




SAFETY WARNINGS

IMPORTANT SAFETY INFORMATION

SUITABLE FOR WET OR DAMP OR DRY LOCATION.

 **WARNING** Risk of fire or electric shock. LED Retrofit Kit installation requires knowledge of signs electrical systems. If not qualified, do not attempt installation. Contact a qualified electrician.

 **WARNING** Risk of fire or electric shock. Install this kit only in host signs that have been identified in the installation instructions and where the input rating of the retrofit kit does not exceed the input rating of the sign.

 **WARNING** Installation of this LED retrofit kit may involved drilling or punching of holes into the structure of the sign. Check for enclosed wiring and components to avoid damage to wiring and electrical parts

NOTE INSTALLER SHOULD EXAMINE ALL PARTS THAT ARE NOT INTENDED TO BE REPLACED BY THE RETROFIT KIT FOR DAMAGE AND REPLACE ANY DAMAGED PARTS PRIOR TO INSTALLATION OF THE RETROFIT KIT.

NOTE INSTALLER SHOULD NOT DISCONNECT EXISTING WIRES FROM LAMPHOLDER TERMINALS TO MAKE NEW CONNECTIONS AT LAMPHOLDER TERMINALS. INSTEAD INSTALLERS SHOULD CUT EXISTING LAMPHOLDER LEADS AWAY FROM THE LAMPHOLDER AND MAKE NEW ELECTRICAL CONNECTIONS TO LAMPHOLDER LEAD WIRES BY EMPLOYING APPLICABLE CONNECTORS.

NOTE DO NOT MAKE OR ALTER ANY OPEN HOLES IN AN ENCLOSURE OF WIRING OR ELECTRICAL COMPONENTS DURING KIT INSTALLATION.

NOTE THIS SIGN HAS BEEN MODIFIED TO OPERATE LED LAMPS. DO NOT ATTEMPT TO INSTALL OR OPERATE * LAMPS IN THIS SIGN” SHALL BE MARKED ON THE RETROFITTED SIGN WHERE READILY VISIBLE BY THE USER DURING NORMAL MAINTENANCE INCLUDING RELAMPING. * SHALL BE REPLACED BY THE ORIGINAL ILLUMINATION TYPE SUCH AS FLUORESCENT, HID, ETC. THIS MARKING SHALL BE PROVIDED ON A SEPARATE PERMANENT LABEL THAT IS INTENDED TO REMAIN IN THE APPLIED POSITION FOR THE LIFETIME OF THE SIGN UNDER CONDITIONS OF NORMAL USE.

SAFETY WARNINGS

IMPORTANT SAFETY INFORMATION

For Wet, Damp, and Dry Locations



Before you begin.

Read these instructions completely & carefully.



WARNING

To avoid electrical shock or fire:

- Disconnect power at service panel prior to installation, troubleshooting or maintenance.
- Follow NEC and local wiring codes.
- Properly ground power supply(s) and fixture.
- Do not connect output of multiple LED power supplies in series or parallel.
- Module Ambient Operating Temperature = -29C to +60C

INSTALLATION

EQUIPMENT NEEDED

- Screwdriver
- Wire strippers
- Gloves
- Tape Measure

COMPONENTS NEEDED

- UL recognized 18 AWG wire
- UL approved wire connectors for 18AWG wire
- Serrated head sheet metal screws
- Disconnect switch (if required)
- Universal Douglas Sign Stick
- Universal Douglas class 2 power supply
- R17D recessed double contact (RDC) lamp holders
- Metal patch material (if required)
- Non-hardening caulk (if required)

INSTALLATION STEPS (factory install):

Step 1:

Determine the length and number of Sign Sticks needed. Determine the number of lampholders needed (2 per sign stick module) to mount all Sign Stick modules. Select the number of power supplies needed from table 1 on page 2.

Step 2:

Install high output, recessed double contact fluorescent lampholders along returns of cabinet.

Step 3:

Mount the power supply using the mounting tabs and fastening means.

Step 4:

Insert Sign Stick modules into lamp holders and connect wire leads to the power supply output according to the wiring diagram in Figure 1. Use UL Listed wire connectors for splice connections. Rotate the end caps of each Sign Stick module, if necessary, so that the LEDs are facing the front of the sign (See **Figure 2**).

