Chromalox®

Installation, Operation
and RENEWAL PARTS IDENTIFICATION

Electric Fluid Heat Transfer Systems
Temperatures to 220°F. at Atmospheric Pressure
For Water or Water and Ethylene Glycol Mixture
6 KW thru 200 KW Systems

SERVICE REFERENCE		
DIV. 4	SEC. RWG	NUMBER 3001B
SALES REFERENCE	(Supersedes PQ408-1)	PQ409-2
		161-052171-001
DATE	January, 1983	

Manufacturing Data —

System Catalog Number and Rating ..... System Serial Number .....

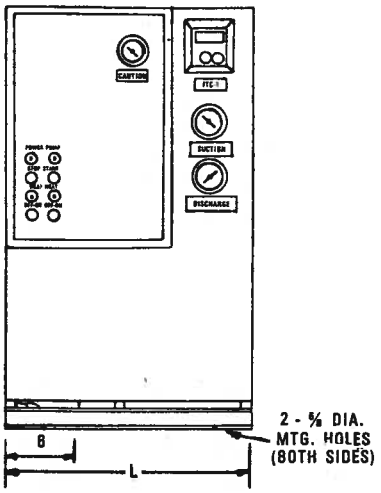
Customer's Name .....

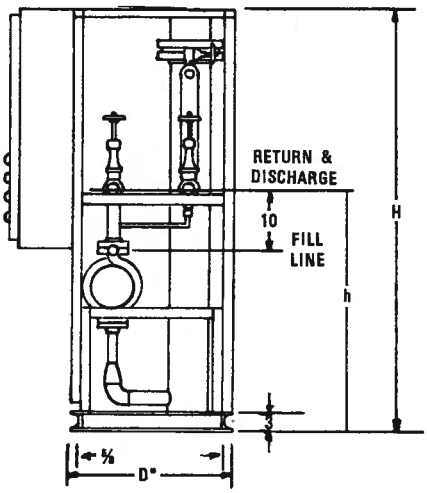
Customer's Order Number ..... Date .....

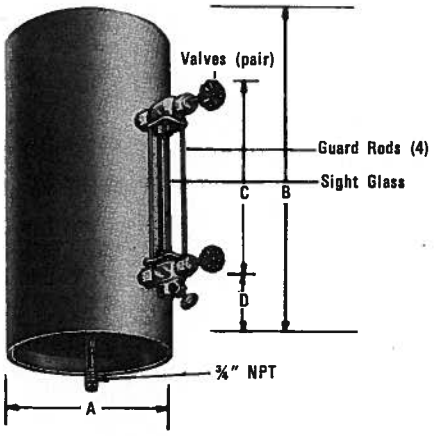
Specifications —

K.W. Rating	Amperes** 240V	Amperes** 480V	Piping Connection NPT	System Volume* (Gals.)	Expansion Tank+ (Gals.)	Pump‡ GPM	Pump‡ HP	Pump‡ TDH (Ft.)	Catalog Number Standard NEMA I	Catalog Number Weather-resistant NEMA IV	Approx. Net Wt., Lbs.	Catalog Number Explosion-resistant Class 1, Group D	Approx. Net Wt., Lbs.
6	18	9	1½	3	12	25	1	60	RWG-6	RWGW-6	600	RWGX-6	1000
9	25	13	1½	3	12	25	1	80	RWG-9	RWGW-9	600	RWGX-9	1000
12	32	18	1½	3	12	25	1	80	RWG-12	RWGW-12	800	RWGX-12	1100
15	40	20	1½	3	12	25	1	80	RWG-15	RWGW-15	800	RWGX-15	1200
18	46	24	1½	3	12	25	1	80	RWG-18	RWGW-18	800	RWGX-18	1200
24	62	31	1½	6	18	25	1	80	RWG-24	RWGW-24	1000	RWGX-24	1300
30	78	38	1½	6	18	25	1	80	RWG-30	RWGW-30	1000	RWGX-30	1300
40	100	50	1½	6	30	25	1	80	RWG-40	RWGW-40	1000	RWGX-40	1300
60	150	75	2	10	30	50	1½	50	RWG-60	RWGW-60	1700	RWGX-60	1700
80	196	89	2	10	30	50	1½	50	RWG-80	RWGW-80	1700	RWGX-80	1800
100	248	123	2	10	30	50	1½	50	RWG-100	RWGW-100	1800	RWGX-100	2300
120	304	152	2	18	42	80	5	100	RWG-120	RWGW-120	2300	RWGX-120	2800
150	378	188	2	18	42	80	5	100	RWG-150	RWGW-150	2400	RWGX-150	2900
200	496	248	2	18	42	80	5	100	RWG-200	RWGW-200	2500	RWGX-200	3000

* Excludes expansion tank and volume in customer's equipment. ** All amperes based on 3ph 60 cycle power. + Recommended size.
‡ Horsepower and TDH ratings are based upon a cold start with a heat transfer medium having a viscosity of approximately 30 SSU at 70°F.







Catalog Number	L	D*	H	h
RWG (W) -6 thru 12	38	25	48	33
RWGX-6 thru 12	38	25	54	33
RWG (W) -15 thru 40	38	25	65	38
RWGX-15 thru 40	38	25	67	38
RWG (W) -60 thru 100	48	30	65	38
RWGX-60 thru 100	48	30	65	38
RWG (W) -120 thru 200	60	30	65	38
RWGX-120 thru 200	60	30	72	38

* Add 10" to Depth of RWG and RWGW and 15" to depth of RWGX for control box overhang.

Size Gal.	Dimensions A (ID)	B	C	D	Wt.* Lbs.
12	12	25½	14	5¾	32
18	12	37½	20	8¾	44
30	18	36¼	20	9½	85
42	20	35	20	7½	80
80	20	63	38	12½	120

* Empty weight.

