PEOPLENET
A TRIMBLE COMPANY

Video Intelligence Owner's Manual

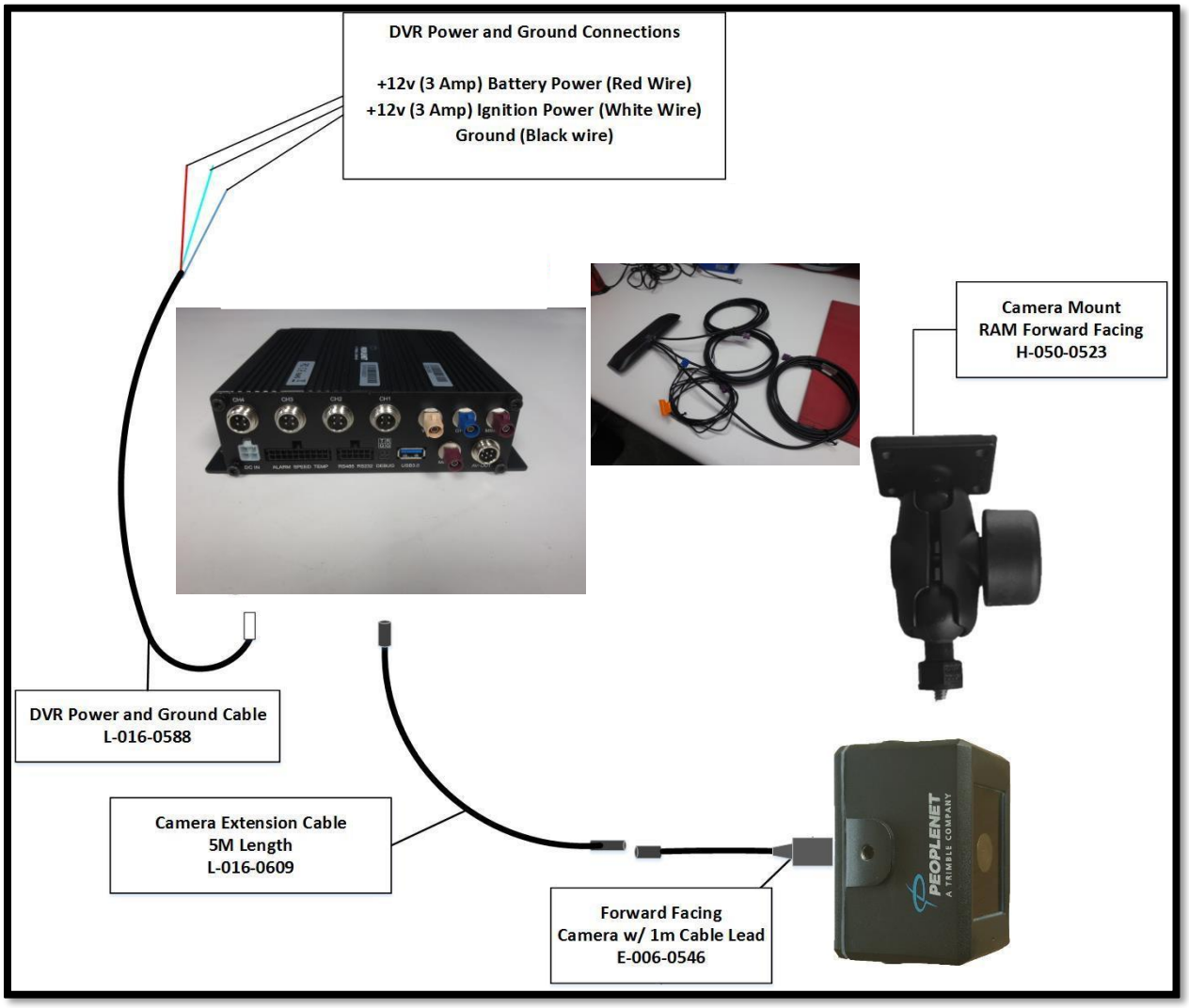
April 26, 2018

Product Description

The purpose of Video Intelligence is to provide the customer safety, liability, and litigation support. The primary camera faces forward of the truck with a 150 degree angle of view in order to capture any safety or traffic events. The DVR will trigger when an On-Board Event (OER) takes place, recording the period before and just after the event to provide a clear picture of what happened. The DVR captures this video and transmits it to the customer portal for review.

Side cameras can also be added to the system, providing a clear view down each side of the cab and trailer. Video from these cameras will be recorded and broadcast along with the video from the forward-facing camera.

Forward-Facing System Overview



Forward-Facing Camera

Screw the RAM mount into the threaded hole on the camera top and tighten it with a wrench.

Activate the vehicle's windshield wipers and note the path across the center of the windshield. The camera should be placed so that it sits just below the wiper line and as close to the windshield center as possible.

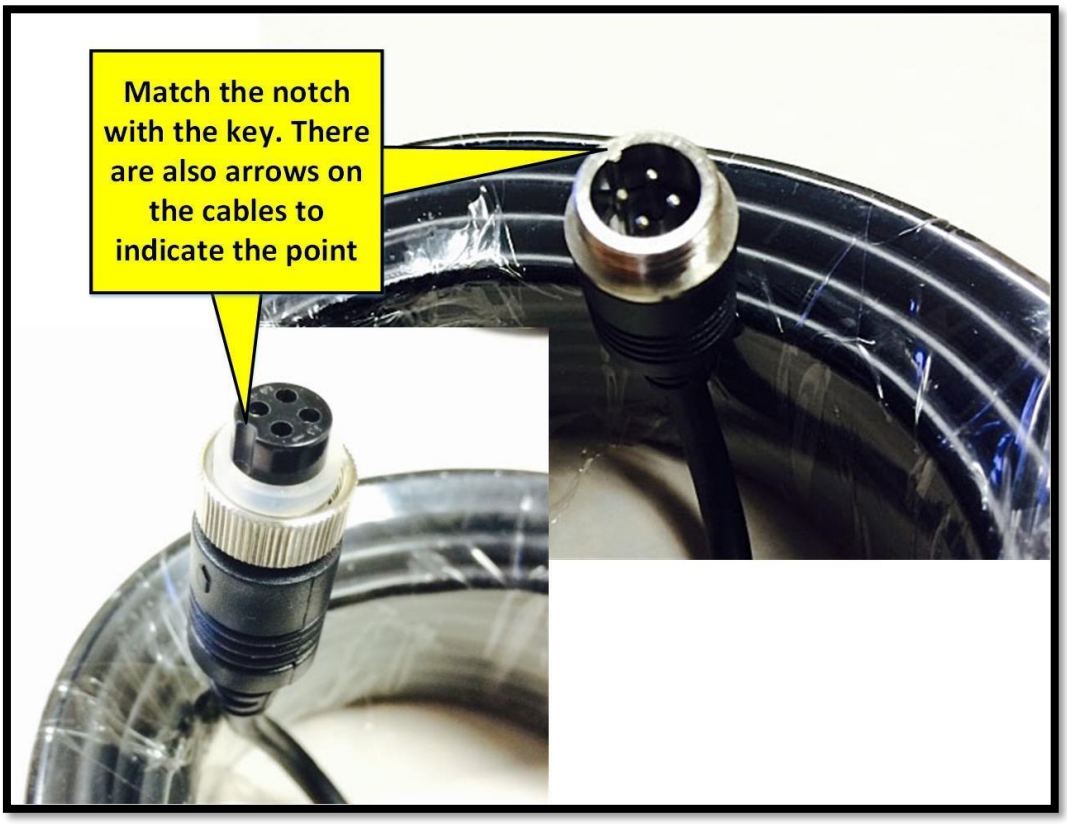
NOTE: The camera should be no more than 2 inches below the wiper line. If the camera must be mounted far to one side of the windshield due to the wiper path or obstructions, mount the camera towards the passenger's side of the windshield.

Clean the windshield around the intended camera mount area using an alcohol swab and a paper towel (do NOT use a shop rag). Remove the tape covering from the RAM mount. Align the camera/RAM assembly for the chosen location; press gently and hold for 10 seconds.

