VDC00945

VALID INSTRUMENT CLUSTER

OPERATION MANUAL

SPARTAN RV CHASSIS / NEWMAR MY2023, 15" DISPLAY

Edited by MW

Contents

Overview 1

The Valid Instrument Cluster is a display device that communicates with multiple pieces of equipment on the coach.

A selectable display in the center provides a menu system which is navigated by using the up, down, back, and OK keys on the steering wheel. See "Navigate the Display" on the next page . Selectable display items include:

- Display brightness
- Alarm messages
- Settings
- Odometer and fuel economy
- Trip 1 and Trip 2
- Selectable information gauges
- Tire pressure and temperature for coach and trailer
- Adaptive Cruise Control

With the coach stopped and the park brake applied, the Setting menu also provides the following items:

- Choice of towable trailer / vehicle for the Tire Pressure Monitoring System (TPMS).
- Sound volume for alerts.
- Measurement units for speed / distance, temperature and pressure.
- Diagnostics for system, onboard diagnostics (OBD), and controller area network (CAN-Bus).

The display will automatically dim for nighttime driving when the marker lights and headlights are turned on.

See also:

"Selectable Display Menu Map" on page 21

1.1 Safety

WARNING

- Driving while distracted can result in loss of vehicle control.
- Do not make adjustments in the selectable display on the Valid Instrument Cluster under conditions that will affect personal safety or the safety of others.

CAUTION

The Valid Instrument Cluster should be serviced only by qualified personnel.

1.2 Navigate the Display

1.2.1 Steering Wheel Buttons

The buttons on the right side of the steering wheel are connected directly to the Valid Instrument Cluster.

- Home – go to the Main screen
- Enter (OK) - make a selection
- Back - go back one screen
- Up - scroll up in a list of selection
- Down - scroll down in a list of selections

1.2.2 Display

The selectable display, located in the center of the screen, is controlled by the menu tabs to the left.

Move up and down the tabs by using the up and down buttons on the steering wheel control. Each tab has a different display in the center.

NOTE: Some items are available only when the park brake is set or the vehicle speed is 0 MPH (0 KM/H).

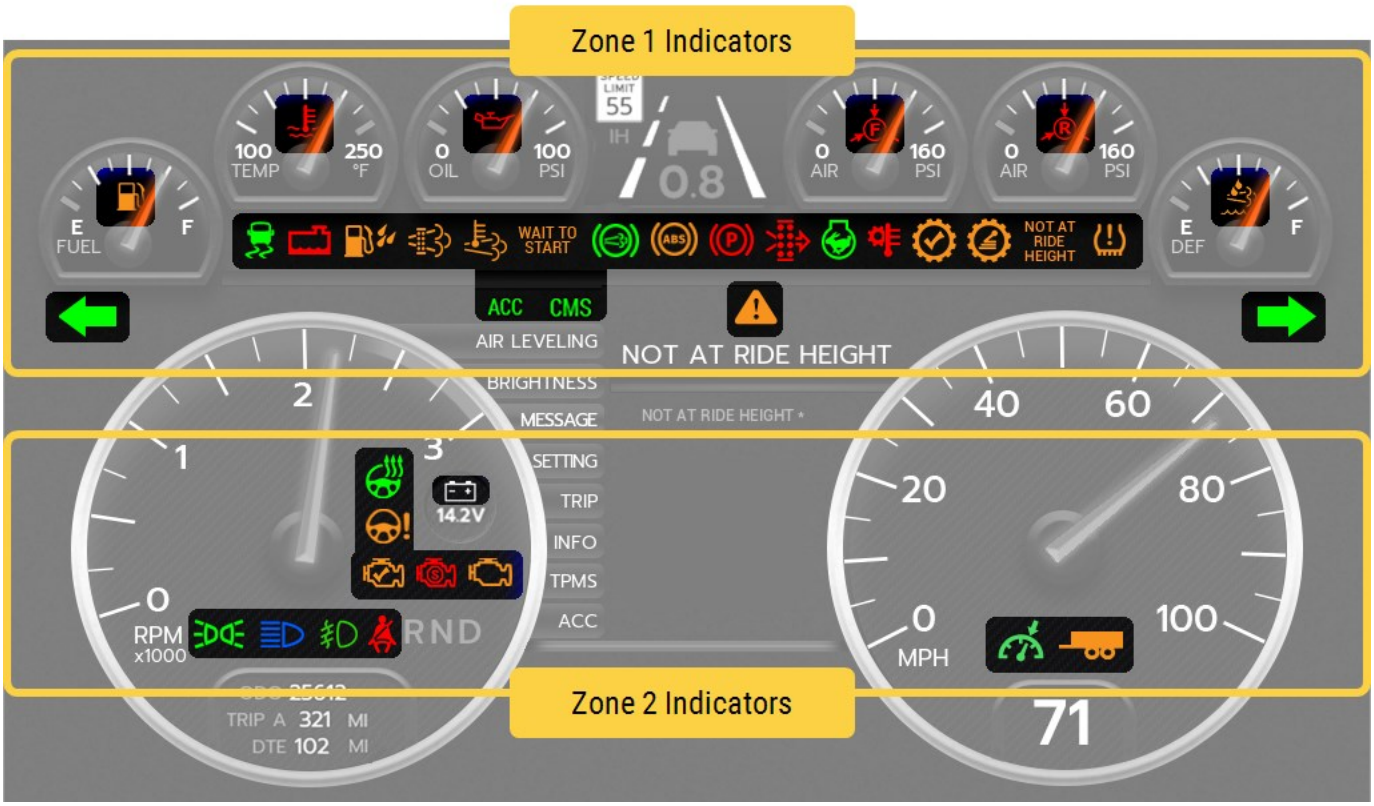
1.3 Clean the Valid Instrument Cluster Screen

The glass on the Valid Instrument Cluster screen is treated with an optical coating to prevent glare and reflection. It should be cleaned only with a suitable product, such as the optical wipes included with the screen, or optical cleaner and a microfiber cloth.

Indicators 2

The indicators displayed on the Valid Instrument Cluster are described in the following pages.

Descriptions are grouped by zone. Refer to the images below.



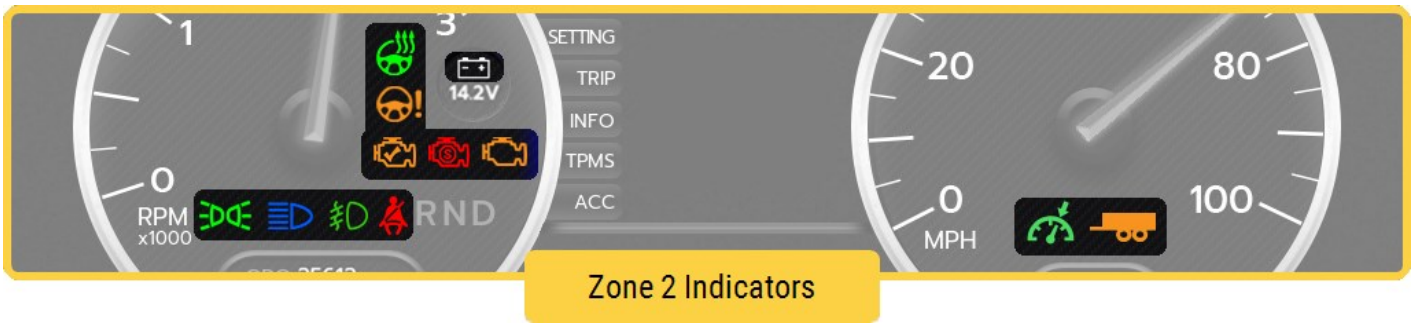
2.1 Indicators - Zone 1

Indicator	Name	Description
	Turn Signal	The left or right turn signal indicator blinks when the right or left turn signal is activated. Both indicators blink when the hazard lights are activated.
	Low Fuel	Fuel level is below the low fuel threshold.
	High Coolant Temperature	A high engine coolant temperature may indicate that the engine is overheating or that it is losing coolant. Seek service.
	Low Oil Pressure	Low engine oil pressure can cause engine damage. Stop driving and seek service at the first opportunity.
	Front Service Tank Pressure	Pressure in the front (secondary) air tank is low.
	Rear Service Tank Pressure	Pressure in the rear (primary) air tank is low.
	Low DEF	The diesel exhaust fluid (DEF) is low. The fluid creates a catalytic reaction that removes particles from the exhaust. When low, the fluid must be topped up. For more information, see "Diesel Exhaust Fluid Indicator" on page 13.
	Automatic Traction Control	Activated when the brake system has detected wheel slip through the ATC (Automatic Traction Control) or ESC (Electronic Stability Control) systems.
	Low Coolant	The engine coolant level is too low.
	Water in Fuel	The vehicle is safe to drive, but the water should be drained as soon as possible. However, if the vehicle has just been re-fueled, the fuel may be contaminated. The engine should be switched off as soon as possible or the fuel injection system could be damaged.

Indicator	Name	Description
	Diesel Particulate Filter	The exhaust Diesel Particulate Filter (DPF) has excessive soot levels and requires passive or active regeneration (Regen) to burn off the soot to prevent a clogged filter. For more information, see "Diesel Particulate Filter Indicator" on page 14
	High Exhaust Temperature	High exhaust temperatures may exist due to active regeneration (soot burn-off) in the Diesel Particulate Filter (DPF). This is normal and does not signify the need for any kind of vehicle or engine service. When this lamp is illuminated, ensure that the exhaust pipe outlet is not directed at any combustible surface or material. For more information, see "Diesel Particulate Filter Indicator" on page 14.
	Wait to Start	The engine is too cold to start and the operator should wait until the signal becomes inactive (turns off).
	Auxiliary Brake	The vehicle's engine exhaust braking system is enabled.
	Anti-Lock Brake System	The electronic brake controller has detected a fault with the anti-lock brake system (ABS).
	Park Brake On	Park brake is applied.
	Restricted Air Filter	The outside air flow to the engine is restricted because the air filter is partially blocked. Seek service at the first opportunity.
	High Idle	High Idle is on. This feature allows the coach engine to idle at a higher RPM setting than usual, and can be used for charging the battery system, running A/C, extending slides, etc.

Indicator	Name	Description
	High Transmission Temperature	The transmission fluid temperature is above normal acceptable limits, and as a result, transmission operation may be altered or restricted.
	Check Transmission	A fault is present in the transmission system.
	Transmission Range Inhibit	The purpose of this indicator is to alert the driver that transmission operation is being inhibited due to high or low engine RPMs, and that range shifts being requested by the operator may not occur. There may be a problem in the transmission, or between engine and transmission.
	Coach Suspension Not at Ride Height	Indicates that the coach suspension is not at ride height.
	TPMS Fault	The Tire Pressure Monitoring System (TPMS) has indicated there is a fault. This may be low or high tire pressure. Rotate the knob to view coach and towable tire pressure screens on the Selectable Display. Press the knob to switch between tire pressure and tire temperature.
	Adaptive Cruise Control (if equipped)	The current state of the adaptive cruise control system (if equipped). May be green or amber.
	Collision Mitigation System (if equipped)	The current state of the OnGuard ACTIVE® collision mitigation system (if equipped). May be green, amber, or red.
	Information, Caution or Critical Alarm Message	Refer to "Information Messages" on page 48 for a list of Information alarms. Refer to "Caution Messages" on page 49 for a list of Caution alarms. Refer to "Critical Messages" on page 54 for a list of Critical alarms.