GENERAL

The Chromalox Heat Transfer Unit is a thoroughly engineered, pretested package, designed to give years of service, virtually maintenance free if properly installed. The RWG series can operate at 220°F. at atmospheric pressure and is available in three models, each with basic features that comply with the National Electrical Code. Model RWG has general purpose NEMA I construction and can be used where no hazards exist. Model RWGW can be used where weather-resistant construction or oil and dust tight construction is required and is constructed according to NEMA IV specifications. Model RWGX, Class 1, Group D is constructed to operate in hazardous or explosive areas. Common to all three models: copper heater sheath maximum density 50 watts per square inch; cast iron, bronze-fitted centrifugal pump with a leak-resistant shaft mechanical seal; power requirements 208, 240 and 480 volts, 3 phase, 60 cycles, 6 to 200 KW.

INSTALLATION

CAUTION: *This system is designed for use with water or ethylene glycol and water mixture as the heat transfer media. Check with your local Chromalox Sales and Application Engineer to be sure that you are using an accepted heat transfer media in this system or consult PQ301.*

Note: When installing system allow sufficient room to remove element if and when necessary.

HYDRAULIC:

Note: The RWGW systems should be mounted so that the control box does not fall in direct sunlight.

The bed plate should be mounted on a solid foundation, preferably level.

The pipe size should be the same as the system piping connections. All piping must be supported so that the pump is not carrying any of the pipe weight. If these instructions are **not** followed, distortion in the pump may cause unnecessary wear and faulty operation.

1. The piping of the entire system should be arranged to minimize pockets where air may be trapped. Air vents or bleeder valves should be provided in the system where air pockets may occur and every time the fluid has to drop.

2. Mount the expansion tank at least fifteen feet above the highest point in the system*. Connect the fluid level sight glass to the expansion tank. To safeguard employees and equipment, run the expansion tank vent out of the building. The vent line should be a minimum of ½" IPS.

3. Check Pump Seal: Designed for a maximum working temperature of 220°F. Do not rotate pump when the seal is dry as seal could be damaged. There should be no leakage at the stuffing box with this mechanical seal.

4. Note: All flanged connections and motor mounts should be checked and tightened if necessary. These sometimes loosen during transit.

ELECTRIC:

NOTE: *All electrical connections should be checked and tightened if necessary. These sometimes loosen during transit.*

CAUTION: ***Hazard of electric shock. The heat transfer system must be grounded using grounding means provided in control box and employing wiring in accordance with National Electric Code.***

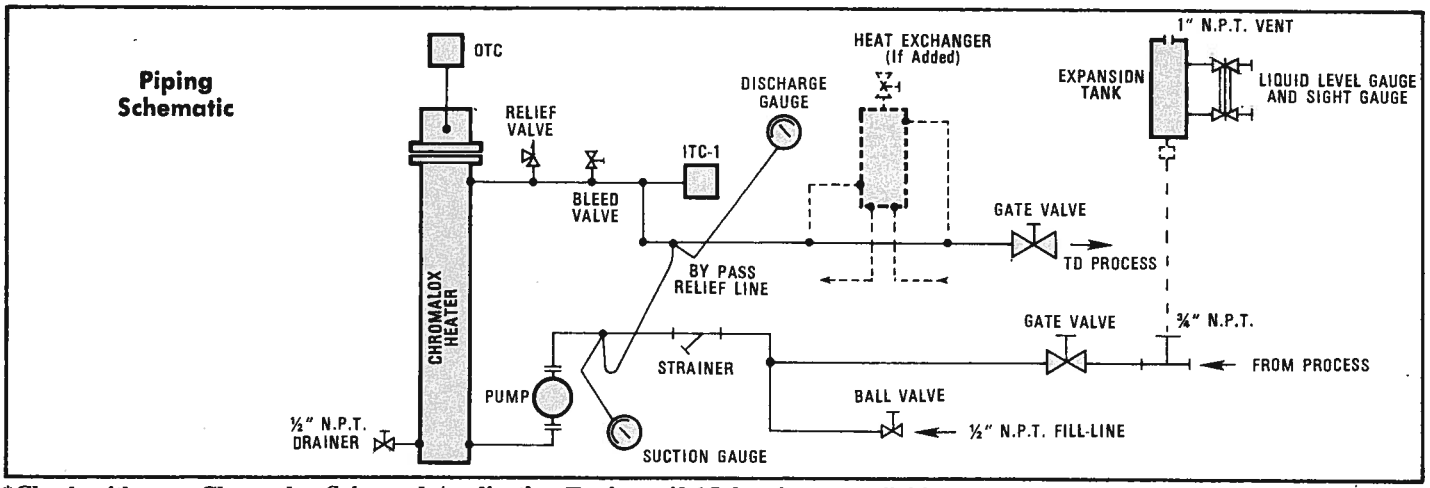
1. The unit is completely wired. The only wiring necessary is to terminals L1, L2, and L3 on the main circuit breaker and grounding lug in the control panel.

CAUTION: ***Hazard of electric shock. Disconnect all power before servicing the heat transfer system.***

2. Turn the thermostat(s) to the lowest temperature possible and the ON-OFF Selector Switch(es) to the OFF position. Start the unit by pushing the push button marked START, located on the front of the panel. This test is to check pump rotation and the unit should be turned off immediately upon learning the direction of rotation.

3. If direction of rotation is not as indicated, reverse the input leads (L1 and L3) at the master circuit breaker. Momentarily start the pump to check rotation.

Piping Schematic



***Check with your Chromalox Sales and Application Engineer if 15 feet is not available.**

OPERATION

WARNING: *To avoid possible damage to the heaters, DO NOT energize the heater until the system is filled with fluid.*

1. Close the system inlet gate valve and open the outlet and fill line gate valves and heater bleed valve(s).

2. The method of filling depends upon the heat transfer media.

A. WATER: Connect a line from your plant supply water to the fill line connection. Turn on the tap and let water run until expansion tank sight glass indicates being ⅓ full. **Note:** Bleed valvel(s) should be closed as water reaches it/them. Shut valves on supply water line and on fill line. Open inlet gate valve.