Camera Targeting

Swivel the RAM mount forward so the camera is close to, but not touching, the windshield. Aim the camera at a point 10 meters in front of the hood center point. Level the camera then tilt it down 5 degrees to make sure the side mirrors are visible. Tighten the RAM using the lock key from the kit.

Route the camera extension cable from the intended DVR location to the headliner above the camera. Connect the camera cable to the extension making sure to align the notch and key as shown below. Slide the sleeve over the connection, and secure the camera cable in the headliner so that it cannot fall into the windshield area and is safely away from any mounting screws.



Power/Ignition/Ground Cable and Connections

The DVR power, ignition, and ground feeds should be connected to the vehicle per the PeopleNet recommendations available on the Support Center (www.peoplenet.custhelp.com). If these connections are paired with a PeopleNet OBC and/or Enhanced Display make sure that the fuses are stepped appropriately so that the DVR input power is fused at 3 amps, the OBC/PMG at 5 amps, and the Enhanced Display at 10 amps, with the DVR ignition at 3 amps and the PeopleNet ignition at 5 amps. Route the power cable to the intended DVR location making sure to avoid potential hazards.

Antenna

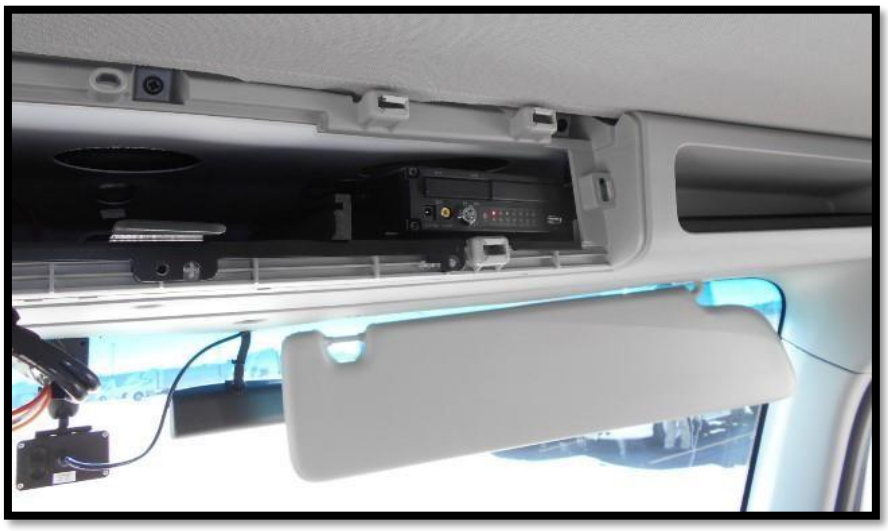
Mount the DVR antenna in the cab with a clear view of the sky and away from cab structures and cabling. The best locations are on the dash or just under the dash plastic. Verify the side labeled “Up” faces the sky and attach with two-sided tape.
Route the antenna cables to the intended DVR location making sure to avoid potential hazards.

DVR Mount Locations

The DVR should be placed in a location away from moisture and protected from damage.

NOTE: The DVR case is connected to ground: avoid contact with any vehicle wiring, as this could cause an electrical short.
Sample locations are below.

Kenworth T680

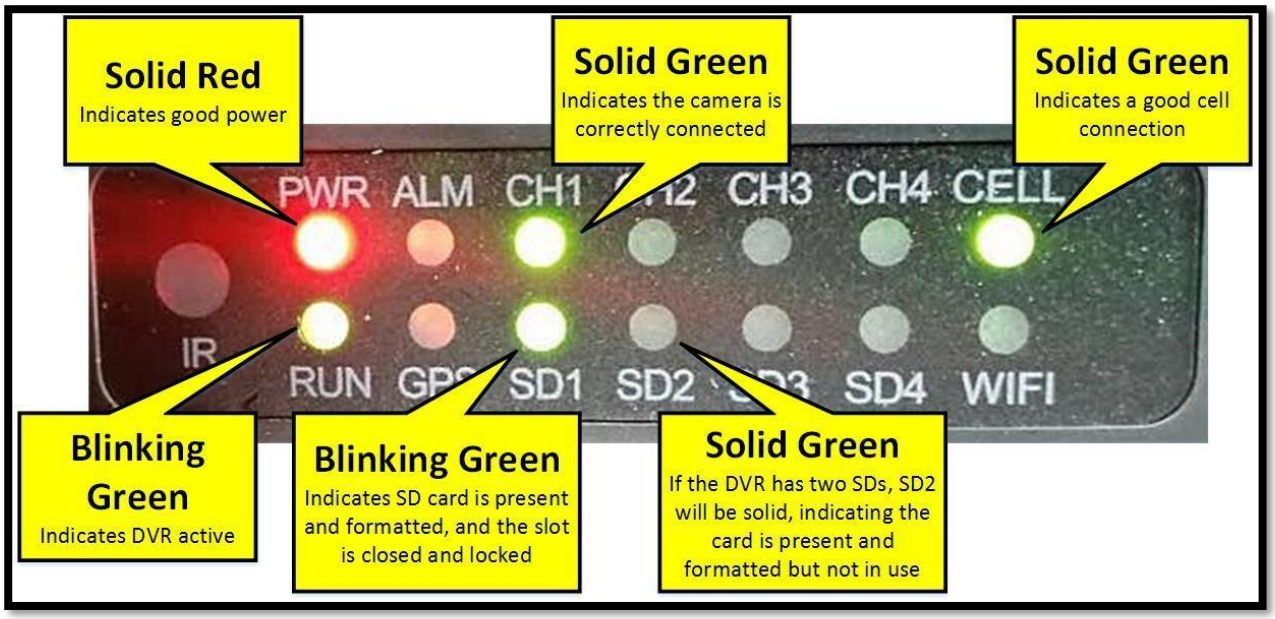


Freightliner Cascadia

DVR Connections and LEDs

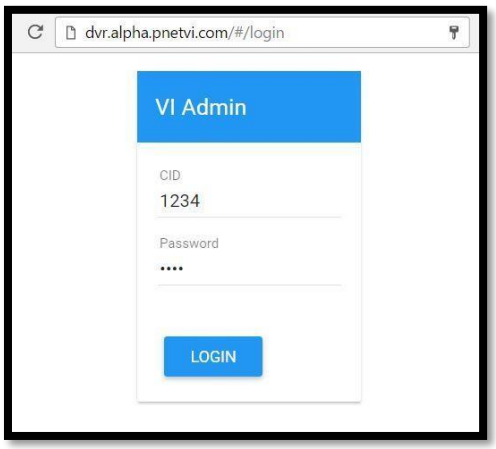
Connect the Power, Antenna, and Camera cables to the DVR. Secure the cables to avoid stress on the connections and bundle any spare cabling away from harm. Attach the DVR to the vehicle with the LEDs visible. Turn the vehicle ignition ON.

Wait 2 minutes for a full boot-up then verify the LEDs match those below. If they do not, refer to the Video Troubleshooting Guide for next steps.



Configuring DVR

1. Navigate to the following website on your internet connected laptop, Tablet or Smart Phone: a. http://dvr.alpha.pnetvi.com/#/
2. Enter the Customer ID (CID). This ID is customer specific and will make sure the DVR is placed in the correct account. If you do not know the company ID contact your system administrator.
3. Enter the password and press Login.
    a. The default password is the CID, but the system administrator can change it. Contact your administrator if the CID fails to work.



4. The system will prompt you to search for the DVR using either the DVR Serial Number or the Vehicle Number. If this is a new installation search under the DVR Serial. If you are checking a pre-existing install and do not have the DVR serial, then search on the Vehicle ID.