2.2 Indicators - Zone 2



Zone 2 Indicators

Indicator	Name	Description
	Heated Steering Wheel (if equipped)	Heated steering wheel is active.
	Low / High Battery	The battery voltage is below or above a set level.
	Column Fault	Steering Column ECU is signaling a fault and should be checked as soon as possible.
	Check Engine	A non-critical engine fault is present and the vehicle should be serviced.
	Stop Engine	The vehicle must be stopped as soon as it is safe to do so.
	Malfunction Indicator Lamp (MIL)	There is a malfunction related to the emissions control system. The after-treatment system should be diagnosed and serviced at the next available opportunity.
	Marker Lights	Indicates that the marker lights are on and the vehicle is in night driving mode.
	Headlights High Beam	Headlights are in High Beam mode.

Indicator	Name	Description
	Fog Lamps	The fog lamps are turned on.
	Seatbelt Not On	(If applicable) If the seat belt is unfastened and the park brake is released, the seatbelt message will appear and a chime will sound.
	Cruise Control	Cruise control is set.
	Trailer Mode (if equipped)	Indicates that the suspension system is in Trailer Mode. In Trailer Mode, the rear suspension air spring pressures are optimized for towing.

2.3 Diesel Exhaust Fluid Indicator

The Diesel Exhaust Fluid (DEF) indicator turns amber when the diesel exhaust fluid is low. The fluid creates a catalytic reaction that removes particles from the exhaust. When low, the fluid must be topped up.

DEF 	Check Engine 	Stop Engine 	Fluid Level	Action Required
Solid	-	-	Low	Provide regen opportunity by altering duty cycle.
Flashing	-	-	Medium	Provide regen opportunity by altering duty cycle.
Flashing	Solid	-	High	Provide regen opportunity by altering duty cycle. Seek service.
-	-	Solid	Extreme	Stop engine at earliest opportunity. Seek service.

2.4 Diesel Particulate Filter Indicator

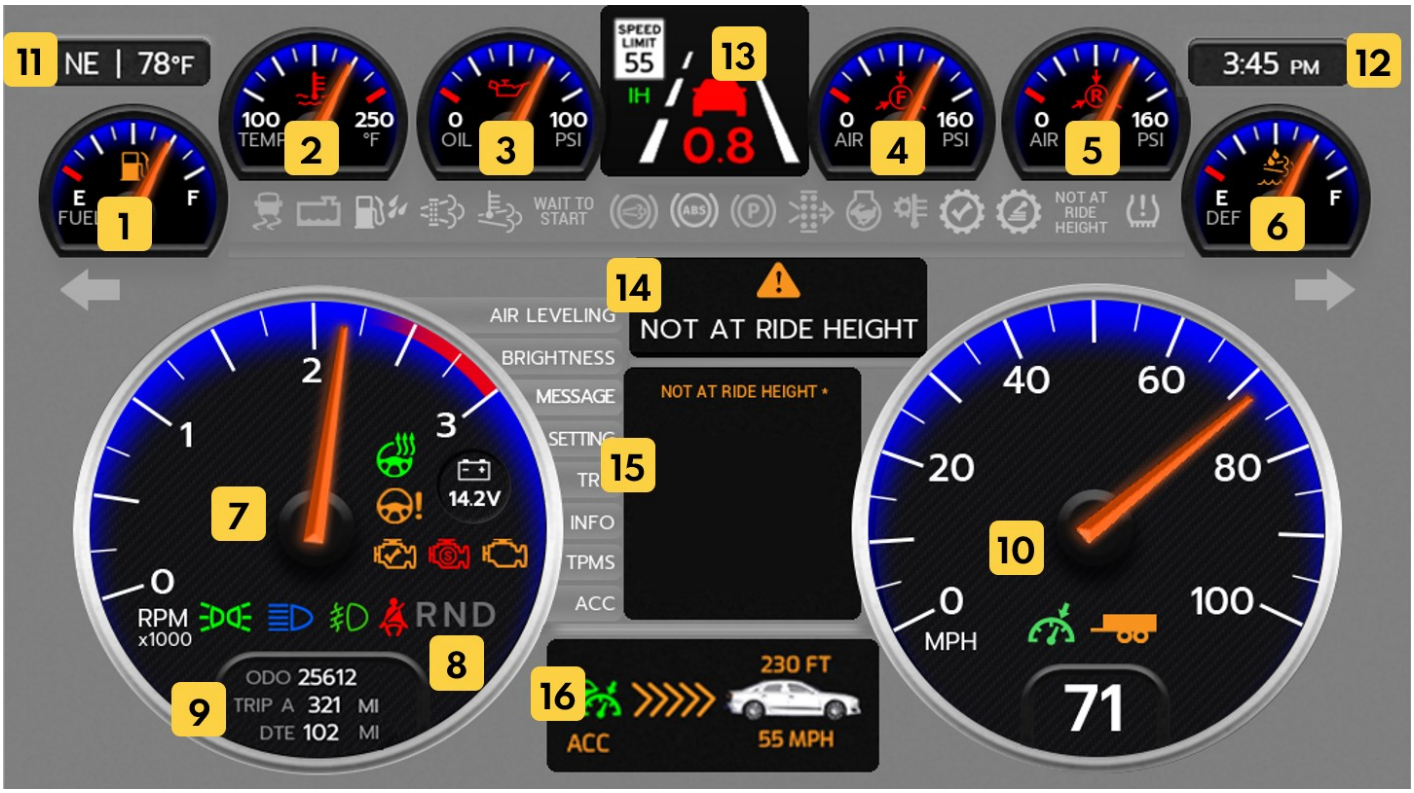
When the Diesel Particulate Filter indicator appears, it means that the exhaust diesel particulate filter (DPF) has excessive soot levels and requires passive or active regeneration (Regen) to burn off the soot to prevent a clogged filter.

Passive regeneration occurs when the vehicle is driven at a challenging duty cycle, such as highway driving for at least 20 minutes, to increase exhaust temperatures.

Active regeneration supplements soot burn-off by injecting diesel fuel to increase exhaust temperature.

DPF 	Check Engine 	Stop Engine 	Soot Level	Action Required
Solid	-	-	Low	Provide regen opportunity by altering duty cycle.
Flashing	-	-	Medium	Provide regen opportunity by altering duty cycle.
Flashing	Solid	-	High	Provide regen opportunity by altering duty cycle. Seek service.
-	-	Solid	Extreme	Stop engine at earliest opportunity. Seek service.

Gauges 3



The Valid Instrument Cluster displays the following gauges:

1. Fuel level
2. Engine coolant temperature
3. Engine oil pressure
4. Pneumatic pressure in the secondary (front) service brake circuit
5. Pneumatic pressure in the primary (rear) service brake circuit
6. DEF level
7. Tachometer
8. Transmission gear
9. Odometer
10. Speedometer

Other display areas include:

11. Heading, outside temperature
12. Clock

13. Mobileye® (if equipped)
14. Message center
15. Selectable display
16. OnGuard ACTIVE® Collision Mitigation System (if equipped)

See also:

"Mobileye®" on page 27
"Selectable Display" on page 20
"Message Center" on page 27
"OnGuardACTIVE® Collision Mitigation System" on page 28

3.1 Fuel Level

When fuel falls below the factory programmed low level, the fuel indicator becomes amber and the gauge glow becomes red. The message center will display a warning and sound an alert tone.

The Valid Instrument Cluster is connected directly to the fuel tank level sender. Provided the chassis battery level is greater than the factory-configured 'Power Off' level, it continues to send fuel level messages over the RV-C network with the ignition off. This allows the fuel level to be viewed on the Coach Management System for operation of the coach generator.

3.2 Engine Coolant Temperature

This gauge displays the temperature of the engine coolant fluid.

When a high coolant temperature is detected, the gauge glow becomes red and the message center displays a warning and plays an alert tone.

Units for temperature can be set in **Setting** > **Units** > **Temperature**.

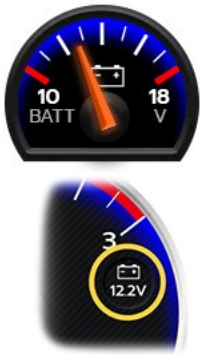
3.3 Engine Oil Pressure

This gauge displays the pressure of the engine oil, which is required to ensure efficient lubrication of the internal engine parts. The oil pressure will increase as the engine RPM is increased from idle to normal driving speed. An oil pressure warning is an indication to seek service at the earliest opportunity.

When the pressure is lower than the red warning level, the gauge glow becomes red and the message center displays a warning and plays an alert tone.

Units for pressure can be set in **Setting** > **Units** > **Pressure**.

3.4 Chassis Battery Voltage



This gauge measures the chassis batteries, which are used when driving the coach, e.g. starting the engine.

When the voltage falls below or rises above the factory-programmed low or high level, the indicator becomes red.

When the battery voltage is too high or too low, the message center will display a warning and sounds an alert tone.

If the vehicle is equipped with Mobileye®, the battery voltage readout is displayed in the tachometer rather than in a dedicated gauge.

3.5 Service Brake Air Tank Pressure

These gauges display the pressure of air in the secondary (front) and primary (rear) service brake.

The gauge level color indicates the following levels:

- Green is normal.
- Amber is low.
- Red is critically low. This is accompanied by a warning tone.

Units for pressure can be set in **Setting** > **Units** > **Pressure**.

3.6 Diesel Exhaust Fluid (DEF) Level

This gauge measures the amount of Diesel Exhaust Fluid (DEF) available.

When the DEF level becomes low, the gauge will turn amber and a message will be displayed in the message area.

A low DEF level derates the engine, which limits engine power and, at maximum severity, the road speed of the vehicle.

See also:

"Diesel Exhaust Fluid Indicator" on page 13

3.7 Tachometer

The tachometer displays the current revolutions per minute (RPM) of the engine.

3.7.1 Transmission Gear

The current transmission gear is displayed within the tachometer area.

When the transmission is in Drive, a subscript to the right of the D indicates the current gear. A superscript to the right of the D indicates the requested gear. If the current gear does not match the requested gear, the subscript will change to red. It is normal for the current gear to be different from the requested gear.

See also:

> "Odometer" below

3.8 Odometer

This gauge displays the mileage for Trip A or B, total vehicle mileage (odometer), and distance to empty.

