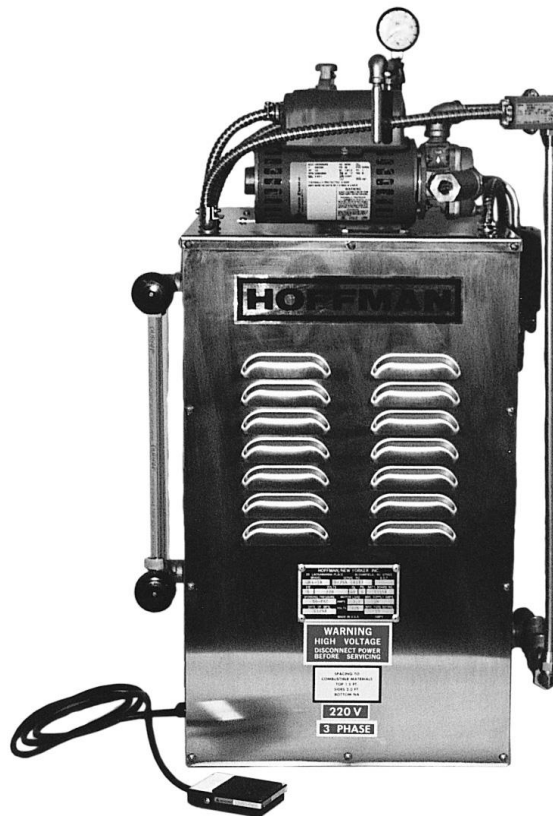


TECHNICAL MANUAL FOR HOFFMAN NEW YORKER ELECTRIC STEAM GENERATORS & BOILERS



**JEL-10 thru JEL-12
RHPG-15 thru RHPG-36**



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**HOFFMAN NEW YORKER
MANUFACTURER'S WARRANTY
ELECTRIC STEAM GENERATORS & BOILERS**

The warranty herein provided covers Electric Steam Generators and Boilers manufactured by Hoffman/New Yorker (H/NY). H/NY offers no warranty on parts manufactured by others but will pass on to buyer the warranty received from the seller or manufacturer of such parts and assist in obtaining buyer's rights per such warranty. H/NY's only obligation will be to furnish replacement parts in accordance with the herein listed schedule for parts that H/NY determines to have been defective in material or workmanship. The buyer agrees to return the defective part to H/NY identified and in accordance with H/NY return material authorization (RMA) policy, freight prepaid within 30 days of receipt of the replacement part. Replacement parts are warranted only for the remainder of the original warranty. No advice or information, oral or written, by employees, affiliates, agents, representatives, licensors, authorized or unauthorized persons will create a warranty, nor should you rely on such advice or information.

Schedule

The pressure vessel, electrical and mechanical components are warranted for one year from the date of sale to an original end user with the limitations provided hereinafter.

Damage to the generator or boiler in transit shall not be considered a defect under this warranty and such damage claims must be presented to the shipping carrier by buyer. H/NY liability, if any, will not exceed the price of H/NY products claimed to be defective. The warranty is contingent upon proper installation, use and maintenance of the generator or boiler in strict accordance with H/NY Technical Manuals furnished with the product. Users are responsible for the suitability of the products to their application. There is no warranty damage resulting from improper installation, abuse, power failure, fire, flood, lightening, improper water, misuse, improper specification, misapplication or other operating conditions beyond our control or parts that are normally expendable in usual course of operation. H/NY is not liable for labor or other costs incurred in the removal, reinstallation, unauthorized repair of this product, or damages of any type whatsoever including incidental or consequential damages.

THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, DISCLAIMERS AND CONDITIONS EXPRESSED OR IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. NO ONE IS AUTHORIZED TO MAKE ANY OTHER WARRANTIES, GUARANTEES OR REPRESENTATIONS ON BEHALF OF H/NY. H/NY'S SOLE LIABILITY AND YOUR EXCLUSIVE REMEDY WITH RESPECT TO SERVICE AND TO DEFECTS IN THE PRODUCT OR PARTS SHALL BE AS SET FORTH IN THIS WARRANTY AND IN NO EVENT SHALL H/NY BE LIABLE FOR DAMAGES, CONSEQUENTIAL OR INCIDENTAL FROM DEFECTS IN THE PRODUCT OR PARTS SOLD BY H/NY AND MANUFACTURED BY H/NY OR MANUFACTURED BY OTHERS. H/NY RESERVES THE RIGHT TO IMPROVE, MODIFY, OR CHANGE THE DESIGN OF ANY PRODUCT WITHOUT BEING HELD LIABLE FOR MAKING SAID IMPROVEMENT, MODIFICATION, OR CHANGE ON ANY PRODUCT PREVIOUSLY SOLD.

TECHNICAL MANUAL

ELECTRIC STEAM GENERATORS AND BOILERS

1.0 INTRODUCTION

This manual contains the installation, operation and maintenance instructions, troubleshooting guide, repair parts illustrations and lists for the Hoffman/New Yorker Electric Steam Generators and Boilers. The Steam Generators and Boilers are designed and manufactured with constant attention to quality, performance, operator safety and energy efficiency. With proper installation, operation and maintenance, the Hoffman/New Yorker Electric Steam Generator or Boiler will last a lifetime.

The steam generators and boilers are composed of a pressure vessel, a safety valve, piping, a heating element, controls and the enclosure.

The pressure vessel is manufactured from high strength steel or cast bronze. It is rated at 100 pounds per square inch of steam pressure. The vessel, safety valve and piping have been designed to the standards set forth in the American Society of Mechanical Engineers Boiler and Pressure Vessel Code. It meets or exceeds their requirements for safety. Many steam generator and boiler assemblies are UL and/or CUL listed. Consult your Hoffman/New Yorker distributor for their identification.

The Heating Element is a flange mounted immersion element. Immersion elements are the most energy efficient heating elements available. This is due to the element making contact with the working fluid (water), transferring all the energy required for heating water into steam.

Some electric steam generator or boiler models use a thermostat controller to regulate the steam pressure. The controller senses the temperature and regulates the current to the heating element to provide the desired output. Larger generators are regulated with pressure switch controllers.

Steam pressure and temperature are related. The higher the steam pressure, the higher the temperature. For a listing of pressures and corresponding temperatures see Chapter 6, Table 6.1.1.

Hoffman/New Yorker also offers a wide variety of options for the steam generators and boilers. For a listing of the options available, please contact your Hoffman/New Yorker Distributor.

1.1 INTENDED USE

The generators and boilers listed in this manual are intended for various steam usage requirements. They may be used for dry cleaning and laundry garment presses, jewelry steam cleaning, dental lab steam cleaning, auto trim, furrier glazing of garments, or for use with steam irons, etc.

The units are capable of producing high-pressure steam. They should not be used for applications that require low-pressure steam unless provisions are made to limit the steam pressure (i.e. autoclaves, steam bath applications, etc.).

The machines are not intended for space heating purposes.

1.2 REGISTRATION WITH LOCAL JURISDICTION

The steam generator or boiler may need to be registered with your local or state government. Check with your municipality for requirements.

1.3 PRELIMINARY DELIVERY INSPECTION

INSPECT BOX/CRATE AND STEAM GENERATOR OR BOILER FOR SHIPPING DAMAGE AND SHORTAGE. ANY DAMAGE OR SHORTAGE IN SHIPMENT SHOULD BE NOTED ON THE FREIGHT BILL BEFORE IT IS SIGNED. CALL THE CARRIER IMMEDIATELY TO REPORT ALL DAMAGE OR SHORTAGE AND ARRANGE TO FILE A CLAIM. THE CARRIER IS RESPONSIBLE TO YOU FOR THE SAFE ARRIVAL OF THE EQUIPMENT.

1.4 WARRANTY ACTIVATION

To activate the Warranty coverage on your Hoffman/New Yorker equipment, please complete and return the Warranty Card supplied with the unit.

1.5 SAFETY AND PRECAUTIONS

It is vital that the purchaser of a Steam Generator or Boiler read this manual and fully understand the instructions before installing or operating the unit. Safety statements are made throughout the manual in the format stated on this page and the next page. Supervisors must assure that the personnel assigned to operate this Steam Generator or Boiler are instructed on and understand the operating and safety features of the unit. The foregoing is imperative, along with safe working habits of the operator, to assure worker safety.

1.5.1 SAFETY NOMENCLATURE

NOTES, CAUTIONS and WARNINGS are used through out this manual to emphasize important and critical instructions.

- **NOTE: A NOTE IS USED TO EMPHASIZE OPERATING PROCEDURES AND CONDITIONS THAT ARE ESSENTIAL TO HIGHLIGHT.**

CAUTION

A CAUTION IS USED TO INDICATE A HAZARDOUS SITUATION THAT MAY RESULT IN PERSONAL INJURY OR DAMAGE TO THE MACHINE.

WARNING

A WARNING IS USED TO INDICATE A HAZARDOUS SITUATION THAT HAS SOME PROBABILITY OF DEATH OR SERIOUS PERSONAL INJURY.

1.5.2 SAFETY FEATURES

The following are safety features, which are incorporated into the Steam Generator or Boiler:

1. ASME Pressure Vessel.
2. ASME Pressure Relief Valve.
3. Steam Pressure Gauge to show internal pressure.
4. Sight Glass to show internal water level.
5. Sight Glass Shield to prevent inadvertent glass breakage.
6. Built in Low Water Cutoff.
7. Electric system designed, manufactured and tested to UL and/or CUL Standards.

1.5.3 SAFETY SUMMARY

The following are general safety precautions that are not related to any specific instructions and therefore do not appear elsewhere in this manual. These are recommended precautions that personnel must understand and apply during all phases of operation and maintenance.

WARNING

DO NOT OPERATE OR SERVICE THIS MACHINE BEFORE READING AND UNDERSTANDING THIS INSTRUCTION MANUAL.

WARNING

COMPLIANCE WITH ALL FEDERAL, STATE AND LOCAL CODES, ORDINANCES AND LAWS REGARDING THE INSTALLATION OF THIS MACHINE IS REQUIRED.

WARNING

IT IS THE RESPONSIBILITY OF THE PURCHASER OF THIS MACHINERY TO TRAIN THE OPERATING PERSONNEL IN THE PROPER MANNER OF OPERATION. IT IS FURTHERMORE UNDERSTOOD THAT HOFFMAN/NEW YORKER ASSUMES NO RESPONSIBILITY FOR INJURY, DISABILITY OR DEATH RESULTING FROM THE IMPROPER OPERATION OF, REMOVAL FROM OR BYPASSING THEREOF ANY ELECTRICAL OR MECHANICAL SAFETY DEVICES INCORPORATED IN THE DESIGN AND MANUFACTURING OF THIS MACHINERY.

WARNING

THIS MACHINE DEVELOPS HIGH TEMPERATURES AND USES PRESSURIZED STEAM, AS WELL AS HIGH ELECTRICAL VOLTAGES. BEFORE SERVICING THIS MACHINE, DISCONNECT SOURCES OF ELECTRICITY AND STEAM, THEN BLEED STEAM FROM THE MACHINE. ENSURE THAT ALL HEATED SURFACES ARE COOL AND ALL MECHANISMS ARE IN THEIR ZERO POSITION.

WARNING

OSHA'S LOCKOUT/TAGOUT STANDARD (29 CFR 1910.147) REQUIRES THAT ALL ENERGY SOURCES BE TURNED OFF AND "LOCKED OUT" WHILE MACHINES ARE BEING SERVICED OR MAINTAINED.

WARNING

WHEN SERVICING THIS MACHINE, USE ONLY APPROVED HOFFMAN/NEW YORKER REPLACEMENT PARTS.

2.0 INSTALLATION

CAUTION

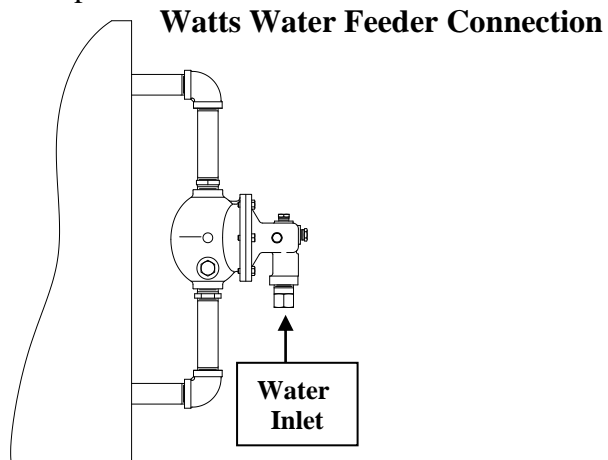
SOME ASSEMBLY MAY BE REQUIRED. FOLLOW ASSEMBLY INSTRUCTIONS PROVIDED WITH UNIT. PERFORM ALL ASSEMBLY BEFORE INSTALLING UNIT.

