Introduction / Comments:

Install Instructions For Topper Interior Lighting for Ranger

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 - Ford Ranger

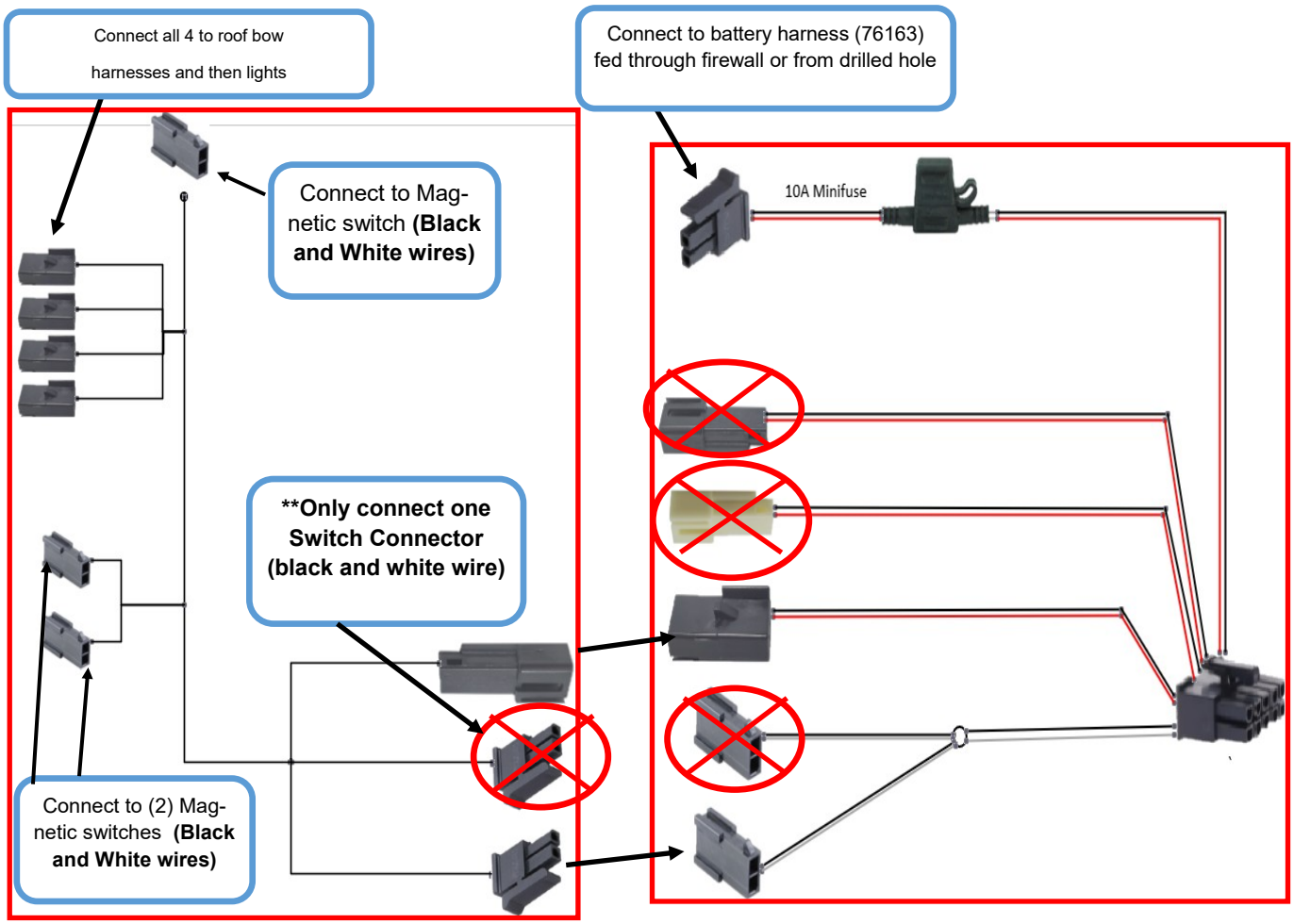
****Please read statement below before moving forward****

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:





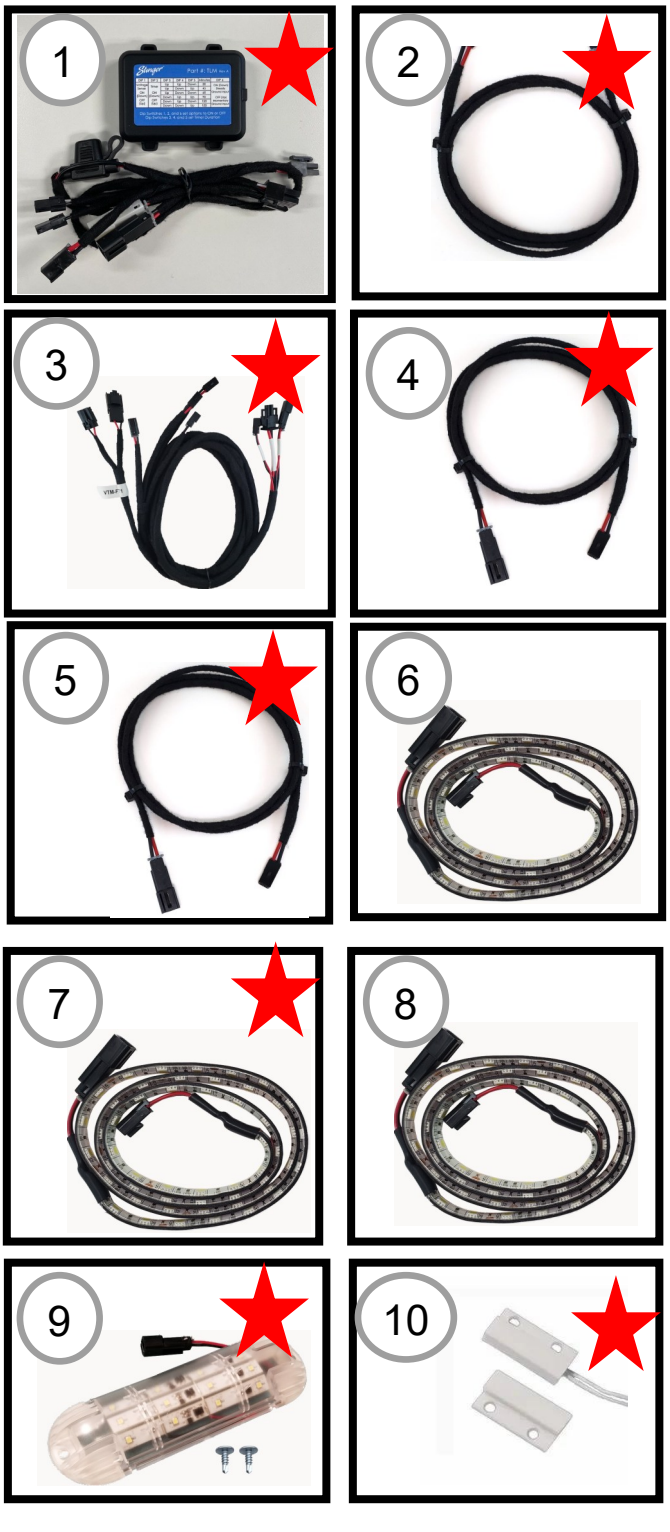
Power drill, 1.25” drill bit

Screwdriver



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 76850 components are denoted with a red star.



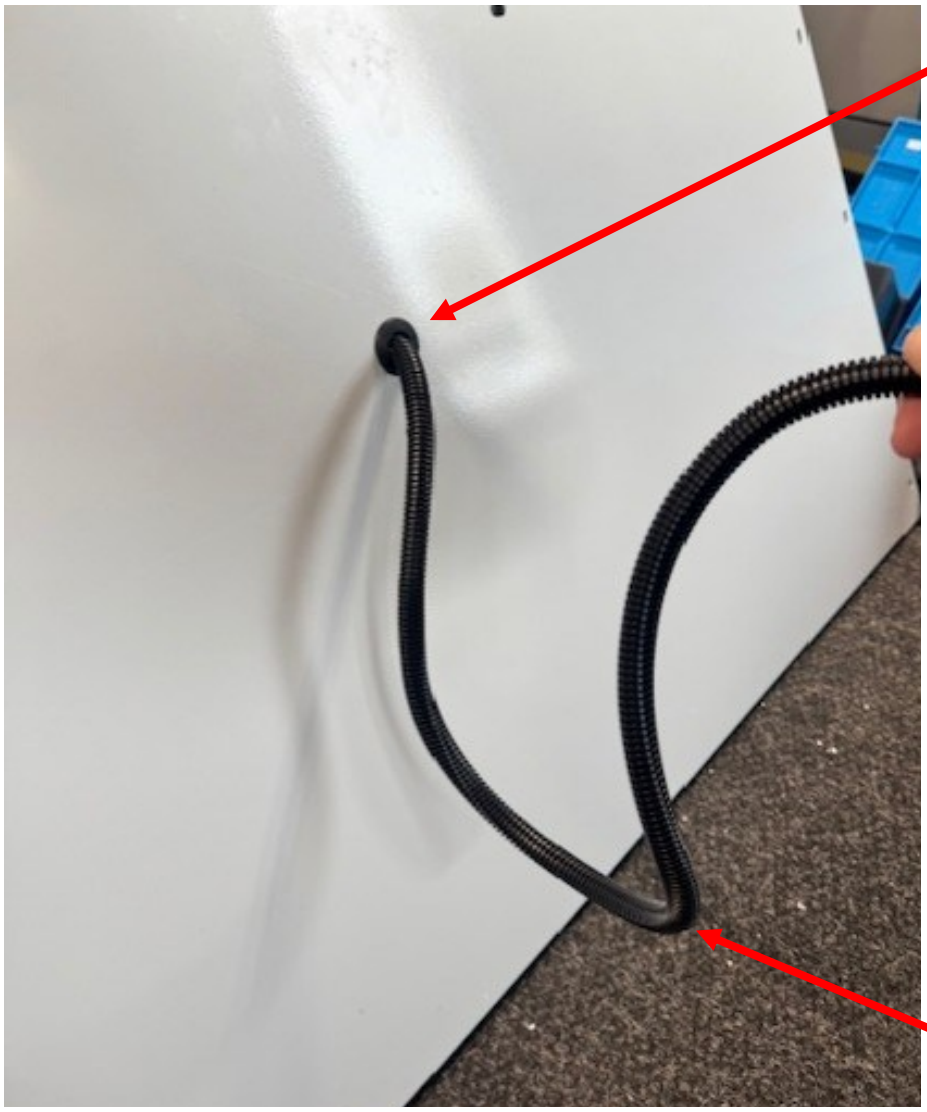
	Part Number	Description	Qty
1	71902	TLM Module/Harness	1
2	76163	TLM To Battery Harness 10 ft	1
3	71905	TLM To Lights Harness	1
4	63481	Roof Bow Harness #1	2
5	63482	Roof Bow Harness #2	2
6	65346	24” Strip Light	
7	65347	36” Strip Light	2
8	65348	48” Strip Light	
9	63480	Dome Light	2
10	71907	Magnetic Switches	3
11	73414-W	Magnetic Switch Bracket Spacer	3
12	73415-W	Magnetic Switch Rear Bracket	1
13	73416-W	Magnetic Switch Side Bracket	2

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. Reference the instructions for only what you are installing.

Harness pictures are for reference only.

