

# crossover

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# PRODUCT™

ENGLISH.....2  
LIGHTING INSTALLATION INSTRUCTIONS



Read all instructions prior to installing product.  
Always wear safety goggles when operating tools.

# TRANSFORMER SET-UP

Refer to local building codes for installation requirements; failure to install this product in accordance with building codes may affect safety of the product and void product warranty. Refer to manufacturers safety instructions when operating any tools.

## Pre-Installation Notes:

- Follow all national and local building/ electrical codes.
- Transformer must be plugged into GFCI outlet.
- Transformer can support up to 50 watts output.
- DO NOT CUT wires. Extra wire length can be coiled up.
- Do not use extension cords.
- Do not use within 10' of ponds, pools, or spas.
- If using insulated wire staples to hold the wires in place, be sure not to pierce or crush the wires.

## 1.

### Mount the Transformer and Photocell.

Use 4 zinc plated or stainless steel screws (not included) to mount the transformer a minimum of 12" above ground level and within reach of a 120V AC GFCI outlet. The 120V AC power cord attached to the transformer is 5' long. The transformer can be mounted under the deck, but the control panel should remain accessible in order to change the settings if needed.

Plug the transformer into the GFCI outlet. Use a zinc plated or stainless steel screw (not included) to mount the photocell in a location that can sense dusk and dawn (night and day) conditions. The photocell cord is 5' long.

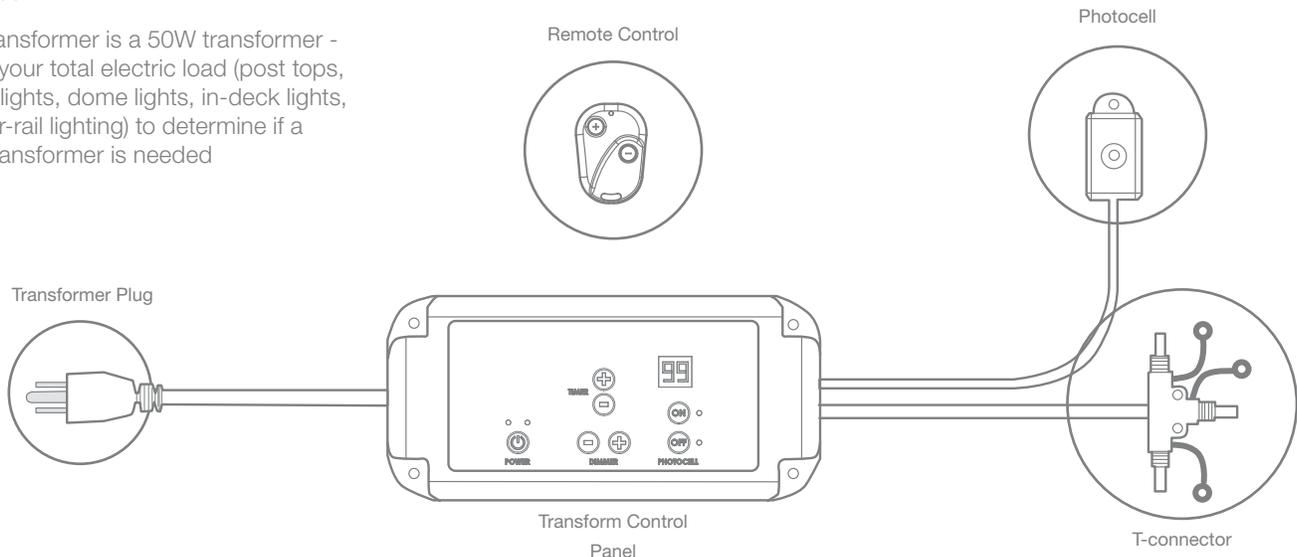
## 2.

If the red light above the power button on the transformer's control panel is illuminated, press the POWER button once to turn the transformer on (green light above power button indicates the transformer is powered on). Press the photocell OFF button (red light next to OFF button will be illuminated indicating photocell is off). This will force the transformer output to be on so that the LED lights will be illuminated during install.

### Prior to Installation:

Determine all posts that will require LED lighting. Sketch deck illustration to determine where transformer will be mounted, and how the wire will be fed from the transformer to the first post.

NOTE: Transformer is a 50W transformer - calculate your total electric load (post tops, side/stair lights, dome lights, in-deck lights, and under-rail lighting) to determine if a second transformer is needed



# 3.

## Mount the T-Connector.

Run the 4' output power cable with the T-connector attached to the location of the first light (typically located at the base of the first post) or a central location if lights will be located in multiple directions. The T-connector can be secured loosely using (2) #4 x 1" zinc plated or stainless steel screws (not supplied). Do not tighten the screws completely as this can damage the T-connector.

If needed, all 3 of the output connectors on the T-connector are active and will supply equal power to the entire system.

Any unused T-connector terminals or splitters in the system must be sealed using the attached cap.