1. Some models are supplied with mounting holes. Mount generator or boiler to a bench or to the floor.

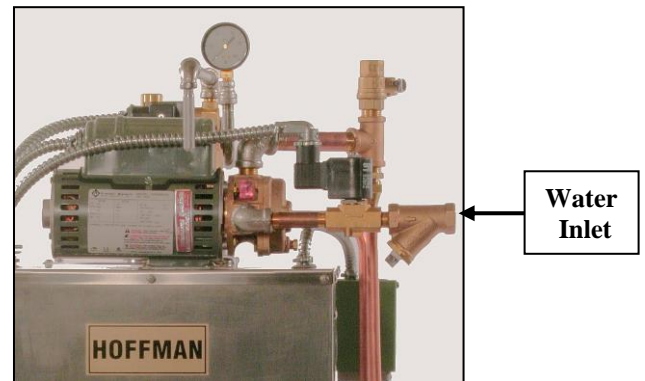
CAUTION

ASSURE FLOOR/TABLE BEARING CAPACITY IS ADEQUATE FOR THE LOAD IMPOSED BY THE STEAM GENERATOR OR BOILER.

2. On models with a Watts Water Feeder, mount the generator perfectly level to insure proper operation of the feeder.
3. Make sure that the unit is oriented so that the safety relief valve is pointed away from any aisle or work area. Discharge piping from the relief valve is recommended and may be required by local law.
4. If discharge piping must be installed on the safety relief valve, make sure that the piping is so supported that it imposes no load on the valve itself. The discharge pipe must be equal to or larger in pipe size than the outlet of the safety relief valve. See yellow card attached to the Safety Valve for instructions.
5. A water supply line must be connected to a generator or boiler with automatic water feed. (Watts Water Feeder or Pump). Use a Strainer on water supply line to protect the Watts Water Feeder or Pump.



Pump and Motor Feed Connection



6. Power the generator from a separate fused supply line. The amperage ratings for various generators are indicated in Chapter 6, Table 6.2.1. Never power the generator from a line that is rated less than that required to run the unit.

WARNING

ALWAYS PROPERLY GROUND THE UNIT BEFORE OPERATING. ONLY A LICENSED ELECTRICIAN SHOULD SERVICE OR INSTALL A HOFFMAN/NEW YORKER STEAM GENERATOR.

7. Installation in an enclosed space shall require the following clearance around the steam generator:
Each Side and Front/Rear Clearance....2 FT --- Top Clearance....1 1/2 FT

3.0 OPERATING INSTRUCTIONS

1. Open the gauge glass valves on the top and bottom of the gauge glass assembly (on units supplied).
2. Check the drain valve to be certain that it is closed.
3. Filling the boiler:
 - A. For *Manual Water Feed Models*: Open the water fill valve on the side of the boiler. Fill the boiler until the water reaches the “Full” mark ($\frac{3}{4}$ the height of the glass).
 - **NOTE: IT MAY BE NECESSARY TO OPEN THE STEAM OUTLET VALVE TO ALLOW AIR TO BREATHE FROM THE SYSTEM. AIR BOUND SYSTEMS WILL BE HARD TO FILL. THERE IS AN AIR BREATHER VALVE LOCATED ON THE STEAM GAUGE LINE ON SOME MODELS.**
 - **NOTE: IT IS RECOMMENDED TO USE DISTILLED WATER FOR OPTIMUM PERFORMANCE.**
 - **NOTE: DO NOT OVERFILL THE BOILER. OVERFILLING WILL CAUSE WET STEAM OR CAUSE DIRT PARTICLES TO DISCHARGE FROM THE STEAM NOZZLE.**

After the unit is full, close the water fill valve.

- B. For *Automatic Water Feed Models with a Watts Water Feeder*: Connect the water line. Turn the water supply on. The Water Feeder will fill the boiler.
 - **NOTE: THE WATTS WATER FEEDER MUST BE SUPPLIED WITH A HIGHER WATER PRESSURE THAN OPERATING PRESSURE OF THE STEAM GENERATOR.**
 - C. For *Automatic Water Feed Models with a Pump*: Connect the water line, continue with the following steps. The pump will fill the boiler when the boiler power is turned on.
4. Turn the ON/OFF switch to the “ON” position.
5. For Steam Pressure Adjustment:

Pressure Switch Controlled Units are factory set and do not require adjustment.
6. For *Models with a Low Water Cutoff with Manual Reset*: Once the power is turned on and the boiler is filled with water, push the reset switch. This will energize the heating element, the low water light will shut off and the heating light will turn on.
7. Allow some time for the boiler to build up pressure, then use as required. The heating light will shut off when the boiler comes up to pressure.

4.0 MAINTENANCE

Boiler Theory and Operation

A boiler converts water to steam. This conversion requires 1 KW of electrical heater energy to produce 3.5#/hr of steam. Since there is both water and steam within a boiler, the fluid within the boiler is considered as a two-phase fluid. The temperature of two phase mixture can be determined by measuring the pressure. A pressure versus temperature chart is listed in Section 6.1.

The general operation of the boiler is simple. The boiler is first filled with water. The heating element may be energized once the water level reaches the minimum operating level. The heating element begins to generate steam and slowly the boiler builds pressure. Initial heat-up requires some time since the boiler shell and water are large quantities of mass consuming much heat energy. Once the boiler reaches operating pressure, the boiler is ready for use.

The boiler supplies steam for a particular application through an outlet valve on top of the boiler. When this valve is opened the pressure will decrease in the boiler. The heating element will turn on if the pressure drops about 10 psi below the set point. This will slow or stop the pressure drop. The amount of pressure drop will depend on the customer's steam demand. The boiler salesman is concerned with properly fitting a customer's demand with the right size boiler.

As a boiler is used, the water level will drop due to steam consumption. In automatic feed options, water will be made up by either a pump (high pressure application) or level control valve refilling as noted on the external sight glass. To manually refill, the boiler should be turned off and allowed to cool. Cooling can be accelerated by turning the unit off and bleeding the pressure down through the outlet valve.

The Hoffman/New Yorker Electric Steam Generator / Boiler is easy to clean and easy to maintain. It is strongly suggested that the following steps be followed to ensure a long and trouble-free life for the boiler.

4.1 CLEANING THE BOILER

1. Turn the Thermostat to "OFF" and turn the power off.
2. Allow the boiler to cool. Check by opening steam valve.
3. Drain the boiler. Close the valve.
4. Fill the boiler to the "Full" mark or halfway up the sight glass with a solution of three parts water to one part vinegar.
5. Bring the boiler up to pressure. Allow the boiler to heat for 30-60 minutes.
6. Blow the boiler down. See Section 4.3 "Blowing Down the Boiler" for the proper procedure.
7. Repeat if necessary.

4.2 CLEANING THE SIGHT GLASS

1. Turn the Thermostat to "OFF."
2. Allow the boiler to cool. Check by opening steam valve or drain valve.
3. Drain the boiler. Leave the valve open.
4. Open the petcock at the bottom of sight glass (if so equipped).
5. Remove the sight glass and clean with a bottle washer. Use a plastic bristle brush. A metal wire brush could scratch the glass and is not recommended.
6. Install the sight glass.

4.3 BLOWING DOWN THE BOILER

This procedure should be performed at start up once a week providing the water is clean. In areas with high mineral content or rusty water, this procedure should be performed once a day. The boiler should be flushed with a cleaning solution at least twice a year.

1. Allow the pressure to reach 2 to 3 psig.
2. Turn the power off.

WARNING

THE WATER IN THE STEAM GENERATOR IS VERY HOT, THE DRAIN VALVE MUST BE PIPED TO A DRAIN TO PREVENT A POSSIBLE BURN.

3. Open the drain valve and drain the boiler.
4. Close the drain valve.

4.4 CLEANING THE LOW WATER AND PUMP CONTROL PROBES

This procedure should be performed at least twice a year:

WARNING

BE SURE THERE IS ZERO PRESSURE IN THE BOILER BEFORE REMOVING PROBES. TEST BY OPENING THE STEAM OUTLET VALVE.

1. Turn the power to the boiler off.
2. Allow the boiler to cool.
3. Drain the boiler and leave the valve open.
4. Remove the cover on the top of the enclosure.
5. Remove the wires on the probe(s).

- **NOTE: FOR MULTIPLE PROBES, WIRES AND PROBES SHOULD BE REMOVED ONE AT A TIME TO ENSURE CORRECT WIRE CONNECTIONS UPON RE-ASSEMBLY.**

6. Unscrew the probes from the boiler shell, using a socket wrench.
7. Clean the probes with steel wool.
8. Insert the probes in the boiler and tighten.
9. Reconnect the wires.
10. Replace the cover on top of the enclosure.
11. Close all open valves.

4.5 CLEANING THE STRAINER

1. Turn the power off.
2. Allow the boiler to cool.
3. Drain the boiler. Leave the valve open.
4. Remove Strainer Cap and clean Screen.
5. Replace Cap.

5.0 TROUBLESHOOTING & SERVICING

5.1 TROUBLESHOOTING TABLE

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
Unit does not heat up.	Lack of power.	Check incoming power.
		Check fuses.
		Check On/Off switch is in "ON" position.
	Lack of water.	Fill unit.
	Bad Heating Element.	Replace. See Section 5.5 – Replacing the Heating Element.
	Bad On/Off Switch.	Replace. See Section 5.7 – Replacing the On/Off Switch.
Safety valve leaking.	Foreign material under seat.	Caution: Make sure discharge is away from people and work areas. Pop safety valve while steam is in unit to dislodge foreign material.
		Replace valve.
Fill valve leaking Steam.	Water between valve and fill cup.	Water must be drained or allowed to boil off to stop leaking.
	Packing nut loose.	When boiler is cool and pressure is at zero (test by opening steam outlet valve) tighten the nut on the handle stem.
	Bad fill valve.	Replace.
Water is dark brown or black.	Rust in Water.	See Section 4.3 – Blowing Down the Boiler. Rust is a normal occurrence in steam generator shells. The rust appearance in the water will slowly disappear after a few weeks of use. The steam generator must be blown down in accordance with instructions given in this manual. Blowing down will minimize the visual amount of discolored water.
No steam comes from the Solenoid Valve.	Bad Foot Switch.	Check Switch. See Section 5.6 – Replacing the Electric Foot Switch.
	Bad Solenoid Valve.	Replace. See Section 5.9 – Replacing the Electric Solenoid Valve.
Can not fill with water.	Breather valve not open.	See Section 3.0 – Operation.
	Check Valve is stuck.	Lightly tap valve.
		Clean valve seat. Disconnect power and remove pressure from the boiler. Check no pressure by leaving the breather open.
		Replace valve.
Water Inlet Solenoid Valve fails to operate.	Replace Water Inlet solenoid Valve.	
Boiler keeps filling.	Inlet solenoid Valve is dirty.	Clean seat in Solenoid Valve. WARNING: Disconnect Power before servicing. Drain Boiler.
Wet Steam.	Too much water in Boiler.	Drain tank until water level fills sight glass approximately 75%.
Hard to see through the Sight Glass.	Minerals have coated the glass.	Clean or replace. See Section 4.2 – Cleaning the Sight Glass or Section 5.4 – Replacing the Gauge Sight Glass.

5.2 ADJUSTING THE STEAM PRESSURE

5.2.1 PRESSURE CONTROL

The boiler contains a dual-limit pressure controller. The control has been factory set and sealed tight. If adjustment is necessary, the maximum setting shall be 90 psig on rising pressure. Thus, the low limit should be set at 85 psig maximum.

WARNING

HIGH VOLTAGE IS PRESENT. DO NOT TOUCH ANY WIRES IN THE PRESSURE CONTROL BOX. A LICENSED ELECTRICIAN OR PLUMBER SHOULD PERFORM THIS ADJUSTMENT.

1. Remove the cover on the pressure controller.
2. Power the boiler and allow the boiler to come up to pressure.
3. Turn the set screw inside the controller to increase or decrease the pressure.
The final pressure is reached when the heating light goes out. This should be set on rising pressure.
4. The dead-band adjustment screw should be set to turn the heating element on 5 to 10 psig below the cut-off pressure. This should be set on falling pressure.
5. Reattach the cover to the pressure controller.
6. DO NOT SET ABOVE RELIEF VALVE RATING.

5.3 REPLACING THE PRESSURE CONTROLLER

(To be performed by a licensed electrician)

1. Turn off the power to the boiler by pulling plug or turning off the power at branch switch or circuit breaker.
2. Allow the boiler to cool to zero pressure.
3. Drain the water from the boiler. Leave the drain valve open.
4. Remove the cover on the pressure controller.
5. Disconnect the wires in the pressure controller.
6. Remove the piping connected to the pressure controller.
7. Remove the mounting screws that hold the pressure controller to the mounting bracket.
8. Remove the controller.
9. Remount the new pressure controller.
10. Remount the pressure piping to the new controller.
11. Rewire the new pressure controller.
12. Adjust to proper steam pressure and dead-band as previously described. See Section 5.2.1.

