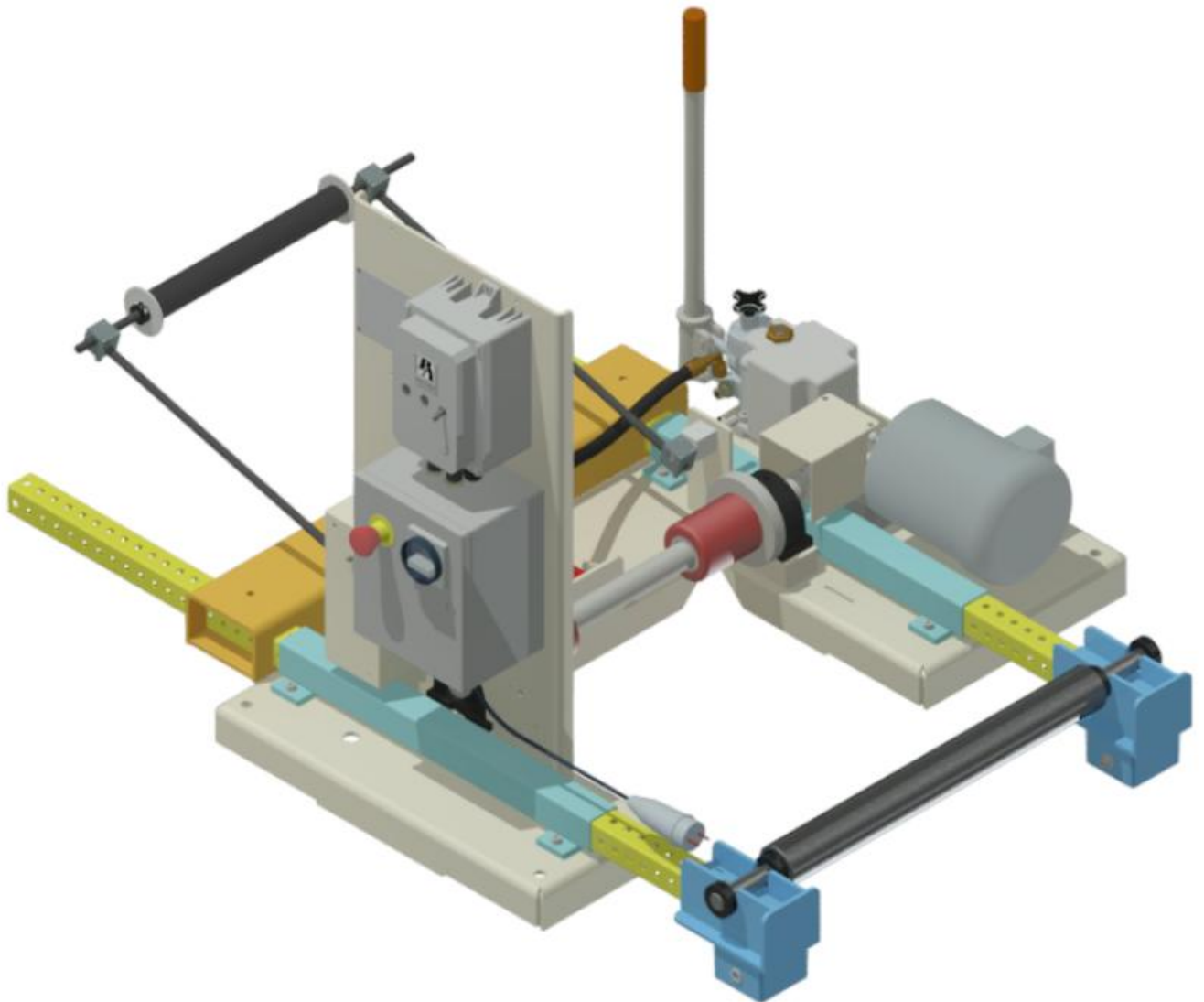




# **P/A INDUSTRIES INC.**

522 Cottage Grove Road • Bloomfield, Connecticut 06002 U.S.A. • Web: [www.pa.com](http://www.pa.com)  
Telephone: 860-243-8306 • Fax: 860-242-4870 • Email: [sales@pa.com](mailto:sales@pa.com)

## Traverse Spool Reel



# Table of Contents

---

<b>1</b>	<b>Introduction .....</b>	<b>3</b>
1.1	<i>General Safety program .....</i>	3
1.2	<i>Warning.....</i>	3
1.3	<i>Warranty Program .....</i>	4
1.4	<i>Receiving and Inspection.....</i>	4
<b>2</b>	<b>Installation and Assembly .....</b>	<b>5</b>
2.1	<i>Mechanical .....</i>	5
2.2	<i>Electrical.....</i>	5
<b>3</b>	<b>Setup and Operation.....</b>	<b>5</b>
<b>4</b>	<b>Maintenance .....</b>	<b>6</b>
4.1	<i>Mechanical .....</i>	6
<b>5</b>	<b>Troubleshooting .....</b>	<b>6</b>
<b>6</b>	<b>Specifications .....</b>	<b>7</b>
6.1	<i>Overall Model Specifications .....</i>	7
6.2	<i>Parts List.....</i>	9
6.3	<i>Dimensions &amp; Drawings .....</i>	11

***Thank you for selecting our product for your coil handling needs. This manual will provide you with all the information necessary to install, operate, apply and maintain your machine. Safety is always a priority so please follow all the caution and warning stickers labeled on our machines.***

## 1 Introduction



**Please read this manual thoroughly before installing, operating, applying and maintaining this machinery. Failure to do so may result in serious injury to yourself and/or others.**

### 1.1 General Safety program

Accident free operation will result from a well developed, management sponsored and enforced safety program. Of vital importance to any successful program is the proper selection of guards and devices.

However, there is no safety device that will bring “automatic” safety to your operation.

Of equal importance to this proper selection of the guard and the device is the training of your personnel. Each person must be trained as to the operation of the guard or safety device, highlighting why they have been provided on the equipment. Rules for safe operating should be written and enforced at all times. A final major concern of an effective safety program is regularly scheduled inspection and maintenance of all of the equipment.