## TRANSFORMER CONTROLS

### On/Off Switch:

When green light is illuminated the + (plus) lights may or may not be on depending on the timer or photocell settings. When red light is illuminated the transformer is powered off and no other controls will function.

### Dimmer Control:

Ensure the LED lights are ON. The - (minus) button dims LED Lights. The + (plus) button brightens the LED Lights. For incremental changes: Press the (-) or (+) dimmer buttons with short pulses. This will dim the LED lights by about 10% per press of the button. For fine adjustment changes: Hold the (-) or (+) dimmer buttons until the desired brightness level is reached and then release the button.

### Photocell Control:

To turn on the Photocell, press the ON button, the green light by the ON button will be illuminated. NOTE: The Photocell has a 2 minute delay. The transformer will now operate according to the timer and photocell. To turn off the Photocell, press the OFF button, the red light by the OFF button will be illuminated. The LED lights will now be ON continuously.

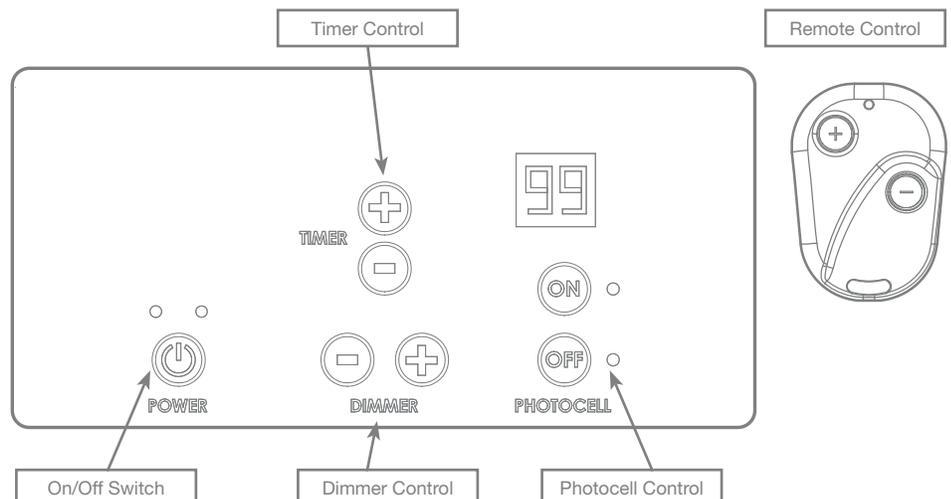
### Timer Control and LCD Display:

When the Photocell is OFF, the LCD Display will show 99. The LED lights will be on continuously, unaffected by the photocell. For dusk to dawn operation of the LED lights (controlled by the Photocell): Ensure the Photocell is ON. Press the Timer control + (plus) button until the LCD Display shows 99. The Photocell has a 2 minute delay.

For Timer operation (LED lights turn on at dusk and turn off from 1 to 9 hours in 1 hour increments): Ensure the Photocell is ON. Press the Timer control - (minus) or + (plus) buttons until LCD Display shows the desired ON time in 1 hour increments from 1 to 9 hours. The Photocell has a 2 minute delay.

### Remote Control (15 yard range):

For incremental changes: Press the - (minus) or + (plus) buttons with short pulses. This will dim the LED lights by about 10% per press of the button. For fine adjustment changes: Hold the (-) or (+) buttons until the desired brightness level is reached and then release the button..



# SUPPLYING POWER TO YOUR FIRST POST

Do NOT cut any wires during your installation. Wire harnesses can be purchased in lengths of 5', 7' and 9'. Excess wire can be coiled up in the posts or beneath the deck surface for a clean installation..

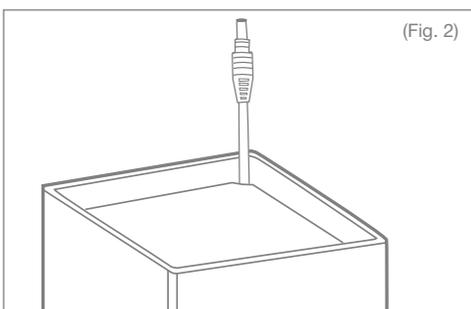
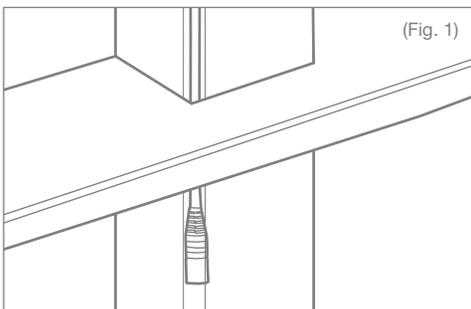
## 1a.

### Using 4" x 4" Wood Posts with Sleeve:

Cut all 4" x 4" posts to a height of 35 1/2" from deck surface for a 36" high installed railing; 41 1/2" for a 42" high installed railing.\* This will allow room for excess wiring to be hidden under your post cap. Right next to mounted 4" x 4", beneath deck surface, drill a 3/4" diameter hole through the deck board – this will be the hole to feed the wire through for the first post closest to the transformer.

