

Installation Guide

MK II System

SLEEPER CAB

October 23, 2026

MirrorEye®

Daimler Trucks North America

Freightliner Cascadia P4 & Western Star 57X Trucks

Provides all steps necessary for preparation, installation, system calibration and activation

Applications

This guide provides MirrorEye® MKII system installation details/instructions for BOTH the Freightliner Cascadia and Western Star **Sleeper Cab** variants.

Cascadia Sleeper Cab



Western Star 57X Sleeper Cab



Table of Contents

Daimler Trucks North America

Overview

Getting Started 4
Activation 5
Tool Checklist 6
System Components 7
Pre-Installation Task Checklist 13
Pre-Installation Precautions 14
Pre-Installation Interior Cab Preparation 15

Installation of MirrorEye® System Components

Harness Connection 17
System Connections 20
Electronic Control Module (ECU) Installation 24
FleetArc Telematics Module (FA 470) Installation 26
CASCADIA Controller/Joystick Installation 28
WESTERN STAR Controller/Joystick Installation 30
DVR Installation (Optional) 32
Passenger Side Monitor Installation 35
Driver Side Monitor Installation 37
Class V Monitor Installation 39
Passenger Side Arm/Camera Installation 40
Driver Side Arm/Camera Installation 47
A-Pillar Cover Installation 55
Final Installation Steps 56

System Alignment/Calibration

Alignment of Cameras 58
Calibration of Distance Lines 60
Entering Critical Values 65

MirrorEye® Activation Process

How to Activate MirrorEye® (Required) 74

Getting Started

(Required)

The following provides the steps necessary to activate the MirrorEye® system with Cloud Services for GPS and Video Feeds. If not already in hand, begin by downloading/reviewing the BASIC PROCESS PDF, which can be accessed at:

https://www.stoneridge.app/en/help/how-to-cloud-activate-mirroreye-i-mk-ii

ALERT: Before starting the activation process, make sure to have the following information available before submitting an activation form. It is imperative to for installers to take clear, decipherable photos of the serial numbers of the following components:

- The FleetArc FA470 Device ID #
- The VIN (or temporary VIN) of the Vehicle
- The Asset ID # or temporary internal ID # of the Vehicle
- The ECU # of any Monitor or Wing Camera (only one number needed)

HOW TO CONTACT YOUR SERVICE TEAM

Email
incident@stoneridge.app

Help Center Live Chat
my.stoneridge.app or stoneriedge.app

Help Center Phone
888.624.4474

Help Center Hours
Monday - Friday
8:00 a.m. - 7:00 p.m. EST

Visit Help Center
https://www.stoneridge.app/help

Reply to Emails
You can reply to any email you receive from the Service Team.

STEP 1.

Make sure the truck is turned on, with enough gas for any additional time it may take to activate your MirrorEye® system.

NOTE: Activation should take approximately 15 to 20 minutes, however in some cases, due to part failure or installation error, expect up to 4 hours for troubleshooting and communication with a developer or engineer.

STEP 2.

Visit https://www.stoneridge.app/activate; enter truck information and device information and click “Submit.” Any additional information you submit is optional and may improve the processing speed of your ticket.

STEP 3.

Request Received

You should receive an email notification of your activation request, and the status of your ticket. If you have any questions or challenges, please reply to that email, or send a message to incident@stoneridge.app or visit https://www.stoneridge.app/tickets to view the status of your tickets.

NOTE: If you do not have access to the portal to view tickets, you can request access here: https://www.stoneridge.app/access

STEP 4.

Request Processing

Your ticket will be submitted directly to a Stoneridge service agent who will review any details and contact you via email or phone to follow up with any questions or errors.

STEP 5.

Certification Approved

Stoneridge software developers and engineers are on call to ensure a successful installation and activation. When installation is successful you will receive an email with details of the successful activation.

Activation

Frequently Asked Questions

How do I register for the MirrorEye activation portal?

Activations are completed in My. Stoneridge. app or MSA Portal. If you do not have access, request via Stoneridge MirrorEye technical support chat, email or call

What happens if I do not complete the activation submission?

If you fail to submit an activation work order and complete the activation process, the MirrorEye system installed will not be able to send diagnostic alerts and will void the warranty of the MirrorEye system for your fleet customer.

What do I do if I have questions during an installation?

If you have questions during an installation, please first refer to the MirrorEye installation guide, then reach out to MirrorEye Technical Support and a member of the team will promptly help answer your question.

Does the order of the pictures I'm submitting matter?

NO, the improved activation process allows you to upload all install photos and then label for association. Required photos have been reduce to 2; FA470 Telematic Device and LTE Dongle if equipped.

What do I do if the Get Inventory feature is not loading in the system components?

Verify the FA470 device is operating properly and is receiving connected status (6 or 7 blinks on the indicator led), View the device registered properly in the MSA portal and has firmware version greater than 12.0 Redirect to published knowledge base articles if needed on this topic.

How to I reach MirrorEye Technical Support?

Live Chat on any of the Stoneridge Portal sites

Email: Incident@stoneridge.app

Call: M-F 8 – 8 EST 888-624-4474

Required Tool	Description	Quantity	Check-off
Drill Bit	5/8” Cobalt or Titanium Drill Bit	1	
Drill Bit	25/64” Cobalt or Titanium Drill Bit	1	
Drill Bit	17/32” Cobalt or Titanium Drill Bit	1	
Hole Saw	2-1/8” Hole Saw	1	
Hole Saw	1” Hole Saw	1	
Hole Saw	1-1/4” Hole Saw	1	
Drill	Cordless 20v Drill	1	
Drill Battery	Extra 20v Drill Battery	1	
Rivet Nut Tool	Rivet Nut Securement Tool w/Impact Attachment	1	
Screwdriver	Phillips Head Screwdriver (size?)	1	
Screwdriver	Flathead Screwdriver (size?)	1	
Panel Removal Tool	Pry Tool for Removing Interior Panels	1	
Cutters	Flush Zip Tie Cutters	1	
Zip Ties	Zip Ties (6” to 12” in length)	30	
Pliers	Needle Nose Pliers	1	
Cutting Blades	Cutting Blades for use with Rotary Tool	2	
Torque Bit Set	Torque Bit Set T15 – T60	1 set	
Bit Driver	12v Torque Driver (Impact Driver)	1	
Bit Adapter	Hex Bit Adapter for Torque Driver	1	
Allen Wrench Set	Metric	1 set	
Allen Keys	#6, #5, #4, #3, #2.5, #2	1 of each	
Manual Wire Strippers	Wire Strippers w/Various Wire Sizes	1	
Cones or Buckets	Used to Mark Distances Behind Truck	6	
Ladder	6’ A-Frame Ladder	1	
Pin Removal Tool Set	Klein® Pin Extractor Set (or Equivalent)	1	
Fuses	10 and 20 amp fuse (Required)	1	
Measurement Tool(s)	Measuring Tape, Measuring Wheel, Phone App. Capable of Measuring 80’	1	

Required Tool	Description	Quantity	Check-off
Drill Bit	7/16” 11mm	1	
Hole Saw	1” Hole Saw	1	
Tape	Tape Measure	1	
Socket Set	Socket Set 8-10mm	1	
Allen Wrench Set	Allen Wrench 8mm	1	

Class V Monitor



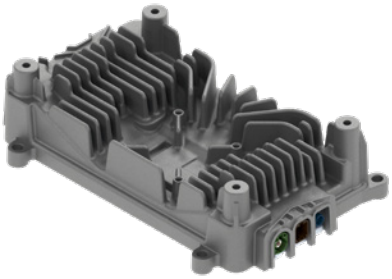
Driver Side Monitor (12”)



Passenger Side Monitor (15”)



Electronic Control Module (ECU)



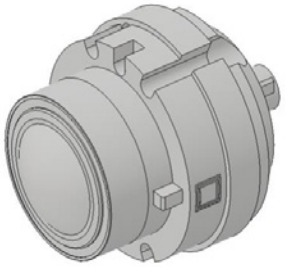
Driver Side Camera (Right)



Passenger Side Camera (Left)



Blind Shot Camera (Right)



Display Controller



MirrorEye® Cloth and Sticker



FleetArc Telematics Box Contents w/FA 470 Module



Driver Side Bracket with Monitor Base and Screw Kit



Passenger Side Bracket with Monitor Base and Screw Kit



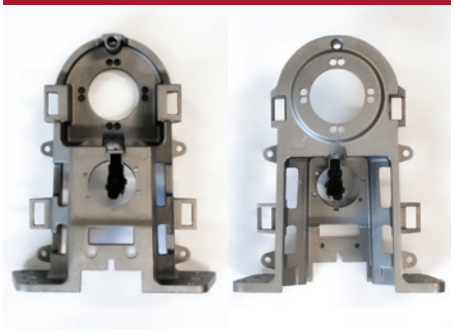
Class V Monitor Bracket



Ram Kit for Class V Monitor



Main Bracket Set



Set Cover Top Main Bracket



Cover Bottom Main Bracket (Driver Side)



Cover Bottom Main Bracket (Passenger Side)



Interface Brackets



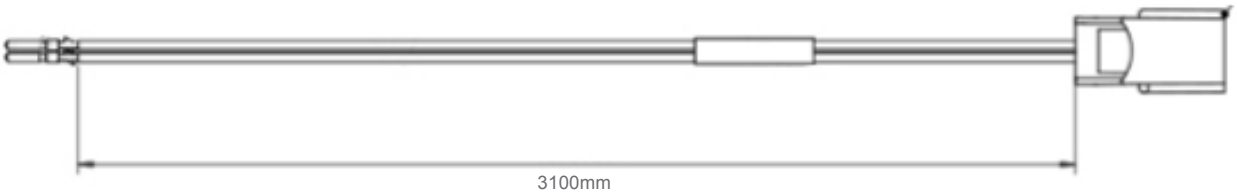
Interface Gaskets



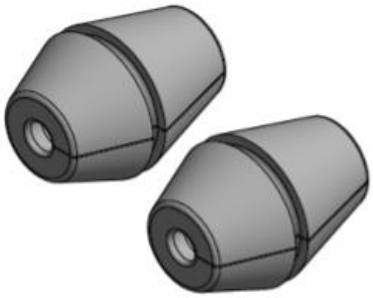
Outside Air Temperature Sensor (OAT - Driver Side)



Wire Harness OAT Sensor



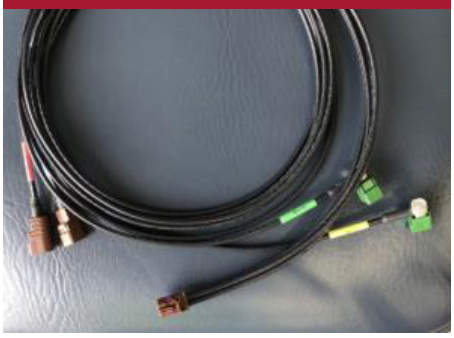
Set Grommet MK II Harness



Driver Coax Cable



Passenger Coax Cable



Blind Spot Camera Coax



Wire Harness Adapter for RP1226 Blue Conn, DTNA (used for Retrofit)



Controller Kit (Right)



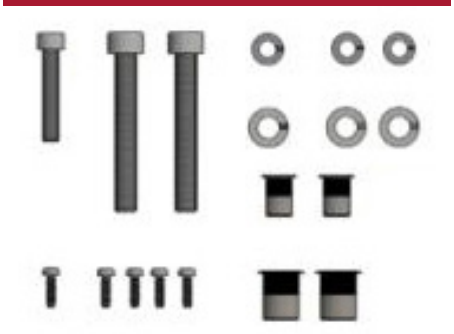
Screws Kit for Monitor Interface (Driver Side)



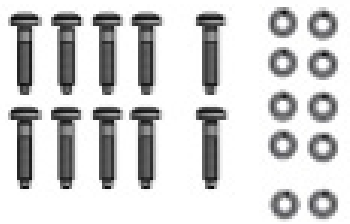
Screws Kit for Monitor Interface (Passenger Side)



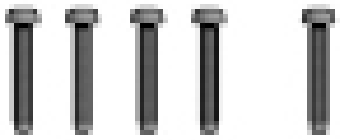
Set Fasteners Vehicle Interface DTNA



Set Fasteners Camera Arm



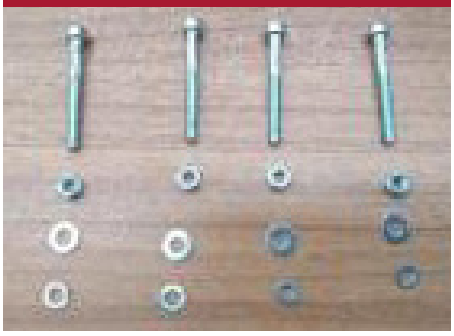
Set Fasteners Camera Bracket



Set Fasteners Monitor Interface Class V



Screws Kit for Connectivity Box



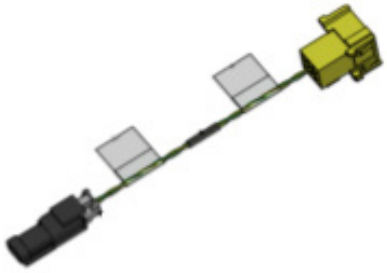
FA470 Cable



Main Harness



Wire Harness MKII CAN Termination (used with Pre-Wire Installation)



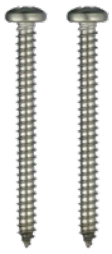
ECU - Bracket



ECU - Bracket Fastener Set



Self Tappers



OPTIONAL COMPONENTS

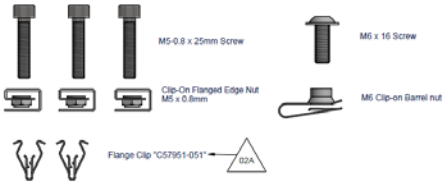
DVR



DVR Bracket



Set Fasteners DVR Bracket



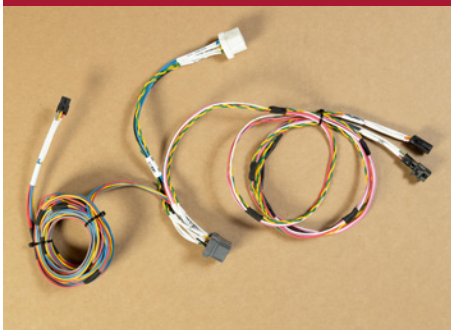
Ethernet Cable



USB



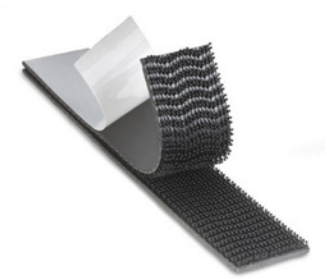
DVR Harness



DVR Trigger Cable



Dual Lock Tape



Connectivity Dongle (Optional)



MirrorEye® Install Task List		Check-off
1	Unpack and examine all materials in the MirrorEye Shipping box.	
2	Match Screw Kits with their stated components.	
3	Record the VIN and Serial #'s of the vehicle and the FA470 for the MirrorEye activation process. (page 65)	
4	Remove the relevant dash panels, a-pillar covers and headliner portions to prepare for the installation of the MirrorEye Components.	
5	Begin installation of the ME main harness; for Retrofit to the vehicles accessory power and ground in the truck's Vehicle Power Distribution Module (VDPM) For Pre-wire: use the preinstalled harness connection located in the passenger side A-Pilar.	
6	Install the MirrorEye Electronic Control Module (ECU) in the headliner and connect the main MirrorEye ECU harness.	
7	Install the FA 470 according to the instruction in the box and connect it to the main ECU harness.	
8	Install the MirrorEye display controller on the dash panel within reach of the driver's seat.	
9	Connect the MirrorEye display controller to the ECU Harness.	
10	Confirm proper power connection via green light on controller and ensure connection to the VPDM.	
11	Disconnect Power Source until installation has been completed.	
12	Carefully thread the main MirrorEye harness driver and passenger camera wing connectors behind the headliner and down the driver's and passenger's side A-pillars. (Be careful not to kink the wires during the threading process)	
13	Connect the driver's and passenger's camera/monitor harnesses to the ECU.	
14	Install the driver's and passenger's monitor interface brackets to the A-pillars.	
15	Install the Class V monitor.	
16	Install the driver's and passenger's exterior MirrorEye bracket wings above the doorframes.	
17	Position the passenger side Class V camera into the MirrorEye exterior bracket.	
18	Thread the Class V cable across the headliner to the MirrorEye ECU. (Be careful not to kink the cable during the threading process)	
19	Install the upper cover of the passenger side exterior arm and attach the passenger side MirrorEye Camera wing. Carefully thread the cables from the ECU harness through the bracket and connect to the appropriate camera/monitor harness. (Be careful not to kink the cable during the threading process)	
20	Using the location and size of the A-pillar interface bracket for reference cut out a section of the a-pillar cover to accommodate the bracket.	
21	With the passenger side monitor (15") in hand connect it to the camera/monitor harness at the a-pillar and mount the monitor to the interface bracket. (Be careful not to kink the wires/cable during the threading process)	
22	Install the upper cover of the driver side exterior arm and attach the driver side MirrorEye Camera wing. Carefully thread the cables from the ECU harness through the bracket and connect to the appropriate camera/monitor harness. (Be careful not to kink the cable during the threading process)	
23	Using the location and size of the A-pillar interface bracket for reference cut out a section of the a-pillar cover to accommodate the bracket.	
24	With the driver side monitor (12") in hand connect it to the camera/monitor harness at the a-pillar and mount the monitor to the interface bracket.	
25	Re-connect the vehicle power source and confirm that the system powers up properly and that all monitors are showing the correct feed for their respective cameras.	
26	Properly seat the harness and camera cables in the A-pillar and headliner locations and reinstall the dash panels, A-pillar covers and headliner to their original configuration. (Be careful not to kink the wires/cable during this process)	
27	Begin system calibration and monitor adjustment. (page 48)	
28	**Complete activation. (page 65)**	

ATTENTION!

Key elements of a successful installation:

Photo Documentation

1. Prior to installation: take “before” pictures of the interior cab area(s) and exterior area above the door frame(s) – this helps ensure the truck is returned to its original condition
2. Make sure to take pictures noting any existing modifications or damage to the truck prior to beginning the install
3. At the end of the installation process, make sure to take pictures documenting the completed installation

Order of Installation

The task list (previous page) is ordered for the efficient installation of MirrorEye® components – however, installers should determine up front what order of installation works best for them.

Proper Cable/Wire Management

Please take every precaution to avoid kinking/crimping of wires and cables when installing the MirrorEye® components. Kinked lines can lead to communications interruptions between components and the system network.

Exercising proper cable management is imperative. Example P42

Proper Preparation

Before beginning installation, it is recommended that components are matched with their corresponding screw(s) kit. This will avoid the incorrect installation of screws, which can lead to permanent monitor damage.

NOTE: Red Loctite® is present on all monitor screws

Cascadia



Western Star



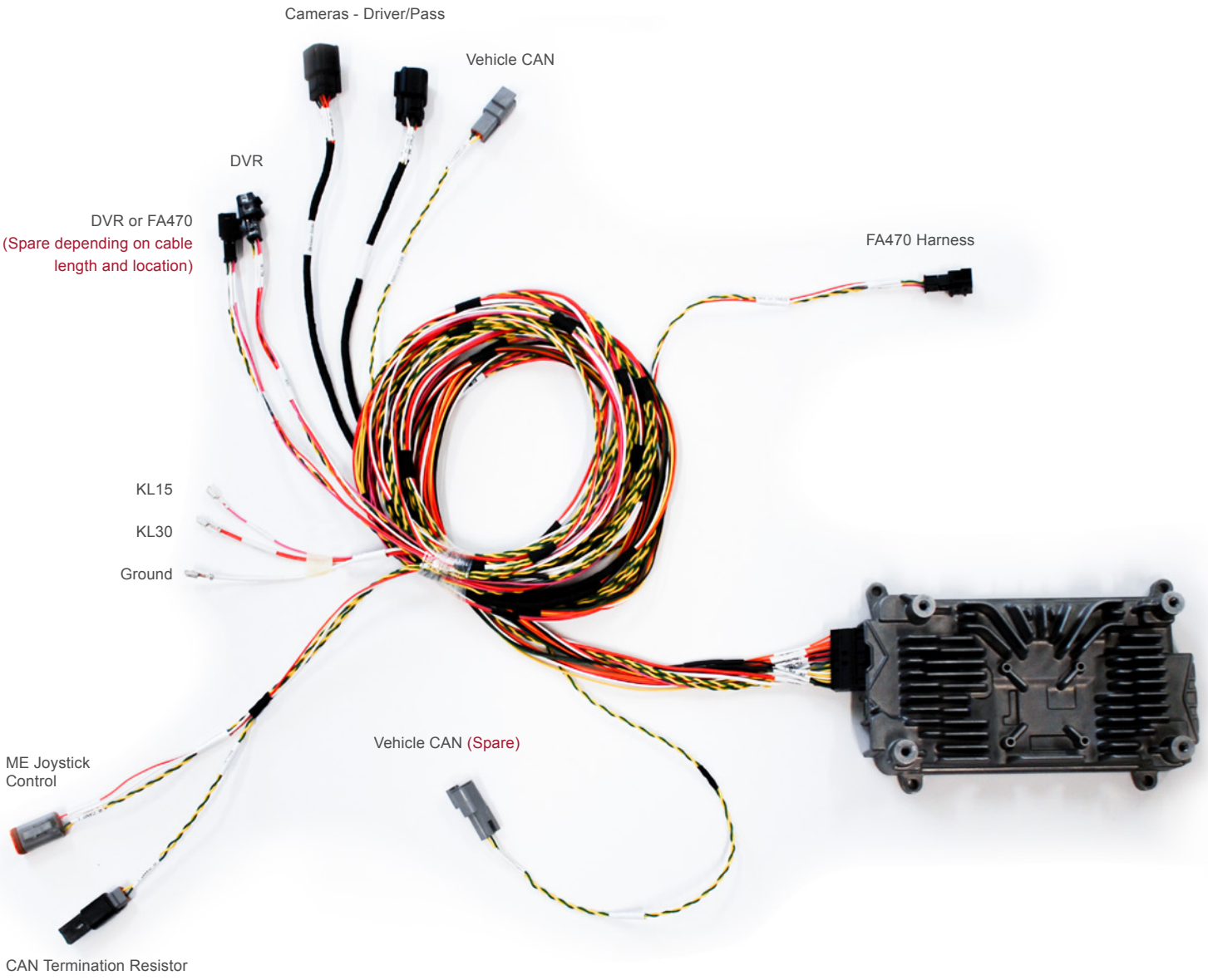
Prior to the installation of MirrorEye® system components, the A-pillar covers (**1**) center dash panel (**2**) should be removed and the headliner (**3**) should be adjusted to allow for access at the center windshield.

