INSTALLATION INSTRUCTIONS

MODELS LT16 and LT12 SL KIT UPGRADE
202026 Rev. D
2025-04-30

Prime Controls, Inc.
4528 Gateway Circle
Dayton, Ohio 45440-1712

T 937.435.8659
F 937.435.2091

vip@primecontrols.com
www.primecontrols.com

INTRODUCTION

Prior to installation, review Figures 1 and 2, Table 1 and drawing 201996 (located at the back of this document) to familiarize yourself with the components of the LT-12-16 SL Kit Upgrade. The kit supports systems with either six or eight lamps. The drawings in this document show the eight lamp variant. Installation is identical for both systems with the exception of the number of TL102A/L lamps installed on the light blocks. Many of the figures in this document are part of drawing 201996 and may be more readable in the drawing itself.

When installing screws and bolts, use thread locking compound in accordance with best practices for your machine.

1. Remove old halogen lamps and illumination system.
2. Install the adapter plate (item1) using the instructions below in Detail A. See Table 1 and Figures 3 and 4 for part identification.
3. Install the mounting brackets with hardware (items 2 through item 19) as shown below.
4. Note that there are two TL102ALs in a six lamp configuration and four TL102ALs in an eight lamp configuration. The TL102AL has a Fresnel lens and the LEDs appear blurred. The TL102A does not have a Fresnel lens and the LEDs are clearly visible. The model numbers are also marked on the subassembly. Populate item 2, the top and bottom assemblies, with TL102A/Ls before installing them into the system.
    a. For a 6 lamp configuration install top: 2x TL102A + bottom: 2x TL102A + sides: 2x TL102AL.
    b. For an 8 lamp configuration install top: 2x TL102A, 1x TL102AL + bottom: 2x TL102A, 1x TL102AL + sides: 2x TL102AL.
    c. Use heatsink compound (not supplied) between the entire bottom surface of the TL102A/TL102ALs and their respective heatsinks and mounting brackets. The compound should be spread thinly and used sparingly to only fill any minute gaps between the surfaces. Slide the mating surfaces slightly back and forth to expel any excess. Also use heat sink compound between the surfaces of the two 202007 blocks their respectively heatsinks and mounting brackets.
5. After installation ensure there is sufficient clearance between all fixed and moving parts. Adjust as necessary to correct. The shapes of the heat sinks may be altered as necessary to achieve this end. However, they should remain flat where they contact other parts of the lighting system to ensure adequate heat transfer.

ITEM	QTY with 6 lamps	QTY with 8 lamps	PART #	DESCRIPTION
1	1	1	201997	PLATE, BRACKET MOUNT
2	6	6	202002	SPACER, BRACKET MOUNT PLATE
3	1	1	203551A	BRACKET, UPPER LIGHT
4	2	2	203558A	BRACKET, SIDE LIGHT
5	1	1	203552A	PEDESTAL, LOWER LIGHT
6	2	2	202007	BLOCK, LIGHT MOUNT
7	4	4	TL102A	TL102A TEST LIGHT
8	2	4	TL102AL	TL102AL TEST LIGHT
9	2	2	202018A	TL102A FLAT HEATSINK
10	2	2	202019A	TL102A TRIPLE FLAT HEATSINK
11	2	2	202020A	TL102A TRIPLE BENT HEATSINK
12	12	12	201924-1.250	SHCS .375-16 X 1.25
13	6	6	201924-3.750	SHCS .375-16 X 3.75
14	18	18	201927	WASHER, FLAT .375
15	18	18	202005	WASHER, LOCK .375
16	8	8	201923-0.750	SHCS .250-20 X 0.750
17	8	8	201923-0.875	SHCS .250-20 X 0.875
18	16	24	201923-1.375	SHCS .250-20 X 1.38
19	8	8	201923-2.250	SHCS .250-20 X 2.25
20	24	24	201925	WASHER, FLAT .250
21	24	24	201922	WASHER, LOCK .250
22	8	8	101356	NUT, HEX .250-20

