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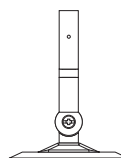
## Installation Instructions for Lazer Line Direct with 4" Round Canopy

LLT1-4R\_ \_

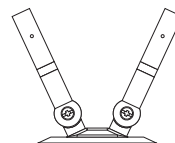
### IMPORTANT INFORMATION

- This instruction shows a typical installation.
- This product is ETL listed.
- It is recommended more than one person assist in this installation.
- This product must be installed by a qualified electrician and in accordance with local electrical codes.

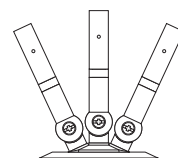
**SAVE THESE INSTRUCTIONS!**



4RD

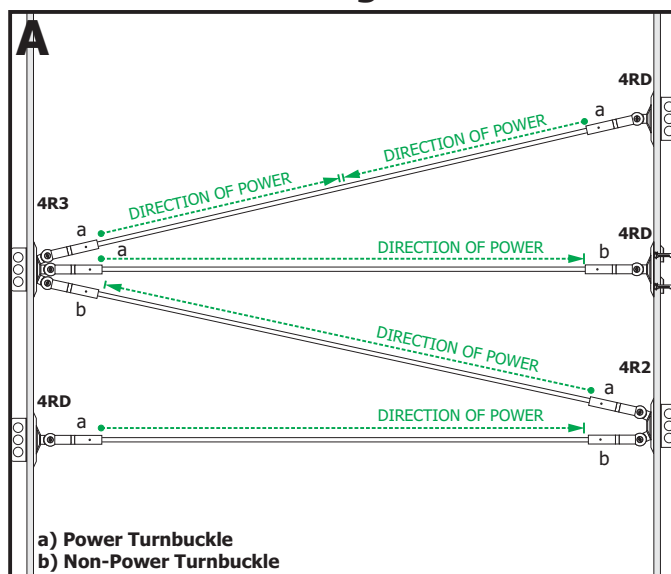


4R2



4R3

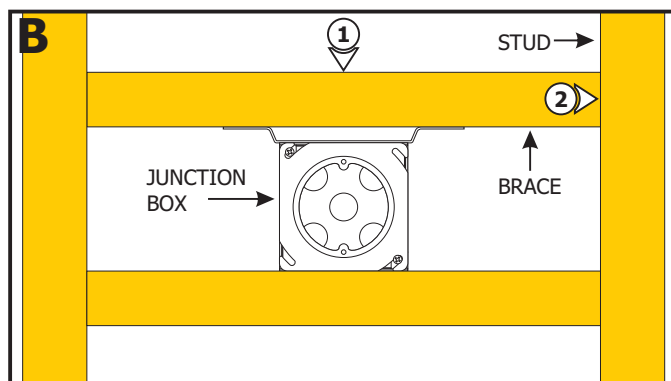
## Section One: Configuration Notes



**1:** Determine the design of the Lazer Line DIY System.

**2:** Based on the design, the 4" Round Canopy with 1, 2, or 3 turnbuckles could be used to mount the Lazer Line in multiple directions. Power could also be multi-directional.

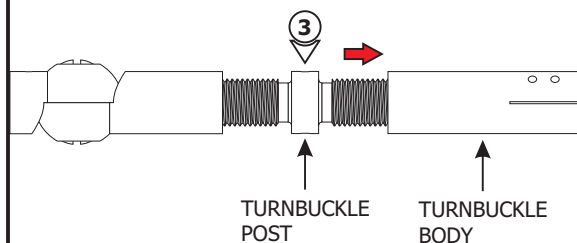
## Section Two: Install the Power Feed Turnbuckle



**NOTE:** Ensure the junction box is mounted to a solid structure such as brick, cement, or wood studs.

**1:** Cut a 16" long 2x4 brace and secure the junction box to the brace (scabs) with screws. If necessary, place a second brace under the junction box for more stability.

