

PD-062710

# P&D Compliant Fleet Solution

## 7" Kit

7" Monitor - HD Cameras with 6 Sensors



## Instruction Manual

## IN THE BOX



1 x 7" 3-Channel Split Screen Monitor

6 x Weatherproof Backup Sensor Reversing System

2 x HD 120° Side Cameras

1 x HD 130° Backup Camera

1 x 50 ft Cable

1 x 16 ft Cable

1 x 10 ft Cable

1 x U Bracket

1 x Fan Bracket

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A Safe Fleet Brand

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**IN NO EVENT SHALL SELLER OR MANUFACTURER BE  
LIABLE FOR ANY DIRECT OR CONSEQUENTIAL DAMAGES OF  
ANY NATURE, OR LOSSES OR EXPENSES RESULTING FROM  
ANY DEFECTIVE PRODUCT OR THE USE OF ANY PRODUCT.**



## SAFETY INFORMATION

Please read the entire manual and follow the instructions and warnings carefully. Failure to do so can cause serious damage and/or injury, including loss of life. Be sure to obey all applicable local traffic and motor vehicle regulations as it pertains to this product. Improper installation will void manufacturer's warranty.

**USAGE :** The Rear View Camera System is designed to help the driver safely detect people and/or objects helping to avoid damage or injury. However, you the driver, must use it properly. Use of this system is not a substitute for safe, proper or legal driving.

- Never back up while looking at the monitor alone. You should always check behind and around the vehicle when backing up, in the same way as you would if the vehicle did not have the Rear View Camera System. If you back up while looking only at the monitor, you may cause damage or injury. Always back up slowly.
- The Rear View Camera System is not intended for use during extensive back-up maneuvers or backing into cross traffic or pedestrian walkways.
- Please, always remember, the area displayed by the Rear View Camera System is limited. It does not display the entire panorama that is behind you.

**PLEASE READ THE ENTIRE MANUAL AND FOLLOW THE INSTRUCTIONS AND WARNINGS CAREFULLY. FAILURE TO DO SO CAN CAUSE SERIOUS DAMAGE AND/OR INJURY, INCLUDING LOSS OF LIFE. BE SURE TO OBEY ALL APPLICABLE LOCAL TRAFFIC AND MOTOR VEHICLE REGULATIONS AS IT PERTAINS TO THIS PRODUCT. IMPROPER INSTALLATION WILL VOID MANUFACTURER'S WARRANTY.**

# SAFETY INFORMATION

## INSTALLATION

Electric shock or product malfunction may occur if this product is installed incorrectly.

- Use this product within the voltage range specified. Failure to do so can cause electronic shock or product malfunction.
- Take special care when cleaning the monitor.
- Make sure to firmly affix the product before use.
- If smoke or a burning smell is detected, disconnect the system immediately.
- Where the power cable may touch a metal case, cover the cable with a friction tape. A short circuit or disconnected wire may cause a fire.
- While installing the RVS System, be careful with the wire positioning in order to avoid wire damage.
- Do not watch movies or operate the monitor while driving; as it may cause an accident.
- Do not install the monitor where it may obstruct driver's view or obstruct an airbag device.
- Dropping the unit may cause possible mechanical failure.



# OVERVIEW

The installed system will consist of:

- 7 inch split screen monitor which:
  - Allows viewing multiple cameras at the same time.
  - Shows full screen display of camera view when a particular camera is in use.
  - Issues audible alerts from the rear sensors when an obstacle is detected while vehicle is in reverse.
- Driver and Passenger side cameras
  - There are 2 mounting options:
    - Flush mounted. This option is always preferred when possible.
    - Bracket mounted.

- Rear backup camera mounted over rear door.

- 6 backup sensors + a sensor control module (ECU).

2 upper sensors will be mounted up high on either side of the vehicle, near the top.

- 4 lower sensors should be mounted at or near bumper level, evenly spaced along the bumper. For box trucks, please refer to the box truck installation guide.
- The ECU will mount inside the cargo area in the upper driver's side corner on all vehicles except straight (box) trucks. On box trucks, the ECU will mount under the truck on the right rear driver's side.

## REQUIRED TOOLS & SUPPLIES

- Tall ladder and step ladder.
- Cordless drill and 1/4" accessories.
- Various drill bits.
- 3/4", 7/8" and 1" hole saws.
- Various hand tools: wrenches, sockets, screwdrivers, etc.
- Wire crimper, wire stripper.
- Measuring tape.
- Wire fish tool.
- Razor knives.
- Brush on primer for cable and sensor holes in sheet metal.
- White touch up paint.
- Long and short zip ties.
- Silicone.

