

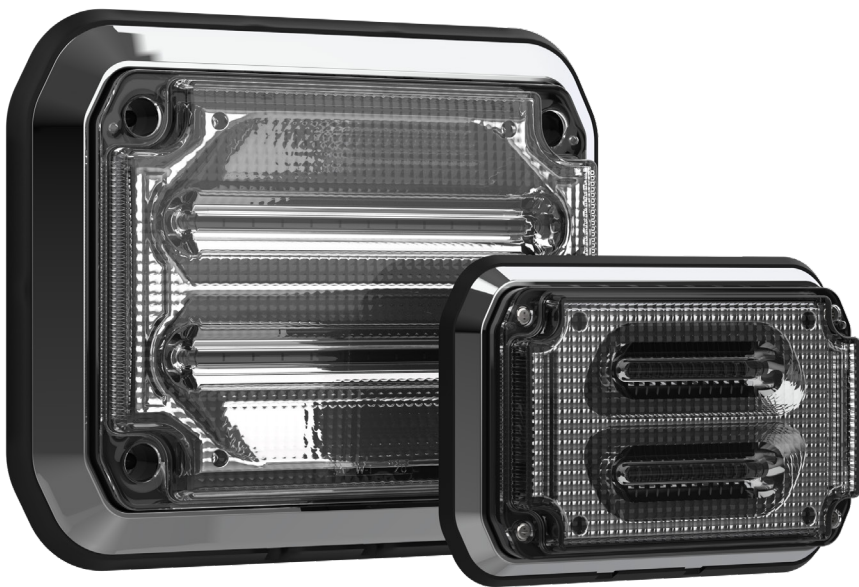


# HVC GUARDIAN WARNING LIGHT SERIES INSTRUCTION MANUAL

## HVC Guardian & Guardian Junior Warning

FT-HVC-GSM-WN & FT-HVC-GSMJR-WN Models

MANUAL VERSION 1.2 (March 25, 2024)



Hiviz Lighting, Inc  
Phone: 703-662-3458  
Email: [firetech@hivizleds.com](mailto:firetech@hivizleds.com)  
PO Box 565, Naples, NC 28760



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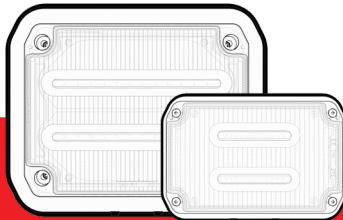
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## FT-HVC GUARDIAN WARNING SERIES



# SAFETY NOTICE & WARRANTY

**WARNING: INSTALLATION MUST BE CONDUCTED BY A QUALIFIED TECHNICIAN.  
IMPROPER INSTALLATION CAN RESULT IN INJURY OR DEATH.**

- Installation must be conducted by a qualified automotive electrician or emergency vehicle technician in accordance with the applicable NFPA standard(s) and procedures (Including but not limited to NFPA 1901, 1906, 1911, 414, 1900)
- Improperly installed, aimed, or operated lights can create significant hazard to motorists which can result in collision. Ensure light fixtures are installed and operated such that their beam does not shine into oncoming traffic
- All circuits must be fused at 125% of the rated power consumption of the loads on the circuit
- A voltage drop greater than 10% in the power feed to a fixture could be an indicator of an under-sized conductor. Use of improperly sized conductors will, at a minimum, result in poor performance, and at a maximum could result in fire
- Verify input voltage is within fixture range before installation. Voltage range information can be found in this manual or printed on the fixture body
- The use of personal protective equipment (safety glasses and gloves) is highly recommended
- Allow proper cooling time before handling the fixture if it has been installed & powered to prevent burns
- Any modifications to the fixture will void warranty and are not authorized by the manufacturer
- Always inspect the fixture for any damage prior to installing and DO NOT install if any damage is present

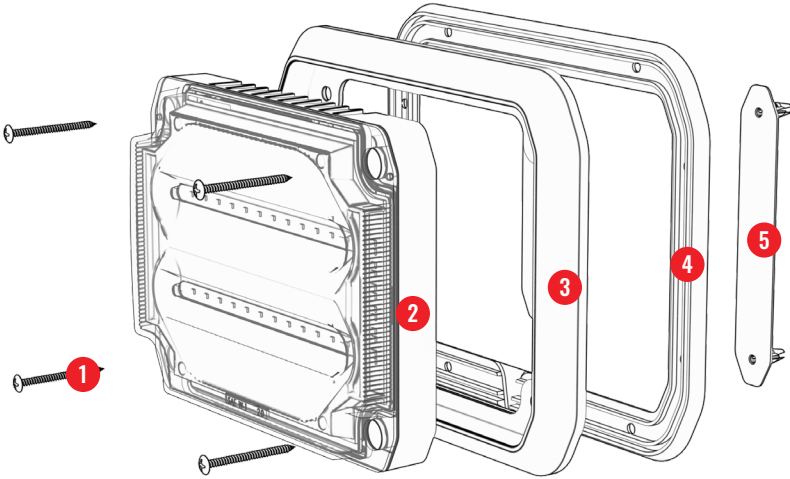


**Warranty Information: Full policy available Online at [hivizleds.com/warranty](http://hivizleds.com/warranty)**

- Proof of purchase may be required to validate warranty. All FireTech products are warranted for the useful service life of the vehicle for which they were first installed
- Improper installation, accident, physical damage, neglect, and normal wear and tear are not covered under warranty
- Lights operated in environments over 150° Fahrenheit are not covered under warranty
- All advance-exchange warranty claims must be validated with HiViz Technical Support prior to issuance of a shipping label. Failure to return defective product will result in an invoice for the full replacement value of the product
- HiViz Lighting will repair or replace defective product at its discretion. Replacement product will be in similar or better cosmetic condition than the defective part.
- Warranties should be handled through the dealer/reseller the product was purchased from; customer is responsible for delivery
- If product is found to have damage not covered under warranty, customer will be responsible for return shipping charges and/or cost of repair
- Non-warranted items can be repaired at the customer's expense of parts and labor, at the discretion of HiViz LED Lighting, who will provide an estimated repair cost before proceeding with the repair.



# HVC GUARDIAN WARNING LIGHT ASSEMBLY



## PIECES INCLUDED

- 1** Screws (4)  
P/N: ASC872
- 2** Light Fixture
- 3** Bezel  
P/N: AHOSMCR
- 4** Gasket  
P/N: AGKSMBK
- 5** Isolator  
P/N: AWPSMBK

## TOOLS REQUIRED

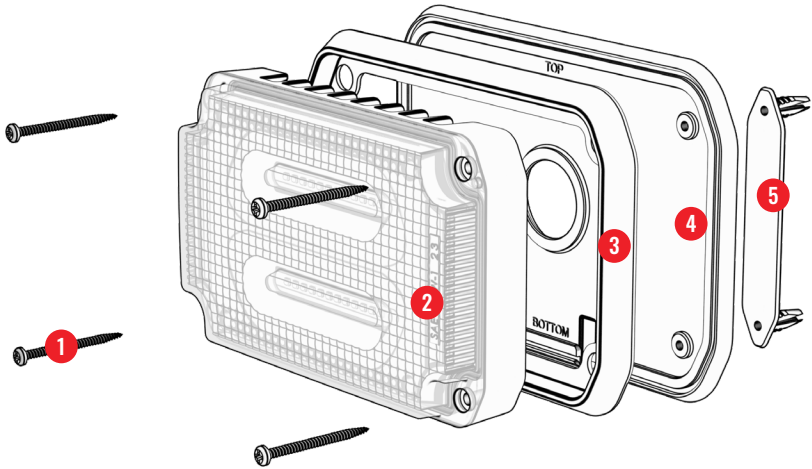
- Phillips Screwdriver
- Heat-shrink butt connectors
- Wire Strippers

### NOTE:

Tighten screws by hand/screwdriver.  
Power-tools can cause damage to isolators  
and cause an insecure attachment.