TABLE 1

Part Number	Sign Stick Model	Module Input Power (Watts)	Max No. of Modules per Power Source
L12V60UNV-A L12V60UNV6-A L12V60UNV-Q L12V60UNV-R	EVSS12xx24	3.9	15
	EVSS12xx36	5.8	10
	EVSS12xx48	7.8	7
	EVSS12xx60	9.7	6
	EVSS12xx72	11.6	5
	EVSS12xx84	13.6	4
	EVSS12xx96	15.5	3
	EVSS12xx108	17.5	3
L24V100UNV-A L24V100UNV-Q	EVSS12xx120	19.4	3
	EVDS24xx24	7.8	12
	EVDS24xx36	11.6	8
	EVDS24xx48	15.5	6
	EVDS24xx60	19.4	4
	EVDS24xx72	23.3	4
	EVDS24xx84	27.2	3
	EVDS24xx96	31.0	3
L12V120UNV-S (Dual Channel)	EVDS24xx108	35.0	2
	EVDS24xx120	38.8	2
	EVSS12xx24	3.9	15 (each channel)
	EVSS12xx36	5.8	10 (each channel)
	EVSS12xx48	7.8	7 (each channel)
	EVSS12xx60	9.7	6 (each channel)
	EVSS12xx72	11.6	5 (each channel)
	EVSS12xx84	13.6	4 (each channel)
L12V120UNV-S (Dual Channel)	EVSS12xx96	15.5	3 (each channel)
	EVSS12xx108	17.5	3 (each channel)
	EVSS12xx120	19.4	3 (each channel)

FIGURE 1

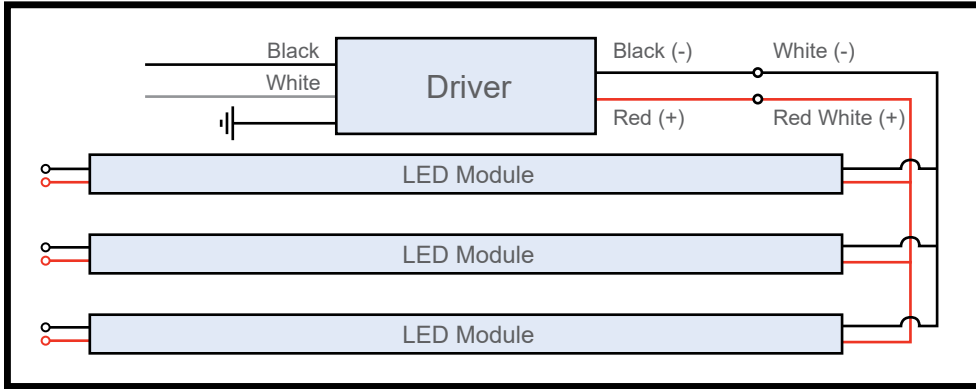
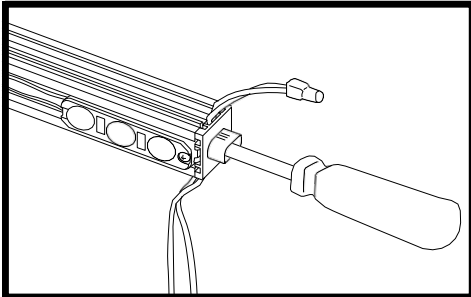
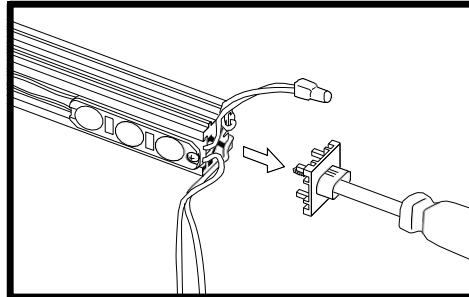


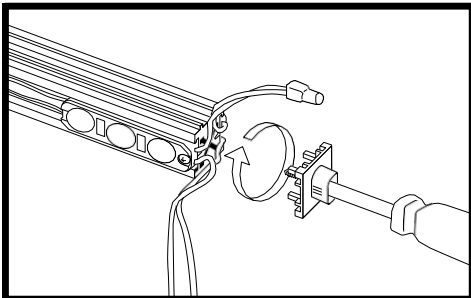
FIGURE 2



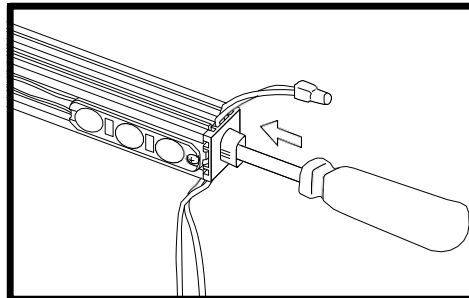
2.a) Use a Phillips-head screwdriver to loosen the screw in the end cap.