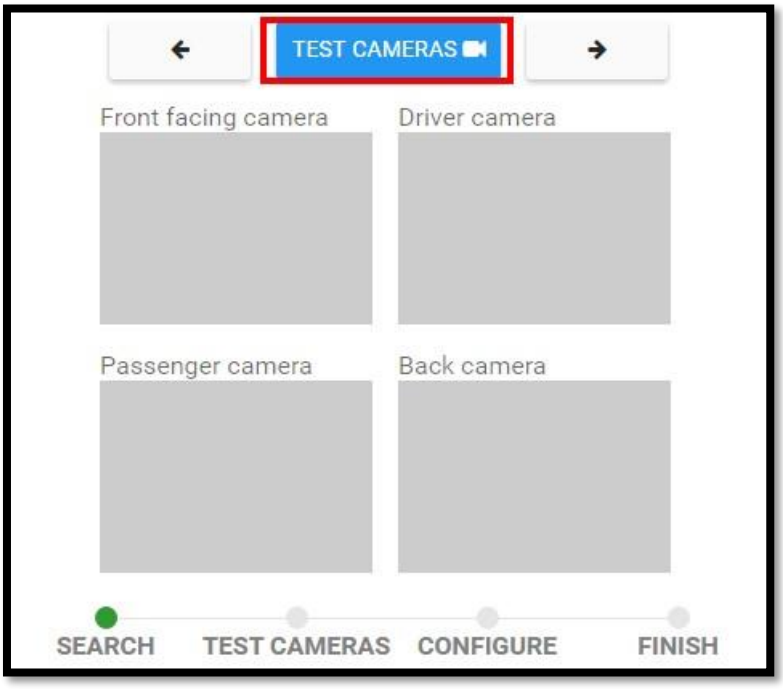
Serial Number Search

NOTE: Always begin with the letters "DVR"

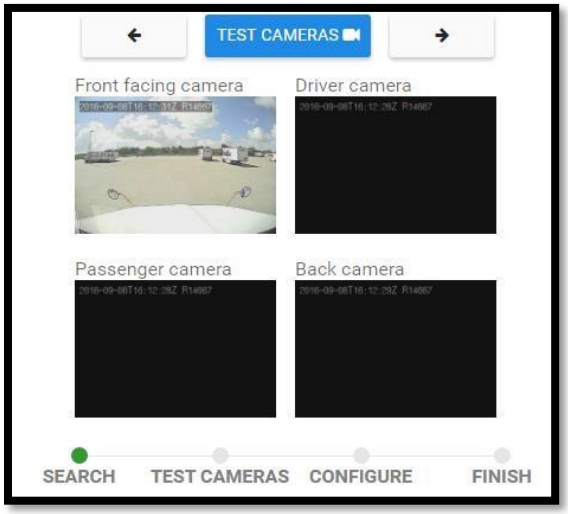
Vehicle Number Search

The follow screen will come up if you connect successfully:

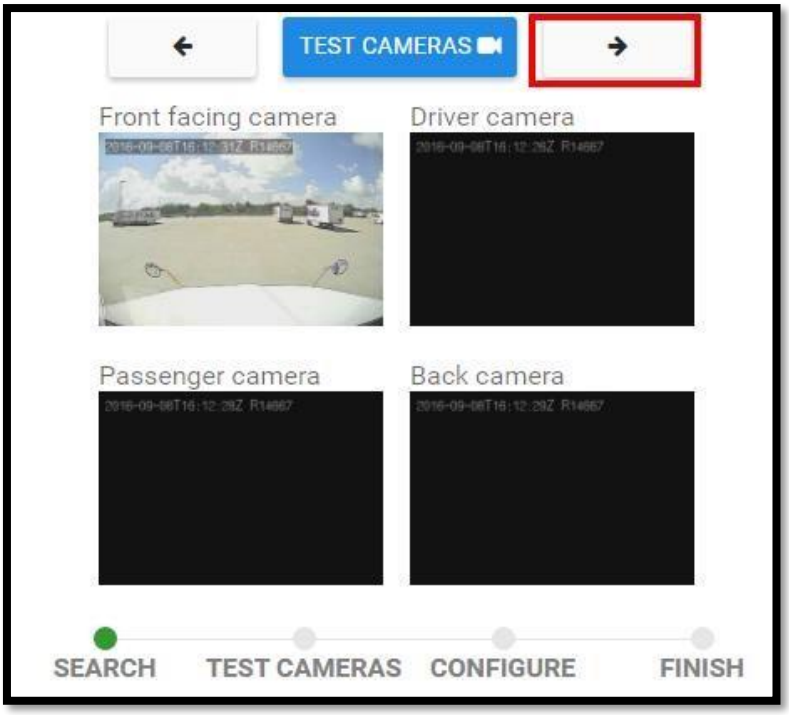
a. Press the “TEST CAMERAS” button to bring up an image for each camera plugged into the DVR



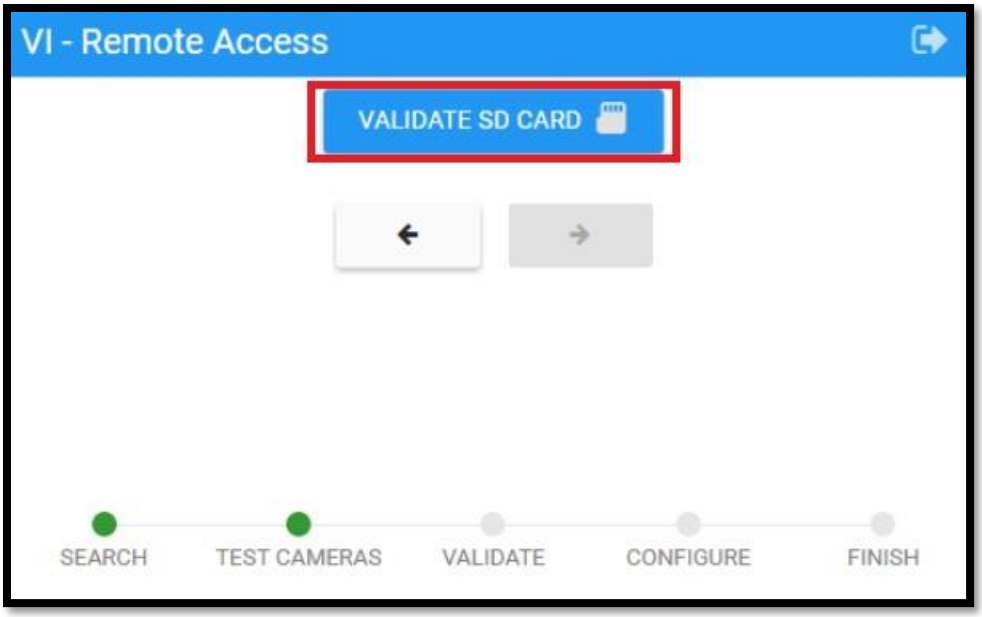
5. Verify that the images match the cameras and cover the correct areas, including the mirrors for the “Front facing camera” and the cab edge for the side cameras if present.



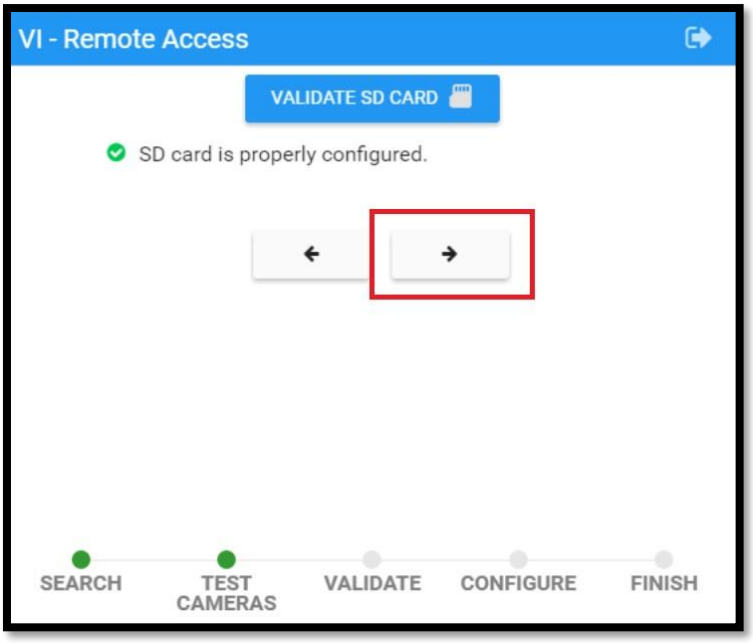
6. Once you have validated the image for “Front Facing” is clear and the camera is adjusted properly, press the “Right Arrow” highlighted in the image below to link the DVR



