

2013 **F-Series Super Duty Class A Motorhome** and **Commercial Chassis Owner's Manual**

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ABOUT THIS MANUAL

Thank you for choosing Ford. We recommend that you take some time to get to know your vehicle by reading this manual. The more that you know about it, the greater the safety and pleasure you will get from driving it.



WARNING: Always drive with due care and attention when using and operating the controls and features on your vehicle.

Note: This manual describes a range of product features and options, sometimes before they are generally available. Therefore, you may find options in this manual that are not found on your vehicle.

Note: Some of the illustrations in this manual may be used for different models, so they may appear different than your vehicle.. However, the essential information in the illustrations is always correct.

Note: Always use and operate your vehicle in line with all applicable laws and regulations.

Note: Pass on this manual when selling your vehicle. It is an integral part of the vehicle.







Protecting the Environment































You must play your part in protecting the environment. Correct vehicle usage and the authorized disposal of waste, cleaning and lubrication materials are significant steps toward this aim.









SYMBOL GLOSSARY

WARNING: You risk death or serious injury to yourself and others if you do not follow the instruction highlighted by the warning symbol.

These are some of the symbols you may see on your vehicle.

Symbol	Description	Symbol	Description	Symbol	Description
	Safety alert		See Owner's Manual		Anti-lock braking system
	Avoid smoking, flames, or sparks		Battery		Battery acid

Symbol	Description	Symbol	Description	Symbol	Description
	Brake fluid – non petroleum base		Brake system		Cabin air filter
	Check fuel cap		Child Safety Door Lock and Unlock		Child seat lower anchor
	Child seat tether anchor		Cruise control		Do not open when hot
	Engine air filter		Engine coolant		Engine coolant temperature
	Engine oil		Explosive gas		Fan warning
	Fasten safety belt		Front airbag		Front fog lamps
	Fuel pump reset		Fuse compartment		Hazard warning flasher
	Heated rear window		Interior luggage compartment release		Jack
	Lighting control		Low tire pressure warning		Maintain correct fluid level
	Panic alarm		Parking aid system		Parking brake system

Symbol	Description	Symbol	Description	Symbol	Description
	Power steering fluid		Power windows front and rear		Power window lockout
	Service engine soon		Side airbag		Stability control
	Windshield defrost and demist		Windshield washer and wiper		

DATA RECORDING

Service Data Recording

Service data recorders in your vehicle are capable of collecting and storing diagnostic information about your vehicle. This potentially includes information about the performance or status of various systems and modules in the vehicle, such as engine, throttle, steering or brake systems. In order to properly diagnose and service your vehicle, Ford Motor Company, Ford of Canada, and service and repair facilities may access or share among them vehicle diagnostic information received through a direct connection to your vehicle when diagnosing or servicing your vehicle. For U.S. only (if equipped), if you choose to use the SYNC® Vehicle Health Report, you consent that certain diagnostic information may also be accessed electronically by Ford Motor Company and Ford authorized service facilities, and that the diagnostic information may be used for any purpose. See your SYNC® supplement for more information.

Event Data Recording

This vehicle is equipped with an event data recorder (EDR). The main purpose of an EDR is to record, in certain crash or near crash-like situations, such as an airbag deployment or hitting a road obstacle; this data will assist in understanding how a vehicle's systems performed. The EDR is designed to record data related to vehicle dynamics and safety systems for a short period of time, typically 30 seconds or less. The EDR in this vehicle is designed to record such data as:

- How various systems in your vehicle were operating;

- Whether or not the driver and passenger safety belts were buckled/fastened;
- How far (if at all) the driver was depressing the accelerator and/or the brake pedal; and
- How fast the vehicle was travelling; and
- Where the driver was positioning the steering wheel.

This data can help provide a better understanding of the circumstances in which crashes and injuries occur.

Note: EDR data is recorded by your vehicle only if a non-trivial crash situation occurs; no data is recorded by the EDR under normal driving conditions and no personal data or information (e.g., name, gender, age, and crash location) is recorded (see limitations regarding 911 Assist and Traffic, directions and Information privacy below). However, parties, such as law enforcement, could combine the EDR data with the type of personally identifying data routinely acquired during a crash investigation.

To read data recorded by an EDR, special equipment is required, and access to the vehicle or the EDR is needed. In addition to the vehicle manufacturer, other parties, such as law enforcement, that have such special equipment, can read the information if they have access to the vehicle or the EDR. Ford Motor Company and Ford of Canada do not access event data recorder information without obtaining consent, unless pursuant to court order or where required by law enforcement, other government authorities or other third parties acting with lawful authority. Other parties may seek to access the information independently of Ford Motor Company and Ford of Canada.

Note: Including to the extent that any law pertaining to Event Data Recorders applies to SYNC® or its features, please note the following: Once 911 Assist (if equipped) is enabled (set ON), 911 Assist may, through any paired and connected cell phone, disclose to emergency services that the vehicle has been in a crash involving the deployment of an airbag or, in certain vehicles, the activation of the fuel pump shut-off. Certain versions or updates to 911 Assist may also be capable of being used to electronically or verbally provide to 911 operators the vehicle location (such as latitude and longitude), and/or other details about the vehicle or crash or personal information about the occupants to assist 911 operators to provide the most appropriate emergency services. If you do not want to disclose this information, do not activate the 911 Assist feature. See your SYNC® chapter for more information.

Additionally, when you connect to Traffic, Directions and Information (if equipped, U.S. only), the service uses GPS technology and advanced vehicle sensors to collect the vehicle's current location, travel direction, and speed ("vehicle travel information"), only to help provide you with the directions, traffic reports, or business searches that you request. If you do not want Ford or its vendors to receive this information, do not activate the service. Ford Motor Company and the vendors it uses to provide you with this information do not store your vehicle travel information. For more information, see Traffic, Directions and Information, Terms and Conditions. See your SYNC[®] supplement for more information.

CALIFORNIA PROPOSITION 65



WARNING: Some constituents of engine exhaust, certain vehicle components, certain fluids contained in vehicles and certain products of component wear contain or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

PERCHLORATE MATERIAL

Note: Certain components in your vehicle such as airbag modules, safety belt pretensioners, and remote control batteries may contain perchlorate material. Special handling may apply for service or vehicle end of life disposal. See www.dtsc.ca.gov/hazardouswaste/perchlorate for more information.

FORD CREDIT (U.S. ONLY)

Ford Credit offers a full range of financing and lease plans to help you acquire your vehicle. If you have financed or leased your vehicle through Ford Credit, thank you for your business.

For your convenience we offer a number of ways to contact us, as well as help manage your account.

Phone: 1-800-727-7000

For more information regarding Ford Credit, as well as access Account Manager, please go to www.fordcredit.com.

REPLACEMENT PARTS RECOMMENDATION

Your vehicle has been built to the highest standards using quality parts. We recommend that you demand the use of genuine Ford and Motorcraft parts whenever your vehicle requires scheduled maintenance or repair. You can clearly identify genuine Ford and Motorcraft parts by looking for the Ford, FoMoCo or Motorcraft branding on the parts or their packaging.

Scheduled Maintenance and Mechanical Repairs

One of the best ways for you to make sure that your vehicle provides years of service is to have it maintained in line with our recommendations using parts that conform to the specifications detailed in this Owner's Manual. Genuine Ford and Motorcraft parts meet or exceed these specifications.

Collision Repairs

We hope that you never experience a collision but, accidents do happen. Genuine Ford replacement collision parts meet our stringent requirements for fit, finish, structural integrity, corrosion protection and dent resistance. During vehicle development we validate these parts deliver the intended level of protection as a whole system. A great way to know for sure you are getting this level of protection is to use genuine Ford replacement collision parts.

Warranty on Replacement Parts

Genuine Ford and Motorcraft replacement parts are the only replacement parts that benefit from a Ford Warranty. Damage caused to your vehicle as a result of the failure of non-Ford parts may not be covered by the Ford Warranty. For additional information, refer to the terms and conditions of the Ford Warranty.

SPECIAL NOTICES**New Vehicle Limited Warranty**

For a detailed description of what is covered and what is not covered by your vehicle's New Vehicle Limited Warranty, refer to the *Warranty Manual* that is provided to you along with your Owner's Manual.

Notice to owners of Class A Motorhome Chassis and Commercial Stripped Chassis Vehicles

The Ford Class A Motorhome Chassis and Commercial Stripped Chassis is not suitable for producing ambulances or school buses. In addition, Ford urges manufacturers to follow the recommendations of the *Ford Incomplete Vehicle Manual*, *Ford Truck Body Builder's Layout Book* and other pertinent supplements.

Notification of delayed warranty start date and accumulated mileage

Verify that your authorized dealer has submitted a Notification of Delayed Warranty Start Date and Accumulated Mileage (FCS 900) to Ford Motor Company.

MOBILE COMMUNICATIONS EQUIPMENT

Using mobile communications equipment is becoming increasingly important in the conduct of business and personal affairs. However, you must not compromise your own or others' safety when using such equipment. Mobile communications can enhance personal safety and security when appropriately used, particularly in emergency situations. Safety must be paramount when using mobile communications equipment to avoid negating these benefits.

Mobile communication equipment includes, but is not limited to, cellular phones, pagers, portable email devices, text messaging devices and portable two-way radios.



WARNING: Driving while distracted can result in loss of vehicle control, accident and injury. Ford strongly recommends that you use extreme caution when using any device or feature that may take your focus off the road. Your primary responsibility is the safe operation of your vehicle. We recommend against the use of any handheld device while driving, encourage the use of voice operated systems when possible and that you become aware of applicable state and local laws that may affect use of electronic devices while driving.

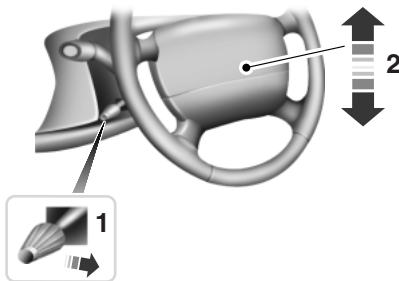
EXPORT UNIQUE (NON-UNITED STATES/CANADA) VEHICLE SPECIFIC INFORMATION

For your particular global region, your vehicle may be equipped with features and options that are different from the features and options that are described in this Owner's Manual. A market unique supplement may be supplied that complements this book. By referring to the market unique supplement, if provided, you can properly identify those features, recommendations and specifications that are unique to your vehicle. This Owner's Manual is written primarily for the U.S. and Canadian Markets. Features or equipment listed as standard may be different on units built for Export. **Refer to this Owner's Manual for all other required information and warnings.**

ADJUSTING THE STEERING WHEEL



WARNING: Do not adjust the steering wheel when your vehicle is moving.



1. Pull and hold the steering wheel release lever.
2. Adjust the steering wheel to the desired position then release the lever.

CRUISE CONTROL



Refer to the *Cruise Control* chapter.

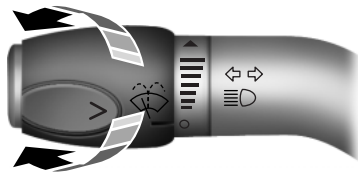
WINDSHIELD WIPERS

Note: Fully defrost the windshield before turning on the windshield wipers.

Note: Make sure the windshield wipers are turned off before entering a car wash.

Note: Clean the windshield and wiper blades if they begin to leave streaks or smears. If that does not resolve the issue, install new wiper blades.

Note: Do not operate the wipers on a dry windshield. This may scratch the glass, damage the wiper blades or cause the wiper motor to burn out. Always use the windshield washers before wiping a dry windshield.



Rotate the end of the control:

- away from you to increase the wiper speed
- toward you to decrease the wiper speed.

WINDSHIELD WASHERS

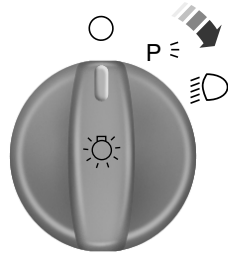
Note: Do not operate the washers when the washer reservoir is empty. This may cause the washer pump to overheat.



Press the end of the stalk to activate the washer.

- A brief press causes a single wipe without washer fluid.
- A quick press and hold causes the wipers to swipe three times with washer fluid.
- A long press and hold will activate the wipers and washer fluid for up to 10 seconds.

LIGHTING CONTROL

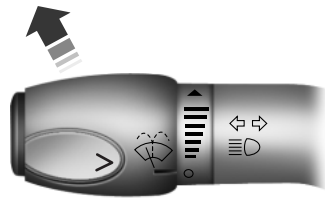


A. Off

B. Parking lamps, instrument panel lamps, license plate lamps and tail lamps

C. Headlamps

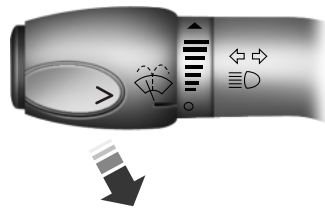
High Beams



Push the lever forward to switch the high beams on.

Push the lever forward again or pull the lever toward you to switch the high beams off.

Headlamp Flasher

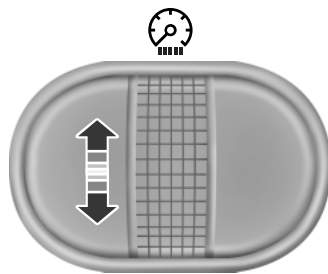


Pull the lever toward you slightly and release it to flash the headlamps.

INSTRUMENT LIGHTING DIMMER

Note: If you disconnect the battery or it becomes discharged, the dimmer switch will require re-calibration. Rotate the dimmer switch from the full dim position to the full dome/on position to reset.

Note: Move the control to the full upright position, past detent, to turn on the interior lamps.



Move the control up or down to adjust the intensity of the panel lighting.

DAYTIME RUNNING LAMPS (IF EQUIPPED)

WARNING: Always remember to switch your headlamps on in low light situations or during inclement weather. The system does not activate the tail lamps and may not provide adequate lighting during these conditions. Failure to activate your headlamps under these conditions may result in a collision.

The system switches the headlamps on in low light situations.

To switch the system on:

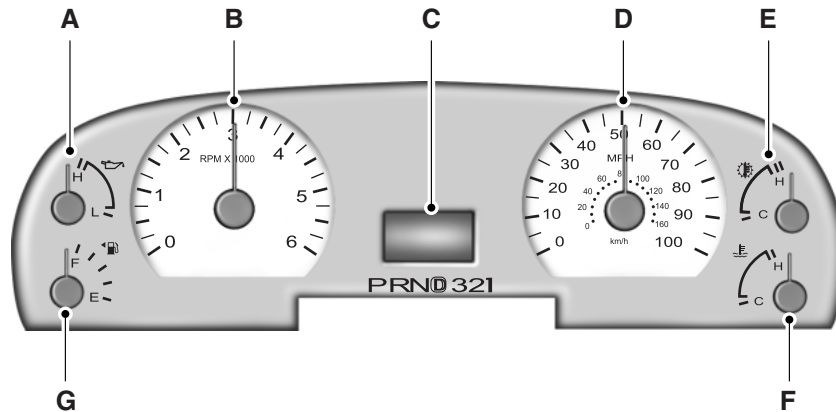
1. Switch the ignition on.
2. Switch the lighting control to the off, autolamp or parking lamp position.
3. Make sure the transmission selector lever is not in position P.

DIRECTION INDICATORS

Push the lever up or down to use the direction indicators.



GAUGES



A. Engine oil pressure gauge

B. Tachometer

C. Information display. See *Information displays* for more information.

D. Speedometer. Vehicle speed is limited to either 65 mph (105 km/h) or 75 mph (120 km/h).

E. Transmission fluid temperature gauge

F. Engine coolant temperature gauge

G. Fuel gauge

Engine Oil Pressure Gauge

Indicates engine oil pressure. The needle should stay in the normal operating range (between “L” and “H”). If the needle falls below the normal range, stop the vehicle, turn off the engine and check the engine oil level. Add oil if needed. If the oil level is correct, have your vehicle checked by your authorized dealer.

Transmission Fluid Temperature Gauge

Normal area: The transmission fluid is within the normal operating temperature (between H and C).

Yellow area: The transmission fluid is higher than normal operating temperature. This can be caused by special operation conditions (i.e. snowplowing, towing or off-road use). Operating the transmission for extended periods of time with the gauge in the yellow area may cause internal transmission damage. Altering the severity of the driving conditions is recommended to lower the transmission temperature into the normal range.

Red area: The transmission fluid is overheating. Stop the vehicle to allow the temperature to return to normal range.

If the gauge is operating in the yellow or red area, stop the vehicle and verify the airflow is not restricted such as snow or debris blocking airflow through the grill. If the gauge continues to show high temperatures, see your authorized dealer.

Engine Coolant Temperature Gauge

At normal operating temperature, the needle will remain in the center section. If the needle enters the red section, the engine is overheating. Stop the engine, switch the ignition off and determine the cause once the engine has cooled down. See *Engine Coolant Check*.

Note: Do not restart the engine until the cause of overheating has been resolved.



WARNING: Never remove the coolant reservoir cap while the engine is running or hot.

Fuel Gauge

Switch the ignition on. The fuel gauge will indicate approximately how much fuel is left in the fuel tank. The fuel gauge may vary slightly when the vehicle is moving or on a gradient. The arrow adjacent to the fuel pump symbol indicates on which side of your vehicle the fuel filler door is located.

WARNING LAMPS AND INDICATORS

The following warning lamps and indicators will alert you to a vehicle condition that may become serious. Some lamps will illuminate when you start your vehicle to make sure they work. If any lamps remain on after starting your vehicle, refer to the respective system warning lamp for further information.

Anti-lock Brake System

If it illuminates when you are driving, this indicates a malfunction. You will continue to have the normal braking system (without ABS) unless the brake warning lamp is also illuminated. Have the system checked by your authorized dealer.

Battery

If it illuminates while driving, it indicates a malfunction. Switch off all unnecessary electrical equipment and have the system checked by your authorized dealer.

Brake System

It will illuminate when the parking brake is engaged and the ignition is on.

If it illuminates when you are driving, check that the parking brake is not engaged. If the parking brake is not engaged, this indicates low brake fluid level or a brake system malfunction. Have the system checked immediately by your authorized dealer.



WARNING: Driving a vehicle with the brake system warning light on is dangerous. A significant decrease in braking performance may occur. It will take you longer to stop the vehicle. Have the vehicle checked by your authorized dealer as soon as possible. Driving extended distances with the parking brake engaged can cause brake failure and the risk of personal injury.

Brake Reserve System (if equipped)

Illuminates to indicate normal hydromax booster reserve system activation when the engine is off and the service brake pedal is applied.

This light may also illuminate momentarily if the engine is running and the driver turns the steering wheel fully in one direction while braking.

If the light remains on while the engine is running, this indicates inadequate hydraulic booster pressure or reserve pump system failure. Stop the vehicle as soon as possible and seek service immediately by your authorized dealer.

Cruise Control (if equipped)

It will illuminate when you switch this feature on.

Direction Indicator

Illuminates when the left or right turn signal or the hazard warning flasher is turned on. If the indicators stay on or flash faster, check for a burned out bulb.

Electronic Throttle Control

Illuminates when the engine has defaulted to a limp-home operation. See your authorized dealer as soon as possible.

High Beam

It will illuminate when the headlamp high beam is switched on. It will flash when you use the headlamp flasher.

Fasten Safety Belt

It will illuminate and a chime will sound to remind you to fasten your safety belt.

Service Engine Soon

If the service engine soon indicator light stays illuminated after the engine is started, it indicates that the On Board Diagnostics system (OBD) has detected a malfunction of the vehicle emissions control system. Refer to *On board diagnostics (OBD)* in the *Fuel and Refueling* chapter for more information about having your vehicle serviced.

If the light is blinking, engine misfire is occurring which could damage your catalytic converter. Drive in a moderate fashion (avoid heavy acceleration and deceleration) and have your vehicle serviced immediately.

Note: Under engine misfire conditions, excessive exhaust temperatures could damage the catalytic converter or other vehicle components.

The service engine soon indicator light illuminates when the ignition is first turned on prior to engine start to check the bulb and to indicate whether the vehicle is ready for Inspection/Maintenance (I/M) testing.

Normally, the service engine soon light will stay on until the engine is cranked, then turn itself off if no malfunctions are present. However, if after 15 seconds the service engine soon light blinks eight times, it means that the vehicle is not ready for I/M testing. See *Readiness for Inspection/Maintenance (I/M) testing* in the *Fuel and Refueling* chapter.

Transmission Tow/Haul (if equipped)

Illuminates when the tow/haul feature has been activated. If the light flashes steadily, have the system serviced immediately, damage to the transmission could occur.

AUDIBLE WARNINGS AND INDICATORS**Headlamps On Warning Chime**

Sounds when the headlamps or parking lamps are on, the ignition is off (the key is not in the ignition) and the driver's door is opened.

Fail-Safe Cooling Warning Chime

Sounds when the coolant gauge pointer has moved to hot. There are three stages of chimes:

- Stage 1 is a single chime when the engine temperature begins to overheat.
- Stage 2 is multiple chimes and engine power becomes limited in order to help cool the engine.
- Stage 3 is multiple chimes and the engine will shut down.

Key In Ignition Warning Chime

Sounds when the key is left in the ignition in the off or accessory position and the driver's door is opened.

Information Display Chime

Sounds when some warning messages appear in the display for the first time.

