG





Thank you for purchasing a quality Insinger product.

In the space provided below please record the model, serial number and start-up date of this unit:

Model: _____

Serial Number: _____

Start-Up Date: _____

When referring to this equipment please have this information available.

Each piece of equipment at Insinger is carefully tested before shipment for proper operation. If the need for service should arise please contact your local Authorized Insinger Service Company.

To find your local authorized Service Company please visit our web site, www.insingermachine.com or call Insinger at 800-344-4802.

Please read the Insinger Limited Warranty and all installation and operation instructions carefully before attempting to install or operate your new Insinger product.

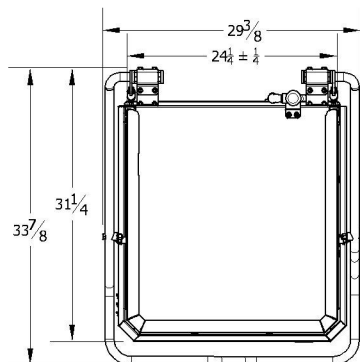
To register your machine for warranty, or for answers to question concerning installation, operation, or service contact our Technical Service Department.

TECHNICAL SERVICE CONTACTS	
Toll-Free	800-344-4802
Fax	215-624-6966
Email	service@insingermachine.com
Website	www.insingermachine.com

TABLE OF CONTENTS

Part 1 Technical Information • Specification Sheets • Introduction • Safety Summary • Warranty	1-8
Part 2 Installation Instructions	9
Part 3 Operation Instructions	10
Part 4 Cleaning Instructions • Daily Cleaning Instructions • Weekly Cleaning Instructions	11
Part 5 Maintenance & Repair Procedures • Maintenance Requirements • Maintenance Procedures • Troubleshooting • Changing Settings	12-13
Part 6 Electrical Schematics • Electrical Schematics • Control Panel Layouts	14-25
Part 7 Replacement Parts	26-41

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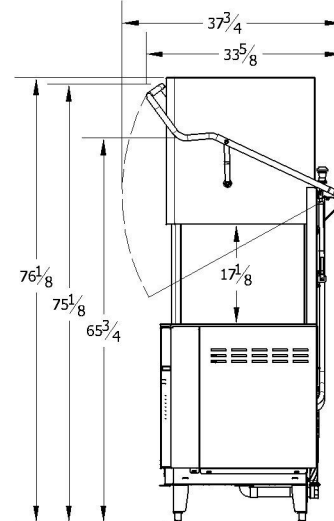
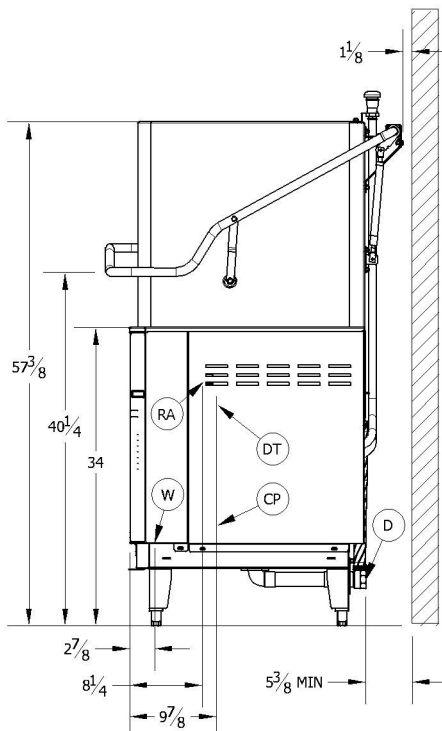
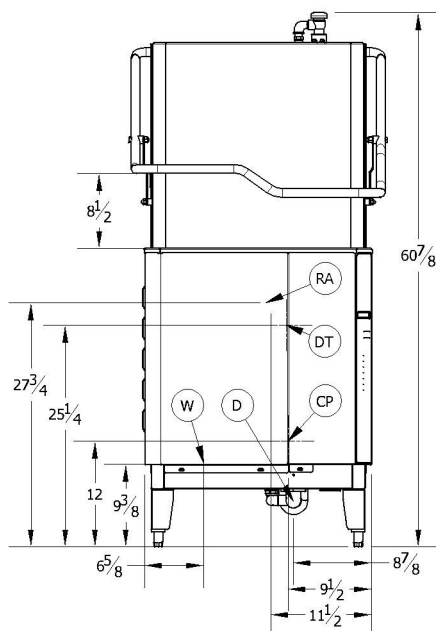


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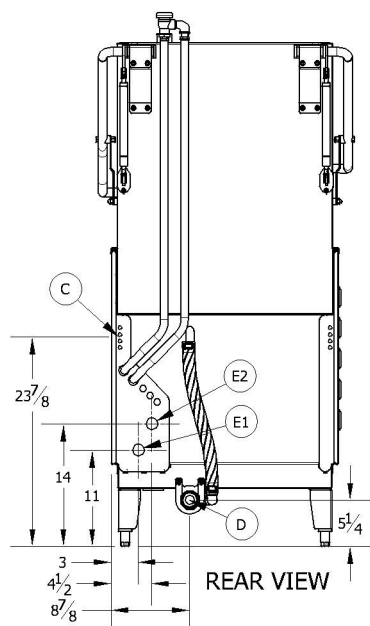
High Temperature Door Type Electrically Heated Dishwashing Machine

INSTALLATION CONNECTIONS		
	Description	Note
D	DRAIN CONNECTION	1-1/2 F-NPT
W	HOT WATER INLET (110° F MIN.)	1/2 F-NPT
E1	MAIN ELECTRICAL (SINGLE & 2-POINT)	1-3/8 HOLE
E2	BOOSTER ELECTRICAL (2 PT ONLY)	1-3/8 HOLE
CP	CONDUCTIVITY PROBE LOCATION	7/8 HOLE
DT	DETERGENT INSERTION POINTS	7/8 HOLE
RA	RINSE AID CONNECTION	1/4 F-NPT
C	CHEMICAL LINE & SIGNAL ACCESS	1/2 HOLES (4)

SPECIFICATIONS	
Racks per Hour	60
Dishes per Hour	1500
Glasses per Hour	2400
Wash Tank (gallons)	17.5
Booster Capacity (gallons)	2.3
Wash Motor HP	1.5
Final Rinse Consumption @ 20 psi (gal / hr)	38.4
Final Rinse Peak Flow @ 20 psi (gal/min)	3.9
Gallons per Rack @ 20 psi	.65
Peak Drain Flow (gpm)	35
Tank Heat (kW)	9.0
Booster Heat (kW)	9.0
Shipping Weight (lbs)	400



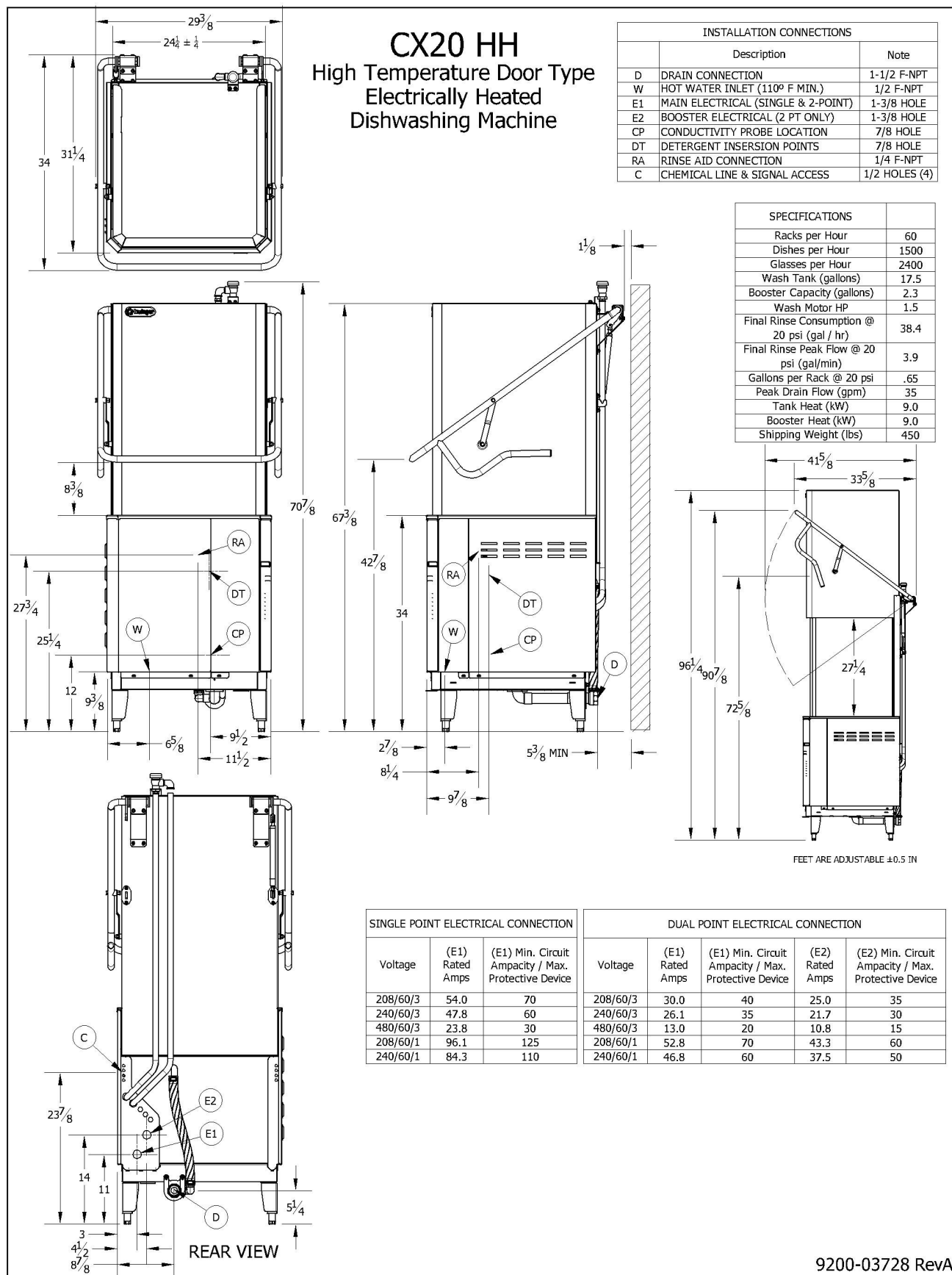
FEET ARE ADJUSTABLE ±0.5 IN



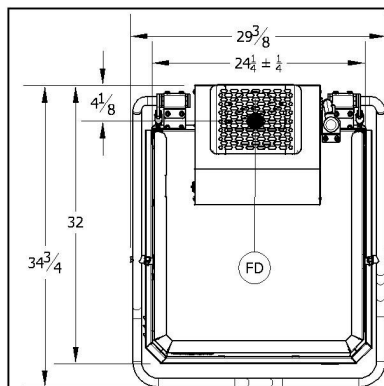
SINGLE POINT ELECTRICAL CONNECTION		
Voltage	(E1) Rated Amps	(E1) Min. Circuit Ampacity / Max. Protective Device
208/60/3	54.0	70
240/60/3	47.8	60
480/60/3	23.8	30
208/60/1	96.1	125
240/60/1	84.3	110

DUAL POINT ELECTRICAL CONNECTION				
Voltage	(E1) Rated Amps	(E1) Min. Circuit Ampacity / Max. Protective Device	(E2) Rated Amps	(E2) Min. Circuit Ampacity / Max. Protective Device
208/60/3	30.0	40	25.0	35
240/60/3	26.1	35	21.7	30
480/60/3	13.0	20	10.8	15
208/60/1	52.8	70	43.3	60
240/60/1	46.8	60	37.5	50

9200-03727 RevA



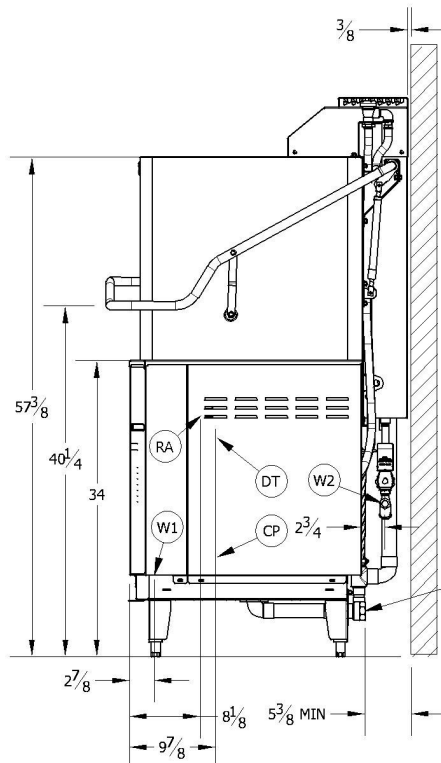
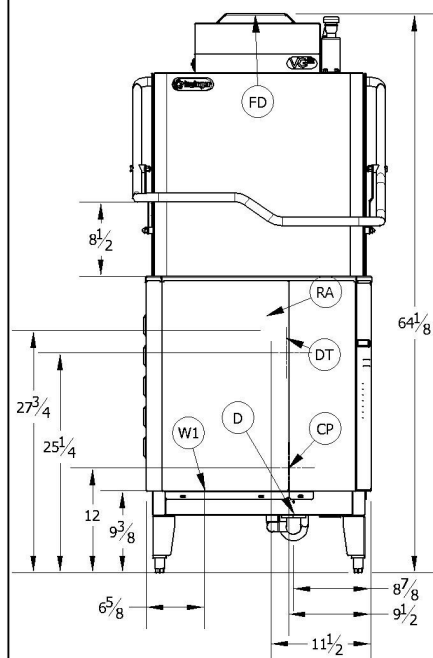
9200-03728 RevA



CX20 VG

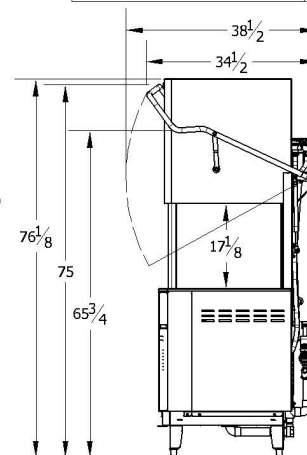
High Temperature Door Type Electrically Heated Dishwashing Machine with **VAPOR GUARD OPTION**

INSTALLATION CONNECTIONS		
	Description	Note
D	DRAIN CONNECTION	1-1/2 F-NPT
W1	HOT WATER INLET (110° F MIN.)	1/2 F-NPT
W2	COLD WATER INLET (70° F MAX)	1/2 F-NPT
E1	MAIN ELECTRICAL (SINGLE & 2-POINT)	1-3/8 HOLE
E2	BOOSTER ELECTRICAL (2 PT ONLY)	1-3/8 HOLE
FD	FAN DISCHARGE (VAPOR GUARD)	6" MIN. Clearance
CP	CONDUCTIVITY PROBE LOCATION	7/8 HOLE
DT	DETERGENT INSERTION POINTS	7/8 HOLE
RA	RINSE AID CONNECTION	1/4 F-NPT
C	CHEMICAL LINE & SIGNAL ACCESS	1/2 HOLES (4)

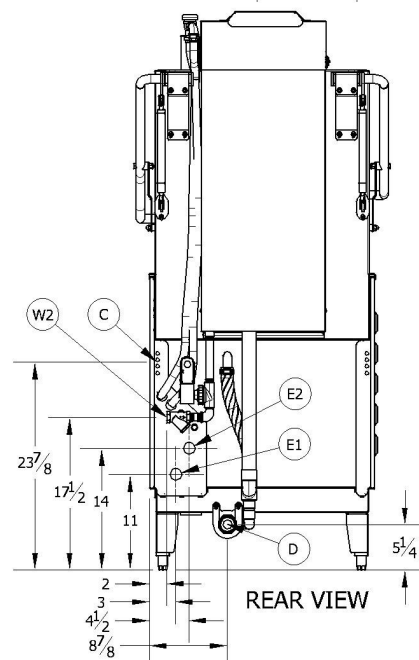


HEAT LOAD	BTU / Hr
LATENT HEAT	4046
SENSIBLE HEAT	8224
TOTAL HEAT	12270

SPECIFICATIONS	
Racks per Hour	60
Dishes per Hour	1500
Glasses per Hour	2400
Wash Tank (gallons)	17.5
Booster Capacity (gallons)	2.3
Wash Motor HP	1.5
Final Rinse Consumption @ 20 psi (gal / hr)	38.4
Final Rinse Peak Flow @ 20 psi (gal/min)	3.9
Gallons per Rack @ 20 psi	.65
Vapor Guard Water Consumption @ 20 psi (gal/min)	4.0
Vapor Guard Water Consumption @ 20 psi (gal/cycle)	1.3
Peak Drain Flow (gpm)	35.0
Tank Heat (kW)	9.0
Booster Heat (kW)	9.0
Shipping Weight (lbs)	500



FEET ARE ADJUSTABLE ±0.5 IN



REAR VIEW

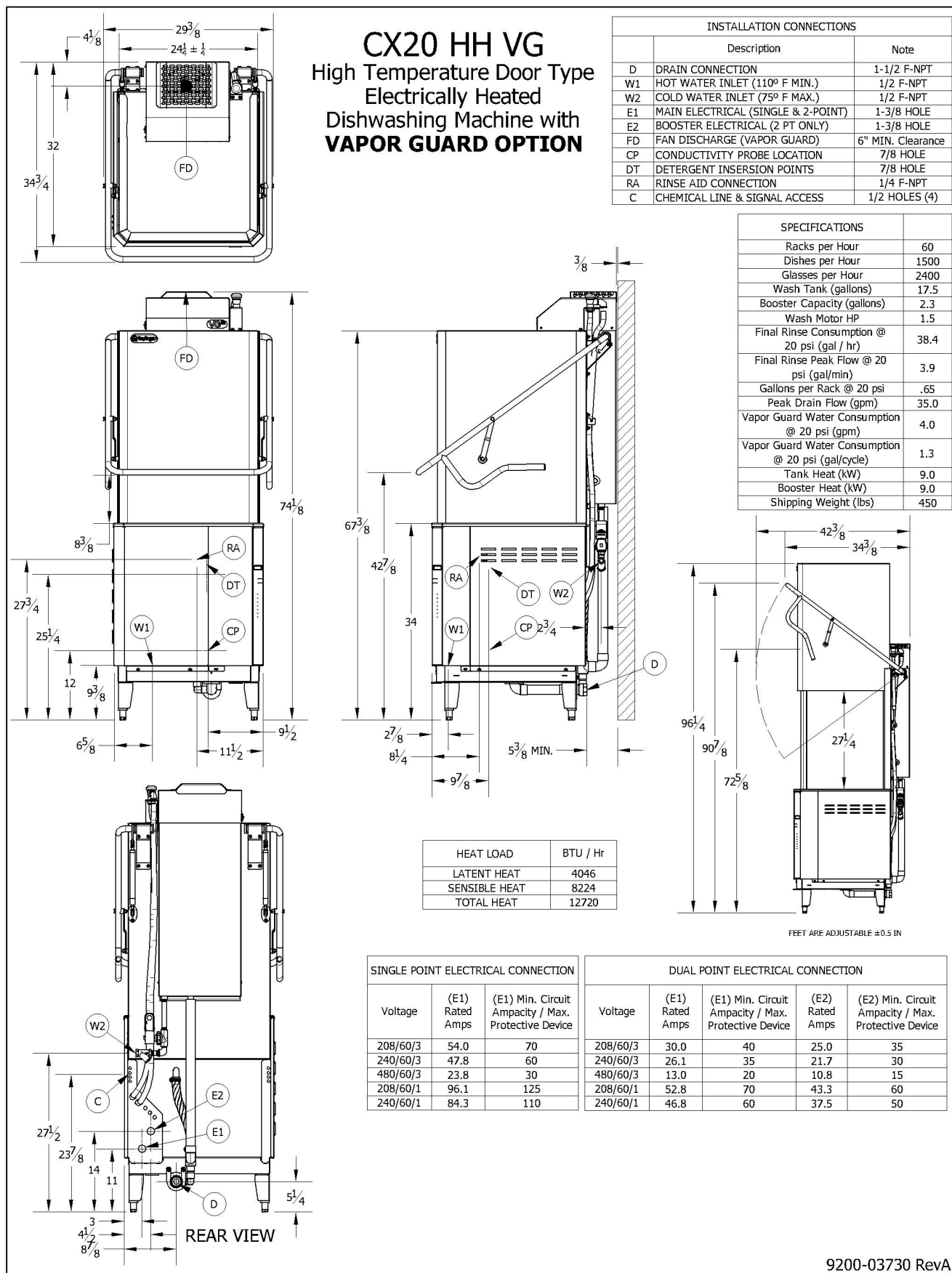
SINGLE POINT ELECTRICAL CONNECTION

Voltage	(E1) Rated Amps	(E1) Min. Circuit Ampacity / Max. Protective Device
208/60/3	54.0	70
240/60/3	47.8	60
480/60/3	23.8	30
208/60/1	96.1	125
240/60/1	84.3	110

DUAL POINT ELECTRICAL CONNECTION

Voltage	(E1) Rated Amps	(E1) Min. Circuit Ampacity / Max. Protective Device	(E2) Rated Amps	(E2) Min. Circuit Ampacity / Max. Protective Device
208/60/3	30.0	40	25.0	35
240/60/3	26.1	35	21.7	30
480/60/3	13.0	20	10.8	15
208/60/1	52.8	70	43.3	60
240/60/1	46.8	60	37.5	50

