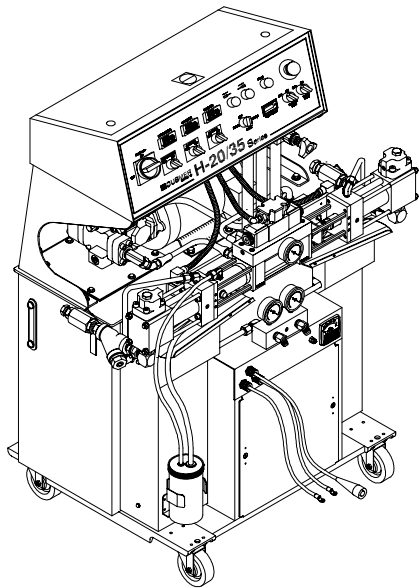




"Teamwork & Communication"



H-20/35 Series Proportioning Unit

Parts Identification Manual 42942-ID

April 5, 2000

Issue 2

GUSMER CORPORATION®

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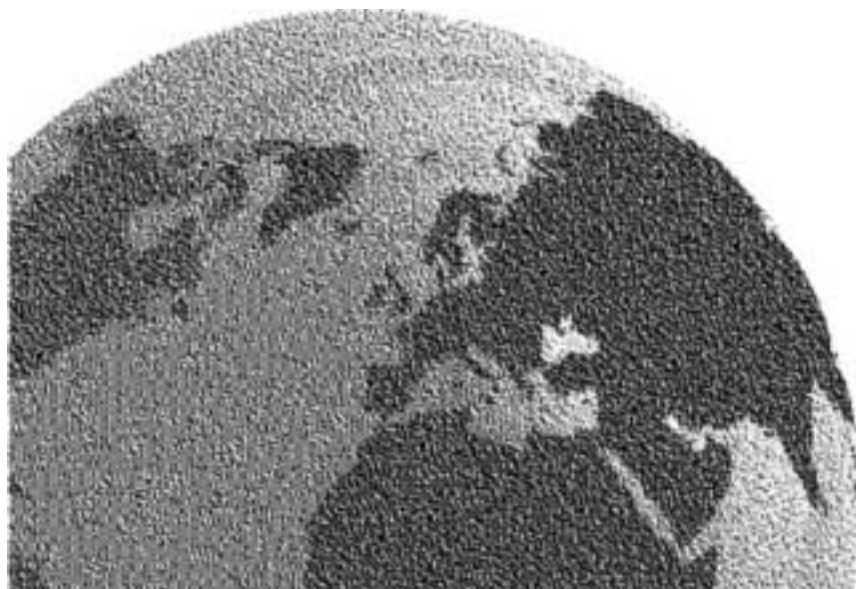
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Revised 11/12/98

H-20/35 SERIES ASSEMBLIES

FINAL ASSEMBLY

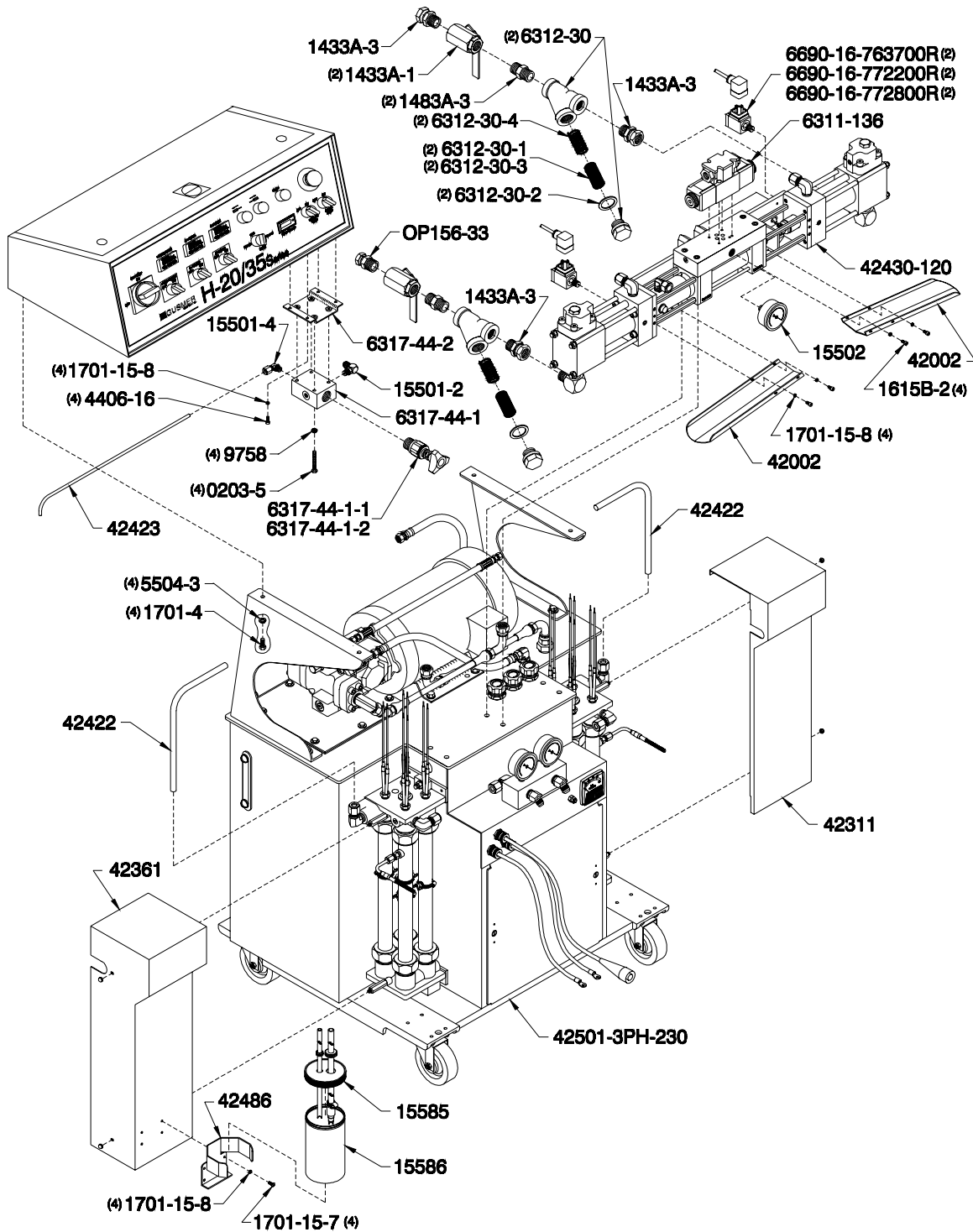


Figure 1 Final Assembly, (Part No. 42000-SIZE), Exploded View

NOTE: Consult page 20 of this Manual for Electrical Components not called out in this Assembly.

TABLE 1 FINAL ASSEMBLIES, (PART NO. 42000-SIZE), PARTS

Part Number	Description	Quantity
0203-5	Hex Head Cap Screw	1
1433A-1	Ball Valve	2
1433A-3	Swivel Union	3
1483A-3	Hex Nipple	2
1615B-2	Socket Head Cap Screw	4
1701-15-7	Button Head Machine Screw	4
1701-15-8	Helical Lockwasher	12
1701-4	Hex Head Cap Screw	4
4406-16	Socket Head Cap Screw	4
5504-3	Helical Lockwasher	4
6311-136	Directional Valve	1
6312-30	Strainer	2
6312-30-1	Strainer Screen (30 Mesh) (Includes 6312-30-4)	2
6312-30-2	Gasket	2
6312-30-3	Strainer Screen (80 Mesh) (Includes 6312-30-4)	2
6312-30-4	Spring	2
6317-44-1	Remote Compensator	1
6317-44-1-1	Relief Valve 0-725 PSI	1
6317-44-1-2	Relief Valve 0-1450 PSI	1
6317-44-2	Remote Compensator Bracket	1
6690-16-763700R	Pressure Switch	1
6690-16-772200R	Pressure Switch	1
6690-16-772800R	Pressure Switch	1
9758	Helical Lockwasher	4
15501-2	O-Ring Elbow	1
15501-4	O-Ring Tube Elbow	1
15502	0-2000 PSI Liquid Fill Gauge	1
15585	Lube Reservoir Hose Assembly	1
15586	Lube Bottle	1
42002	Drip Pan	2
42422	A/R Pump/Heater Tube Assembly	2
42423	Compensator Tube Assembly	1
42311	R - Preheater Cover	1
42361	A - Preheater Cover	1
42430-120	Pumpline Assembly	1
42486	Lubr Reservoir Bracket	1
42501-3PH-230	Base Assembly	1
OP156-33	Swivel Union	1

BASE ASSEMBLY

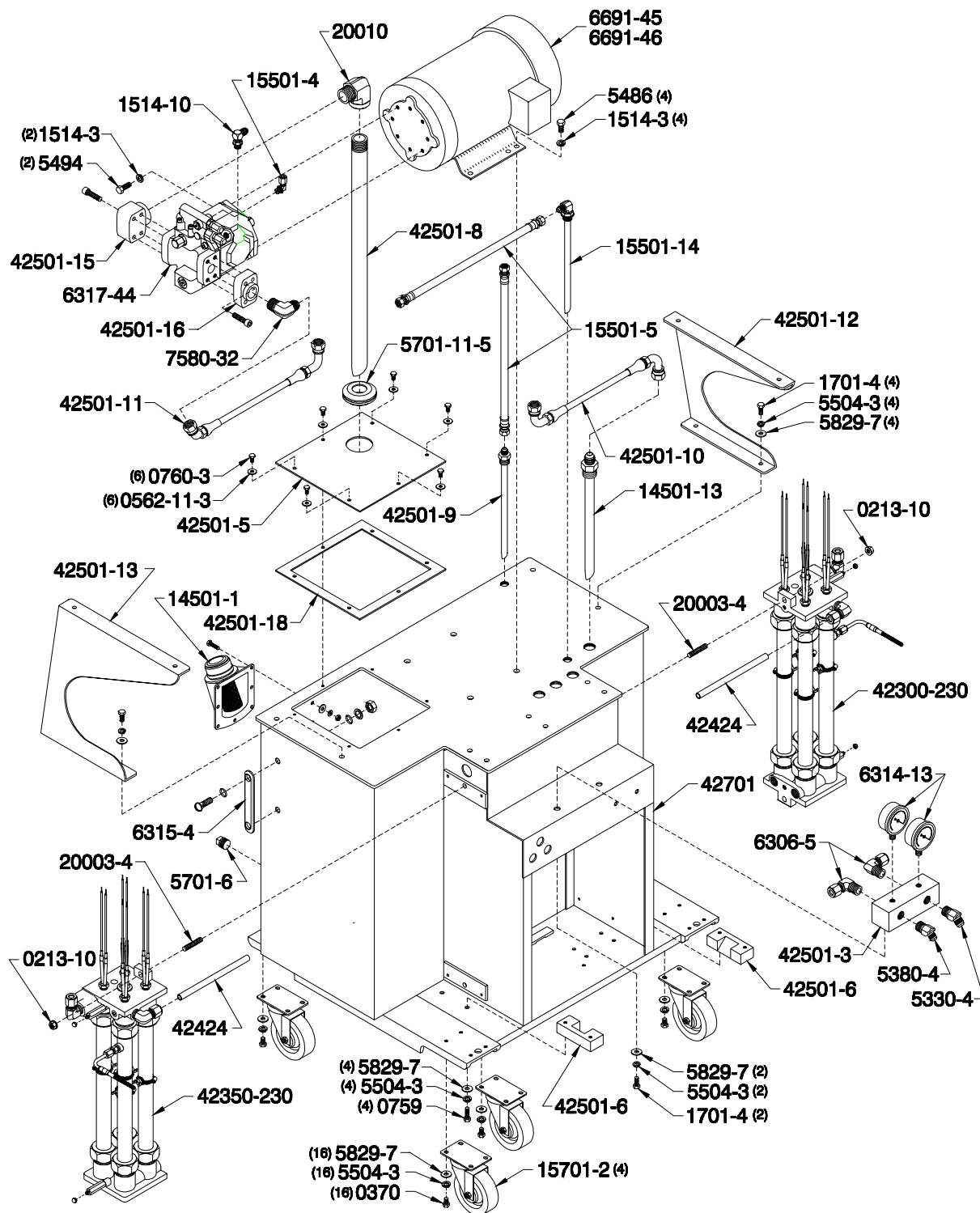


Figure 2 Base Assembly, (Part No. 42501-3HP-230 / 42501-1PH-230), Exploded View

TABLE 2 BASE ASSEMBLIES, (PART NO. 42501-3PH-230 / 42501-1PH-230), PARTS

Part Number	Description	Quantity
0213-10	Flange Nut	2
0370	Hex Head Cap Screw	16
0562-11-3	Flat Washer	6
0759	Hex Head Cap Screw	4
0760-3	Hex Head Cap Screw	6
1514-10	Hose Elbow	1
1514-3	Helical Lockwasher	6
1701-4	Hex Head Cap Screw	6
5330-4	Hose Elbow	1
5380-4	Hose Elbow	1
5486	Hex Head Cap Screw	4
5494	Hex Head Cap Screw	2
5504-3	Helical Lockwasher	26
5701-11-5	Grommet	1
5701-6	Reservoir Drain Plug	1
5829-7	Flat Washer	26
6306-5	Tube Elbow	2
6314-13	0-3000 PSI Liquid Fill Gauge	2
6315-4	Fluid Level Gauge	1
6317-44	Hydraulic Pump	1
6691-45	5 HP Motor (3 Phase 230 Volts)	1
6691-46	5 HP Motor (Single Phase 230 Volts)	1
7580-32	Elbow	1
14501-1	Hydraulic Oil Filler	1
14501-13	Hydraulic Reservoir Return	1
15501-14	Hydraulic Reservoir Return	1
15501-4	O-Ring Tube Elbow	1
15501-5	Bleed Hose Assembly	2
15701-2	Swivel Castor	4
20003-4	Threaded Rod	2
20010	Street Elbow	1
42300-230	R - Primary Heater 6000W	1
42350-230	A - Primary Heater 6000W	1
42424	Outlet Tube Assembly	2
42501-10	T-Port Hose	1
42501-11	P-Port Hose	1
42501-12	Console Bracket (Right)	1
42501-13	Console Bracket (Left)	1
42501-15	Suction Flange	1
42501-16	Outlet Flange	1
42501-18	Access Cover Plate Gasket	1
42501-3	Chemical Manifold	1
42501-5	Tank Cover Plate	1
42501-6	Preheater Mounting Blocks	2
42501-8	Suction Tube	1
42501-9	Dip Tube	1
42701	Hydraulic Tank	1