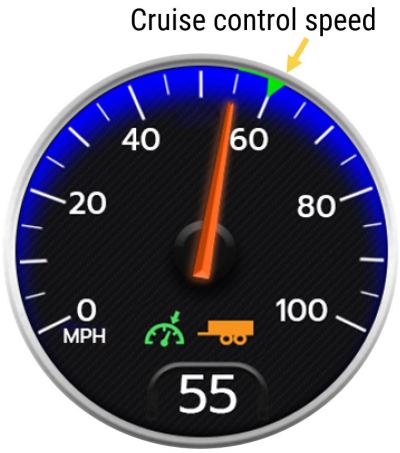
Units for speed / distance can be set in **Setting** > **Units** > **Speed/Distance**.

3.9 Speedometer

The speedometer displays the current speed of the vehicle as both a gauge and a digital readout. The default units are miles per hour (MPH).

If Cruise Control is active, the cruise control speed is indicated with a green arrow on the gauge.

Units for speed / distance can be set in **Setting** > **Units** > **Speed/Distance**.



3.10 Heading, Outdoor Temperature, Time

The compass displays the direction in which the vehicle is heading.

The temperature is the current outdoor temperature.

Units for temperature can be set in **Setting** > **Units** > **Temperature**.

The clock displays the current time.

Selectable Display 4

Use the up and down arrow keys on the right-hand steering wheel paddle to navigate through the Selectable Display.

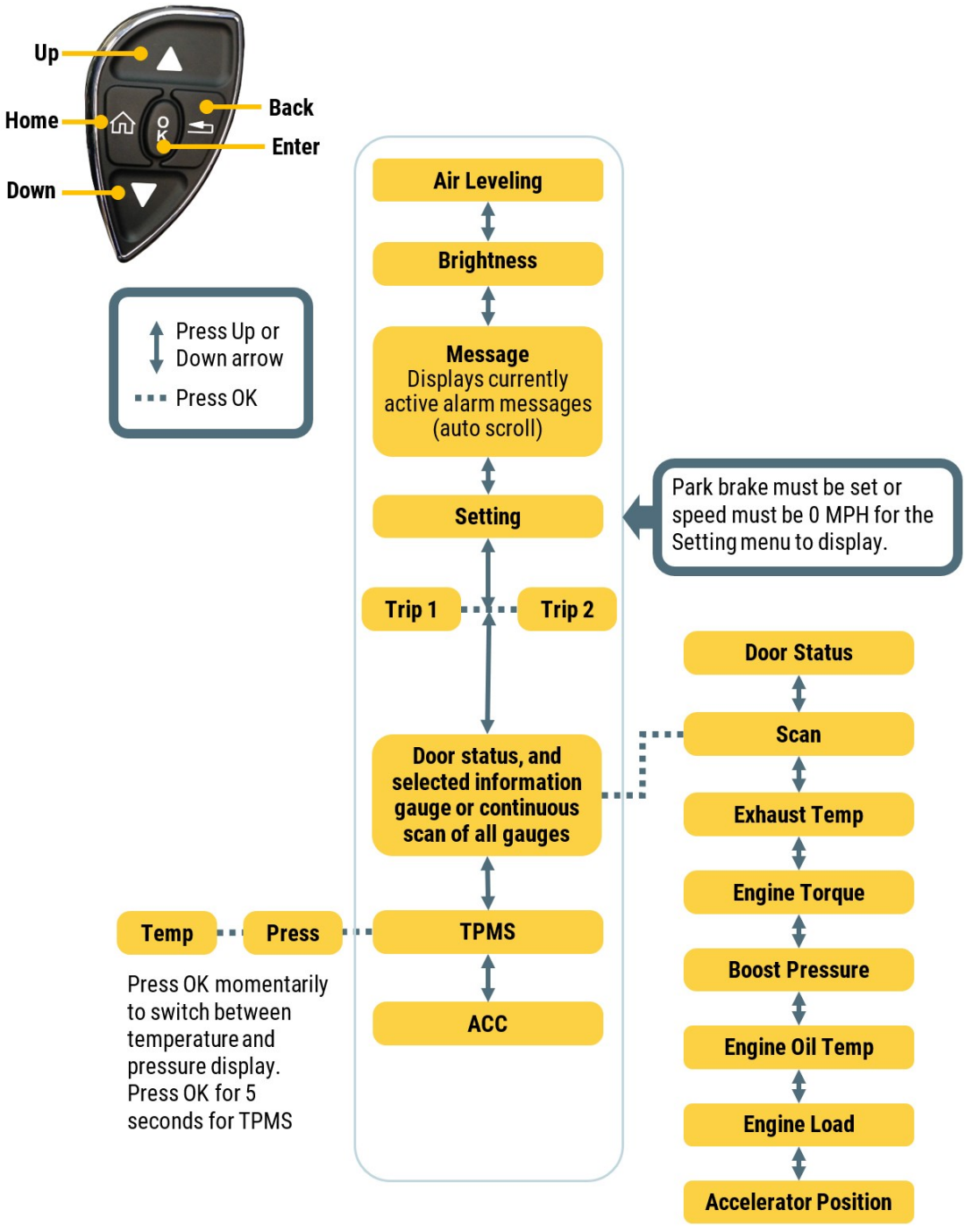
The items listed below can be displayed in the selectable area:

- Air Leveling
- Brightness
- Messages
- Settings
- Trip
- Info
- TPMS (Tire Pressure Monitoring System)
- ACC (Adaptive Cruise Control)

More information on these items can be found in the sections that follow.

4.1 Selectable Display Menu Map

The graphic below depicts the items available in the Selectable Display. Arrows indicate use of the **Up** and **Down** buttons. Dashed lines indicate use of the **OK** buttons.



4.2 Air Leveling (if Equipped)

If equipped, the Air Leveling screen provides control of the air suspension for ride height when traveling, and for leveling when stationary.

In Auto Level mode, the vehicle can be automatically leveled while stationary. This mode is the easiest leveling method to use and is suitable for most leveling situations.

Travel mode is operational when the vehicle is in motion. By default, this mode will initiate when the park brake is released, or when the vehicle begins moving. However, it is best for the operator to enter this mode before the vehicle begins moving.

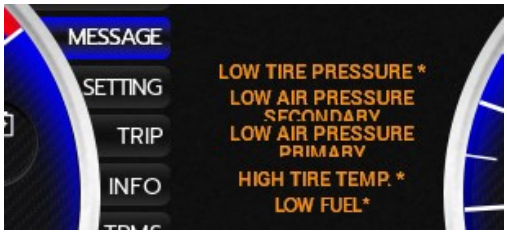
Leveling and suspension operations are discussed in more detail in "Air Leveling (if Equipped)" on page 30.

4.3 Brightness

Use the Brightness setting to control the brightness of the display. This setting can be adjusted independently for daytime or nighttime driving. When both levels are set, the brightness will adjust automatically for daytime mode or nighttime mode with the marker lights off or on.

Use the **Up** and **Down** buttons to adjust the brightness and then press **OK** to save for that mode and return to the previous menu. If the marker lights are off, the brightness will be set for daytime driving. If the marker lights are on, the brightness will be set for nighttime driving.

4.4 Message



Alarm messages are displayed in two locations:

- In the Message screen of the Selectable Display.
- In the Message Center, above the Selectable Display. (See "Message Center" on page 27.)

The Message screen continuously scrolls through all current warning messages, and is a quick way to see all messages at once.

Active dismissible messages are marked with an asterisk. Press **OK** to select and dismiss any such messages.

In the example to the right, the Low Fuel message is selected. When **OK** is pressed, this message will be dismissed, and it will disappear from the message list.

4.5 Setting

Setting is an item in the Selectable Display. Use the **Up**, **Down**, and **OK** buttons on the steering wheel paddle to navigate.

The vehicle must be stopped with the park brake set for this menu item to be available.

Use the **Up** and **Down** buttons to scroll through the available menu items and press **OK** to select. To return to the previous menu, press **Back**.

See also:

"Setting Menu" on page 34

4.6 Trip

The trip screen displays information about Trip A or Trip B:

- Trip distance
- Fuel used
- Average speed
- Instantaneous fuel economy
- Average fuel economy

Press **OK** to toggle between Trip A and Trip B display. Press and hold **OK** to reset the current trip meter to 0.

Units for speed / distance can be set in **Setting** > **Units** > **Speed/Distance**.

4.7 Info

The Info tab displays vehicle door status (if equipped) as well as various secondary gauges.

NOTE: The info gauges do not have any warning threshold levels.

Press **OK** to select a viewing preference for the displays:

1. Scan – to have the items cycled through automatically every five seconds

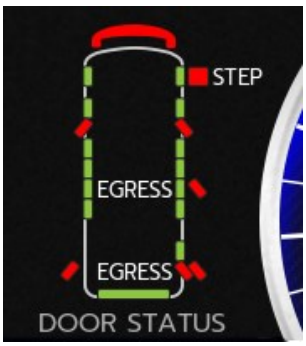
2. Arrows – to move between each item

3. [Blank] – to display the current item only

4.7.1 Door Status (if Equipped)

If equipped, the Door Status display indicates whether any of the following doors are open:

- Cargo
- Egress
- Entry
- Step
- Front bumper
- Rear engine



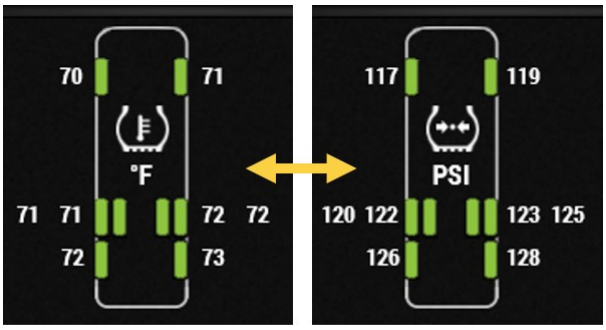
4.7.2 Secondary Gauges

Gauge	Description
Engine Oil Temp	Displays the temperature of the engine oil (if equipped).
Boost Pressure	Displays the engine manifold air intake pressure generated by the turbocharger. Within range of normal operation, an increase in boost pressure provides an increase in engine power.
Accelerator Pedal Position	Displays the position of the accelerator foot pedal. 100% is fully depressed.
% Engine Load	Displays the load on the engine, indicated as a percentage of maximum load.
% Engine Torque	Displays the torque output of the engine, indicated as a percentage of its total torque power.
Exhaust Temp	Displays the temperature of the engine exhaust. A high exhaust temperature may be due to active regeneration (soot burn-off) in the Diesel Particulate Filter (DPF). This is normal and does not signify the need for any kind of vehicle or engine service. See "Diesel Particulate Filter Indicator" on page 14 for more information.