5.4 REPLACING THE GAUGE SIGHT GLASS

1. Turn off power to the boiler by pulling the plug or turning off power at the branch switch or the circuit breaker.
2. Allow the boiler to cool to zero pressure.
3. Drain the water from the boiler. Leave the drain valve open.
4. Remove the Sight Glass Guard.
5. Remove the fittings that hold the glass in position. Top and Bottom nuts hold the glass in position.
6. Replace the gauge glass. Do not over tighten. Always use new seals when replacing the gauge glass.
7. Check for straight alignment of gauge glass. Brass fittings should not be touching glass, realign if necessary.
8. Reinstall Sight Glass Guard.
9. Check for leaks during initial operation.

5.5 REPLACING THE HEATING ELEMENT

(To be performed by a licensed electrician)

The heating element is an immersion type, flange mounted, designed particularly for the Hoffman/New Yorker boiler. An element can be wired either single phase or three phase. However, machine electrical modifications would be necessary to perform such a change. The performance of a heating element depends on the voltage source. A 240 volt element operating at 208 volts performs at 75% capacity. A 208 volt element operating at 240 volts would operate 33% over capacity. Overdriving an element is hazardous to the electrical wiring. Underdriving an element results in poor performance. Thus, it is important to know the exact maximum supply voltage.

CAUTION

OVERDRIVING AN ELEMENT WILL CAUSE ELEMENT FAILURES ALONG WITH POTENTIAL WIRING DAMAGE.

1. Turn off the power to the boiler by pulling the plug or turning off the power at the branch switch or the circuit breaker.
2. For models with *manually operated steam outlet valves*, allow the boiler to cool to zero pressure. Test by opening steam outlet.
For models with *pedal controlled steam outlet valves*, turn power on, turn thermostat to off. Allow boiler to cool to zero pressure. Test by stepping on pedal. At zero pressure, turn power off at branch switch or circuit breaker or pull the plug.
3. Drain the water from boiler. Leave drain valve open.
4. Remove the front cover to the boiler enclosure.
5. Disconnect the wires from the heating element.
6. Remove the bolts on the heating element.
7. Remove “old” heating element.
8. Seal the gasket on both sides of the “new” heating element with a gasket sealer. Use a “new” gasket.
9. Insert the “new” heating element, and tighten the bolts.
10. Rewire the heating element.
11. Fill the boiler to the normal level, and **CHECK FOR ANY LEAKS.**
12. Power the boiler and allow the boiler to come up to pressure. **CHECK FOR ANY LEAKS.**
13. Remount the front of the boiler enclosure.
14. Periodically, check for leaks during first few days after installing new element.

5.6 REPLACING THE ELECTRIC FOOT SWITCH AND/OR CORD

(To be performed by a licensed electrician)

For Models: JEL-10, JEL-11, JEL-12

1. Turn off the power to the boiler by pulling the plug or turning off the power at the branch switch or the circuit breaker.
2. Allow the boiler to cool to zero pressure. Drain the boiler. Leave the valve open.
3. Remove the front cover to the boiler enclosure.
4. Remove the top cover of the foot switch.
5. Disconnect the cord wires from the foot switch.
6. Check continuity through the switch while holding the switch lever down. If the switch passes the test, skip to number 10.
7. If the switch fails the continuity test, loosen two screws on the bottom side of the switch housing and remove the switch from the cord.
8. Insert cord through strain relief on the “new” foot switch and tighten strain relief screws enough so that the switch cannot be pulled from the cord.
9. Reconnect the wires to the switch and reassemble the switch housing.
10. Check continuity through cord.
11. If cord fails the continuity test, disconnect the cord from the switch.
12. Remove strain relief from the side of the boiler cabinet.
13. Reconnect the wires to the foot switch from the new cord.
14. Inside the boiler cabinet, reconnect the “new” foot switch wire to the same place that the “old” one was removed. Use the strain relief connection from the “old” switch. The strain relief pops into the cabinet’s side.
15. Remount the front of the boiler enclosure.
16. Test unit.

5.7 REPLACING THE ON/OFF SWITCH

(To be performed by a licensed electrician)

1. Turn off the power to the boiler by pulling the plug or turning off power at the branch switch or circuit breaker.
2. Allow the boiler to cool to zero pressure. Drain the boiler. Leave the valve open.
3. Remove the front cover to the boiler enclosure.
4. Disconnect the wires from the ON/OFF switch.
5. Remove the nut, which holds the switch to the cover. Located on the outside of the cover.
6. Remove “old” ON/OFF switch.
7. Insert the “new” On/OFF switch.
8. Rewire the switch.
9. Remount the front of the boiler enclosure.
10. Test the unit.

5.8 CLEANING THE ELECTRIC SOLENOID VALVE

(To be performed by a licensed plumber)

For Models: JEL-10, JEL-11, JEL-12

1. Turn off the power to the boiler by pulling the plug or turning off power at the branch switch or at the circuit breaker.
2. Allow the boiler to cool to zero pressure.
3. Drain the water from the boiler. Leave the valve open.
4. Loosen the Romex connector screws.
5. Remove the large brass nut on the solenoid valve.

CAUTION

THIS SOLENOID VALVE IS SUBJECTED TO HIGH PRESSURE STEAM. INSURE THAT THE SOLENOID VALVE IS TIGHTLY SCREWED INTO THE STEAM OUTLET PIPING.

6. Slide off the electric box from the solenoid valve or remove nut, and remove valve coil.
7. Remove stem from valve.
8. Clean off seat in valve and clean the Teflon seat on the plunger. Do not scratch the seat in the valve or on the plunger.
9. Reassemble valve.

5.9 REPLACING THE ELECTRIC SOLENOID VALVE

(To be performed by a licensed electrician)

For Models: JEL-10, JEL-11, JEL-12

1. Turn off the power to the boiler by pulling the plug or turning off the power at the branch switch or at the circuit breaker.
2. Allow the boiler to cool to zero pressure. Drain the boiler. Leave the valve open.
3. Disconnect the wires from the solenoid valve.
4. Remove the "old" solenoid valve.
5. Install the "new" solenoid valve.

- **NOTE: MAKE SURE THAT PORT #1 IS CONNECTED TO THE BOILER VESSEL SIDE AND PORT #2 IS CONNECTED TO THE OUTLET SIDE.**

CAUTION

THIS SOLENOID VALVE IS SUBJECTED TO HIGH PRESSURE STEAM. INSURE THAT THE SOLENOID VALVE IS TIGHTLY SCREWED INTO THE STEAM OUTLET PIPING.

6. Rewire the solenoid valve to the unit.
7. Test the unit.

6.0 TABLES

6.1 PRESSURE VS. TEMPERATURE

The following table shows the relationship between steam pressure in pounds per square inch (psig), and temperature in degrees Fahrenheit (°F). This table can be useful in determining the steam temperature at a corresponding pressure. It is helpful in setting the pressure when the steam generator is connected to auxiliary equipment that requires temperature adjustment.

Table 6.1.1

<u>PRESSURE (psig)</u>	<u>TEMPERATURE (°F)</u>
1	213
5	228
10	240
15	250
20	259
25	267
30	274
35	281
40	287
45	293
50	298
55	303
60	308
65	312
70	316
75	320
80	324
85	328
90	331
95	335
100	338

6.2 ELECTRICAL SPECIFICATIONS

The following table lists voltage and amperage requirements of various models of Steam Generators.

Table 6.2.1

MODEL NUMBER	KW	VOLTAGE	PHASE	AMPS
JEL-10	6.0	240	3/1	17/27
		220	3/1	18/30
		208	3/1	19/31
Jel-11	9.0	240	3/1	24/40
		220	3/1	26/43
		208	3/1	27/46
JEL-12	12.0	240	3/1	31/52
		220	3/1	34/57
		208	3/1	36/60
RHPG-15	6.0	240	3/1	17/27
		220	3/1	18/30
		208	3/1	19/31
RHPG-16	9.0	240	3/1	24/40
		220	3/1	26/43
		208	3/1	27/46
RHPG-17	12.0	240	3/1	31/52
		220	3/1	34/57
		208	3/1	36/60
RHPG-18	18.0	240	3/1	44/75
		220	3/1	47/82
		208	3/1	50/87
RHPG-24	24.0	240	3	58
		220	3	63
		208	3	67
RHPG-29	29.0	240	3	70
		220	3	77
		208	3	81
RHPG-30	30.0	240	3	73
		220	3	79
		208	3	84
RHPG-36	36.0	240	3	87
		220	3	95
		208	3	100

HOFFMAN NEW YORKER

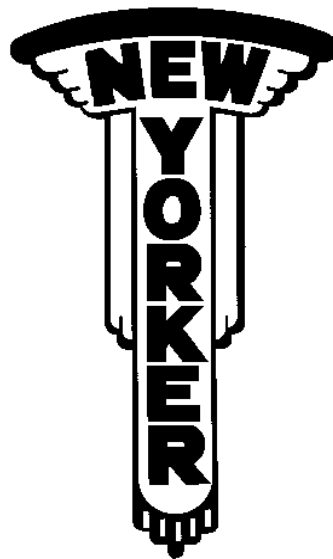


FOR ORIGINAL QUALITY PARTS CALL:

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OR FAX:

1-570-928-9807



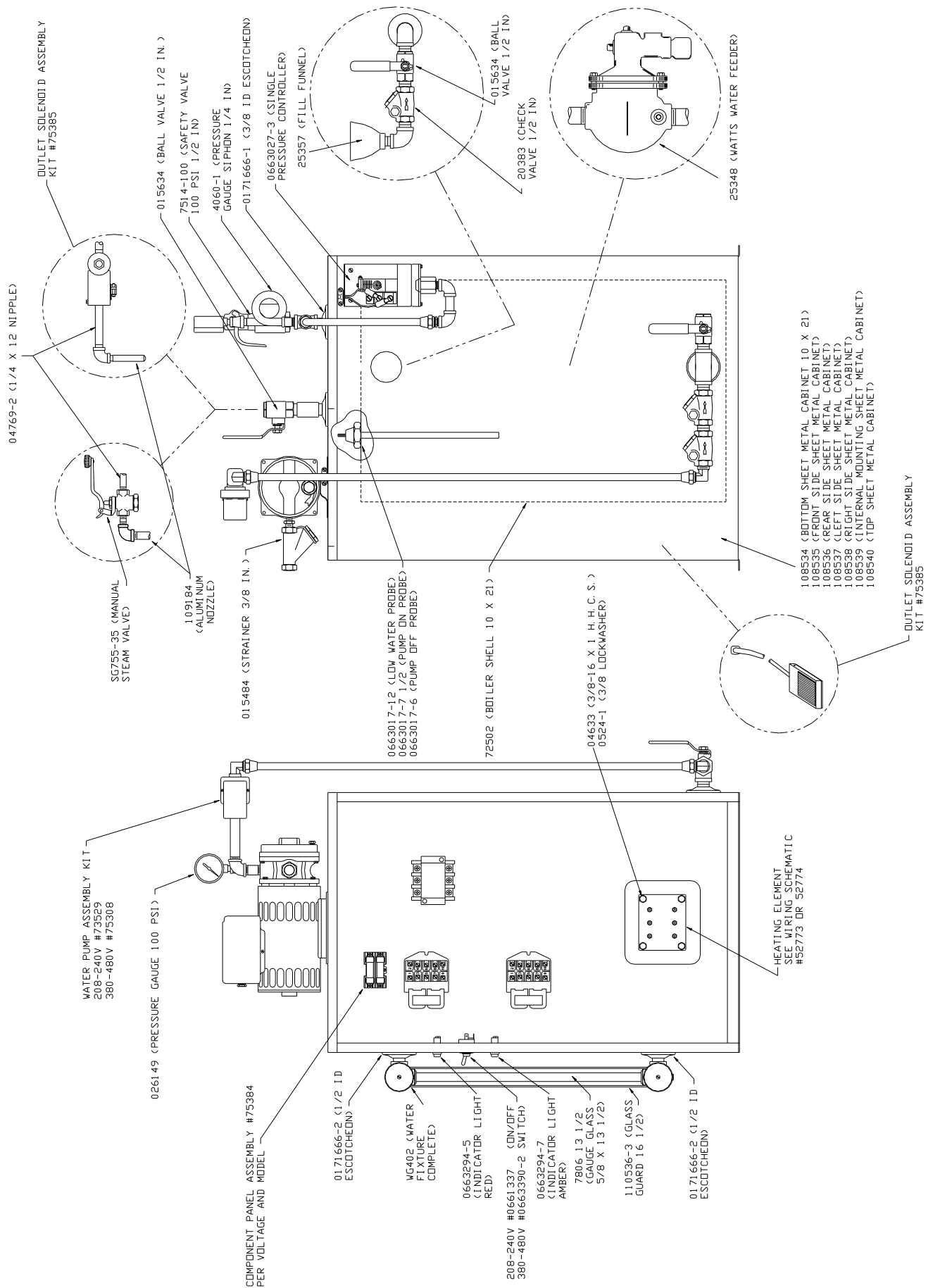
DUSHORE, PA U.S.A.