9200-03729 RevA



9200-03730 RevA

STEAM BOOSTER

TABLE		
ITEM	DESCRIPTION	SIZE
SI	STEAM INLET	1 NPT
ST	STEAM TRAP OUTLET	1/2 NPT
RV	WATER PRESS RELIEF VALVE	3/4 NPT

ALL CONNECTION POINTS SHOWN APPLY TO BOTH STANDARD AND HIGH HOOD UNITS

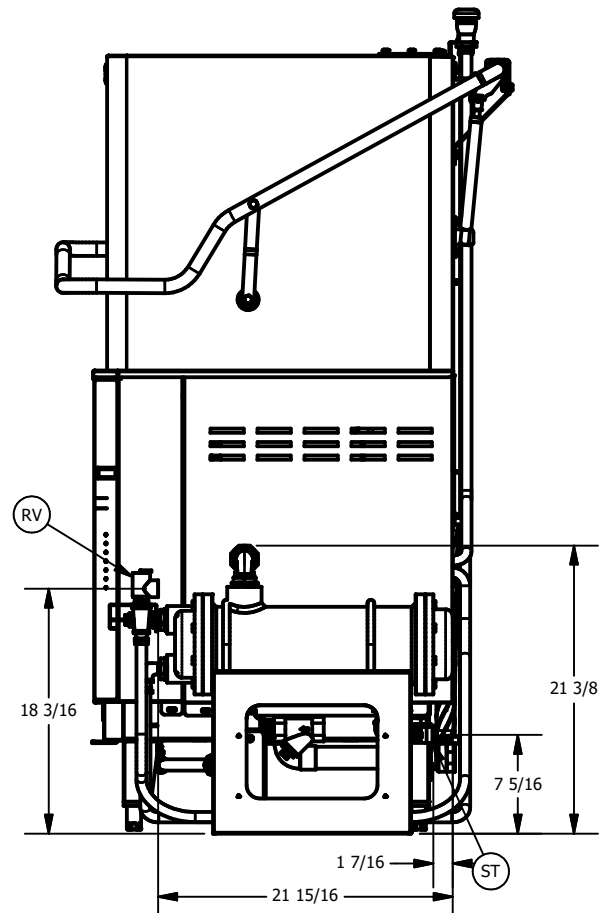
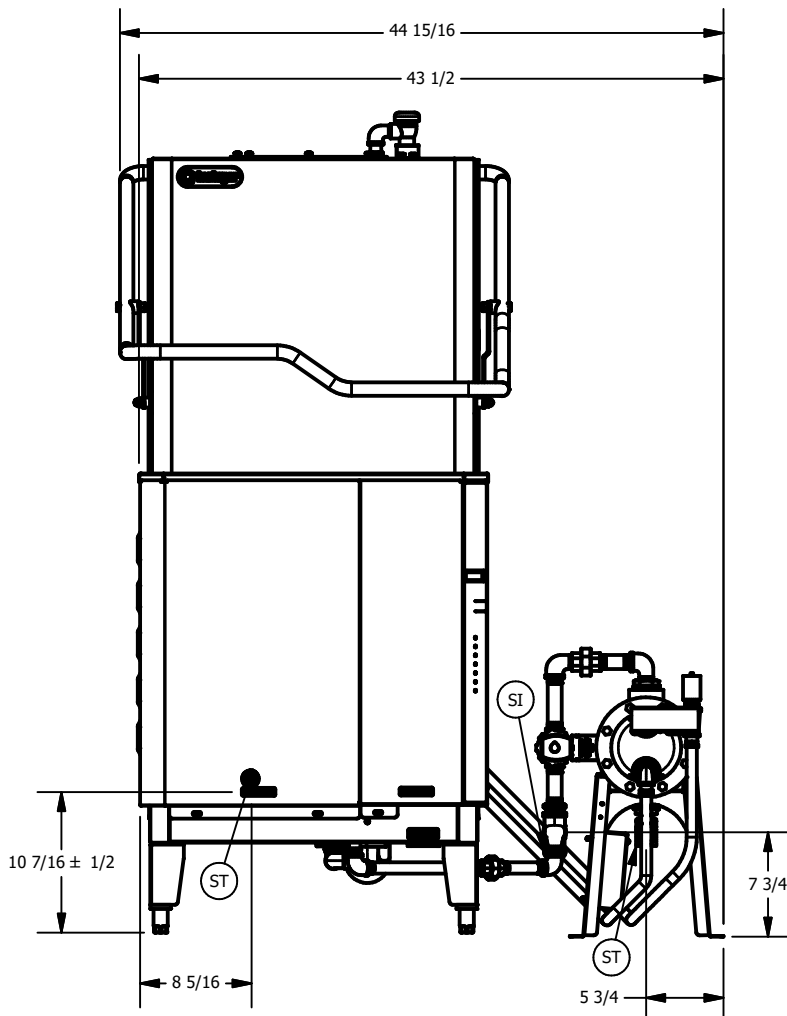
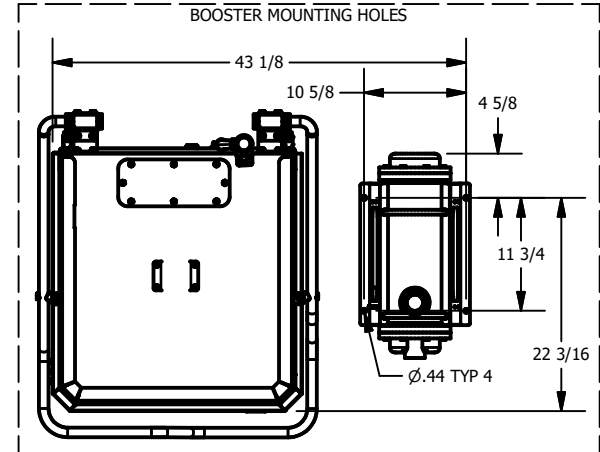
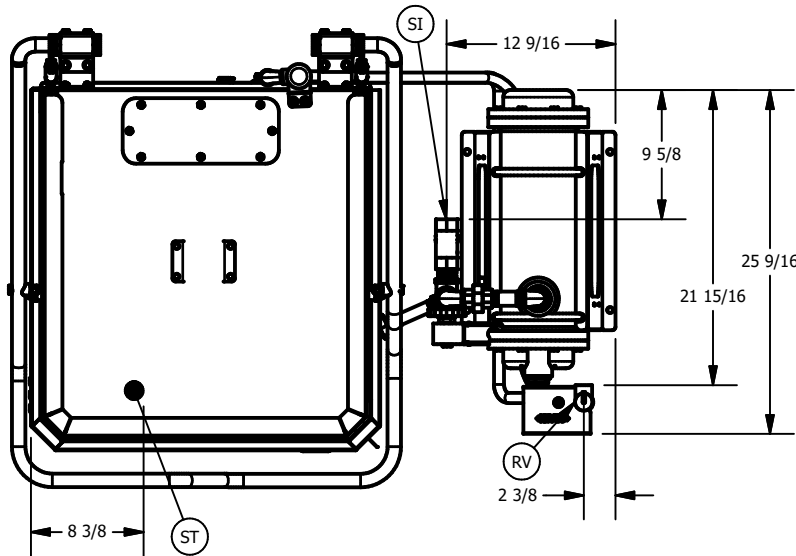
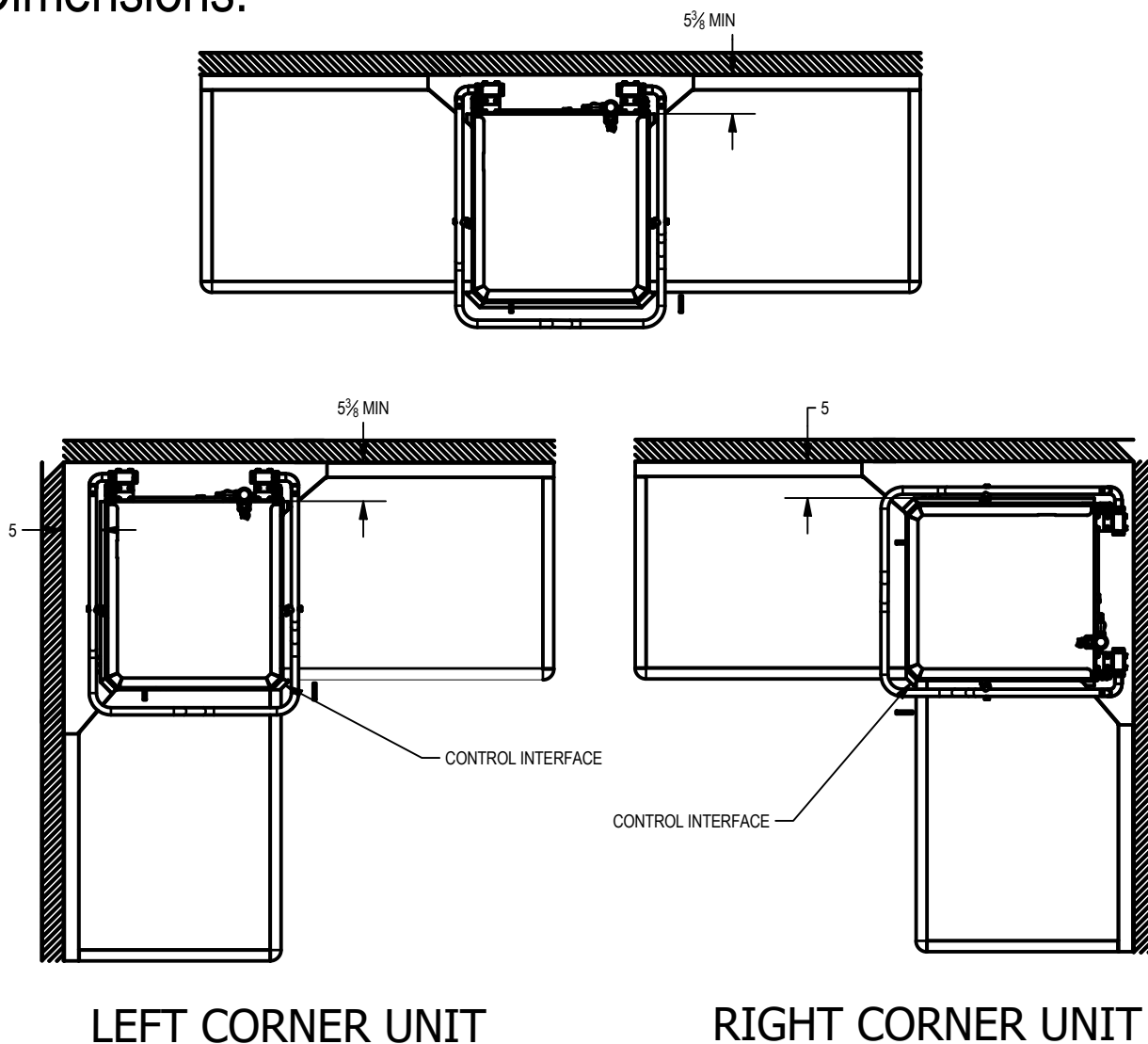
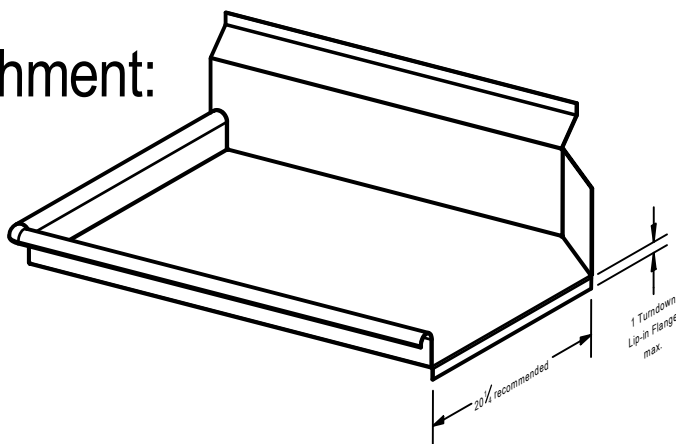


Table Dimensions:



Tabling Attachment:



We reserve the right to change specifications in this bulletin without incurring any obligation for equipment previously or subsequently sold.

OPERATING CAPACITY

Racks per Hour:	59
Dishes per Hour:	1080
Glasses per Hour:	2160

STANDARD OPERATING CYCLES**CYCLE 1:**

Wash Time:	49 sec
Rinse Time:	10 sec
Total Cycle Time:	59 sec

CYCLE 2:

Wash Time:	80 sec
Rinse Time:	10 sec
Total Cycle Time:	90 sec

CYCLE 3:

Wash Time:	170 sec
Rinse Time:	10 sec
Total Cycle Time:	180 sec

VG2 OPERATING CYCLES**CYCLE 1:**

Wash Time:	20 sec
Rinse Time:	10 sec
Vent Time:	30 sec
Total Cycle Time:	60 sec

CYCLE 2:

Wash Time:	80 sec
Rinse Time:	10 sec
Vent Time:	30 sec
Total Cycle Time:	120 sec

CYCLE 3:

Wash Time:	170 sec
Rinse Time:	10 sec
Vent Time:	30 sec
Total Cycle Time:	210 sec

ELECTRIC LOADS

Wash Motor HP:	1.5
Wash Heater kW:	9.0
Rinse Booster Heater kW:	9.0

STEAM REQUIREMENTS

Steam Flow Pressure:	10-20 psig
Steam Consumption @ 15 psig	45 lbm/hr
Steam Inlet Connection	1/2" NPT
Steam Condensate Connection:	1/2" NPT

WATER REQUIREMENTS

Wash Temperature (Minimum):	160° F
Rinse Temperature (Minimum):	180° F
Inlet Water Temperature (Minimum):	110° F
Water Flow Pressure:	20 ± 5 psig
Water Line Size:	1/2" NPT
Drain Line Size:	1-1/2" NPT

TANK CAPACITIES

Wash Tank:	17.5 gallons
Rinse Booster Tank:	2.3 gallons

VENTLESS OPTION REQUIREMENTS

Latent Heat Load:	4046 BTU/Hr
Sensible Heat Load:	8224 BTU/Hr
Total Heat Load:	12270 BTU/Hr

Inlet Water Temperature (Max):	75° F
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NOTE: ALWAYS REFER TO THE MACHINE DATA PLATE FOR SPECIFIC ELECTRICAL AND WATER REQUIREMENTS. THE MATERIAL PROVIDED ON THIS PAGE IS FOR REFERENCE ONLY AND IS SUBJECT TO CHANGE WITHOUT NOTICE.

ELECTRICAL REQUIREMENTS

ELECTRICALLY HEATED / SINGLE POINT CONNECTION									
VOLTS	PHASE	FREQ	WASH MOTOR	WASH HEATER	RINSE HEATER	CONTROL	TOTAL LOAD	MCA	MOP
208	1	60	9.2 A	43.3 A	43.3 A	0.27 A	96.1 A	125 A	125 A
240	1	60	9.1 A	37.5 A	37.5 A	0.24 A	84.3 A	110 A	110 A
208	3	60	4.7 A	25.0 A	25.0 A	0.27 A	54.0 A	70 A	70 A
240	3	60	4.2 A	21.7 A	21.7 A	0.24 A	47.8 A	60 A	60 A
480	3	60	2.1 A	10.8 A	10.8 A	0.12 A	23.8 A	30 A	30 A

ELECTRICALLY HEATED / DUAL POINT CONNECTION															
CONNECTION #1									CONNECTION #2						
VOLTS	PH	FREQ	WASH MOTOR	WASH HEATER	CONTROL	TOTAL LOAD	MCA	MOP	VOLTS	PH	FREQ	RINSE HEATER	TOTAL LOAD	MCA	MOP
208	1	60	9.2 A	43.3 A	0.27 A	52.8 A	70 A	70 A	208	1	60	43.3 A	43.3 A	60 A	60 A
240	1	60	9.1 A	37.5 A	0.24 A	46.8 A	60 A	60 A	240	1	60	37.5 A	37.5 A	50 A	50 A
208	3	60	4.7 A	25.0 A	0.27 A	30.0 A	40 A	40 A	208	3	60	25.0 A	25.0 A	35 A	35 A
240	3	60	4.2 A	21.7 A	0.24 A	26.1 A	35 A	35 A	240	3	60	21.7 A	21.7 A	30 A	30 A
480	3	60	2.1 A	10.8 A	0.12 A	13.0 A	20 A	20 A	480	3	60	10.8 A	10.8 A	15 A	15 A

ELECTRICALLY HEATED (NO BOOSTER) - SINGLE POINT CONNECTION								
VOLTS	PH	FREQ	WASH MOTOR	WASH HEATER	CONTROL	TOTAL LOAD	MCA	MOP
208	1	60	9.2 A	43.3 A	0.27 A	52.8 A	70 A	70 A
240	1	60	9.1 A	37.5 A	0.24 A	46.8 A	60 A	60 A
208	3	60	4.7 A	25.0 A	0.27 A	30.0 A	40 A	40 A
240	3	60	4.2 A	21.7 A	0.24 A	26.1 A	35 A	35 A
480	3	60	2.1 A	10.8 A	0.12 A	13.0 A	20 A	20 A

STEAM HEATED / SINGLE POINT CONNECTION							
VOLTS	PH	FREQ	WASH PUMP	CONTROL	TOTAL LOAD	MCA	MOP
208	1	60	9.2 A	0.31 A	9.5 A	15 A	15 A
240	1	60	9.1 A	0.26 A	9.4 A	15 A	15 A
208	3	60	4.7 A	0.31 A	5.0 A	15 A	15 A
240	3	60	4.2 A	0.26 A	4.5 A	15 A	15 A
480	3	60	2.1 A	0.13 A	2.2 A	15 A	15 A

NOTE: ALWAYS REFER TO THE MACHINE DATA PLATE FOR SPECIFIC ELECTRICAL AND WATER REQUIREMENTS. THE MATERIAL PROVIDED ON THIS PAGE IS FOR REFERENCE ONLY AND IS SUBJECT TO CHANGE WITHOUT NOTICE.

INTRODUCTION

This manual contains all pertinent information to assist in the proper installation, operation, cleaning, maintenance, and parts ordering for the CX20, CX20H and CX20S dishwashers.

The installation instructions are intended for qualified equipment installers.

The operation and cleaning instructions are intended for the daily users of the equipment.

The maintenance and drawing sections are intended for qualified service and/or maintenance technicians.

Replacement parts may be ordered directly from our factory or from your local Authorized Insinger Service Company.

Surefire Start-Up Program

Insinger is proud to offer our exclusive Surefire Start-up & Check-out Program to our commercial customers. This service is included in the purchase price of your new Insinger dishwasher. We will provide an authorized factory service technician for the initial start-up of your new Insinger dishwasher to ensure it is running correctly. Please call the factory or your local Insinger Sales or Service Representative to schedule this service.

NSF 3 requirements for chemical dispensers

This machine must be operated with an automatic detergent feeder and, if applicable, an automatic chemical sanitizer feeder, including a visual means to verify that detergents and sanitizers are delivered or a visual or audible alarm to signal if detergents and sanitizers are not available for delivery to the respective washing system. Please see instructions for electrical and plumbing connections located in this manual and in the feeder equipment manual.

Intended Use

This Insinger dishmachine may only be used for cleaning ware placed in a dish rack.

Any change in design or use of the dishwasher carried out without the written permission of Insinger, will lead to warranty nullification.

If damage is caused to the dishwasher due to failure to observe the instructions given in this manual, no claims under the warranty agreement can be submitted to Insinger Machine Company.

DEFINITIONS

Throughout this guide you will find the following terms: **WARNING, CAUTION, & NOTE.**

	WARNING: Indicates a potential physical danger
CAUTION:	
Indicates a potential equipment damage	
	NOTE: Indicates helpful operating hints or tips

SAFETY SUMMARY

The following are general safety precautions that are not related to any specific procedures. These are recommended precautions that personnel must understand and apply during many phases of operation and maintenance.

Keep Away From Live Circuits

Operating personnel must at all times observe all safety regulations. Do not replace components or make adjustments inside the equipment with the power supply turned on. Under certain conditions, dangerous potentials may exist when the power control is in the off position. To avoid casualties and injuries, always remove power, red tag and lockout machine, and ground a circuit before touching it.

Do Not Service or Adjust Alone

Under no circumstances should any person reach into or enter the enclosure for the purpose of servicing or adjusting the equipment except in the presence of someone who is capable of rendering aid.

Resuscitation

Personnel working with or near high voltages should be familiar with modern methods of resuscitation. Such information may be obtained from the Bureau of Medicine and Surgery.



INSINGER MACHINE COMPANY LIMITED WARRANTY

Insinger Machine Company, Inc. (Insinger) hereby warrants to the original retail purchaser of this Insinger Machine Company, Inc. product, that if it is assembled and operated in accordance with the printed instructions accompanying it, then for a period of either 15 months from the date of shipment from Insinger or 1 year (12 months) from the date of installation or start-up that said Insinger product shall be free from defects in material and workmanship. Whichever one of the two aforesated limited warranty time periods is the shortest shall be the applicable limited warranty coverage time period.

Insinger may require reasonable proof of your date of purchase; therefore, you should retain your copy of invoice or shipping document.

This limited warranty shall be limited to the repair or replacement of parts which prove defective under normal use and service and which on examination shall indicate, to Insinger's satisfaction, they are defective. Any part that is claimed to be defective and covered by this limited warranty must be returned to Insinger. An RMA# must be obtained from the Insinger Warranty Department before returning any material. Return may be done through an Authorized Service Agency. Furnish serial number of machine and RMA # with shipment and send to:

Insinger Machine Company
6245 State Road
Philadelphia, PA 19135-2996

If Insinger's inspection confirms the defect and the claim, Insinger will repair or replace such part without charge and return it to you freight or postage prepaid.

This limited warranty does not cover any failure or accident, abuse, misuse, alteration, misapplication, improper installation, fire, flood,

acts of God or improper maintenance or service, or failure to perform normal and routine maintenance as set out in the instruction booklet (operating instructions) or for improper operation or failure to follow normal operating instructions (as set out in the instruction booklet). Insinger is not responsible nor liable for any conditions of erosion or corrosion caused by corrosive detergents, acids, lye or other chemicals used in the washing and or cleaning process.

Service must be done by either Insinger Appointed Service Agencies or agencies receiving prior authorization from Insinger.

All warranty work must be done during normal working hours, unless purchaser receives prior authorization from Insinger.

There are no other express warrants except as set forth herein and any applicable implied warranties of merchantability and fitness are limited in duration to the period of coverage of this express written limited warranty. This limited warranty supersedes all other express warranties, implied warranties of merchant-ability and fitness or limited warranties as of this date, January 1, 1998. Some states do not allow limitation on how long an implied warranty lasts so this limitation may not apply to you.

Insinger is not liable for any special, indirect or consequential damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, so this limitation nor exclusion may not apply to you.

Insinger does not authorize any person or company to assume for it any other obligation or liability in connection with the sale, installation, use, removal, return or replacement of its equipment: and no such representations are binding on Insinger.

INSTALLATION INSTRUCTIONS

These installation instructions are intended for qualified equipment installers:

PLACEMENT

Carefully uncrate the machine. Take caution not to damage components which may be mounted on the top or sides of the machine.

Set the unit in place and adjust the feet to level the machine.

CHEMICALS

Upon completed installation of the dishwasher, contact a local detergent/chemical supplier for the correct chemicals for your machine.

Electrical connection points for the detergent dispenser and rinse injector are located inside the control panel. Refer to the machine wiring diagram for the proper connection points.

Dispensers may be connected to the 24VAC terminal block provided. refer to the schematic for exact labeling.

The detergent density probe should be placed in the hole provided.

CAUTION:

As with any 3 phase system, an electrician must check all motors for proper phasing, i.e., Pump motors must be running in direction indicated by arrow on housing.

MECHANICAL CONNECTIONS

All lines must be flushed prior to use to remove debris.

Connect a 110°F (for 70°F rise) or a 140°F (for 40°F rise) water line for tank fills and booster as tagged and noted on the installation drawings.

If machine is provided with steam heat connect the steam lines and steam condensate lines as tagged and noted on installation drawings.

Connect the drain lines. Drain lines must be as specified on installation drawings.

If a booster is provided, a 110°F (for 70°F rise) or a 140°F (for 40°F rise) water connection is necessary. A steam booster also requires a condensate line.

WARNING:



DISCONNECT ELECTRICAL POWER SUPPLIES & TAG OUT IN ACCORDANCE WITH APPROPRIATE CODES AT THE DISCONNECT SWITCH TO INDICATE THE CIRCUIT IS BEING SERVICED.

CAUTION:

Drain lines must be as specified on installation drawings. Drain line should be properly vented and should have fall of not less than 1/4" to the foot of proper flow.

ELECTRICAL CONNECTIONS

Connect electrical lines sized for the correct voltage, current and phase of the machine. These should agree with the machine requirements indicated on the nameplate and labels on the control panel.

Machines not provided with a single-point connection require two separate electrical connections for:

1. pumps and control circuit
2. wash tank heater(s)

If an electrical booster is provided, connect the booster directly to power source.

CAUTION:

Some area plumbing codes require drains to flow into an open gap with an opening twice the diameter of the pipe. Check with your local plumbing codes for the type of drain connection required.

CAUTION:

Connections must be made to a circuit breaker or fused disconnect as provided by the end-user and required by local codes. A laminated wiring diagram is inside the control panel.

CAUTION:

Do not reduce the size of lines as specified in installation drawings. All lines are sized to facilitate necessary flows, pressures, etc.

OPERATION INSTRUCTIONS

These instructions are intended for the daily users of this machine:

PREPARING MACHINE

1. Close the drain lever.
2. Check for proper installation and cleanliness of all internal, removable components such as scrap screens and spray manifolds.
3. Ensure all water and steam lines are open.
4. Ensure electrical circuits are on.
5. Close machine door.

STARTING MACHINE

1. Press the power button to turn the machine on. The display will turn on and the machine will start to fill. If the indicator lights flash red the door or drain is open, check the display for instructions.
2. The indicator lights will illuminate blue from bottom to top to show the progress of the filling process. The display will show the fill pressure. The heaters will come on once the tank is approximately 20% full.
3. When the tank is full the heaters will stay on until the wash tank temperature is met. The indicator lights will illuminate orange from bottom to top to show the progress of the heating process. The display will show the wash tank temperature.
4. Once the machine is ready, the indicator lights will turn green.

CAUTION:

Proper wash tank temperature is 160°F minimum.
Proper final rinse temperature is 180°F minimum
at 20 ± 5 PSI, while in the final rinse cycle.

WASHING A RACK

1. Open the door.
2. Insert a rack of soiled dishware in machine and lower doors. The machine is equipped with RackAware™ and will start the wash and rinse automatically. The machine will not run if there isn't a rack present.

CAUTION:

Overloading racks will minimize the proper cleaning of ware.



WARNING:

Do not open the doors during the cycle as hot water is being sprayed. An interlock is provided to stop the wash/rinse cycle if the doors are opened but hot water may spray out if doors are opened too quickly.

3. The indicator lights will illuminate blue from bottom to top to show the cycle progress. When the machine cycle is completed the indicator lights will flash green.
4. Open the door and remove rack of clean ware.
5. For continuous operation, repeat steps 2 - 4.

EXTENDED CYCLES

The CX20 has three cycles. The cycle lengths can be set by following the instructions in Section TK. The machine will default to Cycle 1 so to run Cycle 2 or 3 do the following:

1. With the door open, press the cycle button to choose your cycle, it is below the power button. Press the button twice to select Cycle 2 and three times to select Cycle 3.
2. Once you have selected your cycle close the door to start the wash.
3. After the cycle, the machine will automatically go back to Cycle 1.

SHUTDOWN

1. Upon completion of ware cleaning press the power switch to turn the machine off.
2. The lights will flash red and the display will tell you to Drain Machine. Open the drain.
3. The indicator lights will turn off from top to bottom and then the machine will turn off.
4. Report any unusual occurrences to qualified service personnel.

CLEANING INSTRUCTIONS

DAILY CLEANING

The following cleaning procedures should be done daily, at the end of the shift:

1. Remove all internal removable parts including spray manifolds, scrap screens, drain overflow tubes and suction strainers.
2. Remove the end caps from the spray arms and clean with the brush provided. Flush the arms.
3. Flush scrap screens of matter. Inspect drain overflow and clean as necessary.

CAUTION:

V-cup seal on the drain stopper may become gummed which will not allow the stopper to seat properly. This will cause the drain to leak water. Remove any build-up on the V-cup seal. When the seal becomes worn, replace.

5. Remove all internal removable parts including spray arms, scrap screens, drain stopper and suction strainers.

CAUTION:

Improper cleaning of suction strainers will cause the pumps to cavitate. This will cause poor washing results.

6. Clean tank level airtrap (1 per tank) with a sponge. DO NOT use steel wool.

CAUTION:

Air trap must be cleaned daily. Build-up of grease and scum will cause faulty operation of tank fill and heating system.

7. Final rinse nozzles must be cleaned of matter.
8. Doors must be left open to allow drying of interior surfaces.

WEEKLY CLEANING

1. The entire machine should be wiped down using an industrial grade stainless steel cleaner.
2. Under the supervision of your detergent supplier the machine interior must be properly de-limed.