Connect the female end of the wire harness to the T-connector (Fig. 1) and run the wire harness up the post or post sleeve with the male connector exiting at the top of the post (Fig. 2).

*\*Larger T-top railings with higher brackets may require cutting the post down to only an inch shorter. **When cutting your posts, ensure that the screws for your rail brackets will still screw through into your wooden posts.***



## 1b.

### Using Steel Post Install Kit with Sleeve:

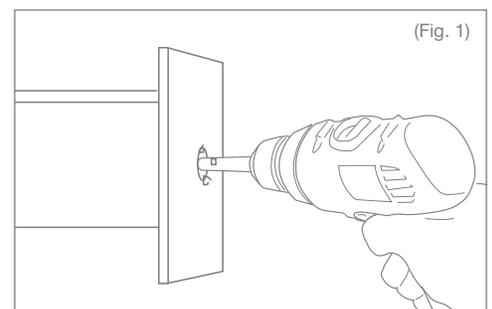
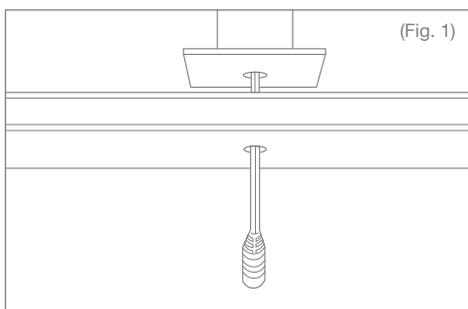
Drill a 1/2" hole through "boxing" and deck board (using the bottom base plate as a guide) – this will be the hole to feed the wire through for the first post closest to the transformer. The wire will run through the inside of the steel structural post.

## 1c.

### Using an Aluminum Post:

Drill a 3/4" hole through the mounting plate – this will be the hole to feed the wire through for the first post closest to the transformer.

The wire will then run through the inside of the post.



# CONNECTING WIRE HARNESSES

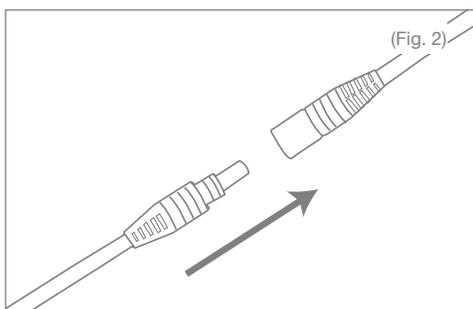
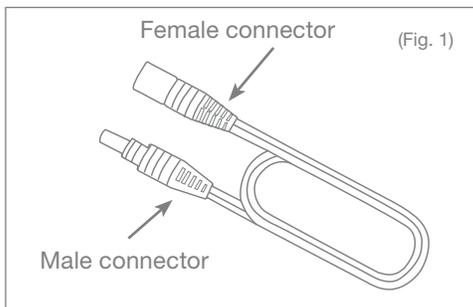
## 1.

### Wire Harnesses:

The harness is used to extend power from the transformer to each individual light or splitter. The harness has a male and female end (Fig. 1).

Harnesses can be plugged into each other to extend length if needed (Fig. 2).

The harness can be run underneath the deck (above ground) and/or inside the post/railing where it is hidden from view.



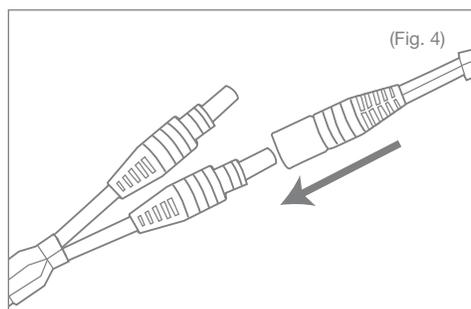
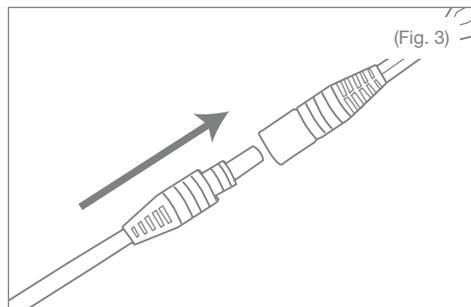
## 2.

### 2-Way Splitter:

The 2-Way Splitter is used to evenly distribute power from 1 input to 2 outputs.

Plug the male connector from a harness into the female input connector of the 2-Way Splitter (Fig. 3). Press firmly until the connection is fully engaged.

Plug the female connector from a harness or a light into one of the male output connectors (Fig. 4). Repeat for the other output connector.



## 3.

### 5-Way Splitter

The 5-Way Splitter is used to evenly distribute power from 1 input to 5 outputs.