B. WATER AND ETHYLENE GLYCOL (or similar type) MIXTURES: Prime the pump by pouring the fluid through the ¼" air bleed valve located on the relief line until the pump's casing is completely filled. (Close the ¼" air bleed valve in relief line *and leave closed while pump is in operation.)* If the pump will not hold its prime, partially close the system outlet gate valve and heater bleed valves thus putting a small back-pressure on the pump. The system is then filled directly from the 55 gallon drum(s) by connecting a hose to fill line and inserting it into the drum.

If system is equipped with a float switch (to shut down the system in case of a low liquid level) a bypass jumper must be used in order to operate the pump. As soon as system is filled this jumper should be removed.

Next energize the pump to pull the fluid into the complete system and up into the expansion tank. When the fluid reaches the heater bleed valve, it should then be closed, and accordingly the bleeds on the customer's process closed when the fluid reaches them. The fill line remains open until the expansion tank sight glass indicates being ⅓ full. After the system is filled, shut down the pump and close the fill valve. The system inlet valve should be opened. Bleed the relief line and then re-close bleed valve.

Turn master circuit breaker off.

3. Check the overheat thermostat located inside the control panel to insure that its manual reset button is in the closed position. It should be set approximately 30°F. higher than that of the control thermostat during normal operation.

4. Close control box door and turn circuit breaker on. Start pump — do not be alarmed if the pump is noisy during the initial start-up operation since it is due to air in the system.

5. Bleed out all air by opening bleeder valves. The pump should become quiet.

CAUTION: *During the initial start-up operation, the liquid level in the expansion tank must be checked continually. This level should not exceed the three-quarter mark on the glass nor drop below the one-quarter mark.* **Note:** *If abnormal expansion of fluid is detected, this is probably due to a pocket of air still present in the system. Check all bleed valves. If problem continues, de-energize pump and check bleed valves.*

6. Set indicating or controlling thermostat at 100°F.

7. To energize the heater(s), turn the selector switch(es) to the ON position after starting the pump. The heater is interlocked with the pump motor starter so that, in the event of motor failure, the heating elements will shut off automatically.

8. Run the system until 100°F. is reached. Periodically open the bleeder valves to remove air from the system.

9. Excessive air in the system will cause the heat transfer liquid to back up into the expansion tank, thus evacuating the heating chamber. If this happens, shut the system down, bleed off the air and allow liquid to return to the heating chamber.

10. After the system has been completely charged and free of air pockets set control thermostat at the desired temperature.

11. If there is an abnormally low reading (less than zero) on the suction gauge, the strainer should be cleaned to remove all foreign material that may have accumulated during assembly. After the system is in operation, the strainer should be checked and cleaned (if necessary) once a year.

Note: Consult Service Manual PQ410 for additional aid to help start-up and to service Chromalox Heat Transfer Systems.

SYSTEM FAILURE CHECK LIST

In case of problems occurring upon system start-up, following is a list of probable causes.

1. Pipe Strain — Causes pump and motor misalignment, excessive wear on pump body, bearings and stuffing box packing; will eventually cause failure of pump and system.

Piping should be properly supported so pump can be removed without piping changing position. If piping moves when the pump is removed, pump malfunction is probably due to stresses and twisting caused by piping. These stresses will be multiplied when the system is hot due to expansion.

2. Piping Restrictions — If high pressure (above 20 psig) is noted at operating temperature, it is probably due to piping restrictions.

At an operating temperature of 200°F., these pressures are considered normal:

Water — 15 psig **Water and Ethylene Glycol Mixture — 20 psig**

Causes of Restriction —

a. Inlet and outlet pipes smaller than provided on system.
b. Piping a multiple of processor uses in series with one another.

To reduce the pressure drop of system, equipment should be repiped in balanced parallel flow.

c. Use of globe valves in system. Globe valves have a much higher pressure drop than a gate valve; the use of globe valves should be eliminated wherever possible.

d. On roll applications, it is sometimes necessary to have the inlet and outlet on the same end of the roll. The inlet and outlet should be properly sized for the pumping rate to give a minimum pressure drop.

3. Air in the heat transfer liquid —

The presence of air in the system is indicated by a knocking or hammering of the pump.

Provide bleeder valves wherever air will become trapped.

4. Insufficient Heat — Probable causes:

a. Low voltage.

b. Blown fuse in heater circuit.

c. System too small for application (not enough kW).

1. Increased work load.
2. Changed product or process.

d. Restriction in flow of heat transfer media to process. (See Restrictions in Piping).

e. Thermostat set too low.

f. Piping or process not insulated. **Note:** This is a common fault. The Heat Transfer System is shipped from the factory uninsulated. The system should be field insulated if the heat requirements are high.

5. Systems mounted above process equipment (Ceiling or platform mounted).

When mounting system above process equipment, check to be sure the pump will not be vapor locked. The cause for vapor lock is insufficient NPSH (net positive suction head). This problem is particularly prevalent on systems with centrifugal pumps but also can appear on systems with positive displacement pumps. The things to check if a system is mounted above the process equipment are as follows:

a. Piping: Eliminate all unnecessary turns and restrictions in the return piping that could cause a vapor lock.

b. The expansion tank should be connected into the pump suction line and be located high enough to create the necessary NPSH. If the expansion tank cannot be elevated, then it should be pressurized with air to obtain the necessary NPSH. This will create the positive head on the pump and prevent the heat transfer media from flashing into vapor at the pump suction when the system is operating at temperatures equal to or exceeding the vapor temperature of the heat transfer media.

6. Miscellaneous Problems —

a. Leaking pipe joints caused by use of wrong or old gaskets, poor threads or unsupported piping.

b. Sludging of heat transfer fluid is caused by the use of the wrong heat transfer fluid. Only water or water and Glycol mixture can be used. Pure Glycol would turn to sludge and carbonize on heater.