NOTE:

The water quality in some areas requires de-liming to be done more frequently. Contact your detergent supplier for recommended de-liming frequency.

DELIME CYCLE

The length of the Delime cycle can be set in the Settings menu. You can set the length to be anywhere from 5 to 15 minutes.

1. Hold the Cycle button for 2 seconds to activate Delime Mode. The indicator LEDs will flash magenta to show that you are in Delime Mode. The display will give you instructions on how to proceed.
2. Open the drain lever and allow the machine to drain. The indicator LEDs will turn off from top to bottom to show the progress.
3. When the LEDs flash magenta, close the drain and make sure the door is also closed. The machine will fill.
4. Once the machine is filled and up to temperature, open the door and put the delime chemical into the tank.
5. Close the door and the machine will run the delime wash cycle.
6. When the cycle is complete, the indicator LEDs will flash magenta. Open the drain lever to drain the machine.
7. The LEDs will flash magenta once the machine is drained. Close the drain lever and allow the machine to fill.
8. Once the machine is filled, the machine will start to run for the flush cycle.
9. At the end of the flush cycle, the indicator LEDs will flash and the display will tell you to drain the machine.
10. After the machine is fully drained, close the drain and allow it to fill and reach temperature.
11. The machine is now ready to wash ware.

MAINTENANCE REQUIREMENTS

This section is intended for qualified service and/or maintenance technicians.

The following maintenance should be conducted quarterly:

1. Remove and clean the strainer screens on water and steam lines. If the screens cannot be cleaned, replace.
2. Inspect the condition of the fill solenoid valve seats and diaphragms. Replace as necessary.
3. Inspect drain o-rings for leakage. Replace where necessary.
4. Check wash and rinse hub bushing/bearing and replace where necessary.

MAINTENANCE PROCEDURES

Solenoid Valve Disassembly (SK-5825)

1. Disconnect the power supply to the machine.
2. Turn off the water supply.
3. Remove cap on top of the coil. Remove the coil.
4. Remove the 4 hex bolts and lift bonnet from valve body. Note positioning of spring and plunger.
5. Remove main piston.
6. Inspect for dirt, wear or lime build-up. Clean or replace as required.
7. Reassemble in reverse of disassembly.

CHANGING SETTINGS

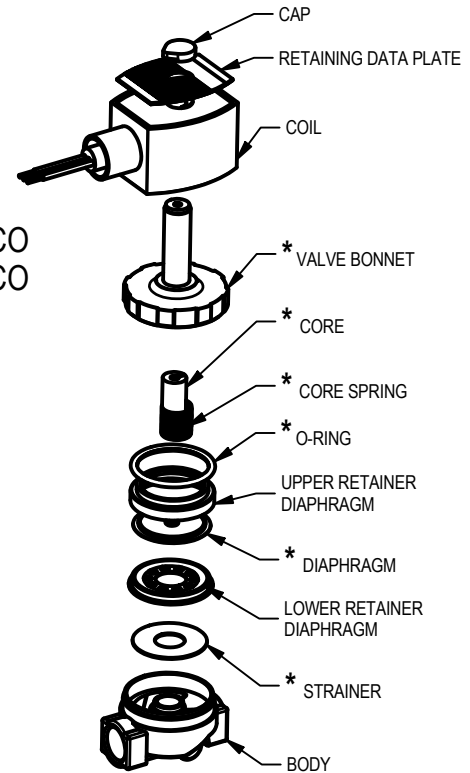
This section is intended for qualified service and/or maintenance technicians.

To access the settings menu you must open the control box. Unscrew the screws that hold the control box cover in place, there is one on the front and one on the side. You will now be able to access the 4-button switch on the right side of the control box.

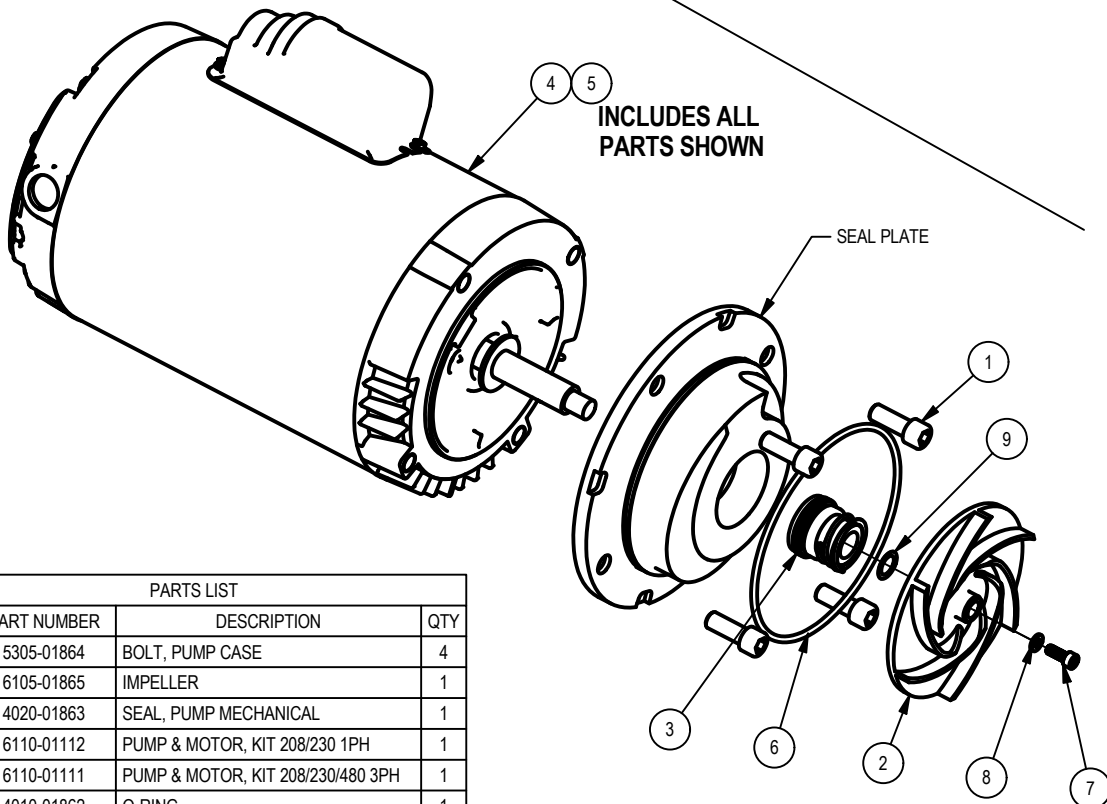
1. To open the settings menu, press and hold button #4 for 2 seconds. The display will now show the programmable options.
2. Scroll through the options using buttons #1 and #2.
3. When you have found the setting you wish the change, press button #3.
4. You will now be able to adjust the value up by using button #3 and down using button #4.
5. When you have set the value, press button #2 to accept.
6. To exit the menu press button #4.

SOLENOID VALVE

6410-01831 KIT, VALVE 1/2 NPT ASCO
 6410-01832 KIT, VALVE 3/4 NPT ASCO
 * INDICATES PARTS SUPPLIED
 IN REBUILD KIT



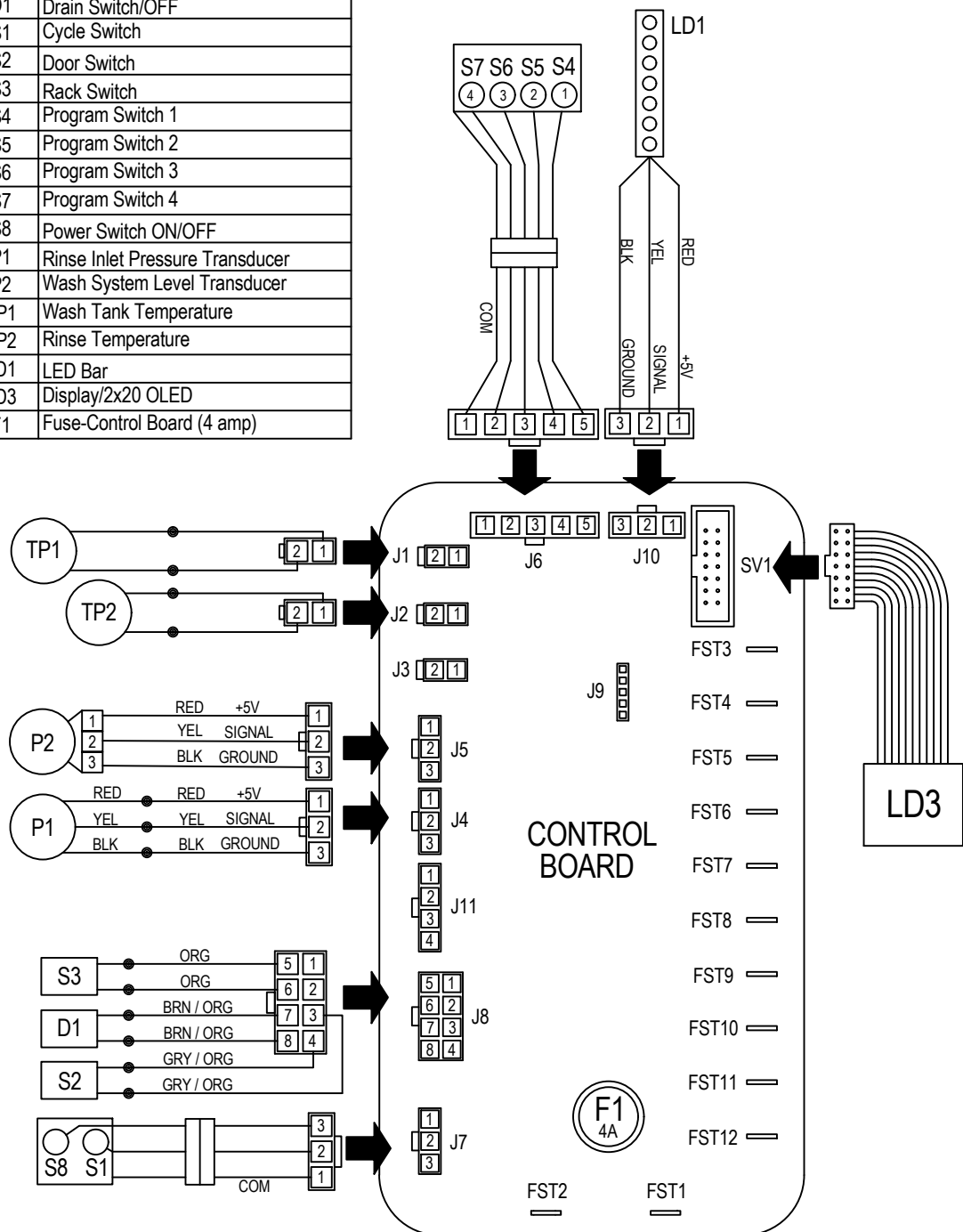
WASH PUMP & MOTOR (1-PHASE & 3 PHASE)



PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	5305-01864	BOLT, PUMP CASE	4
2	6105-01865	IMPELLER	1
3	4020-01863	SEAL, PUMP MECHANICAL	1
4	6110-01112	PUMP & MOTOR, KIT 208/230 1PH	1
5	6110-01111	PUMP & MOTOR, KIT 208/230/480 3PH	1
6	4010-01862	O-RING	1
7	5305-01868	SCREW, PUMP RETAINING	1
8	5330-01867	WASHER, PUMP RETAINING	1
9	5370-01866	SHIM, PUMP	1

CONTROL BOARD HARNESS CONNECTIONS

LEGEND	
D1	Drain Switch/OFF
S1	Cycle Switch
S2	Door Switch
S3	Rack Switch
S4	Program Switch 1
S5	Program Switch 2
S6	Program Switch 3
S7	Program Switch 4
S8	Power Switch ON/OFF
P1	Rinse Inlet Pressure Transducer
P2	Wash System Level Transducer
TP1	Wash Tank Temperature
TP2	Rinse Temperature
LD1	LED Bar
LD3	Display/2x20 OLED
F1	Fuse-Control Board (4 amp)



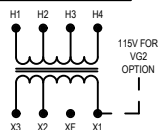
208-480V / 60HZ / 3PH

LEGEND	
M1	Wash Pump Motor
OL1	Overload Wash Motor
VR1	Vent Recovery Relay
VR2	Vent Cutout Relay
C1	Wash Pump Contactor
C2	Wash Heater Contactor
C3	Booster Heater Contactor
DIS	Door Interlock Switch
H1	Wash Tank Heater
H2	Rinse Booster Heater
HL	Wash Heater High Limit
RS	Rinse Solenoid
VS	Vent Water Solenoid
F1	Fuse-Control Board (4 amp)
F2	Fuse-Control Circuit (See Chart)
F3 - F13	Fuses to Component (2 amp)
TB6	Detergent Signal Connection 24V
TB7	Rinse Aid Signal Connection 24V
TB5 / TB8	Vent Fan Signal Connection 24V
TB #	Terminal Blocks
PB1	Main Power Block
HB1	Wash Heater Connection Block
HB2	Booster Heater Connection Block

OVERLOAD SETPOINT	
208V	6 A
240V	6 A
480V	3 A

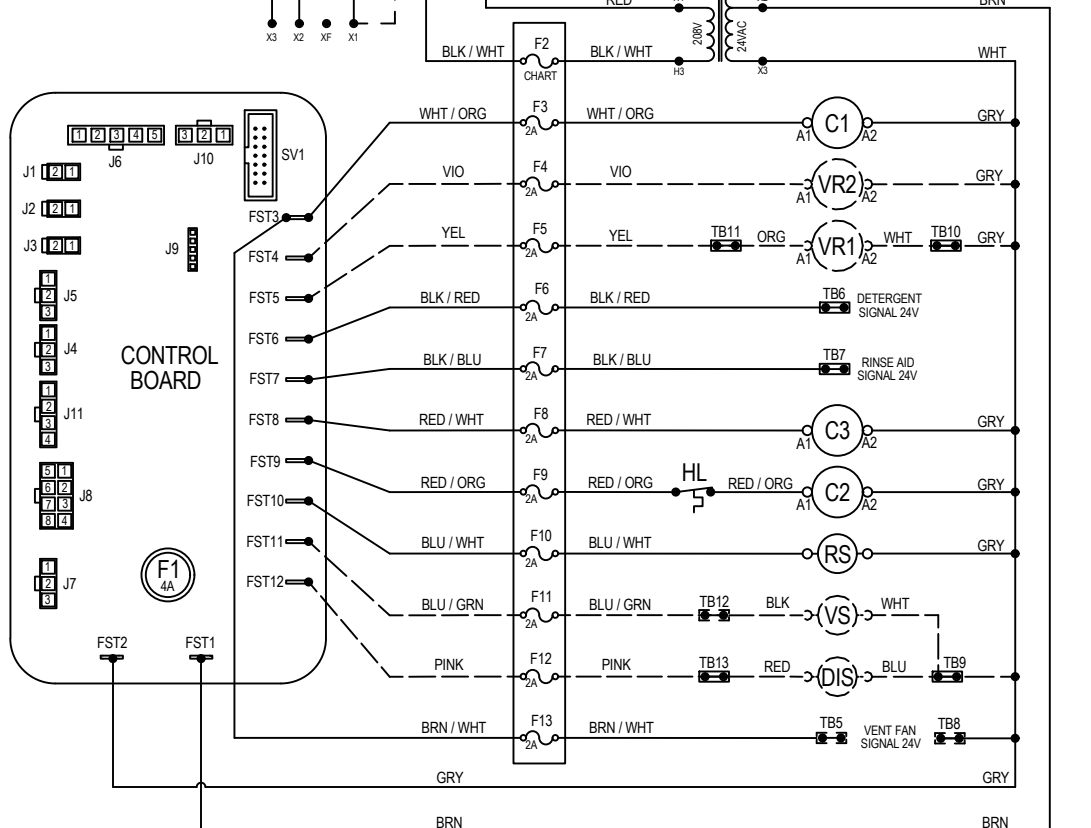
OPTIONAL FEATURES ARE INDICATED BY DASHED LINES: - - - - -

INPUT VOLTAGE	CONNECT
200-208	H3-H4
220-240	H2-H4
440-480	H1-H4
OUTPUT VOLTAGE	
110-120	X1-X3
23-25	X2-X3



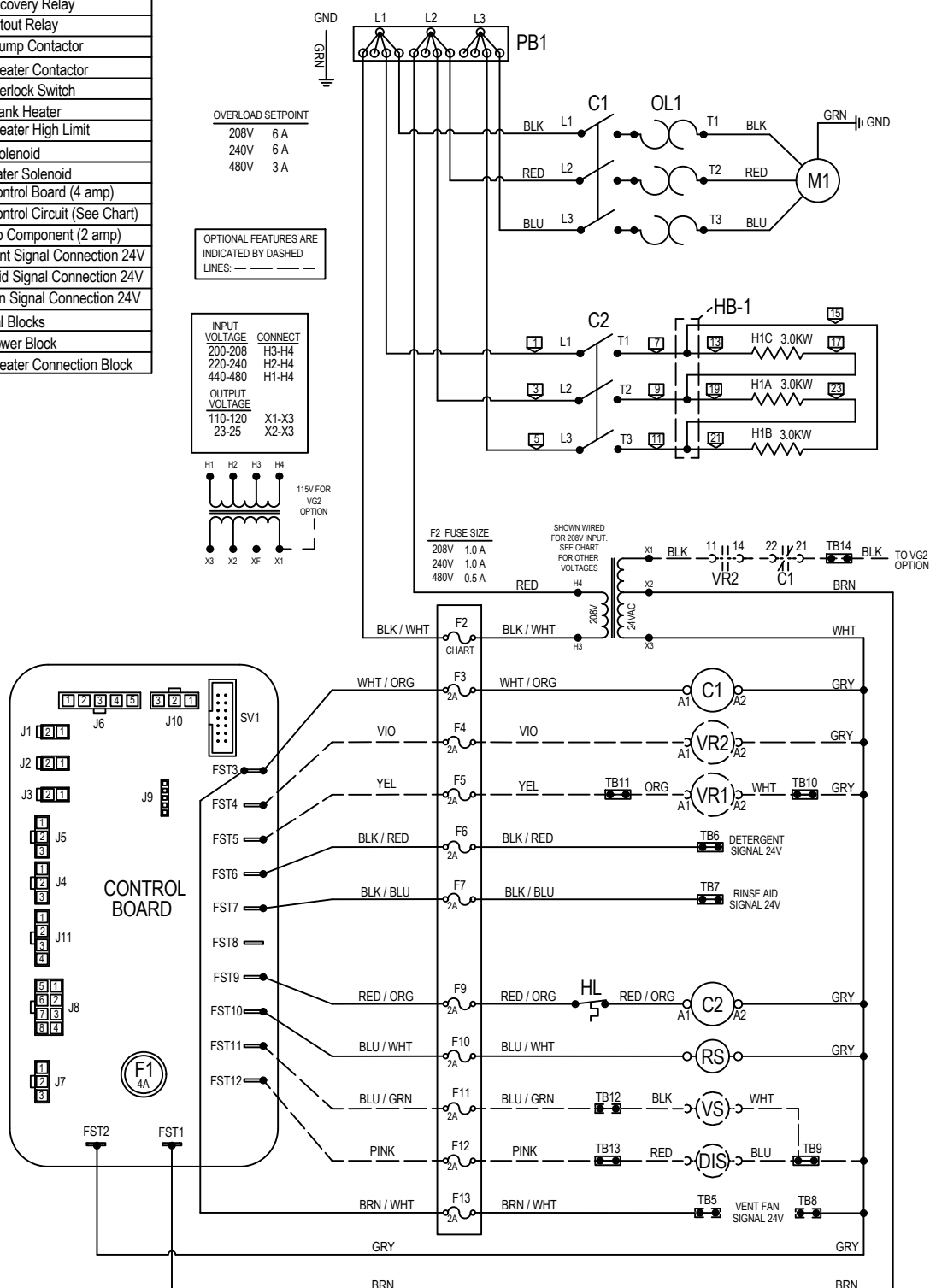
F2 FUSE SIZE	
208V	1.0 A
240V	1.0 A
480V	0.5 A

SHOWN WIRED FOR 208V INPUT. SEE CHART FOR OTHER VOLTAGES



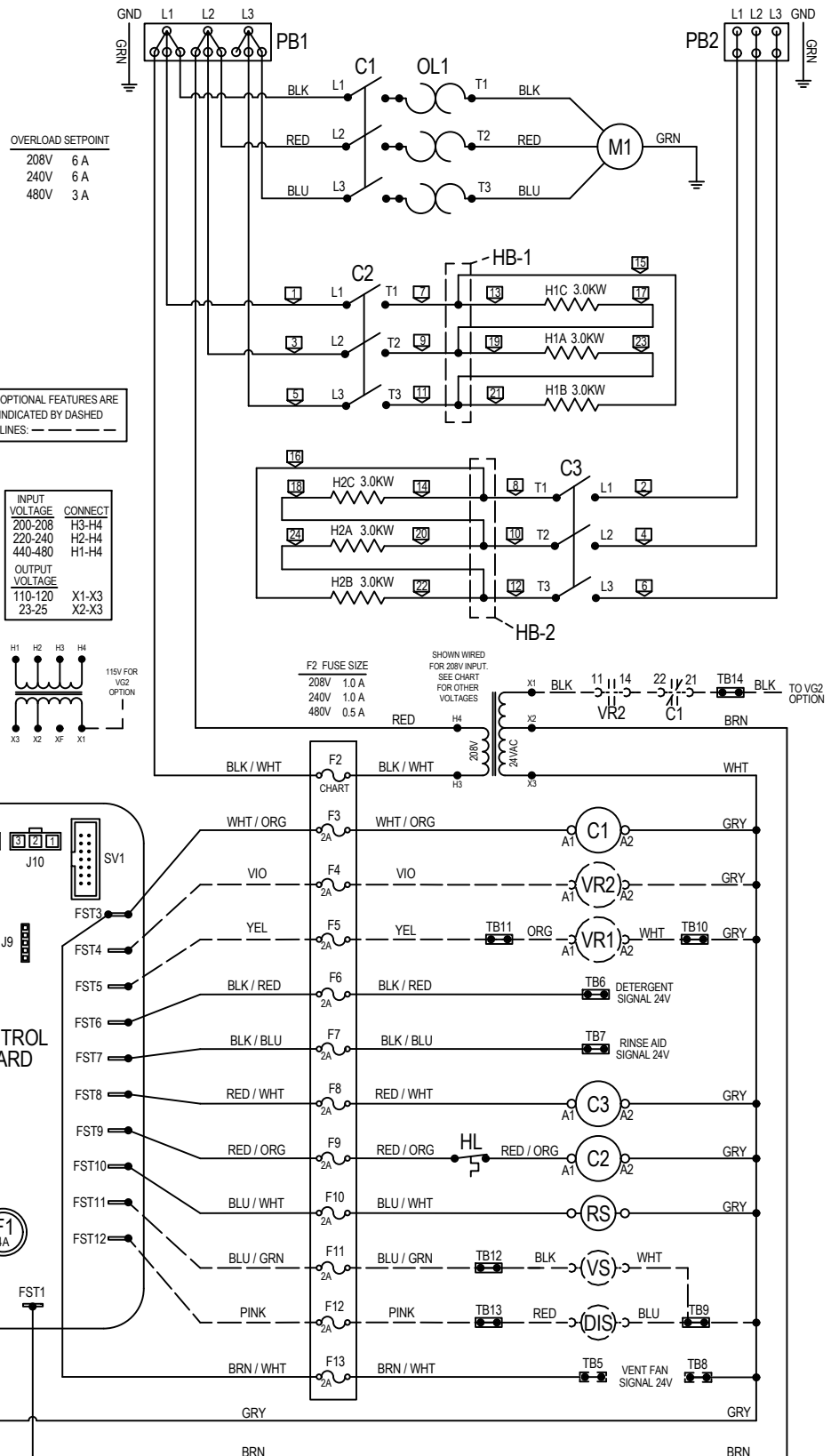
208-480V / 60HZ / 3PH
(No Booster)

LEGEND	
M1	Wash Pump Motor
OL1	Overload Wash Motor
VR1	Vent Recovery Relay
VR2	Vent Cutout Relay
C1	Wash Pump Contactor
C2	Wash Heater Contactor
DIS	Door Interlock Switch
H1	Wash Tank Heater
HL	Wash Heater High Limit
RS	Rinse Solenoid
VS	Vent Water Solenoid
F1	Fuse-Control Board (4 amp)
F2	Fuse-Control Circuit (See Chart)
F3 - F13	Fuses to Component (2 amp)
TB6	Detergent Signal Connection 24V
TB7	Rinse Aid Signal Connection 24V
TB5/ TB8	Vent Fan Signal Connection 24V
TB #	Terminal Blocks
PB1	Main Power Block
HB1	Wash Heater Connection Block



208-480V / 60HZ / 3PH (2-POINT)