To ensure continued safety at all times, top management, line supervision, safety engineers and all employees must assume their proper share of the responsibility in the program. Only as a group, one that knows your own operation and its problems, can you carry out an effective safety program.

To assist you in the development of and continued use of safety programs, many safety minded groups have made guidelines available to you. However, you must know when and how to apply these guidelines. The manufacturer provides information to assist you in properly adjusting and maintaining your equipment. There is no short cut to proper safety; therefore, it is recommended that you comply with their recommendations at all times.

### 1.2 Warning

This equipment offers various means of operating or controlling machines. The operator must not be in or near the point-of-operation of the machine, or the operating parts of any equipment installed on the machine, or bodily injury could result. The EMPLOYER must post adequate warning signs onto the machine with proper warnings for his machine and the specific application to which the machine and equipment are being applied. Occupational Safety and Health Act (OSHA) Sections 1910.211, 1910.212, and 1910.217 contain installation information on the distance between danger points and point-of-operation guards and devices. No specific references have been made to which paragraph of OSHA 1910.211, 1910.212, 1910.217 or any other applicable sections because the paragraphs may change with each edition of the publication of OSHA provisions. All equipment manufactured by us is designed to meet the construction standards of OSHA in effect at the time of sale, but the EMPLOYER installs the equipment so the EMPLOYER is responsible for installation, use, application, training, and maintenance, as well as adequate signs on the machine onto which this equipment will be installed. Remember, OSHA says that the EMPLOYER must use operating methods designed to control or eliminate hazards to operating personnel. It shall be the responsibility of the EMPLOYER to establish and follow a program of periodic and regular inspections of his machine to insure that all their parts, auxiliary equipment, and safeguards are in a safe operating condition and adjustment. Each machine

should be inspected and tested no less than weekly to determine the condition of the machine. Necessary maintenance or repair of both shall be performed and completed before the machine is operated. The EMPLOYER shall maintain records of these inspections and the maintenance work performed. Our Company is not responsible to notify the user of this equipment of future changes in State or Federal laws, or construction standards.

### 1.3 Warranty Program

We warrant our new parts against defects under normal use and service for a period of 12 months after date of shipment. Our obligation under this warranty is limited to replacing or repairing (at our option) the defective part without charge, F.O.B. our plant in Bloomfield, Connecticut. The defective part must be forwarded to our plant, freight prepaid, for our inspection prior to replacement or repair. **EXCEPT AS EXPRESSLY PROVIDED HEREIN, THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING A WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** Furthermore, the seller does not warrant or represent that the equipment complies with the provisions of any law, particularly including the Occupational Safety and Health Act of 1970, and regulations promulgated there under. In no event shall we be liable for special, indirect incidental or consequential damages, however rising.

### 1.4 Receiving and Inspection

**SPECIAL NOTE:** P/A INDUSTREIS INC. ASSUMES NO RESPONSIBILITY IN CONNECTION HEREWITH, NOR CAN IT BE ASSUMED THAT ALL ACCEPTABLE SAFETY MEASURES ARE CONTAINED IN THIS PUBLICATION, OR THAT OTHER ADDITIONAL MEASURES MAY NOT BE REQUIRED UNDER PARTICULAR OR EXCEPTIONAL CIRCUMSTANCES OR CONDITIONS.

#### RECEIVING INSPECTION

Before removing the unit from its packaging, check for visual damage, especially if crate, skid, or carton had been damaged in transit. Any damage caused by shipping should be immediately reported to the carrier. If the unit appears in satisfactory condition, remove all the packaging. Read these instructions. They are provided to answer questions regarding the Operation and use of this equipment.

## 2 Installation and Assembly

### 2.1 Mechanical

The TSR-D is an engineered product designed to feed stock from traverse wound material delivered on wooden spools. The VFD drive allows for smooth acceleration and deceleration to automatically match variable speed requirements. Once the TSR-D has been started, the control system immediately assumes command and automatically controls the stock feed conditions.

The  $\frac{3}{4}$  HP AC motor transmits power through a high strength cast iron housed single stage worm gear speed reducer, providing maximum torque ratings and power transmission efficiency. Pipe plugs are provided for easy oil filling, draining, and level checking. All gearing conforms to AGMA class 8 or better. Spool shafts and drive collars are made of quality steel with high durometer Polyurethane drive and idle surfaces.

The dual jacking mechanisms and 1/8 HP gear motor are designed to handle industrial loading and unloading procedures. A simple momentary switch on the control panel allows the operator to load coils with no lifting required. Loading a full coil is as simple as opening the swing gate, rolling in the new coil, closing the gate and turning the switch in the raise position.

### 2.2 Electrical

None required.

## 3 Setup and Operation

- First place the TSR so that it is in position with the production line and secure the frame to the floor.
- To load a spool/coil, first ensure that the Stop Auto button has been pressed and that the drive roller is immobile.
- Hold the Raise/ Lower switch in the lower position until the rollers' center distance to one another are approximately 60% of the diameter coil being loaded.
- Open the swing gate by pulling the black handle on top of the locking pin.
- Roll the spool in between the (2) rollers, adjusting the guide collars to the appropriate width. Each roller should contact the spool as close to its' center as possible.
- Close the swing gate and ensure the locking pin has dropped **entirely** through the swing gate. It may be necessary to hold the Raise/ Lower switch in the Lower position a bit longer to make this possible.
- After the locking pin has been verified and going entirely through the swing gate, hold the Raise/ Lower switch until the bottom of the spool is approximately  $\frac{1}{2}$ " (12mm) off the ground.
  
- For control function, **E-Stop** removes power from the entire control. Push to engage, twist clockwise to disengage (power up).
- **Power On**: Brings unit out of standby mode, and prepares the control for either a lift or run command.

- **Forward/ Reverse:** Determines direction of spool rotation once Auto mode is engaged.
- **Start Auto:** Commands the unit to rotate the spool and feed material in the direction specified by the Forward/ Reverse switch. Speed is controlled by the dancer arm position.
- **Stop Auto:** Stops spool rotation, while leaving the unit in standby mode. Stop Auto mode also enables the jacking mechanism.
- **Raise/ Lower:** Commands the idler roller to expand or contract, which raises and lowers the coil. \*\*\*NOTE: Raise/ Lower is disabled in Auto mode. Auto Stop must be pressed in order to operate this feature.
- **Fault:** This light will signal when the drive is not ready, or detects an abnormality. To reset this light and resume normal operation, cycle the power using the main disconnects located on the side of the control box.

