

Introduction / Comments:

Install Instructions For Exterior Plug & Play Lights 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 MAN-UAL** (54479) before attempting installation.









Installation Instructions For Exterior Plug And Play Lights For Ranger



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TORQUE

Torque all strobe fasteners to 10 in-lbs. DO NOT OVER TIGHTEN

DO NOT MOUNT ON A CURVED SURFACE



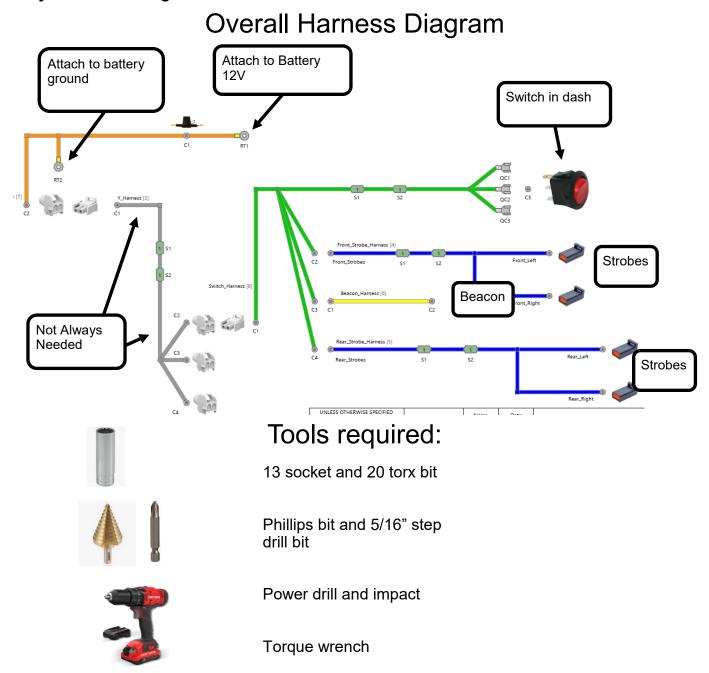
Please read statement below before moving forward

Before installation, disconnect the OEM negative battery cable.

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.

Please reference the order drawing and spec sheet to see what components are going to be installed on this particular upfit.

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.





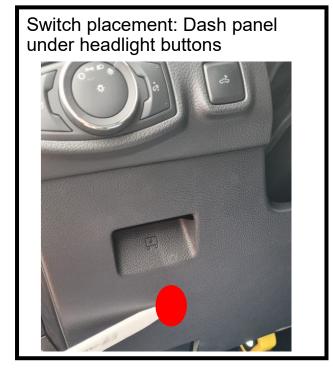
Part Number Description Components 67093 Power Harness #2 1 2 67097 Switch Harness #1 3 67101 Front Strobe Harness #1 (If Applicable) 4 67107 Rear Strobe Harness #2 (If Applicable) 5 67111 Beacon/Lightbar Harness #1 (If Applicable) 6 67686 or 67687 **Strobes** (If Applicable) Beacons 7 67689 or 67690 (If Applicable 8 69776 Beacon/Lightbar Mount (If Applicable) 67691 or 67692 9 Lightbars or 96118 or (If Applicable) 67693 9

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.

Harness pictures are for reference only.

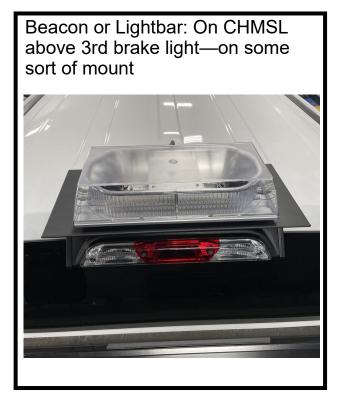


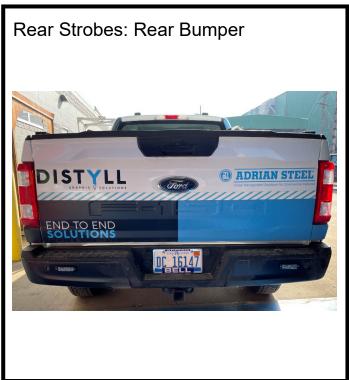
Placements





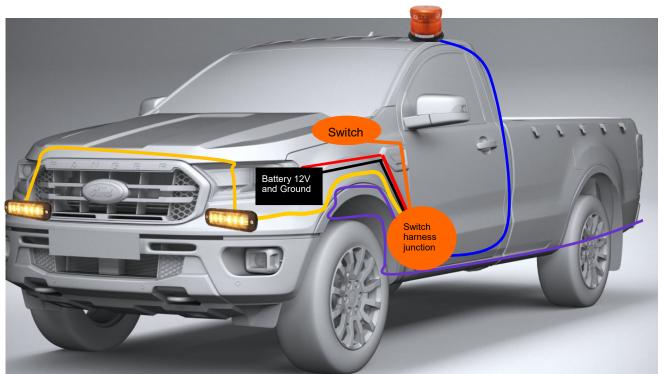
TORQUE STROBES TO 10-IN-LB'S MAXIMUM

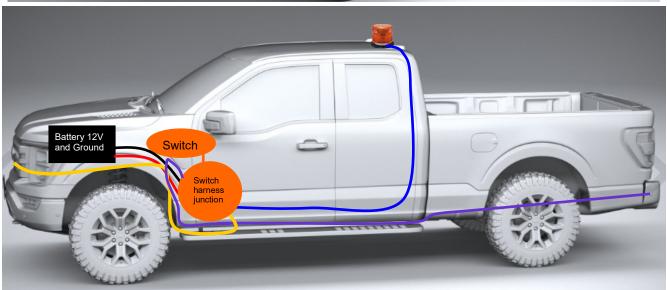






Routing Overview





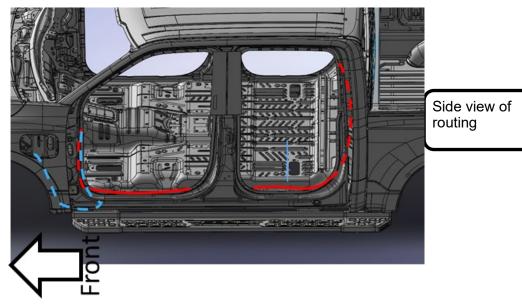
Color	Key - Items
Yellow	Strobes - Front strobe harness
Red/Black	Power harness: Battery to kick panel
Orange	Switch harness: Switch in dash
Blue	Beacon harness: Switch to beacon
Purple	Strobes - Rear strobe harness

