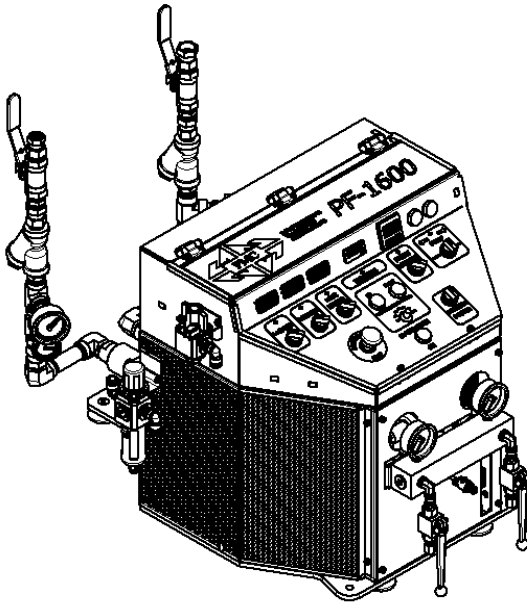




**POLYURETHANE
MACHINERY
CORPORATION**



PF(X)-1600 Proportioners

**Pneumatic, Heated, Plural Component
Proportioner**

**For spraying Polyurethane Foam and
Coatings**

For Professional Use Only

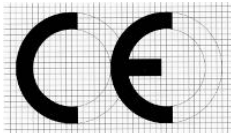
**Not approved for use in explosive
atmosphere locations**

Electrical Drawings

Ref. # 202104

Revision 1.1

February 21, 2019



Polyurethane Machinery Corp.

Corporate: 1 Komo Dr, Lakewood, NJ 08701

Manufacturing: 2 Komo Dr, Lakewood, NJ 08701

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URL: <http://www.polymacusa.com/>



Before installing the PF Series Proportioner and start-up, carefully read all the technical and safety documentation included in this manual. Pay special attention to the information in order to know and understand the operation and the conditions of use of the PF Series Proportioner. All of the information is aimed at improving user safety and avoiding possible breakdowns from the incorrect use of the PF Series Proportioner.

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WARRANTY

WARRANTY

Polyurethane Machinery Corporation (hereinafter “PMC”) provides this LIMITED WARRANTY (hereinafter “Warranty”) to the original purchaser (hereinafter “Customer”) covering this equipment and the original PMC manufactured accessories delivered with the equipment (hereinafter “Product”) against defects in material or workmanship of the Product (hereinafter “Defect” or “Defective”) for a period of one (1) year from the date of first purchase as shown on the original PMC invoice (hereinafter “Warranty Period”).

If during the Warranty Period under normal use, the Product is suspected by Customer to be Defective in material or workmanship, it is Customer’s responsibility to contact PMC and return the Product to PMC as directed by PMC, freight prepaid. If PMC determines that the Product is Defective and that such Defect is covered by this Warranty, PMC will credit Customer for the reasonable freight charges incurred by Customer in returning the Defective Product to PMC, and PMC (or its authorized agent) will, at PMC’s option, repair or replace the Product, subject to the following:

Original Invoice: The original invoice must be kept as proof of the date of first sale and the Product serial number. The Warranty does not cover any Product if the Original Invoice appears to have been modified or altered, or when the serial number on the Product appears to have been altered or defaced.

Product Maintenance: It is the Customer’s responsibility to maintain the Product properly. See your maintenance schedule and owner’s manual for details. The Warranty does not cover an improperly maintained Product.

Non-PMC Components and Accessories: Non-PMC manufactured components and accessories that are used in the operation of the Product are not covered by this Warranty. Such components and accessories shall be subject to the warranty offered to the Customer, if any, by the original manufacturer of such component or accessory.

Other Warranty Exclusions: The Warranty does not cover any Product that PMC determines has been damaged or fails to operate properly due to misuse, negligence, abuse, carelessness, neglect, or accident. By way of example only, this includes:

- Normal wear and tear.
- Improper or unauthorized installation, repair, alteration, adjustment or modification of the Product.
- Use of heating devices, pumping equipment, dispensers, or other parts or accessories with the Product that have not been approved or manufactured by PMC.
- Failure to follow the operating instructions and recommendations provided by PMC.
- Cosmetic damage.
- Fire, flood, “acts of God,” or other contingencies beyond the control of PMC.

THE WARRANTY DESCRIBED HEREIN IS THE EXCLUSIVE REMEDY FOR THE CUSTOMER AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, IMPLIED, STATUTORY OR OTHERWISE, AND THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND ALL OTHER WARRANTIES ARE HEREBY DISCLAIMED. TO THE FULLEST EXTENT PERMITTED BY LAW, PMC SHALL NOT BE RESPONSIBLE, WHETHER BASED IN CONTRACT, TORT (INCLUDING, WITHOUT LIMITATION, NEGLIGENCE), WARRANTY OR ANY OTHER LEGAL OR EQUITABLE GROUNDS, FOR ANY CONSEQUENTIAL, INDIRECT, INCIDENTAL, LOST PROFITS, SPECIAL, PUNITIVE OR EXEMPLARY DAMAGES, WHETHER TO PERSON OR PROPERTY, ARISING FROM OR RELATING TO THE PRODUCT, EVEN IF PMC HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH LOSSES OR DAMAGES.

Non-Warranty Service by PMC: If PMC determines that the suspected Defect of the Product is not covered by this Warranty, disposition of the Product will be made pursuant to the terms and conditions of PMC's written estimate on a time and materials basis.

Continuing Warranty for Products Repaired or Replaced under Warranty: Following the repair or replacement of a Product covered by this Warranty, such Product will continue to be subject to the original Warranty for the remainder of original Warranty Period or for three (3) months from the repair or replacement date, whichever is longer.

No Rights Implied: Nothing in the sale, lease or rental of any Product by PMC shall be construed to grant any right, interest or license in or under any patent, trademark, copyright, trade secret or other proprietary right or material owned by anyone; nor does PMC encourage the infringement of same.

Exclusive Warranty: This writing is the final, complete, and exclusive expression of the Warranty covering the Product. Any statements made by PMC, its employees or agents that differ from the terms of this Warranty shall have no effect. It is expressly understood that Customer's acceptance of this Warranty, by performance or otherwise, is upon and subject solely to the terms and conditions hereof, and any additional or different terms and conditions proposed or expressed by Customer or anyone, whether in writing or otherwise, are null and void unless specifically agreed to in writing by an Officer of PMC.

SAFETY AND HANDLING

This chapter contains important information on the safety, handling, and use of your PF Series Proportioner.



Before installing the PF Series Proportioner and start-up, carefully read all the technical and safety documentation included in this manual. Pay special attention to the information in order to know and understand the operation and the conditions of use of the PF Series Proportioner. All of the information is aimed at improving user safety and avoiding possible breakdowns from the incorrect use of the PF Series Proportioner.

WARNING! Presents information to alert of a situation that might cause serious injuries if the instructions are not followed.

CAUTION! Presents information that indicates how to avoid damage to the equipment or how to avoid a situation that could cause minor injuries.

NOTE! Is relevant information of a procedure being carried out.

Careful study of this manual will enable the operator to know the characteristics of the PF Series Proportioner and the operating procedures. By following the instructions and recommendations contained herein, you will reduce the potential risk of accidents in the installation, use or maintenance of the PF Series Proportioner; you will provide a better opportunity for incident-free operation for a longer time, greater output and the possibility of detecting and resolving problems quickly and simply.

Keep this Operations Manual for future consultation of useful information at all times. If you lose this manual, ask for a new copy from your PMC Distributor or go online and visit our web site at <http://www.polymacusa.com/>.

The PF Series Proportioner has been designed and built for the application of polyurea chemical systems, polyurethane foam chemical systems, and some two-component epoxy systems.

WARNING! The design and configuration of the PF Series Proportioner does not allow its use in potentially explosive atmospheres, or the pressure and temperature limits described in the technical specifications of this manual to be exceeded.

Always use liquids and solvents that are compatible with the unit. If in doubt, consult your PMC Distributor.

When working with the PF Series Proportioner, it is recommended that the operator wear suitable clothing and elements of personal protection, including, without limitation, gloves, protective goggles, safety footwear, and face masks. Use breathing equipment when working with the PF Series Proportioner in enclosed spaces or in areas with insufficient ventilation. The introduction and follow-up of safety measures must not be limited to those described in this manual. Before starting up the PF Series Proportioner, a comprehensive analysis must be made of the risks derived from the products to be dispensed, the type of application, and the working environment.



To prevent possible injury caused by incorrect handling of the raw materials and solvents used in the process, carefully read the Safety Data Sheet (SDS) provided by your supplier.

Deal with the waste caused according to current regulations.



To avoid damage caused by the impact of pressurized fluids, do not open any connection or perform maintenance work on components subject to pressure until the pressure has been completely eliminated.



Use suitable protection when operating, maintaining or being present in the area where the equipment is functioning. This includes, but is not limited to, the use of protective goggles, gloves, shoes and safety clothing and breathing equipment.



The equipment includes components that reach high temperatures and can cause burns. Hot parts of the equipment must not be handled or touched until they have cooled completely.

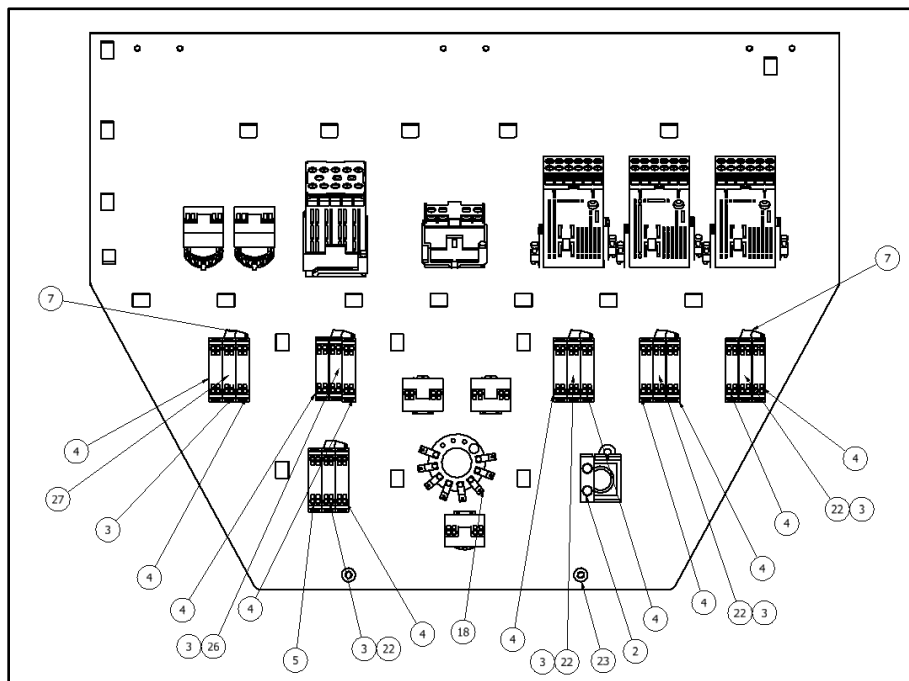
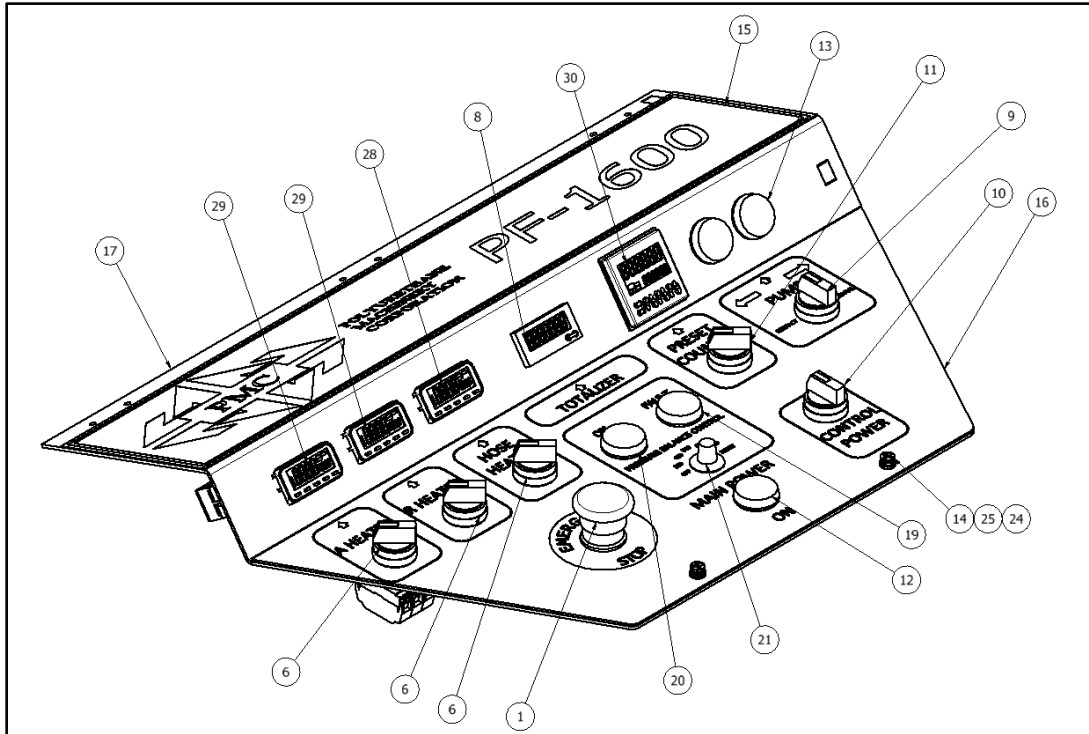