**2:** Locate and secure the brace (scabs) between the studs where the turnbuckles will be mounted.

**C**

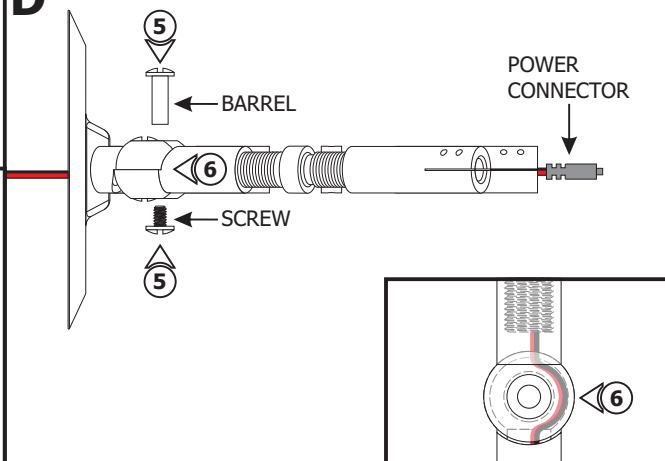
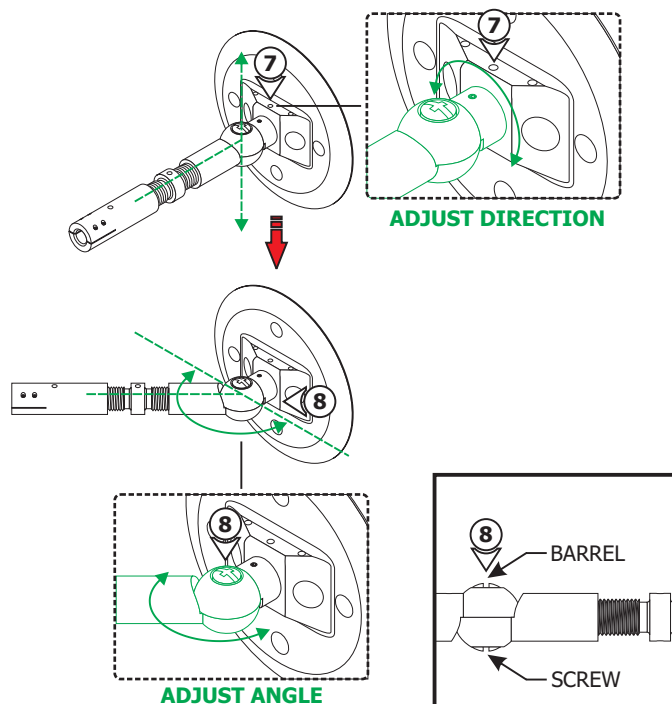
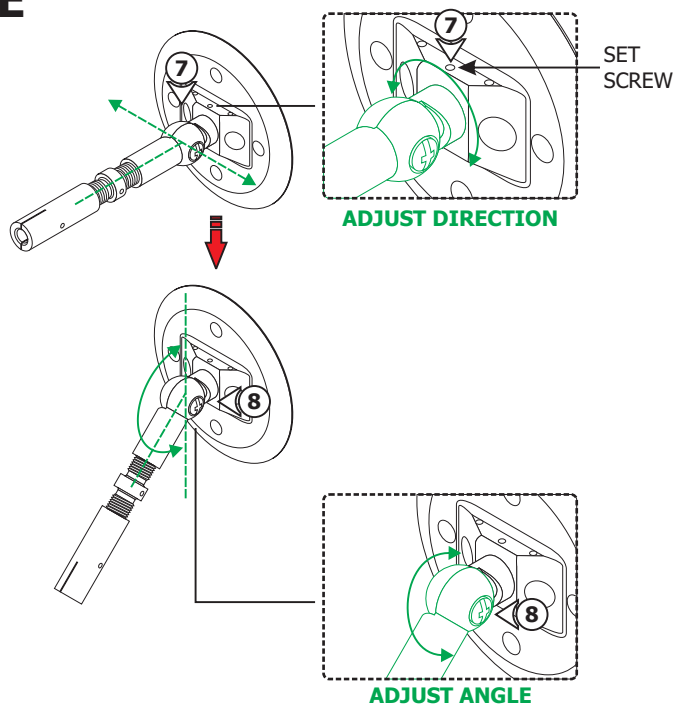
**3:** Unscrew the turnbuckle body and post to its full extension for maximum adjustments and to feed the power connectors through easily.

**4:** Based on the design, determine how many turnbuckles will be powered.

**NOTE:** Steps 5 through 12 are for the powered turnbuckles only.

**5:** Remove the screw and barrel to separate the swivel pieces.

**6:** Feed the power connector through the opening of the powered turnbuckle and loop the wires around the swivel through the canopy. Replace the barrel and secure in place by tightening the screw.