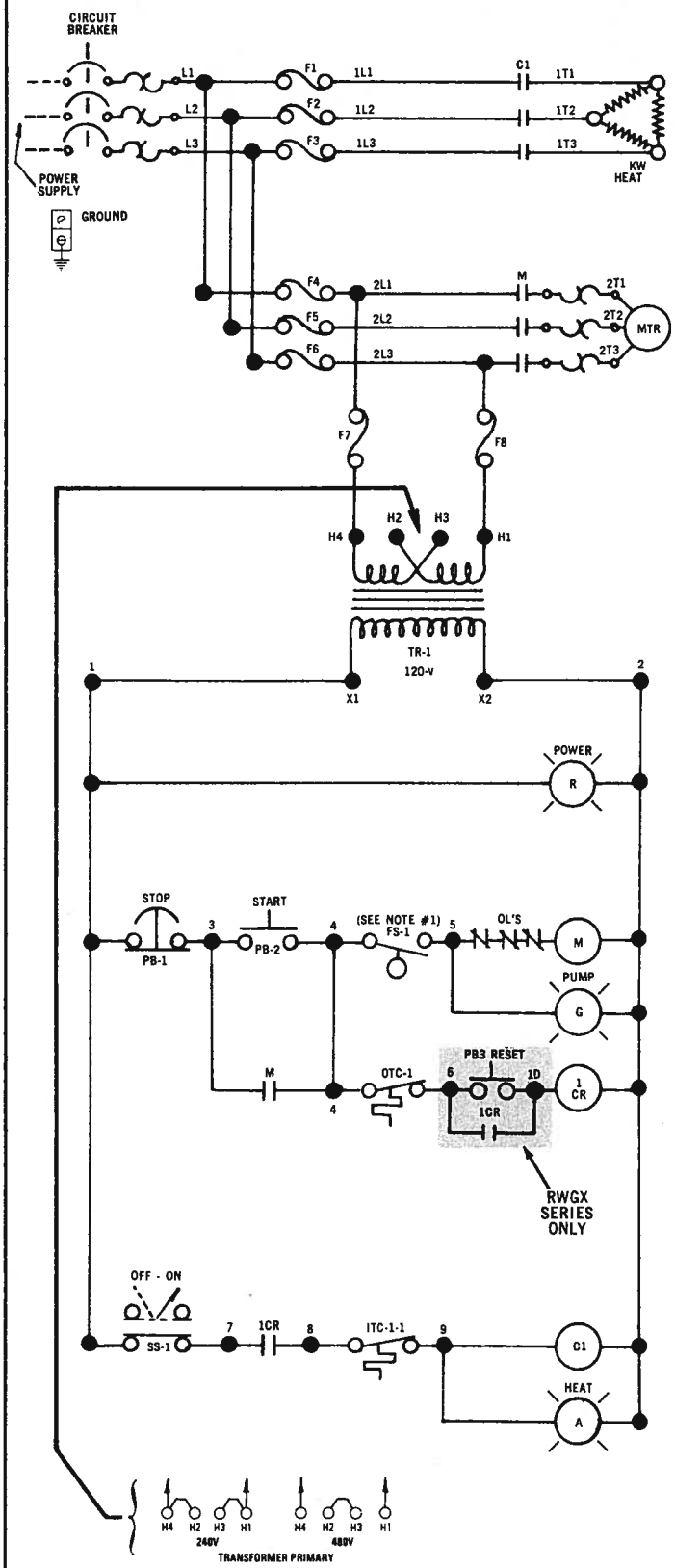
c. Spillage from expansion tank.

1. Tank too small to accept expansion of liquid in system.

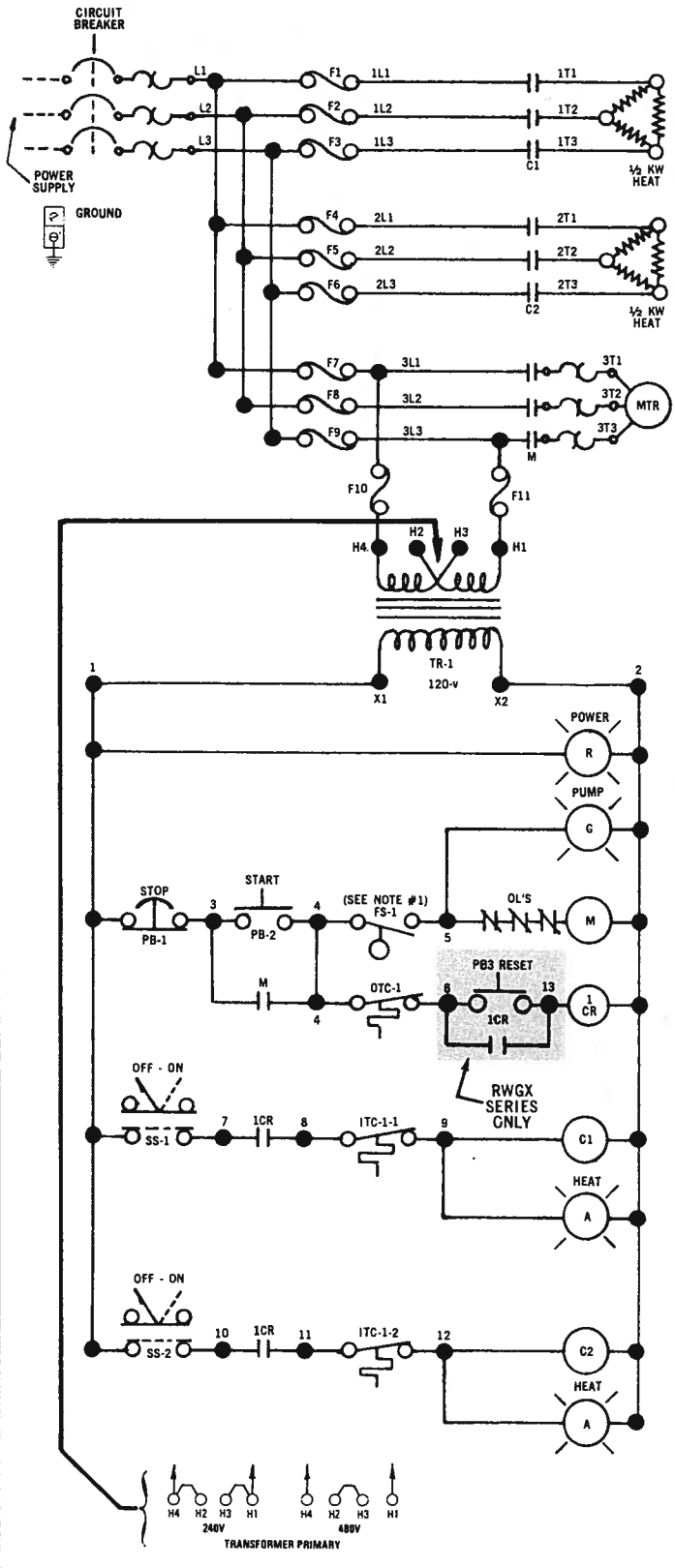
2. Expanding pocket of air in system forcing heat transfer fluid to back up into expansion tank.