## WIRING REQUIREMENTS – ALL VEHICLES

**NOTE: Wire will have to run from the front to the back of the truck.**

**Run the Rear Wire of ECU from the REVERSE IGNITION to the rear of the chassis.**

### **Required power connections:**

- Accessory/Ignition
- Chassis Ground
- Reverse
- Left front turn signal
- Right front turn signal

**Note: You must use the front turn signal wires unless the rear turn signal and stop lights are independent of each other. The monitor view will not work properly when pressing the brake pedal if connected to the stop lights.**





# WIRING CONNECTIONS AND COMPONENT MOUNTING

## Component mounting:

- Rear camera will be mounted with machine screws, nuts, and washers. If there is no access to the backside of camera location, then self-drilling screws can be used to mount the camera bracket.
- Side cameras must be mounted with the supplied machine screws, nuts, and washers.
- Each camera requires 3/4" hole for the camera cable.
- Monitor mounting on step vans will depend on location (most will mount overhead) and use the "U" bracket.
- Monitor requires a 3/4" hole for the cable or use an existing hole in shelf if present.



## MONITOR MOUNTING OVERHEAD IN STEP VAN

In most cases, the monitor will be mounted on the underside of overhead package shelf of the step van.

- Mount with machine screws/bolts, nuts and washers. Never use self tapping/drilling screws for mounting overhead.
- Sit in driver's seat to determine the best viewing angle.
- Be mindful of existing equipment, such as fan.
- Use the existing hole in the shelf if available, to route the monitor cable through.
- If no hole exists, drill 3/4" hole. Insert a snap bushing.

**Note: Some step vans, like Utilimaster vans as an example are prewired for a backup camera.**

- Utilimaster: Look for a 15 pin plug at top left A pillar.
- Lt/Green - Reverse
- Pink - Ignition
- White - Ground



## SIDE CAMERAS – STEP VAN

### Flush Mounting – All Step Vans

Note: All step vans should have access on the backside of the fender for flush mounting. Always double check on both sides to verify before drilling any holes. Be sure to check both sides for air vent. Mount the camera below the air vent. If there is no vent on the passenger side, mount the camera at the same height as the driver's side camera.

The location and angle of the camera will need to be set before drilling the holes. Once determined, you can use the foam tape to mark the hole locations.

- Check angle with the flat lens portion of the camera. "Level" apps are available for smart phones.
- The camera will be mounted to the fender with 3mm Metric (or #4 SAE) machine screws, nuts and washers. This will require 9/64" holes.
- The camera cable will require a 3/4" hole. Use the foam sealing tape to mark the cable hole.
- Check to make sure the drilled holes line up before peeling the truck side of the tape
- Attach the camera with the supplied 3mm machine screws, nuts, and washers.



## REAR CAMERA INSTALLATION - STEP VAN

The backup camera will mount above the rear door, in the center if possible, but may need to be offset due to the location of existing running lights. If this is the case, mount between the center light and either left or right center light. Make sure the camera does not block any of the existing lights.

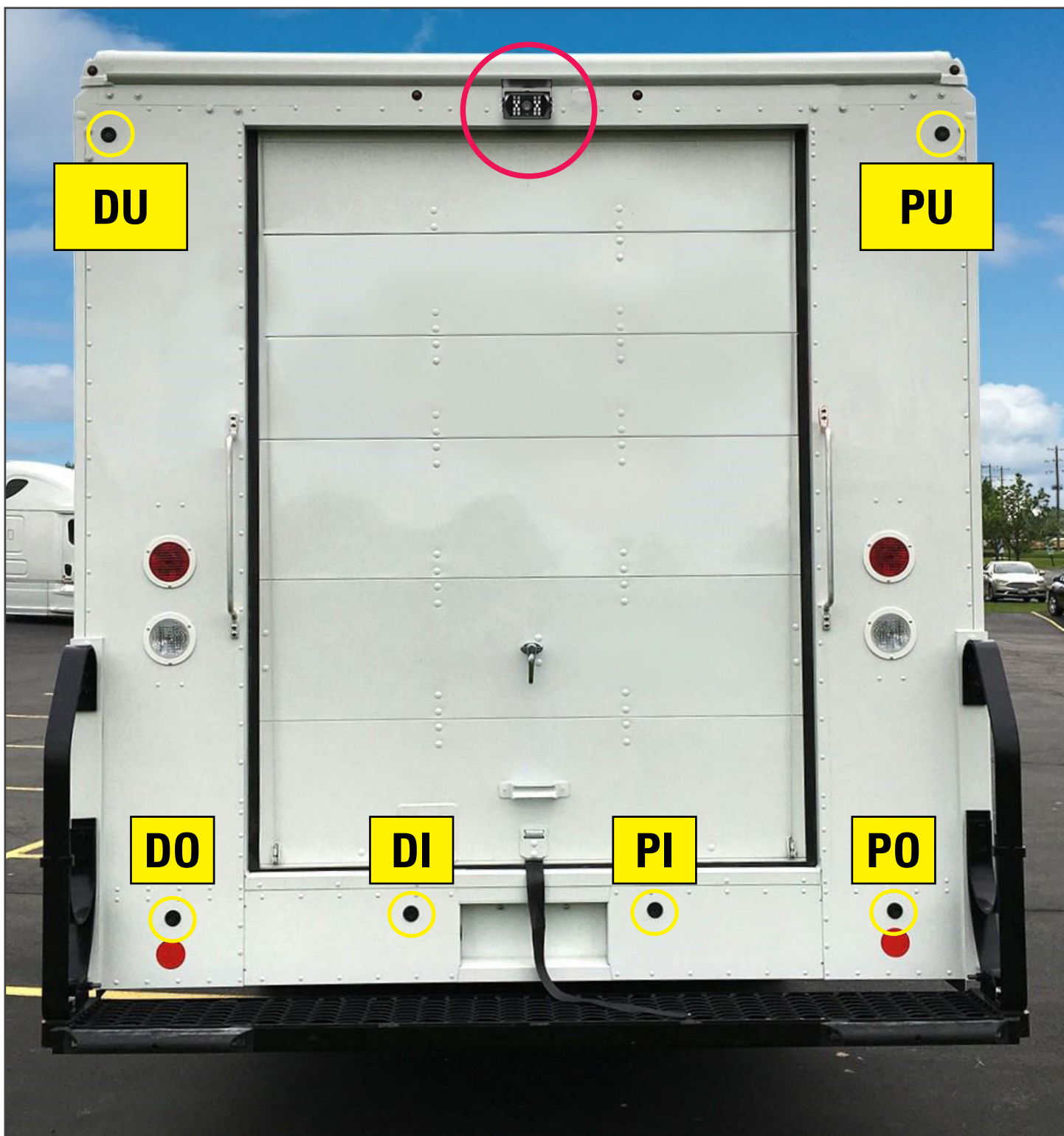
Note: Always avoid mounting the camera above a light to avoid the light washing out the camera's view.

