LEGION LIGHTBAR

User Manual   v.L1.1

Pre-Installation
Wiring & Functions
Vehicle Roof Installation

Standard Feet
- Permanent Mount
- Strap Kit Mount

Adjustable Feet

Flat Surface Installation
Narrow Surface Mount
Wide Surface Mount

PRE-INSTALLATION

To prevent damage to lightbar and vehicle, ensure that all equipment operates properly, and carefully plan where to mount and wire the lightbar and controlling equipment:
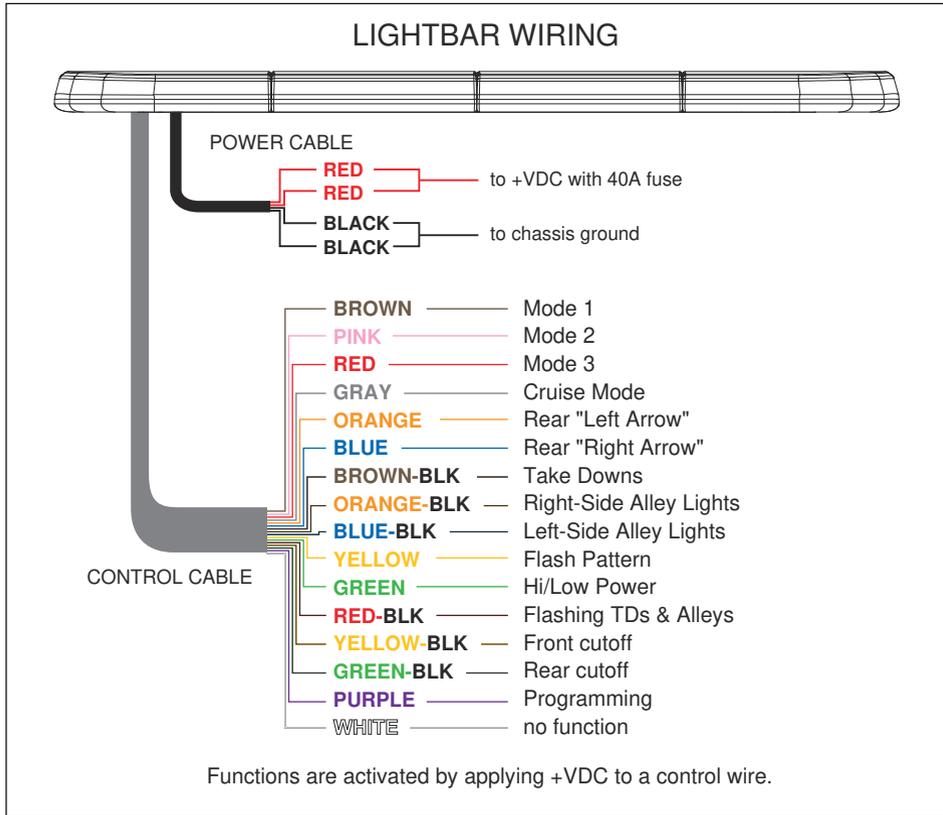
1. Verify that the lightbar and mounting hardware fit the vehicle.

2. Pre-configure desired lightbar functions.

3. Determine:
   - the location to mount the lightbar.
   - the location to route the lightbar's Power Cable.
   - the location to route the Function Cable, (eg. to siren, switch box, console).

WARNING: Take extreme care when routing wires around airbag areas to not interfere with it's proper operation.

4. Separate all electronic equipment wiring from two-way radio equipment wiring.

5. To avoid interference, keep two-way radio antennas a minimum of 50cm away from warning equipment.

6. After drilling holes, deburr and smooth sharp edges, and insert grommets to protect the wires from chafing.

7. When frame-ground the equipment, use the manufacturer-supplied ground locations in the vehicle.

WIRING & FUNCTIONS

Different applications require different functions. It is highly recommended to determine and configure the required functions prior to Installation; (refer to 'CONTROL CABLE' section).