# HVC GUARDIAN JR WARNING LIGHT ASSEMBLY



## PIECES INCLUDED

- 1** Screws (4)  
P/N: ASC495
- 2** Light Fixture
- 3** Bezel  
P/N: AHOSMJCR
- 4** Gasket  
P/N: AGKSMJBK
- 5** Isolator  
P/N: AWPSMJBK

## TOOLS REQUIRED

- Phillips Screwdriver
- Heat-shrink butt connectors
- Wire Strippers

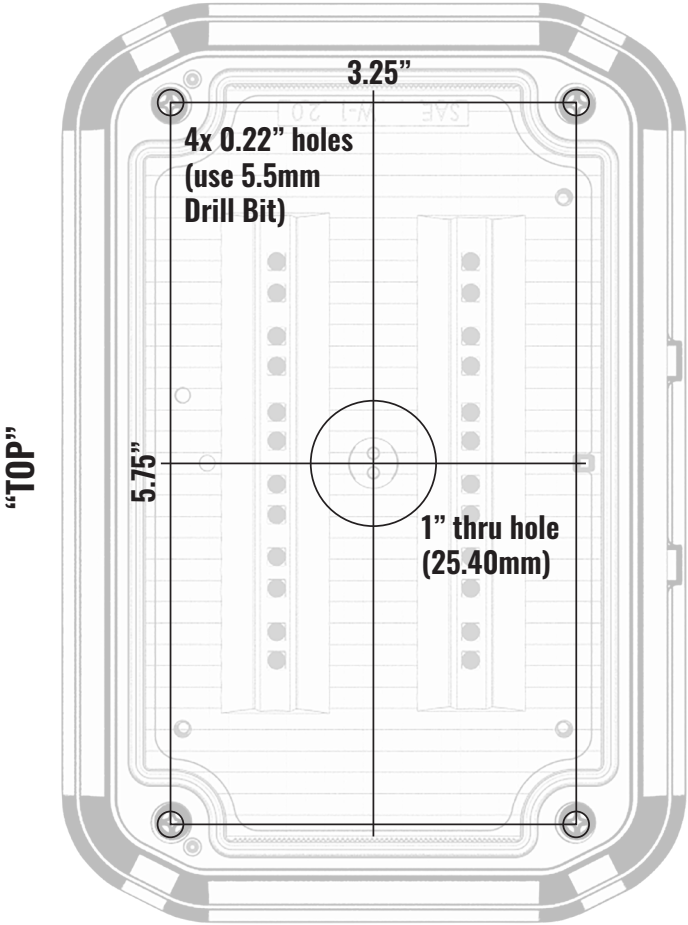
### NOTE:

Tighten screws by hand/screwdriver.  
Power-tools can cause damage to isolators  
and cause an insecure attachment.



# MOUNTING DIMENSIONS

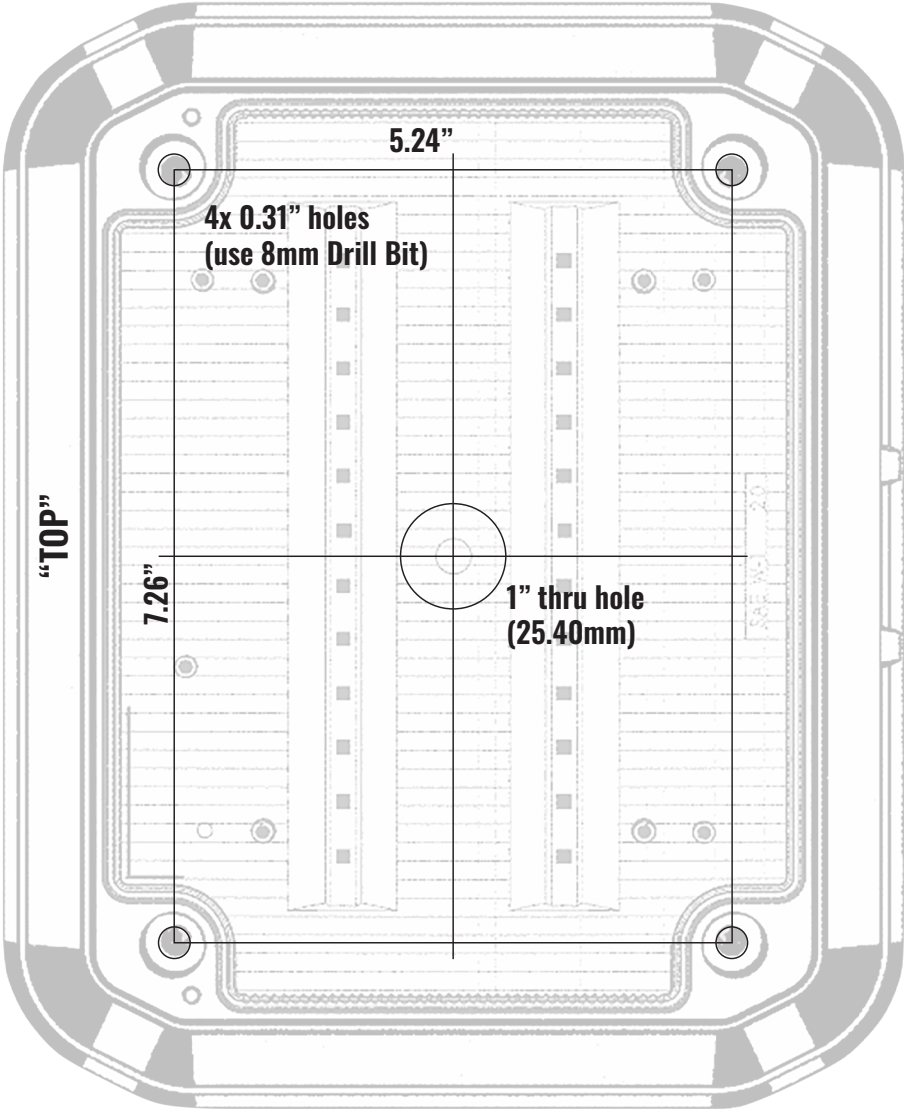
\*Please see template on separate full size pieces of paper included in package to use. The template below is NOT to scale.