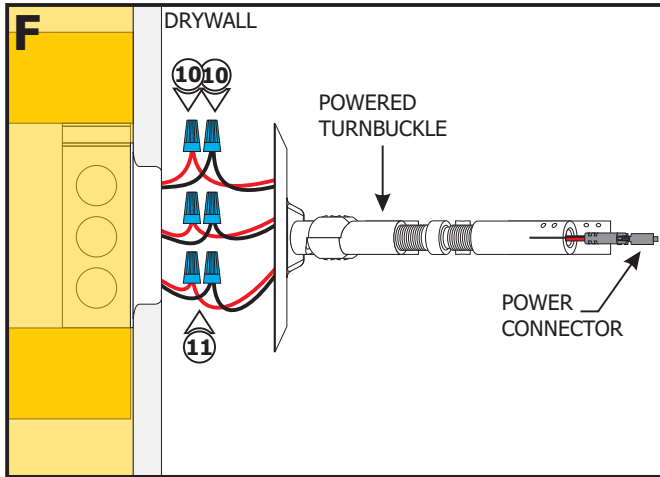
**D****E**

**NOTE:** The turnbuckle rotates around the canopy to adjust the direction and swivels at the base to adjust the angle of the Lazer Line.

**7:** To adjust the direction, loosen (**Do Not Remove**) the set screw on the canopy and slightly rotate the turnbuckle around the canopy. Tighten the set screw using an Allen wrench.

**8:** To adjust the angle, slightly loosen (**Do Not Remove**) the screw on the swivel connector from the barrel, adjust it to the desired angle and tighten the screw.

**9:** Repeat steps 7 and 8 for all other turnbuckles.



**NOTE:** The low voltage wires should be present in the electrical box. Refer to the instructions provided with the power supply to install the low voltage wires before proceeding with the steps below.

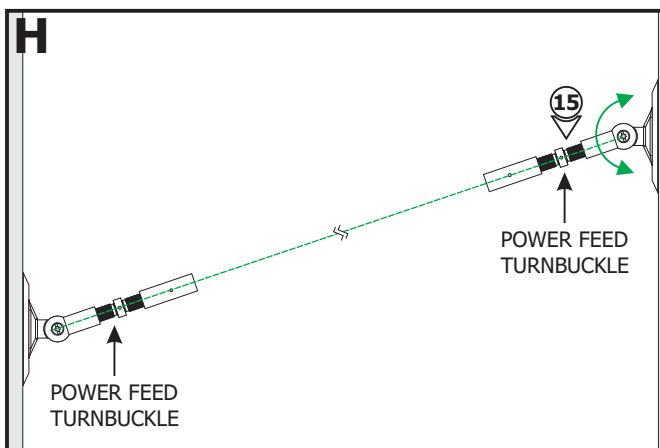
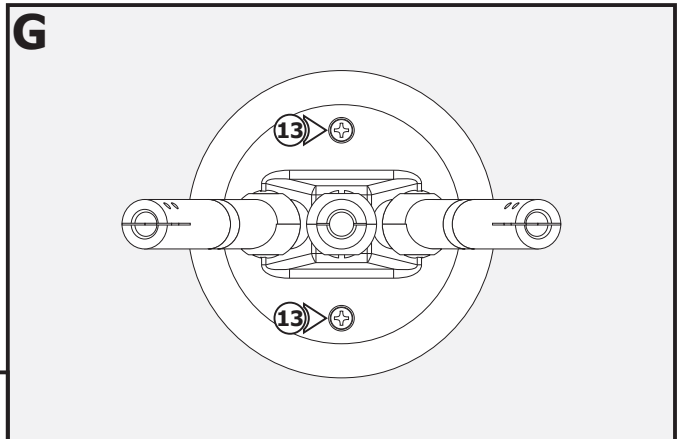
**10:** Connect the red power feed turnbuckle wire to the +24VDC power supply wire using a wire nut. Connect the black power feed turnbuckle wire to the -24VDC power supply wire using a wire nut.

**11:** Repeat for the remaining powered turnbuckles.

**12:** Place all wires inside the electrical box.

**NOTE:** Power turnbuckles can be wired as a single, double, or triple feed. Refer to load restrictions.

**13:** Secure the canopy to the electrical box by tightening the two provided screws.



**14:** Determine the location for the other power feed turnbuckle, either face to face with the first turnbuckle (up to 60 feet away) or diagonal from the power feed turnbuckle.

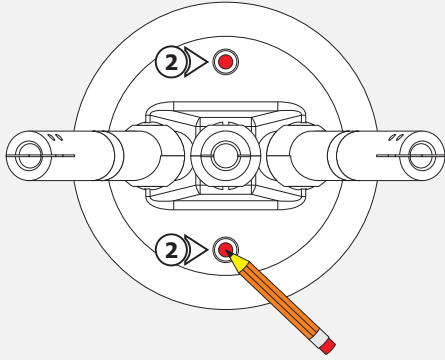
**15:** If necessary, properly rotate the turnbuckle to be in line with the opposite turnbuckle.