PUMPLINE ASSEMBLY

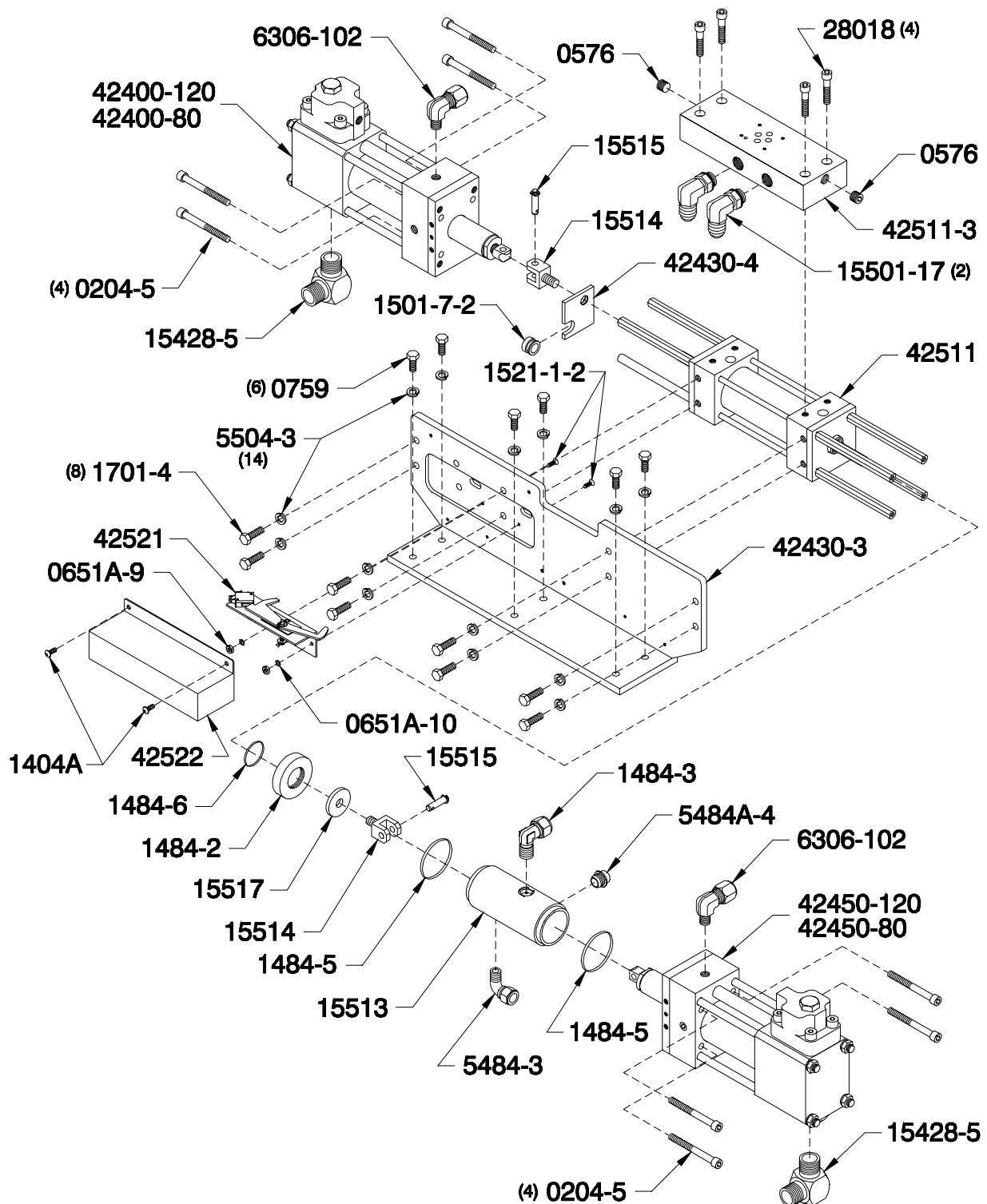


Figure 3 Pumpline Assembly, (Part No. 42430-SIZE), Exploded View

TABLE 3 PUMPLINE ASSEMBLY, (PART NO. 42430-SIZE), PARTS

Part Number	Description	Quantity
0204-5	Socket Head Cap Screw	8
0576	Flush Seal Pipe Plug	2
0651A-10	Lockwasher	2
0651A-9	Hex Nut	2
0759	Hex Head Cap Screw	6
1404A	Button Head Cap Screw	2
1484-2	Lube Cylinder Adapter Plate	1
1484-3	Male Elbow	1
1484-5	O-Ring	2
1484-6	O-Ring	1
1501-7-2	Bronze Bushing	1
1521-1-2	Flat Head Cap Screw	2
1701-4	Hex Head Cap Screw	8
5484-3	Lube Hose Fitting	1
5484A-4	Polyethylene Pipe Plug	1
5504-3	Helical Lockwasher	1
6306-102	Tube Elbow	2
15428-5	Male Elbow	2
15501-17	O-Ring Elbow	2
15513	Iso Lube Cylinder	1
15514	Hydraulic Cylinder Clevis	2
15515	Clevis Pin	2
15517	Baffle	1
28018	Socket Head Cap Screw	4
42400-120	Resin Proportioning Pump Assembly	1
42400-80	Resin Proportioning Pump Assembly	1
42430-3	Pump Mounting L-Bracket	1
42430-4	Activator Plate	1
42450-120	Iso Proportioning Pump Assembly	1
42450-80	Iso Proportioning Pump Assembly	1
42511	Hydraulic Cylinder with Spacers	1
42511-3	Hydraulic Manifold	1
42521	Reversing Switch Assembly	1
42522	Reversing Switch Cover	1

HYDRAULIC CYLINDER WITH SPACERS

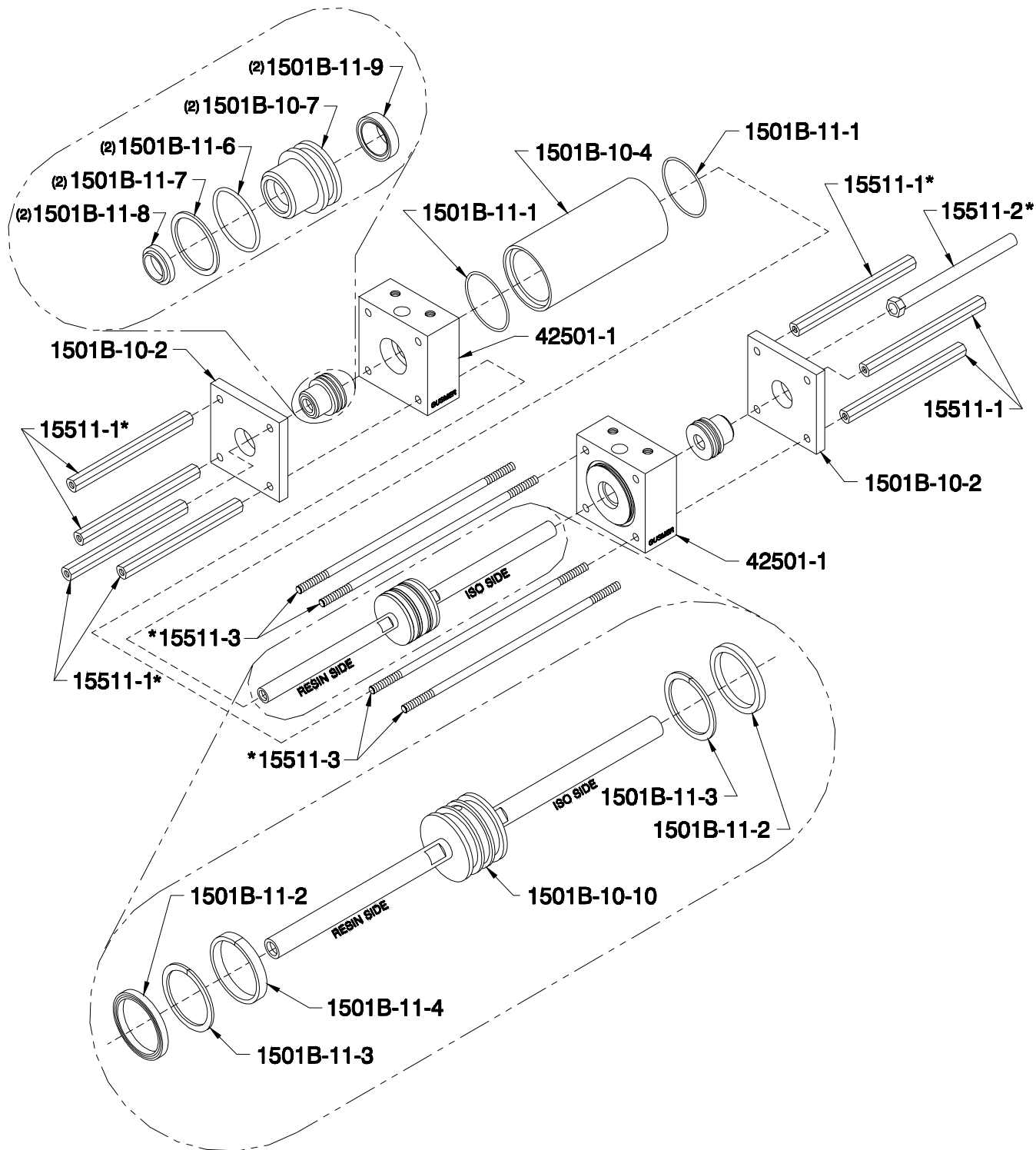


Figure 4 Hydraulic Cylinder with Spacers, (Part No. 42511), Exploded View

** Torque to 200 Inch-Pounds*

TABLE 4 HYDRAULIC CYLINDER WITH SPACERS, (PART NO. 42511), PARTS

Part Number	Description	Quantity
1501B-10-10	Piston Assembly	1
1501B-10-2	Retainer Plate	2
1501B-10-4	Cylinder Body	1
1501B-10-7	Rod Bushing	1
1501B-11-1	O-Ring	2
1501B-11-2	U-Cup	2
1501B-11-3	Back Up Ring	2
1501B-11-4	Teflon Glass Wear Ring	1
1501B-11-6	O-Ring	1
1501B-11-7	Back Up Ring	1
1501B-11-8	Rod Wiper	1
1501B-11-9	Shaft Seal	1
15511-1	Proportioning Pump Spacer (<i>Torque to 200 Inch-Pounds</i>)	7
15511-2	Reversing Switch Pump Spacer (<i>Torque to 200 Inch-Pounds</i>)	1
15511-3	Hydraulic Cylinder Tie Rod (<i>Torque to 200 Inch-Pounds</i>)	4
42501-1	Port Block	2