NOTE: On A-pillars, begin with removal of grab handles (**4**)



Installation

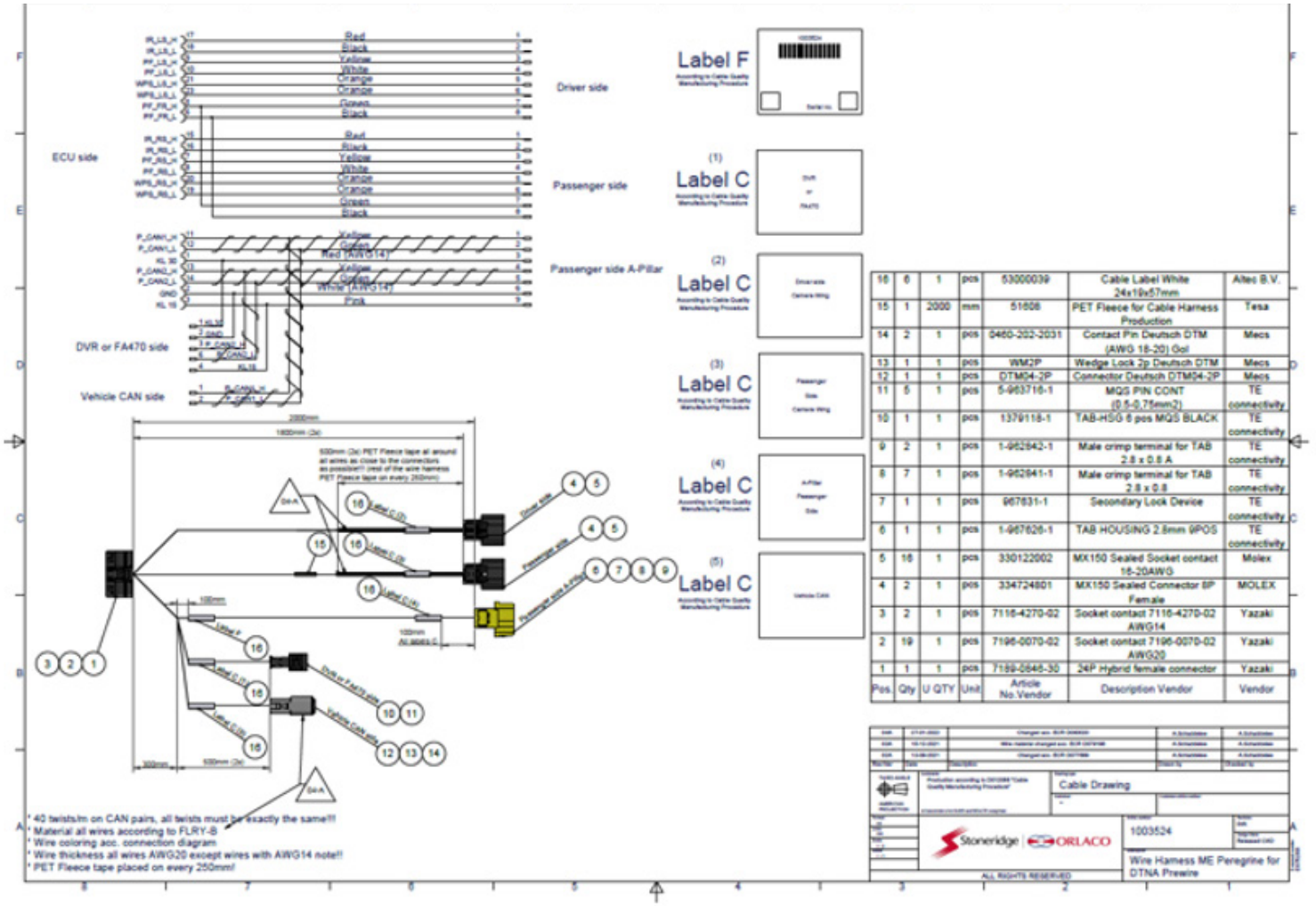
1



Become familiar with the main MirrorEye® ECU harness, it's orientation and the connection points. The individual wire leads are labeled with their appropriate destination

NOTE: Be sure to take every precaution to avoid kinking the main cable harness (Y-harness). Kinked lines can lead to communications interruptions between components and the system network.

1



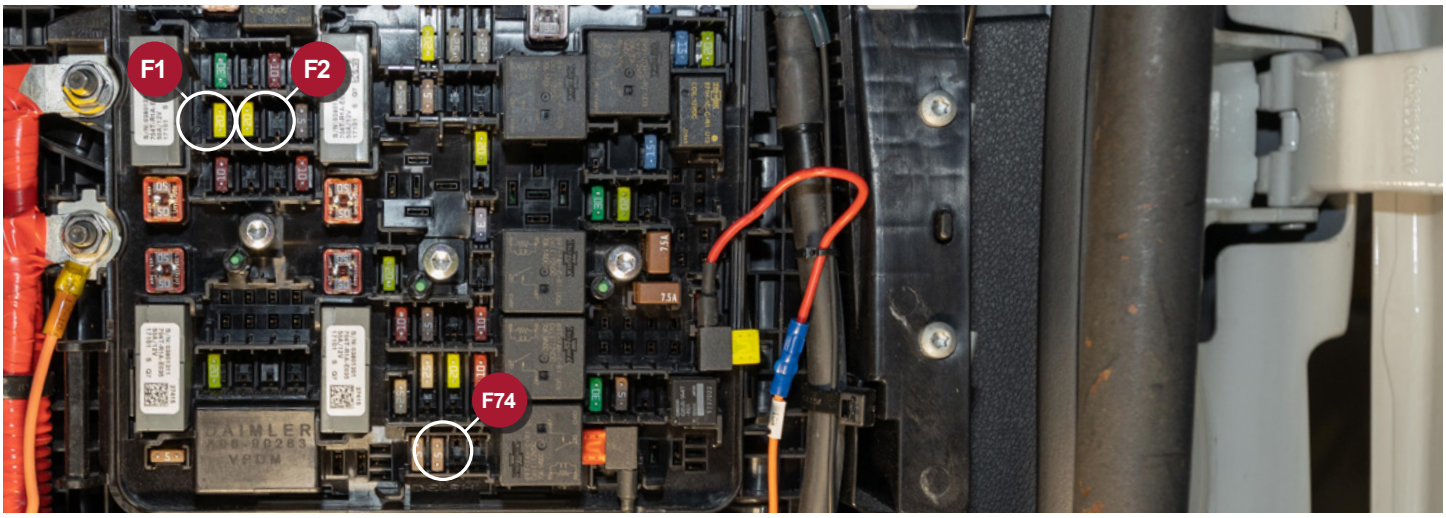
16	6	1	pcs	53000039	Cable Label White 24x19x57mm	Altec B.V.
15	1	2000	mm	51608	PET Fleece for Cable Harness Production	Tesa
14	2	1	pcs	0460-202-2031	Contact Pin Deutsch DTM (AWG 18-20) Gol	Mecs
13	1	1	pcs	WM2P	Wedge Lock 2p Deutsch DTM	Mecs
12	1	1	pcs	DTM04-2P	Connector Deutsch DTM04-2P	Mecs
11	5	1	pcs	5-963716-1	MQS PIN CONT (0.5-0.75mm2)	TE connectivity
10	1	1	pcs	1379118-1	TAB-HSG 6 pos MQS BLACK	TE connectivity
9	2	1	pcs	1-962642-1	Male crimp terminal for TAB 2.8 x 0.8 A	TE connectivity
8	7	1	pcs	1-962641-1	Male crimp terminal for TAB 2.8 x 0.8	TE connectivity
7	1	1	pcs	967631-1	Secondary Lock Device	TE connectivity
6	1	1	pcs	1-967626-1	TAB HOUSING 2.8mm 9POS	TE connectivity
5	18	1	pcs	330122002	MX150 Sealed Socket contact 16-20AWG	Molex
4	2	1	pcs	334724801	MX150 Sealed Connector 8P Female	MOLEX
3	2	1	pcs	7116-4270-02	Socket contact 7116-4270-02 AWG14	Yazaki
2	19	1	pcs	7196-0070-02	Socket contact 7196-0070-02 AWG20	Yazaki
1	1	1	pcs	7189-0846-30	24P Hybrid female connector	Yazaki
Pos.	Qty	U QTY	Unit	Article No.Vendor	Description Vendor	Vendor

Become familiar with the main MirrorEye® ECU harness, it's orientation and the connection points. The individual wire leads are labeled with their appropriate destination

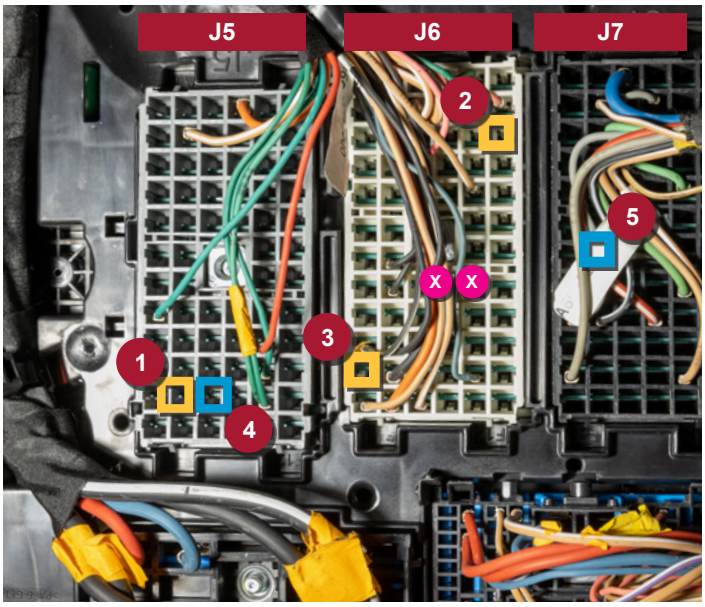
NOTE: Be sure to take every precaution to avoid kinking the main cable harness (Y-harness). Kinked lines can lead to communications interruptions between components and the system network.

Fuse Box Front

Fuse box connection for Retrofit ONLY



Fuse Box Back



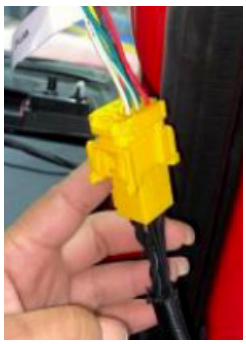
PREFERRED CONNECTION LOCATION

	Type	Connection Location	Relating Fuse
1.	KL30	J5/B11 Power Feed Spare Output 1	BAT (F21/20AMP)
2.	KL15	J6/F3 3PC (third party connector)	IGN (F74/10AMP)
3.	Ground	3PC (third party connector)	GND J6/A11

SECONDARY LOCATION

4.	KL30	J5/C11 Power Feed Spare Output 2	BAT (F22/20AMP)
5.	KL15	Splice pack with pink wires	IGN
6.	Ground	Camera/Video/Imaging System	GND J7/B7

X **DO NOT USE:**
Diagnostics Connector, GND1 J6/D8 or GND2 J6/E8



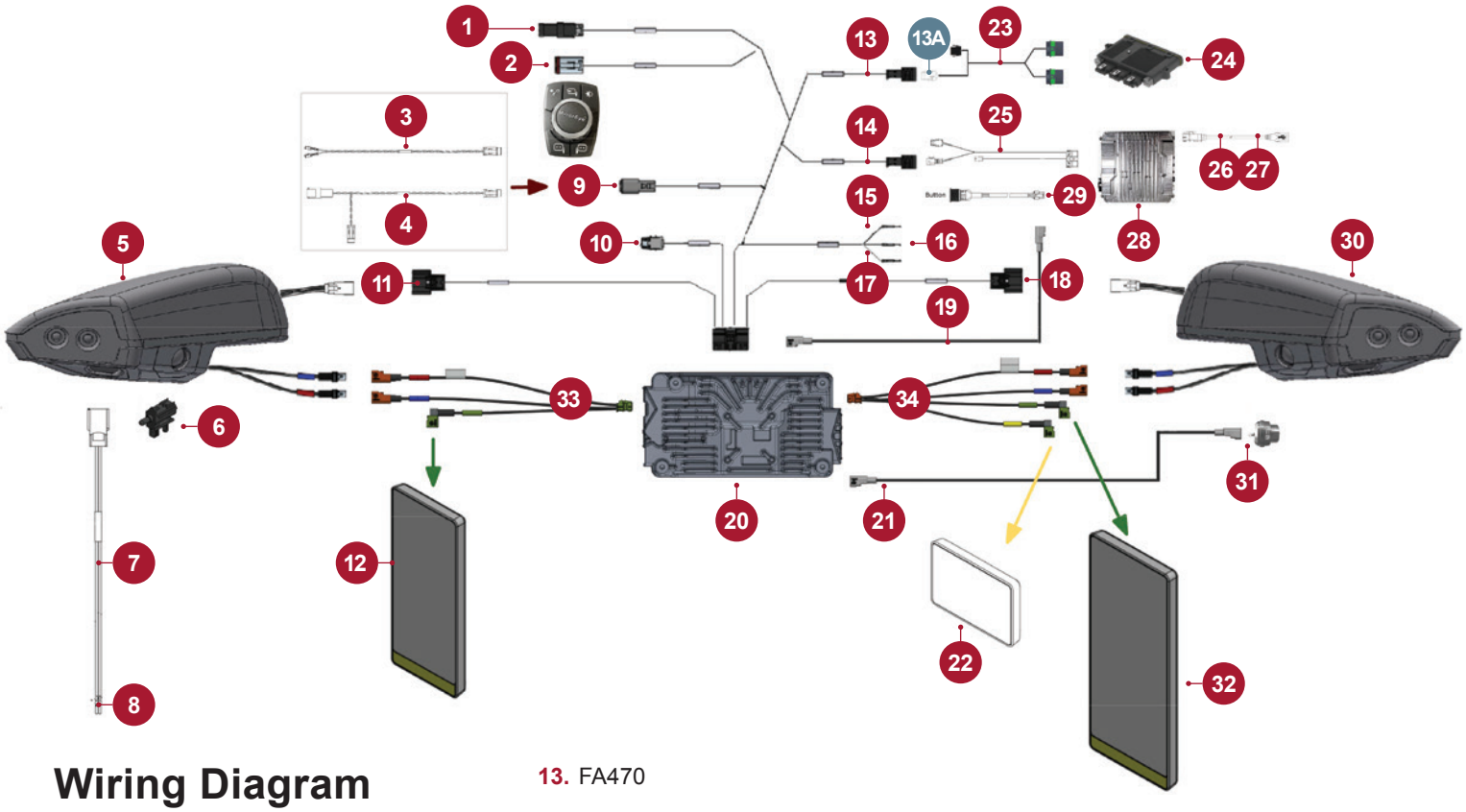
Make primary connections between cabin wiring harness (CAN1, KL30, KL15, Ground) and relating vehicle connections. Carefully handle/manage harness and connections throughout the installation process.

Prewire Application: locate the OE main harness connector shown in picture and connect MirrorEye Main Harness. (yellow connector located on Passenger side A Pilar

Retrofit Application: Run MirrorEye main harness down the passenger side A Pilar and into the dash area near the airbox. and complete fuse panel connection as shown

NOTE: Follow OEM recommended practices for access to and pinning the Power Distribution Module

2



Wiring Diagram

Option 1 - New Class V Monitor

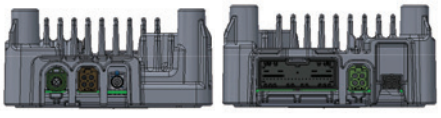
NOTE: Note considered mechanical parts (brackets, etc)

1. CAN Termination Resistor
2. Controller
3. CAN Splicepack
4. CAN Breakout
5. Camera Wing (Driver Side)
6. OAT Sensor GE-1923C
7. OAT Sensor Wire Harness
8. Truck (DTNA connector)
9. Vehicle CAN
10. DVR or Class V Monitor
11. Camera Wing (Driver Side)
12. Driver Side Monitor (Left Side 12.3” Monitor)
13. FA470
14. To DVR Harness
15. KL30
16. Ground
17. KL15 (IGN)
18. Camera Wing (Passenger Side)
19. Ethernet
20. ECU
21. COAX Class V
22. Class V - 7” Monitor
23. FA470 Wire Harness
24. FA470
25. DVR Wire Harness
26. USB Cable for Flash Drive
27. USB Cable for Connectivity Dongle (Alternate use)
28. DVR GEN1
29. DVR Trigger Button
30. Camera Wing (Passenger Side)
31. Class V Camera (Blind Spot)
32. Passenger Side Monitor (Right Side 15” Monitor)
33. Camera/Monitor Harness (Driver Side)
34. Camera/Monitor Harness (Passenger Side)

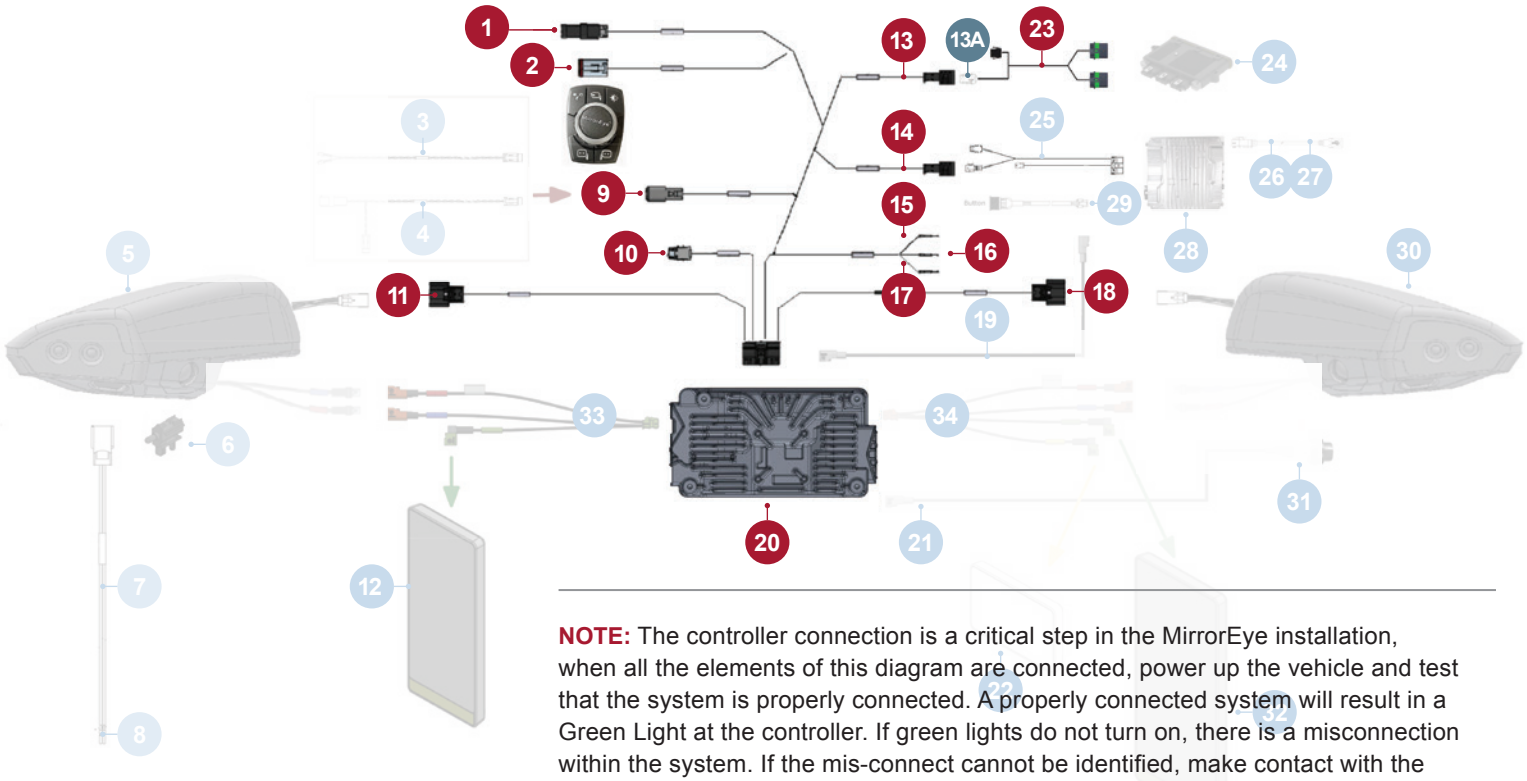
13A Extension Cable
FA-470 Prewire only. PN 0392170



ECU views for reference



2



NOTE: The controller connection is a critical step in the MirrorEye installation, when all the elements of this diagram are connected, power up the vehicle and test that the system is properly connected. A properly connected system will result in a Green Light at the controller. If green lights do not turn on, there is a misconnection within the system. If the mis-connect cannot be identified, make contact with the Stoneridge representative(s).

