Introduction / Comments:

Install Instructions For Interior Lighting In Topper For RAM 1500/HD (6.3’ & 8’)

Note:

Read all instructions prior to installation. Review the Adrian Steel **GENERAL PRECAUTIONS PAGES (56638**) before attempting installation. Only personnel familiar with using electrical best practices should perform this install. Reference **ELECTRICAL BEST PRACTICES MANUAL (54479)** before attempting installation.





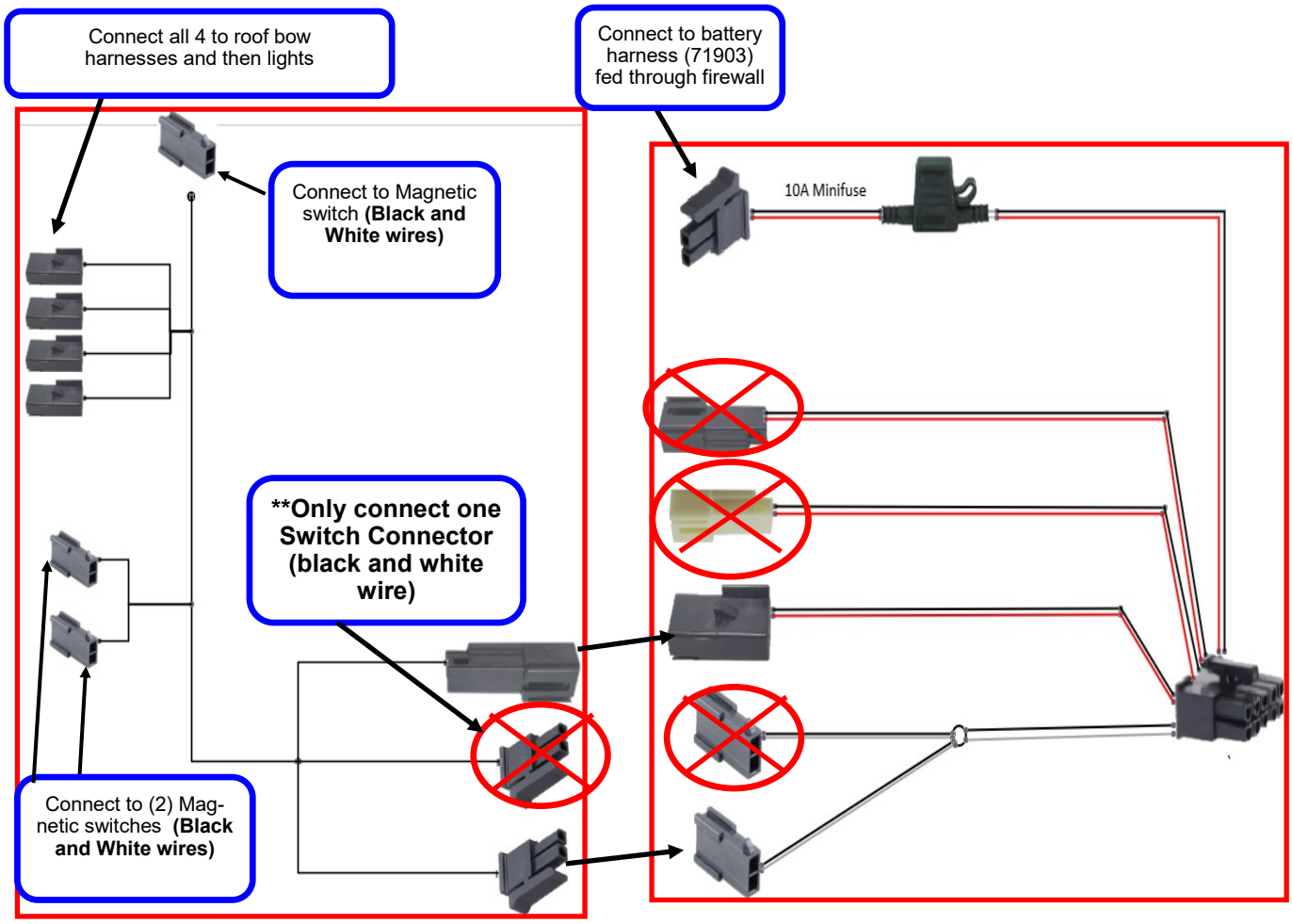
Installation Instructions For Interior Lighting In Topper For RAM 1500/HD (6.3’ & 8’)

****Please read statement below before moving forward****

These plug and play kits are completely modular and can be configured in many different ways. Placement of lights will be determined by sales order drawings/customer ask. Therefore, these instructions are for the most standard configurations, and for reference only.

Overall Harness Diagram

71905 Harness **71902 TLM Harness**



Tools Required:





Screwdriver

Power drill, 3/8" step drill bit



Components:

Please note all these components may not be used in every install.
Only install what you have. Refer to the order drawing.
Integrated Truck Solution Kit 73106 components are denoted with a red star.







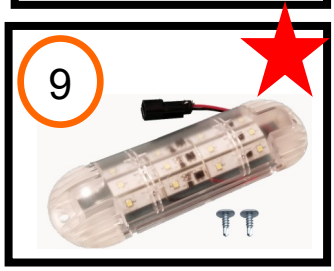


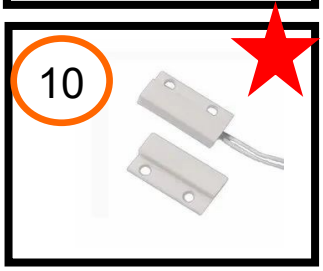


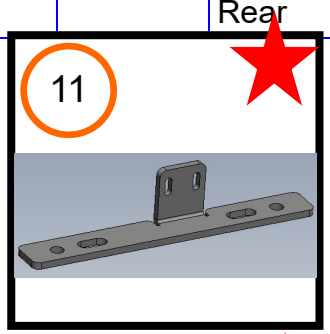


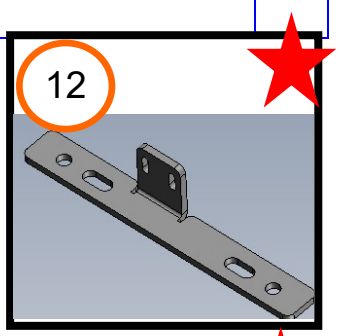


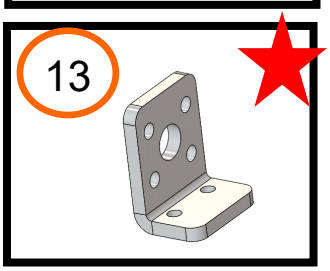


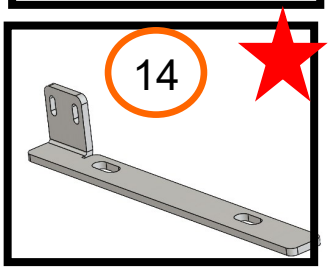










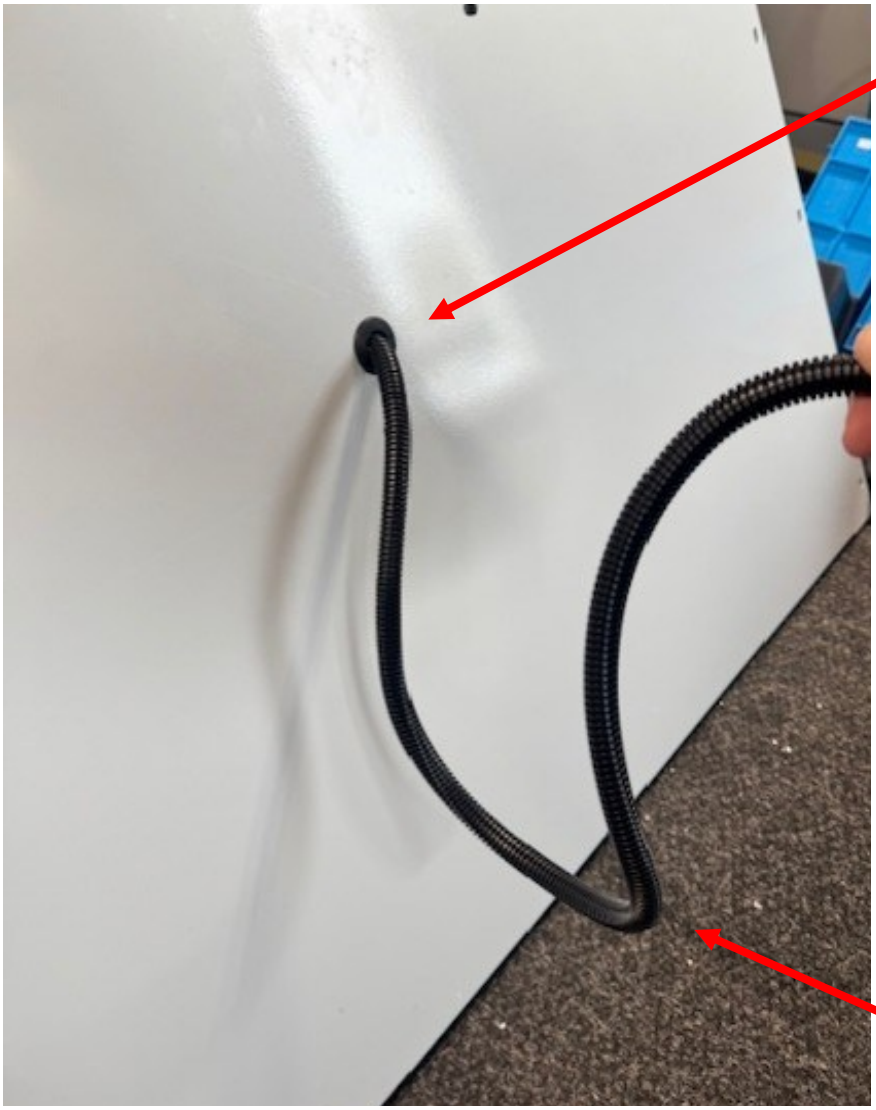


	Part Number	Description	Qty
1	71902	TLM Module/Harness	1
2	71903	TLM To Battery Harness RAM	1
3	71905	TLM To Lights Harness	1
4	63481	Roof Bow Harness #1	3
5	63482	Roof Bow Harness #2	1
6	65346	24” Strip Light	4
7	65347	36” Strip Light	
8	65348	48” Strip Light	
9	63480	Dome Light	2
10	71907	Magnetic Switches	3
11	81550-W	Magnetic Switch Bracket DS	1
12	81594-W	Magnetic Switch Bracket PS	1
13	81552-B	Magnetic Switch Bracket	3
14	81678-W	Magnetic Switch Bracket Rear	1

The purpose of plug and play lighting is to be completely modular. Due to this feature, refer to the order drawing for all exact lighting placements. These installation instructions are for most cases and for reference. Not all installs will have strobes, beacons, and lightbars. Reference the instructions for only what you are installing.

Best Practices to Follow when Routing Through Firewall:

- Create a drip loop with the harness being routed through the firewall as shown so that the water does not flow into the grommet.
- Make sure that the proper grommet for the hole being routed through is used so that there are no openings for water to get through.
- Use silicone after routing and apply around the grommet and wire to seal it. Make sure to let the silicone dry for 30 minutes to an hour.



Light Kit's Offered (6.3' bed only):

Part Numbers/Kit Contents:

73106 Integrated Truck Solution: ★
Includes: (2) 24" strip lights on both sides of the side doors and 3 dome lights in the top, on the roof bows. Refer to all components denoted with a ★ and quantity in blue parenthesis on page 3.

73107 (1) 48" Rear strip light on the back door
Includes: (1) 48" strip light, (1) roof bow harness #1, (1) TLM Module, (1) TLM to Battery Harness, (1) TLM to Lights Harness, (1) Magnetic Switches Bag

73109 (1) 48" Strip light on the driver side only
Includes: (1) 48" strip light, (1) roof bow harness #1, (1) TLM Module, (1) TLM to Battery Harness, (1) TLM to Lights Harness, (1) Magnetic Switches Bag

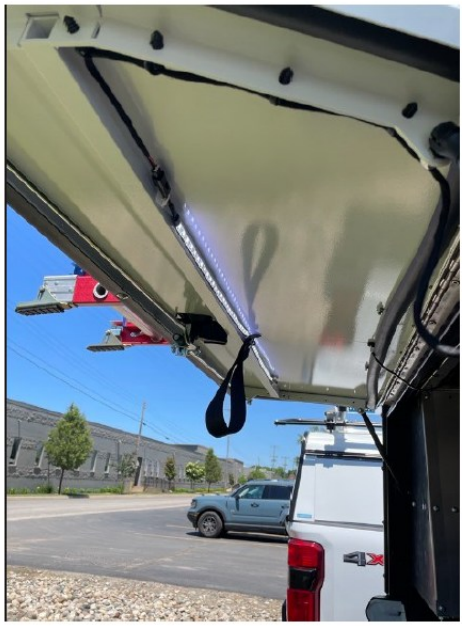
73108 (1) 48" Strip light on the passenger side only
Includes: (1) 48" strip light, (1) roof bow harness #2, (1) TLM Module, (1) TLM to Battery Harness, (1) TLM to Lights Harness, (1) Magnetic Switches Bag

73110 (3) 48" Strip lights—rear, driver, and passenger side
Includes: (3) 48" strip light, (1) roof bow harness #2, (2) roof bow harness #1, (1) TLM Module, (1) TLM to Battery Harness, (1) TLM to Lights Harness,
(1) Magnetic Switches Bag

Driver's Side Strip Lights



Rear Side



Passenger's Side Strip Lights



Light Kit's Offered (8' bed only):

Part Numbers/Kit Contents:

74495 Integrated Truck Solution: ★
Includes: (2) 36" strip lights on both sides of the side doors and 3 dome lights in the top, on the roof bows. Refer to all components denoted with a ★ and quantity in blue parenthesis on page 3.

73107 (1) 48" Rear strip light on the back door
Includes: (1) 48" strip light, (1) roof bow harness #1, (1) TLM Module, (1) TLM to Battery Harness, (1) TLM to Lights Harness, (1) Magnetic Switches Bag

74498 (2) 36" Strip light on the driver side only
Includes: (2) 36" strip light, (1) roof bow harness #1, (1) TLM Module, (1) TLM to Battery Harness, (1) TLM to Lights Harness, (1) Magnetic Switches Bag

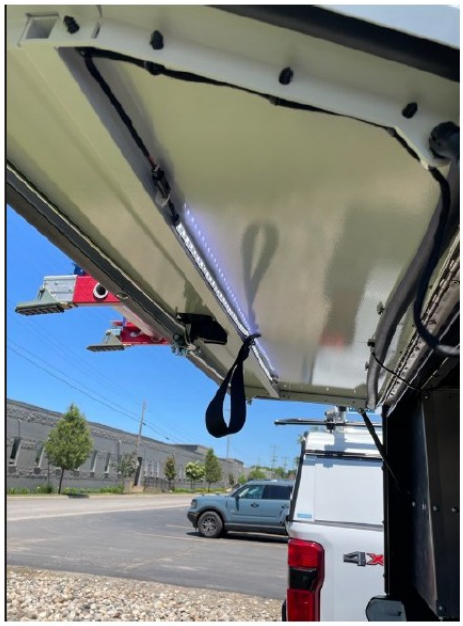
74497 (2) 36" Strip light on the passenger side only
Includes: (2) 36" strip light, (1) roof bow harness #2, (1) TLM Module, (1) TLM to Battery Harness, (1) TLM to Lights Harness, (1) Magnetic Switches Bag

74499 (4) 36" Strip lights & (1) 48" Strip lights-rear, driver, and passenger side
Includes: (4) 36" strip light, (1) 48" strip light, (1) roof bow harness #2, (2) roof bow harness #1, (1) TLM Module, (1) TLM to Battery Harness, (1) TLM to Lights Harness, (1) Magnetic Switches Bag

Driver's Side Strip Lights



Rear Side



Passenger's Side Strip Lights



Light Kit’s Offered (6.3’ bed only):

Part Numbers/Kit Contents:

74629 (2) 24” Strip light with handle on driver side only:
Includes: (2) 24” strip lights with handle, (1) roof bow harness #1, (1) TLM Module, (1) TLM to Battery Harness, (1) TLM to Lights Harness, (1) Magnetic Switches Bag

74630 (2) 24” Strip light with handle on passenger side only:
Includes: (2) 24” strip lights with handle, (1) roof bow harness #1, (1) TLM Module, (1) TLM to Battery Harness, (1) TLM to Lights Harness, (1) Magnetic Switches Bag

74631 (4) 24” Strip light with handle & (1) 48” strip light
Includes: (4) 24” strip lights with handles, (1) 48” strip light, (1) roof bow harness #1, (1) TLM Module, (1) TLM to Battery Harness, (1) TLM to Lights Harness, (1) Magnetic Switches Bag

***** Two 24” light strips will be used with topper door handle. Please ensure handle is secured in place first, then place light strips on topper door.**

Driver’s Side Strip Lights



Passenger’s Side Strip Lights



Walk-In Topper Interior Lighting Kits Offered: (5.6/6.3ft bed)

Part Numbers/Kit Contents:

79983 Integrated Truck Solution:
Includes: (4) 24” strip lights on both sides of the side doors and 2 dome lights in the top, on the roof bows.

79984 (1) 48” Strip Light on Passenger Side Only
Includes: (1) 48” strip light, (1) roof bow harness #2, (1) TLM Module, (1) TLM to Battery Harness, (1) TLM to Lights Harness, (1) Magnetic Switches Bag

79985 (1) 48” Strip Light on Driver Side Only
Includes: (1) 48” strip light, (1) roof bow harness #1, (1) TLM Module, (1) TLM to Battery Harness, (1) TLM to Lights Harness, (1) Magnetic Switches Bag

81548 (1) 48” Strip Light on Rear Side Only
Includes: (1) 48” strip light, (1) roof bow harness #2, (1) TLM Module, (1) TLM to Battery Harness, (1) TLM to Lights Harness, (1) Magnetic Switches Bag

79986 (2) 48” Strip Lights on Driver & Passenger Side
Includes: (2) 48” strip lights, (2) roof bow harness #1, (1) roof bow harness #2, (1) TLM Module, (1) TLM to Battery Harness, (1) TLM to Lights Harness, (1) Magnetic Switches Bag

Driver Side



Passenger Side



Walk-In Topper Interior Lighting Kits Offered: (8ft bed)

Part Numbers/Kit Contents:

79987 Integrated Truck Solution
Includes: (4) 36” strip lights on both sides of the side doors and 3 dome lights in the top, on the roof bows.