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 (5 ft):

Part Numbers/Kit Contents:

76850- Integrated Truck Solution: ★

Includes: (1) 36" strip light on each side of the side doors and 2 dome lights in the top, on the roof bows. Refer to all components denoted with a ★ and quantity in the blue parenthesis on page 3

76851- (1) 36" Rear strip light on the back door

Includes: (1) 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

76853- (1) 36" Strip light on the driver side only

Includes: (1) 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

76852- (1) 36" Strip light on the passenger side only

Includes: (1) 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

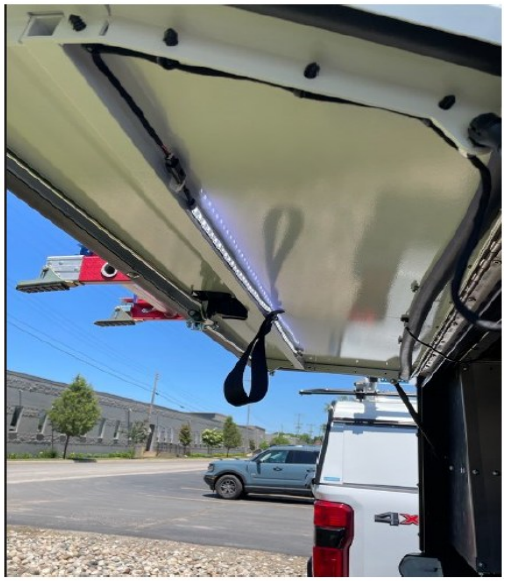
76854- (3) 36" Strip lights—rear, driver, and passenger side

Includes: (3) 36" 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



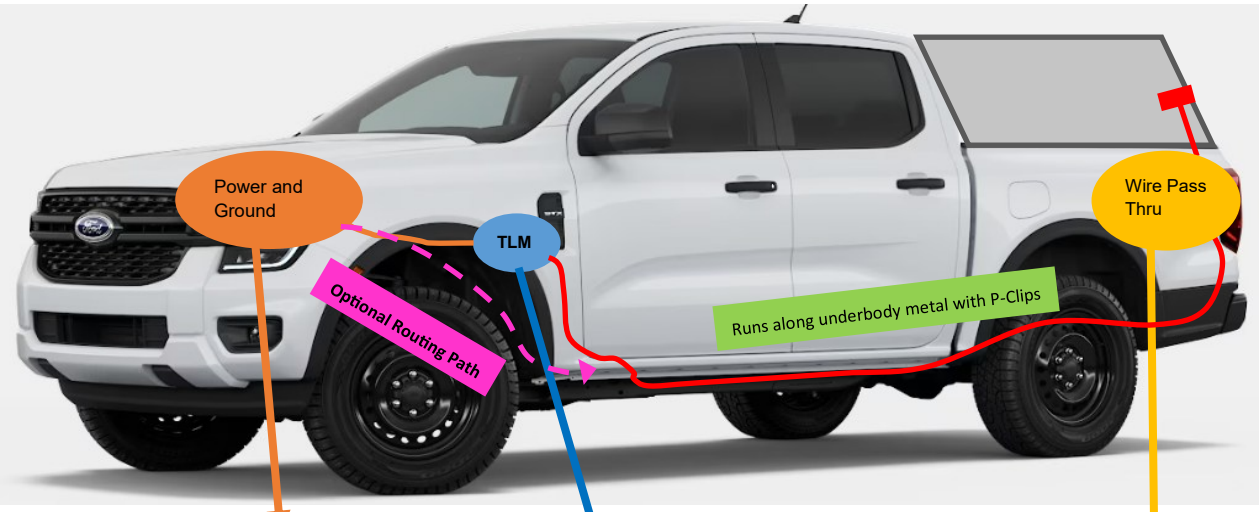
Rear Side

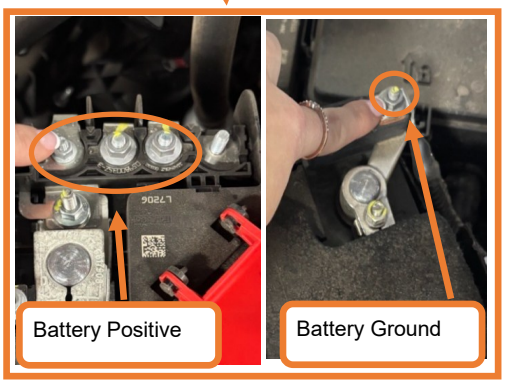


Passenger's Side Strip Lights



Routing Overview: Ranger





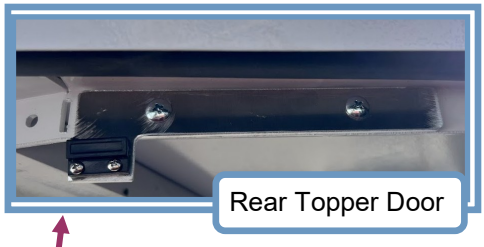




PLEASE NOTE: The routing path from the "Power and Ground Location" will depend if a firewall grommet is available, as it may be obstructed on certain models with the clutch.

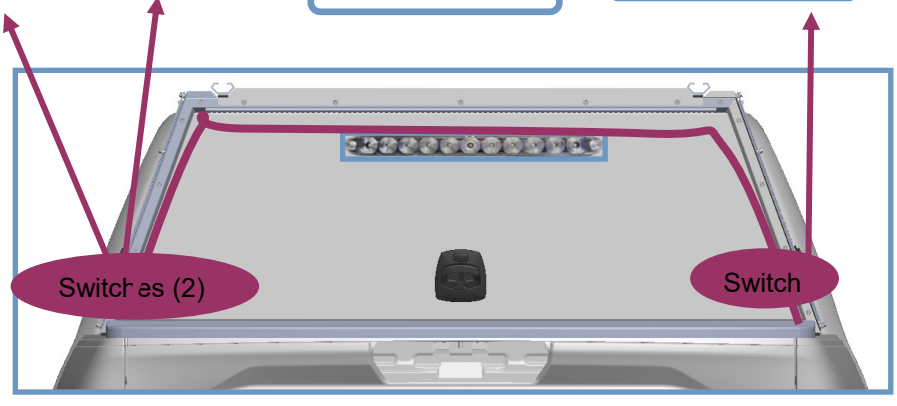
That grommet makes routing easier.







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



Light Placements

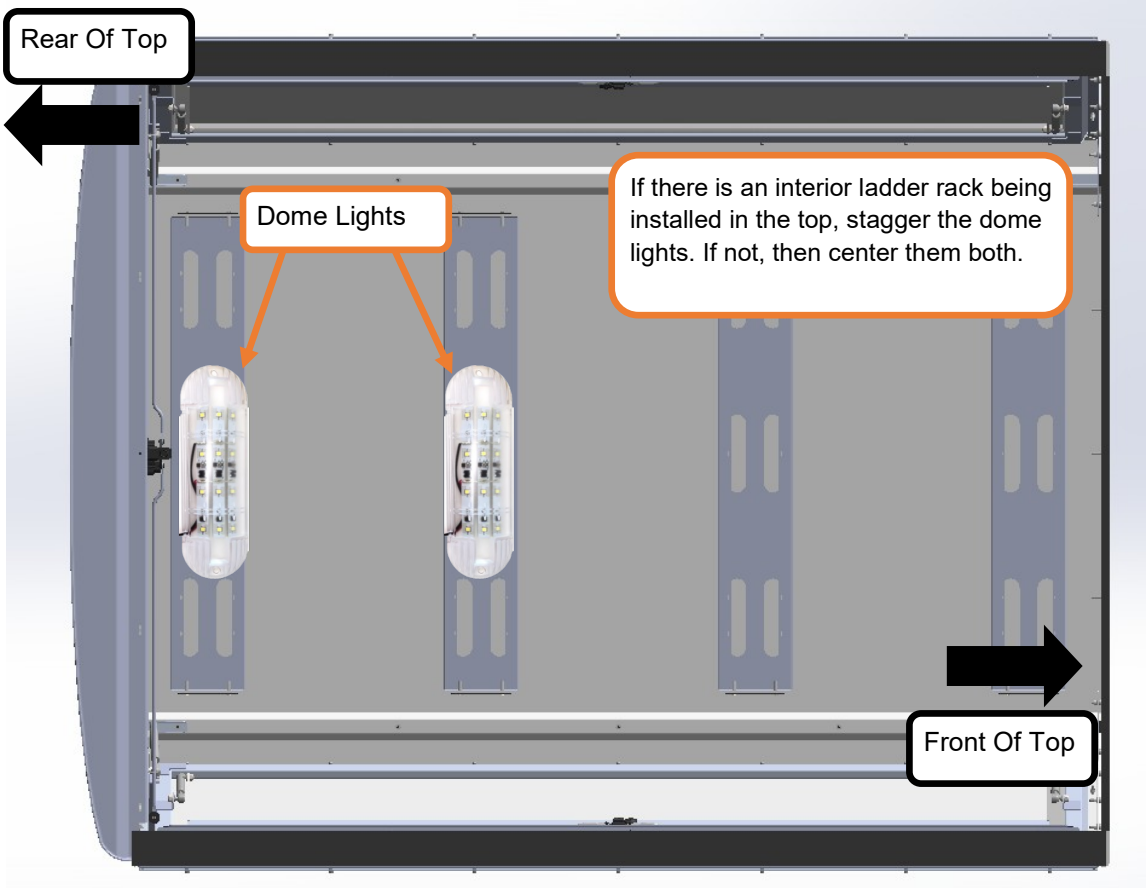
Please refer to the order drawing—not all lights will be used every install. These are modular and created to work depending on customer needs.

Driver's Side

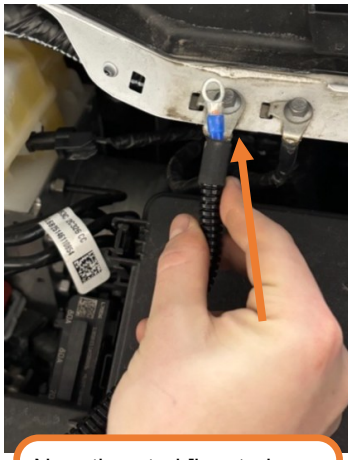


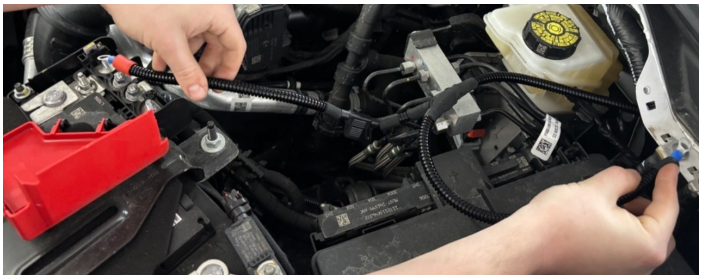
Passenger's Side











Step 1:

Battery-

Open the hood and locate the battery.

Locate the power harness 76163.

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

Connect the red wire ring terminal to one of the positive battery post shown in the picture to the left. Torque the nut. Do not over tighten.

Connect the black wire ring terminal to the negative battery post shown in the picture to the left. Torque the nut. Do not over tighten.

Re-torque the positive nut to 48 lb.in(5.4Nm). DO NOT OVER TIGHTEN

Re-torque the ground nut to 48lb.in (5.4Nm).

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



Step 2:

Inside the cab, on the drive side 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. Peel up the carpeting to expose the frame underneath.

There are two possible routing paths to get inside the cab based on vehicle options: through a fire-wall grommet or down the wheel well to a drilled hole underneath.

Check if you vehicle has the grommet in the picture below, which is on the driver's side in the firewall.

- If its there as pictured, go to next page.

- If it isn't there (blocked by the vehicle clutch), go to page 9.



Step 3A:

Remove the grommet and cut an “X” into it for wire passthrough. Once removed, you’ll be able to see from the engine bay that there’s felt in the way for harness passthrough. Circled in the picture is generally where the grommet is from the cab view (in driver’s footwell)

From the engine bay, push a thin sharp object/knife into the felt and turn to make a small hole. Once a hole is made, jam in a knife and turn it a lot to widen the hole for wire passthrough. It’ll need to be wide enough to comfortably fit the harness, in case other electrical installs need that room.

Once the felt is cut, reinsert the grommet into the firewall and push the alarm harnessing through from the engine bay. At the end of install, silicone the grommet. Make sure to leave a drip loop with the harness as well.

Now skip to page 16

Reference Pg. 4 for routing through the firewall.



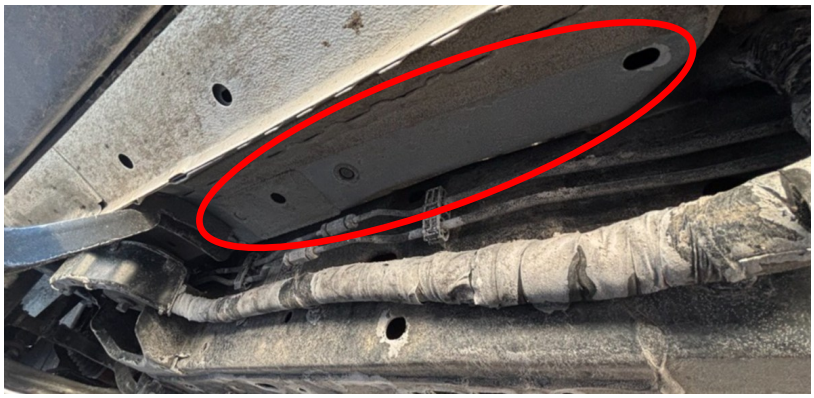
Step 3B-1:

Locate the vehicle frame floor under the carpet. *Check to make sure nothing is on the other side of the drill area*, and then drill a 1" hole around the area marked in the below picture (if it doesn't exist yet from previous installations).

NOTE: The frame below the vehicle (circled) is not the same frame as the frame to be drilled in the footwell. You may need to drill from under as well for easier wire passthrough.

From under the vehicle, begin to pull the harness upward inside the cab. Use the image as a reference for under-vehicle view. Insert one of the provided

grommet and silicone at end of install.