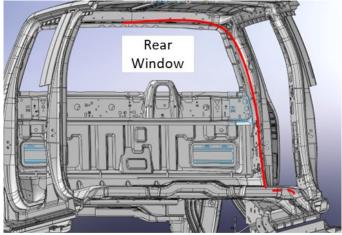


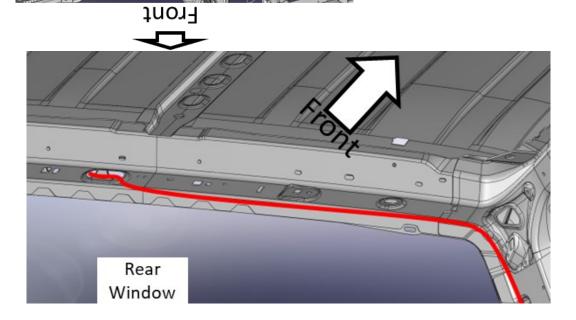
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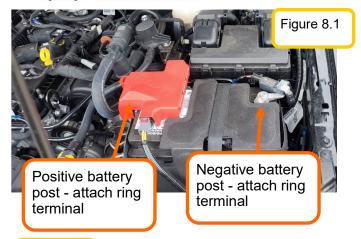
Overview of Routing-Beacon/Lightbar Wire Harness:



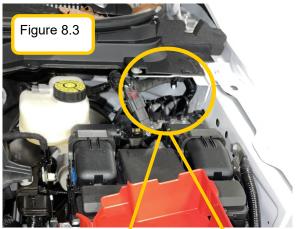
















Step 1: Locate the power harness #67093.

Remove the fuse from the inline fuse holder until he end of the install

Locate the OEM battery under the hood.

Step 2: Attach the red wire with the ring terminal to the battery positive post.

Attach the black wire with the ring terminal to the battery negative post. Figure 8.1.

Route the white connector end rearward following the path called out in figure 8.2, to the firewall grommet.

Locate the firewall grommet. Refer to figure 8.3 and 8.4 for the location.

If installing strobes:

If there is a plug in the OEM grommet, see if you can cut an "X" and route the strobe harnesses through first. If this is not attainable, remove the plug and drill out the hole as needed, and insert the ASCO provided grommet (36096-0).

Then drill a second hole to the right of the grommet for the power harness. Drill out the needed hole size to fit the grommet on the power harness (67093).

Route the power harness connector end through the hole and into the cab.

If not installing strobes:

Drill out the grommet to fit the power harness provided grommet. You will route the power harness through this grommet if not installing any strobes.

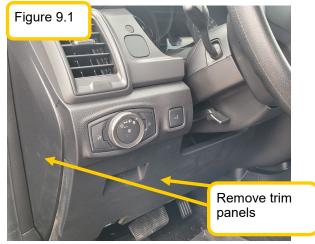
Route the power harness connector end through the hole and into the cab.

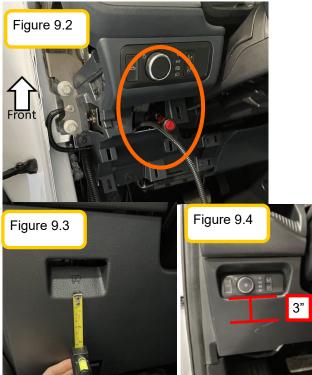
Secure wiring with zip ties.

Silicone the hole.











Step 4:

Locate the switch harness #67097

Connect the switch harness connector to the power harness in the kick panel area.

Disassemble the IP trim to gain access behind the dash. Figure 9.1.

Route the switch end of the switch harness up the dash and through the opening in the IP. Figure 9.2.

Secure to the OEM harnesses behind the IP.

Step 5:

Drill a hole for the switch in the trim panel: The hole will be 1" inch down from the OEM cut out in the dash panel. Center the hole with the cut out. Be sure the back side is free and able to be drilled out. Depending on year of the Ranger, you may need to drill through two layers of trim. Figure 9.3.

Please note if there is no cut out in the dash panel, center the switch side to side, and measure 3" down from the headlight switch cluster. Be sure to check the back side of the panel before drilling. If you need to adjust the switch position to clear harming any OEM wiring, you may do so. Refer to Figure 9.4.

Route the harnesses through the hole

Step 6:

Connect the ground spade to the gold pin on the rocker switch

Connect the white battery power spade to the opposite terminal on the switch.

Connect the red spade to the middle pin

Insert the switch into the hole and place the strobe/beacon decal (if supplied) around the switch.

Reassemble all trim and secure wiring.



Strobe Install—If Applicable

Strobe pictures are for reference only. Please refer to product structure/spec sheets for the actual strobes for the install.



Figure 11.2



Step 1:

Locate the front and rear strobe harnesses #67101 and #67107.

Connect both the front and rear strobe harnesses to the switch harness (two of the remaining unused connectors) in the driver's foot well. Figure 11.1.

Step 2:

If you have not already drilled out the OEM firewall grommet, do that now (to fit the 36096-0 grommet).

Figure 11.2 and 11.3 for the OEM grommet location.

Route both the front and rear strobe harnesses through the grommet.

Silicone the hole once routed.

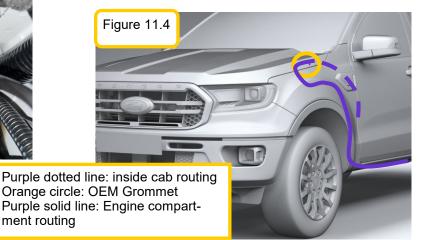
Leave the front strobe harness for now, locate the rear strobe harness.

Route the rear strobe harness down towards the wheel well, as close as possible to the firewall without interfering with any hot or rotating objects.

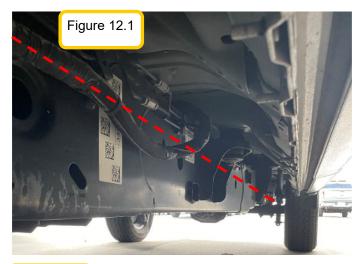
Continue routing the harness to the underbody frame.

