



UPS Ford F59 Model Year 2020 and Later Familiarization

Refer to www.fordups.com for this and other UPS
Ford reference information

Driver Assist Technology (DAT)

- Beginning on model year 2022 and later Ford package cars in UPS' fleet
 - 4 model year 2020 cars in fleet were early test trial units
- Includes camera and radar that provide
 - Automatic Emergency Braking
 - Distance Alert / Indication
 - Lane Departure Warning
 - Automatic High Beam Control
- Includes Electronic Stability Control (ESC) branded as Ford AdvanceTrac.
 - ESC assists in preventing skids or lateral slides by applying the brakes to one or more of the wheels individually and, if necessary, decreases engine power
- If there is a black box (camera) mounted to the inside of the windshield as shown in Figures 1 and 2, the vehicle is equipped with DAT



Fig 1. DAT camera



Fig 2. DAT camera

UPS Ford F59 Model Year 2020 and Later

Familiarization Topics Covered

- Driver Interface
 - Updates
 - Steering wheel adjustment and controls
 - Instrument panel cluster (IPC)
 - Headlamp switch with automatic position
 - Added
 - Traction Control System (TCS)
 - Hill Start Assist
 - DAT equipped units only:
 - Electronic Stability Control (ESC) branded as Ford AdvanceTrac
 - Auto High Beam (controlled by camera)
 - Driver Alert
 - Lane Keeping System
 - Pre-Collision Assist System

UPS Ford F59 Model Year 2020 and Later

Familiarization Topics Covered

- Technician Interface
 - Updates
 - 7.3V8 replaces 6.8V10
 - 7.3 has different starter and alternator
 - Brake calipers and pads
 - ABS module relocated
 - Powertrain Control Module (PCM) relocated
 - Battery Junction Box (BJB)

UPS Ford F59 Model Year 2020 and Later Familiarization Topics Covered

- Technician Interface
 - Added
 - Cab electronics
 - Body Control Module (BCM)
 - Includes flasher module
 - Steering Column Control Module (SCCM)
 - Includes clockspring and multifunction switch
 - Gateway Module (GWM)
 - Sun load sensor
 - DAT equipped cars only:
 - Camera (Image Processing Module IPM)
 - Lane Departure Warning Module (LDWM)
 - 4 Pilot units in model year 2020
 - Production implementation in January 2022
 - Auxiliary Translator Module (ATM)
 - 2 Pilot units July 2022
 - Production implementation October 2022

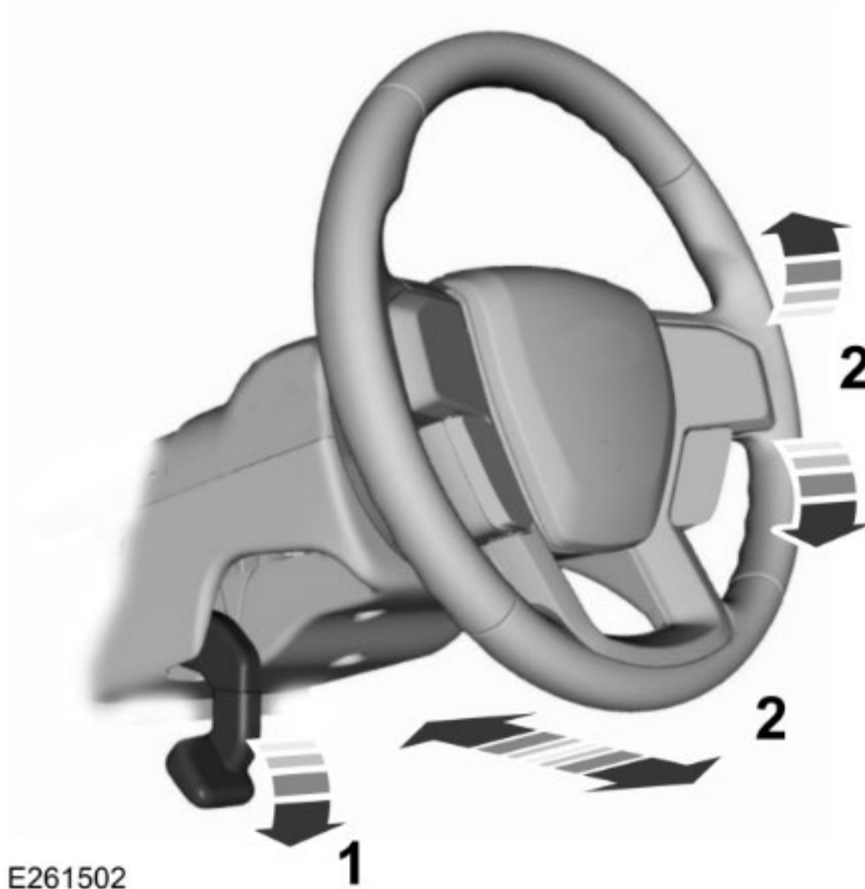
UPS Ford F59 Model Year 2020 and Later Familiarization Topics Covered

- Technician Interface
 - Added (continued)
 - Engine compartment electronics
 - Wiper module & Wiper relays
 - Air temp sensor
 - Redundant sensor with sensor in PCM and removed in 2022 model year
 - Yaw Sensor (ESC)
 - Radar [Cruise Control Module (CCM)] (DAT equipped cars only)

Driver Interface Updates

Steering wheel

- Telescoping feature added to steering wheel
- Information display controls moved from dash to steering wheel



Information Display Controls



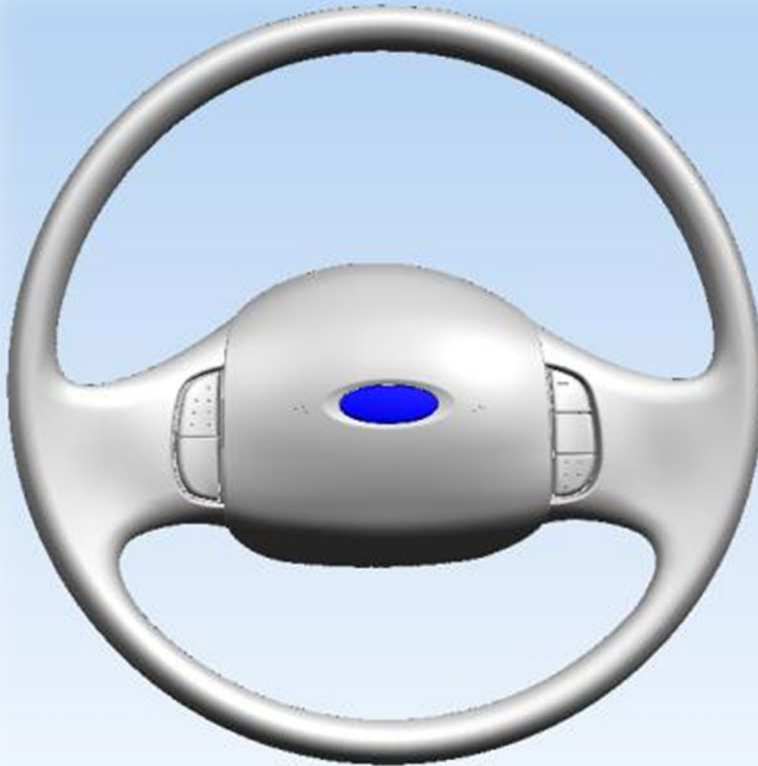
- Press the up and down arrow buttons to scroll through and highlight the options within a menu.
- Press the right arrow button to enter a sub-menu.
- Press the left arrow button to exit a menu.
- Press the **OK** button to choose and confirm a setting or messages.



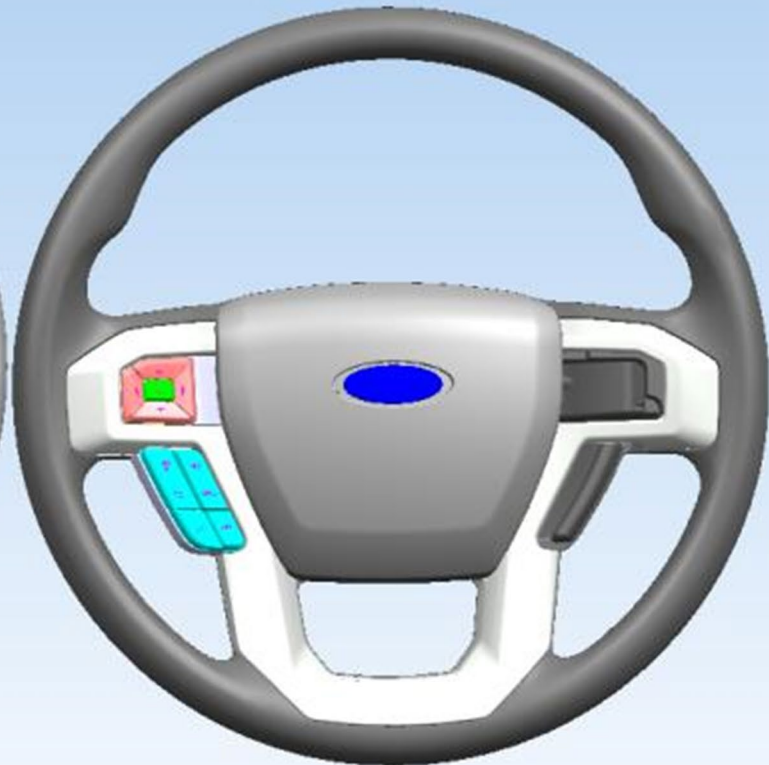
This icon shows the features on or off status. A check in the box indicates the feature is on, and unchecked indicates the feature is off.