- Use 10-24 x 1" machine screws, nylon insert lock nuts and washers to secure the bracket to the van body.
- Drill a 3/4" hole above or below the bracket for the cable and grommet.
- Brush primer around the grommet hole and allow to dry.
- Insert the rubber grommet that is on the camera cable into the opening, making sure that it is seated properly.
- Use thread locker on the screws that secure the camera to the mounting bracket. Do Not tighten completely until the system is powered up.
- Once the system is powered up, you will need to adjust the angle of the camera.
- Adjust so you can see the edge of the bumper.
- Adjust the sun shield so it shades the camera as much as possible without blocking any of the view.





# CAMERA AND SENSORS PLACEMENT



## BACKUP SENSORS OVERVIEW

This system is designed to use 6 backup sensors.  
Each sensor will be labeled for the corresponding mounting location.

Upper sensors:

**DU** = Driver Upper

**PU** = Passenger Upper

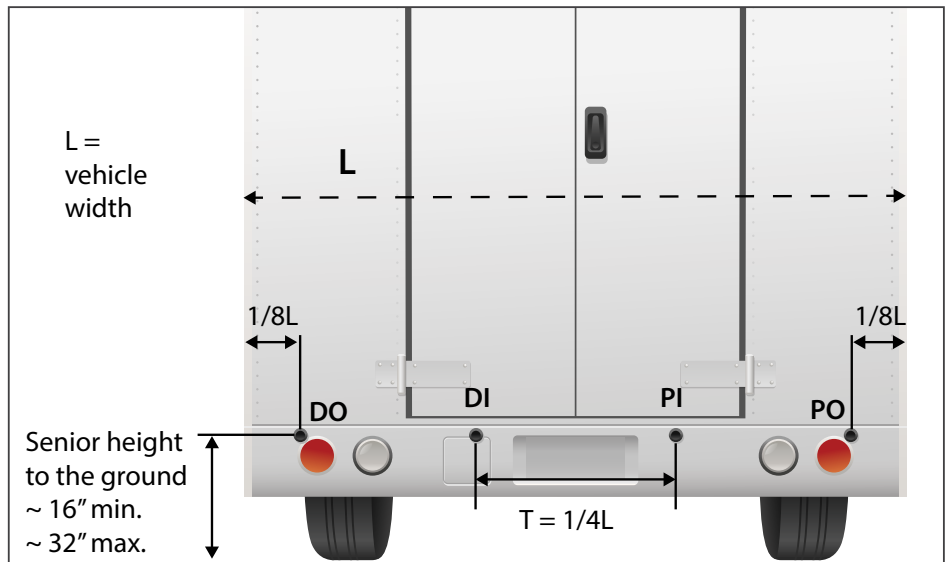
Lower sensors:

**DO** = Driver Outer

**DI** = Driver Inner

**PI** = Passenger Inner

**PO** = Passenger Outer

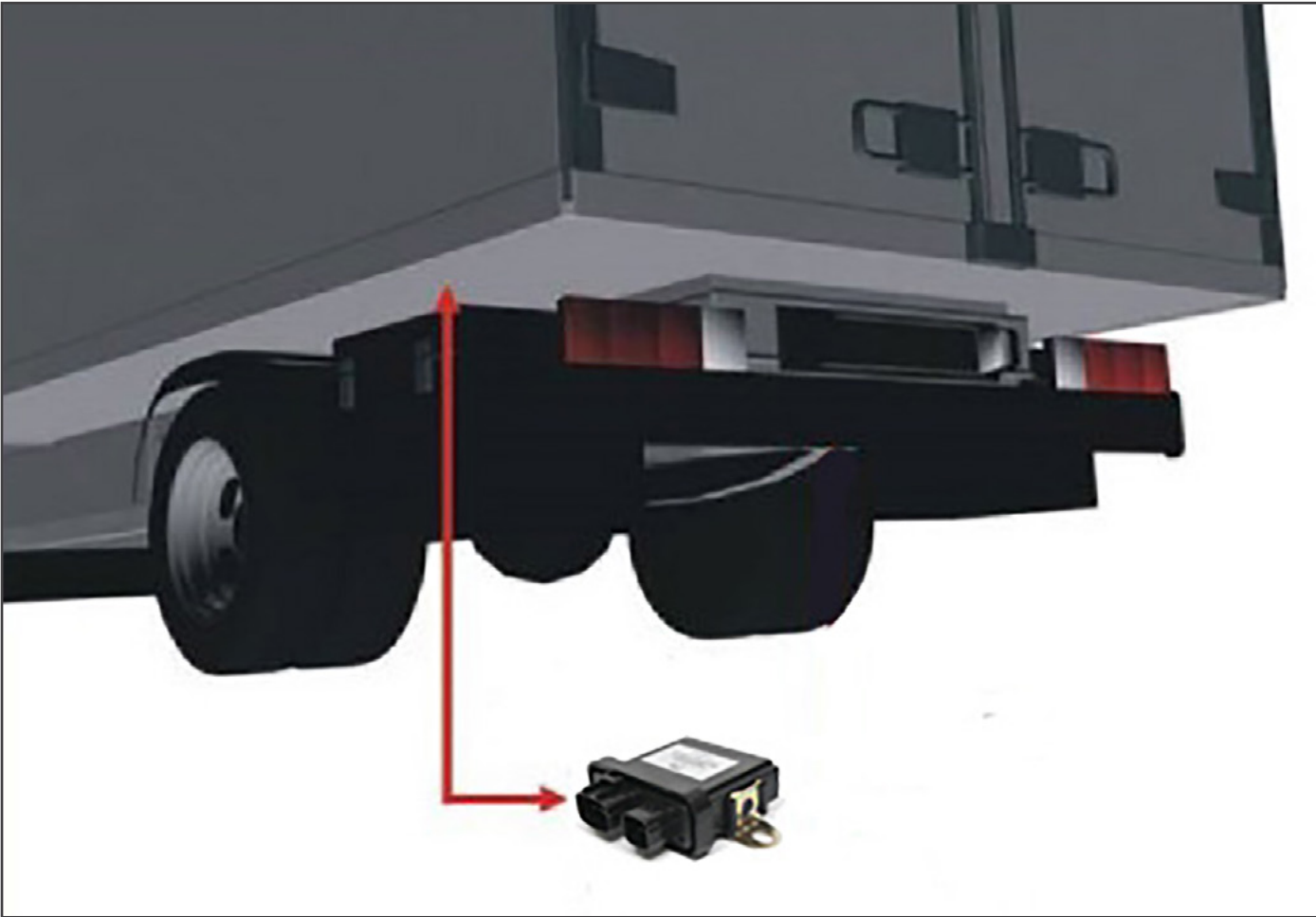


- The 2 upper sensors mount near the upper outside corners of the body. These are sensors DU and PU.
- The 4 lower sensors mount in the body below the door and above the bumper or in the bumper in some cases. These are sensors DO, DI, PI, PO.
- Please refer to install guide for your vehicle type for ideal ECU mounting location.

**Note: Some vehicles will have existing backup up sensors – Most will not be removed.**

- It will be best to mount the ECU first. This will allow you to:
- Plug in the sensor cable connector and route to each sensor and determine the length of cable needed.
- The lower cables will route across the bottom to each sensor.
- The upper sensor cables will route up into the cargo area to each sensor.
- Plug in the power/monitor connector and route up into the cargo area along with the upper sensor cables.

