

FedEx Cargo Van

Blind Spot Camera & Backup Sensor Installation



Monitor Mounting in a Cargo Van

- There may be many different years, makes and models of Cargo Vans that you encounter. Be sure that the mounting location does not block the driver's view of the road.

The example shown is an Isuzu NPR Box Truck attached to the windshield.



In most cases the RVS-MOUNT ("Fan" style w/double sided tape) will work best for the installation. It can be attached to the dash (with screws in addition to the 3M tape) or attached to the windshield using the 3M tape. **Note:** The windshield must be cleaned thoroughly with Isopropyl or denatured alcohol.



RVS-MOUNT

(Requires screws in addition to the 3M tape if attached to the dash)

Ford Medium and High Roof Transit Vans can use the "U" bracket and mount overhead on the map light housing in many cases. (See examples on the following pages). Other high roof vans



RVS-422 "U" bracket



Monitor Mounting – Ford Transit Van Medium & High Roof

- Ford Transit Medium or High Roof Van mounted overhead on the map light housing using the “U” bracket.



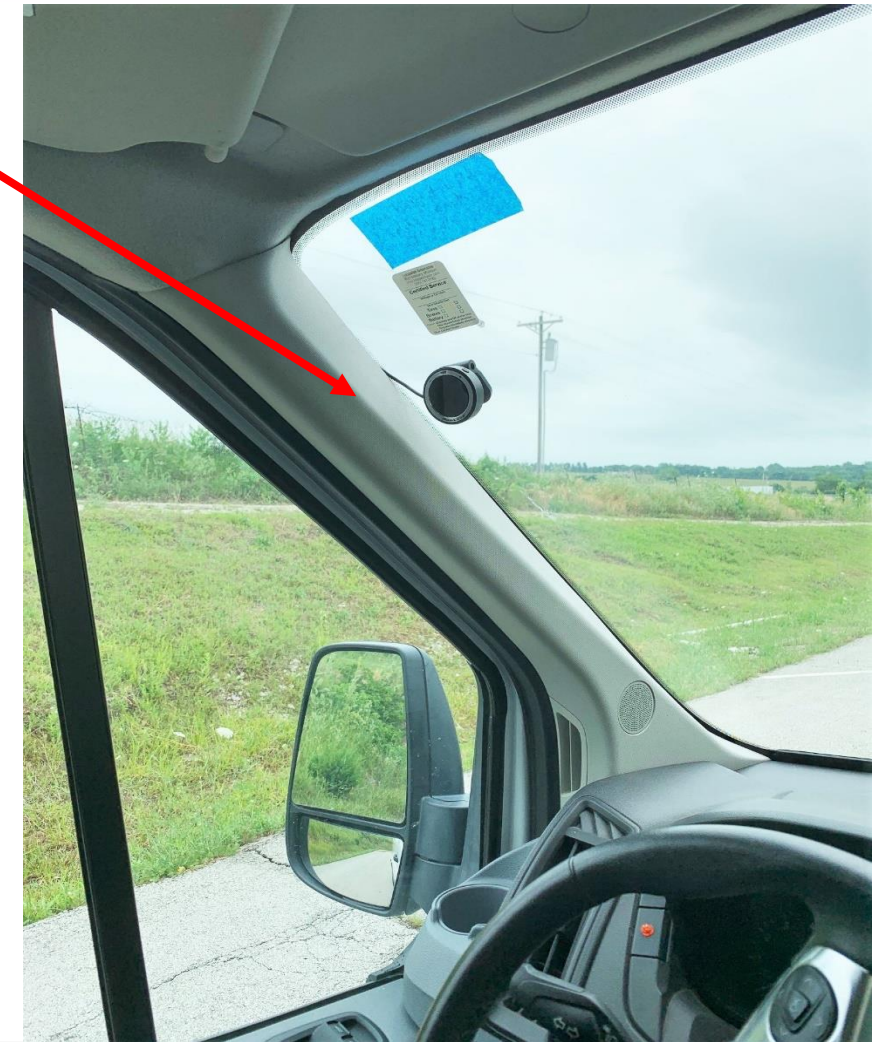
Monitor Mounting – Ford Transit Van Medium & High Roof

Route the monitor cable across to and down the A pillar. You MUST keep all cables and wires behind the Side Curtain Airbag!