LIGHTBAR WIRING

POWER CABLE

RED
RED — to +VDC with 40A fuse
BLACK
BLACK — to chassis ground

Wire	Function
BROWN	Mode 1
PINK	Mode 2
RED	Mode 3
GRAY	Cruise Mode
ORANGE	Rear "Left Arrow"
BLUE	Rear "Right Arrow"
BROWN-BLK	Take Downs
ORANGE-BLK	Right-Side Alley Lights
BLUE-BLK	Left-Side Alley Lights
YELLOW	Flash Pattern
GREEN	Hi/Low Power
RED-BLK	Flashing TDs & Alleys
YELLOW-BLK	Front cutoff
GREEN-BLK	Rear cutoff
PURPLE	Programming
WHITE	no function

CONTROL CABLE

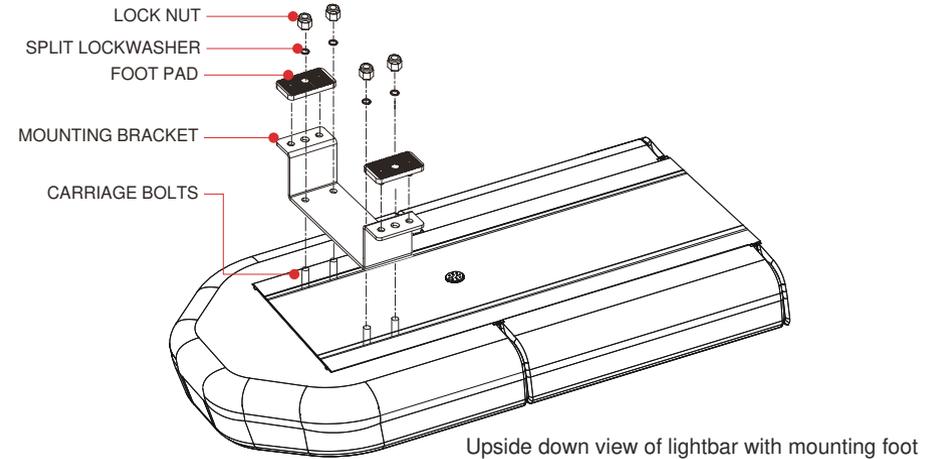Functions are activated by applying +VDC to a control wire.

POWER CABLE

1. Route Power Cable to the vehicle firewall towards the battery.
2. Follow factory wiring harness through the firewall. It may be necessary to drill a hole in the firewall. Ensure that there are no components that could be damaged from the drilling.
3. Route the cable to the battery.
4. Splice the 2 **RED** wires to form a single wire.
5. Install a 40Amp fuse (user-supplied) on the end of **RED** wire, then connect to battery.
6. Splice the 2 **BLACK** wires to form a single wire.
7. Connect **BLACK** wire to the factory chassis ground adjacent to the battery.

NOTE: make sure that all wires of power cable are securely connected to power source.
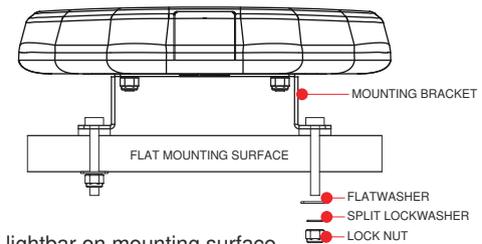
WIDE SURFACE MOUNT

1. Turn the lightbar upside down.
2. Place mounting feet over the carriage bolts.
3. Attach a lockwasher and a nut on each of the carriage bolts, but do not completely tighten the bolts. Leave them loose enough to reposition the mounting foot.

LOCK NUT
SPLIT LOCKWASHER
FOOT PAD
MOUNTING BRACKET
CARRIAGE BOLTS

Upside down view of lightbar with mounting foot

4. Place lightbar on the mounting surface at the desired location.
5. Adjust both mounting foot assemblies in or out as necessary. If possible, try to keep mounting feet near the ends of the lightbar.
6. Using the mounting feet as a template, mark two drilling holes on each end of the mounting surface.
7. Carefully remove the lightbar and turn it upside down, and ensure that the mounting feet do not shift place.
8. Tighten the nuts that secure the mounting feet to the lightbar.