Steering wheel (both 17.5" dia)

MY 19 and earlier

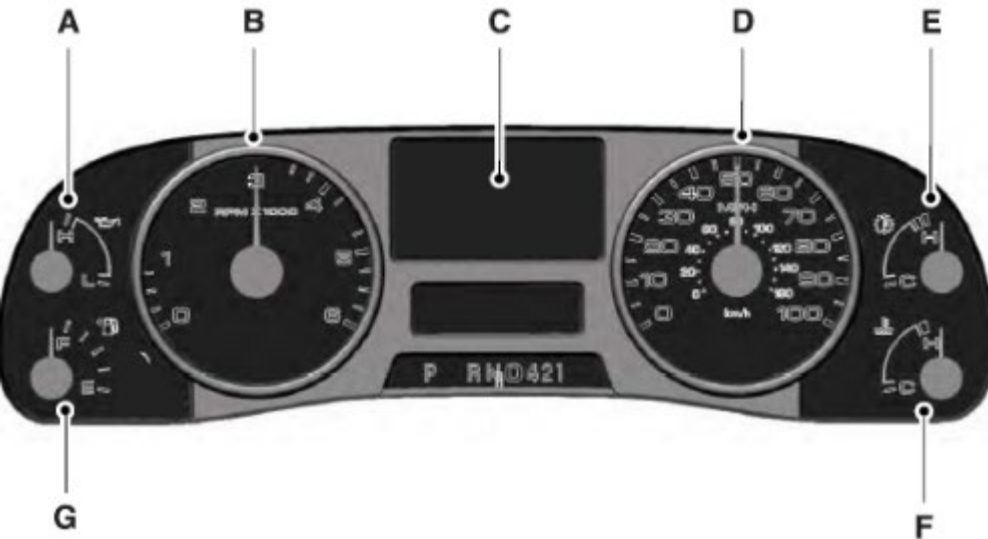


MY 20 and later



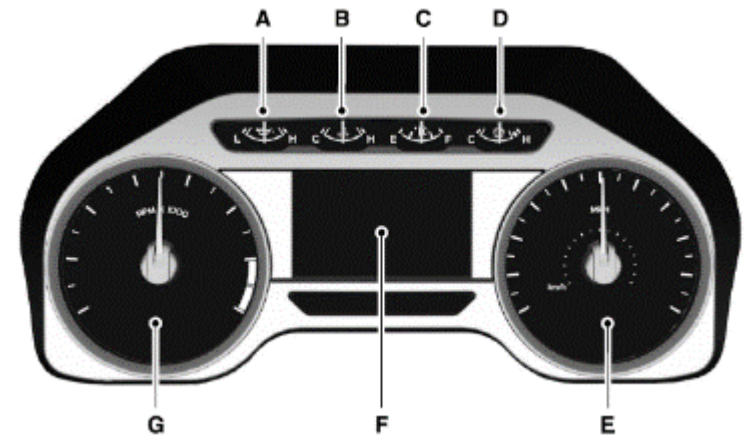
Instrument Cluster (non-DAT equipped cars)

MY 19 and earlier



- A Engine oil pressure gauge.
- B Tachometer.
- C Information display.
- D Speedometer.
- E Transmission fluid temperature gauge.
- F Engine coolant temperature gauge.
- G Fuel gauge.

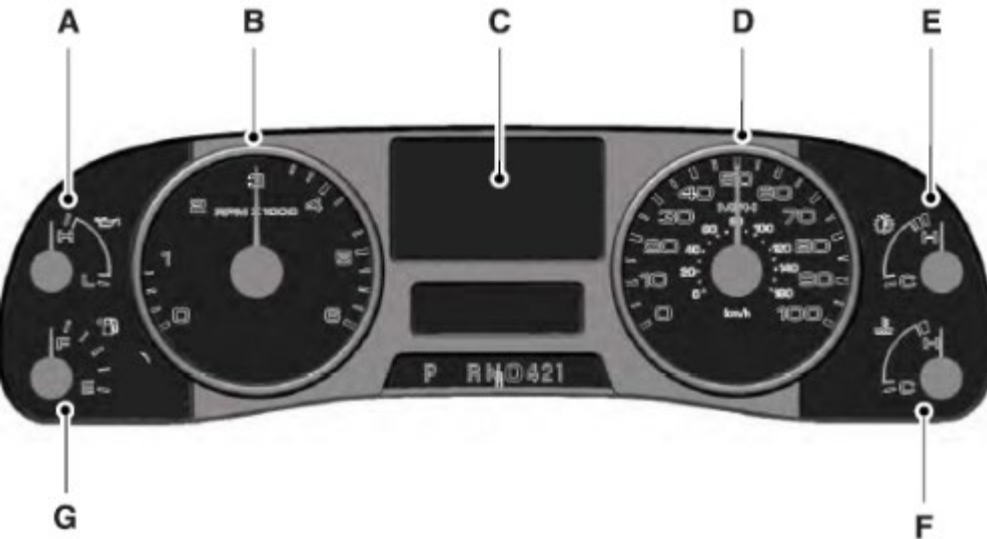
MY 20 and later
(2.3 inch display)



- A Engine oil pressure gauge.
- B Engine coolant temperature gauge.
- C Fuel gauge.
- D Transmission fluid temperature.
- E Speedometer.
- F Information display.
- G Tachometer.

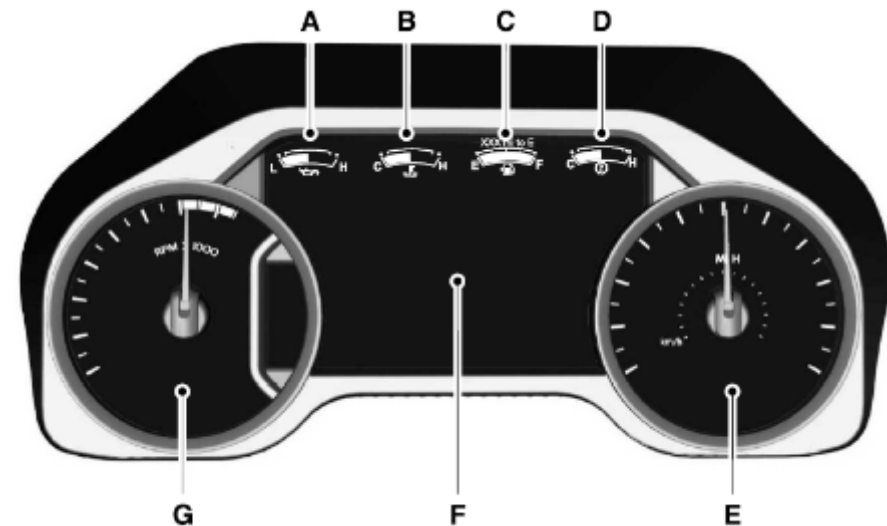
Instrument Cluster (DAT equipped cars)

MY 19 and earlier



- A Engine oil pressure gauge.
- B Tachometer.
- C Information display.
- D Speedometer.
- E Transmission fluid temperature gauge.
- F Engine coolant temperature gauge.
- G Fuel gauge.

MY 20 and later
(8 inch display)



- A Engine oil pressure gauge.
- B Engine coolant temperature gauge.
- C Fuel gauge.
- D Configurable gauge.
- E Speedometer.
- F Information display.
- G Tachometer.