Main MirrorEye ECU Harness

Option 1 - New Class V Monitor

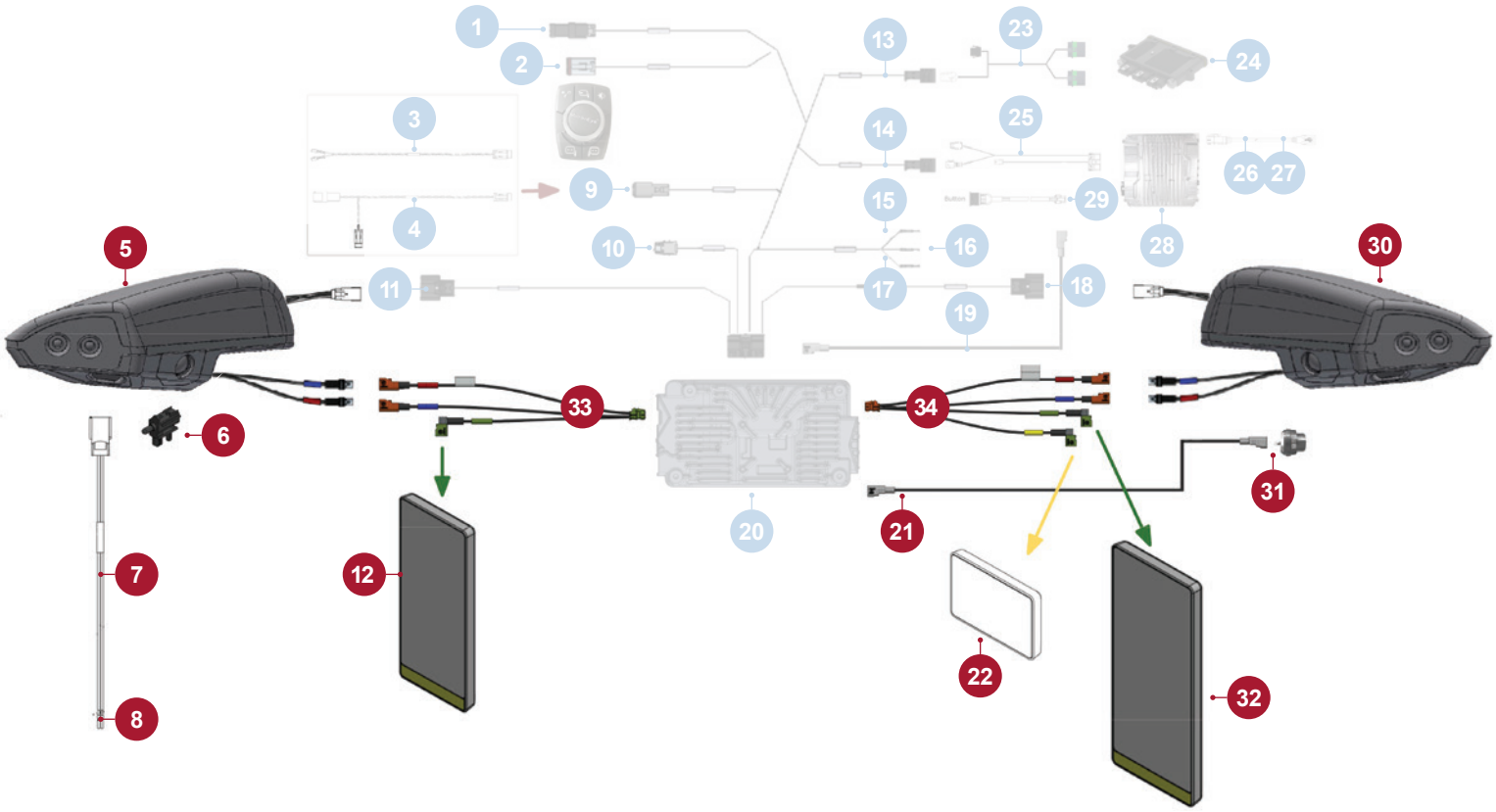
NOTE: Note considered mechanical parts (brackets, etc)

1. CAN Termination Resistor
2. Controller
3. CAN Splicepack
4. CAN Breakout
5. Camera Wing (Driver Side)
6. OAT Sensor GE-1923C
7. OAT Sensor Wire Harness
8. Truck (DTNA connector)
9. Vehicle CAN
10. DVR or Class V Monitor
11. Camera Wing (Driver Side)
12. Driver Side Monitor (Left Side 12.3” Monitor)
13. FA470
14. To DVR Harness
15. KL30
16. Ground
17. KL15 (IGN)
18. Camera Wing (Passenger Side)
19. Ethernet
20. ECU
21. COAX Class V
22. Class V - 7” Monitor
23. FA470 Wire Harness
24. FA470
25. DVR Wire Harness
26. USB Cable for Flash Drive
27. USB Cable for Connectivity Dongle (Alternate use)
28. DVR GEN1
29. DVR Trigger Button
30. Camera Wing (Passenger Side)
31. Class V Camera (Blind Spot)
32. Passenger Side Monitor (Right Side 15” Monitor)
33. Camera/Monitor Harness (Driver Side)
34. Camera/Monitor Harness (Passenger Side)

13A Extension Cable
FA-470 Prewire only. PN 0392170



2



Camera/Monitor Harness Diagram

Option 1 - New Class V Monitor

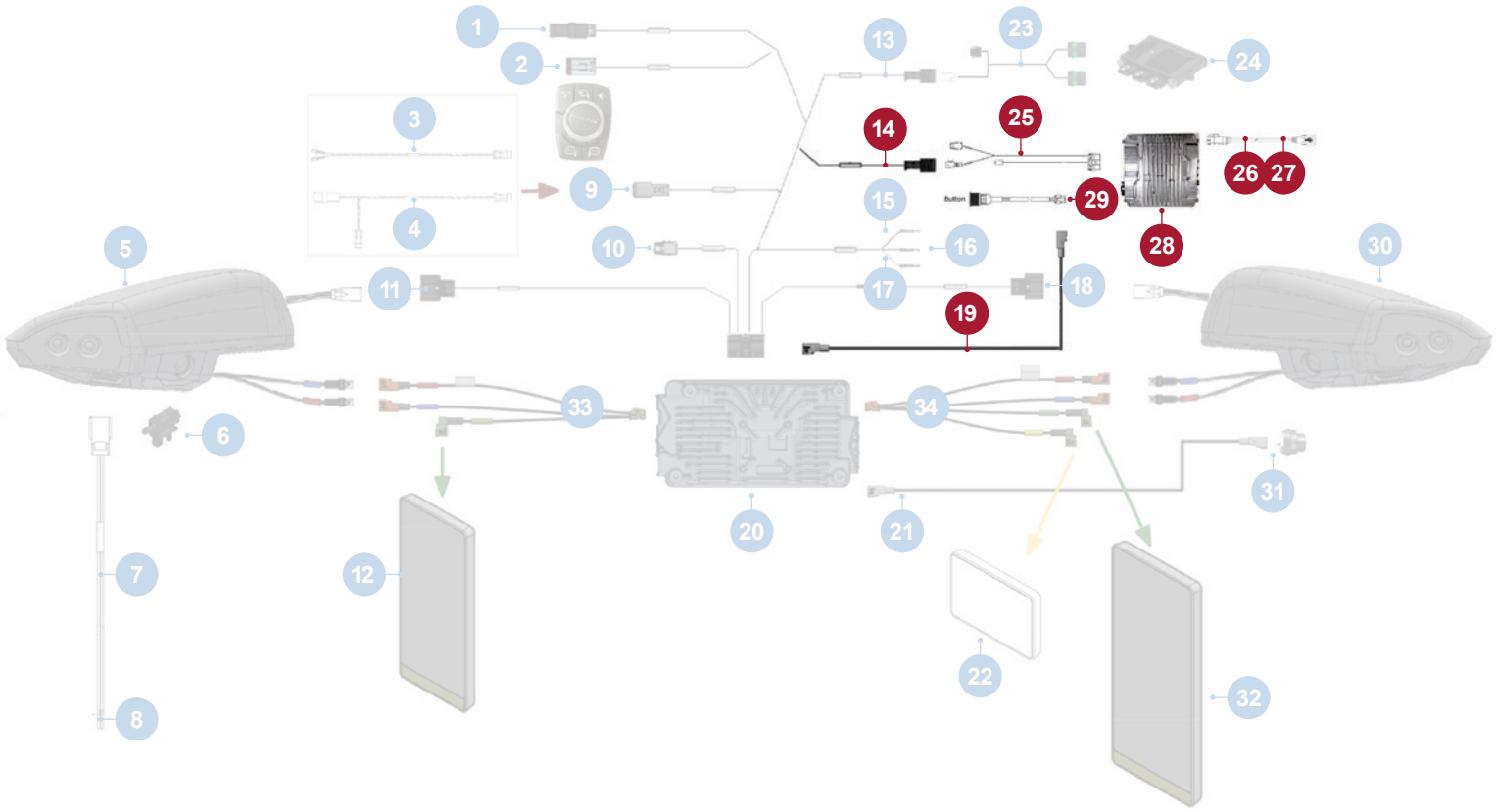
NOTE: Note considered mechanical parts (brackets, etc)

1. CAN Termination Resistor
2. Controller
3. CAN Splicepack
4. CAN Breakout
5. Camera Wing (Driver Side)
6. OAT Sensor GE-1923C
7. OAT Sensor Wire Harness
8. Truck (DTNA connector)
9. Vehicle CAN
10. DVR or Class V Monitor
11. Camera Wing (Driver Side)
12. Driver Side Monitor (Left Side 12.3” Monitor)
13. FA470
14. To DVR Harness
15. KL30
16. Ground
17. KL15 (IGN)
18. Camera Wing (Passenger Side)
19. Ethernet
20. ECU
21. COAX Class V
22. Class V - 7” Monitor
23. FA470 Wire Harness
24. FA470
25. DVR Wire Harness
26. USB Cable for Flash Drive
27. USB Cable for Connectivity Dongle (Alternate use)
28. DVR GEN1
29. DVR Trigger Button
30. Camera Wing (Passenger Side)
31. Class V Camera (Blind Spot)
32. Passenger Side Monitor (Right Side 15” Monitor)
33. Camera/Monitor Harness (Driver Side)
34. Camera/Monitor Harness (Passenger Side)

ECU views for reference



2



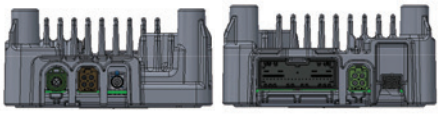
Optional DVR

Option 1 - New Class V Monitor

NOTE: Note considered mechanical parts (brackets, etc)

1. CAN Termination Resistor
2. Controller
3. CAN Splicepack
4. CAN Breakout
5. Camera Wing (Driver Side)
6. OAT Sensor GE-1923C
7. OAT Sensor Wire Harness
8. Truck (DTNA connector)
9. Vehicle CAN
10. DVR or Class V Monitor
11. Camera Wing (Driver Side)
12. Driver Side Monitor (Left Side 12.3" Monitor)
13. FA470
14. To DVR Harness
15. KL30
16. Ground
17. KL15 (IGN)
18. Camera Wing (Passenger Side)
19. Ethernet
20. ECU
21. COAX Class V
22. Class V - 7" Monitor
23. FA470 Wire Harness
24. FA470
25. DVR Wire Harness
26. USB Cable for Flash Drive
27. USB Cable for Connectivity Dongle (Alternate use)
28. DVR GEN1
29. DVR Trigger Button
30. Camera Wing (Passenger Side)
31. Class V Camera (Blind Spot)
32. Passenger Side Monitor (Right Side 15" Monitor)
33. Camera/Monitor Harness (Driver Side)
34. Camera/Monitor Harness (Passenger Side)

ECU views for reference



1



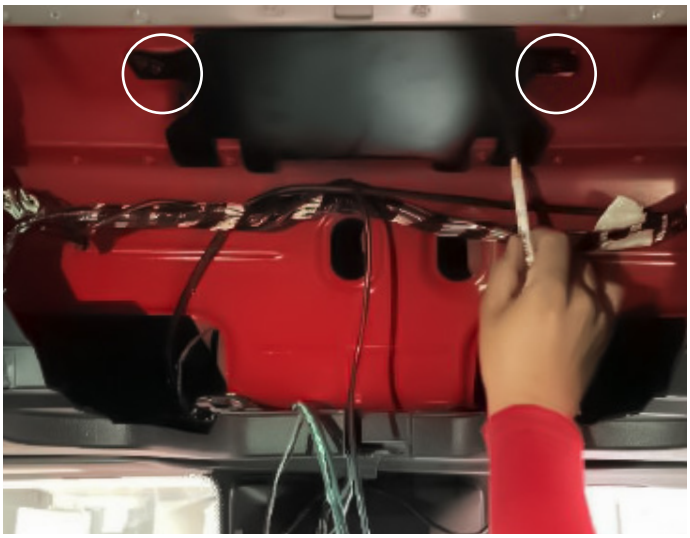
Remove the center portion of the overhead console

2



Attach the ECU to its bracket with relating fastener set

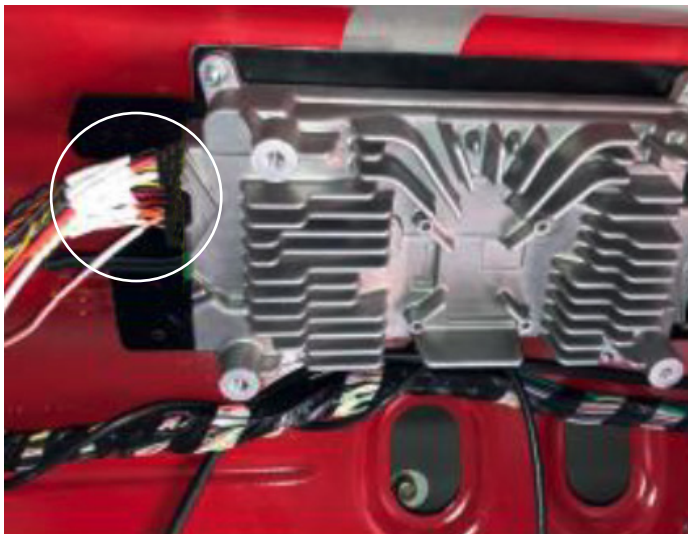
3



Install the ECU/bracket in the center of the overhead compartment, using the bracket's outer "wing holes" to position and affix the subassembly (see relating image for positioning)

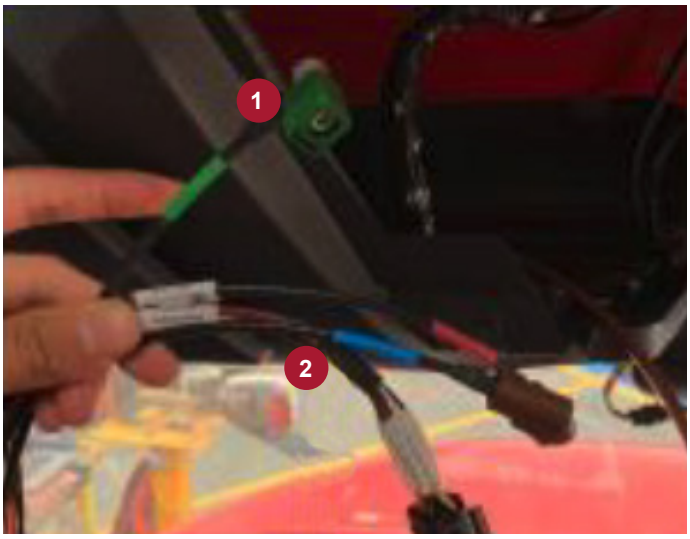
NOTE: Reusing the existing fastner (outer wing holes) in 2 spots and self tapping for the remaining 2 secure the ECU/ Bracket assembly to the overhead compartment.

4



Connect the ECU to the main MirrorEye® wiring harness via relating port on left side of unit

5



Connect coaxial cables relating to driver side monitor and camera (**1**) Monitor coax (**2**) Camera coax

6



Route relating driver-side cables through left-side A-pillar

7



Connect coaxial cables relating to passenger side monitor, camera and Class V (blind spot) camera via relating ports on right side of ECU Text

8



Route relating passenger-side cables through right-side A-pillar

1



Locate the telematics module (FA 470) in the FleetArc box

2



Assemble the connectors as depicted in the provided FA 470 schematic – note that the center shroud is for an additional connector (blind). Each module connector is numbered (CN 1,2,3).

3

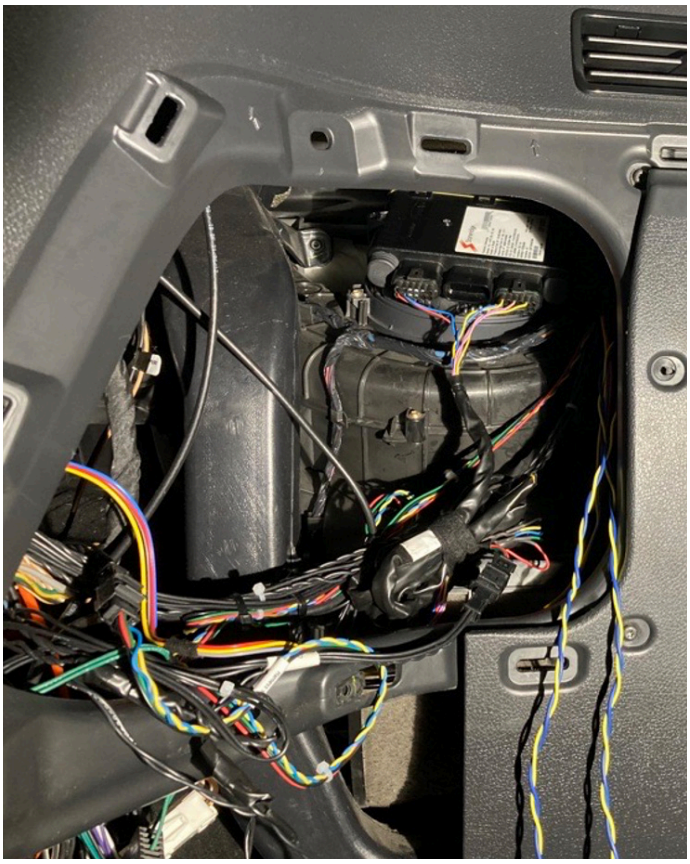


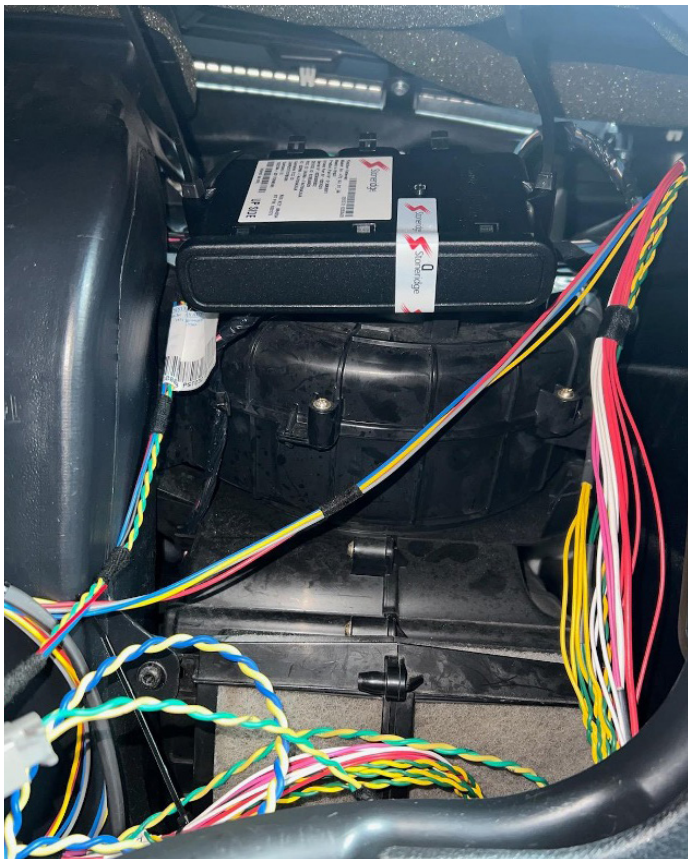
Proceed with the telematics module (FA 470) connection to the main harness. Ensure that the FA470 is installed label side facing up. **NOTE:** Incorrect connection of the telematics module will prevent certification during the cloud activation/virtual checkout (required)

4



Use the Enclosed double-sided tape to secure the FA 470 module base for mounting, as depicted. When mounting the module, ensure that it lays flat (horizontally) to ensure optimal reception. Correct placement of the double-sided tape on the bottom side of the FA470 - Shown





These images demonstrate the correct placement and orientation of the FA470 With the label facing up, either on top of the blower motor or on top of the VPDM box with the OE GPS antenna.

CASCADIA Controller/Joystick Installation

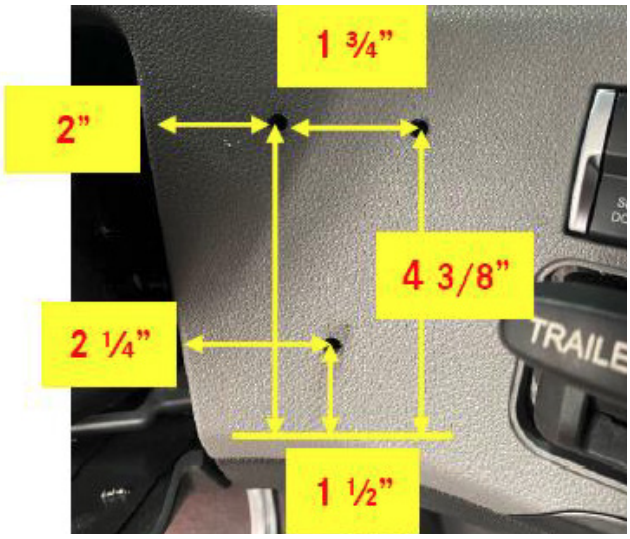
Western Star 57X Installation begins on page 28

1



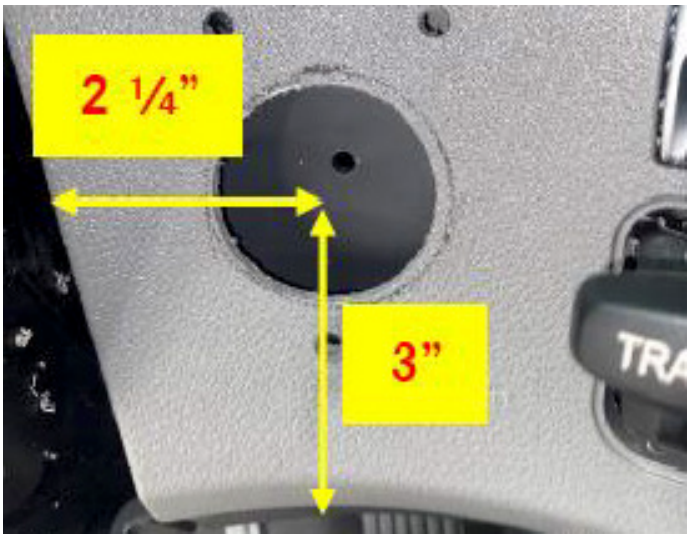
On **Cascadia** truck applications, the MirrorEye® display controller is installed on the dash panel within reach of the driver's seat

2



To mount the controller, begin by creating three (3) hole locations using a ¼" drill at locations depicted

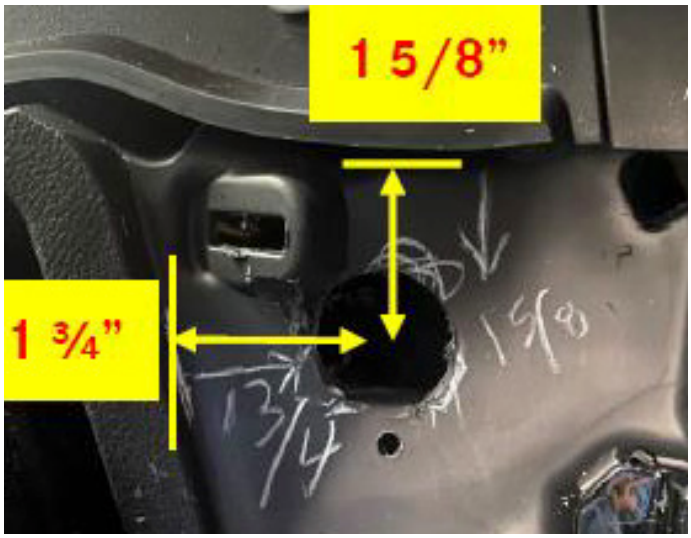
3



Create the cut-out hole using a 2⅛" tool at the location depicted.