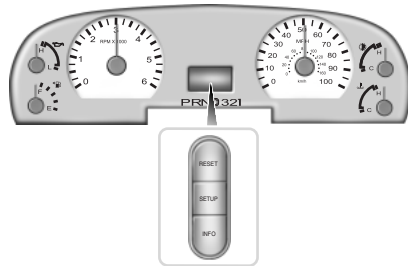
Parking Brake On Warning Chime

Sounds when you have left the parking brake on and you drive your vehicle. If the warning chime remains on after you have released the parking brake, have the system checked by your authorized dealer immediately.

GENERAL INFORMATION

WARNING: Driving while distracted can result in loss of vehicle control, accident and injury. Ford strongly recommends that drivers use extreme caution when using any device or feature that may take their focus off the road. Your primary responsibility is the safe operation of the vehicle. We recommend against the use of any handheld device while driving and that you comply with all applicable laws.

Various systems on your vehicle can be controlled using the information display controls located on the steering wheel. Corresponding information is displayed in the information display.

Information Display Controls

- Press the info button to scroll through trip, outside air temperature, engine hours and miles to empty.
- Press the setup button to scroll through various vehicle feature settings.
- Press the reset button to choose settings, reset information and confirm messages.

Info

Press the INFO button repeatedly to cycle through the following features:

TRIP

Registers the distance of individual journeys. Press and release the INFO button until the TRIP appears in the display. Press and hold the RESET button to reset.

Refer to *UNITS* later in this section to switch the display from Metric to English.

XXX° (outside air temperature)

This displays the outside temperature.

Refer to *UNITS* later in this section to switch the display from Metric to English.

MILES (km) TO E

This displays an estimate of approximately how far you can drive with the fuel remaining in your tank under normal driving conditions. Remember to turn the ignition off when refueling to allow this feature to correctly detect the added fuel.

The DTE function will display FUEL LEVEL LOW when you have approximately 50 miles (80 km), to empty. Press RESET to clear this warning message. It will return at approximately 25 miles (40 km), 10 miles (16 km) and 0 miles (0 km) miles to empty.

DTE is calculated using a running average fuel economy, which is based on your recent driving history of 500 miles (800 km).

ENG HRS

Registers the accumulated time the engine has been running.

System check and vehicle feature customization



Press the SETUP button repeatedly to cycle the message center through the following features:

Note: When returning to the SETUP menu and a non-English language has been selected, HOLD RESET FOR ENGLISH will be displayed to change back to English. Press and hold the RESET button to change back to English.

PRESS RESET FOR SYS CHECK

When this message appears, press the RESET button and the message center will begin to cycle through the following systems and provide a status of the item if needed.

Note: Some systems show a message only if a condition is present.

1. ENGINE TEMP
2. TRANS TEMP
3. OIL PRESSURE
4. BRAKE FLUID LEVEL
5. FUEL LEVEL (if equipped)

UNITS

Displays the current units English or Metric.

Press the RESET button to change from English to Metric.

ENGLISH RESET FOR NEW

Allows you to choose which language the message center will display in. Selectable languages are English, Spanish, or French.

Press the RESET button to cycle the message center through English, Spanish and French language choices. Press and hold the RESET button for two seconds to set the language choice.

Information Messages

Note: Depending on the vehicle options equipped with your vehicle, not all of the messages will display or be available. Certain messages may be abbreviated or shortened.

Press the RESET button to acknowledge and remove some messages from the information display. Other messages will be removed automatically after a short time. Certain messages need to be confirmed before you can access the menus.

Engine Cooling System Messages	Action / Description
REDUCED ENGINE POWER	Displayed when the engine is overheating. Stop the vehicle as soon as safely possible, turn off the engine. If the warning stays on followed by an indicator chime or continues to come on, contact your authorized dealer as soon as possible. Never remove the coolant reservoir cap while the engine is running or hot.
STOP ENGINE SAFELY	Displayed when the engine is overheating. Stop the vehicle as soon as safely possible, turn off the engine. If the warning stays on followed by an indicator chime or continues to come on, contact your authorized dealer as soon as possible.
CHECK ENGINE TEMPERATURE	Displayed when the engine coolant is overheating. Stop the vehicle as soon as safely possible, turn off the engine and let it cool. Check the coolant and coolant level. If the warning stays on or continues to come on, contact your authorized dealer as soon as possible.
Brake, Oil, Fuel and Transmission Messages	Action / Description
FUEL LEVEL LOW	Displayed as an early reminder of a low fuel condition.
BRAKE FLUID LEVEL LOW	Indicates the brake fluid level is low and the brake system should be inspected immediately.

Brake, Oil, Fuel and Transmission Messages	Action / Description
LOW OIL PRESSURE	Displayed when the engine oil pressure is low. If this warning message is displayed, check the level of the engine oil. If the oil level is OK and this warning persists, shut down the engine immediately and contact your authorized dealer as soon as possible.
CHECK TRANS TEMPERATURE	Displayed when the transmission fluid is overheating. This warning may appear when towing heavy loads or when driving in a low gear at a high speed for an extended period of time. Stop the vehicle as soon as safely possible, turn off the engine and let the transmission cool.
CHECK FUEL CAP	Displayed when the fuel cap is loose, not seated properly or off. Stop the vehicle when convenient, turn off the engine and check that the fuel cap is properly inserted. Rotate the cap until a "click" is heard. The warning message will be removed after the proper drive cycle is completed. See "On Board Diagnostics OBDII section for drive cycle explanation. If the warning message remains on or continues to come back on, see your authorized dealer as soon as possible.

GENERAL INFORMATION



WARNING: Extended idling at high engine speeds can produce very high temperatures in the engine and exhaust system, creating the risk of fire or other damage.



WARNING: Do not park, idle, or drive your vehicle on dry grass or other dry ground cover. The emission system heats up the engine compartment and exhaust system, which can start a fire.



WARNING: Do not start your vehicle in a closed garage or in other enclosed areas. Exhaust fumes can be toxic. Always open the garage door before you start the engine.



WARNING: If you smell exhaust fumes inside your vehicle, have your vehicle checked by an authorized dealer immediately. Do not drive if you smell exhaust fumes.

If you disconnect the battery, your vehicle may exhibit some unusual driving characteristics for approximately 5 miles (8 kilometers) after you connect it. This is because the engine management system must realign itself with the engine. You may disregard any unusual driving characteristics during this period.

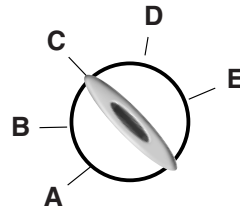
This system meets all Canadian interference-causing equipment standard requirements regulating the impulse electrical field strength of radio noise.

When starting your vehicle, avoid pressing the accelerator pedal before and during operation. Only use the accelerator pedal when you have difficulty starting the engine.

IGNITION SWITCH

Note: When you switch the ignition off and leave your vehicle, do not leave your key in the ignition. This could discharge your vehicle battery.

Note: To switch the engine off when your vehicle is moving, move the transmission selector lever to position **N**. Use the brakes to bring your vehicle to a safe stop. After your vehicle has stopped, switch the engine off and move the transmission selector lever to position **P**. Turn the key to position A or C.



A. **Accessory:** Allows the electrical accessories such as the radio to operate while the engine is not running.

B. **Lock:** Locks the gearshift lever and allows key removal.

C. **Off:** The ignition is off.

D. **On:** All electrical circuits operational. Warning lamps and indicators illuminated. This is the key position when driving.

E. **Start:** Cranks the engine. Release the key as soon as the engine begins cranking.

STARTING A GASOLINE ENGINE

When you start your engine, the idle speed increases to warm the engine up. If the engine idle speed does not slow down automatically, have your vehicle checked by an authorized dealer.

Before starting your vehicle, check the following:

1. Make sure all vehicle occupants have fastened their safety belts.
2. Make sure the headlamps and electrical accessories are off.
3. Make sure the parking brake is on.

4. Move the transmission selector lever to position **P**.
5. Turn the ignition key to position D.

Note: Vehicle speed is limited to either 65 mph (105 km/h) or 75 mph (120 km/h).

Note: Do not touch the accelerator pedal.

1. Move the transmission selector lever to position **P** or **N**.
2. Fully press the brake pedal.
3. Start the engine, then release the key as soon as the engine begins cranking. The engine may continue cranking for up to 10 seconds or until it starts.

Note: If you cannot start your engine, wait for a short period of time and try again.

If you cannot start your engine after three attempts, press the accelerator to the floor until the engine begins to accelerate.

Guarding against Exhaust Fumes



WARNING: If you smell exhaust fumes inside your vehicle, have your dealer inspect your vehicle immediately. Do not drive if you smell exhaust fumes. Carbon monoxide is present in exhaust fumes. Take precautions to avoid its dangerous effects.

Important Ventilating Information

If you stop your vehicle and leave the engine idling for long periods of time, we recommend that you do one of the following:

- Open the windows at least one inch (2.5 centimeters)
- Set your climate control to outside air.

SAFETY PRECAUTIONS

WARNING: Do not overfill the fuel tank. The pressure in an overfilled tank may cause leakage and lead to fuel spray and fire.



WARNING: The fuel system may be under pressure. If the fuel filler cap is venting vapor or if you hear a hissing sound, wait until it stops before completely removing the fuel filler cap. Otherwise, fuel may spray out and injure you or others.



WARNING: If you do not use the proper fuel filler cap, excessive vacuum in the fuel tank may damage the fuel system or cause the fuel cap to disengage in a collision, which may result in possible personal injury.



WARNING: Automotive fuels can cause serious injury or death if misused or mishandled.



WARNING: Gasoline may contain benzene, which is a cancer-causing agent.



WARNING: When refueling always shut the engine off and never allow sparks or open flames near the filler neck. Never smoke while refueling. Fuel vapor is extremely hazardous under certain conditions. Care should be taken to avoid inhaling excess fumes.



WARNING: The flow of fuel through a fuel pump nozzle can produce static electricity, which can cause a fire if fuel is pumped into an ungrounded fuel container.

Observe the following guidelines when handling automotive fuel:



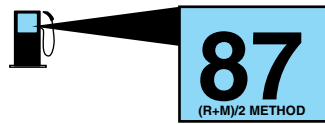
- Extinguish all smoking materials and any open flames before refueling your vehicle.
 - Always turn off the vehicle before refueling.
-
- Automotive fuels can be harmful or fatal if swallowed. Fuel such as gasoline is highly toxic and if swallowed can cause death or permanent injury. If fuel is swallowed, call a physician immediately, even if no symptoms are immediately apparent. The toxic effects of fuel may not be visible for hours.
 - Avoid inhaling fuel vapors. Inhaling too much fuel vapor of any kind can lead to eye and respiratory tract irritation. In severe cases, excessive or prolonged breathing of fuel vapor can cause serious illness and permanent injury.
 - Avoid getting fuel liquid in your eyes. If fuel is splashed in the eyes, remove contact lenses (if worn), flush with water for 15 minutes and seek medical attention. Failure to seek proper medical attention could lead to permanent injury.
 - Fuels can also be harmful if absorbed through the skin. If fuel is splashed on the skin and/or clothing, promptly remove contaminated clothing and wash skin thoroughly with soap and water. Repeated or prolonged skin contact with fuel liquid or vapor causes skin irritation.
 - Be particularly careful if you are taking “Antabuse” or other forms of disulfiram for the treatment of alcoholism. Breathing gasoline vapors, or skin contact could cause an adverse reaction. In sensitive individuals, serious personal injury or sickness may result. If fuel is splashed on the skin, promptly wash skin thoroughly with soap and water. Consult a physician immediately if you experience an adverse reaction.

FUEL QUALITY

Note: Use of any fuel other than those recommended may cause powertrain damage, a loss of vehicle performance, and repairs may not be covered under warranty.

Choosing the Right Fuel

Use only UNLEADED fuel or UNLEADED fuel blended with a maximum of 15% ethanol. Do not use fuel ethanol (E85), diesel fuel, fuel-methanol, leaded fuel or any other fuel because it could damage or impair the emission control system. The use of leaded fuel is prohibited by law.

Octane Recommendations

“Regular” unleaded gasoline with a pump (R+M)/2 octane rating of 87 is recommended. Some stations offer fuels posted as “Regular” with an octane rating below 87,



particularly in high altitude areas. Fuels with octane levels below 87 are not recommended.

Do not be concerned if your engine sometimes knocks lightly. However, if it knocks heavily under most driving conditions while you are using fuel with the recommended octane rating, see your authorized dealer to prevent any engine damage.

Running out of fuel

Avoid running out of fuel because this situation may have an adverse effect on powertrain components.

If you have run out of fuel:

- You may need to cycle the ignition from off to on several times after refueling to allow the fuel system to pump the fuel from the tank to the engine. On restarting, cranking time will take a few seconds longer than normal.
- Normally, adding 1 gallon (3.8L) of fuel is enough to restart the engine. If the vehicle is out of fuel and on a steep grade, more than 1 gallon (3.8L) may be required.
- The service engine soon  indicator may come on. For more information on the service engine soon  indicator, refer to *Warning lights and chimes* in the *Instrument Cluster* chapter.

REFUELING



WARNING: Fuel vapor burns violently and a fuel fire can cause severe injuries. To help avoid injuries to you and others:

- Read and follow all the instructions on the pump island;
- Turn off your engine when you are refueling;
- Do not smoke if you are near fuel or refueling your vehicle;
- Keep sparks, flames and smoking materials away from fuel;
- Stay outside your vehicle and do not leave the fuel pump unattended when refueling your vehicle — this is against the law in some places;
- Keep children away from the fuel pump; never let children pump fuel.
- Do not use personal electronic devices while refueling.

Use the following guidelines to avoid electrostatic charge build-up when filling an ungrounded fuel container:

- Place approved fuel container on the ground.
- DO NOT fill a fuel container while it is in the vehicle (including the cargo area).
- Keep the fuel pump nozzle in contact with the fuel container while filling.
- DO NOT use a device that would hold the fuel pump handle in the fill position.

Fuel Filler Cap



WARNING: The fuel system may be under pressure. If the fuel filler cap is venting vapor or if you hear a hissing sound, wait until it stops before completely removing the fuel filler cap. Otherwise, fuel may spray out and injure you or others.



WARNING: If you do not use the proper fuel filler cap, excessive pressure or vacuum in the fuel tank may damage the fuel system or cause the fuel cap to disengage in a collision, which may result in possible personal injury.

Note: If you must replace the fuel filler cap, replace it with a fuel filler cap that is designed for your vehicle. The customer warranty may be void for any damage to the fuel tank or fuel system if the correct genuine Ford, Motorcraft® or other certified fuel filler cap is not used.

Your fuel tank filler cap has an indexed design with a 1/4th turn on and off feature. When fueling your vehicle:

1. Turn the engine off.
2. Carefully turn the filler cap counterclockwise until it spins off.
3. Pull to remove the cap from the fuel filler pipe.
4. To install the cap, align the tabs on the cap with the notches on the filler pipe.
5. Turn the filler cap clockwise 1/4 of a turn clockwise until it clicks at least once.

If the check fuel cap light or a Check fuel cap message appears in the information displays screen and stays on after you start the engine, the fuel filler cap may not be properly installed.

If the fuel cap light remains on, at the next opportunity, safely pull off of the road, remove the fuel filler cap, align the cap properly and reinstall it. The check fuel cap light or Check fuel cap message may not reset immediately; it may take several driving cycles for the indicators to turn off. A driving cycle consists of an engine start-up (after four or more hours with the engine off) followed by normal city and highway driving.

FUEL CONSUMPTION

Filling the tank

The advertised capacity is the indicated capacity and the empty reserve combined. Indicated capacity is the difference in the amount of fuel in a full tank and a tank when the fuel gauge indicates empty. Empty reserve is the amount of fuel in the tank after the fuel gauge indicates empty.

Note: The amount of usable fuel in the empty reserve varies and should not be relied upon to increase driving range. When refueling your vehicle after the fuel gauge indicates empty, you might not be able to refuel the full amount of the advertised capacity of the fuel tank due to the empty reserve still present in the tank.

For consistent results when filling the fuel tank:

- Turn the ignition off before fueling; an inaccurate reading results if the engine is left running.
- Use the same fill rate (low–medium–high) each time the tank is filled.
- Allow no more than two automatic click–offs when filling.

Results are most accurate when the filling method is consistent.

Calculating fuel economy

Do not measure fuel economy during the first 1,000 miles (1,600 km) of driving (this is your engine's break-in period); a more accurate measurement is obtained after 2,000 miles–3,000 miles (3,200 km–4,800 km). Also, fuel expense, frequency of fill-ups or fuel gauge readings are not accurate ways to measure fuel economy.

1. Fill the fuel tank completely and record the initial odometer reading.
2. Each time you fill the tank, record the amount of fuel added.
3. After at least three to five tank fill-ups, fill the fuel tank and record the current odometer reading.
4. Subtract your initial odometer reading from the current odometer reading.
5. Calculate fuel economy as follows:

Standard: Divide miles traveled by gallons used.

Metric: Multiply liters used by 100, then divide by kilometers traveled.

Keep a record for at least one month and record the type of driving (city or highway). This provides an accurate estimate of the vehicle's fuel economy under current driving conditions. Additionally, keeping records during summer and winter show how temperature impacts fuel economy. In general, lower temperatures mean lower fuel economy.

Conditions

- Heavily loading a vehicle or towing a trailer may reduce fuel economy at any speed.
- Carrying unnecessary weight may reduce fuel economy (approximately 1 mpg [0.4 km/L] is lost for every 400 lb [180 kg] of weight carried).
- Adding certain accessories to your vehicle (for example bug deflectors, rollbars/light bars, running boards, ski racks) may reduce fuel economy.
- Using fuel blended with alcohol may lower fuel economy.
- Fuel economy may decrease with lower temperatures during the first 8–10 miles (12–16 km) of driving.
- Driving on flat terrain offers improved fuel economy as compared to driving on hilly terrain.
- Transmissions give their best fuel economy when operated in the top cruise gear and with steady pressure on the gas pedal.
- Close windows for high speed driving.

EMISSION CONTROL SYSTEM

WARNING: Do not park, idle, or drive your vehicle in dry grass or other dry ground cover. The emission system heats up the engine compartment and exhaust system, which can start a fire.



WARNING: Exhaust leaks may result in entry of harmful and potentially lethal fumes into the passenger compartment. If you smell exhaust fumes inside your vehicle, have your dealer inspect your vehicle immediately. Do not drive if you smell exhaust fumes.

Your vehicle is equipped with various emission control components and a catalytic converter which will enable your vehicle to comply with applicable exhaust emission standards. To make sure that the catalytic converter and other emission control components continue to work properly:

- Use only the specified fuel listed.
- Avoid running out of fuel.
- Do not turn off the ignition while your vehicle is moving, especially at high speeds.
- Have the items listed in *scheduled maintenance information* performed according to the specified schedule.

The scheduled maintenance items listed in *scheduled maintenance information* are essential to the life and performance of your vehicle and to its emissions system.

If other than Ford, Motorcraft® or Ford-authorized parts are used for maintenance replacements or for service of components affecting emission control, such non-Ford parts should be equivalent to genuine Ford Motor Company parts in performance and durability.

Illumination of the service engine soon indicator, charging system warning light or the temperature warning light, fluid leaks, strange odors, smoke or loss of engine power could indicate that the emission control system is not working properly.

An improperly operating or damaged exhaust system may allow exhaust to enter the vehicle. Have a damaged or improperly operating exhaust system inspected and repaired immediately.

Do not make any unauthorized changes to your vehicle or engine. By law, vehicle owners and anyone who manufactures, repairs, services, sells, leases, trades vehicles, or supervises a fleet of vehicles are not permitted to intentionally remove an emission control device or prevent it from working. Information about your vehicle's emission system is on the Vehicle Emission Control Information Decal located on or near the engine. This decal also lists engine displacement.

Please consult your *Warranty Guide* for complete emission warranty information.

On-board diagnostics (OBD-II)

Your vehicle is equipped with a computer that monitors the engine's emission control system. This system is commonly known as the on-board diagnostics system (OBD-II). The OBD-II system protects the environment by ensuring that your vehicle continues to meet government emission standards. The OBD-II system also assists your authorized dealer in properly servicing your vehicle.



When the service engine soon indicator illuminates, the OBD-II system has detected a malfunction. Temporary malfunctions may cause the service engine soon indicator to illuminate.

Examples are:

1. The vehicle has run out of fuel—the engine may misfire or run poorly.
2. Poor fuel quality or water in the fuel—the engine may misfire or run poorly.
3. The fuel cap may not have been securely tightened.
4. Driving through deep water—the electrical system may be wet.

These temporary malfunctions can be corrected by filling the fuel tank with good quality fuel, properly tightening the fuel cap or letting the electrical system dry out. After three driving cycles without these or any other temporary malfunctions present, the service engine soon indicator should stay off the next time the engine is started. A driving cycle consists of a cold engine startup followed by mixed city/highway driving. No additional vehicle service is required.

If the service engine soon indicator remains on, have your vehicle serviced at the first available opportunity. Although some malfunctions detected by the OBD-II may not have symptoms that are apparent, continued driving with the service engine soon indicator on can result in increased emissions, lower fuel economy, reduced engine and transmission smoothness, and lead to more costly repairs.

Readiness for Inspection/Maintenance (I/M) Testing

Some state/provincial and local governments may have Inspection/Maintenance (I/M) programs to inspect the emission control equipment on your vehicle. Failure to pass this inspection could prevent you from getting a vehicle registration.



If the service engine soon indicator is on or the bulb does not work, the vehicle may need to be serviced. Refer to *On-board diagnostics (OBD-II)* in this chapter.