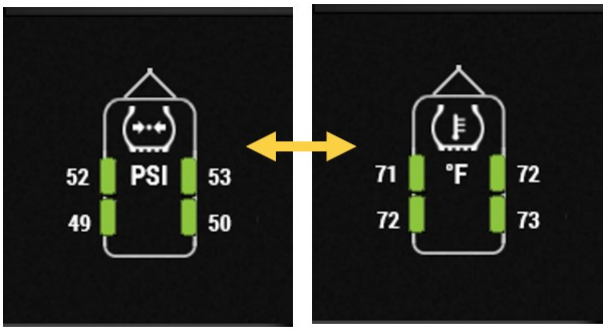
4.8 Tire Pressure Monitoring System

Tire Pressure Monitoring System (TPMS) is an item in the Selectable Display. Use the up and down keys to select. Press **OK** to toggle between tire pressure and tire temperature.

If the Valid Instrument Cluster has been configured to tow a trailer, the trailer tire pressure is also available as an item in the Selectable Display. Use the **Up** and **Down** buttons to display the item.



Vehicle



Trailer

The pressure or temperature status of each tire is represented by a color:

Pressure:

- Green - Normal
- Amber - Warning Low or High
- Red - Critical Low or High
- Gray - no signal is being received from this tire

Temperature:

- Green - Normal
- Red – High
- Gray - no signal is being received from this tire

To view the TPMS Sensor Setup screen, press **OK** and hold for 5 seconds with the vehicle speed at 0 MPH (0 KM/H) or the park brake applied.

See also:

"TPMS Sensor Setup (if Equipped)" on page 41

4.9 Adaptive Cruise Control (ACC) (if Equipped)

If equipped, Adaptive Cruise Control automatically adjusts the vehicle speed to maintain a safe distance from vehicles ahead.

Press **OK** to enable, set relative following distance, or disable.

Long following distance (3.6 seconds): denoted by 5 chevrons.

Medium following distance (3.3 seconds): denoted by 4 chevrons.

Short following distance (3.0 seconds): denoted by 3 chevrons.

Adaptive Cruise Control is disabled.

The setting is retained if the ignition is turned off and on again.

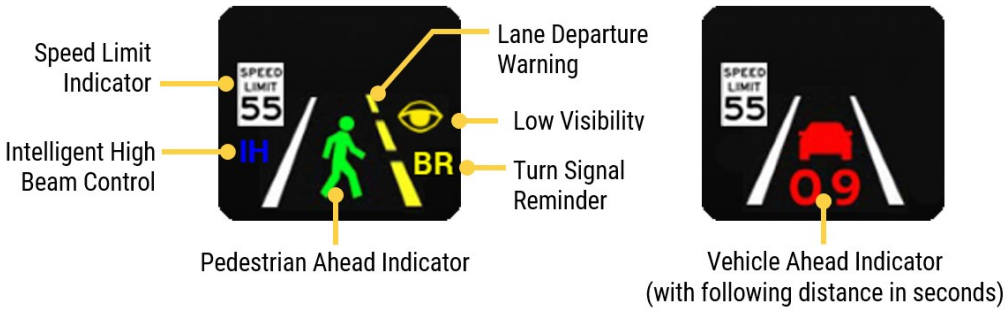
NOTE: Images shown are samples and may not be representative of real-life situations.

5.1 Mobileye®

Mobileye® is a driver-assistance and accident-reduction system that uses an artificial vision sensor to provide information about the road ahead. It is displayed in the top center of the screen between the oil pressure and front air pressure gauges.

NOTE: For full operating instructions, please refer to the Mobileye® support documentation included with the vehicle.

5.1.1 Mobileye® Dash Display Elements



5.2 Message Center

The message center is above the Selectable Display. It shows three categories of alarms:

Information: Related to normal operation of the vehicle.

Caution: Related to items which require attention. An audible alert may also sound when an alarm occurs.

Critical: Related to items which require immediate attention. An audible alert may also sound when an alarm occurs.

When an alarm occurs it is immediately displayed. After a short delay, the display will then continue to cycle through each active alarm.

See also:

"Information Messages" on page 48
"Caution Messages" on page 49
"Critical Messages" on page 54

5.3 OnGuardACTIVE® Collision Mitigation System

OnGuardACTIVE® is a radar-based Collision Mitigation System (CMS). Through forward-object detection, the system provides the driver with assistance to recognize and respond to potentially dangerous driving scenarios that could lead to a rear-end collision.

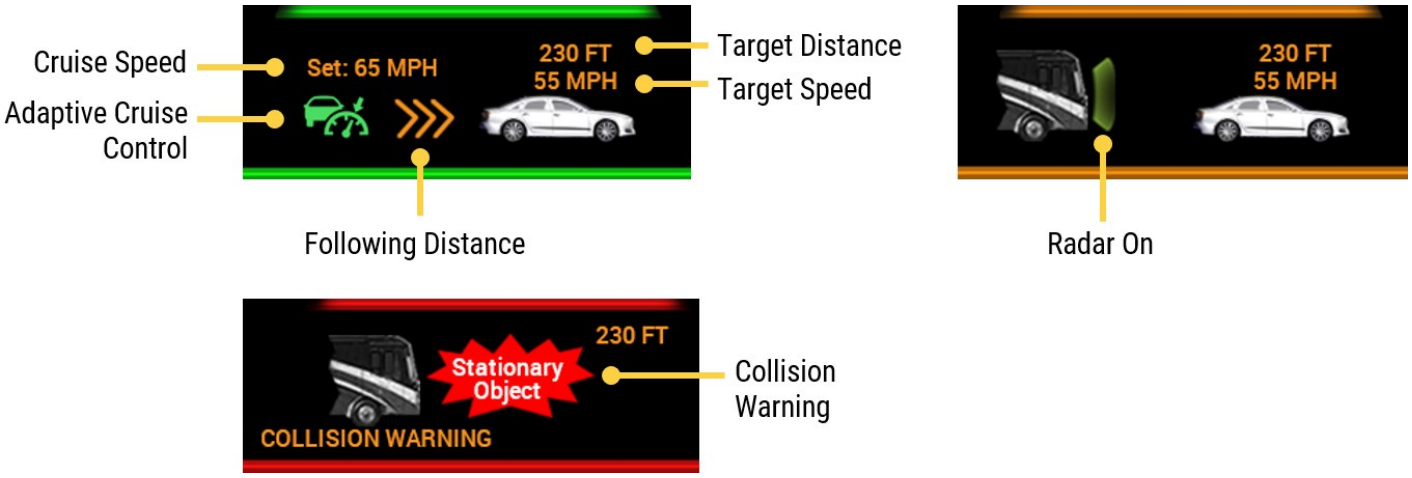
If the coach is equipped with OnGuardACTIVE®, this information is displayed to the right of the Message Center.

NOTE: For full operating instructions please refer to the OnGuardACTIVE® support documentation included with the vehicle.

5.3.1 OnGuardACTIVE® Dash Display Outline Colors

- Gray: General operating mode with no target vehicle detected.
- Blue: Radar alignment.
- Green: Target vehicle detected ahead.
- Amber: Diagnostic fault screen, following distance alert.
- Red: Collision warning, Stationary Object warning.

5.3.2 OnGuardACTIVE® Dash Display Elements



Cruise Speed: Steady speed set by the driver

Adaptive Cruise Control (if equipped): Cruise control system that automatically adjusts the vehicle speed to maintain a safe distance from vehicles ahead. This safe distance (following distance) can be set with Adaptive Cruise Control in the Selectable Display (see "Adaptive Cruise Control (ACC) (if Equipped)" on page 25).

The following distance is denoted by the number of chevrons displayed:

- 3 chevrons – short distance (3.0 seconds)
- 4 chevrons – medium distance (3.3 seconds)
- 5 chevrons – long distance (3.6 seconds)

Target Distance: Distance to the vehicle in front. This vehicle may be moving or stationary.

Target Speed: Speed at which the vehicle in front is traveling.

Radar On: The vehicle's radar system is active and scanning ahead.

Collision Warning: Unless immediate steps are taken, the vehicle is in danger of colliding with a moving or stationary vehicle / object ahead. The distance to the vehicle / object is also displayed.

5.4 Incoming Calls

Vehicles equipped with a an Xite radio head unit have an incoming call feature that allows the driver to answer or decline incoming calls on the Valid Instrument Cluster interface.

The call is displayed in a message window on the Valid Instrument Cluster screen.

Calls are handled with buttons on the left and right steering wheel pods.

When an incoming call is displayed on the Valid Instrument Cluster:

- Press the green call button on the left steering wheel pod to accept a call.
- Press the Back button on the right steering wheel pod to decline a call.
- Press the red call button on the left steering wheel pod to hang up when the call is complete.

Air Leveling (if Equipped) 6

This section describes the leveling operations that can be carried out quickly and easily with the available commands in the Air Leveling screen (if equipped).

Select **More** to access manual leveling commands, as well as additional related operations. This screen is detailed in the following document:

VDC00446 – Trueline Leveling System Operation Guide, Valid Instrument Cluster Interface.

6.1 Auto Level Mode

Auto Level mode can be used to level the vehicle automatically when the vehicle is stationary. This mode is the easiest leveling method to use and is suitable for most leveling situations.

When Auto Level mode is activated, the leveling system detects the lowest corner of the vehicle, and then levels (lowers) the remaining corners to it. If the system determines that it is unable to lower the vehicle to level, any corners that are low will then be raised to the level of the highest corner.

6.1.1 Use Auto Level Mode

Ensure that:

- The ignition is on and the air system is at full pressure.
- The park brake is engaged.
- The front wheels are straightened.

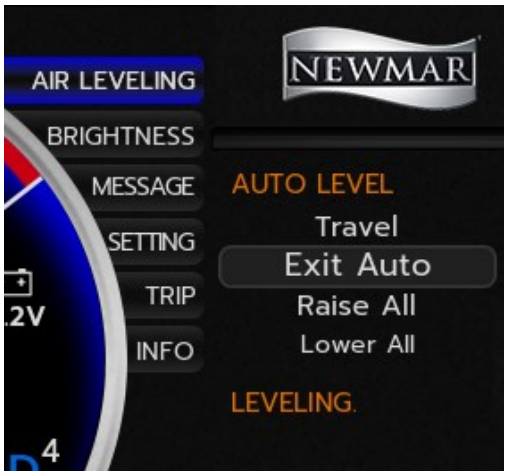
1. Use the **Up** or **Down** buttons to go to the Air Leveling screen. Press **OK** to select.

2. Select **Auto Level** in the menu, and press **OK**.

   A leveling cycle is initiated. The leveling status is displayed on the bottom of the screen.

It is possible to stop the leveling process at any time.

1. Activate the Air Leveling menu.
2. Select **Exit Auto** to stop leveling.



Once leveling has been completed, additional leveling cycles can be performed if the system is in auto mode or auto low power mode.

6.1.1.1 Perform Another Auto Level Cycle

Select **Exit Auto** to stop leveling. Then choose **Auto Level** again.

If the park brake is released while in auto mode, the Trueline Leveling System switches to travel mode.