**GUARDIAN JR WARNING: 7.48" X 5.11"**



**\*Please see template on separate full size pieces of paper included in package to use. The template below is NOT to scale.**

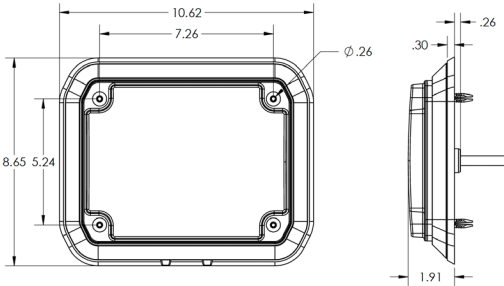


**GUARDIAN WARNING: 10.66" X 8.69"**



# TECHNICAL SPECIFICATIONS

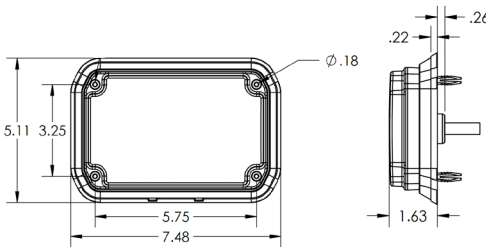
## HVC GUARDIAN WARNING LIGHT



### HVC GUARDIAN WARNING LIGHT

DIMENSIONS	10.62" X 8.65" X 1.91"
WEIGHT	4.4 LBS.
BEZEL	CHROME OR BLACK
INPUT VOLTAGE	11-16V DC
CERTIFICATIONS	SAE J595 CLASS 1; SAE J578; NFPA 1901
LED COLOR OPTIONS	RED, BLUE, AMBER, WHITE, RED/GREEN, RED/BLUE, BLUE/AMBER, AMBER/GREEN, AMBER/WHITE, BLUE/GREEN, BLUE/WHITE, RED/AMBER, RED/WHITE, WHITE/GREEN

## HVC GUARDIAN JR WARNING LIGHT



### HVC GUARDIAN JR WARNING LIGHT

DIMENSIONS	7.48" X 5.11" X 1.63"
WEIGHT	1.7 LBS.
BEZEL	CHROME OR BLACK
INPUT VOLTAGE	11-16V DC
CERTIFICATIONS	SAE J595 CLASS 1; SAE J578; NFPA 1901
LED COLOR OPTIONS	RED, BLUE, AMBER, WHITE, RED/GREEN, RED/BLUE, BLUE/AMBER, AMBER/GREEN, AMBER/WHITE, BLUE/GREEN, BLUE/WHITE, RED/AMBER, RED/WHITE, WHITE/GREEN

## GUARDIAN JR. & GUARDIAN WARNING OPTIONAL ACCESSORIES



### GUARDIAN JR. BLACKOUT BEZEL

P/N: P-GSMJR-BOBEZEL

Matte black replacement bezel for FireTech Guardian Jr Series Product.



### GUARDIAN BLACKOUT BEZEL

P/N: P-GSM-BOBEZEL

Matte black replacement bezel for FireTech Guardian Series Product.



### GUARDIAN RETROFIT GASKET

P/N: P-GSM-RGKIT

For replacing older style fixture or halogen side scene light. Covers old or oversized holes in the body.



### GUARDIAN BEZEL DELETE GASKET

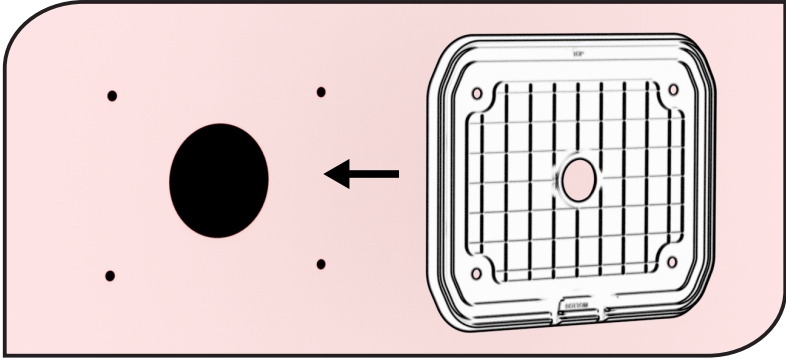
P/N: P-GSM-BDKIT

Allows installation of Guardian/Guardian Elite without chrome bezel for a reduced mounting profile.





# WHEN AND HOW TO USE A RETROFIT GASKET



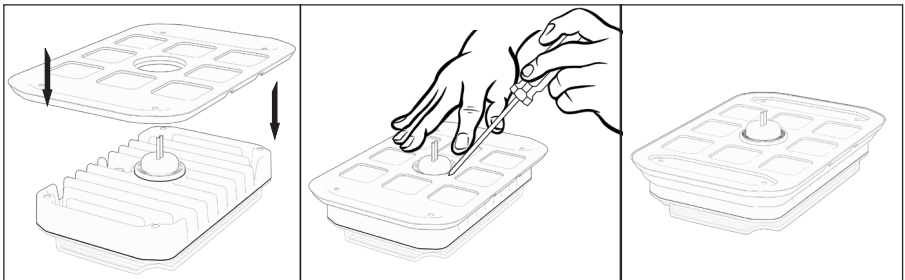
For Guardian full size fixtures: If an older light is removed and a large hole is left in its place, a **retrofit gasket kit** will be required (the standard fitment requires exact hole sizes for proper water ingress protection).

## HOW TO SEAT A RETROFIT GASKET

When using the Retrofit Gasket, or any Guardian Junior product, it is important to ensure the gasket seats properly under the wire bushing on the back of the fixture for a water-tight seal.

To install the gasket around the bushing:

1. Line the gasket, fixture, and bezel up in place (be sure drain holes are at the BOTTOM).
2. On the gasket, push the rubber material **down and underneath** the bushing on the back of the light. Pulling on the corners of the gasket to stretch the rubber material and allow for the gasket to seat is helpful.
3. The gasket needs to be hooked over top of the light. **If needed**, use a flat screwdriver to work the gasket around until it seats in place.



Step 1

Step 2

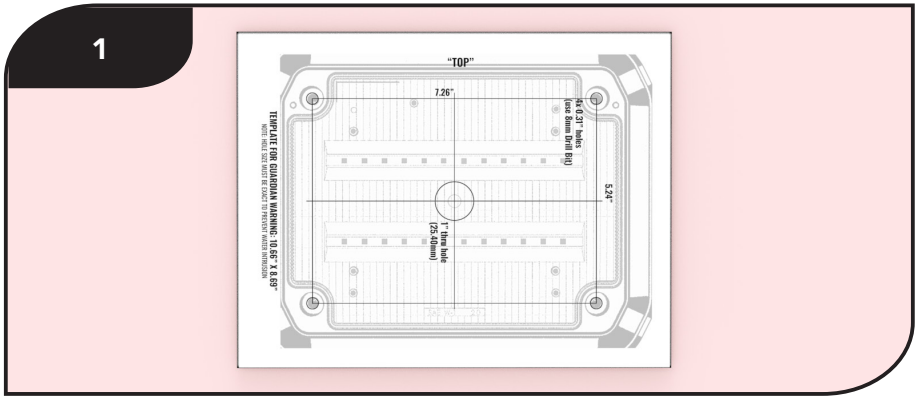
Step 3



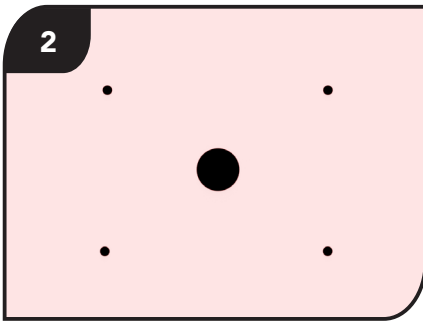
# INSTALLATION INSTRUCTIONS



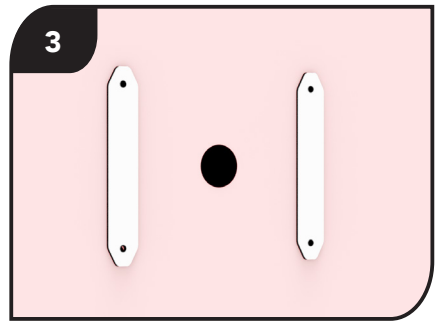
**WARNING: TURN OFF POWER BEFORE WIRING**



Using the included full size mounting template, measure and mark the holes using a permanent marker, check to be sure there is no wiring or other critical infrastructure behind the mounting location (and that you have adequate access to run wiring) then center punch (**measure twice, cut once**).