# ECU PLACEMENT



## SENSOR INSTALLATION GUIDELINES

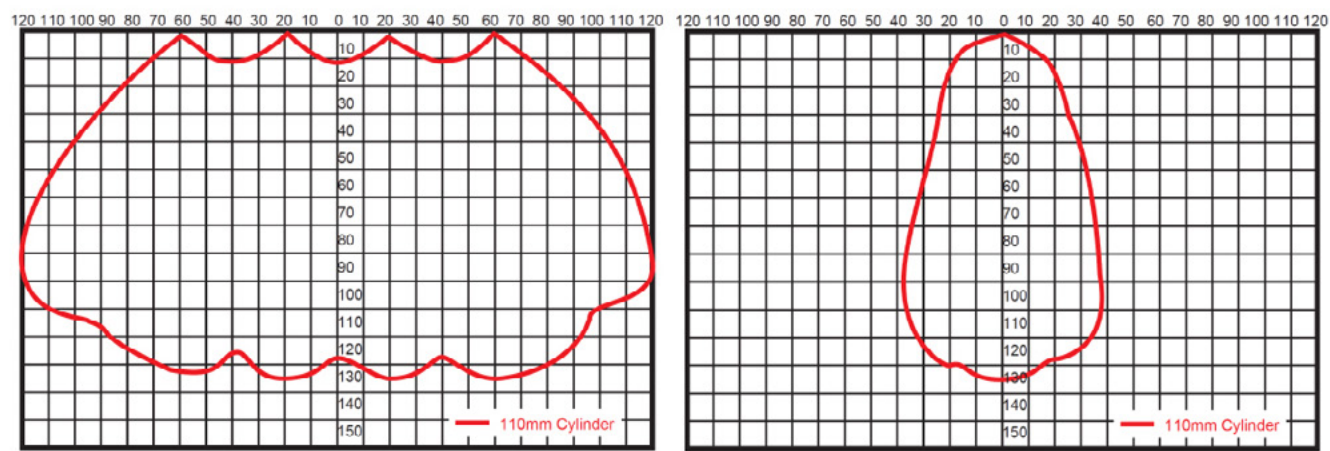
- Carefully drill a 25mm hole and insert the Rubber Jacket, properly orientated “UP”, in the hole first. Then insert the Sensor, again properly orientated “UP.”



- Depending on the thickness and construction of the bumper, the hole diameter may need to be varied. The Rubber Jacket is designed to seat properly into a 25mm hole with a 1/8 inch (3.2mm) thick metal bumper. If this is not the case, the flanges on the Rubber Jacket must be taken into consideration. It is suggested that a test hole be utilized to confirm a proper fit.
- Each Sensor detects objects in a circular area approximately 20” in diameter. It is recommended that the face of all Sensors should be on the same plane to ensure the accuracy of the system.