Step 3B-2:

In the engine bay, route the security alarm harness down the wheel well, emerging under the vehicle. Using zip ties, secure the harness along OEM harnessing in the engine bay so the section that runs down the wheel well is secure.



NOTE: Do not place harness in area that can disrupt vehicle functionality while routing down.

Once under the vehicle, if needed, use zip ties to adhere harness to OEM harness circled in orange.





From there, route the alarm harness into the cab through the drilled hole.

Be sure to tuck all excess wiring together and zip tie them under the vehicle.

TLM Information:

Please note there is currently a REV A TLM and a REV B TLM. Please view the TLM top right corner to confirm which REV you have . Then follow the next instructions.

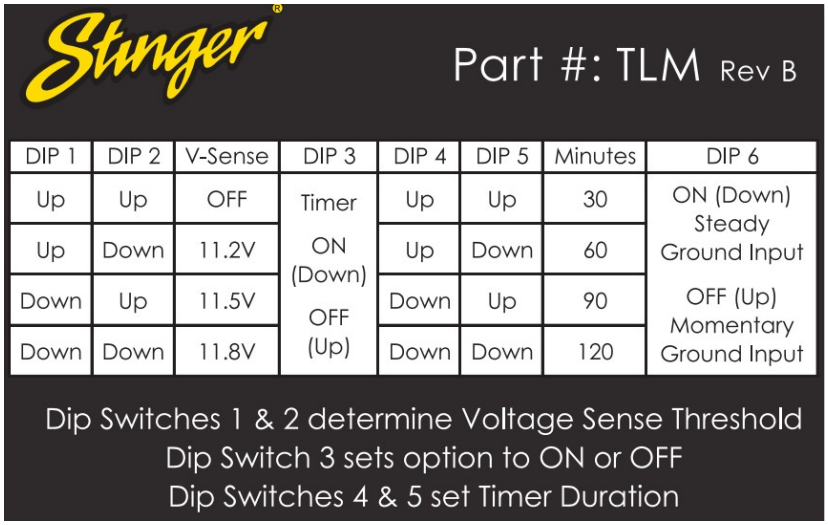
REV A:



REV A DIP SWITCHES:

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

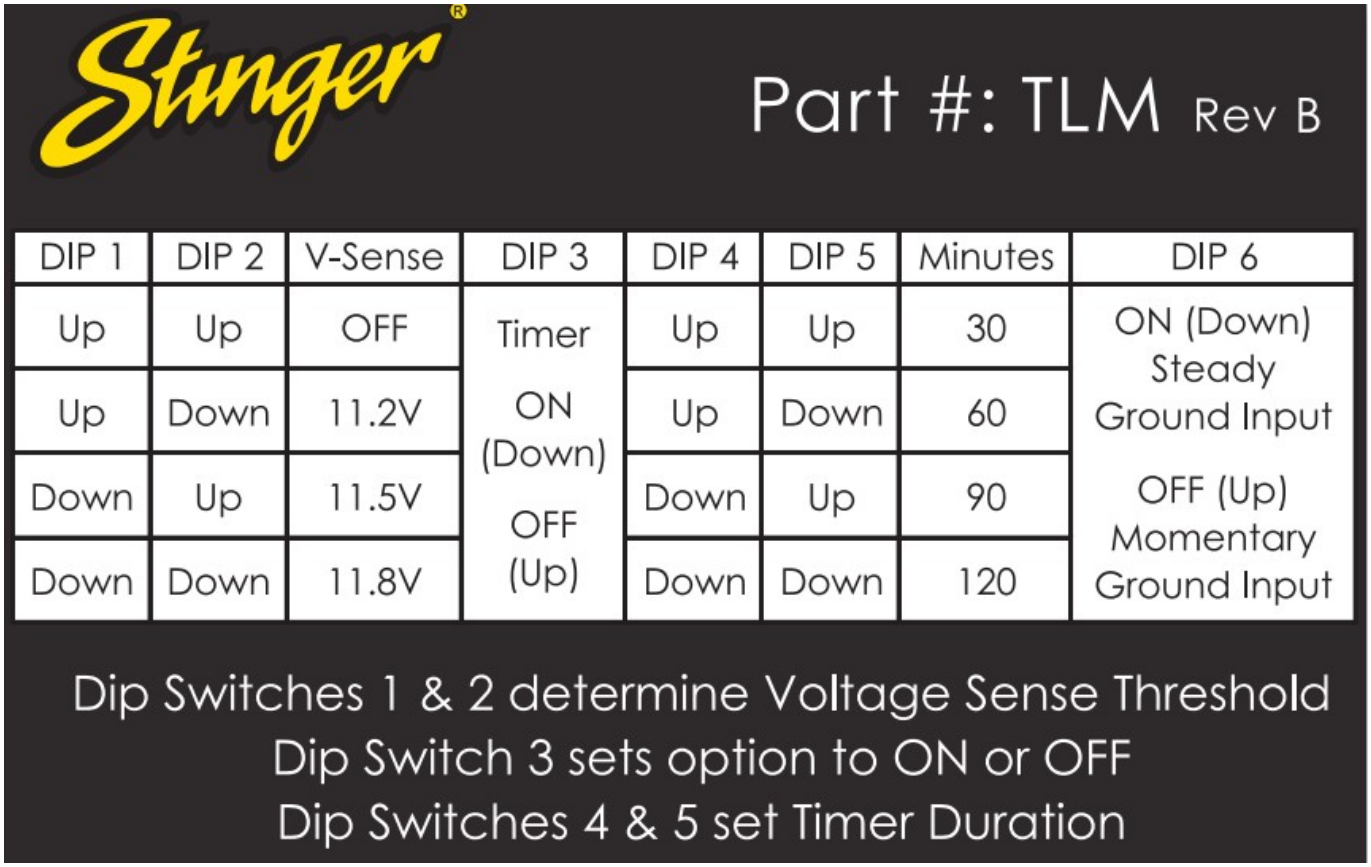
REV B:



REV B DIP SWITCHES:

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

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

For Rev A follow steps below:





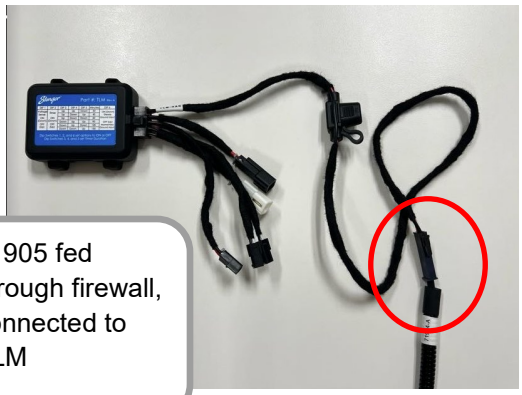
Step 4: Locate the Timer Low-Voltage Module (TLM) and harness — Part number: 71902

First, plug the harness into the module.

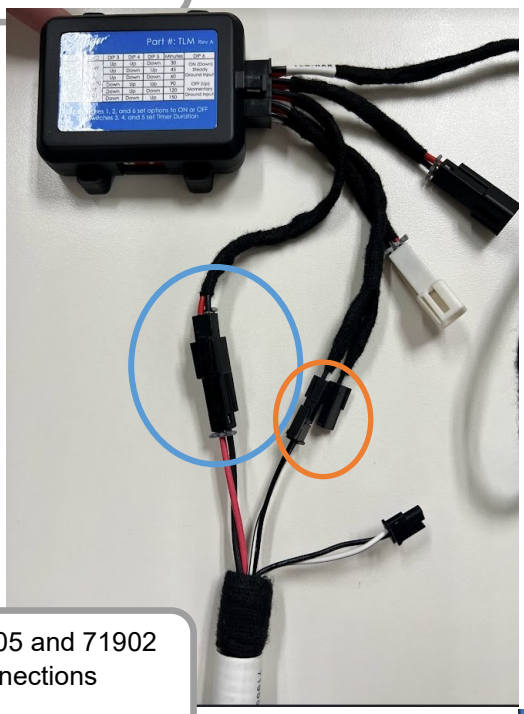
Note:

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.



71905 fed through firewall, connected to TLM



71905 and 71902 Connections

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

Please reference page 2 for the following connection information.

Locate the TLM to battery harness (76163) that has been routed through the firewall grommet and TLM power to light harness (71905).

On the 76163 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:

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	





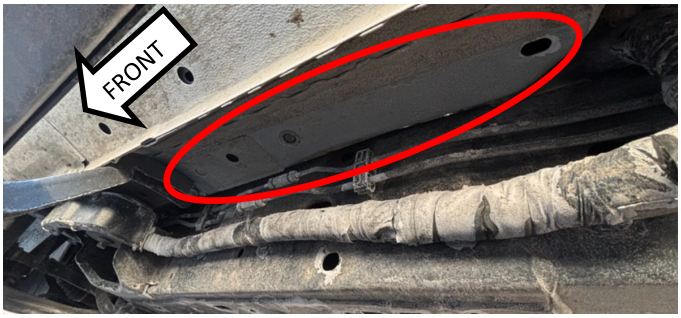
Step 4:

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 (circled).

Secure the TLM and wires with zip ties.

Be sure the TLM is secured.

*** Picture is for location reference only.



Step 5A:

If routed engine bay harnesses through drilled hole, skip to Step 5B. If routed engine bay harnesses through firewall grommet, do this step.

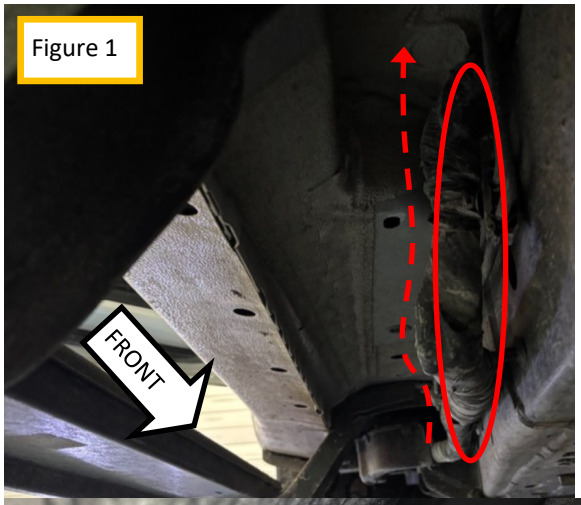
Locate the vehicle frame floor under the carpet. *Check to make sure nothing is on the other side of the drill area*, and then drill a 1" hole around the area marked in the below picture (if it doesn't exist yet from previous installations).

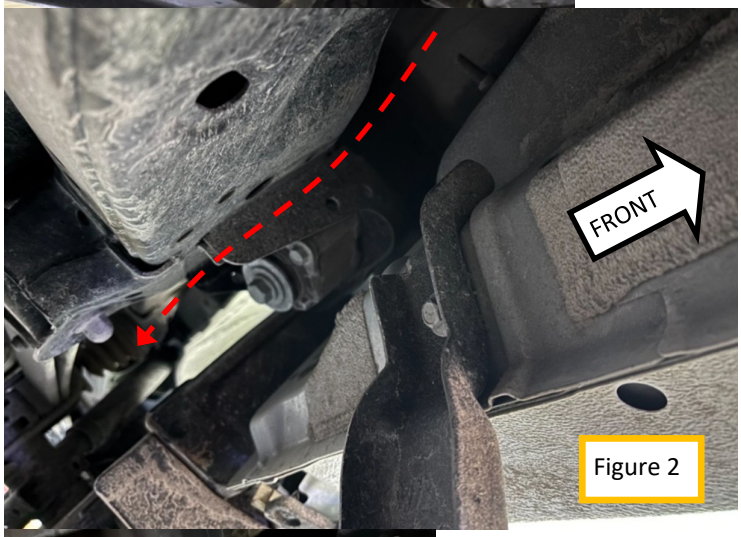
NOTE: The frame below the vehicle (circled) is not the same frame as the frame to be drilled in the footwell. You may need to drill from under as well for easier wire passthrough.

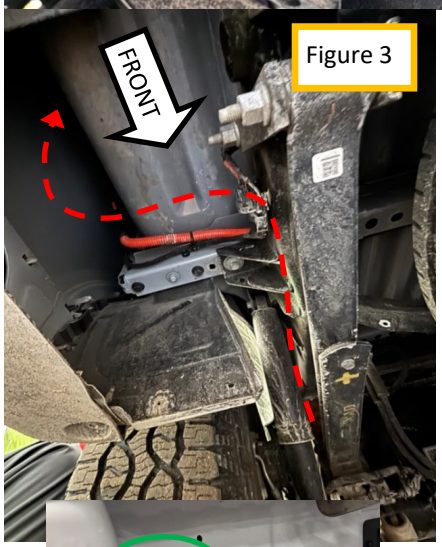
From under the vehicle, begin to pull the 71905 harness from inside the cab to under the vehicle. Use the image as a reference for under-vehicle view. Insert one of the provided grommet and silicone at end of install. Now go to step 17

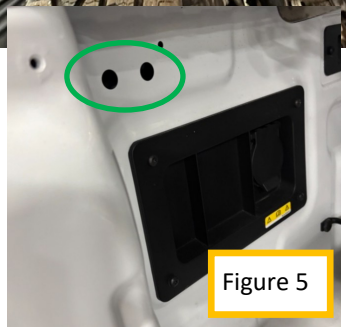
Step 5B:

If the drilled hole still has room, feed the 71905 harness from inside the cab to under the vehicle. If there's not enough room in that hole for another harness, drill another hole to feed the 71905 harness to under the vehicle.