LEGEND	
M1	Wash Pump Motor
OL1	Overload Wash Motor
VR1	Vent Recovery Relay
VR2	Vent Outout Relay
C1	Wash Tank Contactor
C2	Wash Heater Contactor
C3	Booster Heater Contactor
DIS	Door Interlock Switch
H1	Wash Tank Heater
H2	Rinse Booster Heater
HL	Wash Heater High Limit
RS	Rinse Solenoid
VS	Vent Water Solenoid
F1	Fuse-Control Board (4 amp)
F2	Fuse-Control Circuit (See Chart)
F3 - F13	Fuses to Component (2 amp)
TB6	Detergent Signal Connection 24V
TB7	Rinse Aid Signal Connection 24V
TB5 / TB8	Vent Fan Signal Connection 24V
TB #	Terminal Blocks
PB1	Main Power Block
PB2	Booster Heater Power Block
HB1	Wash Heater Connection Block
HB2	Booster Heater Connection Block

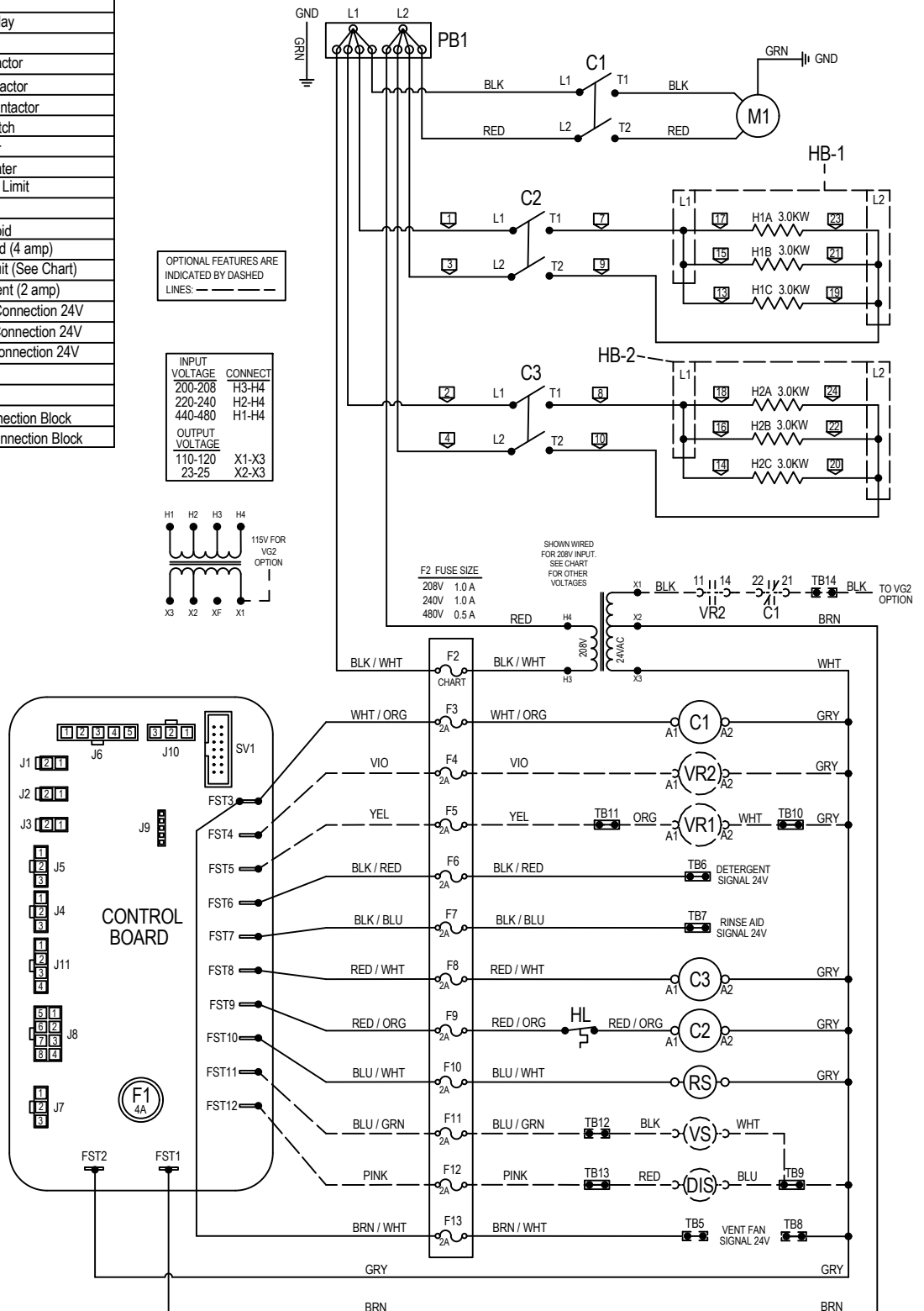
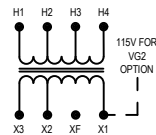


208-240V / 60HZ / 1PH

LEGEND	
M1	Wash Pump Motor
VR1	Vent Recovery Relay
VR2	Vent Cutout Relay
C1	Wash Pump Contactor
C2	Wash Heater Contactor
C3	Booster Heater Contactor
DIS	Door Interlock Switch
H1	Wash Tank Heater
H2	Rinse Booster Heater
HL	Wash Heater High Limit
RS	Rinse Solenoid
VS	Vent Water Solenoid
F1	Fuse-Control Board (4 amp)
F2	Fuse-Control Circuit (See Chart)
F3 - F13	Fuses to Component (2 amp)
TB6	Detergent Signal Connection 24V
TB7	Rinse Aid Signal Connection 24V
TB5 / TB8	Vent Fan Signal Connection 24V
TB #	Terminal Blocks
PB1	Main Power Block
HB1	Wash Heater Connection Block
HB2	Booster Heater Connection Block

OPTIONAL FEATURES ARE INDICATED BY DASHED LINES.

INPUT VOLTAGE	CONNECT
200-208	H3-H4
220-240	H2-H4
440-480	H1-H4
OUTPUT VOLTAGE	
110-120	X1-X3
23-25	X2-X3

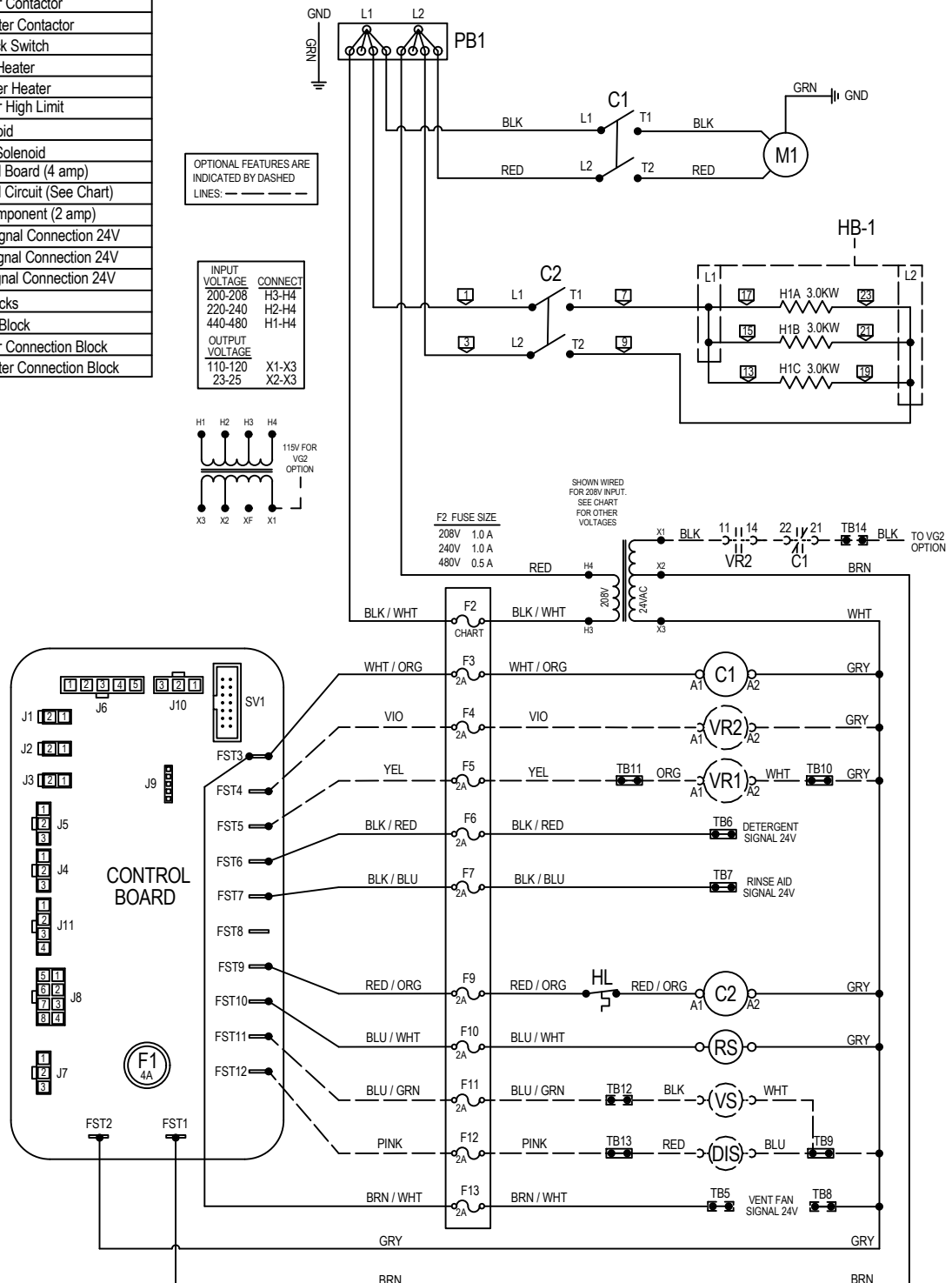
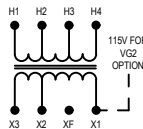


208-240V / 60HZ / 1PH (No Booster)

LEGEND	
M1	Wash Pump Motor
VR1	Vent Recovery Relay
VR2	Vent Cutout Relay
C1	Wash Pump Contactor
C2	Wash Heater Contactor
C3	Booster Heater Contactor
DIS	Door Interlock Switch
H1	Wash Tank Heater
H2	Rinse Booster Heater
HL	Wash Heater High Limit
RS	Rinse Solenoid
VS	Vent Water Solenoid
F1	Fuse-Control Board (4 amp)
F2	Fuse-Control Circuit (See Chart)
F3 - F13	Fuses to Component (2 amp)
TB6	Detergent Signal Connection 24V
TB7	Rinse Aid Signal Connection 24V
TB5 / TB8	Vent Fan Signal Connection 24V
TB #	Terminal Blocks
PB1	Main Power Block
HB1	Wash Heater Connection Block
HB2	Booster Heater Connection Block

OPTIONAL FEATURES ARE INDICATED BY DASHED LINES: - - - - -

INPUT VOLTAGE	CONNECT
200-208	H3-H4
220-240	H2-H4
440-480	H1-H4
OUTPUT VOLTAGE	
110-120	X1-X3
23-25	X2-X3

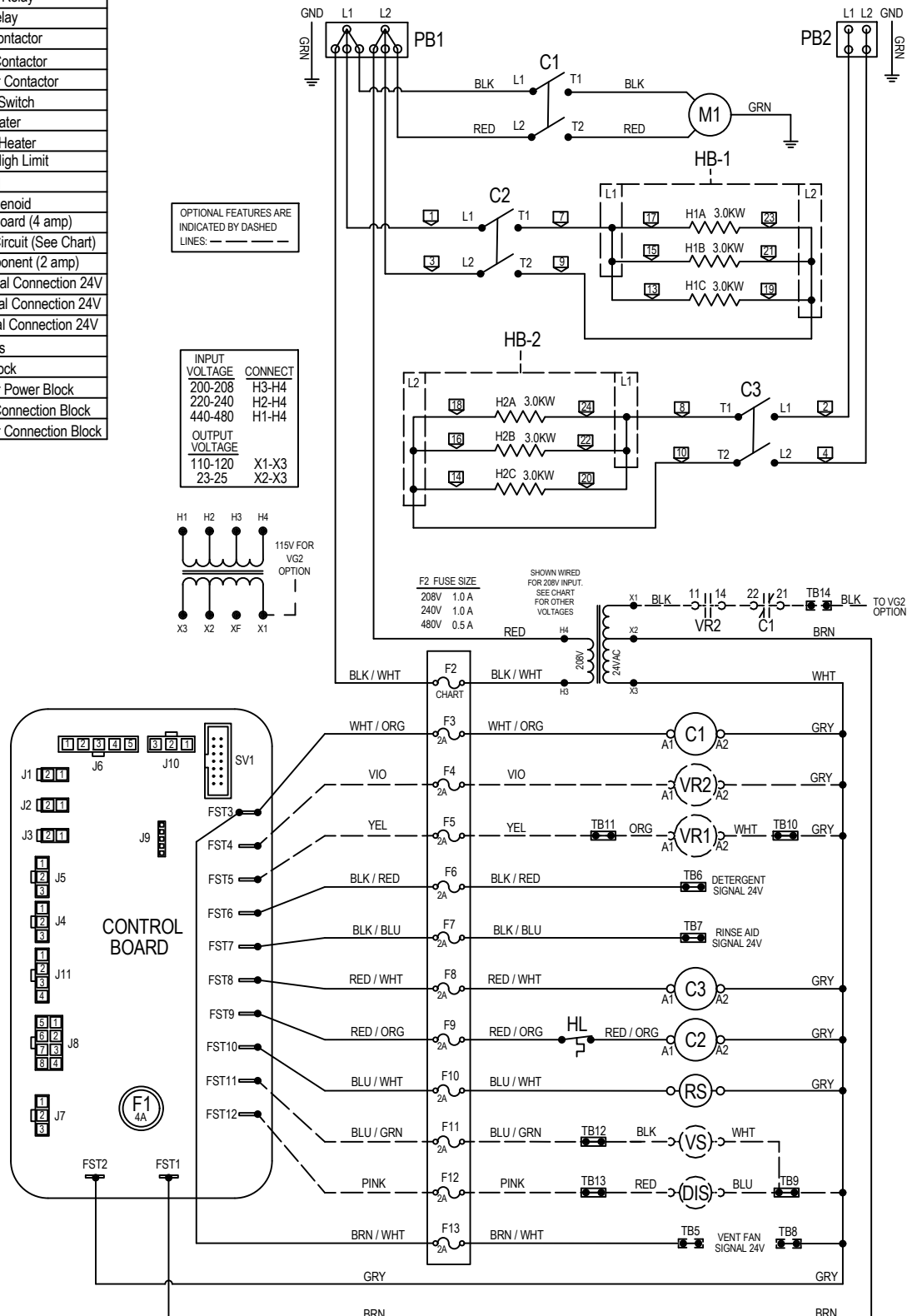
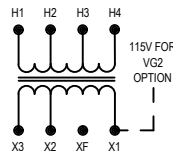


208-240V / 60HZ / 1PH (2-POINT)

LEGEND	
M1	Wash Pump Motor
VR1	Vent Recovery Relay
VR2	Vent Cutout Relay
C1	Wash Pump Contactor
C2	Wash Heater Contactor
C3	Booster Heater Contactor
DIS	Door Interlock Switch
H1	Wash Tank Heater
H2	Rinse Booster Heater
HL	Wash Heater High Limit
RS	Rinse Solenoid
VS	Vent Water Solenoid
F1	Fuse-Control Board (4 amp)
F2	Fuse-Control Circuit (See Chart)
F3 - F13	Fuses to Component (2 amp)
TB6	Detergent Signal Connection 24V
TB7	Rinse Aid Signal Connection 24V
TB5 / TB8	Vent Fan Signal Connection 24V
TB #	Terminal Blocks
PB1	Main Power Block
PB2	Booster Heater Power Block
HB1	Wash Heater Connection Block
HB2	Booster Heater Connection Block

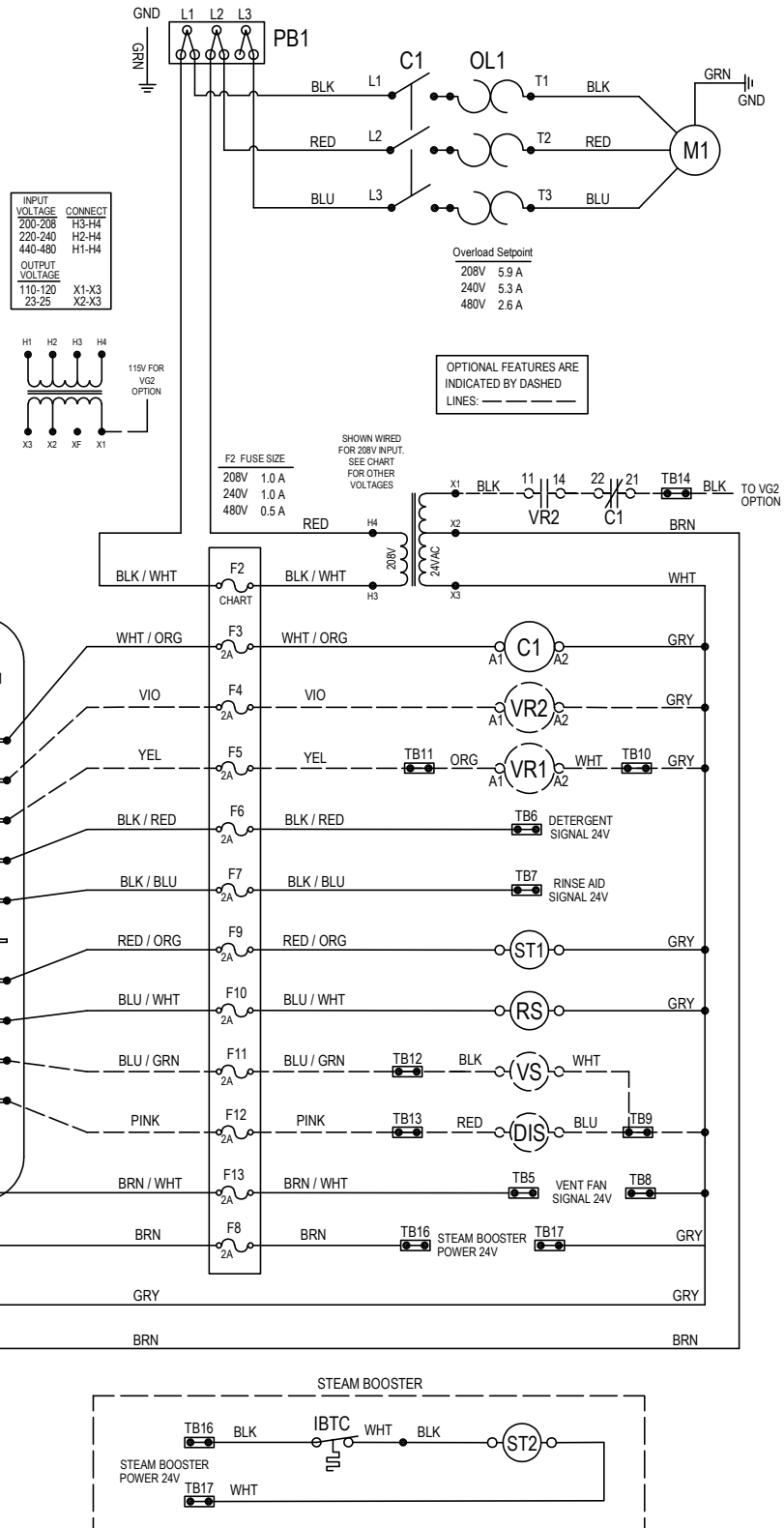
OPTIONAL FEATURES ARE INDICATED BY DASHED LINES: ---

INPUT VOLTAGE	CONNECT
200-208	H3-H4
220-240	H2-H4
440-480	H1-H4
OUTPUT VOLTAGE	
110-120	X1-X3
23-25	X2-X3



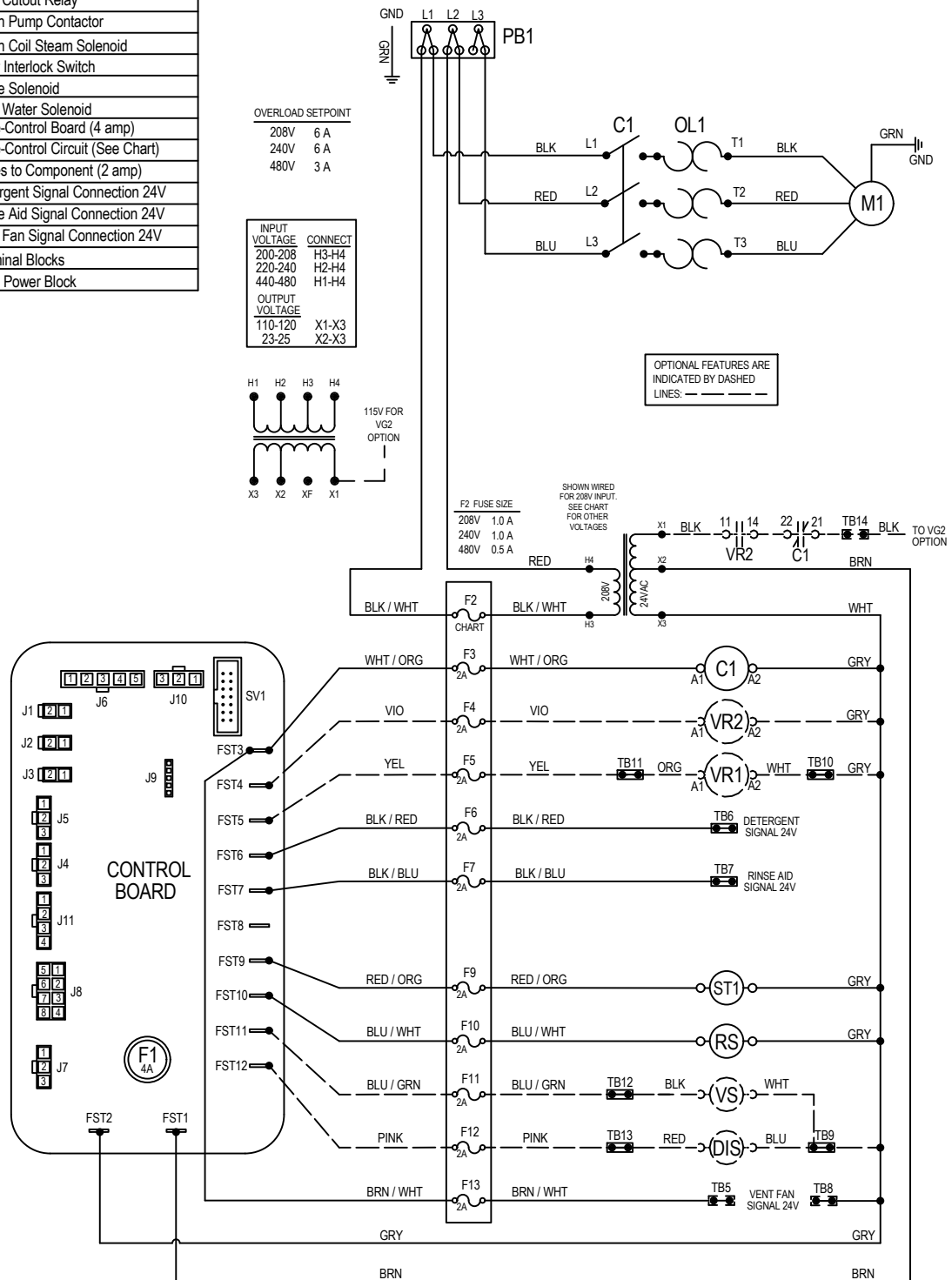
STEAM 208-480V / 60HZ / 3PH

LEGEND	
M1	Wash Pump Motor
OL1	Overload Wash Motor
VR1	Vent Recovery Relay
VR2	Vent Cutout Relay
C1	Wash Pump Contactor
ST1	Wash Coil Steam Solenoid
ST2	Booster Heater Steam Solenoid
DIS	Door Interlock Switch
RS	Rinse Solenoid
VS	Vent Water Solenoid
F1	Fuse-Control Board (4 amp)
F2	Fuse-Control Circuit (See Chart)
F3 - F13	Fuses to Component (2 amp)
TB6	Detergent Signal Connection 24V
TB7	Rinse Aid Signal Connection 24V
TB5 / TB8	Vent Fan Signal Connection 24V
TB1 / TB2	Steam Boost Power 24V
TB #	Terminal Blocks
PB1	Main Power Block



LEGEND	
M1	Wash Pump Motor
OL1	Overload Wash Motor
VR1	Vent Recovery Relay
VR2	Vent Cutout Relay
C1	Wash Pump Contactor
ST1	Wash Coil Steam Solenoid
DIS	Door Interlock Switch
RS	Rinse Solenoid
VS	Vent Water Solenoid
F1	Fuse-Control Board (4 amp)
F2	Fuse-Control Circuit (See Chart)
F3 - F13	Fuses to Component (2 amp)
TB6	Detergent Signal Connection 24V
TB7	Rinse Aid Signal Connection 24V
TB5 / TB8	Vent Fan Signal Connection 24V
TB #	Terminal Blocks
PB1	Main Power Block