NOTE: Before drilling holes in ANY part of the vehicle, be sure that both sides of the mounting surface are clear of parts that could be damaged, such as brake lines, fuel lines, electrical wiring, or other vital parts.
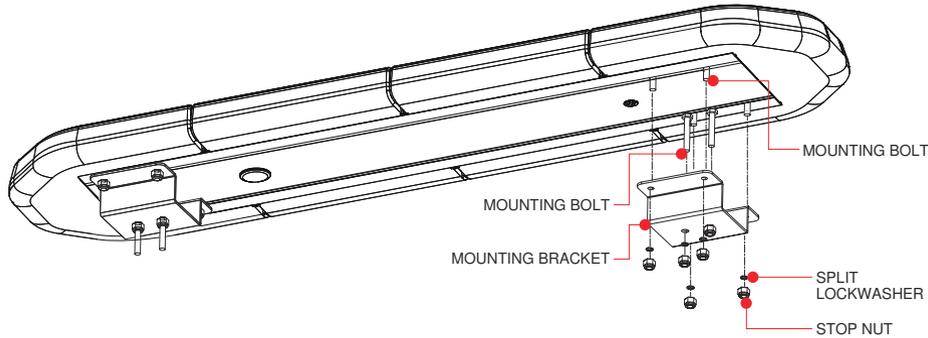
9. Drill four holes at the previously marked drilling positions.
10. Place lightbar on the mounting surfacediffe and align the mounting holes with the mounting feet.
11. Secure mounting feet to mounting surface with carriage bolts.

MOUNTING BRACKET
FLAT MOUNTING SURFACE
FLATWASHER
SPLIT LOCKWASHER
LOCK NUT

Side view of lightbar on mounting surface

FLAT SURFACE INSTALLATION

NARROW SURFACE MOUNT

1. Turn the lightbar upside down.
2. Place mounting feet over the carriage bolts.
3. Attach a lockwasher and a nut on each of the carriage bolts, but do not completely tighten the bolts. Leave them loose enough to reposition the mounting foot.

MOUNTING BOLT
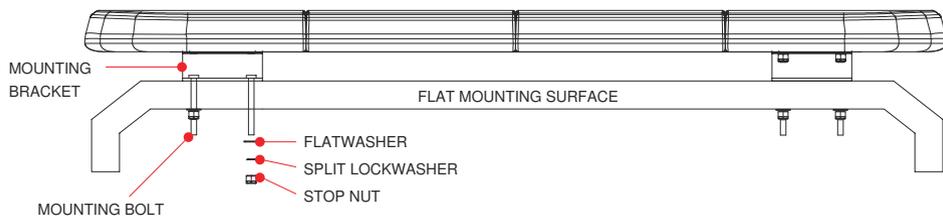MOUNTING BOLT
MOUNTING BRACKET
SPLIT LOCKWASHER
STOP NUT

Hardware for Narrow Surface Mount

4. Place lightbar on the mounting surface at the desired location.
5. Adjust both mounting foot assemblies in or out as necessary. If possible, try to keep mounting feet near the ends of the lightbar.
6. Using the mounting feet as a template, mark two drilling holes on each end of the mounting surface.
7. Carefully remove the lightbar and turn it upside down, and ensure that the mounting feet do not shift place.
8. Tighten the nuts that secure the mounting feet to the lightbar.

NOTE: Before drilling holes in ANY part of the vehicle, be sure that both sides of the mounting surface are clear of parts that could be damaged, such as brake lines, fuel lines, electrical wiring, or other vital parts.

9. Drill four holes at the previously marked drilling positions.
10. Place lightbar on the mounting surface and align mounting holes with the mounting feet.
11. Secure mounting feet to mounting surface with carriage bolts.

MOUNTING BRACKET
FLAT MOUNTING SURFACE
FLATWASHER
SPLIT LOCKWASHER
STOP NUT
MOUNTING BOLT

Lightbar mounted on flat narrow surface

CONTROL CABLE

1. Route Control Cable towards the dash area to a switch panel (user-supplied).
2. Connect the required wires to the switch panel.