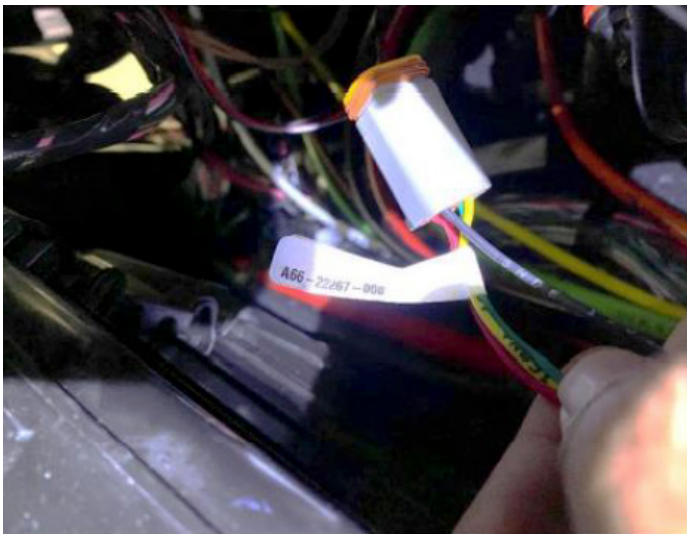
NOTE: Be aware that this is a double-surfaced panel

4



Cut a hole of 1¼" in the second (back) surface at location depicted for controller mounting and relating harness passthrough

5



Connect controller to the main wiring harness, then mount in place with corresponding screw set



NOTE: Corresponding image shows backside mounting make contact with Stoneridge representative(s)

6



Installed controller



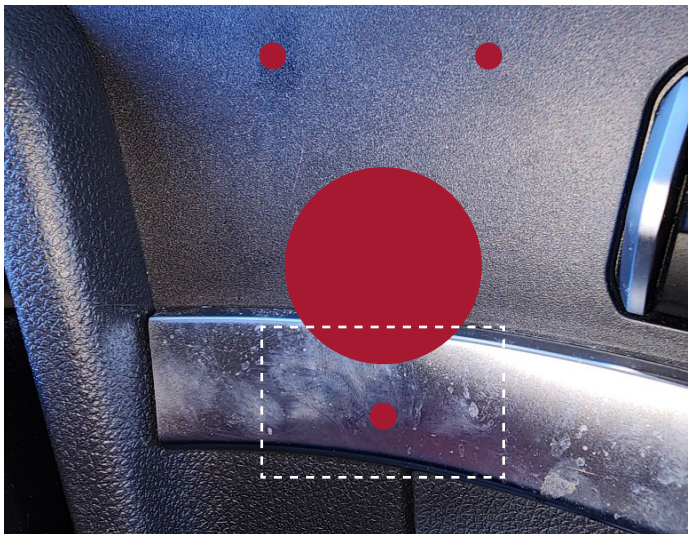
NOTE: Take note of the light indicators — if green lights do not turn on, there is a misconnection within the system. If the mis-connect cannot be identified, make contact with Stoneridge representative(s)

1



On **Western Star** truck applications, the MirrorEye controller should be installed in the location depicted on the dash panel for easy and intuitive reach of the driver

2



For installation in **Western Star** trucks you will need to remove the silver trim bezel and cut a notch in the trim

3



Take care not to damage the to the retaining clip on the back of the trim

4



Create the cut-out hole using a 2⅛” tool at the location depicted. **NOTE:** Be aware that this is a double-surfaced panel

5



Cut a hole of 1¼” in the second (back) surface at location depicted for controller mounting and relating harness passthrough

6



The controller is mounted to the dash panel, not the backstop of the truck.

Using a longer drill bit, add some depth to the upper two holes into the truck backstop to accommodate the controller studs (marked in red).

7

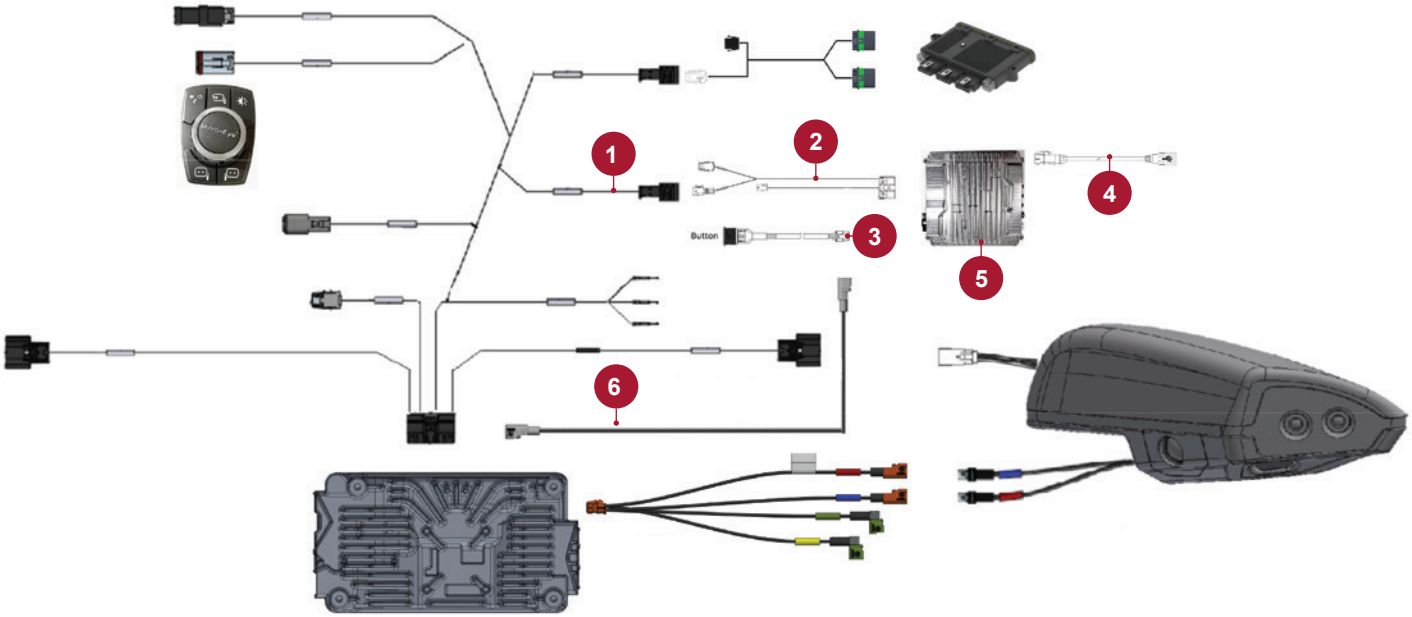


Installed controller on **Western Star** applications



NOTE: Take note of the light indicators — if green lights do not turn on, there is a misconnection within the system. If the mis-connect cannot be identified, make contact with Stoneridge representative(s)

1



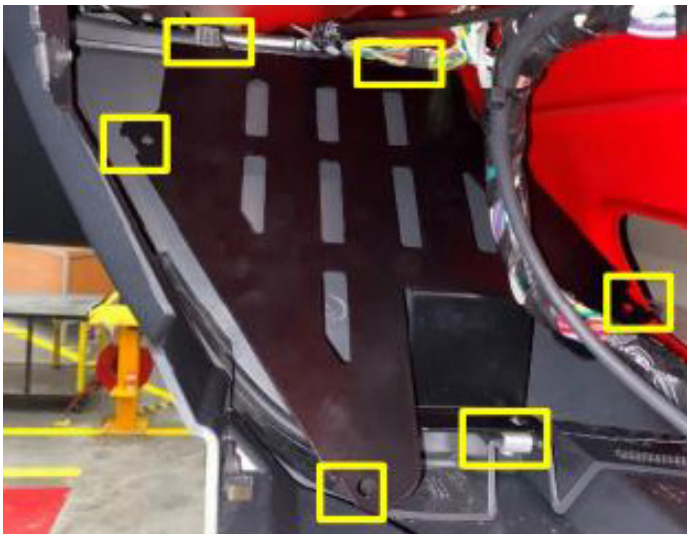
Overview of the DVR Connection
(1) To DVR Harness (2) DVR Wire Harness (3) DVR Trigger Button (4) USB Cable for flash drive or USB Connnectivity Dongle
(5) DVR Gen 1 (6) Ethernet

2



DVR will be installed behind the upper console to the left of the ECU

3



Using the corresponding screw and clip sets, install the DVR bracket in the upper console, as Illustrated

4



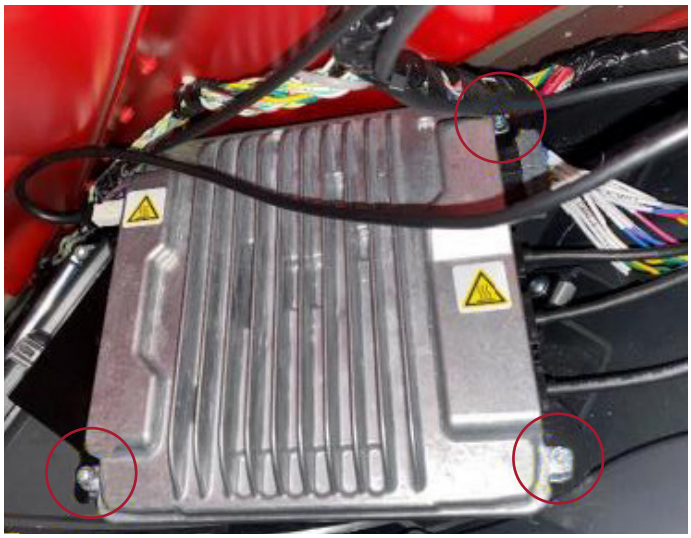
Locate the DVR harness (depicted) and connect to the DVR module as shown

5



Connect the Ethernet cable from the DVR to the ECU and connect USB Cable to the DVR

6



Once the main wire harness, USB (with/without optional Connectivity Dongle) and Button Connections have been installed, attach the DVR to the DVR bracket in the upper console

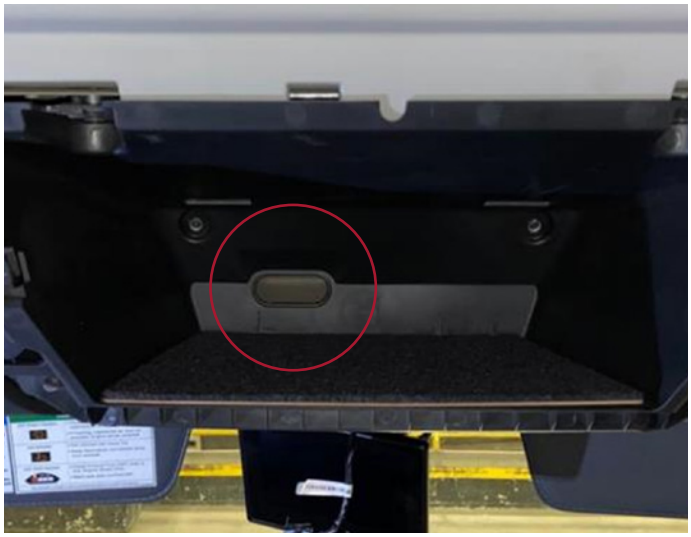
NOTE: If installing connectivity dongle - see note and instructions on page 32, step 8

7



Use a 5/8” Drill Bit (DO NOT use a step drill bit) to make a hole in the upper console tray, and install the button in position

8



Once the USB and connectivity dongle have been attached locate the dongle with the hook and loop tape as shown

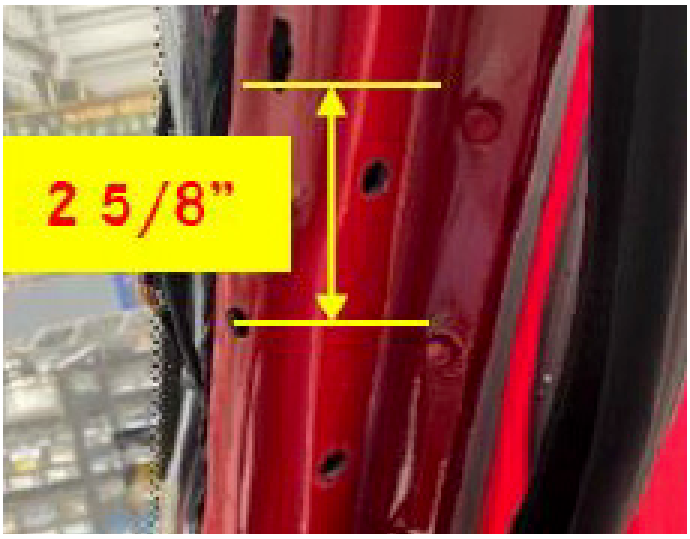
NOTE: If installed with a dongle, secure to back wall as illustrated. If no dongle, route the connected cable to be accessible on the shelf of the upper console.

9



Allowing the connectivity status light to be viewed through the upper console

1



On passenger-side pillar, measure 2⅝” (as depicted) for center hole location, then use bracket as template for 2 additional hole locations – use 25/64” drill bit to create holes

2



Install M6 rivets in hole locations

3





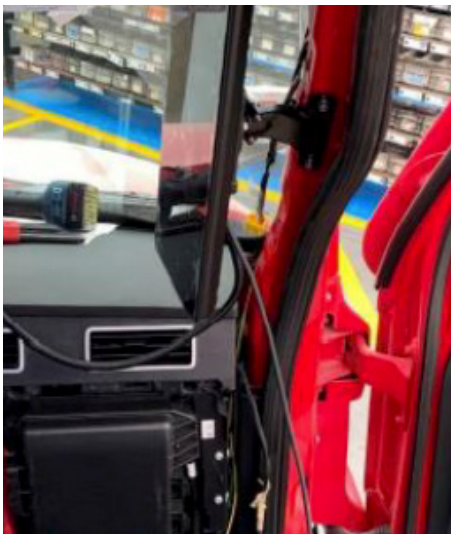
Assemble bracket with relating screw set

4



Install RAM® base to the monitor with relating kit set screws (NOTE: Red Loctite® should be on screws; passenger-side monitor is 15”)

5



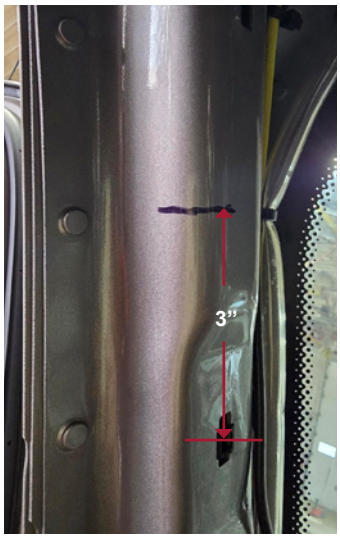




Install passenger side monitor and blind spot warning bracket and indicator, if applicable

NOTE: For MY21 and older, please contact your Stoneridge representative if this bracket is required.

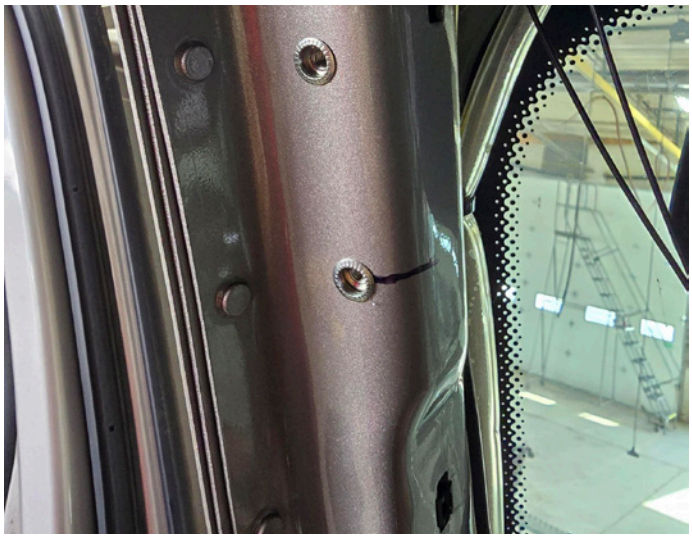
1





Mark holes for driver-side monitor bracket on A-pillar, using relating photo as reference. The bracket can serve as a template if needed.

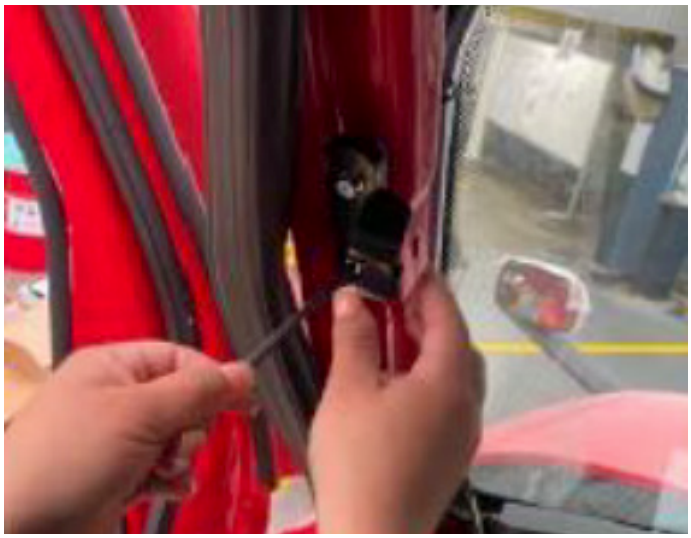
2



Create holes with 25/64” drill, then insert M6 rivnuts

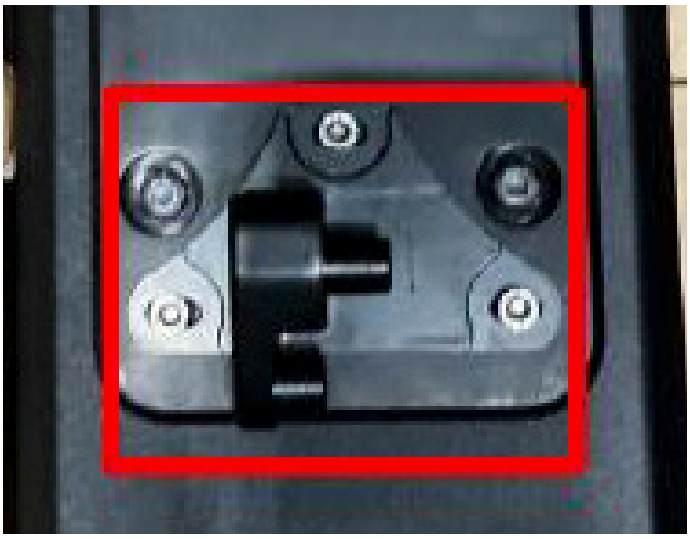
3





Mount and tighten the monitor bracket with Allen wrench and corresponding screw kit

4



Install monitor bracket to back side with relating screw set (NOTE: Red Loctite® should be on screws; driver-side monitor is 12”)

5



Mount the driver-side monitor as depicted with relating screw set

6



Connect Coax Cable Fakra connector to the monitor. Install MKII terminating resistor

1



Remove point screws from the upper console in preparation of installing the Class V monitor bracket