WIRING DIAGRAMS

6 KW thru 24 KW



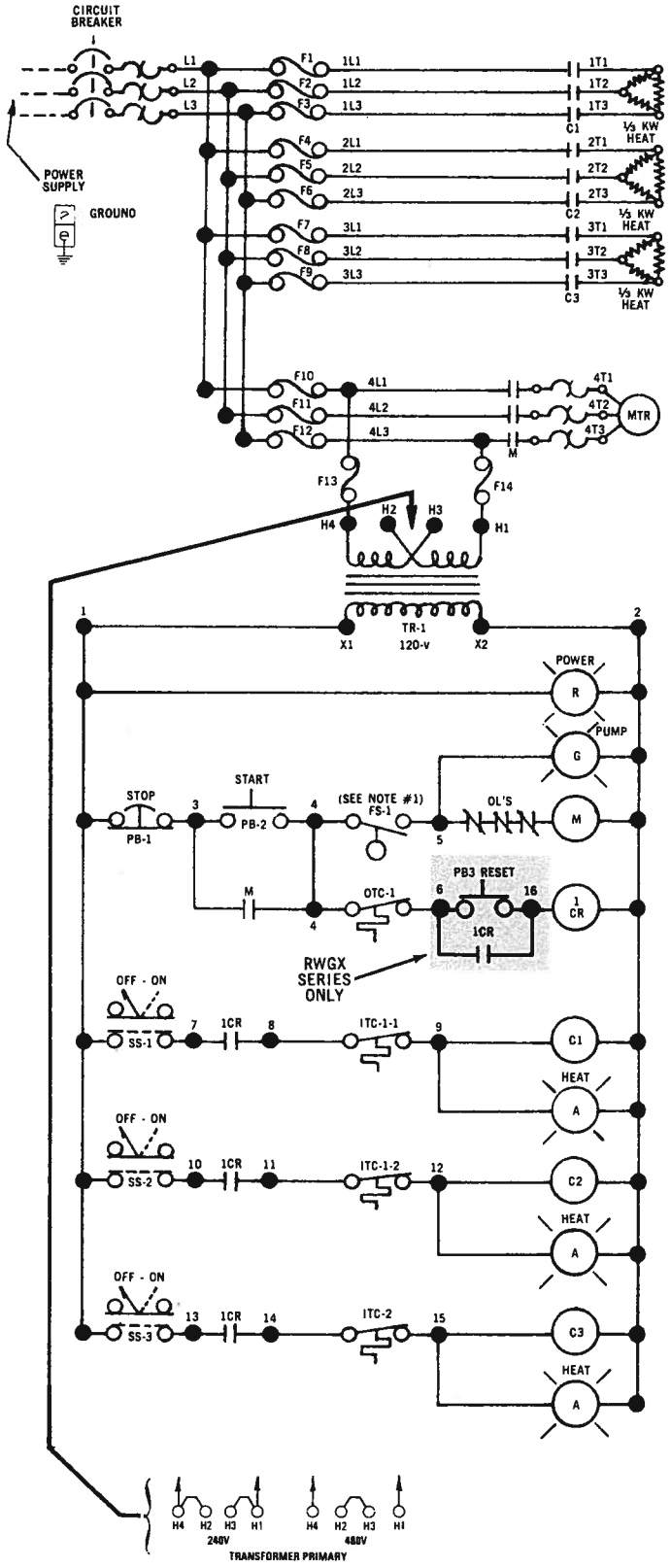
ALL VOLTAGES
30 KW and 40 KW



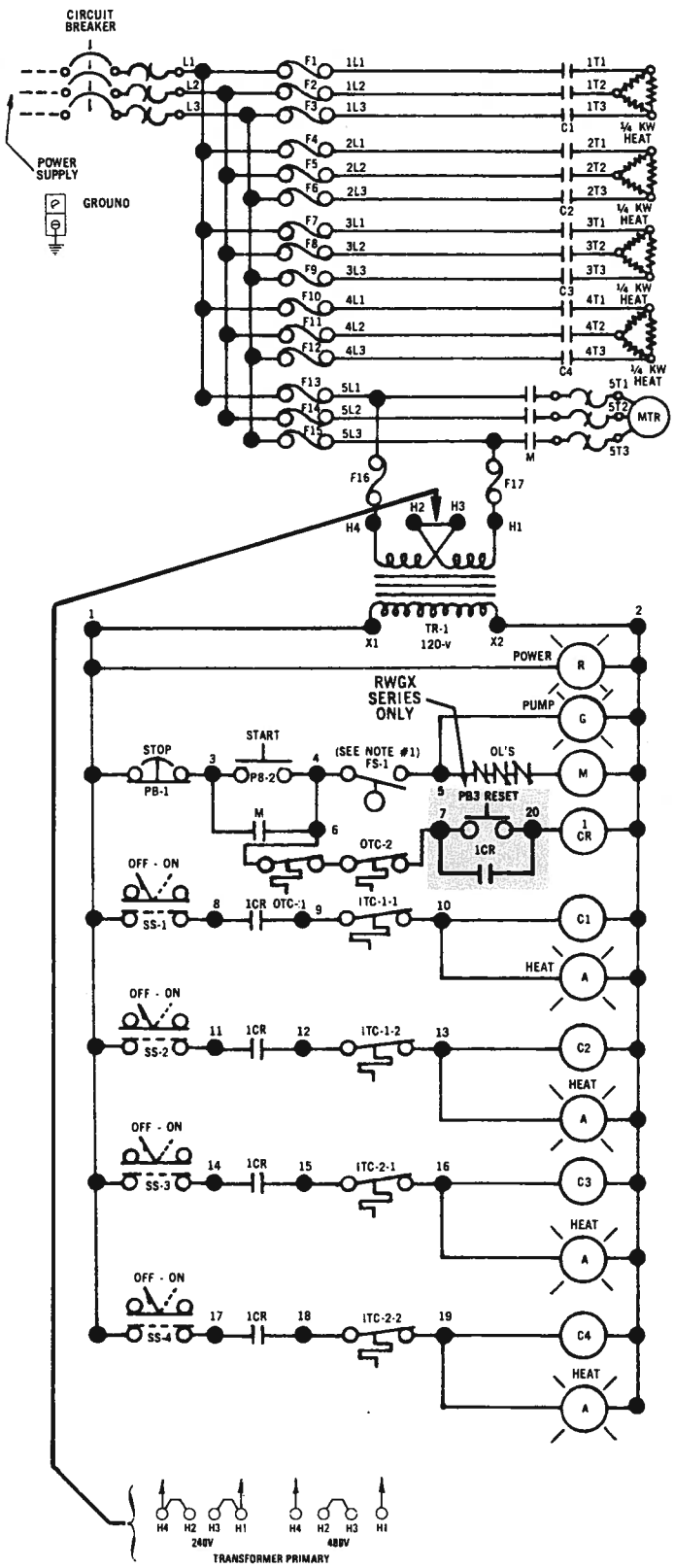
Note 1 — Float Switch (FS) is optional — Points 4 and 5 jumpered when not used.

WIRING DIAGRAMS

ALL VOLTAGES
60 KW thru 100 KW



440/480 VOLT
120 KW thru 200 KW



Note 1 — Float Switch (FS) is optional — Points 4 and 5 jumpered when not used.

RENEWAL PARTS IDENTIFICATION

*NOTE: These parts are recommended spare parts for critical or overseas installations.

SYSTEM RATING			NOTE: Number in ( ) indicates quantity of same part number used.				
Voltage (3 phase)	Kw	Circuit Breaker*	Contactors*	Motor Overload * Heaters (3)	Transformer	Control Relay (RWG, RWGW)	Control Relay (RWGX)
208	6	104-120458-003	072-120812-005	359-120819-024	315-048507-025	072-120461-001	072-120461-001
	9	104-120458-003	072-120812-001	359-120819-024	315-048507-025	072-120461-001	072-120461-001
	12	104-120458-005	072-120812-002	359-120819-024	315-048507-025	072-120461-001	072-120461-001
	15	104-120458-006	072-120812-002	359-120819-024	315-048507-025	072-120461-001	072-120461-001
	18	104-120458-006	072-120812-002	359-120819-024	315-048507-025	072-120461-001	072-120461-001
	24	104-120458-007	072-120812-002	359-120819-024	315-048507-025	072-120461-001	072-120461-001
	30	104-120458-031	072-120812-002 (2)	359-120819-024	315-048507-025	072-120461-001	072-120461-005
	40	104-120458-032	072-120812-002 (2)	359-120819-024	315-048507-025	072-120461-001	072-120461-005
	60	104-120458-035	072-120812-002 (3)	359-120819-028	315-048507-031	072-120461-005	072-120461-007
	80	104-120458-038	072-120812-003 (3)	359-120819-028	315-048507-031	072-120461-005	072-120461-007
220/240	6	104-120458-003	072-120812-005	359-120819-023	315-048507-018	072-120461-001	072-120461-001
	9	104-120458-003	072-120812-001	359-120819-023	315-048507-018	072-120461-001	072-120461-001
	12	104-120458-004	072-120812-002	359-120819-023	315-048507-018	072-120461-001	072-120461-001