PROPORTIONING PUMP ASSEMBLY

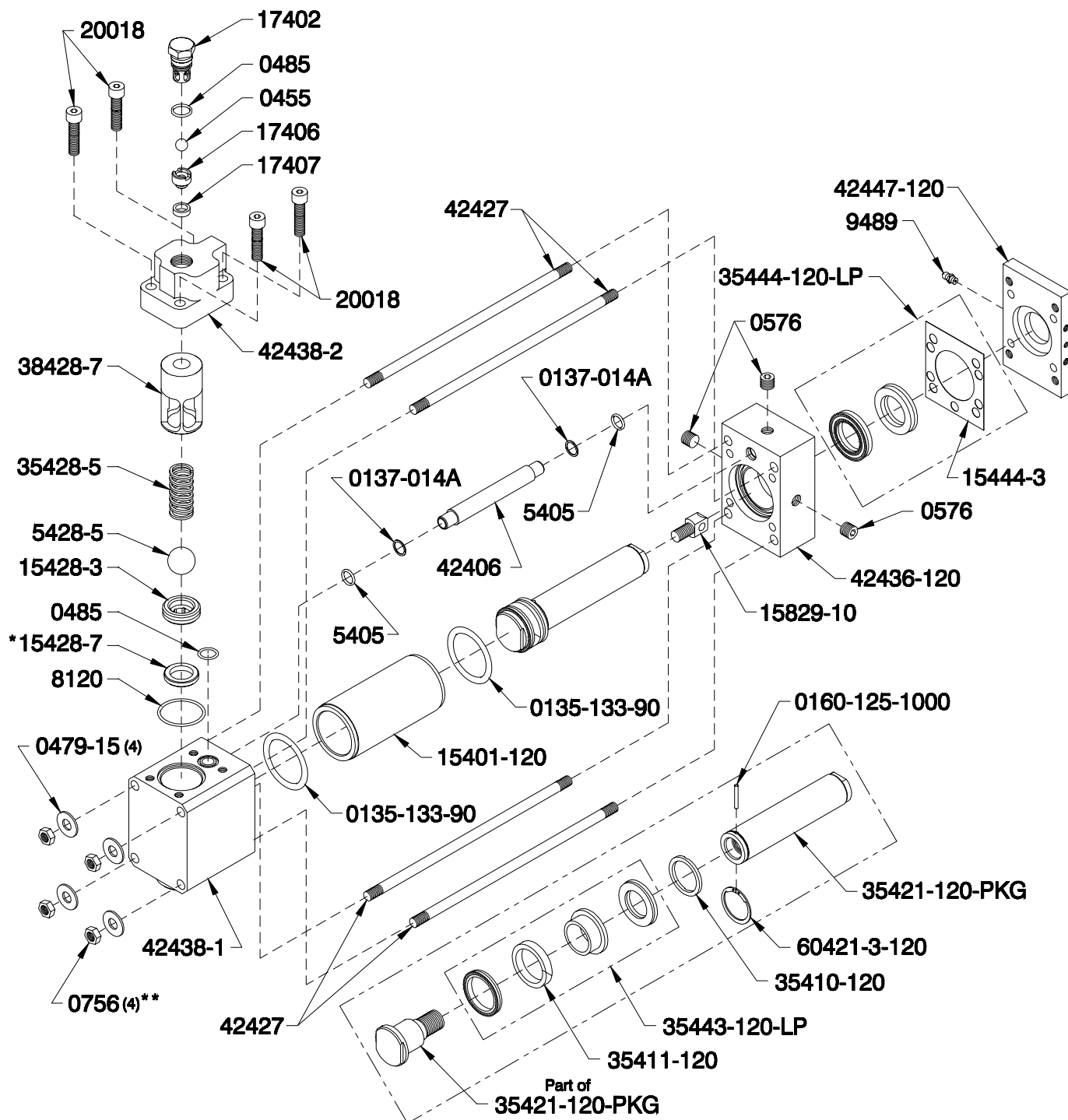


Figure 5 Proportioning Pump Assembly, (Part No. 42400-SIZE/42450-SIZE), Exploded View

* Torque to 50 FT-LBS

** Torque to 30 FT-LBS

TABLE 5 PROPORTIONING PUMP ASSEMBLY, (PART NO. 42400-SIZE/42450-SIZE), PARTS

Part Number	Description	Quantity
0135-133-90	O-Ring	2
0137-014A	Back Up Ring	2
0160-125-1000	Dowel Pin	1
14556-6	Dowel Pin	1
0455	Valve Ball	1
0479-15	Packing Support Washer	4
0485	O-Ring	2
0576	Flush Seal Pipe Plug	3
0756	Hex Nut (<i>Torque to 30 FT-LBS</i>)	4
5405	O-Ring	2
5428-5	Valve Ball	1
8120	O-Ring	1
9489	Grease Fitting (Resin Side ONLY)	1
15401-120	Pump Cylinder	1
15401-80	Pump Cylinder	1
15428-3	Valve Ball Seat (<i>Torque to 50 FT-LBS</i>)	1
15428-7	Seat Seal	1
15444-3	Gasket	1
15829-10	Pump Clevis	1
17402	Check Valve Retainer	1
17406	Check Valve Seat	1
17407	Check Valve Seal	1
20018	Socket Head Cap Screw	4
35410-120	Piston Support Washer	1
35410-80	Piston Support Washer	1
35411-120	Wear Ring	1
35410-80	Wear Ring	1
35421-120-PKG	Piston Rod with Head	1
35421-80-PKG	Piston Rod with Head	1
35428-5	Spring	1
35443-120-LP	Piston Lip Seal Set	1
35443-80-LP	Piston Lip Seal Set	1
35444-120-LP	Cylinder Lip Seal Set	1
35444-80-LP	Cylinder Lip Seal Set	1
38428-7	Inlet Ball Sleeve & Stop	1
42406	Crossover Tube	1
42427	Pump Tie Rod	4
42436-120	Outlet Pump Flange	1
42436-80	Outlet Pump Flange	1
42438-1	Lower Pump Base	1
42438-2	Upper Pump Base	1
42447-120	R - Retaining Flange	1
60421-3-120	Retaining Ring	1
60421-3-80	Retaining Ring	1

PRIMARY HEATER ASSEMBLY

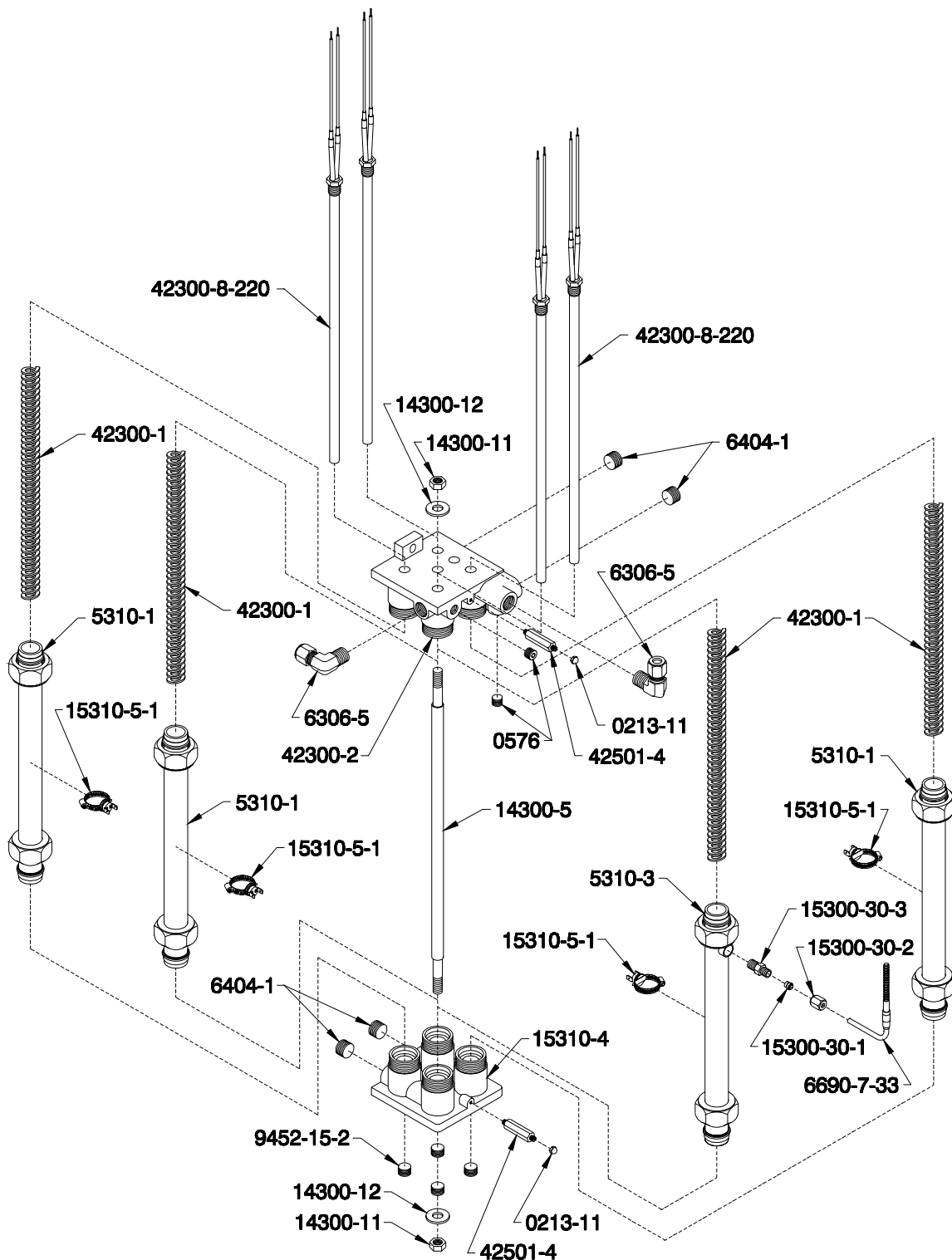


Figure 6 Primary Heater Assembly, (Part No. 42300-SIZE/42360-SIZE), Exploded View

TABLE 6 PRIMARY HEATER ASSEMBLY, (PART NO. 42300-SIZE/42360-SIZE), PARTS

Part Number	Description	Quantity
0213-11	Acorn Nut	2
0576	Flush Seal Pipe Plug	2
5310-1	Heat Exchanger	3
5310-3	Heat Exchanger	1
6306-5	Tube Elbow	2
6404-1	Flush Seal Pipe Plug	4
6690-7-33	Thermocouple	1
9452-15-2	Flush Seal Pipe Plug	4
14300-11	Hex Nut	2
14300-12	Flat Washer	2
14300-5	Tie Rod	1
15300-30-1	Ferrule	1
15300-30-2	Nut	1
15300-30-3	1/4 Tube Body	1
15310-4	Preheater Flange	1
15310-5-1	Thermostat	4
42300-1	Spring	5
42300-2	R - Preheater Flange	1
42300-8-220	Heating Element 1500W	4
42501-4	Preheater Cover Standoff	2

REVERSING SWITCH ASSEMBLY

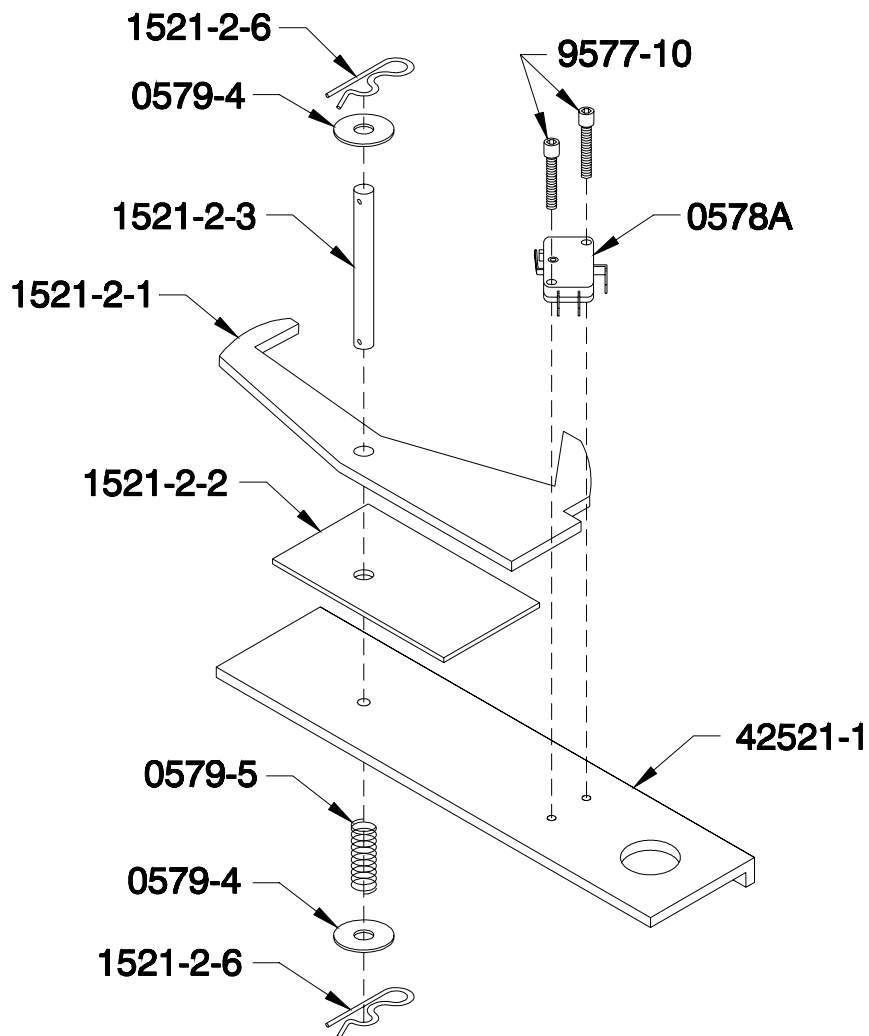
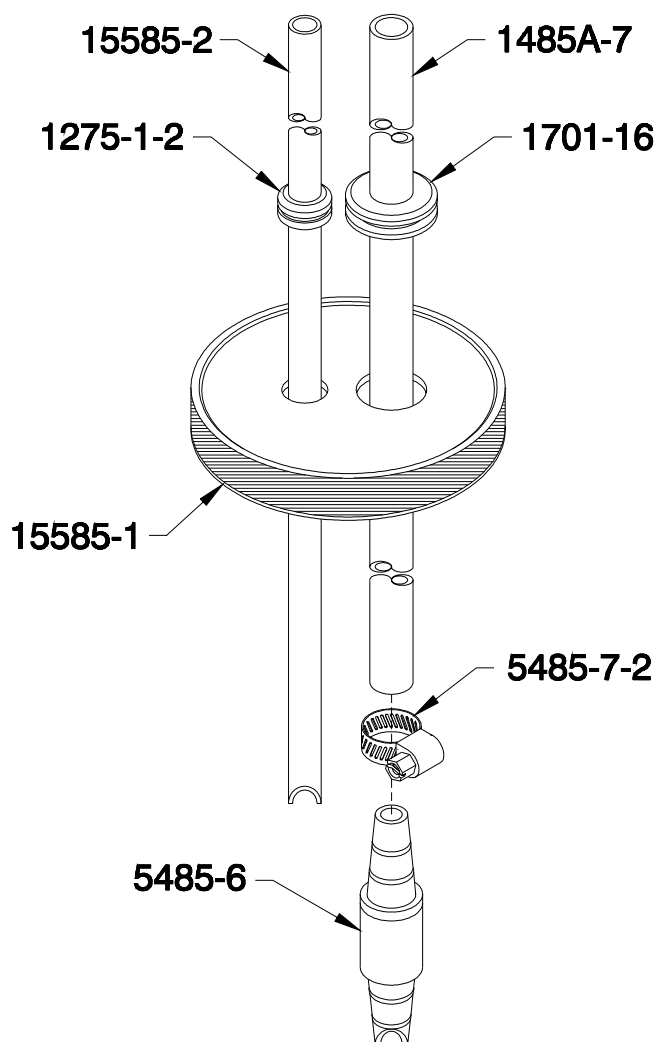