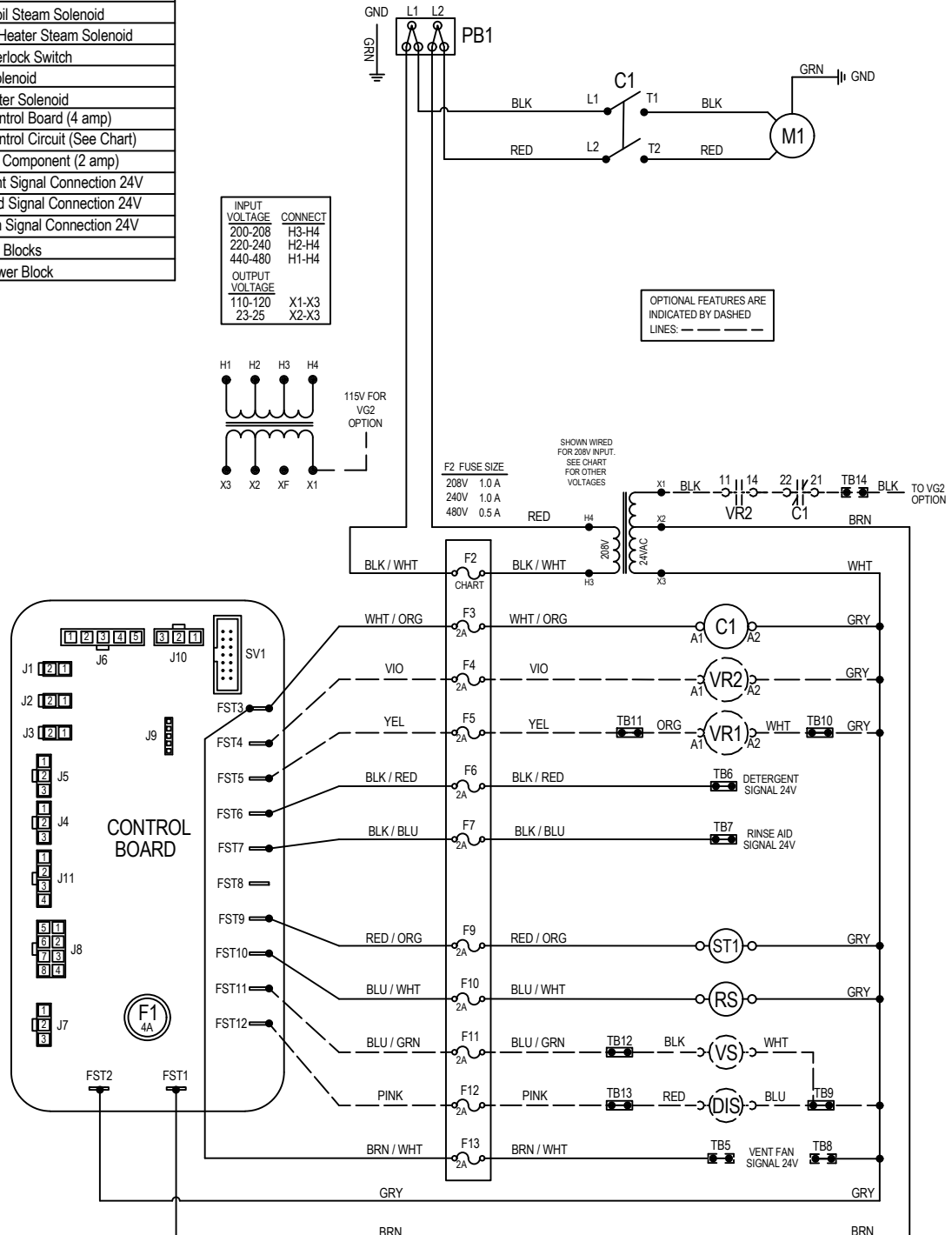
STEAM 208-480V / 60HZ / 3PH (No Booster)





STEAM 208-240V / 60HZ / 1PH (No Booster)

LEGEND	
M1	Wash Pump Motor
VR1	Vent Recovery Relay
VR2	Vent Cutout Relay
C1	Wash Pump Contactor
ST1	Wash Coil Steam Solenoid
ST2	Booster Heater Steam Solenoid
DIS	Door Interlock Switch
RS	Rinse Solenoid
VS	Vent Water Solenoid
F1	Fuse-Control Board (4 amp)
F2	Fuse-Control Circuit (See Chart)
F3 - F13	Fuses to Component (2 amp)
TB6	Detergent Signal Connection 24V
TB7	Rinse Aid Signal Connection 24V
TB5 / TB8	Vent Fan Signal Connection 24V
TB #	Terminal Blocks
PB1	Main Power Block



LEGEND

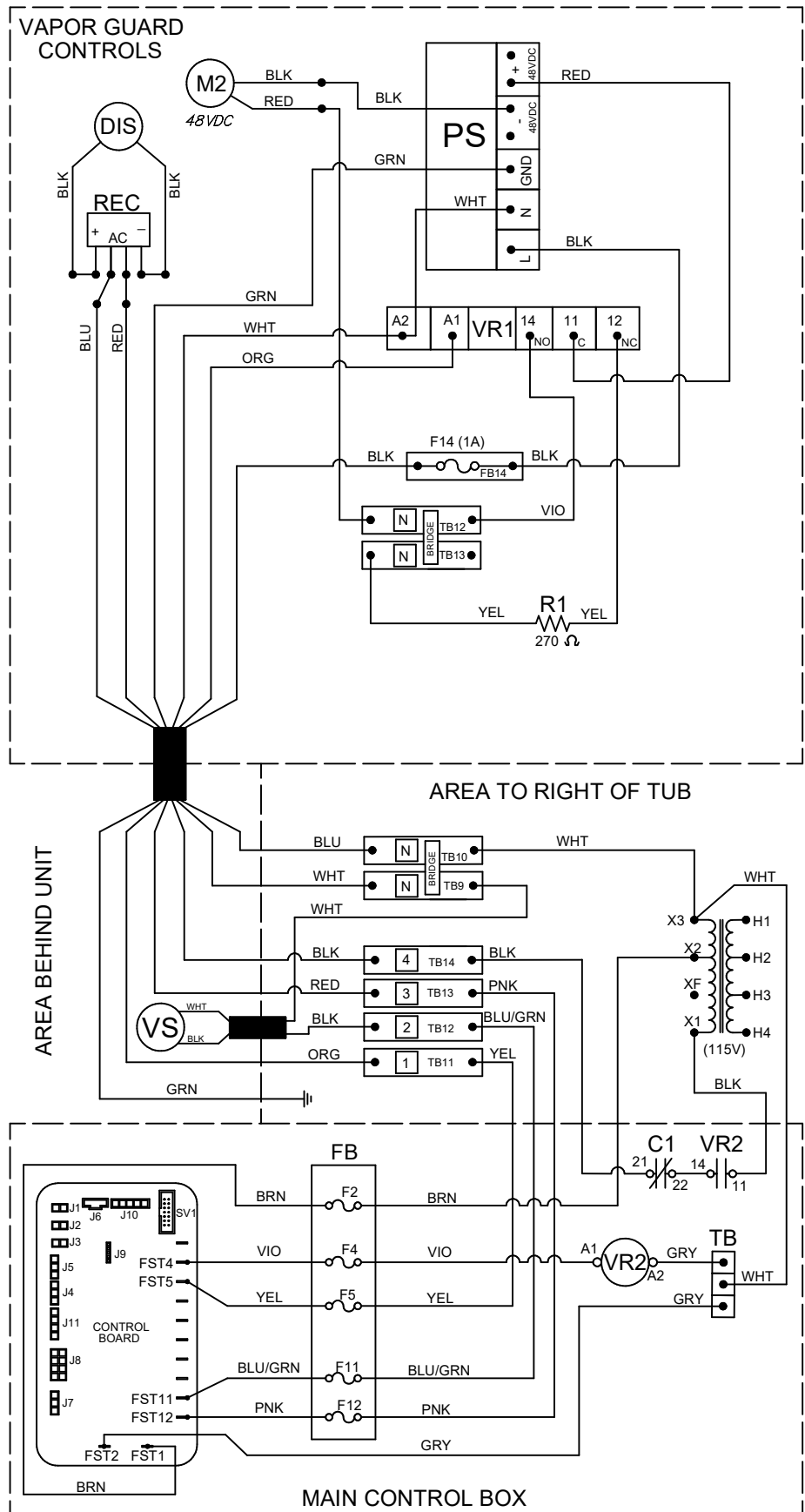
NOTE: SHOWN SCHEMATIC ONLY
SHOWS VAPOR GUARD RELATED
CONNECTIONS SEE MACHINE-
SPECIFIC SCHEMATICS ABOVE

VAPOR GUARD (VG2)

LEGEND	
M2	Fan Motor
VR1	Vent System Relay
VR2	Vent Cutout Relay
PS	Power Supply 48VDC
DIS	Door Interlock Switch
REC	Rect (24VAC to VDC)
R1	Fan Resistor
TB	Terminal Block
RS	Rinse Solenoid
VS	Vent Water Solenoid
FB	Fuse Blocks
F14	Vent Power Fuse
C1	Wash Motor Contactor

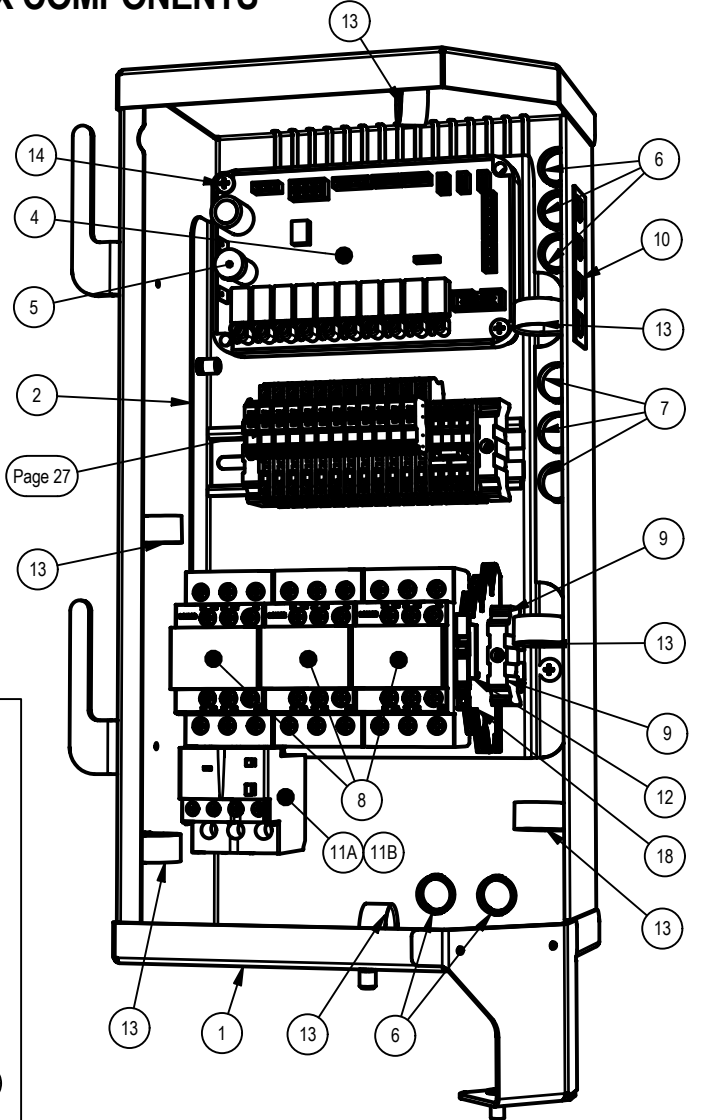
NOTE: THIS SCHEMATIC IS FOR NEWER UNITS AS WELL AS UNITS THAT HAVE HAD THE VAPOR GUARD FAN REPLACED.

NOTE: SHOWN SCHEMATIC ONLY SHOWS VAPOR GUARD RELATED CONNECTIONS SEE MACHINE-SPECIFIC SCHEMATICS ABOVE

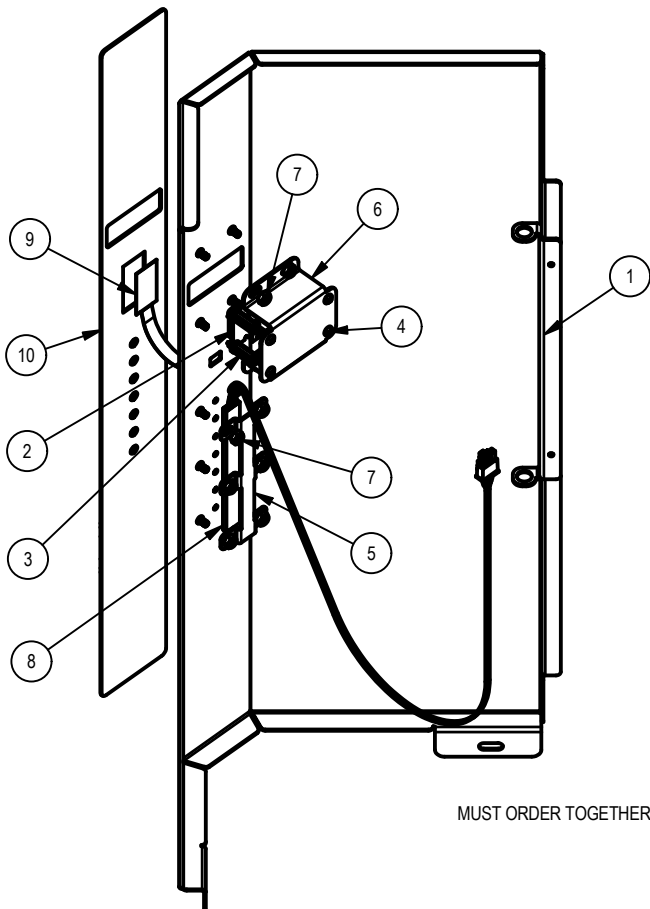


CONTROL BOX COMPONENTS

PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	7100-00051	Control Box Weldment	1
2	7100-00901	Inner Panel Weldment, Control Box	1
3	5915-01151	Grommet, 1.5" Black	1
4	5955-00947	Control Board, Universal-1	1
5	5920-02394	Fuse, 5 x20mm 4.0 Amp	1
6	5915-01150	Grommet, 3/4" DIA x 5/8" Black	5
7	5915-01149	Dome Plug, .75 hole	3
8	5945-01115	Contact, 32A (50 RES) 3-Pole 24VAC COIL	3
9	5940-01128	End Bracket, Din Rail	3
10	5930-01122	Switch, Membrane 4 Position w/ Decal	1
11A	5945-01116	Overload Motor, 4 to 6 Amps (Used for 208-240V)	1
11B	5945-02280	Overload Motor, 2.5 to 4 Amps (Used for 440-480V)	1
12	5945-01447	Relay, 2-Pole 24VAC Coil	1
13	5520-01157	P-Clamp, 7/8" Nylon 6/6 Black	7
14	5305-02384	Screw, 10-32 x 1" Pan Head Phillips 18-8S/S	2
Page 27	N/A	Fuse Block & Fuse Assembly	1

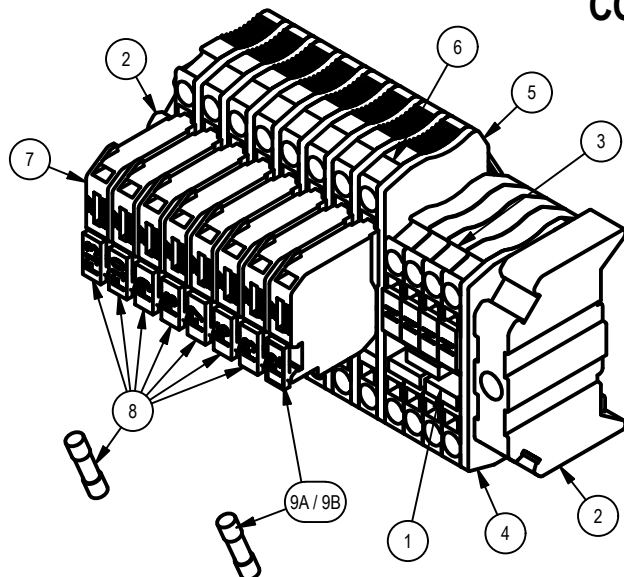


CONTROL BOX COVER COMPONENTS



PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	7100-00047	Control Box Cover	1
2	5965-01105	Display, 2 x 12 LED	1
3	5335-01849	Board Mount, SPT Corner/Edge Hold	4
4	5305-01850	Screw, Sheet Metal Pan Head PHILLIPS #6 X 3/8"	4
5	7000-00989	F-Bracket, LED Strip	1
6	7000-00990	F-Bracket, Display Board	1
7	5325-00556	Nut, #6-32 Locknut Nylon S/S	10
8	7400-01821	Light Strip & Connector Assy	1
9	5930-01121	Switch, Membrane 2 Position	1
10	9600-00852	Decal, CX20 Control Cover	1

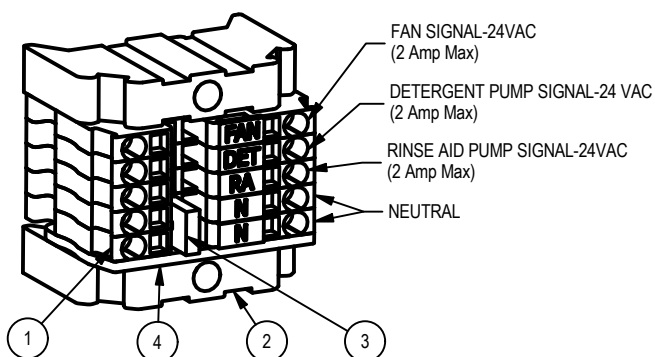
CONTROL BOARD FUSE BLOCKS & FUSES



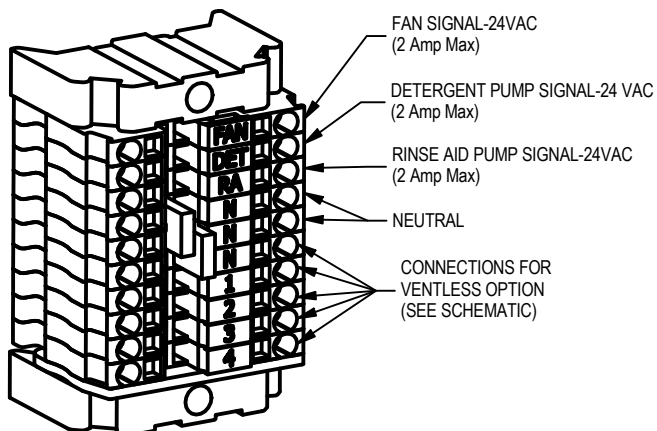
F3-F13 →
F2 →
F2 →

PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	5940-01129	Bridge, Plug In 2-Pole RED	3
2	5940-01128	End Bracket, Din Rail	2
3	5940-01125	Terminal Block	4
4	5940-01127	End Cover, Terminal Block	1
5	5940-01126	End Cover, Terminal Fuse Block	8
6	5940-01123	Terminal Block, Spring 2-PT Disconnect / Fuse	8
7	5940-01124	Terminal, Fuse Carrier w/Light (5x20mm Fuse)	8
8	5920-01130	Fuse, 5 x 20mm 2.0 Amp Fast Acting	8
9A	5920-02142	Fuse, 5 x 20mm 1.0 Amp Slow-Blow (For 208-240V)	1
9B	5920-02143	Fuse, 5 x 20mm 0.5 Amp Slow-Blow (For 440-480V)	1

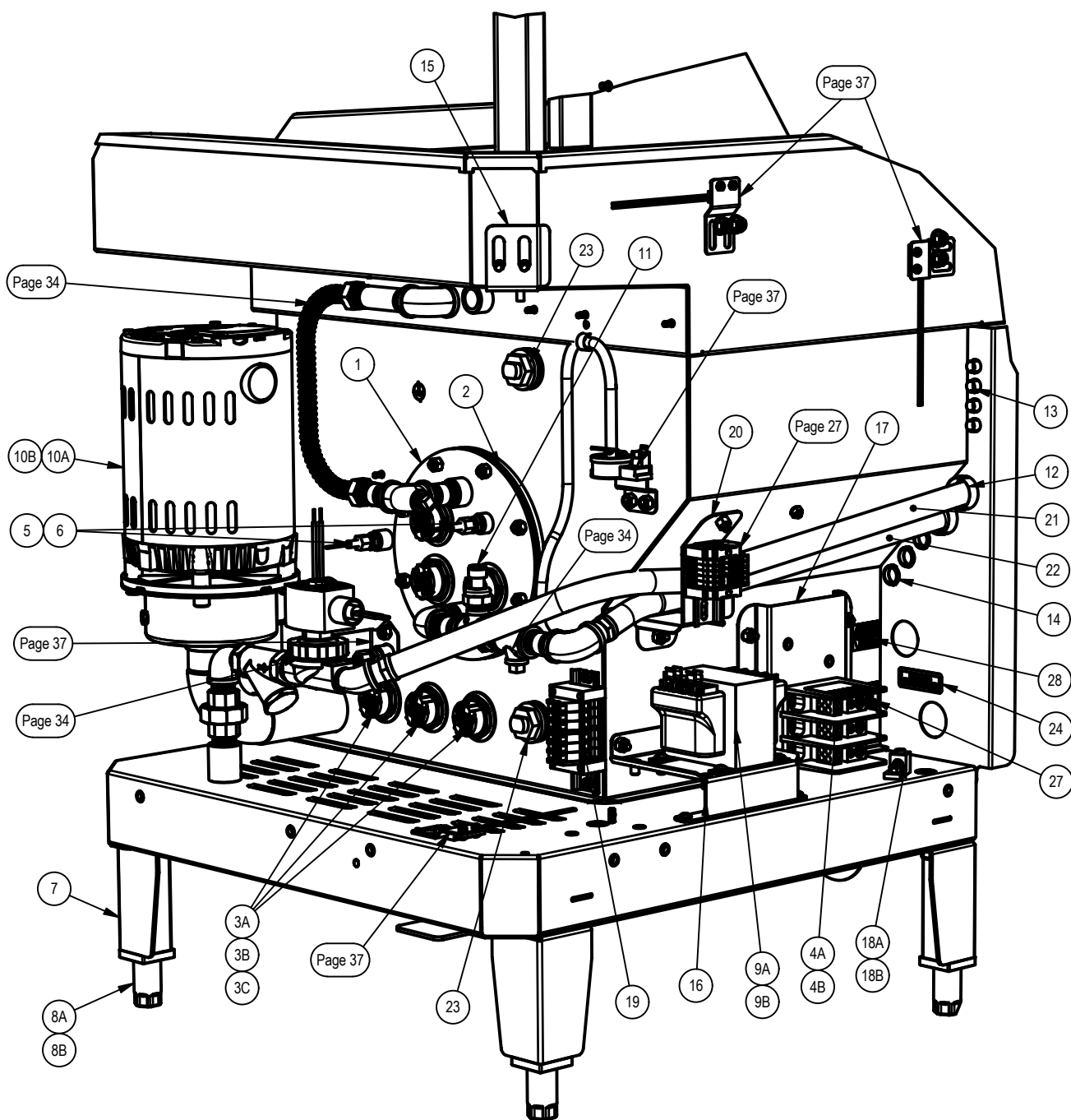
CHEMICAL & EXTERNAL FAN BLOCKS



CHEMICAL & EXTERNAL FAN BLOCKS (VENTLESS OPTION)



PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	5940-01125	Terminal Block	5
2	5940-01128	End Bracket, Din Rail	2
3	5940-01129	Bridge, Plug In 2-Pole RED	1
4	5940-01127	End Cover, Terminal Block	1



PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	7100-00053	Booster Heater Weldment	1
2	4005-00689	Gasket, 8.0 OD x 6.25 ID x .125 Silicon Rubber	1
3A	4440-01107	Heating Element, 3.0 kW 208V	6
3B	4440-01109	Heating Element, 3.0 kW 240V	6
3C	4440-01108	Heating Element, 3.0 kW 480V	6
4A	5940-01163	Power Distribution 3 Pole, 175A 600V	1
4B	5940-01162	Power Distribution 2 Pole, 175A 600V	1
5	4825-01025	Fitting, Compression 1/4" Bulkhead Union w/Locknut	3
6	7400-03453	Thermister, Probe, Temperature 1/4" D x 3" L SS	2
7	7100-01146	Foot Support	4
8A	6310-01137	Foot, Adjustable	4
8B	6310-02105	Foot, Adjustable Flanged	4
9A	5950-01164	Transformer, 100VA 208/230/480V to 24/115VAC	1
9B	5950-00775	Transformer, 250VA 208/230/480V to 20/115VAC	1
10A	6110-01111	Pump and Motor, Kit 208/230/480 3-PH	1
10B	6110-01112	Pump & Motor, Kit 208/230 1-PH	1
11	5035-01120	Transducer, Pressure 1.2 Mpa .5-4.5 VDC	1
12	5915-01152	Grommet, 1-1/4" Black	2
13	5915-01153	Plug, 1/2" Hole Black	4
14	5915-01150	Grommet, 3/4" DIA x 5/8" Black	3
15	7100-01648	Securing Bracket Weldment	1
16	7100-00348	Transformer Bracket Weldment	1
17	7100-01680	Bracket Weldment, Dual Power Block Support	1
18A	5940-01833	Lug, 1 Hole 14-1/0 Wire Aluminum	1
18B	5940-01834	Lug, 2 Hole 14-1/0 Wire Aluminum	1
19	7400-01927	Heater Connection Assembly 3-Phase	1
20	7100-01953	Bracket Weldment, T-Block Connection	1
21	7400-01588	Hose Assy, Inlet to VB	1
22	7400-01589	Hose Assy, VB to Booster	1
23	4820-02003	Plug Assy, Bulkhead 7/8" w/Gaskets	2
24	9600-01938	Label, Copper Conductors Only	1
25	9600-00469	Sticker, Ground	3
26	9600-01942	Label, Power Block L1, L2, L3	1
27	9600-01939	Label, Main Power Connection	1
28	9600-01940	Label, Booster Power Connection	1
Page 27	7400-02108	Terminal Connection Block Assy (Chemical)	1
Page 37	7400-01661	Reed Switch & Mount Assembly	3
Page 37	7000-01800	Wash Heater Hi-Limit Assembly	1
Page 37	7400-01662	Water Level Detection Assembly	1
Page 34	7400-01381	Plumbing Assembly, Booster to Spray Arms	1
Page 34	7400-01380	Booster Inlet Plumbing	1
Page 34	7400-01379	Inlet Plumbing Assembly	1
Page 34	7400-01886	Plumbing, Machine Supply w/No Booster	1