**16:** Repeat steps 1 through 15 for any additional Power Feed Turnbuckles.

**CAUTION:** Carefully unroll the entire LED strip from the reel and use the power connector to power the strip making sure there is no outage before continuing with the installation. Afterwards, carefully roll the LED strip loosely back into the reel.

## Section Three: Install the Non-Power Feed Turnbuckle

**I**



**NOTE:** Omit this section if Non-Power Feed Turnbuckles are not used. Discard the anchors.

**NOTE:** Follow this section if all the turnbuckles for the 4RD, 4R2, and 4R3 are non-powered.

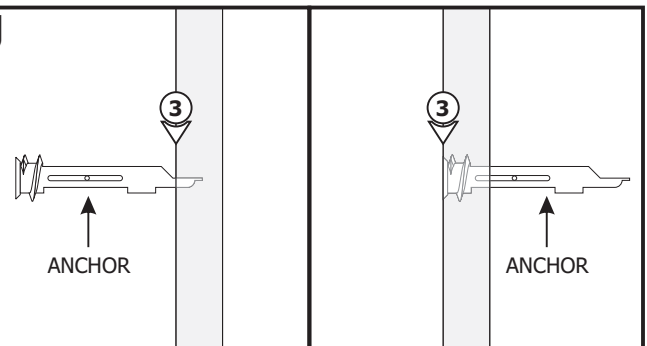
- 1:** Determine the location for the non-power feed turnbuckle, either face to face with the power feed turnbuckle (up to 60 feet away) or diagonal from the power feed turnbuckle.
- 2:** Place the turnbuckle canopy against the surface and mark the two screw holes.

**NOTE:** For other masonry applications, use the appropriate wall anchors.

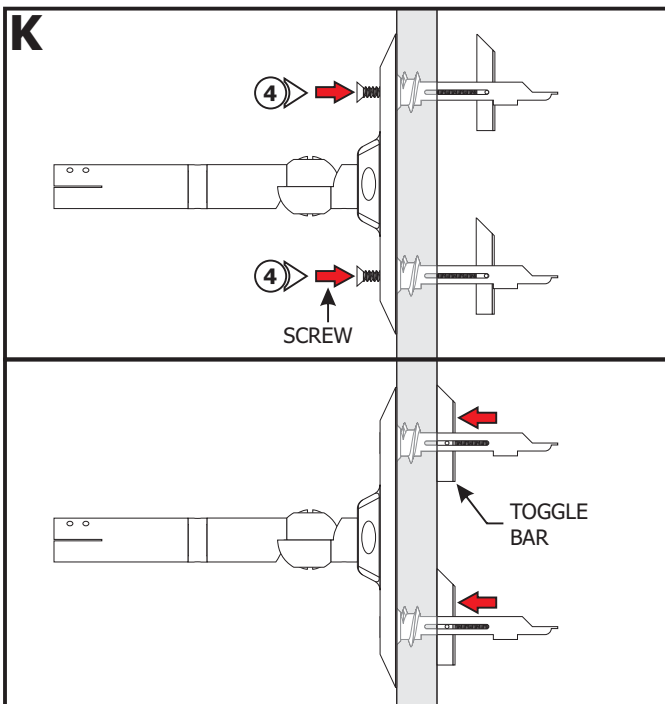
**NOTE:** Step 3 is for drywall mounting. Omit this step if mounting directly to a wood surface.

- 3:** Using a Phillips screwdriver, press the anchor tip slightly into the drywall. Turn the anchor until flush with the drywall. Do not over tighten.