Figure 7 Reversing Switch Assembly, (Part No. 42521), Exploded View

TABLE 7 REVERSING SWITCH ASSEMBLY, (PART NO. 42521), PARTS LIST

Part Number	Description	Quantity
0578A	Reversing Switch	1
0579-4	Flat Washer	2
0579-5	Spring	1
1521-2-1	Reversing Switch Rocker Arm	1
1521-2-2	Rocker Arm Slide Pad	1
1521-2-3	Rocker Arm Pin	1
1521-2-6	Hitch Pin Clip	2
9577-10	Socket Head Cap Screw	2
42521-1	Reversing Switch Bracket	1

LUBE RESERVOIR HOSE ASSEMBLY**Figure 8 Lube Reservoir Hose Assembly, (Part No. 15585), Exploded View****TABLE 8 LUBE RESERVOIR HOSE ASSEMBLY, (PART NO. 15585), PARTS LIST**

Part Number	Description	Quantity
1275-1-2	Rubber Grommet	1
1485A-7	Supply Line	1
1701-16	13/16 OD Grommet	1
5485-6	Lube Reservoir Check Valve	1
5485-7-2	Hose Clamp	1
15585-1	Lube Bottle Cap	1
15585-2	Return Line	1

ELECTRICAL COMPONENTS

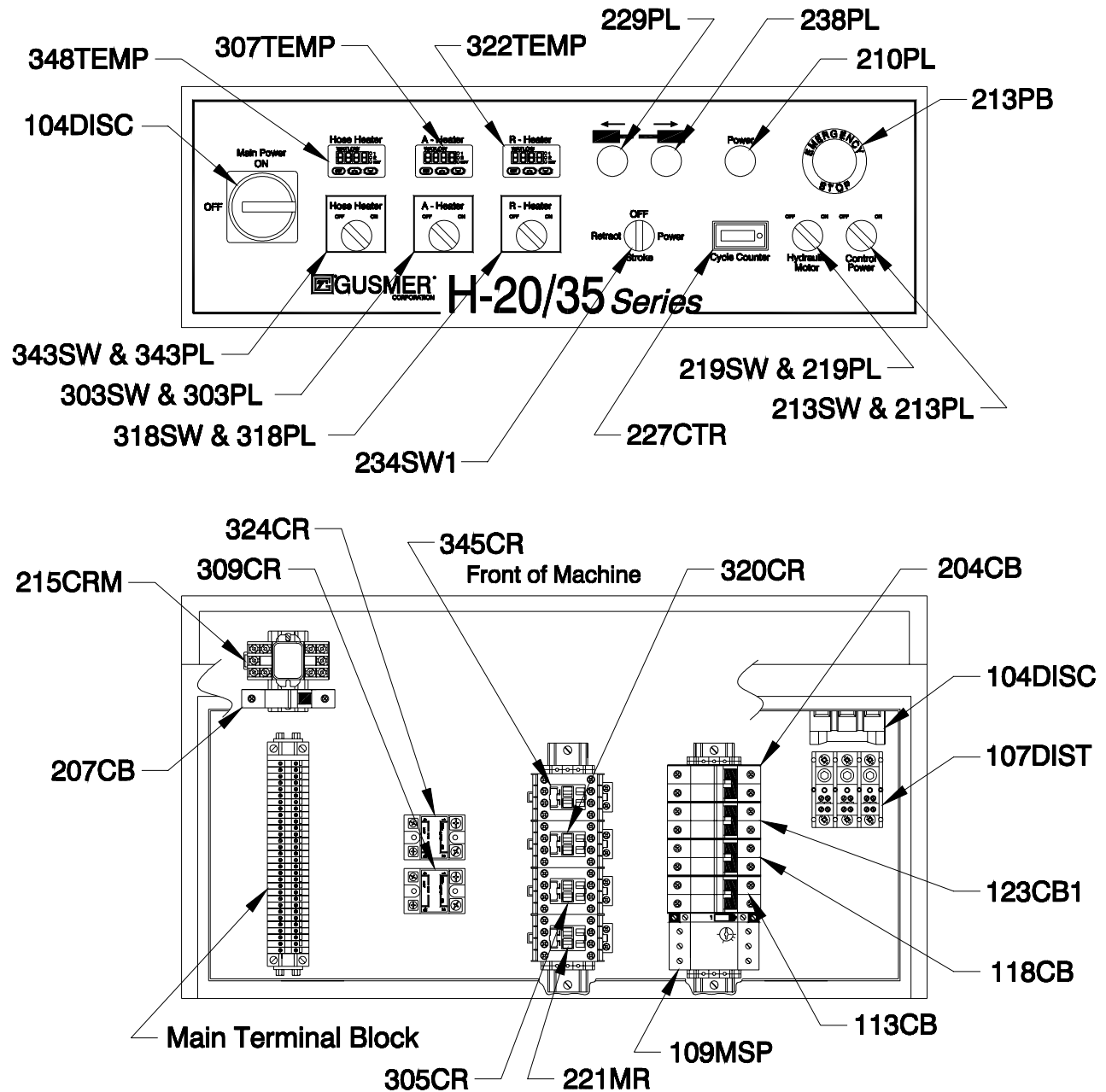


Figure 9 Electrical Components (Sheet 1 of 2)

Note: For schematic symbol part numbers and descriptions see Table 9 on page 40.

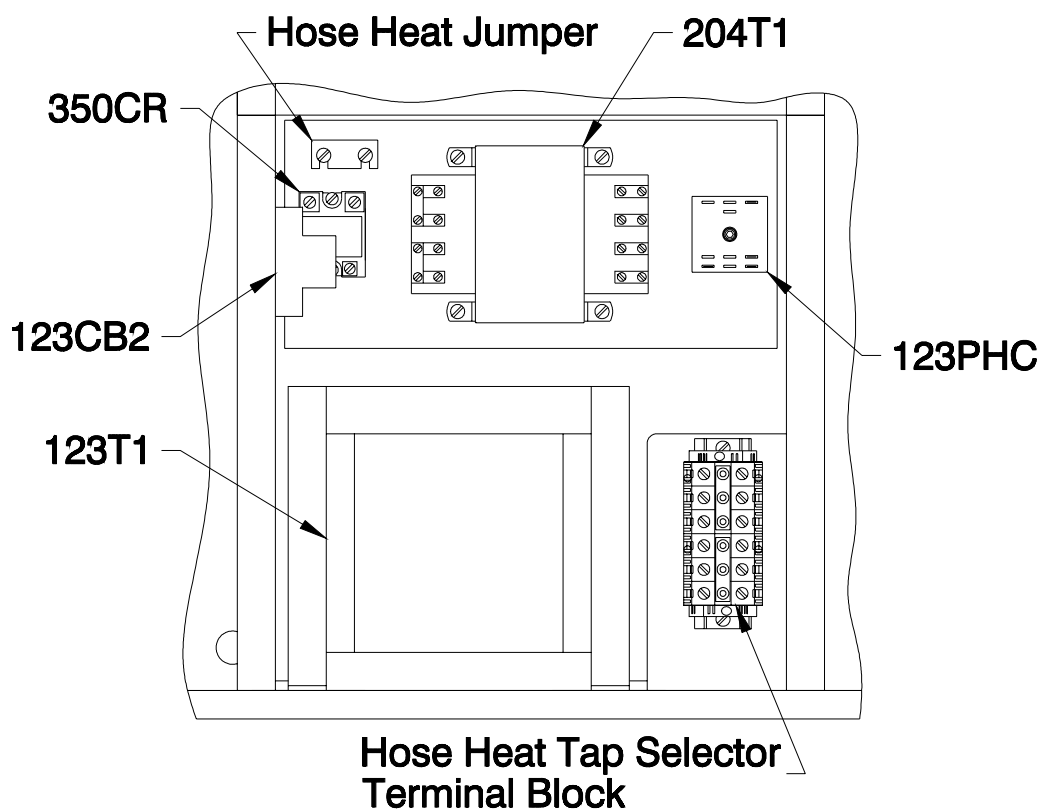


Figure 10 Electrical Components (Sheet 2 of 2)

Note: For schematic symbol part numbers and descriptions see Table 9 on page 40.

ELECTRICAL SCHEMATICS

230 Volt Single Phase

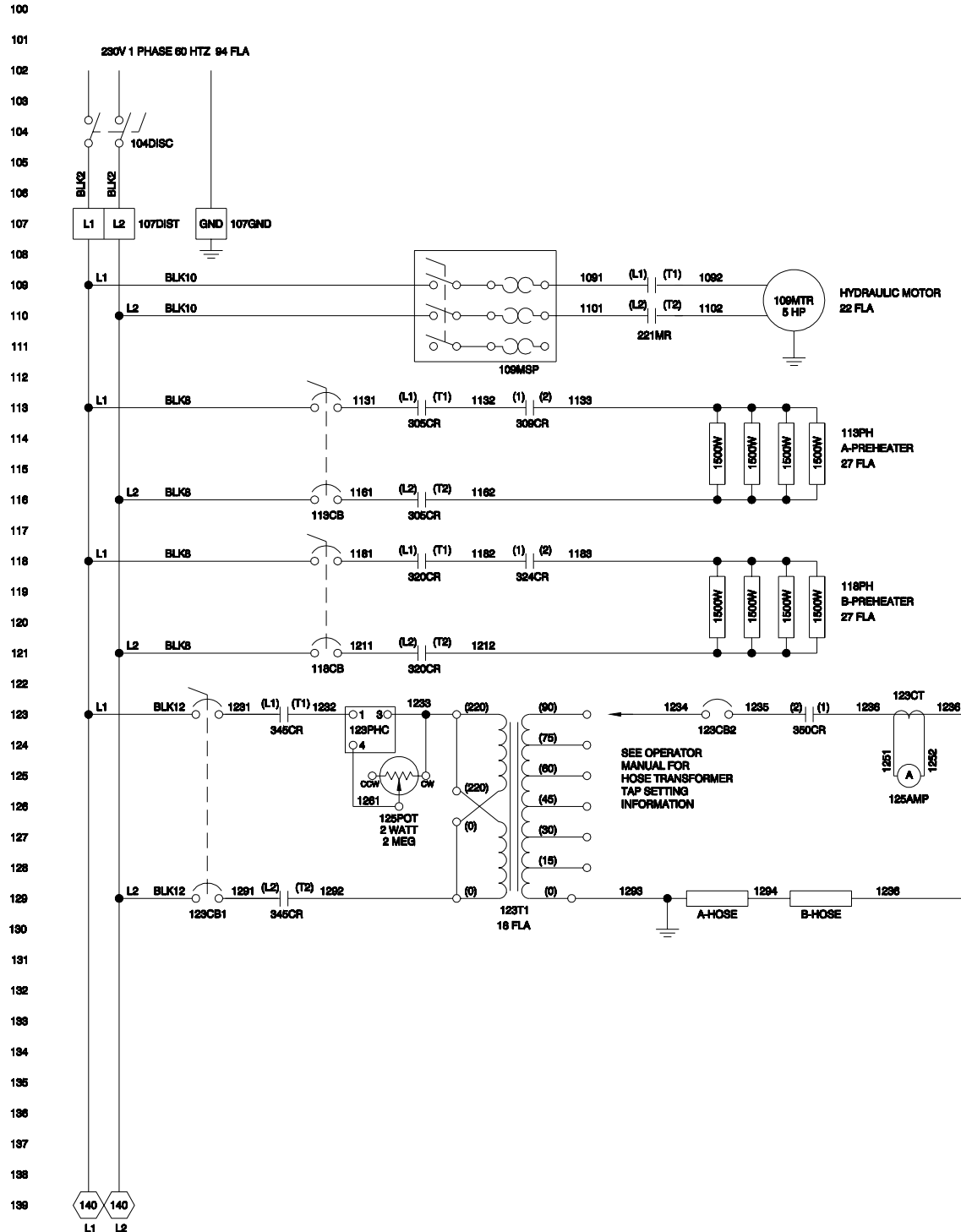


Figure 11 Electrical Schematic 230 Volt Single Phase, (Sheet 1 of 6)