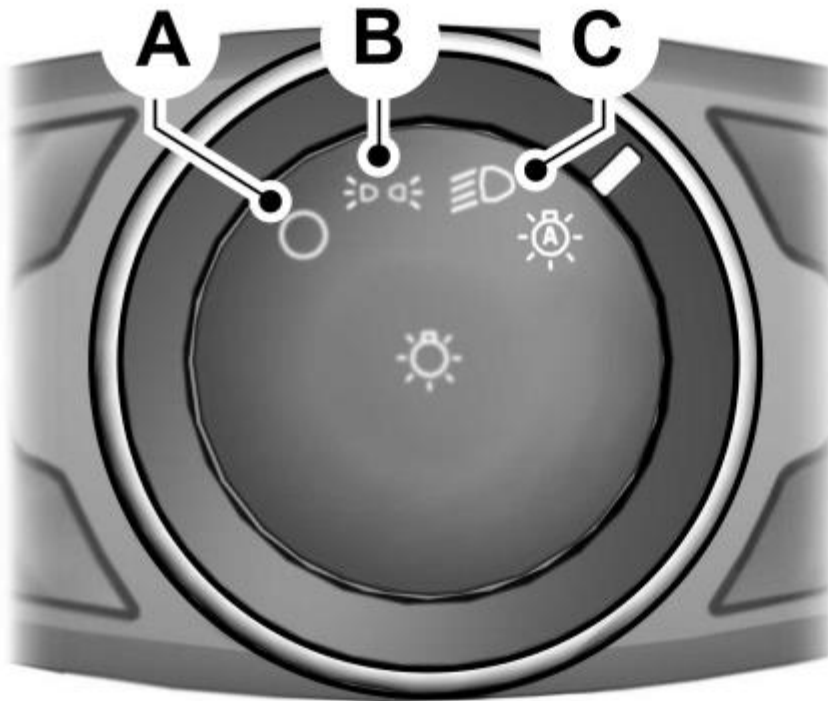
Instrument Cluster Menu without DAT (note maintenance monitor)

MY20 no DAT F59 Instrument Cluster							
MAIN MENU	Trip 1	press and hold OK to rest values					
	Trip 2	press and hold OK to rest values					
	Fuel Economy	press and hold OK to rest values					
	Driver Assist						
	Settings						
Trip 1 & 2	MPH						
	miles to empty						
	distance						
	time						
	avg mpg						
	outside temp						
Fuel Economy	miles to empty						
	mpg						
	avg mpg						
Driver Assist	Engine hours	Engine Hours					
		Engine Idle Hours					
	Voltmeter						
	Maintenance Monitor	Oil Life %	press and hold OK to rest values				
Settings	Vehicle	Lighting	Autolamp delay	Off			
				10 sec	Can adjust but over ridden		
				20 sec	by dark mode programming		
				120 sec			
		Wiper controls	Courtesy wipe	Default off			
	Display settings	Measurement units	Miles & MPG				
			L/100km				
			km/L				
		Temperature Units	F				
			C				
		Language	English				
			Spanish				
			French				

Instrument Cluster Menu with DAT (note locked settings)

My View	Fuel Economy						
	Trip1						
	Configure MyView Screens	Add/Remove Screens	Trip/Fuel Screens	Trip1	press and hold OK to reset values		
				Trip2	press and hold OK to reset values		
				Fuel Economy			
				Fuel History			
			Vehicle Info Screens	Digital Speedometer			
				Engine Information			
				Maintenance Monitor			
			Reorder Screens	Fuel Economy			
			Trip1				
Trip/Fuel	Trip1	MPH, miles to empty, distance, time, avg mpg, outside temp			press and hold OK to reset values		
	Trip2	MPH, miles to empty, distance, time, avg mpg, outside temp			press and hold OK to reset values		
	Fuel Economy						
	Trip History						
Vehicle Info	Digital Speedometer						
	Engine Information	Engine Hours	press and hold OK to reset values				
		Engine Idle Hours	press and hold OK to reset values				
	Maintenance Monitor	Oil Life %	press and hold OK to reset values				
Settings	Driver Alert	On, Off		Setting locked by fleet owner	On		
	Pre Collision	Alert Sensitivity	High, Normal, Low	Setting locked by fleet owner	Normal		
		Distance Indication	On, Off	Setting locked by fleet owner	On		
		Active Braking	On, Off	Setting locked by fleet owner	On		
		Pre Collision	On, Off	Setting locked by fleet owner	On		
	Lane Keeping	Alert Sensitivity	High, Normal, Low	Setting locked by fleet owner	Normal	Can turn lane keeping on and off by switch on dash. Resets to on after keyswitch	
	Advanced Settings	Vehicle	Lighting	Autolamp Delay	Off, 10 sec, 20 sec, 120 sec	Can adjust but overridden by dark mode	
				Auto High Beam	On, Off	Setting locked by fleet owner	On
			Wiper Controls	Courtesy Wipe	On, Off		
		Display Set-up	Measurement units	Miles & MPG, km&L/100km, km&km/L			
			Temperature Units	F, C			
			Language	English, Spanish, French			

Headlamp switch



- A. Off
- B. Parking Lights
- C. Headlights
-  Autolamps

Driver Interface Additions

Traction Control System



- The system turns on each time the ignition is switched on.
- Use the traction control switch on the instrument panel to switch the system off or on.



- If your vehicle is stuck in mud or snow, switching traction control off is beneficial as this allows the wheels to spin.
- Note: If the traction control light does not flash during a traction control event or stays on, the system is not operating. Have the system checked as soon as possible.
- During a traction control event, the traction control light rapidly flashes. Pressing further on the accelerator does not cause the engine to rev higher. This is normal and is no reason for concern.
- When the system turns the traction control off, the OFF light illuminates on the instrument cluster.

Hill Start Assist

- The system turns on each time the ignition is switched on and can not be turned off.
- The system activates on any slope that causes your vehicle to roll.
- Note: There is no warning light to indicate the system is either on or off.
- When the system is active, your vehicle remains stationary on the slope for two to three seconds after you release the brake pedal. This allows time to move your foot from the brake to the accelerator pedal.
- The system releases the brakes automatically once the engine has developed sufficient torque to prevent your vehicle from rolling down the slope.

Using Hill Start Assist

1. Press the brake pedal to bring the vehicle to a complete standstill. Keep the brake pedal pressed and shift into drive (D) when facing uphill or reverse (R) when facing downhill.
2. If the sensors detect that your vehicle is on a slope, the system activates automatically.
3. When you remove your foot from the brake pedal, your vehicle remains on the slope without rolling away for about two to three seconds.
4. Drive off in the normal manner. The system releases the brakes automatically.

Electronic Stability Control (ESC) branded as Ford AdvanceTrac



(DAT equipped cars only)

- The system turns on each time the ignition is switched on and can not be turned off.
- The system assists in preventing skids or lateral slides by applying the brakes to one or more of the wheels individually and, if necessary, decreases engine power.
- If a driving condition activates either the stability control or the traction control system, the following conditions are possible:
 - The stability and traction control light flash.
 - Your vehicle slows down.
 - The system reduces engine power.
 - A vibration in the brake pedal.
 - The brake pedal is stiffer than usual.
 - If the driving condition is severe and your foot is not on the brake, the brake pedal could move as the system applies higher brake force.

Automatic High Beams

(DAT equipped cars only)

- Feature locked on as part of fixed DAT settings option
- The system turns on high beams if it is dark enough and no other traffic is present. If it detects an approaching vehicle's headlamps or tail lamps, or street lighting ahead, the system turns off high beams before they can distract other road users. Low beams remain on.
- Note: *The system may not operate properly if the sensor is blocked. Keep the windshield free from obstruction or damage. A message may appear in the information display if the camera is blocked.*
- A camera sensor, centrally mounted behind the windshield of your vehicle, continuously monitors conditions to turn the high beams on and off.
- The high beams turn on if:
 - The ambient light level is low enough.
 - There is no traffic in front of your vehicle.
 - The vehicle speed is greater than approximately 32 mph (51 km/h).
- The high beams turn off if:
 - The ambient light level is high enough that high beams are not required.
 - The system detects an approaching vehicle's headlamps or tail lamps.
 - The vehicle speed falls below approximately 27 mph (44 km/h).
 - The system detects severe rain, snow or fog.
 - The camera is blocked.

Driver Alert

(DAT equipped cars only)

- Feature locked on as part of fixed DAT settings option
- Activates at speeds above 40 mph
- The system automatically monitors your driving behavior using various inputs including the front camera sensor. If the system detects that your driving alertness is reduced below a certain threshold, the system will alert you using a chime and a message in the information display.
- The warning system is in two stages. At first the system issues a temporary warning that you need to take a rest. This message will only appear for a short time. If the system detects further reduction in driving alertness, another warning may be issued which will remain in the information display for a longer time. Press OK on the steering wheel control to clear the warning. When active the system will run automatically in the background and only issue a warning if required.
- System can be reset by switching the ignition off and on.