**J**



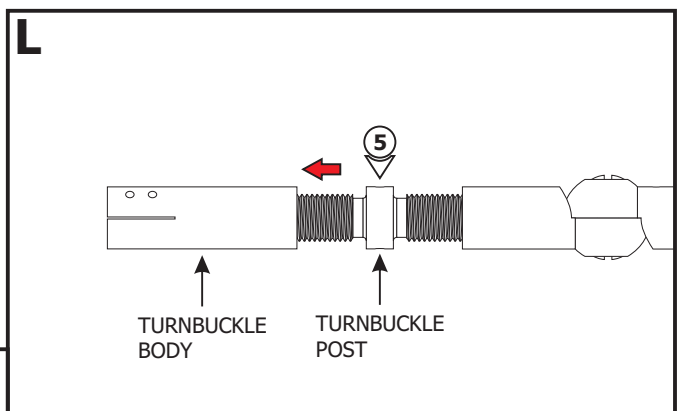
**K**

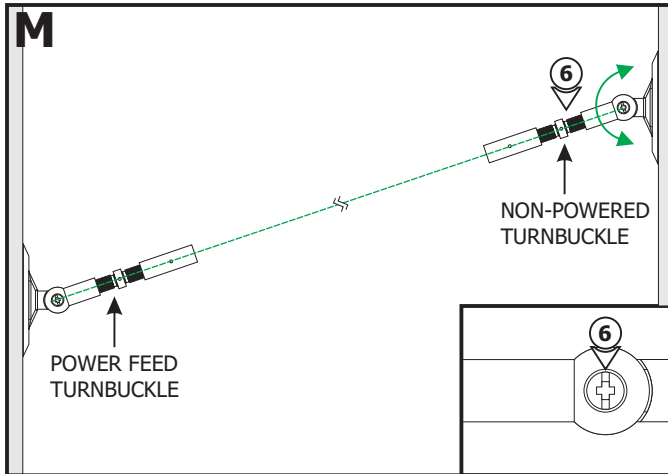


- 4:** Align the canopy holes with the anchors and secure in place by tightening the screws. The screw will stop when the toggle bar is tight and secure behind the wall.

- 5:** Unscrew the turnbuckle body and post to its full extension for maximum adjustments.

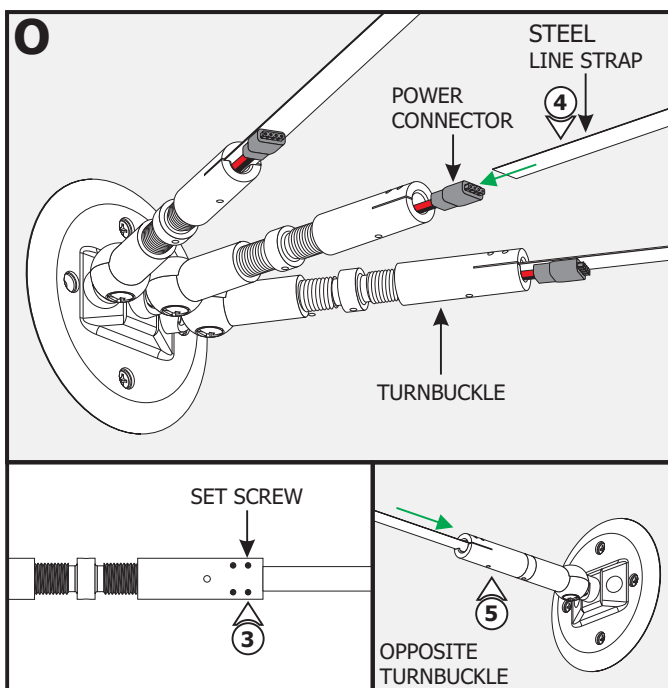
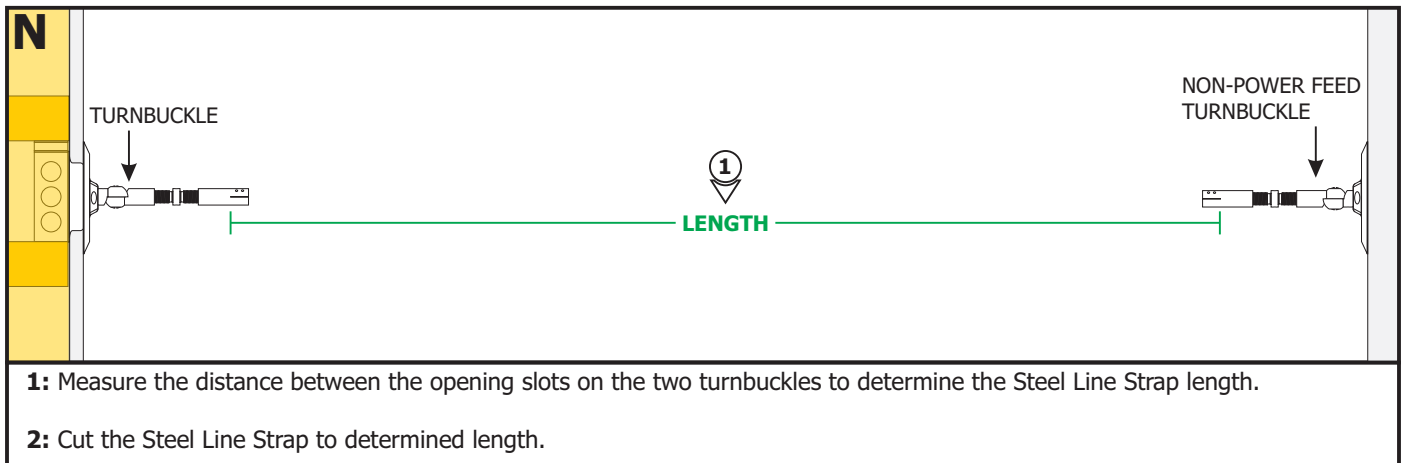
**L**





**6:** If necessary, refer to Drawing E and Steps 7 and 8 to properly rotate the turnbuckle. Ensure the turnbuckle is in line with the opposite turnbuckle.