NOTE: Due to the sensitivity of the leveling sensors, any noticeable movements within the vehicle can cause difficulty while leveling is in progress. Any person in the vehicle during the leveling process should avoid walking around and should be as still as possible.

6.1.2 Change the Height of a Leveled Vehicle

A leveled vehicle can be raised or lowered to adjust the entry doorstep height.

NOTE: To ensure that an adequate amount of air is available, the ignition should be on and the air system should be at full pressure.

Select **Raise All** or **Lower All** on the main menu. This causes the vehicle to move up or down while staying level.

6.2 Travel Mode

Travel mode is operational when the vehicle is in motion. By default, this mode will initiate when the park brake is released, or when the vehicle begins moving. However, it is best for the operator to enter this mode before the vehicle begins moving to allow time for the vehicle to achieve ride height.

6.2.1 Use Travel Mode

1. Use the **Up** / **Down** buttons to go to the Air Leveling screen and press **OK** to select.

2. Select **Travel** in the menu and press **OK**. The suspension status will be displayed on the bottom of the screen.

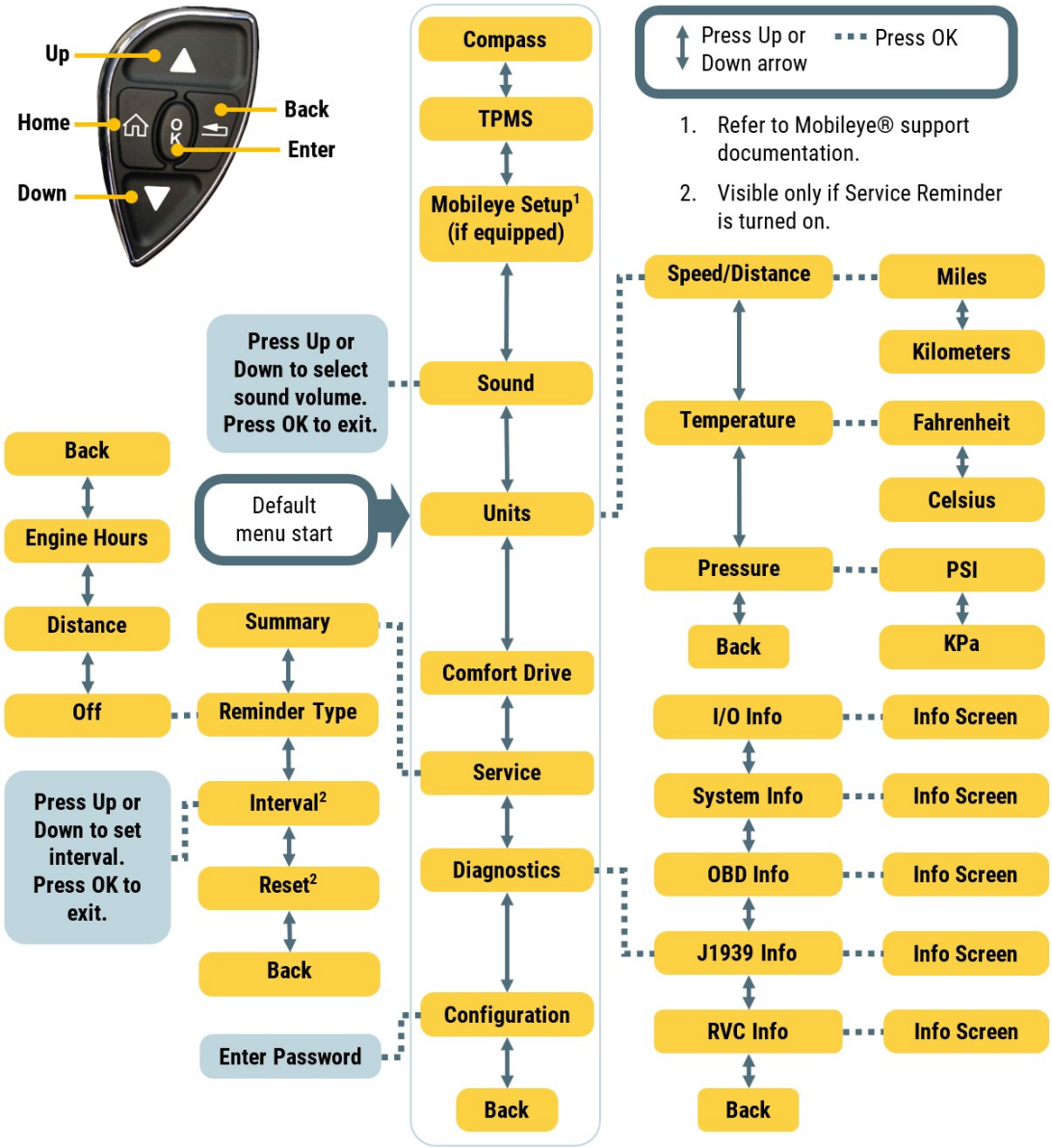
3. The default setting is normal ride height.

   - Select **High Ride** to negotiate uneven terrain.
   - Select **Low Ride** to allow additional clearance to the top of the vehicle.

These heights may be used only under predefined speeds. At higher speeds, the vehicle will go to the normal ride height state, and High Ride and Low Ride will not be available. The maximum speeds at which low and high ride can be maintained are set by the manufacturer.

The Setting menu is one of the items in the Selectable Display, and is available when the vehicle's speed is 0 MPH (0 KM/H) or the park brake is applied.

7.1 Setting Menu Map



7.2 Compass

The vehicle's Ametek compass unit can be calibrated in the Setting menu. The declination can also be set if desired.

7.2.1 Compass Calibration

1. Select **Setting** > **Compass** > **Calibrate**.
2. Drive the coach in a full circle, twice, to calibrate the compass.
3. When two circles have been completed, press **OK** to exit the screen.

   If the calibration was successful, a message will indicate that calibration is complete. If calibration was unsuccessful, drive the coach in two complete circles again.

7.2.2 Compass Declination

Declination is the difference between magnetic north and true north, measured in degrees of rotation in the flat plane. Declination is positive when magnetic north is east of true north, and negative when it is to the west.

1. Select **Setting** > **Compass** > **Declination**.
2. Use the **Up** / **Down** buttons to select the desired declination value.
3. Press **OK** to exit the screen.

7.3 Tire Pressure Monitoring System

Information displayed on the TPMS screen includes:

- Tire pressure and temperature info for all tires on the coach and any attached trailers
- Any detected air leaks in the tires
- Tire sensor status

The TPMS screen can be use to set up to 3 tow configurations, complete with name and sensor assignments.

NOTE: Tire sensors can be assigned manually or automatically.

This screen and its settings are discussed in detail in "TPMS Sensor Setup (if Equipped)" on page 41.

7.4 Mobileye Setup (if Equipped)

If equipped, the Mobileye® setup screen has a number of setup options for the Mobileye® driver-assistance and accident-reduction system. Please refer to the Mobileye® support documentation for information on these settings.

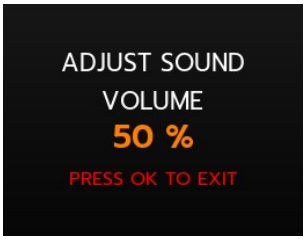
See also:

"Mobileye®" on page 27

7.5 Sound

7.5.1 Sound

Use the sound volume control to adjust the relative sound volume for alerts.



1. Choose **Setting** > **Sound** > **Sound**.
2. Use the **Up** and **Down** buttons to adjust the level. The default level is 50%.
3. Press **OK** to save the setting.

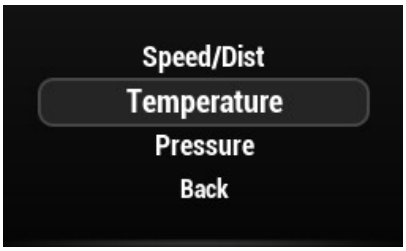
7.5.2 CMS Sound

Use the CMS sound volume control to adjust the relative sound volume for alerts specific to the Collision Mitigation System (CMS), if equipped.

1. Choose **Setting** > **Sound** > **CMS Sound**.
2. Use the **Up** and **Down** buttons to adjust the level. The default level is 50%.
3. Press **OK** to save the setting.

7.6 Units

The measurement units can be changed for the following parameters:



- Speed / Distance: Miles or kilometers
- Temperature: Fahrenheit or Celsius
- Pressure: PSI (pounds per square inch) or kPa (kilopascals)

To change the units for a parameter:

1. Select the parameter using the **Up** and **Down** buttons, and press **OK**.
2. Select the desired unit, and press **OK**.

7.7 Comfort Drive

Use the Comfort Drive setting to set the amount of effort required to steer the vehicle.

- Press **Up** to increase the setting and the amount of effort required.
- Press **Down** to decrease the setting and the amount of effort required.
- Press **OK** to save.

Comfort Drive can also be adjusted with the upper paddle on the right steering wheel pod, as pictured below.

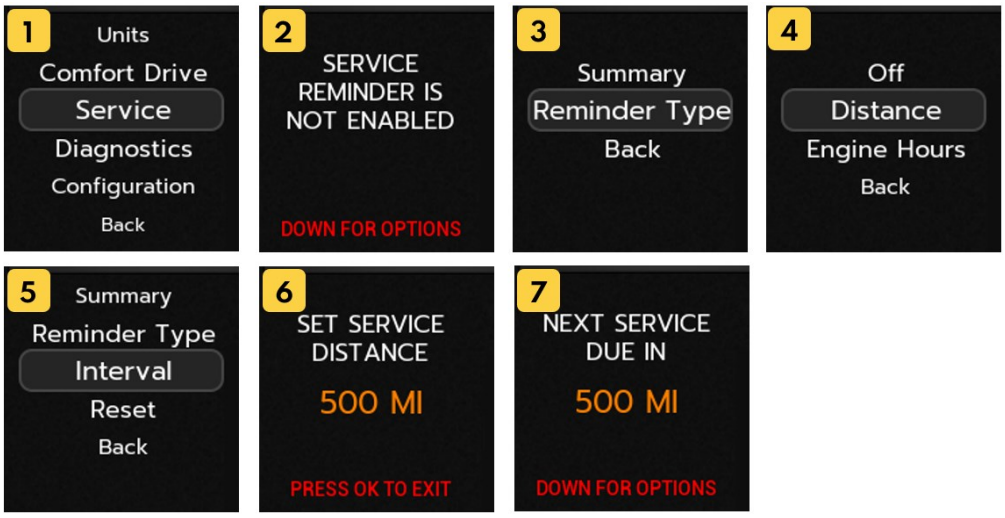
- Pull the paddle towards you to increase the setting and the amount of effort required.
- Push the paddle away from you to decrease the setting and the amount of effort required.

7.8 Service Reminder

Use the service reminder feature to set a reminder for a set interval (time or distance) for servicing the vehicle.