79988 (2) 36” LED Light Strips on Passenger Side Only
Includes: (2) 36” strip light, (1) roof bow harness #2, (1) TLM Module, (1) TLM to Battery Harness, (1) TLM to Lights Harness, (1) Magnetic Switches Bag

79989 (2) 36” LED Light Strips on Drivers Side Only
Includes: (2) 36” strip light, (1) roof bow harness #1, (1) TLM Module, (1) TLM to Battery Harness, (1) TLM to Lights Harness, (1) Magnetic Switches Bag

79990 (4) 36” LED Light Strips on both Passenger and Driver Sides
Includes: (4) 36” strip lights, (2) roof bow harness #1, (1) roof bow harness #2, (1) TLM Module, (1) TLM to Battery Harness, (1) TLM to Lights Harness, (1) Magnetic Switches Bag

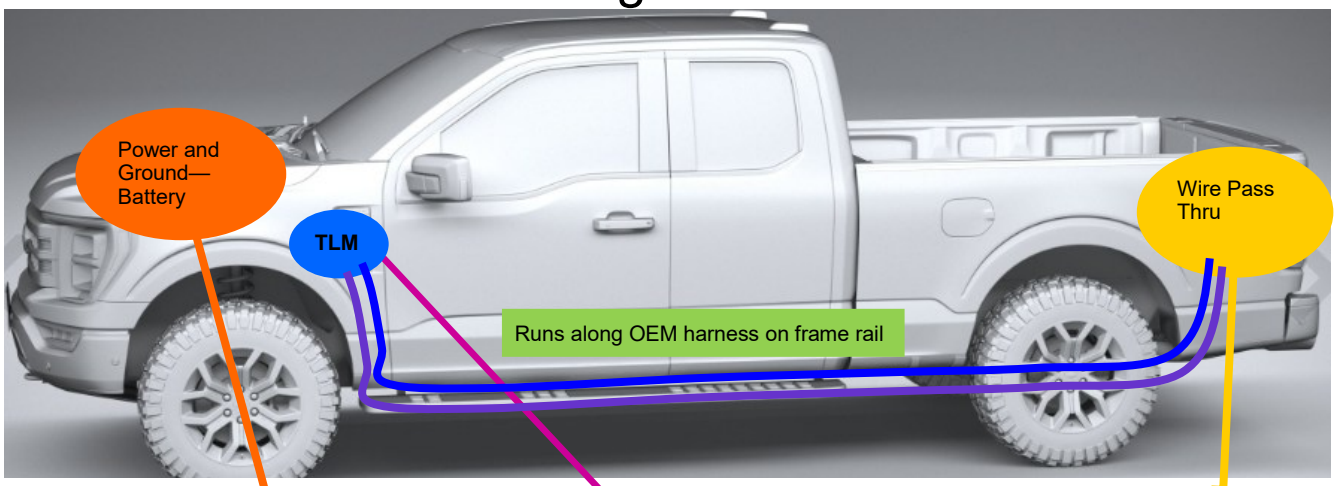
Driver Side



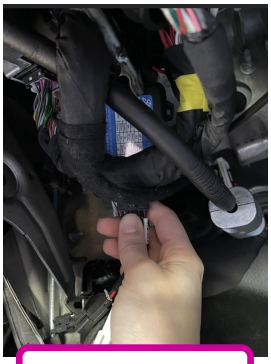
Passenger Side



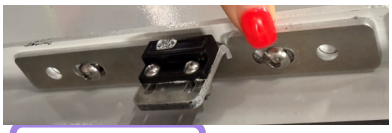
Routing Overview:

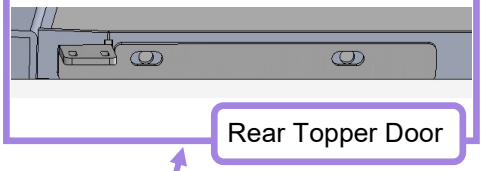




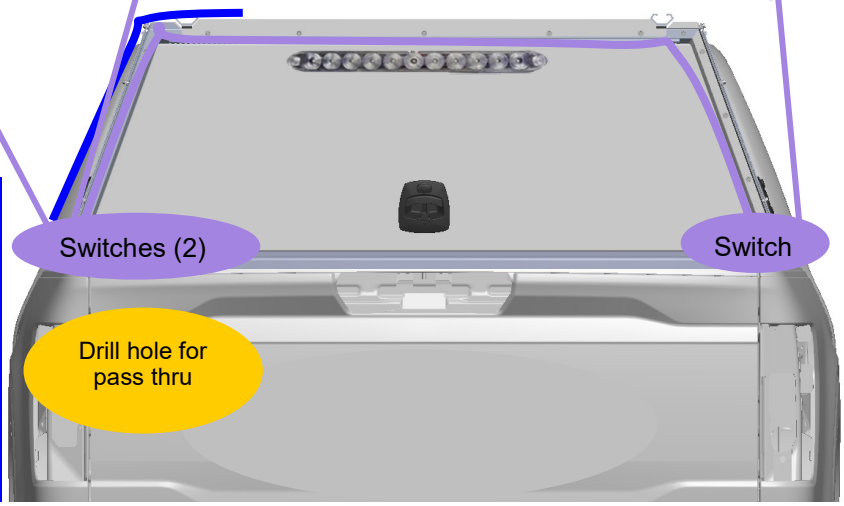










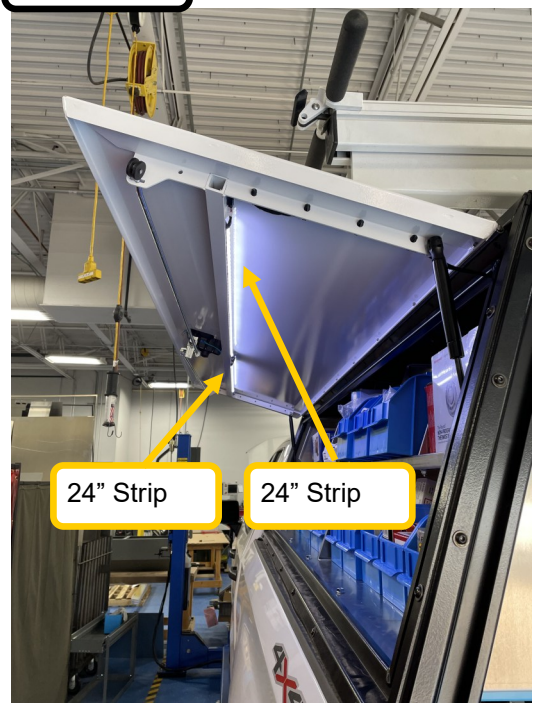


Color	Key - Items
Orange	Power and Ground Location
Blue	Harness Routing From TLM To Topper
Purple	Switches And Switch Harness
Yellow	Bed Wire Pass Thru

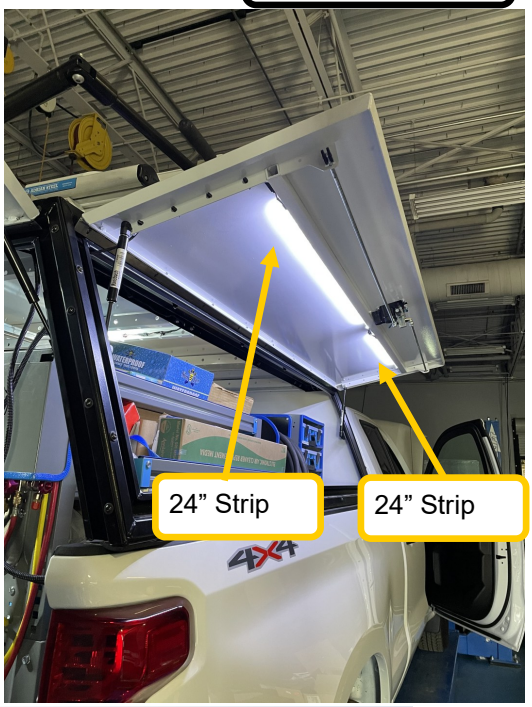
Light Placements (6.3’):

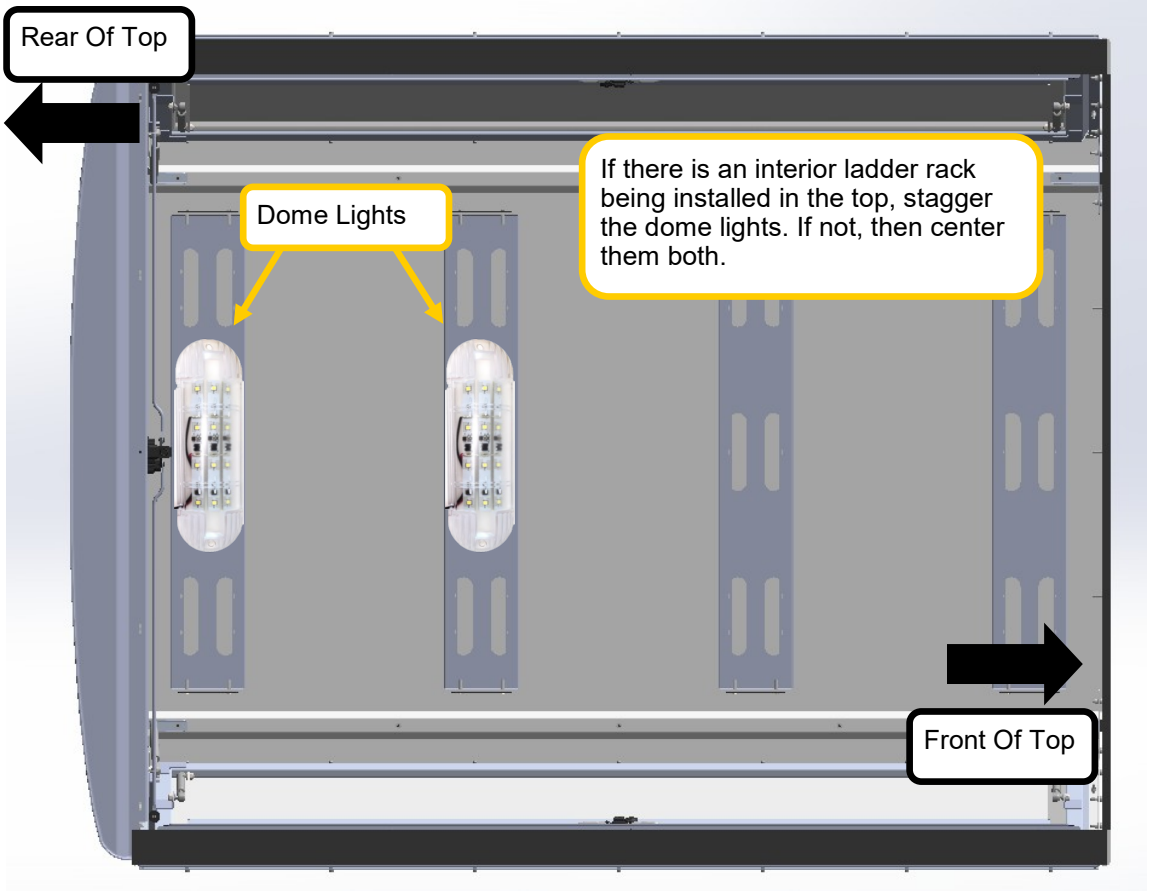
Please refer to the order drawing—not all lights will be used every install.
These are modular and created to work depending on customer needs.

Driver’s Side



Passenger’s Side





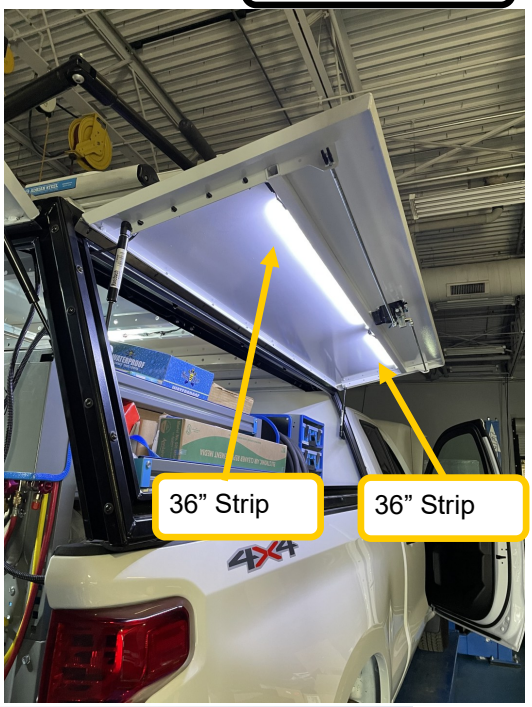
Light Placements (8'):

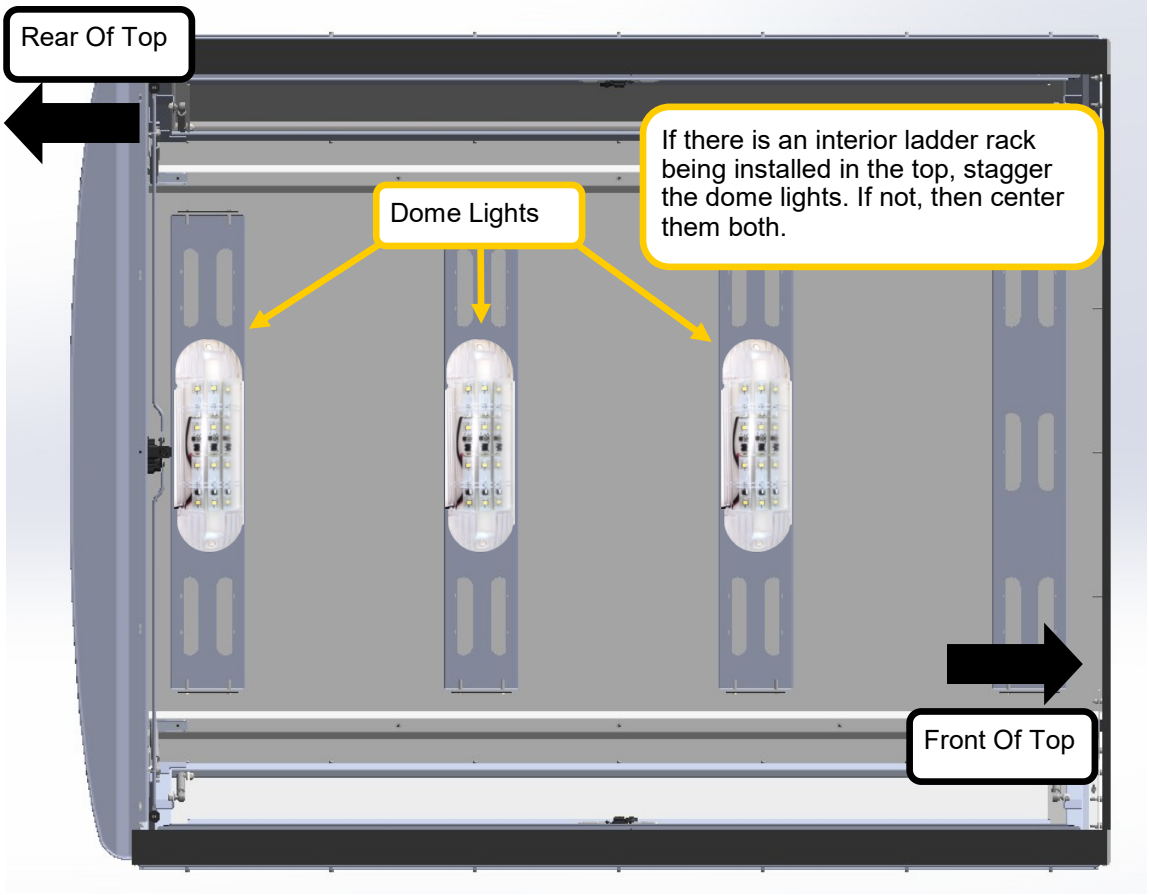
Please refer to the order drawing—not all lights will be used every install.
These are modular and created to work depending on customer needs.

Driver's Side



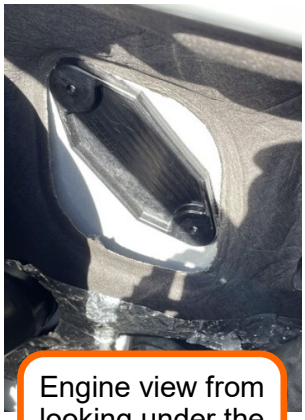
Passenger's Side







Engine view from inside vehicle



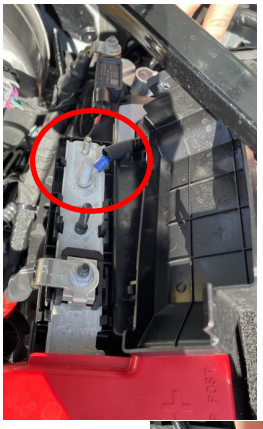
Engine view from looking under the hood

Step 1: Locate the firewall grommet from underneath the kick panel inside the cab on the driver's side.
Drill a 1/4" hole (to fit the grommet on the power harness) from inside the vehicle inside the cab.
BE SURE TO CHECK THAT THE OPPOSING SIDE OF THE FIREWALL IS CLEAR BEFORE DRILLING.
Route the power harness through the grommet.
Pulling harness onside the cab, on the driver side, under the hood.
Make a drip loop with the harness.

Reference Pg. 4 for routing through the firewall.



Re-torque the nuts to 7Nm. DO NOT OVER TIGHTEN.







Step 2: Pull the harness PN 71903 through the grommet towards the battery.

Locate the battery. First image shown to the left.

Remove the inline fuse in the fuse holder. Do not place fuse back into holder until after the install is complete.

Open the cap connected to the battery and connect the red wire ring terminal to the positive battery post circled in red. Once placing the cover back on, cut out a small piece for the harness to fit under. Circled in green..

Connect the black wire ring terminal to the OEM ground stud just right of the battery as shown circled in blue.

Do not un-bolt the battery terminal clamps from the battery.

After completely connecting the power harness to the battery, pull harness until taut from inside the cab. Once taut, secure the harness along the inside of the hood using zip ties.

For Rev A follow the steps below:





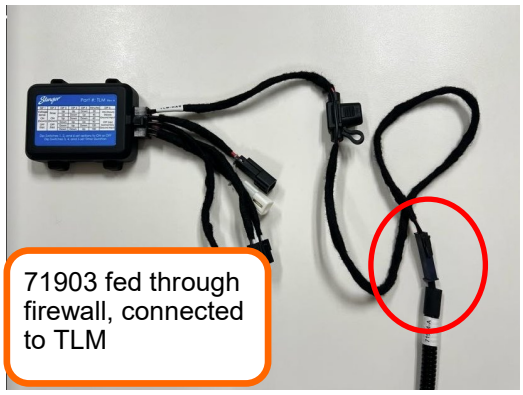
Step 3: Locate the Timer Low-Voltage Module (TLM) and harness — Part number: 71902

First, plug the harness into the module.

Note:
You will NOT use the cream colored connector or the matching black connector. You will be using the smaller black module output connector, one(1) switch harness connectors (black and white wires), and the black power supply connector.

*** Ensure that the fuse from the inline fuse holder has been removed until the end of the install.

Bring TLM to driver side, where power harness is fed through.



71903 fed through firewall, connected to TLM



71905 and 71902 Connections

Please reference page 2 for the following connection information.

Locate the TLM to battery harness (71903) that has been routed through the firewall grommet and TLM power to light harness (71905).

On the 71903 harness, connect the black connector to the blunt red wire on the TLM. (Circled in red in first image, on top).