Refer to figure 11.4 for routing references.

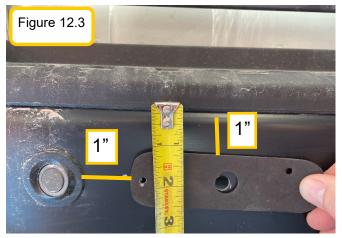
Please note there will not be much slack in the harness, so please keep the harness tight.











Step 3: Routing (Refer to routing diagrams at the beginning of the instructions)

Route the strobe harness rearward following the frame (red dotted line). Secure with zip ties to the OEM harness. Figure 12.1 and 12.2.

Step 4: Mounting Strobes

Find the left most reverse senor.

Place the strobes in line with the sensor horizontally (about 1" down from the bumper crease) and 1" over from the sensor. Figure 12.3.

If there is no sensor, measure ~1" over from the edge of the tailgate edge, or use your best judgement.

Use the strobe as a template, mark the center hole location on the bumper (for routing the wires through).

Drill a 3/8" hole for the wire pass through of the strobe. Use primer on the hole to prevent rusting. Figure 12.3.

Connect the strobe light to the harness and silicone the hole.

Place the strobes in their desired locations and fasten them onto the bumper with the ASCO SUPPLIED SCREW AND NUT: FAS0501 and FAS0503 (for rear bumper only—front will use Ecco supplied screws)

See figure 12.4 to reference the F150 install.

TORQUE STROBES TO 10-IN-LB'S MAXIMUM





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Step 5: Mounting Front Strobes

Locate the driver's side front headlight area.

Measure 1" left of the bumper edge contour. Line the farthest left edge of the strobe at that 1" mark. Figure 13.1.

Place the strobe centered vertically on the bumper panel. Curve the strobe a little so it fits with the bumper curvature.

Figure 13.2.

Use the strobe or gasket as a template, mark the center hole location on the panel (for routing the wires through).

Drill a 3/8" hole for the wire pass through on the strobe.

Step 6: Locate the front strobe harness #67101 that was previously routed to the engine compartment.

Following the routing path shown in figure 13.3, route the harness through the engine compartment to the desired strobe locations.

Using a fish tape may help with the install.

Connect the driver side strobe to the harness.

Connect the second connector to the passengers' side strobe.

Be sure not to secure or route the harness anywhere near moving or hot objects.

Secure wiring with zip ties.

Place the strobes in their desired locations and fasten them onto the grill with the supplied screws. Figures 13.4.

TORQUE STROBES TO 10-IN-LB'S MAXI-MUM

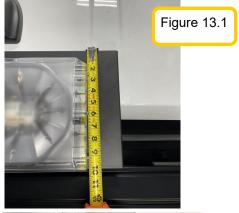
Please note that the headlight changed from 2023 to 2024. This is a minor change. Measure 1" right of the headlight left edge of the headlight, then please follow the same measurements /strobe placements as above. Place the strobe the flat plane/surface below the headlight. Repeat on the passenger side. See figure 13.5 for the 2024 change.

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Beacon/Lightbar Install—If Applicable

Lightbar/ beacon/ and mount pictures are for reference only. Please refer to product structure/ spec sheets for the actual beacon/lightbar/mount for the install.



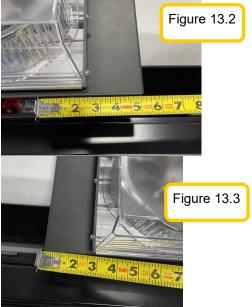


Figure 13.4

Step 1: On a table/bench: Assemble the light
Assemble the lightbar or beacon to the mount, using the supplied fasteners and rubber spacers with the lightbar.

If installing a Whelen lightbar, use the provided screws (FAS0869), washers (FAS0871), and nuts (FAS0501) in the ASCO kit. They are not provided with the light. All other lights will have their own hardware.

Note: Lightbar (SWS Apollo) in pictures is for reference only.

Center the lightbar or beacon onto the mount, side to side, then slide the lightbar to the rear of the mount until it is flush. See figures 13.1, 13.2, and 13.3 for reference.

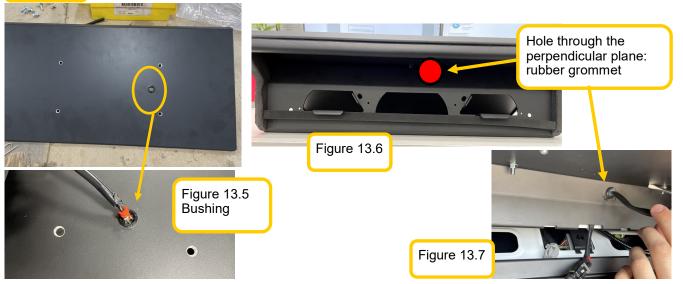
Use the lightbar/beacon as template, mark the needed holes for mounting. Drill the needed holes for mounting.

Needed holes: One through the top where the lightbar or beacon is mounted, and one through the perpendicular plane above the light placement. This will be where you route the wiring into the cab area. Figures 13.6 and 13.7.

Drill two holes for the wiring pass through and insert the provided grommet. For the top plane: if there is a connector on the end of the lightbar/beacon, use the 1" grommet (36096-0). If there is not a connector, use the 3/8" bushing (40941) and refer to the next page.

For the perpendicular plane use the 3/8" rubber grommet (70805)

Route the wires through the grommet and silicone.





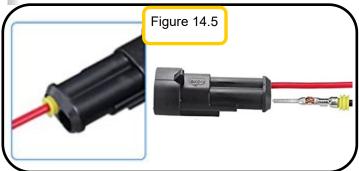
If Lightbar/Beacon does not have a connector on the wires:





Figure 14.4









After mounting the light to the Acari mount and pulling the wire through the grommet (70805)

Locate the connector housing inside the lightbar/beacon box. Figure 14.1.

Note if it has a red insert inside the connector or not. Refer to figure 14.2 for red insert inside the connector.

Insert the lightbar wire terminals into the connector. **See steps below:**

In these steps be very careful to place the terminals into the correct side of the connector.

Line the red wire terminal up with cavity #1 and the black wire terminal up with cavity #2. Figure 14.3.

Note the connector has a "1" and a "2" noted on the connector (circled in red). Figure 14.4. The red wire will be inserted into the #1 cavity of the connector. The black wire will be inserted into the #2 cavity on the connector.