Your vehicle may not pass the I/M test if the service engine soon indicator is on or not working properly (bulb is burned out), or if the OBD-II system has determined that some of the emission control systems have not been properly checked. In this case, the vehicle is considered not ready for I/M testing.

If the vehicle's engine or transmission has just been serviced, or the battery has recently run down or been replaced, the OBD-II system may indicate that the vehicle is not ready for I/M testing. To determine if the vehicle is ready for I/M testing, turn the ignition key to the on position for 15 seconds without cranking the engine. If the service engine soon indicator blinks eight times, it means that the vehicle is not ready for I/M testing; if the service engine soon indicator stays on solid, it means that the vehicle is ready for I/M testing.

The OBD-II system is designed to check the emission control system during normal driving. A complete check may take several days. If the vehicle is not ready for I/M testing, the following driving cycle consisting of mixed city and highway driving may be performed:

15 minutes of steady driving on an expressway/highway followed by 20 minutes of stop-and-go driving with at least four 30-second idle periods.

Allow the vehicle to sit for at least eight hours without starting the engine. Then, start the engine and complete the above driving cycle. The engine must warm up to its normal operating temperature. Once started, do not turn off the engine until the above driving cycle is complete. If the vehicle is still not ready for I/M testing, the above driving cycle will have to be repeated.

AUTOMATIC TRANSMISSION OPERATION**Understanding the shift positions of the 5-speed automatic transmission****P R N D 3 2 1**

This vehicle is equipped with an adaptive transmission shift strategy. Adaptive transmission shift strategy offers the optimal transmission operation and shift quality. When the vehicle's battery has been disconnected for any type of service or repair, the transmission will need to relearn the normal shift strategy parameters, much like having to reset your radio stations when your vehicle battery has been disconnected. The adaptive transmission shift strategy allows the transmission to relearn these operating parameters. This learning process could take several transmission upshifts and downshifts; during this learning process, slightly firmer shifts may occur. After this learning process, normal shift feel and shift scheduling will resume.

P (Park)

This position locks the transmission and prevents the rear wheels from turning.

To put your vehicle in gear:

1. Start the engine
2. Press the brake pedal
3. Move the gearshift lever into the desired gear

To put your vehicle in P (Park):

1. Come to a complete stop
2. Move the gearshift lever and securely latch it in P (Park)



WARNING: Always set the parking brake fully and make sure the gearshift is latched in P (Park). Turn the ignition to the lock position and remove the key whenever you leave your vehicle.

R (Reverse)

With the gearshift lever in R (Reverse), the vehicle will move backward. Always come to a complete stop before shifting into and out of R (Reverse).

N (Neutral)

With the gearshift lever in N (Neutral), the vehicle can be started and is free to roll. Hold the brake pedal down while in this position.

D (Overdrive) with tow/haul off

D (Overdrive) with tow/haul off is the normal driving position for the best fuel economy. The overdrive function allows automatic upshifts and downshifts through gears one through five.

D (Overdrive) with tow/haul on

The tow/haul feature improves transmission operation when towing a trailer or a heavy load. All transmission gear ranges are available when using tow/haul.

To activate tow/haul, press the button on the end of the gearshift lever.

**TOW
HAUL**

The TOW HAUL indicator light will illuminate in the instrument cluster.

Tow/haul delays upshifts to reduce frequency of transmission shifting. Tow/haul also provides engine braking in all forward gears when the transmission is in the D (Overdrive) position; this engine braking will slow the vehicle and assist the driver in controlling the vehicle when descending a grade. Depending on driving conditions and load conditions, the transmission may downshift, slow the vehicle and control the vehicle speed when descending a hill, without the accelerator pedal being pressed. The amount of downshift braking provided will vary based upon the amount the brake pedal is pressed.

Grade braking downshifts occur automatically when all three of the following occur:

- Positive vehicle acceleration (natural acceleration from driving on a decline) is sensed.
- Nearly all pressure is released from the accelerator pedal.
- A minimum amount of time has expired since the last grade braking downshift.

Grade braking downshift mode is immediately exited if the Tow/Haul mode is deactivated or if the accelerator pedal is depressed beyond a minimum threshold.

To deactivate the tow/haul feature and return to normal driving mode, press the button on the end of the gearshift lever. The TOW HAUL light will no longer be illuminated.

When you shut-off and restart the engine, the transmission will automatically return to normal D (Overdrive) mode (tow/haul off).



WARNING: Do not use the tow/haul feature when driving in icy or slippery conditions as the increased engine braking can cause the rear wheels to slide and the vehicle to swing around with the possible loss of vehicle control.

3 (Third)

Transmission starts and operates in third gear only.

Used for improved traction on slippery roads. Selecting 3 (Third) provides engine braking.

2 (Second)

Use 2 (Second) to start-up on slippery roads or to provide additional engine braking on downgrades.

1 (First)

- Provides maximum engine braking
- Allows upshifts by moving gearshift lever
- The transmission will not downshift into 1 (First) at high speeds; it will downshift to a lower gear and then shift into 1 (First) when the vehicle reaches slower speeds.

Forced downshifts

- Allowed in D (Overdrive) with the tow/haul feature on or off
- Press the accelerator to the floor.
- Allows transmission to select an appropriate gear

Brake-shift interlock

WARNING: To prevent vehicle movement when following this procedure, park on a level surface, ensure parking brake is set, and block the rear wheels.



WARNING: If your brake lamps are not working properly or if you have disconnected the vehicle battery cables, the vehicle brake lamps and hazard flashers may not properly warn traffic of a vehicle breakdown or approaching danger, which can increase the risk of serious injury or death. To minimize the risk of serious injury or death, be aware of your surroundings, use other hazard signaling devices if available, and move the vehicle to a safe location away from traffic as soon as possible.



WARNING: Do not drive your vehicle until you verify that the brake lamps are working.



WARNING: Always set the parking brake fully and make sure the gearshift is latched in P (Park). Turn the ignition to the lock position and remove the key whenever you leave your vehicle.



WARNING: If the parking brake is fully released, but the brake warning lamp remains illuminated, the brakes may not be working properly. See your authorized dealer.

The vehicle is equipped with a brake-shift interlock feature that prevents the gearshift lever from being moved from P (Park) unless the brake pedal is pressed.

If you cannot move the gearshift lever out of P (Park) position with the ignition in the 4 (on) position and the brake pedal pressed, a malfunction may have occurred. It is possible that a fuse has blown or the vehicle's brake lamps are not operating properly. Refer to *Fuses and relays* in the *Roadside Emergencies* chapter. If the fuses and brake lamps are working properly, and the vehicle still will not shift out of (P) Park, see your authorized dealer for service.

In an emergency, to disable the malfunctioning brake-shift interlock feature in order to shift the vehicle from P (Park) follow these steps:

1. Apply the parking brake. Turn key to the lock position, and then remove the key.
2. Disconnect the negative (black) battery cable from the battery.
3. Insert the key and turn to the off position. Shift to N (Neutral).
4. Reconnect the negative (black) battery cable to the battery.
5. Start the vehicle.

See your authorized dealer for service immediately.

If Your Vehicle Gets Stuck in Mud or Snow

Note: Do not rock the vehicle if the engine is not at normal operating temperature or damage to the transmission may occur.

Note: Do not rock the vehicle for more than a minute or damage to the transmission and tires may occur, or the engine may overheat.

If your vehicle gets stuck in mud or snow, it may be rocked out by shifting between forward and reverse gears, stopping between shifts in a steady pattern. Press lightly on the accelerator in each gear.

GENERAL INFORMATION

Note: Occasional brake noise is normal. If a metal-to-metal, continuous grinding or continuous squeal sound is present, the brake linings may be worn-out and should be inspected by an authorized dealer. If the vehicle has continuous vibration or shudder in the steering wheel while braking, the vehicle should be inspected by an authorized dealer.

Note: Brake dust may accumulate on the wheels, even under normal driving conditions. Some dust is inevitable as the brakes wear and does not contribute to brake noise. Refer to the *Vehicle Care* chapter for wheel cleaning instructions.



Refer to the *Instrument Cluster* chapter for information on the brake system warning light.

Wet brakes result in reduced braking efficiency. Gently press the brake pedal a few times when driving from a car wash or standing water to dry the brakes.

Brake Over Accelerator

In the event the accelerator pedal becomes stuck or entrapped, apply steady and firm pressure to the brake pedal to slow the vehicle and reduce engine power. If you experience this condition, apply the brakes and bring your vehicle to a safe stop. Turn the engine off, shift to P (Park) and apply the parking brake, and then inspect the accelerator pedal for any interferences. If none are found and the condition persists, have your vehicle towed to the nearest authorized dealer.

Hydraulic brake booster system (Hydroboost or Hydromax)

The Hydroboost and Hydromax systems receive fluid pressure from the power steering pump to provide power assist during braking.

The Hydromax booster receives backup pressure from the reserve system electric pump whenever the fluid in the power steering system is not flowing. When the engine is off, the pump will turn on if the brake pedal is applied, or if the ignition is turned to the on position.

The sound of the pump operating may be heard by the driver, but this is a normal characteristic of the system.

The reserve system provides reduced braking power, so the vehicle should be operated under these conditions with caution, and only to seek service repair and remove the vehicle from the roadway.

Note: For Hydromax-equipped vehicles operating under normal conditions, the noise of the fluid flowing through the booster may be heard whenever the brake is applied. This condition is normal. Vehicle service is not required.

If braking performance or pedal response becomes very poor, even when the pedal is strongly pressed, it may indicate the presence of air in the hydraulic system or leakage of fluid. Stop the vehicle safely as soon as possible and seek service immediately.

HINTS ON DRIVING WITH ANTI-LOCK BRAKES

When the system is operating, the brake pedal will pulse and may travel further. Maintain pressure on the brake pedal. You may also hear a noise from the system. This is normal.

The ABS will not eliminate the dangers inherent when:

- you drive too closely to the vehicle in front of you.
- your vehicle is hydroplaning.
- you take corners too fast.
- the road surface is poor.

PARKING BRAKE



WARNING: Always set the parking brake fully and make sure the transmission selector lever is placed in position P. Turn the ignition to the lock position and remove the key whenever you leave your vehicle.

Apply the parking brake whenever the vehicle is parked. Press pedal downward to set the parking brake.

The BRAKE warning lamp in the instrument cluster illuminates when the ignition is turned on until the parking brake is released.

The parking brake is not recommended to stop a moving vehicle. However, if the normal brakes fail, the parking brake can be used to stop your vehicle in an emergency. Since the parking brake applies only the transmission mounted parking brake assembly, the vehicle's stopping distance will increase greatly and the handling of your vehicle will be adversely affected.

To release the parking brake:

1. Press the foot brake pedal firmly.
2. Pull the parking brake release lever.

PRINCIPLES OF OPERATION

Cruise control lets you maintain a set speed without keeping your foot on the accelerator pedal.

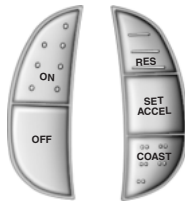
USING CRUISE CONTROL



WARNING: Do not use cruise control in heavy traffic or on roads that are winding, slippery or unpaved.

Note: Vehicle speed may vary momentarily when driving up or down a steep hill. Apply the brakes if the vehicle speed increases above the set speed while driving downhill.

Note: Cruise control will disengage if the vehicle speed decreases more than 10 mph (16 km/h) below your set speed while driving uphill.



The cruise controls are located on the steering wheel.

Switching On Cruise Control

Press and release ON.



The indicator will turn on in the instrument cluster.

Setting a Speed

1. Accelerate to the desired speed.
2. Press and release SET ACCEL.
3. Take your foot off the accelerator pedal.

Changing the Set Speed

- Press and hold SET ACCEL to increase or COAST to decrease the set speed. Release the button when you reach the desired speed.
- Press and release SET ACCEL to increase or COAST to decrease. The set speed will change in approximately 1 mph (2 km/h) increments.
- Press the accelerator pedal or brake pedal until you reach the desired speed. Press and release SET ACCEL.

Canceling a Set Speed

Tap the brake pedal. The set speed will not be erased.

Resuming a Set Speed

Press and release RES.

Switching Off Cruise Control

Note: The set speed is erased when you turn off cruise control.

Press OFF or turn off the ignition.

LOAD LIMIT**Vehicle Loading – With and Without a Trailer**

This section will guide you in the proper loading of your vehicle and/or trailer, to keep your loaded vehicle weight within its design rating capability, with or without a trailer. Properly loading your vehicle will provide maximum return of vehicle design performance. Before loading your vehicle, familiarize yourself with the following terms for determining your vehicle's weight ratings, with or without a trailer, from the vehicle's Safety Compliance Certification Label:

Base Curb Weight – is the weight of the vehicle including a full tank of fuel and all standard equipment. It does not include passengers, cargo, or optional equipment.

Vehicle Curb Weight – is the weight of your new vehicle when you picked it up from your authorized dealer plus any aftermarket equipment.

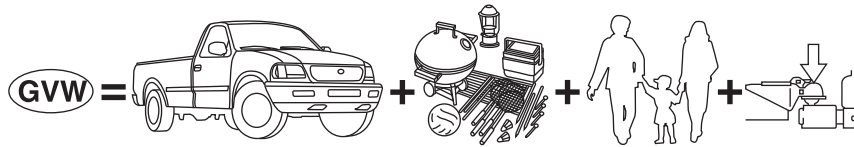


Cargo Weight – includes all weight added to the Base Curb Weight, including cargo and optional equipment. When towing, trailer tongue load weight is also part of cargo weight.

GAW (Gross Axle Weight) – is the total weight placed on each axle (front and rear) – including vehicle curb weight and all payload.

GAWR (Gross Axle Weight Rating) – is the maximum allowable weight that can be carried by a single axle (front or rear). **These numbers are shown on the Safety Compliance Certification Label. The label shall be affixed to either the door hinge pillar, door-latch post, or the door edge that meets the door-latch post, next to the driver's seating position. The total load on each axle must never exceed its GAWR.**

Note: For trailer towing information refer to *Trailer towing* found in this chapter or the *RV and Trailer Towing Guide* provided by your authorized dealer.



GVW (Gross Vehicle Weight) – is the Vehicle Curb Weight + cargo + passengers.

GVWR (Gross Vehicle Weight Rating) – is the maximum allowable weight of the fully loaded vehicle (including all options, equipment, passengers and cargo). **The GVWR is shown on the Safety Compliance Certification Label. The label shall be affixed to either the door hinge pillar, door-latch post, or the door edge that meets the door-latch post, next to the driver's seating position. The GVW must never exceed the GVWR.**

- Example only:

MFD. BY FORD MOTOR CO.

DATE: XX/XX GVWR: XXXXLB/ XXXXXKG
 FRONT GAWR: XXXXL REAR GAWR: XXXXLB
 XXXXKG WITH XXXXKG WITH
 XXXX/XXXXXXX TIRES XXXX/XXXXXXX TIRES
 XXXX.XX RIMS XXXX.XX RIMS
 AT XXX kPa/XX PSI COLD AT XXX kPa/XX PSI COLD

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR
 VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF
 MANUFACTURE SHOWN ABOVE.

VIN: XXXXXXXXXXXXXXXX
 TYPE: XXX XXXXX
 XXXXX

EXT PNT: XX RC: XX DSO:
 WB INT TR TP/PS R AXLE TR SPR XXXX
 XXX XX X XX X XX XXX

XXXXXXXXXXXX XXX XXXX-XXXXXX-XX

MFD. BY FORD MOTOR CO.

DATE: XX/XX GVWR/PNBV: XXXXLB/XXXXKG
 FRONT GAWR/PNDE AV REAR GAWR/PNDE AR
 XXXXKG/XXXXLB XXXXKG/XXXXLB
 WITH/AVEC TIRES/PNEUS
 XXXX/XXXXX
 XXXX/XXXXX
 XXXXXX RIMS/JANTES XXXXXX

AT/A kPa/PSI/LPC XXX/XX COLD/A FROID XXX/XX
 /JUMEELES

VIN: XXXXXXXXXXXXXXXX
 TYPE: XXX/XXXX COMPLIES: ICES/XXX-XXX XXXXX
 XXXXX

EXT PNT: U RC: XX DSO:
 WB INT TR TP/PS R AXLE TR SPR 9M71A
 XXX XX X XX X XXXX XXX

XXXXXXXXXXXXX UCT XXXX-XXXXXX-XX



WARNING: Exceeding the Safety Compliance Certification Label vehicle weight rating limits could result in substandard vehicle handling or performance, engine, transmission and/or structural damage, serious damage to the vehicle, loss of control and personal injury.

$$\text{GCW} = \text{GVW} + \text{Trailer}$$


GCW (Gross Combined Weight) – is the weight of the loaded vehicle (GVW) plus the weight of the fully loaded trailer.

GCWR (Gross Combined Weight Rating) – is the maximum allowable weight of the vehicle and the loaded trailer – including all cargo and passengers – that the vehicle can handle without risking damage.

(Important: The towing vehicle's braking system is rated for operation at GVWR, not at GCWR. Separate functional brakes should be used for safe control of towed vehicles and for trailers where the GCW of the towing vehicle plus the trailer exceed the GVWR of the towing vehicle. **The GCW must never exceed the GCWR.**

Maximum Loaded Trailer Weight – is the highest possible weight of a fully loaded trailer the vehicle can tow. It assumes a vehicle with only mandatory options, no cargo (internal or external), a tongue load of 10–15% (conventional trailer), and driver only (150 lb. [68 kg]). **Consult your authorized dealer (or the *RV and Trailer Towing Guide* provided by your authorized dealer) for more detailed information.**



WARNING: Do not exceed the GVWR or the GAWR specified on the Safety Compliance Certification Label.



WARNING: Do not use replacement tires with lower load carrying capacities than the original tires because they may lower the vehicle's GVWR and GAWR limitations. Replacement tires with a higher limit than the original tires do not increase the GVWR and GAWR limitations.



WARNING: Exceeding any vehicle weight rating limitation could result in serious damage to the vehicle and/or personal injury.

Steps for determining the correct load limit:

1. Locate the statement "The combined weight of occupants and cargo should never exceed XXX kg or XXX lbs." on your vehicle's placard.
2. Determine the combined weight of the driver and passengers that will be riding in your vehicle.
3. Subtract the combined weight of the driver and passengers from XXX kg or XXX lbs.
4. The resulting figure equals the available amount of cargo and luggage load capacity. For example, if the "XXX" amount equals 1,400 lbs. and there will be five 150 lb. passengers in your vehicle, the amount of available cargo and luggage load capacity is 650 lbs. ($1400 - 750$ (5×150) = 650 lb.). In metric units ($635 - 340$ (5×68) = 295 kg.)
5. Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage load capacity calculated in Step 4.
6. If your vehicle will be towing a trailer, load from your trailer will be transferred to your vehicle. Consult this manual to determine how this reduces the available cargo and luggage load capacity of your vehicle.

The following gives you a few examples on how to calculate the available amount of cargo and luggage load capacity:

- Another example for your vehicle with 1400 lb. (635 kg) of cargo and luggage capacity. You decide to go golfing. Is there enough load capacity to carry you, 4 of your friends and all the golf bags? You and four friends average 220 lb. (99 kg) each and the golf bags weigh approximately 30 lb. (13.5 kg) each. The calculation would be: $1400 - (5 \times 220) - (5 \times 30) = 1400 - 1100 - 150 = 150$ lb. Yes, you have enough load capacity in your vehicle to transport four friends and your golf bags. In metric units, the calculation would be: $635 \text{ kg} - (5 \times 99 \text{ kg}) - (5 \times 13.5 \text{ kg}) = 635 - 495 - 67.5 = 72.5$ kg.

- A final example for your vehicle with 1400 lb. (635 kg) of cargo and luggage capacity. You and one of your friends decide to pick up cement from the local home improvement store to finish that patio you have been planning for the past 2 years. Measuring the inside of the vehicle with the rear seat folded down, you have room for 12-100 lb. (45 kg) bags of cement. Do you have enough load capacity to transport the cement to your home? If you and your friend each weigh 220 lb. (99 kg), the calculation would be: $1400 - (2 \times 220) - (12 \times 100) = 1400 - 440 - 1200 = -240$ lb. No, you do not have enough cargo capacity to carry that much weight. In metric units, the calculation would be: $635 \text{ kg} - (2 \times 99 \text{ kg}) - (12 \times 45 \text{ kg}) = 635 - 198 - 540 = -103$ kg. You will need to reduce the load weight by at least 240 lb. (104 kg). If you remove 3-100 lb. (45 kg) cement bags, then the load calculation would be:
 $1400 - (2 \times 220) - (9 \times 100) = 1400 - 440 - 900 = 60$ lb. Now you have the load capacity to transport the cement and your friend home. In metric units, the calculation would be: $635 \text{ kg} - (2 \times 99 \text{ kg}) - (9 \times 45 \text{ kg}) = 635 - 198 - 405 = 32$ kg.

The above calculations also assume that the loads are positioned in your vehicle in a manner that does not overload the Front or the Rear Gross Axle Weight Rating specified for your vehicle on the Safety Compliance Certification Label. The label shall be affixed to either the door hinge pillar, door-latch post, or the door edge that meets the door-latch post, next to the driver's seating position.

Special Loading Instructions for Owners of Pick-up Trucks and Utility-type Vehicles



WARNING: Loaded vehicles may handle differently than unloaded vehicles. Extra precautions, such as slower speeds and increased stopping distance, should be taken when driving a heavily loaded vehicle.

Your vehicle can haul more cargo and people than most passenger cars. Depending upon the type and placement of the load, hauling cargo and people may raise the center of gravity of the vehicle.

