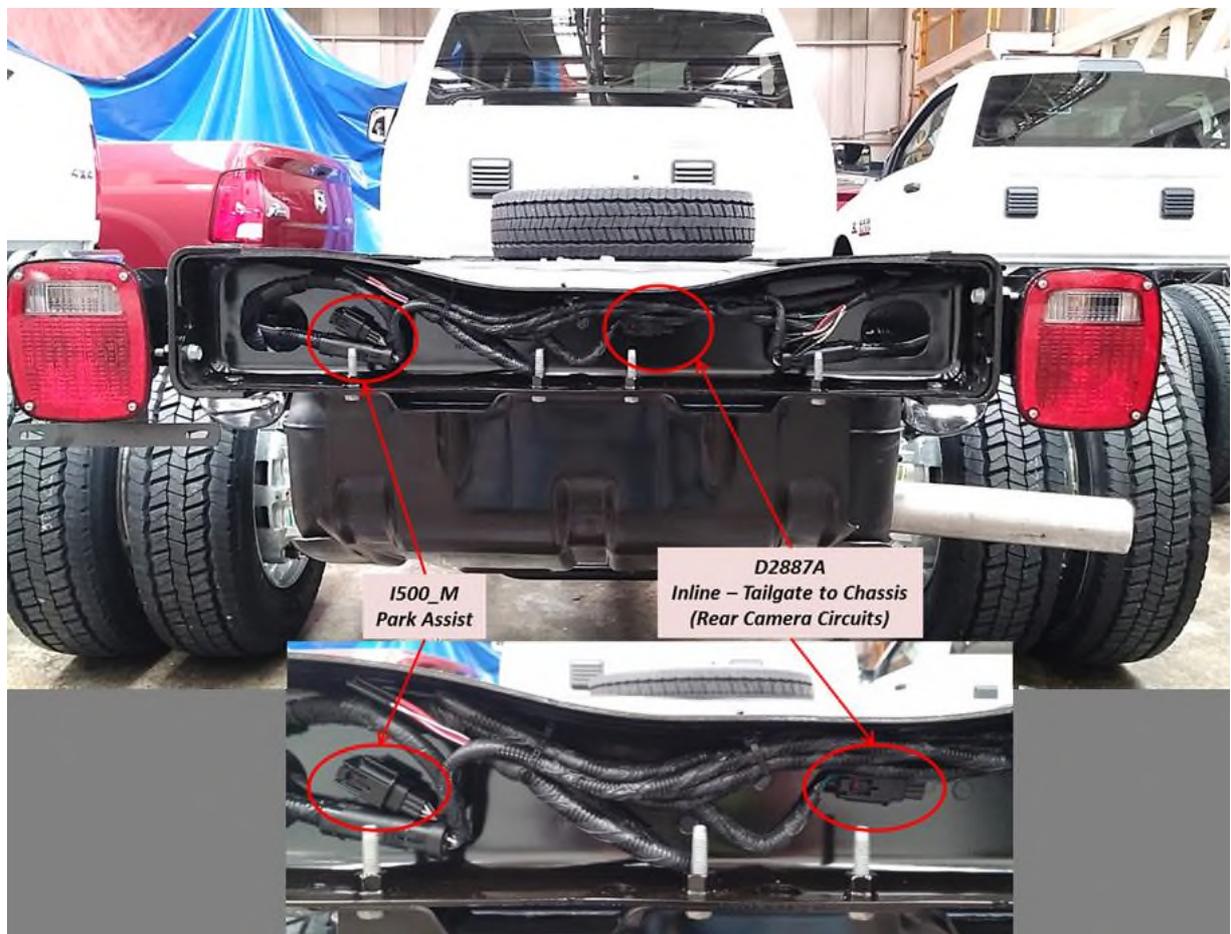


# Loose Ship Park Assist and Park View System

These features are available on all 3500 4500 and 5500 chassis/cabs. It has been developed to allow the up fitter to install back up camera (park view) and park assist (parktronics) on the up fit. Both systems plug into connectors on the rear of the frame. Both systems use the same type of connector. The difference is the gender of the connector. The park assist (parktronics) connector is towards the left side of the rear frame rail and is a female socket. The backup camera connector is located just to the right of center of the rear frame rail and is a male plug. **DO NOT PLUG THESE TWO CONNECTORS TOGETHER.** These connectors are secured in such a manner that they may be hidden by the harness bundle and may be difficult to see. They are there. Just push the harness bundle out of the way. Depending upon the type of up fit being installed, it may be easier to make this connection prior to installation of the up fit.