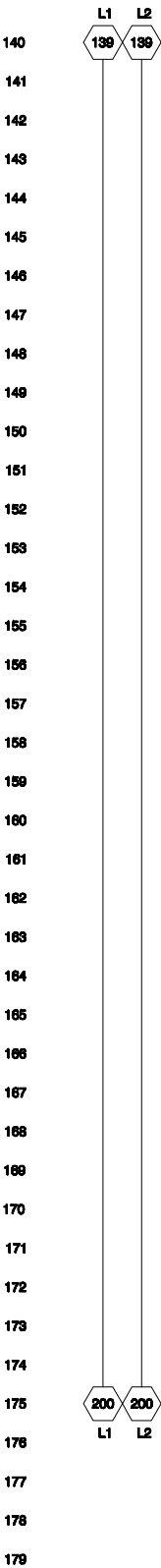


Figure 12 Electrical Schematic 230 Volt Single Phase, (Sheet 2 of 6)

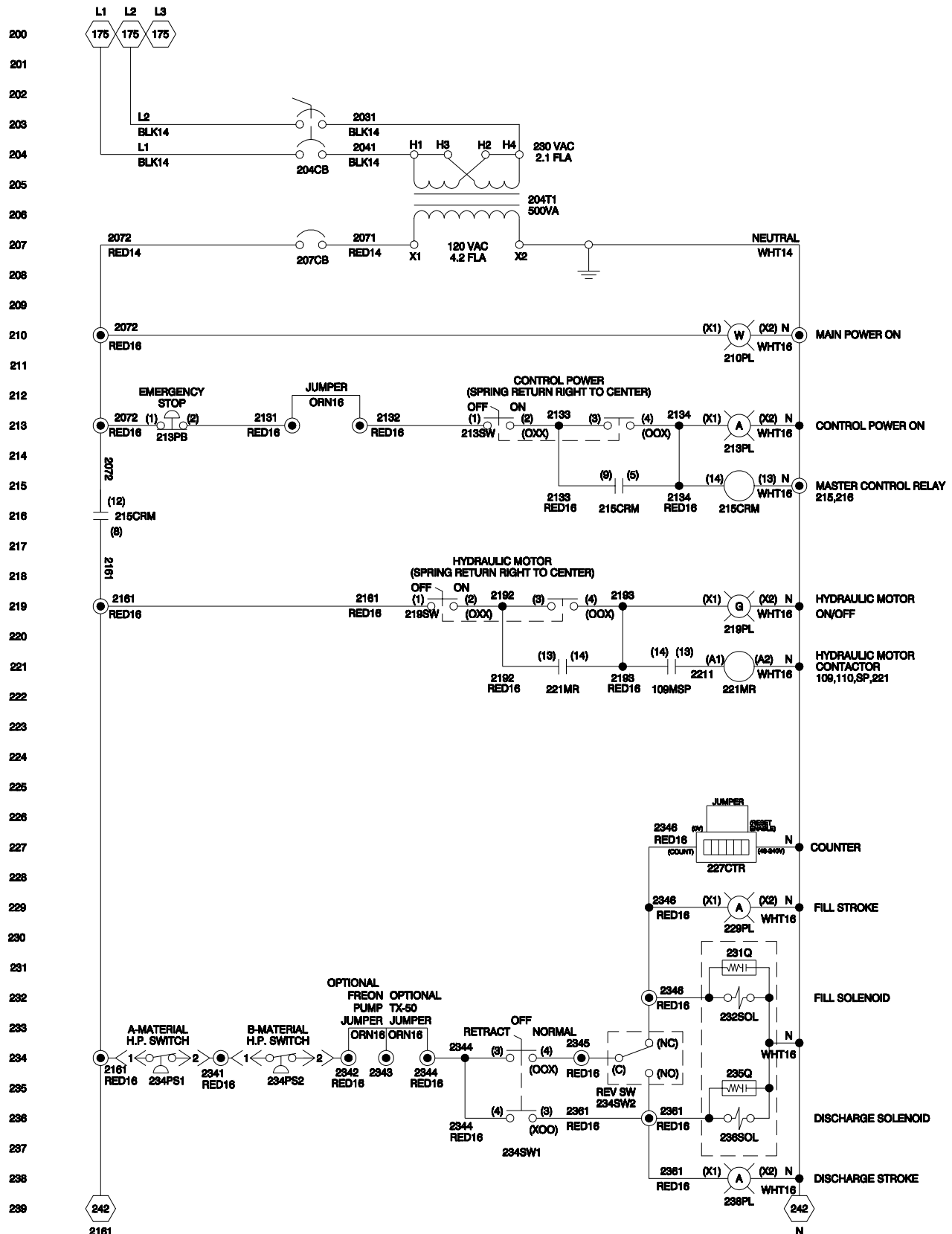


Figure 13 Electrical Schematic 230 Volt Single Phase, (Sheet 3 of 6)

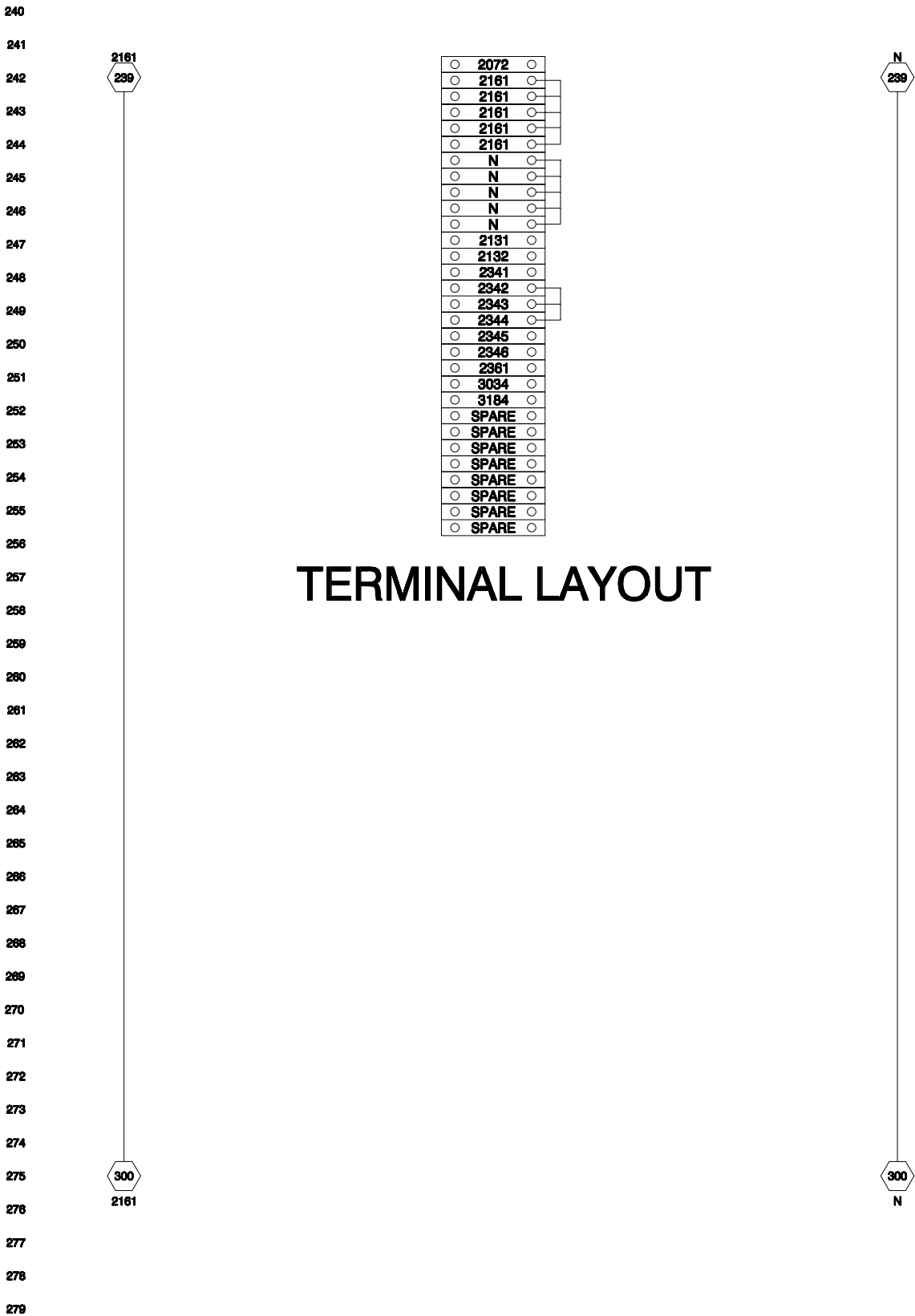
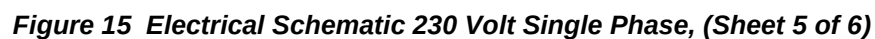


Figure 14 Electrical Schematic 230 Volt Single Phase, (Sheet 4 of 6)



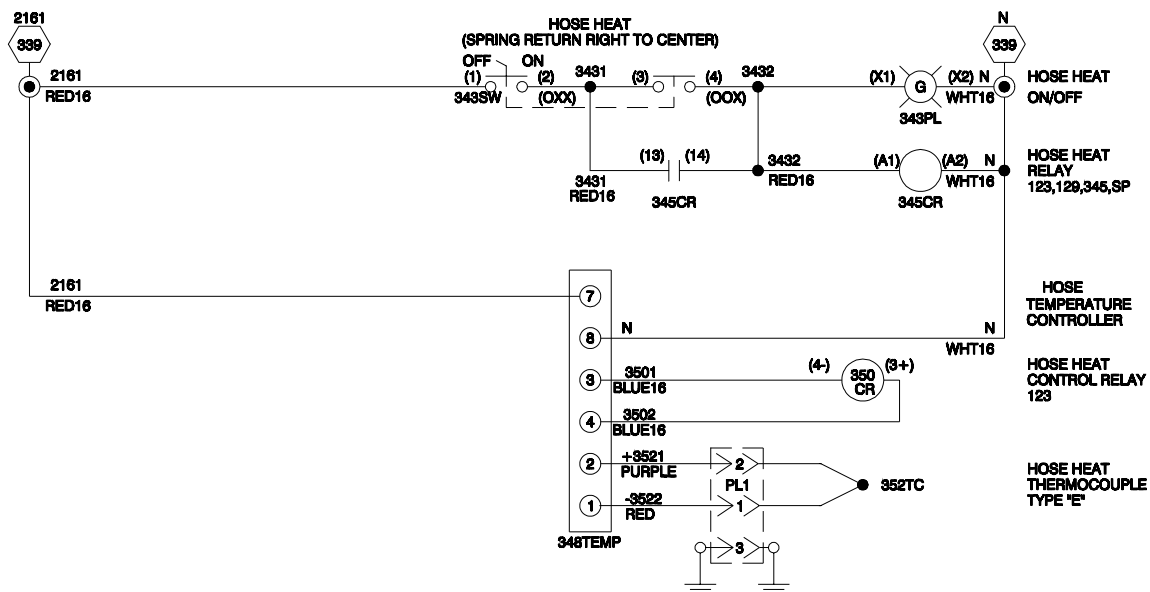


Figure 16 Electrical Schematic 230 Volt Single Phase, (Sheet 6 of 6)

