

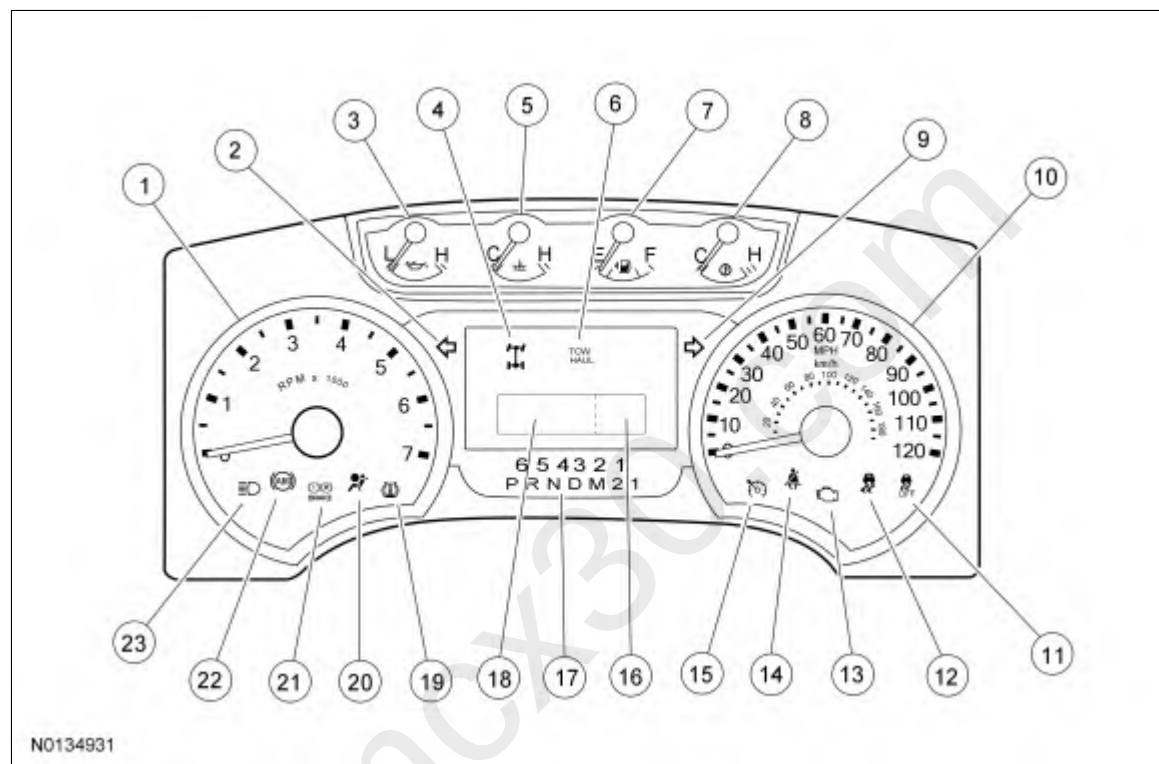
SECTION 413-01: Instrumentation, Message Center, and Warning Chimes
DESCRIPTION AND OPERATION

2014 F-150 Workshop Manual
Procedure revision date: 10/25/2013

Instrument Panel Cluster (IPC)

Base Instrument Panel Cluster (IPC)

NOTE: Additional warning indicators, which are displayed in the message center, are listed below under "IPC Message Center Indicators".