## **4 Maintenance**

### **4.1 Mechanical**

Correct lubrication is essential for long reliable service life. Bearing flanges should be lubricated on a 6-month interval with good multipurpose grease (E.g. Multi-Purpose Grease #12). Also, do not grease or lubricate the drive and idler collars.

For the hydraulic pump, use only anti foaming high grade jack oil.

## **5 Troubleshooting**

For any service related questions please call PA Industries at 860-243-8306.

## 6 Specifications

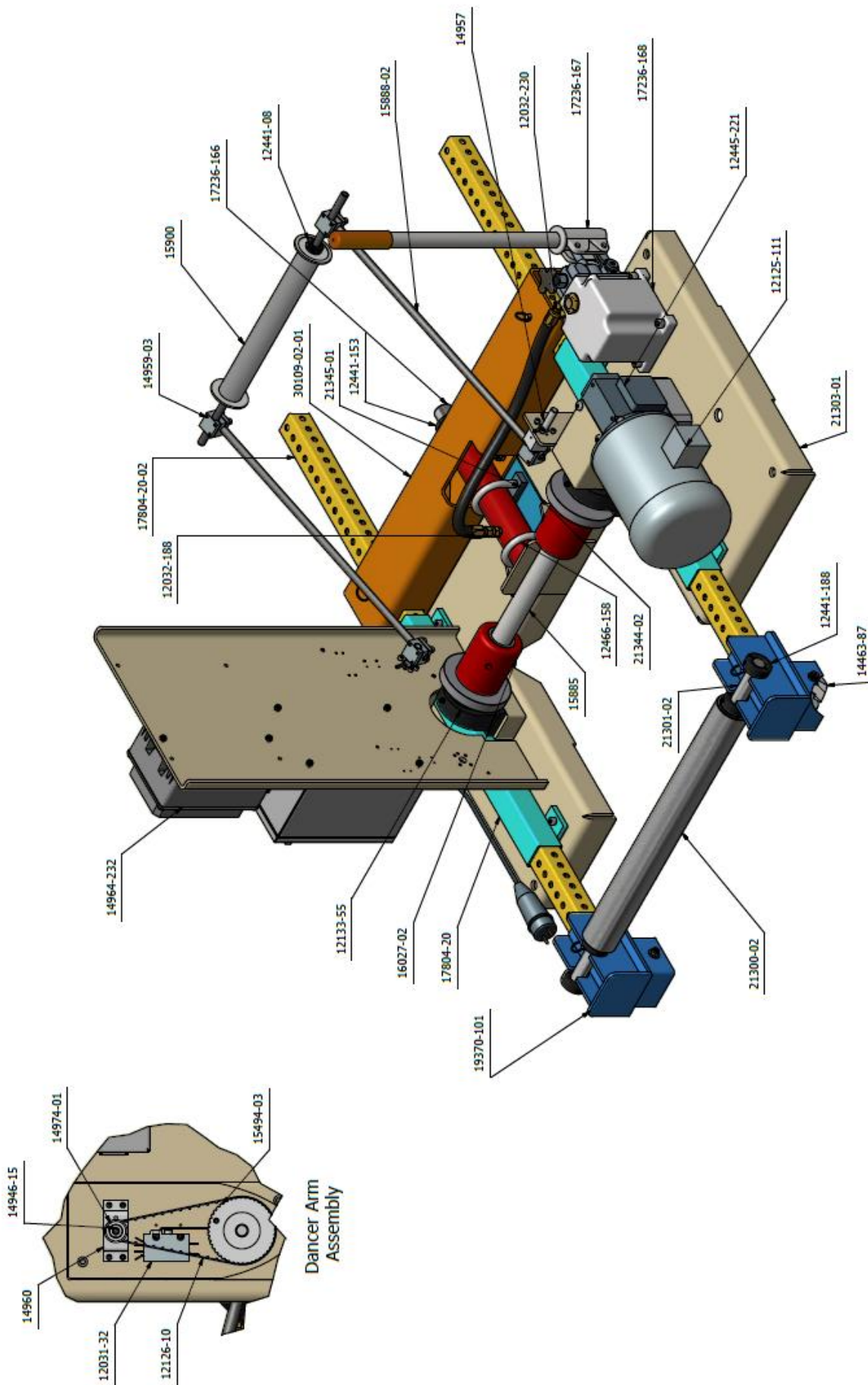
### 6.1 Overall Model Specifications

Traverse Spool Reel Model TSR-D	
<b>Spool Reel Diameter, adjustable:</b>	15 To 40 Inches, See table B (Below)
<b>Maximum Reel Weight:</b>	See Table B (Below)
<b>Maximum Reel Width:</b>	17 Inches
<b>Stock Speed:</b>	See Table A (Below)
<b>Rim Speed</b>	0-1350 IPM At 131 RPM Of Drive Collar
<b>Weight:</b>	Approximately 220 Pounds
<b>Floor Space (Without Dancer Arm</b>	48" Length (MAX) X 43" Wide X 29" High
<b>Electric Supply</b>	120 VAC, 50/60 Hz.-15 Amp Service
	12 Foot Cord & 3 Prong Plug
<b>Fuses:</b>	
	<b>Supply Line:</b> 15 Amp Slow Blow
<b>Control:</b>	
	<b>Layout:</b> (See Below)
<b>Lifting Speed:</b>	15 Seconds/ Inch