To prevent serious injury through crushing or amputation, do not work with the equipment without the safety guards installed on the moving parts. Make sure that all the safety guards are correctly reinstalled at the end of the repair or maintenance work of the equipment.

220/400 VAC CONSOLE W/PBC

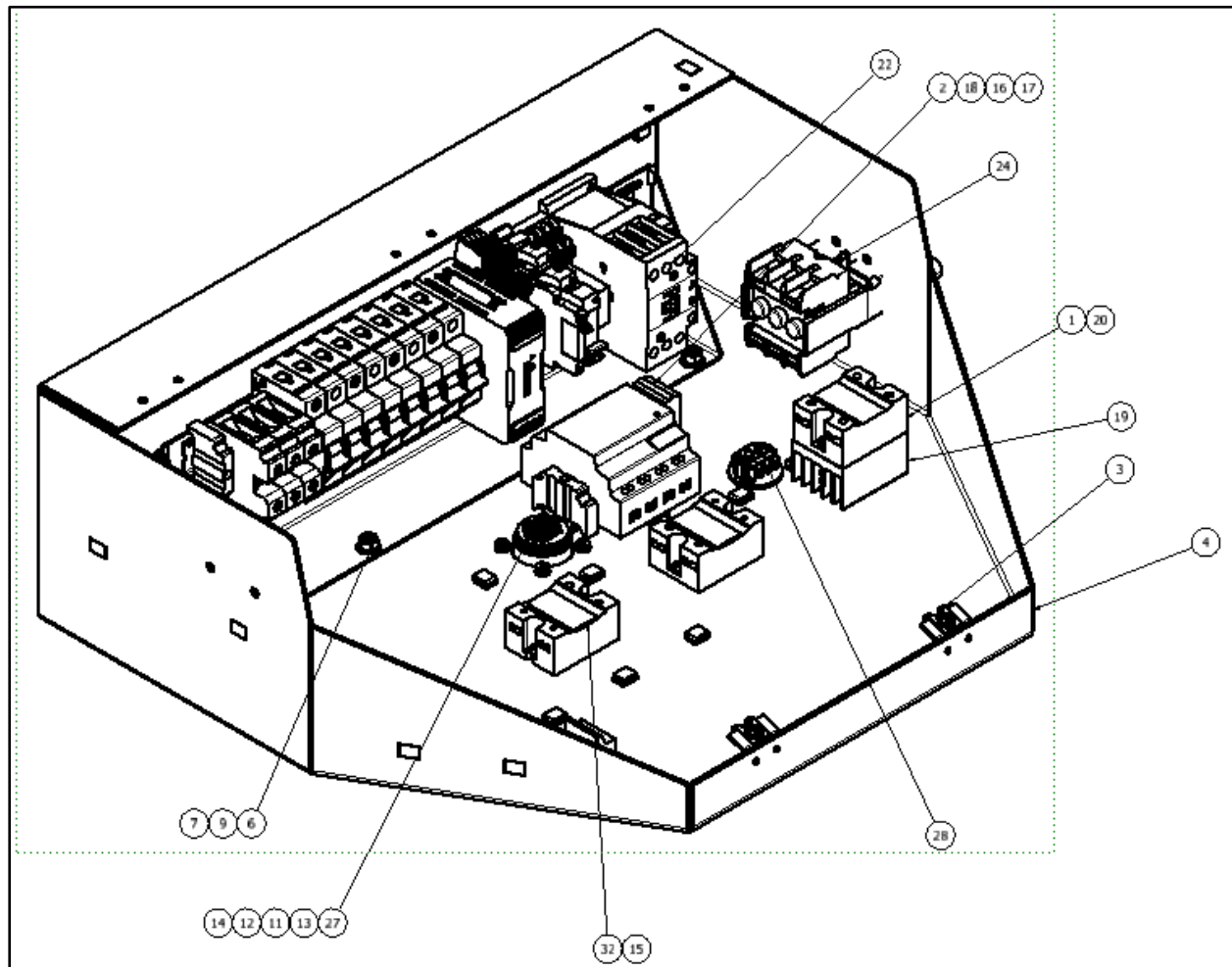
Component Identification

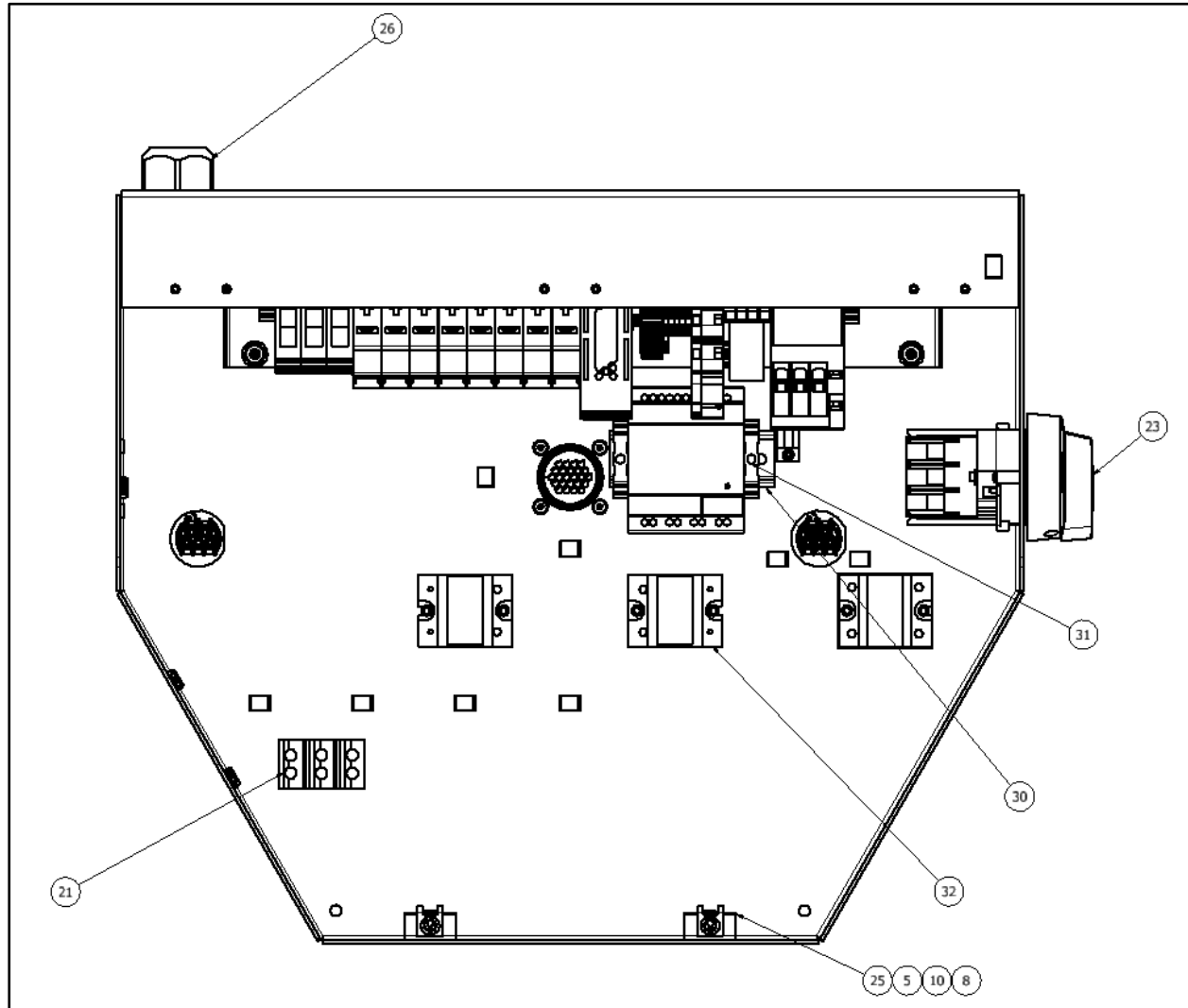
Top Panel



220/400 VAC CONSOLE W/ PBC Top Panel			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	201218	E-STOP PUSH-TWIST
2	1	201219	CONTACT BLOCK, NON-LIGHTED SPST-NC
3	6	201222	LAMP HOLDER, PUSH-IN
4	11	201221	CONTACT BLOCK, NO, PUSH IN
5	1	201220	CONTACT BLOCK, NC, PUSH IN
6	3	201223	22M SWITCH, 2 POS RED, MANUAL
7	6	201224	MOUNTING COLLAR, 22M
8	1	201217	CYCLE COUNTER
9	1	201225	22M SWITCH, 3 POS WHITE, MANUAL
10	1	201226	22M SWITCH, 3 POS RED, MANUAL
11	1	201227	22M SWITCH, 2 POS GREEN, MANUAL
12	1	201228	LIGHT UNIT, GREEN, 24VDC
13	2	201229	LIGHT UNIT, ORANGE, 24VDC
14	2	202069	FASTNER, QUARTER TURN, 82 SERIES
15	1	201277	LABEL, TOP, PF-1600
16	1	201278	LABEL, CONTROLS, PF-1600
17	1	201279	COVER W/PEMS, PF-1600
18	1	EL-196	SWITCH, ROTARY, 7 POS, 15A
19	1	201302	LIGHT UNIT, RED, 24VDC, PUSH-IN
20	1	201301	LIGHT UNIT, GREEN, 24VDC, PUSH-IN
21	1	EL-197	KNOB, 1/4 DIA. BLACK
22	4	201215	LIGHT UNIT, RED, 24VDC
23	2	201212	RETAINER, QUARTER TURN FASTNER
24	2	201213	WASHER, CUPPED, NATURAL
25	2	201214	SPRING, QUARTER TURN FASTNER
26	1	201257	LIGHT UNIT, GREEN, 24VDC
27	1	201216	LIGHT UNIT, WHITE, 24VDC
28	1	201155	TEMPERATURE CONTROLLER, HOSE
29	2	201154	TEMPERATURE CONTROLLER, HTR
30	1	201157	COUNTER, COUNTDOWN, PROGRAMMED, OMRON