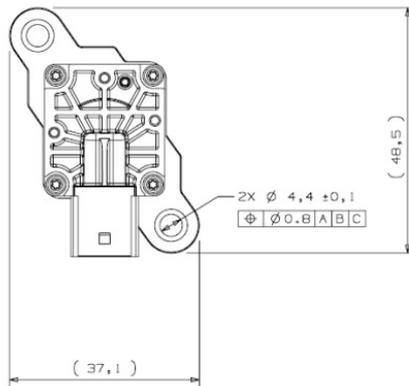
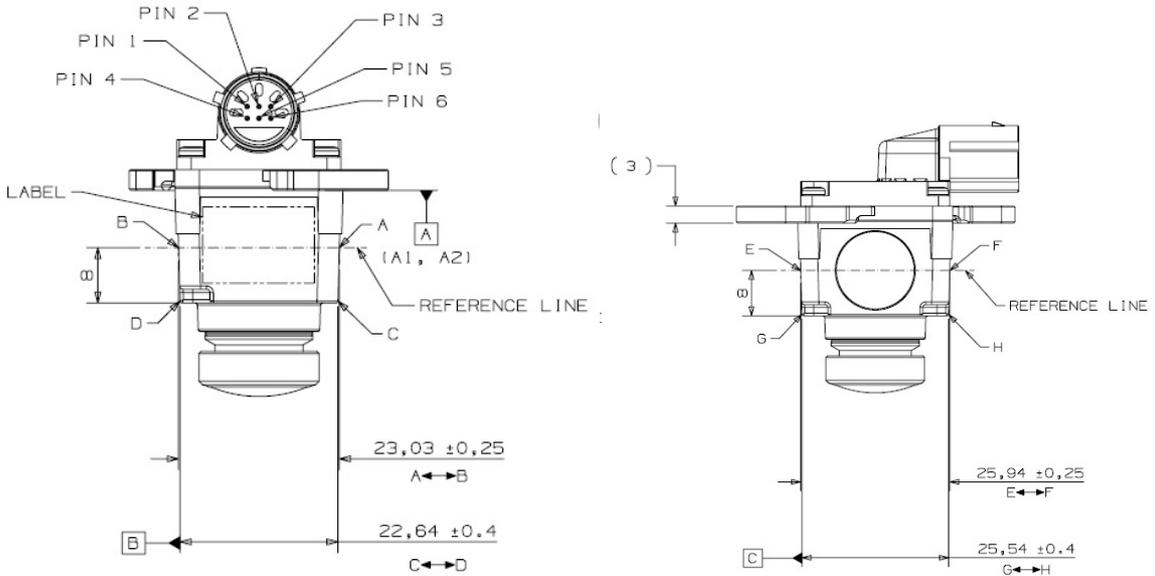
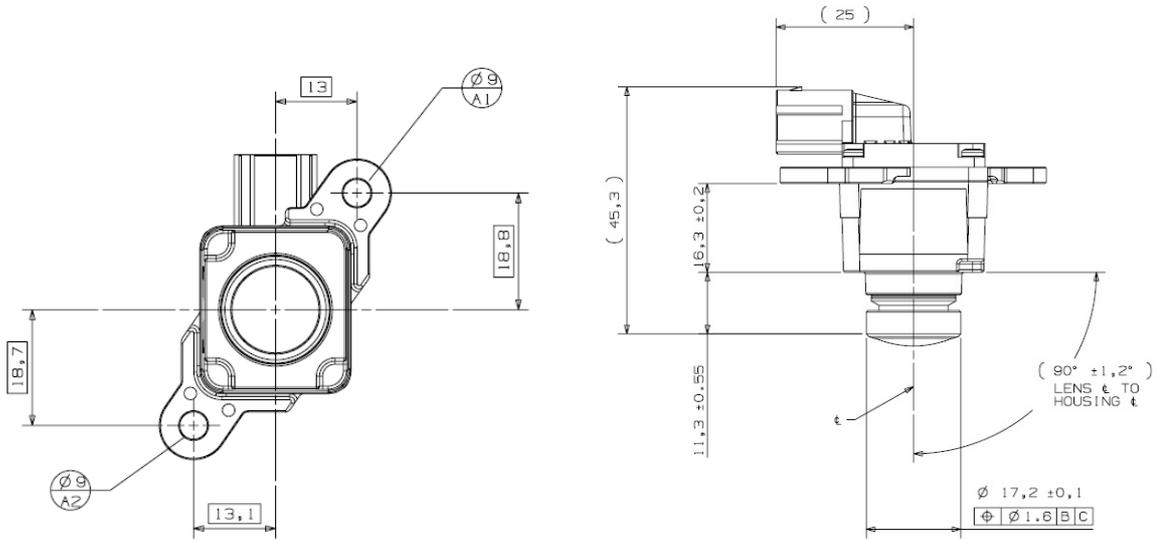
# Loose Ship Park Assist and Park View System

To install, first remove the video cable and the camera from the upfitter bag, extend the cable to locate both end-connectors. Install the *white* connector from jumper onto the camera connector mate as shown in the pictures. A 'click' will be heard when a secure connection has been achieved.



Route the video cable as desired, taking care to prevent in-use impact/abrasion damage. Add a protective covering (such as convolute) if prudent. Secure the cable (using clips/straps) often in its routing path. Install the *black* connector onto its chassis harness mate, located at the rear of the vehicle. (See photo on page 1) A 'click' will be heard when a secure connection is achieved. The following page has mechanical drawings of the camera.

# Loose Ship Park Assist and Park View System



# Loose Ship Park Assist and Park View System

Parktronics (Rear Park Assist):

## PLEASE READ COMPLETELY BEFORE ATTEMPTING INSTALLATION

Starting in model year 2015 the RAM Chassis Cab is offered with a rear park assist option package sales code XAA. Starting in 2016, the RAM Chassis Cab is offered with front and rear park assist option package sales code XAG. Rear only (XAA) will still be available.

If the vehicle is equipped with a ParkSense Rear Park Assist System, XAA or XAG sales code, the chassis cab has come equipped to support this system, but only the in-cab controls and chassis wiring have been factory installed. The rear sensors and mounting hardware that comprise Park Assist System will still need to be installed. The ParkSense Kit can be found in the cab of the vehicle. Once located, take an inventory of the kit's contents to confirm it is complete and become familiar with the components before installation. **Table 1** below details the kit's content and should be used for reference.