Drill holes. Exact diameters are important for water sealing and secure mounting.



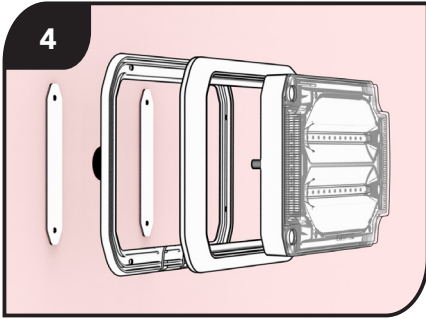
Once holes have been drilled, install the **isolators** (they prevent the light fixture and mounting hardware from coming in contact with the body, preventing galvanic corrosion), a rubber mallet can be used to pop them in place.



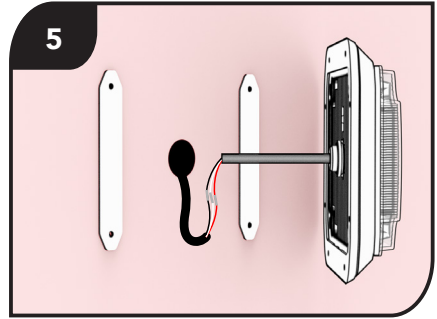
# INSTALLATION INSTRUCTIONS (CONT.)



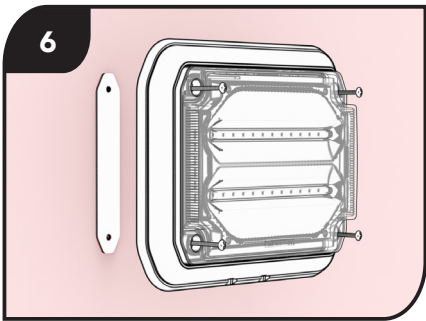
**WARNING: TURN OFF POWER BEFORE WIRING**



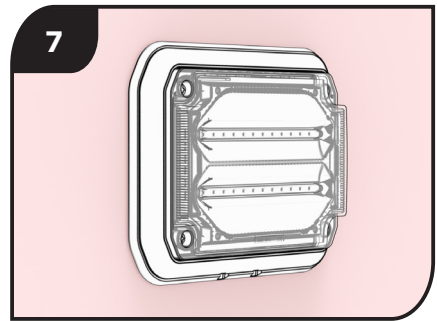
**Install the gasket on your bezel and the bezel with your fixture before connecting wiring.** Be sure the gasket drains are at the bottom.



Connect wiring from HVC Zone Module or OMEN end module/ beacon to the HVC Guardian fixture (it may be necessary to have a second person hold the light while you connect the wiring). Be sure to leave a service loop (slack in the wire) to allow for removal and re-installation if needed.



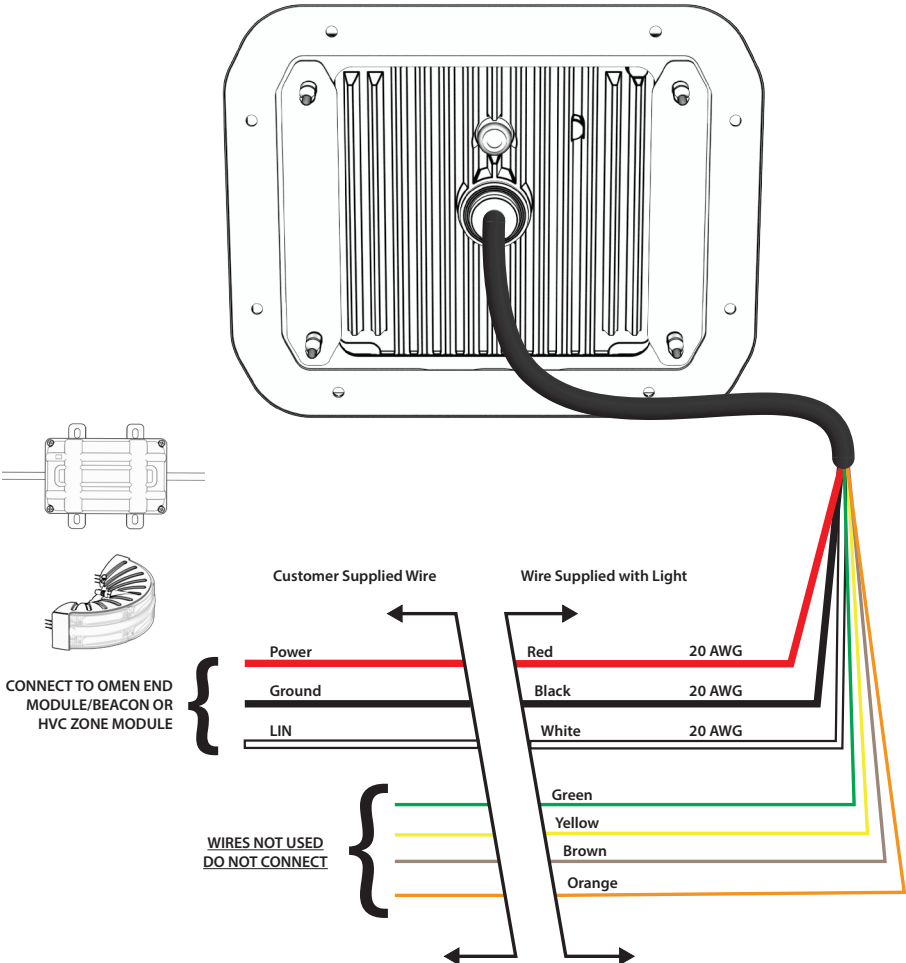
Align fixture with isolators and install fixture **using included mounting screws**. Use a manual screwdriver to prevent damage to the isolators.



Installation complete.



# WIRING INFORMATION





Below, **Blue Sea Systems** has provided a chart documenting proper wire size selections for automotive applications. NFPA 1901 13.2.1.1 allows for up to 10% voltage drop on automotive fire apparatus. Please be sure to reference proper conductor size below. Visit [blueseas.com](http://blueseas.com) for more information.