Lane Keeping System

(DAT equipped cars only)

- The system turns on each time the ignition is switched on but can be turned off for a given keyswitch cycle by pressing the switch next to the hazard switch as shown in Figure 1 below.
- Note: The system works as long as the camera can detect one lane marking at a speed above 40 mph (64 km/h).
- Note: The system may not function with a blocked camera, or if the windshield is damaged or dirty
- If the system detects an unintentional drift out of your lane is likely to occur, the system notifies you to stay in your lane through the instrument cluster display. The system provides a warning by an audible tone.

System Settings

- The system sensitivity feature is locked on normal as part of fixed DAT settings option

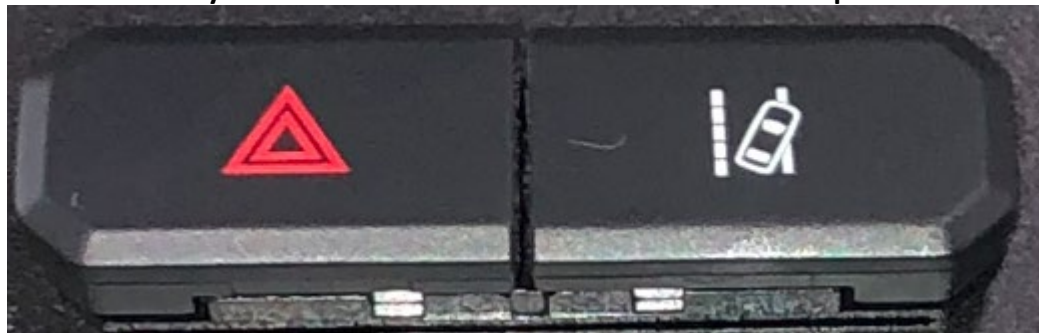


Figure 1. Hazard and Lane Keeping System On/Off Switches

Lane Keeping System

(DAT equipped cars only)

- System Display



- When you switch on the system, a graphic with lane markings appears in the instrument cluster display screen
- While the system is on, the color of the lane markings change to indicate the system status.
- Gray: Indicates that the system is temporarily unable to provide a warning on the indicated side(s). This may be because:
 - Your vehicle is below the activation speed.
 - The direction indicator is active.
 - Your vehicle is in a dynamic maneuver.
 - The road has no or poor lane markings in the camera field-of-view.
 - The camera is obscured or unable to detect the lane markings due to environmental, traffic or vehicle conditions. For example, significant sun angles, shadows, snow, heavy rain or fog, following a large vehicle that is blocking or shadowing the lane or poor headlamp illumination.
- Green: Indicates that the system is available or ready to provide a warning on the indicated side(s).
- Red: Indicates that the system is providing or has just provided a lane keeping alert warning.
- You can temporarily disable the system at any time by using your direction indicator.

Pre-Collision Assist System

(DAT equipped cars only)

- Feature locked on as part of fixed DAT settings option
 - Alert sensitivity set to Normal.
 - Distance Indication set to On.
 - Active Braking set to On.
 - Pre-Collision Assist set to On.
- The Pre-Collision Assist system is active at speeds above approximately 3 mph (5 km/h).

Pre-Collision Assist System

(DAT equipped cars only)

- If your vehicle is rapidly approaching another stationary vehicle or a vehicle traveling in the same direction the system provides three levels of functionality:

1. Alert

2. Brake Support

3. Active Braking

- Alert: When active, a flashing visual warning appears and an audible warning tone sounds.
- Brake Support: The system is designed to help reduce the impact speed by preparing the brakes for rapid braking. The system does not automatically apply the brakes. If you press the brake pedal, the system could apply additional braking up to maximum braking force, even if you lightly press the brake pedal.
- Active Braking: Active braking may activate if the system determines that a collision is imminent. The system may help the driver reduce impact damage or avoid the crash completely.

Pre-Collision Assist System

(DAT equipped cars only)

Distance Indication and Alert

- Distance Indication and Alert is a function that provides the driver with a graphical indication of the time gap to other preceding vehicles traveling in the same direction. The Distance Indication and Alert screen in the display screen shows one of the graphics that follow.



- If the time gap to a preceding vehicle is small, a red visual indication displays.

Technician Interface Updates

7.3V8 replaces 6.8V10

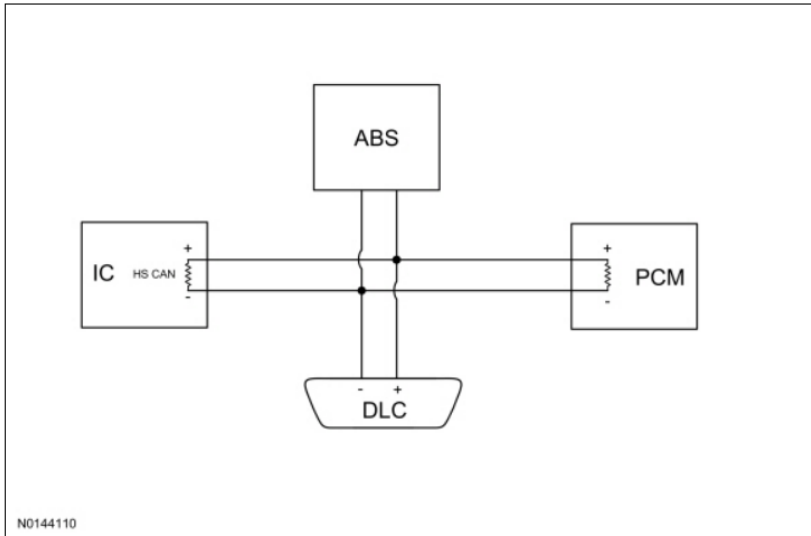


Specifications	7.3	6.8
Compression Ratio	10.5	9.2
HP	350	320
Torque	468	460
Valvetrain	Pushrod	SOHC
Fuel injection	Port	Port
Cyl Head & Valves per cyl	Alum - 2	Alum - 3
Cyl Block	Cast Iron	Cast Iron
Maintenance Items	7.3	6.8
Oil Filter Part Number	FL-820-S	FL-820-S
Oil capacity (qts)	8	7
Oil Chg Interval	5000	5000
Oil	10W30	10W30
Spark Plug	SP-589	SP-509
Spark Plug Interval	80,000	80,000
Air Filter (F59)	FA-1782	FA-1782
Coolant	P-OAT (Yellow)	OAT (Orange)
Coolant Interval	10 years or 200,000	6 years or 105,000 mi

- 12 min interview with Ford 7.3 chief engineer Joel Beltramo:
<https://www.youtube.com/watch?v=2FtNlFAbc2w>
- Cam, Valvetrain & Oil Pump
<https://www.youtube.com/watch?v=CJztLbsQ7Y4>

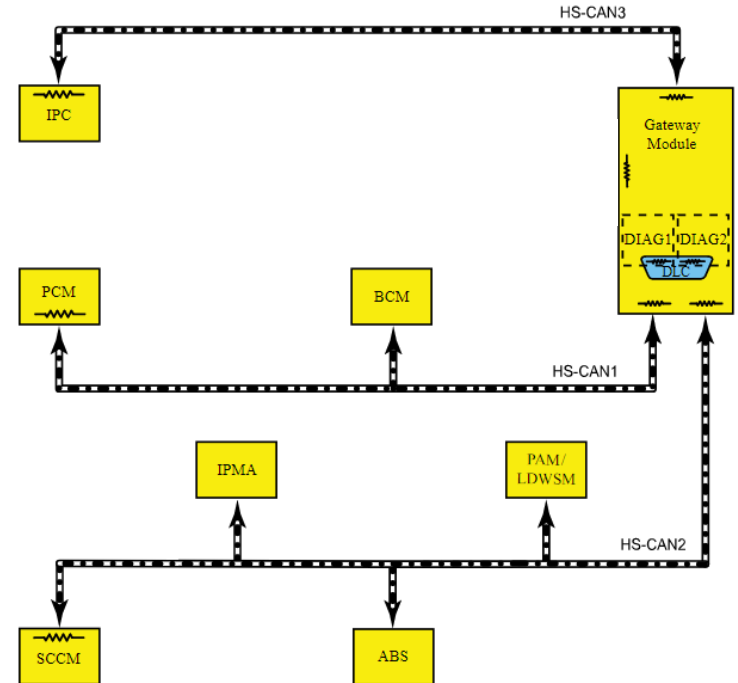
Communications Network

MY 19 and earlier



NOTE: For vehicles equipped with pre-collision assist, the CCM does not communicate directly on the HS-CAN2. The CCM communicates with the IPMA on a private CAN, and the IPMA communicates on the HS-CAN2.