Using a trim tool or flat blade screwdriver, press the release tab toward the front of van on each side to drop the overhead panel down.

Carefully remove the A pillar cover.



Side Cameras – Cargo Van

The example shown is a 2017 Ram Promaster Van

Flush Mounting

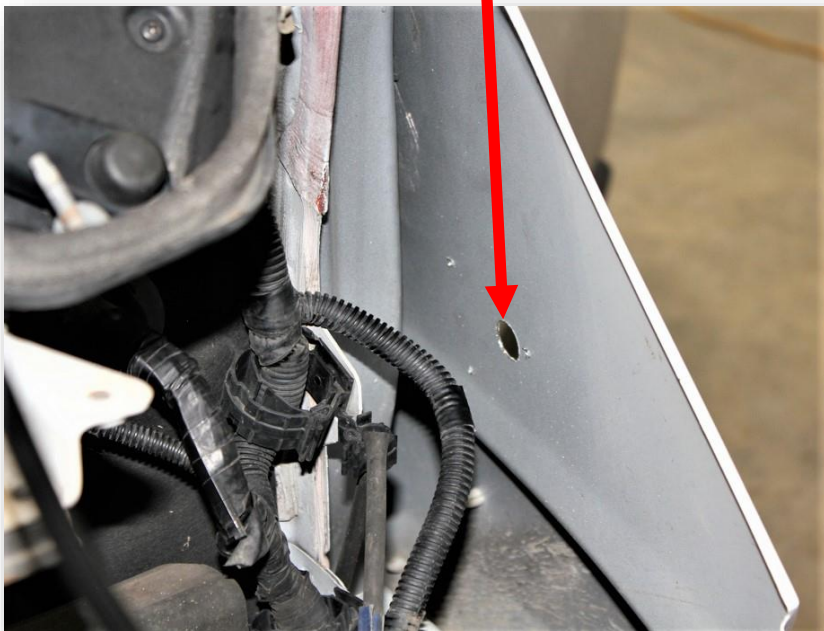
- Note: You must have a flat surface on the fender or body panel for flush mounting. Always double check on both sides of the panel (if possible) to verify before drilling any holes. Mount the left and right camera at the same height as the driver's side camera.
- The location of the camera and angle of 8° will need to be set before drilling the holes. Once determined, mark the hole locations.
 - Check the and adjust the camera angle with the flat lens portion of the camera. "Level" apps are available for smart phones.
 - Mark the screw holes.
 - The camera cable will require a 3/4" hole. Use the foam sealing tape to mark the cable hole
 - The camera will be mounted to the fender with 3mm Metric (or #4 SAE) machine screws, nuts and washers. Machine screws will require 1/8" holes.
 - or
 - 3mm Metric (or #4 SAE) sheet metal screws. Pre-drill 5/64" holes in the fender. Note: You will want to hand tighten the screws.
 - Coat the cable hole with brush on primer.
 - Apply the foam sealing tape to the fender.
 - Verify the screw holes are correct, then peel the camera side if the 3M tape.
 - Attach the camera.
 - Route camera cables to interior of van and make the connections.