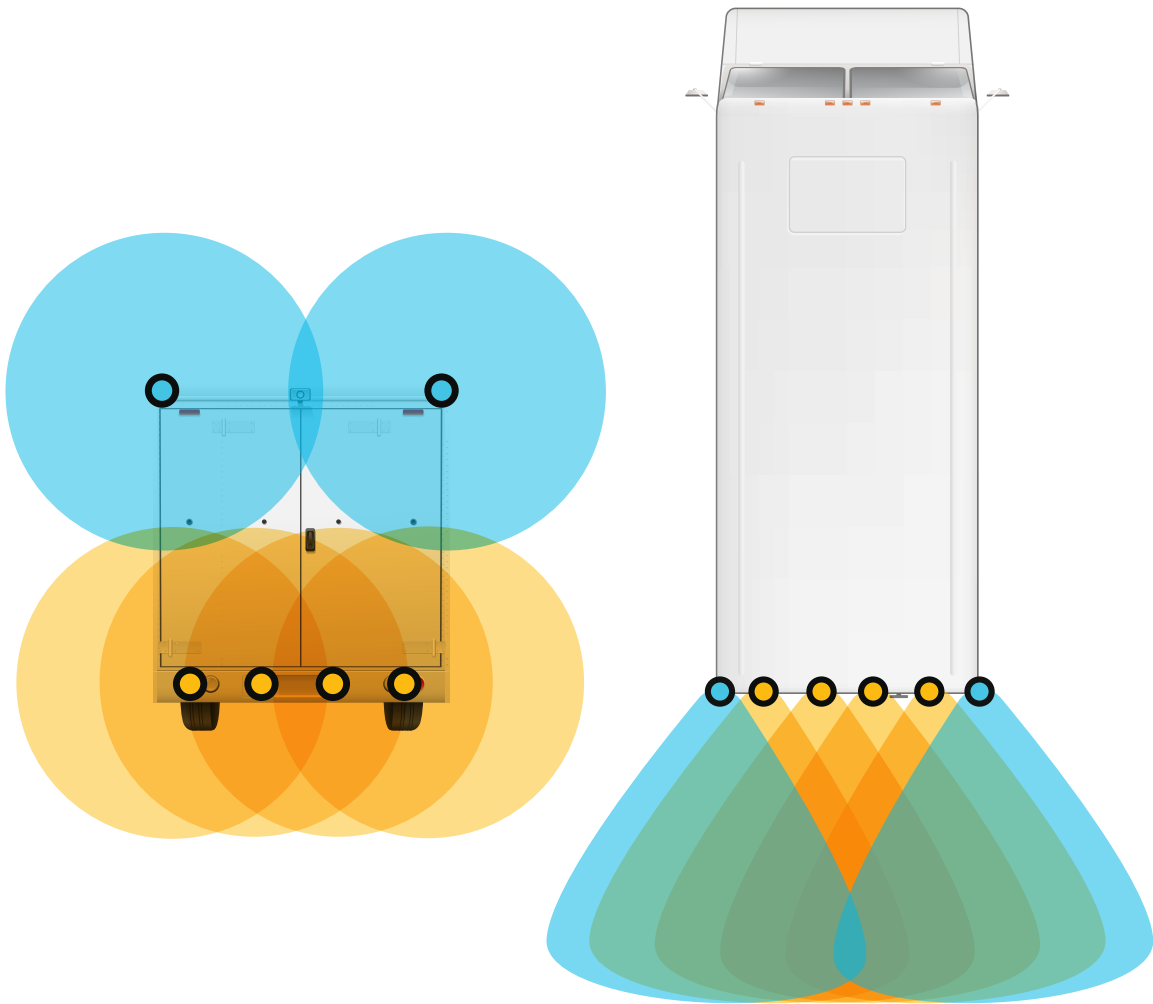


# SENSORS RANGE



4 Sensor Horizontal Field: M14, M15 or M16 Sensors

Single Sensor Vertical Field: M14, M15 or M16 Sensors



## CABLE ROUTING – STEP VAN

Route the upper sensor cable across to the passenger side upper backup sensor. Be sure to secure the cable so that it cannot come in contact with the door spring, cables or door. If using sticky tabs to attach zip ties, add screw in center or add silicone to the perimeter of the sticky tab. The double sided tape will fail!

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

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

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

Route loomed cable and wires through existing wire channel or body framing to the front of the truck toward the passenger bulkhead and then to the driver's side A pillar.

Route the rear camera cable past the bulkhead and through the horizontal channel over the driver's side door/window.

If mounting the monitor to the overhead shelf:

- Route the rear camera cable over the shelf towards the center.
- Route the left side camera cable up the vertical channel at the left front side (B pillar) of the door/window and towards the center.
- Route the right side camera cable up the vertical channel at the right front side (B pillar) of the door/window and towards the center.

If mounting the monitor to the dash:

- Route the rear camera cable over the shelf towards the center.
- Route the left side camera cable up the vertical channel at the left front side (B pillar) of the door/window and towards the center.
- Route the right side camera cable up the vertical channel at the right front side (B pillar) of the door/window and towards the center.