REEL Diameter	REEL RPM	STOCK FEED SPEED (IPM)
40	28	1317
35	21	1317
30	17	1317
25	14	1317
20	12	1317
15	10	1317

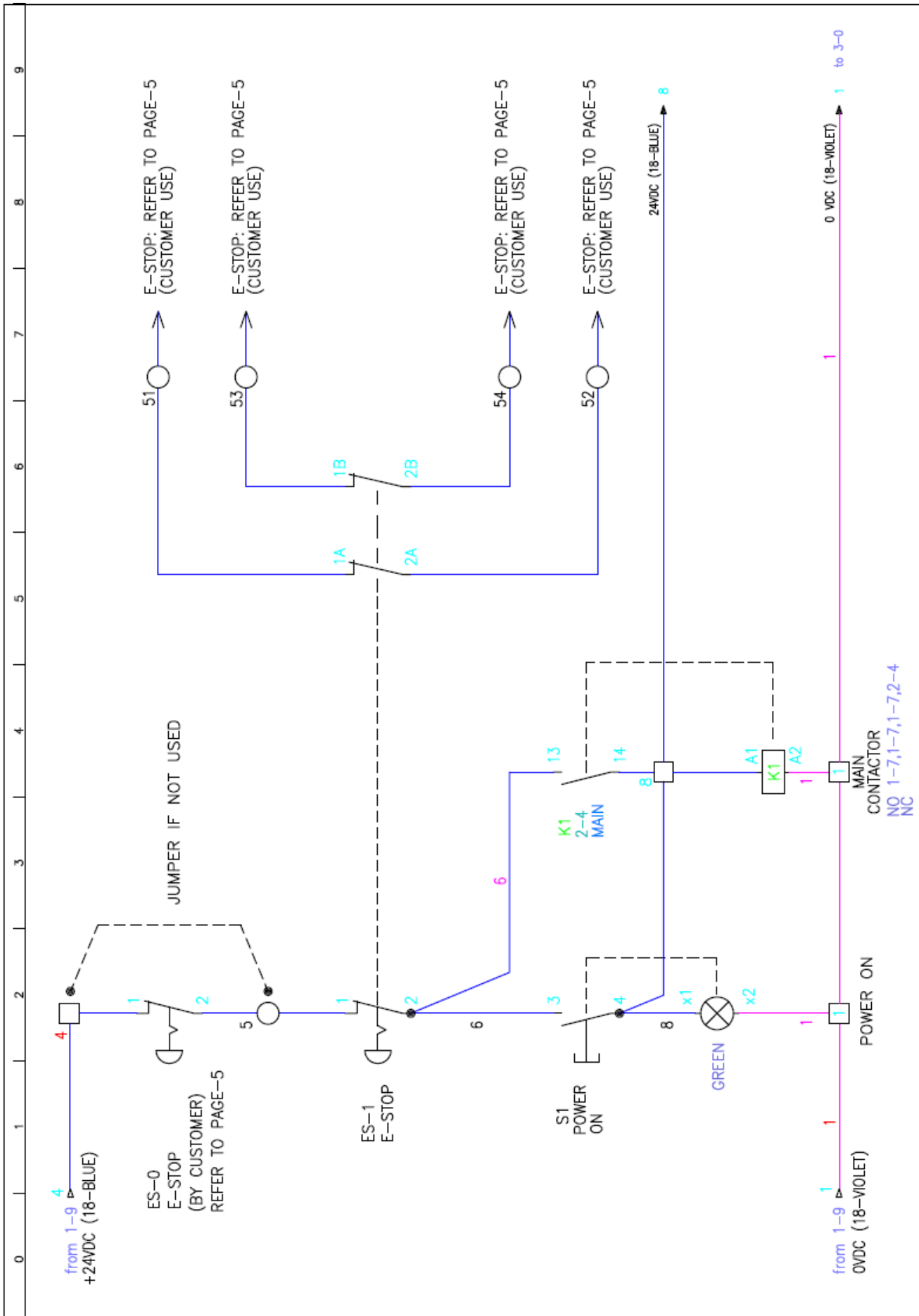
O.D. (IN.)	MAX WEIGHT (LBS)
15	2030
16	2045
17	2060
18	2080
19	2015
20	2120
21	2140
22	2165
23	2195
24	2220
25	2255
26	2285
27	2320
28	2360
29	2400
30	2440
31	2480
32	2530
33	2580
34	2630
35	2685
36	2745
37	2805
38	2870
39	2940
40	3010