2



Assemble the monitor bracket and RAM® interface using relating screw kit

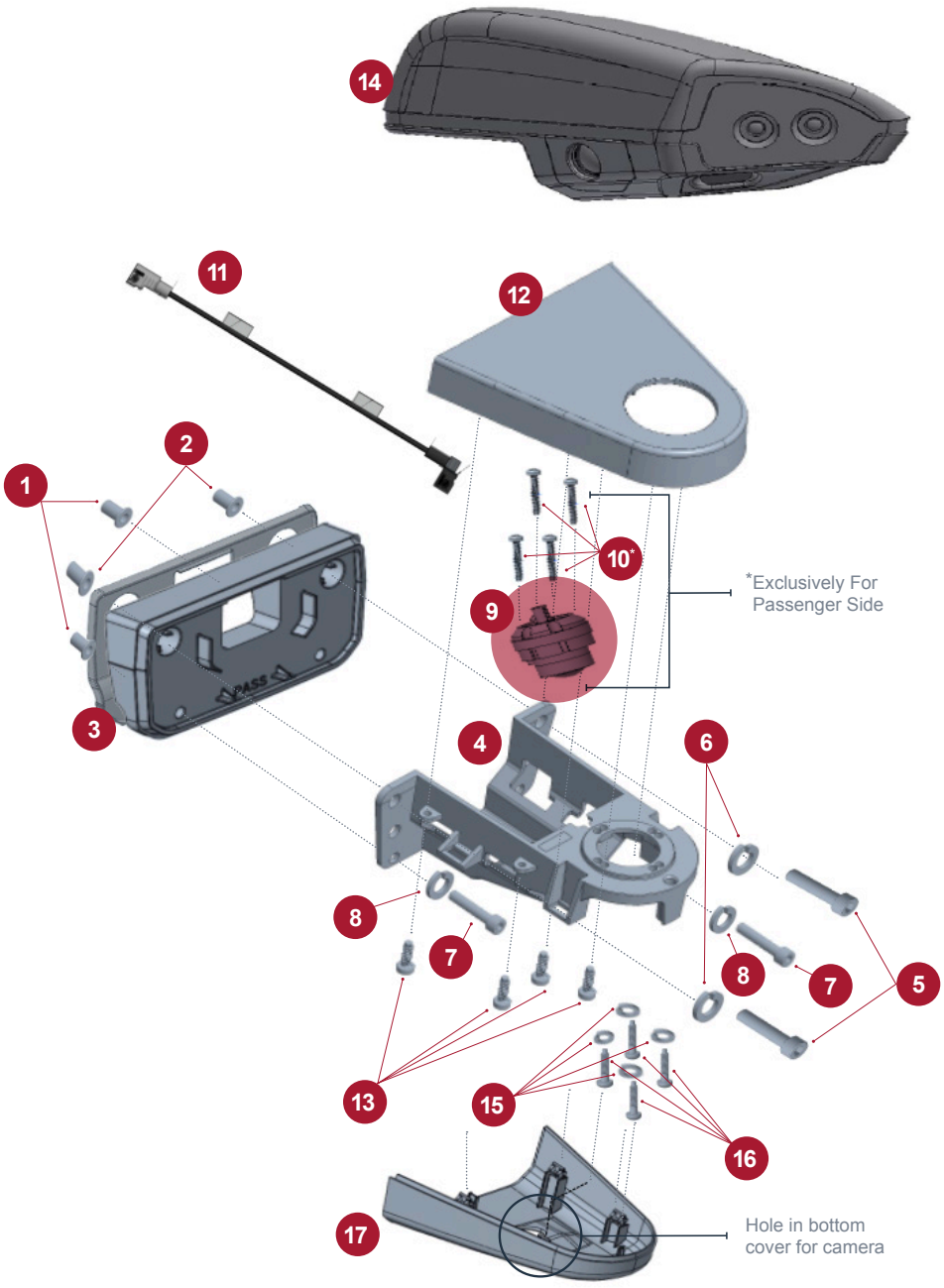
3





Affix the RAM® bracket interface assembly with previously removed point screws, adjusting with a drill

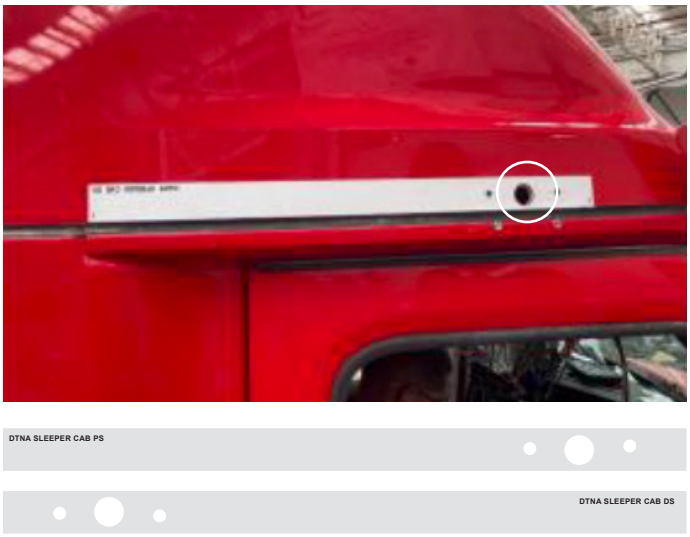
1

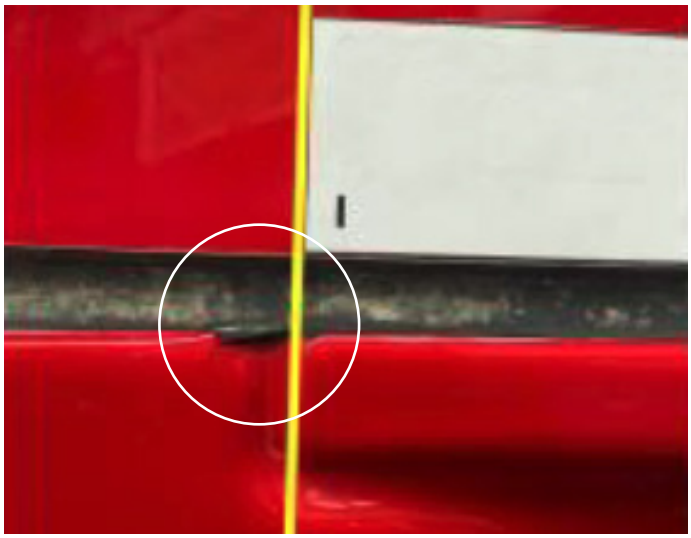


Identify and review relating components

1. M6 X 1,0 6h .70-4,2 Rivet Nut Zinc, Fastenal Art Nr. 0125653, Carbon Steel - Fe/Zn A1l Per ISO 4042 (Qty. 2)
2. M8 X 1,25 6h, 70-3,8 Rivet Nut Zinc, Fastenal Art Nr. 0125655, Carbon Steel - Fe/Zn A1l Per ISO 4042 (Qty. 2)
3. Mounting Gasket and Interface Bracket Passenger Side
4. Main Bracket
5. M8-1,25 X 60mm Socket Head Fully Threaded Screw, ISO 4762, Zn-Pl Steel (Qty. 2)
6. M8 Split Lock Washer, DIN 127b, Zn-Pl Steel (Qty. 2)
7. M6-1,0 X 35mm Socket Head Fully Threaded Screw, ISO 4762, Zn-Pl Steel (Qty. 2)
8. M6 Split Lock Washer, Din 127b, Zn-Pl Steel (Qty. 2)
9. Class V Camera (Blind Spot)
10. M3 X 20mm Thread Forming Screw (Qty. 4)
11. Coax Wing Harness
12. Top Cover
13. 3.5 X 12 - T15 Panhead Thread Forming Screw, Kn6039 / Wn5452, Zn-Pl Steel (Qty. 4)
14. Camera Wing With IR Focused Emitter - Passenger Side
15. M4 Split Lock Washer, Din 127b, Zn-Pl Steel (Qty. 4)
16. M4x0.7 Pilot Screw 18mm (Qty. 4)
17. Bottom Cover Main Bracket

2





Use the provided template to identify locations for upper M8 holes and larger harness hole. Place the template's left edge flush with the passenger side door edge, as depicted. Use wax pencil to mark hole locations.
Drill the center cable/harness passthrough hole to size indicated on template. (1¼" hole saw - requires 3" of depth)

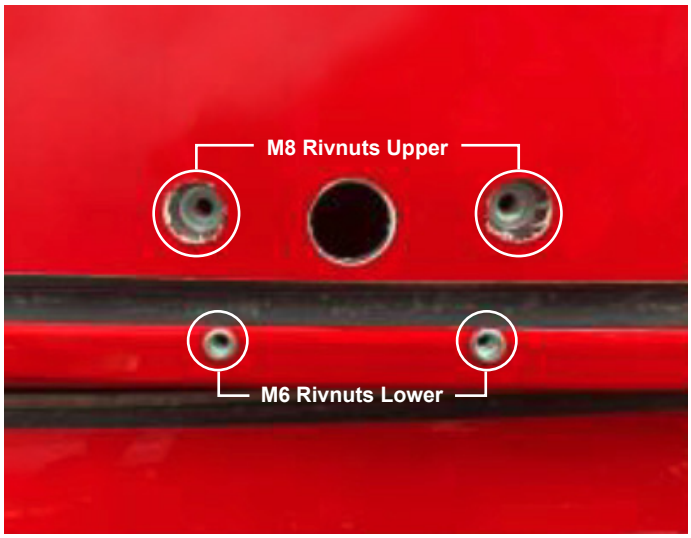
NOTE: templates are provided to installer teams separately and not included in MirrorEye contents package.

3



Use the interface bracket or gasket to mark lower hole locations

4



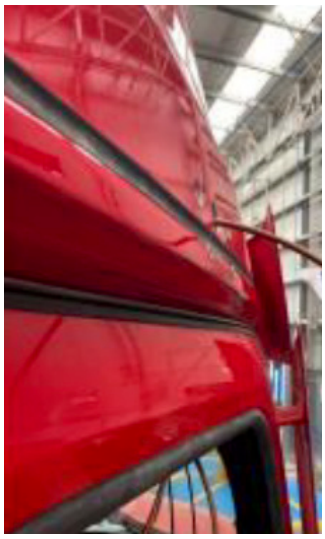
For upper mounting holes, use a 1" hole saw to drill out the outer surface and use a 17/32" drill bit to drill out the secondary surface for the M8 rivnuts. Use a 25/64" drill bit to create the lower mounting holes which use M6 rivnuts.

5



Use 17/32” drill bit, open center hole for M8 rivnuts

6

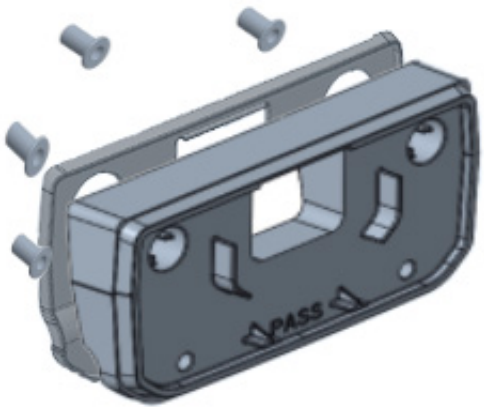




Using the large center passthrough hole, pull out the relating harness and coax cables relating to the wing camera and Class V (blind spot) camera

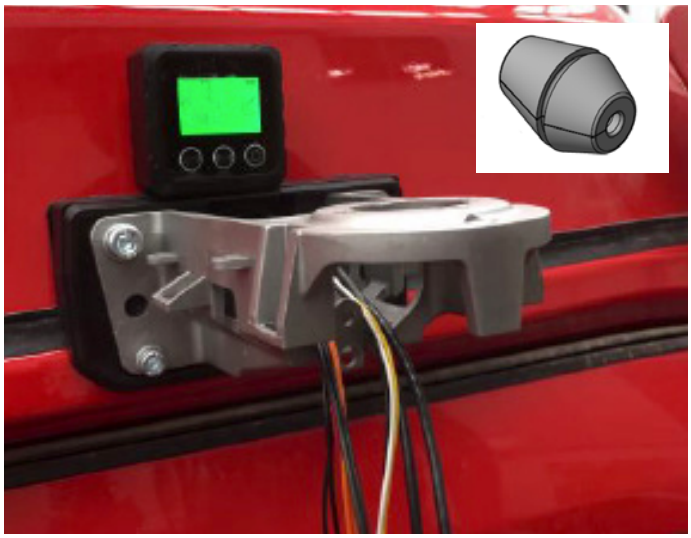
Please refer to Page 42 (Coax Cable Connections) for a more detailed installation of the coax cables.

7



Before affixing the interface and main bracket, be sure to place the gasket, as depicted. (the interface will indicate “Pass” or “Driver” as appropriate)

8



Assemble and route cables through the main camera arm bracket (using the grommet to protect the cables) then affix the main bracket with relating fasteners, continually measuring its inclination with a level gauge

NOTE: MirrorEye MKII Generation – Coax Cable Connections

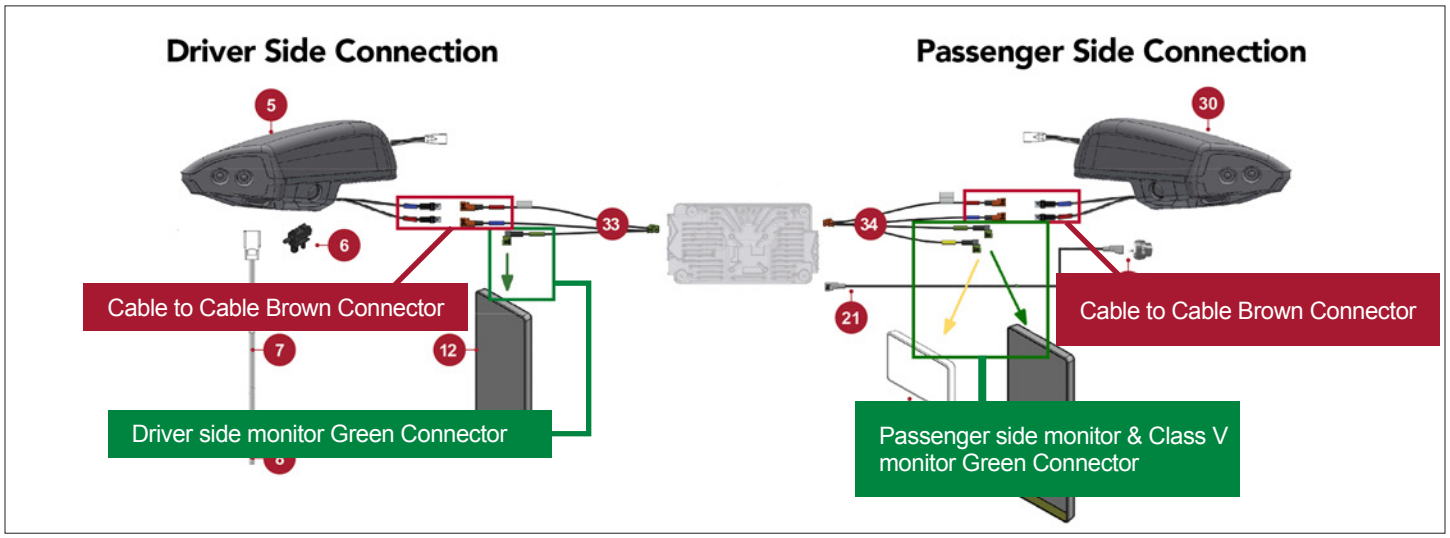
Issue: Coax cable harness connector unmated cable to cable AND/OR coax cable connection at any or all monitor connections resulting in loss of communication signal between the MKII Camera Wing and in-cab Monitor.

The Brown or Green Fakra cable connector securing the MirrorEye Camera Wing to the in-cab Monitor and ECU if not properly secured may interrupt communication and video feed to the in-cab monitor. This connection when properly installed should result in an audible snap hearing the lock tab of the connect fully seat.

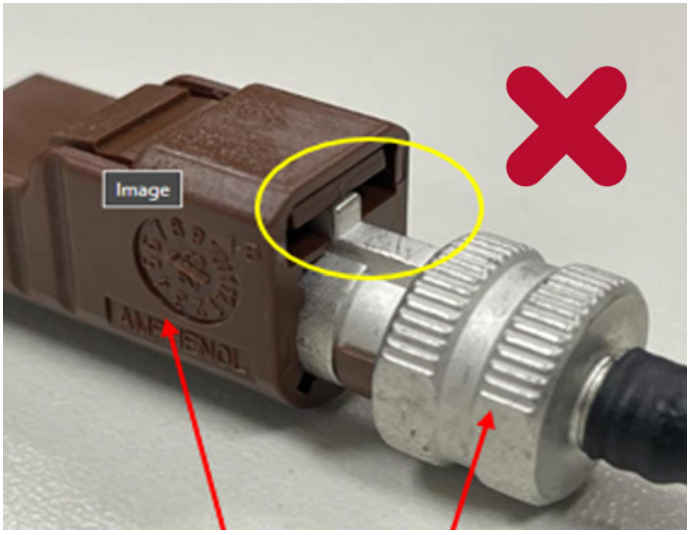
Verification test of this seated connection should be performed by completing a light tug test on the connector after securing. Take caution to not pull the coax of either cable possibly damaging the crimp of the cable. Ensure the connection is locked or fully seated and will not be affected by cable movement or vehicle vibration.

Affected connectors illustrated below for Driver and Passenger side wing connection and monitor connections.

- Cable to Cable – connecting the ECU to the Camera Wing (Brown Connector)
- Cable to Monitor – Connection ECU to the Monitor (Green Connector)

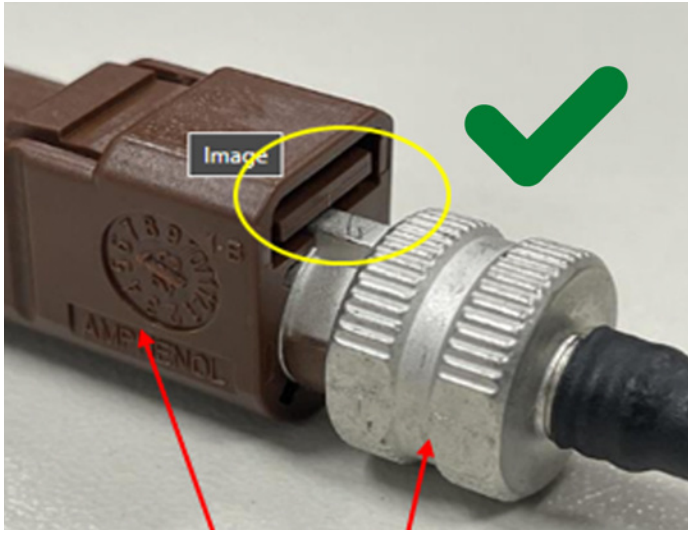


1. Failed - unlocked connection



Hold points for tug test. Do not pull from the cable.

2. Good -locked connection



Hold points for tug test. Do not pull from the cable.

3



- Connections at all monitor's - the connector when fully seated should result in an audible snap
- Lite tug test should be performed after seating the connector

4

If you encounter a cable that is fails, the tug test of a locked connection:

1. Remove the cable and replace and repeat test.
2. Open a service ticket directly with Stoneridge Support Team. Ticket can be generated by emailing Incident@stoneridge.com, please be sure to include the vehicle asset or unit number, registered vehicle owner, your contact information, Name, phone number. Or submit a new ticket via the Stoneridge Service Portal at Stoneridge.app (This does require registration and log on access to the page.)
3. Keep the cable for return to Stoneridge, RMA shipping label and instructions will be provided via the service ticket communication.

5. Minimum Allowed Bending Radii

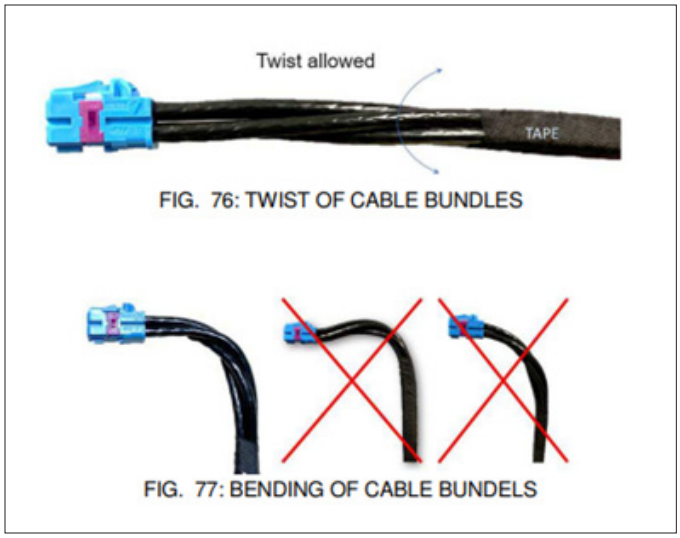
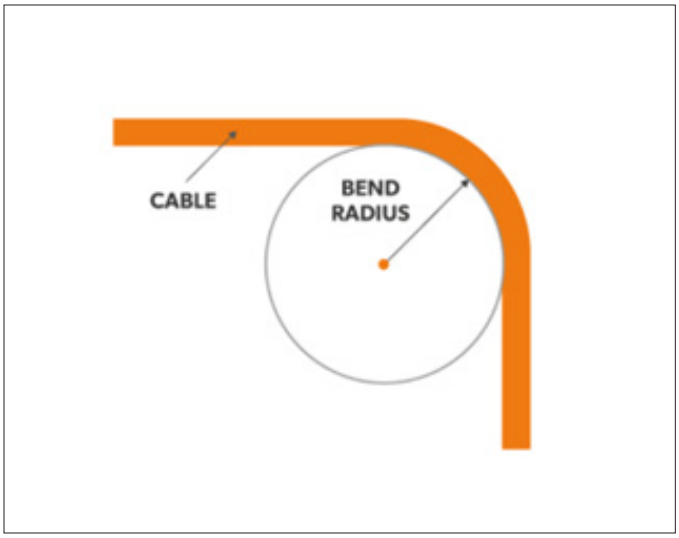


FIG. 76: TWIST OF CABLE BUNDLES

FIG. 77: BENDING OF CABLE BUNDELS



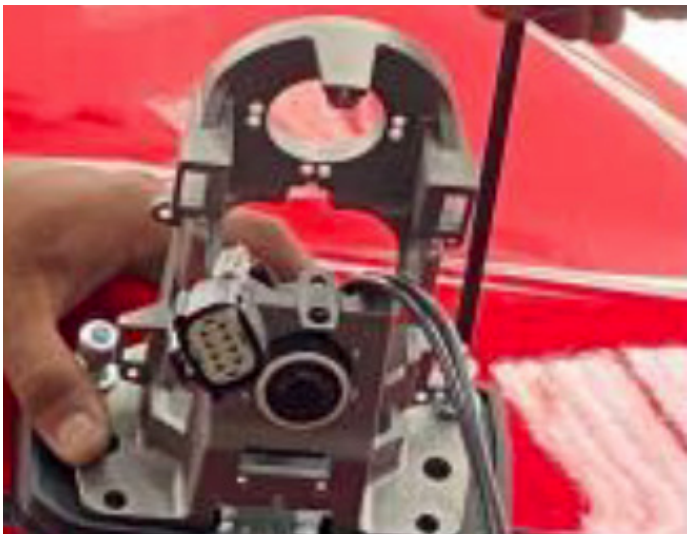
For correct data transmission through the COAX cables, it is important to route the cables in such a way that the minimum bending radius is ensured. Installing the cables with a bending radius smaller than the minimum bending radii specified in this document could result in partial, temporary or permanent loss of image on the displays.