TOWING A TRAILER

WARNING: Do not exceed the GVWR or the GAWR specified on the certification label.



WARNING: Towing trailers beyond the maximum recommended gross trailer weight exceeds the limit of the vehicle and could result in engine damage, transmission damage, structural damage, loss of vehicle control, vehicle rollover and personal injury.

Your vehicle's load capacity is designated by weight, not by volume, so you cannot necessarily use all available space when loading a vehicle.

Towing a trailer places an additional load on your vehicle's engine, transmission, axle, brakes, tires and suspension. Inspect these components periodically during, and after, any towing operation.

Load Placement

To help minimize how trailer movement affects the vehicle when driving:

- Load the heaviest items closest to the trailer floor.
- Load the heaviest items so they are centered between the left and right side trailer tires.
- Load the heaviest items above the trailer axles or just slightly forward toward the trailer tongue. Do not allow the final trailer tongue weight to go above or below 10–15% of the loaded trailer weight.
- Select a tow bar with the correct rise or drop. When both the loaded vehicle and trailer are connected, the trailer frame should be level, or slightly angled down toward the vehicle, when viewed from the side.

When driving with a trailer or payload, a slight takeoff vibration or shudder may be present due to the increased payload weight. Additional information regarding proper trailer loading and setting your vehicle up for towing is noted under *Load limit* in the *Load Carrying* chapter and in the *RV & Trailer Towing Guide*, available at your authorized dealer.

RECOMMENDED TOWING WEIGHTS

Note: Do not exceed the trailer weight for your vehicle configuration listed in the chart below.

Note: Make sure to take into consideration trailer frontal area. Do not exceed:

- 60 feet² (5.6 meters²) trailer frontal area.

Note: For high altitude operation, reduce the gross combined weight by 2% per 1000 feet (300 meters) starting at the 1000 foot (300 meter) elevation point.

Note: Certain states require electric trailer brakes for trailers over a specified weight. Be sure to check state regulations for this specified weight. The maximum trailer weights listed may be limited to this specified weight, as the vehicle's electrical system may not include the wiring connector needed to activate electric trailer brakes.

Your vehicle may tow a Class I, II or III trailer provided the maximum trailer weight is less than or equal to the maximum trailer weight listed for your vehicle configuration on the following chart.

Rear axle ratio	Maximum GVWR - lb (kg)	Maximum GCWR - lb (kg)	Maximum Trailer Weight - lb (kg)
4.30	16000 (7257)	23000 (10432)	7000 (3175)
4.30	18000 (8165)	23000 (10432)	5000 (2268)
4.88	18000 (8165)	25000 (11340)	7000 (3175)
4.88	19500 (8845)	26000 (11793)	6500 (2894)
5.38	20500 (9299)	26000 (11793)	5500 (2500)
5.38	22000 (9979)	26000 (11793)	4000 (1814)
6.17	24000 (10886)	30000 (13608)	6000 (2721)
6.17	26000 (11793)	30000 (13608)	4000 (1814)

ESSENTIAL TOWING CHECKS

Follow these guidelines to ensure safe towing:

- Do not tow a trailer until your vehicle has been driven at least 1000 miles (1600 kilometers).
- Consult your local motor vehicle laws for towing a trailer.
- Refer to the instructions included with towing accessories for the proper installation and adjustment specifications.
- Service your vehicle more frequently if you tow a trailer. Refer to your scheduled maintenance information.
- If you use a rental trailer, follow the instructions the rental agency gives you.

For load specification terms found on the tire label and Safety Compliance label and for instructions on calculating your vehicle's load, refer to *Load limit* in the *Load Carrying* chapter.

Remember to account for the trailer tongue weight as part of the vehicle load when calculating the total vehicle weight.

Hitches

Do not use a hitch that either clamps onto the bumper or attaches to the axle. Distribute the trailer load so 10–15% of the total trailer weight is on the tongue.

Weight-Distributing Hitch

When hooking-up a trailer using a weight-distributing hitch, always use the following procedure:

1. Park the loaded vehicle (without the trailer) on a level surface.
2. Measure the height to the top of the vehicle front wheel opening on the fender, this is H1.
3. Securely attach the loaded trailer to the vehicle without the weight-distributing bars connected.
4. Measure the height to the top of the vehicle front wheel opening on the fender a second time, this is H2.
5. Install and adjust the tension in the weight-distributing bars so that the height of the vehicle's front wheel opening on the fender is approximately halfway between H1 and H2.
6. Check that the trailer is level or slightly nose down. If not, adjust the ball height accordingly and repeat Steps 1 through 6.
7. Lock bar tension adjuster in place.
8. Check that the trailer tongue is securely attached and locked to the hitch.
9. Install safety chains, lighting, and trailer brake controls as required by law or the trailer manufacturer.



WARNING: Do not adjust a weight-distributing hitch to any position where the rear bumper of the vehicle is higher than it was before attaching the trailer. Doing so will defeat the function of the weight-distributing hitch, which may cause unpredictable handling, and could result in serious personal injury.

Safety Chains

Note: Never attach safety chains to the bumper.

Always connect the safety chains to the hook retainers of the vehicle hitch.

To connect the safety chains, cross them under the trailer tongue and allow enough slack for turning tight corners. Do not allow the chains to drag on the ground.

Trailer Brakes

Electric brakes and manual, automatic or surge-type brakes are safe if installed properly and adjusted to the manufacturer's specifications. The trailer brakes must meet local and Federal regulations.



WARNING: Do not connect a trailer's hydraulic brake system directly to your vehicle's brake system. Your vehicle may not have enough braking power and your chances of having a collision greatly increase.

The towing vehicle braking system is rated for operation at the GVWR, not the GCWR.

Separate functioning brake systems are required for safe control of towed vehicles and trailers weighing more than 1,500 lb (680 kg) when loaded.

Trailer Lamps

Trailer lamps are required on most towed vehicles. Make sure all running lights, brake lights, turn signals and hazard lights are working. Contact your authorized dealer or trailer rental agency for proper instructions and equipment for hooking up the lamps.

Before Towing a Trailer

Practice turning, stopping and backing-up to get the feel of the vehicle-trailer combination before starting on a trip. When turning, make wider turns so the trailer wheels will clear curbs and other obstacles.

When Towing a Trailer

- Do not drive faster than 70 mph (113 km/h) during the first 500 miles (800 kilometers).
- Do not make full-throttle starts.
- Check your hitch, electrical connections and trailer wheel lug nuts thoroughly after you have traveled 50 miles (80 kilometers).
- When stopped in congested or heavy traffic during hot weather, place gearshift in P (Park) to aid engine and transmission cooling and to help A/C performance.
- Turn off the speed control with heavy loads or in hilly terrain. The speed control may turn off automatically when you are towing on long, steep grades.

- Shift to a lower gear when driving down a long or steep hill. Do not apply the brakes continuously, as they may overheat and become less effective.
- If your transmission is equipped with a Grade Assist or Tow/Haul feature, use this feature when towing. This provides engine braking and helps eliminate excessive transmission shifting for optimum fuel economy and transmission cooling.
- Allow more distance for stopping with a trailer attached; anticipate stops and brake gradually.
- Avoid parking on a grade. However, if you must park on a grade:
 1. Turn the steering wheel to point the vehicle tires away from traffic flow
 2. Set the vehicle parking brake
 3. Place the automatic transmission in P (Park) or manual transmission in a high gear
 4. Place wheel chocks under in front and back of the trailer wheels. (Chocks not equipped with vehicle.)

Launching or Retrieving a Boat or Personal Water Craft (PWC)

Note: Disconnect the wiring to the trailer **before** backing the trailer into the water.

Note: Reconnect the wiring to the trailer after the trailer is removed from the water.

When backing down a ramp during boat launching or retrieval:

1. Do not allow the static water level to rise above the bottom edge of the rear bumper.
2. Do not allow waves to break higher than six inches (15 centimeters) above the bottom edge of the rear bumper.

Exceeding these limits may allow water to enter vehicle components:

1. Causing internal damage to the components.
2. Affecting driveability, emissions, and reliability.

Replace the rear axle lubricant any time the rear axle has been submerged in water. Water may have contaminated the rear axle lubricant, which is not normally checked or changed unless a leak is suspected or other axle repair is required.

WRECKER TOWING

If you need to have your vehicle towed, contact a professional towing service or, if you are a member of a roadside assistance program, your roadside assistance service provider. When calling for a tow truck, let the operator know what kind of vehicle you have.

It is recommended that your vehicle be towed with a wheel lift (with the rear wheels on the ground and front wheels off the ground) or flatbed equipment. If the vehicle is towed by other means, or incorrectly, vehicle damage may occur.

To avoid transmission damage when towing your vehicle from the front with the rear wheels on the ground, do not exceed a maximum distance of 50 miles (80 kilometers) and maximum speed of 35 mph (56 km/h). If the maximum distance or speed is to be exceeded, the driveshaft must be removed by a qualified technician or transmission damage will result.

TOWING THE VEHICLE ON FOUR WHEELS**Emergency Towing**

In the event your vehicle becomes disabled (without access to wheel dollies, car-hauling trailer, or flatbed transport vehicle), it can be flat-towed (all wheels on the ground, regardless of the powertrain/transmission configuration) under the following conditions:

- The vehicle is facing forward so that it is towed in a forward direction.
- The transmission is placed in N (Neutral). Refer to *Automatic transmission* in the *Transmission* chapter if you cannot move the transmission into N (Neutral).
- Maximum speed is 35 mph (56 km/h).
- Maximum distance is 50 miles (80 kilometers).

BREAKING-IN

You need to break in new tires for approximately 300 miles (480 kilometers). During this time, your vehicle may exhibit some unique driving characteristics. Avoid driving too fast during the first 1000 miles (1600 kilometers). Vary your speed frequently and change up through the gears early. Do not labor the engine. Do not tow during the first 1000 miles (1600 kilometers).

ECONOMICAL DRIVING

Fuel economy is affected by several things such as how you drive, the conditions you drive under and how you maintain your vehicle.

There are some things to keep in mind that may improve your fuel economy:

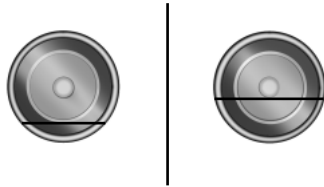
- Accelerate and slow down in a smooth, moderate fashion.
- Drive at steady speeds without stopping.
- Anticipate stops; slowing down may eliminate the need to stop.
- Combine errands and minimize stop-and-go driving.
- Close the windows for high-speed driving.
- Drive at reasonable speeds (traveling at 55 mph [88 km/h] uses 15% less fuel than traveling at 65 mph [105 km/h]).
- Keep the tires properly inflated and use only the recommended size.
- Use the recommended engine oil.
- Perform all regularly scheduled maintenance.

There are also some things you may not want to do because they may reduce your fuel economy:

- Sudden or hard accelerations.
- Rev the engine before turning it off.
- Idle for periods longer than one minute.
- Warm up your vehicle on cold mornings.
- Use the air conditioner or front defroster.
- Use the speed control in hilly terrain.
- Rest your foot on the brake pedal while driving.
- Drive a heavily loaded vehicle or tow a trailer.

- Carry unnecessary weight (approximately 1 mpg [0.4 km/L] is lost for every 400 lb [180 kg] of weight carried).
- Add particular accessories to your vehicle (e.g. bug deflectors, rollbars/light bars, running boards, ski racks).
- Drive with the wheels out of alignment.

DRIVING THROUGH WATER



If driving through deep or standing water is unavoidable, proceed very slowly. Never drive through water that is higher than the bottom of the wheel rims (for cars) or the bottom of the hubs (for trucks).

When driving through water, traction or brake capability may be limited. Also, water may enter your engine's air intake and severely damage your engine or your vehicle may stall.

Note: Driving through deep water where the transmission vent tube is submerged may allow water into the transmission and cause internal transmission damage.

Note: Once through the water, always dry the brakes by moving your vehicle slowly while applying light pressure on the brake pedal. Wet brakes do not stop the vehicle as quickly as dry brakes.

ROADSIDE ASSISTANCE**Vehicles sold in the U.S. : Getting roadside assistance**

To fully assist you should you have a vehicle concern, Ford Motor Company offers a complimentary roadside assistance program. This program is separate from the New Vehicle Limited Warranty. The service is available:

- 24-hours, seven days a week
- for the coverage period listed on the Roadside Assistance Card included in your Owner Guide portfolio.

Roadside assistance will cover:

- a flat tire change with a good spare, if provided with the vehicle (except vehicles that have been supplied with a tire inflation kit)
- battery jump start
- lock-out assistance (key replacement cost is the customer's responsibility)
- fuel delivery – Independent Service Contractors, if not prohibited by state, local or municipal law shall deliver 5 gallons (18.9L) of fuel to a disabled vehicle. Fuel delivery service is limited to two no-charge occurrences within a 12-month period.
- towing – Ford and Lincoln eligible vehicle towed to an authorized dealer within 35 miles (56.3 km) of the disablement location or to the nearest authorized dealer. If a member requests to be towed to an authorized dealer more than 35 miles (56.3 km) from the disablement location, the member shall be responsible for any mileage costs in excess of 35 miles (56.3 km).

Trailers shall be covered up to \$200 if the disabled eligible vehicle requires service at the nearest authorized dealer. If the trailer is disabled, but the towing vehicle is operational, the trailer does not qualify for any roadside services.

Vehicles sold in the U.S. : Using roadside assistance

Customers who require roadside assistance, may contact 1-800-444-3311.

Vehicles sold in Canada : Getting roadside assistance

Canadian customers who require roadside assistance, call 1-800-665-2006.

Vehicles sold in Canada : Using roadside assistance

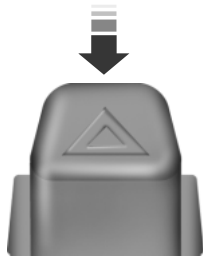
Complete the roadside assistance identification card and place it in your wallet for quick reference. In Canada, the card is found in the Warranty Guide in the glove box.

Canadian Roadside coverage and benefits may differ from the U.S. coverage. Please refer to your Warranty Guide or visit our website at www.ford.ca for information on Canadian services and benefits.

Canadian customers who need to obtain roadside information, call 1-800-665-2006 or visit our website at www.ford.ca.

Hazard Flasher Control

Note: With extended use, the flasher may run down your battery.



The hazard flasher is located on the steering column, just behind the steering wheel. The hazard flashers will operate when the ignition is in any position or if the key is not in the ignition.

- Press the flasher control and all front and rear direction signals will flash.

- Press the flasher control again to turn them off.

Use it when your vehicle is disabled and is creating a safety hazard for other motorists.

JUMP-STARTING THE VEHICLE

WARNING: The gases around the battery can explode if exposed to flames, sparks, or lit cigarettes. An explosion could result in injury or vehicle damage.



WARNING: Batteries contain sulfuric acid which can burn skin, eyes and clothing, if contacted.

Do not attempt to push-start your automatic transmission vehicle. Automatic transmissions do not have push-start capability. Attempting to push-start a vehicle with an automatic transmission may cause transmission damage.

When the battery is disconnected or a new battery is installed, the automatic transmission must relearn its shift strategy. As a result, the transmission may have firm soft shifts, firm shifts or both. This operation is considered normal and will not affect function or durability of the transmission. Over time, the adaptive learning process will fully update transmission operation.

Preparing Your Vehicle

Note: Use only a 12 volt supply to start your vehicle.

Note: Do not disconnect the battery of the disabled vehicle as this could damage the vehicle's electrical system

1. Park the booster vehicle close to the hood of the disabled vehicle making sure the two vehicles do not touch. Set the parking brake on both vehicles and stay clear of the engine cooling fan and other moving parts.
2. Check all battery terminals and remove any excessive corrosion before you attach the battery cables. Ensure that vent caps are tight and level.
3. Turn the heater fan on in both vehicles to protect from any electrical surges. Turn all other accessories off.

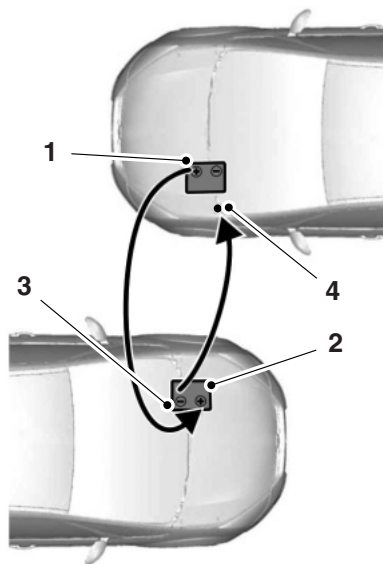
Connecting the Jumper Cables



WARNING: Do not connect the end of the second cable to the negative (-) terminal of the battery to be jumped. A spark may cause an explosion of the gases that surround the battery.

Note: Do not attach the negative (-) cable to fuel lines, engine rocker covers, the intake manifold or electrical components as grounding points.

Note: In the illustration, the vehicle on the bottom is used to designate the assisting (boosting) battery.



1. Connect the positive (+) jumper cable to the positive (+) terminal of the discharged battery.

2. Connect the other end of the positive (+) cable to the positive (+) terminal of the assisting battery.

3. Connect the negative (-) cable to the negative (-) terminal of the assisting battery.

4. Make the final connection of the negative (-) cable to an exposed metal part of the stalled vehicle's engine, away from the battery and the carburetor/fuel injection system.

Ensure that the cables are clear of fan blades, belts, moving parts of both engines, or any fuel delivery system parts.

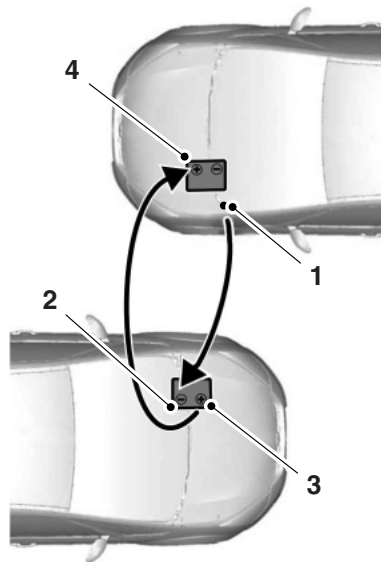
Jump Starting

1. Start the engine of the booster vehicle and run the engine at moderately increased speed.
2. Start the engine of the disabled vehicle.
3. Once the disabled vehicle has been started, run both engines for an additional three minutes before disconnecting the jumper cables.

Removing the Jumper Cables

Note: In the illustration, the vehicle on the bottom is used to designate the assisting (boosting) battery.

Remove the jumper cables in the reverse order that they were connected.



1. Remove the jumper cable from the ground metal surface.
2. Remove the jumper cable on the negative (-) terminal of the booster vehicle's battery.
3. Remove the jumper cable from the positive (+) terminal of the booster vehicle's battery.
4. Remove the jumper cable from the positive (+) terminal of the disabled vehicle's battery.

After the disabled vehicle has been started and the jumper cables removed, allow it to idle for several minutes so the engine computer can relearn its idle conditions.

GETTING THE SERVICES YOU NEED**At home**

You must take your Ford vehicle to an authorized dealer for warranty repairs. While any authorized dealer handling your vehicle line will provide warranty service, we recommend you return to your selling authorized dealer who wants to ensure your continued satisfaction. Please note that certain warranty repairs require special training, equipment or both, so not all authorized dealers are authorized to perform all warranty repairs. This means that, depending on the warranty repair needed, you may have to take your vehicle to another authorized dealer. In certain instances, Ford may authorize that your vehicle be repaired at a repair center other than an authorized dealer facility. A reasonable time must be allowed to perform a repair after taking your vehicle to the authorized dealer. Repairs will be made using Ford or Motorcraft parts, or remanufactured or other parts that are authorized by Ford.

If you have questions or concerns, or are unsatisfied with the service you are receiving, follow these steps:

1. Contact your Sales Representative or Service Advisor at your selling or servicing authorized dealer.
2. If your inquiry or concern remains unresolved, contact the Sales Manager Service Manager or Customer Relations Manager.
3. If you require assistance or clarification on Ford Motor Company policies or procedures, please contact the Ford Customer Relationship Center at 1-800-392-3673 (FORD).

Away from home

If you own a motorhome built on a Ford Chassis and are away from home when your vehicle needs service, or if you need more help than the authorized dealer could provide, after following the steps above, contact the Ford Motorhome Customer Assistance Center to find an authorized dealer or service location to help you. In the United States and Canada call 1-800-444-3311 Open 365/24/7.

Ford Motorhome Customer Assistance Center
P.O. Box 141266
Irving , TX 75014-1266

In order to help service your motorhome vehicle, please have the following information available when contacting the Motorhome Customer Assistance Center:

- telephone number where you can be reached
- vehicle location (city and state)
- year and make of your vehicle
- date of vehicle purchase
- current odometer reading
- vehicle identification number (VIN).

IN CALIFORNIA (U.S. ONLY)

California Civil Code Section 1793.2(d) requires that, if a manufacturer or its representative is unable to repair a motor vehicle to conform to the vehicle's applicable express warranty after a reasonable number of attempts, the manufacturer shall be required to either replace the vehicle with one substantially identical or repurchase the vehicle and reimburse the buyer in an amount equal to the actual price paid or payable by the consumer (less a reasonable allowance for consumer use). The consumer has the right to choose whether to receive a refund or replacement vehicle.