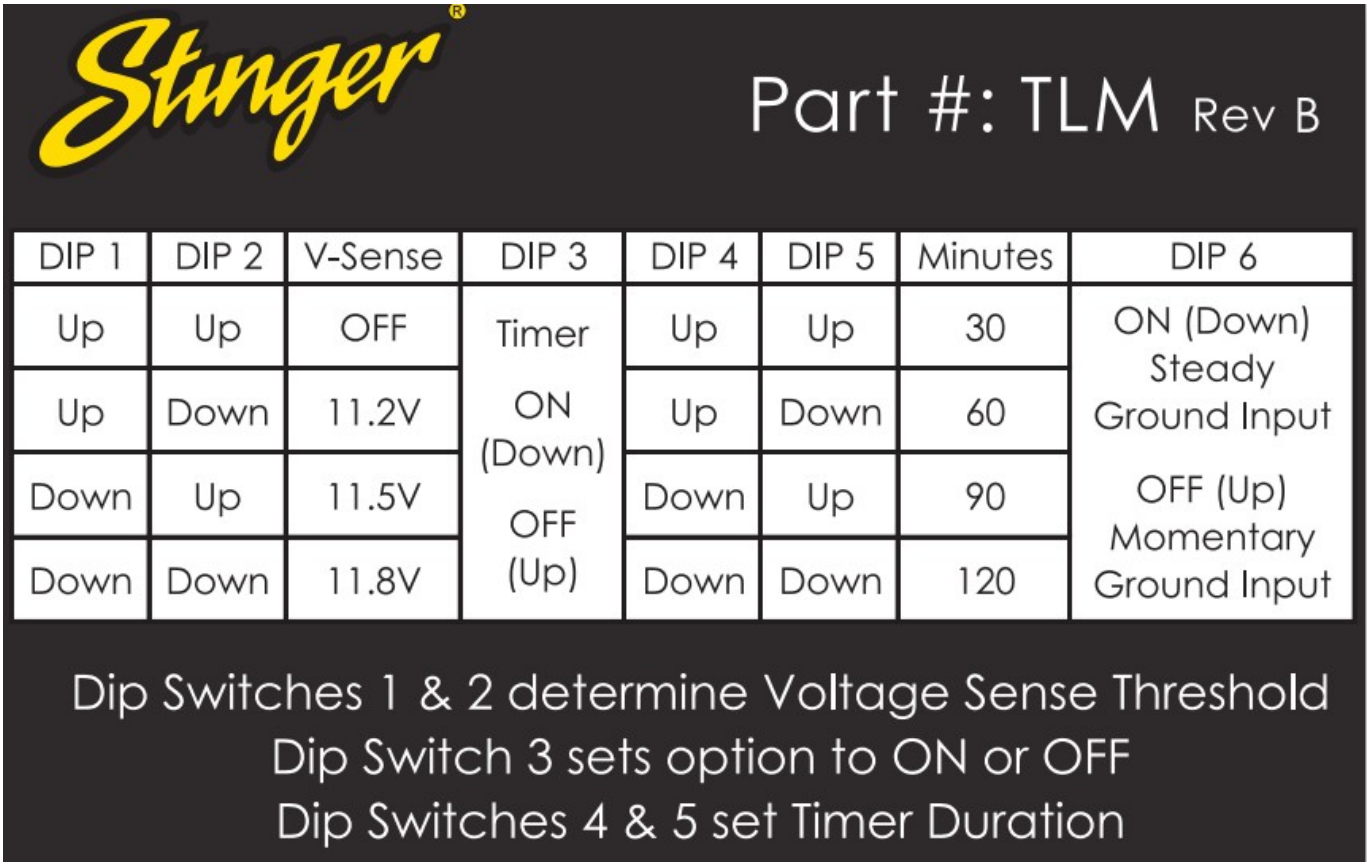
Plug the red and black connector on the 71905 to the mating connector on the 71902 (TLM), shown in the blue circle. Next, connect one of the switch connections (black and white wires) to one of the mating connections on TLM. Circled in yellow. The rest of the connectors will not be used.

***** You do NOT need to connect both switch connections.**
To set the dip switch to 90 minutes (default) follow the chart below:
If customer would like a time different that 90 minutes, use the dip switches to set the time. Chart is as follows: **TLM REV A**

1	2	3	4	5	6
Down	Down	Down	Up	Up	Down

DIP 1	DIP 2	DIP 3	DIP 4	DIP 5	Minutes	DIP 6
Voltage Sense ON (Down) OFF (Up)	Timer ON (Down) OFF (Up)	Up	Up	Down	30	ON (Down) Steady Ground Input
		Up	Down	Up	45	
		Up	Down	Down	60	
		Down	Up	Up	90	OFF (Up) Momentary Ground Input
		Down	Up	Down	120	
		Down	Down	Up	150	

TLM Rev B:

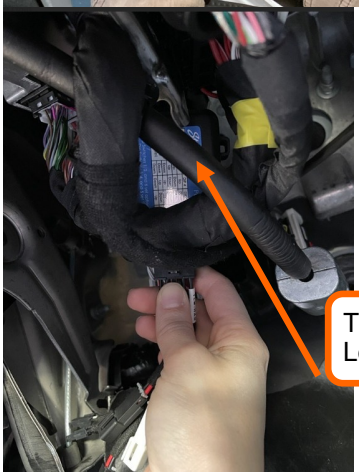


Please set dip switches in the following order:

(This is set for 90 minutes, if customer would like 30,60, or 120 minutes please refer to the chart above to set dip switches accordingly)

1	2	V-Sense	3	4	5	6
Down	Down	11.8	Down	Down	Up	Down





Step 4: Locate the driver's side door sill area.

Use a trim tool to remove the trim panels in the driver's step well and dash/kick panel.

Use the adhesive tape supplied in the kit to stick the TLM to the side of the module up under the kick panel. Refer to the picture to the left for the TLM placement.

Secure the TLM and wires with zip ties to OEM harnesses.

Be sure the TLM is secured.

*** Picture is for location reference only.





Step 5:
Lift the carpet and locate the OEM grommet.
Route the wiring harness (71905) to the OEM grommet under the carpet. Use the images to the left for reference.

From below the vehicle, drill to fit 3/4" grommet supplied in the kit.



Step 6:
Route the harness under the carpet and through the grommet.
Follow the frame to the rear of the vehicle. Use the images as reference.

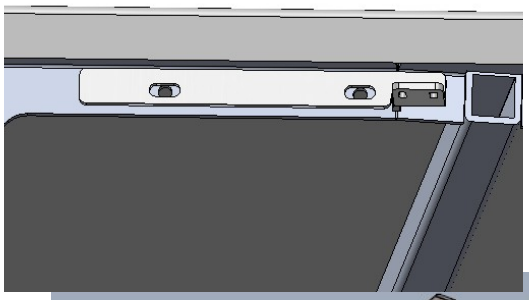




Step 7: Locate the rear driver's side bed area. There is an oval shaped grommet for a pass thru. Using a 3/8" step drill bit, drill a hole into the plastic grommet and route the harnesses through the hole. Insert the bigger grommet supplied in the Brake Light kit into the bed frame pass through, this will be used for the interior light harness and Brake Light harness together.
Tuck any excess wiring into the empty cavity underneath the bed frame.
Use the supplied Tek screw and P-clip to secure the wire harness to the frame.



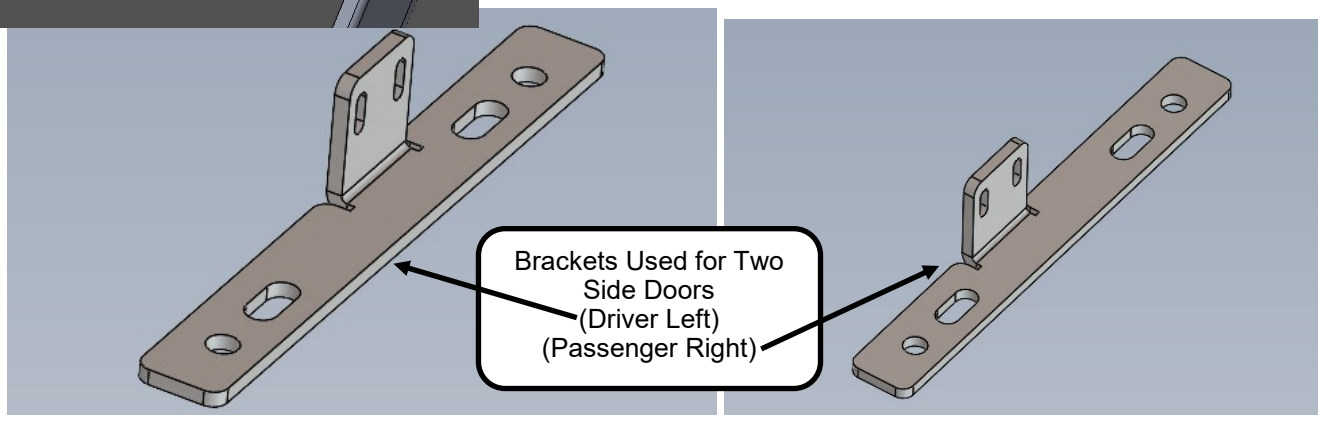
Excess wiring tucked under the bed frame



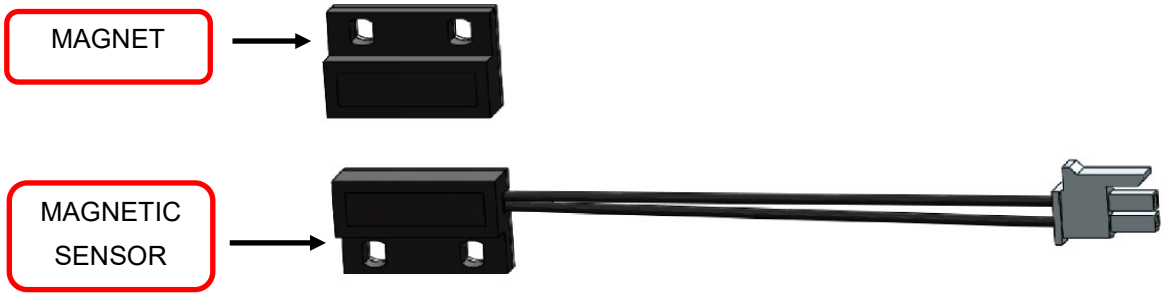
Step 8:
Locate BAG71907, magnetic switches PN 71907 and magnetic switch brackets.

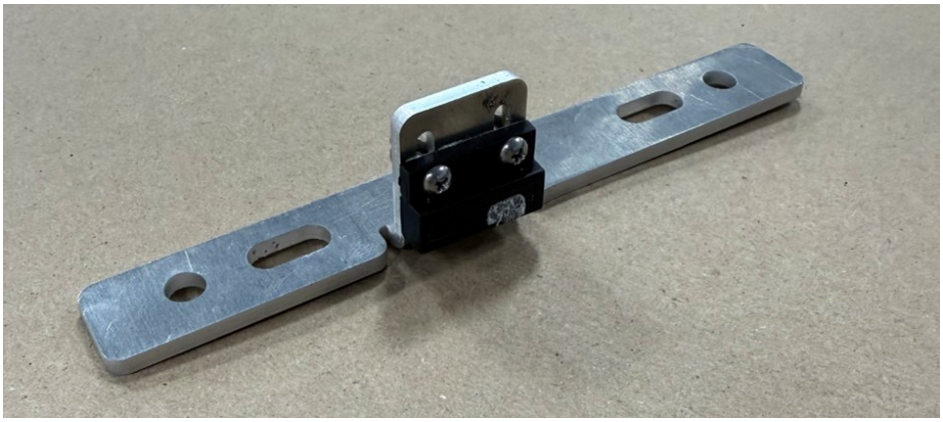
There are two unique mounting brackets, these will be used for side doors.

Note: They are very similar, pay close attention to what one you have.



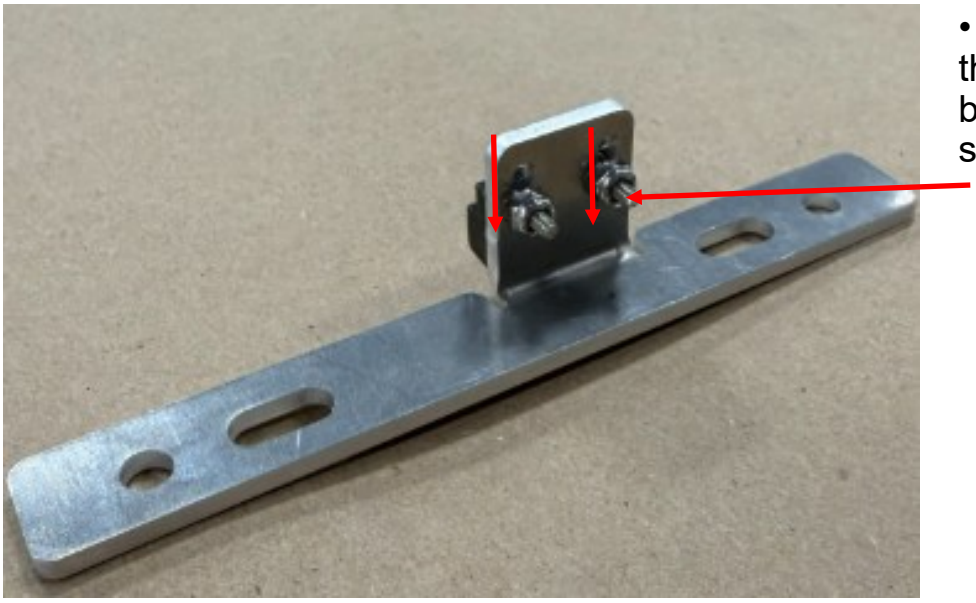
Step 9:
71907 will have 3 magnets and 3 magnetic sensors. Use the image as reference.



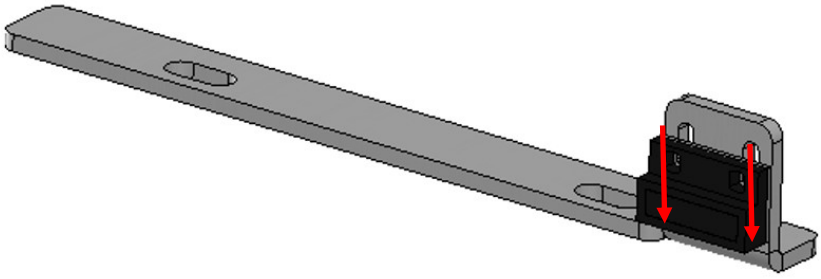


Step 10:

• Place magnet so that it matches the image.



• Mount the bolts so that they are on the bottom edge of the slot.



• The rear door is the same mounting as the side doors with the magnet all the way down.



Step 11: Install Magnetic Switch Brackets

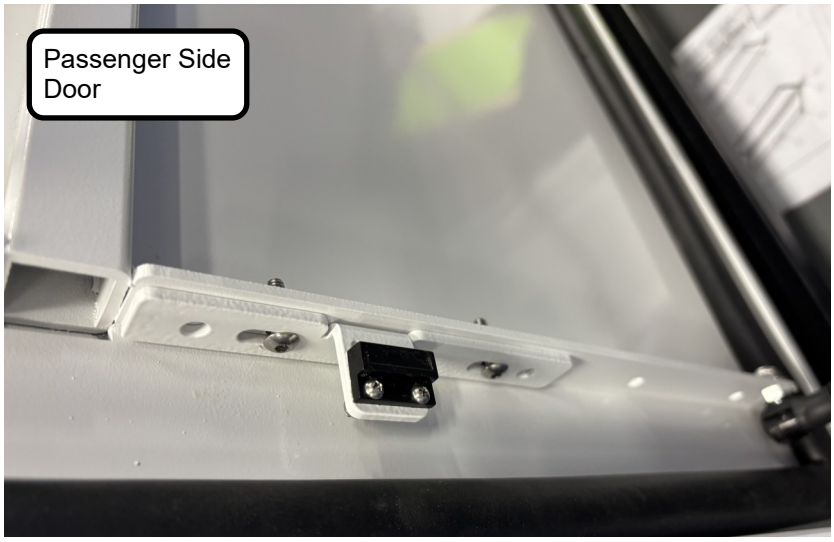
Using an alcohol wipe, clean brackets. After they are dry, locate bracket for the driver side door.

For the driver side, mount the bracket so that the slightly shorter side goes towards the tube extrusion/upwards.

Line the bolt heads up to the **middle of the slot** for best alignment.

Use the image to the left as reference.

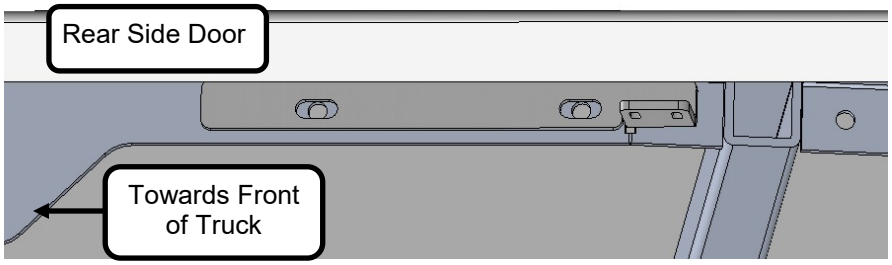
Secure mount with 10-24x.75 button head cap screws and 10-24 hex nuts.



For the passenger side, the shorter side of the bracket will be closer to the tube extrusion/away from truck.

Line bracket up with first two holes after metal brace make sure to have the bolts in the **middle of the slot** for best alignment.

Use the image to the left as reference.



For the rear side, place bracket on the left outermost side of the topper door.

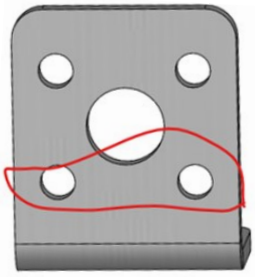
Secure bracket to metal brace with magnet attachment towards the back of the truck or away from the truck.





Step 12:
Identify the door shocks on the topper doors. Both the driver and passenger sides should have pre-existing holes on the shock mounts for placing the magnetic switch.

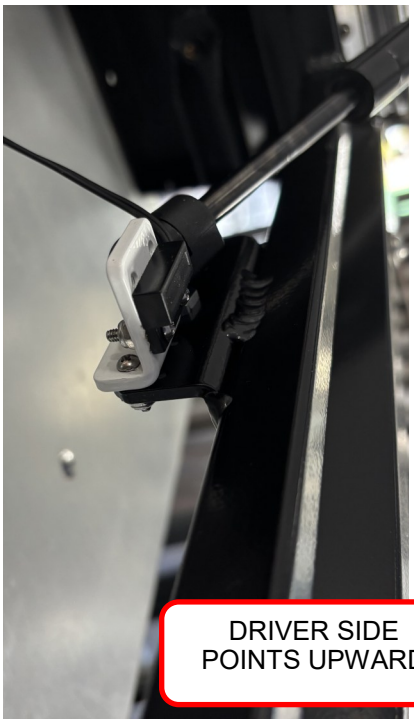
Start by cleaning the shock mount using an alcohol pad and remove any plastic film covering the back of switch.



For mounting of switch:

If there is an option of holes use the holes circled in the image.

If there is just two holes use the holes provided.



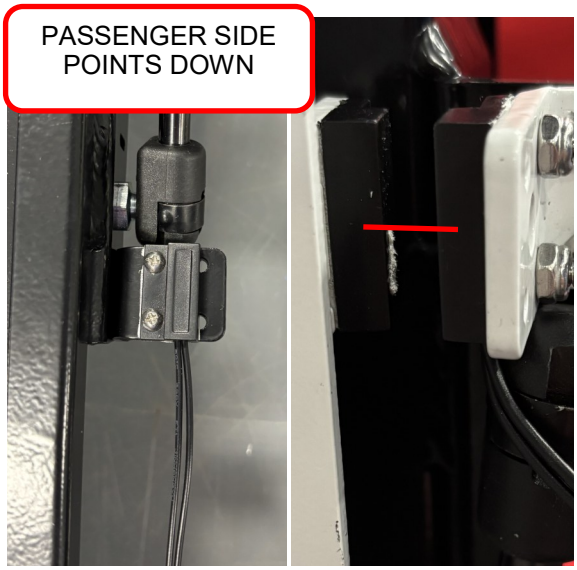
Step 13:
Locate driver's side door shock mounts. There will be two magnetic switches mounted to each side of the driver's side door shock mount.

Position the magnetic switch along with its wires and connector. To have the wires point upward toward the shocks.

Place switch centered on the mount for easiest alignment.

Using a screw driver secure the magnetic switches in proper position. Make sure to mount the switch to the lower two holes.

Use the provided images as reference.



Step 14:
Locate passenger side door shock mount. Secure magnetic switch on passenger side mount with wires facing upward.

Make sure magnetic switches are face to face with one another! If they are not aligned they will not function properly. Refer to image for proper alignment.

Make use of the slots throughout the bracket assembly to adjust the magnets to align as closely as possible.