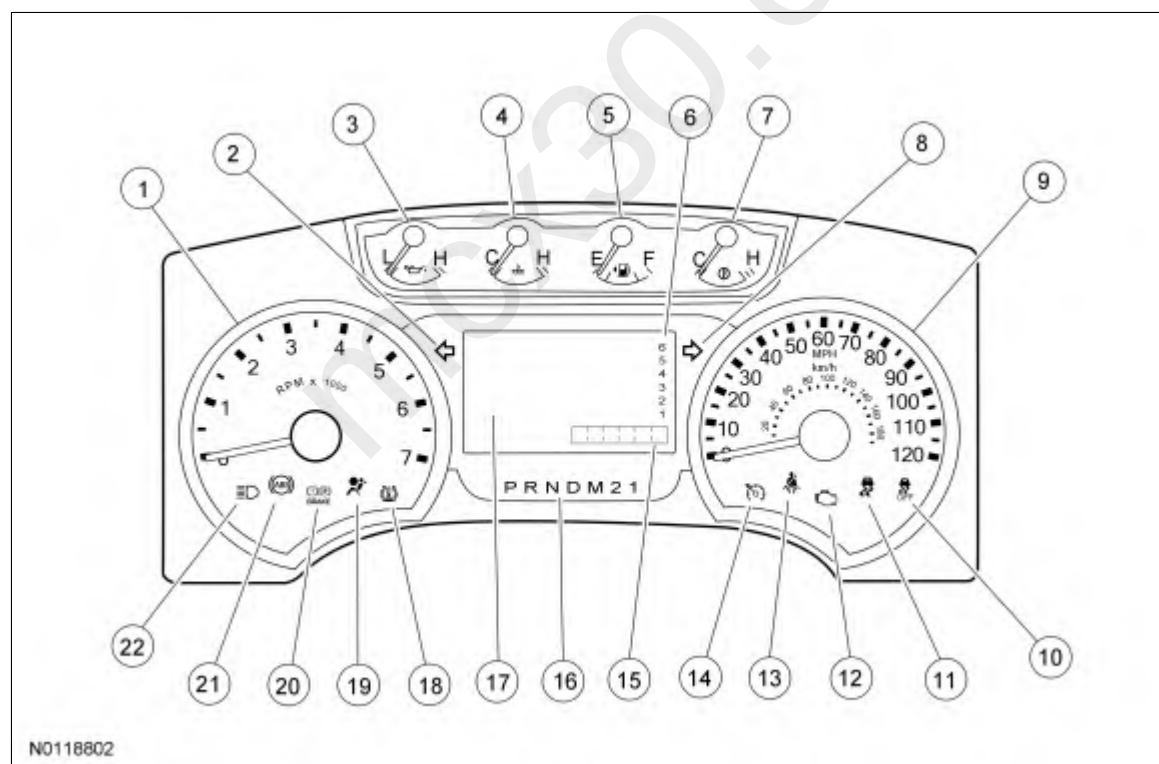


Item	Part Number	Description
1	—	Tachometer
2	—	LH turn indicator
3	—	Oil pressure gauge
4	—	Electronic locking differential indicator
5	—	Engine temperature gauge
6	—	Tow haul indicator
7	—	Fuel gauge
8	—	Transmission temperature gauge
9	—	RH turn indicator
10	—	Speedometer
11	—	Stability/traction control disabled indicator
12	—	Stability/traction control indicator

13	—	Malfunction Indicator Lamp (MIL)
14	—	Safety belt warning indicator
15	—	Cruise control indicator
16	—	Message center indicator display area
17	—	PRNDL with select shift display (if equipped)
18	—	Message center display area
19	—	Tire Pressure Monitoring System (TPMS) warning indicator
20	—	Air bag warning indicator
21	—	Brake warning indicator
22	—	ABS warning indicator
23	—	High beam indicator

Optional IPC

NOTE: Base F-150 Instrument Panel Cluster (IPC) shown, SVT Raptor IPC similar. Additional warning indicators, which are displayed in the message center, are listed below under "IPC Message Center Indicators".



Item	Part Number	Description
1	—	Tachometer
2	—	LH turn indicator
3	—	Oil pressure gauge

4	—	Engine temperature gauge
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15	—	Message center indicator display area
16	—	PRNDL display
17	—	Message center display area
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Instrument Panel Cluster (IPC)

The Instrument Panel Cluster (IPC) is available either with a base message center (identified by the 3-button message center switch) or with the optional message center (identified by the 5-button message center switch). The IPC contains gauges, informational indicators, warning indicators and message center indicators that are designed to provide the driver with system status and to alert the driver that certain conditions exist in the vehicle.