California Civil Code Section 1793.22(b) presumes that the manufacturer has had a reasonable number of attempts to conform the vehicle to its applicable express warranties if, within the first 18 months of ownership of a new vehicle or the first 18000 miles (29 000 km), whichever occurs first:

1. Two or more repair attempts are made on the same non-conformity likely to cause death or serious bodily injury OR
2. Four or more repair attempts are made on the same nonconformity (a defect or condition that substantially impairs the use, value or safety of the vehicle) OR
3. The vehicle is out of service for repair of nonconformities for a total of more than 30 calendar days (not necessarily all at one time)

In the case of 1 or 2 above, the consumer must also notify the manufacturer of the need for the repair of the nonconformity at the following address:

Ford Motor Company
16800 Executive Plaza Drive
Mail Drop 3NE-B
Dearborn, MI 48126

You are required to submit your warranty dispute to BBB AUTO LINE before asserting in court any rights or remedies conferred by California Civil Code Section 1793.22(b). You are also required to use BBB AUTO LINE before exercising rights or seeking remedies created by the Federal Magnuson-Moss Warranty Act, 15 U.S.C. sec. 2301 et seq. If you choose to seek redress by pursuing rights and remedies not created by California Civil Code Section 1793.22(b) or the Magnuson-Moss Warranty Act, resort to BBB AUTO LINE is not required by those statutes.

THE BETTER BUSINESS BUREAU (BBB) AUTO LINE PROGRAM (U.S. ONLY)

Your satisfaction is important to Ford Motor Company and to your dealer. If a warranty concern has not been resolved using the three-step procedure outlined earlier in this chapter in the *Getting the services you need* section, you may be eligible to participate in the BBB AUTO LINE program.

The BBB AUTO LINE program consists of two parts – mediation and arbitration. During mediation, a representative of the BBB will contact both you and Ford Motor Company to explore options for settlement of the claim. If an agreement is not reached during mediation or you do not want to participate in mediation, and if your claim is eligible, you may participate in the arbitration process. An arbitration hearing will be scheduled so that you can present your case in an informal setting before an impartial person. The arbitrator will consider the testimony provided and make a decision after the hearing.

Disputes submitted to the BBB AUTO LINE program are usually decided within forty days after you file your claim with the BBB. You are not bound by the decision, and may reject the decision and proceed to court where all findings of the BBB Auto Line dispute, and decision, are admissible in the court action. Should you choose to accept the BBB AUTO LINE decision, Ford is then bound by the decision, and must comply with the decision within 30 days of receipt of your acceptance letter.

BBB AUTO LINE Application: Using the information provided below, please call or write to request a program application. You will be asked for your name and address, general information about your new vehicle, information about your warranty concerns, and any steps you have already taken to try to resolve them. A Customer Claim Form will be mailed that will need to be completed, signed and returned to the BBB along with proof of ownership. Upon receipt, the BBB will review the claim for eligibility under the Program Summary Guidelines.

You can get more information by calling BBB AUTO LINE at 1-800-955-5100, or writing to:

**BBB AUTO LINE
4200 Wilson Boulevard, Suite 800
Arlington, Virginia 22203-1833**

BBB AUTO LINE applications can also be requested by calling the Ford Motor Company Customer Relationship Center at 1-800-392-3673.

Note: Ford Motor Company reserves the right to change eligibility limitations, modify procedures, or to discontinue this process at any time without notice and without obligation.

UTILIZING THE MEDIATION/ARBITRATION PROGRAM (CANADA ONLY)

For vehicles delivered to authorized Canadian dealers. In those cases where you continue to feel that the efforts by Ford of Canada and the authorized dealer to resolve a factory-related vehicle service concern have been unsatisfactory, Ford of Canada participates in an impartial third party mediation/arbitration program administered by the Canadian Motor Vehicle Arbitration Plan (CAMVAP).

The CAMVAP program is a straight forward and relatively speedy alternative to resolve a disagreement when all other efforts to produce a settlement have failed. This procedure is without cost to you and is designed to eliminate the need for lengthy and expensive legal proceedings.

In the CAMVAP program, impartial third-party arbitrators conduct hearings at mutually convenient times and places in an informal environment. These impartial arbitrators review the positions of the parties, make decisions and, when appropriate, render awards to resolve disputes. CAMVAP decisions are fast, fair, and final as the arbitrator's award is binding on both you and Ford of Canada.

CAMVAP services are available in all Canadian territories and provinces. For more information, without charge or obligation, call your CAMVAP Provincial Administrator directly at 1-800-207-0685 or visit www.camvap.ca.

GETTING ASSISTANCE OUTSIDE THE U.S. AND CANADA

Before exporting your vehicle to a foreign country, contact the appropriate foreign embassy or consulate. These officials can inform you of local vehicle registration regulations and where to find unleaded fuel.

If you cannot find unleaded fuel or can only get fuel with an anti-knock index lower than is recommended for your vehicle, contact a regional office or owner relations/customer relationship office.

The use of leaded fuel in your vehicle without proper conversion may damage the effectiveness of your emission control system and may cause engine knocking or serious engine damage. Ford Motor Company/Ford of Canada is not responsible for any damage caused by use of improper fuel. Using leaded fuel may also result in difficulty importing your vehicle back into the U.S.

If your vehicle must be serviced while you are traveling or living in Asia-Pacific Region, Sub-Saharan Africa, U.S. Virgin Islands, Central America, the Caribbean, and Israel, contact the nearest authorized dealer. If the authorized dealer cannot help you, contact:

FORD MOTOR COMPANY
FORD EXPORT OPERATIONS & GLOBAL INITIATIVES
1555 Fairlane Drive
Fairlane Business Park #3
Allen Park, Michigan 48101
U.S.A.

Telephone: (313) 594-4857

For customers in Guam, the Commonwealth of the Northern Mariana Islands (CNMI), American Samoa, and the U.S. Virgin Islands, please feel free to call our Toll-Free Number: (800) 841-FORD (3673).

FAX: (313) 390-0804

Email: expcac@ford.com

If your vehicle must be serviced while you are traveling or living in Puerto Rico, contact the nearest authorized dealer. If the authorized dealer cannot help you, contact:

Ford International Business Development Inc.
Customer Relationship Center
P.O. Box 11957
Caparra Heights Station
San Juan, Puerto Rico 00922-1957
Telephone: (800) 841-FORD (3673)
FAX: (313) 390-0804
Email: prcac@ford.com
www.ford.com.pr

If your vehicle must be serviced while you are traveling or living in the Middle East, contact the nearest authorized dealer. If the authorized dealer cannot help you, contact:

Ford Middle East
Customer Relationship Center
P.O. Box 21470
Dubai, United Arab Emirates
Telephone: +971 4 3326084
Toll-Free Number for the Kingdom of Saudi Arabia: 800 8971409
Local Telephone Number for Kuwait: 24810575
FAX: +971 4 3327299
Email: menacac@ford.com
www.me.ford.com

If you buy your vehicle in North America and then relocate to any of the above locations, register your vehicle identification number (VIN) and new address with Ford Motor Company Export Operations & Global Growth Initiatives by emailing expcac@ford.com.

If you are in another foreign country, contact the nearest authorized dealer. If the authorized dealer employees cannot help you, they can direct you to the nearest Ford affiliate office.

Customers in the U.S. should call 1-800-392-3673.

ORDERING ADDITIONAL OWNER'S LITERATURE

To order the publications in this portfolio, contact Helm, Incorporated at:

HELM, INCORPORATED
47911 Halyard Drive
Plymouth, Michigan 48170
Attention: Customer Service

Or to order a free publication catalog, call toll free: 1-800-782-4356

Monday-Friday 8:00 a.m. - 6:00 p.m. EST

Helm, Incorporated can also be reached by their website:
www.helminc.com.

(Items in this catalog may be purchased by credit card, check or money order.)

Obtaining a French Owner's Manual

French Owner's Manual can be obtained from your authorized dealer or by contacting Helm, Incorporated using the contact information listed previously in this section.

REPORTING SAFETY DEFECTS (U.S. ONLY)

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety

Administration (NHTSA) in addition to notifying Ford Motor Company.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or Ford Motor Company.

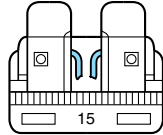
To contact NHTSA, you may call the Vehicle Safety Hotline toll-free at 1-888-327-4236 (TTY: 1-800-424-9153); go to <http://www.safercar.gov>; or write to:

Administrator
1200 New Jersey Avenue, Southeast
Washington, D.C. 20590

You can also obtain other information about motor vehicle safety from <http://www.safercar.gov>.

REPORTING SAFETY DEFECTS (CANADA ONLY)

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform Transport Canada, using their toll-free number: 1-800-333-0510, or online at: <https://wwwapps.tc.gc.ca/Saf-Sec-Sur/7/PCDB-BDPP/Index.aspx>.

CHANGING A FUSE**Fuses**

If electrical components in the vehicle are not working, a fuse may have blown. Blown fuses are identified by a broken wire within the fuse. Check the appropriate fuses before replacing any electrical components.

Note: Always replace a fuse with one that has the specified amperage rating. Using a fuse with a higher amperage rating can cause severe wire damage and could start a fire.

Standard Fuse Amperage Rating and Color

COLOR					
Fuse rating	Mini fuses	Standard fuses	Maxi fuses	Cartridge maxi fuses	Fuse link cartridge
2A	Grey	Grey	—	—	—
3A	Violet	Violet	—	—	—
4A	Pink	Pink	—	—	—
5A	Tan	Tan	—	—	—
7.5A	Brown	Brown	—	—	—
10A	Red	Red	—	—	—
15A	Blue	Blue	—	—	—
20A	Yellow	Yellow	Yellow	Blue	Blue
25A	Natural	Natural	—	Natural	Natural
30A	Green	Green	Green	Pink	Pink
40A	—	—	Orange	Green	Green
50A	—	—	Red	Red	Red
60A	—	—	Blue	Yellow	Yellow
70A	—	—	Tan	—	Brown
80A	—	—	Natural	Black	Black

FUSE SPECIFICATION CHART**Power Distribution Box**

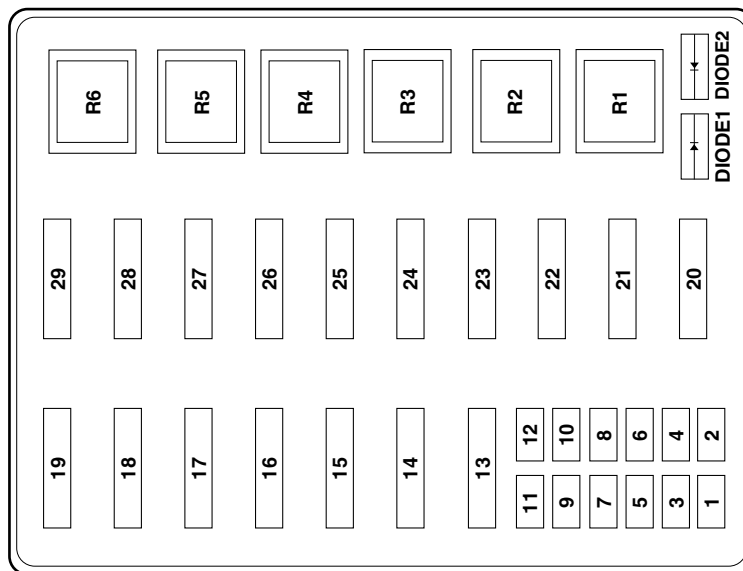
WARNING: Always disconnect the battery before servicing high current fuses.



WARNING: To reduce risk of electrical shock, always replace the cover to the power distribution box before reconnecting the battery or refilling fluid reservoirs.

The power distribution box is located in the engine compartment. It has high-current fuses that protect your vehicle's main electrical systems from overloads.

If the battery has been disconnected and reconnected, refer to *Changing the vehicle battery* in the *Maintenance* chapter.



The high-current fuses are coded as follows:

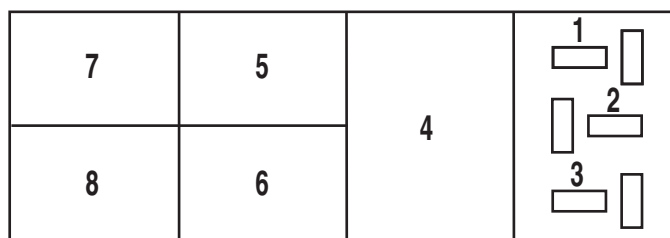
Fuse/Relay Location	Fuse Amp Rating	Protected Components
1	5A*	Power brake assist module – Hydromax
2	10A*	A/C compressor clutch
3	20A*	A/C clutch relay coil, Mass air flow sensor with intake air temperature, Vapor management valve, Engine heated exhaust gas oxygen sensor #11 and #21, Catalyst monitor sensor
4	5A*	Powertrain control module memory
5	20A*	Powertrain control module power
6	20A*	Park lamp feeds, Instrument panel fuse #41, Warning chime module, Trailer tow running lamp relay coil, Instrument panel dimmer module
7	20A*	Ignition coils, Radio capacitors
8	30A*	Hydromax – Anti-lock brake system module
9	10A*	Starter main relay coil, Starter ground relay coil
10	20A*	Daytime running lamps
11	20A*	Fuel pump relay coil, Powertrain control module power
12	25A*	Trailer tow back-up lamps feed, Instrument panel - backup lamp feed
13	30A**	Trailer tow electric brake controller feed
14	60A**	Instrument panel battery feed (fuse #9, 15, 21)
15	20A**	Trailer tow park lamps

Fuse/Relay Location	Fuse Amp Rating	Protected Components
16	60A**	Anti-lock brake system module – Hydromax
	40A**	Anti-lock brake system module – Hydroboost
17	20A**	Horn feed
18	20A**	Transmission control indicator light, Tow/haul switch, Backup lamp feed
19	—	Not used
20	30A**	Powertrain control module relay coil, Powertrain control module relay (Power distribution box fuses # 3, 5, 7, 18)
21	20A**	Fuel pump motor, Fuel injectors
22	20A**	Diagnostic tool connector, Cigar lighter feed
23	40A**	Blower motor feed
24	50A**	Instrument panel battery feed (fuses #4, 10, 16, 22)
25	40A**	Ignition switch feed (Instrument panel fuses #1, 5, 7, 11, 13, 14, 17, 19, 23; Power distribution box fuses #9, 11)
26	40A**	Ignition switch feed (Instrument panel fuses #5, 11, 17, 23, 26, 38)
27	30A**	Multi-function switch (headlamps)
28	30A**	Starter solenoid
29	60A**	Power brake assist motor – Hydromax
	40A**	Anti-lock brake system module – Hydroboost
R1	—	A/C clutch relay
R2	—	Fuel pump relay
R3	—	Horn relay

Fuse/Relay Location	Fuse Amp Rating	Protected Components
R4	—	Starter relay
R5	—	Blower motor relay
R6	—	Powertrain control module relay
Diode 1	—	Fuel pump diode
Diode 2	—	A/C clutch diode
* Mini Fuses ** Maxi Fuses		

Diode and Relay Module

The module box is located by the power distribution box in front of the radiator in the engine compartment.



The components are coded as follows:

Relay Location	Description
1	One touch integrated start (ATO diode)
2	Not used
3	Not used
4	Daytime running lamps power relay
5	Hydromax – brake on/off signal isolating relay
6	Reverse lamps relay
7	Starter ground relay
8	Trailer tow parking lamps relay

Fuse Holder Module

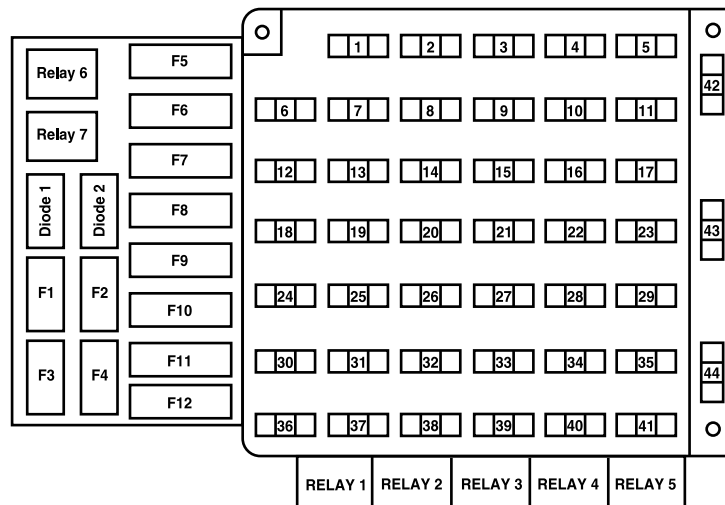
The fuse holder module is located next to the diode/relay module.

Fuse Location	Fuse Amp Rating	Protected Circuits
1	10A	Hydromax – brake on/off signal

Passenger Compartment Fuse Panel

The fuse panel is located below and to the left of the steering wheel by the brake pedal. Remove the panel cover to access the fuses.

To remove a fuse use the fuse puller tool provided on the fuse panel cover.



The fuses are coded as follows.

Fuse/Relay Location	Fuse Amp Rating	Protected circuits
1	20A	Turn/stop lamps, Turn indicators, Body builder rear turn/stop feeds
2	—	Not used
3	—	Not used
4	10A	Instrument panel cluster
5	10A	Body builder accessory feed (accessory and run)
6	—	Not used
7	15A	Blower motor relay coil
8	10A	Brake lamps feed
9	20A	Stop lamps: Vehicle turn/stop lamps, Body builder rear turn/stop feeds, Body builder stop lamp feed
10	10A	Instrument cluster memory, Power brake assist lamp – Hydromax
11	30A	Wiper/washer module, Wiper feed
12	—	Not used
13	10A	Anti-lock brake system module – Hydromax
14	10A	Warning chime module, Power brake assist module – Hydromax, Instrument cluster power, Instrument cluster warning lamps, Anti-lock brake system module – Hydroboost
15	15A	Left turn signal feed
16	20A	Body builder battery (+12V) feed
17	5A	Body builder radio feed
18	—	Not used

Fuse/Relay Location	Fuse Amp Rating	Protected circuits
19	5A	Daytime running lamps relays
20	—	Not used
21	15A	Right turn signal feed
22	20A	Trailer tow turn signals
23	10A	Cluster run/accessory
24	—	Not used
25	10A	Body builder right-hand low beam headlamp feed
26	10A	Brake shift interlock actuator
27	—	Not used
28	—	Not used
29	—	Not used
30	—	Not used
31	10A	Body builder left-hand low beam headlamp feed
32	—	Not used
33	10A	Reverse lamps
34	10A	Trailer tow reverse lamps, Body builder reverse gear
35	20A	Body builder high beam feed, High beam indicator, Daytime running lamps
36	—	Not used
37	—	Not used
38	10A	Body builder run feed
39	—	Not used
40	—	Not used
41	10A	Instrument illumination
42	—	Not used
43	—	Not used
44	—	Not used
Relay 1	—	Trailer tow right turn signal

Fuse/Relay Location	Fuse Amp Rating	Protected circuits
Relay 2	—	Trailer tow left turn signal
Relay 3	—	Right turn signal
Relay 4	—	Left turn signal
Relay 5	—	Not used
Relay 6	—	Daytime running lamps, Parking brake
Relay 7	—	Daytime running lamps on/off
Diode 1	—	Brake transmission shift interlock
Diode 2	—	Brake transmission shift interlock
F1	—	Not used
F2	—	Not used
F3	—	Not used
F4	10A	Brake transmission shift interlock
F5	—	Not used
F6	—	Not used
F7	—	Not used
F8	—	Not used
F9	—	Not used
F10	—	Not used
F11	—	Not used
F12	—	Not used

GENERAL INFORMATION

Have your vehicle serviced regularly to help maintain its roadworthiness and resale value. There is a large network of Ford authorized dealers that are there to help you with their professional servicing expertise. We believe that their specially trained technicians are best qualified to service your vehicle properly and expertly. They are supported by a wide range of highly specialized tools developed specifically for servicing your vehicle.

To help you service your vehicle, we provide *scheduled maintenance information* which makes tracking routine service easy.

If your vehicle requires professional service, your authorized dealer can provide the necessary parts and service. Check your *Warranty Guide* to find out which parts and services are covered.

Use only recommended fuels, lubricants, fluids and service parts conforming to specifications. Motorcraft® parts are designed and built to provide the best performance in your vehicle.

Precautions

- Do not work on a hot engine.
- Make sure that nothing gets caught in moving parts.
- Do not work on a vehicle with the engine running in an enclosed space, unless you are sure you have enough ventilation.
- Keep all open flames and other burning material (such as cigarettes) away from the battery and all fuel related parts.