“Printed with permission of **Advanced System Group**”

CIRCUIT LENGTH	CIRCUIT TYPE		CURRENT FLOW IN AMPS															
	10% VOLTAGE DROP Non Critical	3% VOLTAGE DROP Critical	5A	10A	15A	20A	25A	30A	40A	50A	60A	70A	80A	90A	100A	120A	150A	200A
0 to 20 ft.	0 to 6.1 M	0 to 6 ft.																
30 ft.	9.1 M	10 ft.	16 AWG	14 AWG	14 AWG	14 AWG	12 AWG	10 AWG	8 AWG	6 AWG	6 AWG	6 AWG	4 AWG	4 AWG	4 AWG	2 AWG	1 AWG	210 AWG
50 ft.	15.2 M	15 ft.	12 AWG	12 AWG	10 AWG	10 AWG	8 AWG	8 AWG	6 AWG	6 AWG	4 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG	1 AWG	210 AWG
65 ft.	19.8 M	20 ft.	10 AWG	10 AWG	8 AWG	8 AWG	6 AWG	6 AWG	6 AWG	4 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG	1 AWG	1 AWG	210 AWG
80 ft.	24.4 M	25 ft.	8 AWG	8 AWG	6 AWG	6 AWG	6 AWG	6 AWG	4 AWG	4 AWG	4 AWG	2 AWG	2 AWG	2 AWG	1 AWG	1 AWG	1 AWG	210 AWG
100 ft.	30.5 M	30 ft.	6 AWG	6 AWG	6 AWG	6 AWG	6 AWG	4 AWG	4 AWG	4 AWG	2 AWG	2 AWG	2 AWG	2 AWG	1 AWG	1 AWG	1 AWG	210 AWG
130 ft.	39.6 M	40 ft.	4 AWG	4 AWG	4 AWG	4 AWG	4 AWG	4 AWG	2 AWG	2 AWG	2 AWG	2 AWG	2 AWG	2 AWG	1 AWG	1 AWG	1 AWG	210 AWG
165 ft.	50.3 M	50 ft.	2 AWG	2 AWG	2 AWG	2 AWG	2 AWG	2 AWG	2 AWG	2 AWG	2 AWG	2 AWG	2 AWG	2 AWG	1 AWG	1 AWG	1 AWG	210 AWG
200 ft.	61.0 M	60 ft.	1 AWG	1 AWG	1 AWG	1 AWG	1 AWG	1 AWG	1 AWG	1 AWG	1 AWG	1 AWG	1 AWG	1 AWG	1 AWG	1 AWG	1 AWG	210 AWG
		70 ft.	21.3 M															
		80 ft.	24.4 M															
		90 ft.	27.4 M															
		100 ft.	30.5 M															
		110 ft.	33.5 M															
		120 ft.	36.6 M															
		130 ft.	39.6 M															

Although this process uses information from ABYC E-11 to recommend wire size and circuit protection, it may not cover all of the unique characteristics that may exist on a boat. If you have specific questions about your installation please consult an ABYC certified installer.

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# HIVIZ CONNECT FULL SYSTEM WIRING MANUAL

## CAN/LIN HiViz Connect Wiring Information



HiViz Lighting, Inc  
Phone: 703-662-3458  
Email: [firetech@hivizleds.com](mailto:firetech@hivizleds.com)  
PO Box 565, Naples, NC 28760

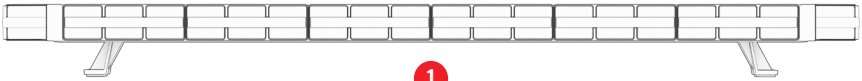


# HVC WARNING LIGHT SYSTEM

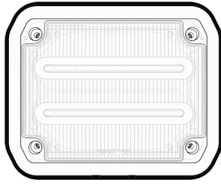
## BASIC COMPONENTS NEEDED

### COMPONENTS

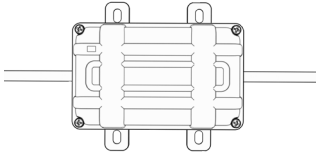
- 1 OMEN Warning Lightbar
- 2 HVC Perimeter Lights
- 3 HVC Zone Modules or OMEN/OMEN Beacons
- 4 CAN Wiring Components (see next page for more)



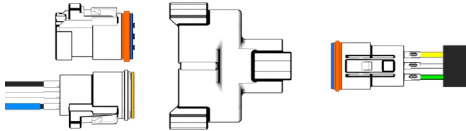
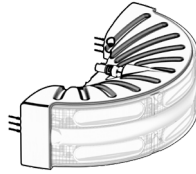
1



2



3



4

**NOTE:**  
Tighten screws by hand/screwdriver.  
Power-tools can cause damage to isolators  
and cause an insecure attachment.



# WIRING TOOLS & PARTS NEEDED



Generic Needle  
Nose Pliers



Machined Pin  
Crimp Tool  
**HDT-48-00**



Generic Wire  
Stripping Tool



Wedglock & Pin  
Removal Tool  
**DT-RT1**



(Assorted) DEUTSCH Size  
16 Gold Plated Solid Socket;  
20-16 AWG  
**0462-201-1631**



Misc. Shielded  
Twisted Pair J1939  
CAN Wire



(4) DEUTSCH DT 3  
Way Gray J1939 "Y"  
Receptacle Connector  
**DT04-3P-P007**



(6) DEUTSCH DT 3  
Way Blue J1939 Plug  
Wedglock (backbone)  
**W3S-1939**



(2) DEUTSCH DT 3 Way  
J1939 Terminating  
Plug Connector with  
120 Ohm Resistor  
**DT06-3S-P006**



(10) DEUTSCH  
DT 3 Way Plug  
Connectors  
**DT06-3S**



(4) DEUTSCH DT 3  
Way Orange Plug  
Wedglock  
**W3S-AS**

These items are not included. Contact your preferred supplier for pricing and availability. If you do not have a supplier visit [waytekwire.com](http://waytekwire.com).  
**Deutsch or Amphenol products can be used.**



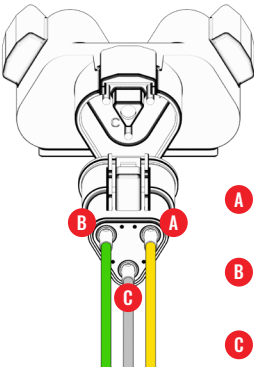
# WIRING INSTRUCTIONS

**Figure A:** Visual of which traditional twisted shielded CAN conductors should be inserted into the proper A, B, and C slots of the plugs.

**Figure B:** When assembling the CAN system you will see that the Y receptacle connector will have compatibility with triangle wedgelock plugs and a circle wedgelock plug. The triangle wedgelock connectors should be used with the CAN backbone and the terminating resistors. The circle wedgelock connector should be used with the CAN conductors coming off of the OMEN and HVC Zone Modules.

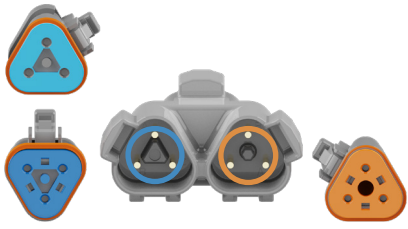
**Figure C:** Shows the components and arrangement required to build a CAN backbone for an OMEN warning lightbar. These components are not included with your lightbar but are available from a variety of manufacturers including waytekwire.com.