	15	104-120458-006	072-120812-002	359-120819-023	315-048507-018	072-120461-001	072-120461-001
	18	104-120458-006	072-120812-002	359-120819-023	315-048507-018	072-120461-001	072-120461-001
	24	104-120458-007	072-120812-002	359-120819-023	315-048507-018	072-120461-001	072-120461-001
	30	104-120458-009	072-120812-002 (2)	359-120819-023	315-048507-024	072-120461-001	072-120461-005
	40	104-120458-031	072-120812-002 (2)	359-120819-023	315-048507-024	072-120461-001	072-120461-005
	60	104-120458-034	072-120812-002 (3)	359-120819-026	315-048507-030	072-120461-005	072-120461-007
	80	104-120458-037	072-120812-003 (3)	359-120819-026	315-048507-030	072-120461-005	072-120461-007
440/480	6	104-120458-010	072-120812-005	359-120819-017	315-048507-018	072-120461-001	072-120461-001
	9	104-120458-011	072-120812-005	359-120819-017	315-048507-018	072-120461-001	072-120461-001
	12	104-120458-012	072-120812-005	359-120819-017	315-048507 018	072-120461-001	072-120461-001
	15	104-120458-012	072-120812-001	359-120819-017	315-048507-018	072-120461-001	072-120461-001
	18	104-120458-012	072-120812-001	359-120819-017	315-048507-018	072-120461-001	072-120461-001
	24	104-120458-014	072-120812-002	359-120819-017	315-048507-018	072-120461-001	072-120461-001
	30	104-120458-014	072-120812-001 (2)	359-120819-017	315-048507-024	072-120461-001	072-120461-005
	40	104-120458-015	072-120812-001 (2)	359-120819-017	315-048507-024	072-120461-001	072-120461-005
	60	104-120458-017	072-120812-001 (3)	359-120819-019	315-048507-024	072-120461-005	072-120461-007
	80	104-120458-033	072-120812-002 (3)	359-120819-019	315-048507-024	072-120461-005	072-120461-007
	100	104-120458-034	072-120812-002 (3)	359-120819-031	315-048507-024	072-120461-005	072-120461-007
	120	104-120458-034	072-120812-002 (4)	359-120819-031	315-048507-030	072-120461-007	072-120461-009
	150	104-120458-037	072-120812-002 (4)	359-120819-031	315-048507-030	072-120461-007	072-120461-009
	200	104-120458-040	072-120812-002 (4)	359-120819-031	315-048507-030	072-120461-007	072-120461-009