Be sure to align the terminal prongs up with the inside of the connector pin outs.

Carefully insert the terminals into their designated section. Figure 14.5.

Also be sure the terminals snap into position. You should feel or hear a click when they are correctly inserted.

Pull on the wiring to be sure the connectors have been inserted completely.

If not already done:

Insert the red plastic piece into the top end of the connector. This will also click into place. Figure 14.6 and 14.7.

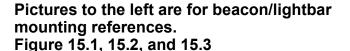
Silicone the grommet/wiring.













Step 2: Disconnect OEM Light
Using a torx T20 bit, remove the 4
screws holding the 3rd brake light to the
CHMSL. Figure 15.4.

Remove the OEM light from the CHMSL and disconnect the OEM harness clip. Figure 15.5.

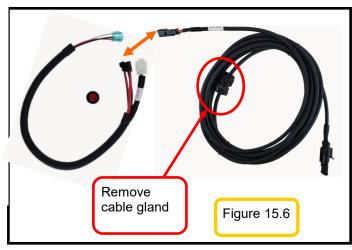
Step3:

Locate the beacon/lightbar harness (67111).

Remove the cable gland off the beacon/ lightbar harness. This will not be needed to the CMSL mounted light install.

Connect the harness to the switch harness (one of the remaining unused connectors) in the driver's foot well. Figure 15.6.





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Beacon/Lightbar Install—If Applicable



Step 4: Routing (Refer to routing diagrams at the beginning of the instructions)

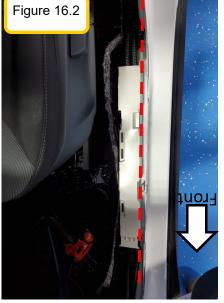
Route the beacon harness following the OEM harness rearward along the foot sill and then up the rear C pillar. Figure 16.1,16.2, and 16.3.

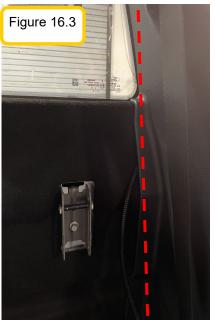
BE SURE TO AVOID ALL SEAT BELT RETENSIONERS

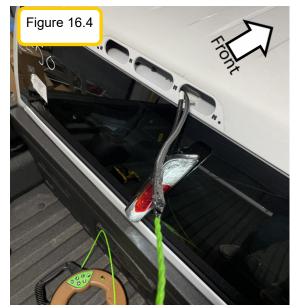
Step 5: Feed the fish tape through the CHMSL opening towards the driver's side C pillar. Tape the harness to the fish tape and pull through the CHMSL opening. Figure 16.4.

Make sure harness is tucked head liner and C pillar trim. Figure 16.6.

See pictures for routing references. Secure all wiring with cable ties and trim panels.











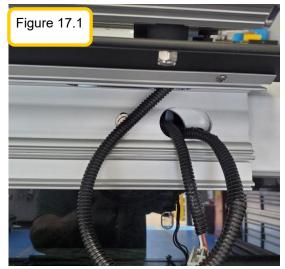


Figure 17.2 Figure 17.3





Step 5: Mounting the light:

Using the mount manufacturer supplied instructions, attach the mount to the vehicle body.

Pull the lightbar harness through the mount opening like seen in the picture to the left—before re-installing the OEM light and black trim plastic piece. Figure 17.1, 17.2, and 17.3.

Connect the beacon/lightbar harness with the beacon/lightbar.

Tape up all non-needed wires from the lightbar/beacon.

Assemble the rest of the needed lightbar/beacon mount pieces.

Re-connect all the OEM light wiring and attach the light back to the Acari mount/ vehicle. Figure 17.4.



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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. Double check the functionality of the lights and switches.

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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⚠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		

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 JLC	DATE DRAWN 7/21/2001
ECN NUMBER 16551	ECN DATE 7/22/2014
PART WEIGHT	REV. LEVEL
0.02 LBS.	С
PART N	IUMBER

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 JLC	DATE DRAWN 7/21/2001
ECN NUMBER 16551	ECN DATE 7/22/2014
PART WEIGHT	REV. LEVEL
0.02 LBS.	С
PART N	IUMBER

26618-0

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!

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△CAUTION △

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ECN DATE
01/31/2017
REV. LEVEL
D

36096-0

ITEM DESCRIPTION: SNAP BUSHING 3/8 ID 1/2 OD HEYCO



MANUFACTURER: WAYTEK

MANUFACTURERS PART NUMBER: 24102

SPECIFICATIONS: SNAP BUSHING

INSIDE DIA 3/8" MOUNTING HOLE ½"

SPECIAL NOTES: NONE

SUPPLIED BY: THIS ITEM IS ADRIAN AVAILABLE

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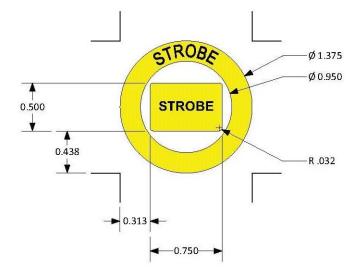
^A CAUTION

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7	DRAWN BY	DATE DRAWN
1	RBB	5/9/2011
1	ECN NUMBER	ECN DATE
1	13876	05/10/2011
1	PART WEIGHT	REV. LEVEL
1	0.10 LBS.	Α
4	DART	IIMDED

40941

ITEM DESCRIPTION: STROBE SWITCH DECAL SET



MANUFACTURER: VANNER

MANUFACTURERS PART NUMBER: TBD

SPECIFICATIONS: (1) Circular Yellow Decal (ID=0.950", OD=1.375") with "STROBE" in black letters

(1) Rectangular Yellow Decal (H=0.500", L=0.750") with "STROBE" in black letters

SPECIAL NOTES: For round rocker switch (OD=0.780") and Ford Transit Upfitter Switches.

SUPPLIED BY: THIS ITEM IS ADRIAN AVAILABLE!