MY20 and later



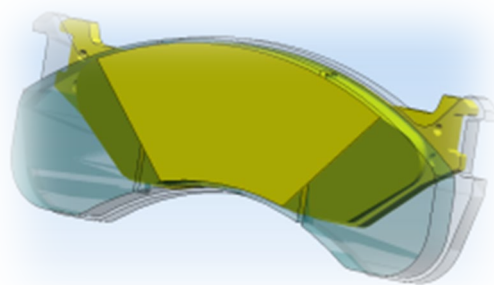
1. BCM – Body Control Module
2. ABS – Anti-Lock Braking System Module
3. IC / IPC – Instrument Panel Cluster Module
4. SCCM – Steering Column Control Module
5. PCM – Powertrain Control Module

6. Gateway Module
7. IPMA - Image Processing Module (Camera) (DAT only)
8. LDWSM – Lane Departure Warning Sounder Module

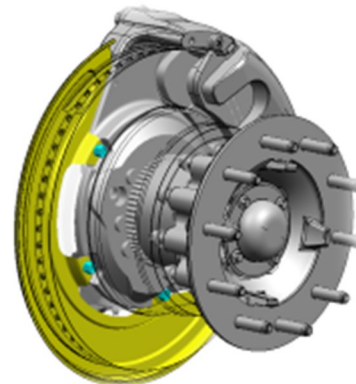
Brake calipers and pads

- Larger calipers: Bosch T66mm calipers replace the TRW T60mm calipers
- All rear calipers and brake lines positioned to backside of axle.
- 52% larger brake pad with revised lining material
- Front dust shields added
- Front and rear brake calipers and pads are the same. Front and rear brake pads have different part #s due to different wear indicator wire lengths

Old & New Brake Pad



Dust Shield



ABS Module

- Relocated from driver's side frame rail to driver's side engine compartment

MY 19 and earlier



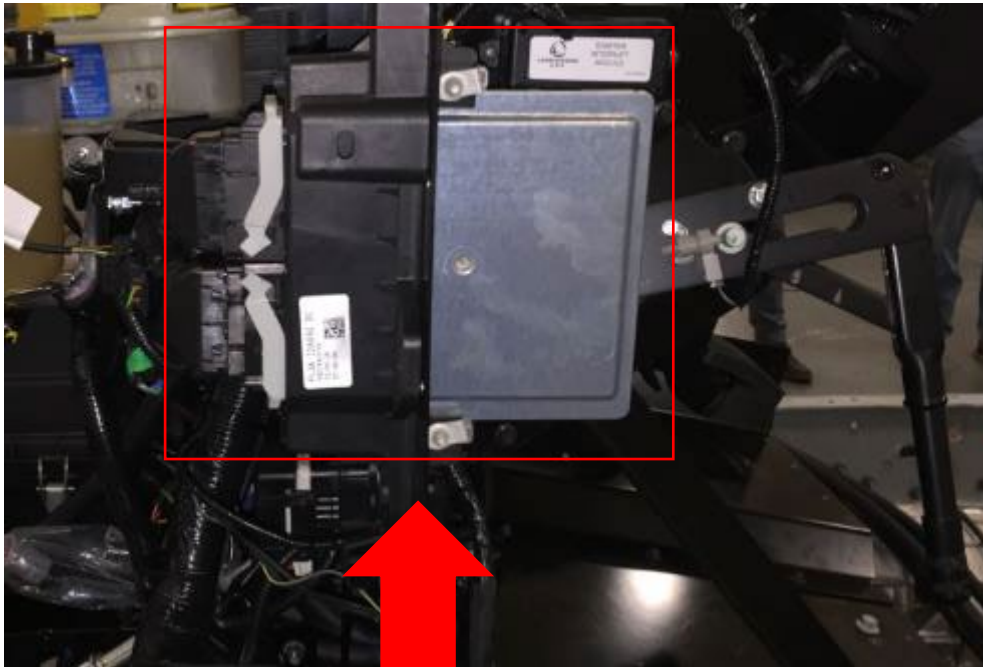
MY20



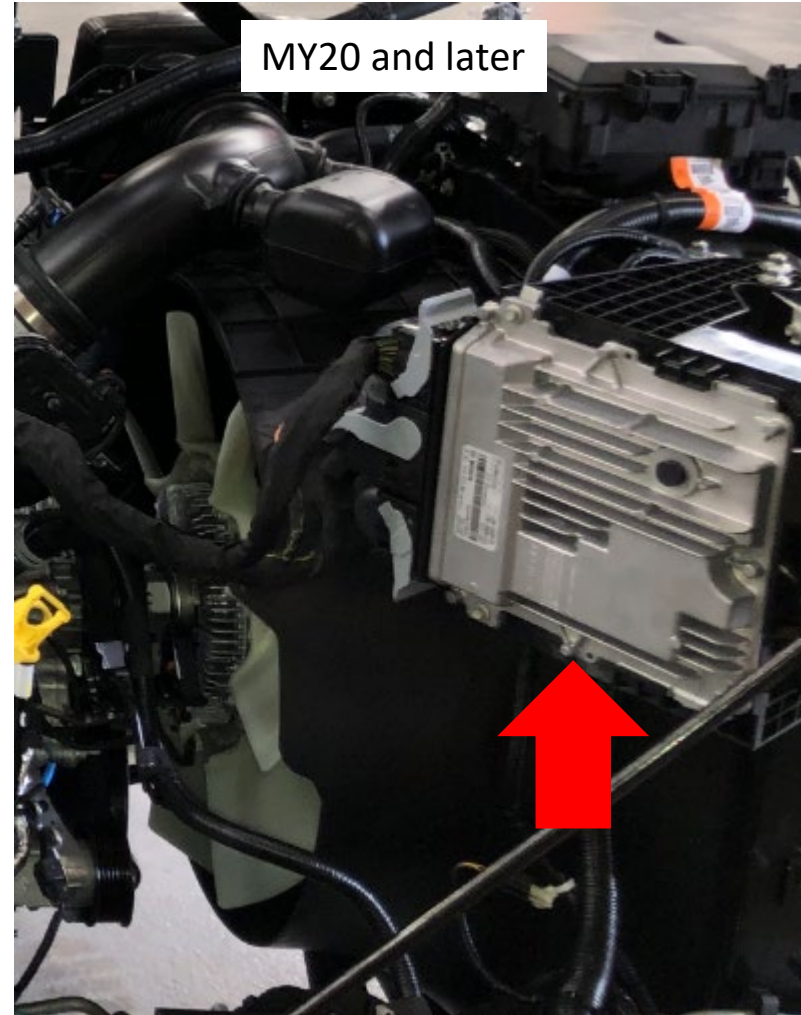
Powertrain Control Module (PCM)