SYSTEM RATING		Circuit Breaker Handle RWG	Circuit Breaker Handle RWGW
Voltage (3 phase)	Kw		
208	6	139-120791-002	129-120791-006
	9	139-120791-002	139-120791-006
	12	139-120791-002	139-120791-006
	15	139-120791-002	139-120791-006
	18	139-120791-002	139-120791-006
	24	139-120791-002	139-120791-006
	30	139-120791-003	139-120791-007
	40	139-120791-003	139-120791-007
	60	139-120791-003	139-120791-007
	80	139-120791-014	139-120791-014
220/240	6	139-120791-002	139-120791-006
	9	139-120791-002	139-120791-006
	12	139-120791-002	139-120791-006
	15	139-120791-002	139-120791-006
	18	139-120791-002	139-120791-006
	24	139-120791-002	139-120791-006
	30	139-120791-002	139-120791-006
	40	139-120791-003	139-120791-007
	60	139-120791-003	139-120791-007
	80	139-120791-014	139-120791-014
440/480	6	139-120791-002	139-120791-006
	9	139-120791-002	139-120791-006
	12	139-120791-002	139-120791-006
	15	139-120791-002	139-120791-006
	18	139-120791-002	139-120791-006
	24	139-120791-002	139-120791-006
	30	139-120791-002	139-120791-006
	40	139-120971-002	139-120791-006
	60	139-120791-002	139-120791-006
	80	139-120791-003	139-120791-007
	100	139-120791-003	139-120791-007
	120	139-120791-003	139-120791-007
	150	139-120791-014	139-120791-014
	200	139-120791-014	139-120791-014

SYSTEM RATING		HEATING ELEMENT PART NUMBER*		
Voltage (3 phase)	Kw	RWG	RWGW	RWGX
240	6	155-122210-002		
	9			
	12			
	15		155-122212-001	
	18	155-122212-004		
	24			
	30	155-122212-007		155-122212-050
	40	155-122212-013		155-122212-054
	60	155-122214-018	155-122214-019	155-122214-013
	80	155-122214-022	155-122214-023	155-122214-011
480	6	155-122210-003	155-122210-004	
	9	155-122210-046		
	12	155-122210-005	155-122210-006	
	15	155-122212-002	155-122212-003	
	18	155-122212-012		
	24	155-122212-005	155-122212-016	155-122212-061
	30	155-122212-008	155-122212-009	155-122212-051
	40	155-122212-010	155-122212-011	155-122212-055
	60	155-122214-001	155-122214-002	155-122214-009
	80	155-122214-014	155-122214-003	155-122214-010
	100	155-122214-004	155-122214-005	155-122214-015
	120	155-122214-024 (2)	155-122214-006 (2)	
	150	155-122214-007 (2)		
	200	155-122214-008 (2)	155-122215-006 (2)	

System Rating 240/480V 3ϕ Kw Range	Pump and Motor Assembly* Part Number	
	RWG & RWGW	RWGX
6 thru 40	226-121001-001	226-121001-005
60 thru 100	226-121001-002	226-121001-004
120 thru 200	226-121001-003	226-121001-013