## Section Four: Install the Steel Line Strap

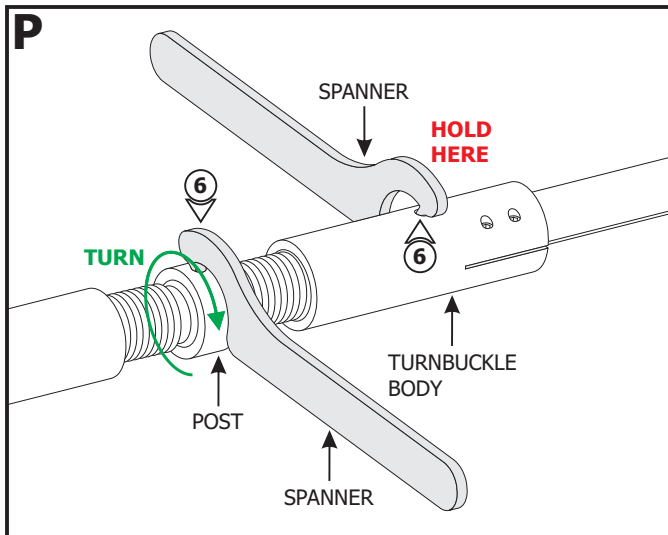


**NOTE:** The Steel Line Strap must be inserted completely in line with turnbuckles to hold the tension.

**3:** Loosen (**Do Not Remove**) the four set screws on the turnbuckle using an Allen wrench.

**4:** Carefully insert the Steel Line Strap, with the power connector exposed, into the power feed turnbuckle. Tighten the four set screws very tight using the provided Allen wrench.

**5:** Insert the other end of the Steel Line Strap into the opposite turnbuckle and tighten the set screws.



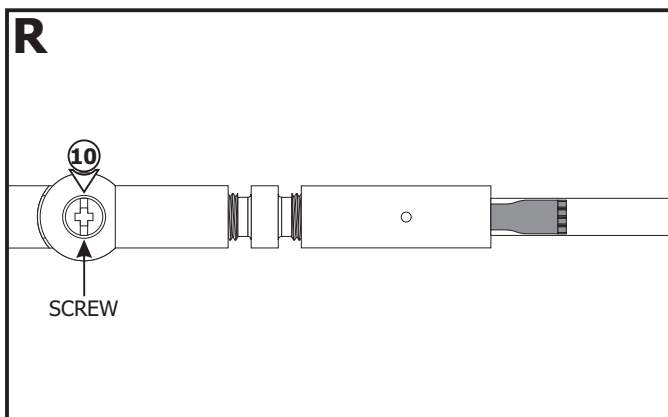
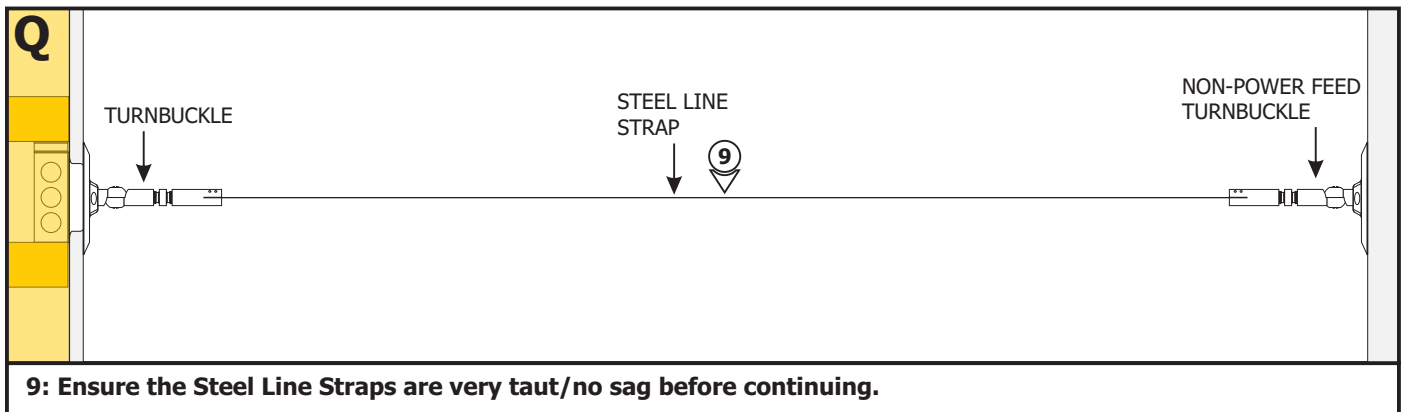
**NOTE: DO NOT** put any other tool in the turnbuckle holes but the spanners to prevent damage to the cable.