The IPC uses part of the message center as a display area for basic informational items such as the odometer and trip odometer and for the message center display information.

All indicator lamps and warning indicator lamps are LEDs, which are not replaceable.

Compass Display

The electronic compass system consists of:

- Compass module (without navigation)
- Global Positioning System (GPS) antenna (with navigation)
- Front Display Interface Module (FDIM)

Vehicles Without Navigation

The compass signal originates with the compass module and is displayed in the FDIM. The vehicle heading is displayed as a 1 or 2-character display and indicates the current direction of the vehicle (N, NE, E, SE, S,

SW, W, or NW).

Compass Accuracy

Driving near power lines, or driving in the area of large iron or steel structures on vehicles without navigation can temporarily alter the compass heading. If the compass remains inaccurate after driving near such objects, calibrate the compass. For additional information, refer to [Compass Calibration](#) in this section. Most geographic areas (zones) have a magnetic north compass point that varies slightly from the northerly direction on maps. This variation is 4 degrees between the adjacent zones and becomes noticeable as the vehicle crosses multiple zones. A correct zone setting eliminates the error. For additional information, refer to [Compass Zone Adjustment](#) in this section.

Vehicles With Navigation

The compass signal originates with the GPS antenna. No calibration or zone adjustment is available, as the compass heading is based on the GPS signal. Refer to the appropriate section in Group [415](#) for the procedure.

Transport Mode

The vehicle is placed in a transport mode at the completion of production to reduce the drain on the battery. Various systems may be altered in how they operate or are disabled when in the transport mode. The vehicle automatically reverts to normal operation after 201 km (125 miles). To disable or turn off the transport mode, carry out the following within 10 seconds:

- Verify the battery is fully charged.
- With ignition in RUN, press brake pedal 5 times.
- Press hazard switch 4 times (on, off, on, off).

Factory Mode

During vehicle assembly, the vehicle defaults to factory mode. Factory mode sets the function timers such as PRNDL display to further reduce the drain on the battery during assembly. The vehicle is placed into transport mode at the end of vehicle assembly. The vehicle remains in factory mode for 60 ignition cycles or until it is manually changed to transport mode.

Informational Indicators/Warning Indicators

Informational indicators provide information to the driver of conditions that exist in the vehicle. Warning indicators provide information to the driver of conditions that could potentially cause personal injury or alter vehicle performance.

Instrument Panel Cluster (IPC) Message Center Indicators

Message center indicators illuminate in the message center and replace the typical informational or warning indicator using the same iconic representation. When multiple warnings exist, the message center indicators cycle through each display until the condition has been corrected. The message center indicators include:

- 4X4 auto
- Charging system
- Door ajar
- Electronic Locking Differential (ELD)
- Engine oil pressure
- Engine over-temperature

- Low fuel
- 4X2
- 4X4 low
- 4X4 high
- Powertrain malfunction (wrench)
- Tow haul

Hardwired Inputs

The hardwired inputs are provided from the following systems or components:

- Fuel level
- Hill descent control
- Message center switch
- Park detect
- Traction control switch

Messaged Inputs

Module messaging is the standard for sending and receiving information required to operate the IPC. All messages required for the IPC to operate are received over the High Speed Controller Area Network (HS-CAN). For a list of module messages with the message origination sources, refer to [Section 418-00](#).

Listed below is a partial list of status and information messages that the IPC requires from other vehicle inputs:

- ABS
 - ABS braking
 - Roll Stability Control (RSC®)
 - Traction control
- Base brake system
 - Brake fluid level status
 - Parking brake status
- Body
 - Door ajar
 - Supplemental Restraint System (SRS)
 - Tire Pressure Monitoring System (TPMS)
- Lighting system
 - LH/RH turn
 - High beam
- Powertrain
 - Charging system
 - ELD
 - Engine emission system
 - Engine oil pressure
 - Engine rpm
 - Engine temperature
 - Four-Wheel Drive (4WD)
 - Tow haul status
 - Transmission range
 - Vehicle speed