Bottom Plate

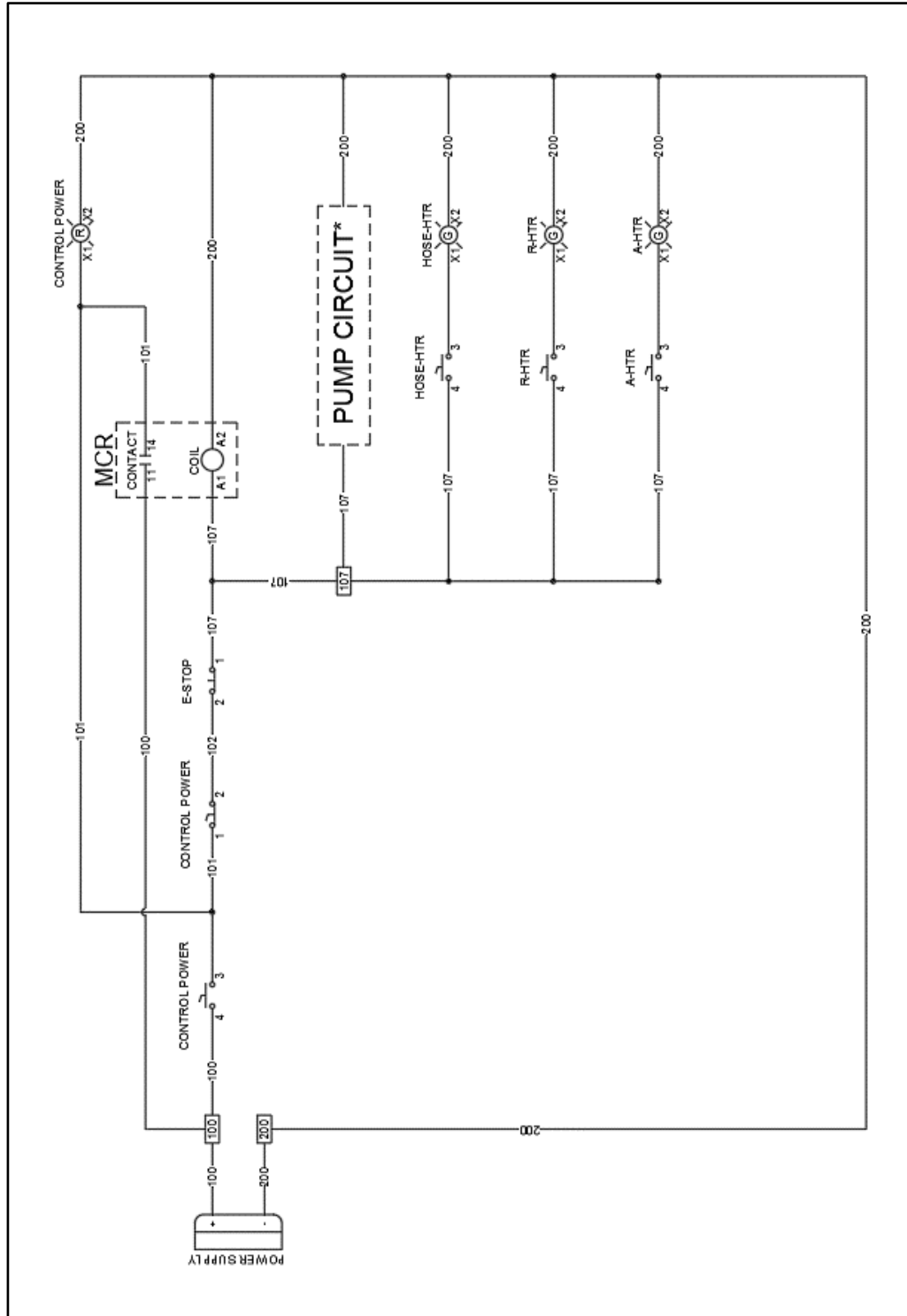




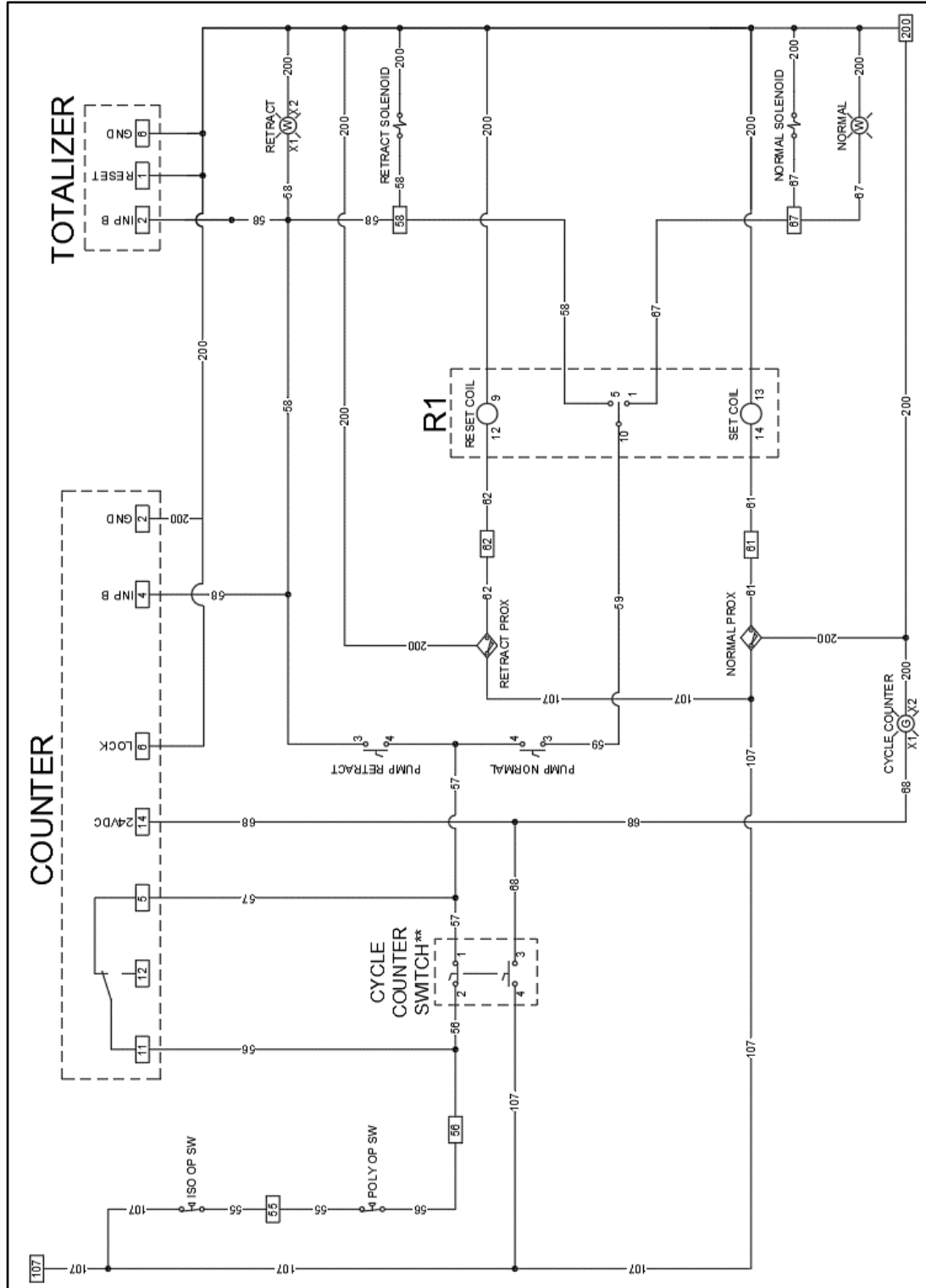
220/400 VAC CONSOLE W/ PBC Bottom Plate			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	EL-35	HOSE HEAT RELAY
2	1	200495	COUNTER, NON-RESETTABLE
3	2	201230	RECEPTACLE, 82 QUARTER TURN
4	1	201245	ENCLOSURE, BTM W/PEMS
5	4	201057	NUT, HEX, 8-32
6	4	201058	NUT, HEX, 1/4-20
7	4	201056	WASHER, FLAT, 1/4
8	4	201059	WASHER, LOCK, NO 8
9	4	201060	WASHER, LOCK, 1/4
10	4	201061	WASHER, FLAT, NO 8
11	4	201063	WASHER, FLAT, NO 6
12	4	201062	WASHER, LOCK, NO 6
13	4	201064	NUT, HEX, 6-32
14	4	201065	SHCS, #6-32 X 0.375, 18-8 SS
15	4	201066	SHCS, 8-32 X 1/4, BO
16	2	201067	WASHER, LOCK, NO 5
17	2	201068	WASHER, FLAT, NO 5
18	2	201069	SHCS, 5-40 X 1/4, BO
19	1	EL-35-1	HEAT SINK
20	2	201072-1	SHCS, 8-32X 1 1/2, BO
21	3	201283	PANEL JACK, SNAP IN, TYPE E THERMOCOUPLE
22	1	201610	PWR RAIL ASY, 220V 1 PH, PF-1600
	1	201300	PWR RAIL ASY, 220V 3 PH, PF-1600
	1	201617	PWR RAIL ASY, 400V 3 PH, PF-1600
23	1	201303	DOOR MOUNTING KIT, ROTARY DISCONNECT
24	1	201304	DISCONNECT, ROTARY, 80A, 3 POLE
25	2	201231	BRACKET, RECEPTACLE
26	1	201291	STRAIN RELIEF, .590-1.00 ID
27	1	201258	CABLE ASSY, 24 SUPPLY
28	2	201531	CONNECTOR, DEVICE, REAR MOUNTING
29	1	EL-194-2	PROGRAMMED, EZ RELAY
30	1	EL-147	DIN RAIL, 35 X 7.5 MM
31	2	EL-152	END STOP; 35MM
32	2	EL-34	HOSE HEAT RELAY