Table 1: Rear ParkSense Kit Contents

Quantity	Part Number	Description	Picture
4	1EW63TRMAA	Sensor	
4	04806229AA	Decoupling ring	
4	1JK80TRMAA	Retainer	
4	68240744AA	Mounting Plate	
1	68256920AA	Wiring Harness	

### Rear Park Sense System as Delivered

Since rear ParkSense has not been installed, a vehicle scan performed at a dealership with a diagnostic tool will show the ParkSense sensors as disconnected and the indicator light on the ParkSense button **Figure 11**, located within the center stack, will be illuminated indicating the system is disabled. Additionally, if the ParkSense button is pressed with the sensors disconnected the indicator light will flash briefly and return to its illuminated state. As a reminder, this ParkSense system is only intended to be mounted on the rear of the vehicle per the following installation instructions.

# Loose Ship Park Assist and Park View System

## Sensor Placement

In order for the ParkSense System to work properly the sensors should remain between 42 and 81 centimeters from the ground at all times while the vehicle is in use. If the sensors are below 42 centimeters, the ParkSense System may falsely detect the ground as an obstacle. Whereas the higher the sensors are mounted above 81 centimeters, the taller an object must be for the ParkSense System to detect it. To help the installer determine a mounting height **Appendix A** provides a reference of frame rail height to ground at curb and GAWR (Gross Axle Weight Rating) for all chassis cabs. This frame rail height must be measured above the axle and not at the end of the frame.

If the installer of the ParkSense System cannot guarantee that the sensors remain in the 42-81 centimeter range then it is the installer's responsibility to ensure that the ParkSense System will meet the requirements of their customer.

The sensors should be placed in a straight horizontal line across the back of the vehicle with two sensors 41.3 centimeters left and right of the vehicle's centerline and the other two sensors 76 centimeters left and right of the vehicle's centerline. The mounting depth between sensors cannot vary more than 10 centimeters. **Figure 1** visually represents the parameter window in which the sensors can be mounted.

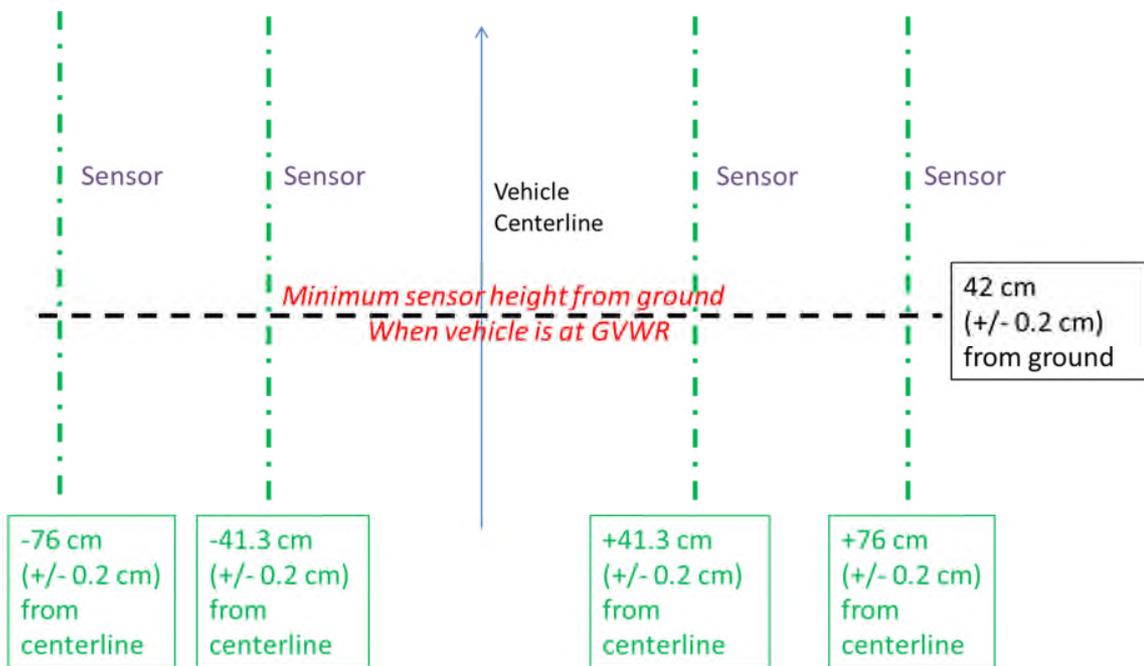


Figure 1: Parameter window in which ParkSense Sensors can be mounted

Figure 2 and

# Loose Ship Park Assist and Park View System

**Figure 3:** ParkSense's Horizontal Vision Field – Top View along with **Table 3 & 4** show the sensor's vision field in red which must remain clear of obstructions. Whereas the green regions can have obstructions present that the ParkSense sensor will not detect. If an obstruction falls within the field of view, the sensors will continuously report the obstruction and the chime will sound.