7. The screen below will appear, prompting a test of the SD Card. Press “VALIDATE SD CARD”

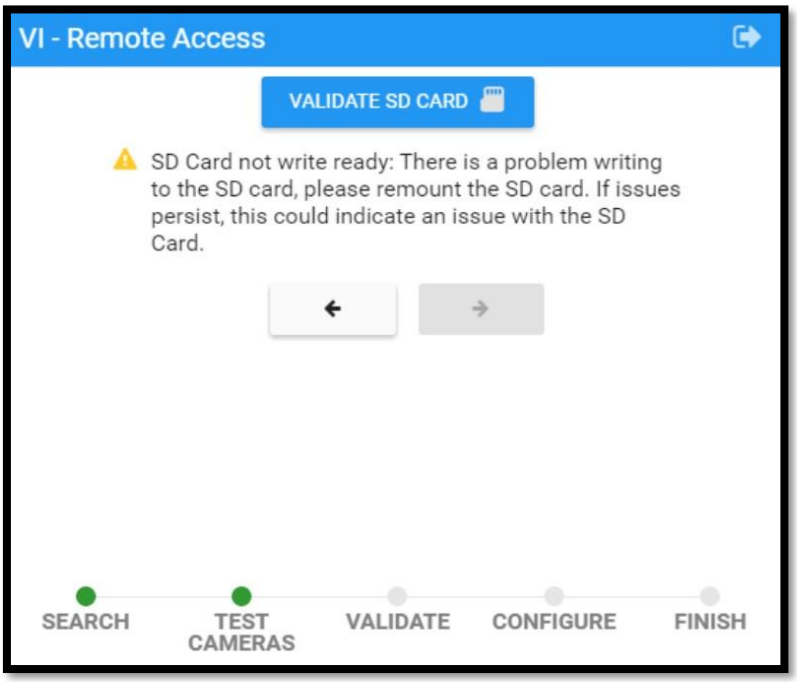


8. If the SD is present, locked, and properly formatted, you will receive the following confirmation. Press the right arrow to proceed to the Link portion of the activation (Step 9, below)

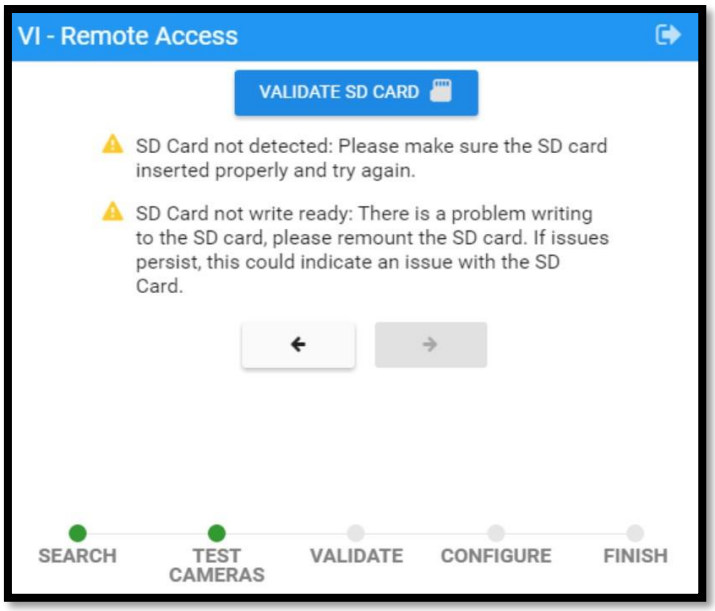


If you instead receive either of the below errors, you must troubleshoot the SD card before proceeding. The system will not permit activation without a functioning SD.

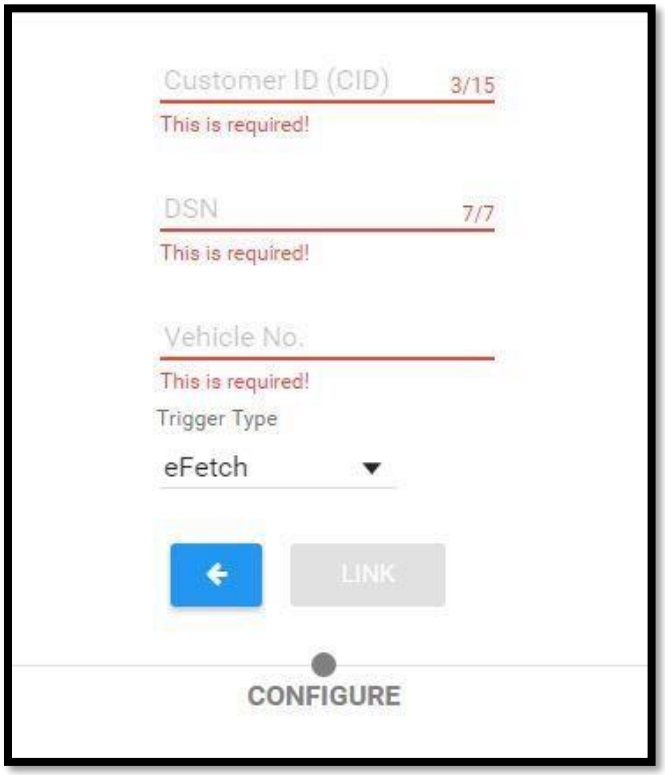
SD FORMATTING ERROR



SD MISSING ERROR

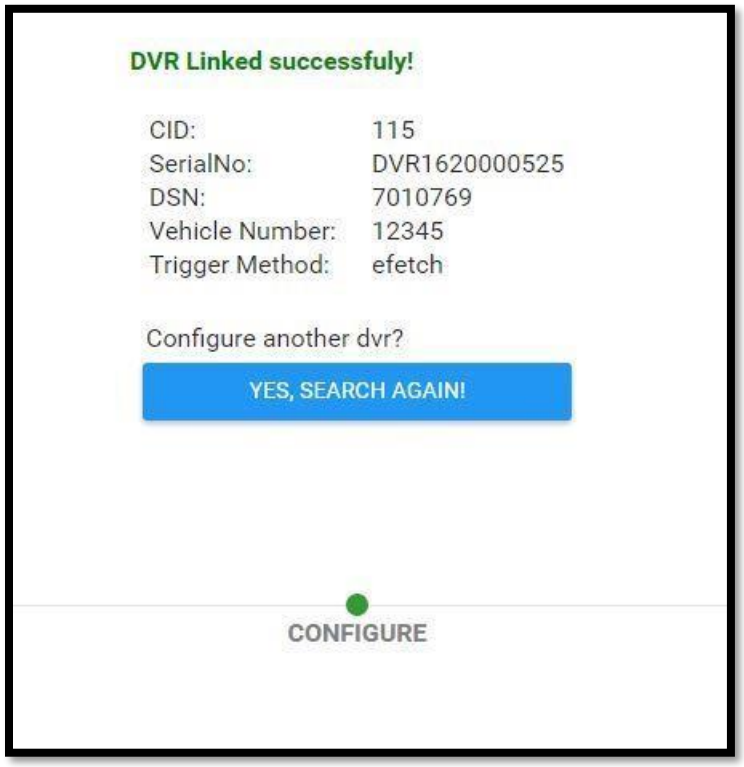


10. The DVR Activation page will appear. This page controls how the DVR identifies itself.



11. In the 3 fields enter:
    a. **Customer ID (CID)** – The CID will auto-populate based on the login criteria. Verify the CID is correct.
    b. **DSN** – The serial number of the vehicle's PMG or OBC module
    c. **Vehicle ID** – The truck's number at it shows in the PeopleNet Fleet Manager
    d. Leave the trigger type as "eFetch"

12. Press LINK. Confirm the CID, Serial Number, DSN, and Vehicle Number in the confirmation message.



Video Confirmation

1. Leaving the vehicle ignition ON, boot the PeopleNet display and login as a driver. On the main screen press the "OER" icon, then the "Record" button to trigger a video.

NOTE: If the OER icon is gray, contact your system administrator to set the Manual OER option on the PeopleNet Fleet Manager to URGENT.

2. Login to the PeopleNet Fleet Manager and select the VIDEO tab.
3. Select “FILTER BY”, enter the truck number in the VEHICLE field and press the + button. Verify the video is present and the camera angle shows both hood mirrors, where available, as well as a clear view of the horizon.