← VERIFY CORRECT VOLTAGE

← VERIFY CORRECT VOLTAGE

← VERIFY CORRECT VOLTAGE

← QTY 2 IF DUAL POINT 3-PHASE CONNECTION

← QTY 2 IF DUAL POINT 1-PHASE CONNECTION

← OPTIONAL

← USED FOR STANDARD UNITS

← USED FOR VAPOR GUARD OPTION UNITS

← 3-PHASE UNITS ONLY

← 1-PHASE UNITS ONLY

← USED FOR 1-POINT CONNECTION

← USED FOR DUAL POINT CONNECTION

← CALL FOR HIGH HOOD AND/OR VAPOR GUARD OPTIONS

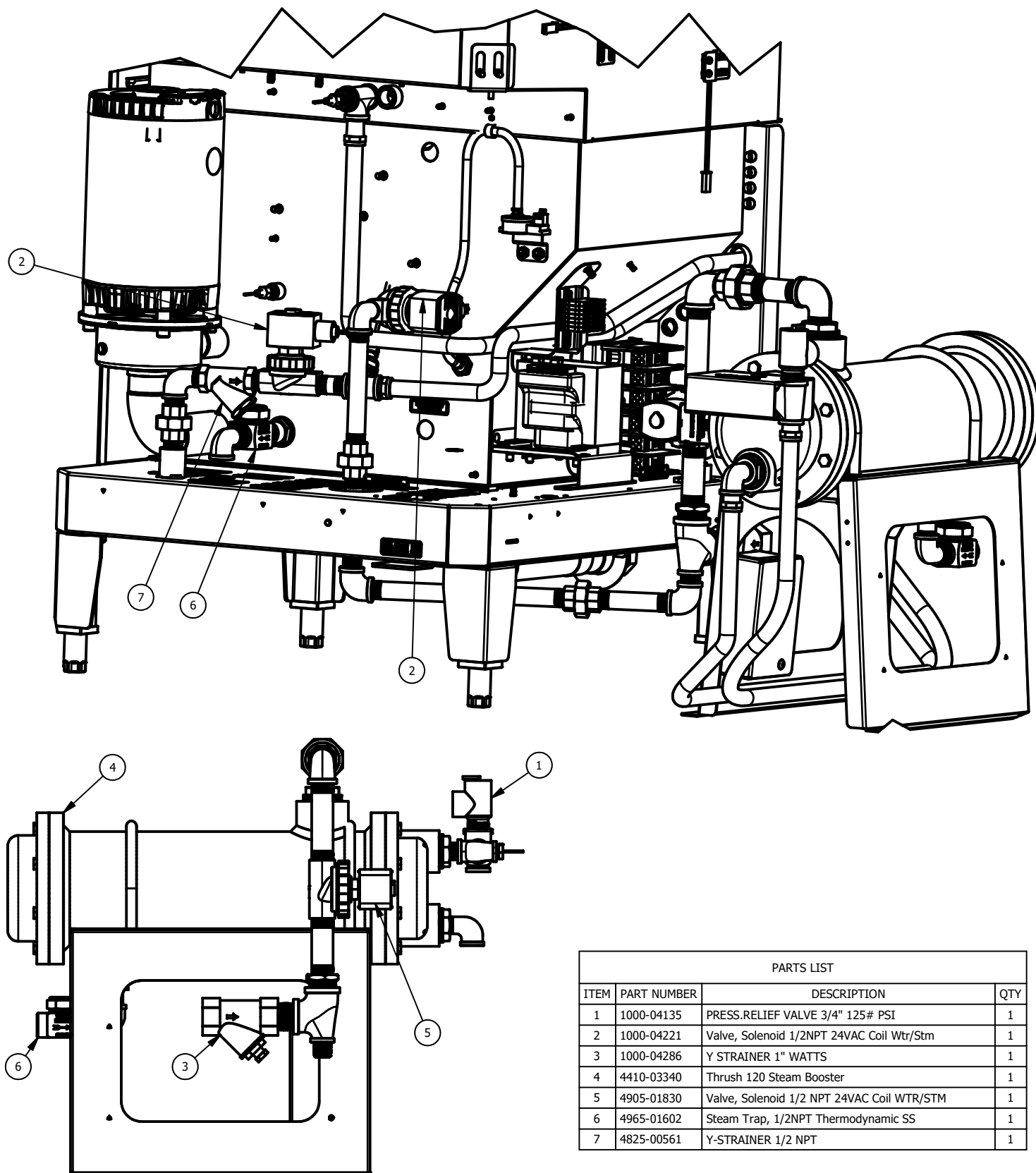
← CALL FOR HIGH HOOD AND/OR VAPOR GUARD OPTIONS

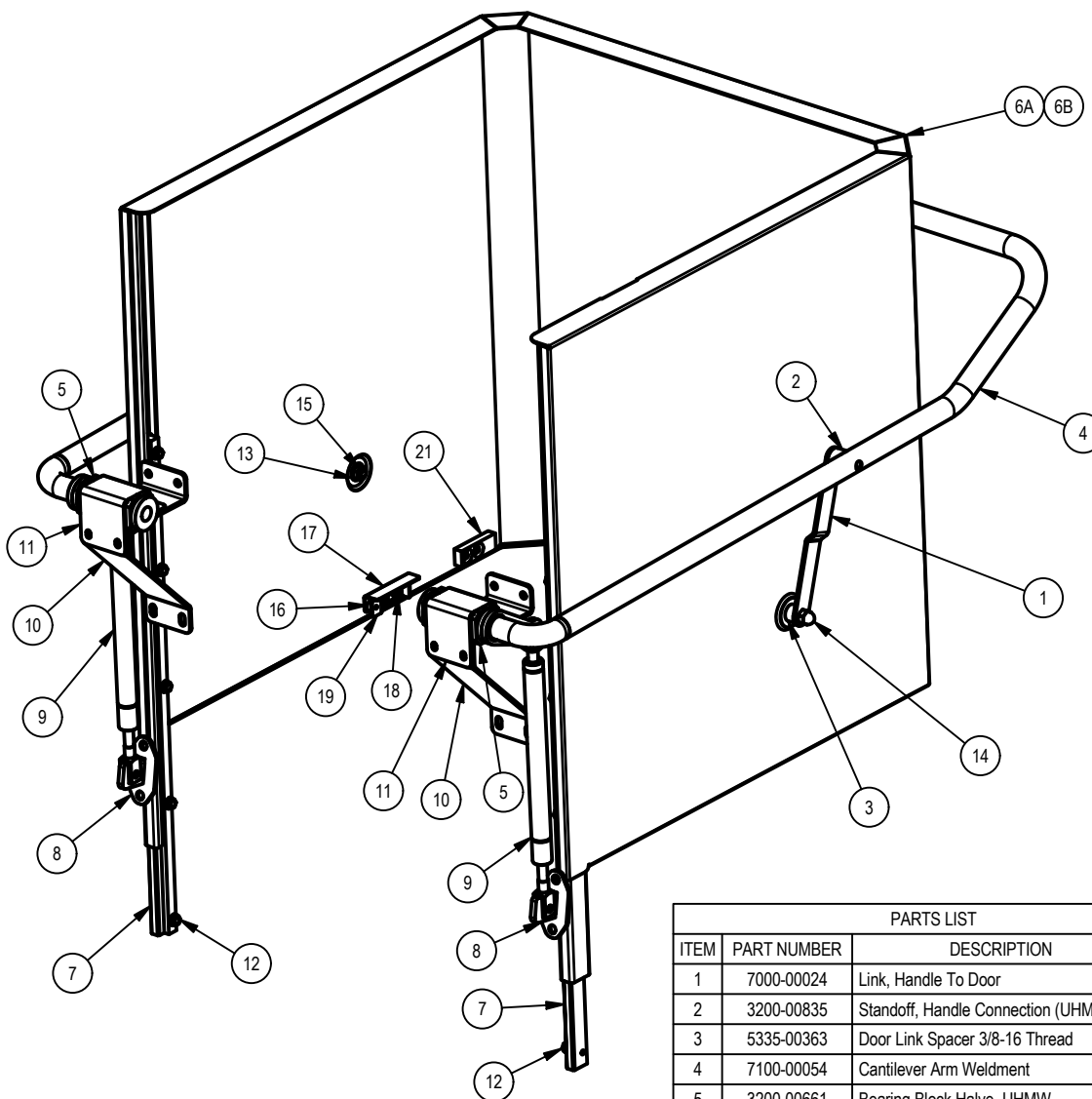
← USED ONLY FOR DUAL POINT CONNECTION

← USED FOR STANDARD BOOSTER

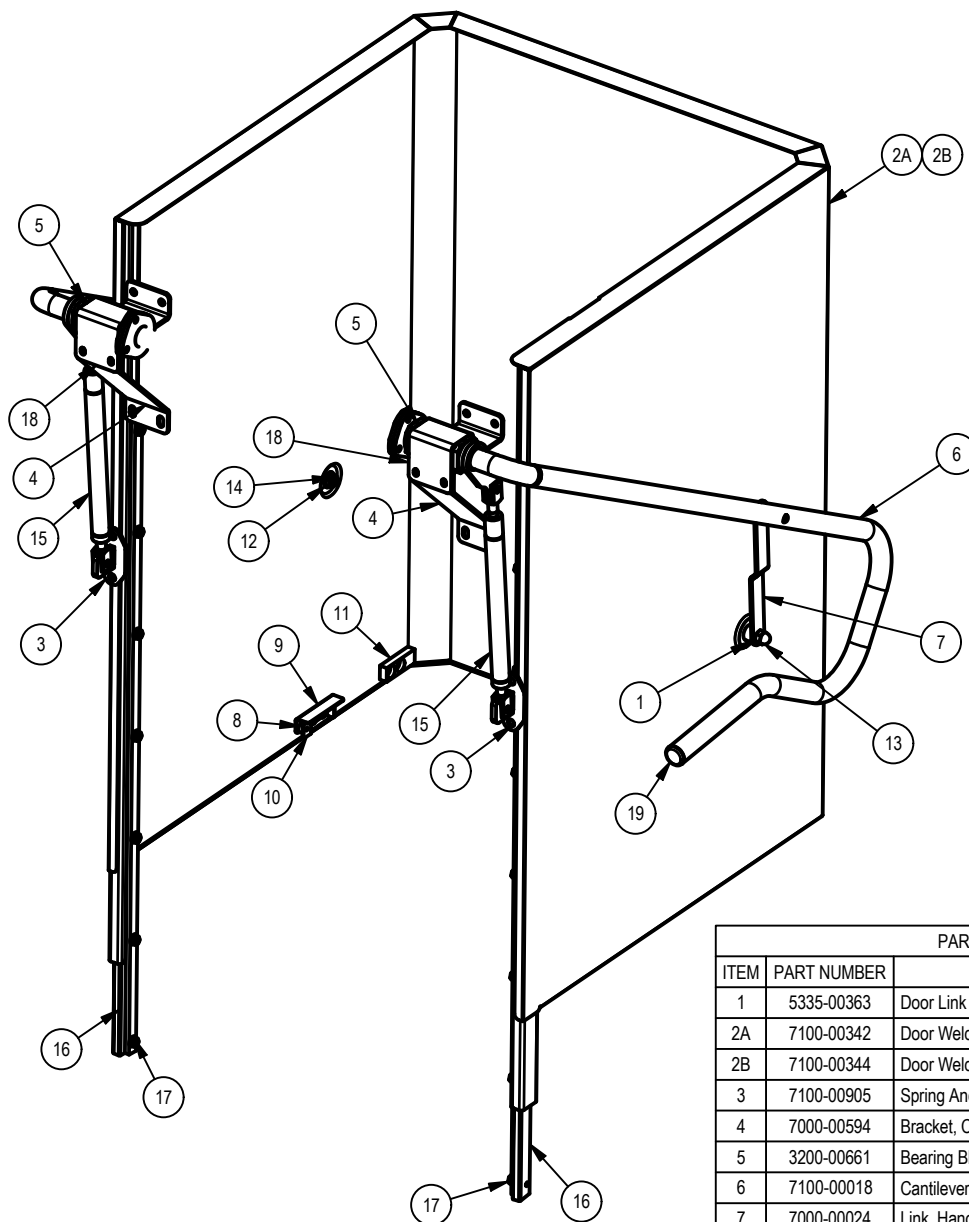
← USED FOR STANDARD BOOSTER

← USED ONLY FOR NO BOOSTER OPTION

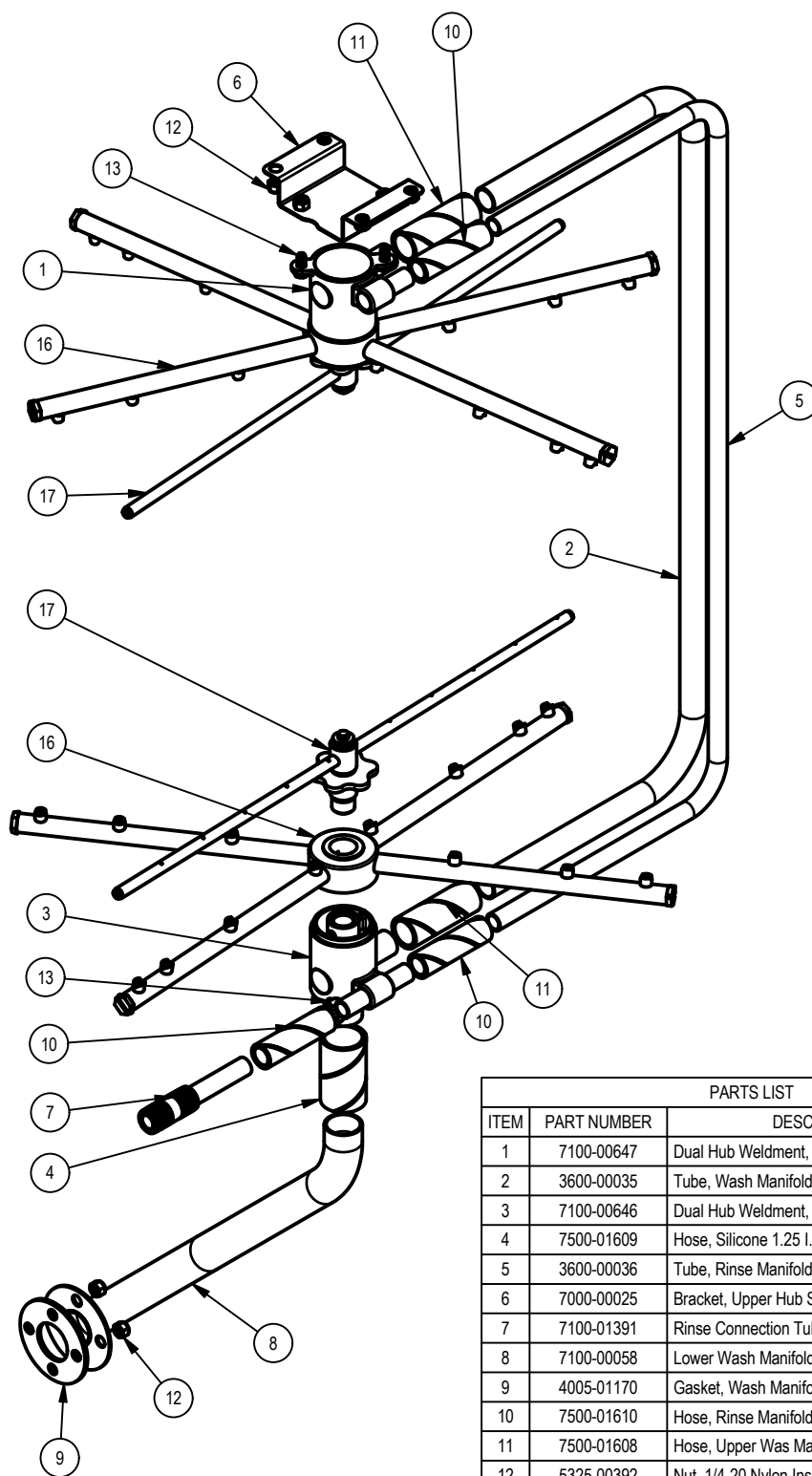




PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	7000-00024	Link, Handle To Door	2
2	3200-00835	Standoff, Handle Connection (UHMW)	2
3	5335-00363	Door Link Spacer 3/8-16 Thread	2
4	7100-00054	Cantilever Arm Weldment	1
5	3200-00661	Bearing Block Halve, UHMW	4
6A	7100-00049	Door Weldment, Low Hood	1
6B	7100-00343	Door Weldment, Low Hood Ventless	1
7	3200-00010	Door Guide	2
8	7100-00905	Spring Anchor Weldment	2
9	5405-00660	Spring, Gas Operated 150#	2
10	7000-00594	Bracket, Cantilever Arm Support	2
11	7000-00595	Bracket, Cantilever Arm Hold Down	2
12	5305-01147	Screw, 1/4-10 x 1/2 S/S Hex Plastite	10
13	5330-00538	Washer, 3/8 304-SS	2
14	5325-00552	Nut, Acorn 3/8-16 18-8 SS	2
15	5325-00365	Locknut Low, 3/8-16 Nylon-Insert 18-8 SS	2
16	5065-01114	Magnet, Neodymium	1
17	7000-00946	Bracket, Door Stop	1
18	5325-01646	Locknut, 1/4-20 Low Profile w/Nylon Insert	2
19	7000-00599	Bracket, Door Magnet	1
21	3200-01842	Door Guide, Corner (UHMW)	2



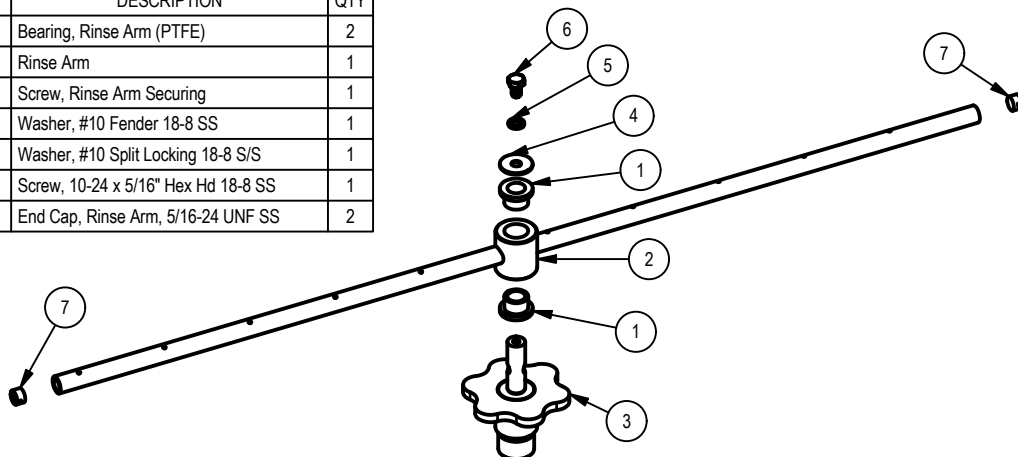
PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	5335-00363	Door Link Spacer 3/8-16 Thread	2
2A	7100-00342	Door Weldment, High Hood	1
2B	7100-00344	Door Weldment, High Hood Ventless	1
3	7100-00905	Spring Anchor Weldment	2
4	7000-00594	Bracket, Cantilever Arm Support	2
5	3200-00661	Bearing Block Halve, UHMW	4
6	7100-00018	Cantilever Arm Weldment High Hood	1
7	7000-00024	Link, Handle To Door	2
8	5065-01114	Magnet, Neodymium	1
9	7000-00946	Bracket, Door Stop	1
10	7000-00599	Bracket, Door Magnet	1
11	3200-01842	Door Guide, Corner (UHMW)	2
12	5330-00538	Washer, 3/8 304-SS	2
13	5325-00552	Nut, Acorn 3/8-16 18-8 SS	2
14	5325-00365	Locknut Low, 3/8-16 Nylon-Insert 18-8 SS	2
15	5405-01843	Spring, Gas Operated 214#	2
16	3200-00019	Door Guide High Hood (HPDE Black)	2
17	5305-01147	Screw, 1/4-10 x 1/2 S/S Hex Plastite	14
18	7000-00595	Bracket, Cantilever Arm Hold Down	2
19	5915-01827	Plug, 1.0"OD Tubing LPDE	2



PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	7100-00647	Dual Hub Weldment, Upper	1
2	3600-00035	Tube, Wash Manifold (Upper)	1
3	7100-00646	Dual Hub Weldment, Lower	1
4	7500-01609	Hose, Silicone 1.25 I.D x 2.5" Long	1
5	3600-00036	Tube, Rinse Manifold (Upper)	1
6	7000-00025	Bracket, Upper Hub Support	1
7	7100-01391	Rinse Connection Tube Weldment	1
8	7100-00058	Lower Wash Manifold Weldment	1
9	4005-01170	Gasket, Wash Manifold	1
10	7500-01610	Hose, Rinse Manifold 5/8" ID x 3" Long	3
11	7500-01608	Hose, Upper Was Manifold 7/8" I.D x 3" Long	2
12	5325-00392	Nut, 1/4-20 Nylon Insert Locknut	12
13	5310-00388	Bolt, 1/4-20 x 5/8" Hex Head Stainless Steel	4
16	7400-00073	Wash Arm Assembly	2
17	7400-00074	Rinse Arm Assembly	2

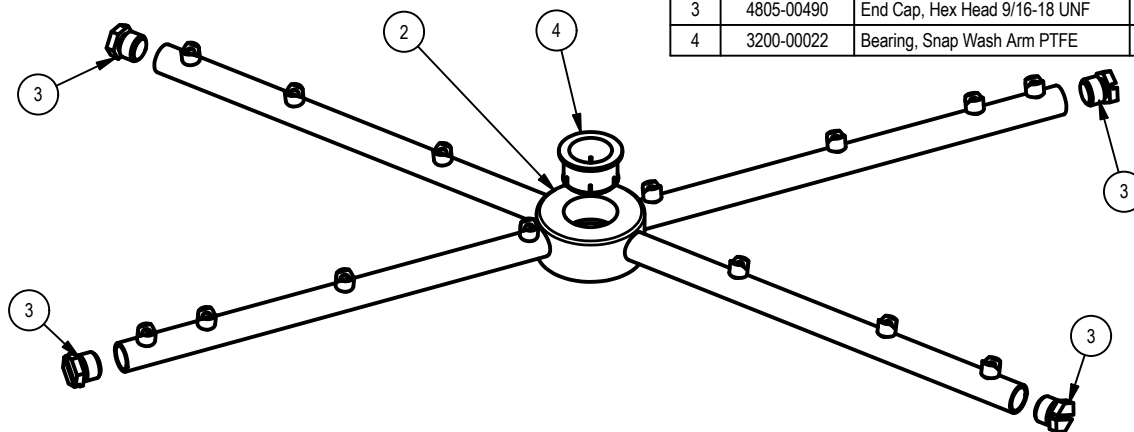
PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	3200-00590	Bearing, Rinse Arm (PTFE)	2
2	7100-00077	Rinse Arm	1
3	7100-00086	Screw, Rinse Arm Securing	1
4	5330-00548	Washer, #10 Fender 18-8 SS	1
5	5330-00726	Washer, #10 Split Locking 18-8 S/S	1
6	5305-01618	Screw, 10-24 x 5/16" Hex Hd 18-8 SS	1
7	4805-01619	End Cap, Rinse Arm, 5/16-24 UNF SS	2

RINSE ARM ASSEMBLY (7400-00074)

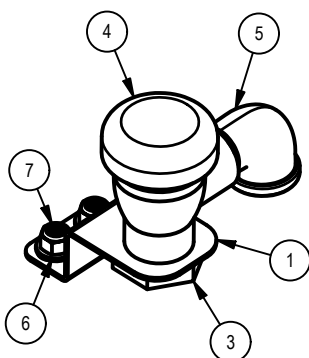


WASH ARM ASSEMBLY (7400-00073)

PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
2	7100-00586	Wash Arm	1
3	4805-00490	End Cap, Hex Head 9/16-18 UNF	4
4	3200-00022	Bearing, Snap Wash Arm PTFE	1