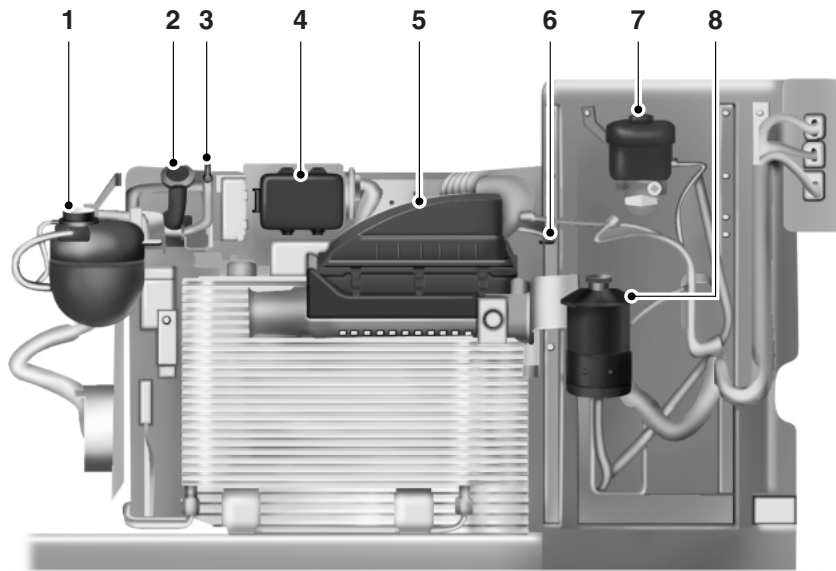
Working with the engine off

1. Set the parking brake and shift to P (Park).
2. Turn off the engine and remove the key.
3. Block the wheels.

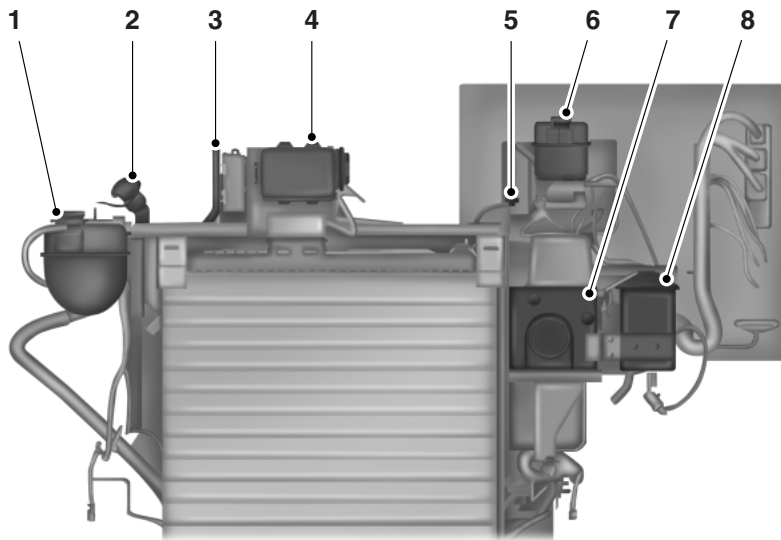
Working with the Engine On

WARNING: To reduce the risk of vehicle damage and/or personal burn injuries, do not start your engine with the air cleaner removed and do not remove it while the engine is running.

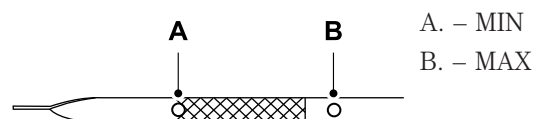
1. Set the parking brake and shift to P (Park).
2. Block the wheels.

UNDER HOOD OVERVIEW**6.8L V10 engine**

1. Engine coolant reservoir
2. Engine oil filler cap
3. Automatic transmission fluid dipstick
4. Power distribution box
5. Air filter assembly
6. Engine oil dipstick
7. Brake fluid reservoir
8. Power steering fluid reservoir

6.8L V10 engine (commercial stripped chassis)

1. Engine coolant reservoir
2. Engine oil filler cap
3. Automatic transmission fluid dipstick
4. Power distribution box
5. Engine oil dipstick
6. Brake fluid reservoir
7. Air filter assembly
8. Power steering fluid reservoir

ENGINE OIL DIPSTICK**ENGINE OIL CHECK**

Note: Check the level before starting the engine.

Note: Make sure that the level is between the MIN and MAX marks.

1. Make sure that your vehicle is on level ground.
2. Turn the engine off and wait 10 minutes for the oil to drain into the oil pan.
3. Remove the dipstick and wipe it with a clean, lint-free cloth. Replace the dipstick and remove it again to check the oil level.

If the level is at the MIN mark, add oil immediately.

Adding engine oil

Note: Do not remove the filler cap when the engine is running.

Note: Do not add engine oil further than the MAX mark. Oil levels above the MAX mark may cause engine damage.



Only use oils certified for gasoline engines by the American Petroleum Institute (API). An oil with this trademark symbol conforms to the current engine and emission system protection standards and fuel economy requirements of the International Lubricants Specification Advisory Council (ILSAC), comprised of U.S. and Japanese automobile manufacturers.

1. Remove the filler cap.
2. Add engine oil that meets Ford specifications. See *Capacities and Specifications* for more information.
3. Replace the filler cap. Turn it until you feel a strong resistance.

ENGINE COOLANT CHECK

Checking the Engine Coolant

The concentration and level of engine coolant should be checked at the intervals listed in *Scheduled Maintenance Information*.

Note: Make sure that the level is at the FULL COLD level or within the COLD FILL RANGE in the coolant reservoir.

Note: Coolant expands when it is hot. The level may extend beyond the COLD FILL RANGE.

If the level is below the COLD FILL RANGE, add coolant immediately. See *Adding Engine Coolant* in this chapter.

The coolant concentration should be maintained at 50%.

Note: For best results, coolant concentration should be tested with a refractometer such as Rotunda tool ROB75240 available from your dealer. Ford does not recommend the use of hydrometers or coolant test strips for measuring coolant concentrations.

Note: Automotive fluids are not interchangeable; do not use engine coolant/antifreeze or windshield washer fluid outside of its specified function and vehicle location.

Adding Engine Coolant



WARNING: Do not add engine coolant when the engine is hot. Steam and scalding liquids released from a hot cooling system can burn you badly. Also, you can be burned if you spill coolant on hot engine parts.



WARNING: Do not put engine coolant in the windshield washer fluid container. If sprayed on the windshield, engine coolant could make it difficult to see through the windshield.



WARNING: To reduce the risk of personal injury, make sure the engine is cool before unscrewing the coolant pressure relief cap. The cooling system is under pressure; steam and hot liquid can come out forcefully when the cap is loosened slightly.



WARNING: Do not add coolant further than the MAX mark.

Note: Do not use stop leak pellets or cooling system sealants/additives as they can cause damage to the engine cooling and/or heating systems. This damage would not be covered under your vehicle's warranty.

- DO NOT MIX different colors or types of coolant in your vehicle. Make sure the correct coolant is used. Mixing of engine coolants may harm your engine's cooling system. The use of an improper coolant may harm engine and cooling system components and may void the warranty.
- In case of emergency, a large amount of water without engine coolant may be added in order to reach a vehicle service location. In this instance, the cooling system must be drained, chemically cleaned with Motorcraft® Premium Cooling System Flush, and refilled with a 50/50 mixture of engine coolant and distilled water as soon as possible. Water alone (without engine coolant) can cause engine damage from corrosion, overheating or freezing.
- Do not use alcohol, methanol, brine or any engine coolants mixed with alcohol or methanol antifreeze (coolant). Alcohol and other liquids can cause engine damage from overheating or freezing.
- Do not add extra inhibitors or additives to the coolant. These can be harmful and compromise the corrosion protection of the engine coolant.

Unscrew the cap slowly. Any pressure will escape as you unscrew the cap.

Add a 50/50 mixture of distilled water and engine coolant meeting the Ford specification. See *Capacities and Specifications* for more information.

Whenever coolant has been added, the coolant level in the coolant reservoir should be checked the next few times you drive the vehicle. If necessary, add enough 50/50 mixture of engine coolant and distilled water to bring the coolant level to the proper level.

Recycled engine coolant

Ford Motor Company does not recommend the use of recycled engine coolant since a Ford-approved recycling process is not yet available.



Always dispose of used automotive fluids in a responsible manner. Follow your community's regulations and standards for recycling and disposing of automotive fluids.

Severe Climates

If you drive in extremely cold climates:

- It may be necessary to increase the coolant concentration above 50%.
- NEVER increase the coolant concentration above 60%.
- A coolant concentration of 60% will provide improved freeze point protection. Engine coolant concentrations above 60% will decrease the overheat protection characteristics of the engine coolant and may cause engine damage.
- If available, refer to the chart on the coolant container to make sure the coolant concentration in your vehicle will provide adequate freeze protection at the temperatures in which you drive in the winter months.

If you drive in extremely hot climates:

- It is still necessary to maintain the coolant concentration above 40%.
- NEVER decrease the coolant concentration below 40%.
- A coolant concentration of 40% will provide improved overheat protection. Engine coolant concentrations below 40% will decrease the corrosion/freeze protection characteristics of the engine coolant and may cause engine damage.
- If available, refer to the chart on the coolant container to make sure the coolant concentration in your vehicle will provide adequate protection at the temperatures in which you drive.

Vehicles driven year-round in non-extreme climates should use a 50/50 mixture of engine coolant and distilled water for optimum cooling system and engine protection.

What you should know about fail-safe cooling

If the engine coolant supply is depleted, this feature allows the vehicle to be driven temporarily before incremental component damage is incurred. The “fail-safe” distance depends on ambient temperatures, vehicle load and terrain.

How fail-safe cooling works

If the engine begins to overheat, the engine coolant temperature gauge will move to the red (hot) area and:



The coolant temperature warning light will illuminate.



The service engine soon indicator will illuminate.

If the engine reaches a preset over-temperature condition, the engine will automatically switch to alternating cylinder operation. Each disabled cylinder acts as an air pump and cools the engine.

When this occurs the vehicle will still operate. However:

- The engine power will be limited.
- The air conditioning system will be disabled.

Continued operation will increase the engine temperature and the engine will completely shut down, causing steering and braking effort to increase.

Once the engine temperature cools, the engine can be re-started. Take your vehicle to an authorized dealer as soon as possible to minimize engine damage.

When fail-safe mode is activated

WARNING: Fail-safe mode is for use during emergencies only.

Operate the vehicle in fail-safe mode only as long as necessary to bring the vehicle to rest in a safe location and seek immediate repairs. When in fail-safe mode, the vehicle will have limited power, will not be able to maintain high-speed operation, and may completely shut down without warning, potentially losing engine power, power steering assist, and power brake assist, which may increase the possibility of a crash resulting in serious injury.



WARNING: Never remove the coolant reservoir cap while the engine is running or hot.

You have limited engine power when in the fail-safe mode, so drive the vehicle with caution. The vehicle will not be able to maintain high-speed operation and the engine will run rough. Remember that the engine is capable of completely shutting down automatically to prevent engine damage, therefore:

1. Pull off the road as soon as safely possible and turn off the engine.
2. Arrange for the vehicle to be taken to an authorized dealer.
3. If this is not possible, wait a short period for the engine to cool.
4. Check the coolant level and replenish if low.
5. Re-start the engine and take your vehicle to an authorized dealer.

Note: Driving the vehicle without repairing the engine problem increases the chance of engine damage. Take your vehicle to an authorized dealer as soon as possible.

TRANSMISSION FLUID CHECK

Automatic transmission



WARNING: The dipstick cap and surrounding components may be hot; gloves are recommended.

Note: Automatic transmission fluid expands when warmed. To obtain an accurate fluid check, drive the vehicle until it is at normal operating temperature (approximately 20 miles [30 km]). If your vehicle has been operated for an extended period at high speeds, in city traffic during hot weather or pulling a trailer, the vehicle should be turned off for about 30 minutes to allow fluid to cool to normal operating temperature 150°F - 170°F (66°C - 77°C) before checking.

Refer to your *scheduled maintenance information* for scheduled intervals for fluid checks and changes. Your transmission does not consume fluid. However, the fluid level should be checked if the transmission is not working properly, i.e., if the transmission slips or shifts slowly or if you notice some sign of fluid leakage.

1. Drive the vehicle 20 miles (30 km) or until it reaches normal operating temperature.
2. Park the vehicle on a level surface and engage the parking brake.

3. With the engine running, parking brake engaged and your foot on the brake pedal, move the gearshift lever through all of the gear ranges. Allow sufficient time for each gear to engage.
4. Latch the gearshift lever in P (Park) and leave the engine running.
5. Remove the dipstick, wiping it clean with a clean, dry lint free rag. If necessary, refer to *Identifying components in the engine compartment* in this chapter for the location of the dipstick.
6. Install the dipstick making sure it is fully seated in the filler tube.
7. Remove the dipstick and inspect the fluid level. The fluid should be in the designated area for normal operating temperature or ambient temperature.

Low fluid level



Do not drive the vehicle if there is no indication of fluid on the dipstick and the ambient temperature is above 50°F (10°C).

Correct fluid level

The transmission fluid should be checked at normal operating temperature 150°F-170°F (66°C-77°C) on a level surface. The normal operating temperature can be reached after approximately 20 miles (30 km) of driving.

You can check the fluid without driving if the ambient temperature is above 50°F (10°C). However, if fluid is added at this time, an overfill condition could result when the vehicle reaches normal operating temperature.



The transmission fluid should be in this range if at normal operating temperature (150°F-170°F [66°C-77°C]).

High fluid level

Fluid levels above the safe range may result in transmission failure. An overfill condition of transmission fluid may cause shift and/or engagement concerns and/or possible damage.

High fluid levels can be caused by an overheating condition.

Adjusting automatic transmission fluid levels

Before adding any fluid, make sure the correct type is used. The type of fluid used is normally indicated on the dipstick and also in the *capacities and specifications* chapter.

Note: Use of a non-approved automatic transmission fluid may cause internal transmission component damage.

If necessary, add fluid in 1/2 pint (250 ml) increments through the filler tube until the level is correct.



If an overfill occurs, excess fluid should be removed by an authorized dealer.

Note: An overfill condition of transmission fluid may cause shift and/or engagement concerns and/or possible damage.

Do not use supplemental transmission fluid additives, treatments or cleaning agents. The use of these materials may affect transmission operation and result in damage to internal transmission components.

Automatic transmission fluid filter

The TorqShift® automatic transmission is equipped with a serviceable transmission fluid filter located inside the transmission bottom pan.

Refer to *scheduled maintenance information* for service intervals for automatic transmission fluid and transmission filter.

For transmission filter maintenance, see your authorized dealer.

BRAKE FLUID CHECK**Hydromax**

WARNING: Carefully read cautionary information on product label. For MEDICAL EMERGENCY INFORMATION contact a physician or Poison Control Center immediately; on Ford-Motorcraft® products call: 1-800-959-3673 (FORD). Failure to follow these instructions may result in personal injury.



WARNING: Use of any brake fluid other than that indicated for your brake system will cause permanent damage.



WARNING: Do not let the reservoir for the master cylinder run dry. This may cause the brakes to fail.

Chassis with Gross Vehicle Weight Ratings of 20,500 lb (9,299 kg), 22,000 lb (9,979 kg), 24,000 lb (10,886 kg) and 26,000 lb (11,793 kg) are equipped with Hydromax Brake Booster Systems and must use Motorcraft® DOT 5.1 Motor Vehicle Brake Fluid or equivalent meeting Ford Specification ESD-M6C57-A. Refer to *Technical Specifications* in the *Capacities and Specifications* chapter.



Add fluid up to the bottom of the rings located at the top of the reservoir. Do not fill above this line.

Note: Use only DOT 5.1 brake fluid that is certified to meet Ford specifications.

Note: A clear gel-like substance in the hydraulic brake master cylinder reservoir may appear on some vehicles. This substance is a silicone base lubricant used during assembly of the master cylinder. It will float on top of the brake hydraulic fluid in the master cylinder. This condition is normal and in no way affects the operation of the brake system. It does not require any service.

Brake system fluid should be replaced on a regular basis to maintain optimum braking performance, especially under heavy-duty driving conditions such as frequent steep grades or heavy towing loads. Refer to *scheduled maintenance information* for the service interval schedules.

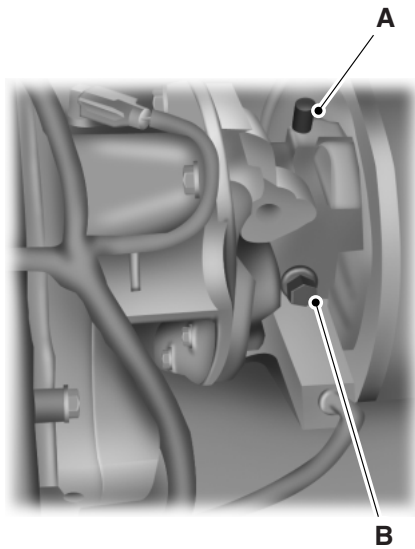
Hydroboost

Chassis with Gross Vehicle Weight Ratings of 16,000 lb (7,257 kg), 18,000 lb (8,165 kg) and 19,500 lb (8845 kg) are equipped with Hydroboost Brake Booster Systems and must use Motorcraft® High Performance DOT 3 Motor Vehicle Brake Fluid or equivalent meeting Ford Specification WSS-M6C62-A. Refer to *Technical Specifications* in the *Capacities and Specifications* chapter.

Add brake fluid from a clean unopened container until the level reaches MAX. Do not fill above this line.

Note: Use only DOT 3 brake fluid that is certified to meet Ford specifications.

Brake system fluid should be replaced on a regular basis to maintain optimum braking performance, especially under heavy-duty driving conditions such as frequent steep grades or heavy towing loads. Refer to *scheduled maintenance information* for the service interval schedules.

Parking brake fluid

Check the fluid level only if there is visible signs of fluid leakage. If necessary, fill the parking brake assembly to the bottom of the filler plug hole (B) (located on the driver side of the transmission). Refer to *Technical specifications* in the *Capacities and Specifications* chapter for the proper fluid type.

Note: Do not fill the parking brake through the vent plug (A) (located on top of the transmission).

POWER STEERING FLUID CHECK

1. Start the engine and let it run until it reaches normal operating temperature (the engine coolant temperature gauge indicator will be near the center of the normal area between H and C).
2. While the engine idles, turn the steering wheel left and right several times.
3. Turn the engine off.

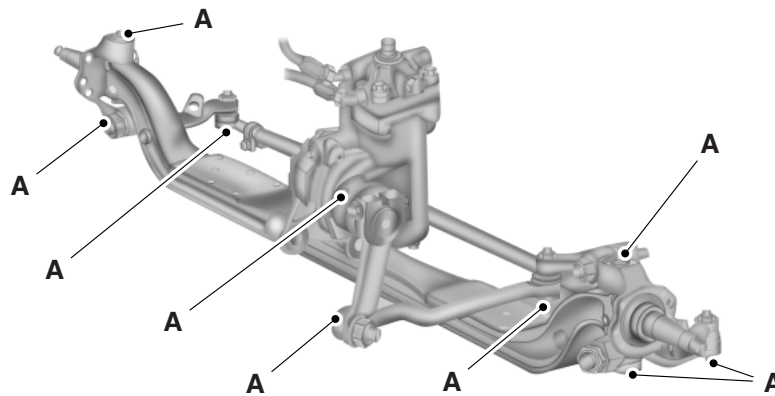


4. Check the fluid level on the dipstick. It should be between the arrows in the FULL range on the side of the dipstick with the words MAX. HOT at the top. Do not add fluid if the level is within this range.

5. If the fluid is low, add fluid in small amounts, continuously checking the level until it reaches the FULL range. Be sure to put the dipstick back in the reservoir.

Refer to *Maintenance product specifications and capacities* in this chapter for the proper fluid type.

Steering linkage lubrication points



There are nine lubrication points on the steering linkage shown as "A". Refer to *Technical specifications* in the *Capacities and Specifications* chapter for lubricant type to use.

FUEL FILTER

Your vehicle is equipped with a lifetime fuel filter that is integrated with the fuel tank. Regular maintenance or replacement is not needed.

CHANGING THE VEHICLE BATTERY

WARNING: Batteries normally produce explosive gases which can cause personal injury. Therefore, do not allow flames, sparks or lighted substances to come near the battery. When working near the battery, always shield your face and protect your eyes. Always provide proper ventilation.



WARNING: When lifting a plastic-cased battery, excessive pressure on the end walls could cause acid to flow through the vent caps, resulting in personal injury and/or damage to the vehicle or battery. Lift the battery with a battery carrier or with your hands on opposite corners.



WARNING: Keep batteries out of reach of children. Batteries contain sulfuric acid. Avoid contact with skin, eyes or clothing. Shield your eyes when working near the battery to protect against possible splashing of acid solution. In case of acid contact with skin or eyes, flush immediately with water for a minimum of 15 minutes and get prompt medical attention. If acid is swallowed, call a physician immediately.



WARNING: Battery posts, terminals and related accessories contain lead and lead compounds. Wash hands after handling.

Your vehicle is equipped with a Motorcraft® maintenance-free battery which normally does not require additional water during its life of service.

Note: If your battery has a cover/shield, make sure it is reinstalled after the battery has been cleaned or replaced.

For longer, trouble-free operation, keep the top of the battery clean and dry. Also, make certain the battery cables are always tightly fastened to the battery terminals.

If you see any corrosion on the battery or terminals, remove the cables from the terminals and clean with a wire brush. You can neutralize the acid with a solution of baking soda and water.

It is recommended that the negative battery cable terminal be disconnected from the battery if you plan to store your vehicle for an extended period of time.

Battery relearn

Because your vehicle's engine is electronically controlled by a computer, some control conditions are maintained by power from the battery. When the battery is disconnected or a new battery is installed, the engine must relearn its idle and fuel trim strategy for optimum driveability and performance. To begin this process:

1. With the vehicle at a complete stop, set the parking brake.
 2. Put the gearshift lever in P (Park), turn off all accessories and start the engine.
 3. Run the engine until it reaches normal operating temperature.
 4. Allow the engine to idle for at least one minute.
 5. Turn the A/C on and allow the engine to idle for at least one minute.
 6. Drive the vehicle to complete the relearning process.
- The vehicle may need to be driven to relearn the idle and fuel trim strategy.
 - **Note:** If you do not allow the engine to relearn its idle trim, the idle quality of your vehicle may be adversely affected until the idle trim is eventually relearned.