## 6.2 Parts List

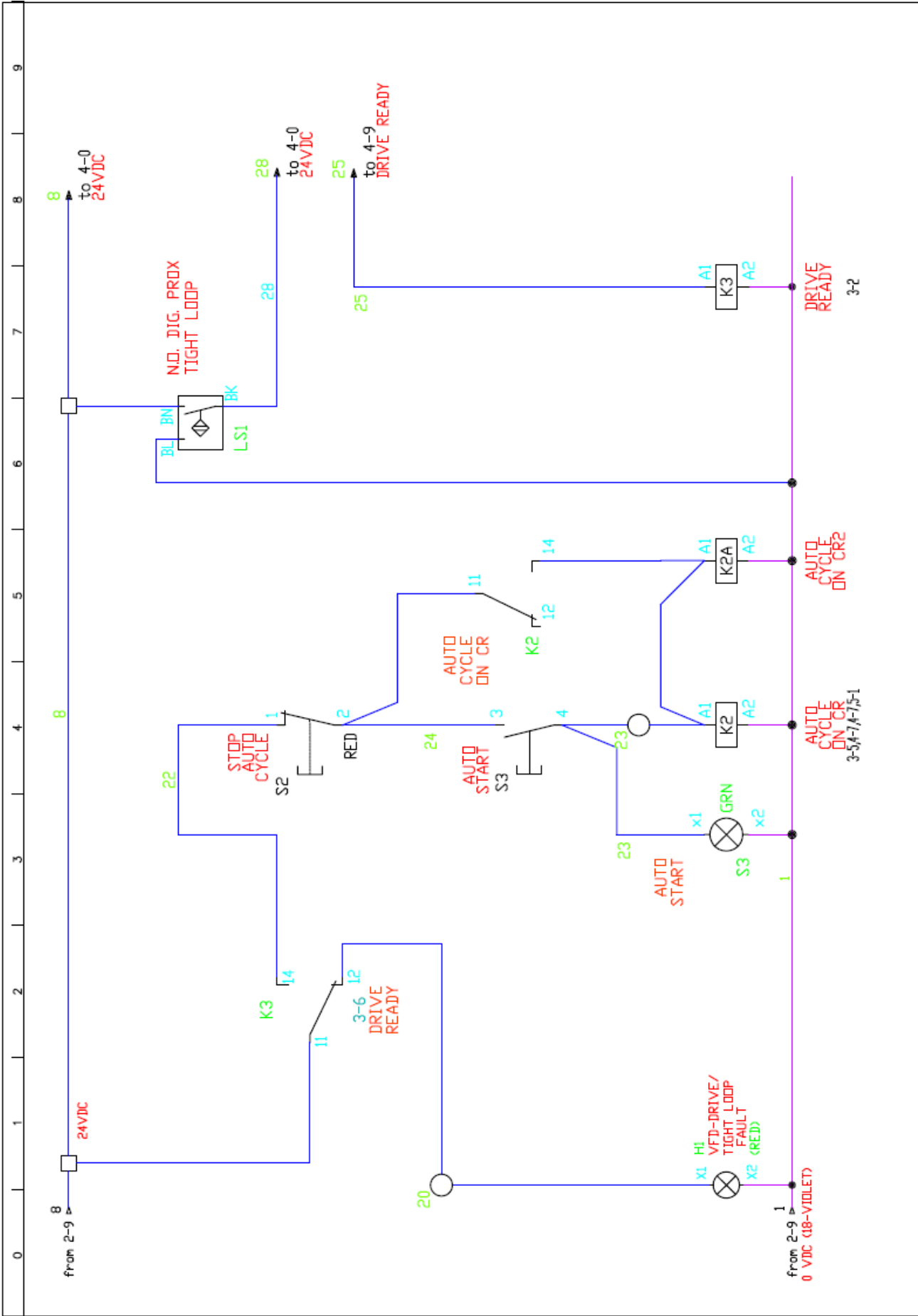


Part Number	QTY	Description
14960	1	BRACKET, POTENTIOMETER
14946-15	1	POTENTIOMETER,10K,SINGLE TURN,2" SHAFT
14974-01	1	SHEAVE, TIMING, 11T, .700 PITCH DIA
12126-10	1	BELT, TIMING, 80T
12031-32	1	LIMIT SWITCH, DPDT, LEVER. .250" QC TERM
15494-03	1	TIMING SHEAVE, MODIFIED 44T, TSR
14964-232	1	VFD,KBAC-24D,NEMA 4X,115/230 VAC IN,1HP
12133-55	2	PILLOW BLOCK, BEARING 207-23, DIA 1 7/16
16027-02	2	ROLLER, COATED & FLANGE
17804-20	2	SLIDE JACK ASSEMBLY, EASY LIFT TSR
19370-101	2	TSR, DROP ROLL BRACKET****
21300-02	1	ROLLER, TSR, 17IN
15885	1	SHAFT, DRIVE - TSR
12466-158	2	U-BOLT, 2 1/4 ROUND, 1/2-13 X 4..25" LG
21344-02	1	SLIDE STOP, TSR RAM
21301-02	1	SHAFT, ROLLER, 25mm x 787 LG, TSR
12441-188	4	CLAMP, COLLAR, 25 MM ID X 15 MM WD
14463-87	4	CASTER, WHEEL ONLY, 2 1/2 X 1 W, STEEL
21303-01	1	BASE, 17in TSR DROP ROLL, L-R
12125-111	1	MOTOR, 230/460 VAC, 3/4 HP, 1725 RPM 56C
12445-221	1	REDUCER, WORM GEAR, 15:1 RATIO, 56C, L
17236-168	1	HYDRAULIC HAND PUMP, TANK, .25 GAL
17236-167	1	HYDRAULIC HAND PUMP, NO TANK
12032-230	1	FITTING, HOSE,90 DEG, 3/8, 9/16-18 UNF
14957	2	SHAFT, DA, .50 DIA x 4.56 LONG
15888-02	2	SHAFT, SPOOL ROLLER, TSR, 24" X .5" OD**
12441-08	2	CLAMP COLLAR, 1/2 BORE, BLACK OXIDE
17236-166	1	HYDRAULIC CYLINDER RAM, 10T
15900	1	SPOOL ROLLER ASSY, TSR (DANCER ARM 17")
30109-02-01	1	ADJ BRACKET, SLIDE LIFT*****
21345-01	2	SPACER, TSR RAM
12441-153	1	CLAMP COLLAR, 30mmID X 54mmOD X 15mm WD
14959-03	4	CLAMP, 1.25 SQ x .50 BORE, METRIC
17804-20-02	2	SLIDE JACK TUBING, EASY LIFT TSR
12032-188	1	FITTING, HOSE, 3/8, 9/16-18 UNF