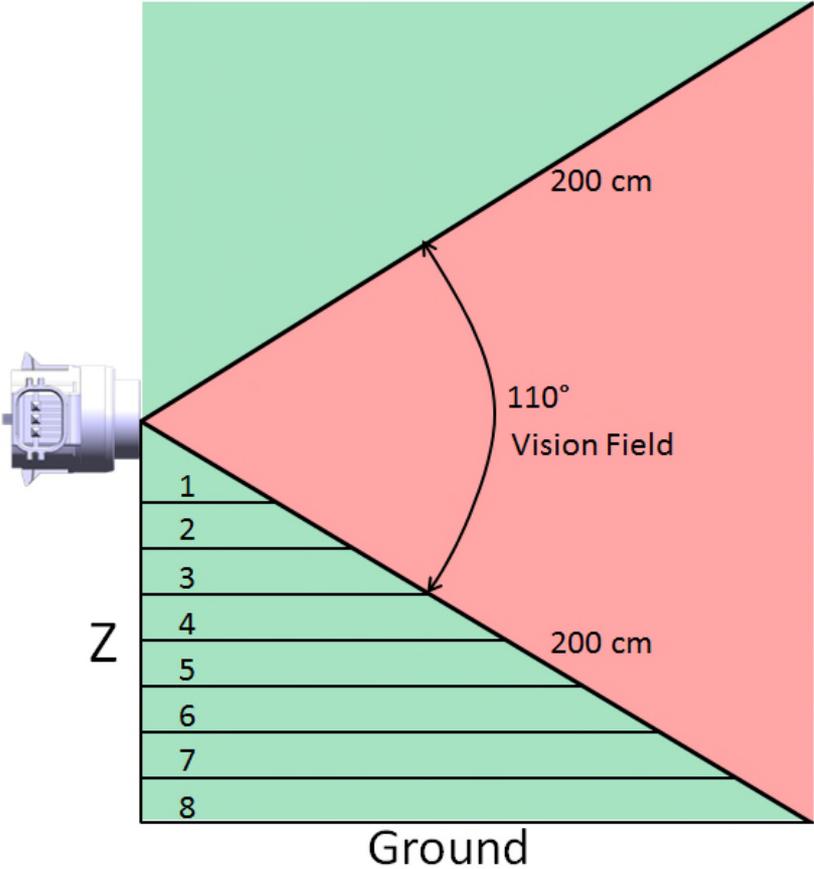


Figure 2: ParkSense's Vertical Vision Field – Side View

# Loose Ship Park Assist and Park View System

Table 3. Dimensions for Figure 3		
Position	Distance Along Z from Sensor (cm)	Distance from Vision Field Back to Sensor Face Z (cm)
1	20	14
2	40	28
3	60	42
4	80	56
5	100	70
6	120	84
7	140	98
8	164	114.8

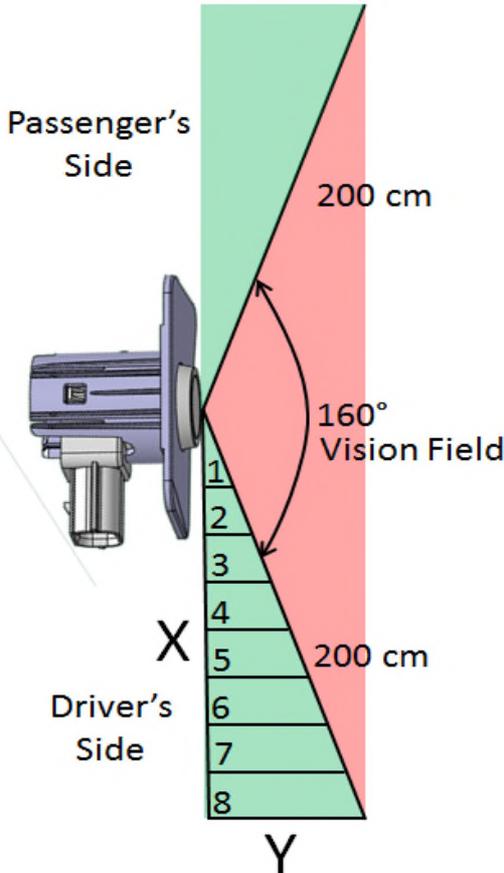


Figure 3: ParkSense's Horizontal Vision Field – Top View

# Loose Ship Park Assist and Park View System

Table 4. Dimensions for Figure 4		
Position	Distance Along X from Sensor (cm)	Distance from Vision Field Back to Sensor Face X (cm)
1	25.00	4.400
2	50.00	8.800
3	75.00	13.200
4	100.00	17.600
5	125.00	22.000
6	150.00	26.400
7	175.00	20.900
8	196.00	34.7

### Steel Coupon Attachment

When deciding upon a location to mount the sensor and coupon on the back of the vehicle it is critical that the sensor's face mounts perpendicular to the ground as shown in **Figure 4**. On select applications modification to the upfit may be necessary. If this requirement is not met, the sensor's vision field shown in **Figure 2** will be skewed and the ParkSense system's performance will not be optimal.

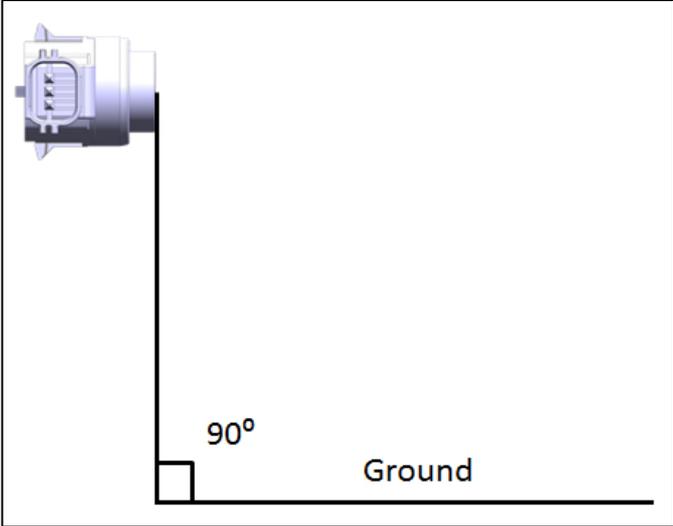


Figure 4: Sensor Mounting Requirement with Ground

# Loose Ship Park Assist and Park View System

While attaching the coupon to the vehicle it is important to make sure that the index keying in the mounting coupon is at the top of the mounting coupon. Once the retainer clip, sensor and O ring are inserted into the coupon, the clip and sensor should have a slight angle downward towards the ground plane. **Figure 5** demonstrates a proper installation. If the index keying is on the bottom side of the coupon as seen in **Figure 6**, the sensor will face upwards when installed and the system's ability to detect obstacles closer to the ground will be degraded.