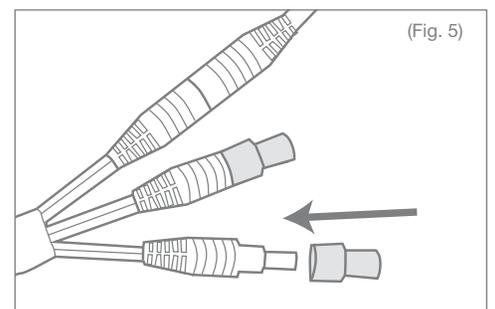
Plug the male connector from a harness into the female input connector of the 5-Way Splitter. Press firmly until the connection is fully engaged.

Connection is fully engaged when there is minimal gap between the male harness connector and the female input connector.

Plug the female connector from a harness or a light into one of the male output connectors. Repeat for each output connector that is needed.

If there are any unused output connectors, an end cap (2 included) must be used to seal the output connector (Fig. 5). Any unused end caps can be saved or discarded. If there are more than 2 unused output connectors, a 2-Way Splitter (Fig. 4) should be used.

The 5-Way Splitter can be secured using (2) #2 Stainless Steel Screws (not supplied).



# LED POST CAP INSTALLATION

Crossover Product transformer, harnesses, and splitters are compatible with all Crossover Product lighted accessories (post caps, side/stair lights, dome lights, under-rail lighting, and flush-deck lights) and Transform lighted accessories (Transform post caps, Transform dome lights).

## 1.

Plug the male connector that is at the top of your post (Fig. 1) into the female connector attached to the light. Press firmly until the connection is fully engaged.

Connection is fully engaged when there is minimal gap between the male and female connector. Ensure all excess wiring is concealed in the post and will not interfere with the post cap fitting on the post or post sleeve.

For vinyl post caps, a reflector plate is included; place this on the top of the wooden 4" x 4" or structural post to deflect the light upward.

## 2.

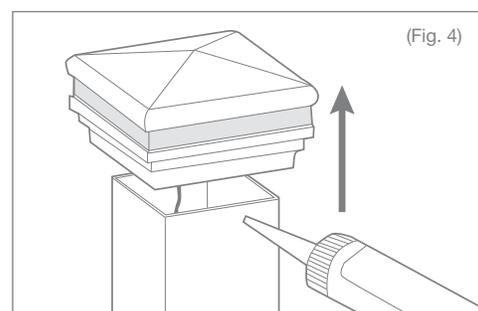
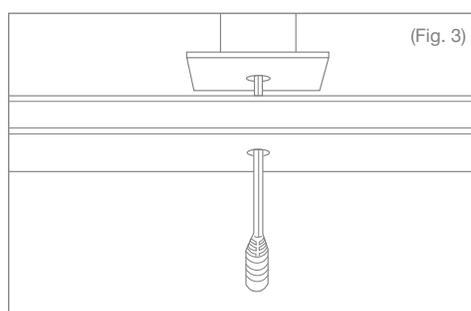
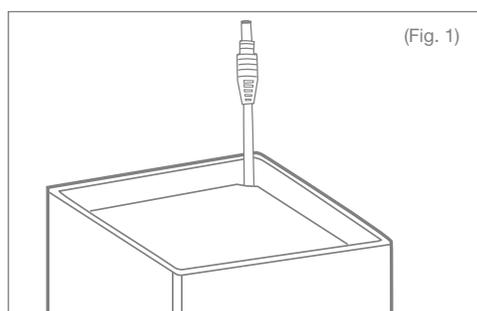
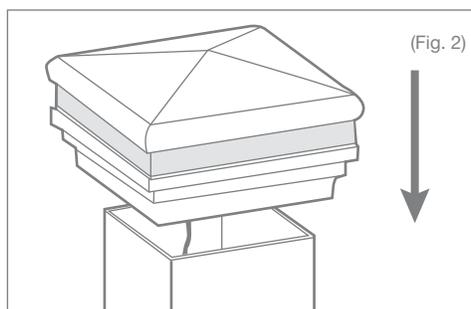
Carefully align the post cap light and set on top of the post or post sleeve (Fig. 2). Any extra wire can be coiled up inside the post.

Plug the female harness connector at the base (Fig. 3) of the post into the male harness connector on the transformer. The post cap light will now be illuminated if the transformer is on.

## 3.

(Optional) After the light is confirmed working, lift the post cap light from the post and apply a bead of clear exterior silicone caulking (not supplied) where the post cap light will be installed onto the post or post sleeve (Fig. 4).

Place post cap light onto the adhesive.



# LED SIDE LIGHT INSTALLATION

Crossover Product transformer, harnesses, and splitters are compatible with all Crossover Product lighted accessories (post caps, side/stair lights, dome lights, under-rail lighting, and flush-deck lights) and Transform lighted accessories (Transform post caps, Transform dome lights).

Follow instructions for wiring harness so that there is a male connector at each location that will have a light installed.

## 1.

Place the template (below) at the desired location and pre-drill two  $\frac{1}{16}$ " holes for screws and one  $\frac{1}{2}$ " hole for the wire.