Minimum bending radius of the COAX cables:

No.	Cable	Single bend	Multiple bends
2	ECU to wing-pigtail	16.5mm	51mm
2	ECU to monitor	16.5mm	51mm
3	Wing-pigtail	8.7mm	29mm

Cable mounting clips and ties are permitted. Make sure that the clamping force of a clip or tie is just adequate to prevent unwanted movement. Clamping forces shall not be too high: the COAX cables may not be ‘strangled’.Too high clamping forces will deteriorate the signal quality from the camera to the electronic control unit, could result in partial, temporary or permanent loss of image on the displays.

9



Install the Class V (blind spot) camera in the center portion of the main camera arm bracket, as depicted

10



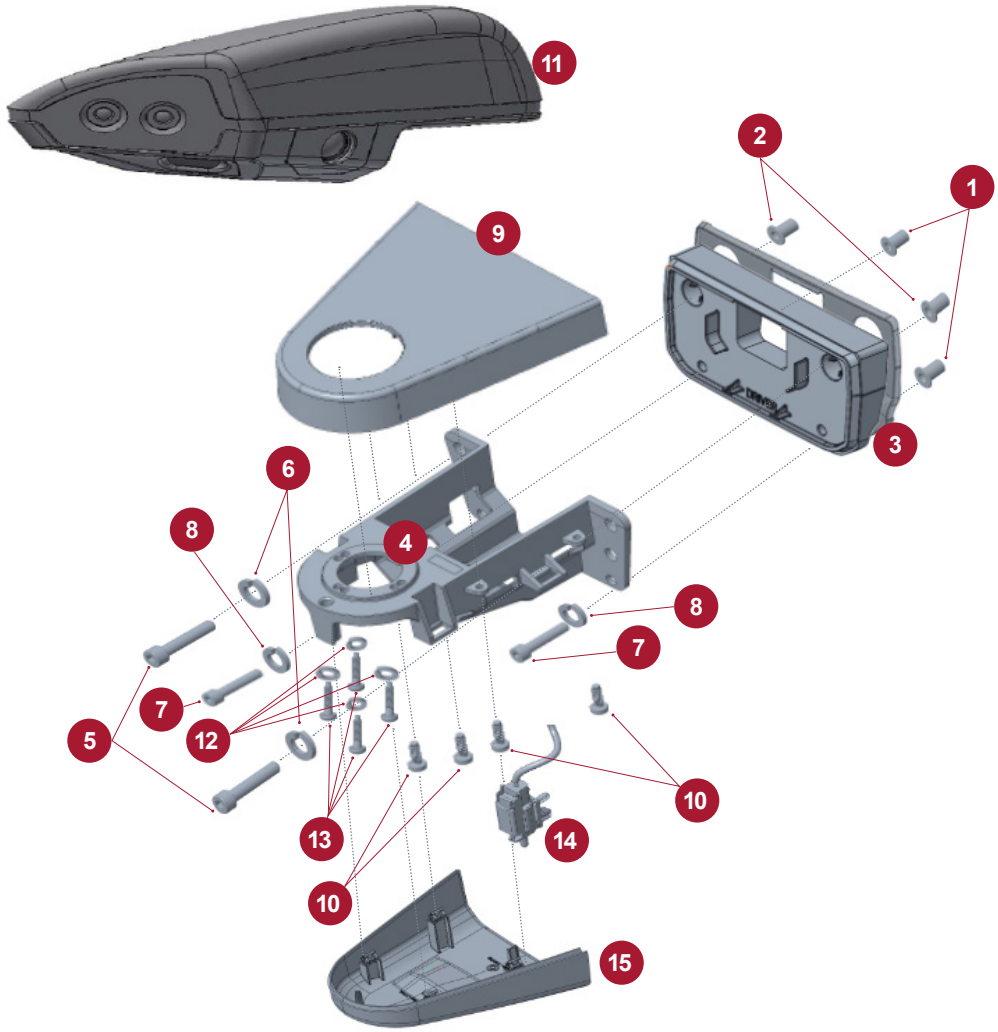
Using the corresponding fastener set, install upper main bracket cover with screw set, use the alignment holes marked “R” bolt the wing to the bracket and snap on lower cover

11



Snap in place the lower cover to the main camera arm bracket to complete the exterior installation

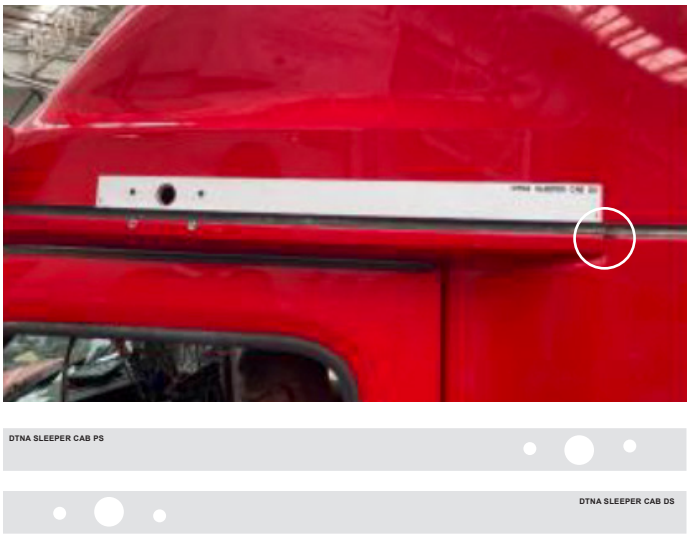
1



1. M6 X 1,0 6h .70-4,2
   Rivet Nut Zinc,
   Fastenal Art Nr. 0125653,
   Carbon Steel - Fe/Zn A1I
   Per ISO 4042 (Qty. 2)
2. M8 X 1,25 6h, 70-3,8
   Rivet Nut Zinc,
   Fastenal Art Nr. 0125655,
   Carbon Steel - Fe/Zn A1I
   Per ISO 4042 (Qty. 2)
3. Mounting Gasket and Interface Bracket Driver Side
4. Main Bracket
5. M8-1,25 X 60mm
   Socket Head Fully Threaded Screw,
   ISO 4762, Zn-Pl Steel (Qty. 2)
6. M8 Split Lock Washer,
   Din 127b, Zn-Pl Steel (Qty. 2)
7. M6-1,0 X 35mm
   Socket Head Fully Threaded Screw,
   ISO 4762, Zn-Pl Steel (Qty. 2)
8. M6 Split Lock Washer,
   DIN 127b, Zn-Pl Steel (Qty. 2)
9. Top Cover
10. 3.5 X 12 - T15
    Pan head Thread Forming Screw,
    Kn6039 / Wn5452,
    Zn-Pl Steel (Qty. 4)
11. Camera Wing with
    IR Focused Emitter - Driver Side
12. M4 Split Lock Washer,
    DIN 127b, Zn-Pl Steel (Qty. 4)
13. M4x0.7 Pilot Screw 18mm (Qty. 4)
14. DTNA OAT Sensor GE - 1923
15. Bottom Cover Main Bracket

Identify and review relating components

2





Use the provided template to identify locations for upper M8 holes and larger harness hole. Place the template's left edge flush with the passenger side door edge, as depicted. Use wax pencil to mark hole locations.
Drill the center cable/harness passthrough hole to size indicated on template. (1¼" hole saw - requires 3" of depth)

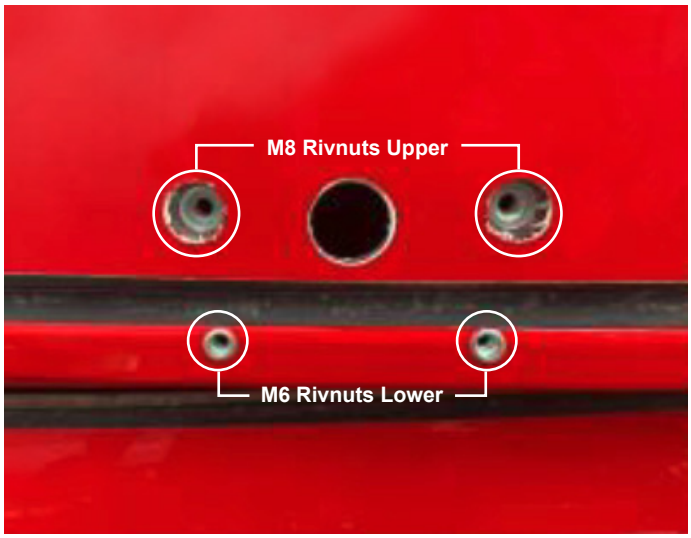
NOTE: templates are provided to installer teams separately and not included in MirrorEye contents package.

3



Use the interface bracket or gasket to mark lower hole locations

4



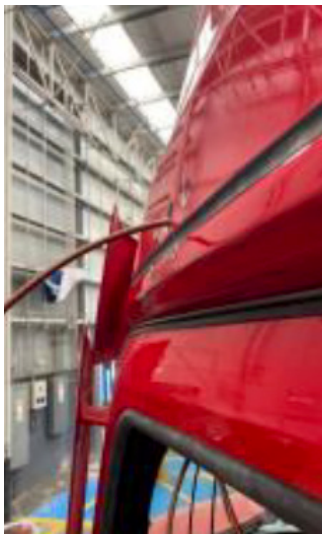
For upper mounting holes, use a 1" hole saw to drill out the outer surface and use a 17/32" drill bit to drill out the secondary surface for the M8 rivnuts. Use a 25/64" drill bit to create the lower mounting holes which use M6 rivnuts.

5



Use 1 inch hole saw to drill outer then open upper M8 holes with 17/32” and lower M6 holes with 25/64”

6





Using the large center passthrough hole, pull out the relating harness and coax cables relating to the wing camera and OAT sensor

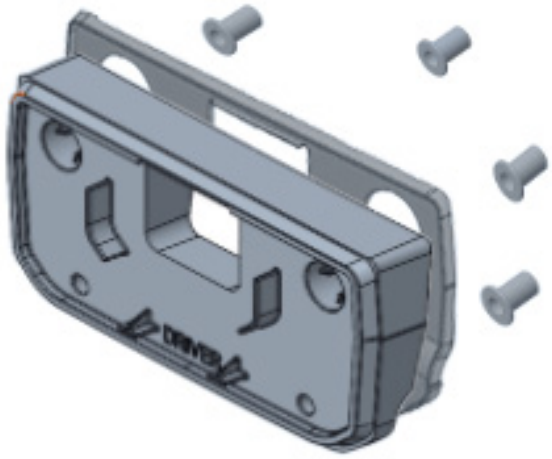
Please refer to Page 47 (Coax Cable Connections) for a more detailed installation of the coax cables.

7



Assemble the OAT sensor to the main bracket with corresponding screw set

8



Before affixing the interface and main bracket, be sure to place the gasket, as depicted. (the interface will indicate “Pass” or “Driver” as appropriate)

NOTE: MirrorEye MKII Generation – Coax Cable Connections

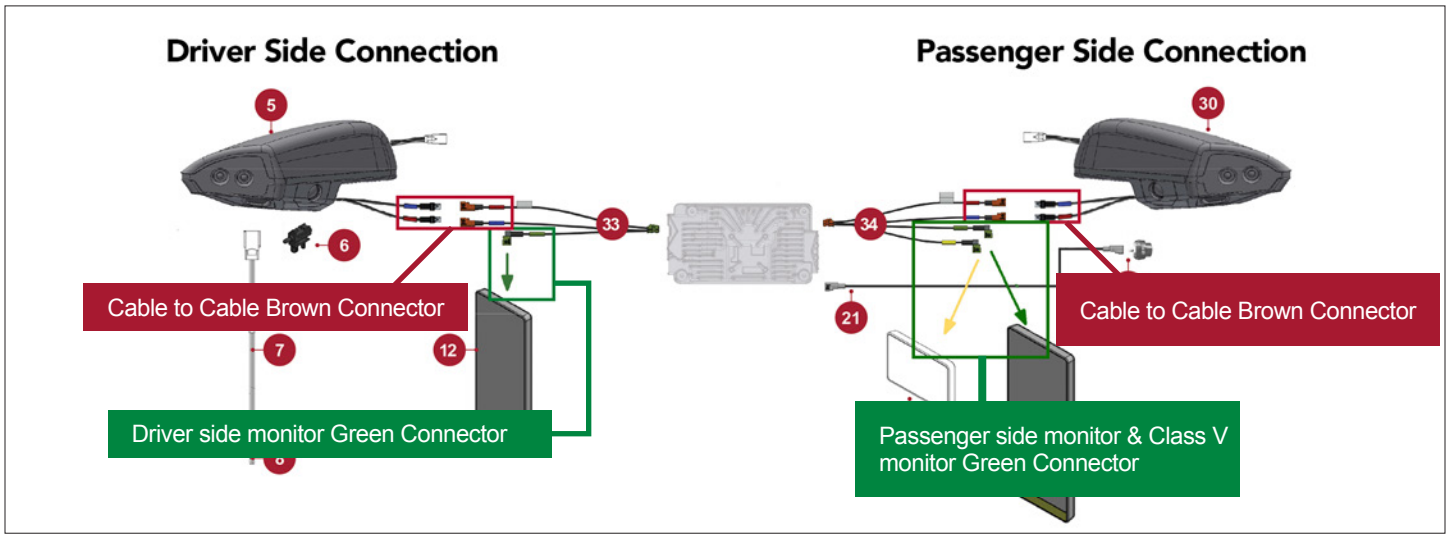
Issue: Coax cable harness connector unmated cable to cable AND/OR coax cable connection at any or all monitor connections resulting in loss of communication signal between the MKII Camera Wing and in-cab Monitor.

The Brown or Green Fakra cable connector securing the MirrorEye Camera Wing to the in-cab Monitor and ECU if not properly secured may interrupt communication and video feed to the in-cab monitor. This connection when properly installed should result in an audible snap hearing the lock tab of the connect fully seat.

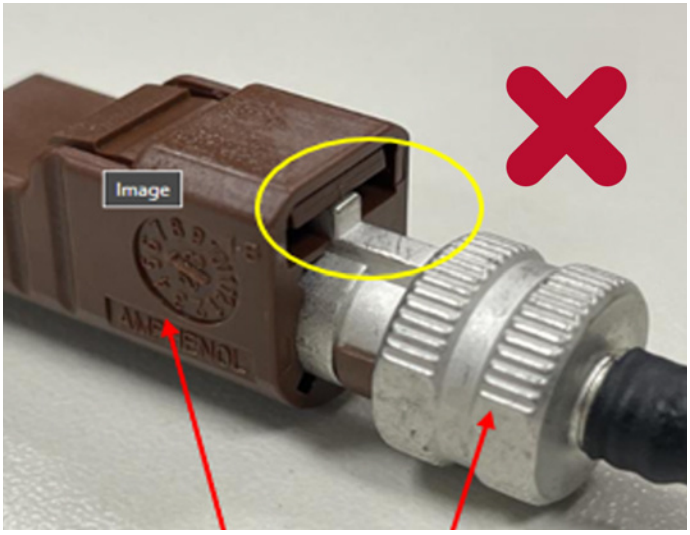
Verification test of this seated connection should be performed by completing a light tug test on the connector after securing. Take caution to not pull the coax of either cable possibly damaging the crimp of the cable. Ensure the connection is locked or fully seated and will not be affected by cable movement or vehicle vibration.

Affected connectors illustrated below for Driver and Passenger side wing connection and monitor connections.

- Cable to Cable – connecting the ECU to the Camera Wing (Brown Connector)
- Cable to Monitor – Connection ECU to the Monitor (Green Connector)

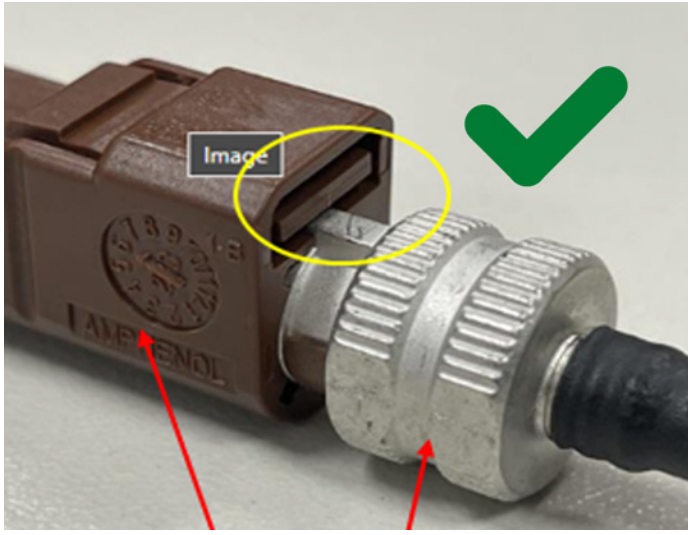


1. Failed - unlocked connection



Hold points for tug test. Do not pull from the cable.

2. Good -locked connection



Hold points for tug test. Do not pull from the cable.

3



- Connections at all monitor's - the connector when fully seated should result in an audible snap
- Lite tug test should be performed after seating the connector

4

If you encounter a cable that is fails, the tug test of a locked connection:

1. Remove the cable and replace and repeat test.
2. Open a service ticket directly with Stoneridge Support Team. Ticket can be generated by emailing Incident@stoneridge.com, please be sure to include the vehicle asset or unit number, registered vehicle owner, your contact information, Name, phone number. Or submit a new ticket via the Stoneridge Service Portal at Stoneridge.app (This does require registration and log on access to the page.)
3. Keep the cable for return to Stoneridge, RMA shipping label and instructions will be provided via the service ticket communication.

9



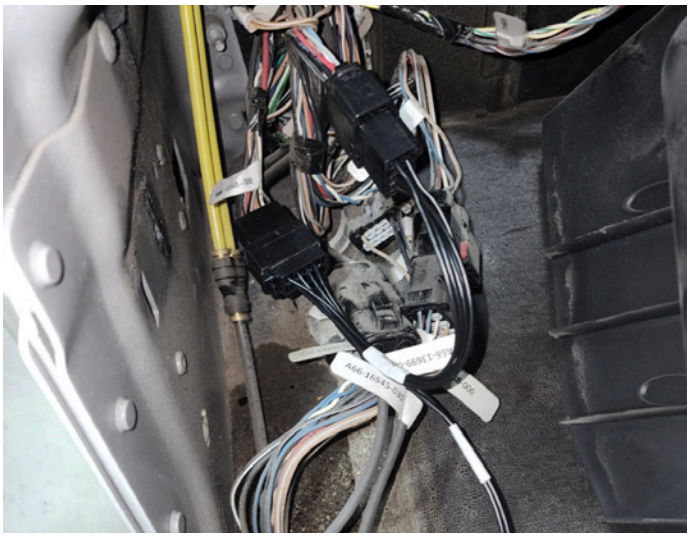
Route OAT Sensor wire inside the cab through the wing mounting bracket for connection in the lower kick panel.

10



Locate the OE Harness shown in the photo to insert the OAT Sensor Breakout harness.

11



Install the provided connector to the OAT Sensor Wire and complete connection to the breakout harness.

9



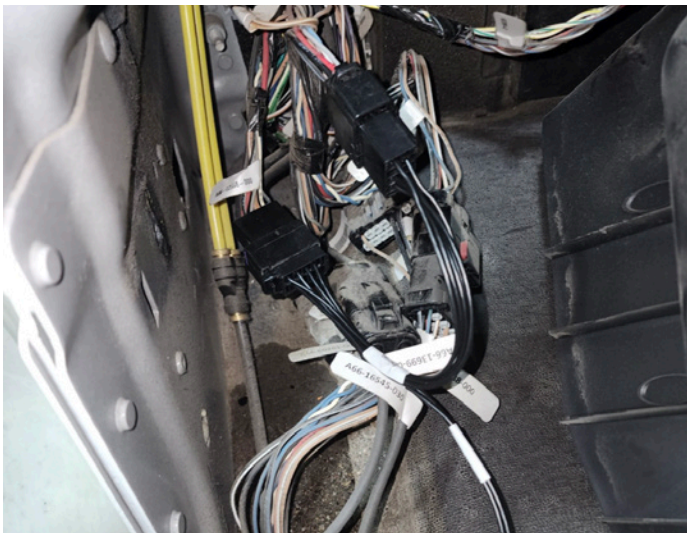
Route OAT Sensor wire inside the cab through the wing mounting bracket for connection in the lower kick panel.

10



Locate the OE Harness shown in the photo to insert the OAT Sensor Breakout harness.

11



Install the provided connector to the OAT Sensor Wire and complete connection to the breakout harness.