When the battery is disconnected or a new battery installed, the transmission must relearn its adaptive strategy. As a result of this, the transmission may shift firmly. This operation is considered normal and will not affect function or durability of the transmission. Over time the adaptive learning process will fully update transmission operation to its optimum shift feel.

If the battery has been disconnected or a new battery has been installed, the clock and the preset radio stations must be reset once the battery is reconnected.

Always dispose of automotive batteries in a responsible manner. Follow your local authorized standards for disposal. Call your local authorized recycling center to find out more about recycling automotive batteries.

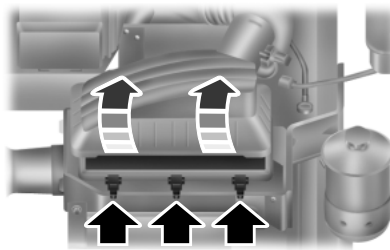
AIR FILTER CHECK

WARNING: To reduce the risk of vehicle damage and/or personal burn injuries do not start your engine with the air cleaner removed and do not remove it while the engine is running.

When changing the air filter element, use only the air filter element listed. Refer to *Motorcraft® part numbers* in the *Capacities and Specifications* chapter.

Refer to *Scheduled Maintenance* for the appropriate intervals for changing the air filter element.

Note: Failure to use the correct air filter element may result in severe engine damage. The customer warranty may be void for any damage to the engine if the correct air filter element is not used.



1. Loosen the latches that secure the air filter cover in place.
2. Carefully separate the two halves of the air filter housing.
3. Remove the air filter element from the housing.
4. Install a new air filter element. Be careful not to crimp the filter element edges between the air filter housing. This could cause filter

damage and allow unmetered air to enter the engine if not properly seated.

5. Replace the air filter cover to the housing and secure the latches.

GENERAL INFORMATION

Your Ford or Lincoln authorized dealer has many quality products available to clean your vehicle and protect its finishes.

CLEANING THE WHEELS

- Clean weekly with Motorcraft® Wheel and Tire Cleaner (ZC-37-A), which is available from your dealer. Heavy dirt and brake dust accumulation may require agitation with a sponge. Rinse thoroughly with a strong stream of water.
- Never apply any cleaning chemical to hot or warm wheel rims or covers.
- Some automatic car washes may cause damage to the finish on your wheel rims or covers. Chemical-strength cleaners, or cleaning chemicals, in combination with brush agitation to remove brake dust and dirt, could wear away the clearcoat finish over time.
- Do not use hydrofluoric acid-based or high caustic-based wheel cleaners, steel wool, fuels or strong household detergent.
- To remove tar and grease, use Motorcraft® Bug and Tar Remover (ZC-42), available from your dealer.

CLEANING THE ENGINE

Engines are more efficient when they are clean because grease and dirt buildup keep the engine warmer than normal. When washing:

- Take care when using a power washer to clean the engine. The high-pressure fluid could penetrate the sealed parts and cause damage.
- Do not spray a hot engine with cold water to avoid cracking the engine block or other engine components.
- Spray Motorcraft® Engine Shampoo and Degreaser (ZC-20) on all parts that require cleaning and pressure rinse clean. In Canada, use Motorcraft® Engine Shampoo (CXC-66-A).
- Never wash or rinse the engine while it is hot or running; water in the running engine may cause internal damage.
- Never wash or rinse any ignition coil, spark plug wire or spark plug well, or the area in and around these locations.

CLEANING THE EXTERIOR

Underbody:

Flush the complete underside of your vehicle frequently. Keep body and door drain holes free from packed dirt.

VEHICLE STORAGE

If you plan on storing your vehicle for an extended period of time (30 days or more), read the following maintenance recommendations to make sure your vehicle stays in good operating condition.

All motor vehicles and their components were engineered and tested for reliable, regular driving. Long term storage under various conditions may lead to component degradation or failure unless specific precautions are taken to preserve the components.

General

- Store all vehicles in a dry, ventilated place.
- Protect from sunlight, if possible.
- If vehicles are stored outside, they require regular maintenance to protect against rust and damage.

Body

- Wash vehicle thoroughly to remove dirt, grease, oil, tar or mud from exterior surfaces, rear-wheel housing and underside of front fenders.
- Periodically wash vehicles stored in exposed locations.
- Touch-up raw or primed metal to prevent rust.
- Cover chrome and stainless steel parts with a thick coat of auto wax to prevent discoloration. Re-wax as necessary when the vehicle is washed.
- Lubricate all hood, door and trunk lid hinges, and latches with a light grade oil.
- Cover interior trim to prevent fading.
- Keep all rubber parts free from oil and solvents.

Engine

- The engine oil and filter should be changed prior to storage, as used engine oil contain contaminants that may cause engine damage.
- Start the engine every 15 days. Run at fast idle until it reaches normal operating temperature.
- With your foot on the brake, shift through all the gears while the engine is running.

Fuel system

- Fill the fuel tank with high-quality fuel until the first automatic shutoff of the fuel pump nozzle.

Note: During extended periods of vehicle storage (30 days or more), fuel may deteriorate due to oxidation. Add a quality gas stabilizer product to the vehicle fuel system whenever actual or expected storage periods exceed 30 days. Follow the instructions on the additive label. The vehicle should then be operated at idle speed to circulate the additive throughout the fuel system.

Cooling system

- Protect against freezing temperatures.
- When removing vehicle from storage, check coolant fluid level. Confirm there are no cooling system leaks, and fluid is at the recommended level.

Battery

- Check and recharge as necessary. Keep connections clean.
- If storing your vehicle for more than 30 days without recharging the battery, it may be advisable to disconnect the battery cables to ensure battery charge is maintained for quick starting.

Note: If battery cables are disconnected, it will be necessary to reset memory features.

Brakes

- Make sure brakes and parking brake are fully released.

Tires

- Maintain recommended air pressure.

Miscellaneous

- Make sure all linkages, cables, levers and pins under vehicle are covered with grease to prevent rust.
- Move vehicles at least 25 feet (8 meters) every 15 days to lubricate working parts and prevent corrosion.

TIRE CARE**Information About Uniform Tire Quality Grading**

Tire Quality Grades apply to new pneumatic passenger car tires. The Quality grades can be found where applicable on the tire sidewall between tread shoulder and maximum section width. For example:

- **Treadwear 200 Traction AA Temperature A**

These Tire Quality Grades are determined by standards that the United States Department of Transportation has set.

Tire Quality Grades apply to new pneumatic passenger car tires. They do not apply to deep tread, winter-type snow tires, space-saver or temporary use spare tires, light truck or LT type tires, tires with nominal rim diameters of 10 to 12 inches or limited production tires as defined in Title 49 Code of Federal Regulations Part 575.104(c)(2).

U.S. Department of Transportation-Tire quality grades: The U.S. Department of Transportation requires Ford Motor Company to give you the following information about tire grades exactly as the government has written it.

Treadwear

The treadwear grade is a comparative rating based on the wear rate of the tire when tested under controlled conditions on a specified government test course. For example, a tire graded 150 would wear one and one-half ($1\frac{1}{2}$) times as well on the government course as a tire graded 100. The relative performance of tires depends upon the actual conditions of their use, however, and may depart significantly from the norm due to variations in driving habits, service practices, and differences in road characteristics and climate.

Traction AA A B C

WARNING: The traction grade assigned to this tire is based on straight-ahead braking traction tests, and does not include acceleration, cornering, hydroplaning or peak traction characteristics.

The traction grades, from highest to lowest are AA, A, B, and C. The grades represent the tire's ability to stop on wet pavement as measured under controlled conditions on specified government test surfaces of asphalt and concrete. A tire marked C may have poor traction performance.

Temperature A B C

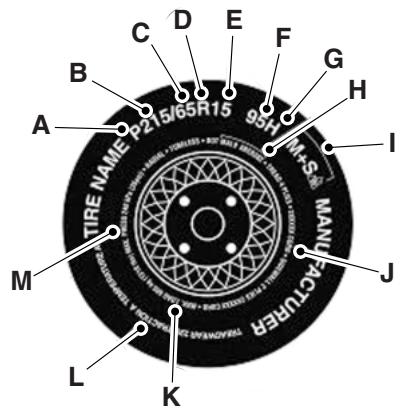
WARNING: The temperature grade for this tire is established for a tire that is properly inflated and not overloaded. Excessive speed, underinflation, or excessive loading, either separately or in combination, can cause heat buildup and possible tire failure.

The temperature grades are A (the highest), B and C, representing the tire's resistance to the generation of heat and its ability to dissipate heat when tested under controlled conditions on a specified indoor laboratory test wheel. Sustained high temperature can cause the material of the tire to degenerate and reduce tire life, and excessive temperature can lead to sudden tire failure. The grade C corresponds to a level of performance which all passenger car tires must meet under the Federal Motor Vehicle Safety Standard No. 139. Grades B and A represent higher levels of performance on the laboratory test wheel than the minimum required by law.

Glossary of Tire Terminology

- **Tire label:** A label showing the OE (Original Equipment) tire sizes, recommended inflation pressure and the maximum weight the vehicle can carry.
- **Tire Identification Number (TIN):** A number on the sidewall of each tire providing information about the tire brand and manufacturing plant, tire size and date of manufacture. Also referred to as DOT code.
- **Inflation pressure:** A measure of the amount of air in a tire.
- **Standard load:** A class of P-metric or Metric tires designed to carry a maximum load at 35 psi [37 psi (2.5 bar) for Metric tires]. Increasing the inflation pressure beyond this pressure will not increase the tire's load carrying capability.
- **Extra load:** A class of P-metric or Metric tires designed to carry a heavier maximum load at 41 psi [43 psi (2.9 bar) for Metric tires]. Increasing the inflation pressure beyond this pressure will not increase the tire's load carrying capability.
- **kPa:** Kilopascal, a metric unit of air pressure.
- **PSI:** Pounds per square inch, a standard unit of air pressure.
- **Cold inflation pressure:** The tire pressure when the vehicle has been stationary and out of direct sunlight for an hour or more and prior to the vehicle being driven for 1 mile (1.6 km).
- **Recommended inflation pressure:** The cold inflation pressure found on the Safety Compliance Certification Label. See the completed vehicle's owner's guide for the location of the Safety Compliance Certification Label.
- **Bead area of the tire:** Area of the tire next to the rim.
- **Sidewall of the tire:** Area between the bead area and the tread.
- **Tread area of the tire:** Area of the perimeter of the tire that contacts the road when mounted on the vehicle.
- **Rim:** The metal support (wheel) for a tire or a tire and tube assembly upon which the tire beads are seated.

Information on “P” Type Tires



P215/65R15 95H is an example of a tire size, load index and speed rating. The definitions of these items are listed below. (Note that the tire size, load index and speed rating for your vehicle may be different from this example.)

A. **P:** Indicates a tire, designated by the Tire and Rim Association (T&RA), that may be used for service on cars, SUVs, minivans and light trucks.

Note: If your tire size does not begin with a letter this may mean it is designated by either ETRTO (European Tire and Rim Technical

Organization) or JATMA (Japan Tire Manufacturing Association).

B. **215:** Indicates the nominal width of the tire in millimeters from sidewall edge to sidewall edge. In general, the larger the number, the wider the tire.

C. **65:** Indicates the aspect ratio which gives the tire's ratio of height to width.

D. **R:** Indicates a “radial” type tire.

E. **15:** Indicates the wheel or rim diameter in inches. If you change your wheel size, you will have to purchase new tires to match the new wheel diameter.

F. **95:** Indicates the tire's load index. It is an index that relates to how much weight a tire can carry. You may find this information in your owner's guide. If not, contact a local tire dealer.

Note: You may not find this information on all tires because it is not required by federal law.

G. **H:** Indicates the tire's speed rating. The speed rating denotes the speed at which a tire is designed to be driven for extended periods of time under a standard condition of load and inflation pressure. The tires on your vehicle may operate at different conditions for load and inflation pressure. These speed ratings may need to be adjusted for the difference in conditions. The ratings range from 81 mph (130 km/h) to 186 mph (299 km/h). These ratings are listed in the following chart.

Note: You may not find this information on all tires because it is not required by federal law.

Letter rating	Speed rating - mph (km/h)
M	81 mph (130 km/h)
N	87 mph (140 km/h)
Q	99 mph (159 km/h)
R	106 mph (171 km/h)
S	112 mph (180 km/h)
T	118 mph (190 km/h)
U	124 mph (200 km/h)
H	130 mph (210 km/h)
V	149 mph (240 km/h)
W	168 mph (270 km/h)
Y	186 mph (299 km/h)

Note: For tires with a maximum speed capability over 149 mph (240 km/h), tire manufacturers sometimes use the letters ZR. For those with a maximum speed capability over 186 mph (299 km/h), tire manufacturers always use the letters ZR.

Note: Vehicle speed is limited to either 65 mph (105 km/h) or 75 mph (120 km/h).

H. **U.S. DOT Tire Identification Number (TIN):** This begins with the letters "DOT" and indicates that the tire meets all federal standards. The next two numbers or letters are the plant code designating where it was manufactured, the next two are the tire size code and the last four numbers represent the week and year the tire was built. For example, the numbers 317 mean the 31st week of 1997. After 2000 the numbers go to four digits. For example, 2501 means the 25th week of 2001. The numbers in between are identification codes used for traceability. This information is used to contact customers if a tire defect requires a recall.

I. **M+S or M/S:** Mud and Snow, or

AT: All Terrain, or

AS: All Season.

J. **Tire Ply Composition and Material Used:** Indicates the number of plies or the number of layers of rubber-coated fabric in the tire tread and sidewall. Tire manufacturers also must indicate the ply materials in the tire and the sidewall, which include steel, nylon, polyester, and others.

K. **Maximum Load:** Indicates the maximum load in kilograms and pounds that can be carried by the tire. Refer to the Safety Compliance Certification Label for the correct tire pressure for your vehicle. See the completed vehicle's owner's guide for the location of the Safety Compliance Certification Label.

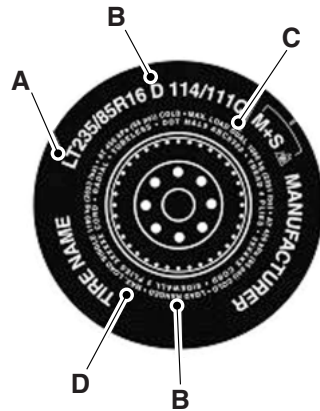
L. **Treadwear, Traction and Temperature Grades**

- **Treadwear:** The treadwear grade is a comparative rating based on the wear rate of the tire when tested under controlled conditions on a specified government test course. For example, a tire graded 150 would wear one and one-half ($1\frac{1}{2}$) times as well on the government course as a tire graded 100.
- **Traction:** The traction grades, from highest to lowest are AA, A, B, and C. The grades represent the tire's ability to stop on wet pavement as measured under controlled conditions on specified government test surfaces of asphalt and concrete. A tire marked C may have poor traction performance.
- **Temperature:** The temperature grades are A (the highest), B and C, representing the tire's resistance to the generation of heat and its ability to dissipate heat when tested under controlled conditions on a specified indoor laboratory test wheel.

M. **Maximum Permissible Inflation Pressure:** Indicates the tire manufacturers' maximum permissible pressure and/or the pressure at which the maximum load can be carried by the tire. This pressure is normally higher than the manufacturer's recommended cold inflation pressure which can be found on either the Safety Compliance Certification Label. See the completed vehicle's owner's guide for the location of the Safety Compliance Certification Label. The cold inflation pressure should never be set lower than the recommended pressure on the vehicle label.

The tire suppliers may have additional markings, notes or warnings such as standard load, radial tubeless, etc.

Additional Information Contained on the Tire Sidewall for “LT” Type Tires



“LT” type tires have some additional information beyond those of “P” type tires; these differences are described below.

Note: Tire Quality Grades do not apply to this type of tire.

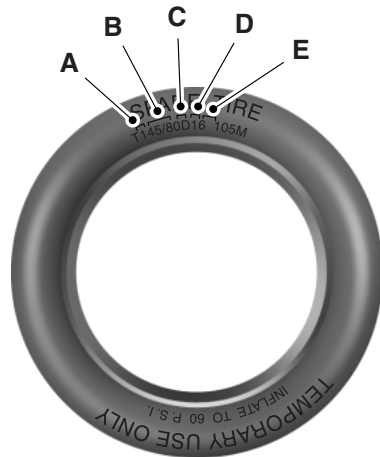
A. LT: Indicates a tire, designated by the Tire and Rim Association (T&RA), that is intended for service on light trucks.

B. Load Range/Load Inflation Limits: Indicates the tire’s load-carrying capabilities and its inflation limits.

C. Maximum Load Dual lb (kg) at psi (kPa) cold: Indicates the maximum load and tire pressure when the tire is used as a dual; defined as four tires on the rear axle (a total of six or more tires on the vehicle).

D. Maximum Load Single lb (kg) at psi (kPa) cold: Indicates the maximum load and tire pressure when the tire is used as a single; defined as two tires (total) on the rear axle.

Information on “T” Type Tires



“T” type tires have some additional information beyond those of “P” type tires; these differences are described below:

T145/80D16 is an example of a tire size.

Note: The temporary tire size for your vehicle may be different from this example. Tire Quality Grades do not apply to this type of tire.

A. T: Indicates a type of tire, designated by the Tire and Rim Association (T&RA), that is intended for temporary service on cars, SUVs, minivans and light trucks.

B. 145: Indicates the nominal width of the tire in millimeters from sidewall edge to sidewall edge. In general, the larger the number, the wider the tire.

C. 80: Indicates the aspect ratio which gives the tire’s ratio of height to width. Numbers of 70 or lower indicate a short sidewall.

D. D: Indicates a “diagonal” type tire.

R: Indicates a “radial” type tire.

E. 16: Indicates the wheel or rim diameter in inches. If you change your wheel size, you will have to purchase new tires to match the new wheel diameter.

INFLATING YOUR TIRES

Safe operation of your vehicle requires that your tires are properly inflated. Remember that a tire can lose up to half of its air pressure without appearing flat.

Every day before you drive, check your tires. If one looks lower than the others, use a tire gauge to check pressure of all tires and adjust if required.

At least once a month and before long trips, inspect each tire and check the tire pressure with a tire gauge (including spare, if equipped). Inflate all tires to the inflation pressure recommended by Ford Motor Company.



WARNING: Under-inflation is the most common cause of tire failures and may result in severe tire cracking, tread separation or “blowout”, with unexpected loss of vehicle control and increased risk of injury. Under-inflation increases sidewall flexing and rolling resistance, resulting in heat buildup and internal damage to the tire. It also may result in unnecessary tire stress, irregular wear, loss of vehicle control and accidents. A tire can lose up to half of its air pressure and not appear to be flat!

You are strongly urged to buy a reliable tire pressure gauge, as automatic service station gauges may be inaccurate. Ford recommends the use of a digital or dial type tire pressure gauge rather than a stick type tire pressure gauge.

Use the recommended cold inflation pressure for optimum tire performance and wear. Under-inflation or over-inflation may cause uneven treadwear patterns.

Always inflate your tires to the Ford recommended inflation pressure even if it is less than the maximum inflation pressure information found on the tire. The Ford recommended tire inflation pressure is found on the Safety Compliance Certification Label or Tire Label. See the completed vehicle's owner's manual for the location of the Safety Compliance Certification Label or Tire Label. Failure to follow the tire pressure recommendations can cause uneven treadwear patterns and adversely affect the way your vehicle handles.

Maximum Permissible Inflation Pressure is the tire manufacturer's maximum permissible pressure and/or the pressure at which the maximum load can be carried by the tire. This pressure is normally higher than the manufacturer's recommended cold inflation pressure which can be found on the Safety Compliance Certification Label or Tire Label. See the completed vehicle's owner's manual for the location of the Safety Compliance Certification Label or Tire Label. The cold inflation pressure should never be set lower than the recommended pressure on the Safety Compliance Certification Label or Tire Label.

When weather temperature changes occur, tire inflation pressures also change. A 10°F (6°C) temperature drop can cause a corresponding drop of 1 psi (7 kPa) in inflation pressure. Check your tire pressures frequently and adjust them to the proper pressure which can be found on the Safety Compliance Certification Label or Tire Label.

To check the pressure in your tire(s):

1. Make sure the tires are cool, meaning they are not hot from driving even a mile.

If you are checking tire pressure when the tire is hot, (i.e. driven more than 1 mile [1.6 km]), never “bleed” or reduce air pressure. The tires are hot from driving and it is normal for pressures to increase above recommended cold pressures. A hot tire at or below recommended cold inflation pressure could be significantly under-inflated.

Note: If you have to drive a distance to get air for your tire(s), check and record the tire pressure first and add the appropriate air pressure when you get to the pump. It is normal for tires to heat up and the air pressure inside to go up as you drive.

2. Remove the cap from the valve on one tire, then firmly press the tire gauge onto the valve and measure the pressure with the tire gauge.
3. Add enough air to reach the recommended air pressure

Note: If you overfill the tire, release air by pushing on the metal stem in the center of the valve. Then recheck the pressure with your tire gauge.

4. Replace the valve cap.
5. Repeat this procedure for each tire, including the spare.

Note: Some spare tires operate at a higher inflation pressure than the other tires. For T-type/mini-spare tires (see *Dissimilar Spare Tire/Wheel Information* section for description): Store and maintain at 60 psi (4.15 bar). For full-size and dissimilar spare tires (see *Dissimilar Spare Tire/Wheel Information* section for description): Store and maintain at the higher of the front and rear inflation pressure as shown on Safety Compliance Certification Label or the Tire Label.