Side Cameras – 2017 Ram Promaster Van

Showing backside of the left fender

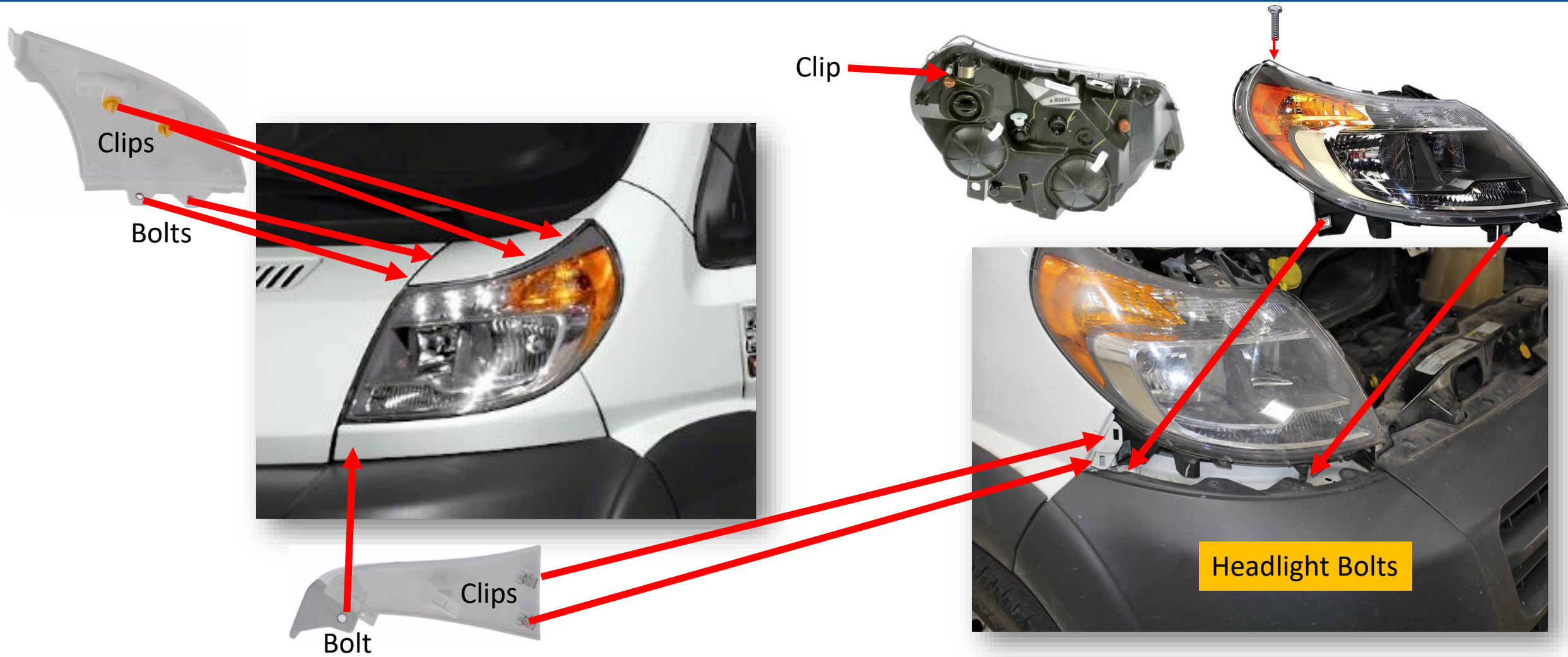
- Treat the camera cable hole with primer before inserting the grommet.



For access to the backside of the Ram Promaster fenders, you will need to remove the headlight assemblies. (See photos on next page).

- Remove 2 bolts on each upper trim panel.
- Carefully pry upwards to remove the trim panel.
- Remove 1 bolt on each lower trim panel.
- Carefully pry outwards to remove the trim panel.
- Remove the 2 lower bolts and 1 upper bolt holding the headlight in place.
- Pull headlight forward. To release the clip in the upper corner.
- Disconnect headlight power connector(s) and set headlight aside.
- Reverse the procedure to reinstall.
- Confirm operation of:
 - Parking lights
 - Low Beam
 - Hi Beam
 - Turn Signals

2017 Ram Promaster Van Headlight Removal



2017 Ram Promaster Van Side Cameras (cont.)

- Route the rear camera cable past the bulkhead then:
 - Route the cable over the headliner and down the “A” pillar, staying behind the side curtain airbag, or
 - Route the cable down the “B” pillar and under the rocker/step trim.
 - Route cable to dash.
- Route the front camera cables to the upper driver side corner of the firewall and locate the OEM grommet.
- Route the passenger side cable across to the driver’s side.
 - Note: Be careful not to attach the cables to the moving parts of the windshield wiper mechanism or close enough to rub.
- Route cables through the grommet and seal with silicone.
- Make the camera cable connections under the dash, neatly dog bone (bundle) the excess cable and secure under the dash.



Cable Routing – Cargo Van –

Example shown is a 2019 Ford Transit Van

Route the loomed right side upper sensor cable across to the passenger side upper backup sensor.

Route the rear camera cable towards the driver's side and secure along with the passenger side sensor cable.

Bundle the excess cables vertically in the driver's side corner of the cargo box.