Run a harness (not included) down the inside of the post or post wrap with the male connector hanging out of the  $\frac{1}{2}$ " hole that was just drilled (Fig. 1).

## 2.

Plug the male connector (from the harness that exits the top of the post) into the female connector attached to the side light.

Press firmly until the connection is fully engaged. The light should be illuminated if the transformer is on.

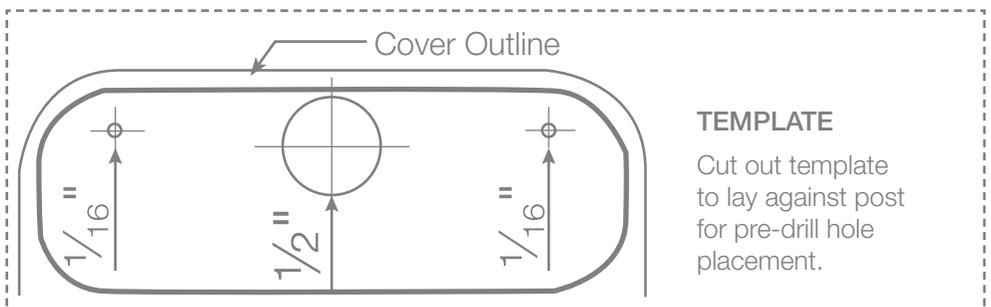
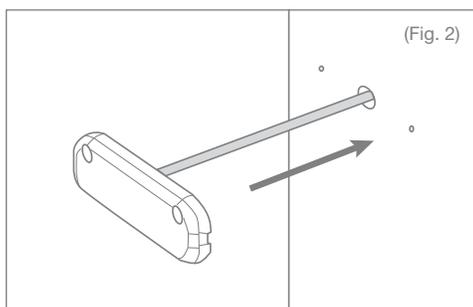
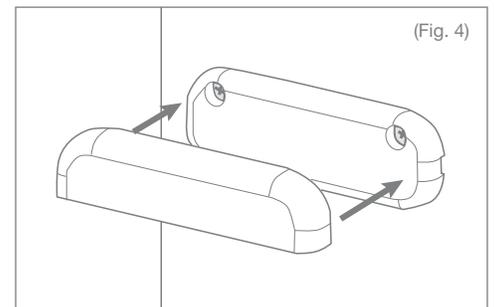
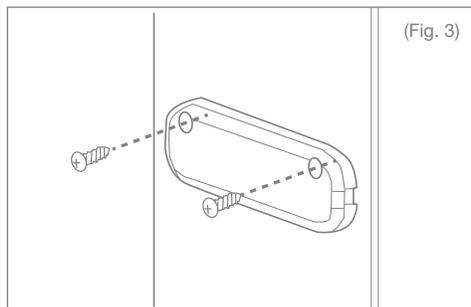
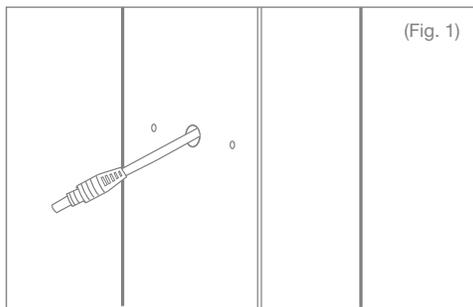
Push the wire and connection back through the  $\frac{1}{2}$ " hole until the back of the lens is flush with the post (Fig. 2).

Align the pre-drilled holes and use the 2 included stainless steel screws to mount the lens to the post (Fig. 3).

## 3.

Align the cover with the lens of the light and snap the cover onto the lens (Fig. 4). Only one cover will be used per lens (2 are supplied). Each cover will give a different lighting effect. The unused cover can be saved or discarded.

If needed, the cover can be removed by carefully inserting a small flat blade screwdriver near the latch on 1 side and popping off the cover. Care should be taken to not scratch the lens.



# LED DOME LIGHT INSTALLATION

Crossover Product transformer, harnesses, and splitters are compatible with all Crossover Product lighted accessories (post caps, side/stair lights, dome lights, under-rail lighting, and flush-deck lights) and Transform lighted accessories (Transform post caps, Transform dome lights).

Follow instructions for wiring harness so that there is a male connector at each location that will have a light installed.

## 1.

Cut out the template below and place at the desired location. Pre-drill two  $\frac{1}{16}$ " holes for screws and one  $\frac{1}{2}$ " hole for the wire.

Run a harness (not included) down the inside of the post or post wrap with the male connector hanging out of the  $\frac{1}{2}$ " hole that was just drilled.

## 2.

Plug the male connector into the female connector attached to the light.

Press firmly until the connection is fully engaged. The light should be illuminated if the transformer is on.