**6:** Place the spanners on the holes on the turnbuckle post and turnbuckle body. Rotate the turnbuckle post clockwise with one hand while holding the turnbuckle body with the other hand. **Do not overtighten.**

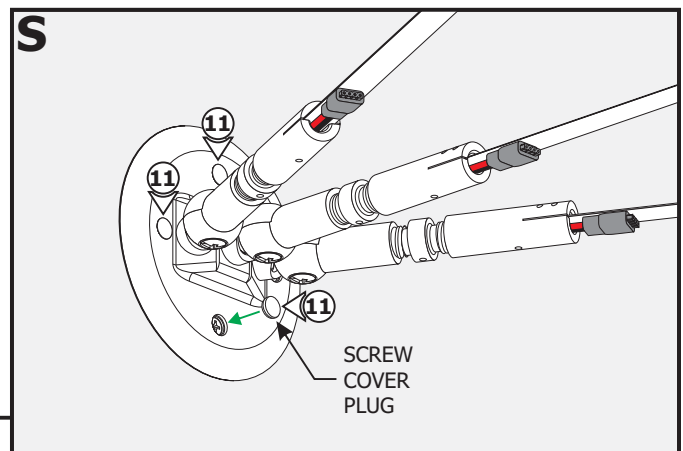
**7:** Tighten the post on the opposite turnbuckle for the Lazer Line to stay taut. **Do not overtighten.**

**8:** Repeat steps 1 through 7 to install the remaining Steel Line Straps.

**NOTE:** Ensure the Steel Line Strap is very taut to avoid sagging.

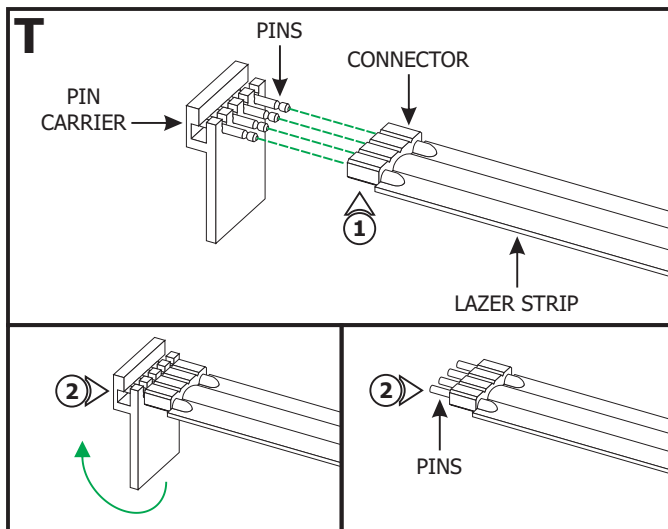


**10:** Tighten the screw on each turnbuckle bushing to secure the position in place.



**11:** Insert the cover plugs over the screws on the canopy.

## Section Five: Install the LED Lazer Strip - Power on One End

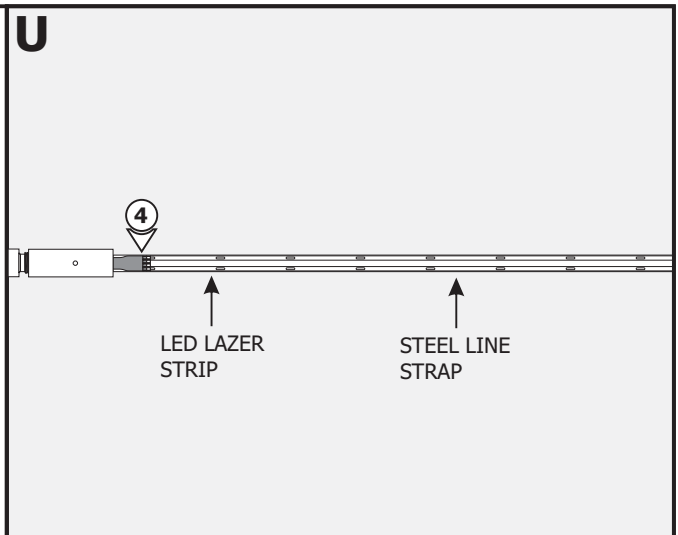


- 1: If not pre-installed, align the pin carrier with the connector on the Lazer Strip.
- 2: Push the pins completely in the Lazer Strip connector and then lift the carrier up to remove it.