PURCHASED PRODUCT DATA SHEET (PPDS)

Page 1 of 1

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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 RJB	DATE DRAWN 11/15/2017	
ECN NUMBER	ECN DATE	
XXXX	XXXXXX	
PART WEIGHT 0.02 LBS.	REV. LEVEL A	
PART NUMBER		

55073

HILLIARD, OHIO USA SHEET 1 OF LABEL, STROBE TXT, .95ID ROUND SWITCH DATE DRAWING/ PART NO. CHKIDATE \$1.375 .x ± .025 .xx ± .015 .xxx ± .005 REV CABLES DRN/DATE MEO TOL. LABEL/ METAL STROBE WITHOUT THE EXPRESS WRITTEN CONSENT OF VANINER INC. IT IS PROVIDED SOLELY FOR THE CONVENIENCE OF THE USER AND SHALL BE RETURNED UPON REQUEST. THIS DRAWING AND ALL INFORMATION CONTAINED HEREIN IS THE PROPERTY OF VANNER INC. AND MAY NOT BE COPIED, REPRODUCED OR DIVULGED TO UNAUTHORIZED PERSONS X REA/ECO NO.: 2. ARTWORK FROM D91XXXX-A PAGE 1, PMS BLACK 1. MATERIAL: .002 YELLOW POLYESTER 3. .001 OVERLAMINATE NON 4. ADHESIVE BACKED SCALE:

Page 2 of 1

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⚠CAUTION ⚠

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DRAWN BY	DATE DRAWN
RJB	11/15/2017
ECN NUMBER	ECN DATE
XXXX	XXXXXXX
PART WEIGHT	REV. LEVEL
0.02 LBS. A	
PART NUMBER	

55073

LOC | QTY | Part # | Description | Size

Material: IJ39 | Lamination: 8518

1: 6039597.Strobe Switch-1.52" x 2.07"

DISTILL DISTILL
GRAPHIC SOLUTIONS
GRAPHIC SOLUTIONS

STROBE

DISTILL SOLUTIONS



Note: Part will not be weeded, just cut.

Kit# 8001872 | Adrian Steel Part # 55073

O6/O1/2O23 • **JY** 2022 DISTYLL Graphics Solutions. All rights reserved.

ASCO REV.1 6/14/2023

DISTVII	CLIENT NAME:		Switch Decals	O-ID: O15319-1
	Adrian Steel	DESIGNER:		Rev #: XXXX
FINAL DESIGN	O5/31/2O23	TRN		Opt #: A

Please check information to confirm accurate vehicle specifications.

CLEANING INSTRUCTIONS All surfaces must be considered contaminated. Clean the vehicle surface immediately before applying the film. Dust and other contaminates can collect quickly on the surface and prevent the film from adhering properly. Even a freshly painted surface can collect dust before graphics can be applied.

For the best success with the films recommended for vehicle graphics, always apply the graphics when the air and vehicle surface are both above 60°F (16°C) and below 90°F (32°C) before beginning the installation.

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:

This is also from HellermannTyton: Their Part Number is 156-00592



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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

 $0.0 = \pm .062$ $0.00 = \pm .031$

 $0.000 = \pm .015$ Material Thickness: per ASTM Std. Weld Callouts per AWS

RELEASE & REVISIONS

22671 **INITIAL ECN:**

CURRENT ECN: 22671

ECN DESCRIPTION:

REVISED BY: EMS

RELEASE TO PRODUCTION

PURCHASED COMPONENT

Fastenal

REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER 0787863

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

PRINTED DOCUMENT IS UNCONTROLLED

Sheet 1 of 1

ADRIAN STEEL

ADRIAN STEEL COMPANY 906 JAMES STREET, ADRIAN, MI 49221

REVISION LEVEL

MAT'L USED:

DESIGNED BY: EMS

PART / PRODUCT IDENTIFICATION

Clip, Black UV Tie, HellermannTyton

WEIGHT (Lbs.): 0.5

SEGMENT ELE

DESCRIPTION OF REQUIREMENTS

DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING)

N/A

LOAD/RATING REQUIREMENT

N/A

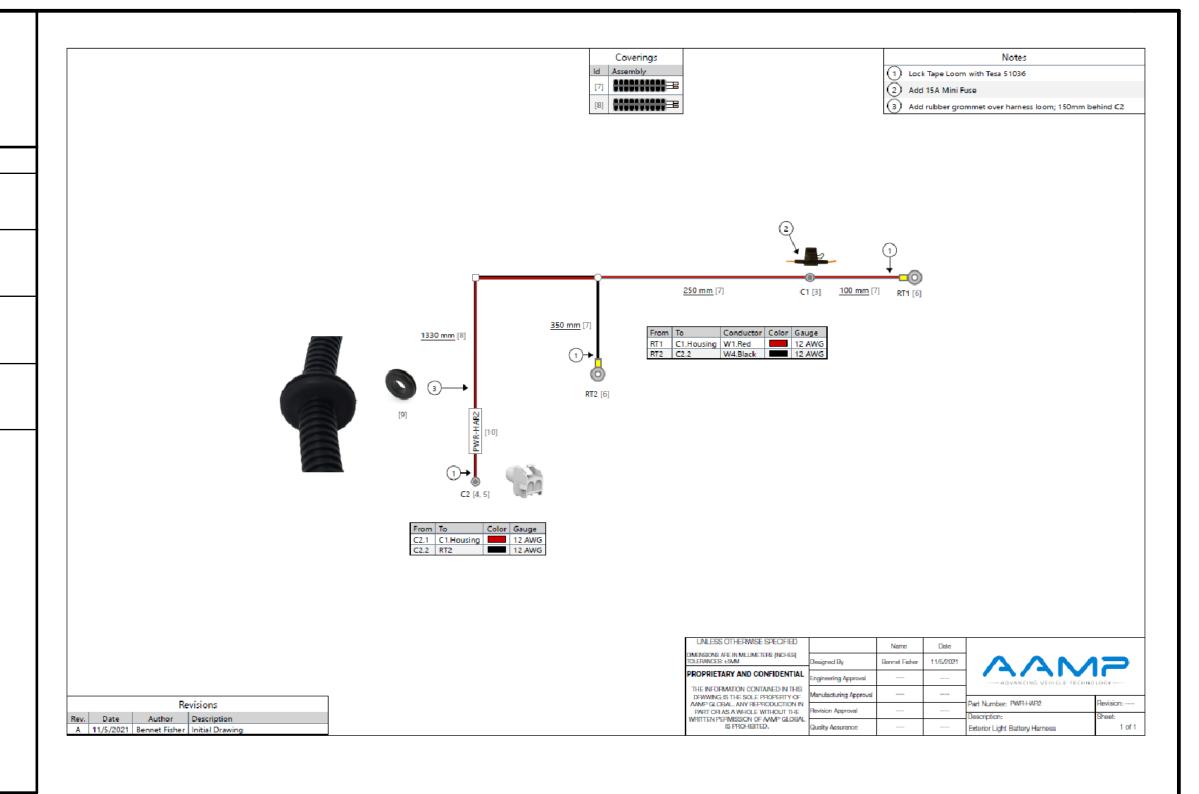
MATERIAL REQUIREMENT

N/A

PACKAGING REQUIREMENT

N/A

OTHER REQUIREMENTS



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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