7.0 DRAWINGS & PARTS LIST

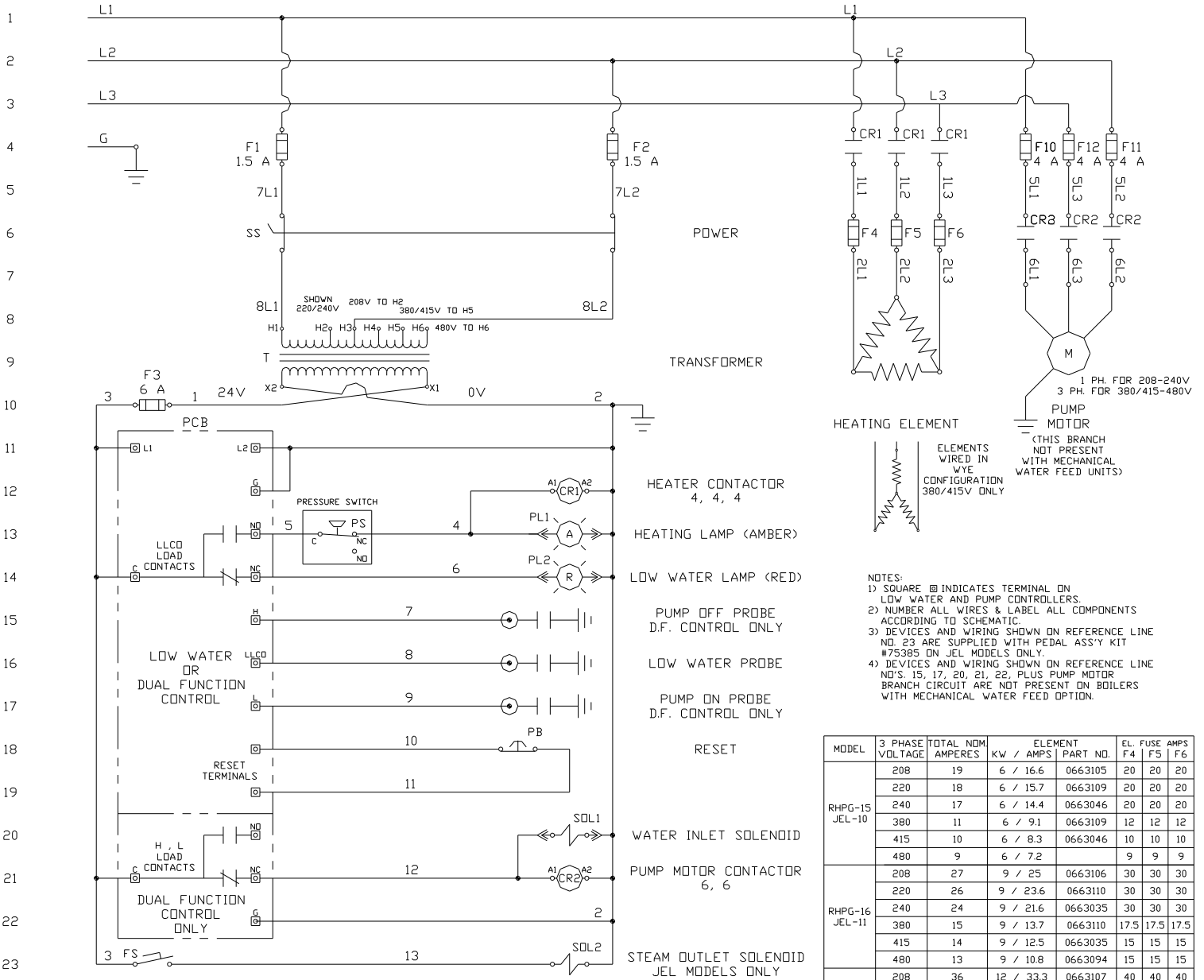
- Figure 7.1 - Assembly for Models: JEL-10, JEL-11, JEL-12, RHPG-15, RHPG-16, RHPG-17
 - Figure 7.2 - 52773 (rev B) Wiring Schematic RHPG/ JEL 6, 9, & 12 KW 3 Phase
 - Figure 7.3 - 52774 (rev A) Wiring Schematic RHPG/ JEL 6, 9, & 12 KW 1 Phase
 - Figure 7.4 - 75384 (rev B) Component Panel Assembly RHPG/ JEL 6, 9, & 12 KW
 - Figure 7.5 - 75385 (rev B) Outlet Solenoid Assembly Kit JEL -10, 11, 12
 - Figure 7.6 - 75308 (rev B) Water Pump Assembly Kit 380-460V, 3 Phase RHPG/JEL 6, 9, & 12 KW
 - Figure 7.7 - 73529 (rev B) Water Pump Assembly Kit Single Phase RHPG/JEL 6, 9, & 12 KW
 - Figure 7.8 - 52771 (rev B) Wiring Schematic RHPG-18 thru 36 KW Boilers 3 Phase
 - Figure 7.9 - 52794 Wiring Schematic RHPG-18 Boiler 1 Phase
 - Figure 7.10- 75285 (rev D) Electrical Enclosure Assembly Boilers 18 thru 36 KW
 - Figure 7.11 - 73493 (rev C) Water Pump Assembly Kit RHPG 18-36 KW
- Optional Parts List

FOR ORIGINAL QUALITY PARTS: 1-800-221-0146

Figure 7.1 – Assembly for Models: JEL-10, JEL-11, JEL-12, RHPG-15, RHPG-16, RHPG-17



**Figure 7.2 – 52773 (rev B) Wiring Schematic
RHPG/ JEL 6, 9, & 12 KW 3 Phase**



MODEL	3 PHASE VOLTAGE	TOTAL NOM AMPERES	KW / AMPS	ELEMENT PART NO.	EL. FUSE AMPS		
					F4	F5	F6
RHPG-15 JEL-10	208	19	6 / 16.6	0663105	20	20	20
	220	18	6 / 15.7	0663109	20	20	20
	240	17	6 / 14.4	0663046	20	20	20
	380	11	6 / 9.1	0663109	12	12	12
	415	10	6 / 8.3	0663046	10	10	10
RHPG-16 JEL-11	208	27	9 / 25	0663106	30	30	30
	220	26	9 / 23.6	0663110	30	30	30
	240	24	9 / 21.6	0663035	30	30	30
	380	15	9 / 13.7	0663110	17.5	17.5	17.5
	415	14	9 / 12.5	0663035	15	15	15
RHPG-17 JEL-12	208	36	12 / 33.3	0663107	40	40	40
	220	34	12 / 31.5	0663111	40	40	40
	240	31	12 / 28.8	0663036	40	40	40
	380	21	12 / 18.2	0663111	25	25	25
	415	19	12 / 16.7	0663036	20	20	20
	480	17	12 / 14.4	0663092	20	20	20