Table 1

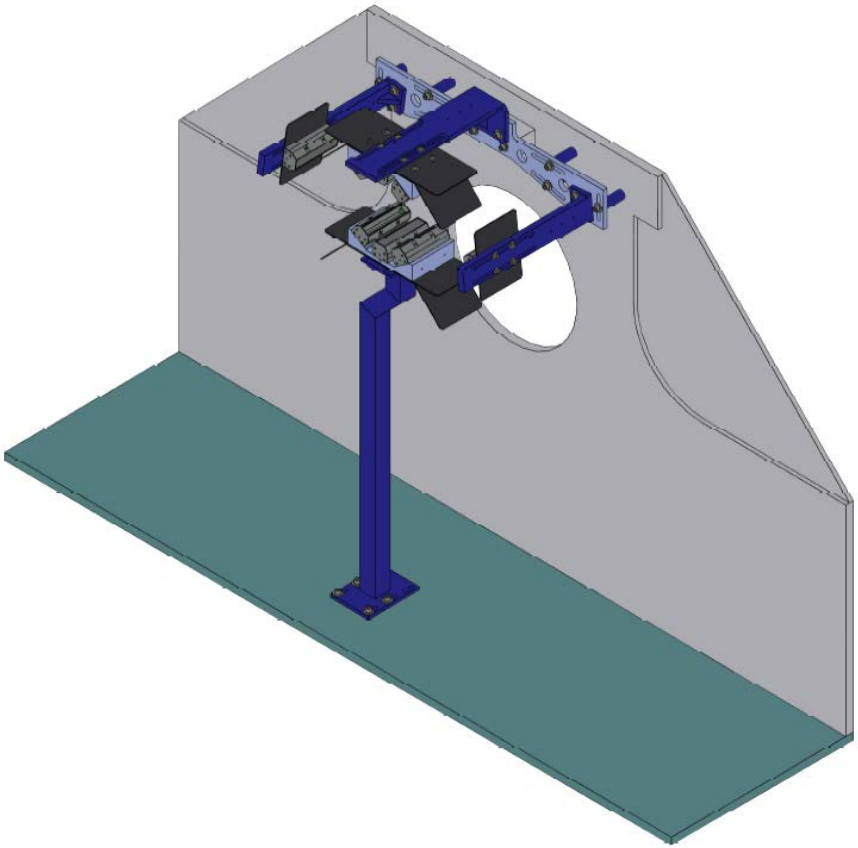


Figure 1