Route loomed cable and wires to the front of the vehicle:

- Through existing wire channel.
- Behind body framing.
- Tied to OEM harness.
- If van has interior walls
 - Secure high in upper corner of side wall and ceiling.
 - Route under the lower shelving secured high as possible.

Note: Be sure that cables cannot be damaged by shifting cargo.



Cable Routing – Cargo Van (cont.)

Example shown is a 2019 Ford Transit Van

Route the rear camera cable past the bulkhead then:

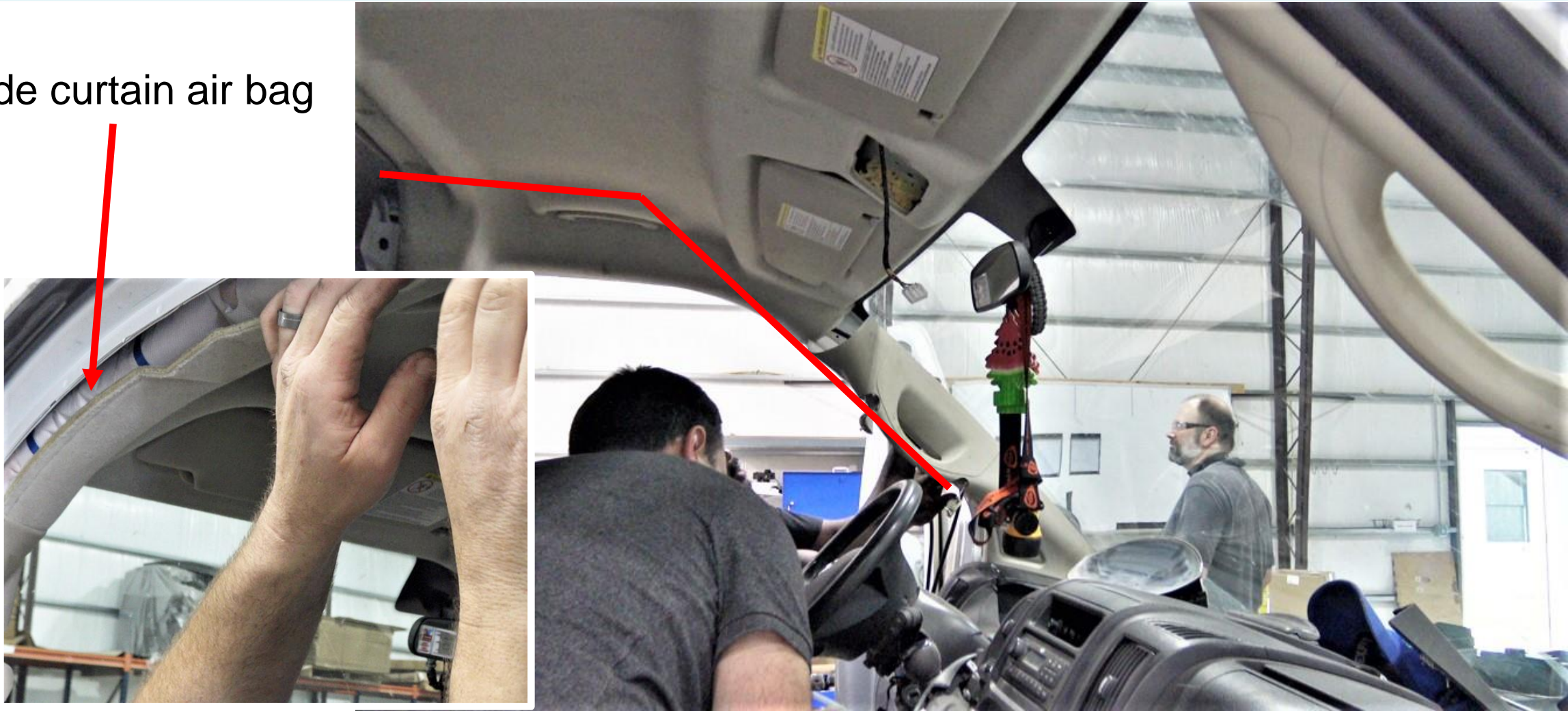
- Route the over the headliner and down “A” pillar, or
- Route down the “B” pillar and under the rocker/step trim.
- Ford Transit Van - Route the side camera cable up out of fender and through the OEM grommet. **Seal with silicone.**
- Make the camera cable connections under the dash, Neatly dog bone (bundle) the excess cable and secure under the dash.