- Relocated from driver's side firewall to passenger side fan shroud

MY 19 and earlier



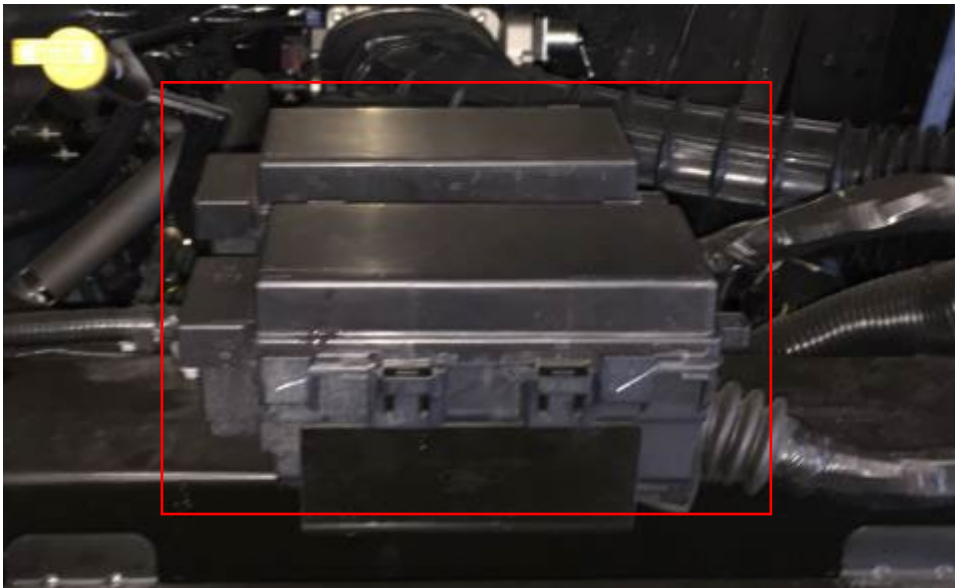
MY20 and later



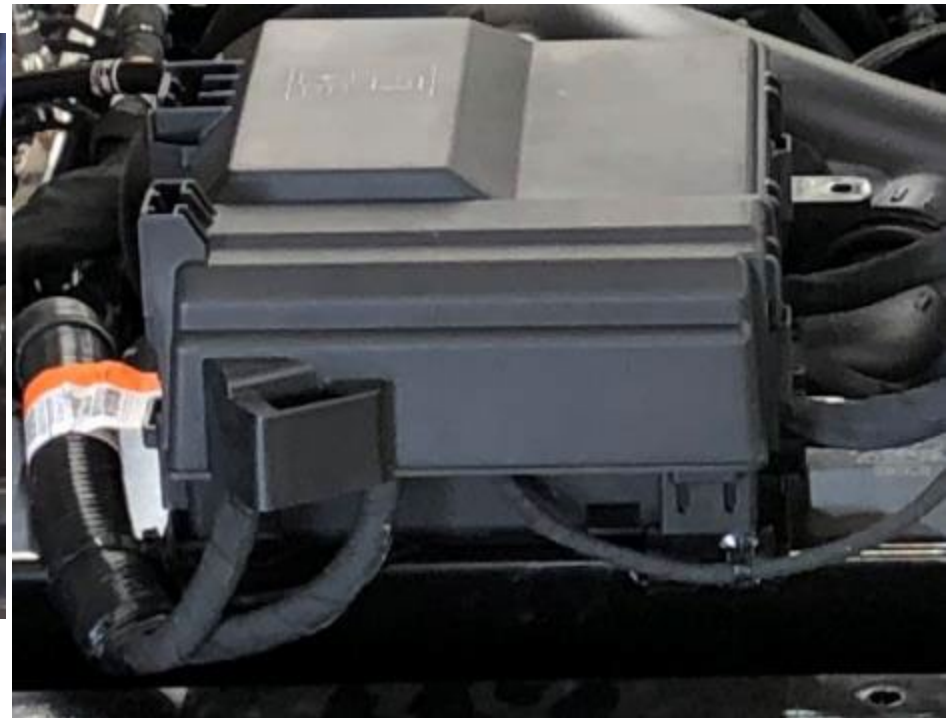
Battery Junction box (BJB)

- 2 boxes consolidated into 1

MY 19 and earlier



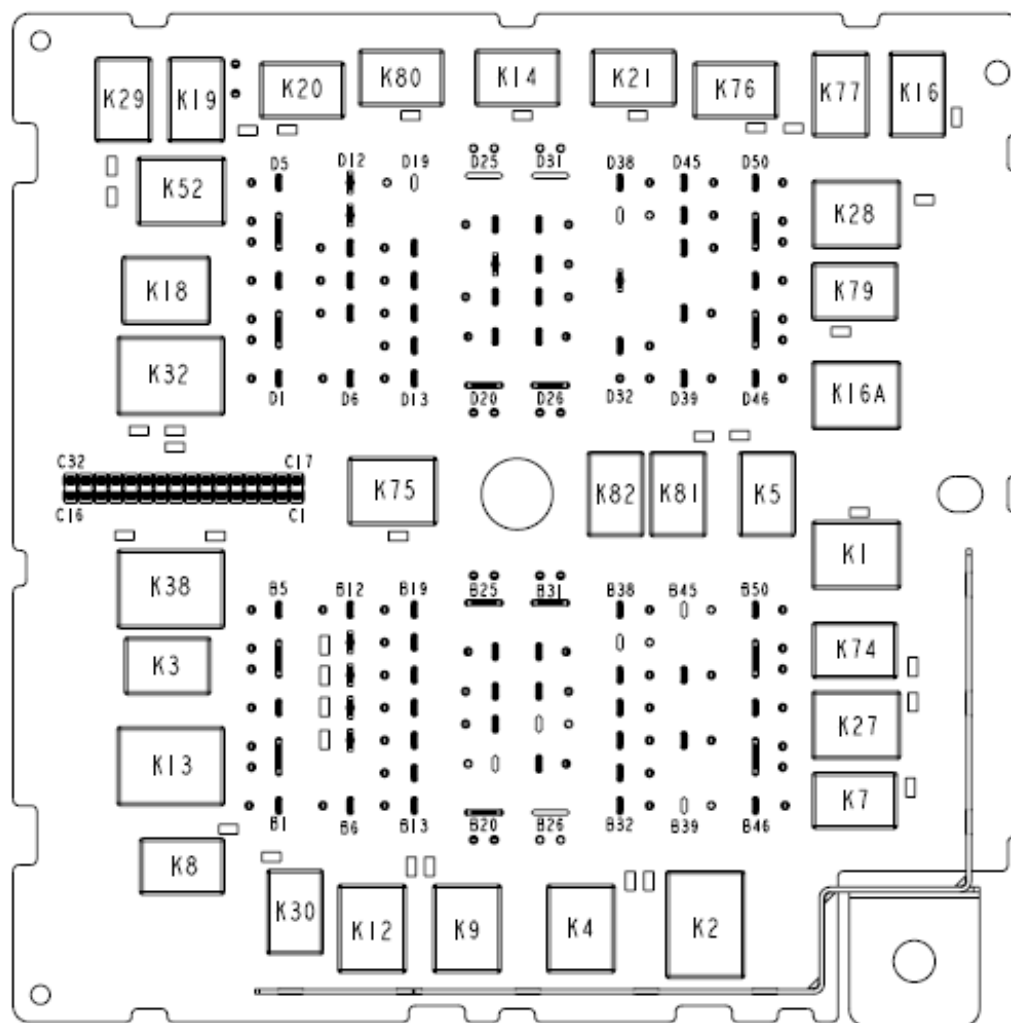
MY20 and later



MY20 & Newer Battery Junction Box (BJB)

Relay Assignments (non-serviceable)

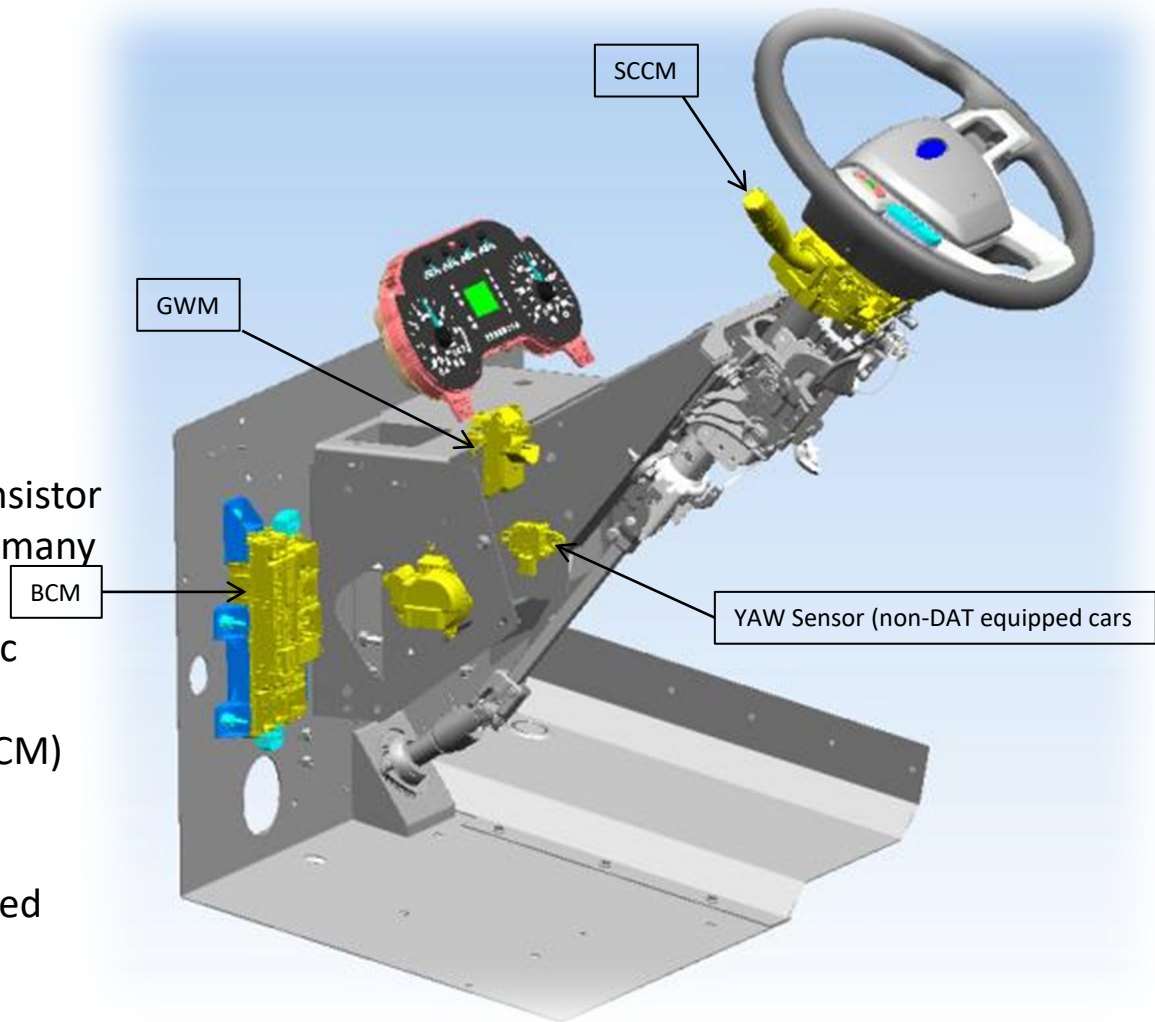
K1 – Fuel Pump
K2 – PCM
K3 – Starter
K7 – Ac Clutch
K8 – Horn
K9 – Front Wiper Motor
K12 – Run/Start
K13 – Front Blower
K14 – Not used
K16 – Not used
K18 – TT Park Lamps
K19 – TT Stop/Turn LH
K20 – TT Stop/Turn RH
K21 – TT Backup Lamp
K27 – Not used
K28 – Not used
K29 – Not used
K30 – Not used
K32 – Latching Relay 1
K38 – Not used
K52 – Upfit Run/Start
K74 – Customer Run/ Accessory
K75 – Not used
K76 – Not used
K77 – Stop Lamps
K79 – TT Battery Charge
K80 – BOO Isolation Hydromax
K81 – Wash Relay
K82 – Not used