7.8.1 Set the Service Reminder

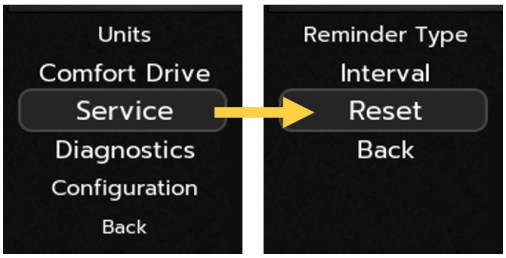
1. Go to **Setting** > **Service**.
2. Use the **Down** button to set the reminder options.
3. Select **Reminder Type**.
4. Select **Distance** or **Engine Hours**.
5. Select **Interval**.
6. Set the desired interval by using the arrow buttons, and press **OK**.
7. Go to **Summary**. The set interval is now displayed, and will count down over time / distance traveled.



7.8.2 Reset the Service Reminder

When the interval has elapsed and the vehicle has been serviced, the service reminder must be reset.

Go to **Setting** > **Service** > **Reset**. The interval will be reset to the original value (as set in Step 6, "Set the Service Reminder" on the previous page).



7.9 Diagnostics

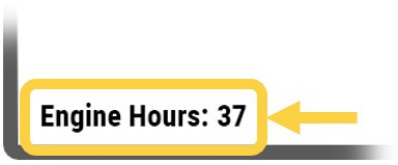
The diagnostic screens are found in the Setting menu. They provide information that is helpful for service staff when troubleshooting any issues, and are discussed in greater detail in the Service Manual.

Screen	Description
I / O Info	Shows the status of the discrete inputs and outputs connected directly to the rear connectors on the Valid Instrument Cluster.
System Info	Displays the status of any alert message received since the ignition was turned on. The part numbers, firmware revisions, and serial number are also shown.
OBD Info	Displays the status of any diagnostic message (DM1) received since the ignition was turned on.
J1939 CAN Info	Displays all devices communicating on the vehicle's J1939 Controller Area Network (CAN).
RVC CAN Info	Displays all devices communicating on the vehicle's RVC Controller Area Network (CAN).

7.9.1 Engine Hours

To view engine hours, select **Setting** > **Diagnostics** > **OBD Info**.

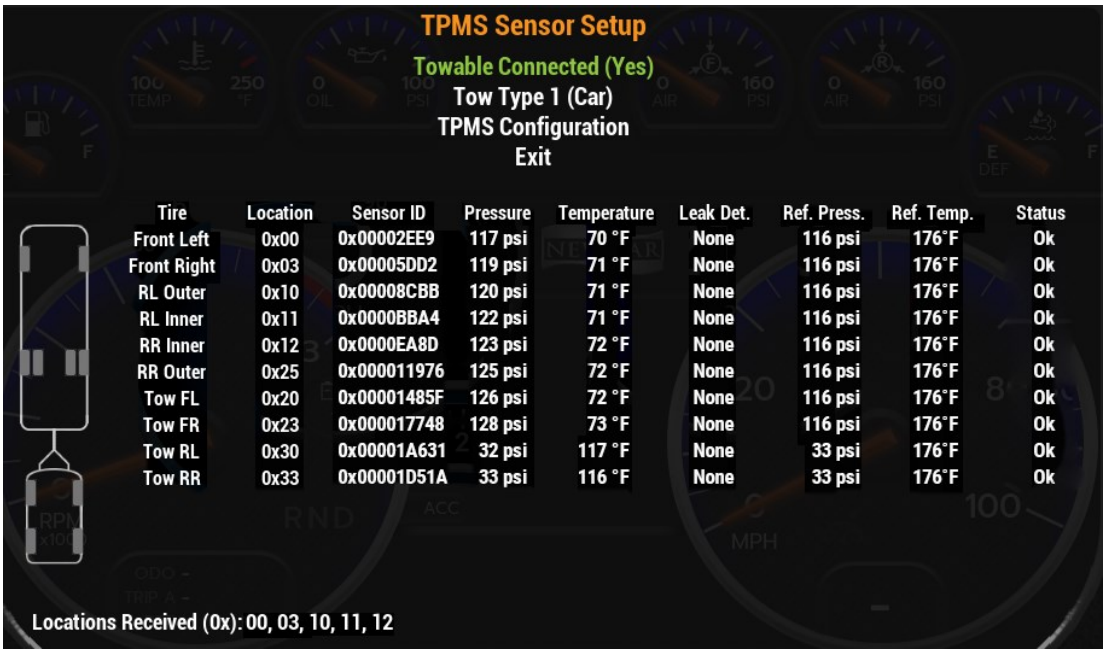
The engine hours are displayed on the bottom left of the pop-up screen.



7.10 Configuration

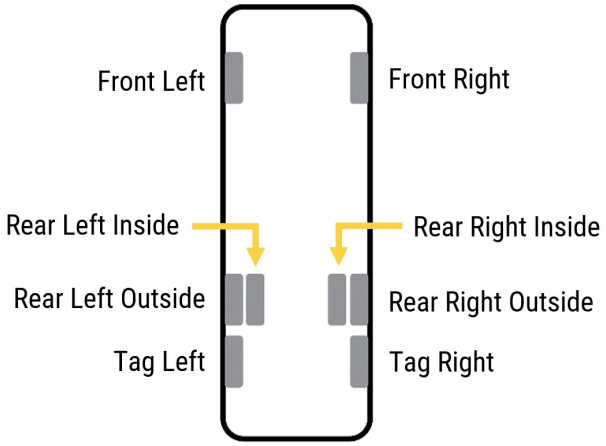
The Configuration screen is used mainly for initial setup at the factory. A passcode is required to gain entry.

TPMS Sensor Setup (if Equipped) 8



To access the TPMS Sensor Setup Screen:

- Press and hold **OK** for 5 seconds while on the TPMS display, or
- Select TPMS from the Settings menu



NOTE: Vehicle speed must be 0 MPH (KMH) or the park brake must be applied to access this screen.

Information displayed on the TPMS screen includes:

- Tire pressure and temperature info for all tires on the coach and any attached trailers
- Any detected air leaks in the tires
- Tire sensor status

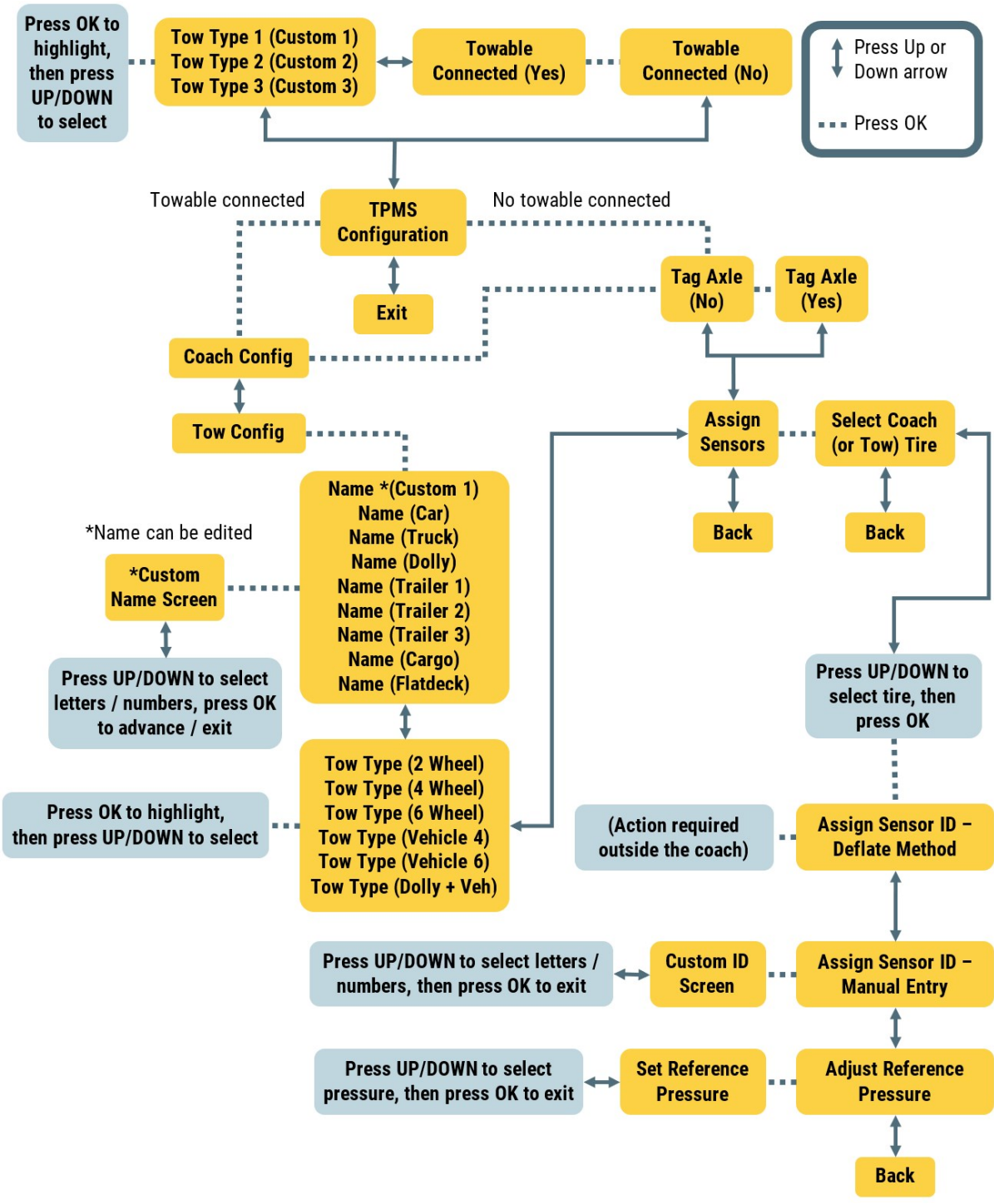
The TPMS screen can be use to set up to 3 tow configurations, complete with name and sensor assignments.

NOTE: Tire sensors can be assigned manually or automatically.

See also:

"Tire Pressure Monitoring System" on page 25

8.1 TPMS Sensor Setup Menu Map



8.2 Tire Sensor Display

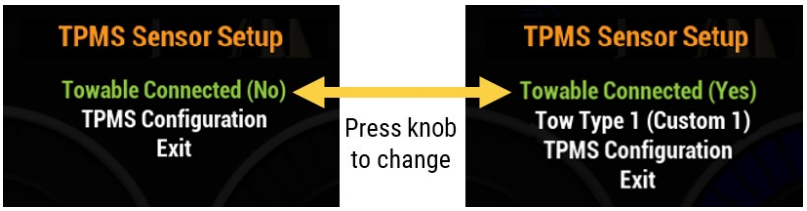
The pressure and temperature values are displayed in colors that indicate the status of the data received.