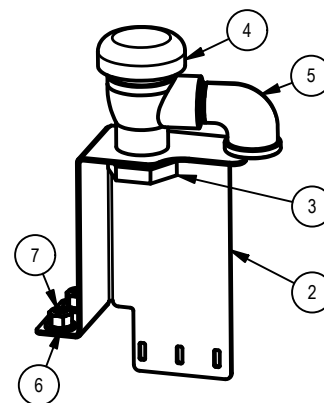


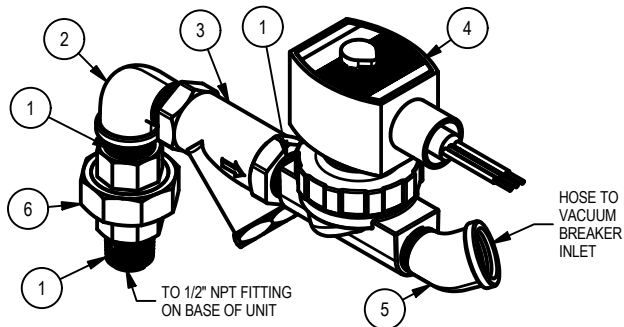
VACUUM BREAKER ASSEMBLY (7400-01855)



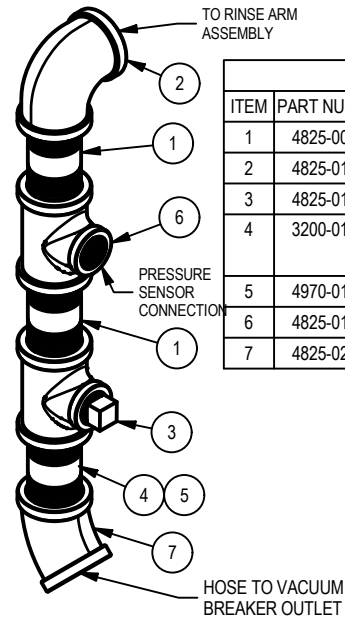
PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	7000-00895	Bracket, Vacuum Breaker Support	1
2	7000-01525	Bracket, Vacuum Breaker Support (VG2)	1
3	4825-01024	Locknut, 1/2" NPT Brass	1
4	4825-01534	Vacuum Breaker 1/2" NPT	1
5	4825-00997	Elbow, 90 Deg Street 1/2" NPT Brass	1
6	5330-00391	Washer, 1/4" Flat 18-8 SS	2
7	5325-00392	Nut, 1/4-20 Nylon Insert Locknut	2

VACUUM BREAKER ASSEMBLY VAPOR GUARD (7400-01855)

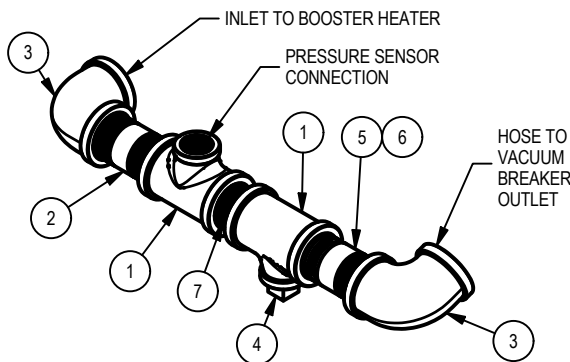


INLET PLUMBING ASSEMBLY: 7400-01379


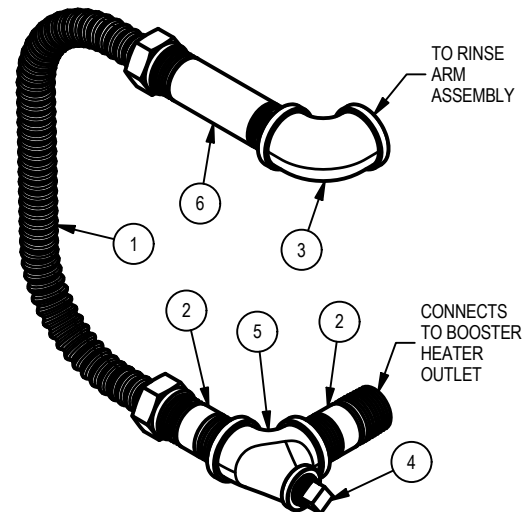
PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	4825-00998	Nipple, Close, 1/2" NPT, Brass	3
2	4825-00997	Elbow, 90 Deg Street 1/2" NPT Brass	1
3	4825-00561	Y-STRAINER 1/2 NPT	1
4	4905-01000	Valve, Solenoid 1/2NPT 24VAC Coil Wtr/Strm	1
5	4825-01854	Elbow, 45 Deg Street 1/2" NPT	1
6	4825-02020	Union, 1/2 NPT Brass	1

NO BOOSTER PLUMBING INLET TO MACHINE 7400-01886


PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	4825-00560	Nipple, 1/2" NPT x 2"	2
2	4825-01022	Elbow, 90 Deg 1/2 NPT	1
3	4825-01284	Plug, 1/4 NPT Brass	1
4	3200-01307	Nipple, Flow Control 1/2 NPT (CPVC)	1
5	4970-01232	Flow Controller 15L/min	1
6	4825-01857	Tee, Inline 1/2x1/4x1/2 NPT	2
7	4825-02389	Elbow, 45 Deg 1/2 NPT	1

PLUMBING INLET TO BOOSTER: 7400-01380


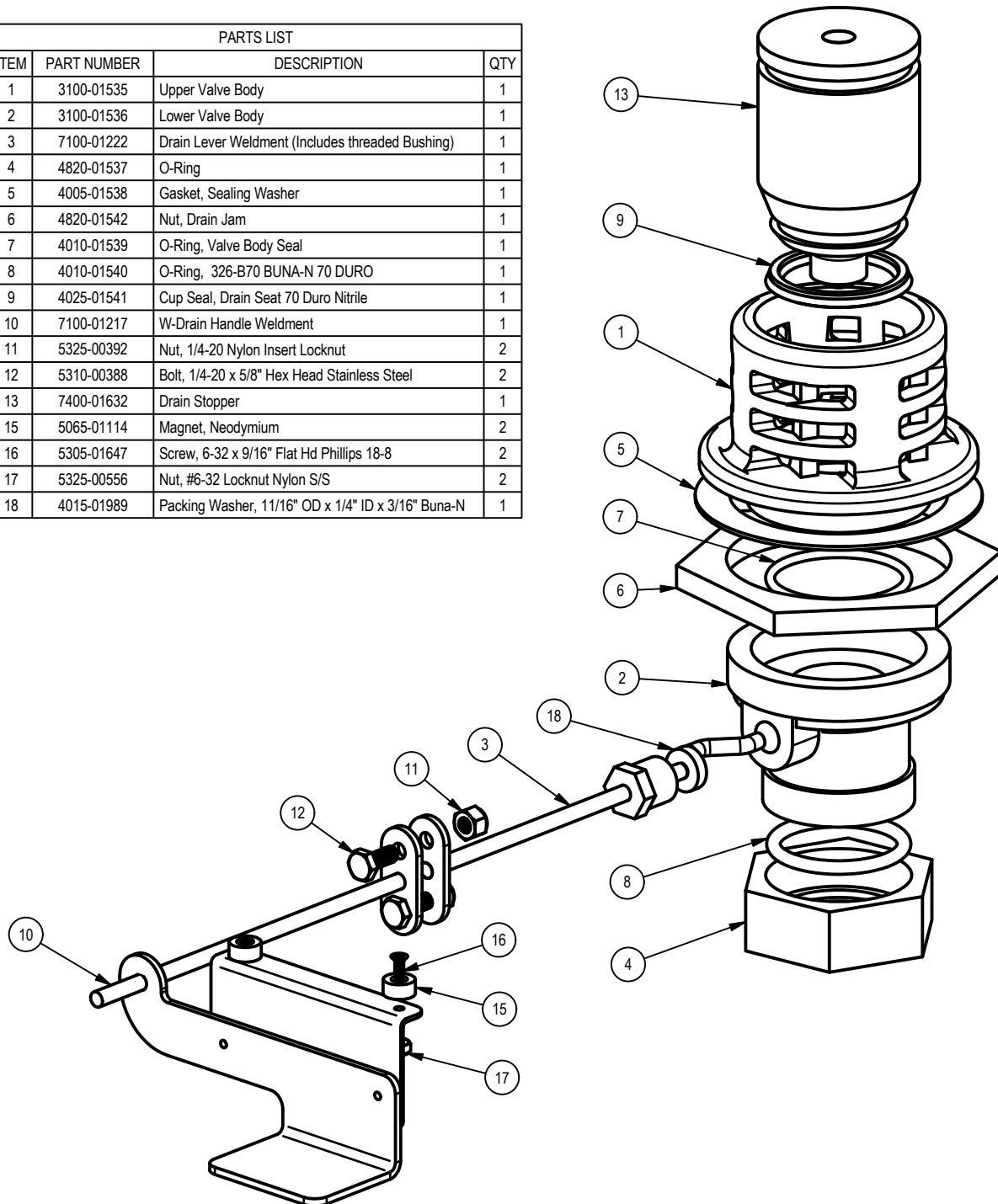
PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	4825-01857	Tee, Inline 1/2 x 1/4 x 1/2 NPT Brass	2
2	4825-00560	Nipple, 1/2" NPT x 2" Lg Brass	1
3	4825-01022	Elbow, 90 Deg 1/2 NPT Brass	2
4	4825-01284	Plug, 1/4 NPT Brass	1
5	3200-01307	Nipple, Flow Control 1/2 NPT x 2" Long (CPVC)	1
6	4970-01232	Flow Controller 15L/min (NOT SHOWN)	1
7	4825-00998	Nipple, Close, 1/2" NPT, Brass	1

BOOSTER TO MACHINE INLET: 7400-01381


PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	4705-01028	HOSE, Corrugated 1/2" FIP 12" LG Stainless Steel	1
2	4825-00560	Nipple, 1/2" NPT x 2" Lg Brass	2
3	4825-01022	Elbow, 90 Deg 1/2 NPT Brass	1
4	4825-01284	Plug, 1/4 NPT Brass	1
5	4825-01023	Tee, Right Angle 1/2 x 1/2 x 1/4 NPT Brass	1
6	4825-01858	Nipple, 1/2" NPT x 3.5" Lg Brass	1

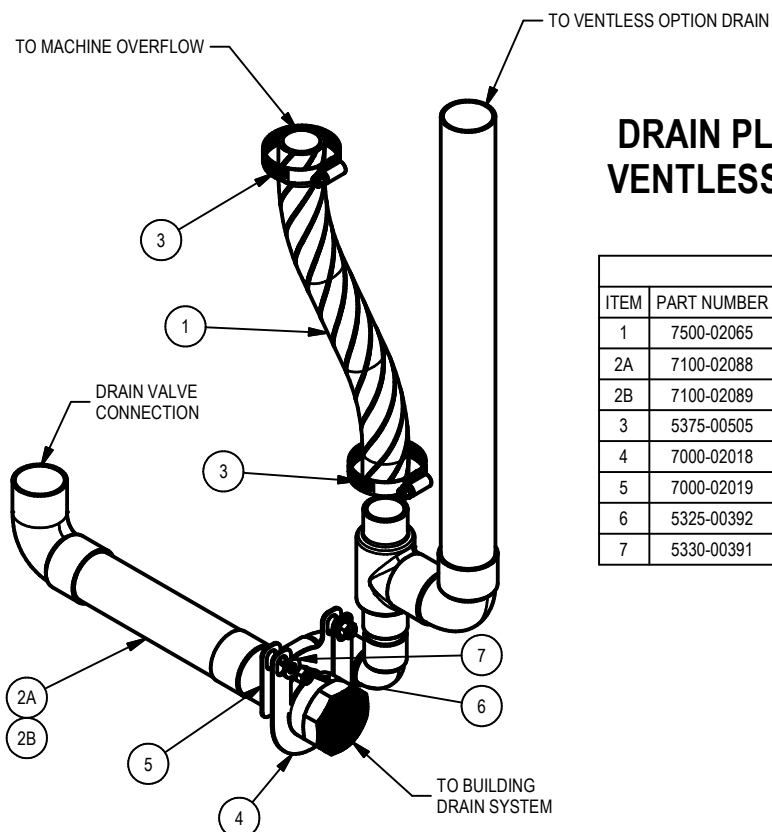
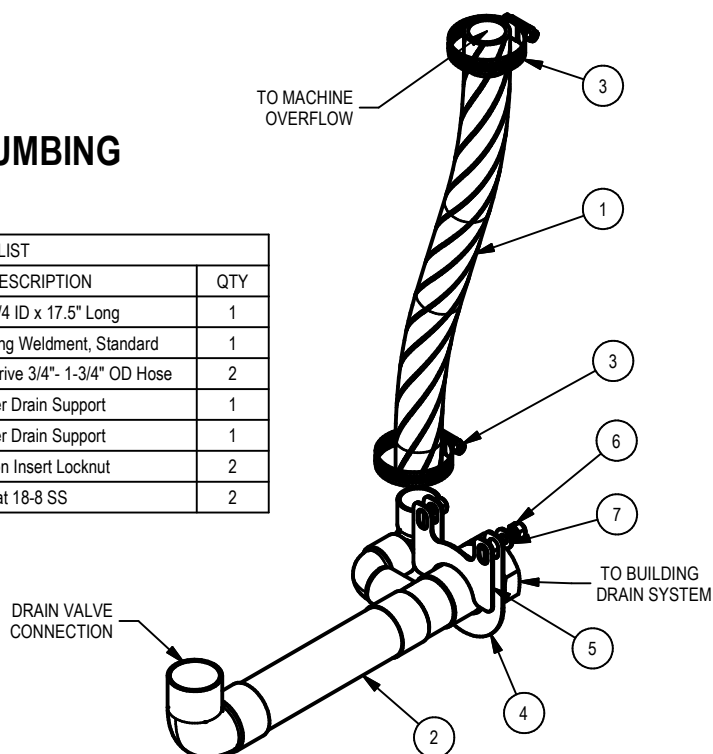
DRAIN VALVE ASSEMBLY

PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	3100-01535	Upper Valve Body	1
2	3100-01536	Lower Valve Body	1
3	7100-01222	Drain Lever Weldment (Includes threaded Bushing)	1
4	4820-01537	O-Ring	1
5	4005-01538	Gasket, Sealing Washer	1
6	4820-01542	Nut, Drain Jam	1
7	4010-01539	O-Ring, Valve Body Seal	1
8	4010-01540	O-Ring, 326-B70 BUNA-N 70 DURO	1
9	4025-01541	Cup Seal, Drain Seat 70 Duro Nitrile	1
10	7100-01217	W-Drain Handle Weldment	1
11	5325-00392	Nut, 1/4-20 Nylon Insert Locknut	2
12	5310-00388	Bolt, 1/4-20 x 5/8" Hex Head Stainless Steel	2
13	7400-01632	Drain Stopper	1
15	5065-01114	Magnet, Neodymium	2
16	5305-01647	Screw, 6-32 x 9/16" Flat Hd Phillips 18-8	2
17	5325-00556	Nut, #6-32 Locknut Nylon S/S	2
18	4015-01989	Packing Washer, 11/16" OD x 1/4" ID x 3/16" Buna-N	1



DRAIN PLUMBING

PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	7500-01611	Hose, Drain 1-1/4 ID x 17.5" Long	1
2	7100-00354	W-Drain Plumbing Weldment, Standard	1
3	5375-00505	Clamp, Worm Drive 3/4"- 1-3/4" OD Hose	2
4	7000-02018	F-Bracket, Lower Drain Support	1
5	7000-02019	F-Bracket, Upper Drain Support	1
6	5325-00392	Nut, 1/4-20 Nylon Insert Locknut	2
7	5330-00391	Washer, 1/4" Flat 18-8 SS	2

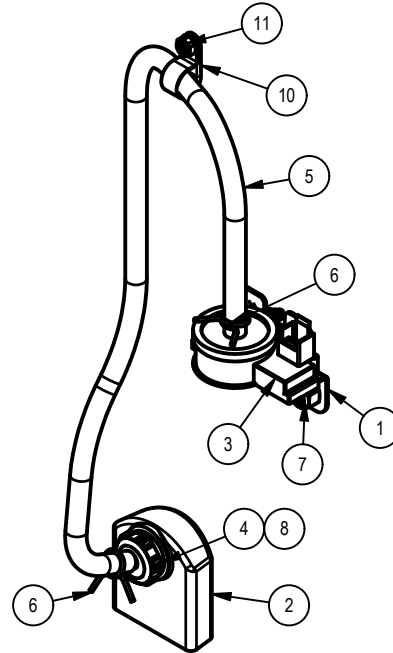


DRAIN PLUMBING VENTLESS OPTION

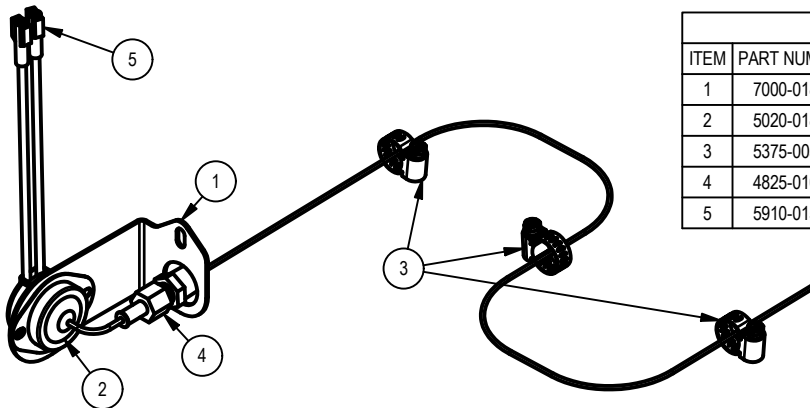
PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	7500-02065	Hose, Overflow-Ventless 1-1/4 ID x 13" Long	1
2A	7100-02088	W-Drain Plumbing Weldment, Ventless	1
2B	7100-02089	W-Drain Plumbing Weldment, Ventless High Hood	1
3	5375-00505	Clamp, Worm Drive 3/4"- 1-3/4" OD Hose	2
4	7000-02018	F-Bracket, Lower Drain Support	1
5	7000-02019	F-Bracket, Upper Drain Support	1
6	5325-00392	Nut, 1/4-20 Nylon Insert Locknut	2
7	5330-00391	Washer, 1/4" Flat 18-8 SS	2

WASH TANK LEVEL DETECTION

PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	7000-00992	Bracket, Pressure Sensor	1
2	3100-01085	Air Trap	1
3	5035-01119	Transducer, Pressure .5-30 mbar.5-3.4 VDC	1
4	5325-01373	Nut, M-16 Thread Nylon6/6	1
5	4725-01174	Tubing, Santoprene Rubber 1/4"ID x 3/8"OD. X 21" LG	1
6	5375-01176	Clamp, Spring 3/8 OD Hose 17-7 PH SS	2
7	5325-00392	Nut, 1/4-20 Nylon Insert Locknut	2
8	4010-01840	O-RING 115-B70 BUNA-N 70 DURO (D2-585)	1
10	5520-01161	P-Clamp 1/2"	1
11	5325-00556	Nut, #6-32 Locknut Nylon S/S	1

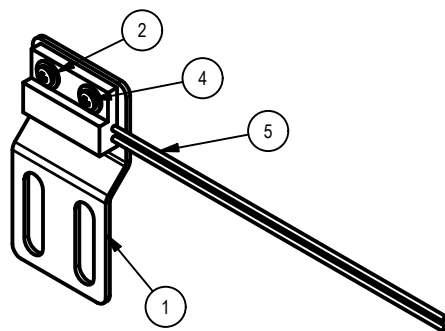


WASH TANK TEMPERATURE HI-LIMIT



PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	7000-01800	Bracket, Heater Hi-Limit	1
2	5020-01801	Thermostat, Hi-Limit 230° F	1
3	5375-00511	Clamp, Worm Drive 5/8" OD Hose	3
4	4825-01025	Fitting, Compression 1/4" w/ Locknut	1
5	5910-01503	Terminal, Insulated FEM FASTON 14 AWG	2

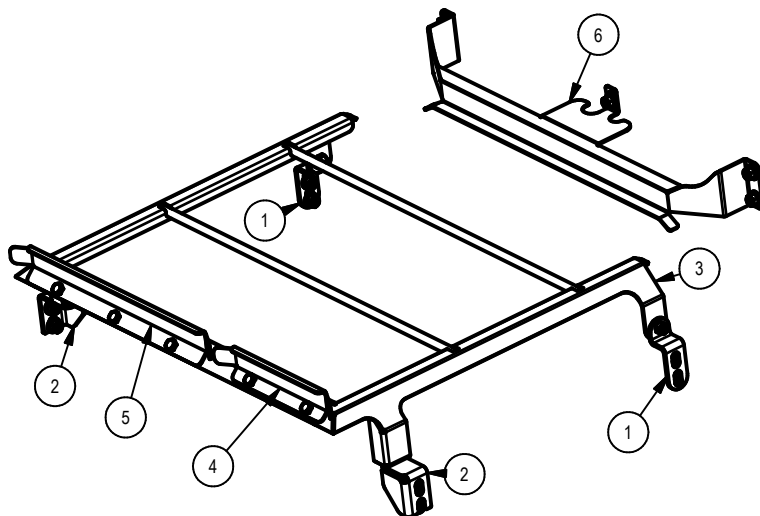
DOOR, RACK & DRAIN SWITCHES



PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	7000-01215	Bracket, Reed Switch	1
2	5330-01905	Washer, #4 18-8 SS	2
3	5325-01904	Locknut, 4-40 w/Nylon Insert SS	2
4	5305-01903	Screw, 4-40 X 3/8" Pan HD, Phillips 18-8SS	2
5	7400-01880	Reed Switch & Connector	1

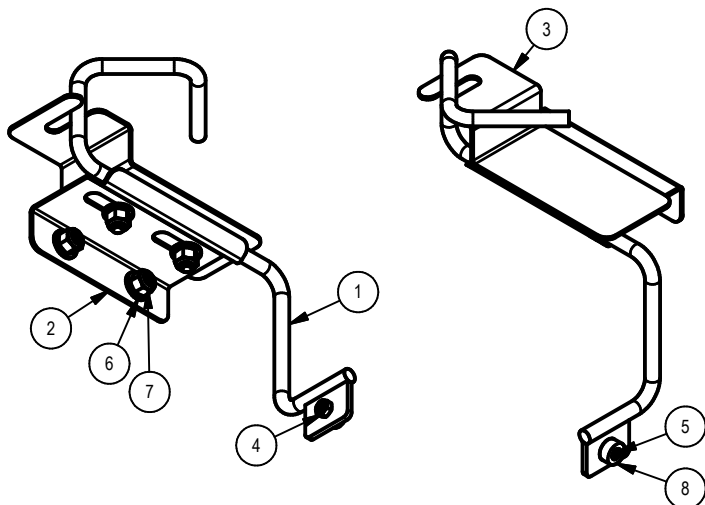
RACK SUPPORTS

PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	7000-00597	F-Bracket, Rear Rack Support Pivot	2
2	7000-00598	F-Bracket, Front Rack Support	2
3	7100-00060	W-Rack Support Weldment	1
4	7000-00604	F-Guide, Rack Front	1
5	7000-00042	F-Guide, Rack Front & Side	1
6	7000-00041	F-Support, Rack Rear	1



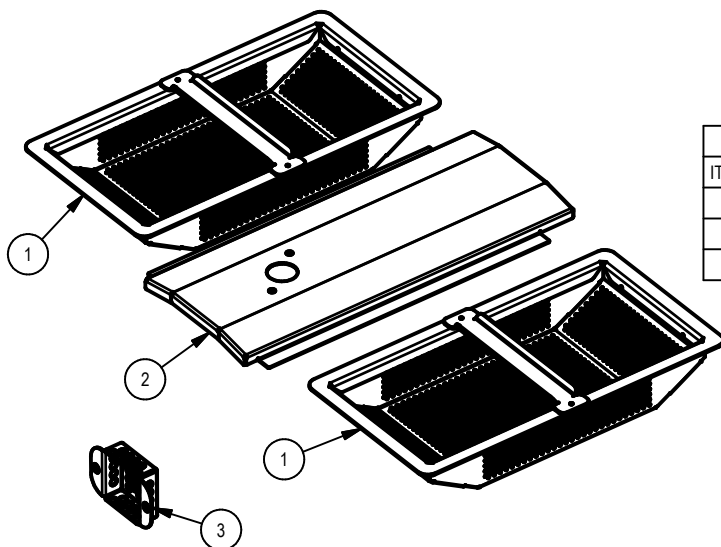
RACK SWITCH

PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	7100-00026	W-Rack Switch Lever Weldment	1
2	7000-00993	F-Bracket, Rack Switch Rod Support	1
3	7100-00027	W-Cover Weldment, Rack Switch	1
4	5325-00556	Nut, #6-32 Locknut Nylon S/S	1
5	5305-01647	Screw, 6-32 x 9/16" Flat Hd Phillips 18-8	1
6	5330-00391	Washer, 1/4" Flat 18-8 SS	4
7	5325-00392	Nut, 1/4-20 Nylon Insert Locknut	4
8	5065-01114	Magnet, Neodymium	1