Video Intelligence – Driver Side / Passenger Side

Installation Documentation

Side Camera Installation Guidelines

The side cameras will replace the vehicle's existing spot mirrors with poles that combine the camera and an adjustable mirror. The exact orientation and mounting method are somewhat flexible, but below are several general principles to guide mounting decisions.

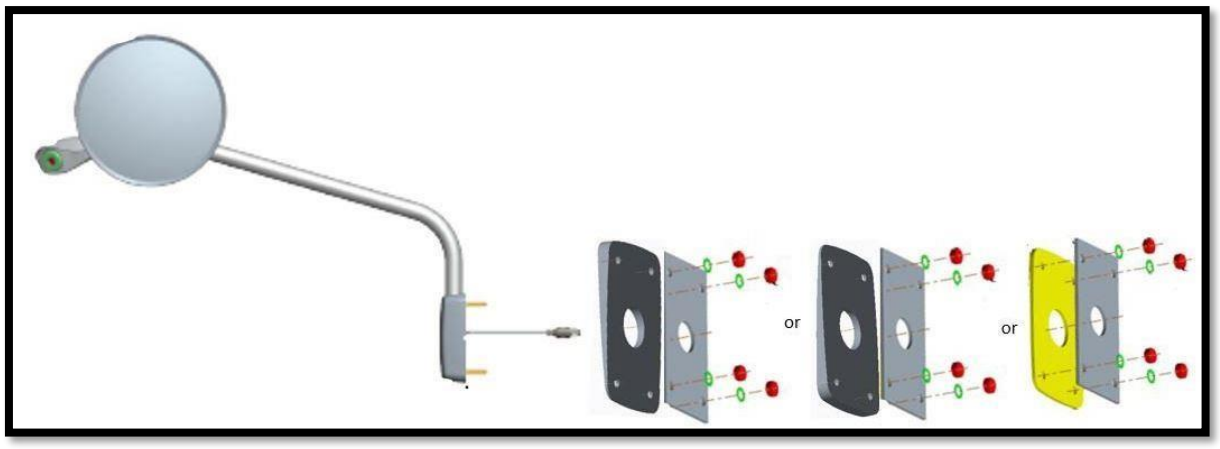
- **The camera and mirror should be as far forward and as far up on the hood as is practical.**
- **The mount should employ existing holes whenever possible. In some cases this will be all existing holes. Holes that are not used should be capped, either with original hardware or inserts, to avoid noise and leakage.**
- **The mirror position should match the vehicle's original mirror position as much as practical.**
- **As shown below, wedge gaskets are provided and should be used to level the pole. The goal is to have the pole arm parallel to the ground.**
- **The base should be as close to vertical as possible, allowing the arm to swivel to the desired position without changing the vertical angle. Exceptions include cases when the original spot mirror was on a sharp angle such as an aerodynamic base.**
- **The cables should be routed into the cab following the path of existing vehicle electrical lines, such as headlight wires, whenever possible. Always route up the driver's side to avoid the exhaust system. Always be aware of the path of the hood and other moving parts.**

Side Camera Installation

Before drilling, any holes check the inside of hood to make sure there are no obstructions and the mounting studs will be accessible.

Refer to the Camera Arm Matrix at the end of this document for the appropriate arm and gasket configuration for your vehicle.

1. Note the vehicle's spot mirror locations for later targeting of the replacement mirror.
2. Open the hood and remove the vehicle's spot mirrors.
3. Determine the best mounting position using the guidelines above. In most cases those will involve using at least one existing hole.
4. Identify whether a wedge gasket will be needed based on the slope of the hood and the guide in the appendix. The goal is to make the arm base vertical, leaving the arm parallel to the ground.



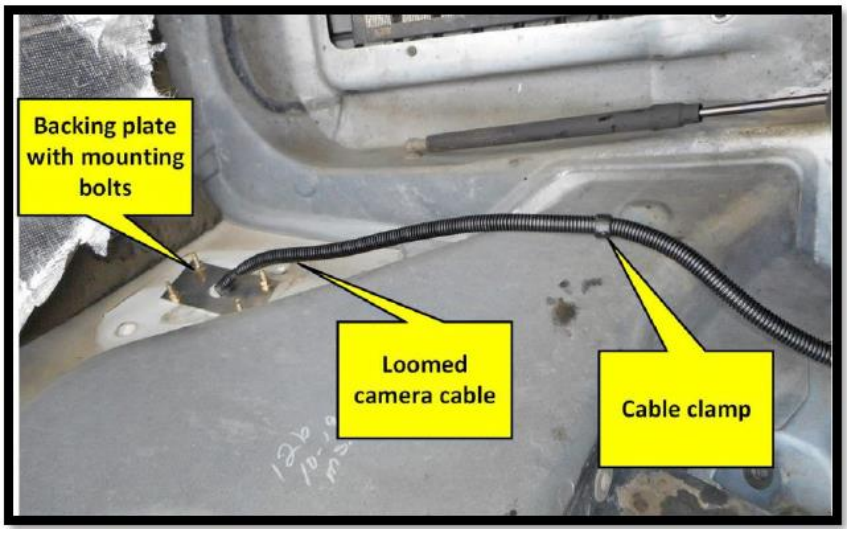
5. Hold the gasket to the hood, level it, and mark the four mounting holes and the center hole for drilling.

6. Drill the four mounting holes using a 5/16” or 8mm drill bit. Drill the center hole using a 1” holesaw or step-bit.
7. Insert the camera cable through the gasket and the hood center hole, making sure that the lettering on the gasket faces away from the cab.
8. Orient the wedge gasket according to the instructions in the Appendix and slide the four mounting bolts through the gasket and into the hood.
9. On the inside of the hood, slip the backing plate or straps over the bolts then attach the camera arm with the four locknuts provided, making sure the nuts are securely tightened.

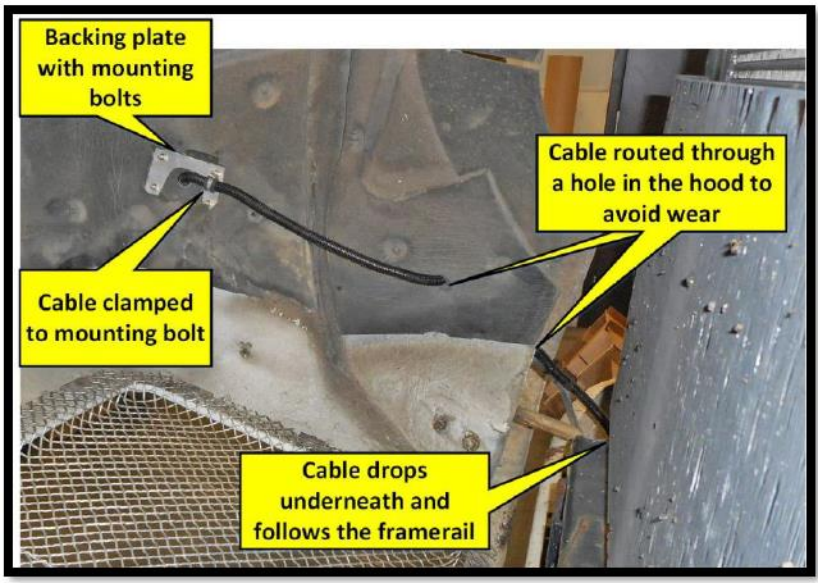
NOTE there are two sizes of nut in the kit. Verify that you have the correct nuts before tightening

10. Cover the camera cable with ¼” split-loom tubing for protection, attach it to the hood side with a cable clamp, and route it to the forward frame-rail making sure to avoid any possible rub areas.