HOLES/SLOTS $0.0 = \pm .062$ $0.00 = \pm .031$ $0.00 = \pm .062$ $0.000 = \pm .031$ 0.000 = + .015

Material Thickness: per ASTM Std. Weld Callouts per AWS

RELEASE & REVISIONS

INITIAL ECN: 25378

CURRENT ECN: 25378

ECN DESCRIPTION:

RELEASE FOR PRODUCTION

REVISED BY

PURCHASED COMPONENT

REFERENCED SUPPLIER AND/OR MANUFACTURER AAMP GLOBAL

67093 OR PWR-HAR2

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.)

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Sheet 1 of 1

ADRIAN STEEL

ADRIAN STEEL COMPANY 906 JAMES STREET, ADRIAN, MI 49221

PART / PRODUCT IDENTIFICATION

REVISION LEVEL

PURCHASED MAT'L USED: DESIGNED BY: E.BURKE

POWER HARNESS EXTERIOR 2

WEIGHT (Lbs.): **0.2** SEGMENT ELE

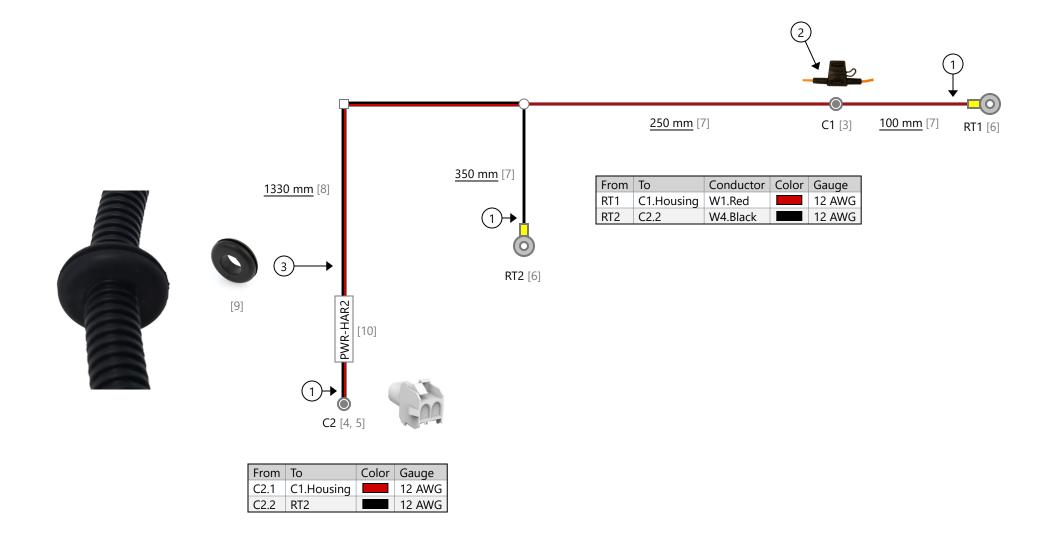
Coverings

Id Assembly

[7]

Notes

- 1) Lock Tape Loom with Tesa 51036
- (2) Add 15A Mini Fuse
- 3) Add rubber grommet over harness loom; 150mm behind C2



UNLESS OTHERWISE SPECIFIED		Name	Date	
DIMENSIONS ARE IN MILLIMETERS [INCHES] TOLERANCES: ±5MM	Designed By	Bennet Fisher	11/5/2021	
PROPRIETARY AND CONFIDENTIAL	Engineering Approval			
DIAWING IS THE SOLETHOLETTI OF	Manufacturing Approval			ŀ.
AAMP GLOBAL. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE	Revision Approval			1
WRITTEN PERMISSION OF AAMP GLOBAL IS PROHIBITED.	Quality Assurance			F

ADVANCING VEHICLE TECHNO	
Part Number: PWR-HAR2	Revision:
Description:	Sheet:
Exterior Light Battery Harness	1 of 1

Revisions				
Rev.	Date	Author	Description	
Α	11/5/2021	Bennet Fisher	Initial Drawing	

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



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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

 $0.0 = \pm .062$ $0.00 = \pm .031$

 $0.000 = \pm .015$ Material Thickness: per ASTM Std. Weld Callouts per AWS

RELEASE & REVISIONS

INITIAL ECN: 25378

CURRENT ECN: 25378

ECN DESCRIPTION:

RELEASE FOR PRODUCTION

REVISED BY:

PURCHASED COMPONENT

REFERENCED SUPPLIER AND/OR MANUFACTURER **AAMP GLOBAL**

REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER SSW-HAR1 OR 67097

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.)

PRINTED DOCUMENT IS UNCONTROLLED

PART / PRODUCT IDENTIFICATION



ADRIAN STEEL

ADRIAN STEEL COMPANY 906 JAMES STREET, ADRIAN, MI 49221

REVISION LEVEL

Sheet 1 of 1

MAT'L USED:

PURCHASED

DESIGNED BY: E.BURKE

SWITCH HARNESS 1 EXTERIOR LIGHTING

WEIGHT (Lbs.): **0.2**

SEGMENT ELE

Coverings

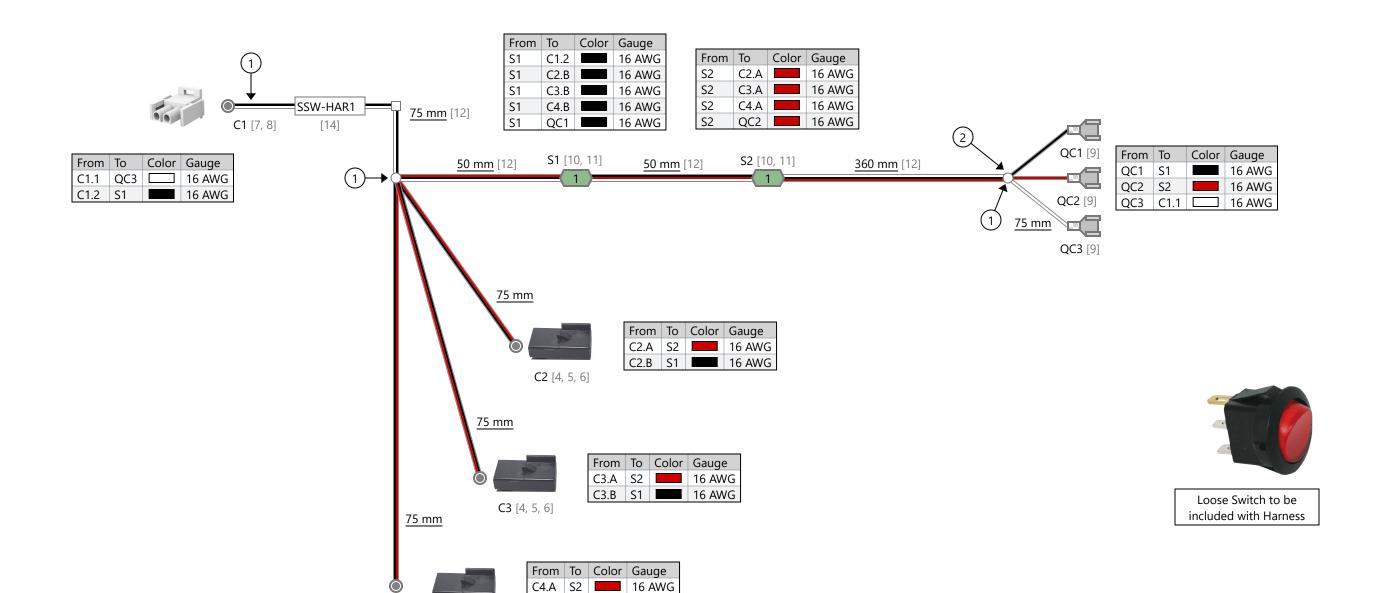
Id Assembly

[12]

Notes

1) Lock Tape Loom with Tesa 51608

(2) 75mm between end of loom and Quick Connects



C4.B S1 16 AWG

UNLESS OTHERWISE SPECIFIED		Name	Date	
DIMENSIONS ARE IN MILLIMETERS [INCHES] TOLERANCES: ±5MM	Designed By	Bennet Fisher	11/5/2021	
PROPRIETARY AND CONFIDENTIAL	Engineering Approval			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF	Manufacturing Approval			
AAMP GLOBAL. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE	Revision Approval			Part Nur Descript
WRITTEN PERMISSION OF AAMP GLOBAL IS PROHIBITED.	Quality Assurance			Strobe S

ADVANCING VEHICLE TECHNO	
Part Number: SSW-HAR1	Revision:
Description:	Sheet:
Strobe Switch Harness - 3 Outputs	1 of 1

Revisions				
Rev.	Date	Author	Description	
Α	11/5/2021	Bennet Fisher	Initial Drawing	

DESCRIPTION OF REQUIREMENTS

DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING)

LOAD/RATING REQUIREMENT

MATERIAL REQUIREMENT

N/A

PACKAGING REQUIREMENT

N/A

OTHER REQUIREMENTS



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OLERANCES & INSPECTION UNLESS OTHERWISE SPECIFIED

ALL BEND ANGLES ARE 90 DEGREES ALL DIMENSIONS ARE IN INCHES. REFERENCE DIMENSIONS (X.XXX) DO NOT REQUIRE INSPECTION

HOLES/SLOTS 0.0 = ± .062 0.00 = ± .031 0.000 = ± .015

Material Thickness: per ASTM Std. Weld Callouts per AWS

RELEASE & REVISIONS

INITIAL ECN: 25378

CURRENT ECN: 26321

ECN DESCRIPTION:

REVISED BY:

RELEASE FOR PRODUCTION

PURCHASED COMPONENT

REFERENCED SUPPLIER AND/OR MANUFACTURER **AAMP GLOBAL**

REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER
BLB-HAR1 OR 67111

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.)

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Sheet 1 of 1

PART / PRODUCT IDENTIFICATION



ADRIAN STEEL COMPANY 906 JAMES STREET, ADRIAN, MI 49221

REVISION LEVEL

PURCHASED DESIGNED BY: E.BURKE MAT'L USED:

BEACON/LIGHTBAR HARNESS 1

WEIGHT (Lbs.): SEGMENT EBE PART NUMBER: **67111** 0.2

Bill of Materials						
Id	Туре	Manufacturer	Part Number	Quantity		
1	Cable		16AWG 2C FT2 TPU Cable	4620 mm		
2	Connector	Aptiv	12047663	1		
3	Contact	Aptiv	12047581	2		
4	Lock	Aptiv	12047665	1		
5	Heat Shrink		Adhesive-Lined Heat Shrink	2		
6	Connector	TE Connectivity	282080-1	1		
7	Contact	TE Connectivity	282110-1	2		
8	Wire Seal	TE Connectivity	281934-2	2		
9	Connector	TE Connectivity	282104-1	1		
10	Wire Seal	TE Connectivity	282081-1	2		
11	Label		Heat Shrink Style Label	1		

- Heat shrink cable jacket and wire 20mm behind connector (Heat shrink = 38mm long)
- Place adhesive lined heat shrink over C2 connector wire cavities and cable jacket (Heat shrink = 38mm long)
- 3 Plug C3 into C2
- 4 C3 Cavities are sealed





From To Color Gauge			
C1.A C2.1 16 AWG C1.B C2.2 16 AWG	BLB-HAR1 REV. B	4620 mm	
	C1 [2, 3, 4, 5]		C2 [5, 6, 7, 8]