9



Assemble and route cables through the main camera arm bracket (using the grommet to protect the cables) then affix the main bracket with relating fasteners, continually measuring its inclination with a level gauge

10



Using the corresponding fastener set, install upper main bracket cover with screw set, use the alignment holes marked “L” bolt the wing to the bracket

11



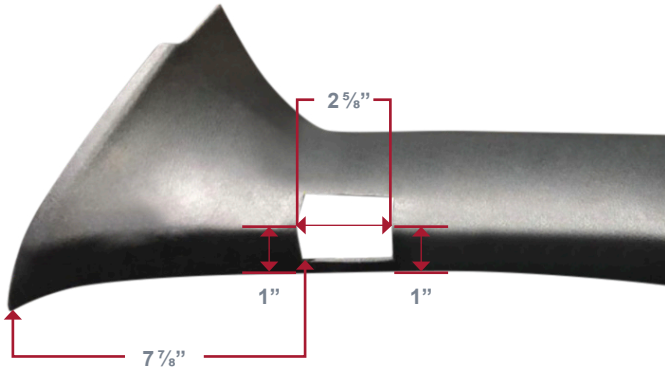
Snap in place the lower cover to the main camera arm bracket to complete the exterior installation

1



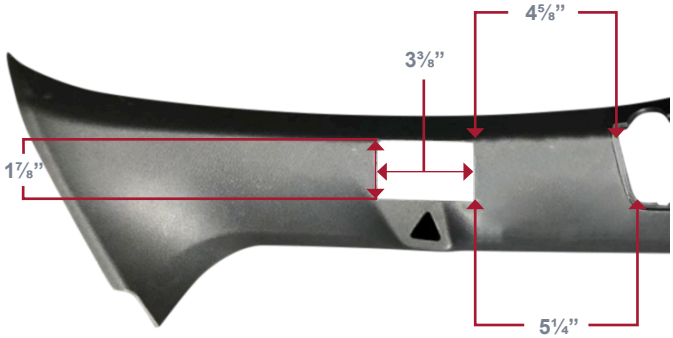
Identify the corresponding driver- and passenger-side A-pillar covers before proceeding to measuring/cutting windows for monitor brackets
(1) Driver Side (2) Passenger Side

2



On driver’s side (left) cover, follow the measurements depicted and cut squared window

3



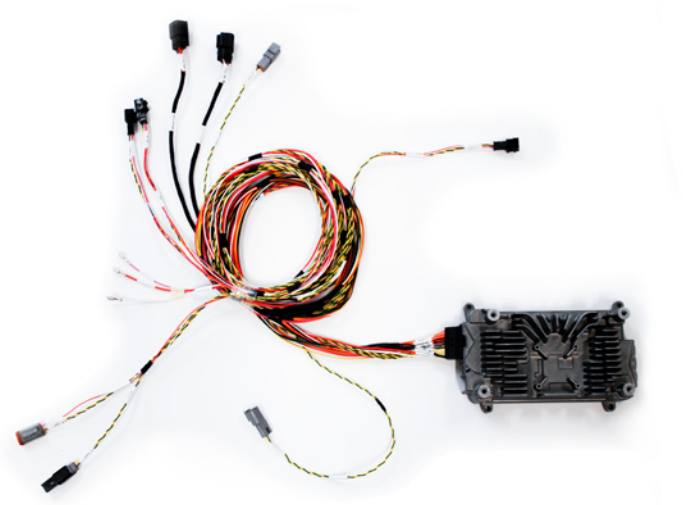
On the passenger side (right) cover, follow the measurements depicted and cut rectangular window

1



Confirm the system powers up properly and that all monitors are showing the correct feed from their respective cameras

2



Make sure the main harness and relating cables/ connections are properly seated in the dash, A-pillar(s), console or headliner locations

3



Re-install all panels, upper console, covers and headliner to their original configuration(s). Be mindful of harness/ cable placement to avoid kinking during re-installation

MirrorEye®



System Alignment/ Calibration

SYSTEM ALIGNMENT/CALIBRATION

Alignment of Cameras

1



Verify field of view for all three cameras

2



The Class V camera should show as parallel to the truck's body and should be positioned to maximize the outward view

3



For the driver side camera view make sure that the horizon is parallel to the top of the monitor screen. Align the inside edge of the camera view to be parallel with the fairing

4



Repeat the previous step (3) on the passenger side ensuring a similar field of view in both the driver side and passenger side monitors

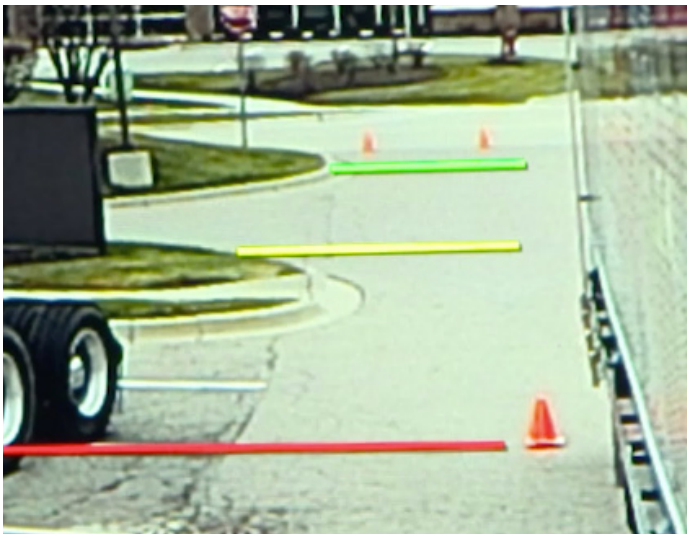
MirrorEye®

SYSTEM ALIGNMENT/CALIBRATION

Calibration of Distance Lines

This step must be completed without a driver present

1



At the time of installation, the vehicle's distance lines **must** be calibrated in the MirrorEye® system …

2



To do so, first bring up the Driver Menu by long-pushing (e.g., "push and hold") the lower-left button on the MirrorEye® Controller …

3



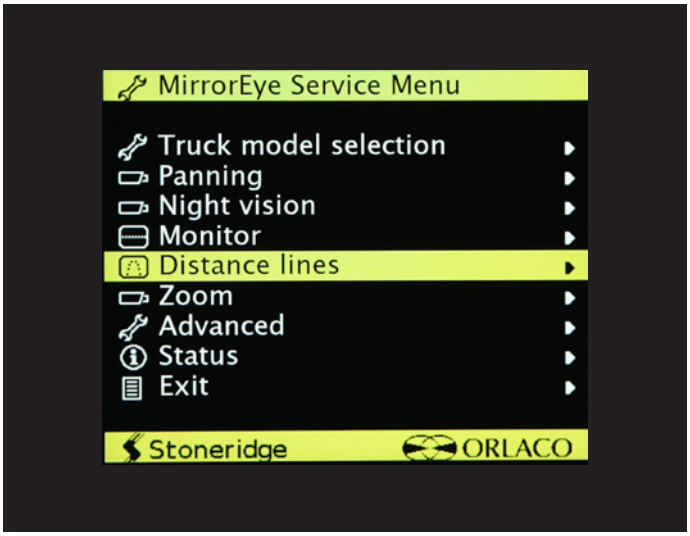
Using the controller's dial knob, scroll down to the Exit selection, and **long-push the Driver Side Manual Panning button and Controller Knob simultaneously** … this will bring access to advanced settings …

4



Warning message will appear… on the same page, "Access service menu" is default-selected, press the Controller Knob …

5



On the MirrorEye® Service Menu, dial-scroll to Distance Lines, then press the Controller Knob …

6



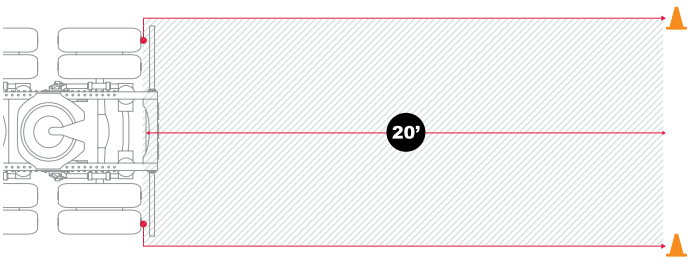
MirrorEye® installation technicians need to set the End of Trailer – or EOT – distance to calibrate the vehicle's distance lines …

7



Before doing so, first place cones at the end of the trailer on both the driver and passenger sides of the truck …

8



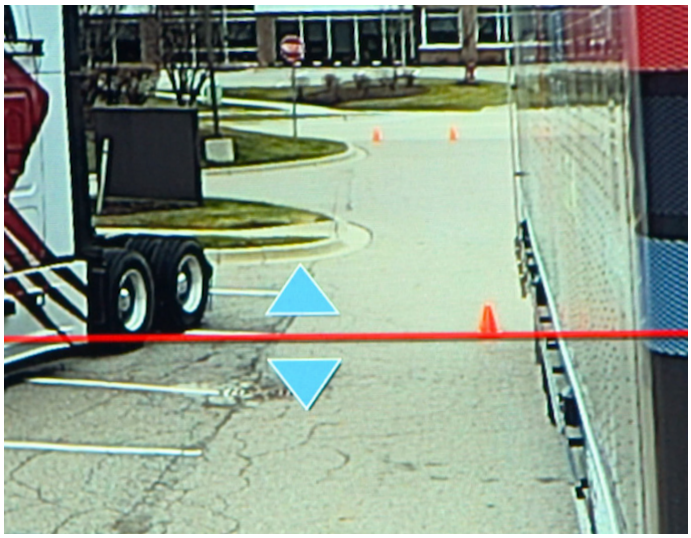
If a trailer isn't attached, measure 20-ft. from the first rear axle rearward and place a cone at that location on both sides of the vehicle (passenger and driver sides)

9



Back in the cab, dial-scroll to the “Set End of Trailer” selection and push the Controller Knob …

10



Match the red line on the monitor with the cone at the end of the trailer on the Driver Side using the Dial Knob … when it’s aligned, push the Controller Knob …

11



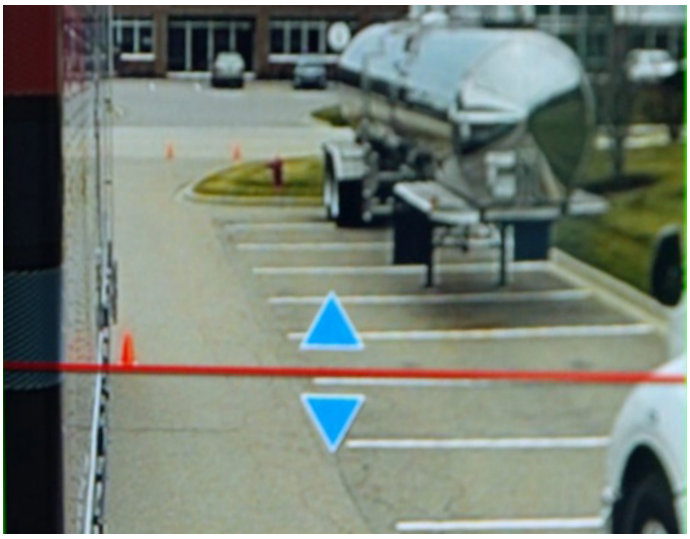
Once set, the correct driver-side distance lines are adjusted and displayed on the monitor …

12



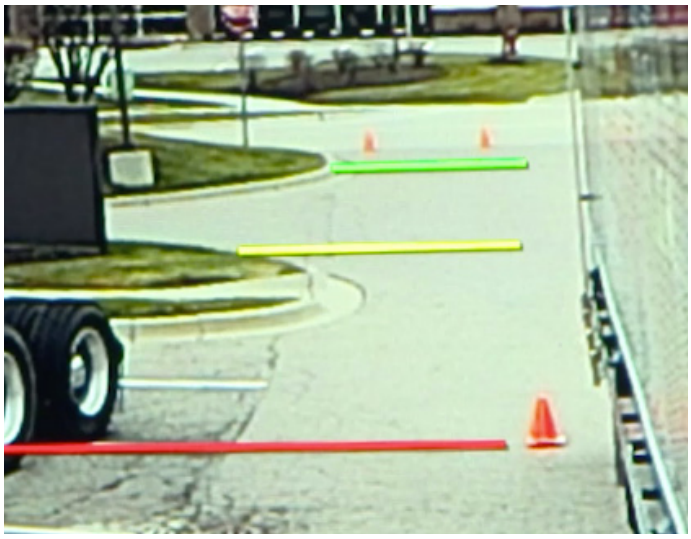
To match Passenger Side distance lines with those of the driver side, push and hold the lower-right button on the MirrorEye® Controller …

13



Match the red line on the monitor with the cone at the end of the trailer on the Passenger Side using the Dial Knob … when it's aligned, push the Controller Knob …

14



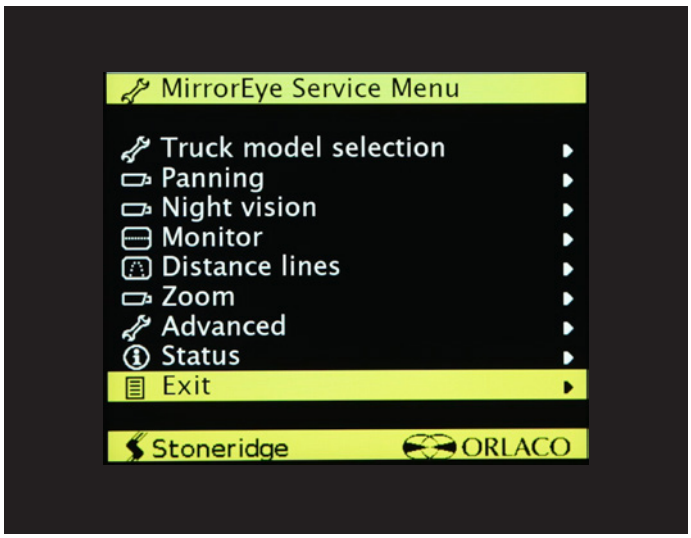
At this point, all distance lines for both sides of the truck are displayed and color-identified in red, yellow and green …

15



To exit Distance Lines in the Service Menu, dial-scroll to Return and push on the Controller Knob …

16

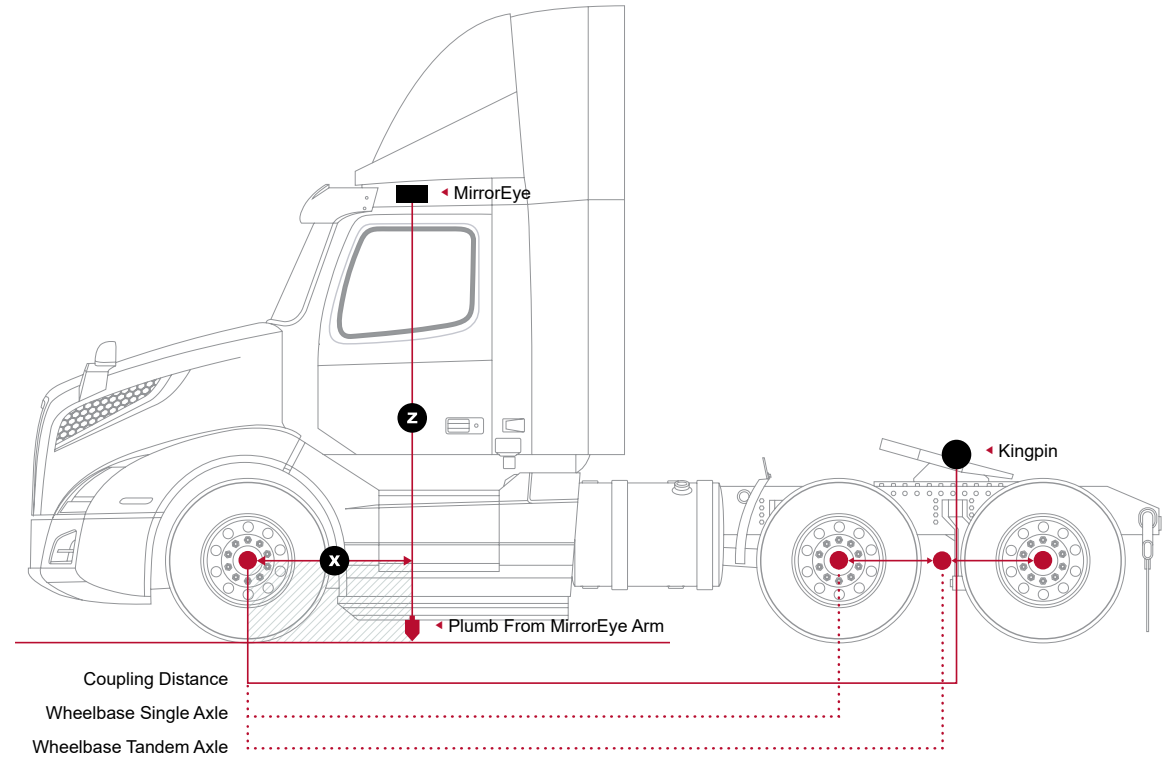


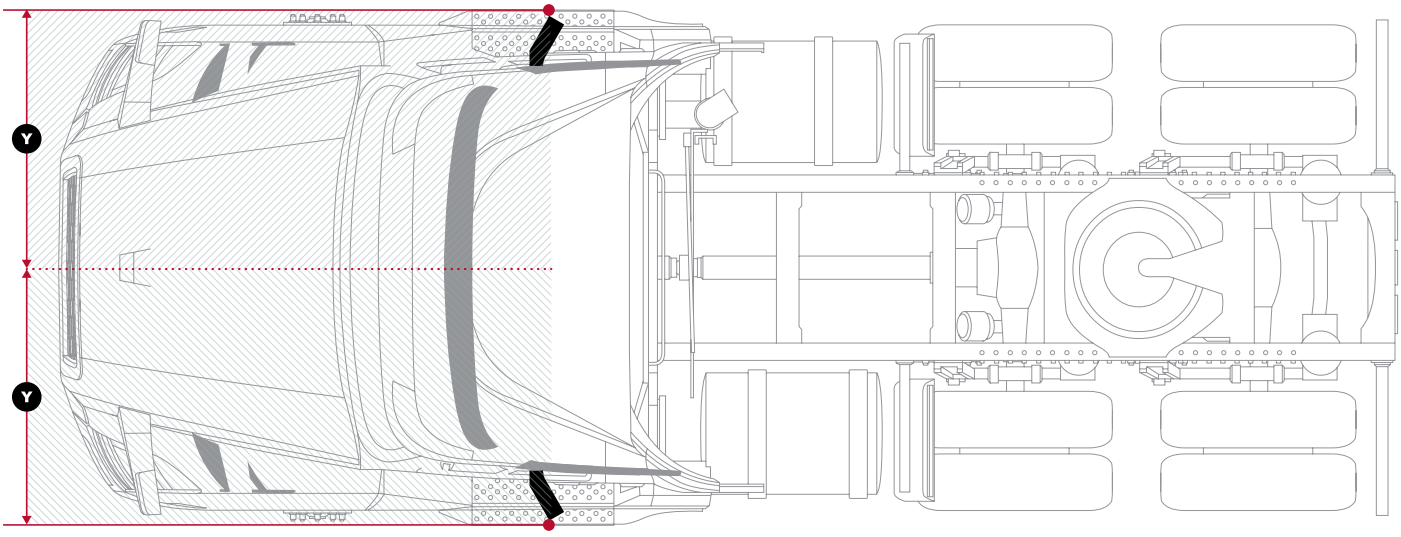
To exit the Service Menu, scroll down to Exit and press the Controller Knob again …

Entering Critical Values

At the time of installation, key and critical vehicle measurements must be entered into the MirrorEye® system

1





At the time of installation, key and critical values/measurements relating to the vehicle's **wheelbase, steering ratio, coupling position and camera positions (X,Y and Z)** must be entered into the MirrorEye® system.

2



To do so, first bring up the Driver Menu by pushing and holding the lower-left button on the MirrorEye® Controller …

3



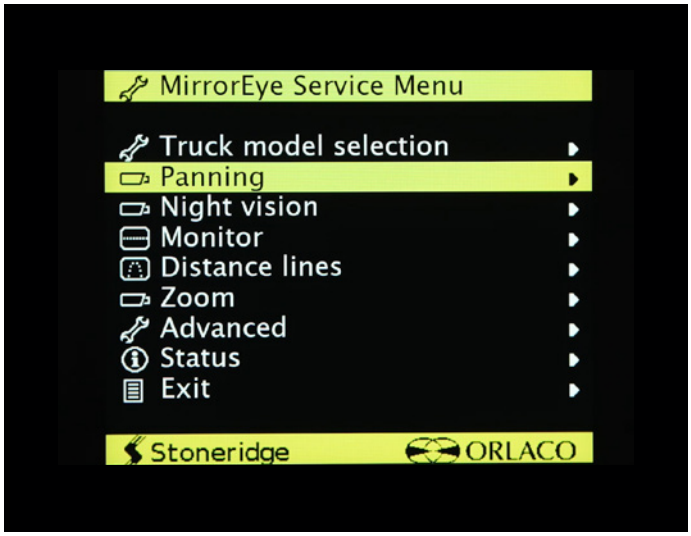
Using the controller's Dial Knob, scroll down to the Exit selection, then **push and hold the Driver Side Manual Panning button and Controller Knob simultaneously** … this will bring access to advanced settings …

4



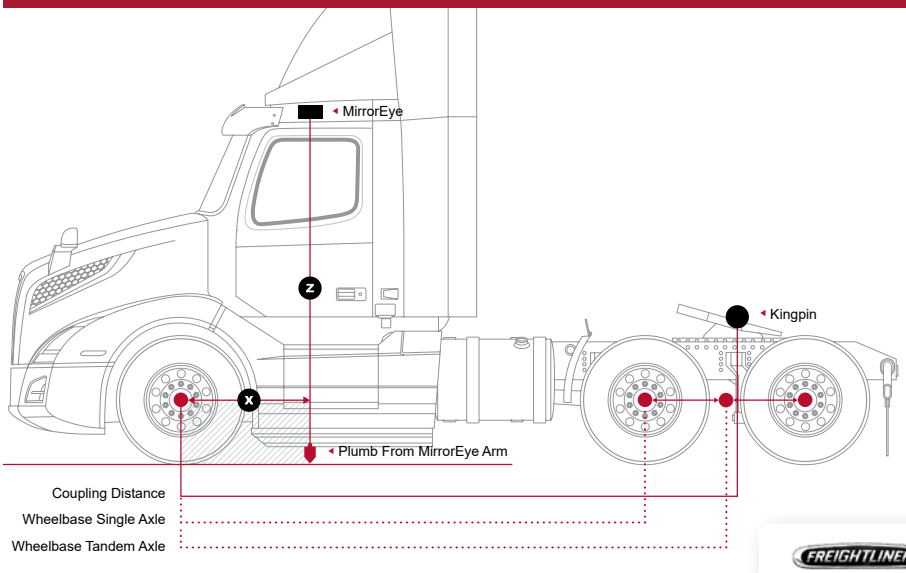
A Warning message will appear … on the same page, "Access service menu" is default-selected, press the Controller Knob …

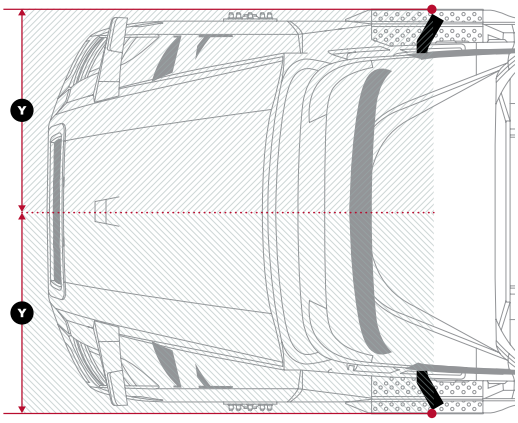
5



On the MirrorEye® Service Menu, dial-scroll to Panning, then press the Controller Knob …

6





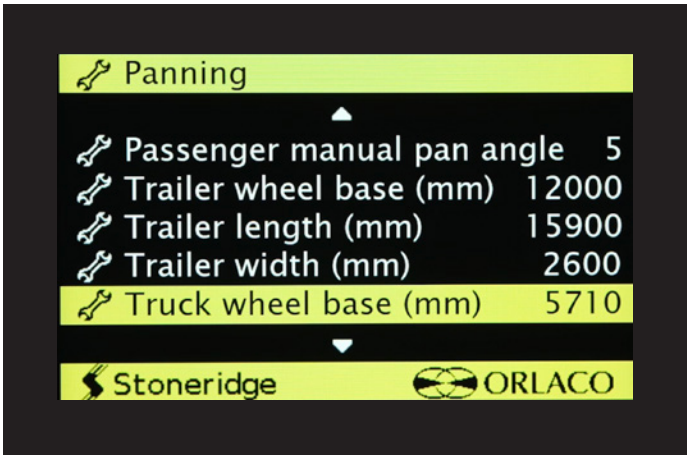
In the Panning service menu, the values/measurements relating to the vehicle's **wheelbase, steering ratio, coupling position and camera positions (X,Y and Z)** are accessed. All must be determined and entered into the MirrorEye® system at the time of installation.