230 Volt 3 Phase

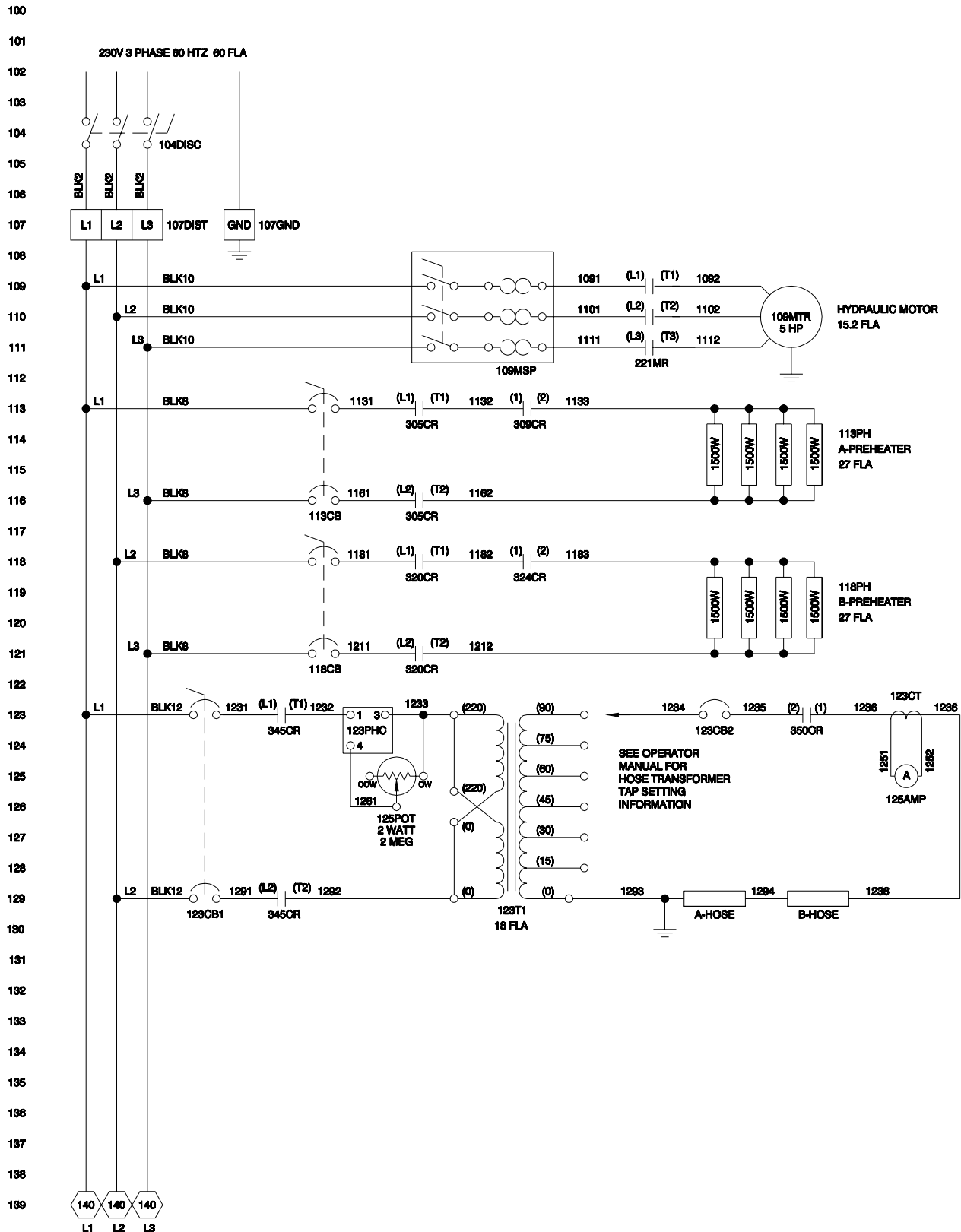


Figure 17 Electrical Schematic 230 Volt 3 Phase, (Sheet 1 of 6)

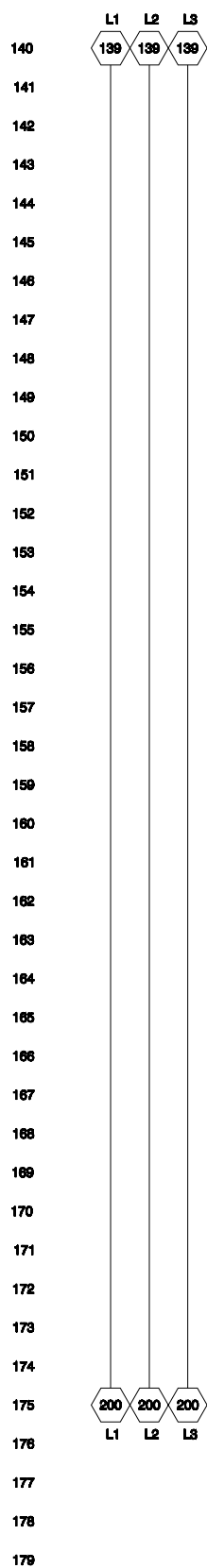


Figure 18 Electrical Schematic 230 Volt 3 Phase, (Sheet 2 of 6)

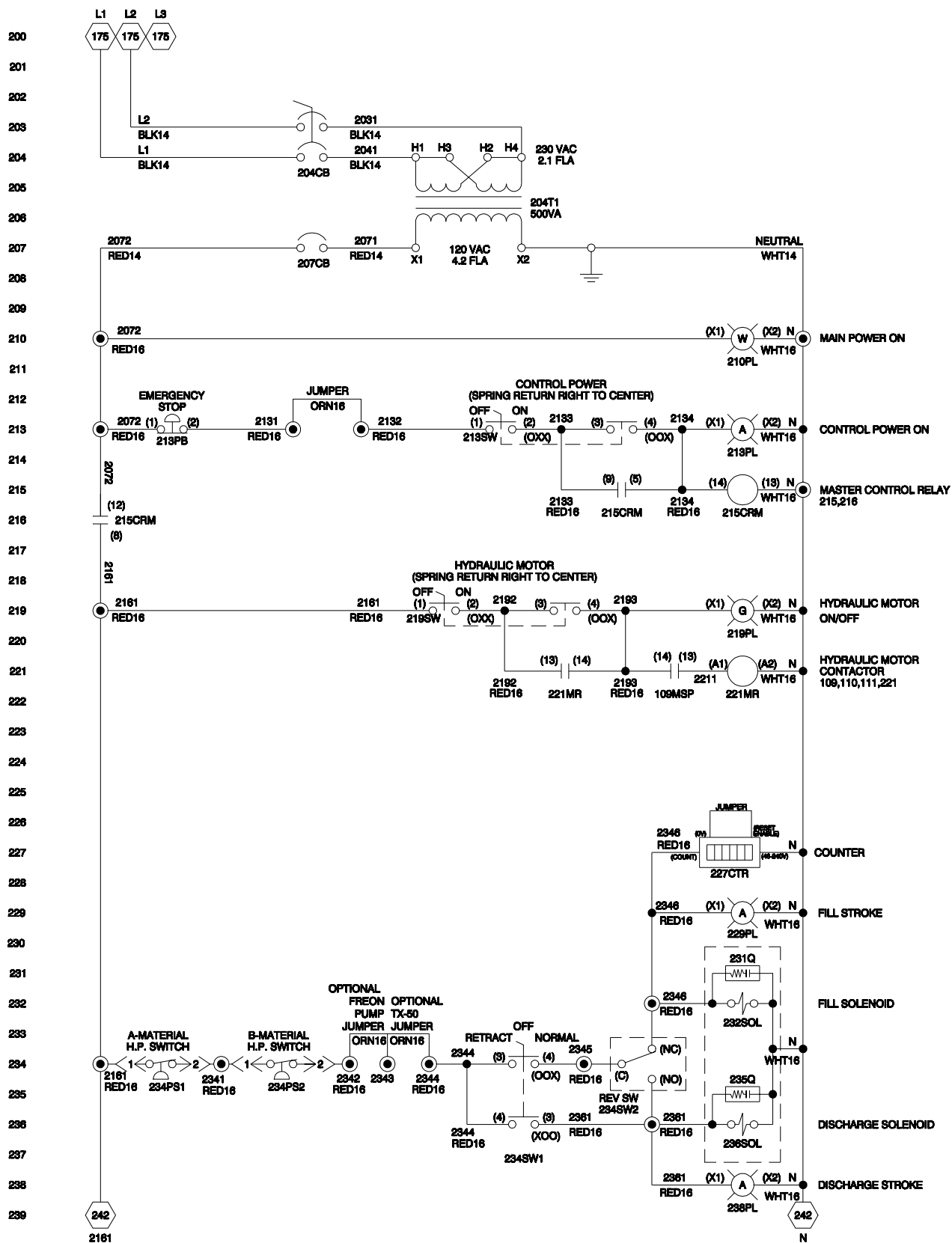


Figure 19 Electrical Schematic 230 Volt 3 Phase, (Sheet 3 of 6)

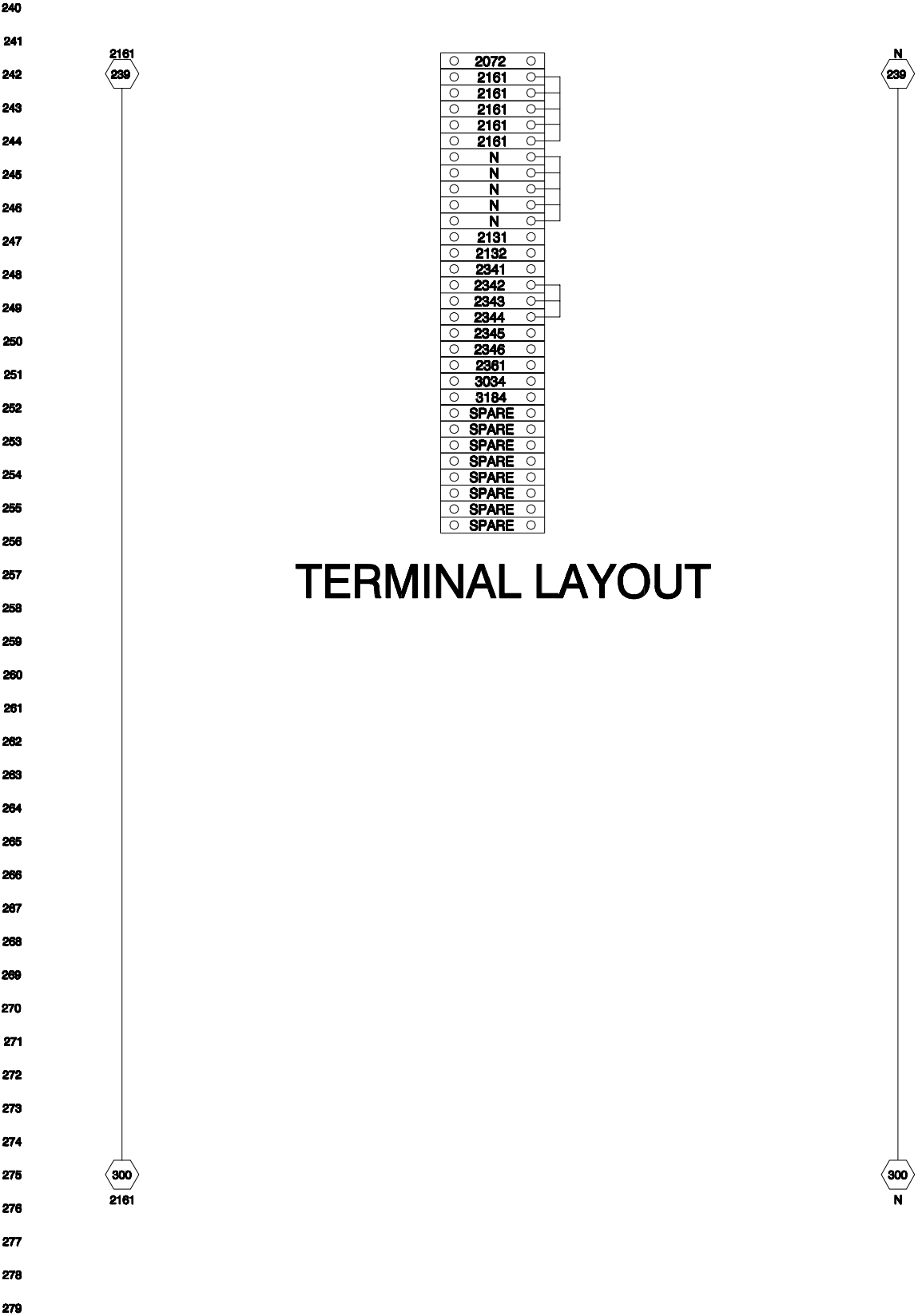
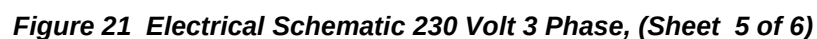


Figure 20 Electrical Schematic 230 Volt 3 Phase, (Sheet 4 of 6)