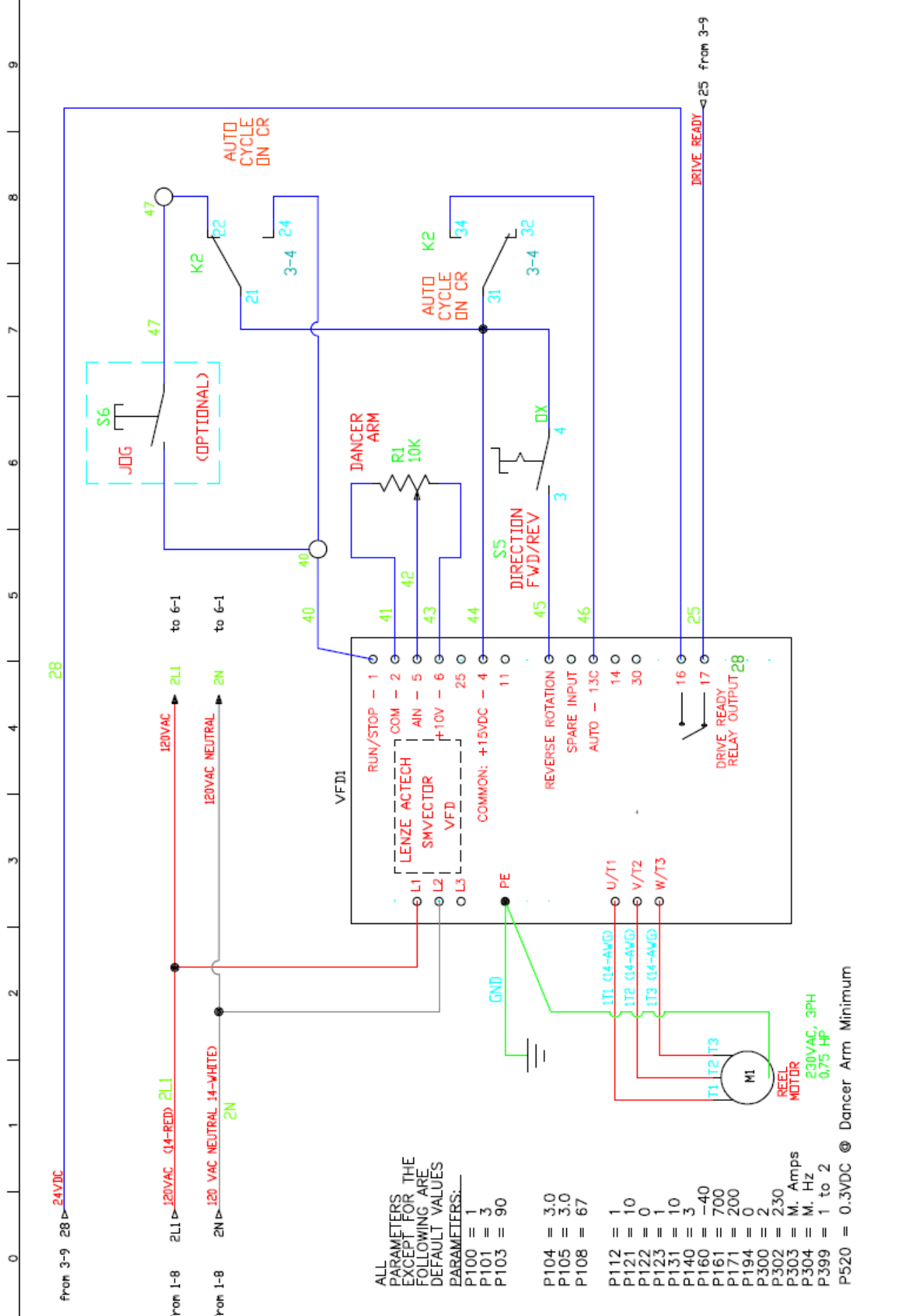




0	1	2	3	4	5	6	7	8	9
<p><b>P/A INDUSTRIES INC.</b>          522 Cottage Grove Rd., Bloomfield, CT 06002          Phone: (860) 243-8306 Fax: (860)242-4870</p>									
<p><b>ELECTRICAL SCHEMATIC 120V, TSR, US</b>          POWER: 120VAC, 15A, 1PH, 60HZ          DANCER ARM - AUTO LIFT</p>									
<p>DRAWN BY: <b>BR</b>          DATE: <b>3/2014</b></p>					<p>MACHINE SERIAL NUMBER:          MACHINE MODEL:</p>				
<p>REVISION</p>					<p>PAGE: <b>2</b> OF <b>6</b>          DRAWING NUMBER: <b>21101-01</b></p>				



<b>P/A INDUSTRIES INC.</b> 522 Cottage Grove Rd., Bloomfield, CT 06002 Phone: (860) 243-8306 Fax: (860)242-4870		<b>ELECTRICAL SCHEMATIC 120V, TSR, US</b> POWER: 120VAC, 15A, 1PH, 60HZ DANCER ARM - AUTO LIFT		DRAWN BY: BR DATE: 3/2014	MACHINE SERIAL NUMBER: MACHINE MODEL: 21101-01	PAGE: 3 OF 6	REVISION:
---	--	--	--	------------------------------	---	--------------	-----------



from 3-9 28	24VDC	28
from 1-8 2L1	120VAC (14-RED) 2L1	to 6-1
from 1-8 2N	120VAC NEUTRAL (14-WHITE) 2N	to 6-1

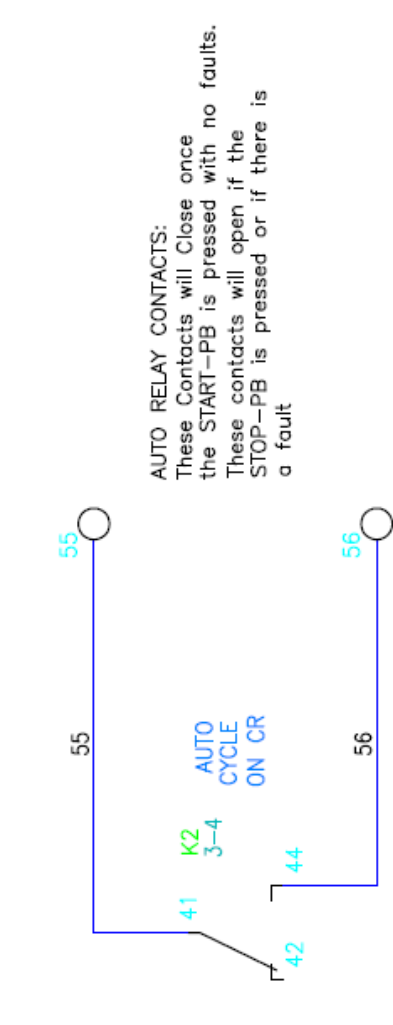
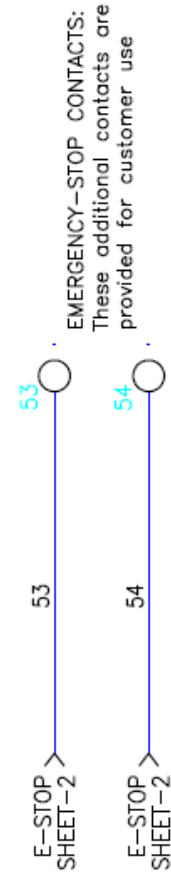
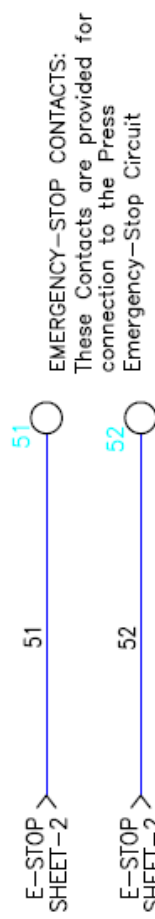
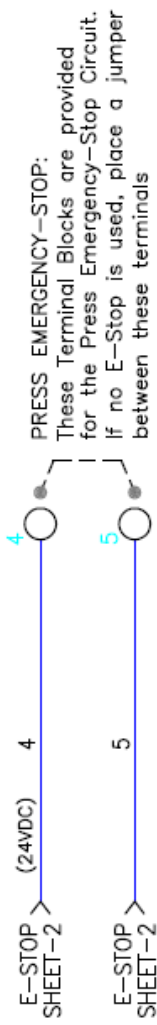
**ALL PARAMETERS EXCEPT FOR THE FOLLOWING ARE DEFAULT VALUES:**  
**PARAMETERS:**  
 P100 = 1  
 P101 = 3  
 P103 = 90  
  