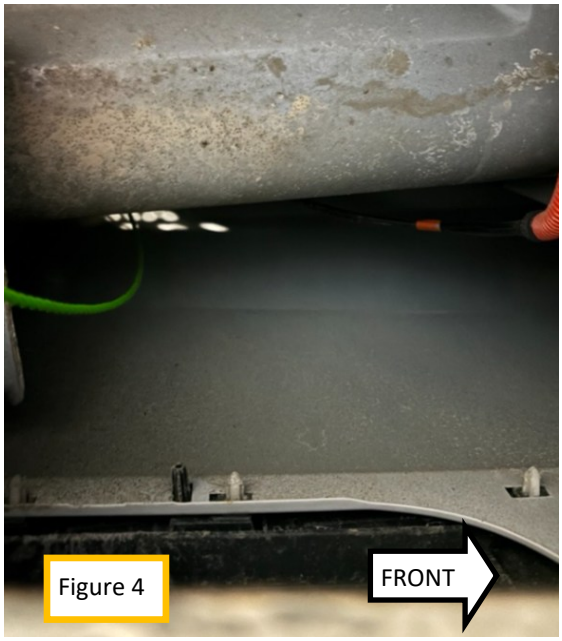
Step 6:

Route 71905 rearward, initially using zip ties to secure it to the large OEM harness (circled).

Once that OEM harness runs out, secure the harnessing to the metal frame using the provided P-clips with the kit.

Take the best path for routing when going behind the wheel, *making sure to avoid securing harnessing to anything that will inhibit the vehicle's operation.* Figure 2 and 3 are just for reference.

Once at the back, route the harnessing over to the driver side frame. Use fish tape to route the harnessing up the cavity and pull it through the hole circled in green in Figure 5 to get it into the bed area.



Step 21:

Route connector end through, towards the driver side topper pillar

Secure the harnessing with zip ties/ sticky mounts up the pillar



All Ranger Vehicles

BAG71907 Includes:

FAS0554 X 6

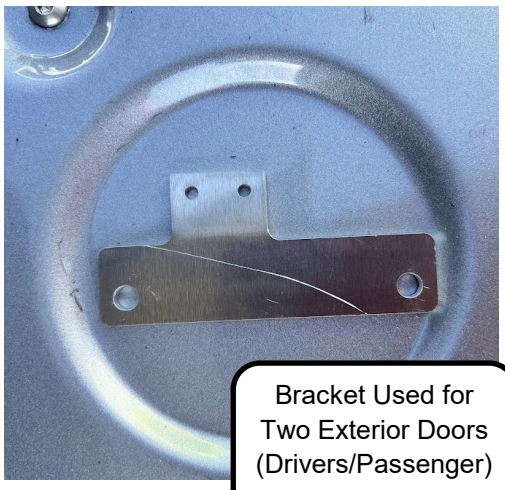
FAS0674 X 6

FAS0942 X 20

FAS0943 X 20

BAG0406-A X 1





Bracket Used for Two Exterior Doors (Drivers/Passenger)

MAGNET



MAGNETIC SENSOR



Step 7:

Locate BAG71907, magnetic switches PN 71907 and magnetic switch brackets PN: 73414-W, 73415-W, 73416-W.

Two small mounting brackets with two switch mounting points, will be used for exterior doors.

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

Insert FAS0674 into the topper door brackets and secure all brackets to topper door using FAS0674.

To secure magnetic switches to bracket and gas shock brackets, use FAS0942 on all magnets and magnetic switches. then secure with FAS0943



Step 8: Install Magnetic Switch Brackets

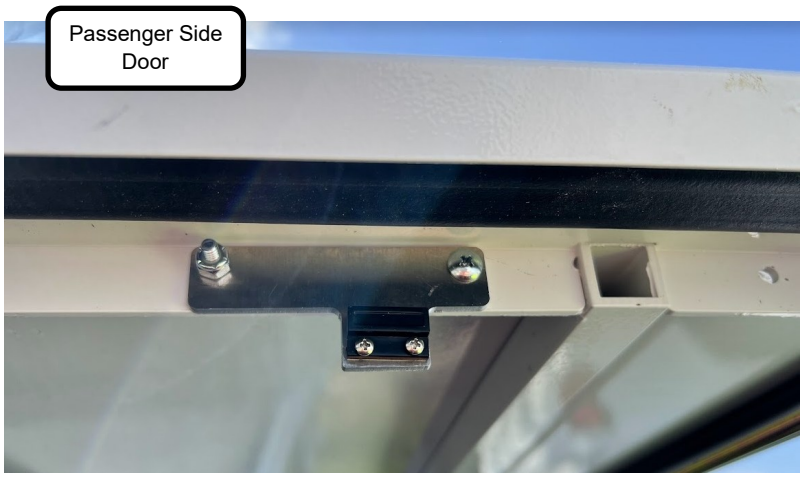
Using an alcohol wipe, clean brackets. After they are dry, locate one bracket for an exterior door. This first bracket will be for the driver side.

Peel off plastic on backside of magnet. Place fasteners in magnet and secure magnet on bracket using both fasteners provided.

For the driver side, the tab of the bracket will be on the left side for proper alignment.

Place spacer bracket behind bracket with mounted magnet. Secure spacer and bracket to outside edge of topper.
Line bracket up with first two holes after metal brace.

Use the image to the left as reference.



Step 9:

For the passenger side, the tab of the bracket will be on the right side for proper alignment.

Place spacer bracket behind bracket with mounted magnet. Secure spacer and bracket to outside edge of topper. Line bracket up with first two holes after metal brace.



Use the image to the left as reference.

For the rear side, place spacer and bracket on the left outermost side of the topper door (right outermost side for Hybrid).

Secure after metal brace. Face bracket with tab pointing away from the vehicle.



Step 10:

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.



Step 11:

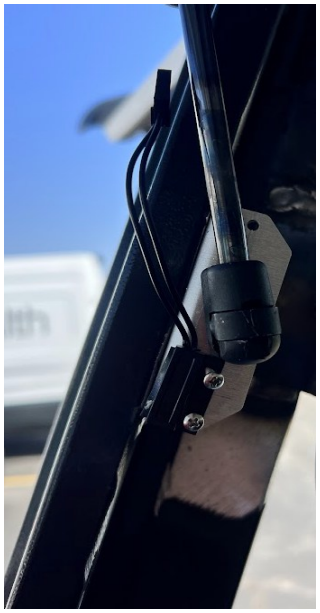
Locate driver's side door shock mounts. There will be two magnetic switches mounted to each side of the driver's side door shock mount.

Position the magnetic switch along with its wires and connector.

Place switch flush with edge of door shock mount as shown in the image. The driver side switch will have wires facing downward. The rear side switch will have wires facing upward.

Using a screw driver secure the magnetic switches are in proper position.

Use the provided image as reference.



Step 12:

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.



PASSENGER SIDE UPWARD



Step 13:

After mounting magnetic switches, begin to pull harness through grommet in truck bed. Connect magnetic switches to harness.

Pull the wiring upward to secure along the inside with zip ties.

Using zip-tie sticky backs, secure harness along inside of topper. Continue routing the harnesses in the corner of the topper, to the top front of the first roof bow. (Shown in orange)

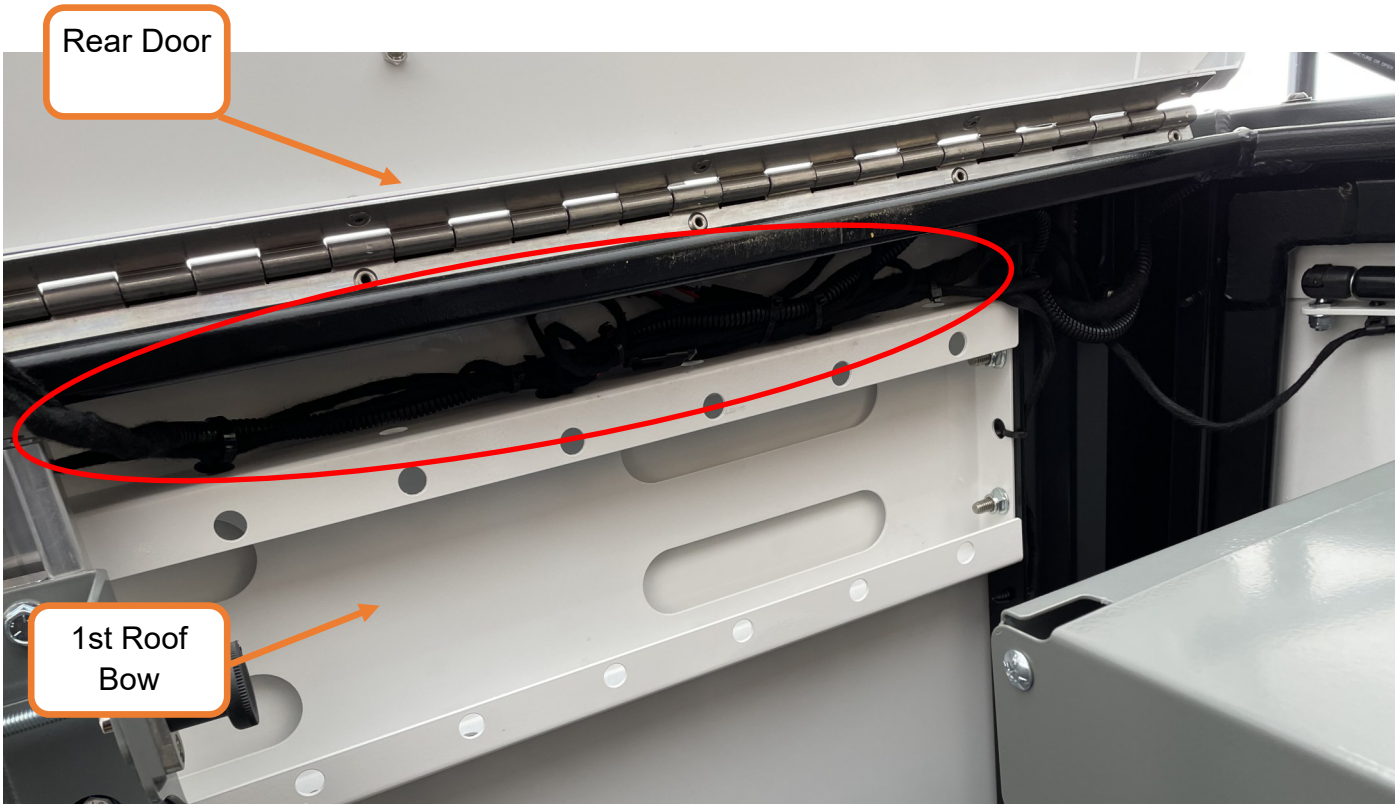
Step 14:

The harness end with connectors should end up between the first roof bow and the door frame on the driver side. See picture below for reference. Use the holes in the roof bows to secure wiring with zip ties.

Be sure to not route any wires through holes in roof bows.

Be sure to clean all surfaces with alcohol wipes before placing sticky backs.

If provided, can use stud mounted zip ties on inner channel near door shocks to secure harness.









Step 15:

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

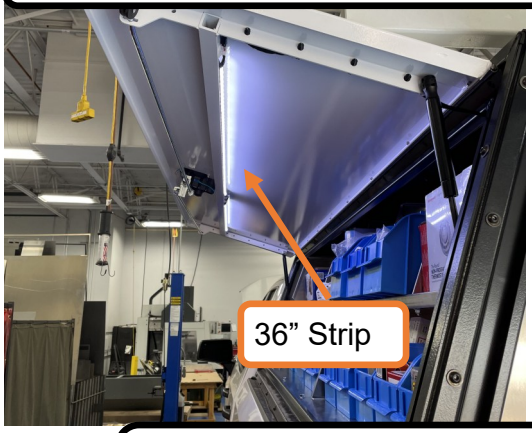




Step 16:

Install the lights.

Driver's Side: Integrated Truck Solution Kit



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.