**FIGURE A:**  
*CAN WIRING*



- A** CAN High (Yellow)
- B** CAN Low (Green)
- C** CAN Shield (exposed wire)


**FIGURE B:**  
*WEDGELOCK KEY*



Compatible with blue/triangle wedgelocks

Compatible with orange/circle wedgelocks

**FIGURE C:**  
*CAN BACKBONE FOR A SINGLE OMEN LIGHTBAR WITH NO HVC PERIMETER LIGHTS*

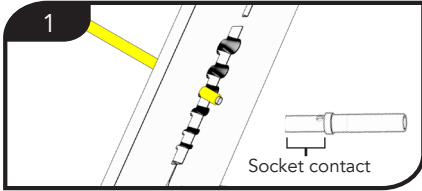


# WIRING INSTRUCTIONS (CONT.)

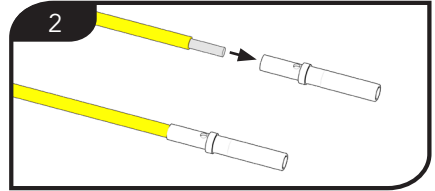
## HOW TO ASSEMBLE DEUTSCH CONNECTORS



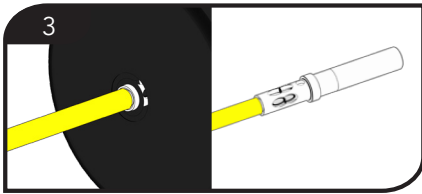
WARNING: TURN OFF POWER BEFORE WIRING



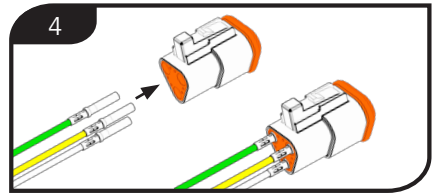
Strip the conductor with your wire strippers just enough so that it will fit inside the socket contact. Ensure that none of the wires inside of the conductor were nicked or broken off.



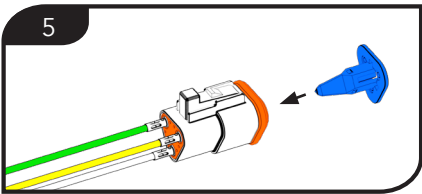
Insert the wire into the socket contact and ensure there are no stray wires sticking out from the socket. You want to see the wires from the hole in the side of the socket. Make sure you don't have wire exposed at the bottom of the socket as well.



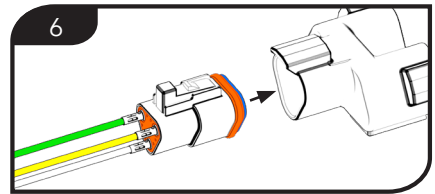
Once you have done the above steps: crimp the socket contact onto the stripped conductor per your crimp tool's instructions.



Insert the socket contact with attached conductor into the rear of the Deutsch connector (see Figures A and B for proper layout). Push until a click is heard and felt. A slight tug will confirm it is in place.



Once all contacts are in place, the wedgelock may be inserted by hand. Press until it clicks into place. The arrow on the wedgelock should point towards the exterior locking mechanism.

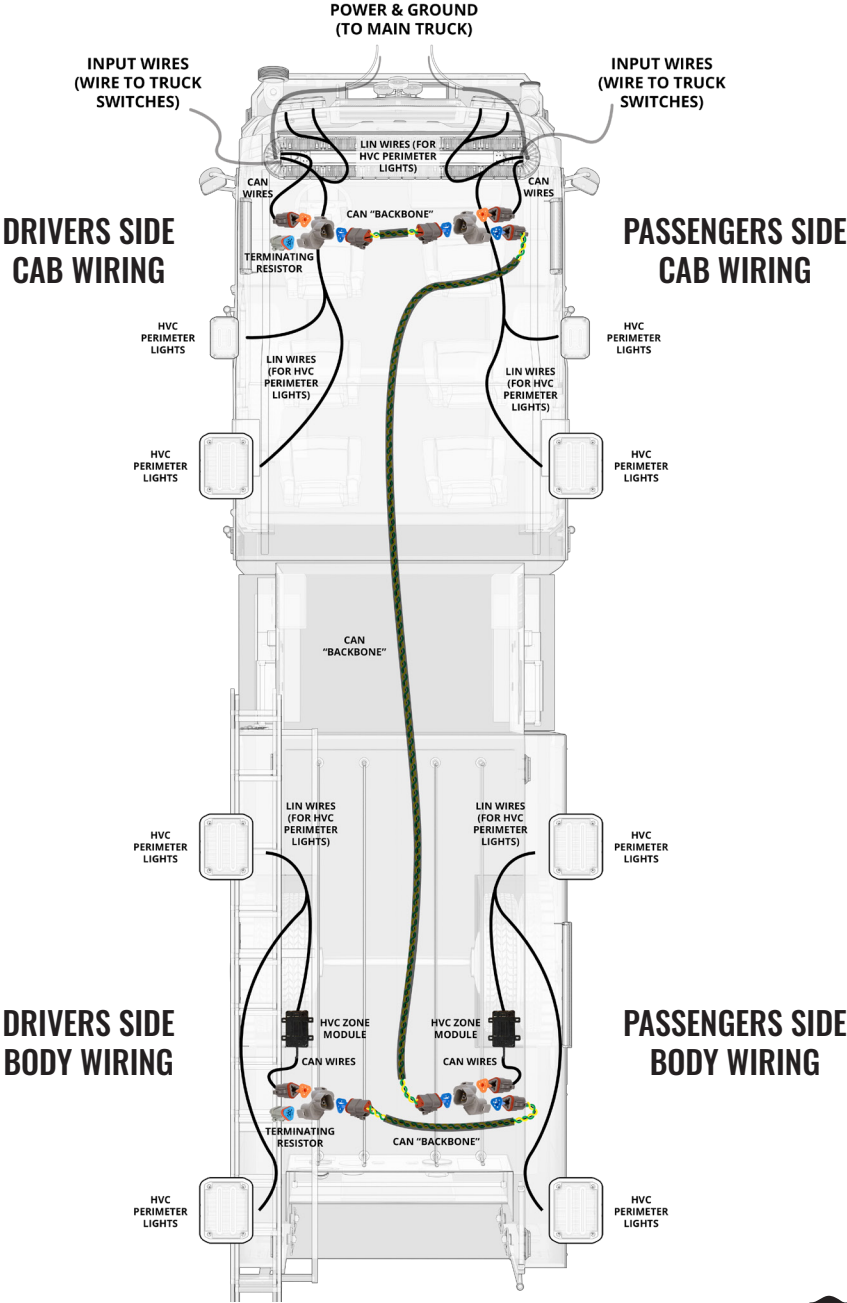


Insert the assembled plug into the correct receiving section of the Y Receiver.

**NOTE:** Use blank sealing plugs (PN A114017) for any holes not used to keep water from entering the connectors. These are available through waytekwire, and other suppliers.