**Figure 7.3 – 52774 (rev A) Wiring Schematic
RHPG/ JEL 6, 9, & 12 KW 1 Phase**

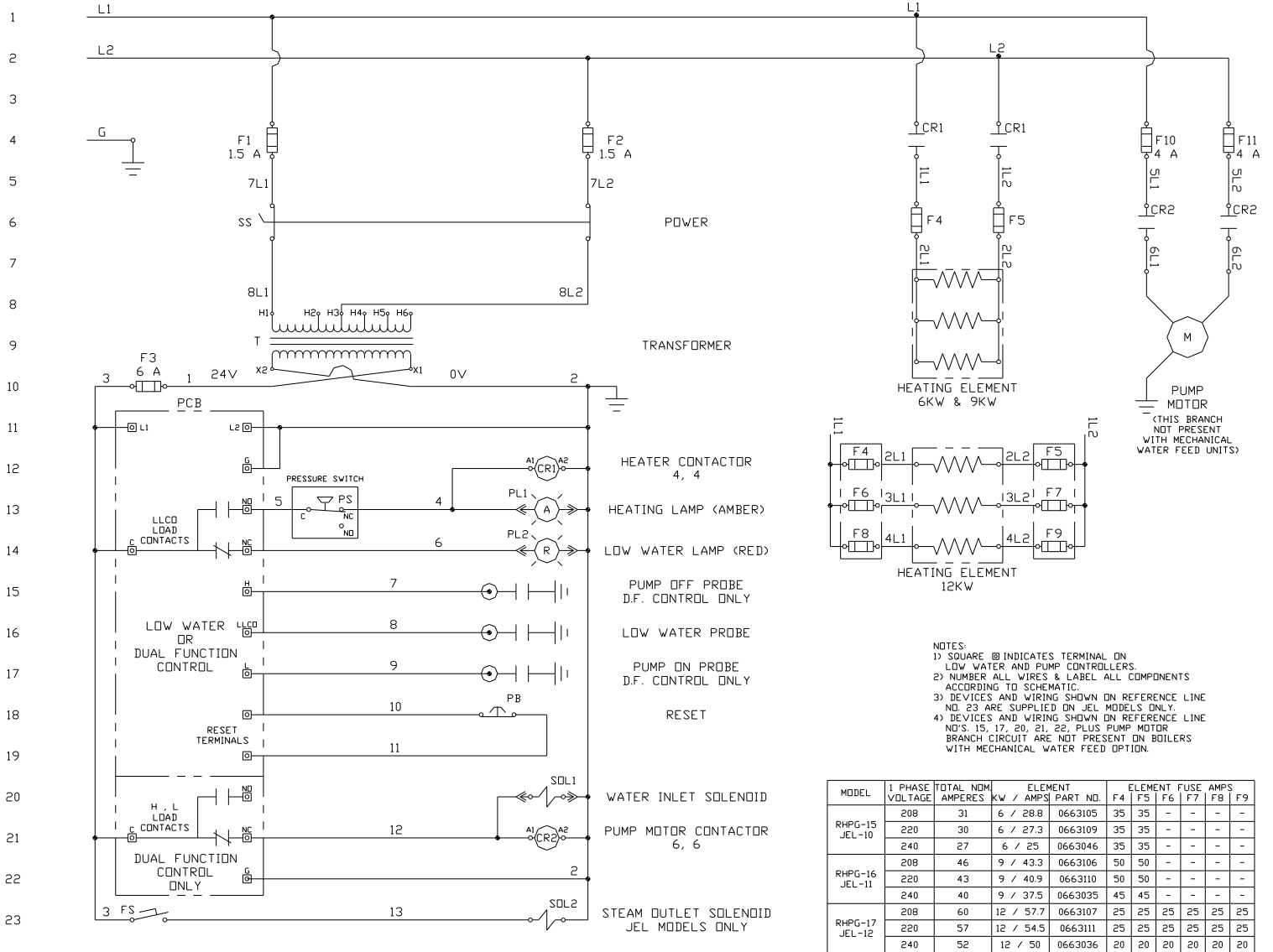


Figure 7.4 – 75384 (rev B) Component Panel Assembly

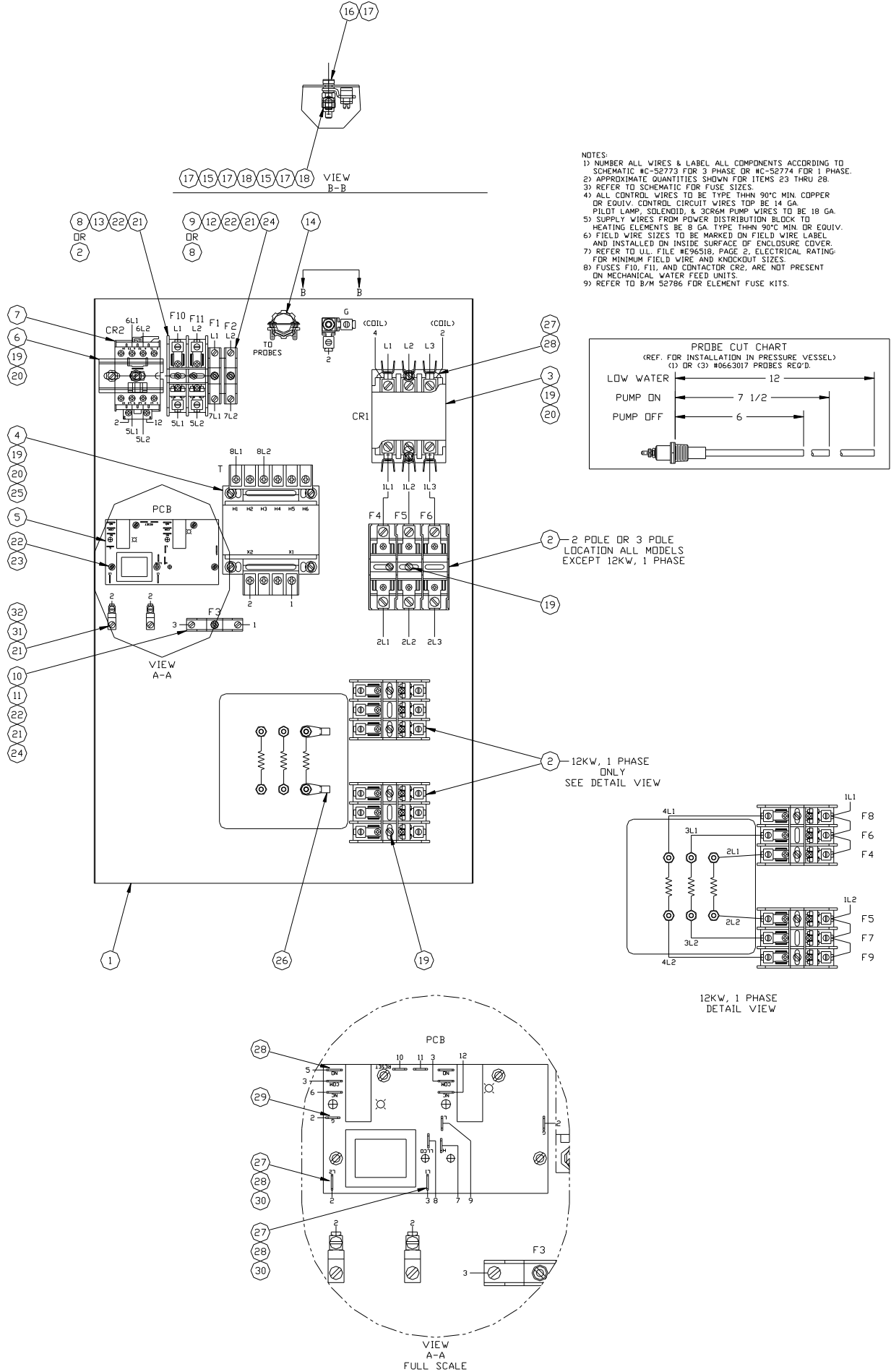
RHPG/ JEL 6, 9, & 12 KW

For drawing refer to next page

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY./ASSY.</u>											
			75384-1	-2	-3	-4	-5	-6	-7	-8	-9	-10		
1	112298	Component Panel	1	1	1	1	1	1	1	1	1	1	1	1
2	0663678	Fuse Block (Element) 3-Pole	1	1	-	-	-	-	-	2	2	2	1	
	0665265-2	Fuse Block (Element) 2-Pole	-	-	1	1	-	-	-	-	-	-	-	
	0665265-3	Fuse Block (Element) 3-Pole	-	-	-	-	1	1	-	-	-	-	-	
3	0663024-24	Contactora, 50 Amp, 24V Coil	1	1	1	1	1	1	1	1	1	1	1	1
4	0663730	Transformer, 100 VA	1	1	1	1	1	1	1	1	1	1	1	1
5	0663759	Level Control	1	-	1	-	1	-	1	-	1	-	1	-
	0663871	Level Control	-	1	-	1	-	1	-	1	-	1	-	1
6	111775-2.5	Din Rail 2 ½”	1	-	1	-	1	-	1	-	1	-	1	-
7	0663431	Contactora, 13 Amp	1	-	1	-	1	-	1	-	1	-	1	-
8	0663680	Fuse Block 2-Pole	1	-	1	-	1	-	1	-	2	1		
9	0663471	Fuse Block 2-Pole	1	1	1	1	1	1	1	1	1	-	-	
10	0663471	Fuse Block 1-Pole	½	½	½	½	½	½	½	½	½	½	½	½
11	0663319-6	Fuse, 6 Amp, Fast Acting	1	1	1	1	1	1	1	1	1	1	1	1
12	0663866-1.5	Fuse, 1.5 Amp, Time Delay	2	2	2	2	2	2	2	2	2	-	-	
	0663679-1.5	Fuse, 1.5 Amp, Time Delay	-	-	-	-	-	-	-	-	-	2	2	
13	0663679-4	Fuse, 4 Amp, Time Delay	2	-	2	-	2	-	2	-	3	-	-	
14	23008	Romex Connector, 1/2”	1	1	1	1	1	1	1	1	1	1	1	1
15	0663705	Ground Lug 4-14	2	2	2	2	2	2	2	2	2	2	2	2
16	0463-1	Hex Head Cap Screw ¼-20 x 1”	1	1	1	1	1	1	1	1	1	1	1	1
17	05238	Int. Ext. Tooth Lock Washer 1/4	4	4	4	4	4	4	4	4	4	4	4	4
18	04910-1	Hex Nut ¼-20	2	2	2	2	2	2	2	2	2	2	2	2
19	02314-1	Rnd. Head Mach. Screw 8-32 x 1/2	10	8	10	8	10	8	12	10	8	10		
20	05115-1	Flat Washer #8	8	6	8	6	8	6	8	6	8	6	8	6
21	0233-1	Rnd. Head Mach. Screw 6-32 x 1/2	7	5	7	5	7	5	7	5	7	5	7	5
22	0460810-1	Lock Washer #6	9	6	9	6	9	6	9	6	9	6	9	6
23	0234-1	Rnd. Head Mach. Screw 6-32 x 5/8	4	3	4	3	4	3	4	3	4	3	4	3
24	0663292-4	Ring Terminal 18/14-8R	6	6	6	6	6	6	6	6	6	6	6	6
25	0663292-5	Ring Terminal 18/14-10R	5	5	5	5	5	5	5	5	5	5	5	5
26	0663292-18	Ring Terminal 8-10R	3	3	2	2	3	3	6	6	3	3		
27	0663333	Fem./ Male Disc. Adapter .250	3	3	3	3	3	3	3	3	3	3	3	3
28	0663648-1	Fem. Disc., Insulated #16/14-250	13	10	13	10	13	10	13	10	13	10	13	10
29	0663774-4	Fem. Disc., Insulated #16/14-187	7	4	7	4	7	4	7	4	7	4	7	4
30	0663910-1	Fem. Disc., Piggyback #16/14-250	3	3	3	3	3	3	3	3	3	3	3	3
31	0662133	Ground Lug 14-10	2	2	2	2	2	2	2	2	2	2	2	2
32	05232	Internal Tooth Lock Washer #6	2	2	2	2	2	2	2	2	2	2	2	2

ASS'Y. NO.	DESCRIPTION
75384-1	208-220/240V, 6KW & 9KW, 3 PH.
75384-2	208-220/240V, 6 & 9KW, 3 PH., WATER FEED
75384-3	208-220/240V, 6KW & 9KW, 1 PH.
75384-4	208-220/240V, 6 & 9KW, 1 PH., WATER FEED
75384-5	208-220/240V, 12KW, 3 PH.
75384-6	208-220/240V, 12KW, 3 PH., WATER FEED
75384-7	208-220/240V, 12KW, 1 PH.
75384-8	208-220/240V, 12KW, 1 PH., WATER FEED
75384-9	380/415-480V, 6, 9, 12KW, 3 PH.
75384-10	380/415-480V, 6, 9, 12KW, 3 PH., WATER FEED

Figure 7.4 – 75384 (rev B) Component Panel Assembly
RHPG/ JEL 6, 9, & 12 KW



**Figure 7.5 – 75385 (rev B) Outlet Solenoid Assembly Kit
JEL-10, 11, 12**

For drawing refer to next page

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	73322	Pedal & Cord Assembly	1
2	0663310	Strain Relief 90°	1
3	75587-24	Solenoid Valve Assembly, 2/2, 24V	1
4	0150954	“Y” Strainer 1/4”	1
5	03153	Brass Hex Reducer, 1/2 x 1/4	1
6	033100	Brass Street Elbow, 1/4 x 90°	1
7	033183	Brass Reducing Elbow, 1/4 x 1/8	1
8	05832	Brass Nipple, 1/4 Close	1
9	05838	Brass Nipple, 1/4 x 4	1
10	05854	Brass Nipple, 1/4 x 12	1
11	109184	Nozzle	1
12	0663894-3	Conduit, Flexible Type B, 3/8	1
13	0663889-3	Conduit Connector, Snap-In, 3/8	1
14	0663420-2	Conduit Connector, 3/8	1
15	02325-1	Round Head Machine Screw 10-32 x 1/2	1
16	05265-1	Internal Tooth Lock Washer #10	2
17	0493-1	Hex Nut 10-32	2
18	0663292-5	Ring Terminal 18/14 x #10	1
19	0663292-4	Ring Terminal 18/14 x #8	1
20	0663648	Female Disconnect, Ins. 22/18 x 1/4 x .032	4
21	0663649	Male Disconnect, Ins. 22/18 x 1/4 x .032	3
22	0663333	Male/Female Disconnect Adapter, 1/4	1

**Figure 7.5 – 75385 (rev B) Outlet Solenoid Assembly Kit
JEL-10, 11, 12**

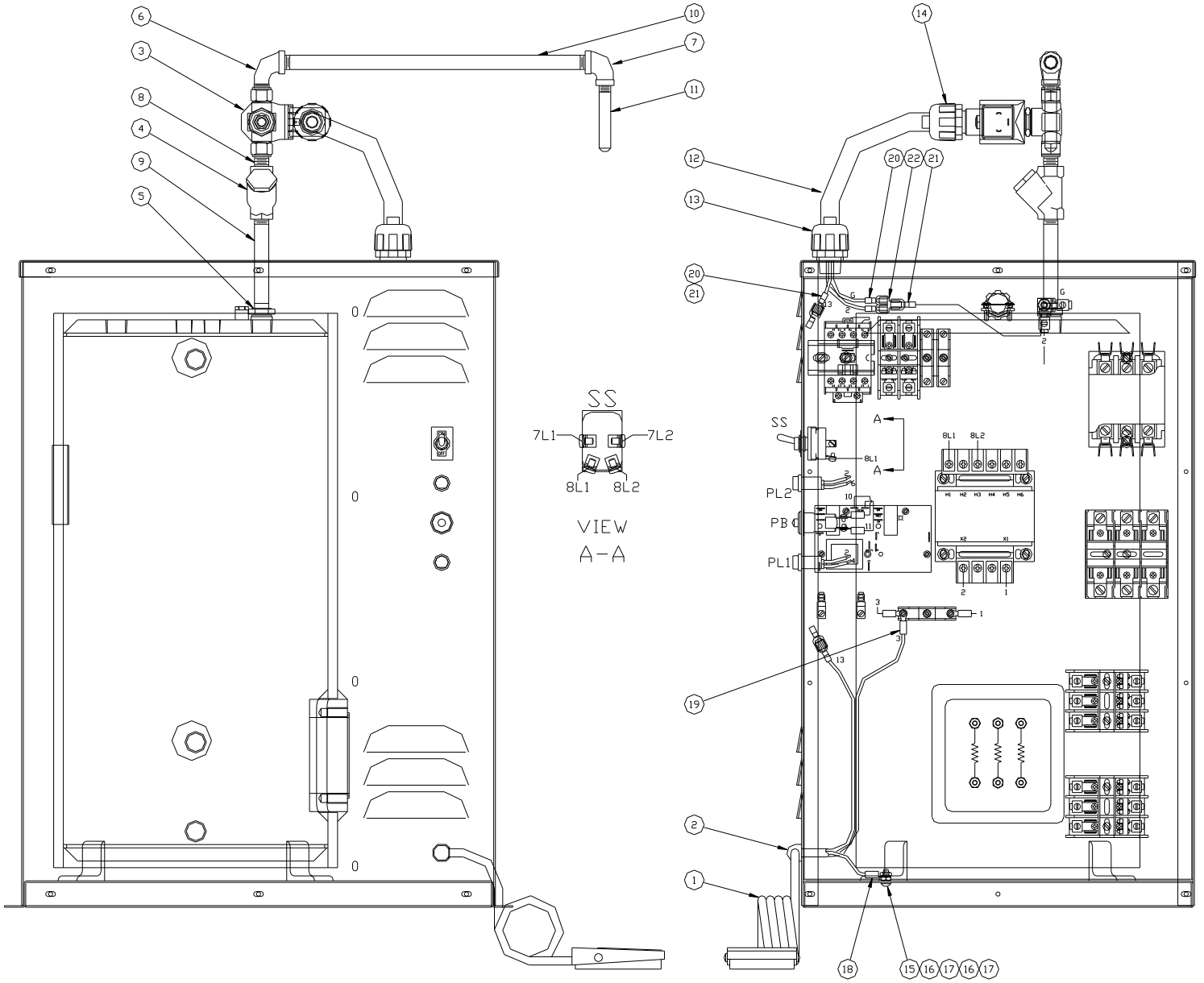


Figure 7.6 – 75308 (rev B) Water Pump Assembly Kit
380-460V, 3 Phase, RHPG/ JEL 6, 9, & 12 KW
 For drawing refer to next page

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	085177	Pump, 380-460V, 3 Phase	1
2	75588-50	Solenoid Valve Assembly, 1/2", 24V	1
3	75507	Pump Conn./Drain Assembly	1
4	015484-4	"Y" Strainer, 1/2	1
5	015634	Ball Valve, 1/2	1
6	05894	Brass Nipple, 1/2 Close	4
7	031141	Brass Hex Reducer, 1 x 1/2	2
8	033105	Brass Street Elbow, 1/2	1
9	0434	Brass Tee, 1/2	1
10	04617-1	Hex Head Cap Screw 5/16-18 x 3/4	4
11	0523-1	Lock Washer 5/16	4
12	05129	Flat Washer 5/16 S.A.E	4
13	110016	Pump Mounting Plate	1
14	20561	Flare Elbow, 1/2P x 1/2T	1
15	20539	Flare Nut, 1/2T	1
16	20210	Copper Tubing, 1/2 O.D.	2'
17	23008	Romex Connector, 1/2	2
18	22661	Duplex Connector, 1/2	1
19	20928	Anti-Short Bushing	4
20	0663297	Conduit, 3/8	3'