Passenger's Side: Integrated Truck Solution Kit

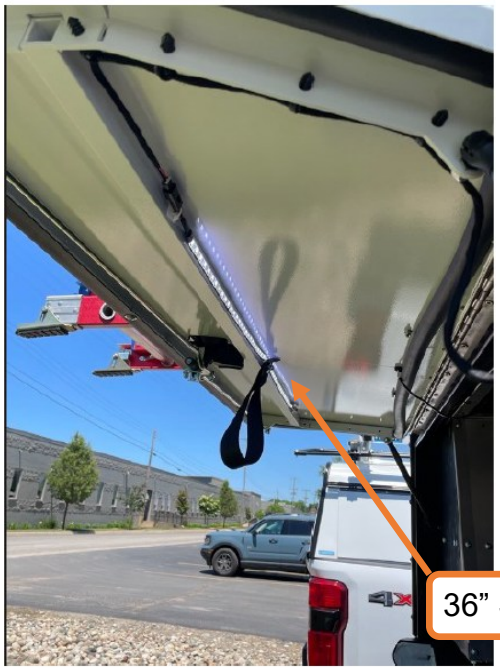


Be sure to have the larger connector end of the lights towards the rear for connecting into the roof bow harnesses.

On the drivers side, install (1) 36" strip lights as center as possible between the front and rear sides of the door.

For the passenger side, install (1) 36" strips, following the same instructions as above.

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



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 17:

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.

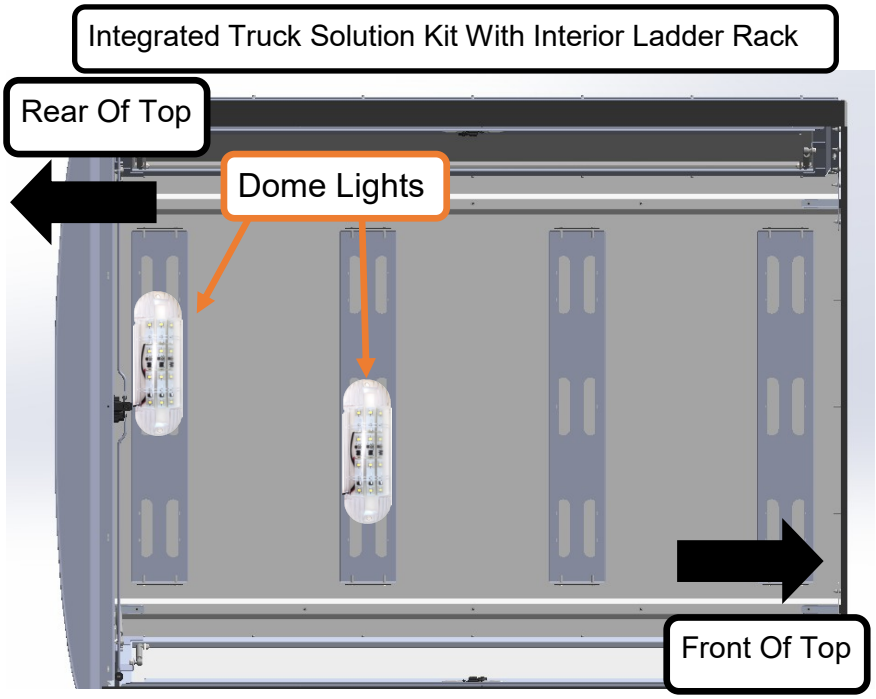
If there will be an interior ladder rack installed, stagger the dome lights on the roof bows like shown. If not then please center the lights.

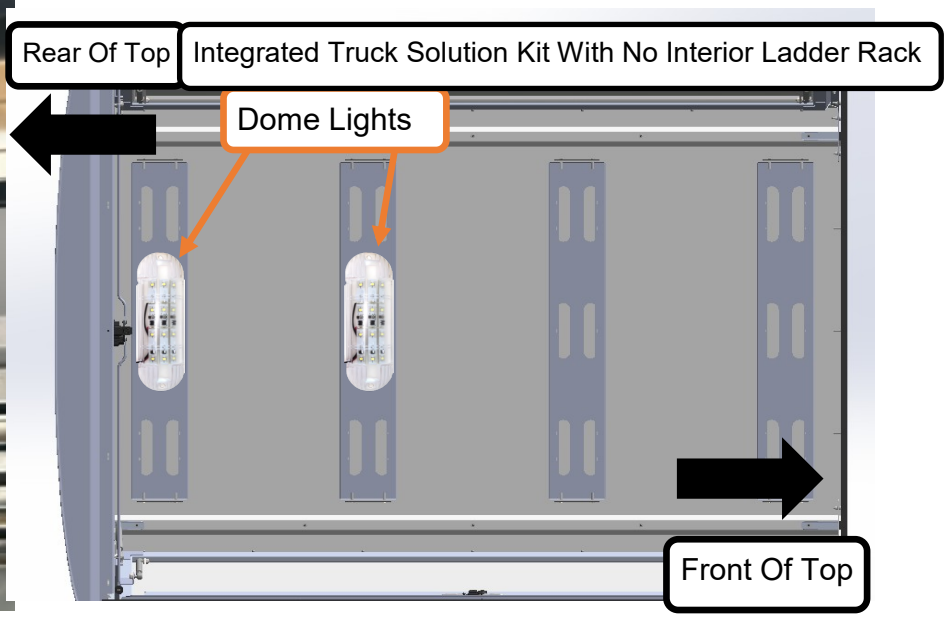
Note: Don't use the self tapper screws. Drill 2 holes and use nuts and bolts to secure Dome lights.



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







Step 17b:

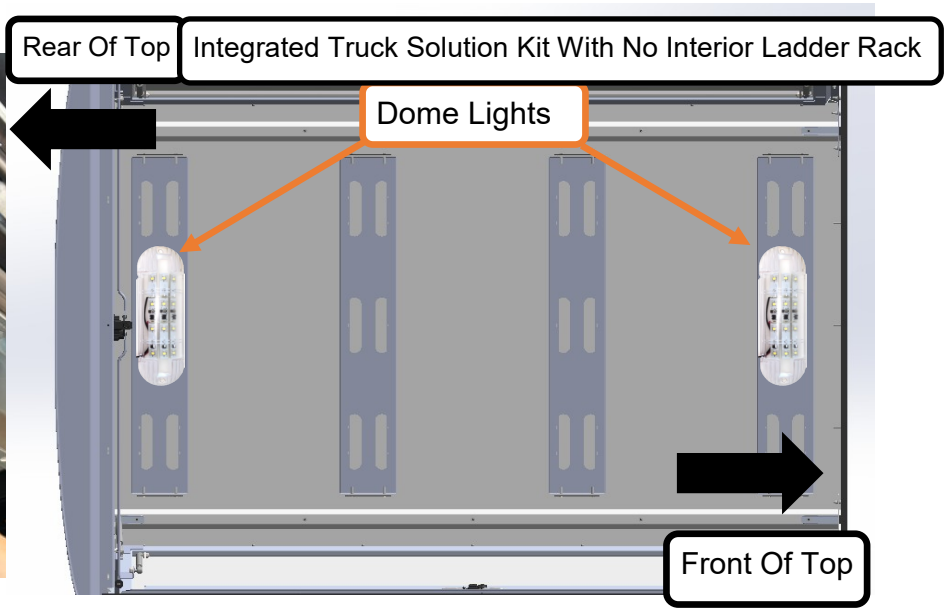
Locate the (2) dome lights.

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.

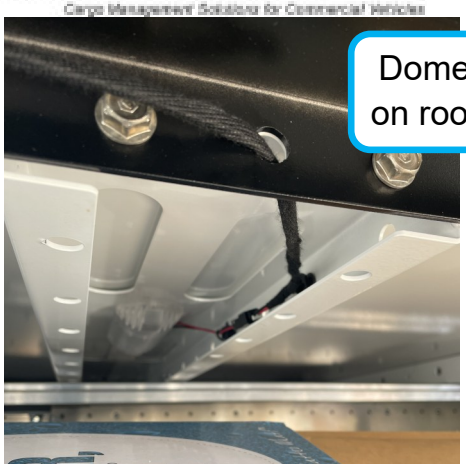
If there will be an interior ladder rack installed, stagger the dome lights on the roof bows like shown. If not then please center the lights.

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





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









Step 18: Roof Bow Harness Routing

Use roof bow harness #1 (63481) for routing the 1 of the 2 dome lights and the strip lights on the driver, passenger, and rear side door.

Use roof bow harness #2 (63482) for routing to 1 of the 2 dome lights

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.

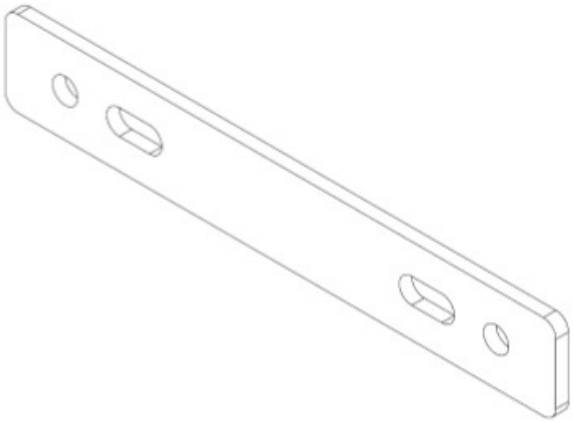
When both side doors are open, allow very little slack on the wire, ensuring it is taut. However, while pulling wiring taut on the strip lights ensure the doors open and close without damaging the wires.

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 19:

Continue to route power to light harness 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” of an inch away from one another.

***** If the lights do <u>NOT</u> turn off when all of the doors are shut, preform next step below.**

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 ensure the mag-netic 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.



Pull taught and coil up excess harnessing under vehicle

Step 20:

Once all harnesses are connected, pull taught and secure the harnessing coming up into the cargo area

Coil up harness underneath the vehicle where the TLM harness goes up

---

Insert the fuse into the inline-fuse holder on the power harness. The install is now complete. Secure all wiring with zip ties. Re-attach all trim. Re-assure all pass through holes have been silicone and grommeted when applicable. Double check the functionality of the lights and switches.

Be sure the lights turn on with the switch.



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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ADRIAN STEEL
VAN AND PICKUP EQUIPMENT

906 JAMES STREET
ADRIAN, MI 49221
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!

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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!

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
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 36096-0

ITEM DESCRIPTION: GROMMET,RUBBER,1" ID



MANUFACTURER: CTW (or equiv.)
MANUFACTURERS PART NUMBER: G2930

SPECIFICATIONS:
1" I.D.
1-1/4" PANEL HOLE DIA.
3/16" MAX PANEL THICKNESS
1-1/2" O.D.
7/16" THICKNESS

SPECIAL NOTES: NONE

SUPPLIED BY: THIS ITEM IS ADRIAN AVAILABLE!

PURCHASED PRODUCT DATA SHEET (PPDS)

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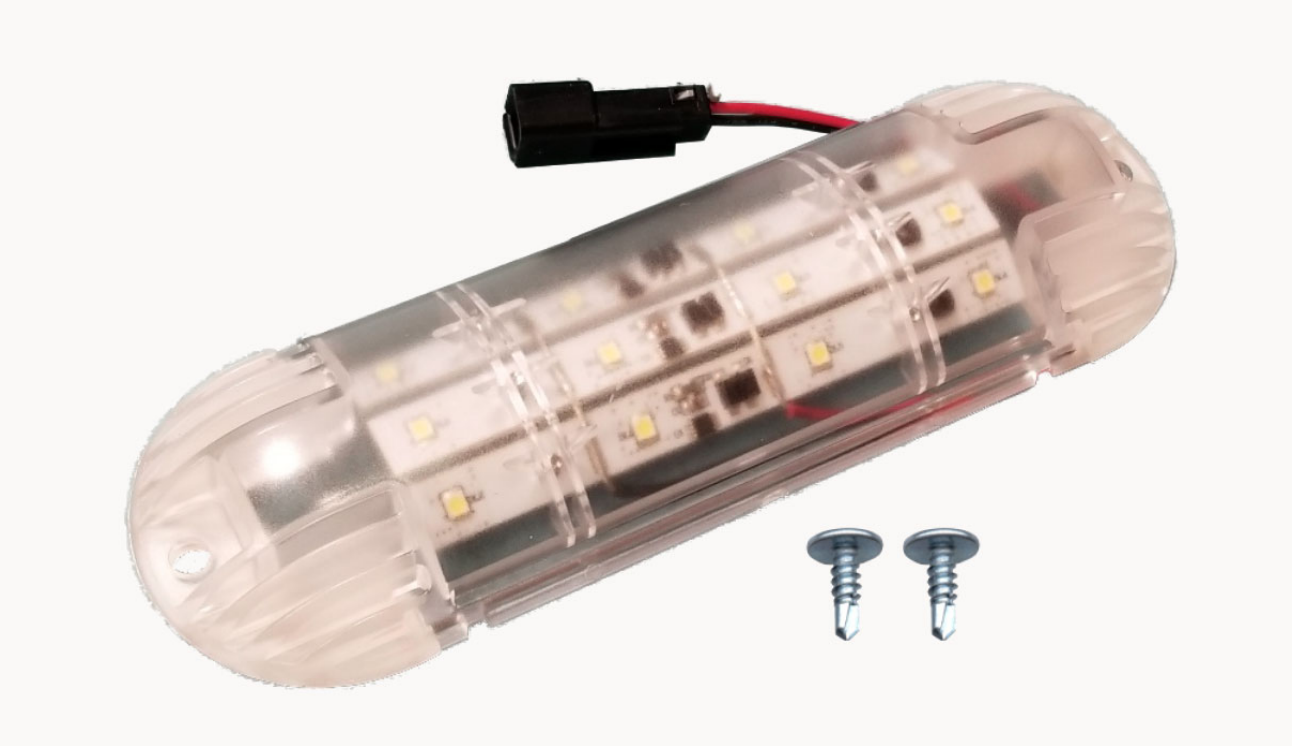
⚠ CAUTION ⚠
WHEN INSTALLING EQUIPMENT IN OR ON VEHICLES CHECK FOR FUEL TANKS, FUEL LINES, CONTROL LINES AND ELECTRICAL WIRING BEFORE DRILLING! ALWAYS USE DRILL BITS WITH INTEGRAL STOPS WHENEVER POSSIBLE!