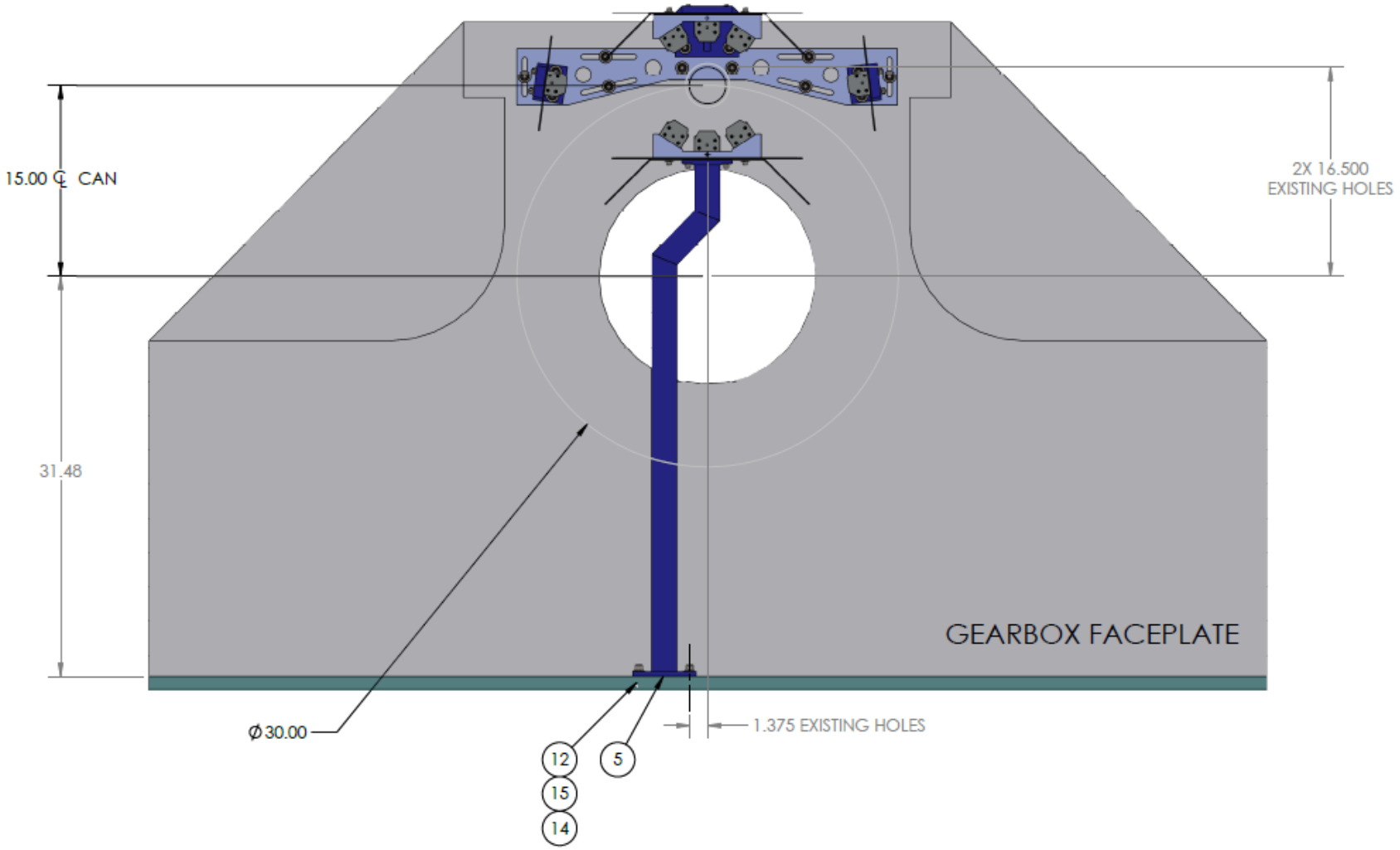
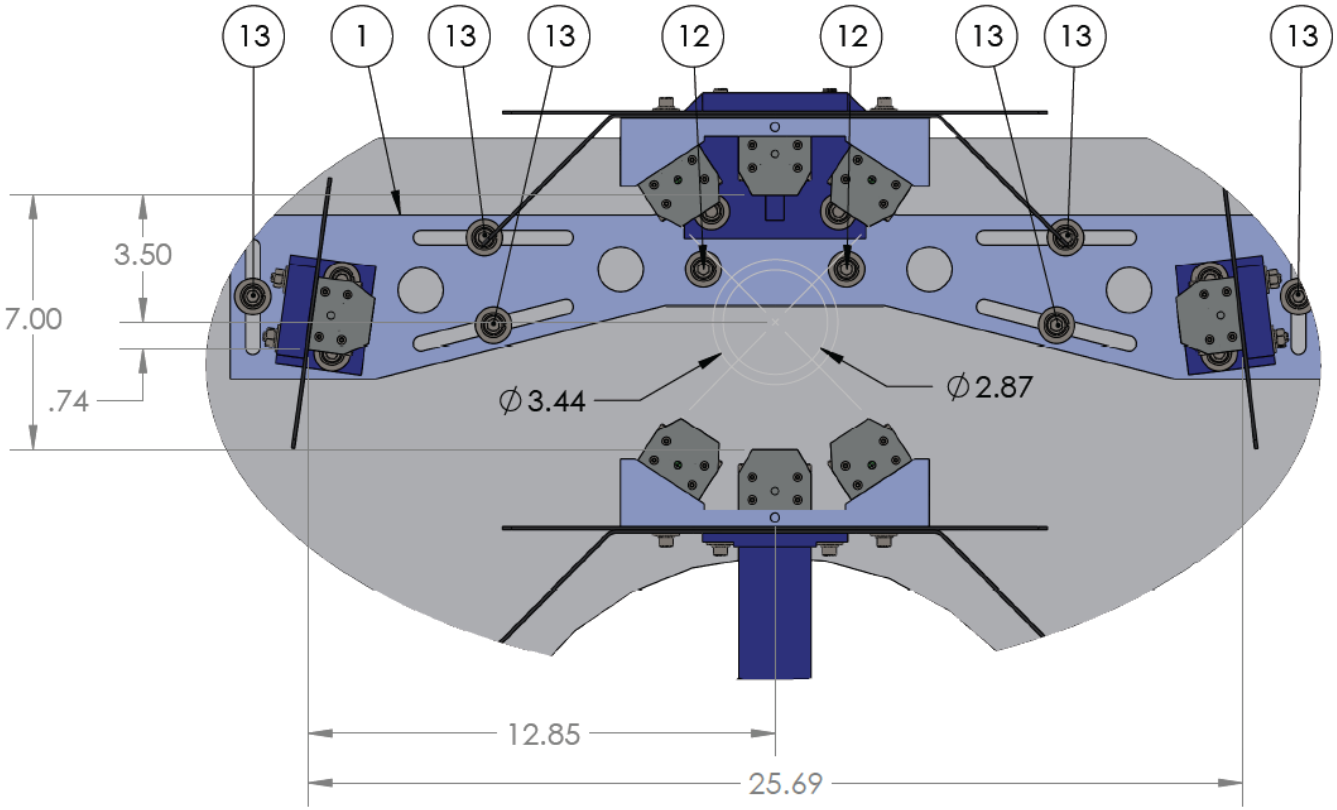