Schematics

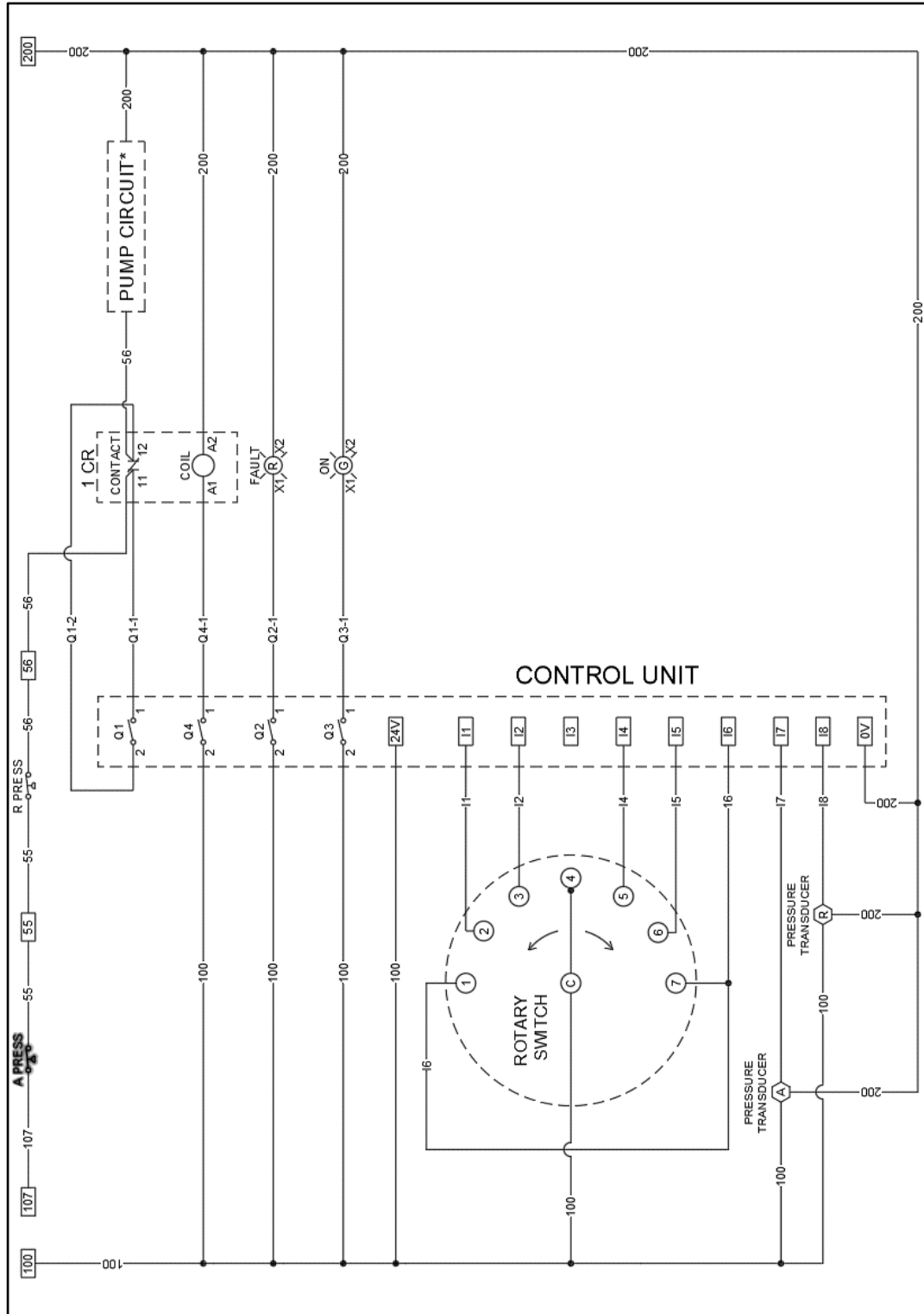
24 VDC Power Circuit



Pump Circuit



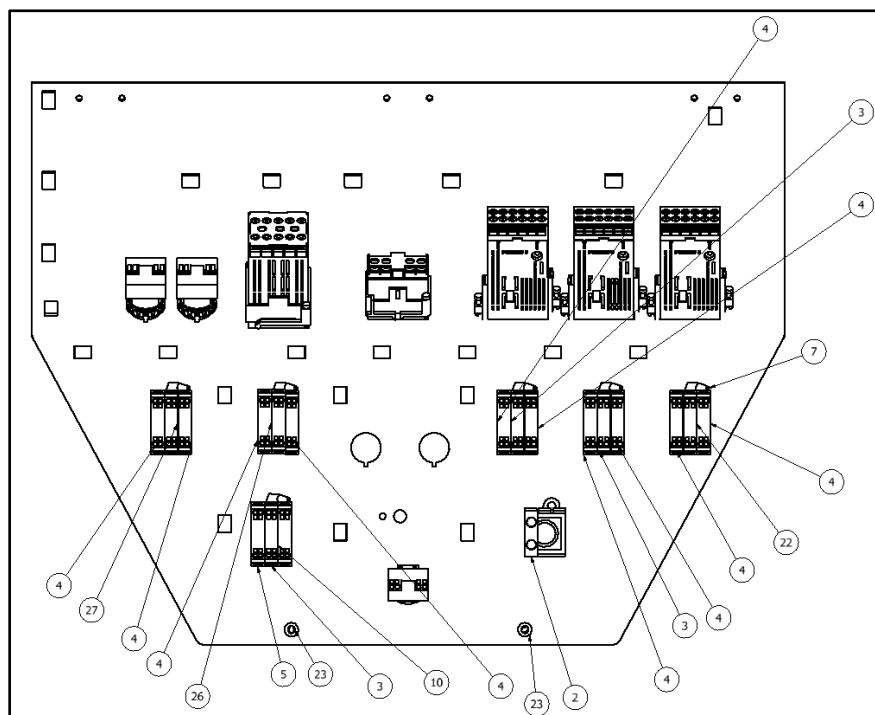
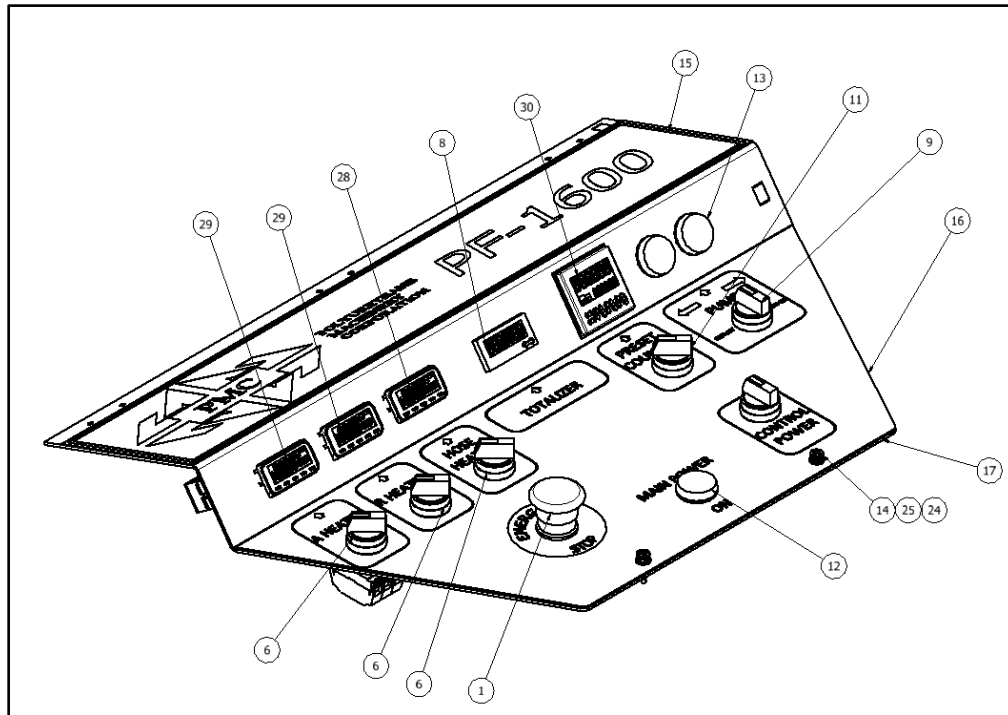
Pressure Balance Control Circuit