MODE 1, MODE 2, MODE 3
In each Mode, there is a list of built-in flash patterns to choose from.
To change flash patterns:

1. Activate the desired Mode by applying **+VDC** to **BROWN**, **PINK**, or **RED** wire.
   - **BROWN** wire for Mode 1.
   - **PINK** wire for Mode 2.
   - **RED** wire for Mode 3.

2. While the Mode is activated, tap **+VDC** to **YELLOW** wire:
   - Once for next pattern (refer to Flash Patterns charts).
   - Quickly 3 times for FP#0.

FP#	FLASH PATTERNS		
	Mode 1	Mode 2	Mode 3
0	**Single Split (rear only)**	**Single Split**	**Random**
1	Quad Split (rear only)	Quad Split	Quad Split
2	Ultra Split (rear only)	Ultra Split	Ultra Split
3	Single-Quad Split (rear only)	Single-Quad Split	Single-Quad Split
4	Side-by-Side Single (rear only)	Side-by-Side Single	Side-by-Side Single
5	Side-by-Side Quad (rear only)	Side-by-Side Ultra	Side-by-Side Ultra
6	Single Split (front only)	Outside-In Single	Outside-In Single
7	Quad Split (front only)	Outside-In Ultra	Outside-In Ultra
8	Ultra Split (front only)	Single All	Single All
9	Single-Quad (front only)	Quad All	Quad All
10	Side-by-Side Single (front only)	Ultra All	Ultra All
11	Side-by-Side Quad (front only)	Single-Quad All	Single-Quad All

NOTE: Flash Pattern #0 can be user customized by entering PROGRAM Mode, (refer to PROGRAMMING section). All other patterns are still available after customization is done. There is a reset function which restores original factory setting; refer to RESET section.

PROGRAMMING

FP#0 of each Mode can be user customized.

To configure flash pattern:

1. Activate the desired Mode by applying **+VDC** to:
   BROWN wire (Mode 1), **PINK** wire (Mode 2), or
   RED wire (Mode 3).

2. Enter PROGRAMMING mode by quickly tapping
   +VDC to **PURPLE** wire 3 times within 1 second.

3. Once in PROGRAMMING mode, all lightheads
   will faintly blink once every second. The inner
   forward-facing pair of lightheads will be activated.

NOTE: If the inner foward-facing heads are Take
   Downs, then tap **+VDC** to **PURPLE** wire
   once to scroll to the next pair of lightheads.

4. Tap **+VDC** to **YELLOW** wire:
   • Once for next pattern (see Lighthead Patterns).
   • Quickly 3 times within 1 second for FP#0.

5. Scroll to the next pair of lightheads by tapping
   +VDC to **PURPLE** wire.

6. Repeat steps 4 and 5 until all lightheads are
   properly configured.

7. Exit PROGRAM mode by quickly tapping **+VDC**
   to **PURPLE** wire 3 times within 1 second.

FP#	Lighthead Patterns
0	Steady
1	Single Slow (split)
2	Single Mid (split)
3	Single Fast (split)
4	Double (split)
5	Double (split)
6	Quint (split)
7	Ultra (split)
8	Single-Quad (split)
9	Single H/L (split)
10	Random
11	Off
12	Single Slow (all)
13	Single Mid (all)
14	Single Fast (all)
15	Double (all)
16	Double (all)
17	Quint (all)
18	Ultra (all)
19	Single-Quad (all)
20	Single H/L (all)