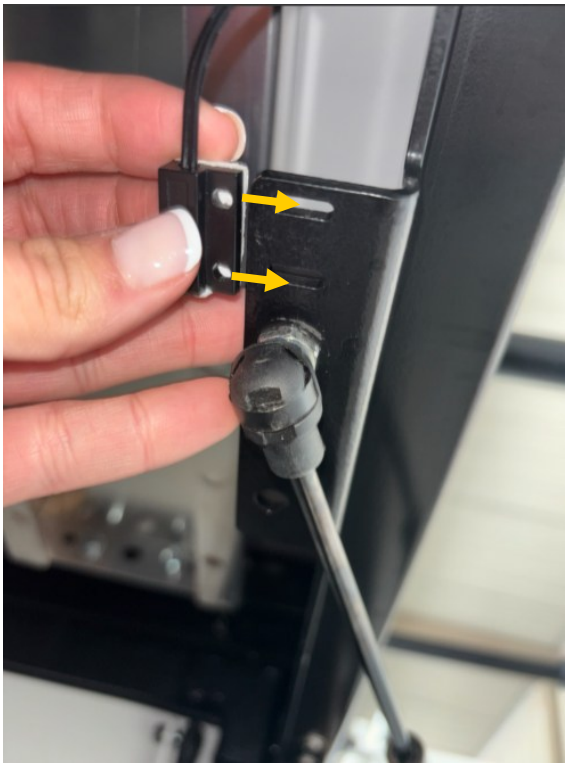
Walk-In Topper Magnetic Switch Instructions:

Please follow the next two pages for mounting magnetic switches for the walk-in topper.

- BAG0989
- Bracket Part Number 77230



Walk-In Topper Magnet Bracket Install

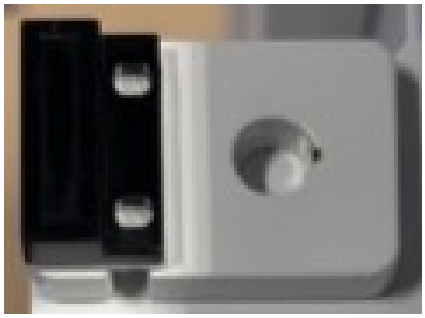


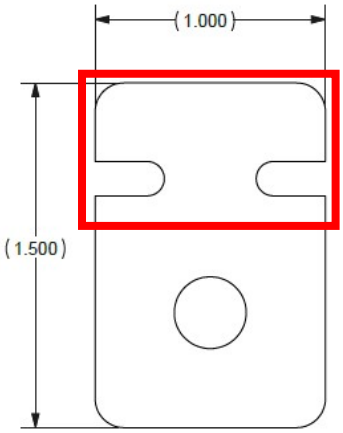
- Install Driver/Passenger side doors the same as the above pages.
- Mount magnetic switch sensor on the top part of door frame on the topper. Use the image to the left as reference.
- Plug in mating connector end to magnetic switch sensor to 71905. Circled in image on the bottom left.
- Place sensor end aligned with the holes.
- Secure sensor in place by removing sticky back paper, and use provided fasteners to mount in place. Be sure to clean the area with alcohol wipe before install.
- Use images below as reference for mounting the magnetic switch sensor.
- Secure harnesses using stud mounted zip ties.





Walk-In Topper Magnet Bracket Install





- Use the small bracket for the rear walk-in doors and use BAG0989 to secure it.
- Locate the 77230 bracket spacer and the magnet switch.
- Peel the sticky off the magnet and stick it to the bracket as shown in the images to the left. Make sure the holes in the magnet line up with the ones on the bracket.
- Locate the screws and place the bracket with the magnet switch on it and secure it to the top of the walk-in door as pictured below.
- Make sure the magnet switches line up so that they will properly work.
- Test functionality of magnetic switches.

Place the magnet in the location of the red rectangle. Make sure the holes line up.



NOTE: The hole in the small bracket is not for mounting. This hole was designed for paint line purposes.

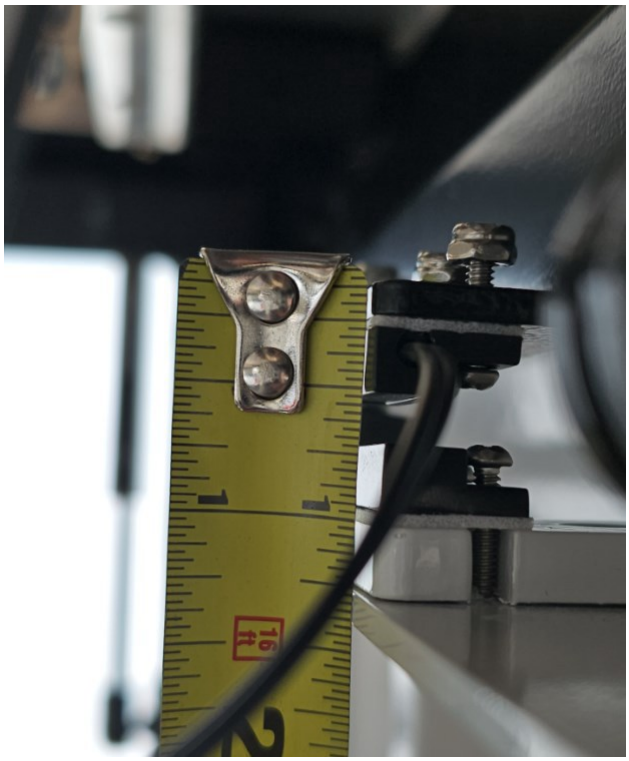
After install check: Shut the topper door and ensure the magnetic switches are aligned. The two magnets must meet, face-to-face when the door is shut.

Line the bracket with the magnet switch with these holes.



Walk-In Topper Magnet Bracket Install Cont.

Note: The brackets should be lined up as shown below. They should also be spaced apart as shown on the measuring tape in the photo.





Mounting **Kit 81548's** Rear Door Light Kit

Mount [1] 48" light strip on the inside of the topper similar to the images below.







*** Be sure to place strip light high enough on inner wall to avoid making contact with door roller when closed. Image above for reference

CONTAINMENT FOR MAGNETIC SWITCHES

Route Harness 71905

- Route harness **71905** through the assembly following the standard routing path.

Connect Rear Door Magnetic Switch

- Identify the **shorter magnetic switch lead**.
- Route the shorter lead to the **rear door** location.

Plug the shorter magnetic switch connector into the rear door magnetic switch.

Extend Passenger Side Harness

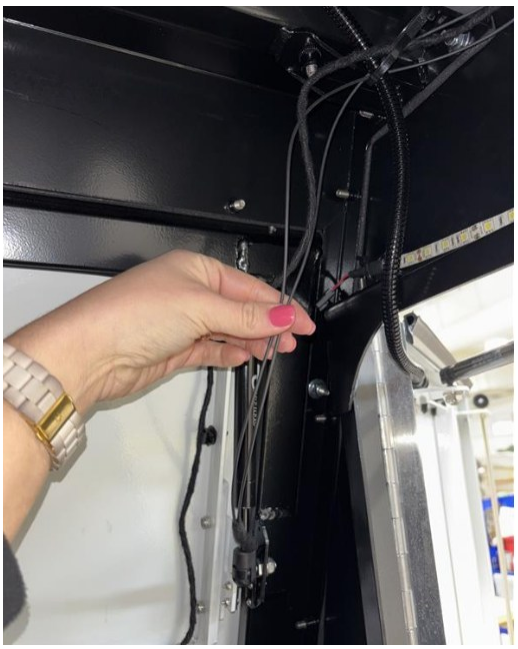
- Locate the magnetic switch harness on the **passenger side**.
- Cut the harness at the appropriate location to allow for wire extension.
- Strip the wire ends.
- Add the required extra wire length using butt connectors.
- Crimp all butt connectors securely.

Route the extended harness to the final magnetic switch mounting location.

Final Inspection

- Verify all connectors are fully seated.
- Confirm wiring is secured away from sharp edges and moving parts.

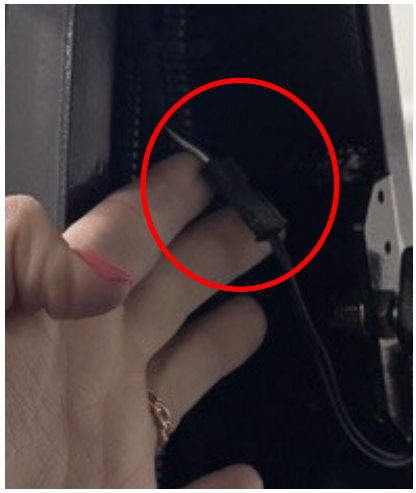
Check that harness routing does not interfere with door operation











Step 16:
A) After routing 71905 underneath the vehicle, towards the rear, secure the bundle in the middle of the roof bows closest to the doors.

Route the longest lead of magnetic switch harness to the **driver side** switch mount. Image to the left.

When routing keep the harness tucked up into the area with the harness. Use stud mounts to secure harness, if there is no stud mounts to connect to, use sticky back mounting.

Connect end of magnetic switch to matting connector end on harness. (Shown in Red)



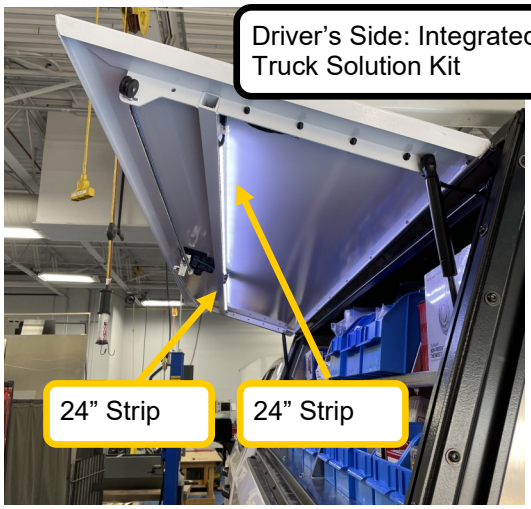
B) With the two short leads plug one end into the rear magnetic sensor, the other add 80371 extension harness to it to reach the passenger side magnetic sensor. (Shown in Red)

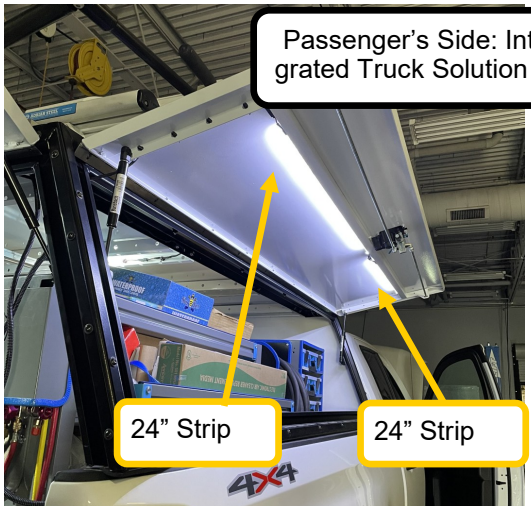


80371









Driver’s, Passenger, or Rear Door: Other Interior Light Kits



Step 17 (6.3’ only): Install the lights.
Locate the lights for the install. This will vary with customers so grab only what is called out on the sales order per vehicle.

***Please note:** if there is an added door handle strap, the lights will need to be installed as high up on the channel as possible, to avoid the nut and bolt clamping on the light strip.

Open the topper doors that are requiring lights. Locate the square tube running horizontal across the door. The side facing the interior of the top will be the side you will secure the lights to.

Using the alcohol pads provided in the boxes, clean the entire inside wall of the square tube where the lights will stick to before installing. Be sure to let the tube dry.

Be sure to have the larger connector end of the lights towards the rear for connecting into the roof bow harnesses.

If installing the integrated Truck Solution (73106):
Connect (2) 24” strips together, and remove sticky tape on the back.

On the drivers side, install (2) 24” strip lights as center as possible between the front and rear sides of the door.

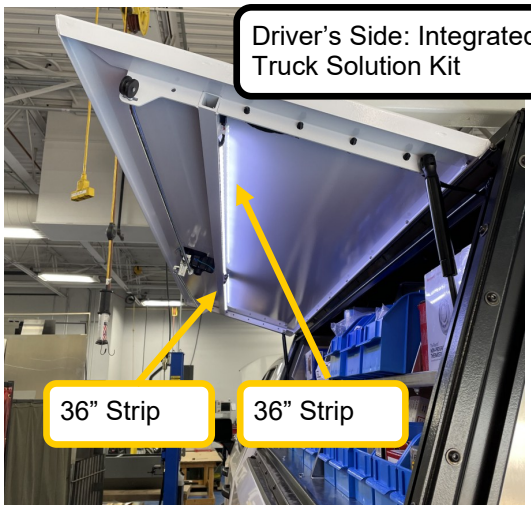
For the passenger side, install (2) 24” strips, following the same instructions as above.

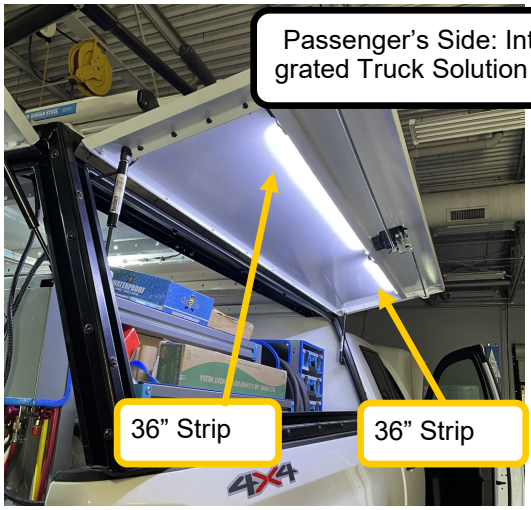
Follow the same mounting location/procedure for any other strip lights being mounted (48” or 36”). Lights will mount on the interior side of the channel that runs along the door.

Only install the lights on the sides that are needed. Not every door will always have lights. These will vary on customer asks. Refer to page 4 for kit part numbers and components.

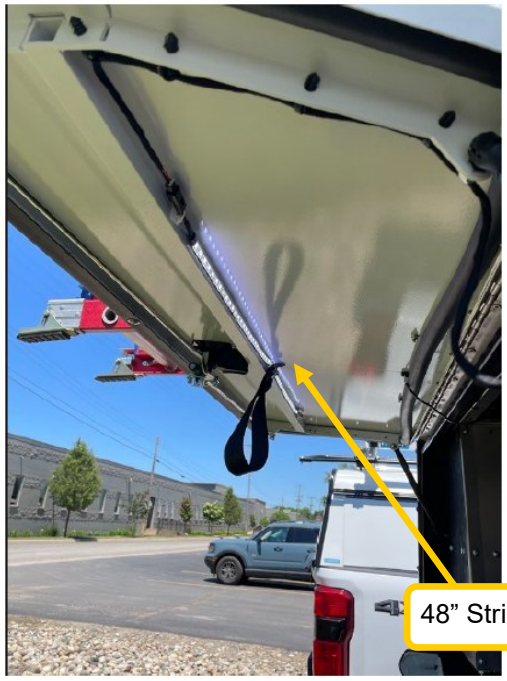
Be sure to have the larger connector end of the lights towards the rear for connecting into the roof bow harnesses.

Place a small sticky back square zip tie mount at each end of the strips to secure the connector to the topper.





Driver's, Passenger, or Rear Door: Other Interior Light Kits



Step 17 (8' only): Install the lights.
Locate the lights for the install. This will vary with customers so grab only what is called out on the sales order per vehicle.

***Please note:** if there is an added door handle strap, the lights will need to be installed as high up on the channel as possible, to avoid the nut and bolt clamping on the light strip.

Open the topper doors that are requiring lights. Locate the square tube running horizontal across the door. The side facing the interior of the top will be the side you will secure the lights to.

Using the alcohol pads provided in the boxes, clean the entire inside wall of the square tube where the lights will stick to before installing. Be sure to let the tube dry.

Be sure to have the larger connector end of the lights towards the rear for connecting into the roof bow harnesses.

If installing the integrated Truck Solution (74495):
Connect (2) 36" strips together, and remove sticky tape on the back.

On the drivers side, install (2) 36" strip lights as center as possible between the front and rear sides of the door.

For the passenger side, install (2) 36" strips, following the same instructions as above.

Follow the same mounting location/procedure for any other strip lights being mounted (48"). Lights will mount on the interior side of the channel that runs along the door.

Only install the lights on the sides that are needed. Not every door will always have lights. These will vary on customer asks. Refer to page 4 for kit part numbers and components.

Be sure to have the larger connector end of the lights towards the rear for connecting into the roof bow harnesses.

Place a small sticky back square zip tie mount at each end of the strips to secure the connector to the topper.

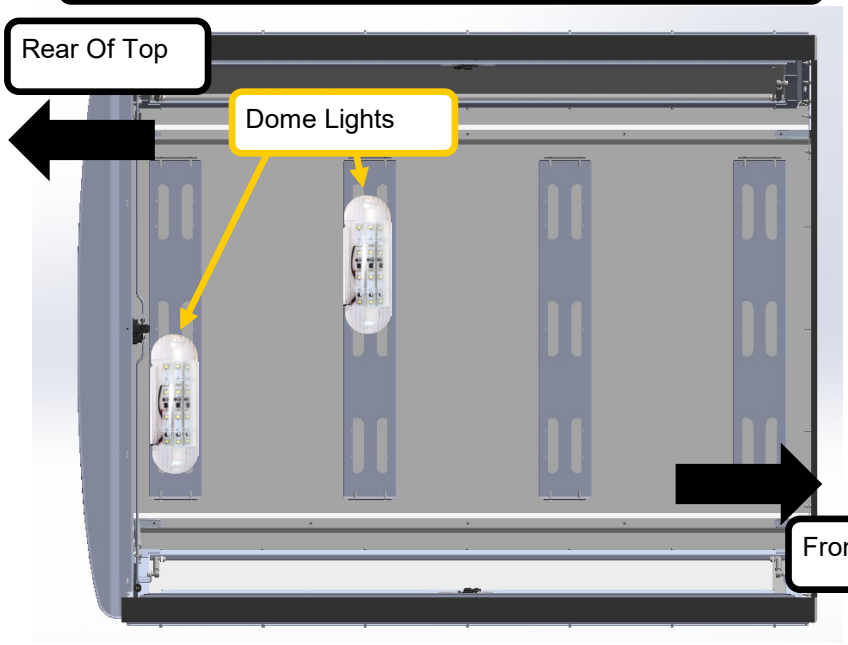
Step 18 (6.3' only):
For the Integrated Truck Solution (73106)
Locate the (2) dome lights.

Be sure to clean the area that the lights will stick to carefully before installing. Use the alcohol pad provided in the boxes and let it dry before installing.

If there will be an interior ladder rack installed, stagger the dome lights on the roof bows like shown. If not then please center the lights.

Note: Don't use the self tapper screws. Drill 2 holes and use nuts and bolts to secure Dome Lights.

Integrated Truck Solution Kit With Interior Ladder Rack



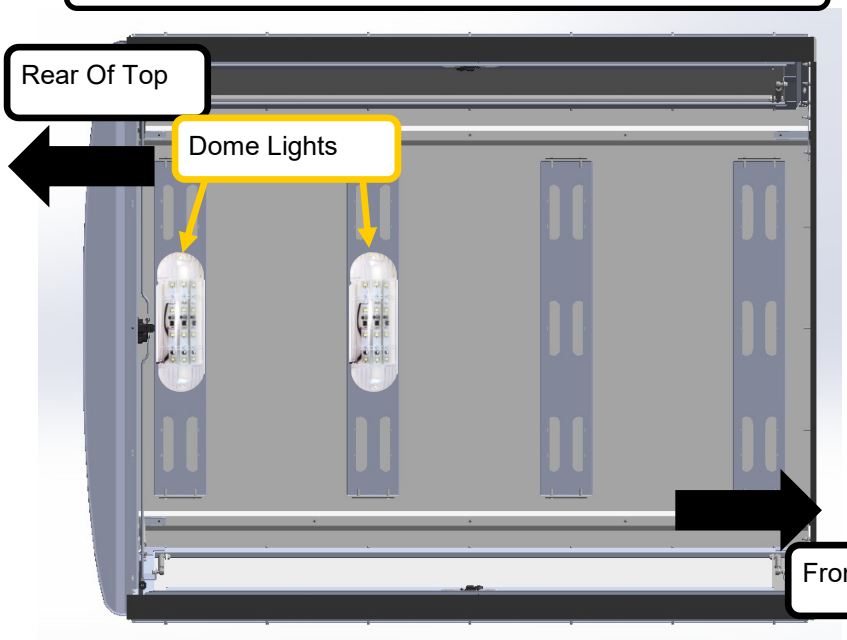
Place dome light on roof bow as shown in images below:



Please secure dome lights with (FAS-0022 10-24X0.75) screw, (FAS-0029 10-24) nut, and (FAS-0027) washer on roof bow.