FREIGHTLINER COMPONENT INFORMATION

SEE VEHICLE ID NO. WHEN ORDERING PART

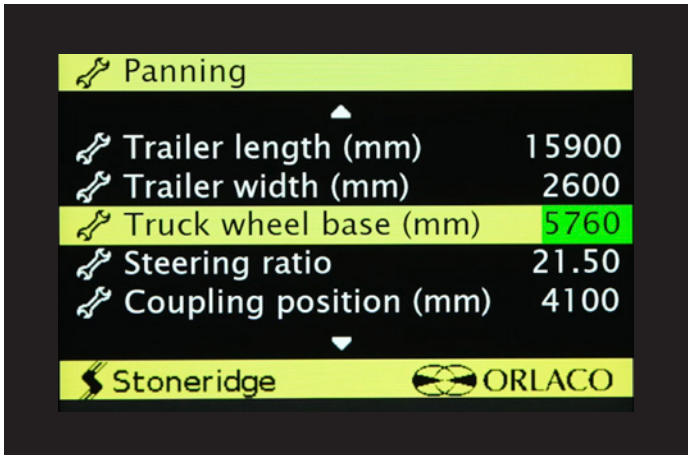
Sample Door Jamb Label

7



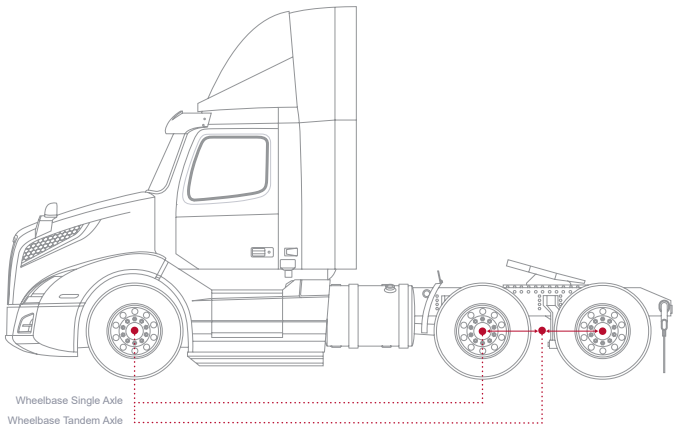
To adjust the **Wheelbase**, scroll to the selection in the Panning menu and press the Controller Knob …

8



Most trucks will have an OEM decal in the door jamb that carries the wheelbase value, and usually in standard measurements (e.g., "inches"). **Be aware that all standard measurements for the wheelbase and other values will need to be converted to metric (e.g., "mm") before being entering into the MirrorEye® system**. Conversion tables are readily available online.

9



The wheelbase is measured from the center of the front axle to the center of the rear axle group

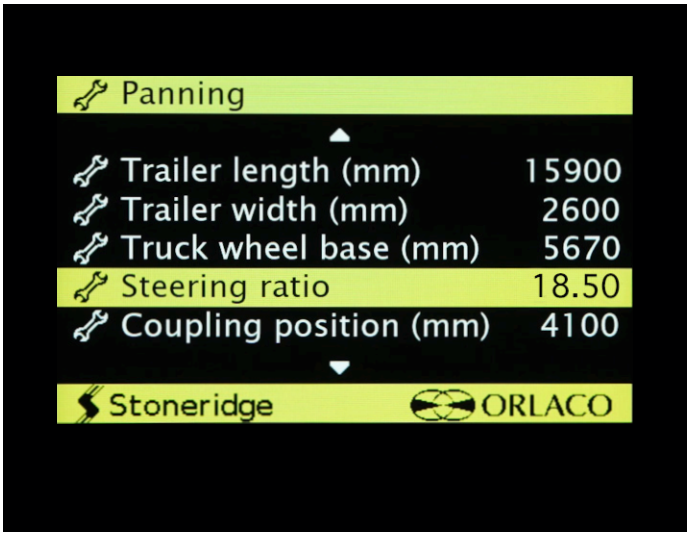
10



Use the Dial Knob to adjust the millimeter value in the green box until the proper value is found, then press the Controller Knob …

… to lock the value in, press the Controller Knob again …

11



To adjust the **Steering Ratio**, scroll to the selection in the Panning menu and press the Controller Knob …

12

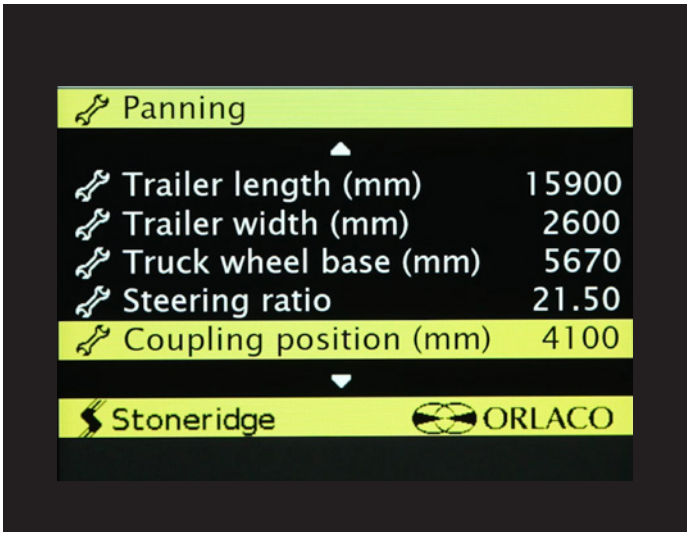


Be aware that the steering wheel ratio for all trucks – regardless of make or model – **should be set to 18.50**

Use the Dial Knob to adjust the steering ratio to 18.50, then press the Controller Knob…

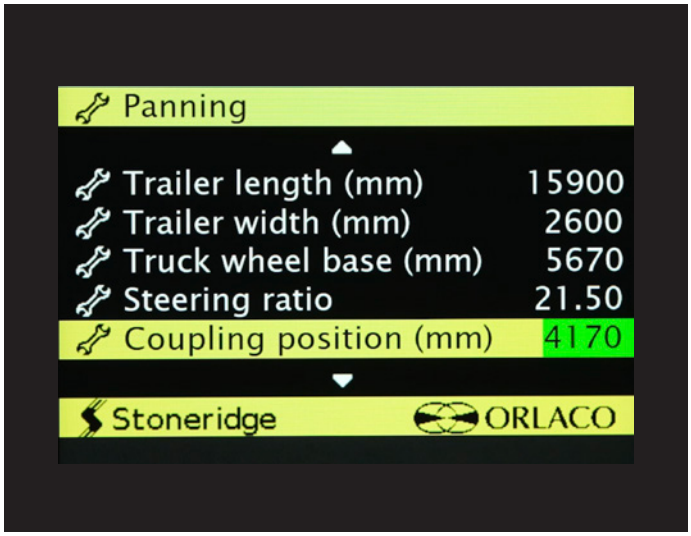
… to lock the value in, press the Controller Knob again …

13



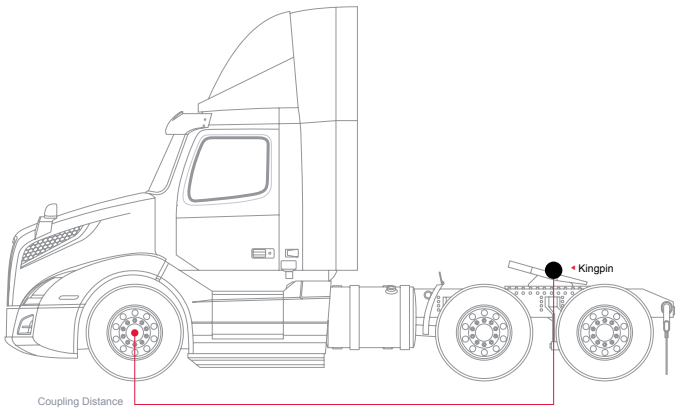
To adjust the **Coupling Position**, scroll to the selection in the Panning menu and press the Controller Knob …

14



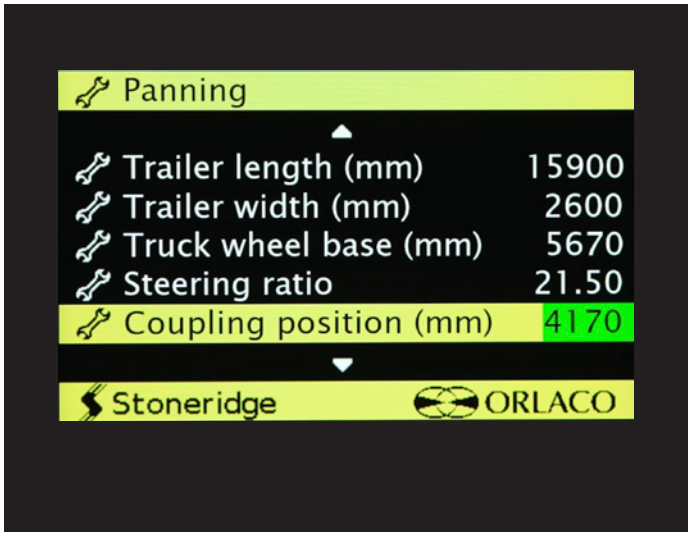
Be aware that the Coupling Position value needs to be entered in millimeters. All standard measurements (e.g. “in inches”) will need to be converted before entering values into the system. Conversion tables are readily available online.

15



The Coupling Position is measured from the center of the front axle of the truck to the King Pin position on the fifth wheel …

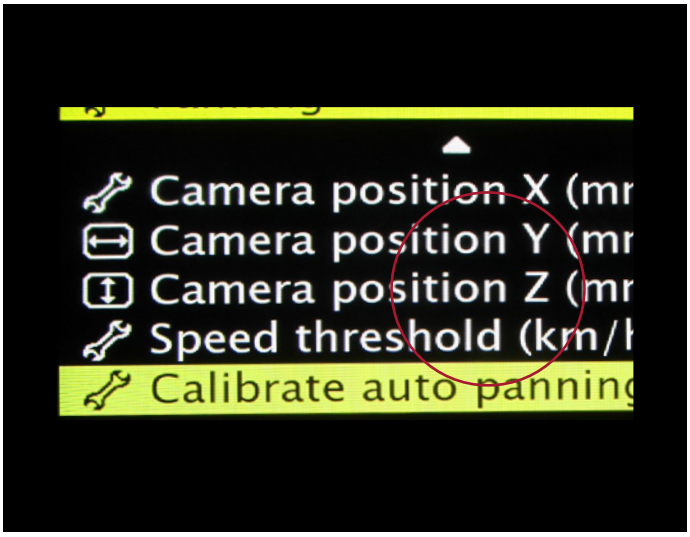
16



Use the Dial Knob to adjust the millimeter value in the green box until the proper value is found, then press the Controller Knob …

… to lock the value in, press the Controller Knob again …

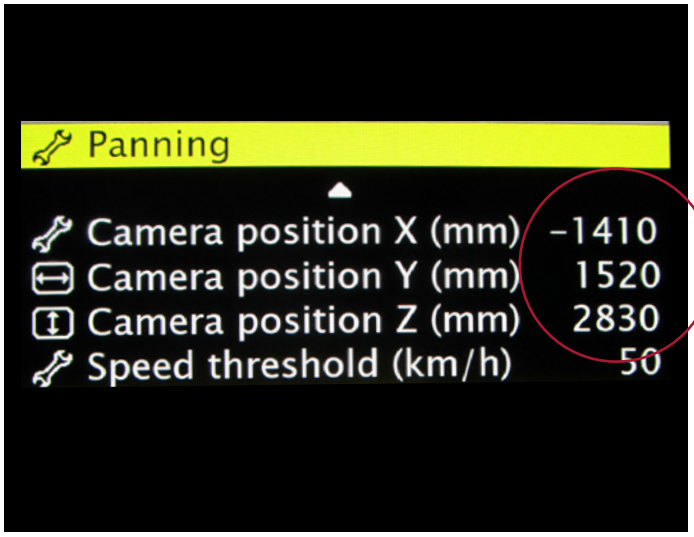
17



To adjust the **camera position values – X, Y, or Z** – scroll to the relating position in the Panning menu and press the Controller Knob …

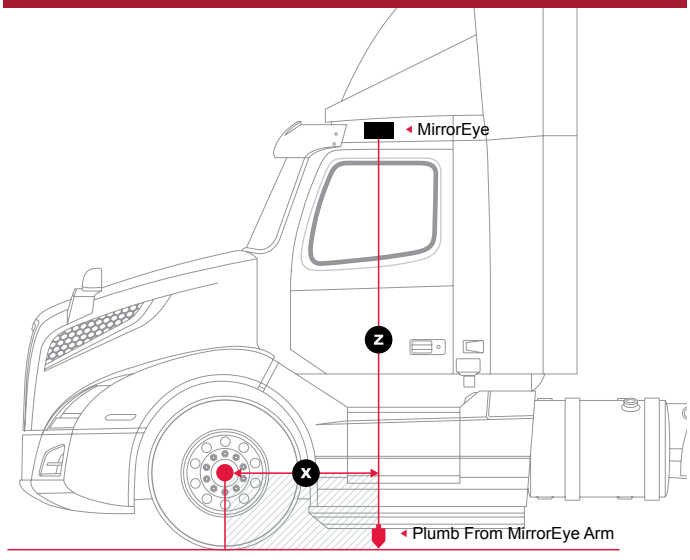
(Please note that camera position X is a negative value)

18



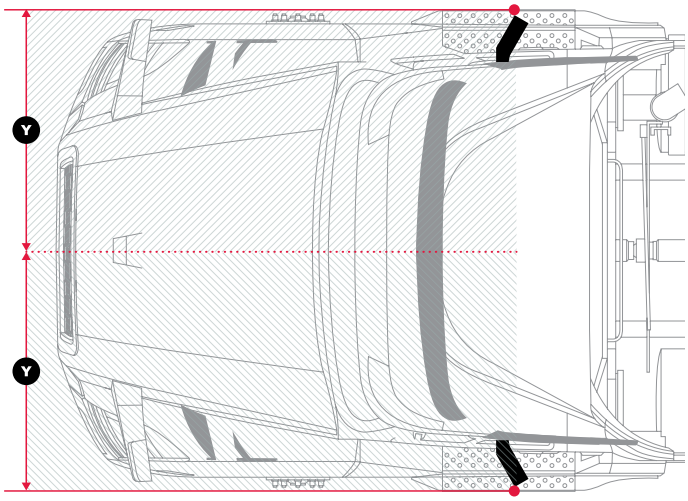
Be aware that all camera position values need to be entered in millimeters. All standard measurements (e.g. “in inches”) will need to be converted before entering values into the system. Conversion tables are readily available online.

19



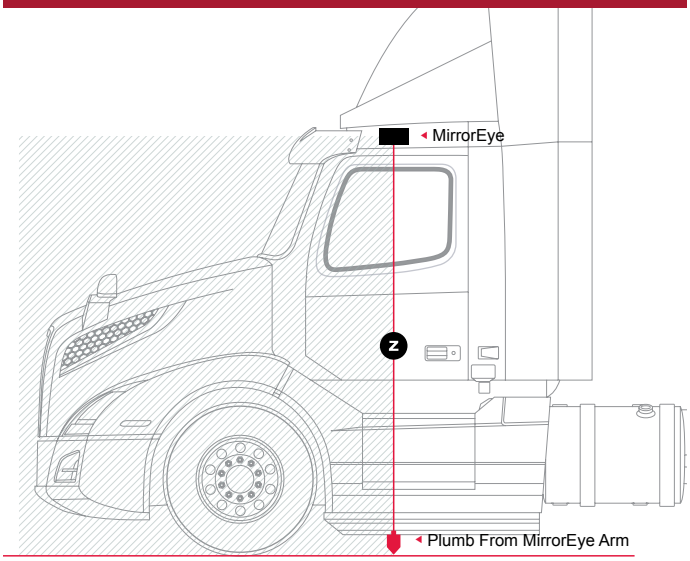
The camera position X value is the distance from the **Center Line of Front Axle to the Camera Lens** (plumb bob from camera lens to ground)

20



The camera position Y value is the distance from the **Center Line of the Truck to the Camera Lens** (plumb bob from camera lens to ground)

21



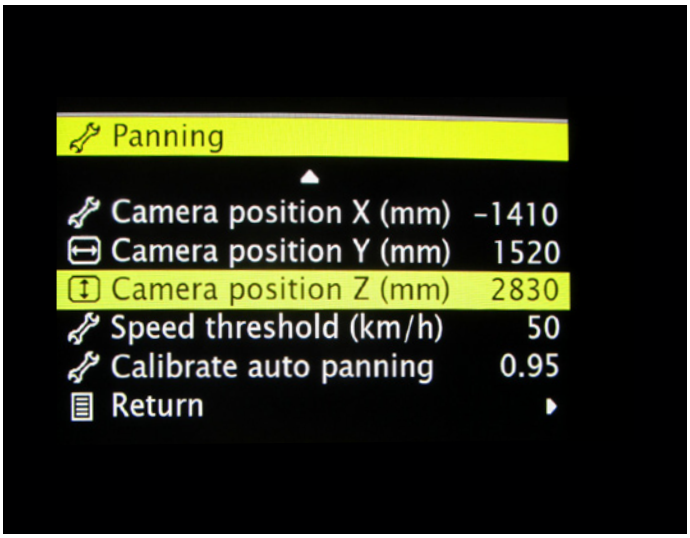
The camera position Z value is the distance from the **Ground to Camera Lens** (plumb bob from camera lens to ground)

22



The default setting for “Calibrate auto panning” for all versions of MirrorEye should be 0.95. If your auto panning setting is not 0.95, make sure to do so

23



Use the Dial Knob to adjust any of the camera position X, Y or Z values, then press the Controller Knob …

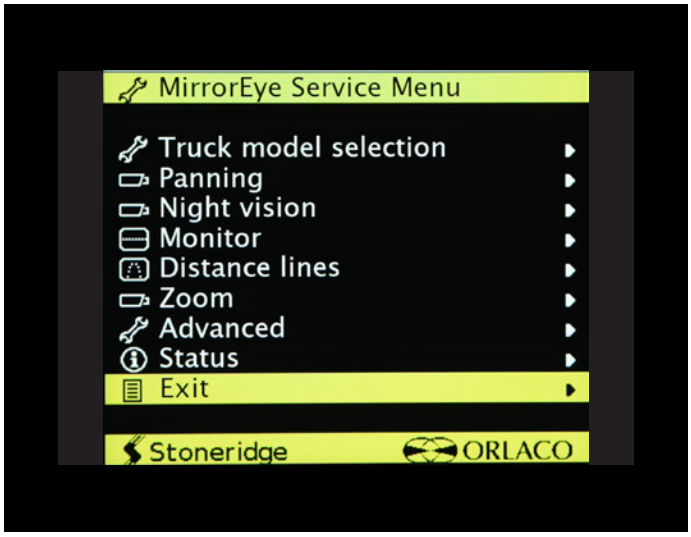
…. to lock the value in, press the Controller Knob again …

24



To exit Panning in the Service Menu, dial-scroll to Return and push on the Controller Knob …

25



To exit the Service Menu, scroll down to Return and press the Controller Knob again …



MirrorEye® Activation Process

MirrorEye®

Activation

(Required)

The following provides the steps necessary to activate the MirrorEye® system with Cloud Services for GPS and Video Feeds. If not already in hand, begin by downloading/reviewing the BASIC PROCESS PDF, which can be accessed at:

https://www.stoneridge.app/en/help/how-to-cloud-activate-mirroreye-i-mk-ii

ALERT: Before starting the activation process, make sure to have the following information available before submitting an activation form. It is imperative to for installers to take clear, decipherable photos of the serial numbers of the following components:

- The FleetArc FA470 Device ID #
- The VIN (or temporary VIN) of the Vehicle
- The Asset ID # or temporary internal ID # of the Vehicle
- The ECU # of any Monitor or Wing Camera (only one number needed)

HOW TO CONTACT YOUR SERVICE TEAM

Email
incident@stoneridge.app

Help Center Phone
888.624.4474

Help Center Hours
Monday - Friday
8:00 a.m. - 8:00 p.m. EST

Visit Help Center
https://www.stoneridge.app/help

Reply to Emails
You can reply to any email you receive from the Service Team.

STEP 1.

Make sure the truck is turned on, with enough gas for any additional time it may take to activate your MirrorEye® system.

NOTE: Activation should take approximately 15 to 20 minutes, however in some cases, due to part failure or installation error, expect up to 4 hours for troubleshooting and communication with a developer or engineer.

STEP 2.

Visit https://www.stoneridge.app/activate; enter truck information and device information and click “Submit.” Any additional information you submit is optional and may improve the processing speed of your ticket.

STEP 3.

Request Received

You should receive an email notification of your activation request, and the status of your ticket. If you have any questions or challenges, please reply to that email, or send a message to incident@stoneridge.app or visit https://www.stoneridge.app/tickets to view the status of your tickets.

NOTE: If you do not have access to the portal to view tickets, you can request access here: https://www.stoneridge.app/access

STEP 4.

Request Processing

Your ticket will be submitted directly to a Stoneridge service agent who will review any details and contact you via email or phone to follow up with any questions or errors.

STEP 5.

Certification Approved

Stoneridge software developers and engineers are on call to ensure a successful installation and activation. When installation is successful you will receive an email with details of the successful activation.

Stoneridge | MirrorEye®

Better Safety Through Better Vision™