Welcome/Farewell Mode

The IPC provides a startup/shutdown mode also known as a welcome/farewell mode. When the vehicle receives a Remote Keyless Entry (RKE) request or a door ajar (open) message, the IPC gradually increases illumination of the gauge trim rings and powers up the message center (the optional IPC provides a welcome graphic). When the key is inserted into the ignition switch (key off), the IPC illuminates the gauge points. When the ignition is placed into the RUN or START position, the IPC begins a prove-out stage. During the prove-out stage, the IPC provides message center information (replaces the welcome screen with vehicle specific information on the optional IPC.) while illuminating all LED indicators for a predetermined time. For the shutdown, the IPC reverses the startup process.

MyKey®

NOTE: All MyKey® displayed messages listed below are base IPC (3-button message center switch) displays. The optional IPC (5-button message center switch) message displays are similar.

The MyKey® feature allows the customer to program a restricted driving mode that is tied to one or more keys known as a MyKey®. When MyKey® is in use, the IPC provides the following functions:

- At the beginning of vehicle start up, as part of the welcome strategy, the message center greets the MyKey® driver with MYKEY ACTIVE DRIVE SAFELY displayed in the message center. If the MyKey® speed limiter feature is turned on, the message center also displays SPEED LIMITED TO 80 MPH (or 130 km/h).
- The IPC continuously provides a periodic Belt-Minder® warning chime until the driver and passenger safety belts are buckled. When the Belt-Minder® is issued, the Audio Front Control Module (ACM) is muted and the message center displays BUCKLE UP TO UNMUTE AUDIO.
- If the MyKey® speed limiter feature is turned on and the vehicle speed approaches 120 km/h (75 mph), the message center displays VEHICLE NEAR TOP SPEED along with a chime.
- If the MyKey® speed limiter feature is turned on and the vehicle speed reaches 130 km/h (80 mph), the message center displays VEHICLE AT TOP SPEED DRIVE SAFELY along with a chime.
- If the speed warning is selected at one of the preset values (75, 90, 105 km/h [45, 55, 65 mph]) and the vehicle approaches the preset speed, the message center displays CHECK SPEED DRIVE SAFELY along with a chime.
- If the traction control always on feature is turned on and the MyKey® driver presses the traction control switch to disable traction control, the message center displays ADVTRAC ON MYKEY SETTING.
- At 1/8 tank of remaining fuel, the IPC turns on the low fuel warning with the appropriate Distance To Empty (DTE) message along with a chime.
- MyKey® miles driven by the MyKey® user can be found in the information display and in the system check function of the message center on the base IPC and in the information display only on the optional IPC.
- The number of MyKey® programmed and administrator keys can be found in the system check function of the message center (base IPC.) or information function (optional IPC).
- The parking aid warning menu is disabled in the message center to force these features always on.

When an administrator key is in use, the IPC provides the following functions:

- The message center provides a menu guiding the user to create a MyKey®. When the maximum MyKey® limit is reached, the MyKey® creation menu is no longer available.
- The message center provides menus for setting 4 optional MyKey® features:
 - MyKey® 80 MPH speed limiter
 - MyKey® pre-selected speed warning
 - MyKey® radio volume limiter
 - AdvanceTrac® on/off

- The message center provides a menu to clear all MyKey® programmed keys at once.
- MyKey® miles driven by the MyKey® user can be found in the information display and in the system check function of the message center on the base IPC and in the information display only on the optional IPC.
- The number of MyKey® programmed and administrator keys can be found in the system check function of the message center (base IPC) or information function (optional IPC).

For additional information on the MyKey® features, refer to [Section 419-01B](#).

Neutral Tow Feature

The neutral tow feature provides informational messages to inform the driver that neutral tow is enabled or disabled and powers down or turns off IPC functions such as welcome/farewell (startup-shut down) and PRNDL indication. The neutral tow feature allows the vehicle to be towed in NEUTRAL (N) without excessive battery drain.