Integrated Truck Solution Kit With No Interior Ladder



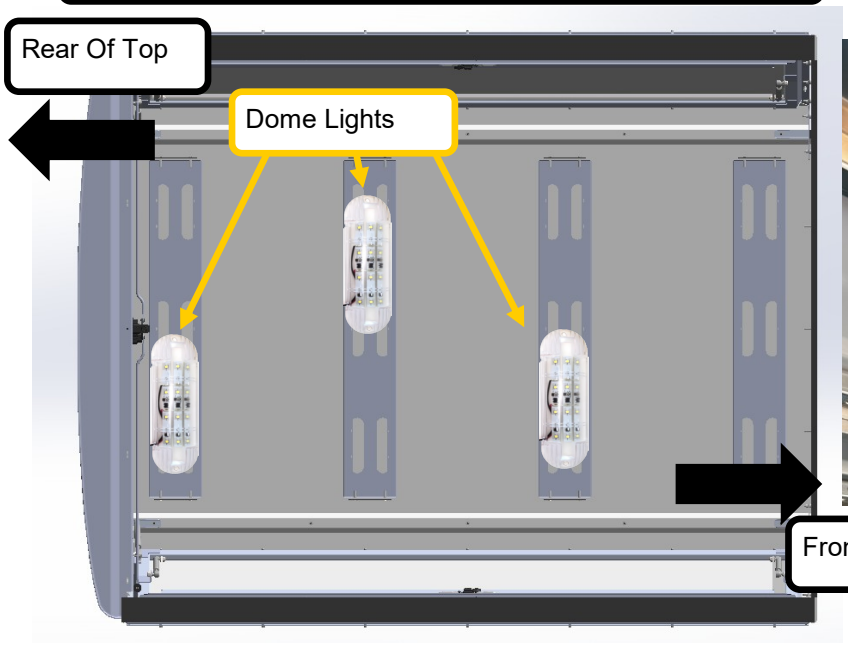
Step 18 (8' only):
For the Integrated Truck Solution (74495)
Locate the (3) dome lights.

Be sure to clean the area that the lights will stick to carefully before installing. Use the alcohol pad provided in the boxes and let it dry before installing.

If there will be an interior ladder rack installed, stagger the dome lights on the roof bows like shown. If not then please center the lights.

Note: Don't use the self tapper screws. Drill 2 holes and use nuts and bolts to secure Dome Lights.

Integrated Truck Solution Kit With Interior Ladder Rack

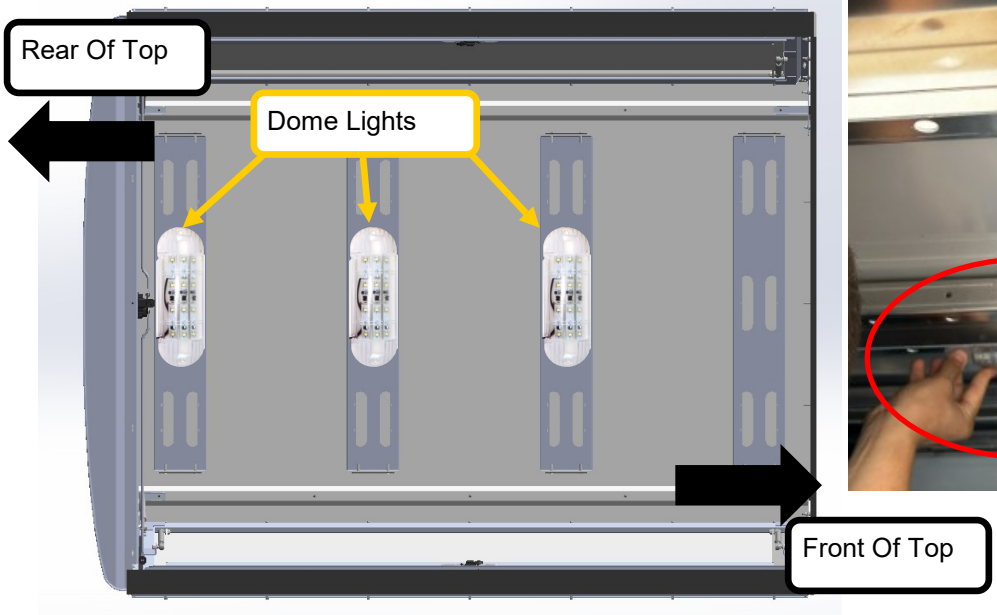


Place dome light on roof bow as shown in images below:

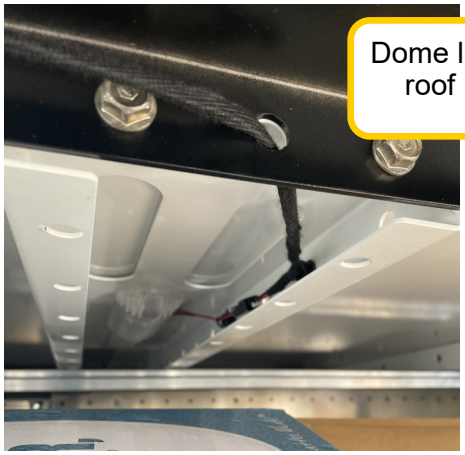


Please secure dome lights with (FAS-0022 10-24X0.75) screw, (FAS-0029 10-24) nut, and (FAS-0027) washer on roof bow.

Integrated Truck Solution Kit With No Interior Ladder













Step 19: Roof Bow Harness Routing

Use roof bow harness #1 (63481) for routing the 2 dome lights and the strip lights on the driver's side door.

Use roof bow harness #2 (63482) for routing to the strip lights on the passenger side.

Utilize the existing holes in the doors and roof bows for securing the zip ties to. Clean topper surface in corner areas with alcohol pads. Begin to secure the harness using provided self adhesive tie mounts where necessary.

*****IMPORTANT:**
Ensure while securing wiring to avoid all sharp edges. (Shown in image 3, circled in red). When wiring from the light strips to the roof bow, avoid sharp edges at the ends.

When both side doors are open, allow very little slack on the wire, ensuring it is taut. However, while pulling wiring taut on the strip lights ensure the doors open and close without damaging the wires.

Route the harnesses to the TLM harness (71905) and plug them in.

Secure all the wires with zip ties and tuck neatly as possible between the first roof bow and the rear door edge.

Be sure all wiring is secured with zip ties.





Step 20: *** Testing of magnetic switches ***

Continue to route power to light harness PN 71905 to magnetic switches mounted on door shock mounts.

After plugging in the magnetic switches, be sure to secure the excess wiring using provided cable ties.

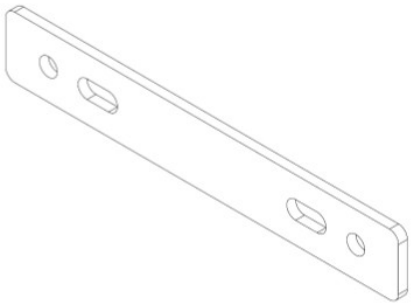
Once magnetic switches and all lights are plugged in, lights should be on.

To test and see if the magnetic switches are close enough to one another, open the tailgate of the truck and shut all of the topper doors.

Once all of the topper doors are shut, all of the lights should be off. If one topper door is open, the lights will remain on. In order for the lights to turn off, all of the topper doors must be shut.

Magnetic switches should be no more than 1/4" away from one another.

If the lights do NOT turn off when all of the doors are shut, preform next step below.





Step 21: Locate magnetic switch bracket spacer PN 73414-W.

Place one **or two bracket(s)** behind the pre-existing bracket on the topper door. This can be placed behind one bracket and then tested again.

Utilizing hardware provided, secure bracket behind magnetic switch bracket. This is to ensure the magnetic switches are close enough for connectivity.

A spacer may be placed behind all magnetic switch brackets on the rear door and two side doors if deemed necessary.

Magnetic switches mounted on topper door must be **NO MORE** than 0.3" apart from each when the door is shut.







Insert the fuses into the inline-fuse holders on the TLM harness (71905) and the power harness (71903).

The install is now complete.

Check that the lights come on when any of the 3 doors open.

TOPPER INTERIOR LIGHTING: ISSUE & SOLUTIONS



If lights do not turn off when topper door is closed or do not turn on when topper doors are opened, please follow the checklist below.

OEM BATTERY VOLTAGE

- ☐ Check OEM battery voltage. Ensure battery voltage is 11.8 volts or higher. If TLM reads a battery voltage of 11.8 volts for 20 seconds or more, it will shut off until it reads an increase in voltage.
- ☐ If voltage is low, charge the vehicle battery.

TLM DIP SWITCHES

- ☐ Check TLM located under driver/passenger side footwell.
- ☐ The time set will be customer specific.
- ☐ Ensure Voltage Sense is ON (down), Timer is ON (down), and Steady Ground Input is ON (Down).
- ☐ Setting TLM to 90 minutes is as follows:

1	2	3	4	5	6
Down	Down	Down	Up	Up	Down

MAGNETIC SWITCH PLACEMENT/LOCATION

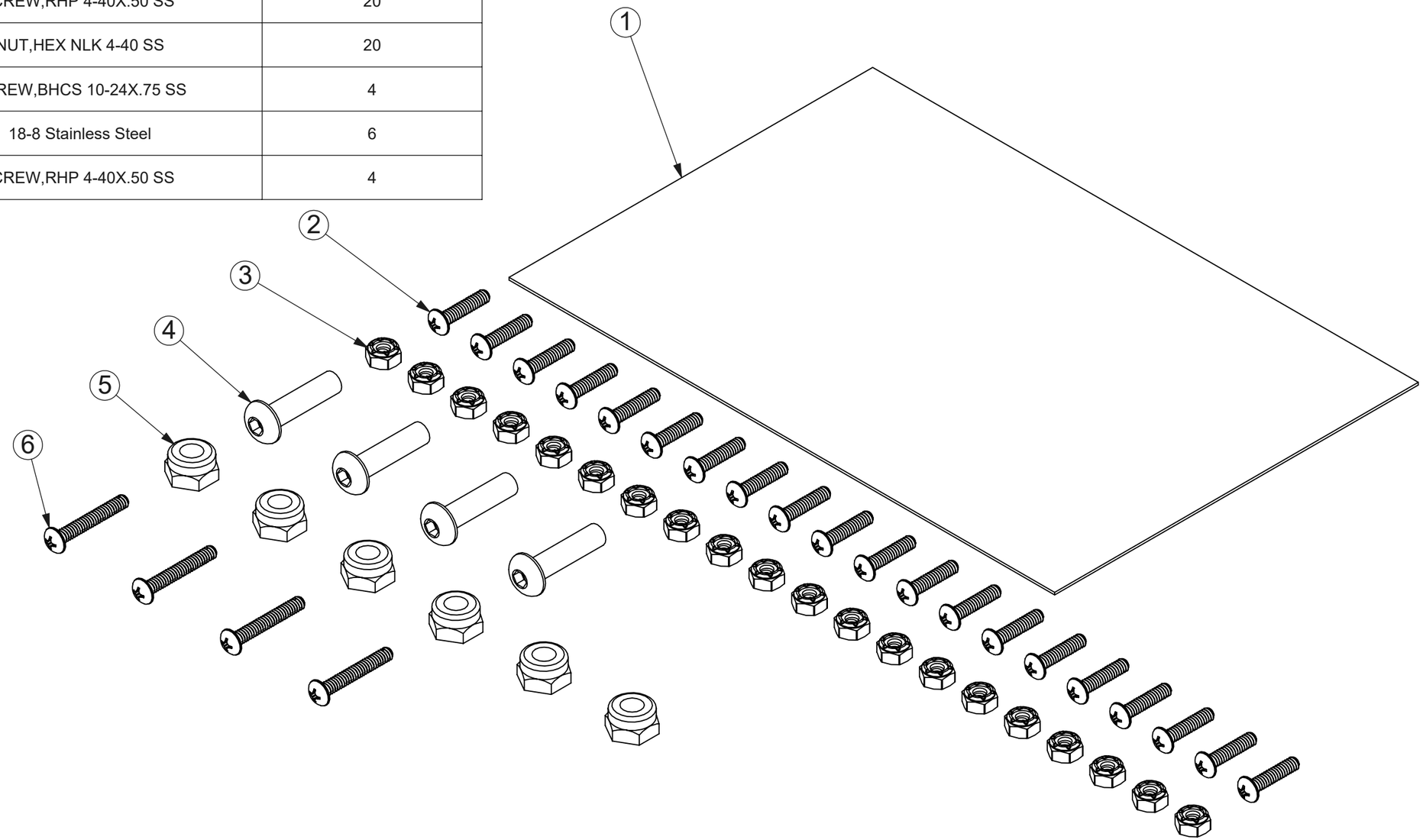
- ☐ Magnetic Switches mounted on topper doors must be **no** more than 0.3 inches apart from one another when topper door is shut.
- ☐ If the space between magnetic switches is too far, place spacer between topper door brackets.
- ☐ Magnetic switches mounted on door shocks must be mounted properly:
  - Driver Side: Magnetic Switch sensor wires must be mounted downward
  - Passenger/Rear Side: Magnetic Switch sensor must be mounted upward

MAGNETIC SWITCH FUNCTIONALITY/RESET

- ☐ Shut all topper doors to reset magnetic switch connection once timer shuts off lights.
- ☐ If topper lights do not turn on/off, unplug and test one sensor at a time, to see if there is a sensor malfunction.
- ☐ **If the topper lights turn off after 5 seconds of turning on, vehicle battery has low voltage.**
- ☐ **If the topper lights turn off after 10 seconds of turning on, there is an issue with the dip switches on the TLM.**

***** Be sure to always check that there is proper connection at all connectors, and that there is no issue in any wiring harnesses.**

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	BAG0406-A	4" x 6" 3MIL AUTOBAG	1
2	FAS0942	SCREW,RHP 4-40X.50 SS	20
3	FAS0943	NUT,HEX NLK 4-40 SS	20
4	FAS0674	SCREW,BHCS 10-24X.75 SS	4
5	FAS0554	18-8 Stainless Steel	6
6	FAS0989	SCREW,RHP 4-40X.50 SS	4



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FORMING, WELDING & ASSEMBLY

THIS PART IS NOT PAINTED, COATED OR FINISHED AT THIS PART LEVEL!

MECHANICAL FINISHING: **N/A**

SPECIAL FORM TOOL(S): **N/A**

WELDING JIG: **N/A**

ASSEMBLY JIG: **N/A**

MATERIAL TYPE: **ASSM**

PRINTED DOCUMENT IS UNCONTROLLED

TOLERANCES & INSPECTION

UNLESS OTHERWISE SPECIFIED

ALL BEND ANGLES ARE 90 DEGREES

ALL DIMENSIONS ARE IN INCHES.

REFERENCE DIMENSIONS (X.XXX) DO NOT REQUIRE INSPECTION

FEATURES	HOLES/SLOTS	ANGLES
0.0 = ± .125	0.0 = ± .062	0° = ± 2°
0.00 = ± .062	0.00 = ± .031	0.0° = ± 1°
0.000 = ± .031	0.000 = ± .015	

Material Thickness: per ASTM Std.
Weld Callouts per AWS

RELEASE & REVISIONS

INITIAL ECN: **28219**

CURRENT ECN: **28219**

ECN DESCRIPTION: **RELEASE FOR PRODUCTION**

REVISED BY: **LJK**

PART / PRODUCT IDENTIFICATION

ADRIAN STEEL®

ADRIAN STEEL COMPANY
906 JAMES STREET, ADRIAN, MI 49221

REVISION LEVEL **B**

MAT'L USED: **ASSM**

DESIGNED BY: **L. KALENIECKI**

DESCRIPTION: **FAS BAG WALK IN TOPPER MAG SWITCH F-150**

WEIGHT (Lbs.): **0.725**

SEGMENT CODE: **BAG**

PART NUMBER: **BAG0989**

PART NUMBER
13905-0

ITEM DESCRIPTION: WIRE TIE, NYLON 40Lb, 8.5” BLACK



MANUFACTURER: WAYTEK, INC. or equivalent
MANUFACTURERS PART NUMBER: 21093M or 21093C

SPECIFICATIONS: STANDARD CABLE TIE
BLACK, NYLON
8-1/2” LONG
TENSILE STRENGTH: 40.0 LBS
21093M = 1,000 quanity
21093C = 100 quanity

SPECIAL NOTES: PART NUMBER IS BLACK.

SUPPLIED BY: THIS ITEM IS ADRIAN AVAILABLE!

PURCHASED PRODUCT DATA SHEET (PPDS)

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517-265-6194
WWW.ADRIANSTEEL.COM

⚠ CAUTION ⚠

WHEN INSTALLING EQUIPMENT IN OR ON VEHICLES CHECK FOR FUEL TANKS, FUEL LINES, CONTROL LINES AND ELECTRICAL WIRING BEFORE DRILLING! ALWAYS USE DRILL BITS WITH INTEGRAL STOPS WHENEVER POSSIBLE!

DRAWN BY	DATE DRAWN
MDG	10/26/2006
ECN NUMBER	ECN DATE
18021	11/13/2015
PART WEIGHT	REV. LEVEL
0.01 LBS.	D

PART NUMBER
13905-0

PART NUMBER
26618-0

ITEM DESCRIPTION: SILICONE, 1oz. TUBE



SPECIFICATIONS:
SU5005 RTV SILICONE
1oz. TUBE
CLEAR OR EQUIVILENT
SELF PIERCING CAP

SPECIAL NOTES:

SUPPLIED BY: THIS ITEM IS ADRIAN AVAILABLE!

PURCHASED PRODUCT DATA SHEET (PPDS)

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ADRIAN STEEL
VAN AND PICKUP EQUIPMENT
906 JAMES STREET
ADRIAN, MI 49221
517-265-6194
WWW.ADRIANSTEEL.COM

⚠ CAUTION ⚠

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DRAWN BY	DATE DRAWN
JLC	7/21/2001
ECN NUMBER	ECN DATE
16551	7/22/2014
PART WEIGHT	REV. LEVEL
0.02 LBS.	C

PART NUMBER
26618-0

PART NUMBER
26618-0

ITEM DESCRIPTION: SILICONE, 1oz. TUBE



SPECIFICATIONS:
SU5005 RTV SILICONE
1oz. TUBE
CLEAR OR EQUIVILENT
SELF PIERCING CAP

SPECIAL NOTES:

SUPPLIED BY: THIS ITEM IS ADRIAN AVAILABLE!

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DRAWN BY	DATE DRAWN
JLC	7/21/2001
ECN NUMBER	ECN DATE
16551	7/22/2014
PART WEIGHT	REV. LEVEL
0.02 LBS.	C

PART NUMBER
26618-0

PART NUMBER
35353-0

ITEM DESCRIPTION: BUTT CONNECTOR FOR 22-18 GA WIRE, SEALED



MANUFACTURER: WAYTEK or CTW
MANUFACTURERS PART NUMBER: #30965 or #4-18-6

SPECIFICATIONS: Red Color Insulated Butt Connector with Sealable Ends
For 18 – 22 GA Wire

SPECIAL NOTES: NONE

SUPPLIED BY: THIS ITEM IS ADRIAN AVAILABLE!