DRAWN BY	DATE DRAWN
HJE	04/01/2008
ECN NUMBER	ECN DATE
19252	01/31/2017
PART WEIGHT	REV. LEVEL
0.01 LBS.	D

PART NUMBER
36096-0

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 **(1) LED LIGHT WITH 12 LED GROUPED IN THREE ROWS** **(2) TEK SCREWS INCLUDED**



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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: **25886**

ECN DESCRIPTION:

UPDATE SUPPLIER PART #

REVISED BY: **A. ELLISON**

PURCHASED COMPONENT

REFERENCED SUPPLIER AND/OR MANUFACTURER

OBERTON ELECTRONICS / ECHOMASTER FLEET SOLUTIONS

REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER

8018-6000 / STL40489-3

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.)

PART / PRODUCT IDENTIFICATION

ADRIAN STEEL®

ADRIAN STEEL COMPANY
906 JAMES STREET, ADRIAN, MI 49221

REVISION LEVEL: **B**

MAT'L USED: **PURCHASED**

DESIGNED BY: **A. ELLISON**

DESCRIPTION: **MODULE DOME LED LIGHT**

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

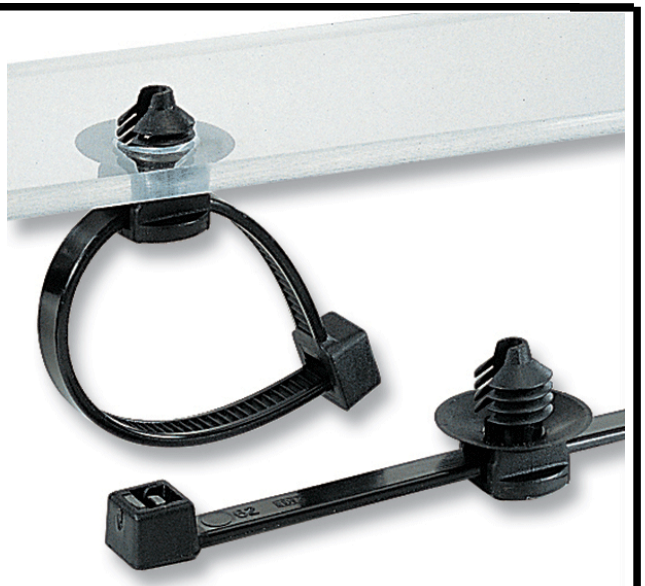
SEGMENT CODE: **EAU**

PART NUMBER: **63480**

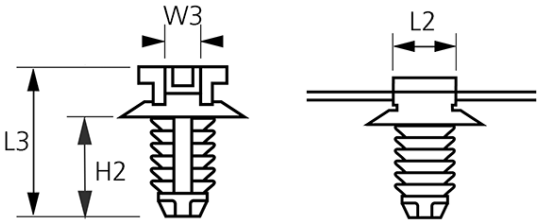
PURCHASED COMPONENT KEY FEATURES

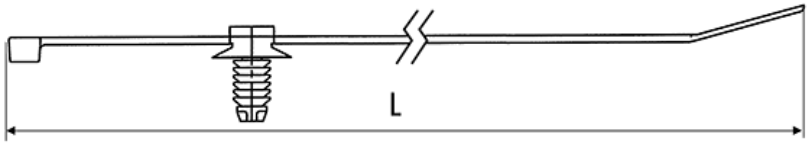
DESCRIPTION OF REQUIREMENTS
DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING) **N/A**
LOAD/RATING REQUIREMENT **N/A**
MATERIAL REQUIREMENT **N/A**
PACKAGING REQUIREMENT **N/A**
OTHER REQUIREMENTS • **Roof Bow #1** ***(Cargo area, first Roof bow after partition)*** • ***(5x) WIRE TIE W/CHRISTMAS TREE*** • ***1100mm Length***





(5x)





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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: 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-HARRB1

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 #1**

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

SEGMENT CODE: **EAU**

PART NUMBER: **63481**

PURCHASED COMPONENT KEY FEATURES

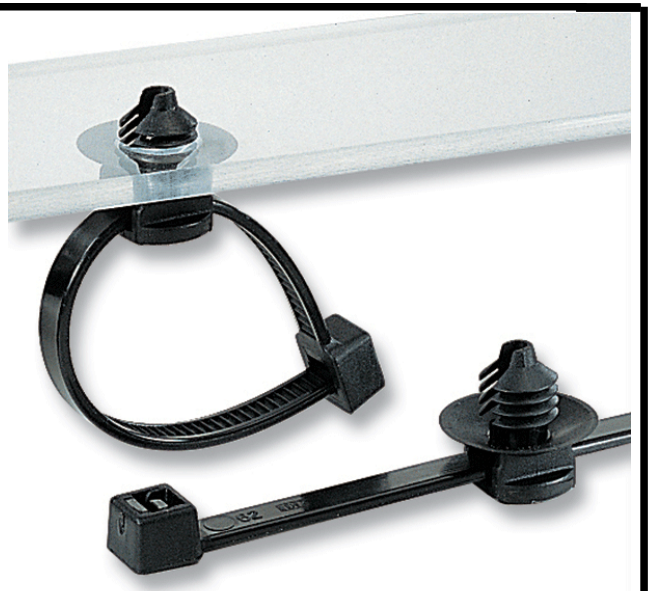
DESCRIPTION OF REQUIREMENTS
DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING)
N/A
LOAD/RATING REQUIREMENT
N/A
MATERIAL REQUIREMENT
N/A
PACKAGING REQUIREMENT
N/A
OTHER REQUIREMENTS

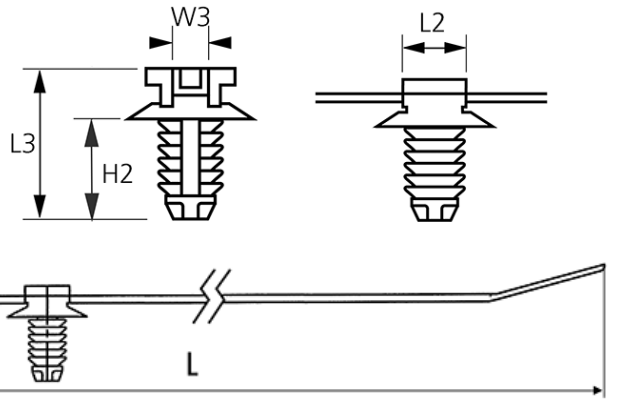
- **Roof Bow #2**
- **(5x) WIRE TIE W/CHRISTMAS TREE**
- **1570mm Length**



P-HARRB2

(5x)





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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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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: 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**

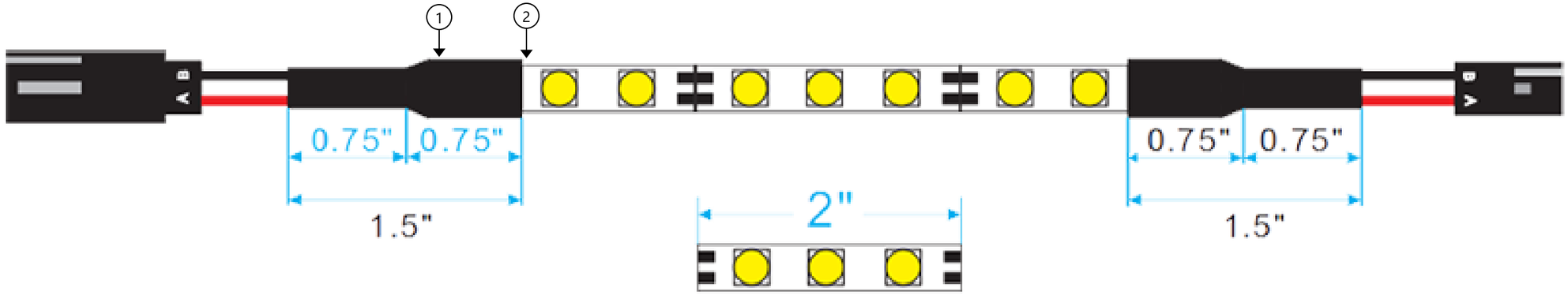
DESCRIPTION: **MODULE DOME LED STRIP 36"**

WEIGHT (Lbs.): **0.3**

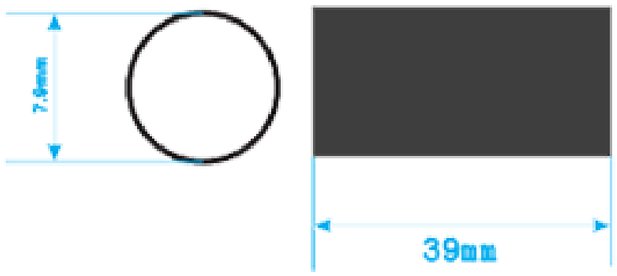
SEGMENT CODE: **EAU**

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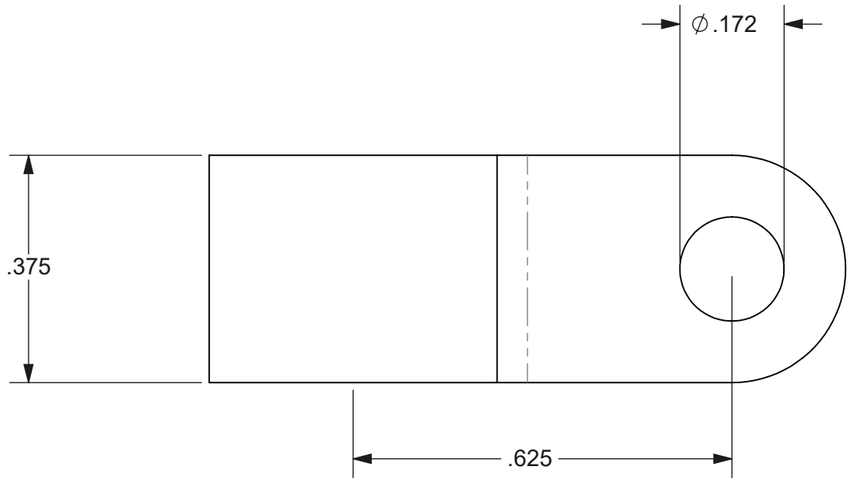
	Name	Date
Designed By	Bennet Fisher	11/1/21
Engineering Approval		
Manufacturing Approval		
Revision Approval		
Quality Assurance		