Figure 7.6 – 75308 (rev B) Water Pump Assembly Kit
380-460V, 3 Phase, RHPG/ JEL 6, 9, & 12 KW

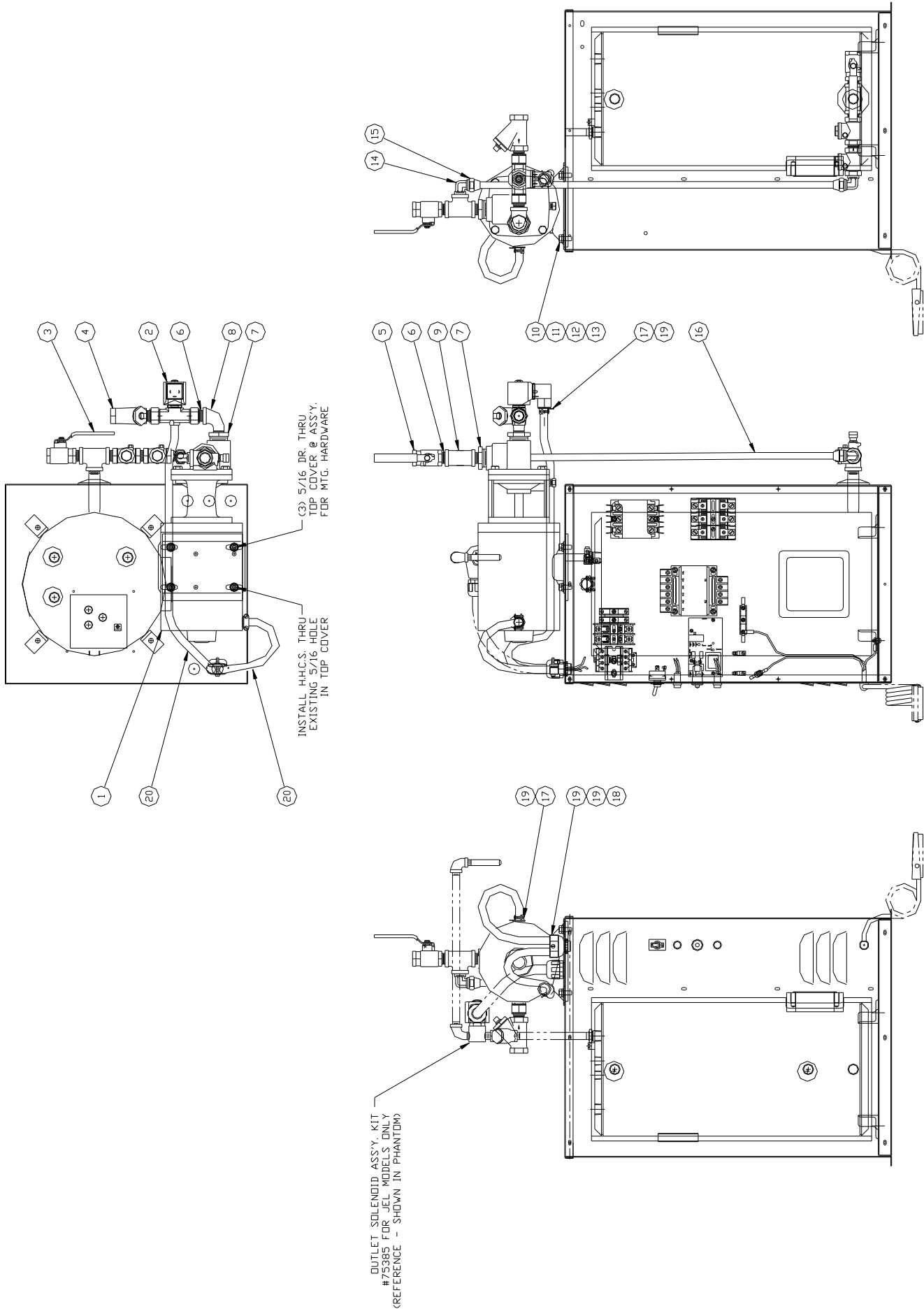
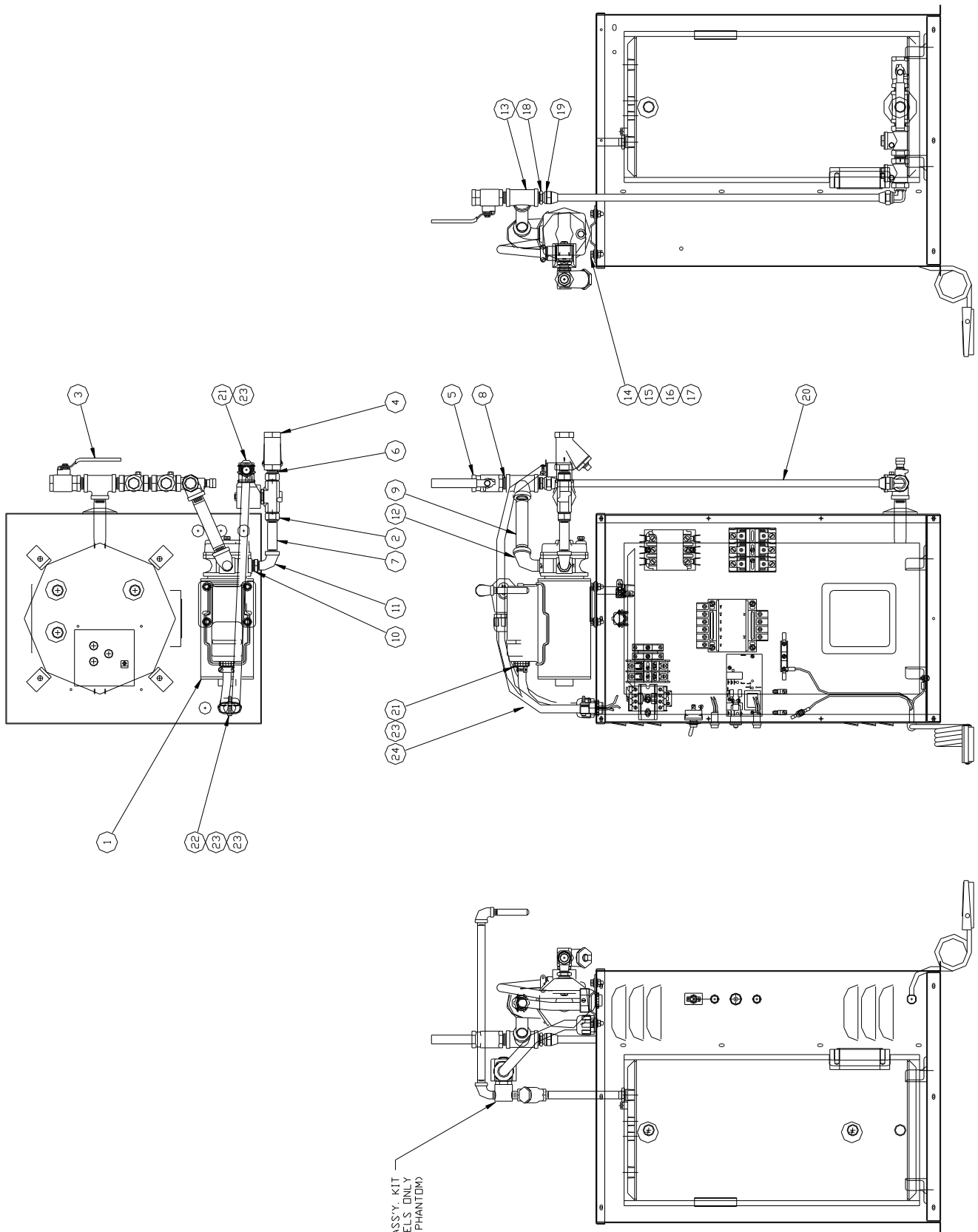


Figure 7.7 – 73529 (rev B) Water Pump Assembly Kit
Single Phase, RHPG/ JEL 6, 9, & 12 KW
 For drawing refer to next page

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	3CR6M*	Pump, Single Phase	1
2	75588-37	Solenoid Valve, 3/8", 24V	1
3	75507	Pump Conn./drain Assembly	1
4	015484	"Y" Strainer, 3/8"	1
5	015634	Ball Valve, 1/2"	1
6	05863	Brass Nipple, 3/8" Close	2
7	05894	Brass Nipple, 1/2" Close	1
8	058102	Brass Nipple, 1/2" x 5"	1
9	031300	Brass Hex Reducer, 1/2" x 3/8"	1
10	033101	Brass Street Elbow, 3/8"	1
11	031105	Brass Street Elbow, 1/2"	1
12	0434	Brass Tee, 1/2"	1
13	0462-1	Hex Head Cap Screw 1/4-20 x 3/4"	4
14	0522-1	Lock Washer 1/4"	4
15	20823-1	Flat Washer 1/4" S.A.E.	8
16	04910-1	Hex Nut 1/4-20"	4
17	20560	Flare Connector, 1/2P x 1/2T	1
18	20539	Flare Nut, 1/2T	1
19	20210	Copper Tubing, 1/2" O.D.	2'
20	23008	Romex Connector, 1/2"	2
21	22661	Duplex Connector, 1/2"	1
22	20928	Anti-Short Bushing	4
23	0663297	Conduit, 3/8"	2'

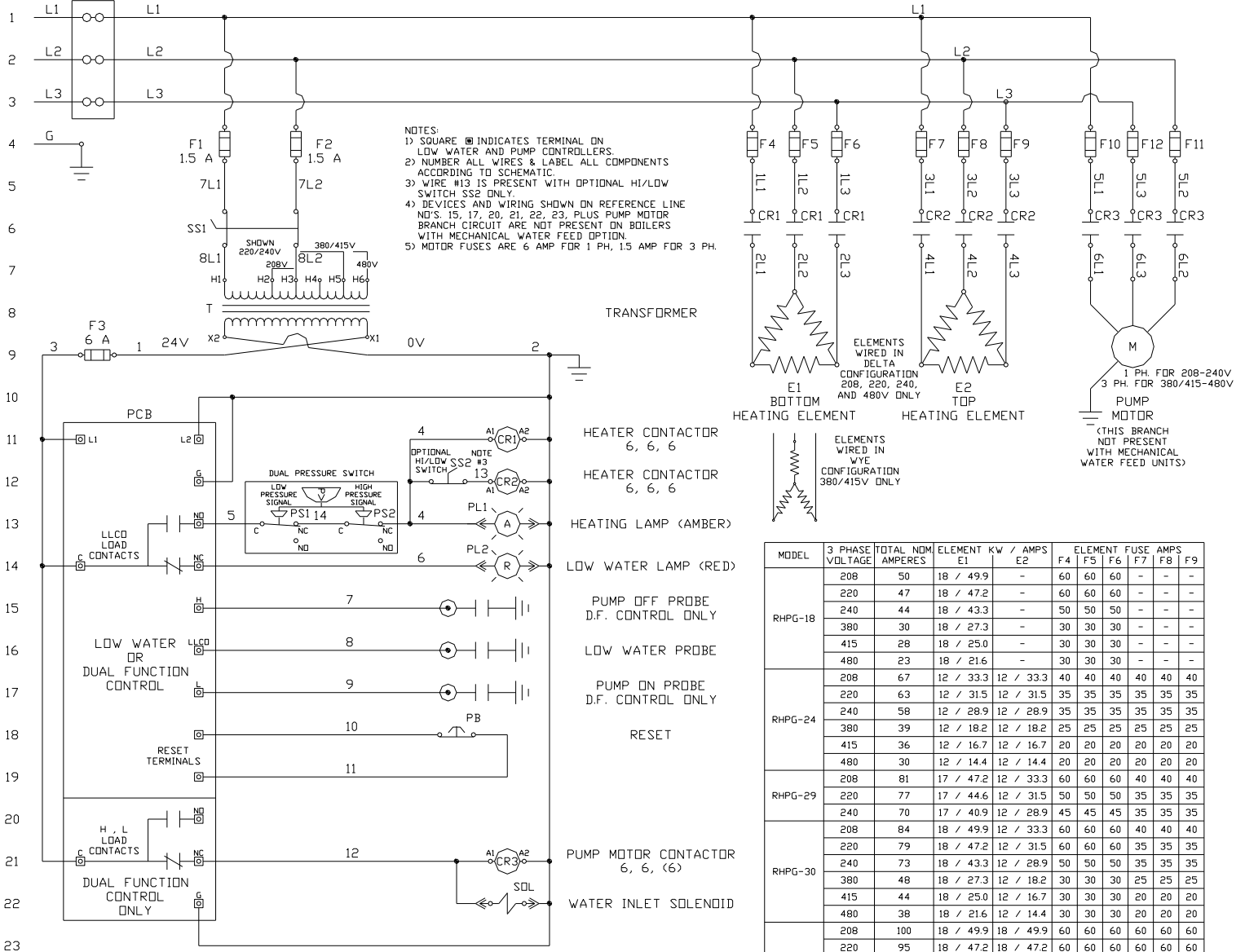
*NOTE: UNITS ASSEMBLED AFTER JAN. 2012 OR WITH S/N 24561 & UP THAT HAVE MTH/DLT BRAND PUMP/MOTOR ORDER P/N 0805357.