Color	Pressure	Temperature
Green	Normal range	Normal range
Amber	Higher or lower than normal range	n/a
Red	Critically higher or lower than normal range	High
White	Error / no data received	Error / no data received

8.3 Towable Connected

To configure tire settings for a towed trailer or vehicle, the system must be told that there is a towable connected.

Press the knob to toggle the Towable Connected setting to **Yes**.



- To configure tire settings for the coach, Towable Connected can be set to either **Yes** or **No**. Refer to "Configure Coach Tire Settings" below.
- To configure tire settings for a towable, refer to "Configure a Tow Setting" on page 46.

8.4 Configure Coach Tire Settings

Configuration of a coach tire setting is comprised of these two steps:

1. The identification of a tag axle, if applicable.
2. The assignment of tire sensor(s).

8.4.1 Configure a Coach Tire Setting

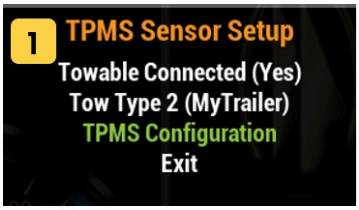
Press **Up** or **Down** to highlight an item. Press **OK** to select the item.

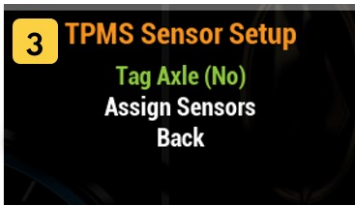
1. Select **TPMS Configuration**.
2. If there is a towable connected, select **Coach Config**.

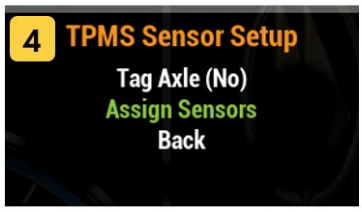
NOTE: Step 2 is not required if there is no towable connected.

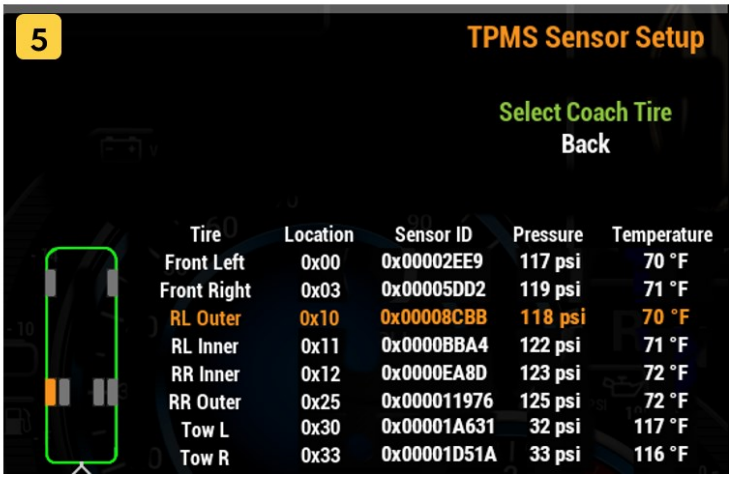
3. Press **OK** to select **Yes** or **No** for the presence or absence of a tag axle.
4. Select **Assign Sensors**.
5. With the green highlight on **Select Coach Tire**, press **Up** or **Down** to select a tire location from the list. The highlighted tire is shown in orange.

   To select **Back**, press **Down** to the end of the tire list.
6. After a tire has been selected, press **OK** to proceed to the next screen.









See also:

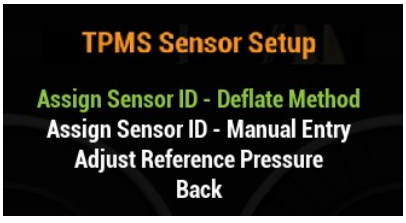
"Tire Pressure Monitoring System" on page 25

8.4.2 Assign Tire Sensors - Deflate Method

Use the Deflate Method to have the TPMS automatically assign a sensor ID based on manual tire deflation.

1. For the chosen tire, rotate the knob to highlight **Assign Sensor ID - Deflate Method** to automatically set the sensor assignment, and press to select.

   When this method is selected, the Select Coach / Tow Tire screen is displayed again.



2. Exit the coach and deflate the tire by at least 5 psi. This action triggers the TPMS to select the tire for ID assignment.

3. During the ID assignment process, the status column for that tire displays "**Learning**."
   - If the ID is successfully assigned, the status displays "**Success**."
   - If the ID is not successfully assigned, the status displays "**Failed**."

   These temporary status messages are displayed for 10 seconds. After 10 seconds, the regular status message is displayed.

NOTE: To confirm that the correct sensor ID has been assigned, read the ID number of the sticker on the tire rim. This number should match what is displayed in the Sensor ID column for that tire on the TPMS Sensor Setup screen.

Return to the **Select Tow Tire** screen to complete this process for other tow tires.

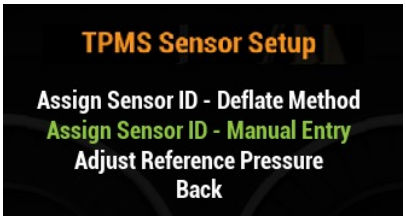
When finished, rotate the knob to highlight **Back** and press to select. The settings are now saved.

IMPORTANT: Re-inflate the tire back to its proper pressure after the sensor has been successfully assigned.

8.4.3 Assign Tire Sensors - Manual Entry

Use the Manual Entry method to manually enter a sensor ID for a tire location. Tire sensor ID numbers can be found on the tire rim.

1. For the chosen tire, rotate the knob to highlight **Assign Sensor ID - Manual Entry** and press to select.



2. On the Enter Sensor ID screen, rotate the knob to select a number or letter.
3. Press the knob to advance to the next character, and rotate to select.
4. Press the knob after the 8th character to return to the previous screen.

8.4.4 Adjust Reference Pressure

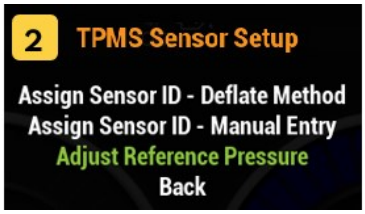
NOTE: To set the reference pressure for a trailer, ensure that **Towable Connected** is set to **Yes**, and that the appropriate tow type is selected.

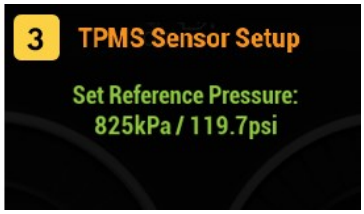
Press **Up** or **Down** to highlight an item. Press **OK** to select the item.

1. Select a tire.
2. Select **Adjust Reference Pressure**.
3. Select the desired pressure.

   NOTE: The pressure changes in increments of 0.8 psi (5.5 kPa).

4. Repeat Steps 1 through 4 to update the reference pressure for additional tire sensors, if required.





8.5 Configure a Tow Setting

Configuration of a custom tow setting is comprised of the steps listed below:

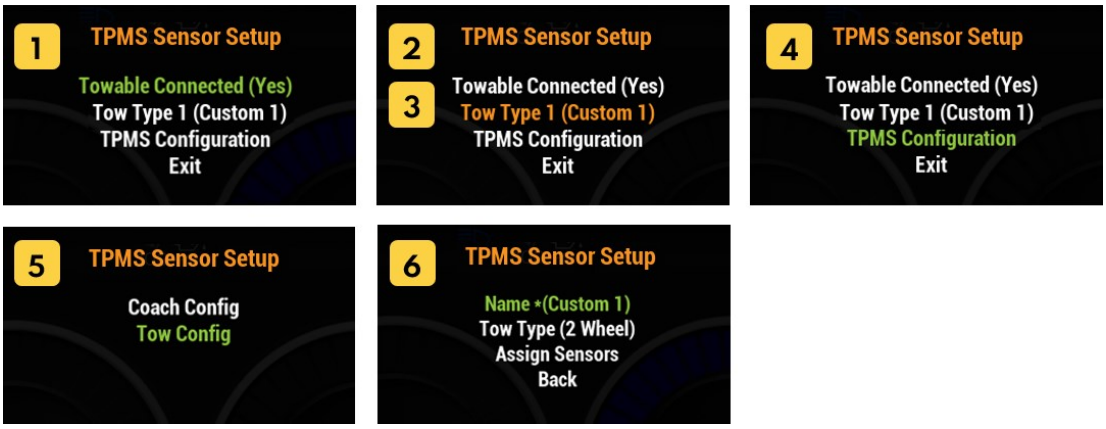
1. Selection of one of three custom settings.
2. The assignment of a custom name.
3. The selection of tow type (trailer, vehicle) for the custom setting.
4. The assignment of tire sensor(s).

8.5.1 Choose Custom Setting

Press **Up** or **Down** to highlight an item. Press **OK** to select the item.

1. With the green highlight on Towable Connected, press **OK** to select **Yes**.
2. Select **Tow Type**. The highlight turns from green to orange.
3. Select **Tow Type 1**, **Tow Type 2**, or **Tow Type 3**.
4. Select **TPMS Configuration**.
5. Select **Tow Config**.

6. Select one of 8 preset names, or select **Custom** to enter a custom name.



8.5.2 Create a Custom Name

1. Press **Up** or **Down** to select an upper or lowercase letter / number / space.
2. Press **OK** to advance to the next character, and press **Up** or **Down** to select. Up to 10 characters may be entered.
3. Press **OK** after the 10th character to return to the previous screen.

8.5.3 Choose Tow Type

1. Select **Tow Type**.
2. Press **Up** or **Down** to select a trailer or vehicle type for the custom tow setting, and press **OK**.

8.5.4 Assign Sensors

- Refer to "Assign Tire Sensors - Deflate Method" on page 44 or "Assign Tire Sensors - Manual Entry" on page 45 for instructions on how to assign tire sensor IDs.
- Refer to "Adjust Reference Pressure" on the previous page for instructions on how to adjust the reference pressure for a given sensor.

Appendix A - Information Messages

Information messages describe normal functions of the coach.

*** indicates that the message can be dismissed from the Selectable Display.**

Message	Description
ACC Braking	The Adaptive Cruise Control feature is braking the vehicle due to a slower vehicle up ahead.
ACC Turned Off	The Adaptive Cruise Control function is turned off.
Auxiliary Brake	The auxiliary (engine exhaust) brake is engaged.
DFP Regen Active	A regeneration (regen) cycle is being performed because the exhaust Diesel Particulate Filter (DPF) has excessive soot levels.
Heated Steering Wheel Active* (if equipped)	The heating function for the steering wheel has been turned on.
Manual Tag Dump On	Tag axle air bags have been manually deflated to reduce the load on the tag wheels.
Service Due	The vehicle is due for its regularly scheduled service.
Traction Control Active*	A loss of traction has been detected in one or more wheels and the Automatic Traction Control is acting to restore it.
Wait to Start*	The vehicle's grid heater must heat up before the vehicle is started. When the key is turned to the on position, this message will remain on until the grid heater is ready. Once the message is off, the vehicle can be started.