2.b) Remove the screw and endcap from the main extrusion body



2.c) Rotate the endcap 90° into the desired position for the application.



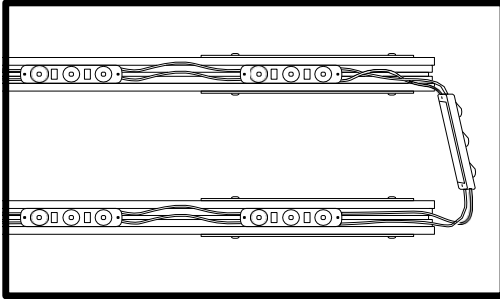
2.d) Push the endcap back into the extrusion body and tighten the screw.

INSTALLATION STEPS (RETROFIT INSTALL):

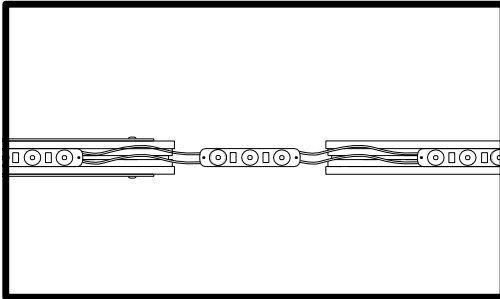
- Before proceeding, ensure that the sign is not and cannot be energized by following the appropriate lock out/ tag out procedures.
- Determine if the sign can be retrofitted and identify which parts to remove. The sign must be a listed sign that uses standard R17D recessed double contact (RDC) lamp holders.
 - Remove existing fluorescent lamps and dispose of according to local codes.
 - Remove existing enclosure covers to access the ballast. Remove the ballast from the existing electrical enclosure and cut back any exposed Type 2 wiring leading from the ballast to the lampholders. The lampholders will be re-used to mechanically mount the LED Modules but will be electrically non-functional.
- Examine the lampholders for mechanical serviceability. Replace lampholders that show signs of physical damage; ie cracked receptacle components, non-functioning spring back.
- Examine the orientation of lampholder receptacle position and verify the LED array will face the diffuser/sign when mounted. If necessary, rotate the end caps. Refer to **Figure 2** in factory installation instructions.
- Install the LED modules into the lampholders and interconnect the modules according to the wiring diagram in **Figure 1** in the factory installation instructions.
 - WARNING!!** : DO NOT EXCEED the maximum number of modules per driver listed in **TABLE 1**.
- Install the LED driver power supply into the existing suitable electrical enclosure inside the sign or remotely. Fasten the supply securely using serrated head self-taping screws to create a suitable ground to the sign.
- Determine if a disconnect switch needs to be installed.
 - Disconnect switches may be remotely mounted in signs installed in the U.S.
 - Signs installed in Canada are required to have a disconnect switch as part of the sign.
 - Whether existing or new, the disconnect switch must be suitably rated for the driver, (1 amp@120V; .4 amp @277 Volt, minimum).
- Use the existing conduit or raceway for wiring. Drill access holes where required for the CLASS 2 wires to exit the raceway to interconnect to the LED module chain.
 - Connect the white/red wire leading to the sign module to the red wire from the driver according to the wiring diagram in **Figure 1** in the factory installation instructions.
 - Connect the white wire leading to the sign module to the black wire from the driver according to the wiring diagram in **Figure 1** in the factory installation instructions.
 - Connect the incoming wiring through the disconnect switch to the driver such that the line wire is attached to the line side (BLACK) wire of the power supply.
 - Connect the incoming neutral wire to the white (NEUTRAL SIDE) of the driver. Make all wire-wire AC connections with approved wire nuts for the branch circuit & LED driver supply conductors.
- Patch or seal any unused openings in the rain enclosure that are not intended to be drain holes.
 - Openings greater than ½ inch in diameter require a metal patch secured by screws or rivets and caulked with non-hardening caulk.
 - Smaller holes may be sealed with a non-hardening caulk.
- Clear work area and test sign operation.