220/400 VAC CONSOLE W/O PBC

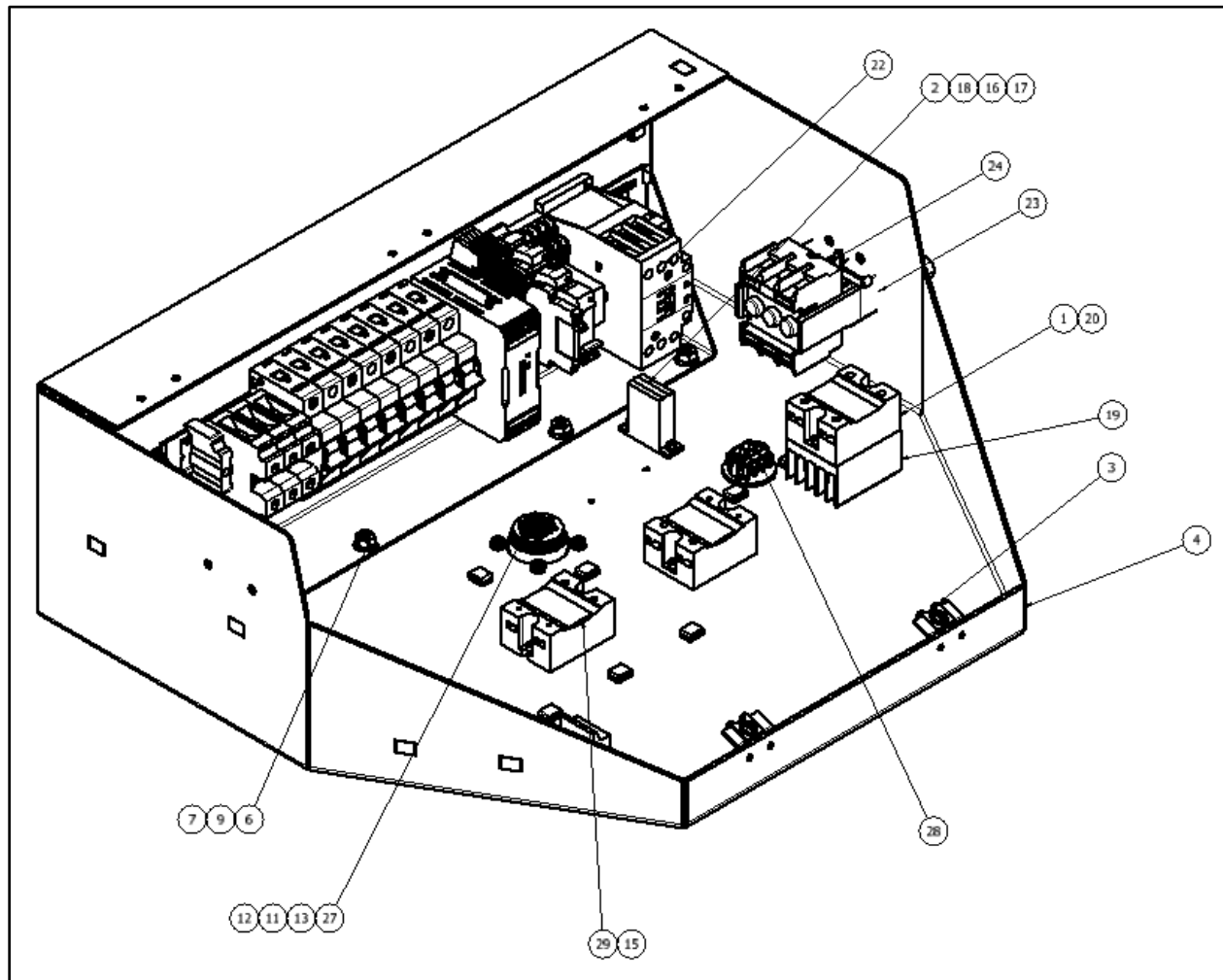
Component Identification

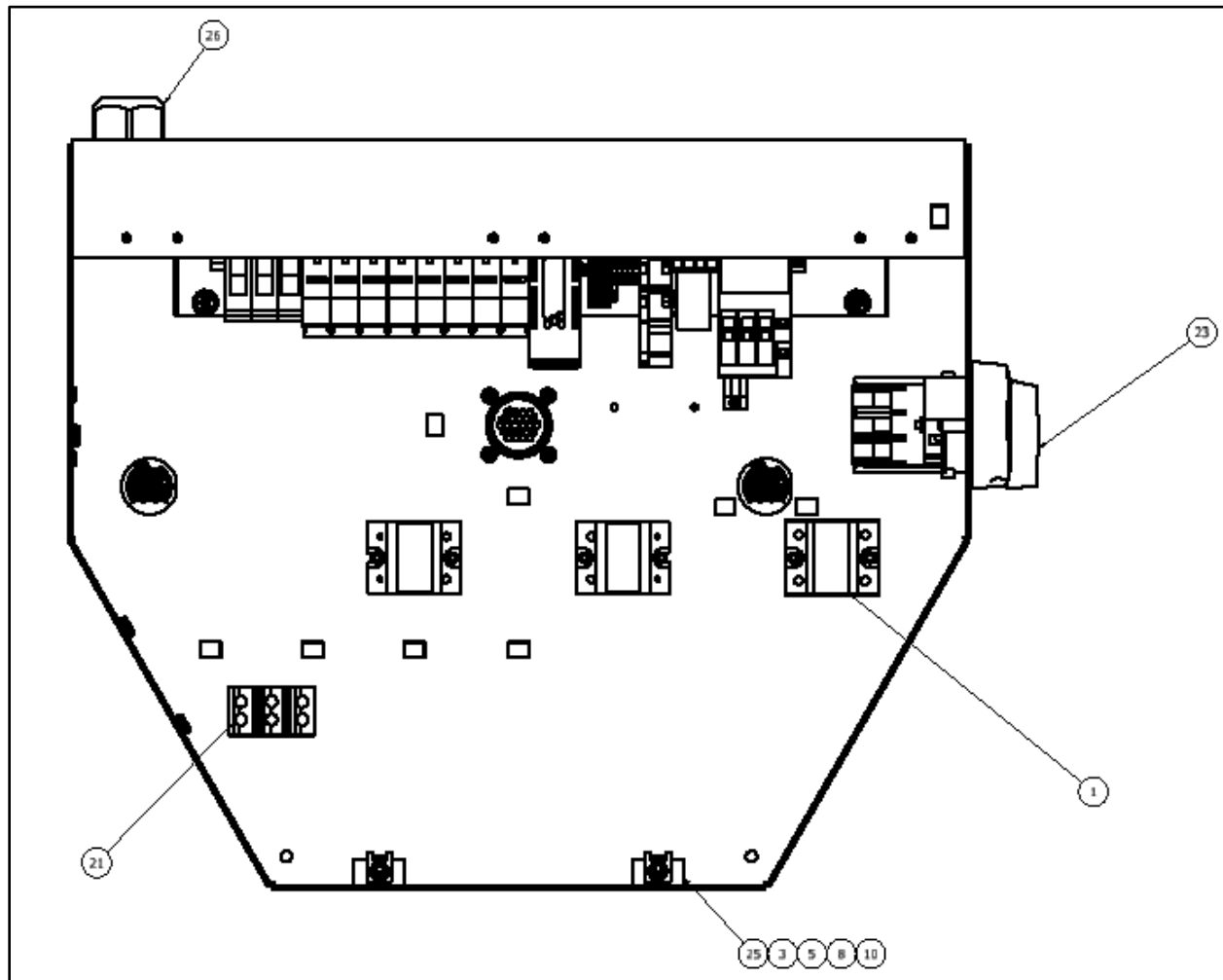
Front Panel



220/400 VAC CONSOLE W/O PBC			
Front Panel			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	201218	E-STOP PUSH-TWIST
2	1	201219	CONTACT BLOCK, NON-LIGHTED SPST-NC
3	6	201222	LAMP HOLDER, PUSH-IN
4	11	201221	CONTACT BLOCK, NO, PUSH IN
5	1	201220	CONTACT BLOCK, NC, PUSH IN
6	3	201223	22M SWITCH, 2 POS RED, MANUAL
7	6	201224	MOUNTING COLLAR, 22M
8	1	201217	CYCLE COUNTER
9	1	201225	22M SWITCH, 3 POS WHITE, MANUAL
10	1	201226	22M SWITCH, 3 POS RED, MANUAL
11	1	201227	22M SWITCH, 2 POS GREEN, MANUAL
12	1	201228	LIGHT UNIT, GREEN, 240VDC
13	2	201229	LIGHT UNIT, ORANGE, 24VDC
14	2	202069	FASTNER, QUARTER TURN, 82 SERIES
15	1	201277	LABEL, TOP, PF-1600
16	1	201569	LABEL, CONTROLS, PF-1600
17	1	201279	COVER W/PEMS, PF-1600
22	4	201215	LIGHT UNIT, RED, 24VDC
23	2	201212	RETAINER, QUARTER TURN FASTNER
24	2	201213	WASHER, CUPPED, NATURAL
25	2	201214	SPRING, QUARTER TURN FASTNER
26	1	201257	LIGHT UNIT, GREEN, 24VDC
27	1	201216	LIGHT UNIT, WHITE, 24VDC
28	1	201155	TEMPERATURE CONTROLLER, HOSE
29	2	201154	TEMPERATURE CONTROLLER, HTR
30	1	201157	COUNTER, COUNTDOWN, PROGRAMMED, OMRON

Bottom Plate

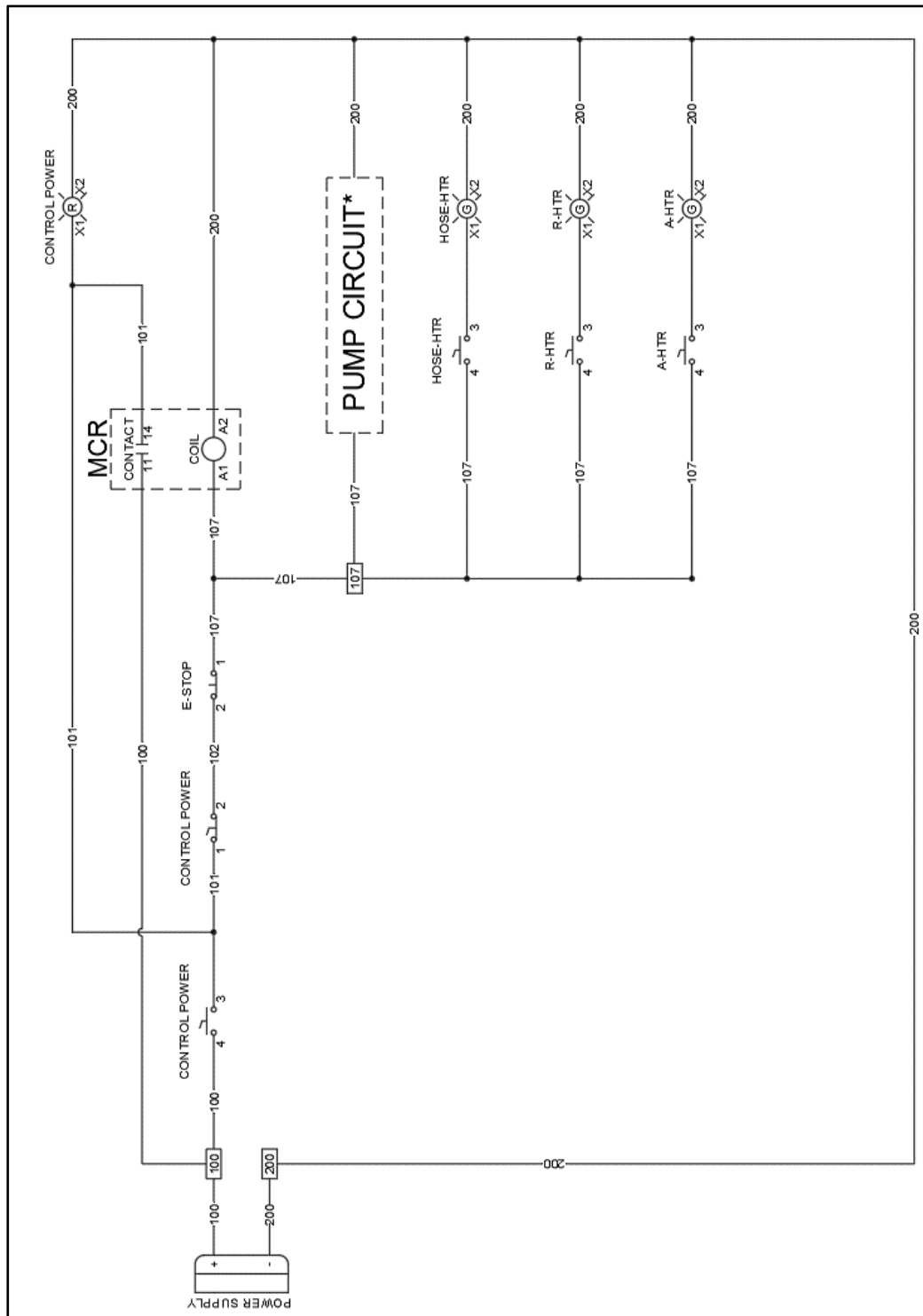




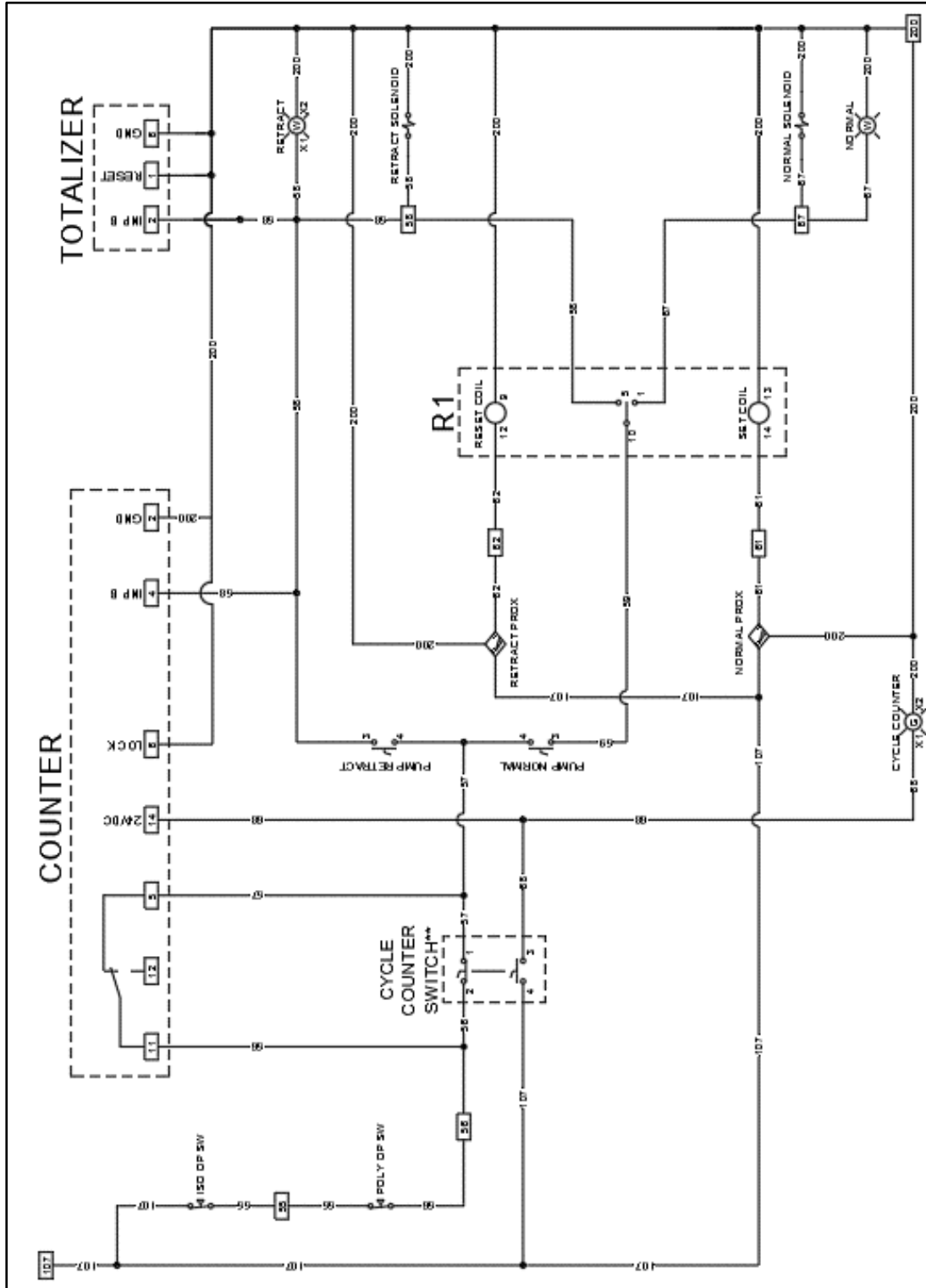
220/400 VAC CONSOLE W/O PBC Bottom Plate			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	EL-35	HOSE HEAT RELAY
2	1	200495	COUNTER, NON-RESETTABLE
3	2	201230	RECEPTACLE, 82 QUARTER TURN
4	1	201245	ENCLOSURE, BTM W/PEMS
5	4	201057	NUT, HEX, 8-32
6	4	201058	NUT, HEX, 1/4-20
7	4	201056	WASHER, FLAT, 1/4
8	4	201059	WASHER, LOCK, NO 8
9	4	201060	WASHER, LOCK, 1/4
10	4	201061	WASHER, FLAT, NO 8
11	4	201063	WASHER, FLAT, NO 6
12	4	201062	WASHER, LOCK, NO 6
13	4	201064	NUT, HEX, 6-32
14	4	201065	SHCS, #6-32 X 0.375, 18-8 SS
15	4	201066	SHCS, 8-32 X 1/4, BO
16	2	201067	WASHER, LOCK, NO 5
17	2	201068	WASHER, FLAT, NO 5
18	2	201069	SHCS, 5-40 X 1/4, BO
19	1	EL-35-1	HEAT SINK
20	2	201072-1	SHCS, 8-32X 1 1/2, BO
21	3	201283	PANEL JACK, SNAP IN, TYPE E THERMOCOUPLE
22	1	201610	PWR RAIL ASY, 220V 1 PH, PF-1600
	1	201300	PWR RAIL ASY, 220V 3 PH, PF-1600
	1	201617	PWR RAIL ASY, 400V 3 PH, PF-1600
23	1	201303	DOOR MOUNTING KIT, ROTARY DISCONNECT
24	1	201304	DISCONNECT, ROTARY, 80A, 3 POLE
25	2	201231	BRACKET, RECEPTACLE
26	1	201291	STRAIN RELIEF, .590-1.00 ID
27	1	201258	CABLE ASSY, 24 SUPPLY
28	2	201531	CONNECTOR, DEVICE, REAR MOUNTING
29	2	EL-34	HOSE HEAT RELAY