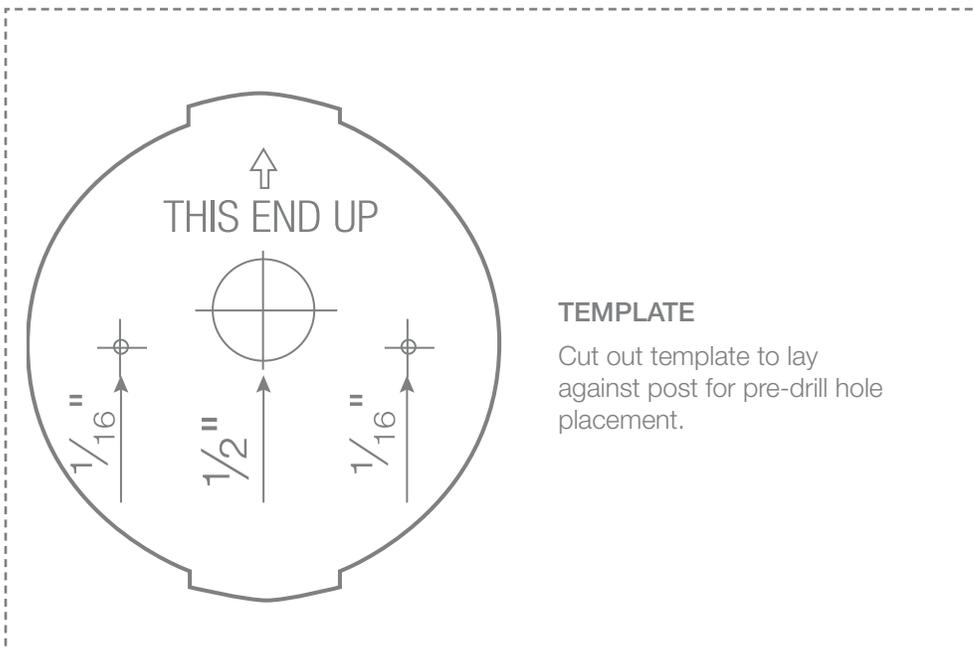
## 3.

Twist the dome light to separate the dome from the lens back. Push the wire and connection of the lens portion back through the  $\frac{1}{2}$ " hole until the back plate of the light is flush with the post (Fig. 1).

Align the pre-drilled holes and use the 2 included stainless steel screws to mount the back plate of the light to the post (Fig. 2).

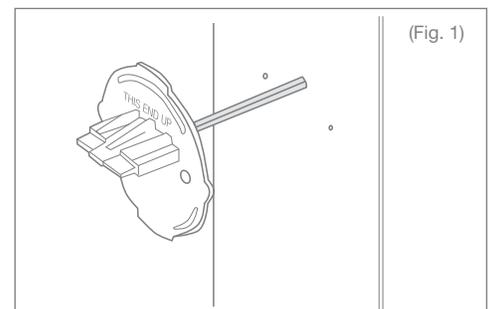
Place the dome/lens portion of the light over the back plate at a slight angle. Place the dome/lens portion over the back plate.

Once the dome/lens portion of the light is flush with the post, twist the dome/lens clockwise until it locks into place.

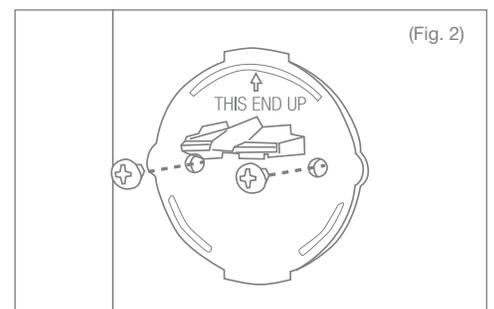


**TEMPLATE**

Cut out template to lay against post for pre-drill hole placement.



(Fig. 1)



(Fig. 2)

# LED FLUSH MOUNT LIGHT INSTALLATION

Crossover Product transformer, harnesses, and splitters are compatible with all Crossover Product lighted accessories (post caps, side/stair lights, dome lights, under-rail lighting, and flush-deck lights) and Transform lighted accessories (Transform post caps, Transform dome lights).

Follow instructions for wiring harness so that there is a male connector at each location that will have a light installed.

## 1.

Layout the location of the light(s). To prevent splitting, do not install within 1/2" of the edge (1" from center) of the light and the edge the deck board (Fig 1).

Use a 1" diameter Forstner bit to bore a flat bottom hole 0.7" deep into the deck board (Fig. 1). **NOTE:** Do not drill completely through the deck board with this bit.

Drill a 1/2" diameter hole in the center of the hole that was drilled in with the Forstner bit (Fig. 2). Drill completely through the deck board with this bit.

## 2.

Place the connector and wire attached to the light through the hole that was drilled in Step 1 (Fig. 3).

Gently insert the flush mount light into the hole that was drilled in Step 1 (Fig. 4). The top of the light should sit just below the surface of the deck board.

If the light is above the deck surface, remove it and check for debris. If there is no debris, bore the hole slightly deeper with the Forstner bit.