Figure 2

ASSEMBLY NOTES:
1) BOLT THRU ITEM 1 USING (2) EXISTING 3/8-16 TAPPED HOLES MARKED "12" ON EXISTING 2.5" RISER BLOCK
2) DRILL AND TAP (6) 3/8-16 HOLES IN GEARBOX FACEPLATE MARKED "13"
3) USE A HOLE LOCATION TRANSFER PUNCH TO TRANSFER HOLES (REF MCMASTER-CARR P/N 3374A33)
4) USE ITEM 2 AND SLOTS IN ITEM 1 TO HELP GUIDE THE TRANSFER PUNCH
5) HOLE LOCATIONS NOT CRITICAL. SLOTS IN ITEM 1 ALLOW FOR HOLE LOCATION ADJUSTEMENT TO AVOID EXISTING MACHINE FEATURES



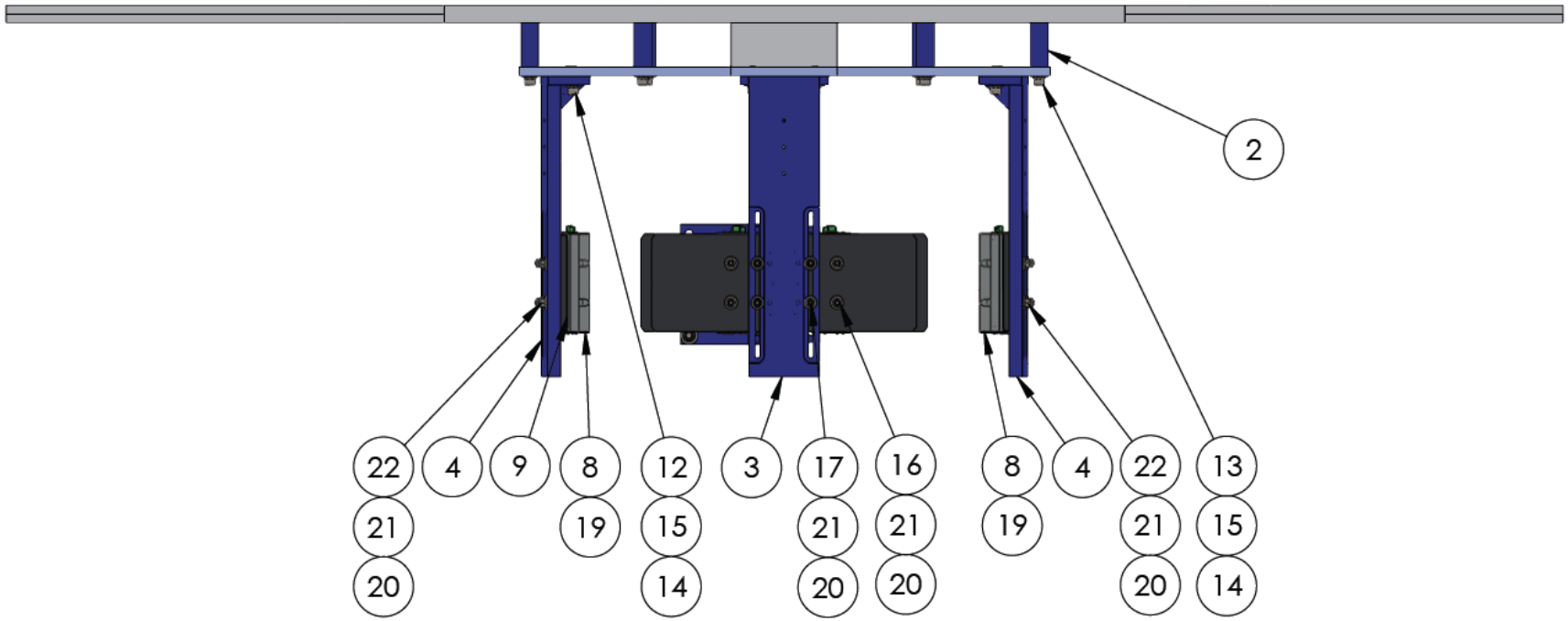


Figure 3

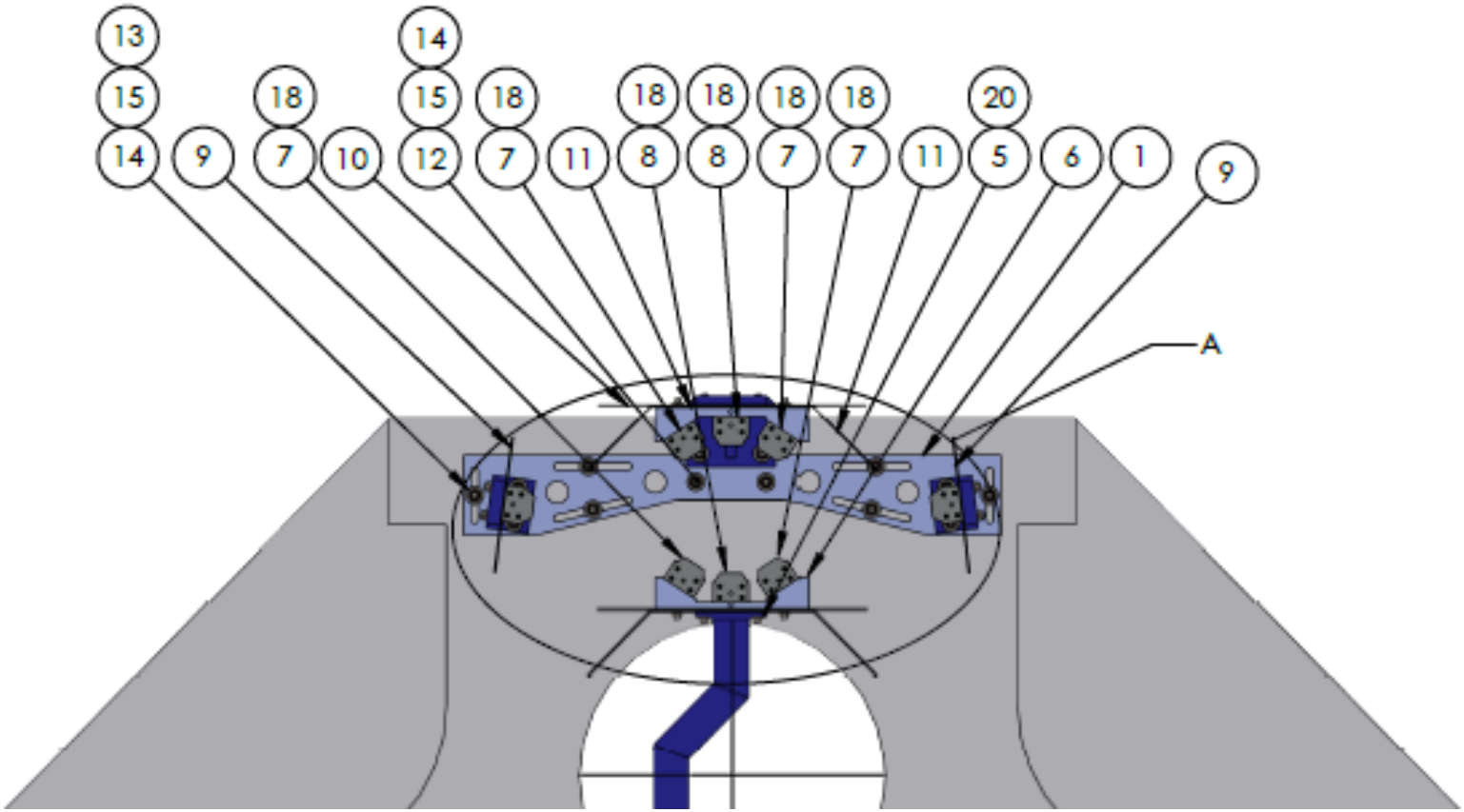


Figure 4

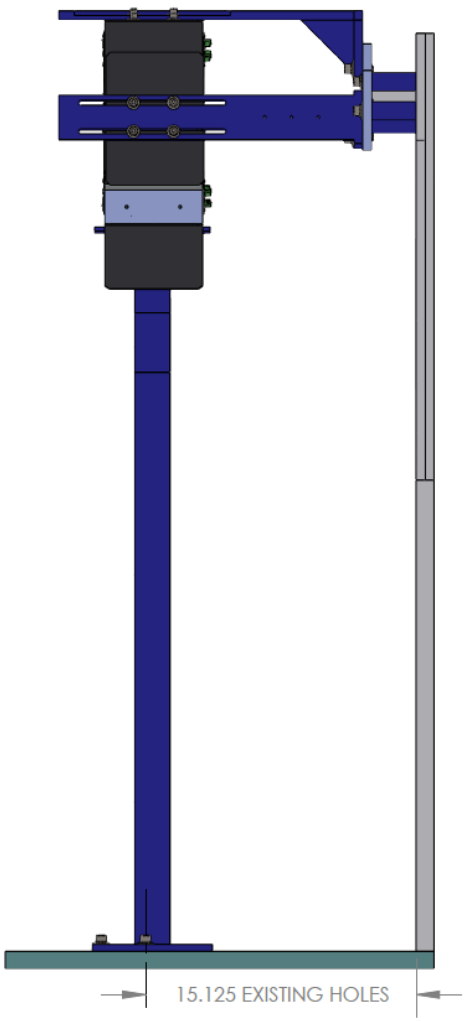


Figure 5

6. Install Items 23 through 31 with adequate gauge wiring (see below) to support 1.25 amps per each TL102A/L. DIN rail mounting is recommended. The dimmer circuit is optional. Leave the DIM connection on the