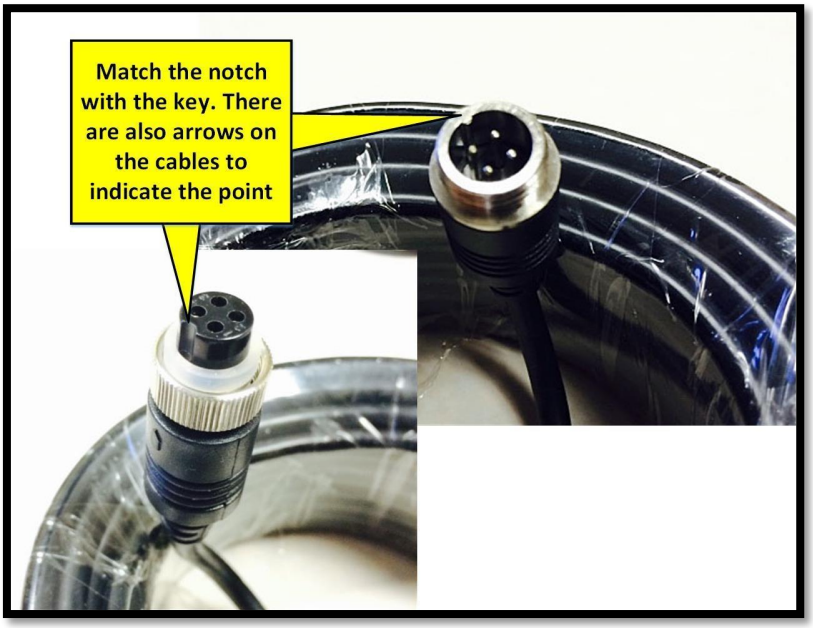
Example 1 - Volvo



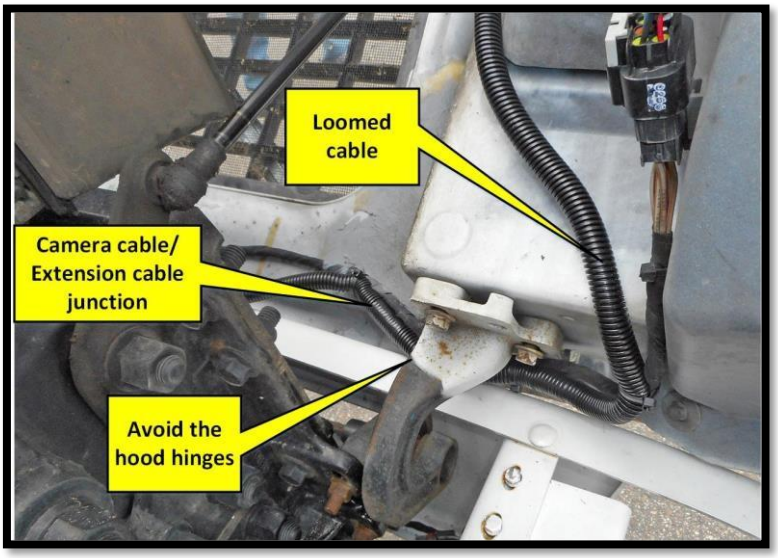
Example 2 – Kenworth T300



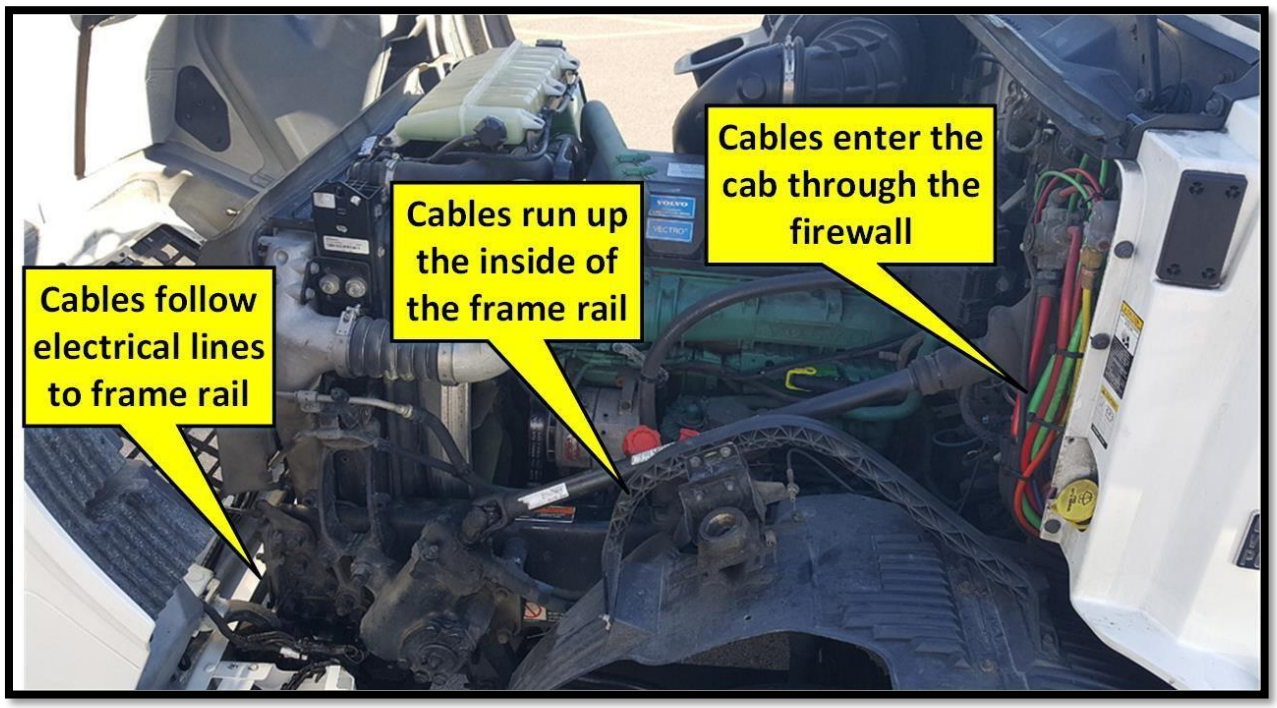
11. Repeat the process on the opposite side of the cab.
12. In a protected space around the forward frame-rail, connect the camera extension cables to each camera cable, making sure to align the key and notch as shown. Cover the connection points with electrical tape and cover the extension cables with enough protective loom to reach the firewall.



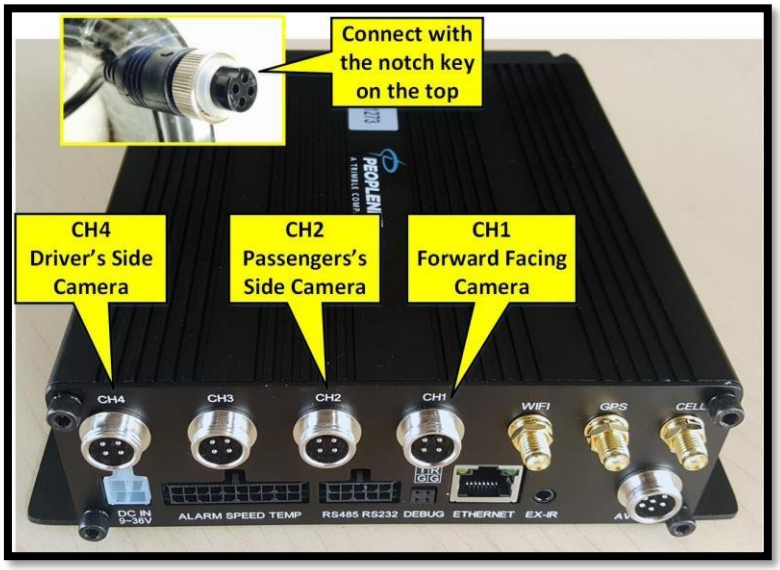
13. Route the passenger's side camera cable across to the driver's side following either the headlight power lines or the forward frame rail, making sure to avoid moving parts. The cable should be secured with a clamp or tie at least every 12 inches.



14. Route the cables up the driver's side frame rail avoiding movable parts, major heat sources, and any exposure to the wheel well.