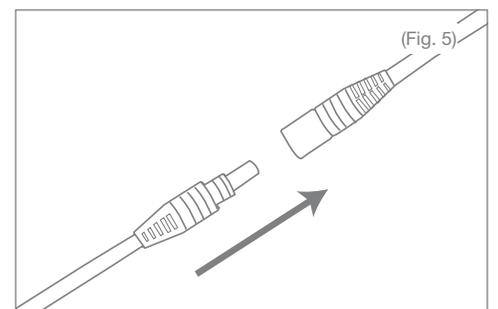
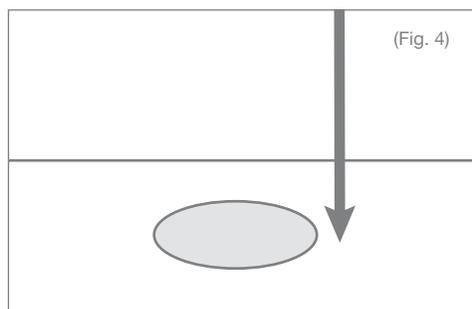
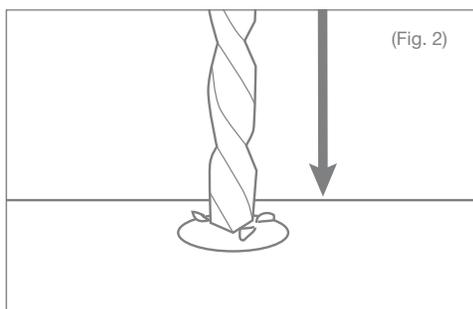
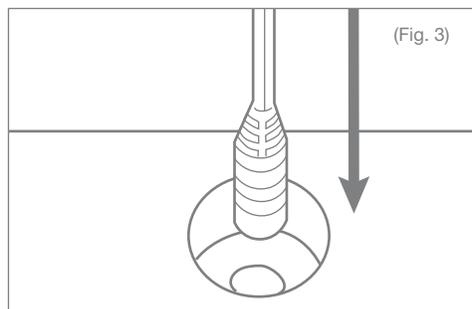
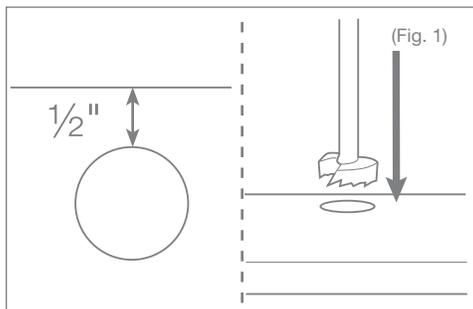
If the light is too far below the surface, remove the light and place a small amount of clear exterior silicone caulking in the bottom of the hole and reinsert the light so it is just below the surface of the deck board.

## 3.

Underneath the deck, plug the male connector of the harness into the female connector attached to the light (Fig. 5). Press firmly until the connection is fully engaged.

Connection is fully engaged when there is minimal gap between the male and female connector.

The flush mount light will now be illuminated if the transformer is on and the harness is plugged in.



# LED UNDER-RAIL LIGHTING INSTALLATION

Crossover Product transformer, harnesses, and splitters are compatible with all Crossover Product lighted accessories (post caps, side/stair lights, dome lights, under-rail lighting, and flush-deck lights) and Transform lighted accessories (Transform post caps, Transform dome lights).

**NOTE: Under-Rail Lighting should be installed prior to the completion of your railing installation for the most seamless install as you will be required to drill through the posts where the top rail meets the post.**

## 1.

Under-Rail lighting can be installed directly on the underside of your top rail or by using the PVC under-rail light channel (sold separately).

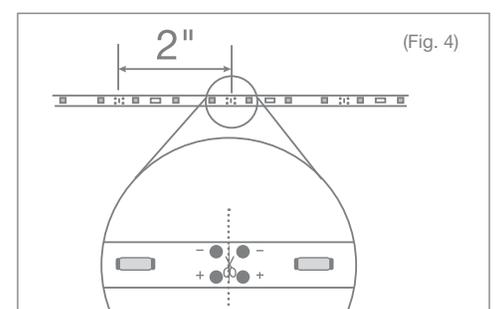
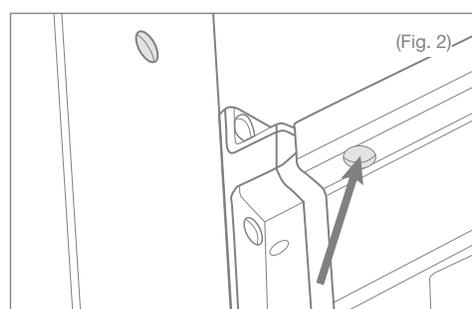
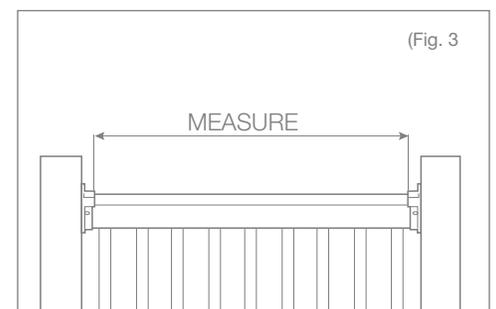
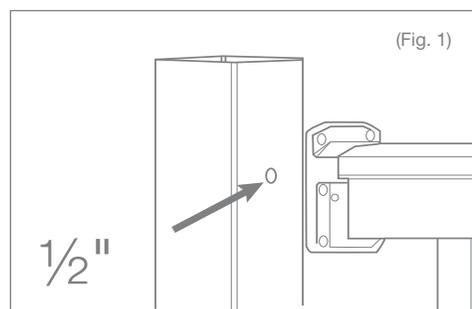
Under-Rail light strip comes with an adhesive backing for easy install as well as a secondary adhesive strip for the under-rail light channel. The Under-Rail light strip has a connector at one end of the strip to plug into the harness running up your post.