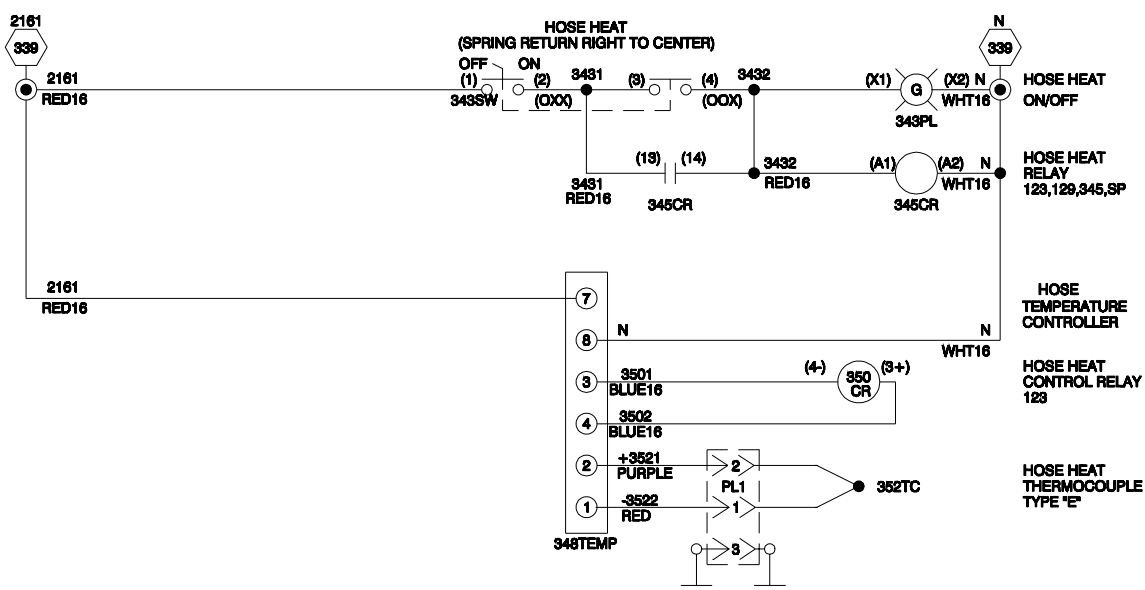


Figure 22 Electrical Schematic 230 Volt 3 Phase, (Sheet 6 of 6)

380 Volt 3 Phase

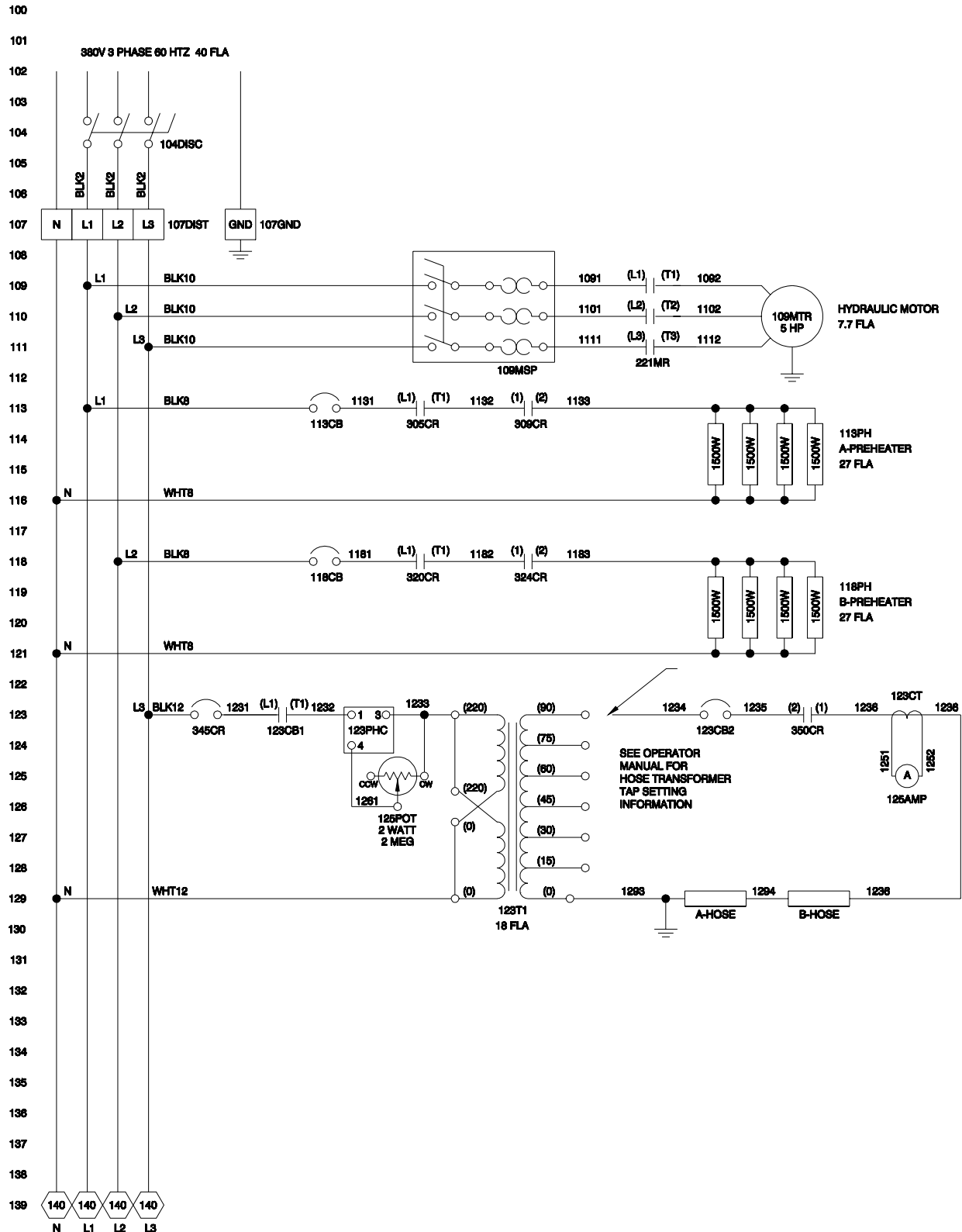


Figure 23 Electrical Schematic 380 Volt 3 Phase, (Sheet 1 of 6)

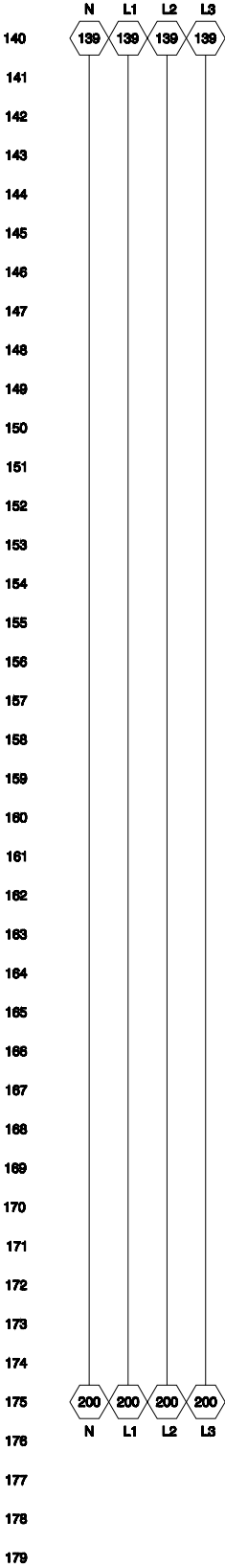


Figure 24 Electrical Schematic 380 Volt 3 Phase, (Sheet 2 of 6)

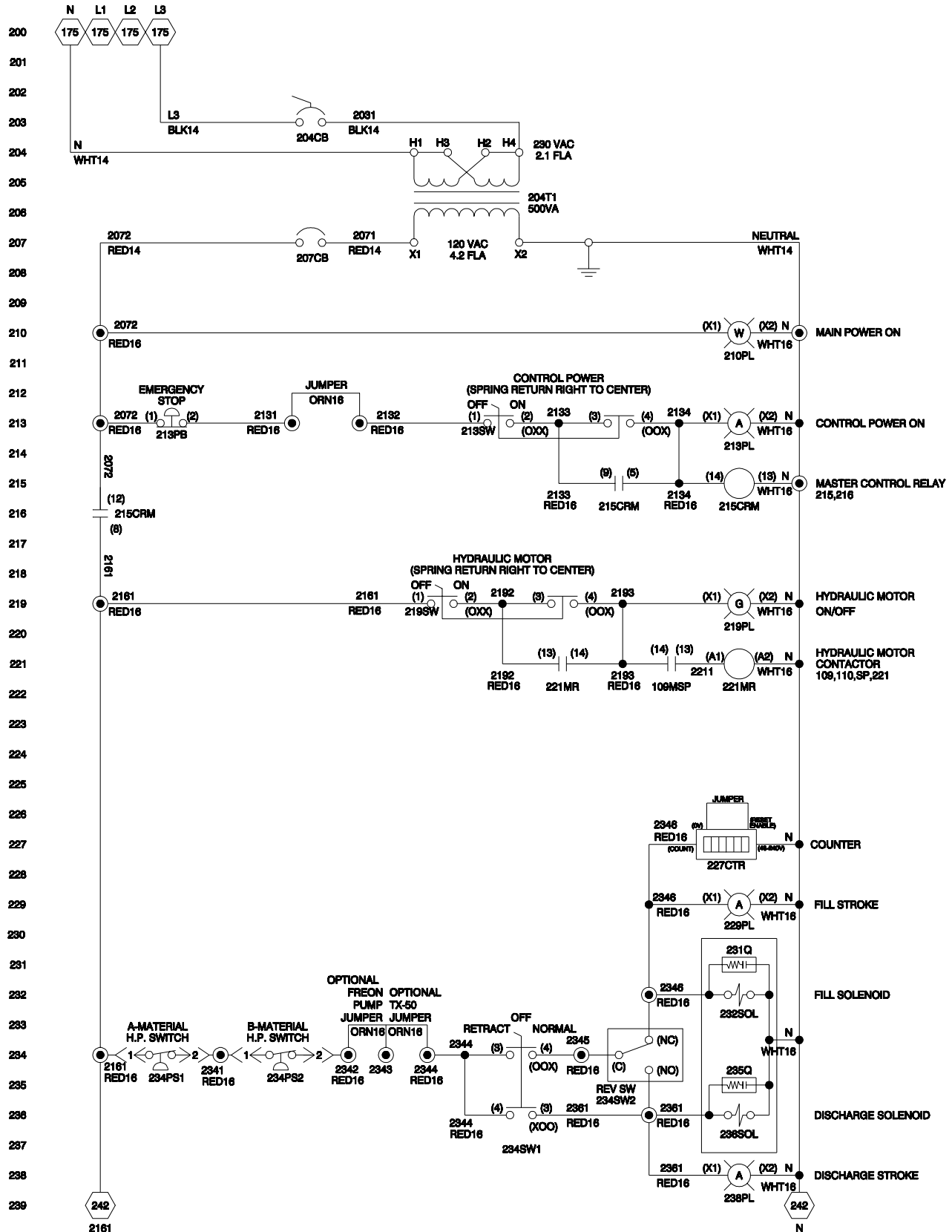
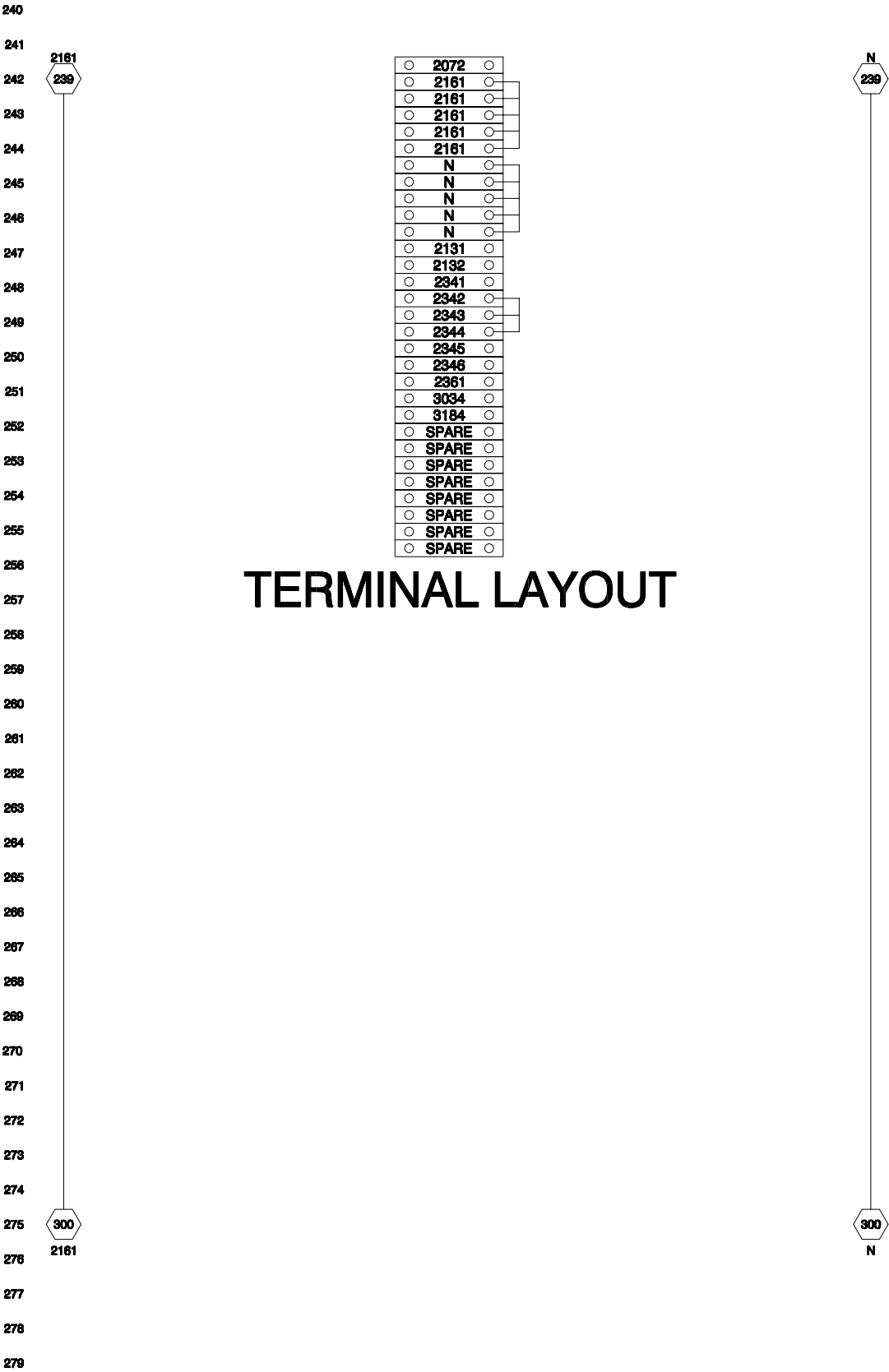