Appendix B - Caution Messages

Caution messages warn of circumstances that require attention.

*** indicates that the message can be dismissed from the Selectable Display.**

Message	Description
ABS System Fault*	A fault has been detected in the anti-lock braking system. A chime will sound continuously when this message is displayed.
ACC Fault	A fault has been detected in the adaptive cruise control system. A warning beep will sound.
Air Filter Restriction*	The engine air filter is clogged or blocked. A chime will sound for 5 seconds when this message is displayed.
Baggage Door Ajar* (if equipped)	One or more baggage doors are open. A chime will sound for 5 seconds when this message is displayed.
Battery Tray*	The sliding battery tray is extended and / or not secured. A chime will sound when this message is displayed.
Blocked Radar	The radar signal for the ACC system is blocked and the system cannot sense objects ahead of the vehicle.
Check Engine*	The Engine Amber Warning Lamp is on and a chime will sound continuously when this message is displayed. Seek service at the first available opportunity.
Check Suspension* (if equipped)	Trouble with the suspension system. Check the diagnostics leveling / suspension control page or OBD Info screen. A single chime will sound when this message is displayed.
Check Transmission*	Signal from transmission that some aspect of its operation is not functioning correctly, and as a result, transmission operation may be altered or restricted. The Check Transmission indicator may be either steady or flashing. Seek service at the first available opportunity. A chime will sound continuously when this message is displayed.

Caution messages warn of circumstances that require attention.

*** indicates that the message can be dismissed from the Selectable Display.**

Message	Description
Close Following Distance	The coach is too close to the leading vehicle. **NOTE:** Cruise control need not be set for this message to display. A constant tone will sound when this message is displayed.
CMS Fault	A fault has been detected in the OnGuardACTIVE® Collision Mitigation System. A warning beep will sound.
Column Fault*	Steering Column ECU is signaling a fault and should be checked as soon as possible.
DEF Concentration High	The diesel exhaust fluid in the tank is too high in urea concentration.
DEF Concentration Low	The diesel exhaust fluid in the tank is too low in urea concentration.
DEF Contaminated	The diesel exhaust fluid in the tank is contaminated.
DEF Sensor Failure	There is an error with diesel exhaust fluid property detection.
DPF Regen Required	Diesel particulate filter (DPF) regeneration is required.
Egress Door Ajar* (if equipped)	One or more egress doors are open. A chime will sound for 5 seconds when this message is displayed.
Emissions	There is a malfunction related to the emissions control system. The after-treatment system should be diagnosed and serviced at your next available opportunity.
Engine Door Ajar* (if equipped)	The engine door is open. A chime will sound for 5 seconds when this message is displayed.
Entrance Door Ajar* (if equipped)	The entrance door is open. A chime will sound for 5 seconds when this message is displayed.

Caution messages warn of circumstances that require attention.

*** indicates that the message can be dismissed from the Selectable Display.**

Message	Description
Front Bumper Out* (if equipped)	The front bumper is open. A chime will sound for 5 seconds when this message is displayed.
High Exhaust System Temp	Indicates that high exhaust temperatures may exist due to Active Regeneration (soot burn-off) in the Diesel Particulate Filter (DPF). This is normal and does not signify the need for vehicle or engine service. Ensure the exhaust pipe outlet is not directed at any combustible surface or material.
High Tire Pressure*	The pressure level of the tire is higher than the pressure defined by the vehicle or tire manufacturer, and may be at a level where the safety of the vehicle is jeopardized. A chime will sound for 3 seconds when this message is displayed.
Low Coolant*	The engine coolant fluid level is low and should be topped up. A chime will sound for 5 seconds when this message is displayed.
Low Diesel Exhaust Fluid - URGENT*	The Diesel Exhaust Fluid (DEF) is critically low and must be topped up. A chime will sound for 5 seconds when this message is displayed.
Low Diesel Exhaust Fluid*	The Diesel Exhaust Fluid (DEF) is low. The fluid creates a catalytic reaction that removes particles from the exhaust. When low, the fluid must be topped up. A chime will sound for 5 seconds while this message is displayed.
Low Fuel*	The vehicle fuel tank is low. Refer to the ‘Distance to empty” display. (See"Odometer" on page 18.) A chime will sound for 5 seconds when this message is displayed.
Low Tire Pressure*	The pressure level of the tire is lower than the pressure defined by the vehicle or tire manufacturer and may be at a level where the safety of the vehicle is jeopardized. A chime will sound for 3 seconds when this message is displayed.

Caution messages warn of circumstances that require attention.

*** indicates that the message can be dismissed from the Selectable Display.**

Message	Description
No Data	The Valid Instrument Cluster has received no J1939 communication for at least 15 seconds.
No Data - ABS	The Valid Instrument Cluster has lost communication with the anti-lock braking system.
No Data - Engine	The Valid Instrument Cluster has lost communication with the engine's ECU (Electronic Control Unit).
No Data - Front Susp. Mod. (if equipped)	The Valid Instrument Cluster has lost communication with the front suspension module. A single chime will sound when this message is displayed.
No Data - Pressure Transducer Module (if equipped)	The Valid Instrument Cluster has lost communication with the pressure transducer module.
No Data - Rear Susp. Mod. (if equipped)	The Valid Instrument Cluster has lost communication with the rear suspension module. A single chime will sound when this message is displayed.
No Data - Transmission	The Valid Instrument Cluster has lost communication with the transmission controller.
Not at Ride Height* (if equipped)	The coach suspension is not at ride height. A chime will sound for 3 seconds when this message is displayed.
Radar Offline	The Valid Instrument Cluster has lost communication with both the adaptive cruise control system and the collision mitigation system.
Radar Offline ACC1	The Valid Instrument Cluster has lost communication with the adaptive cruise control system.
Radar Offline CMS	The Valid Instrument Cluster has lost communication with the collision mitigation system.
Stability Control Active	The vehicle's stability control system is active.

Caution messages warn of circumstances that require attention.

*** indicates that the message can be dismissed from the Selectable Display.**

Message	Description
Transmission Range Inhibit	A requested transmission shift cannot be made due to inappropriate vehicle speed or other restrictions.
Turn Signal On*	One of the turn signals is still on and the speed of the vehicle is greater than 0 MPH (0 KM/H). A chime will sound continuously when this message is displayed.
Water in Fuel*	Water has been detected in the fuel. A chime will sound for 5 seconds when this message is displayed.

Appendix C - Critical Messages

Critical messages warn of circumstances that require immediate attention.

*** indicates that the message can be dismissed from the Selectable Display.**

Message	Description
Antenna Up*	The antenna is extended. A chime will sound continuously when this message is displayed.
DFP Regen Required - Critical*	Indicates the state of the diesel particulate filter regeneration need and urgency. A chime will sound continuously when this message is displayed.
DFP Regen Required - Urgent*	Indicates the state of the diesel particulate filter regeneration need and urgency. A chime will sound continuously when this message is displayed.
Engine Derated - DEF Required*	Torque has been derated for protection of the engine. On-Board Diagnostics has determined that the limits for nitrous oxide (N_2O) in the exhaust stream have been exceeded due to the diesel exhaust fluid tank being empty. A steady tone will sound when this message is displayed.
High Battery Voltage*	The Engine Control Module (ECM) battery measurement is above the factory-configured high battery threshold. A chime will sound continuously when this message is displayed.
High Coolant Temp*	The coolant fluid temperature is high. A chime will sound continuously when this message is displayed.
High Tire Pressure	The pressure level of the tire is critically high relative to the pressure defined by the vehicle or tire manufacturer, and the safety of the vehicle may be jeopardized. A chime will sound twice for 5 seconds in a 5 minute period when this message is displayed.

Critical messages warn of circumstances that require immediate attention.

*** indicates that the message can be dismissed from the Selectable Display.**

Message	Description
High Tire Temperature	The temperature level of the tire is higher than the temperature defined by the vehicle or tire manufacturer, and may be at a level where the safety of the vehicle is jeopardized. A chime will sound twice for 5 seconds in a 5-minute period when this message is displayed.
High Transmission Temp*	Transmission fluid temperature is above normal acceptable limits, and as a result, transmission operation may be altered or restricted. A chime will sound continuously when this message is displayed.
Jacks Down*	The hydraulic jacks are down and / or the slide-outs are not fully retracted and the parking brake is not set. A steady tone will sound when this message is displayed.
Low Air Pressure - Primary	Pressure in the primary (rear) side of the air brake system is below the 'red' threshold level. A warning tone will sound when this message is displayed.
Low Air Pressure - Secondary	Pressure in the secondary (front) side of the air brake system is below the 'red' threshold level. A warning tone will sound when this message is displayed.
Low Battery Voltage*	The Engine Control Module (ECM) battery measurement is below the factory-configured low battery threshold. A chime will sound continuously when this message is displayed.
Low Oil Pressure*	The engine oil pressure is low. Driving in this condition can cause serious damage to the engine. A chime will sound continuously when this message is displayed.

Critical messages warn of circumstances that require immediate attention.

*** indicates that the message can be dismissed from the Selectable Display.**

Message	Description
Low Tire Pressure	The pressure level of the tire is critically low relative to the pressure defined by the vehicle or tire manufacturer, and the safety of the vehicle may be jeopardized. A chime will sound twice for 5 seconds in a 5 minute period when this message is displayed.
Park Brake On - Trans Not in Neutral*	The park brake is engaged but the transmission is in a gear other than neutral. A chime will sound continuously when this message is displayed.
Seatbelt Warning (if applicable)	Driver's seatbelt is unsecured and the park brake has been released. A chime will sound for 10 seconds when this message is displayed.
Shore Cord*	The vehicle is still connected to shore power with the park brake released. A chime will sound continuously when this message is displayed.
Speed Restricted - DEF Required*	Speed has been restricted for protection of the engine. On-Board Diagnostics has determined that the limits for nitrous oxide (N_2O) in the exhaust stream have been exceeded due to the diesel exhaust fluid tank being empty. A chime will sound continuously when this message is displayed.
Step Out*	The entry step is out and the park brake is not set. A steady tone will sound when this message is displayed.
Stop Engine*	The vehicle needs to be stopped as soon as it is safe to do so. A warning tone will sound when this message is displayed.
Trans in Neutral - Park Brake Not Set*	The transmission has been put in neutral but the park brake has not yet been engaged. A chime will sound continuously when this message is displayed.

Critical messages warn of circumstances that require immediate attention.

*** indicates that the message can be dismissed from the Selectable Display.**

Message	Description
Wheelchair Lift Out*	The wheelchair lift is out and the park brake is not set. A steady tone will sound when this message is displayed.

5320-B 48th Avenue SE

Salmon Arm, BC V1E 1X2

tel 250-832-6477 | fax 250-832-7746

www.validmfg.com | sales@validmfg.com