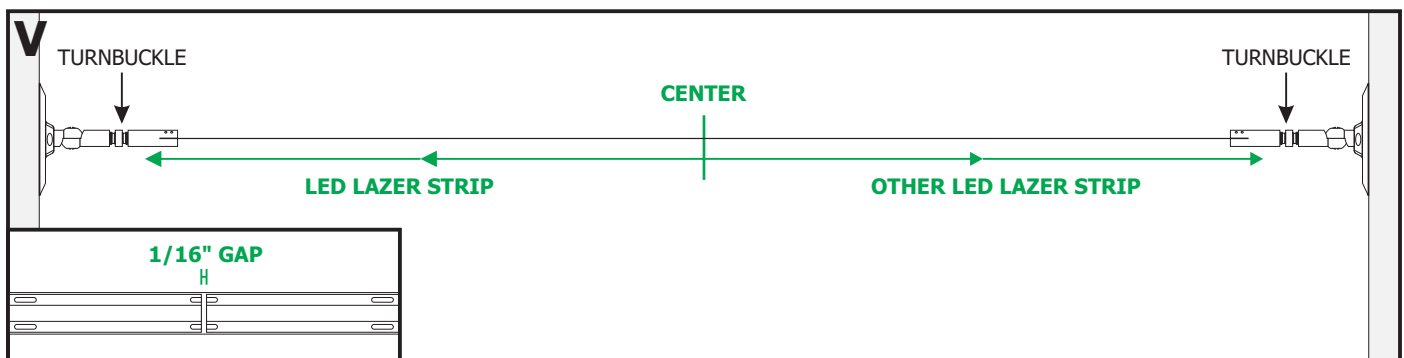
**NOTE:** Omit this section if powering both ends of the Lazer Line. Refer to Section Six.

- 3: Clean the Steel Line Strap thoroughly with alcohol (pads provided) where the LED Lazer Strip will be installed.
- 4: Align the +24V marking on the LED Lazer Strip with the red wire of the power connector. Push the pins of the LED Lazer Strip into the power connector. Remove the backing from the strip and firmly press down onto the Steel Line Strap. Repeat for each LED Lazer Strip.
- 5: If necessary, trim excess LED Lazer Strip **ONLY** on the cuttable section from the non-powered side.

**NOTE:** Repeat step 6 in Section Four so that the Steel Line Strap stays taut. After energizing the LEDs, firmly press down onto the Steel Strap removing all air bubbles from the initial heat if any.

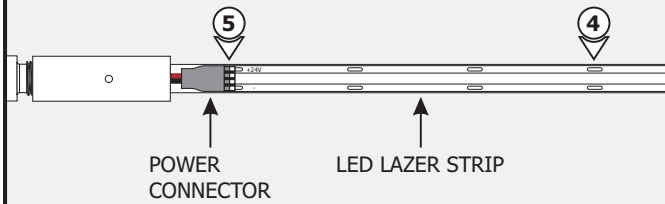


## Section Six: Install the LED Lazer Strip - Power on Both Ends



- 1: Refer to steps 1 and 2 in Section Five if the pins are not pre-installed on the Lazer Strip.
- 2: Clean the Steel Line Strap thoroughly with alcohol (pads provided) where the LED Lazer Strips will be installed.
- 3: To avoid gaps, start at the center of the Steel Line Strap. Align and place both LED Lazer Strips on the center of the Steel Line Strap after measuring to ensure any length changes. Cut excess LEDs at cuttable sections on the non-powered sides if necessary. Ensure that the LED Lazer Strips do not touch. Leave a 1/16" gap between the strips.

**W**



**4:** Remove the backing from the LED Lazer Strip and firmly press down onto the Steel Line Strap.

**5:** Align the +24V marking on the LED Lazer Strip with the red wire of the power connector. Push the pins of the LED Lazer Strip into the power connector. All light gaps should be at the power connector, not in the middle.

**6:** Repeat steps 1 through 5 for the other LED Lazer Strips and remaining Steel Line Straps.

**NOTE:** Repeat step 6 in Section Four so that the Steel Line Strap stays taut. After energizing the LEDs, firmly press down onto the Steel Strap removing all air bubbles from the initial heat if any.

## General Wiring Diagrams