 P104 = 3.0  
 P105 = 3.0  
 P108 = 67  
  
 P112 = 1  
 P121 = 10  
 P122 = 0  
 P123 = 1  
 P131 = 10  
 P140 = 3  
 P160 = -40  
 P161 = 700  
 P171 = 200  
 P194 = 0  
 P300 = 2  
 P302 = 230  
 P303 = M. Amps  
 P304 = M. Hz  
 P399 = 1 to 2  
 P520 = 0.3VDC @ Dancer Arm Minimum



**P/A INDUSTRIES INC.**  
 522 Cottage Grove Rd., Bloomfield, CT 06002  
 Phone: (860) 243-8306 Fax: (860)242-4870

**ELECTRICAL SCHEMATIC 120V, TSR, US**  
**POWER: 120VAC, 15A, 1PH, 60HZ**  
**DANGER ARM- AUTO LIFT**

DRAWN BY	MACHINE SERIAL NUMBER:	PAGE	OF	REVISION
BR		4	6	
DATE	MACHINE MODEL:	DRAWING NUMBER:		
3/2014		21101-01		



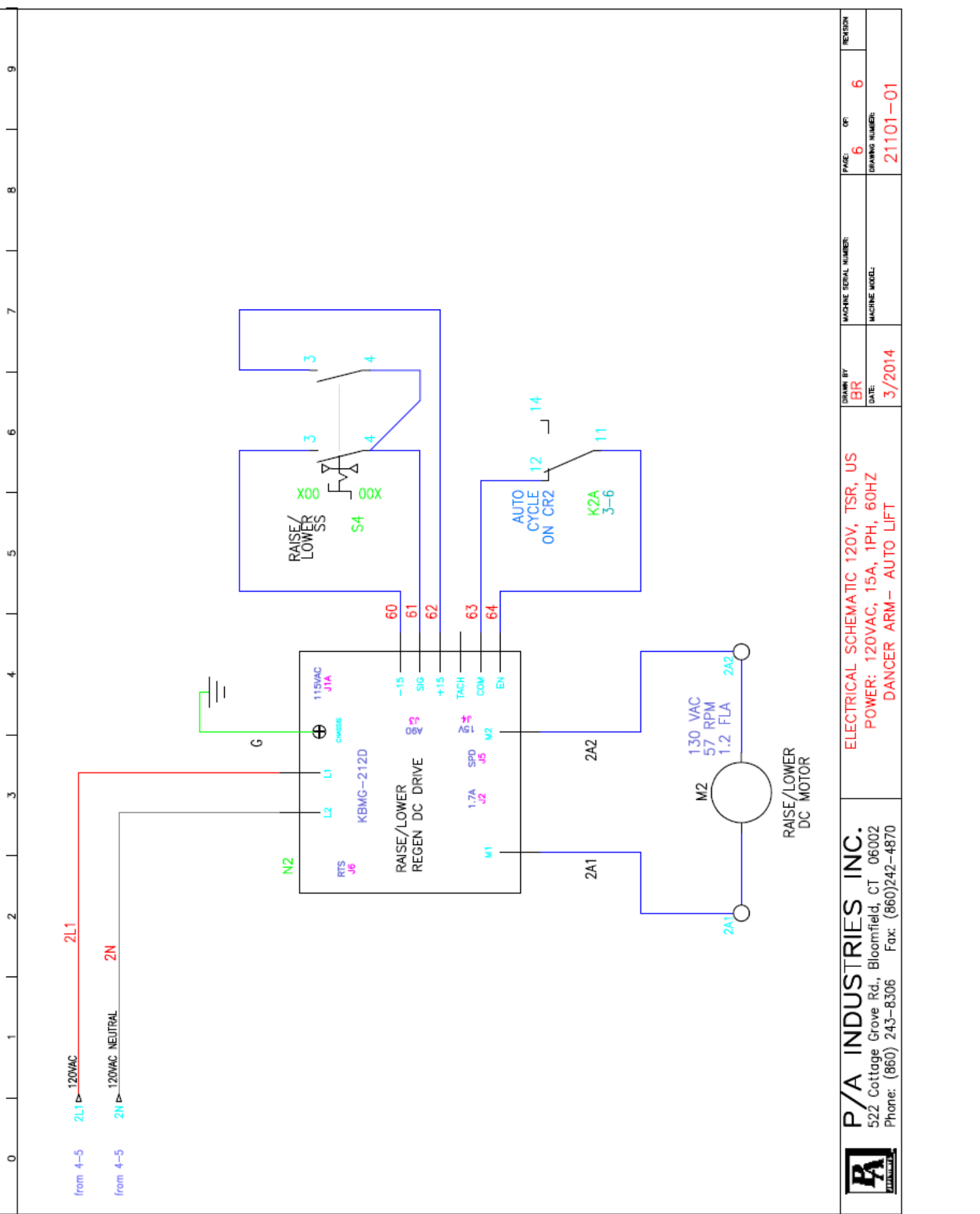
**AUTO RELAY CONTACTS:**  
 These Contacts will Close once the START-PB is pressed with no faults. These contacts will open if the STOP-PB is pressed or if there is a fault