TL102A/L open with no connection if the dimmer is not installed. Wiring diagrams for the section updated with and without DIM are shown below.
    a. Install a total of 6 connectors for a 6-lamp configuration: top:2xTL102A + bottom:2xTL102A + sides:2xTL102AL.
    b. Install a total of 8 connectors for an 8-lamp configuration: top:2xTL102A,1xTL102AL + bottom:2xTL102A,1xTL102AL + sides:2xTL102AL.
    c. The voltage to any TL102A/L shall remain between 22.0 and 26.0V regardless of load. Take care that when only one TL102A is connected to the power supply the voltage is not greater than 26.0V and when all TL102A/Ls are connected, the voltage to any TL102A/L is not below 22.0V.
    d. The connectors to the TL102A/L are designed to accept 0.8-1.5mm^2 (28-16 AWG) wire. Tighten the connector screws to a torque of 0.22-0.25nm (2-2.2 ft-lbs.).
    e. A typical installation shall run 14-gauge main power to a junction block and split off 16 AWG feeder wires to each TL102A.
7. Prime Controls requires disabling power to the TL102A/Ls when the tester is idle.

ITEM	QTY	PART #	DESCRIPTION	Mfr	Mfr P/N
			Circuit Breaker Assembly		
23	1	201947	Circuit Breaker, 1P 4A D Curve	Altech	1DU4R
24	1	201889	Auxiliary Contact Switch	Altech	H1COR
			Relay assembly		
25	1	201943	Relay, 120V Coil 16A(DC) DPDT	Magnacraft	788XBXM4L-120A
26	1	201944	Relay Socket	Magnacraft	70-788EL11-1
27	1	201945	Relay Clip	Magnacraft	16-1351
28	1	201946	Relay Protection Diode	Magnacraft	70-BSMD-250
29	1	201897	**Alternate Relay, 24V coil 16A(DC) DPDT**	Magnacraft	788XBXM4L-24D
30	1	201901	**Pot, LED Lamp Dimmer**	Eaton	M22-R10K
31	1	201948	**Power Supply, 90-264VAC, 24VDC 20A**	TDK Lambda	DPP480-24-1