Technician Interface Additions

Cab electronics

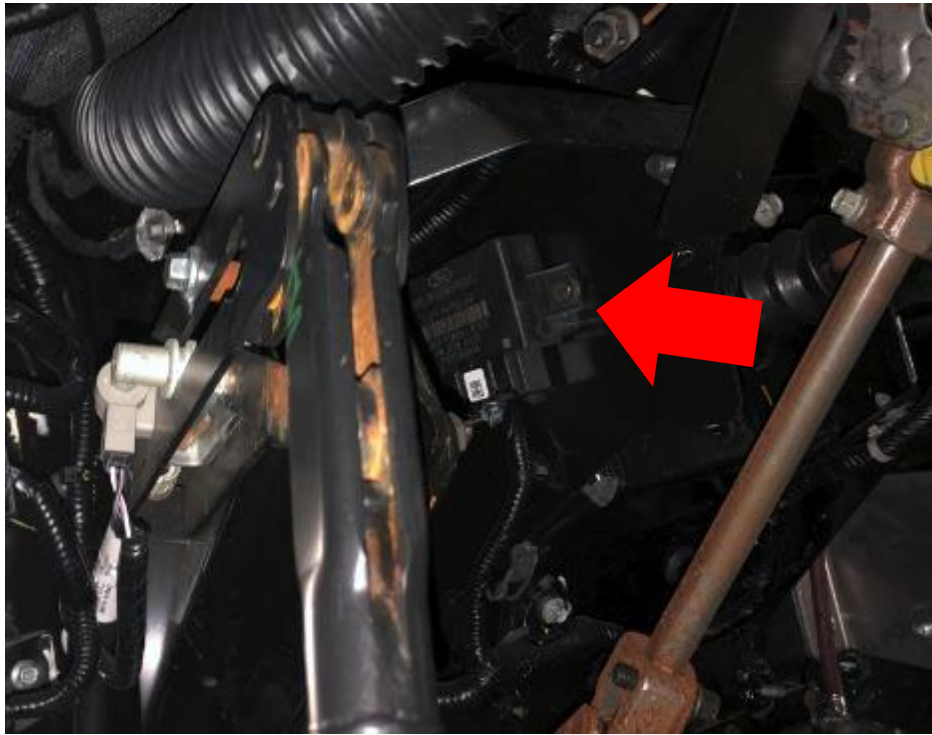
- Body Control Module (BCM)
 - Includes flasher module
 - The BCM controls:
 - Brake shift interlock
 - Dimmable backlighting
 - Exterior lighting
 - Horn
 - Ignition state messaging
 - The BCM utilizes a Field Effect Transistor (FET) protective circuit strategy for many of its outputs
 - Also called multifunction electronic module in service manual
- Steering Column Control Module (SCCM)
 - Includes clockspring and multifunction switch
 - Turn signal switch can be replaced separately
- Gateway Module (GWM)
 - OBD2 connection point
 - Mounted by Body Builder
 - Also known as Smart Data Link Connector
- Yaw Sensor
 - Location shown on this slide is for non-DAT equipped cars
 - DAT equipped cars have the yaw sensor on the frame rail (slide 38)



Cab electronics

- Lane Departure Warning Sounder Module (LDWM) (DAT equipped cars only)
 - Mounted by Body Builder
- Speaker (DAT equipped cars only)
 - Mounted by Body Builder

Lane Departure Warning Sounder Module



Speaker



Cab electronics

- Sun load sensor
 - Input for autolamps



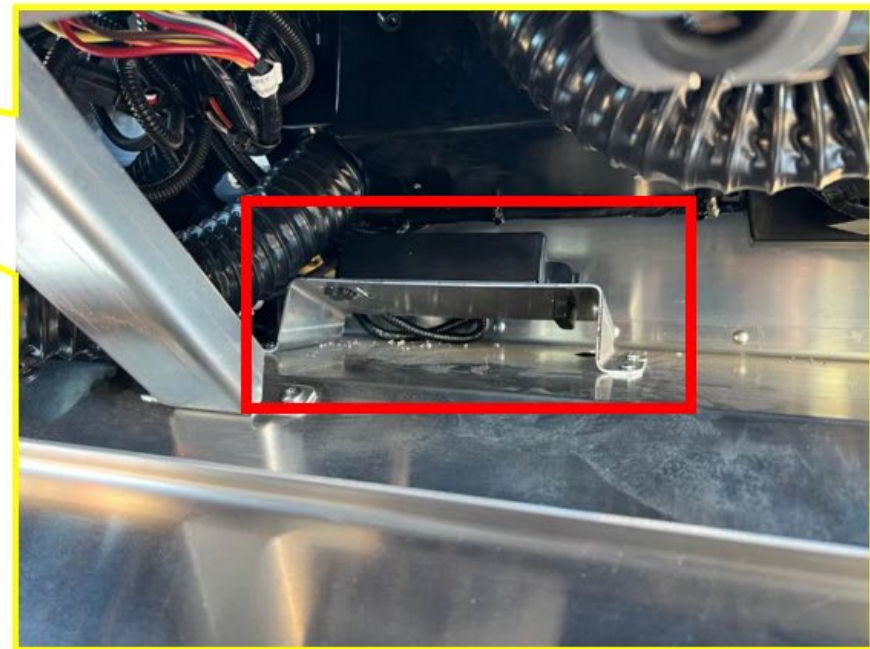
Cab electronics

- Camera [Image Processing Module (IPM)]
(DAT equipped cars only)