**Figure 7.7 – 73529 (rev B) Water Pump Assembly Kit
Single Phase, RHPG/ JEL 6, 9, & 12 KW**



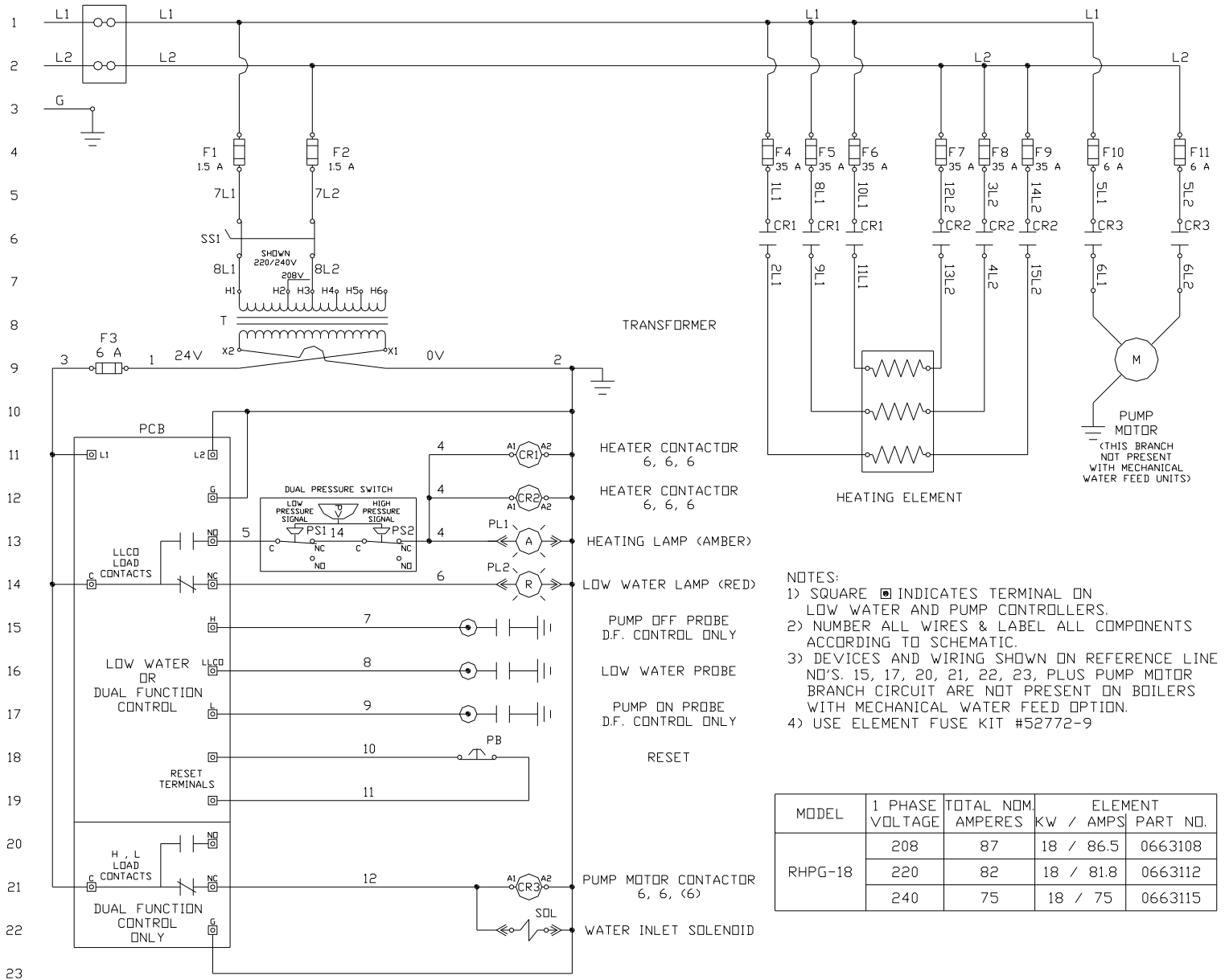
OUTLET SOLENOID ASS'Y KIT
#75385 FOR JEL MODELS ONLY
(REFERENCE - SHOWN IN PHANTOM)

**Figure 7.8 – 52771 (rev B) Wiring Schematic
RHPG-18 thru 36 Boilers 3 Phase**



MODEL	3 PHASE VOLTAGE	TOTAL NDM AMPERES	ELEMENT KW / AMPS		ELEMENT FUSE			AMPS		
			E1	E2	F4	F5	F6	F7	F8	F9
RHPG-18	208	50	18 / 49.9	-	60	60	60	-	-	-
	220	47	18 / 47.2	-	60	60	60	-	-	
	240	44	18 / 43.3	-	50	50	50	-	-	
	380	30	18 / 27.3	-	30	30	30	-	-	
	415	28	18 / 25.0	-	30	30	30	-	-	
RHPG-24	208	67	12 / 33.3	12 / 33.3	40	40	40	40	40	
	220	63	12 / 31.5	12 / 31.5	35	35	35	35	35	
	240	58	12 / 28.9	12 / 28.9	35	35	35	35	35	
	380	39	12 / 18.2	12 / 18.2	25	25	25	25	25	
	415	36	12 / 16.7	12 / 16.7	20	20	20	20	20	
RHPG-29	208	81	17 / 47.2	12 / 33.3	60	60	60	40	40	
	220	77	17 / 44.6	12 / 31.5	50	50	50	35	35	
	240	70	17 / 40.9	12 / 28.9	45	45	45	35	35	
	380	84	18 / 49.9	12 / 33.3	60	60	60	40	40	
	415	80	18 / 47.2	12 / 31.5	60	60	60	35	35	
RHPG-30	208	100	18 / 49.9	18 / 49.9	60	60	60	60	60	
	220	95	18 / 47.2	18 / 47.2	60	60	60	60	60	
	240	87	18 / 43.3	18 / 43.3	50	50	50	50	50	
	380	57	18 / 27.3	18 / 27.3	30	30	30	30	30	
	415	53	18 / 25.0	18 / 25.0	30	30	30	30	30	
RHPG-36	208	100	18 / 49.9	18 / 49.9	60	60	60	60	60	
	220	95	18 / 47.2	18 / 47.2	60	60	60	60	60	
	240	87	18 / 43.3	18 / 43.3	50	50	50	50	50	

**Figure 7.9 – 52794 Wiring Schematic
RHPG-18 Boiler 1 Phase**



MODEL	1 PHASE VOLTAGE	TOTAL NOM. AMPERES	ELEMENT KW / AMPS	PART NO.
RHPG-18	208	87	18 / 86.5	0663108
	220	82	18 / 81.8	0663112
	240	75	18 / 75	0663115

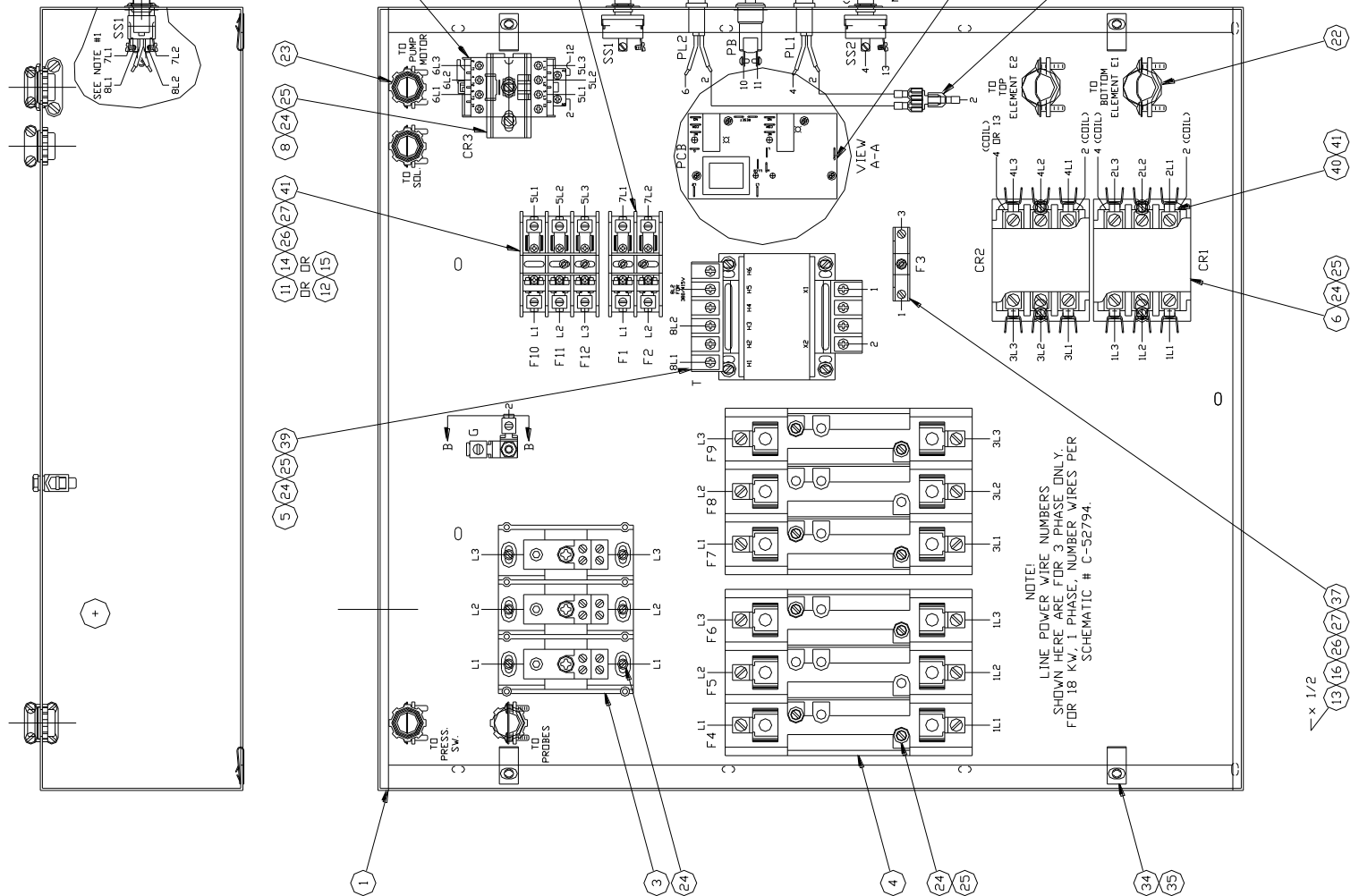
Figure 7.10 – 75285 (rev D) Electrical Enclosure Assembly - Boilers 18 thru 36 KW
 For drawing refer to next page