Cable Routing – Cargo Van (cont.)

Example shown is a 2017 Ram Promaster Van

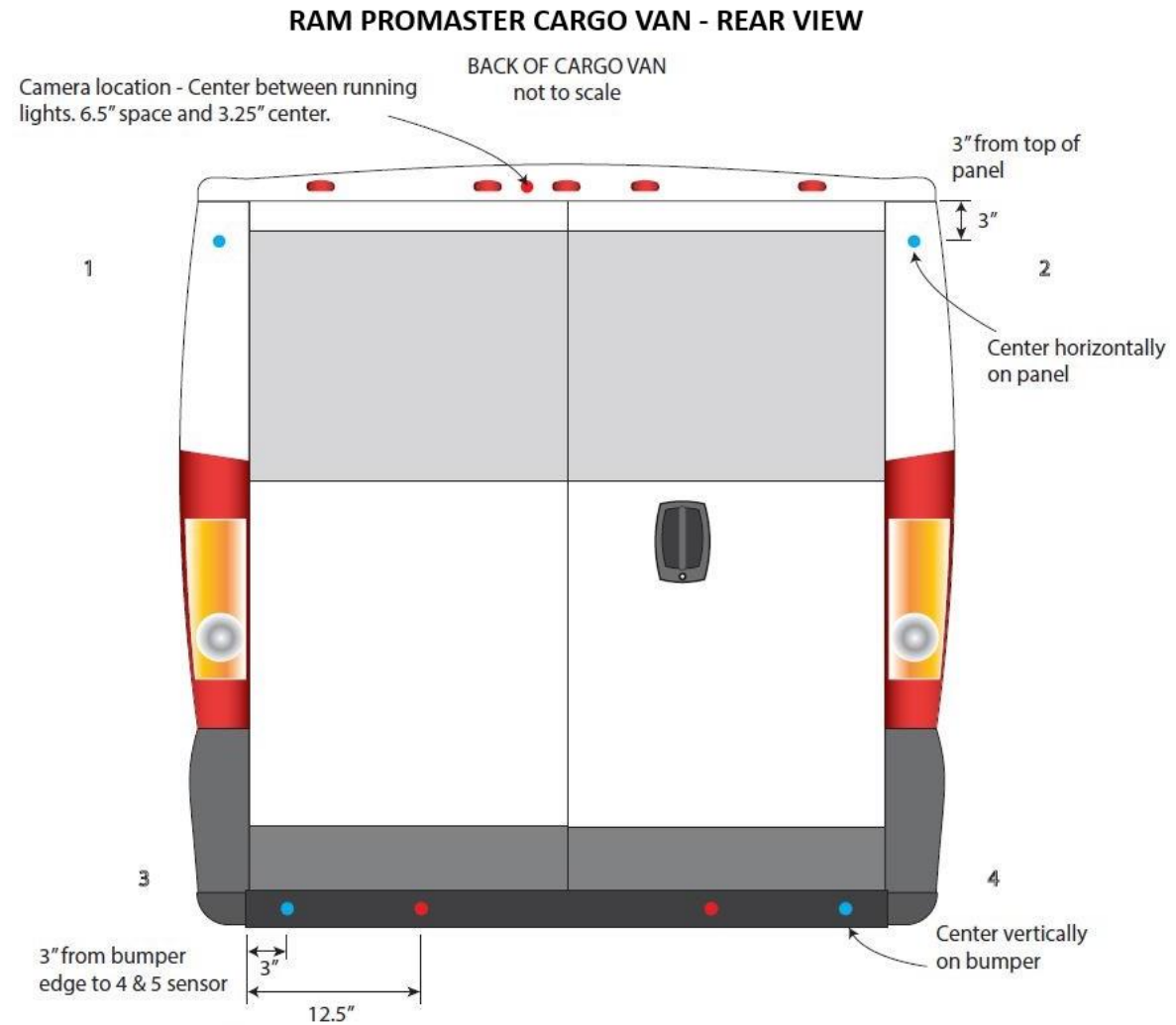
- Side curtain air bag



Backup Sensor and Rear Camera Mounting Locations

Example shown is a
2017 Ram Promaster

Exact location and
measurements will vary by
year, make and model.