INSTRUCTIONS FOR JOINER ASSEMBLY (5FT -10FT VARIANTS)

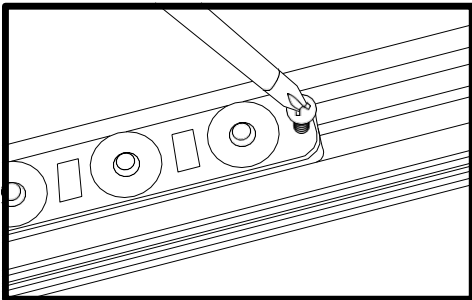
1. Unpack the product and prepare your workspace



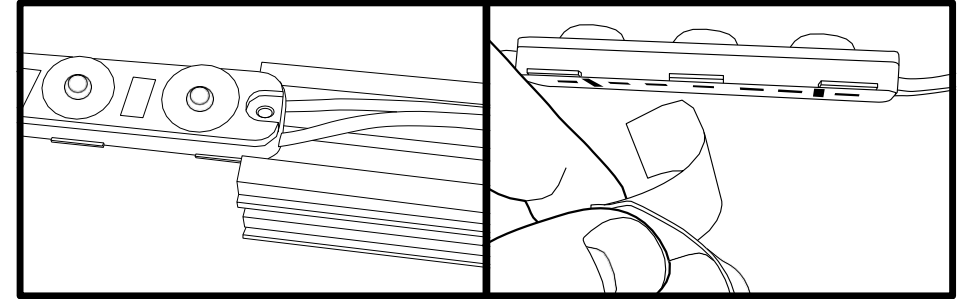
2. Extend the two portions of the product in a straight line



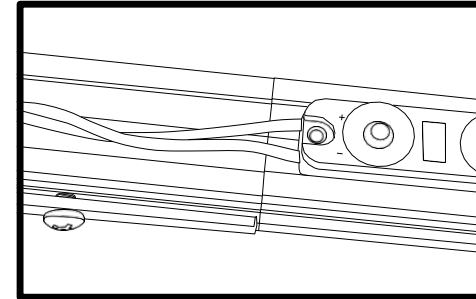
3. Loosen the screw on the end module until it can slide freely in the aluminum extrusion



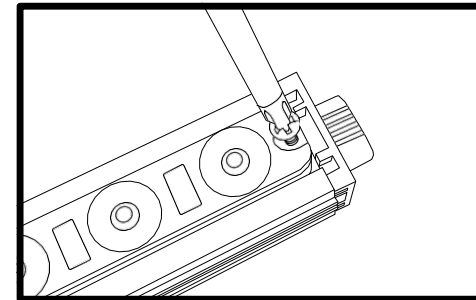
4. Fully extend the modules to the end of the extrusion (butting up to the endcap) Slide the tabs of the middle module into the aluminum extrusion channel as needed. Remove the adhesive backing of the middle module (if it jams while inserting into extrusion)



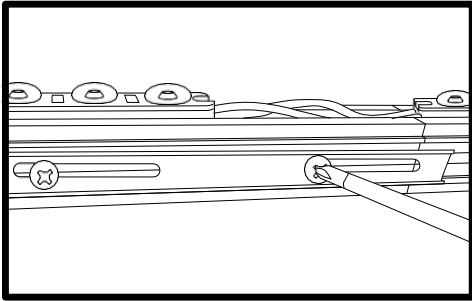
5. Push the two aluminum extrusions together (end-to-end)



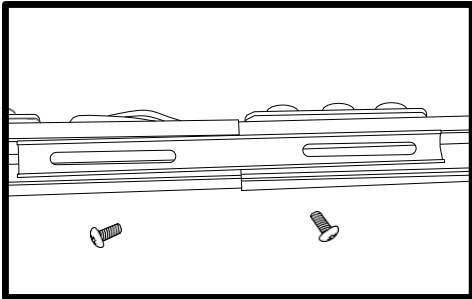
6. Tighten the screw on the end module to hold it in place



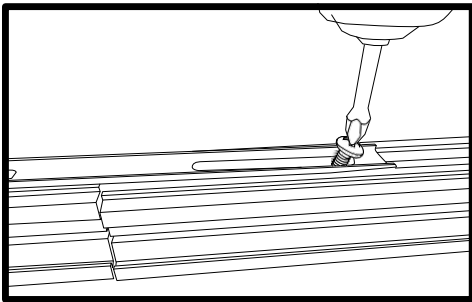
7. Remove both screws from each side joiner



8. Slide the joiner so it straddles both aluminum extrusion segments



9. Replace and tighten both screws on the side joiner



10. Repeat steps 8 and 9 for the other side joiner

11. If using an 8ft-10ft variant, repeat steps 7 through 9 for the second set of joiners. The kit is now ready for mounting in the sign.