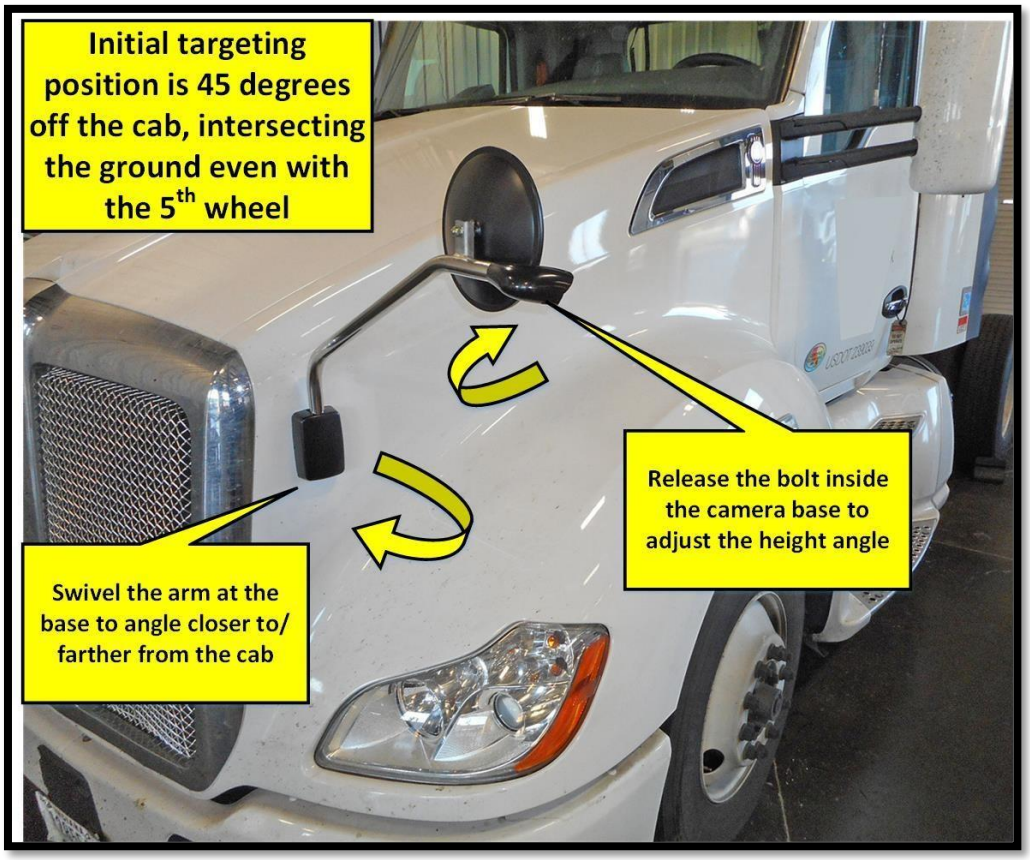


15. Pass through the firewall using an existing opening if available. If none is available drill a 1” hole in a safe space, route the cables through, then seal it with a grommet and silicone sealant.
16. Route the cables across the dash to the DVR, then remove the loom from the final 12” of cable, allowing the cable to flex more easily.
17. Connect the passenger’s side camera to the DVR CH2 position and the driver’s side camera to the CH4 position.



Targeting the Side Cameras

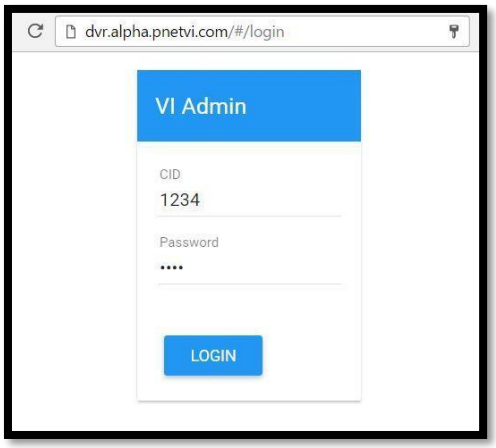
1. Adjust the camera arms as shown below for the initial test.



2. Run the “Configuring DVR” process until you reach the “Test Camera” step.
3. Verify in the snapshot that the “Driver camera” and “Passenger camera” fields show the correct camera.
4. Adjust the cameras as needed to get a clear view down the trailer, with the only the edge of the cab visible. The driver compartment should not be visible.
5. Press the “TEST CAMERAS” button after each adjustment to confirm success.
6. Once targeting is complete, use the adjustment nut on the spot mirror to approximate the original position for the driver, then rotate the mirror so the drip hole is on the bottom.

Activating Camera Channels

1. Navigate to the following website on your internet connected laptop, Tablet or Smart Phone: http://dvr.alpha.pnetvi.com/#/
2. Enter the Customer ID (CID). This ID is customer specific and will make sure the DVR is entered in the correct account. If you do not know the company ID contact your system administrator.
3. Enter the password and press Login.
    a. The default password is the CID, but the system administrator can change it. Contact your administrator if the CID fails to work.

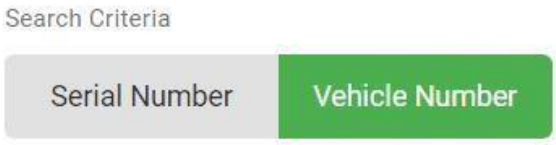


4. The system will prompt you to search for the DVR using either the DVR Serial Number or the Vehicle Number. If this is a new installation search under the DVR Serial. If you are checking a pre-existing install and do not have the DVR serial, then search on the Vehicle ID.

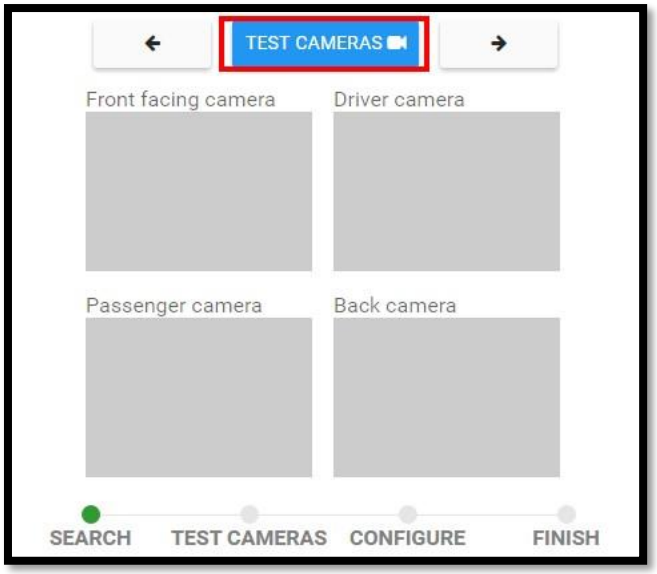
Serial Number Search

NOTE: Always begin with the letters "DVR"

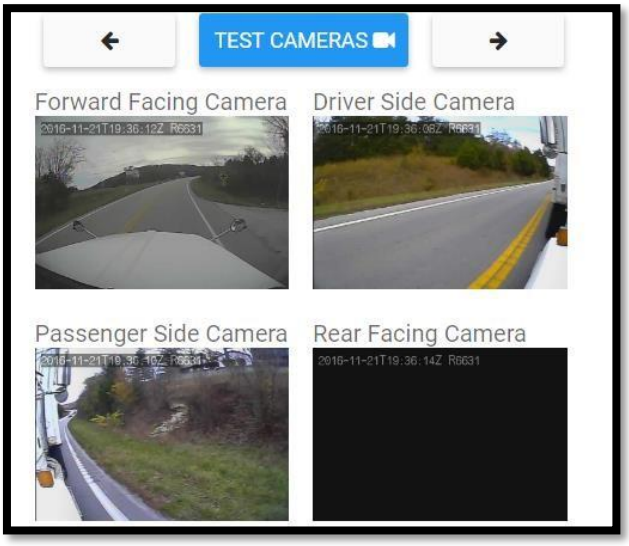
Vehicle Number Search



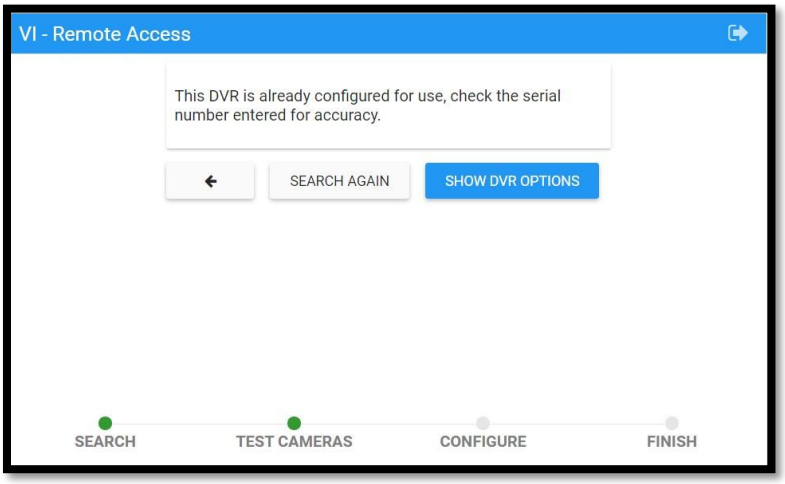
5. The following screen will come up if you connected successfully
    a. Press the “TEST CAMERAS” button to bring up an image for each camera plugged into the DVR