RENEWAL PARTS IDENTIFICATION

SYSTEM RATING		FUSES*					
Voltage (3 phase)	Kw	Fuse No. 1, 2, 3	Fuse No. 4, 5, 6	Fuse No. 7, 8, 9	Fuse No. 10, 11, 12	Fuse No. 13, 14, 15	Fuse No. 16, 17
208	6	128-047674-006 (3)	128-121133-021 (3)	128-114696-018 (2)			
	9	128-047674-011 (3)	128-121133-021 (3)	128-114696-018 (2)			
	12	128-047674-033 (3)	128-121133-021 (3)	128-114696-018 (2)			
	15	128-121133-080 (3)	128-121133-021 (3)	128-114696-018 (2)			
	18	128-121133-081 (3)	128-121133-021 (3)	128-114696-018 (2)			
	24	128-121133-082 (3)	128-121133-021 (3)	128-114696-018 (2)			
	30	128-121133-080 (3)	128-121133-080 (3)	128-121133-021 (3)	128-114696-018 (2)		
	40	128-121133-082 (3)	128-121133-082 (3)	128-121133-021 (3)	128-114696-018 (2)		
	60	128-121133-082 (3)	128-121133-082 (3)	128-121133-082 (3)	128-121133-025 (3)	128-114696-015 (2)	
	80	128-121133-084 (3)	128-121133-084 (3)	128-121133-084 (3)	128-121133-025 (3)	128-114696-015 (2)	
220/240	6	128-047674-006 (3)	128-121133-020 (3)	128-114696-006 (2)			
	9	128-047674-011 (3)	128-121133-020 (3)	128-114696-006 (2)			
	12	128-047674-033 (3)	128-121133-020 (3)	128-114696-006 (2)			
	15	128-121133-080 (3)	128-121133-020 (3)	128-114696-006 (2)			
	18	128-121133-081 (3)	128-121133-020 (3)	128-114696-006 (2)			
	24	128-121133-083 (3)	128-121133-020 (3)	128-114696-006 (2)			
	30	128-121133-080 (3)	128-121133-080 (3)	128-121133-020 (3)	128-114696-018 (2)		
	40	128-121133-082 (3)	128-121133-082 (3)	128-121133-020 (3)	128-114696-018 (2)		
	60	128-121133-082 (3)	128-121133-082 (3)	128-121133-082 (3)	128-121133-024 (3)	128-114696-002 (2)	
	80	128-121133-084 (3)	128-121133-084 (3)	128-121133-084 (3)	128-121133-024 (3)	128-114696-002 (2)	
440/480	6	128-047674-003 (3)	128-121133-043 (3)	128-114696-010 (2)			
	9	128-047674-005 (3)	128-121133-043 (3)	128-114696-010 (2)			
	12	128-047674-007 (3)	128-121133-043 (3)	128-114696-010 (2)			
	15	128-121133-062 (3)	128-121133-043 (3)	128-114696-010 (2)			
	18	128-121133-063 (3)	128-121133-043 (3)	128-114696-010 (2)			
	24	128-121133-065 (3)	128-121133-043 (3)	128-114696-010 (2)			
	30	128-121133-062 (3)	128-121133-062 (3)	128-121133-043 (3)	128-114696-011 (2)		
	40	128-121133-063 (3)	128-121133-063 (3)	128-121133-043 (3)	128-114696-011 (2)		
	60	128-121133-063 (3)	128-121133-063 (3)	128-121133-063 (3)	128-121133-047	128-114696-011 (2)	
	80	128-121133-066 (3)	128-121133-066 (3)	128-121133-066 (3)	128-121133-047	128-114696-011 (2)	
	100	128-121133-067 (3)	128-121133-067 (3)	128-121133-067 (3)	128-121133-056 (3)	128-114696-011 (2)	
	120	128-121133-067 (3)	128-121133-067 (3)	128-121133-067 (3)	128-121133-067 (3)	128-121133-056 (3)	128-114696-006 (2)
	150	128-121133-071 (3)	128-121133-071 (3)	128-121133-071 (3)	128-121133-071 (3)	128-121133-056 (3)	128-114696-006 (2)
	200	128-121133-070 (3)	128-121133-070 (3)	128-121133-070 (3)	128-121133-070 (3)	128-121133-056 (3)	128-114696-006 (2)

	EXPANSION TANK	
Parts	Size (Gal.)	Part Number
Valves	All	344-120971-001
Sight* Glass	12	374-121046-001
	18, 30, 42	374-121046-002
	80	374-121046-003
Guard Rods (4)	12	272-121047-001
	18, 30, 42	272-121047-002
	80	272-121047-003

INDICTING TEMPERATURE CONTROL (ITC)		
Kw Range	RWG & RWGW	RWGX
6 thru 24	300-121011-003	300-121011-015
30 thru 40	300-121011-007	300-121011-015 (2)
60 thru 100	300-121011-007 (1)	300-121011-015 (3)
	300-121011-003 (1)	
120 thru 200	300-121011-007 (2)	300-121011-015 (4)

Description	Part Number (All Systems)
Pump Gasket (6 - 40 Kw)	132-121043-001 (2)
Pump Gasket (60 - 100 Kw)	132-121043-002 (2)
Pump Gasket (120 - 200 Kw)	132-121043-002 132-121042-003
Pressure Relief Valve	344-048419-004
Suction Gauge	130-121200-002
Discharge Gauge	130-121200-001
Motor Starter*	358-120820-001

Description	Part Number (RWG, RWGW)	Part Number (RWGX)
Over Temperature Control (OTC)*	300-057515-001	300-027559-009
Selector Switch (SS)*	292-120827-001	292-121109-001
Push Button — Start (PB2)*	292-120814-001	292-121111-001
Push Button — Stop (PB1)*	292-120814-002	
Push Button — Reset (PB3)*	———	292-121112-001
Pilot Light — Green (G)*	213-120816-002	213-121103-002
Pilot Light — Red (R)*	213-120816-005	213-121103-001
Pilot Light — Amber (A)*	213-120816-001	213-121103-003

Note: Number in ( ) indicates quantity of same part number used.

***NOTE: These parts are recommended spare parts for critical or overseas installations.**

The warranty below has been drafted to comply with the Federal Law applicable to products manufactured after December 31, 1976. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. The warranty in no manner reduces the coverage provided to you under the warranty it replaces.

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Warranty Period: This warranty extends for twelve months from date of shipment from factory or authorized distributor.

Limitations: Products must be installed and maintained in accordance with Chromalox instructions. Users are responsible for the suitability of the products to their application. There is no warranty against damage resulting from corrosion, misapplication, improper specification or other operating conditions beyond our control. Claims against carriers for damage in transit must be filed by tha buyer.

Remedy: Return the defective part or product, freight prepaid, to the location designated by Chromalox Product Service. All such items must be accompanied by a Material Return Authorization. This form, which includes a tear-out mailing and identification label, should be obtained from your local Chromalox Sales Office.

Defective items will be repaired or replaced, at our option, at no charge. SUCH REPAIR OR REPLACEMENT IS THE EXCLUSIVE REMEDY AVAILABLE FROM EDWIN L. WIEGAND DIVISION, EMERSON ELECTRIC CO. WIEGAND IS NOT LIABLE FOR LABOR COSTS INCURRED IN REMOVAL, REINSTALLATION, OR UNAUTHORIZED REPAIR OF THE PRODUCT OR FOR DAMAGE OF ANY TYPE WHATSOEVER, INCLUDING INCIDENTAL OR CONSEQUENTIAL DAMAGE. Some states do not allow the exclusion or limitations of incidental or consequential damages, so the preceding limitation or exclusion may not apply to you.

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EMERSON ELECTRIC CO.

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