## COMPLETING THE INSTALLATION

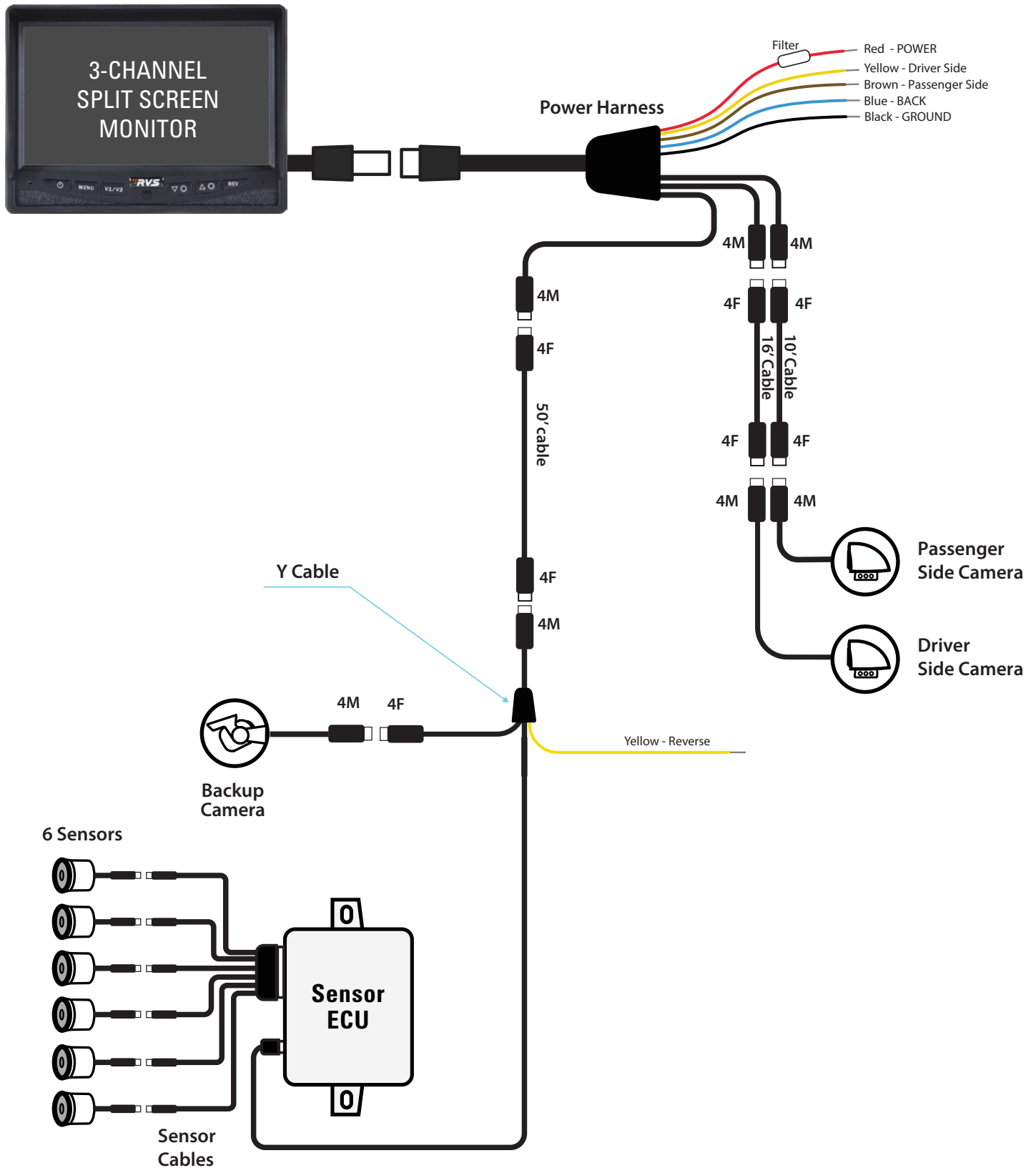
Verify all cameras function properly:

- Rear camera displays when the vehicle is put in reverse.
- The left side camera displays with the left turn signal.
- The right side camera displays with the right turn signal.
- Verify that the left and right camera view works properly when the brake pedal is pressed.

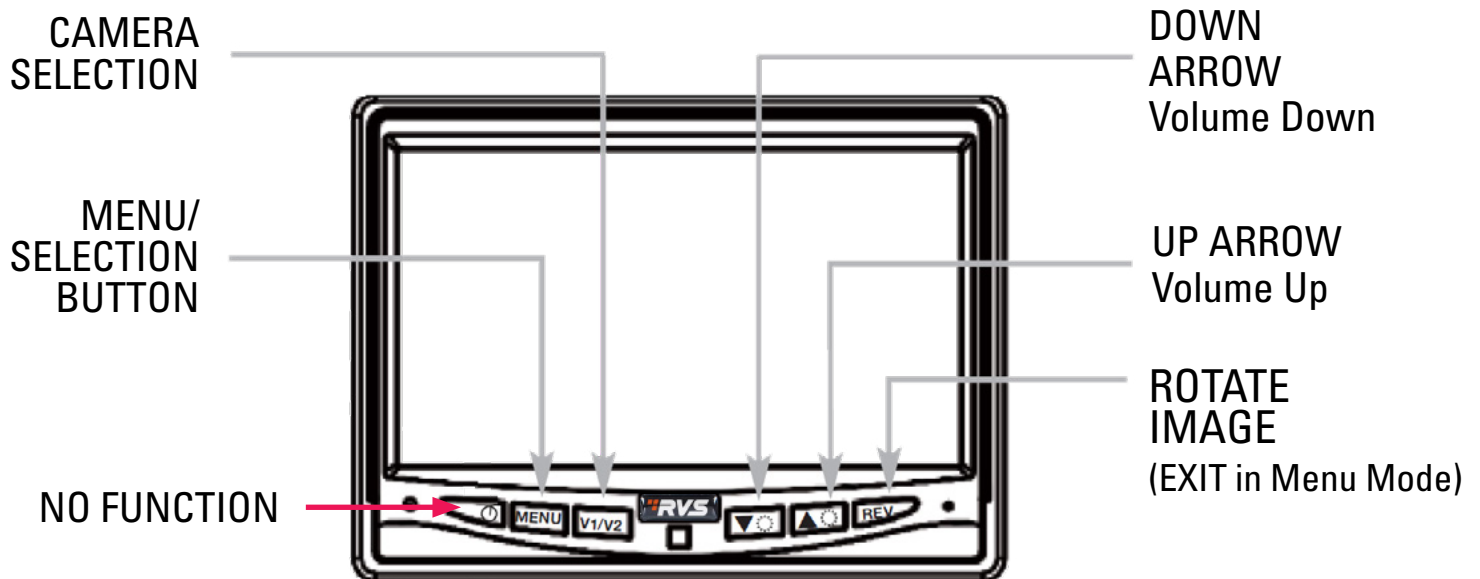
Verify that the backup sensors are located properly and function properly. (Testing is easiest with 2 people. If a 2nd person is not available, place an object in front of each sensor to test. A tall person may work for the upper sensors).