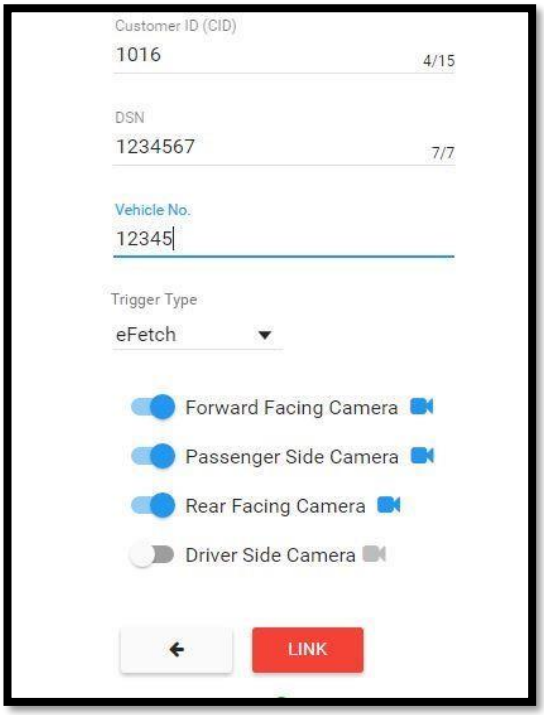
6. Verify that the images match the cameras and cover the correct areas, including the mirrors for the “Front facing camera” and the cab edge for the side cameras if present.
    a. Verify in the snapshot that the “Driver camera” and “Passenger camera” fields show the correct camera.
    b. Adjust the cameras as needed to get a clear view down the trailer, with only the edge of the cab visible and the wheel well just visible at the bottom.
    The driver compartment should not be visible.



7. Once you have validated the images for all cameras are clear and the cameras are adjusted properly, press the “Right Arrow” highlighted in the image below to link the DVR
8. Click on “SHOW DVR OPTIONS”



9. Activate each camera that you are using in the section below the text. If you are installing a passenger side camera then only activate that channel. Once all desired channels are activated then press the “Update” button at the bottom.



Sample Side Camera Installations:

Before drilling any holes check location on inside of hood to make sure there are no obstructions and that mounting studs will be accessible.

Pod-Style Hood-Mount Mirror

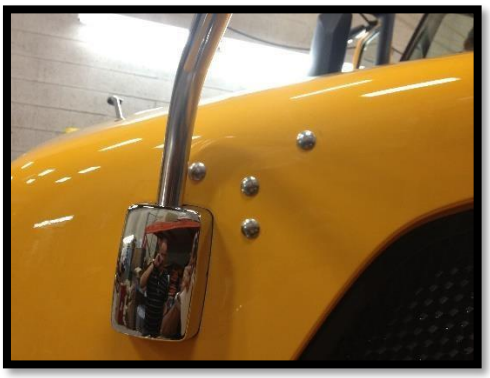
1. If the truck already has a pod-style hood-mount mirror installed, remove the mirror and use the four holes as a guide for mounting the Aero Cam base.



2. With gasket in position as shown in the above picture, drill center hole using a 1-inch drill bit or hole saw.

OE Aerodynamic Hood-Mount Mirror

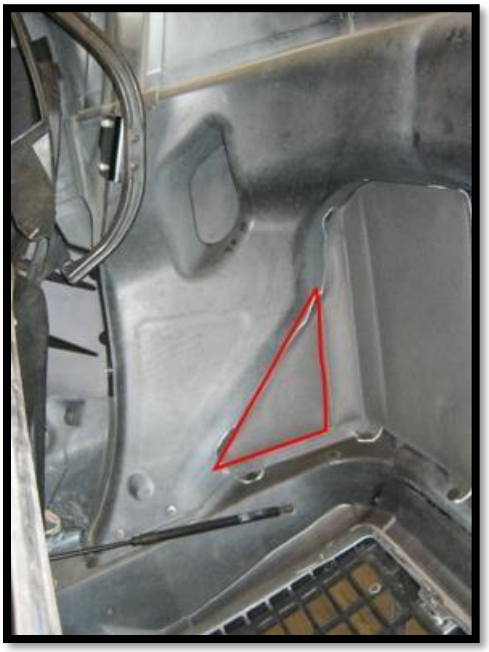
1. Remove the existing mirror. Place the gasket onto the hood so that the bottom, most forward hole is in the large center of the gasket. Use a level to ensure the gasket is properly positioned.



2. Drill center hole with a 1-inch drill bit or hole saw.
3. Drill the other four holes with a 5/16” or 8mm drill bit.
4. Use carriage bolts to fill the unused holes from the OE mirror.

No Existing Hood-Mount Mirror

1. Roughly align the base gasket in the center of the triangular area from the inside of the hood. Drill a small hole in the center of the 1” center hole.
2. From the outside of the hood, using the drilled hole as a guide, align the base gasket vertically and horizontally.
3. Carefully mark the four corners and the center-hole positions with a center punch or marker.
4. Drill center hole with a 1-inch drill bit or hole saw.
5. Drill the other four holes with a 5/16” or 8mm drill bit.



Kenworth T660s

1. Remove the studs from the base of the camera assembly. Replace the upper studs only with the shorter studs provided in the kit.

2. On one side of the truck select the camera assembly that will position the camera pointing rearward when mounted to that side. Place a gasket on the camera base with the adhesive side pointing away from the mounting base.

3. Feed the wire protruding from the cameras mounting base through the center hole of the gasket. Remove the paper liner from the gasket. Mount the camera assembly to the outside of the hood using one short backing strap on the top studs with lock washers and nuts and two ¼-20 hex head screws with lock washers and flat washers on the bottom. Tighten to 100 in-lb.

Camera Arm Matrix

Review the matrix below to confirm which arm and wedge-grommet to use for your vehicle.

Make	Model	Universal (short arm)	Long Arm	Wedge 4° Up	Wedge 4° Down	No Wedge
Peterbilt	579	x			x	
Peterbilt	587	x			x	
Peterbilt	388	x			x	
Peterbilt	389	x			x	
Kenworth	T660		x			x
Kenworth	T680	x			x	
Kenworth	T700	x			x	
Kenworth	T800	x			x	
Kenworth	T880	x			x	
Kenworth	W900	x			x	
Kenworth	C500	x			x	
Kenworth	T440	x			x	
Volvo	VNM 200	x				x
Volvo	VNM 430	x				x
Volvo	VNM 630	x				x
Volvo	VNL 200	x		x		
Volvo	VNL 300	x		x		
Volvo	VNL 430	x		x		
Volvo	VNL 630	x		x		
Volvo	VNL 670	x		x		
Volvo	VNL 730	x		x		
Volvo	VNL 780	x		x		
Volvo	VNX 300	x			x	
Volvo	VNX 430	x			x	
Volvo	VNX 630	x			x	
Volvo	VHD 200	x			x	

Volvo	VHD 430	x			x	
Mack	Pinnacle	x				x
Mack	Titan	x				x
International	Prostar	x			x	
International	Prostar	x			x	
International	Lonestar	x			x	
Freightliner	Cascadia Evolution	x				x
Freightliner	Cascadia CA125	x			x	
Freightliner	Cascadia CA125	x				x
Freightliner	M2 106	x	x		x	
Freightliner	M2 112	x		x		
Freightliner	Coronado	x		x		
Freightliner	122SD	x		x		
Freightliner	114SD	x		x		
Western Star	5700	x				x
Western Star	4900	x				x
Western Star	4700	x			x	
Western Star	6900	x			x	

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Warning for RF Exposure: This equipment complies with FCC RF exposure limits. The equipment should be installed and operated with a minimum distance of 20.59 cm between the radiator and the vehicle occupants. This transmitter must not be collocated or operating in conjunction with any other antenna or transmitter.