Figure 25 Electrical Schematic 380 Volt 3 Phase, (Sheet 3 of 6)



TERMINAL LAYOUT

Figure 26 Electrical Schematic 380 Volt 3 Phase, (Sheet 4 of 6)

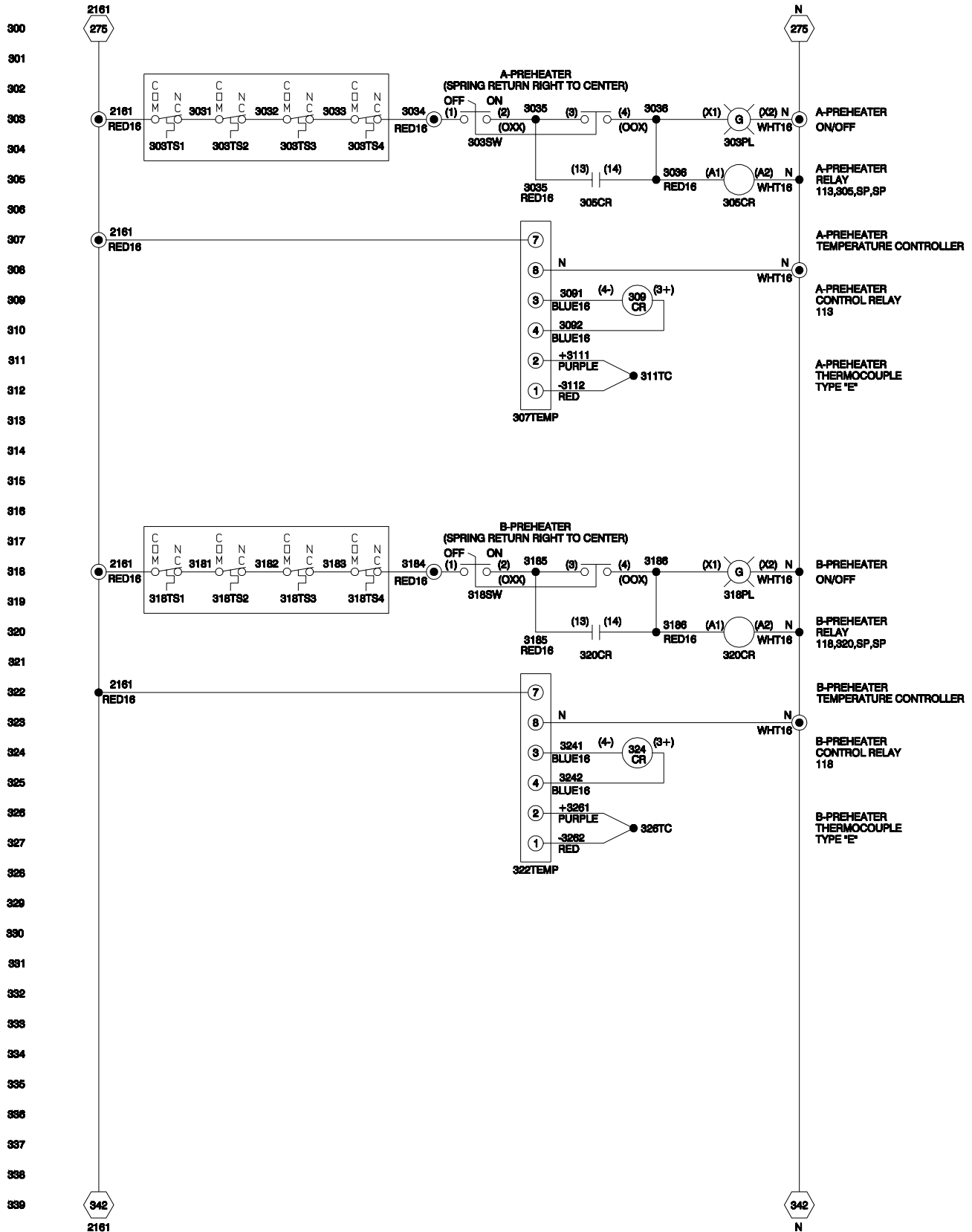


Figure 27 Electrical Schematic 380 Volt 3 Phase, (Sheet 5 of 6)



TABLE 9 ELECTRICAL SCHEMATIC, (PARTS LIST)

Reference Letter	Part Number	Description	Quantity
104DISC	6690-16-143	Disconnect	1
	6690-16-144	Disconnect Handle	1
107DIST	6690-20-10-3	3 Pole Terminal Block	1
107GND	1645-1-1	Ground Terminal Block	1
107N	6690-20-10-1	Neutral Terminal Block	1
109MSP			
	6690-27-89	Motor Circuit Protector (1x230 60HZ)	1
	6690-27-88	Motor Circuit Protector (3x230V)	1
	6690-27-82	Motor Circuit Protector (3x380V)	1
109MTR			
	6691-46	5HP Single Phase 60Hz Motor (1x220 60Hz)	1
	6691-45	5HP Three Phase 50/60 Hz Motor (3x230V)	1
	6691-45	5HP Three Phase 50/60 Hz Motor (3x380V)	1
113CB			
	6690-25-22	Circuit Breaker for 6000W Heater (1x220 60Hz)	1
	6690-25-22	Circuit Breaker for 6000W Heater (3x230V)	1
	6690-25-21	Circuit Breaker for 6000W Heater (3x380V)	1
113PH			
	42300-8-220	1500 Watt Cartridge Heater (1x220 60Hz)	4
	42300-8-220	1500 Watt Cartridge Heater (3x230V)	4
	42300-8-220	1500 Watt Cartridge Heater (3x380V)	4
118CB			
	6690-25-22	Circuit Breaker for 6000W Heater (1x220 60Hz)	1
	6690-25-22	Circuit Breaker for 6000W Heater (3x230V)	1
	6690-25-21	Circuit Breaker for 6000W Heater (3x380V)	1
118PH			
	42300-8-220	1500 Watt Cartridge Heater (1x220 60Hz)	4
	42300-8-220	1500 Watt Cartridge Heater (3x230V)	4
	42300-8-220	1500 Watt Cartridge Heater (3x380V)	4
123CB1			
	6690-25-24	Circuit Breaker (1x220 60Hz)	1
	6690-25-24	Circuit Breaker (3x230V)	1
	6690-25-23	Circuit Breaker (3x380V)	1
123CB2	6690-25-28	Circuit Breaker	1
123PHC			
	6690-26-18	230V Phase Controller (1x220 60Hz)	1
	6690-26-18	230V Phase Controller (3x230V)	1
	6690-26-18	230V Phase Controller (3x380V)	1
123T1	6690-15-28	Multi-Tap Hose Transformer	1
123CT	6690-29-28-1	Ammeter Current Transformer	1
125POT			
	6690-5-17	Potentiometer (1x220 60Hz)	1
	6690-5-17	Potentiometer (3x230V)	1
	6690-5-17	Potentiometer (3x380V)	1
125AMP	6690-29-28	0-75A Ammeter	1
204CB			
	6690-25-43	Circuit Breaker (1x220 60Hz)	1
	6690-25-43	Circuit Breaker (3x230V)	1
	6690-25-37	Circuit Breaker (3x380V)	1

Reference Letter	Part Number	Description	Quantity
204T1	6690-15-27	120VAC Control Transformer	1
207CB	6690-25-36	Circuit Breaker	1
210PL	6690-19-15-17	Light Base	1
	6690-19-15-19	Pilot Light w/o Lens	1
	6690-19-15-11	Mounting Latch	1
	6690-19-15-20	130V Lamp	1
	6690-19-15-14	Clear Lens	1
213PB	6690-16-67	Red Mushroom Head Switch	1
	6690-19-15-11	Mounting Latch	1
	6690-16-59-1	N.O. Switch Block	1
	6690-16-60-1	N.C. Switch Block	1
	L0257	E-Stop Label	1
213SW	6690-16-145	Amber Switch	1
	6690-19-15-11	Mounting Latch	1
	6690-16-59-1	N.O. Switch Block	1
	6690-16-60-1	N.C. Switch Block	1
213PL	6690-19-15-17	Light Base	1
	6690-19-15-20	130V Lamp	1
215CRM	6690-1-57	Relay	1
	6690-1-58	Relay Base	1
219SW	6690-16-146	Green Lens	1
	6690-19-15-11	Mounting Latch	1
	6690-16-59-1	N.O. Switch Block	1
	6690-16-60-1	N.C. Switch Block	1
219PL	6690-19-15-17	Light Base	1
	6690-19-15-20	130V Lamp	1
221MR	6690-27-68	Contactor	1
227CTR	6690-29-27	Digital Counter	1
229PL	6690-19-15-17	Light Base	1
	6690-19-15-19	Pilot Light w/o Lens	1
	6690-19-15-11	Mounting Latch	1
	6690-19-15-20	130V Lamp	1
	6690-19-15-15	Amber Lens	1
231Q	6690-21-1	Quencharc	1
232SOL	6311-116-110-1	Replacement 120VAC Solenoid Coil	1
234PS1	6690-16-107	Pressure Switch	1
	6690-16-76-1	Din Connector	1
234PS2	6690-16-107	Pressure Switch	1
	6690-16-76-1	Din Connector	1
234SW1	6690-16-109	3 Position Switch	1
	6690-19-15-11	Mounting Latch	1
	6690-16-59-1	N.O. Switch Block	1
234SW2	0578A	Replacement Micro-Switch	1
235Q	6690-21-1	Quencharc	1
236SOL	6311-116-110-1	Replacement 120VAC Solenoid Coil	1
238PL	6690-19-15-17	Light Base	1
	6690-19-15-19	Pilot Light w/o Lens	1
	6690-19-15-11	Mounting Latch	1
	6690-19-15-20	130V Lamp	1
	6690-19-15-15	Amber Lens	1
303TS1	6690-7-26	Over Temperature Safety Switch	1

Reference Letter	Part Number	Description	Quantity
303TS2	6690-7-26	Over Temperature Safety Switch	1
303TS3	6690-7-26	Over Temperature Safety Switch	1
303TS4	6690-7-26	Over Temperature Safety Switch	1
303SW	6690-16-146	Green Switch	1
	6690-19-15-11	Mounting Latch	1
	6690-16-59-1	N.O. Switch Block	1
	6690-16-60-1	N.C. Switch Block	1
303PL	6690-19-15-17	Light Base	1
	6690-19-15-20	130V Lamp	1
305CR	6690-27-68	Contactor	1
307TEMP	6690-26-22-3	Temperature Controller	1
309CR	6690-1-55	SSR	1
311TC		Thermocouple	1
318TS1	6690-7-26	Over Temperature Safety Switch	1
318TS2	6690-7-26	Over Temperature Safety Switch	1
318TS3	6690-7-26	Over Temperature Safety Switch	1
318TS4	6690-7-26	Over Temperature Safety Switch	1
318SW	6690-16-146	Green Lens	1
	6690-19-15-11	Mounting Latch	1
	6690-16-59-1	N.O. Switch Block	1
	6690-16-60-1	N.C. Switch Block	1
318PL	6690-19-15-17	Light Base	1
	6690-19-15-20	130V Lamp	1
320CR	6690-27-68	Contactor	1
322TEMP	6690-26-22-3	Temperature Controller	1
324CR	6690-1-55	SSR	1
326TC		Thermocouple	1
343SW	6690-16-146	Green Lens	1
	6690-19-15-11	Mounting Latch	1
	6690-16-59-1	N.O. Switch Block	1
	6690-16-60-1	N.C. Switch Block	1
343PL	6690-19-15-17	Light Base	1
	6690-19-15-20	130V Lamp	1
345CR	6690-27-68	Contactor	1
348TEMP	6690-26-22-3	Temperature Controller	1
350CR	6690-1-7	SSR	1
352TC		TSU	1
	18650-7	TSU Replacement Plug Assembly	1

INSTRUCTION MANUAL DISCREPANCY REPORT

[illegible]

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