PURCHASED PRODUCT DATA SHEET (PPDS)

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517-265-6194
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⚠ CAUTION ⚠
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DRAWN BY	DATE DRAWN
APG	11/9/2007
ECN NUMBER	ECN DATE
14810	5/31/2012
PART WEIGHT	REV. LEVEL
.01 LBS.	C

PART NUMBER
35353-0

PURCHASED COMPONENT KEY FEATURES

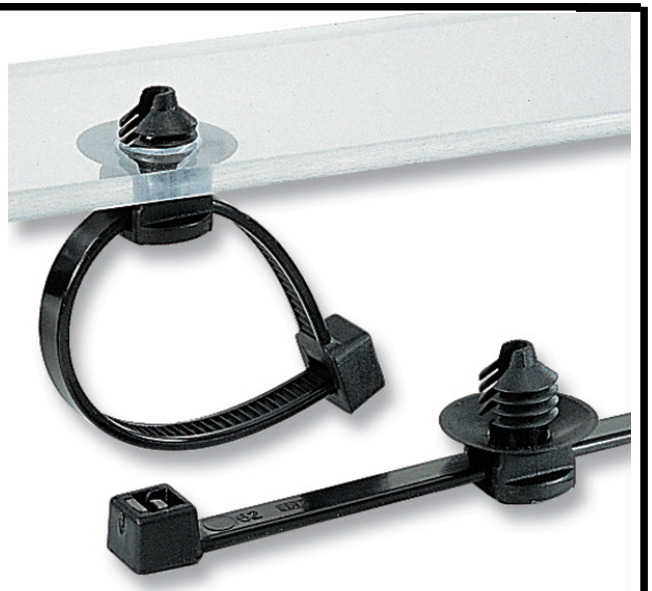
DESCRIPTION OF REQUIREMENTS
DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING)
N/A
LOAD/RATING REQUIREMENT
N/A
MATERIAL REQUIREMENT
N/A
PACKAGING REQUIREMENT
N/A
OTHER REQUIREMENTS

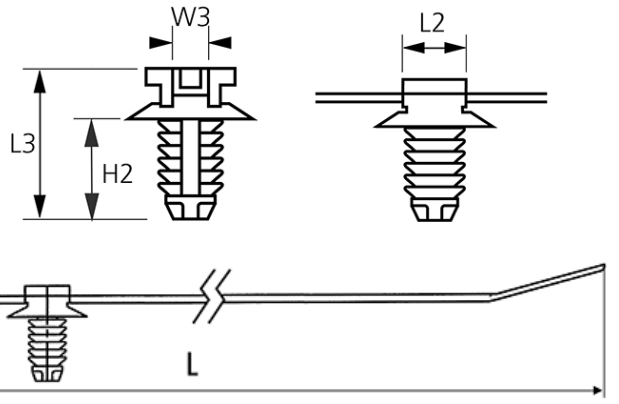
- **Roof Bow #2**
- **(5x) WIRE TIE W/CHRISTMAS TREE**
- **1570mm Length**



P-HARRB2

(5x)





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TOLERANCES & INSPECTION

UNLESS OTHERWISE SPECIFIED

ALL BEND ANGLES ARE 90 DEGREES

ALL DIMENSIONS ARE IN INCHES.

REFERENCE DIMENSIONS (X.XXX) DO NOT REQUIRE INSPECTION

FEATURES	HOLES/SLOTS	ANGLES
0.0 = ± .125	0.0 = ± .062	0° = ± 2°
0.00 = ± .062	0.00 = ± .031	0.0° = ± 1°
0.000 = ± .031	0.000 = ± .015	

Material Thickness: per ASTM Std. Weld Callouts per AWS

RELEASE & REVISIONS

INITIAL ECN: 24359

CURRENT ECN: 24359

ECN DESCRIPTION:

QE8539 RELEASE MODULAR DOME LIGHTING

REVISED BY: **MJF**

PURCHASED COMPONENT

REFERENCED SUPPLIER AND/OR MANUFACTURER
ECHOMASTER FLEET SOLUTIONS

REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER
P-HARRB2

COLOR (ONLY LIST IF COLOR SPECIFIC)

COMODITY ITEM (Y/N) (YES = ALL DIMENSIONS AND NOTES ARE REFERANCE) (NOTE: DIMENSIONS AND FEATURES MAY VARY FOR A COMODITY ITEM.)
YES

PART / PRODUCT IDENTIFICATION

ADRIAN STEEL

ADRIAN STEEL COMPANY
906 JAMES STREET, ADRIAN, MI 49221

REVISION LEVEL **A**

MAT'L USED: **PURCHASED**

DESIGNED BY: **MJF**

DESCRIPTION: **ROOF BOW HARNESS #2**

WEIGHT (Lbs.): **.50**

SEGMENT CODE: **EAU**

PART NUMBER: **63482**

PURCHASED COMPONENT KEY FEATURES

DESCRIPTION OF REQUIREMENTS
DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING) **N/A**
LOAD/RATING REQUIREMENT **N/A**
MATERIAL REQUIREMENT **N/A**
PACKAGING REQUIREMENT **N/A**
OTHER REQUIREMENTS

Note:

Connector / Terminal Configuration:

- **MALE 2 PIN ON ONE END**
- **FEMALE 2 PIN ON THE OPPOSITE END.**

BOM:

Item	Qty.	Description
1	1	36" WHITE LED STRIP LIGHT W/ADHESIVE
2	2	4" ZIP TIE
3	2	CABLE TIE MOUNT
4	1	ALCOHOL PAD



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REFERENCE DIMENSIONS (X.XXX) DO NOT REQUIRE INSPECTION

FEATURES	HOLES/SLOTS	ANGLES
0.0 = ± .125	0.0 = ± .062	0° = ± 2°
0.00 = ± .062	0.00 = ± .031	0.0° = ± 1°
0.000 = ± .031	0.000 = ± .015	

Material Thickness: per ASTM Std.
Weld Callouts per AWS

RELEASE & REVISIONS

INITIAL ECN: 24697

CURRENT ECN: 25778

ECN DESCRIPTION:
Revise Modular Lights With New 3M Adhesive

REVISED BY: JLT

PURCHASED COMPONENT

REFERENCED SUPPLIER AND/OR MANUFACTURER
AAMP

REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER
CL-36BLED rev.B

COLOR (ONLY LIST IF COLOR SPECIFIC)

COMODITY ITEM (Y/N) (YES = ALL DIMENSIONS AND NOTES ARE REFERANCE)
(NOTE: DIMENSIONS AND FEATURES MAY VARY FOR A COMODITY ITEM.)
YES

PART / PRODUCT IDENTIFICATION

ADRIAN STEEL®

ADRIAN STEEL COMPANY
906 JAMES STREET, ADRIAN, MI 49221

REVISION LEVEL **B**

MAT'L USED:

DESIGNED BY: **J. TYNER**

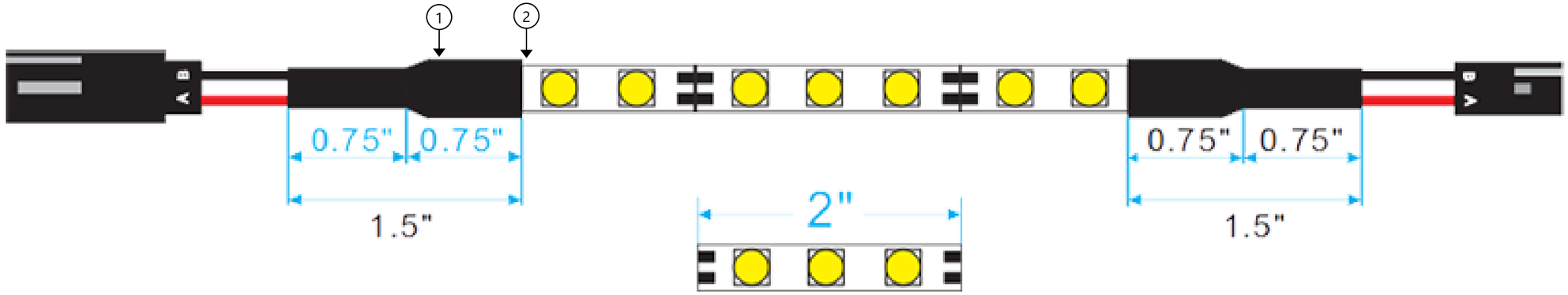
DESCRIPTION: **MODULE DOME LED STRIP 36"**

WEIGHT (Lbs.): **0.3**

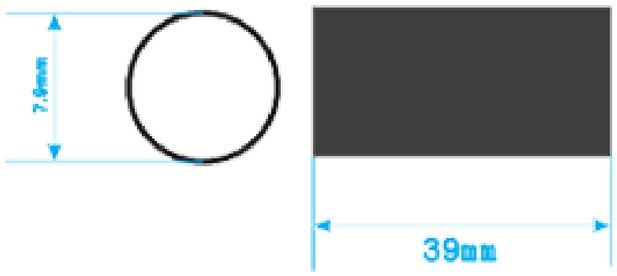
SEGMENT CODE: **EAU**

PART NUMBER: **65347**

Notes	
1	3:1 Adhesive Heat Shrink to be placed over LED Solder Joints
2	5925 Adhesive Liner Edges to be exposed next to heat shrink



12"=6X
24"=12X
36"=18X
48"=24X



Revisions			
Rev.	Date	Author	Description
A	11/1/21	Bennet Fisher	Initial Drawing
B	7/27/2022	Bennet Fisher	Adhesive changed to VHB 5925

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN MILLIMETERS [INCHES]
TOLERANCES: ±5MM

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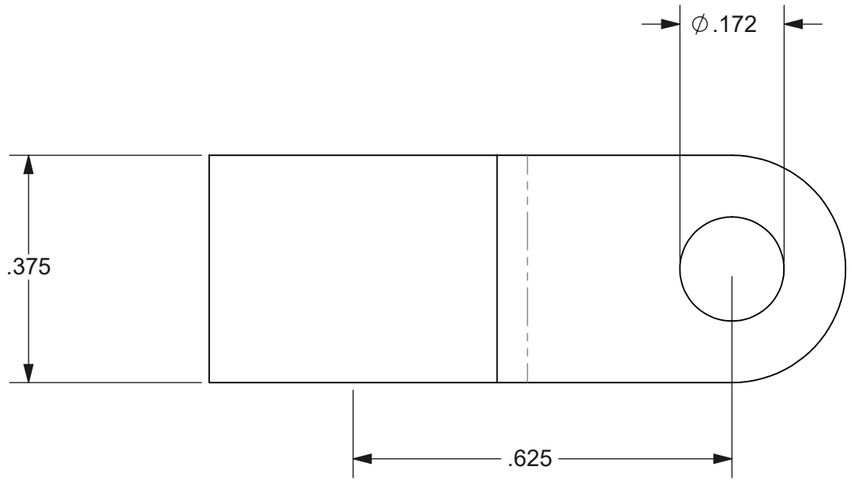
	Name	Date
Designed By	Bennet Fisher	11/1/21
Engineering Approval		
Manufacturing Approval		
Revision Approval		
Quality Assurance		

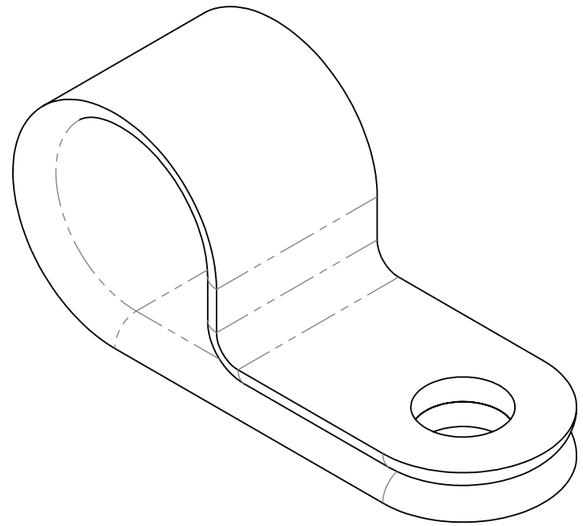
AAMP
ADVANCING VEHICLE TECHNOLOGY

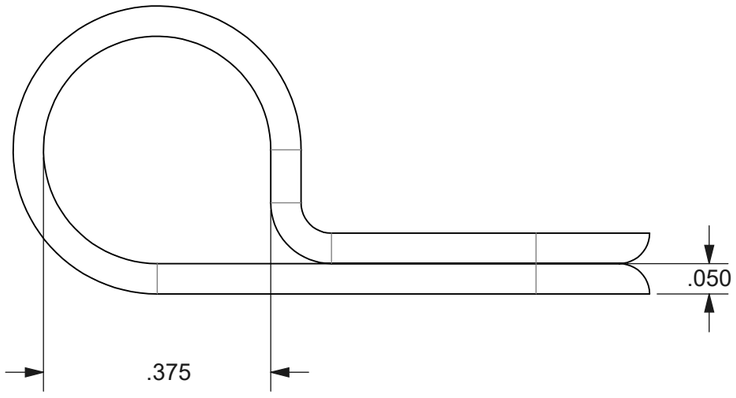
Part Number: CL-36BLED	Revision: B
Description: 36" LED Strip	Sheet: 1

PURCHASED COMPONENT KEY FEATURES

DESCRIPTION OF REQUIREMENTS
DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING) **N/A**
LOAD/RATING REQUIREMENT **N/A**
MATERIAL REQUIREMENT **N/A**
PACKAGING REQUIREMENT **N/A**
OTHER REQUIREMENTS **N/A**







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TOLERANCES & INSPECTION

UNLESS OTHERWISE SPECIFIED

ALL BEND ANGLES ARE 90 DEGREES

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REFERENCE DIMENSIONS (X.XXX) DO NOT REQUIRE INSPECTION

FEATURES	HOLES/SLOTS	ANGLES
0.0 = ± .125	0.0 = ± .062	0° = ± 2°
0.00 = ± .062	0.00 = ± .031	0.0° = ± 1°
0.000 = ± .031	0.000 = ± .015	

Material Thickness: per ASTM Std.
Weld Callouts per AWS

RELEASE & REVISIONS

INITIAL ECN: **25297**

CURRENT ECN: **25334**

ECN DESCRIPTION:

UPDATE SUPPLIER TO SAY EQUIVALENT

REVISED BY:

PURCHASED COMPONENT

REFERENCED SUPPLIER AND/OR MANUFACTURER
MCMASTER-CARR OR EQUIVALENT

REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER
8876T38 OR EQUIVALENT

COLOR (ONLY LIST IF COLOR SPECIFIC)
BLACK

COMODITY ITEM (Y/N) (YES = ALL DIMENSIONS AND NOTES ARE REFERANCE)
(NOTE: DIMENSIONS AND FEATURES MAY VARY FOR A COMODITY ITEM.)
NO

PART / PRODUCT IDENTIFICATION

ADRIAN STEEL®

ADRIAN STEEL COMPANY
906 JAMES STREET, ADRIAN, MI 49221

REVISION LEVEL **B**

MAT'L USED:

DESIGNED BY: **E.BURKE**

DESCRIPTION: **Nylon Plastic Loop Clamp**

WEIGHT (Lbs.): **0.001**

SEGMENT CODE: **HDW**

PART NUMBER: **66843**

PURCHASED COMPONENT KEY FEATURES

DESCRIPTION OF REQUIREMENTS
DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING) **N/A**
LOAD/RATING REQUIREMENT **N/A**
MATERIAL REQUIREMENT **N/A**
PACKAGING REQUIREMENT **N/A**
OTHER REQUIREMENTS **TIMER LIGHTING MODULE FOR INTERIOR PLUG AND PLAY LIGHTING ON TOPPERS**





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TOLERANCES & INSPECTION

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REFERENCE DIMENSIONS (X.XXX) DO NOT REQUIRE INSPECTION

FEATURES	HOLES/SLOTS	ANGLES
0.0 = ± .125	0.0 = ± .062	0° = ± 2°
0.00 = ± .062	0.00 = ± .031	0.0° = ± 1°
0.000 = ± .031	0.000 = ± .015	

Material Thickness: per ASTM Std.
Weld Callouts per AWS

RELEASE & REVISIONS

INITIAL ECN: **26830**

CURRENT ECN: **27950**

ECN DESCRIPTION:

Update to REV B

REVISED BY: **JJC**

PURCHASED COMPONENT

REFERENCED SUPPLIER AND/OR MANUFACTURER
Stinger

REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER
71902

COLOR (ONLY LIST IF COLOR SPECIFIC)

COMODITY ITEM (Y/N) (YES = ALL DIMENSIONS AND NOTES ARE REFERANCE)
(NOTE: DIMENSIONS AND FEATURES MAY VARY FOR A COMODITY ITEM.)
NO

PART / PRODUCT IDENTIFICATION

ADRIAN STEEL®

ADRIAN STEEL COMPANY
906 JAMES STREET, ADRIAN, MI 49221

REVISION LEVEL **B**

MAT'L USED: **PURCHASED**

DESIGNED BY: **E.BURKE**

DESCRIPTION: **TIMER LIGHTING MODULE**

WEIGHT (Lbs.): **0.2**

SEGMENT CODE: **ELE**

PART NUMBER: **71902**







TLM

Timer/Low Voltage Module

INSTALLATION MANUAL

Thank you for purchasing the TLM

WHAT'S INCLUDED:

- Timer/Low Voltage Module
- Module Harness
- Cable Ties

COMPATIBLE ACCESSORIES:

- Vehicle-specific harness (P-VTM-xxx)
- Switch harness (VTM-SWx)
- High current harness (VTM-RLY)

FEATURES:

- Selectable timer durations - 30, 60, 90, and 120 minutes
- Selectable Low Voltage Sense shut off - 11.8V, 11.5V, and 11.2V
- Timer and Low Voltage sense work independently of each other
- Inputs for 2 momentary switches or a steady ground input
- 10A max current output

OPERATING INSTRUCTIONS:

DIP 1	DIP 2	V-Sense	DIP 3	DIP 4	DIP 5	Minutes	DIP 6
Up	Up	OFF	Timer	Up	Up	30	ON (Down) Steady Ground Input
Up	Down	11.2V	ON (Down)	Up	Down	60	
Down	Up	11.5V	OFF (Up)	Down	Up	90	OFF (Up) Momentary Ground Input
Down	Down	11.8V		Down	Down	120	

DIP 1-2
If Voltage Sense feature is turned ON, low voltage shut down will occur when the input voltage to the TLM module drops below the V-Sense setting. To eliminate false triggers, there is a 20 second delay before shut down.
If Voltage Sense is turned OFF, input voltage level will not be monitored.

NOTE: Voltage Sense takes precedence over Timer.

DIP 3
If the Timer feature is turned ON and switch input is activated, output voltage will be provided for specified timer duration.

DIP 4-5
Switch settings will determine how long output will be active after the switch input is activated.

NOTE: If an invalid time is selected (e.g. Up, Up, Up or Down, Down, Down) the output will turn off 10 seconds after the switch input is activated.

DIP 6
Steady Ground Input Applications:
Applying ground to the switch input will activate the output, removing ground from switch input will disable the output. If ground is applied once again, the output will be re-activated, and the timer will reset/start over.

Momentary Ground Input Applications:
Applying a pulsed ground to the switch input will activate the output, a seond pulsed ground to the switch input will disable the output. If a pulsed ground is applied once again, the output will be re-activated, and the timer will reset/start over.