RESETTING
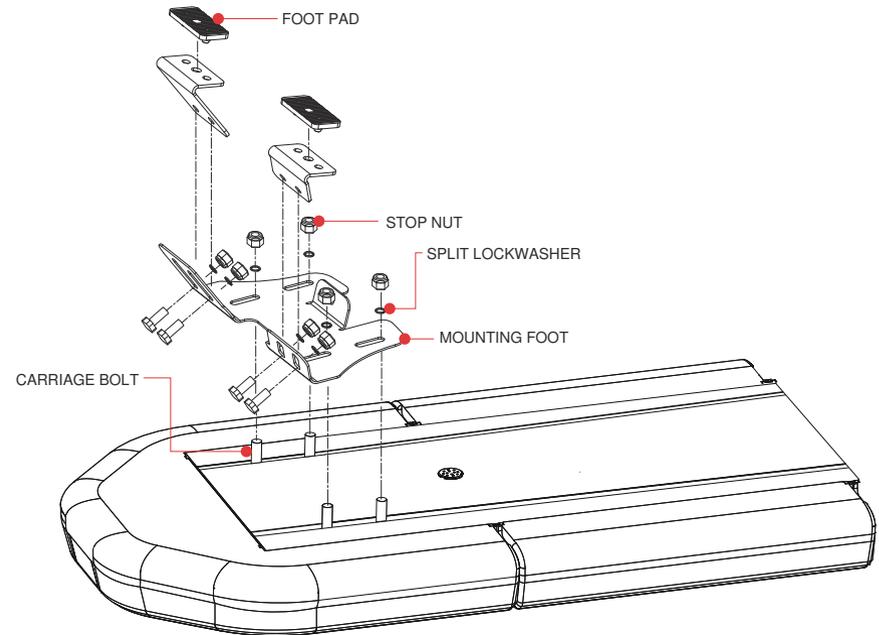
To restore factory setting:

1. With no wires activated, enter RESET mode by tapping **+VDC** to **PURPLE** wire for
   more than 1 second.

2. Once in RESETTING mode, the lightbar will display:
   single flash = Mode 1   or   double flash = Mode 2   or   triple flash = Mode 3

3. Select Mode to reset by tapping **+VDC** to **PURPLE** wire once to change Modes.

4. Apply **+VDC** to **PURPLE** wire for 2~4 seconds to restore factory setting.

5. Exit RESETTING mode by tapping **+VDC** to **PURPLE** wire for 5 seconds or more.

ADJUSTABLE FEET

Install Mounting Feet on the Lightbar
1. Turn the lightbar upside down.
2. Place mounting feet over the carriage bolts.
3. Attach a lockwasher and a nut on each of the carriage bolts, but do not completely
   tighten the bolts. Leave them loose enough to reposition the mounting foot.

FOOT PAD

STOP NUT

SPLIT LOCKWASHER

MOUNTING FOOT

CARRIAGE BOLT

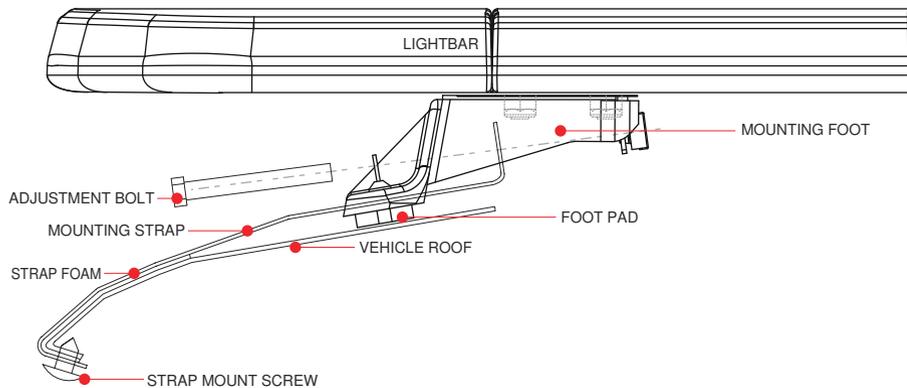Upside down view of lightbar with mounting foot

STRAP KIT MOUNT

The Strap Kit is designed for specific make and mode of vehicle. Before installation, ensure that the correct strap kit is used.

1. Place the lightbar on the vehicle roof at the desired location. Usually, the lightbar should be centered on the center door post (B-pillar).

NOTE: Water may leak into the vehicle interior if the straps are improperly positioned. Ensure that the straps are positioned above or near the center door post (B-pillar).

2. Determine where the straps will attach to the vehicle.

Front view of lightbar with Strap Kit mount

3. Place the straps in position on the roof sheet metal as shown in diagram.
4. Use the straps as a template and mark the drilling hole locations.
5. Drill holes according to the marked locations.
6. Apply a silicone sealant (user-supplier) around the holes before attaching the straps.
7. Secure the straps with the sheet metal screws.