Table 2

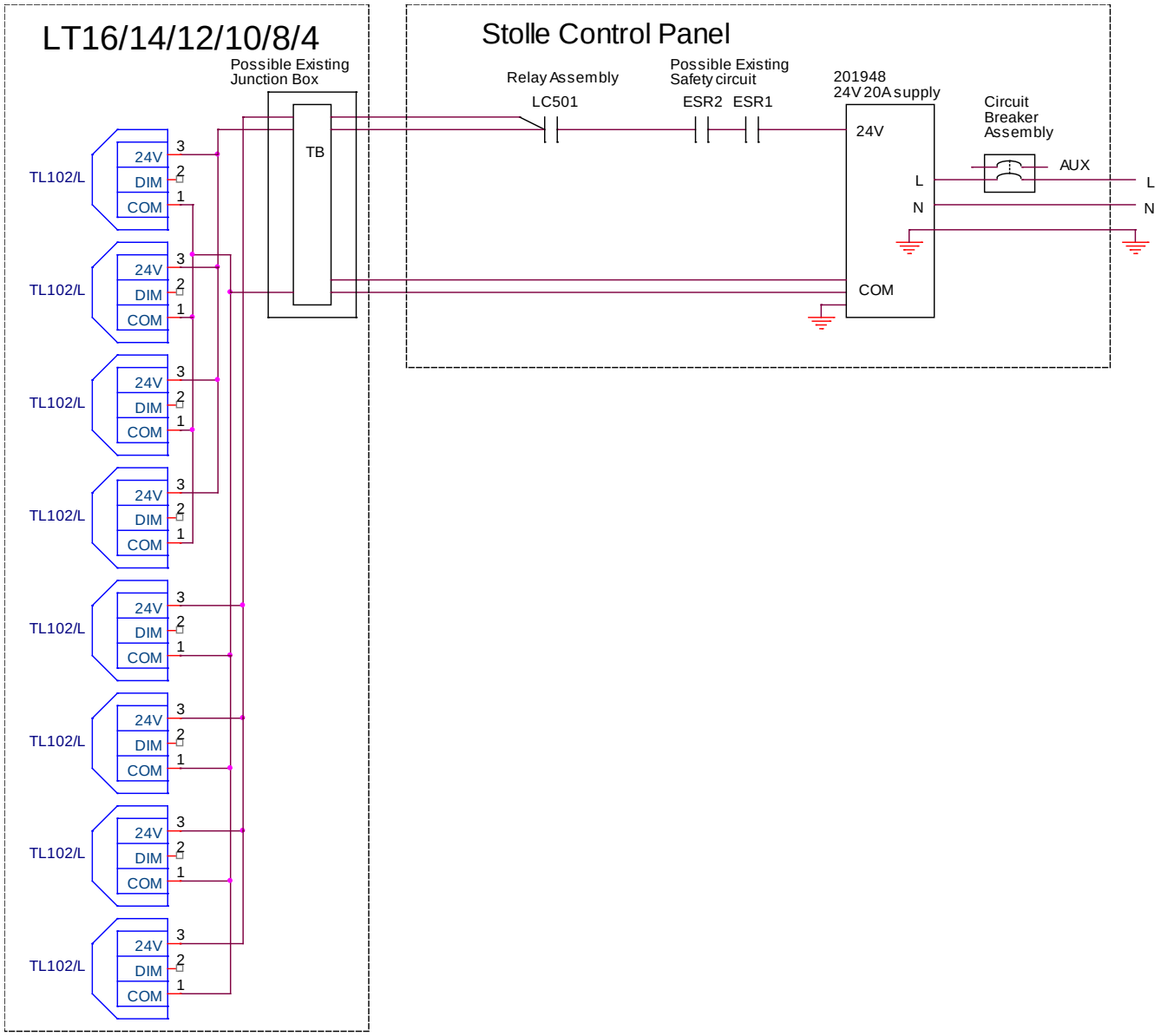


Figure 6

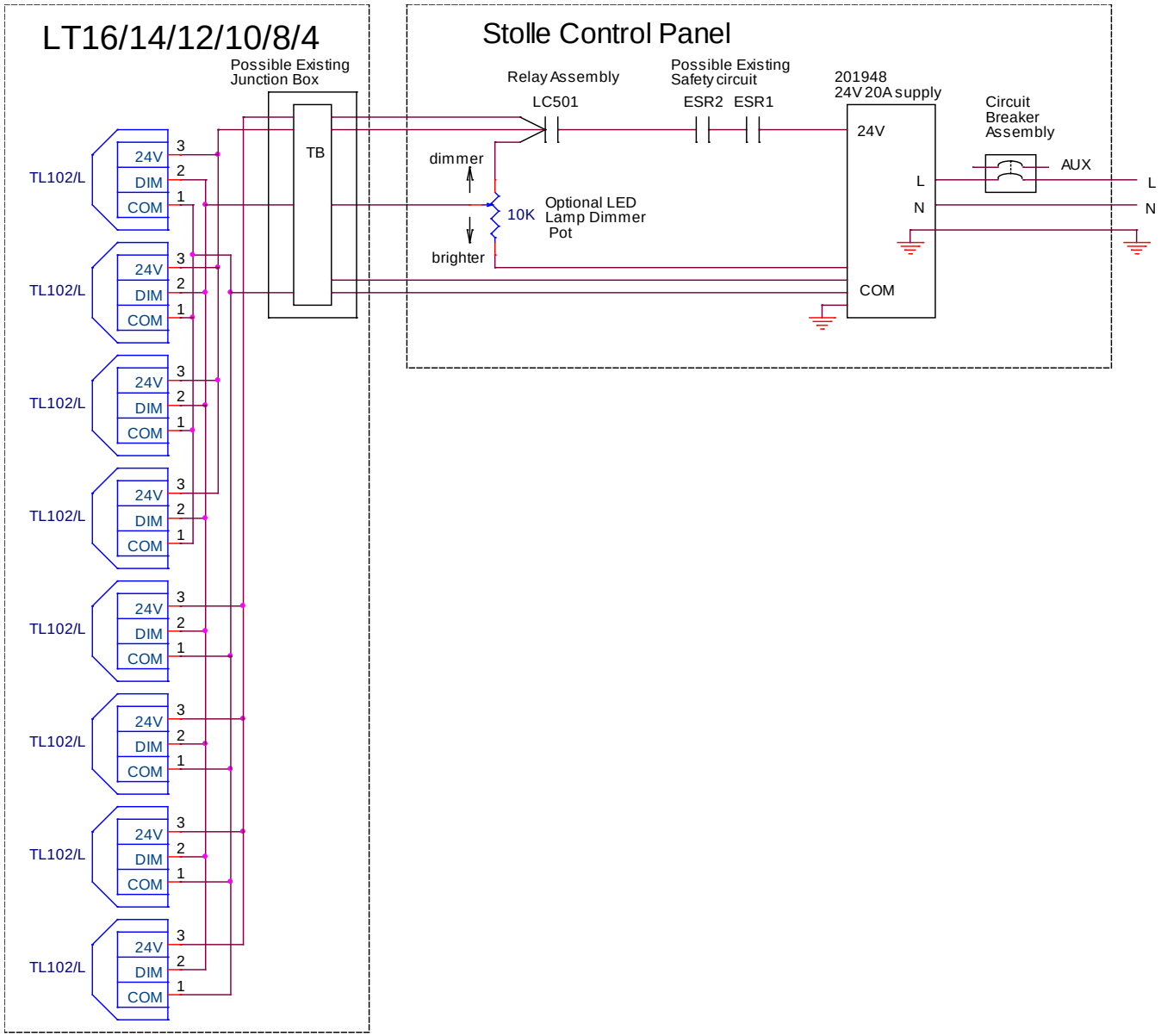


Figure 7

8. It is critical to adjust the slide mounts so the TL102As and the TL102ALs are centered with the can. That will make the TL102As and the TL102ALs all the same distance from the plate.
9. It is also critical that the TL102As and the TL102ALs are in position and centered with the can in its topmost position as shown in Detail A above. That will make corresponding TL102As and the TL102ALs equidistant from the can in its topmost position.
10. Anchor all cables and check that there are no mechanical interference issues with parts before jogging or running the system.
11. Modify the shroud as needed to allow function of interlocks and proper fit.
12. Power up the TL102A/Ls and verify all are functional with their indicator lights on and all LEDs lit. The indicator light will not illuminate if there is no power, or if there is an internal fault with the lamp. A cell phone camera may be used to check to see if the individual LEDs are on. Be aware that some cell phones do not detect infrared light or may only dimly show the infrared light.
13. If necessary, number the pockets starting with 1 on the wheel of the machine near the LT20s; in the same order and correlation as the display on the user interface. Check a can at each pocket for a fit that is not too loose to give false indications or too tight to cover up cracked flanges.
14. Calibrated leakers may be run or jogged through the system by watching the error log at the user interface. Verify the hole drilled in the can is flattened to the curve of the can so that there are no shadows cast on the calibrated orifice. Please also verify that the orifice is clear and free of debris.

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