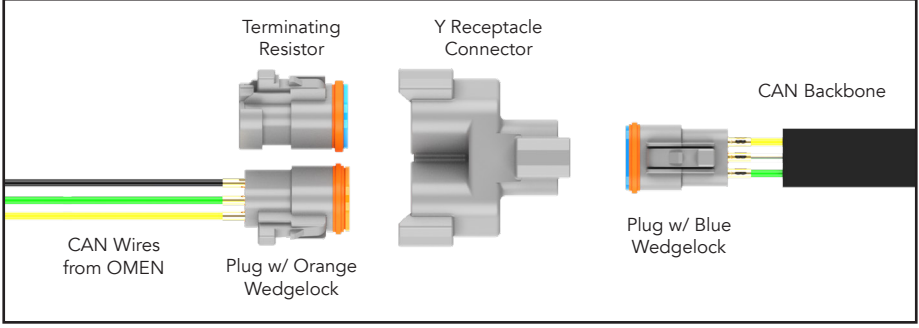
# EXAMPLE #1: CAN/LIN HVC ARCHITECTURE\*



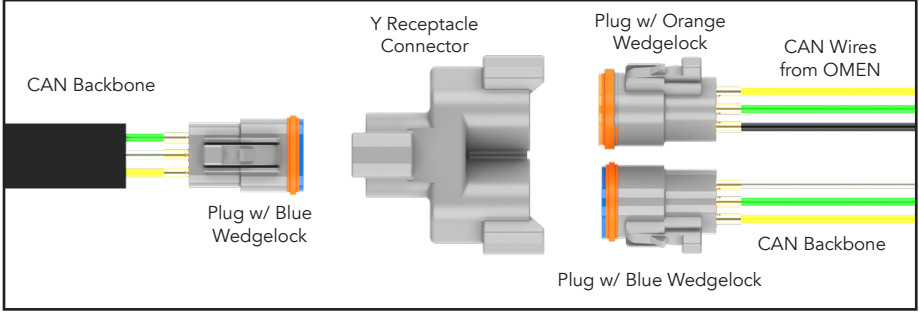
\* These are just examples to show basic CAN/LIN wiring. Each trucks lighting layout will be different.



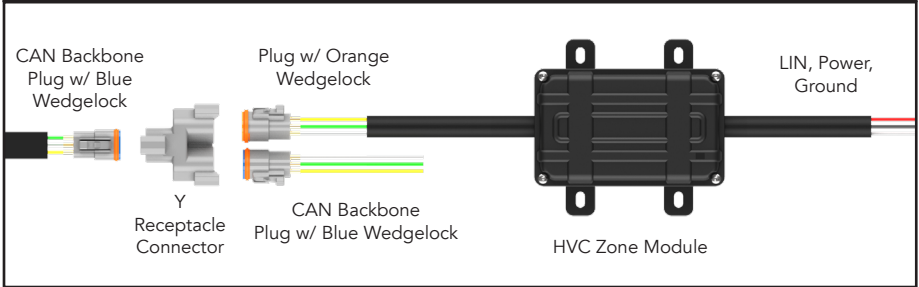
## DRIVERS SIDE CAB WIRING - Y RECEIVER CLOSE UP



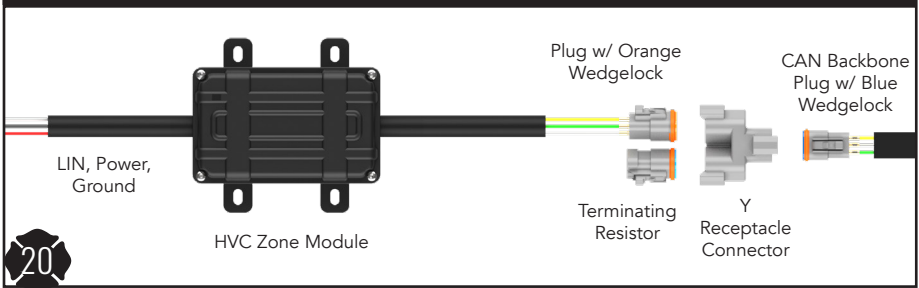
## PASSENGERS SIDE CAB WIRING - Y RECEIVER CLOSE UP



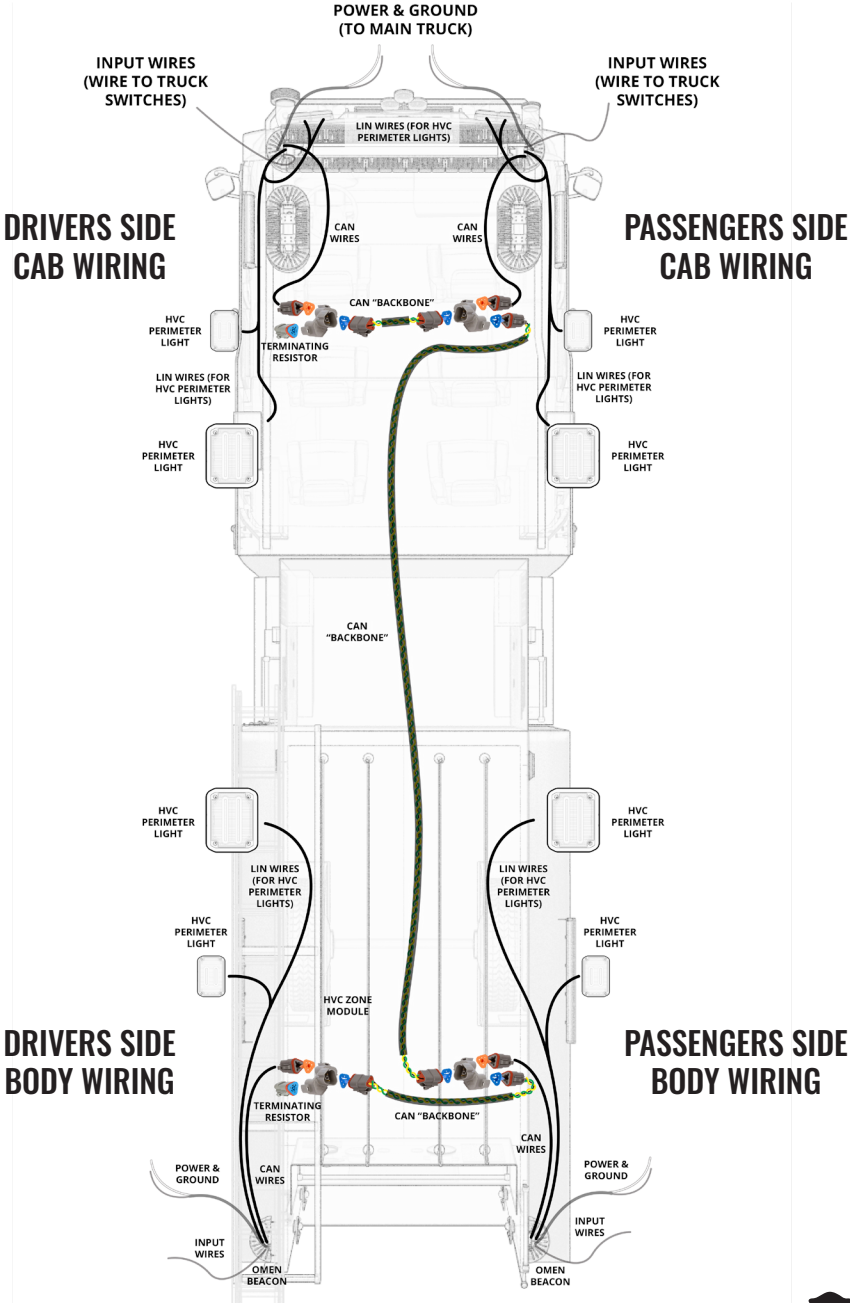
## PASSENGERS SIDE BODY WIRING - Y RECEIVER CLOSE UP



## DRIVERS SIDE BODY WIRING - Y RECEIVER CLOSE UP



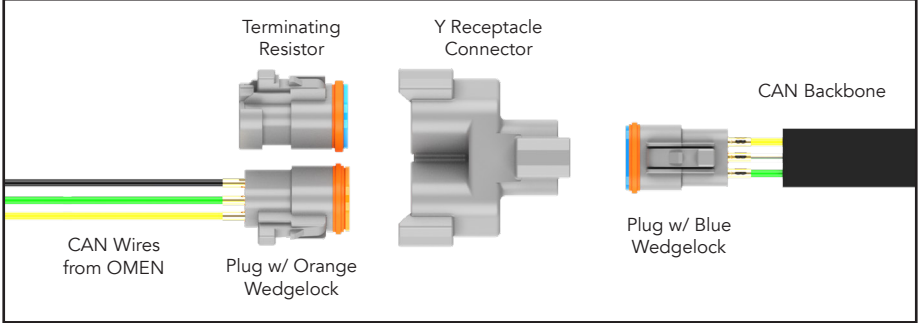
# EXAMPLE #2: CAN/LIN HVC ARCHITECTURE\*