Backup Sensor ECU Location Up High - Step Van

Example shown is a 2019 Ford Transit Van

The ECU will be located on the in the rear driver's side corner.

- Whenever possible, secure the ECU to the behind framing with:
 - 1/4-20 bolts, nuts and washers or
 - #10 machine screws, nuts and washers.
- If there is not an existing OEM grommet with access the floor to route the lower sensor cables through, drill a 7/8" hole in the floor near the back wall. Check for wires and any substructure before drilling.
- Bundle the excess cables behind the framing and secure to an existing wire loom or body framing with zip ties.

Note: Be sure the connectors are fully seated and locked into the ECU.



Backup Sensor ECU Location - Step Van

Example shown is a 2017 Ram ProMaster Van

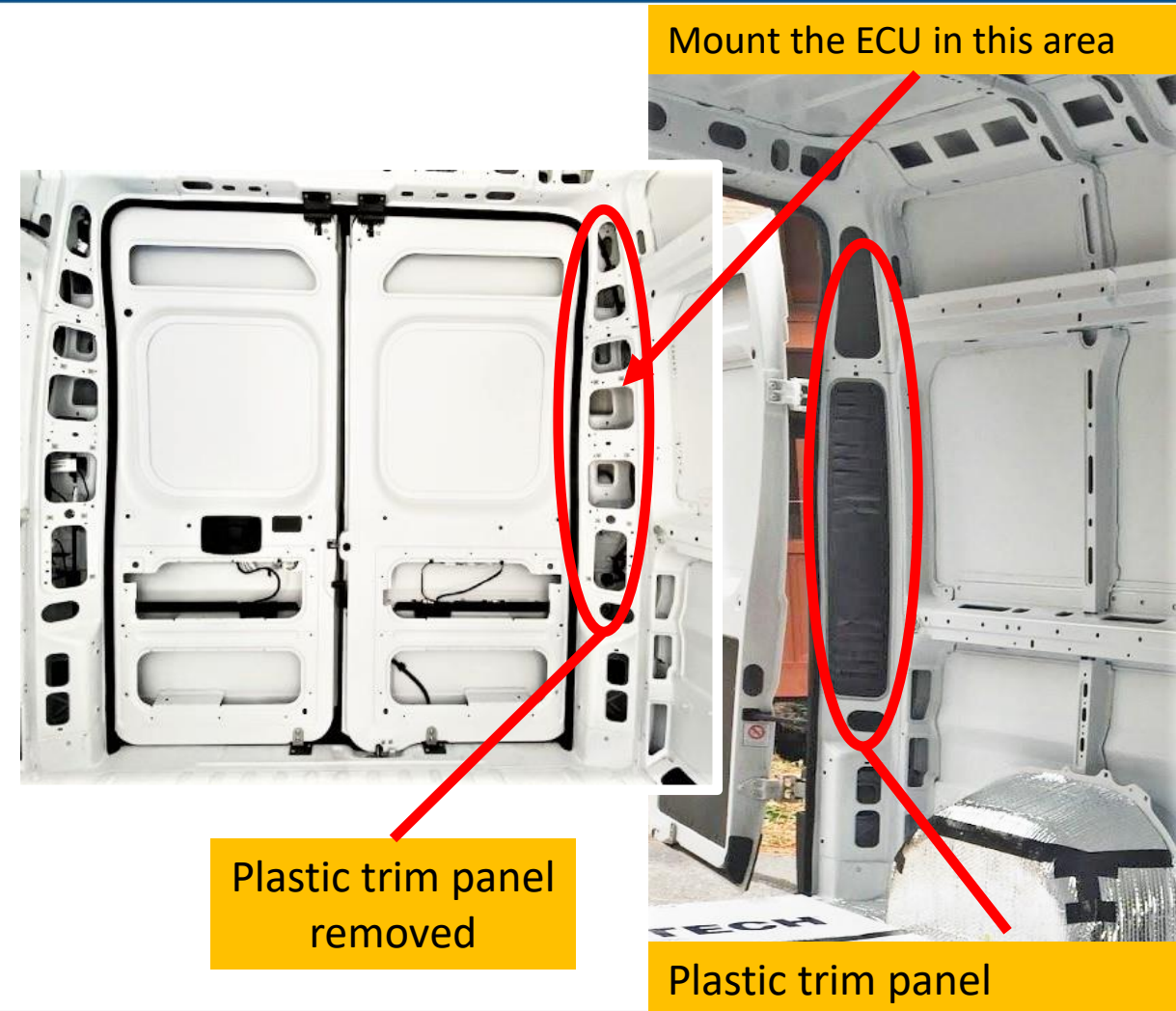
The ECU will be located on the in the rear driver's side corner.