Schematics

24 VDC Power Circuit

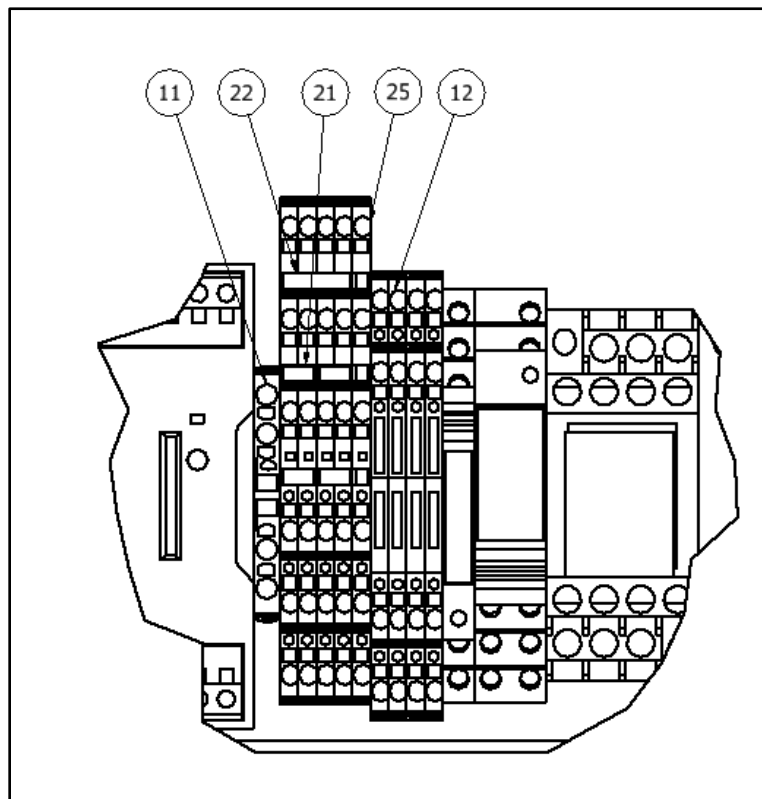
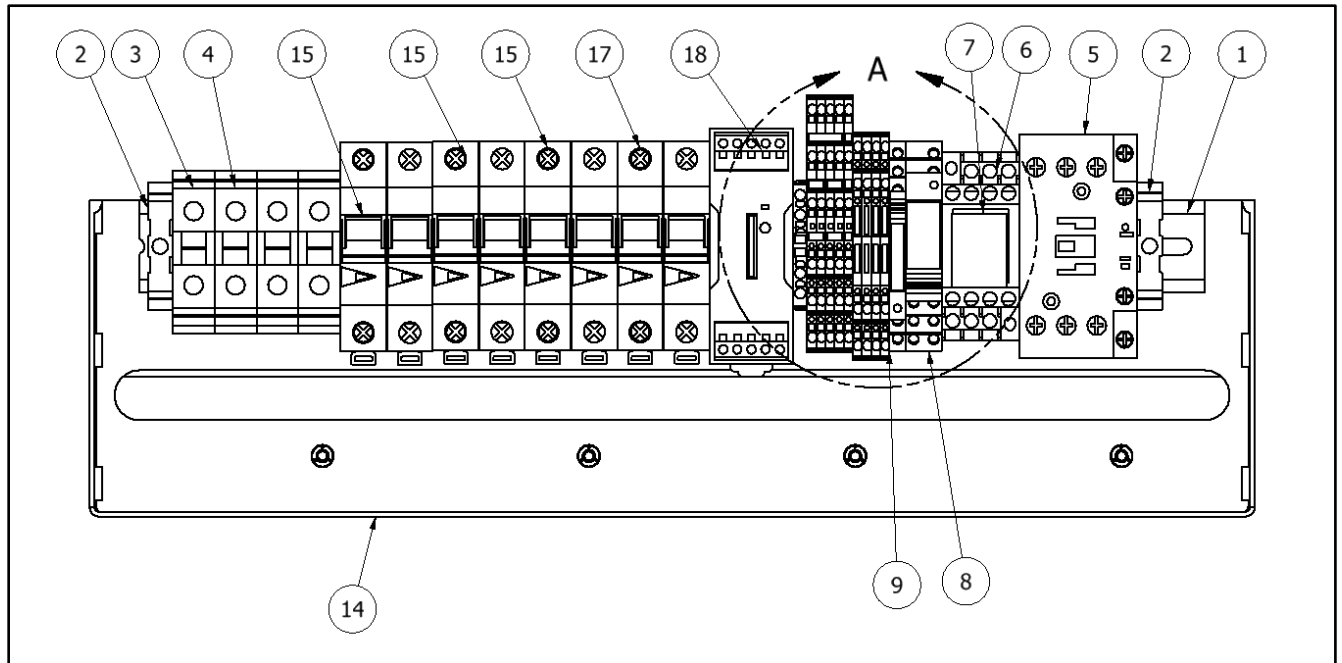