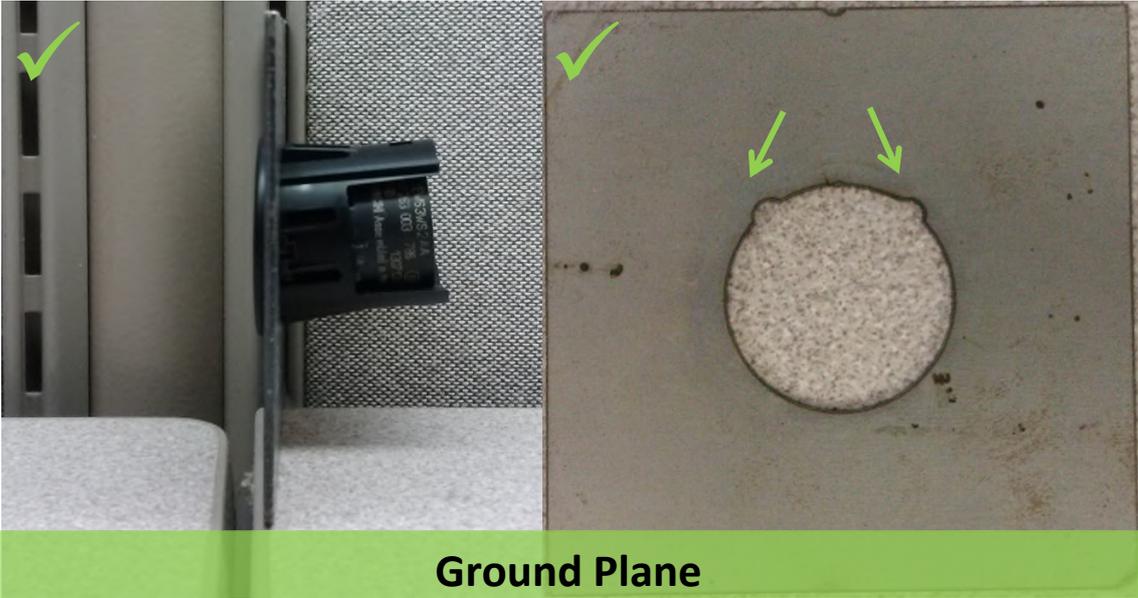


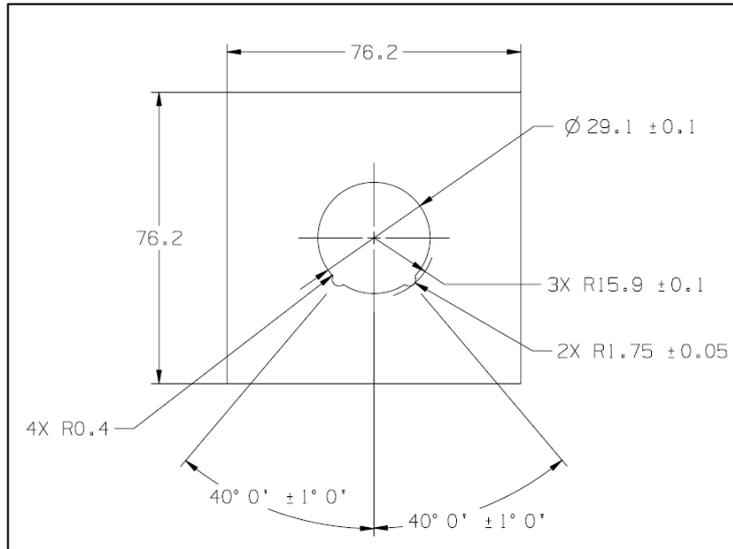
Figure 5: Correct Coupon and Sensor Mounting



Figure 6: Incorrect coupon and Sensor Mounting

# Loose Ship Park Assist and Park View System

**Note:** The use of the steel coupon is not mandatory. However, if the coupon is not used, please follow the dimensions outlined in **Figure 7** to reproduce the required hole and keying for the ParkSense Bezel in the body. If the coupon is used, it is recommended that a surface treatment be applied before and/or after mounting, but prior to sensor installation, to prevent corrosion.



**Figure 7: Body Bezel Hole Dimensions in Millimeters**

## Wiring

With the four sensors installed onto the body, plug the sensors into the wiring harness. The 6 pin connector must be plugged into the factory installed connector which is located between the frame rails. **Figure 8** shows the physical location of the factory connector. Depending on option content, there may be 1 or 2 connectors in this area which are capped. The sensor harness will only mate with the connector which has the male connector on the vehicle side (plug and sensor harness connector will be female). Once everything is connected make sure the wires are secured and nothing is hanging loose that could be snagged.