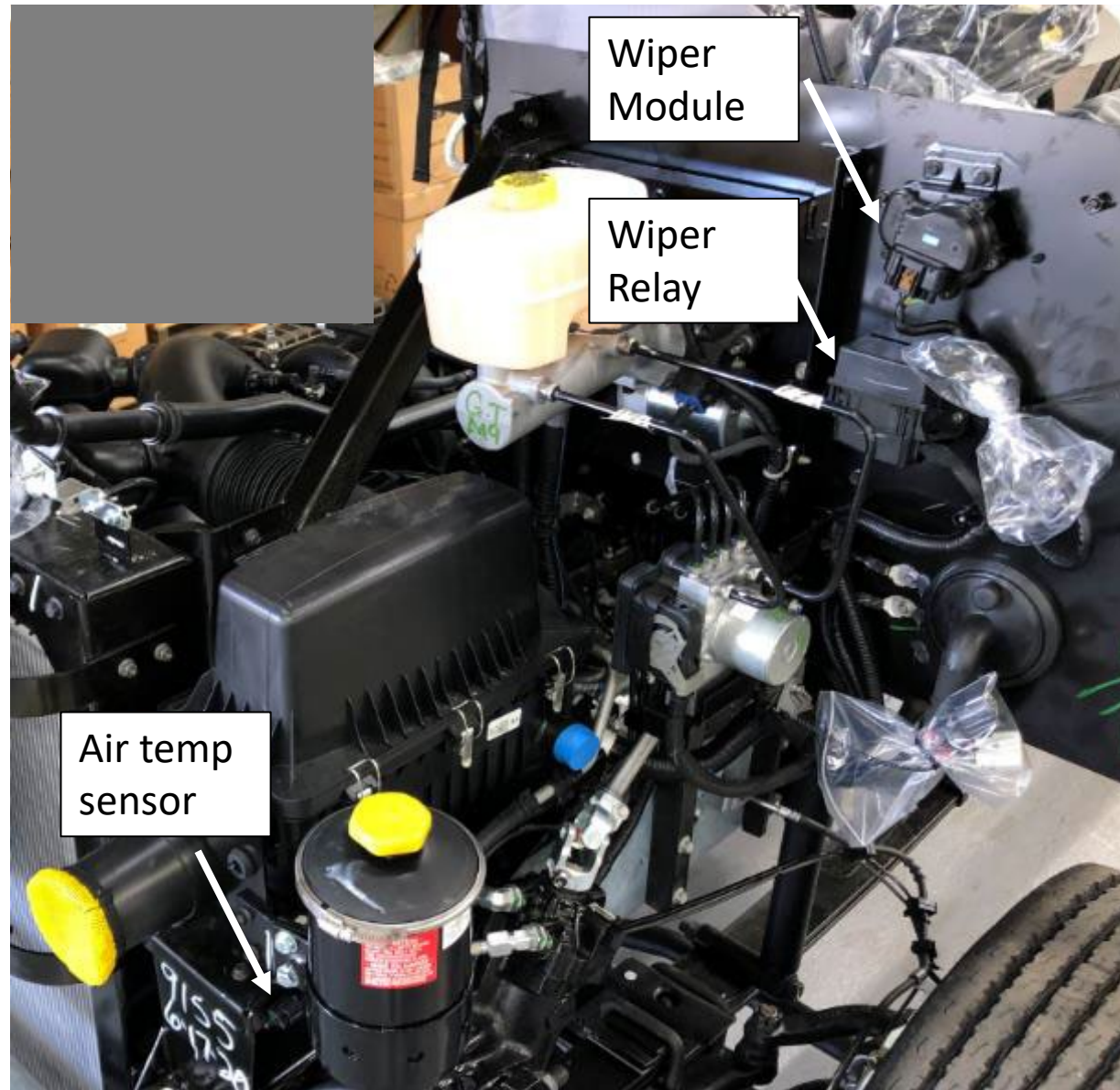
Cab electronics

- Auxiliary Translator Module (ATM) October 2022



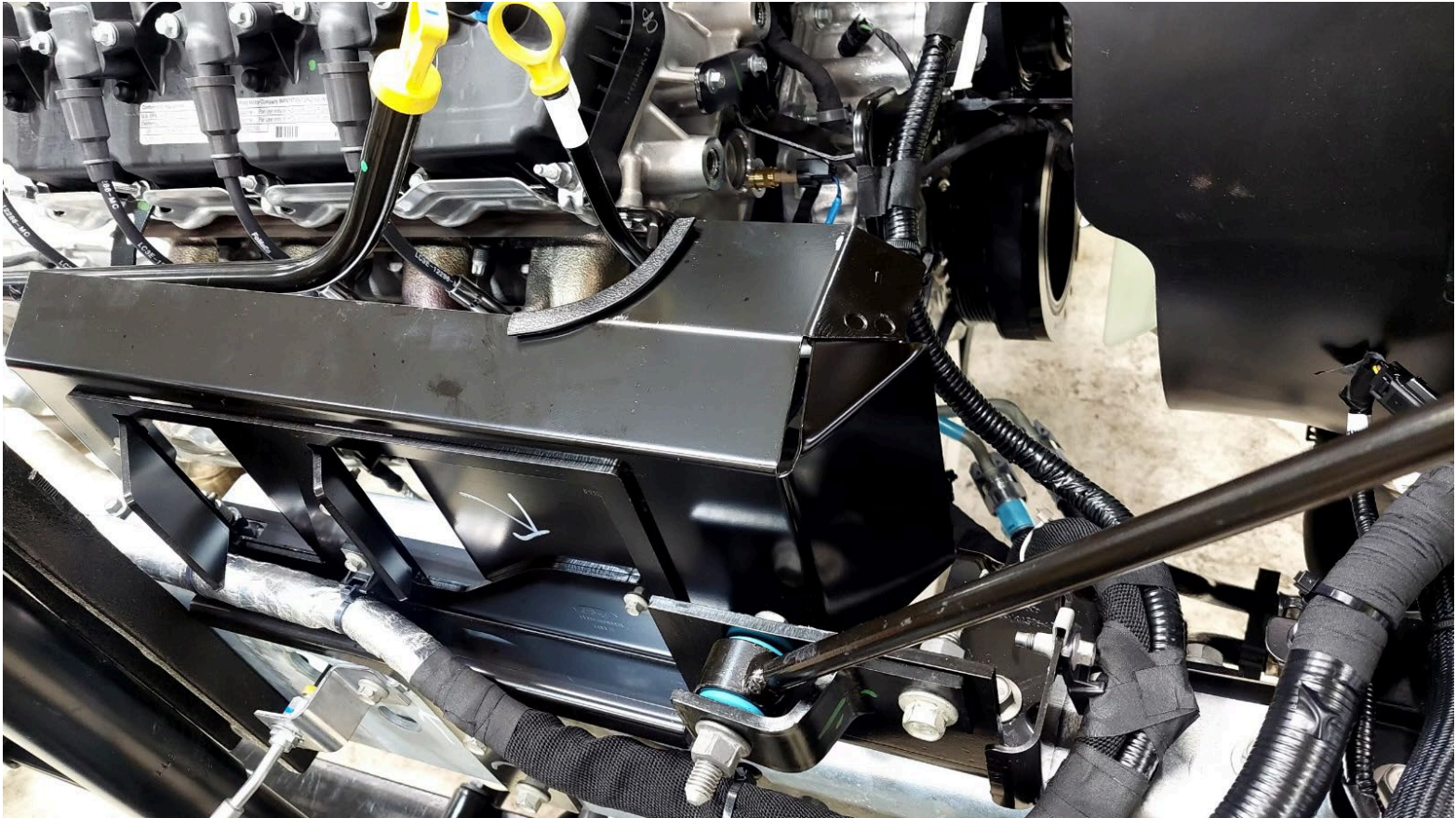
Engine Compartment electronics

- Wiper module & Wiper relay
 - Not used on Morgan Olson Bodies
- Air temp sensor
 - Redundant sensor discontinued in early Model Year 2022
 - Sensor inside PCM used for ambient air temp



Engine Compartment

- Air deflector
 - Passenger side only
 - 2023 & newer



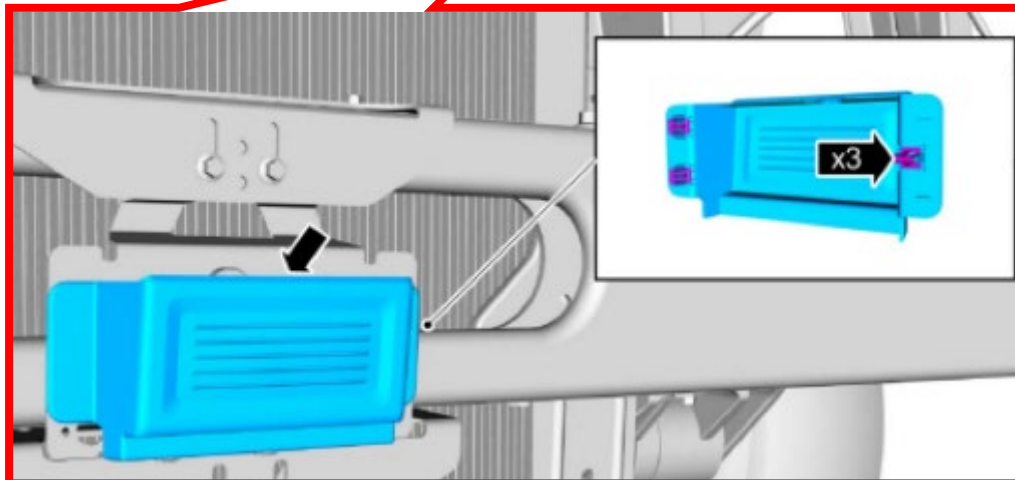
Yaw Sensor (ESC)

(DAT equipped cars only)



Radar [Cruise Control Module(CCM)]


(DAT equipped cars only)



Options in O&M Manual that are conditional to Utilimaster

Utilimaster Only: Autolamps and Wipers

Autolamps turn the headlamps on in low light situations or when the wipers operate.

-  Switch the lighting control to the autolamps position.
- Note: If you switch the autolamps on, you cannot switch the high beams on until the system turns the low beams on.

Windshield Wiper Activated Headlamps

- When you switch the autolamps on, the headlamps turn on within 10 seconds of switching the wipers on. They turn off approximately 60 seconds after you switch the windshield wipers off.
- The headlamps do not turn on with the wipers:
 - During a single wipe.
 - When using the windshield washers.
 - If the wipers are in intermittent mode.

Very subtle with with daytime running lights