Most ProMasters will have existing plastic trim panel. Mount the ECU behind the panel.

Whenever possible, secure the ECU to the behind framing with:

- 1/4-20 bolts, nuts and washers or
- #10 machine screws, nuts and washers.
- If there is not an existing OEM grommet with access the floor to route the lower sensor cables through, drill a 7/8" hole in the floor near the back wall. Check for wires and any substructure before drilling.
- Bundle the excess cables behind the framing and secure to an existing wire loom or body framing with zip ties.

Note: Be sure the connectors are fully seated and locked into the ECU.



Backup Sensors – Cargo Van

Example shown is a 2019 Ford Transit Van

The 2 Upper Sensors (DU & PU) will mount in each top corner of the body.

- Mount as close to the outside edge as possible. Verify inside and outside before drilling hole for the sensor.
- Drill a 1" (25mm) hole for each sensor.
- Treat the cut sensor opening with brush on primer.
- Use the supplied rubber boots.

The 4 Lower Sensors (DO,DI,PI,PO) will mount into the rear bumper. Determine the shape of the actual bumper and distance to the metal before drilling the sensor holes in the plastic cover.

- For each sensor that will be mounted directly into a metal bumper, drill a 1" (25mm) hole and place the sensor directly in the hole. Be sure to Treat the cut sensor opening with brush on primer.
- For each sensor that will be mounted into a plastic bumper cover, drill a 21.5mm hole and the supplied rubber boots will not be needed.

All Sensors:

- Be sure to properly align each sensor in the hole. They are marked with an arrow on the backside and the "Hood" should be positioned at the top on the front side.
- Route the lower cables down through the floor using an existing OEM grommet in the floor or drill a 1" hole in the floor as close to the corner as possible. Make sure the cables cannot be damaged by feet or packages.
- Secure the lower cables to existing wiring or framing or route through existing channel to the driver's side.
- You will need to use the supplied split loom for the sensor cables.



Completing the Installation

Verify all cameras function properly:

- Rear camera displays full screen when the vehicle is put in reverse.
- Left side camera displays full screen with the left turn signal.
- Right side camera displays full screen with the right turn signal.
- Verify that the left and right camera view work properly when the brake pedal is pressed.

Verify that the backup sensors are located properly and function properly.

(Testing is easiest with 2 people. If a 2nd person is not available, place an object in front of each sensor to test. A tall ladder may work for the upper sensors).

- Verify that each sensor is properly positioned
- Verify that each sensor shows it is triggering visually on the monitor.
- Verify that you can hear that each sensor is triggering audibly.

- Verify that the default monitor view is set to the left and right camera split screen.
- Verify that the rear camera is adjusted to see the edge of the bumper.
- Verify that the rear camera sun shield is adjusted so that it shades the camera as much as possible w/o blocking any of the view.
- Verify that the rear camera grid lines are adjusted properly.
- Verify that the monitor turns off when the vehicle key is in the off position.
- Be sure to leave the following in the vehicle:
 - The RVS laminated “Quick Start” guide.
 - The RVS operation guide booklet.
- Be sure to perform the AMODS post inspection.
- Be sure that the vehicle is as clean or cleaner than you found it! NO metal shavings, wire clippings, ends of zip ties, TOOLS, etc....

Product Information and Technical Help



A Safe Fleet Brand

For product information

Please call

800-764-1028

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MIDWEST FLEET SOLUTIONS**

For installation help

Please call

800-775-2527



FedEx Step Van install guide Version 2 Rev 1