Mark on your posts using a pencil where the under-rail light strip will connect to the harness (running up inside the post) and exit the post sleeve to the top rail of your railing section. This hole will be hidden once the brackets and top rail are mounted to the post. Drill a  $\frac{1}{2}$ " hole in the post at this location (Fig. 1).

If your top rail has visible brackets, make a mark on the underside of the top rail where the bracket is located. Drill  $\frac{1}{2}$ " hole in top rail at this mark (Fig. 2), moving brackets aside if necessary. This is where the light strip will exit the top rail and run along the underside of the top rail.

## 2.

Measure the length along the top rail that the under-rail lighting strip will run. This may be post-to-post if your brackets are hidden, or bracket-to-bracket if the brackets are exposed (Fig. 3). If using the under-rail light channel, subtract  $\frac{1}{4}$ " and cut the channel to this length using a fine-toothed saw. Cut under-rail light strip to the required length. **NOTE: under-rail light strip can only be cut at the designated locations (located every 2" along light strip) as shown in figure 4.**



### 3.

Run a harness down the inside of the post, with the male connector accessible at the top of the post (Fig. 5). Thread the female end of the under-rail light strip through the hole in the top rail and through the hole in the post, being careful not to cut or damage the light strip or wiring if threading through a metal post. Plug the male connector into the female connector attached to the under-rail light strip (Fig. 6).

Attach your brackets to the post and connect your top rail to the brackets, taking care not to damage the wiring or under-rail light strip.

### 4.

Using supplied alcohol pads clean under side of rail and both surfaces of under-rail light channel (if using). Do not throw used pads away, they are needed in later step.

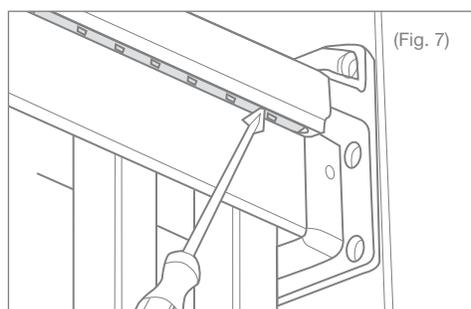
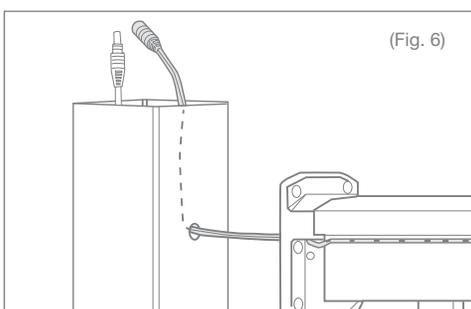
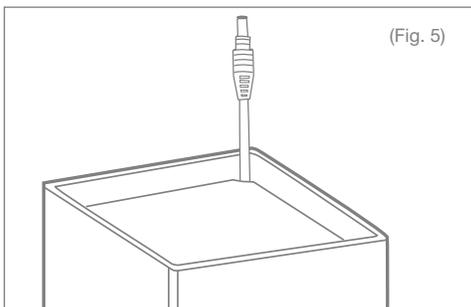
If using under-rail light channel, remove adhesive backing on one side of adhesive strip. Apply adhesive strip to back of under-rail light channel. Remove adhesive backing on back of PVC channel and position on the underside of your top rail. Start at end with hole allowing small gap for strip light to run from the post to the light channel. Push firmly on the channel to securely attach to rail.

TIP: Fold the used alcohol pad over the tip of a flat head screwdriver to help press the under-rail light strip into the channel without damaging the LEDs (Fig. 7).

### 5.

If applying light strip directly to the underside of your top rail, remove the adhesive strip from the under-rail light strip and, starting at the opposite post, firmly press the under-rail light strip to the underside of the top rail. When you reach the post where the harness is connected to the under-rail light strip, any excess wiring can be gently pushed back into the hole.

Complete your installation by adding a dab of silicone caulk to the cut end of the light strip, protecting the exposed circuit.



Need a little help installing your railing?  
[www.rdirail.com/support/installation-videos.html](http://www.rdirail.com/support/installation-videos.html)



crossover  

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