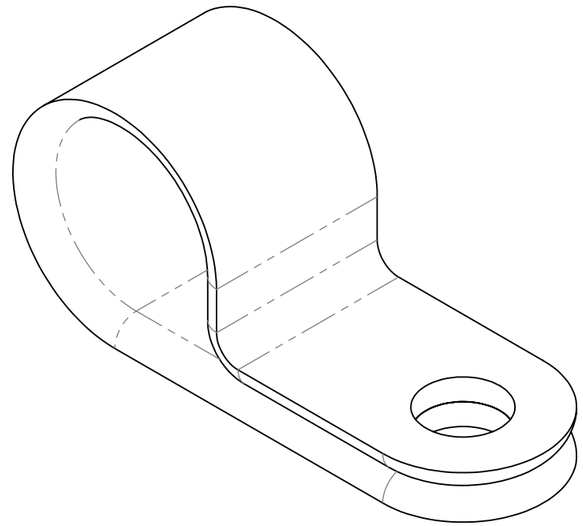
AAMP
ADVANCING VEHICLE TECHNOLOGY

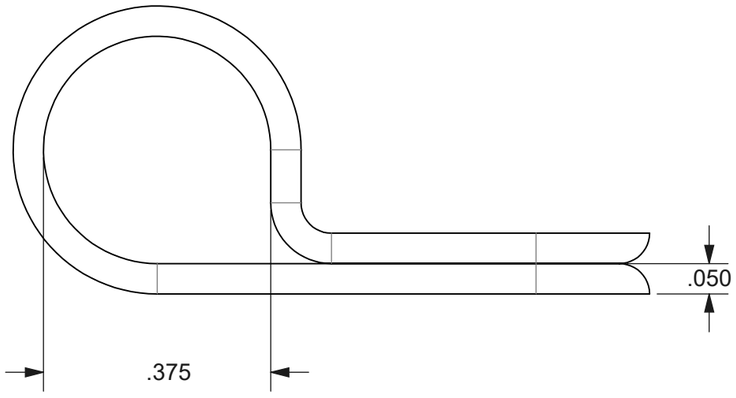
Part Number: CL-36BLED	Revision: B
Description: 36" LED Strip	Sheet: 1

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

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: **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**

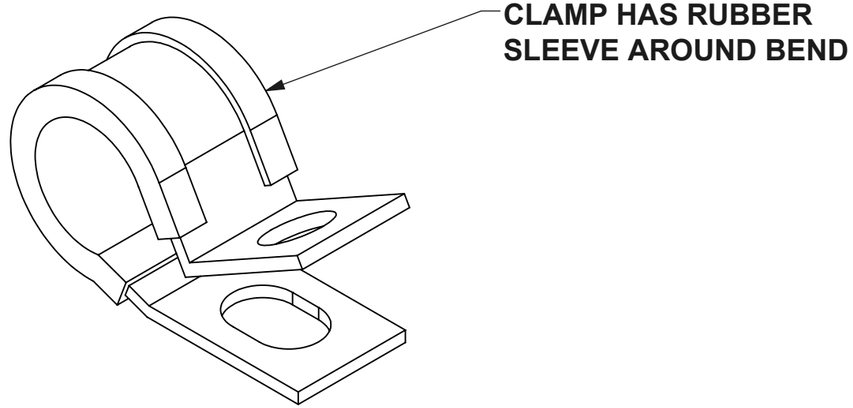
SEGMENT CODE: **HDW**

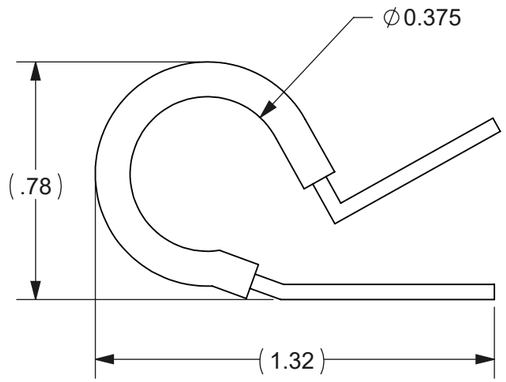
PART NUMBER: **66843**

PURCHASED COMPONENT KEY FEATURES

DESCRIPTION OF REQUIREMENTS
DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING) **N/A**
LOAD/RATING REQUIREMENT **N/A**
MATERIAL REQUIREMENT **Zinc Plating** **EPDM Rubber**
PACKAGING REQUIREMENT **N/A**
OTHER REQUIREMENTS **0.281 Hole Diameter**







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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: 26661

CURRENT ECN: 26661

ECN DESCRIPTION:

CREATE NEW PART NUMBER AND PRINT

REVISED BY: **SPL**

PURCHASED COMPONENT

REFERENCED SUPPLIER AND/OR MANUFACTURER
Mid-State Bolt & Nut/Div Of Field

REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER
COL0609ZI

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:

DESIGNED BY: **S. Lukas**

DESCRIPTION: **CABLE CLAMP-3/8" DIAM. MED DUTY CUSHION**

WEIGHT (Lbs.): **0.002**

SEGMENT CODE: **HDW**

PART NUMBER: **71671**

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

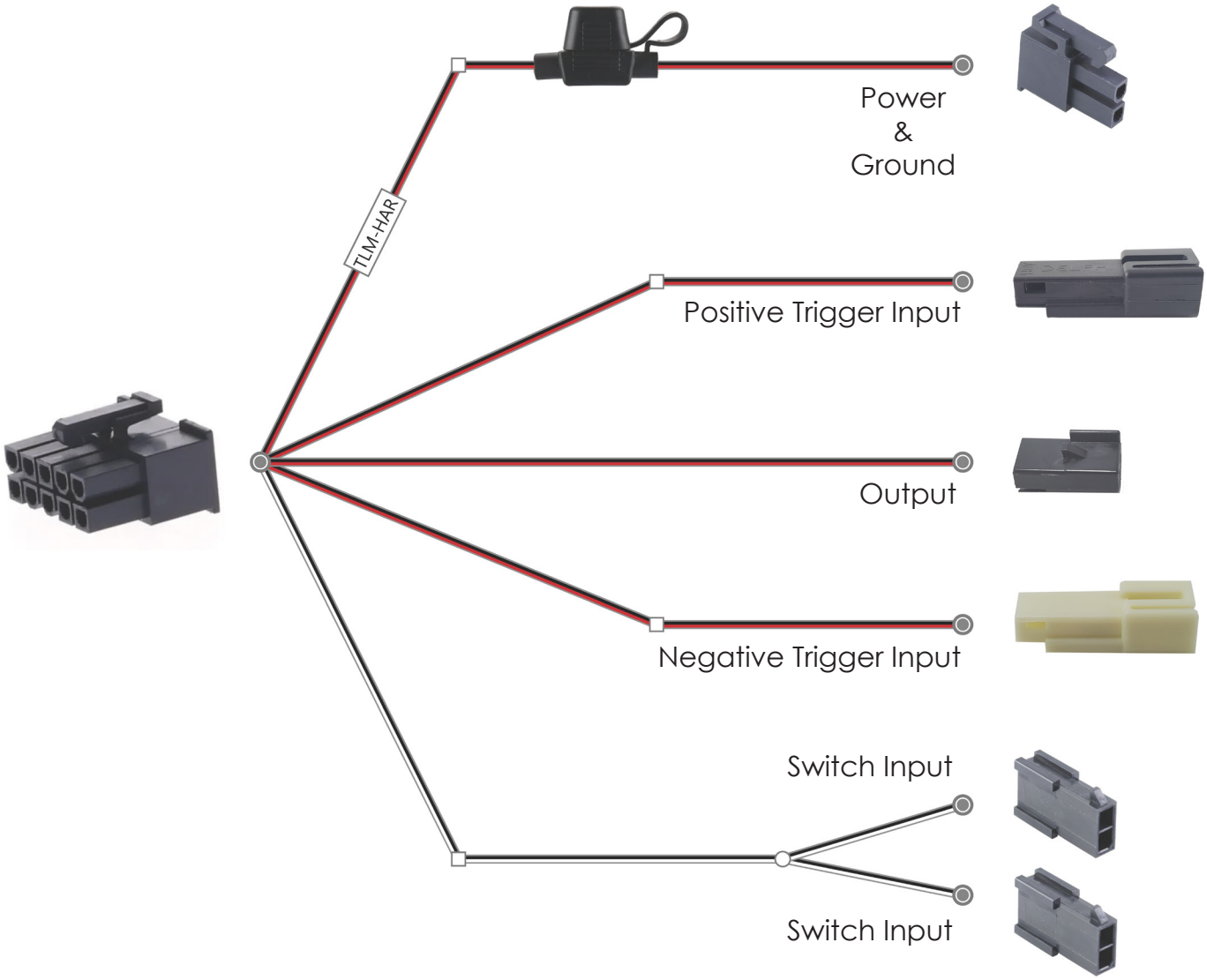
Trigger Input	Switch Input	Output	Voltage Sense (ON)	Timer (ON)
Active	N/A	ON	Monitoring Input Voltage	N/A
Not Active	N/A	OFF	N/A	N/A
Not Active	Activated (Pulsed)	ON	Monitoring Input Voltage	Timer Starts
Not Active	Activated (Pulsed)	OFF	N/A	Timer Off
Not Active	Activated (Pulsed)	ON	Monitoring Input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

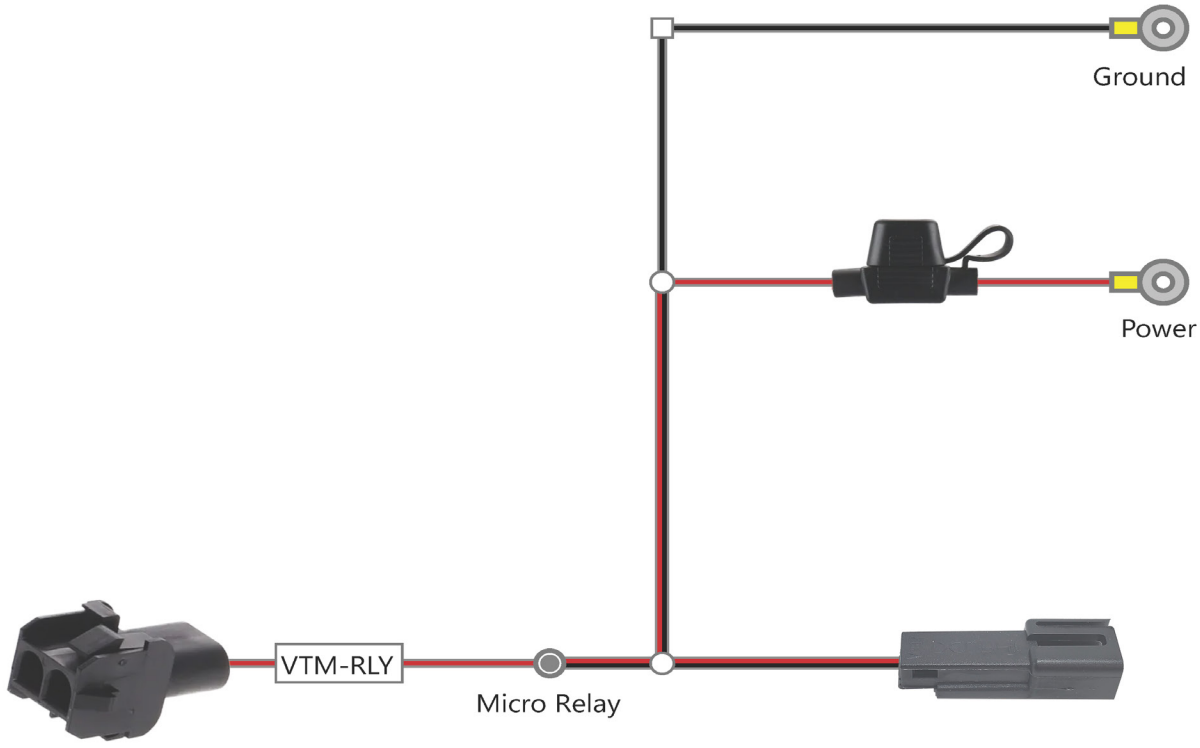


If necessary, connectors may be removed for hardwire applications.