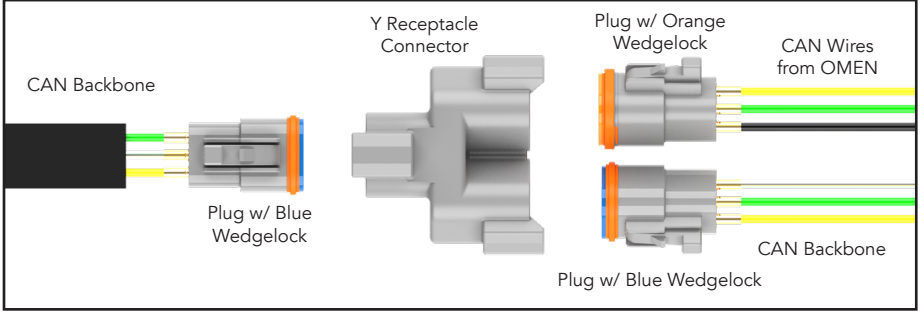
\* These are just examples to show basic CAN/LIN wiring. Each trucks lighting layout will be different.



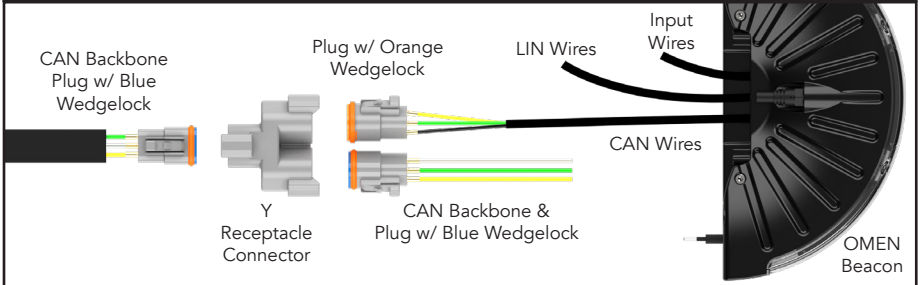
## DRIVERS SIDE CAB WIRING - Y RECEIVER CLOSE UP



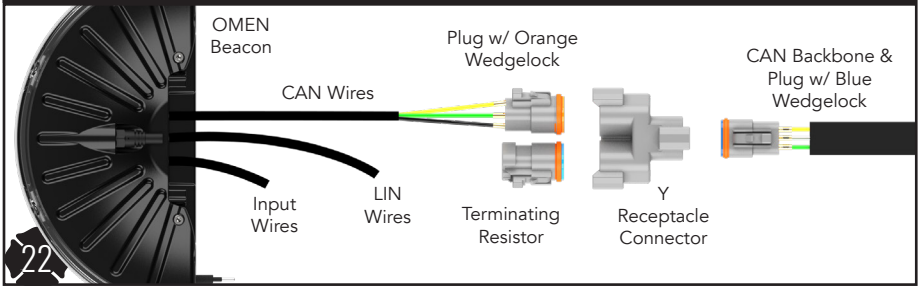
## PASSENGERS SIDE CAB WIRING - Y RECEIVER CLOSE UP



## PASSENGERS SIDE BODY WIRING - Y RECEIVER CLOSE UP



## DRIVERS SIDE BODY WIRING - Y RECEIVER CLOSE UP

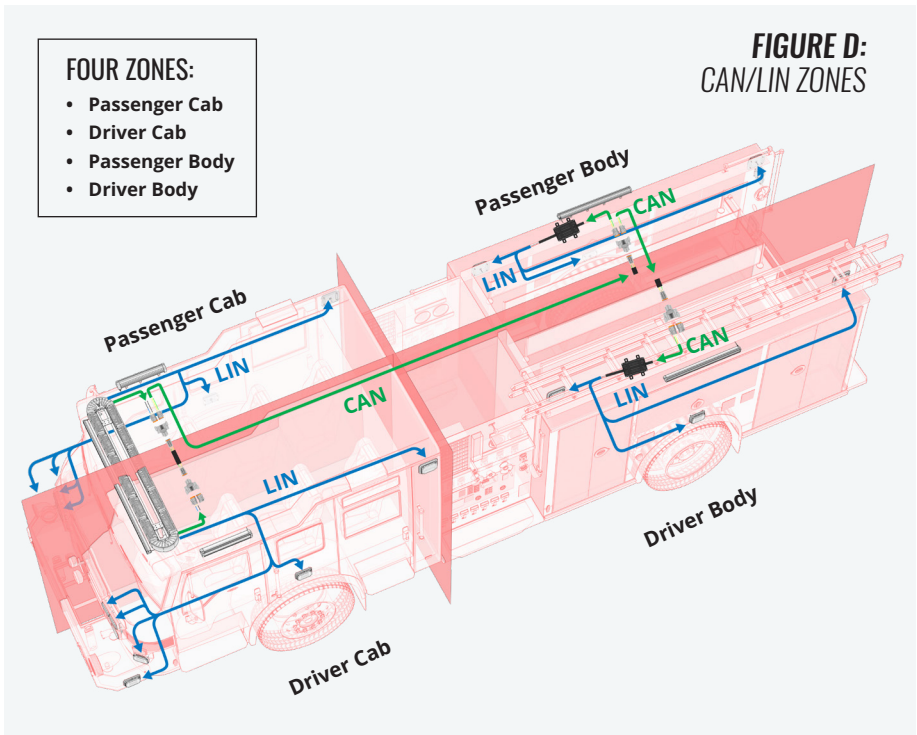


# THINGS TO KNOW

- If you have multiple OMENs in the front two cab zones you can choose any one OMEN end module to connect your perimeter lights to as long as it is in the same zone as your perimeter lights (see Figure D below).
- All HVC perimeter lights must be tied to the LIN network in their zone. They should be bussed/linked together like a traditional sync wire would.
- Each zone must have some form of zone module to allow system communication. Zone modules can either be integrated or external:

**Integrated:** OMEN end modules/beacons double as zone modules and are most commonly used to communicate with the “driver cab” and “passenger cab” zones.

**External:** In body zones where no OMEN end modules/beacons exist, an additional HVC Zone Module is required per zone (typically 2 per truck).



# WIRING TROUBLESHOOTING

- Check for any missing wedgelocks.
- Check to make sure the sockets are all the way seated and latched before wedgelocks are installed, a small tug on the conductor should confirm.
- Check to make sure sealing plugs are installed to any open holes in the connectors, if they are not installed water gets inside and kills the connection.
- Check to make sure your sockets haven't been crimped too tight, if they are crimped too tight it will break the wire off in the terminal contact.
- Check to make sure your twisted shielded CAN wires are all in their correct seats in the plugs (see figures A and B on page 18).