From	То	Color	Gauge
C2.1	C1.A		16 AWG
C2.2	C1.B		16 AWG



Revisions				
Rev.	Date	Author	Description	
	11/5/2021	Bennet Fisher	Initial Drawing	
	3/21/2022	Bennet Fisher	Added 300mm to harness; changed female connector	
Α	4/26/2022	Bennet Fisher	Added adhesive lined heat shrink to C2	
В	4/3/2023	Bennet Fisher	Removed cable gland from harness	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS [INCHES]		Name	Date
OLERANCES: ±5MM PROPRIETARY AND CONFIDENTIAL	Designed By	Bennet Fisher	04/26/2022
THE INFORMATION CONTAINED IN THIS	Engineering Approval		
DRAMINIC IS THE SOLE DRODEDTY OF	Manufacturing Approval		
PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF AAMP GLOBAL	Revision Approval		
IS PROHIBITED.	Quality Assurance		

A	A	M	
—— ADVA	NCING VEHI	CLE TECHNOL	OGY —

Part Number: BLB-HAR1 REV. B_	Revision: B
Description:	Sheet:
Beacon/Light Bar Harness - 4.62 Meters	1

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

WHELEN LIGHTBAR: R2LPPCA WITH EXTERIOR PLUG AND PLAY CONNECTOR **CLEAR LENS AMBER LED'S**

CUSTOM R2LPPCA WITH W446, WPF. 2 SOCK CONNECTR KIT AMP WITH LOOM / GROMET / PATTERN WIRE TAPE / SETTING OF THE PATTERN

WHELEN PART NUMBER: R2LPPCA-AS CUSTOM / 01-0689088C1P0





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TOLERANCES & INSPECTION

UNLESS OTHERWISE SPECIFIED

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ALL DIMENSIONS ARE IN INCHES.

REFERENCE DIMENSIONS (X.XXX) DO NOT REQUIRE INSPECTION

HOLES/SLOTS $0.0 = \pm .062$ $0.00 = \pm .031$ $0.000 = \pm .015$

Material Thickness: per ASTM Std. Weld Callouts per AWS

RELEASE & REVISIONS

INITIAL ECN: 25921

CURRENT ECN: 28678

ECN DESCRIPTION:

Add Updated Part Number to PPDS

REVISED BY: LJK

PURCHASED COMPONENT

REFERENCED SUPPLIER AND/OR MANUFACTURER WHELEN

REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER R2LPPCA-AS CUSTOM / 01-0689088C1P0

COLOR (ONLY LIST IF COLOR SPECIFIC) **CLEAR LENS / AMBER LED'S**

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

PRINTED DOCUMENT IS UNCONTROLLED

PART / PRODUCT IDENTIFICATION

ADRIAN STEEL

ADRIAN STEEL COMPANY 906 JAMES STREET, ADRIAN, MI 49221

Sheet 1 of 1

REVISION LEVEL

MAT'L USED: PURCHASED

DESIGNED BY: EMB

WHELEN LP LGHTBR AM W/CON

WEIGHT 1.5

SEGMENT EBE

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

ACARI CHMSL NO DRILL MOUNT FOR RANGER TRUCKS **SUPERCREW AND SUPERCAB**

AT-FORD-R KIT

INCLUDES MOUNTING HARDWARE

DOES NOT INCLUDE LIGHTBAR



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 $0.0 = \pm .062$ $0.00 = \pm .031$

 $0.000 = \pm .015$ Material Thickness: per ASTM Std. Weld Callouts per AWS

RELEASE & REVISIONS

INITIAL ECN: 25934

CURRENT ECN: 25934

ECN DESCRIPTION:

RELEASE TO PRODUCTION

REVISED BY: N/A

PURCHASED COMPONENT

REFERENCED SUPPLIER AND/OR MANUFACTURER ACARI

REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER AT-FORD-R

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

PRINTED DOCUMENT IS UNCONTROLLED

PART / PRODUCT IDENTIFICATION

ADRIAN STEEL

ADRIAN STEEL COMPANY 906 JAMES STREET, ADRIAN, MI 49221

REVISION LEVEL

Sheet 1 of 1

MAT'L USED: PURCHASED

DESIGNED BY: EMB

MOUNT, CHMSL RANGER

WEIGHT 5.00

SEGMENT EBE

DESCRIPTION OF REQUIREMENTS

DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING)

N/A

LOAD/RATING REQUIREMENT

N/A

MATERIAL REQUIREMENT

N/A

PACKAGING REQUIREMENT

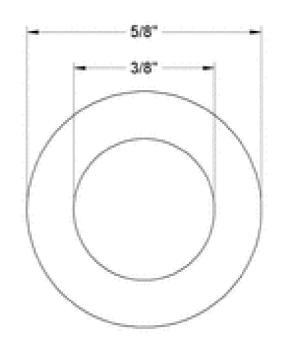
N/A

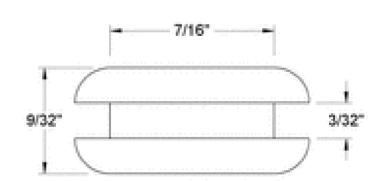
OTHER REQUIREMENTS

RUBBER GROMMET: MCMASTER-CARR 9600K33

INNER DIAMATER: 3/8"

PANEL HOLE DIAMETER: 7/16" PANEL THICKNESS: 3/23"







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TOLERANCES & INSPECTION

UNLESS OTHERWISE SPECIFIED

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REFERENCE DIMENSIONS (X.XXX) DO NOT REQUIRE INSPECTION

HOLES/SLOTS

 $0.0 = \pm .062$ $0.00 = \pm .031$ $0.000 = \pm .015$

Material Thickness: per ASTM Std. Weld Callouts per AWS

RELEASE & REVISIONS

INITIAL ECN: 26411

CURRENT ECN: 26411

ECN DESCRIPTION:

RELEASE TO PRODUCTION

REVISED BY: N/A

PURCHASED COMPONENT

REFERENCED SUPPLIER AND/OR MANUFACTURER MCMASTR-CARR

REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER 9600K33

COLOR (ONLY LIST IF COLOR SPECIFIC) **BLACK/RUBBER**

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

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Sheet 1 of 1

ADRIAN STEEL

ADRIAN STEEL COMPANY 906 JAMES STREET, ADRIAN, MI 49221



MAT'L USED: PURCHASED

DESIGNED BY: EMB

PART / PRODUCT IDENTIFICATION

GROMMET,3/8"ID 7/16"OD

WEIGHT 0.01

SEGMENT CODE: **EBE**