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 TIMER LIGHTING MODULE** **POWER HARNESS TO LIGHTS**



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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: **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

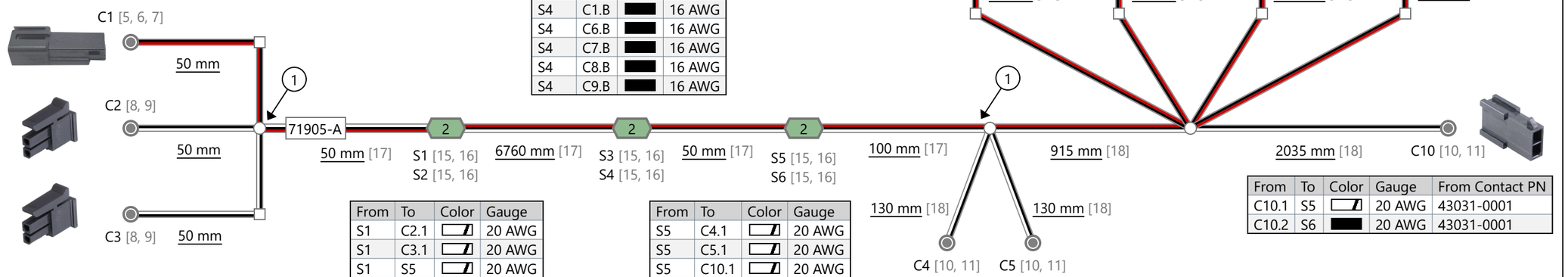
From	To	Color	Gauge	From Contact PN
C6.A	S3		16 AWG	12047767
C6.B	S4		16 AWG	12047767

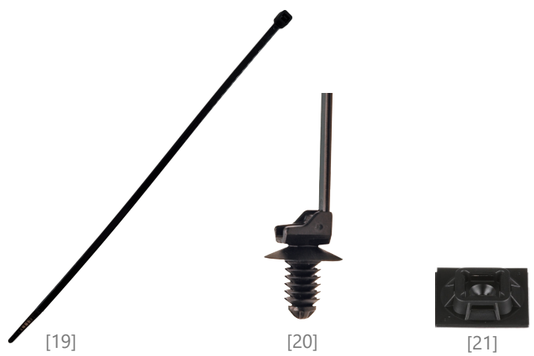
From	To	Color	Gauge	From Contact PN
C8.A	S3		16 AWG	12047767
C8.B	S4		16 AWG	12047767

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

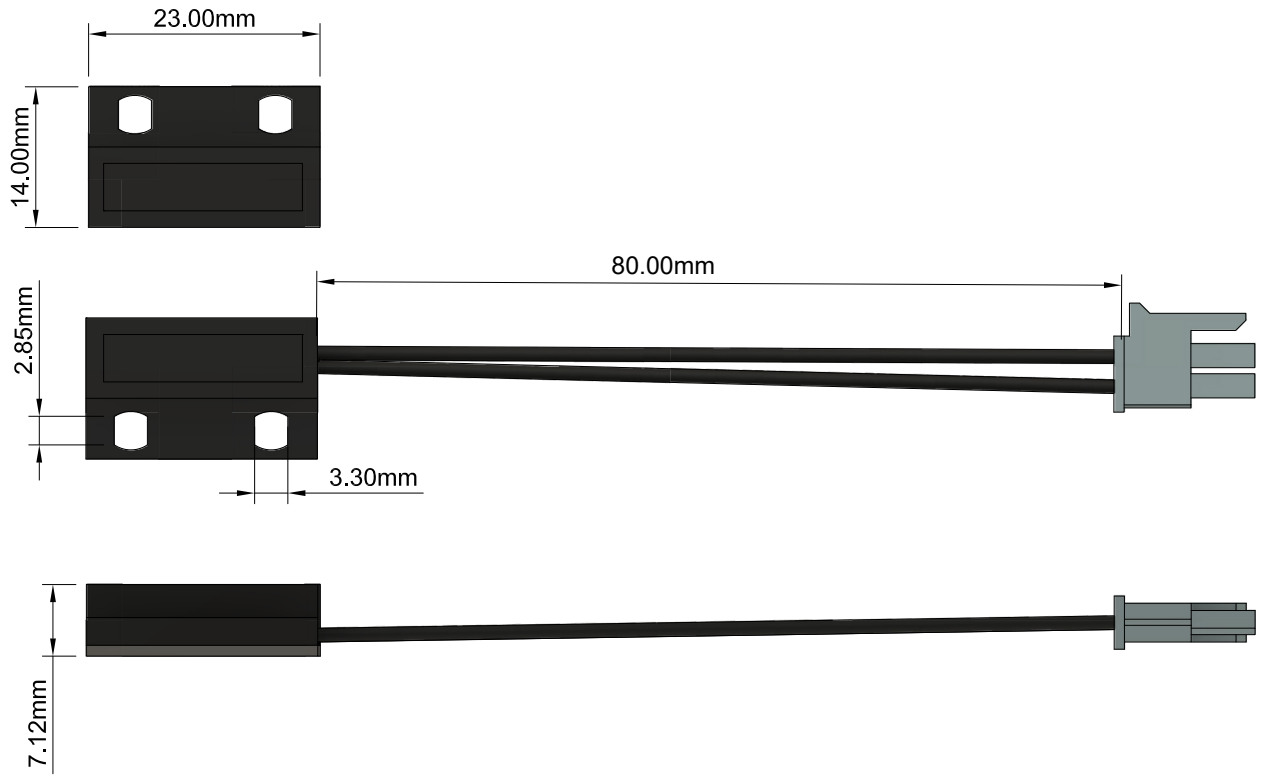
DESIGNED BY: E.BURKE

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

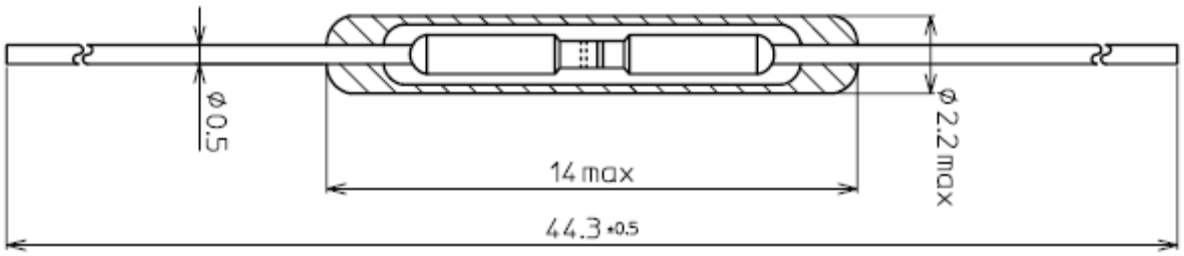
■Appearance



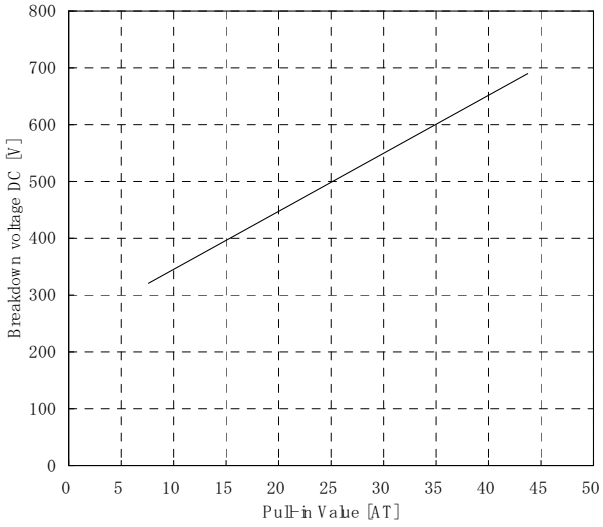
■Features

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}	---

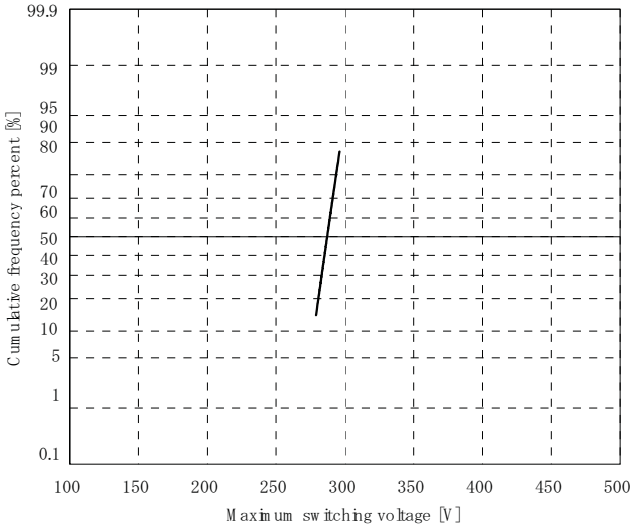
■Dimensions (unit: mm)



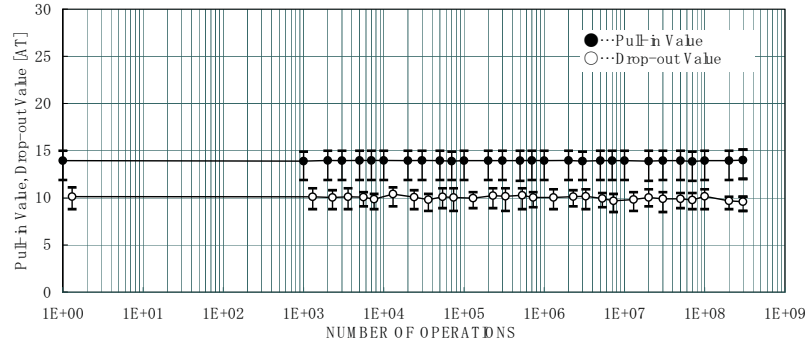
■Withstand voltage between contacts

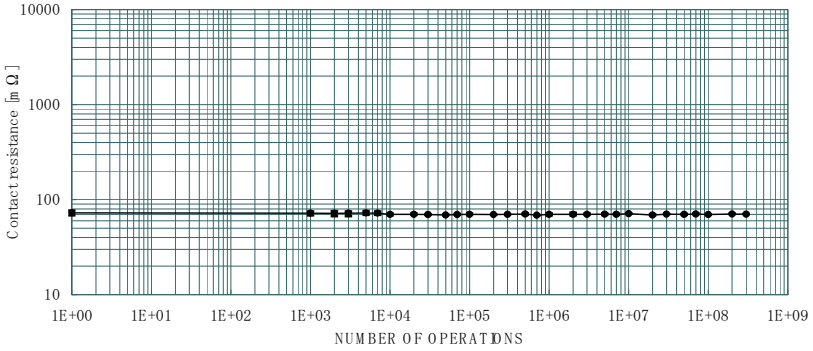


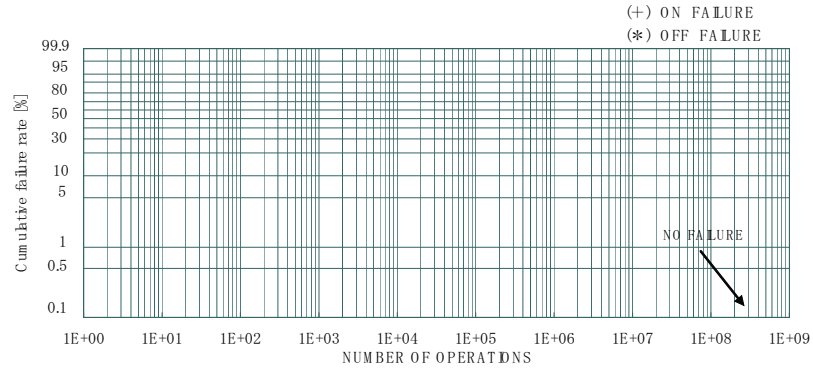
■Maximum switching voltage



■Life test data: 5Vdc-1mA

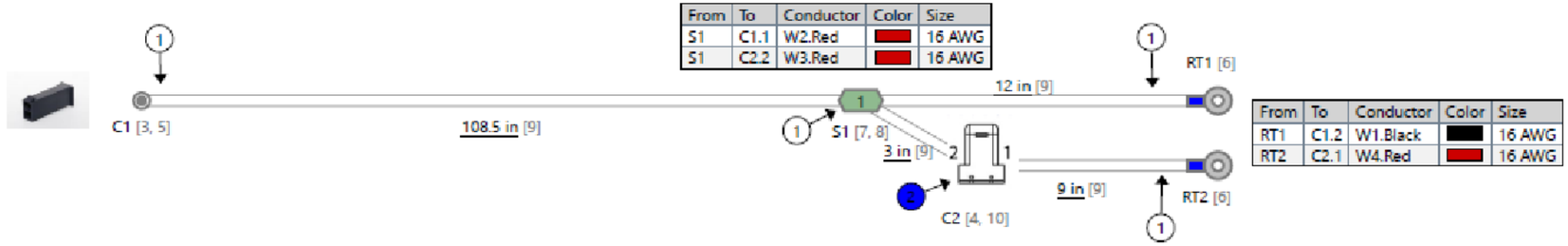






PURCHASED COMPONENT KEY FEATURES

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 **10 foot power harness for the TLM**



From	To	Conductor	Color	Size
S1	C1.1	W2.Red		16 AWG
S1	C2.2	W3.Red		16 AWG

From	To	Conductor	Color	Size
RT1	C1.2	W1.Black		16 AWG
RT2	C2.1	W4.Red		16 AWG

From	To	Conductor	Color	Size	From Contact PN
C2.1	RT2	W4.Red		16 AWG	
C2.2	S1	W3.Red		16 AWG	

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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: **28473**

CURRENT ECN: **28473**

ECN DESCRIPTION:
Release

REVISED BY: **LJK**

PURCHASED COMPONENT

REFERENCED SUPPLIER AND/OR MANUFACTURER
Stinger

REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER
76163

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: **JWS**

DESCRIPTION: **HARN, PWR TLM BATTERY 10'**

WEIGHT (Lbs.): **.20**

SEGMENT CODE: **ELE**

PART NUMBER: **76163**