# Loose Ship Park Assist and Park View System

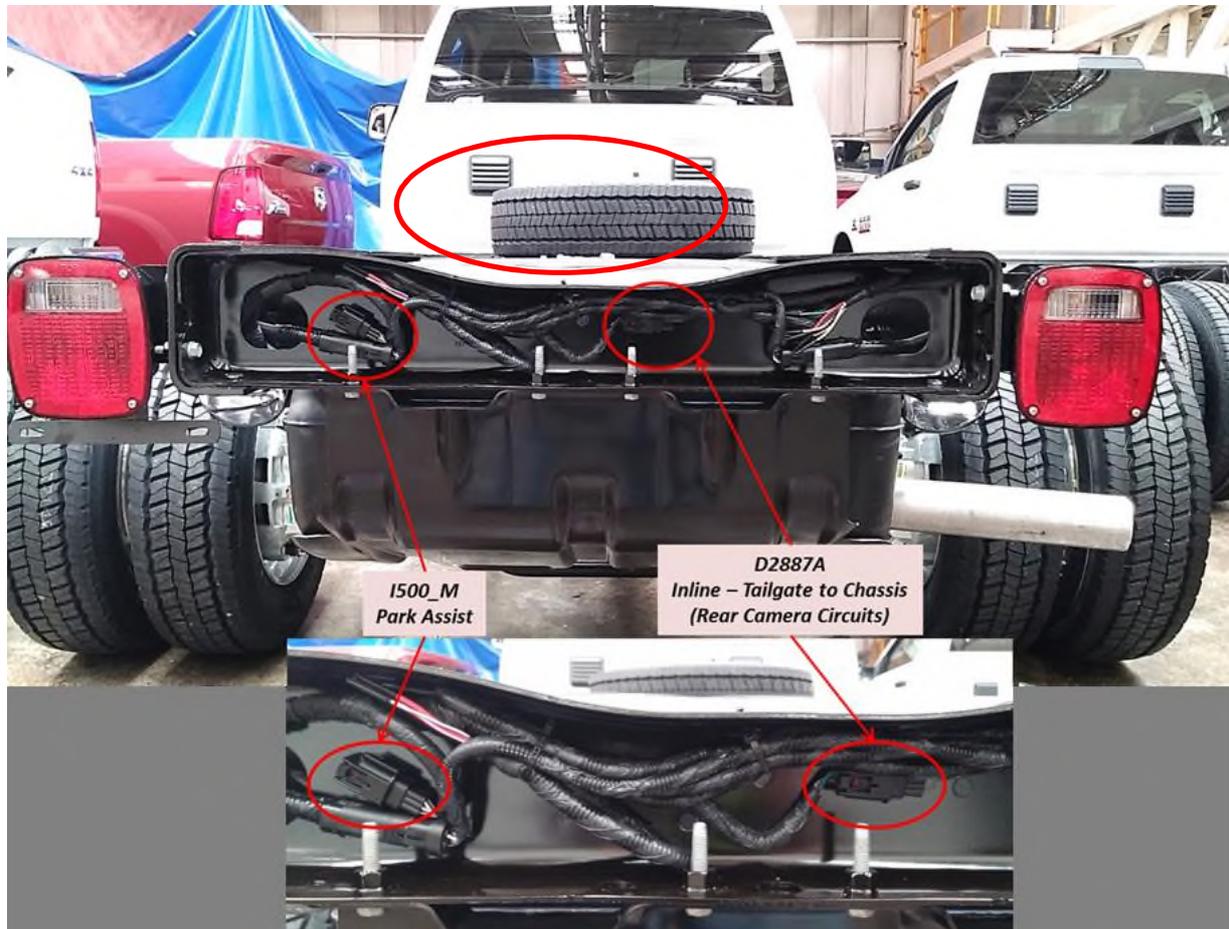


Figure 8: Factory ParkSense Connector Location

## Activating ParkSense

With the ignition in run position and the vehicle in park, access "Commercial Settings" within the instrument cluster using the steering wheel controls. If the vehicle is equipped with 3.5" screen in the instrument cluster "Commercial Settings" will be found within the "Vehicle Settings" menu. If the vehicle is equipped with a 7" screen in the instrument cluster "Commercial Settings" is a standalone option within the instrument cluster. Once inside "Commercial Settings", enter your unique four digit pin (default is 0000) and select "ParkSense Setup". Following the logic outlined in **Figure 9**, select that the Rear ParkSense sensors are installed. Once the setting has been changed, turn the key to the off position, wait until the instrument cluster screen turns off, and then key back on.

# Loose Ship Park Assist and Park View System

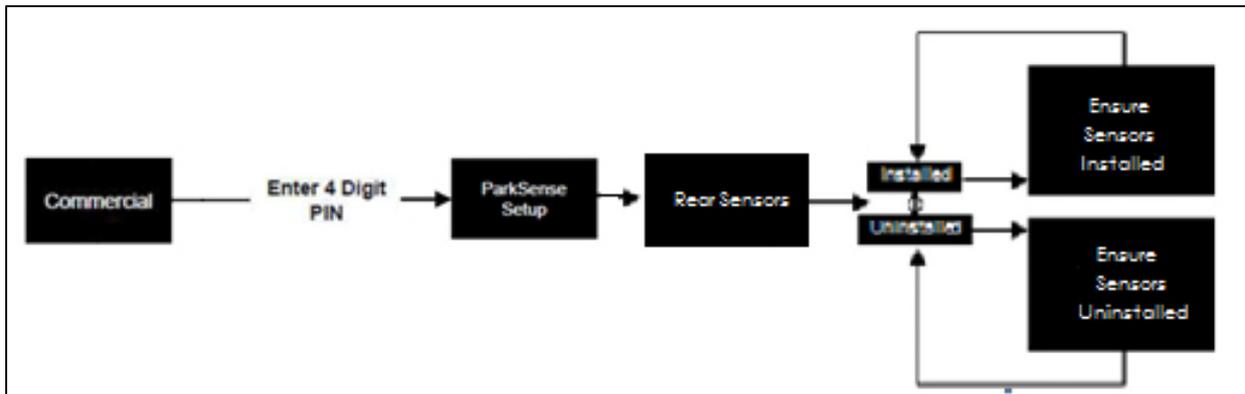


Figure 9: Instrument Cluster Logic Flow

Note: If ParkSense sensors are installed but the system is not enabled in the cluster, you may still hear tones from the radio.