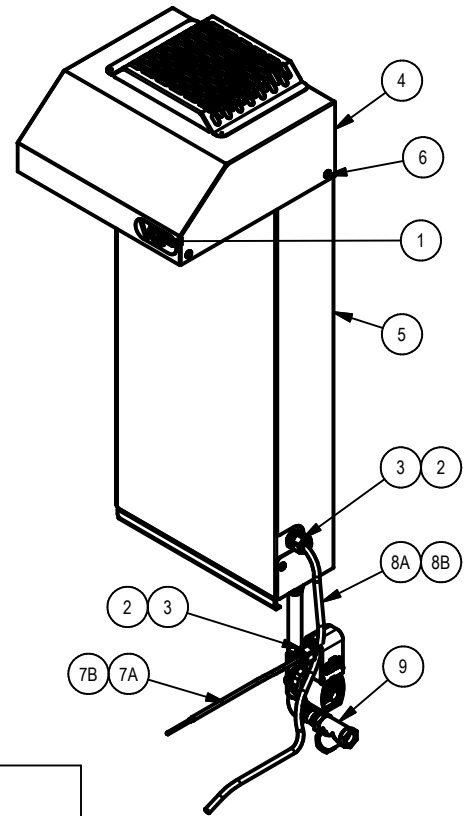
WASH TANK STRAINERS

PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	7100-00056	W-Strainer Weldment, Wash Tub	2
2	7000-00072	F-Support, Strainer & Dual Hub	1
3	7000-00033	F-Wrap, Wash Pump Suction Strainer	1

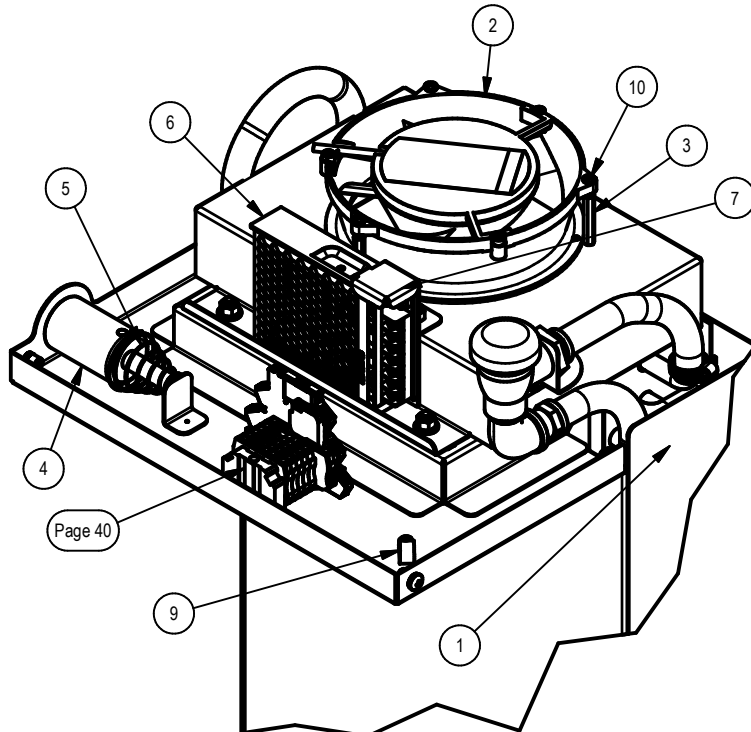


VG2 EXTERNAL COMPONENTS

PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	9600-01443	Decal, Vapor Guard (VG2)	1
2	5325-01169	Nut, 1/2" NPT Black Plastic	2
3	5915-01168	Cord Strain Relief, 1/2" Plastic Black, No Nut	2
4	7100-01428	Cover Weldment, Ventless Fan	1
5	7100-01435	Ventless Back Cover	1
6	5305-01041	Screw, 10-32 x 1/2" Phillips Truss	6
7A	5907-02134	Cable Harness, Ventless Water Solenoid	1
7B	5907-02135	Cable Harness, High Hood Ventless water Solenoid	1
8A	5907-02132	Cable Harness, Main Ventless Control	1
8B	5907-02133	Cable Harness, High Hood Main Ventless Control	1
9	7400-01634	Plumbing Assembly VG2	1

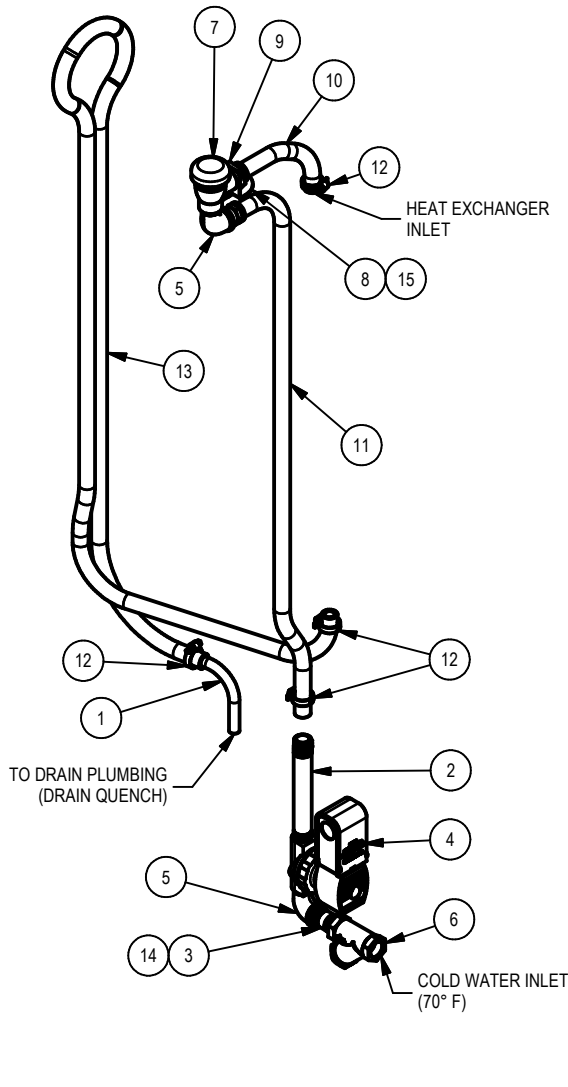


VG2 INTERNAL COMPONENTS



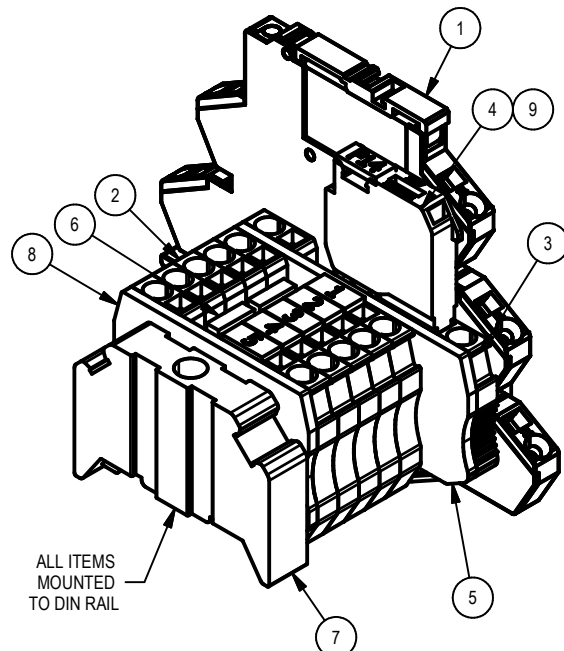
PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	4415-00355	COIL, HEAT EXCHANGER	1
2	6140-01407	Fan, 48VDC 1.8A 87W 5500RPM	1
3	5335-01638	Standoff 1.5", Hex Alum Male-Fem 8-32	3
4	5935-01444	Solenoid, Linear Push Rod 24VDC	1
5	5405-01445	Spring, Conical Compression	1
6	5951-01409	Power Supply 100-240VAC to 48VDC 2.3A	1
7	7000-00971	Bracket, Fan Power Supply	1
Page 42	7400-01484	Power Block Assembly (VG2)	1
	5520-01161	P-Clamp 1/2"	3
10	5305-01640	Screw, 8-32 x 3/4" Pan Hd Phillips 18-8 SS	3

VG2 PLUMBING ASSEMBLY



PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	7000-02102	Elbow, Ventless HX Disch. 90° 1/2"OD	1
2	4825-01532	Nipple, 1/2" NPT x 6" Long Brass	1
3	3200-01307	Nipple, Flow Control 1/2 NPT x 2" Long (CPVC)	1
4	4905-01000	Valve, Solenoid 1/2 NPT 24VAC Coil WTR/STM	1
5	4825-00997	Elbow, 90 Deg Street 1/2" NPT Brass	2
6	4825-00561	Y-Strainer 1/2 NPT	1
7	4825-01534	Vacuum Breaker 1/2" NPT	1
8	7000-01433	Bracket, Vent Supply Vacuum Breaker	1
9	4825-01024	Locknut, 1/2" NPT Brass	1
10	7400-01439	Hose Assembly, VB to HX Inlet	1
11	7400-01637	Hose Assembly, VG Water Inlet to VB	1
12	5375-01639	Clamp, Worm Drive 1/2" to 1-1/16" OD Hose	4
13	4725-01173	Hose, 1/2" ID x 3/4" OD Rubber (88.0")	7.3 FT
14	4970-01232	Flow Controller 15L/min (3.96gal/min)	1
15	5325-00392	Nut, 1/4-20 Nylon Insert Locknut	2

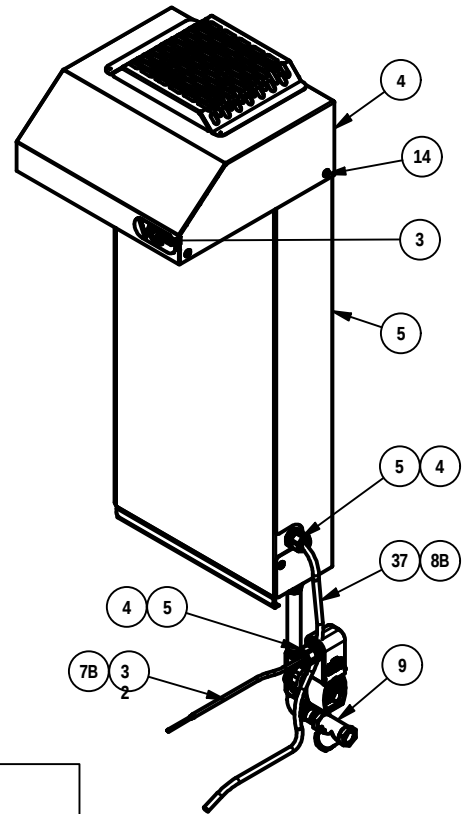
VG2 POWER CONNECTION BLOCK



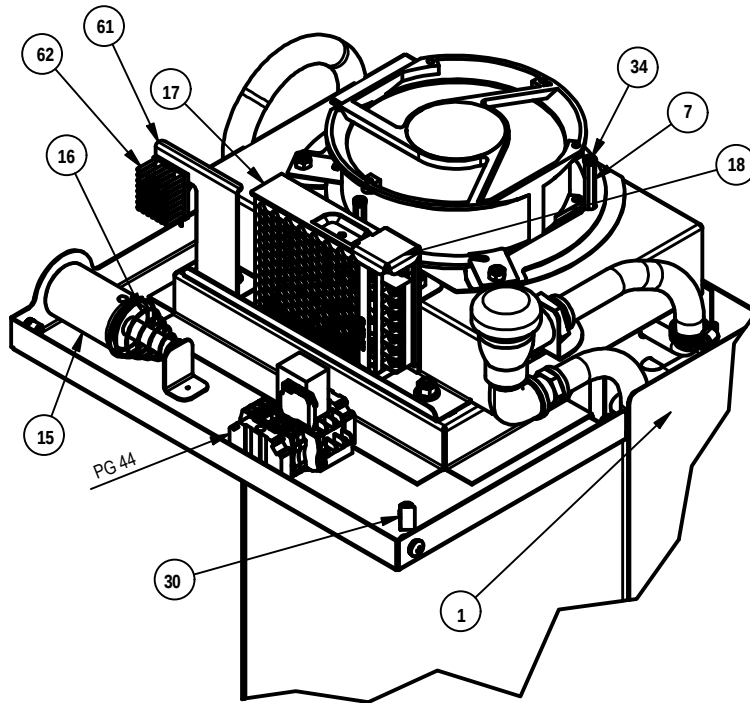
PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	5945-01447	Relay, 2-Pole 24VAC Coil	1
2	5940-01125	Terminal Block	5
3	5940-01123	Terminal Block, Spring 2-PT Disconnect / Fuse	1
4	5940-01124	Terminal, Fuse Carrier w/Light (5x20mm Fuse)	1
5	5940-01126	End Cover, Terminal Fuse Block	1
6	5940-01129	Bridge, Plug In 2-Pole RED	2
7	5940-01128	End Bracket, Din Rail	2
8	5940-01127	End Cover, Terminal Block	1
9	5920-02142	Fuse, 1.0 Amp 5x20mm SLOW-BLOW	1

VG2 EXTERNAL COMPONENTS

PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
3	9600-01443	Decal, Vapor Guard (VG2)	1
4	5325-01169	Nut, 1/2" NPT Black Plastic	2
5	5915-01168	Cord Strain Relief, 1/2" Plastic Black, No Nut	2
4	7100-01428	Cover Weldment, Ventless Fan	1
5	7100-01435	Ventless Back Cover	1
14	5305-01041	Screw, 10-32 x 1/2" Phillips Truss	6
32	5907-02134	Cable Harness, Ventless Water Solenoid	1
7B	5907-02135	Cable Harness, High Hood Ventless water Solenoid	1
37	5907-02132	Cable Harness, Main Ventless Control	1
8B	5907-02133	Cable Harness, High Hood Main Ventless Control	1
9	7400-01634	Plumbing Assembly VG2	1
59	1000-04253	VAPOR GUARD ALTERNATIVE FAN ASSEMBLY	1
60	5935-03828	Solenoid Coil, 24VAC 1/2" ASCO	1
61	1000-04652	HEAT SINK AND HANGER BRACKET	1
62	1000-04649	HEAT SINK AND RESTITOR ASSEMBLY	1

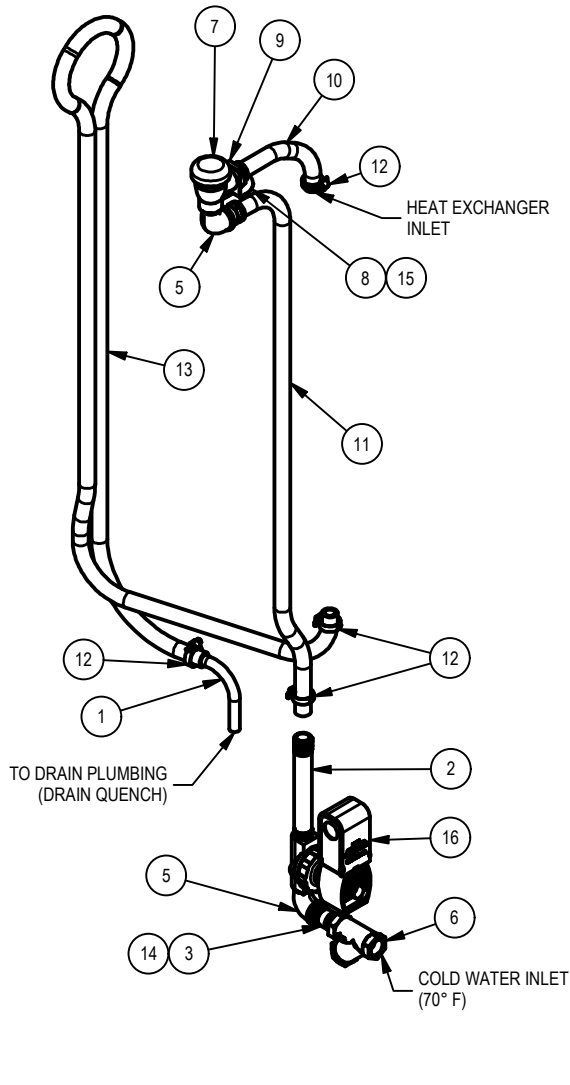


VG2 INTERNAL COMPONENTS



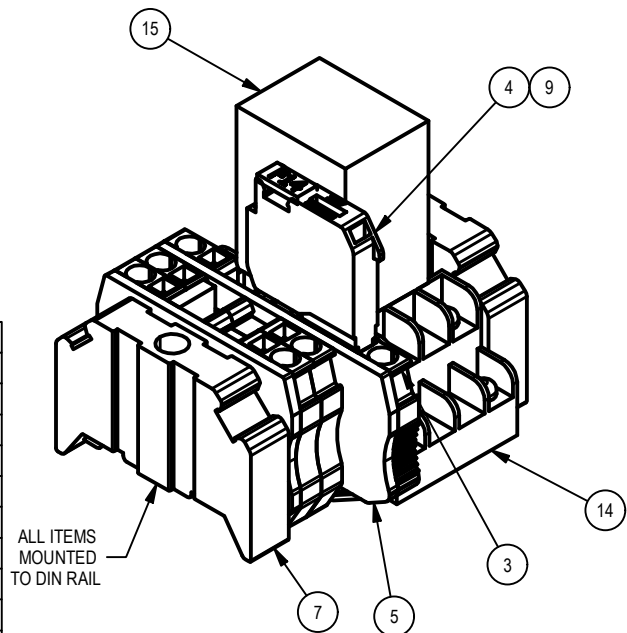
PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	4415-00355	COIL, HEAT EXCHANGER	1
7	5335-01638	Standoff 1.5", Hex Alum Male-Fem 8-32	3
15	5935-01444	Solenoid, Linear Push Rod 24VDC	1
16	5405-01445	Spring, Conical Compression	1
17	5951-01409	Power Supply 100-240VAC to 48VDC 2.3A	1
18	7000-00971	Bracket, Fan Power Supply	1
PG 44	7400-01484	Power Block Assembly (VG2)	1
30	5520-01161	P-Clamp 1/2"	3
34	5305-01640	Screw, 8-32 x 3/4" Pan Hd Phillips 18-8 SS	3
59	1000-04253	VAPOR GUARD ALTERNATIVE FAN ASSEMBLY	1
60	5935-03828	Solenoid Coil, 24VAC 1/2" ASCO	1
61	1000-04652	HEAT SINK AND HANGER BRACKET	1
62	1000-04649	HEAT SINK AND RESTITOR ASSEMBLY	1

VG2 PLUMBING ASSEMBLY

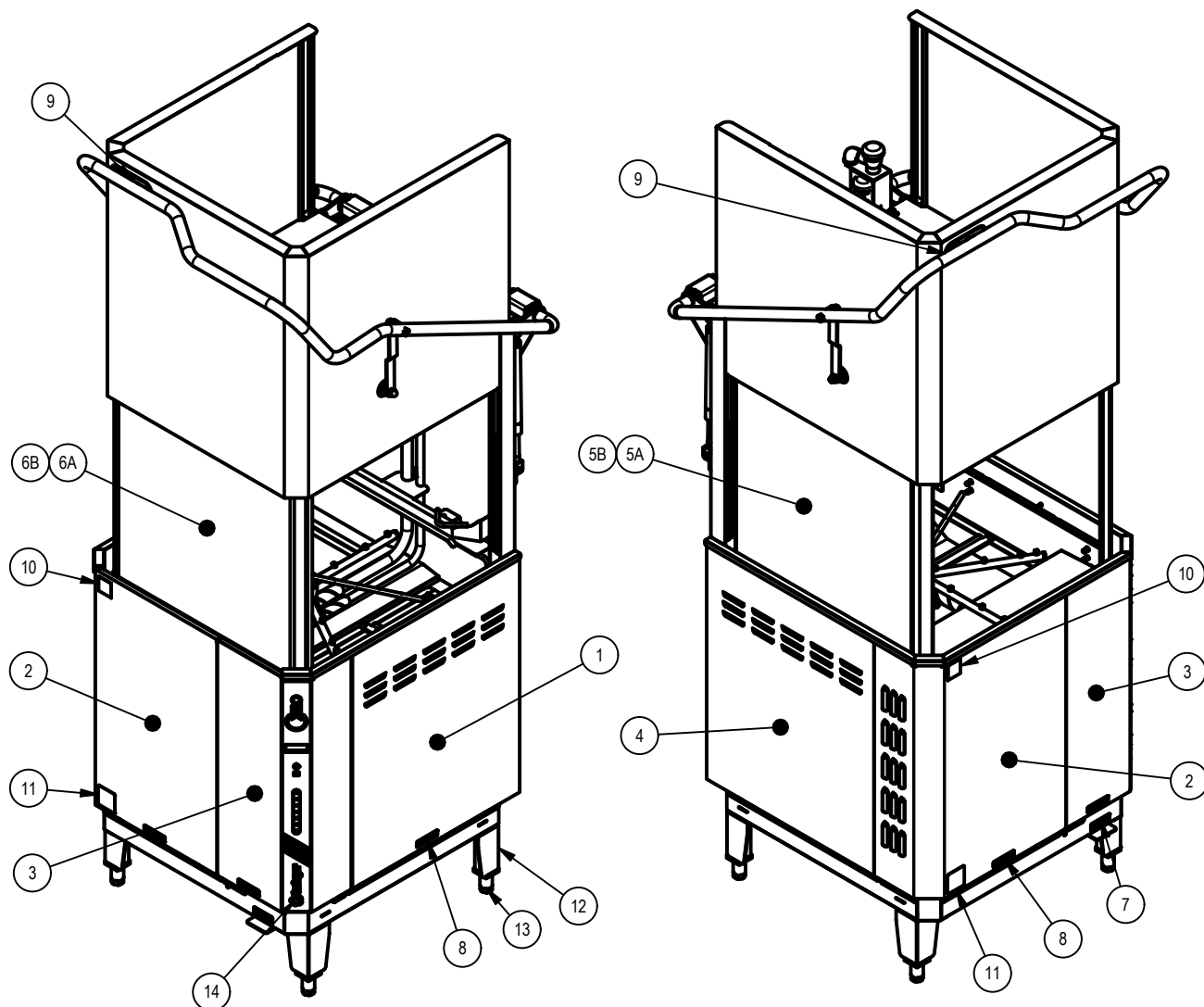


PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	7000-02102	Elbow, Ventless HX Disch. 90° 1/2"OD	1
2	4825-01532	Nipple, 1/2" NPT x 6" Long Brass	1
3	3200-01307	Nipple, Flow Control 1/2 NPT x 2" Long (CPVC)	1
4	4905-01000	Solenoid, 1/2 NPT 24V	1
5	4825-00997	Elbow, 90 Deg Street 1/2" NPT Brass	2
6	4825-00561	Y-Strainer 1/2 NPT	1
7	4825-01534	Vacuum Breaker 1/2" NPT	1
8	7000-01433	Bracket, Vent Supply Vacuum Breaker	1
9	4825-01024	Locknut, 1/2" NPT Brass	1
10	7400-01439	Hose Assembly, VB to HX Inlet	1
11	7400-01637	Hose Assembly, VG Water Inlet to VB	1
12	5375-01639	Clamp, Worm Drive 1/2" to 1-1/16" OD Hose	4
13	4725-01173	Hose, 1/2" ID x 3/4" OD Rubber (88.0")	7.3 FT
14	4970-01232	Flow Controller 15L/min (3.96gal/min)	1
15	5325-00392	Nut, 1/4-20 Nylon Insert Locknut	2
16	5935-03828	Solenoid Coil, 24VAC 1/2" ASCO	1

VG2 POWER CONNECTION BLOCK



PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
3	5940-01123	Terminal Block, Spring 2-PT Disconnect / Fuse	1
4	5940-01124	Terminal, Fuse Carrier w/Light (5x20mm Fuse)	1
5	5940-01126	End Cover, Terminal Fuse Block	1
7	5940-01128	End Bracket, Din Rail	2
9	5920-02142	Fuse, 1.0 Amp 5x20mm SLOW-BLOW	1
11	5940-01125	Terminal Block	2
12	5940-01127	End Cover, Terminal Block	1
13	5940-01129	Bridge, Plug In 2-Pole RED	1
14	1000-05472	RELAY BASE 10 A 150 VAC	1
15	1000-05473	RELAY, 10 A 150 VAC	1



PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	7000-00046	Panel, Right Dress	1
2	7000-00044	Panel, Front Dress	1
3	7100-00047	Control Box Cover	1
4	7000-00045	F-Panel, Left Dress	1
5A	7400-02182	False Panel Assy, Corner	1
5B	7400-02186	False Panel Assy, Corner (High Hood)	1
6A	7400-02185	False Panel Assy, Front	1
6B	7400-02187	False Panel Assy, Front (High Hood)	1
7	9600-01933	Label, Drain (Pull-Close/Push-Open)	1
8	9600-01936	Label, Disconnect Machine (Single Supply)	3
9	9600-00189	Decal, Insinger Oval	1
10	9600-01941	Label, Energy Star	1
11	9600-00558	Label, Made In The USA	1
12	7100-01146	Foot Support	4
13	6310-01137	Foot, Adjustable	4
14	9600-00852	Decal, CX20	1

HOURS OF OPERATION

Insinger is available to assist you and your team day or night. Our regular business hours are Monday through Friday, 8:00 AM - 5:00 PM (EST). After-hours inquiries may take longer to respond.

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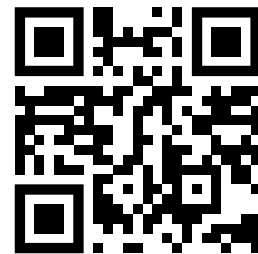
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Digital Contact Cards