- 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.

# CONNECTION DIAGRAM



## MONITOR OPERATIONS



## NAVIGATING MENU

MENU	
Contrast	>
Brightness	>
Saturation	>
Language	>
Volume	>
Turn	>
Distance Grid	>
Grid Position	>
Day/Night	>
Camera Type	>
Reset	>

## MENU DESCRIPTIONS

- Brightness, Contrast, Saturation: adjust image properties
- Language: choose your language
- Volume: adjust volume
- Turn: Toggle between mirror/normal image on each individual channel
- Distance Grid: Toggle which channel distance grid lines will display on
- Grid Position: Adjust grid lines
- Day/Night: Toggle between back-lit buttons and auto dimming
- Camera Type: Choose camera type
- Reset: Reset to default factory settings

## MONITOR DIMENTIONS





## **THE WARRANTY**

REAR VIEW SAFETY LLC ("RVS" OR "WARRANTOR"), A SUBSIDIARY OF SAFE FLEET ACQUISITION CORP. ("SAFE FLEET"), WARRANTS TO THE ORIGINAL PURCHASER ("CUSTOMER") OF THE NEW (NOT USED) EQUIPMENT AND PARTS MANUFACTURED AND SOLD BY RVS TO SUCH CUSTOMER (COLLECTIVELY, THE "PRODUCTS") THAT EACH OF SUCH PRODUCTS WILL BE FREE FROM MANUFACTURING DEFECTS FOR THE APPLICABLE PERIOD SET FORTH IN SECTION 2 BELOW, IN EACH CASE COMMENCING ON THE WARRANTY START DATE (AS DEFINED BELOW), PROVIDED THAT SUCH PRODUCT IS USED UNDER CONDITIONS OF NORMAL USE, THAT REGULAR PERIODIC MAINTENANCE AND SERVICE IS PERFORMED, AND THAT SUCH PRODUCT WAS INSTALLED IN ACCORDANCE WITH THE INSTRUCTIONS PUBLISHED BY WARRANTOR (OR ITS APPLICABLE AFFILIATE), AND ALL IN ACCORDANCE WITH THE PRODUCT DOCUMENTATION (AS DEFINED BELOW) AND SUBJECT TO THE OTHER TERMS AND CONDITIONS SET FORTH BELOW (THIS "RVS LIMITED WARRANTY").

"WARRANTY START DATE" MEANS THE DATE CUSTOMER PURCHASES THE PRODUCT. THIS RVS LIMITED WARRANTY IS NOT TRANSFERABLE FOR ANY REASON, INCLUDING IN THE EVENT THE APPLICABLE PRODUCT IS SOLD, TRADED, TRANSFERRED OR OTHERWISE DISPOSED OF IN ANY MANNER BY THE ORIGINAL PURCHASER TO ANOTHER PARTY.

## **THREE YEAR WARRANTY**

REAR VIEW SAFETY, INC. WARRANTS THIS PRODUCT AGAINST MATERIAL DEFECTS FOR A PERIOD OF THREE YEARS FROM DATE OF PURCHASE. WE RESERVE THE RIGHT TO REPAIR OR REPLACE ANY SUCH DEFECTIVE UNIT AT OUR SOLE DISCRETION. REAR VIEW SAFETY, INC. IS NOT RESPONSIBLE FOR A DEFECT IN THE SYSTEM AS A RESULT OF MISUSE, IMPROPER INSTALLATION, DAMAGE OR MISHANDLING OF THE ELECTRONIC COMPONENTS. REAR VIEW SAFETY, INC. IS NOT RESPONSIBLE FOR CONSEQUENTIAL DAMAGES OF ANY KIND.

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## **WARRANTY PERFORMANCE**

DURING THE ABOVE WARRANTY PERIOD, SHOULD YOUR REAR VIEW SAFETY PRODUCT EXHIBIT A DEFECT IN MATERIAL OR WORKMANSHIP, SUCH DEFECT WILL BE REPAIRED WHEN THE COMPLETE REAR VIEW SAFETY, INC. PRODUCT IS RETURNED, POSTAGE PREPAID AND INSURED, TO REAR VIEW SAFETY, INC. OTHER THAN THE POSTAGE AND INSURANCE REQUIREMENT, NO CHARGE WILL BE MADE FOR REPAIRS COVERED BY THIS WARRANTY.





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