## Validation of the ParkSense System

Once installation is complete, please follow the four basic steps outlined below to confirm that the ParkSense System has been installed correctly. Ultimately these four steps provide a basic functionality check and it is the installer’s responsibility to confirm that the ParkSense system functions properly.

1. In order for the vehicle to run an internal diagnostic check on the ParkSense System, a short test drive reaching a vehicle speed of at least 25 mph is required. Once complete and before keying the vehicle off, check the ParkSense button in the center stack to make sure the indicator light is not illuminated, **Figure 10**. If the indicator light is not illuminated, proceed to Step 2. If the indicator light is illuminated, **Figure 11**, an active fault in the ParkSense System may be present. To confirm the ParkSense button was not accidentally pressed at some point, press the ParkSense button. If the indicator light turns off, the system is working. Proceed to Step 2. If the indicator light blinks for a few seconds and then remains on, a fault is present that must be diagnosed and fixed before the system will be functional.



Figure 10: ParkSense Button (Indicator off)



Figure 11: ParkSense Button (Indicator On)

# Loose Ship Park Assist and Park View System

2. With no obstructions behind the vehicle for at least 2.5 meters, engine running and brakes fully engaged, shift the vehicle into reverse and confirm that the ParkSense System does not detect an object (no chimes and no bars behind vehicle displayed in instrument cluster), **Figure 12**.

If the system detects an obstructions behind the vehicle (audio chime(s) and bar(s) behind vehicle displayed in instrument cluster **Figure 13**), verify that there are no obstructions within 2.5 meters of the rear of the vehicle. If no obstructions are present, review sensor installation to ensure sensors are installed within the guidelines provided.

Note: If the ParkSense system has been configured as installed in the commercial menu and chimes are heard, it is possible that the ParkSense system is configured in “sound only” mode. See the section below titles “Enabling ParkSense Popups” below.



Figure 12: Instrument Cluster Graphic with no obstructions detected (Highline Cluster Left – Midline Cluster Right)

3. With the vehicle in park, place a sizable object 1 meter away from the sensors centered behind the vehicle. The minimum object size is a 1 meter high pole 10 cm in diameter. With an object now behind the vehicle, brake on, put the vehicle in reverse, and confirm that the ParkSense System detects the object immediately upon entering reverse gear. The graphic in the instrument cluster should now have bars behind it, **Figure 13**, and an audible chime should be heard.

# Loose Ship Park Assist and Park View System

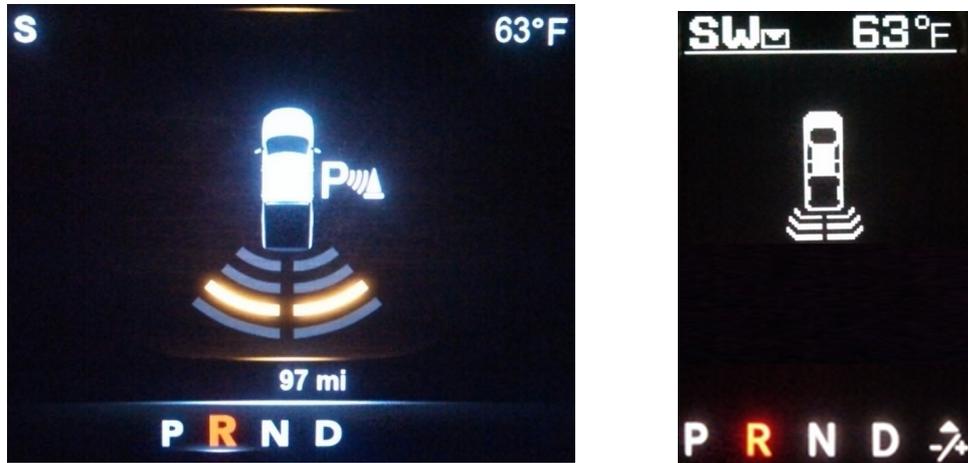


Figure 13: Cluster Graphic with object detected  
(Highline Cluster Left – Midline Cluster Right)

4. With the object still detected, put the vehicle in park and press the ParkSense button. Watch for the indicator light on the ParkSense button **Figure 11** to illuminate and the instrument cluster to display “ParkSense Off” **Figure 14**. Now shift the vehicle back into reverse and confirm that **Figure 14** is shown in the instrument cluster. Additionally when the ParkSense button is pressed to initially turn the system off one chime will sound as well as each time the vehicle is shifted into reverse as an audio reminder that the ParkSense system is off. Once confirmed, put the vehicle back in park and press the button again to turn ParkSense back on. This completes the ParkSense System validation and confirms a successful installation.