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY./ASSY.*</u>							
			75285-1	-2	-3	-4	-5	-6	-7	-8
			*See chart on drawing for assembly description.							
1	112209	Enclosure	1	1	1	1	1	1	1	1
2	108812	Enclosure Cover (not shown)	1	1	1	1	1	1	1	1
3	0663089	Power Distribution Block	1	1	1	1	1	1	1	1
4	0662990	Fuse Block 3-Pole	2	1	2	1	-	-	-	-
	0663331-2	Fuse Block 3-Pole	-	-	-	-	2	1	2	1
5	0663730	Transformer, 100 VA	1	1	1	1	1	1	1	1
6	0663024-24	Contactor, 50 AMP, 24V Coil	2	1	2	1	2	1	2	1
7	0663759	Level Control	1	1	-	-	1	1	-	-
	0663871	Level Control	-	-	1	1	-	-	1	1
8	111775-2.5	Din Rail 2 ½”	1	1	-	-	1	1	-	-
9	0663431	Contactor, 13 AMP	1	1	-	-	1	1	-	-
10	0663471	Fuse Block 2-Pole, 250V	1	1	1	1	-	-	-	-
11	0663680	Fuse Block 2-Pole, 600V	1	1	-	-	1	1	1	1
12	0663678	Fuse Block 3-Pole, 600V	-	-	-	-	1	1	-	-
13	0663471	Fuse Block 1-Pole	½	½	½	½	½	½	½	½
14	0663679-6	Fuse, 6 AMP, Time Delay	2	2	-	-	-	-	-	-
15	0663866-1.5	Fuse, 1.5 AMP, Time Delay	2	2	2	2	-	-	-	-
	0663679-1.5	Fuse, 1.5 AMP, Time Delay	-	-	-	-	5	5	2	2
16	0663319-6	Fuse, 6 AMP, Fast Acting	1	1	1	1	1	1	1	1
17	0663318	Push Button, Momentary, N.C.	1	1	1	1	1	1	1	1
18	0663294-5	Pilot Lamp, 28V, Red	1	1	1	1	1	1	1	1
19	0663294-7	Pilot Lamp, 28V, Amber	1	1	1	1	1	1	1	1
20	0661337	Selector Switch, DPST	1	1	1	1	-	-	-	-
	0663390-2	Selector Switch, DPST	-	-	-	-	1	1	1	1
21	0661977	Selector Switch, SPST (Optional)	1	1	1	1	1	1	1	1
22	0663299	Romex Conn., ¾”	2	1	2	1	2	1	2	1
23	23008	Romex Conn., ½”	4	4	4	4	4	4	4	4
24	02314-1	Rnd Hd. Machine Screw 8-32 x 1/2	24	18	24	18	24	18	24	18
25	05115-1	Flat Washer, #8	14	8	14	8	14	8	14	8
26	0233-1	Rnd Hd. Machine Screw 6-32 x 1/2	5	5	5	5	5	5	5	5
27	0460810-1	Lock Washer #6	9	9	9	9	9	9	9	9
28	0234-1	Rnd Hd. Machine Screw 6-32 x 5/8	4	4	4	4	4	4	4	4
29	20155	Ground Lug 2-8	1	1	1	1	1	1	1	1
30	0463-1	Hex Hd. Cap Screw ¼-20 x 1”	1	1	1	1	1	1	1	1
31	05238	I.E. Tooth Lock Washer 1/4	4	4	4	4	4	4	4	4
32	04910-1	Hex Nut ¼-20	2	2	2	2	2	2	2	2
33	0663705	Ground Lug 4-14	1	1	1	1	1	1	1	1
34	0460805	Speed Nut ¼-20	4	4	4	4	4	4	4	4
35	02369-1	R.H.M.S. ¼-20 x ½ (not shown)	4	4	4	4	4	4	4	4
36	0663649-1	Male Disc., Insulated #16/14-250	2	2	2	2	2	2	2	2
37	0663292-4	Ring Terminal #18-14R	2	2	2	2	2	2	2	2
38	0663292-15	Ring Terminal #14-6R	8	8	8	8	8	8	8	8
39	0663292-5	Ring Terminal #14-14R	4	4	4	4	4	4	4	4
40	0663333	Fem./Male Disc. Adapter .250	7	7	7	7	7	7	7	7
41	0663648-1	Female Disc., Insulated #16/14-250	28	28	28	28	28	28	28	28
42	0663774-4	Female Disc., Insulated #16/14-187	7	7	7	7	7	7	7	7
43	0663648	Female Disc., Insulated #22-18-250	3	3	3	3	3	3	3	3

Figure 7.10 – 75285 (rev D) Electrical Enclosure Assembly - Boilers 18 thru 36 KW

ASSY. NO.	DESCRIPTION
75285-1	208-220/240V, 3 PH, 18 KW
75285-2	208-220/240V, 3 PH, 18 KW
75285-3	208-220/240V, WATER FEED
75285-4	208-220/240V, 3 PH, 18 KW, WATER FEED
75285-5	380/415-480V, 3 PH
75285-6	380/415-480V, 3 PH, 18 KW
75285-7	380/415-480V, 3 PH, WATER FEED
75285-8	380/415-480V, 3 PH, 18 KW, WATER FEED

- NOTES:
- NUMBER ALL WIRES & LABEL ALL COMPONENTS ACCORDING TO SCHEMATIC C-52794 FOR 3 PHASE ACCORDING TO SCHEMATIC C-52794 FOR 1 PHASE
 - WIRE #13 IS PRESENT WITH OPTIONAL H/L/D/W
 - SWITCH SSR ONLY
 - FIELD WIRE SIZES SHOWN FOR ITEMS 36 THRU 43
 - REFER TO SCHEMATIC FOR FUSE SIZES
 - ALL CONTROL WIRES TO BE TYPE THIN 90°C MIN. COPPER OR EQUIV. CONTROL CIRCUIT WIRES TOP BE 14 GA. OR EQUIV. CONTROL CIRCUIT WIRES BOTTOM BE 18 GA.
 - SUPPLY WIRES FROM POWER DISTRIBUTION BLOCK
 - HEATING ELEMENTS TO BE TYPE THIN 90°C MIN. DR EQUIV. USE 4 GA. FOR 208 & 220/240V UNITS.
 - FIELD WIRE SIZES TO BE MARKED ON FIELD WIRE LABEL AND INSTALLED ON INSIDE SURFACE OF ENCLOSURE COVER.
 - REFER TO IUL FILE #E100835 - PAGE 11, ELECTRICAL RATING
 - REFER TO IUL FILE #E100835 - PAGE 11, ELECTRICAL RATING
 - FUSES F10, F11, OR F12; CONTACTOR CR3; ARE NOT PRESENT ON MECHANICAL WATER FEED UNITS.
 - RESISTOR PRESENT ON CONTACTOR CR2 AND TOP ELEMENT E2
 - RESISTOR PRESENT ON CONTACTOR CR1 AND BOTTOM ELEMENT E1
 - REFER TO B/M 52772 FOR ELEMENT FUSE KITS.
 - USE ASSY. NOS. 75285-1 & 75285-3 FOR 18 KW, 1 PHASE UNITS.



NOTE:
LINE POWER WIRE NUMBERS SHOWN HERE ARE FOR 3 PHASE ONLY. FOR 18 KW, 1 PHASE, NUMBER WIRES PER SCHEMATIC # C-52794.

**Figure 7.11 – 73493 (rev C) Water Pump Assembly Kit
RHPG 18-36 KW**

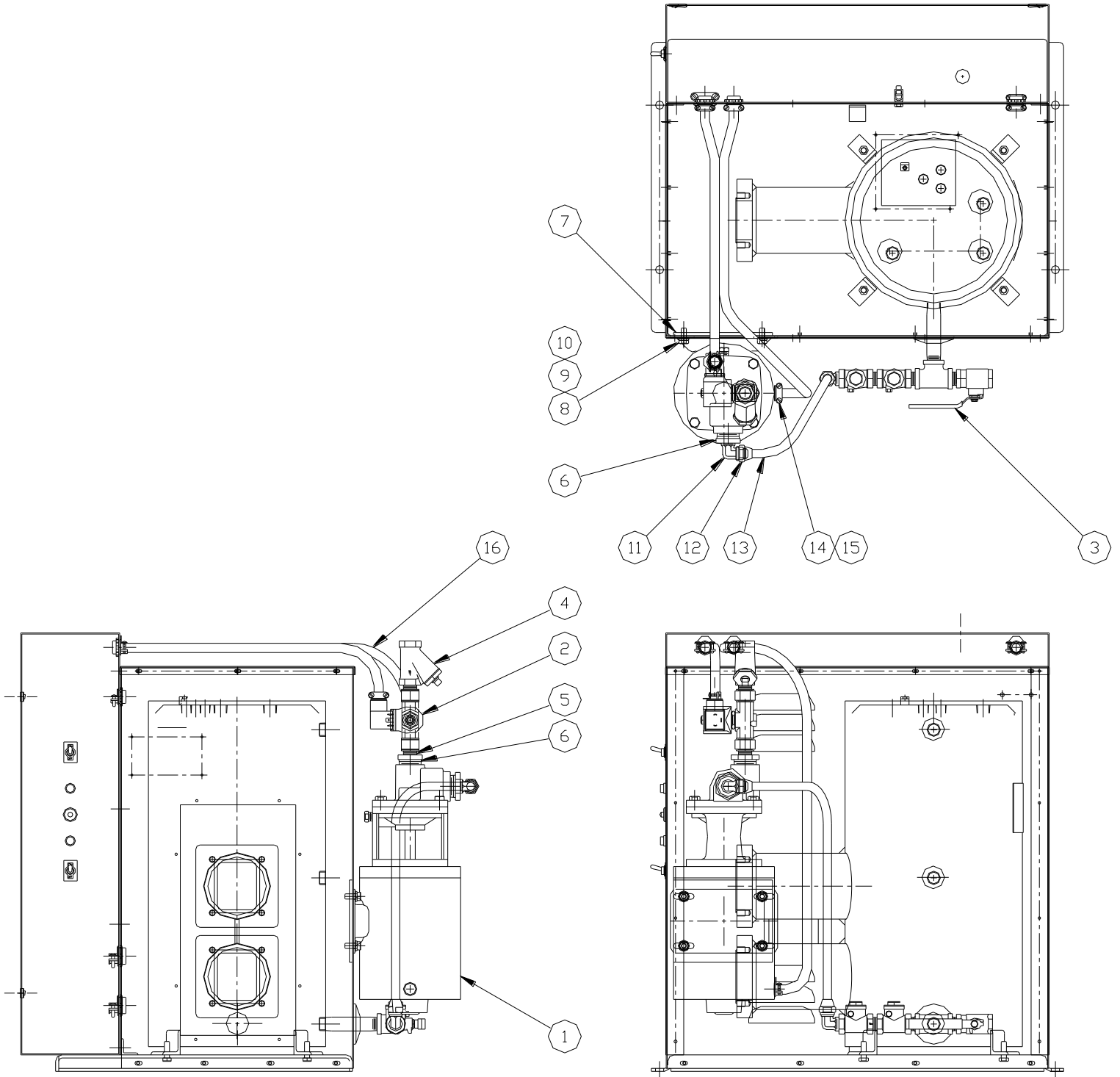
For drawing refer to next page

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY./ASSY.*</u>		
			73493	-3	-CE
			*See chart below for assembly description		
1	3CT5M*	Pump	1	-	-
	085177	Pump	-	1	1
2	75588-50	Solenoid Valve Assembly, 1/2", 24V	1	1	1
3	75507	Pump Conn./Drain Assembly	1	1	1
4	015484-4	"Y" Strainer, 1/2	1	1	1
5	05894	Brass Nipple, 1/2 Close	2	2	2
6	031141	Brass Hex Reducer, 1 x 1/2	2	2	2
7	110016	Pump Mounting Plate	1	1	1
8	04617-1	Hex Head Cap Screw 5/16-18 x 3/4	4	4	4
9	0523-1	Lock Washer 5/16	4	4	4
10	05129	Flat Washer 5/16 S.A.E	4	4	4
11	20561	Flare Elbow, 1/2P x 1/2T	1	1	1
12	20539	Flare Nut, 1/2T	1	1	1
13	20210	Copper Tubing, 1/2 O.D.	1.5'	1.5'	1.5'
14	23008	Cond. Connector, 3/8"	2	2	-
	0663735-2	Cond. Connector, 1/2"	-	-	2
15	20928	Anti-Short Bushing	2	2	-
16	0663297	Conduit, 3/8"	5'	5'	-
	0663419-3	Conduit, 1/2"	-	-	3'
17	75189	Motor Guard	-	-	2

*NOTE: UNITS ASSEMBLED AFTER JAN. 2012 OR WITH S/N 24561 & UP THAT HAVE MTH/DLT BRAND PUMP/MOTOR ORDER P/N 0805357.

ASS'Y NO.	DESCRIPTION
73493	1 PH., 208-240V
73493-3	3 PH., 380-480V
73493-CE	3 PH., 380-480V, CE

**Figure 7.11 – 73493 (rev C) Water Pump Assembly Kit
RHPG 18-36 KW**



OPTIONAL PARTS LIST

<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
108577-2	Caster Plate Models: JEL-10, JEL-11, JEL-12, RHPG-15, RHPG-16, RHPG-17	1
SG755	Manual Steam Gun Models: RHPG-15, RHPG-16, RHPG-17	1
74717	Handle Kit Models: JEL-10, JEL-11, JEL-12, RHPG-15, RHPG-16, RHPG-17	1
Handle Kit List:		
05788-1	Handle	1
EG9T-14	Handle Support	1
049163	5/16-18 Acorn Nut	2
0523-1	5/16 Lock Washer	2
20263-31	5/16-18 x 7 3/4 Threaded Rod	1
0462-1	1/4-20 x 3/4 Hex Head Cap Screw	2
0522-1	1/4 Lock Washer	2
04910-1	1/4-20 Hex Nut	2
23086	Teflon Hose	3 Feet
23082	Teflon Hose	5 Feet
23083	Teflon Hose	6 Feet
23084	Teflon Hose	7 Feet
23085	Teflon Hose	8 Feet
23087	Teflon Hose	10 Feet

HOFFMAN NEW YORKER

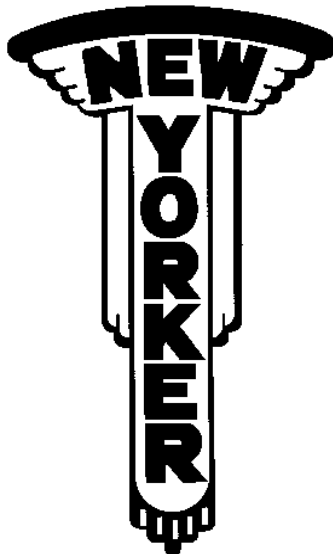


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1-570-928-9807



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