Steady Ground Input Applications

Trigger Input	Switch Input	Output	Voltage Sense (ON)	Timer (ON)
Active	N/A	ON	Monitoring Input Voltage	N/A
Not Active	N/A	OFF	N/A	N/A
Not Active	Activated (Input Grounded)	ON	Monitoring Input Voltage	Timer Starts
Not Active	Deactivated (Ground Removed)	OFF	N/A	Timer Off
Not Active	Activated (Input Grounded)	ON	Monitoring Input Voltage	Timer Starts

Momentary Ground Input Applications

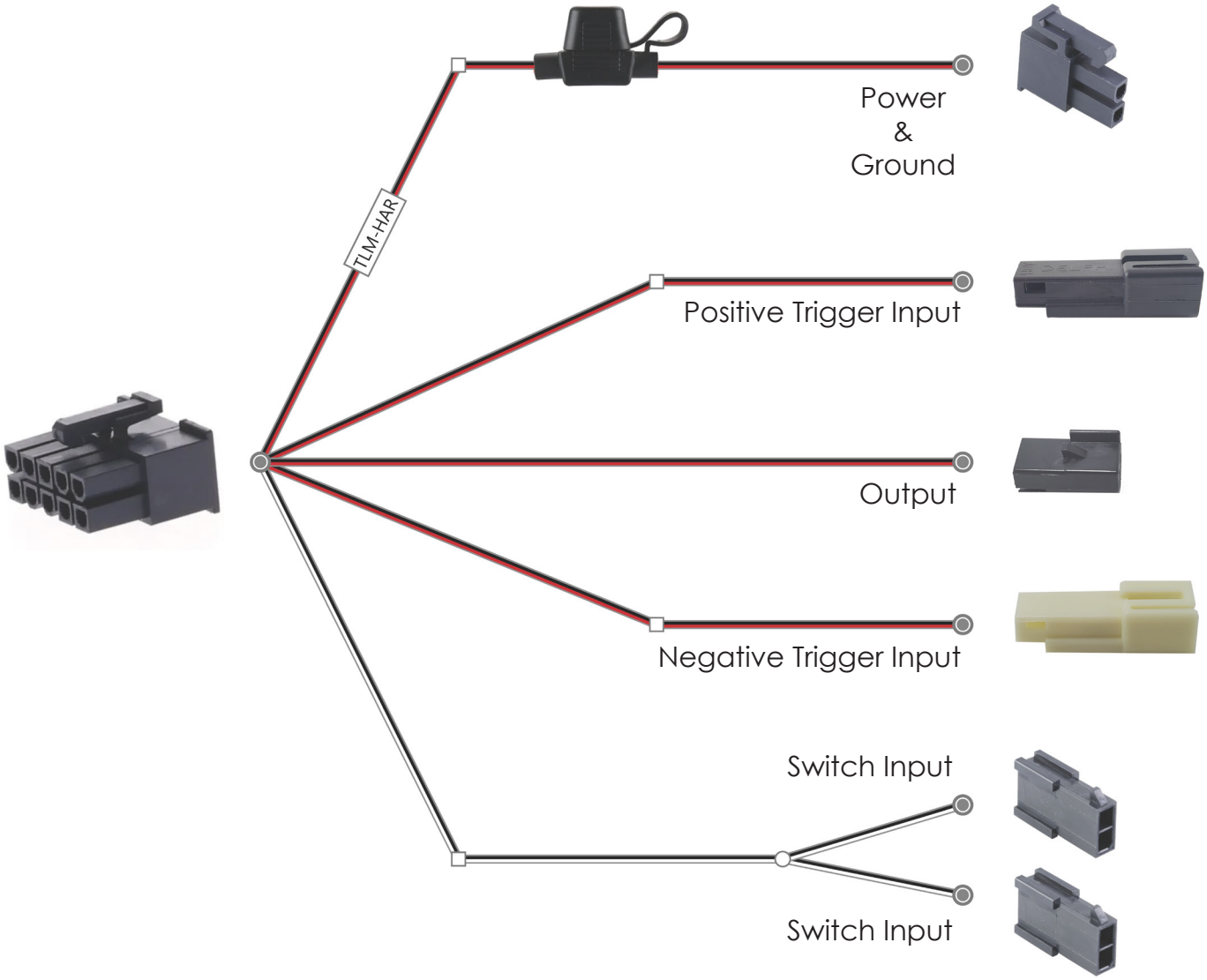
Trigger Input	Switch Input	Output	Voltage Sense (ON)	Timer (ON)
Active	N/A	ON	Monitoring Input Voltage	N/A
Not Active	N/A	OFF	N/A	N/A
Not Active	Activated (Pulsed)	ON	Monitoring Input Voltage	Timer Starts
Not Active	Activated (Pulsed)	OFF	N/A	Timer Off
Not Active	Activated (Pulsed)	ON	Monitoring Input Voltage	Timer Starts

In the tables above "Trigger Input" refers to the Positive Trigger Input and Negative Trigger Input of the module.

If a Trigger Input is active, its function takes precedence. Attempting to activate the Switch Input while a Trigger Input is active will have no effect on the modules output.

WIRING DIAGRAMS:

TLM Harness

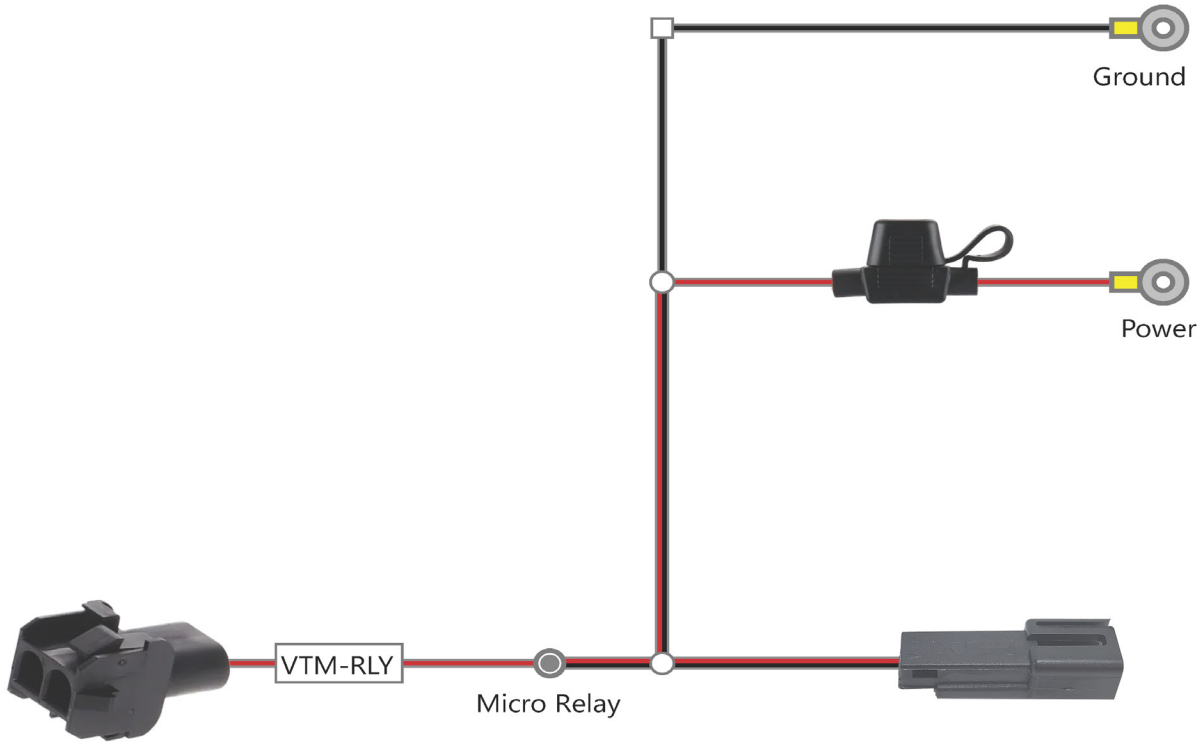


If necessary, connectors may be removed for hardwire applications.

Positive Trigger Input: Applying 12V to Red wire will activate output
Negative Trigger Input: Applying ground to Black wire will activate output
Switch Input: Closing loop between switch input wire leads will activate output

VTM-RLY (Optional Harness)

For larger current demands, use the optional VTM-RLY and connect to power and ground, along with the TLM harness. VTM-RLY supports up to 15A.



VTM-RLY Output connects to P-VTMxxx harness for vehicle lighting

VTM-RLY Input connects to the output from the TLM harness

Troubleshooting Table:

Output does not activate when Positive or Negative Trigger Input is activated	Check fuse on TLM harness	Replace fuse if it is bad
	Check power and ground connections	Fix loose or bad wire connection
	Confirm module has power and ground at its input	Replace module or damaged harness if necessary
Output does not activate when Switch Input is activated	Confirm DIP 6 on module matches switch type being used	Change DIP 6 setting to match switch type
	Confirm switch being used is not defective	Replace bad switch if necessary
Switch Input - Irregular behavior	Output does not turn off with switch	Check DIP 6 and confirm it matches switch type
		Confirm switch is not damaged or defective; replace if necessary
	Output activates for 5 seconds then turns off	Input voltage to module is below Voltage Sense setting



Phone – 866-931-8021 (option 3)

E-Mail – support@stingersolutions.com

StingerSolutions.com

REV. B

PURCHASED COMPONENT KEY FEATURES

DESCRIPTION OF REQUIREMENTS
DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING) **N/A**
LOAD/RATING REQUIREMENT **N/A**
MATERIAL REQUIREMENT **N/A**
PACKAGING REQUIREMENT **N/A**
OTHER REQUIREMENTS **PLUG AND PLAY POWER HARNESS FOR TOPPER SILVERADO AND RAM KITS** **POWER FROM BATTERY TO TLM MODULE**



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REFERENCE DIMENSIONS (X.XXX) DO NOT REQUIRE INSPECTION

FEATURES	HOLES/SLOTS	ANGLES
0.0 = ± .125	0.0 = ± .062	0° = ± 2°
0.00 = ± .062	0.00 = ± .031	0.0° = ± 1°
0.000 = ± .031	0.000 = ± .015	

Material Thickness: per ASTM Std.
Weld Callouts per AWS

RELEASE & REVISIONS

INITIAL ECN: **26830**

CURRENT ECN: **26830**

ECN DESCRIPTION:

RELEASE FOR MARKET FILL

REVISED BY: **EMB**

PURCHASED COMPONENT

REFERENCED SUPPLIER AND/OR MANUFACTURER
AAMP

REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER
71903

COLOR (ONLY LIST IF COLOR SPECIFIC)

COMODITY ITEM (Y/N) (YES = ALL DIMENSIONS AND NOTES ARE REFERANCE) (NOTE: DIMENSIONS AND FEATURES MAY VARY FOR A COMODITY ITEM.)
NO

PART / PRODUCT IDENTIFICATION

ADRIAN STEEL®

ADRIAN STEEL COMPANY
906 JAMES STREET, ADRIAN, MI 49221

REVISION LEVEL **A**

MAT'L USED: **PURCHASED**

DESIGNED BY: **E.BURKE**

DESCRIPTION: **HARN,POWER TLM BATTERY 4'**

WEIGHT (Lbs.): **0.2**

SEGMENT CODE: **ELE**

PART NUMBER: **71903**

Bill of Materials

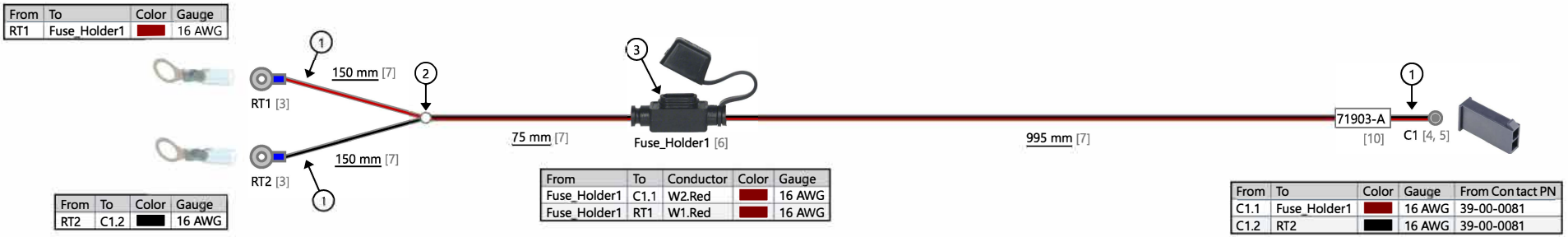
Id	Type	Manufacturer	Part Number	Quantity
1	Wire		16 AWG Red GXL	1220 mm
2	Wire		16 AWG Black GXL	1220 mm
3	Ring Terminal	Molex	19164-0027	2
4	Connector	Molex	46993-0211	1
5	Contact	Molex	39-00-0081	2
6	Splice		ATM Fuse Holder	1
7	Corrugated Tubing		0.25" Nylon Split Wall	1370 mm
8	Fuse	Littelfuse	297010.WXNV	1
9	Cable Tie	Hellerman nTyton	T30LL0M4	5
10	Label		Heat Shrink Style Label	1

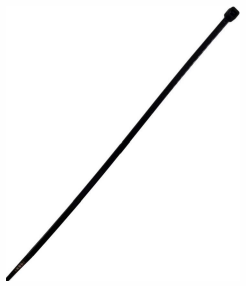
Coverings

Id	Assembly
[7]	

Notes

1. Lock tape loom behind connector with Tesa 51036
2. Tape knuckle with Tesa 51036
3. Install 10A Mini Fuse





[9]

Revisions

Rev.	Date	Author	Description
A	10/29/2023	Bennet Fisher	Initial Drawing

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN MILLIMETERS [INCHES]
TOLERANCES: ±5MM

PROPRIETARY AND CONFIDENTIAL

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	Name	Date
Designed By	Bennet Fisher	10/29/2023
Engineering Approval		
Manufacturing Approval		
Revision Approval		
Quality Assurance		

AAMP
ADVANCING VEHICLE TECHNOLOGY

Part Number: 71903-A	Revision: A
Description: HARN, PWR TLM BATTERY 4'	Sheet: 1

PURCHASED COMPONENT KEY FEATURES

DESCRIPTION OF REQUIREMENTS
DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING) **N/A**
LOAD/RATING REQUIREMENT **N/A**
MATERIAL REQUIREMENT **N/A**
PACKAGING REQUIREMENT **N/A**
OTHER REQUIREMENTS **PLUG AND PLAY TIMER LIGHTING MODULE** **POWER HARNESS TO LIGHTS**



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TOLERANCES & INSPECTION

UNLESS OTHERWISE SPECIFIED

ALL BEND ANGLES ARE 90 DEGREES

ALL DIMENSIONS ARE IN INCHES.

REFERENCE DIMENSIONS (X.XXX) DO NOT REQUIRE INSPECTION

FEATURES	HOLES/SLOTS	ANGLES
0.0 = ± .125	0.0 = ± .062	0° = ± 2°
0.00 = ± .062	0.00 = ± .031	0.0° = ± 1°
0.000 = ± .031	0.000 = ± .015	

Material Thickness: per ASTM Std.
Weld Callouts per AWS

RELEASE & REVISIONS

INITIAL ECN: **26830**

CURRENT ECN: **26830**

ECN DESCRIPTION:

RELEASE FOR MARKET FILL

REVISED BY: **EMB**

PURCHASED COMPONENT

REFERENCED SUPPLIER AND/OR MANUFACTURER
AAMP

REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER
71905

COLOR (ONLY LIST IF COLOR SPECIFIC)

COMODITY ITEM (Y/N) (YES = ALL DIMENSIONS AND NOTES ARE REFERANCE)
(NOTE: DIMENSIONS AND FEATURES MAY VARY FOR A COMODITY ITEM.)
NO

PART / PRODUCT IDENTIFICATION

ADRIAN STEEL®

ADRIAN STEEL COMPANY
906 JAMES STREET, ADRIAN, MI 49221

REVISION LEVEL **A**

MAT'L USED: **PURCHASED**

DESIGNED BY: **E.BURKE**

DESCRIPTION: **HARN,POWER TLM LIGHT SIF1**

WEIGHT (Lbs.): **0.2**

SEGMENT CODE: **ELE**

PART NUMBER: **71905**

Bill of Materials

Id	Type	Manufacturer	Part Number	Quantity
1	Wire		20 AWG White-Black	10520 mm
2	Wire		20 AWG Black	10520 mm
3	Wire		16 AWG Red GXL	11470 mm
4	Wire		16 AWG Black GXL	11470 mm
5	Connector	Aptiv	12047663	1
6	Contact	Aptiv	12047581	2
7	Lock	Aptiv	12047665	1
8	Connector	Molex	43025-0210	2
9	Contact	Molex	43030-0001	4
10	Connector	Molex	43020-0201	3
11	Contact	Molex	43031-0001	6
12	Connector	Aptiv	12047662	4
13	Contact	Aptiv	12047767	8
14	Lock	Aptiv	12047664	4
15	Splice		Generic Splice	6
16	Heat Shrink	CYG	CB-DWT-3/16	6
17	Corrugated Tubing		0.25" Nylon Split Wall	6960 mm
18	Tape	Tesa	51608	
19	Cable Tie	HellermannTyton	T30LL0M4	35
20	Cable Tie with Mount	Hellermann Tyton	T50RTM250HSM4	10
21	Cable Tie Mount	Panduit	SGABM25-AV-C300	10
22	Label		Heat Shrink Style Label	1

Coverings

Id	Assembly
[17]	
[18]	

Notes

1. Lock tape end of loom with 51608

From	To	Color	Gauge	From Contact PN
C1.A	S3		16 AWG	12047581
C1.B	S4		16 AWG	12047581

From	To	Color	Gauge	From Contact PN
C2.1	S1		20 AWG	43030-0001
C2.2	S2		20 AWG	43030-0001

From	To	Color	Gauge	From Contact PN
C3.1	S1		20 AWG	43030-0001
C3.2	S2		20 AWG	43030-0001

From	To	Color	Gauge
S3	C1.A		16 AWG
S3	C6.A		16 AWG
S3	C7.A		16 AWG
S3	C8.A		16 AWG
S3	C9.A		16 AWG
S4	C1.B		16 AWG
S4	C6.B		16 AWG
S4	C7.B		16 AWG
S4	C8.B		16 AWG
S4	C9.B		16 AWG

From	To	Color	Gauge
S1	C2.1		20 AWG
S1	C3.1		20 AWG
S1	S5		20 AWG
S2	C2.2		20 AWG
S2	C3.2		20 AWG
S2	S6		20 AWG

From	To	Color	Gauge
S5	C4.1		20 AWG
S5	C5.1		20 AWG
S5	C10.1		20 AWG
S5	S1		20 AWG
S6	C4.2		20 AWG
S6	C5.2		20 AWG
S6	C10.2		20 AWG
S6	S2		20 AWG

From	To	Color	Gauge	From Contact PN
C7.A	S3		16 AWG	12047767
C7.B	S4		16 AWG	12047767

From	To	Color	Gauge	From Contact PN
C9.A	S3		16 AWG	12047767
C9.B	S4		16 AWG	12047767