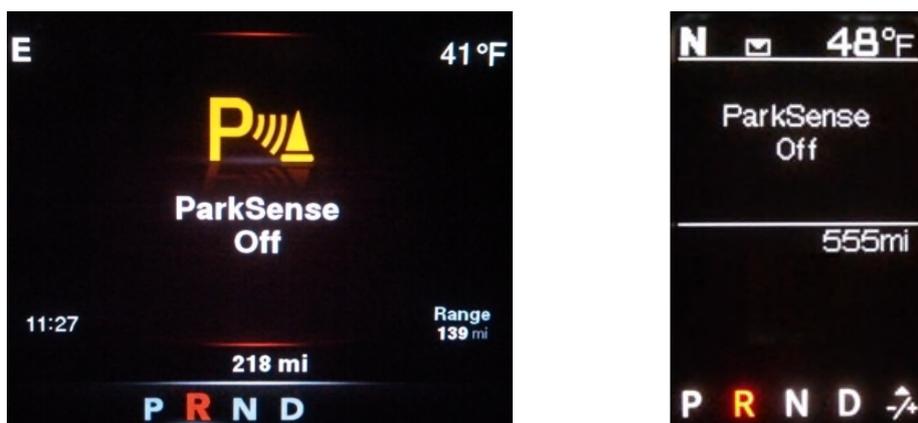


Figure 14: Cluster Image for ParkSense Off  
(Highline Cluster Left – Lowline Cluster Right)

# Loose Ship Park Assist and Park View System

## Removal of System

If you decide to remove the ParkSense System, simply unplug the four sensors from the body wiring harness and reinstall the cap back into the body side 6 pin connector to protect it from corrosion. Additionally, go into “Commercial Setting” and select that the ParkSense sensors are not installed. See “Activating ParkSense” for instructions for changing this setting. If the ParkSense sensors are not deactivated within the cluster, upon start-up and every time the vehicle is put into reverse, a “Service ParkSense” message will appear within the cluster.

## Enabling ParkSense Popups

If when validating the ParkSense system, it was found that the no instrument cluster pop-ups were occurring, then it may be possible that the system has been configured for “Sound only” mode. This section describes how to re-enable the pop-ups if desired.

If the vehicle is equipped with the non-touch screen radio pictured in **Figure 15** (RA1), then the settings to enable ParkSense popups can be found in the instrument cluster. Otherwise the popup configuration will be done in the settings menu found in the radio. A menu flow chart for both situations is provided in **Figure 16**.



Figure 15: Non-Touchscreen RA1 Radio

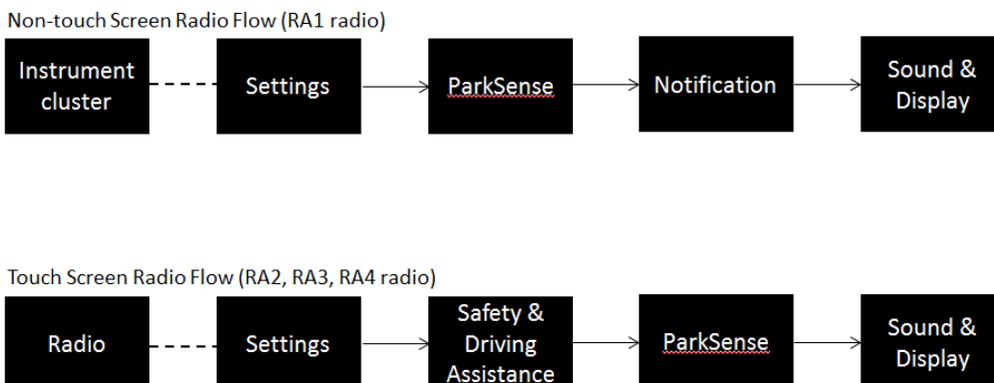


Figure 16: Sound & Display Configuration Flow Chart

# Loose Ship Park Assist and Park View System

## Appendix A: Frame Rail to Ground Plane Height Chart

Class	Configuration	Wheelbase	Rear Wheel Configuration	Tire Size	Top of Rear Frame to Ground Dimension		Delta (Curb - GAWR)
					Curb Load (cm)	GAWR Load (cm)	
3500	Regular cab 60" CA	143.5	SRW	LT265/70R18E(TTV)	86.7	74.6	12.1
	Regular cab 60" CA		DRW	LT235/80R17E(TPY)	86.1	71.9	14.2
	Regular cab 84" CA	167.5	DRW	LT235/80R17E(TPY)	85.6	71.8	13.8
	Crew cab 60" CA	172.4	SRW	LT265/70R18E(TTV)	86.2	74.6	11.6
	Crew cab 60" CA		DRW	LT235/80R17E(TPY)	85.5	71.2	14.3
4500	Regular cab 60" CA	144.5	DRW	225/70R19.5 F	92.1	79.3	12.8
	Regular cab 84" CA	168.5	DRW	225/70R19.5 F	91.6	79.9	11.7
	Regular cab 108" CA	192.5	DRW	225/70R19.5 F	91.5	80.3	11.2
	Regular cab 120" CA	204.5	DRW	225/70R19.5 F	91.4	80.3	11.1
	Crew cab 60" CA	173.5	DRW	225/70R19.5 F	91.2	79.4	11.8
	Crew cab 84" CA	197.4	DRW	225/70R19.5 F	91.3	79.4	11.9
5500	Regular cab 60" CA	144.5	DRW	225/70R19.5 F	92.0	79.3	12.7
	Regular cab 84" CA	168.5	DRW	225/70R19.5 F	91.5	79.9	11.6
	Regular cab 108" CA	192.5	DRW	225/70R19.5 F	91.1	80.3	10.8
	Regular cab 120" CA	204.5	DRW	225/70R19.5 F	93.9	84.2	9.7
	Crew cab 60" CA	173.5	DRW	225/70R19.5 F	91.3	79.4	11.9
	Crew cab 84" CA	197.4	DRW	225/70R19.5 F	90.9	79.4	11.5