Pump Circuit



220 VAC-3 PHASE POWER RAIL

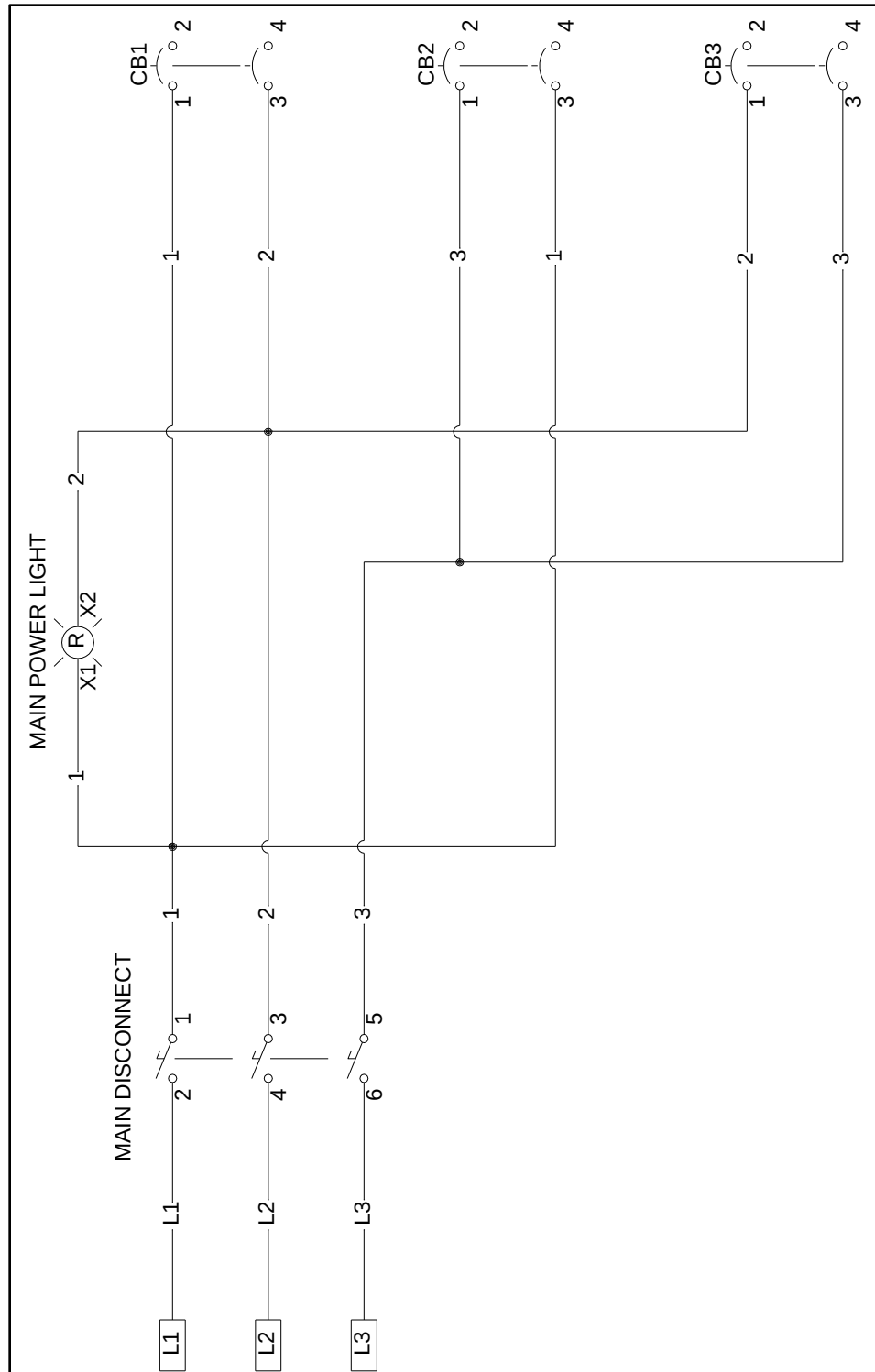
Component Identification



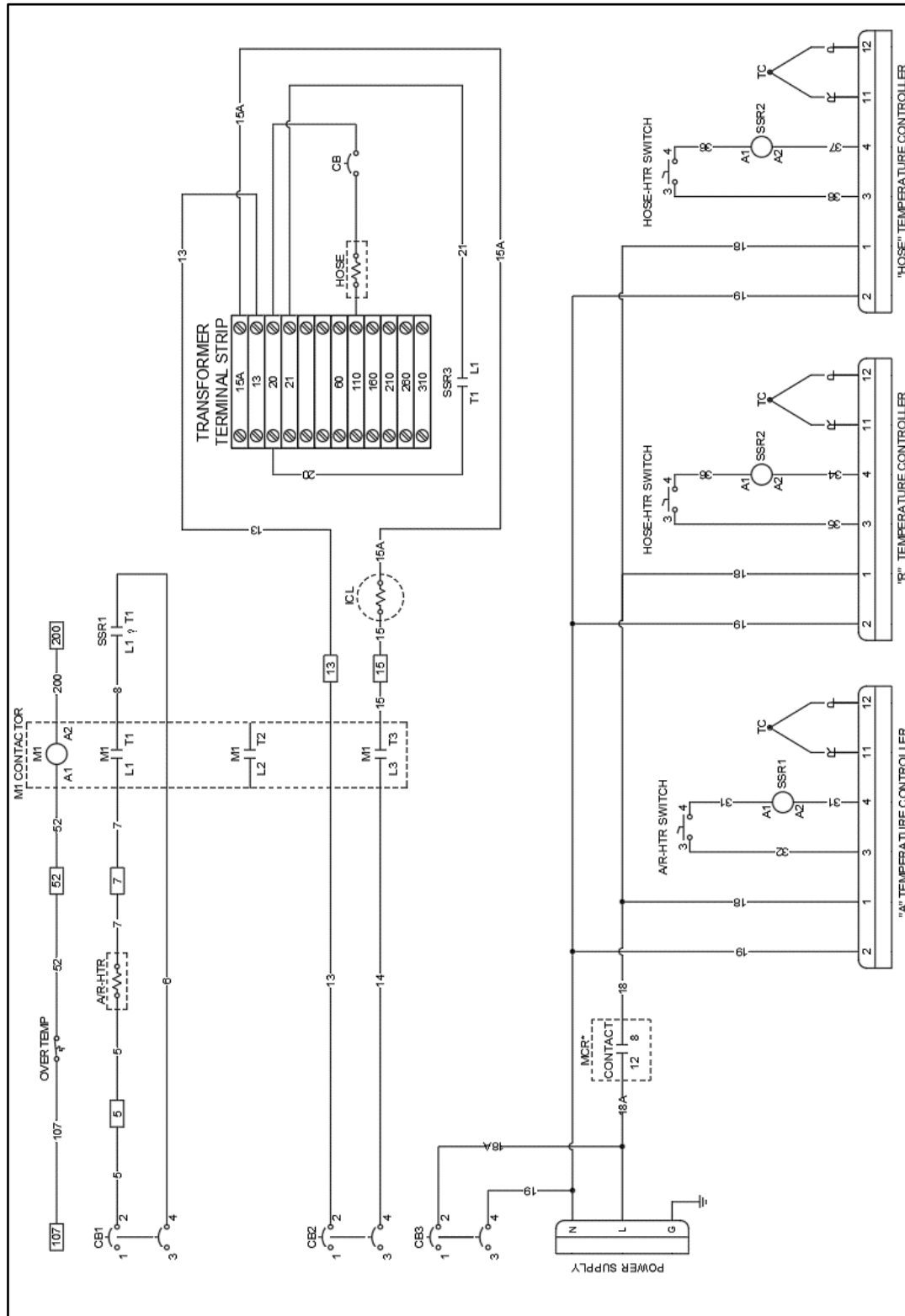
220 VAC-3 PHASE POWER RAIL			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	EL-147	DIN RAIL, 35 X 7.5mm, 16.000in
2	2	EL-152	END STOP; 35MM
3	1	EL-146	TERMINAL BLOCK; 16MM, GRND
4	3	EL-143	TERMINAL BLOCK; 16MM
5	1	EL-118	CONTACTOR; 32A; 24VDC COIL
6	1	EL-155	RELAY SOCKET
7	1	EL-154	LATCHING RELAY; 24V
8	1	EL-174	SS Relay, 24VDC
9	1	EL-198	RELAY, SPDT, 24VDC
10	1	201248	CABLE WAY, 1.5 X 1 X 17.500in
11	1	201045	TERMINAL BLOCK GROUND PUSH TO CONNECT
12	4	201047	TERMINAL BLOCK 2 TIER PUSH TO CONNECT
14	1	201210	BRCKT, DIN RAIL,WIREWAY MNT
15	3	EL-188	CIRCUIT BREAKER, 32A, 2 POLE
17	1	EL-114	CIRCUIT BREAKER, 3A, 2 POLE, TYP
18	1	EL-122	POWER SUPPLY, 24VDC
19	13	201055	BHCS, 10-32 X .250, BO
21	4	201263	JUMPER, 2 POSITION
22	1	201264	JUMPER, 4 POSITION
23	1	201247	CABLE WAY, .75 X .75
25	5	201046	TERMINAL BLOCK 4 TIER PUSH TO CONNECT
26	48	201266	MARKER, STRIP, 3.5mm WIDTH

Schematics

Incoming Power

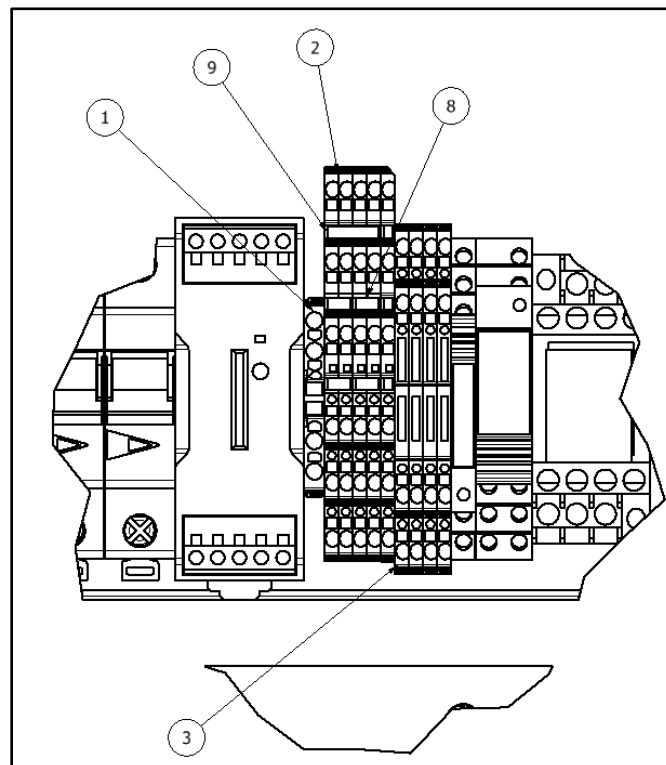
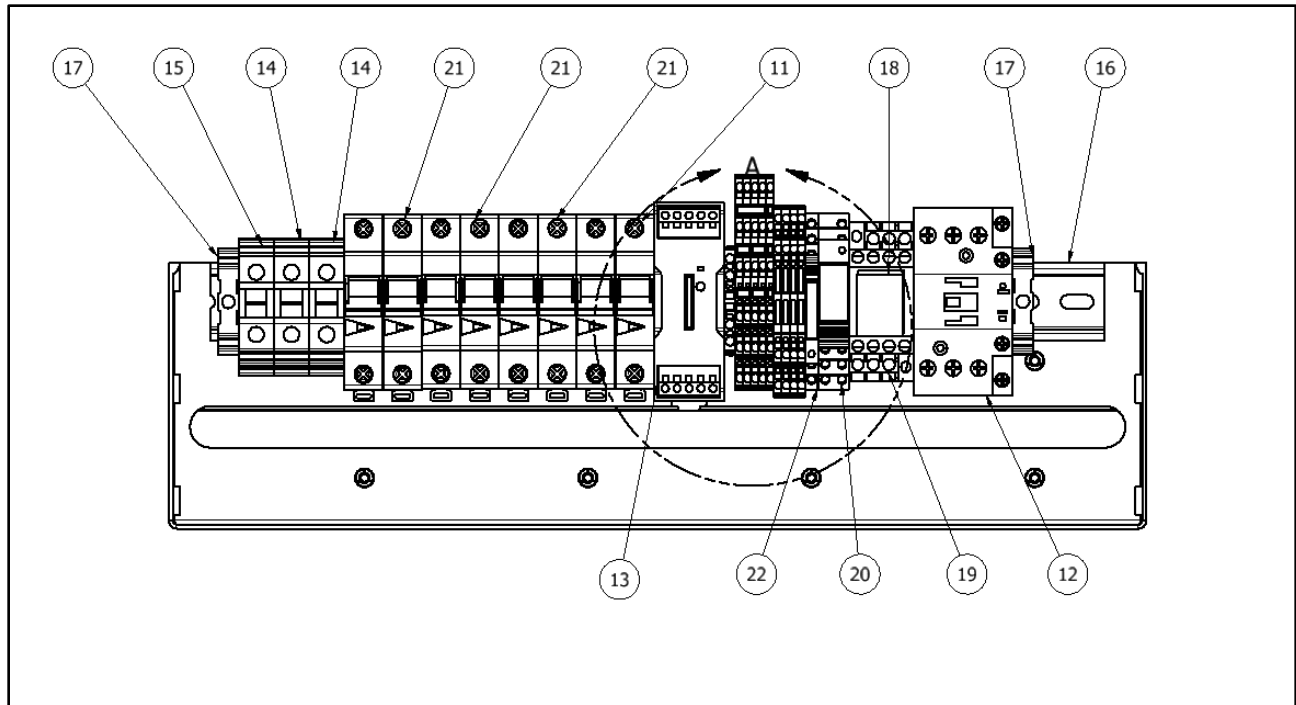