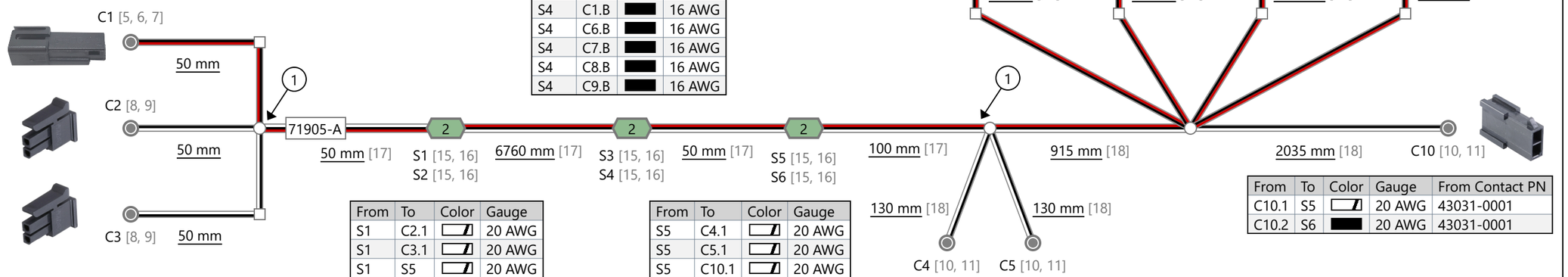
From	To	Color	Gauge	From Contact PN
C6.A	S3		16 AWG	12047767
C6.B	S4		16 AWG	12047767

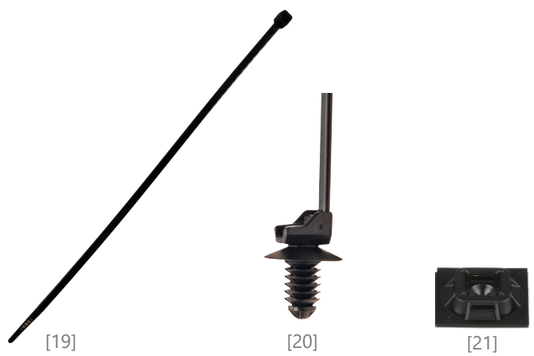
From	To	Color	Gauge	From Contact PN
C8.A	S3		16 AWG	12047767
C8.B	S4		16 AWG	12047767

From	To	Color	Gauge	From Contact PN
C10.1	S5		20 AWG	43031-0001
C10.2	S6		20 AWG	43031-0001

From	To	Color	Gauge	From Contact PN
C5.1	S5		20 AWG	43031-0001
C5.2	S6		20 AWG	43031-0001

From	To	Color	Gauge	From Contact PN
C4.1	S5		20 AWG	43031-0001
C4.2	S6		20 AWG	43031-0001




[19]

[20]

[21]

Revisions

Rev.	Date	Author	Description
	10/29/2023	Bennet Fisher	Initial Drawing
	12/29/2023	Bennet Fisher	Added fourth 12047662 (C9) connector, modified length to C10
A	1/16/2024	Bennet Fisher	Modified lengths to C4, C5, and C10

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN MILLIMETERS [INCHES]
TOLERANCES: ±5MM

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	Name	Date
Designed By	Bennet Fisher	10/29/2023
Engineering Approval		
Manufacturing Approval		
Revision Approval		
Quality Assurance		

Stinger® Commercial

Part Number: 71905	Revision: A
Description: TLM - Switch & Light Extension Harness	Sheet: 1

PURCHASED COMPONENT KEY FEATURES

DESCRIPTION OF REQUIREMENTS
DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING) **N/A**
LOAD/RATING REQUIREMENT **N/A**
MATERIAL REQUIREMENT **N/A**
PACKAGING REQUIREMENT **N/A**
OTHER REQUIREMENTS **PLUG AND PLAY MAGNETIC SWITCHES FOR TOPPER INTERIOR LIGHTING** **BAG INCLUDES:** **3 MAGNETIC SWITCH SETS WITH WIRE LEADS AND CONNECTORS**



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FEATURES	HOLES/SLOTS	ANGLES
0.0 = ± .125	0.0 = ± .062	0° = ± 2°
0.00 = ± .062	0.00 = ± .031	0.0° = ± 1°
0.000 = ± .031	0.000 = ± .015	

Material Thickness: per ASTM Std.
Weld Callouts per AWS

RELEASE & REVISIONS

INITIAL ECN: 26830

CURRENT ECN: 26830

ECN DESCRIPTION:

RELEASE FOR MARKET FILL

REVISED BY: EMB

PURCHASED COMPONENT

REFERENCED SUPPLIER AND/OR MANUFACTURER
AAMP

REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER
71907

COLOR (ONLY LIST IF COLOR SPECIFIC)

COMODITY ITEM (Y/N) (YES = ALL DIMENSIONS AND NOTES ARE REFERANCE)
(NOTE: DIMENSIONS AND FEATURES MAY VARY FOR A COMODITY ITEM.)
NO

PART / PRODUCT IDENTIFICATION

ADRIAN STEEL®

ADRIAN STEEL COMPANY
906 JAMES STREET, ADRIAN, MI 49221

REVISION LEVEL
A

MAT'L USED: PURCHASED

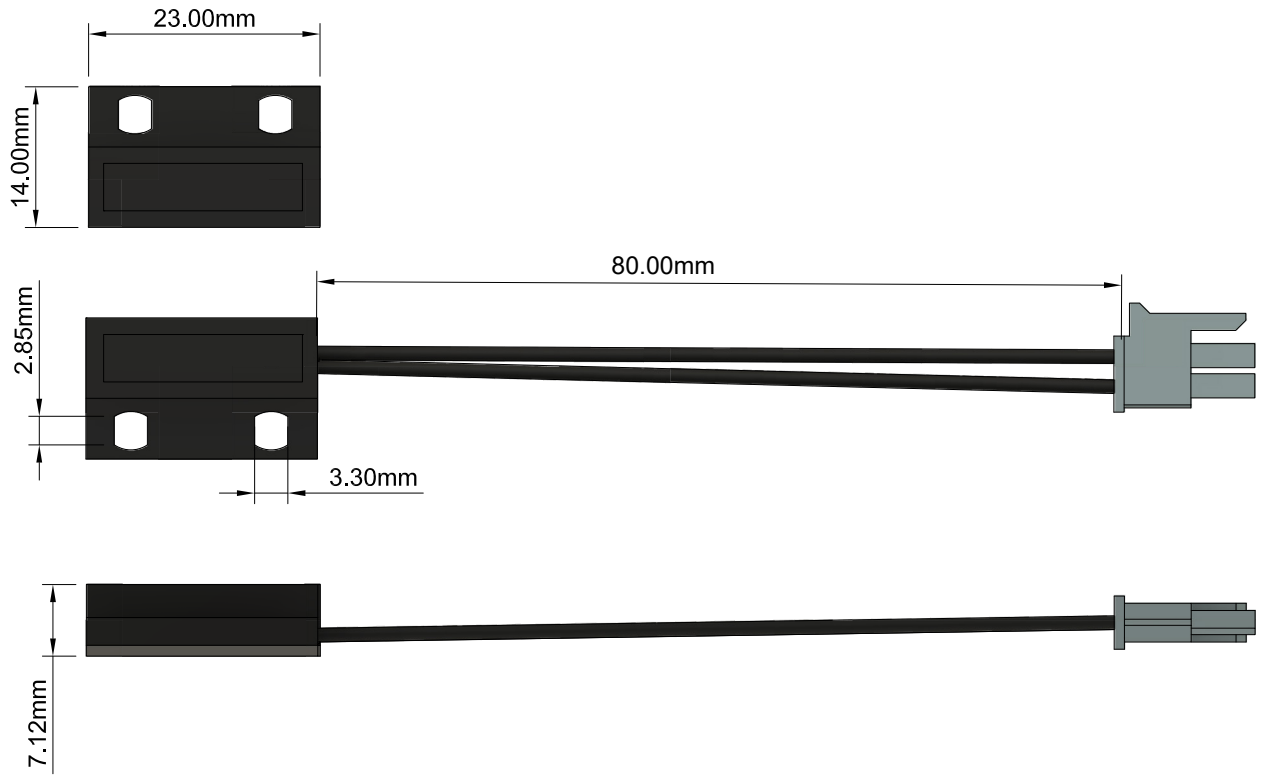
DESIGNED BY: E.BURKE

DESCRIPTION: TLM MAGNETIC SWITCH P&P

WEIGHT (Lbs.): 0.02

SEGMENT CODE: ELE

PART NUMBER: 71907



Magnetic Switch Type: N.O. (Normally Open)
Housing: Black ABS 15E1
Wire: 22AWG Black
Operating Distance: 15-20mm
Working Current: 0.5A
Operating Voltage: 0-110Vdc
IP Rating: IP67
Operating Temperature: -40 ~ 110°C
Reed Operating Temperature: -40 ~ 125°C
ABS Operating Temperature: -40 ~ 110°C
Package: 3pcs/kitted set

Dept.	Technical reference	Created by Bennet Fisher 4/12/2024	Approved by
		Document type	Document status
		Title: Magnetic Switch Part # 71907	DWG No.
			Rev. / Date of Issue / Sheet 1/1

OKI Open up your dreams

Reed Switch

Issue Date: Mar. 25, 2008

ORD324

■Features

- In order to achieve high electrical capacity and long, uses iridium with high harness and high melting point.
- When power is turned on maximum voltage can reach 200V.
- To maintain the contact stability of the contacts, the contacts are sealed in a glass tube filled with inert gas.

■Applications

- Position detection machine
- Rotation detection machine
- Vehicle electrical equipment
- Civil products

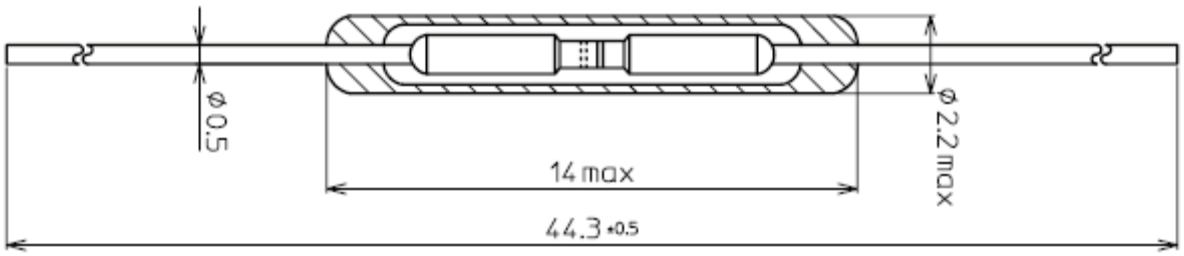
■Appearance



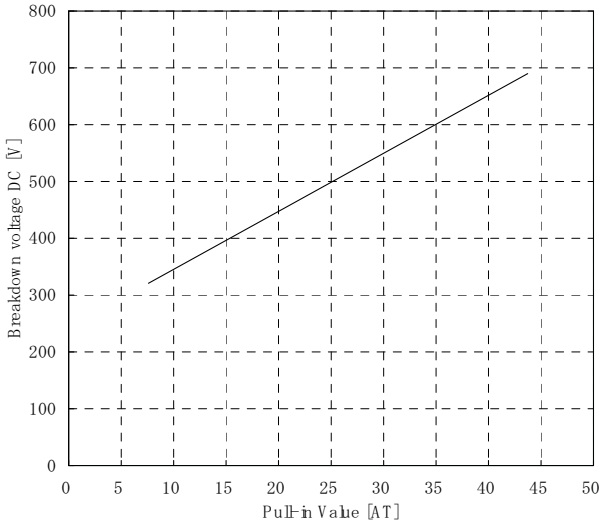
■Features

Contact material / contact form	Iridium / 1A	Unit
Pull in value (PI)	10 ~ 40	AT
Disconnect value (DO)	5 min	AT
Contact resistance value (CR)	100max	mΩ
Withstand voltage between contacts	250min	Vdc
Insulation resistance	1×10^{10} min	Ω
Electrostatic capacity between contacts	0.3max	pF
Contact rating	10	W
Maximum switching voltage	200	Vdc
Maximum switching current	0.5	A
Maximum power current	1	A
Release time	0.4max	ms
Bounce time	0.3max	ms
Recovery time	0.05max	ms
Shock proof	100G-6ms	---
Vibration resistance	50G (10 ~ 2kHz)	---
Operating temperature range	-40 ~ +125	°C
Life (5Vdc-1mA, impedance load)	1×10^{8}	---

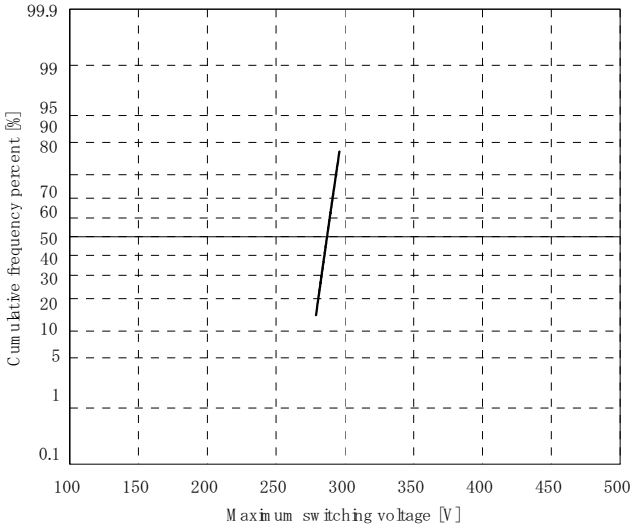
■Dimensions (unit: mm)



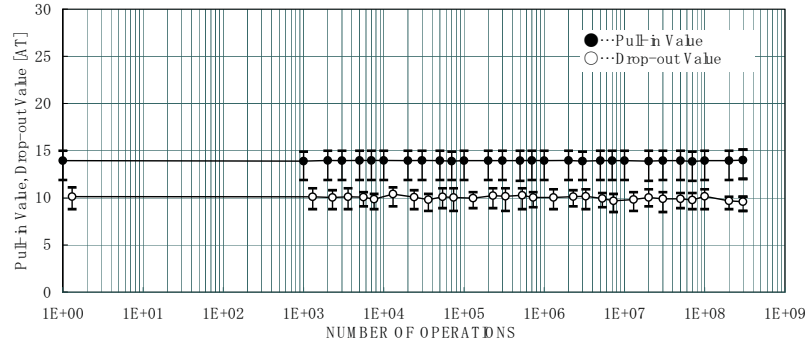
■Withstand voltage between contacts

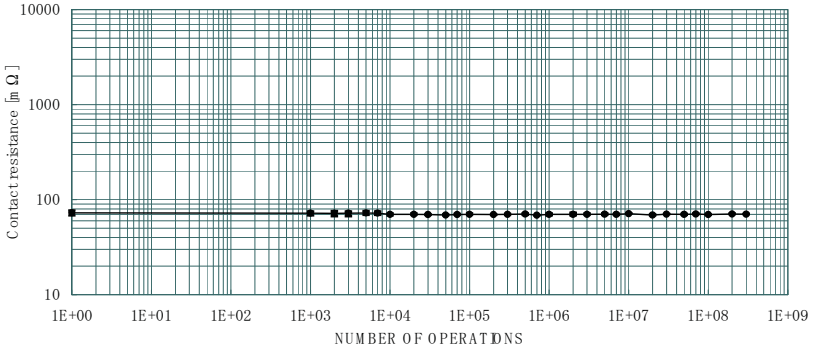


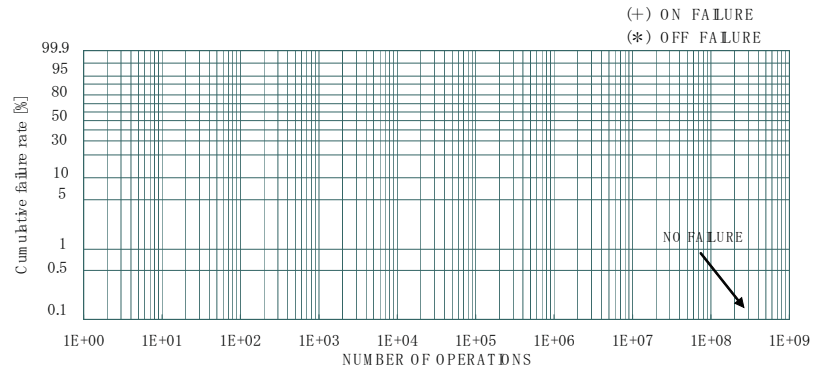
■Maximum switching voltage



■Life test data: 5Vdc-1mA







PURCHASED COMPONENT KEY FEATURES

DESCRIPTION OF REQUIREMENTS

DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING)

N/A

LOAD/RATING REQUIREMENT

N/A

MATERIAL REQUIREMENT

N/A

PACKAGING REQUIREMENT

N/A

OTHER REQUIREMENTS

- **80lbs Tensile Strength**
- **Low-Profile M5/M6 Stud Mount**
- **Color: Black**



Low-Profile head allows mounts to stack, providing more mounting versatility from a single stud.
Four-pawl, three-tooth design delivers outstanding stud retention to keep bundles secure.

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TOLERANCES & INSPECTION

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FEATURES	HOLES/SLOTS	ANGLES
0.0 = ± .125	0.0 = ± .062	0° = ± 2°
0.00 = ± .062	0.00 = ± .031	0.0° = ± 1°
0.000 = ± .031	0.000 = ± .015	

Material Thickness: per ASTM Std.
Weld Callouts per AWS

RELEASE & REVISIONS

INITIAL ECN: 78320

CURRENT ECN: 78320

ECN DESCRIPTION:

Release

REVISED BY: LJK

PURCHASED COMPONENT

REFERENCED SUPPLIER AND/OR MANUFACTURER
HellermannTyton

REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER
157-00460

COLOR (ONLY LIST IF COLOR SPECIFIC)

COMMODITY ITEM (Y/N) (YES = ALL DIMENSIONS AND NOTES ARE REFERANCE)
(NOTE: DIMENSIONS AND FEATURES MAY VARY FOR A COMODITY ITEM.)
No

PART / PRODUCT IDENTIFICATION

ADRIAN STEEL®

ADRIAN STEEL COMPANY
906 JAMES STREET, ADRIAN, MI 49221

REVISION LEVEL **A**

MAT'L USED: Purchased

DESIGNED BY: L. Kaleniecki

DESCRIPTION: 7.5" STUD MNT CABLE TIE

WEIGHT (Lbs.): 0.01

SEGMENT CODE: HDW

PART NUMBER: 78320

PURCHASED COMPONENT KEY FEATURES

DESCRIPTION OF REQUIREMENTS
DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING) **N/A**
LOAD/RATING REQUIREMENT **N/A**
MATERIAL REQUIREMENT **N/A**
PACKAGING REQUIREMENT **N/A**
OTHER REQUIREMENTS **Use Waytek or equivalent as supplier** **18AWG GXL INSULATED ELECTRICAL WIRE** **AUTOMOTIVE GRADE WIRE** **BLACK**

NOTE: This wire is the same part# as 35352-BK, which should be obsoleted



Black wire



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0.0 = ± .125	0.0 = ± .062	0° = ± 2°
0.00 = ± .062	0.00 = ± .031	0.0° = ± 1°
0.000 = ± .031	0.000 = ± .015	

Material Thickness: per ASTM Std.
Weld Callouts per AWS

RELEASE & REVISIONS

INITIAL ECN: **29153**

CURRENT ECN: **29153**

ECN DESCRIPTION:

RELEASE

REVISED BY: **MLH**

PURCHASED COMPONENT

REFERENCED SUPPLIER AND/OR MANUFACTURER
Waytek

REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER
WL18-0

COLOR (ONLY LIST IF COLOR SPECIFIC)

COMMODITY ITEM (Y/N) (YES = ALL DIMENSIONS AND NOTES ARE REFERANCE)
(NOTE: DIMENSIONS AND FEATURES MAY VARY FOR A COMODITY ITEM.)
YES

PART / PRODUCT IDENTIFICATION

ADRIAN STEEL®

ADRIAN STEEL COMPANY
906 JAMES STREET, ADRIAN, MI 49221

REVISION LEVEL **A**

MAT'L USED:

DESIGNED BY: **MLH**

DESCRIPTION: **WIRE ELECT.18G BLACK /FT**

WEIGHT (Lbs.): **0.06**

SEGMENT CODE: **ELE**

PART NUMBER: **80361**