NOTE: After installation, frequently inspect the lightbar and mounting feet to ensure that all fasteners and brackets are tight.

8. Place the lightbar on the vehicle roof, and align strap bolt holes with lightbar mounting feet bolt holes.
9. Insert adjustment bolt through strap bolt hole all the way to mounting feet bolt hole.
10. Tighten bolts.

FLASHING TDs & ALLEYs

Activate Flashing TDs & Alleys by applying **+VDC** to **RED-BLK** wire. To scroll to a different configuration, tap **+VDC** to **YELLOW** wire:

- TDs and Alleys flashing
- Alleys only flashing
- TDs **+VDC** toonly flashing

NOTE: Flashing TDs & Alleys have priority over the steady burn functions.

CRUISE MODE

Activate Cruise mode by applying **+VDC** to **GRAY** wire. All corner lightheads will be activated in low power steady burn. To activate more lightheads tap **+VDC** to **PURPLE** wire while in CRUISE mode; the lightheads immediately next to the corner lightheads will be activated.

TRAFFIC ARROWS

During Mode 1, Mode 2, or Cruise mode, activate Traffic Arrow functions by applying **+VDC** to:

- **ORANGE** wire for Left Arrow.
- **BLUE** wire for Right Arrow.
- **ORANGE** & **BLUE** wires for Center Out.

To configure the Traffic Arrow flash patterns, tap **+VDC** to **YELLOW** wire:

- Once for next pattern (refer to Traffic Arrow Patterns chart).
- Quickly 3 times within 1 second for reset to FP#0.

FP#	Traffic Arrow Patterns
0	Sweep Single
1	Sweep Double
2	Sweep Triple
3	Sweep Single End-Double
4	Solid
5	Solid End-Double
6	Solid Chaser
7	Solid Fade
8	Blink Double
9	Blink Triple
10	Blink Solid

NOTE: If the bar is equipped with the Dual Color Traffic Arrow option, the rear lightheads will automatically switch to Amber when the Traffic Arrow function is activated; and will automatically switch back when the Traffic Arrow function is deactivated.

OTHERS

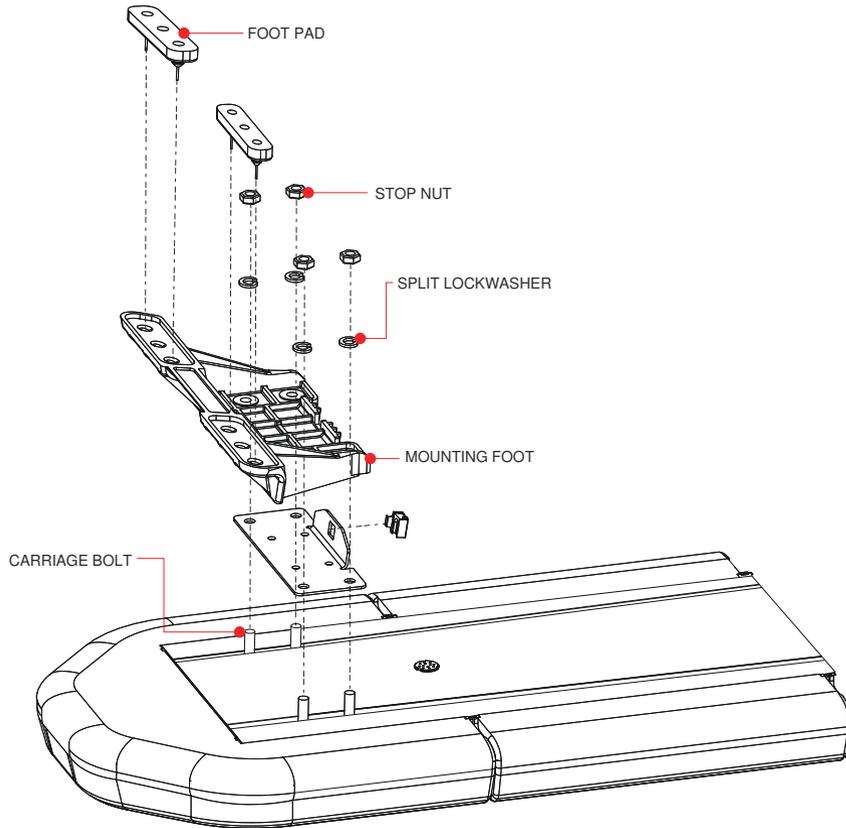To activate other functions, apply **+VDC** to:

- **BROWN-BLK** wire for Take Down Lights
- **ORANGE- BLK** wire for Right-Side Alley Light
- **BLUE-BLK** wire for Left-Side Alley Light
- **YELLOW- BLK** wire for Front cutoff
- **GREEN- BLK** wire for Rear cutoff
- **GREEN** wire for Low Power

VEHICLE ROOF INSTALLATION

STANDARD FEET

Install Mounting Feet on the Lightbar
1. Turn the lightbar upside down.
2. Place mounting feet over the carriage bolts.
3. Attach a lockwasher and a nut on each of the carriage bolts, but do not completely tighten the bolts. Leave them loose enough to reposition the mounting foot.

FOOT PAD

STOP NUT

SPLIT LOCKWASHER

MOUNTING FOOT

CARRIAGE BOLT

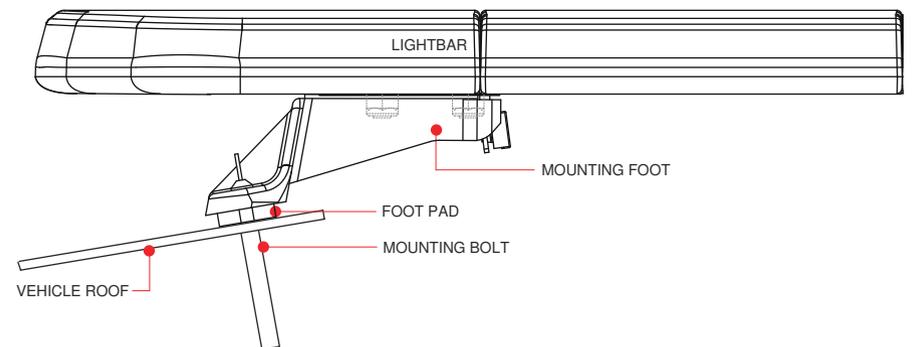Upside down view of lightbar with mounting foot

PERMANENT MOUNT

Installation includes centering the lightbar on the vehicle's roof, leveling the lightbar, and scribing and drilling holes for mounting the lightbar permanently to the roof.

1. Place lightbar on the vehicle roof at the desired location. The lightbar is usually centered on the door center post (B-pillar).
2. Adjust both mounting feet in or out as necessary until the foot pads rest near the edge of the roof or gutter where the roof is the most rigid. Make sure the lightbar and the mounting feet are centered left to right on the vehicle.
3. Level the lightbar by shifting the lightbar slightly forward or back.
4. Using the mounting feet as a template, mark two drilling holes on each end of the vehicle roof.
5. Carefully remove the lightbar and turn it upside down, and ensure that the mounting feet do not shift place.
6. Tighten the nuts that secure the mounting feet to the lightbar.
7. Drill four holes at the previously marked drilling positions.

WARNING: DO NOT DRILL THROUGH the roof support structure that spans the distance between the driver's and passenger's side. Drilling through this will weaken the roof of the vehicle.

NOTE: Before drilling holes, ensure that the holes will go through sheet metal and not the upholstery. And ensure that no damages are caused to the vehicle components.

8. Place lightbar on the vehicle roof and align the mounting holes with the mounting feet. Secure mounting feet to vehicle roof with carriage bolts.

LIGHTBAR

MOUNTING FOOT

FOOT PAD

MOUNTING BOLT

VEHICLE ROOF

Front view of lightbar with Permanent mount

NOTE: After installation, frequently inspect the lightbar and mounting feet to ensure that all fasteners and brackets are tight.