Heater Circuit



220 VAC-1 PHASE POWER RAIL

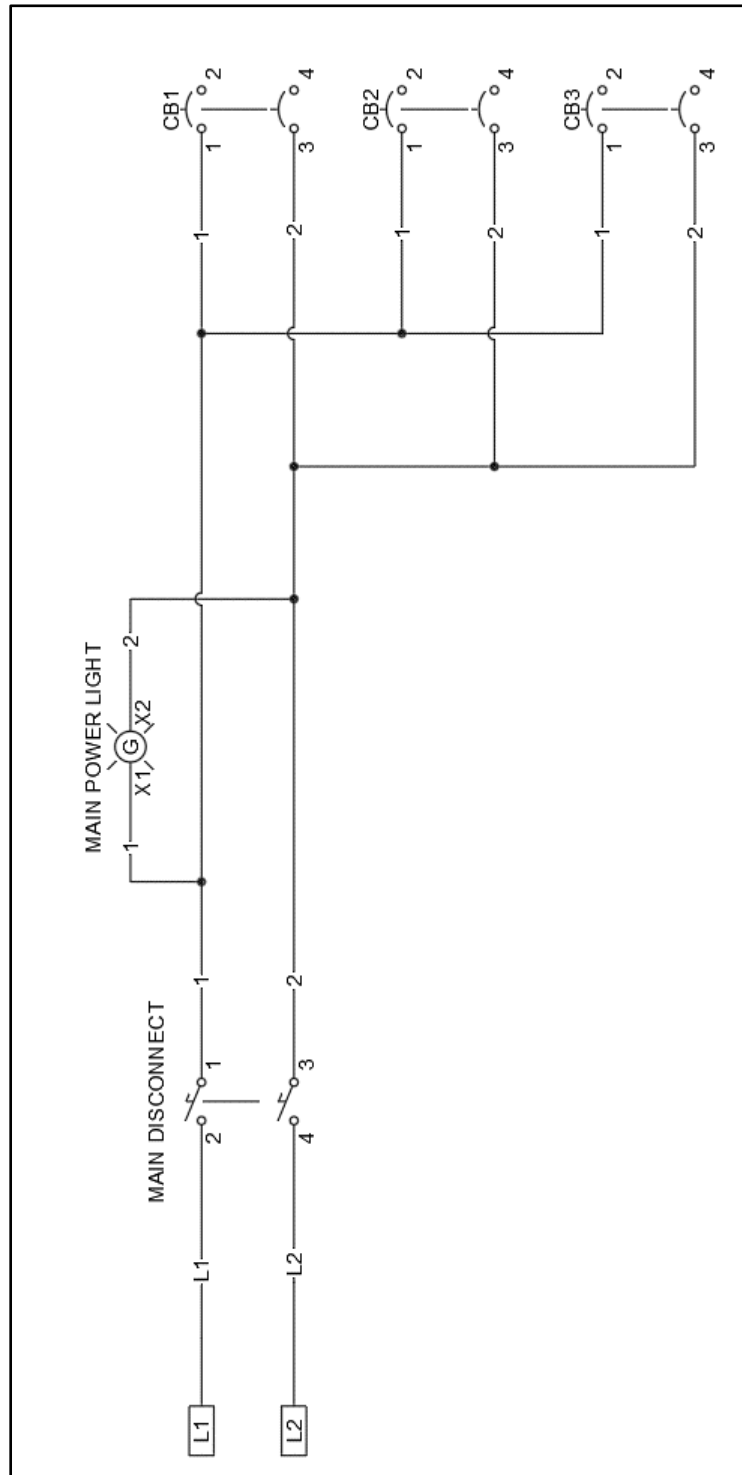
Component Identification



220 VAC-1 PHASE POWER RAIL			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	201045	TERMINAL BLOCK GROUND PUSH TO CONNECT
2	5	201046	TERMINAL BLOCK 4 TIER PUSH TO CONNECT
3	4	201047	TERMINAL BLOCK 2 TIER PUSH TO CONNECT
4	13	201055	BHCS, 10-32 X .250, BO
5	1	201210	BRCKT, DIN RAIL,WIREWAY MNT
6	1	201247	CABLE WAY, .75 X .75
7	1	201248	CABLE WAY, 1.5 X 1 X 17.500in
8	4	201263	JUMPER, 2 POSITION
9	1	201264	JUMPER, 4 POSITION
10	48	201266	MARKER, STRIP, 3.5mm WIDTH
11	1	EL-114	CIRCUIT BREAKER, 3A, 2 POLE, TYP
12	1	EL-118	CONTACTOR; 32A; 24VDC COIL
13	1	EL-122	POWER SUPPLY, 24VDC
14	2	EL-143	TERMINAL BLOCK; 16MM
15	1	EL-146	TERMINAL BLOCK; 16MM, GRND
16	1	EL-147	DIN RAIL, 35 X 7.5mm, 16.000in
17	2	EL-152	END STOP; 35MM
18	1	EL-154	LATCHING RELAY; 24V
19	1	EL-155	RELAY SOCKET
20	1	EL-174	SS Relay, 24VDC
21	3	EL-188	CIRCUIT BREAKER, 32A, 2 POLE
22	1	EL-198	RELAY, SPDT, 24VDC

Schematics

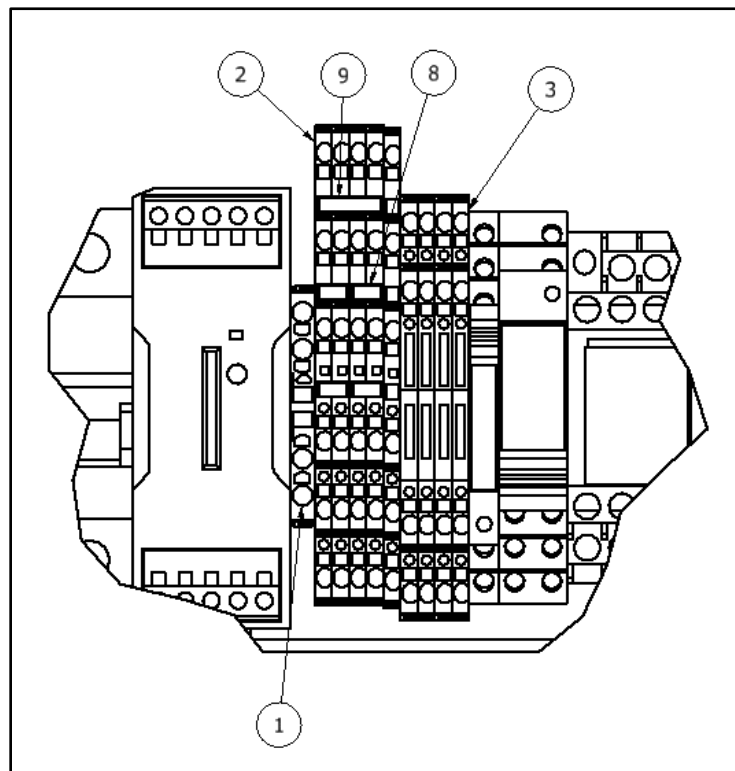
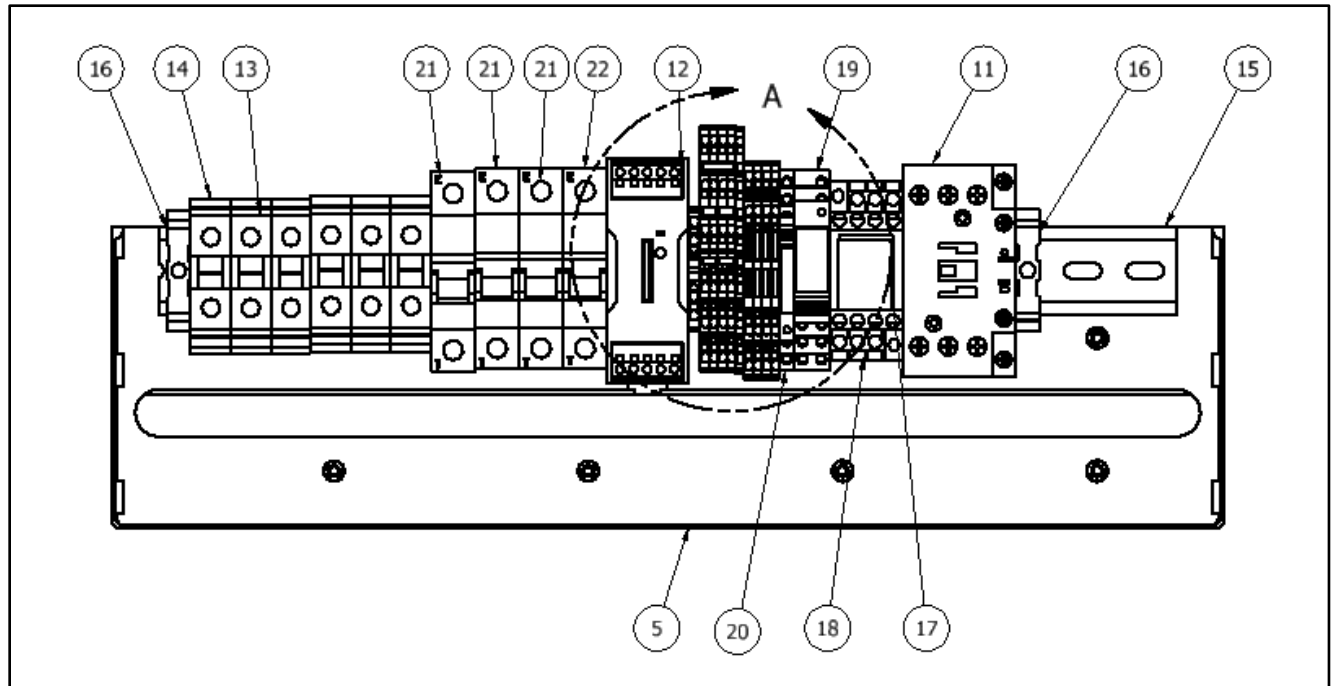
Incoming Power



[illegible]

400 VAC-3 PHASE POWER RAIL

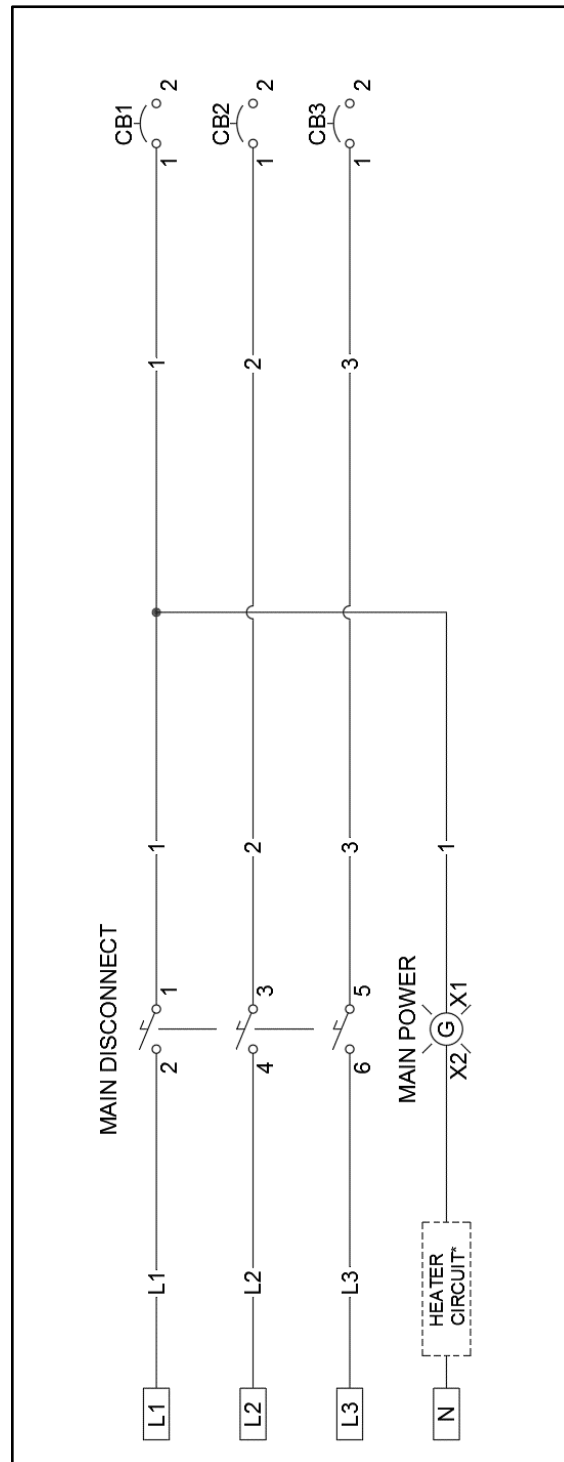
Component Identification



400 VAC-3 PHASE POWER RAIL			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	201045	TERMINAL BLOCK GROUND PUSH TO CONNECT
2	5	201046	TERMINAL BLOCK 4 TIER PUSH TO CONNECT
3	4	201047	TERMINAL BLOCK 2 TIER PUSH TO CONNECT
4	13	201055	BHCS, 10-32 X .250, BO
5	1	201210	BRCKT, DIN RAIL, WIREWAY MNT
6	1	201247	CABLE WAY, .75 X .75
7	1	201248	CABLE WAY, 1.5 X 1 X 17.500in
8	4	201263	JUMPER, 2 POSITION
9	1	201264	JUMPER, 4 POSITION
10	48	201266	MARKER, STRIP, 3.5mm WIDTH
11	1	EL-118	CONTACTOR; 32A; 24VDC COIL
12	1	EL-122	POWER SUPPLY, 24VDC
13	5	EL-143	TERMINAL BLOCK; 16MM
14	1	EL-146	TERMINAL BLOCK; 16MM, GRND
15	1	EL-147	DIN RAIL, 35 X 7.5mm, 16.000in
16	2	EL-152	END STOP; 35MM
17	1	EL-154	LATCHING RELAY; 24V
18	1	EL-155	RELAY SOCKET
19	1	EL-174	SS Relay, 24VDC
20	1	EL-198	RELAY, SPDT, 24VDC
21	3	EL-191	CIRCUIT BREAKER, 32A, 1 POLE
22	1	EL-186	CIRCUIT BREAKER, 3A, 1 POLE

Schematics

Incoming Power



Heater Circuit