**EMERGENCY-STOP CONTACTS:**  
 These Contacts are provided for connection to the Press Emergency-Stop Circuit

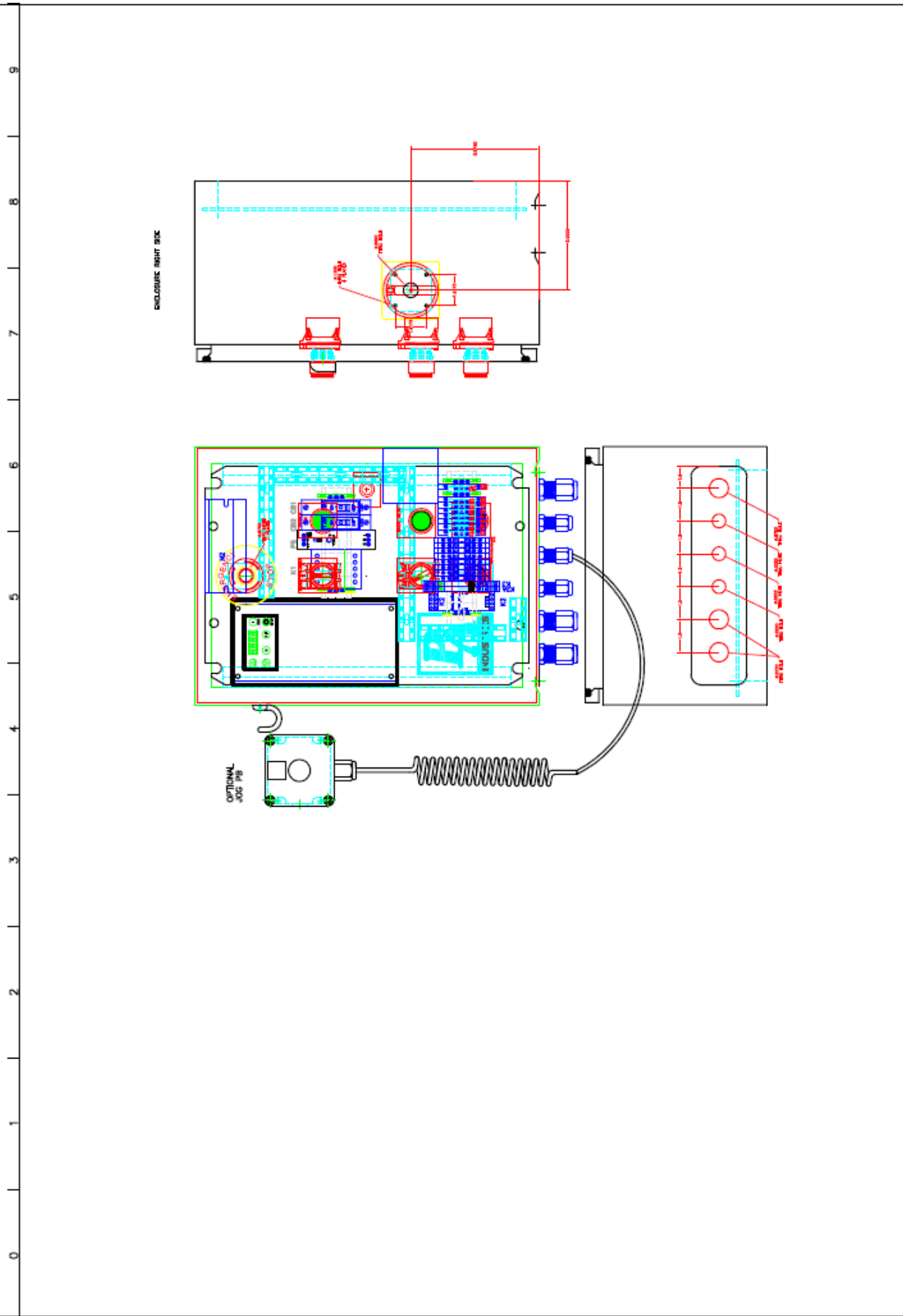
**EMERGENCY-STOP CONTACTS:**  
 These additional contacts are provided for customer use


**PRESS EMERGENCY-STOP:**  
 These Terminal Blocks are provided for the Press Emergency-Stop Circuit. If no E-Stop is used, place a jumper between these terminals

 <b>P/A INDUSTRIES INC.</b> 522 Cottage Grove Rd., Bloomfield, CT 06002 Phone: (860) 243-8306 Fax: (860)242-4870	<b>ELECTRICAL SCHEMATIC 120V, TSR, US</b> <b>POWER: 120VAC, 15A, 1PH, 60HZ</b> <b>DANGER ARM - AUTO LIFT</b>		DRAWN BY <b>BR</b>	MACHINE SERIAL NUMBER:	PAGE <b>5</b> OF <b>6</b>	REVISION
			DATE: <b>3/2014</b>	MACHINE MODEL:	DRAWING NUMBER: <b>21101-01</b>	



	<b>P/A INDUSTRIES INC.</b> 522 Cottage Grove Rd., Bloomfield, CT 06002 Phone: (860) 243-8306 Fax: (860)242-4870		<b>ELECTRICAL SCHEMATIC 120V, TSR, US</b> <b>POWER: 120VAC, 15A, 1PH, 60HZ</b> <b>DANCER ARM - AUTO LIFT</b>		DRAWN BY <b>BR</b>	MACHINE SERIAL NUMBER:	PAGE 6 OF 6	REVISION 6
	DATE: 3/2014		MACHINE MODEL:	DRAWING NUMBER: 21101-01				



 <b>P/A INDUSTRIES INC.</b> 522 Cottage Grove Rd., Bloomfield, CT 06002 Phone: (860) 243-8306 Fax: (860)242-4870	DRAWN BY <b>BR</b>	DATE: <b>3/2014</b>	PAGE: <b>1</b> OF: <b>1</b>	REVISION
	DRAWING DESCRIPTION <b>ELECTRICAL SCHEMATIC 120V, TSR, US          POWER: 120VAC, 15A, 1PH, 60HZ          DANCER ARM - AUTO LIFT</b>			DRAWING NUMBER: <b>20945-01</b>