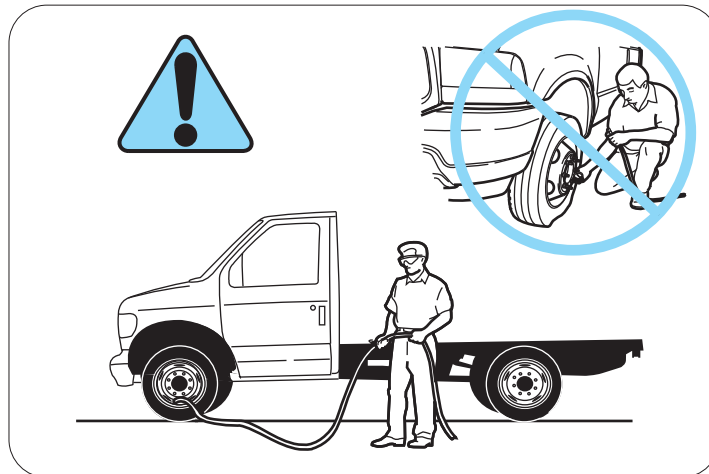
6. Visually inspect the tires to make sure there are no nails or other objects embedded that could poke a hole in the tire and cause an air leak.
7. Check the sidewalls to make sure there are no gouges, cuts or bulges.

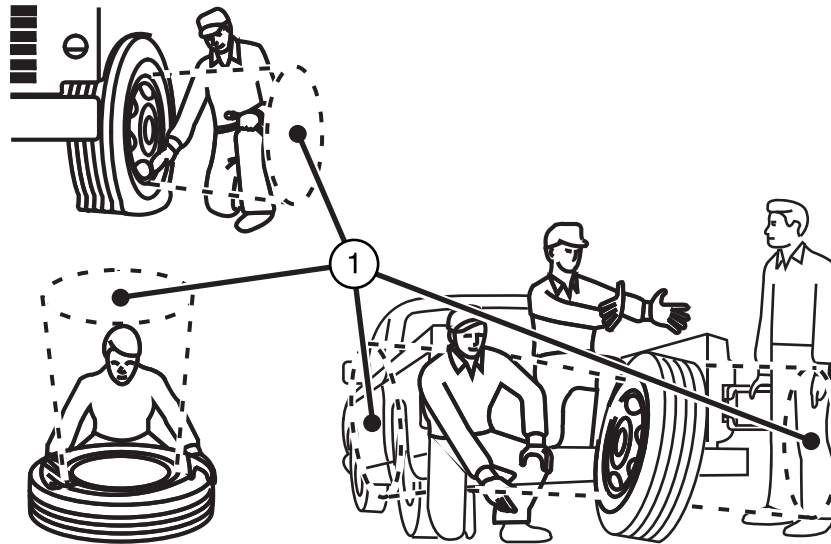
Tire Inflation Information

WARNING: An inflated tire and rim can be very dangerous if improperly used, serviced or maintained. To reduce the risk of serious injury, never attempt to re-inflate a tire which has been run flat or seriously under-inflated without first removing the tire from the wheel assembly for inspection. Do not attempt to add air to tires or replace tires or wheels without first taking precautions to protect persons and property.

All tires with Steel Carcass Plies (if equipped):

This type of tire utilizes steel cords in the sidewalls. As such, they cannot be treated like normal light truck tires. Tire service, including adjusting tire pressure, must be performed by personnel trained, supervised and equipped according to Federal Occupational Safety and Health Administration (OSHA) regulations. For example, during any procedure involving tire inflation, the technician or individual must utilize a remote inflation device, and ensure that all persons are clear of the trajectory area.





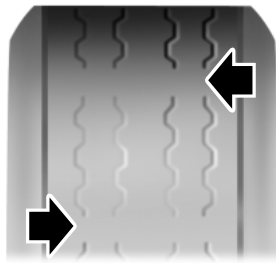
WARNING: Stay out of the trajectory (1) as indicated in the illustration.

Inspecting Your Tires and Wheel Valve Stems

Periodically inspect the tire treads for uneven or excessive wear and remove objects such as stones, nails or glass that may be wedged in the tread grooves. Check the tire and valve stems for holes, cracks, or cuts that may permit air leakage and repair or replace the tire and replace the valve stem. Inspect the tire sidewalls for cracking, cuts, bruises and other signs of damage or excessive wear. If internal damage to the tire is suspected, have the tire demounted and inspected in case it needs to be repaired or replaced. For your safety, tires that are damaged or show signs of excessive wear should not be used because they are more likely to blow out or fail.

Improper or inadequate vehicle maintenance can cause tires to wear abnormally. Inspect all your tires, including the spare, frequently, and replace them if one or more of the following conditions exist:

Tire Wear



When the tread is worn down to 1/16th of an inch (2 mm), tires must be replaced to help prevent your vehicle from skidding and hydroplaning. Built-in treadwear indicators, or “wear bars”, which look like narrow strips of smooth rubber across the tread will appear on the tire when the tread is worn down to 1/16th of an inch (2 mm).

When the tire tread wears down to the same height as these “wear bars”, the tire is worn out and must be replaced.

Damage

Periodically inspect the tire treads and sidewalls for damage (such as bulges in the tread or sidewalls, cracks in the tread groove and separation in the tread or sidewall). If damage is observed or suspected have the tire inspected by a tire professional. Tires can be damaged during off-road use, so inspection after off-road use is also recommended.



WARNING: Age

Tires degrade over time depending on many factors such as weather, storage conditions, and conditions of use (load, speed, inflation pressure, etc.) the tires experience throughout their lives. In general, tires should be replaced after six years regardless of tread wear. However, heat caused by hot climates or frequent high loading conditions can accelerate the aging process and may require tires to be replaced more frequently.

You should replace your spare tire when you replace the road tires or after six years due to aging even if it has not been used.

U.S. DOT Tire Identification Number (TIN)

Both U.S. and Canada Federal regulations require tire manufacturers to place standardized information on the sidewall of all tires. This information identifies and describes the fundamental characteristics of the tire and also provides a U.S. DOT Tire Identification Number for safety standard certification and in case of a recall.

This begins with the letters “DOT” and indicates that the tire meets all federal standards. The next two numbers or letters are the plant code designating where it was manufactured, the next two are the tire size code and the last four numbers represent the week and year the tire was built. For example, the numbers 317 mean the 31st week of 1997. After 2000 the numbers go to four digits. For example, 2501 means the 25th week of 2001. The numbers in between are identification codes used for traceability. This information is used to contact customers if a tire defect requires a recall.

Tire Replacement Requirements

WARNING: Only use replacement tires and wheels that are the same size, load index, speed rating and type (such as P-metric versus LT-metric or all-season versus all-terrain) as those originally provided by Ford. The recommended tire and wheel size may be found on either the Safety Compliance Certification Label (affixed to either the door hinge pillar, door-latch post, or the door edge that meets the door-latch post, next to the driver's seating position), or the Tire Label which is located on the B-Pillar or edge of the driver's door. If this information is not found on these labels then you should contact your authorized dealer as soon as possible. Use of any tire or wheel not recommended by Ford can affect the safety and performance of your vehicle, which could result in an increased risk of loss of vehicle control, vehicle rollover, personal injury and death. Additionally the use of non-recommended tires and wheels could cause steering, suspension, axle or transfer case/power transfer unit failure. If you have questions regarding tire replacement, contact your authorized dealer as soon as possible.



WARNING: When mounting replacement tires and wheels, you should not exceed the maximum pressure indicated on the sidewall of the tire to set the beads without additional precautions listed below. If the beads do not seat at the maximum pressure indicated, re-lubricate and try again.

When inflating the tire for mounting pressures up to 20 psi (1.38 bar) greater than the maximum pressure on the tire sidewall, the following precautions must be taken to protect the person mounting the tire:

1. Make sure that you have the correct tire and wheel size.
2. Lubricate the tire bead and wheel bead seat area again.
3. Stand at a minimum of 12 ft (3.6 m) away from the tire wheel assembly.
4. Use both eye and ear protection.

For a mounting pressure more than 20 psi (1.38 bar) greater than the maximum pressure, an authorized dealer or other tire service professional should do the mounting.

Always inflate steel carcass tires with a remote air fill with the person inflating standing at a minimum of 12 ft (3.6 m) away from the tire wheel assembly.

Your vehicle's tires are designed to provide a safe ride and handling capability.

Important: Remember to replace the wheel valve stems when the road tires are replaced on your vehicle.

It is recommended that the two front tires or two rear tires generally be replaced as a pair.

Safety Practices



WARNING: If your vehicle is stuck in snow, mud, sand, etc., do not rapidly spin the tires; spinning the tires can tear the tire and cause an explosion. A tire can explode in as little as three to five seconds.



WARNING: Do not spin the wheels at over 35 mph (56 km/h). The tires may fail and injure a passenger or bystander.

Driving habits have a great deal to do with your tire mileage and safety.

- Observe posted speed limits
- Avoid fast starts, stops and turns

- Avoid potholes and objects on the road
- Do not run over curbs or hit the tire against a curb when parking

Highway Hazards

No matter how carefully you drive there's always the possibility that you may eventually have a flat tire on the highway. Drive slowly to the closest safe area out of traffic. This may further damage the flat tire, but your safety is more important.

If you feel a sudden vibration or ride disturbance while driving, or you suspect your tire or vehicle has been damaged, immediately reduce your speed. Drive with caution until you can safely pull off the road. Stop and inspect the tires for damage. If a tire is under-inflated or damaged, deflate it, remove wheel and replace it with your spare tire and wheel. If you cannot detect a cause, have the vehicle towed to the nearest repair facility or tire dealer to have the vehicle inspected.

Tire and Wheel Alignment

A bad jolt from hitting a curb or pothole can cause the front end of your vehicle to become misaligned or cause damage to your tires. If your vehicle seems to pull to one side when you're driving, the wheels may be out of alignment. Have an authorized dealer check the wheel alignment periodically.

Wheel misalignment in the front or the rear can cause uneven and rapid treadwear of your tires and should be corrected by an authorized dealer. Front-wheel drive vehicles and those with an independent rear suspension (if equipped) may require alignment of all four wheels.

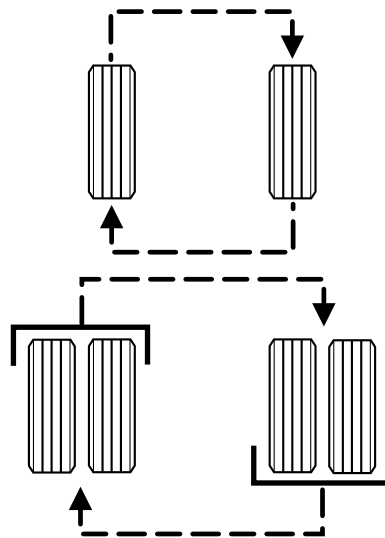
The tires should also be balanced periodically. An unbalanced tire and wheel assembly may result in irregular tire wear.

Tire Rotation

Note: If your tires show uneven wear ask an authorized dealer to check for and correct any wheel misalignment, tire imbalance or mechanical problem involved before tire rotation.

Note: Your vehicle may be equipped with a dissimilar spare tire and wheel assembly. A dissimilar spare tire and wheel assembly is defined as a spare tire or wheel that is different in brand, size or appearance from the road tires and wheels. If you have a dissimilar spare tire and wheel assembly, it is intended for temporary use only and should not be used in a tire rotation.

Rotating your tires at the recommended interval (as indicated in your scheduled maintenance) will help your tires wear more evenly, providing better tire performance and longer tire life.



- Dual rear wheel (DRW) vehicle – Six tire rotation

If your vehicle is equipped with dual rear wheels it is recommended that the front and rear tires (in pairs) be rotated only side to side. We do not recommend splitting up the dual rear wheels. Rotate them side to side as a set. After tire rotation, inflation pressures must be adjusted for the tires new positions in accordance with vehicle requirements.

Sometimes irregular tire wear can be corrected by rotating the tires.

USING SNOW CHAINS



WARNING: Snow tires must be the same size, load index, speed rating as those originally provided by Ford. Use of any tire or wheel not recommended by Ford can affect the safety and performance of your vehicle, which could result in an increased risk of loss of vehicle control, vehicle rollover, personal injury and death. Additionally, the use of non-recommended tires and wheels could cause steering, suspension, axle or transfer case/power transfer unit failure.

The tires on your vehicle have all-weather treads to provide traction in rain and snow. However, in some climates, you may need to use snow tires and chains. If you need to use chains, it is recommended that steel wheels (of the same size and specifications) be used, as chains may chip aluminum wheels.

Note: The suspension insulation and bumpers will help prevent vehicle damage. Do not remove these components from your vehicle when using snow tires and chains.

Follow these guidelines when using snow tires and chains:

- If possible, avoid fully loading your vehicle.
- Use only SAE Class S chains.
- Install chains securely, verifying that the chains do not touch any wiring, brake lines or fuel lines.
- Drive cautiously. If you hear the chains rub or bang against your vehicle, stop and retighten the chains. If this does not work, remove the chains to prevent damage to your vehicle.
- Remove the tire chains when they are no longer needed. Do not use tire chains on dry roads.

CHANGING A ROAD WHEEL

If you get a flat tire while driving, do not apply the brake heavily. Instead, gradually decrease your speed. Hold the steering wheel firmly and slowly move to a safe place on the side of the road.

Dissimilar Spare Tire and Wheel Assembly Information



WARNING: Failure to follow these guidelines could result in an increased risk of loss of vehicle control, injury or death.

If you have a dissimilar spare tire and wheel assembly, then it is intended for temporary use only. This means that if you need to use it, you should replace it as soon as possible with a road tire and wheel assembly that is the same size and type as the road tires and wheels that were originally provided by Ford. If the dissimilar spare tire or wheel is damaged, it should be replaced rather than repaired.

A dissimilar spare tire and wheel assembly is defined as a spare tire or wheel that is different in brand, size or appearance from the road tires and wheels and can be one of three types:

1. **T-type mini-spare:** This spare tire begins with the letter “T” for tire size and may have “Temporary Use Only” molded in the sidewall
2. **Full-size dissimilar spare with label on wheel:** This spare tire has a label on the wheel that states: “THIS TIRE AND WHEEL FOR TEMPORARY USE ONLY”

When driving with one of the dissimilar spare tires listed above, **do not:**

- Exceed 50 mph (80 km/h)
- Load the vehicle beyond maximum vehicle load rating listed on the Safety Compliance Label

- Tow a trailer
- Use snow chains on the end of the vehicle with the dissimilar spare tire
- Use more than one dissimilar spare tire at a time
- Use commercial car washing equipment
- Try to repair the dissimilar spare tire

Use of one of the dissimilar spare tires listed above at any one wheel location can lead to impairment of the following:

- Handling, stability and braking performance
- Comfort and noise
- Ground clearance and parking at curbs
- Winter weather driving capability
- Wet weather driving capability
- All-wheel driving capability (if applicable)

3. **Full-size dissimilar spare without label on wheel**

When driving with the full-size dissimilar spare tire and wheel assembly, do not:

- Exceed 70 mph (113 km/h)
- Use more than one dissimilar spare tire and wheel at a time
- Use commercial car washing equipment
- Use snow chains on the end of the vehicle with the dissimilar spare tire and wheel

The usage of a full-size dissimilar spare tire and wheel assembly can lead to impairment of the following:

- Handling, stability and braking performance
- Comfort and noise
- Ground clearance and parking at curbs
- Winter weather driving capability
- Wet weather driving capability
- All-wheel driving capability (if applicable)
- Load leveling adjustment (if applicable)

When driving with the full-size dissimilar spare tire and wheel assembly, additional caution should be given to:

- Towing a trailer
- Driving vehicles equipped with a camper body
- Driving vehicles with a load on the cargo rack

Drive cautiously when using a full-size dissimilar spare tire and wheel, and seek service as soon as possible.

Tire Change Procedure



WARNING: When one of the front wheels is off the ground, the transmission alone will not prevent the vehicle from moving or slipping off the jack, even if the transmission selector lever is in position **P**.



WARNING: To help prevent the vehicle from moving when you change a tire, be sure to place the transmission selector lever in position **P**, set the parking brake and block (in both directions) the wheel that is diagonally opposite (other side and end of the vehicle) to the tire being changed.



WARNING: Never get underneath a vehicle that is supported only by a jack. If the vehicle slips off the jack, you or someone else could be seriously injured.

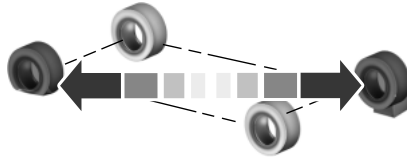


WARNING: Do not attempt to change a tire on the side of the vehicle close to moving traffic. Pull far enough off the road to avoid the danger of being hit when operating the jack or changing the wheel.



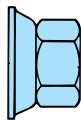
WARNING: Always use the jack provided as original equipment with your vehicle. If using a jack other than the one provided as original equipment with your vehicle, make sure the jack capacity is adequate for the vehicle weight, including any vehicle cargo or modifications.

1. Park on a level surface.
2. Activate the warning flashers.
3. Place the transmission selector lever in position **P**.
4. Apply the parking brake and turn engine off.
5. Block the wheel that is diagonally opposite the tire you are changing.



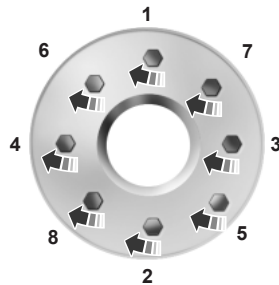
The parking brake is on the transmission. Therefore, the vehicle will not be prevented from moving when a rear wheel is lifted, even if the parking brake is applied. Be sure to block both directions of the wheel that is diagonally opposite to the wheel that is being lifted.

6. Remove the spare tire and jack from the storage location.
7. Loosen the wheel nut by pulling up on the handle of the lug nut wrench about one-half turn (counterclockwise). Do not remove the wheel lug nuts until you raise the tire off the ground.
8. Position the jack to raise the front or rear wheel. Raise the vehicle with the jack applied to the axle(s).
- Note:** Never use the rear differential as a jacking point.
9. Raise the vehicle until the wheel is completely off the ground.
10. Remove the lug nuts with the lug nut wrench.
11. Replace the flat tire with the spare tire.

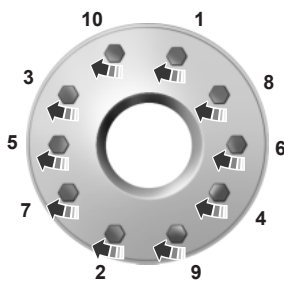


12. Use the lug nut wrench to screw the lug nut snugly against the wheel.
13. Lower the vehicle.

14. Remove the jack and fully tighten the lug nuts in the order shown. Refer to *Wheel lug nut torque specifications* later in this chapter for the proper lug nut torque specification.



8-lug nut torque sequence



10-lug nut torque sequence

15. Replace any wheel trim.
16. Stow the jack, handle and lug wrench.
17. Unblock the wheels.

TECHNICAL SPECIFICATIONS**Wheel Lug Nut Torque Specifications**

WARNING: When a wheel is installed, always remove any corrosion, dirt or foreign materials present on the mounting surfaces of the wheel or the surface of the wheel hub, brake drum or brake disc that contacts the wheel. Ensure that any fasteners that attach the rotor to the hub are secured so they do not interfere with the mounting surfaces of the wheel. Installing wheels without correct metal-to-metal contact at the wheel mounting surfaces can cause the wheel nuts to loosen and the wheel to come off while the vehicle is in motion, resulting in loss of control.

On vehicles equipped with dual rear wheels, retighten the wheel lug nuts to the specified torque at 100 miles (160 km), and again at 500 miles (800 km) of new vehicle operation and after any wheel disturbance (tire rotation, changing a flat tire, wheel removal, etc.).

Bolt size	Wheel lug nut torque*	
	ft-lb	N•m
M14 x 1.5 (19.5 in. wheels)	150	200
M22 x 1.5 (22.5 in. wheels)	450	610
* Torque specifications are for nut and bolt threads free of dirt and rust. Use only Ford recommended replacement fasteners.		

On all two-piece flat wheel nuts, apply one drop of motor oil between the flat washer and the nut. Do not apply motor oil to the wheel nut threads or the wheel stud threads.

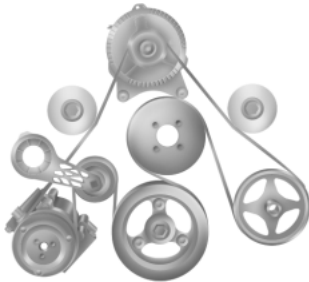


ENGINE SPECIFICATIONS

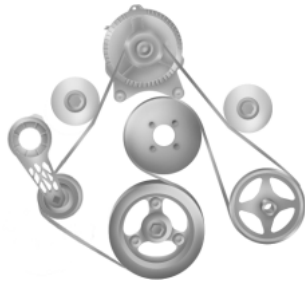
Engine	6.8L V10 engine
Cubic inches	415
Required fuel	Minimum 87 octane
Firing order	1-6-5-10-2-7-3-8-4-9
Ignition system	Coil on plug
Spark plug gap	0.039-0.043 inch (1.00-1.10mm)
Compression ratio	9.2:1

Engine drivebelt routing

Engines with A/C



Engines without A/C



TECHNICAL SPECIFICATIONS

Item	Capacity	Ford part name or equivalent	Ford part number / Ford specification
Brake fluid-Hydroboost brake booster system—Chassis with Gross Vehicle Weight Ratings of 16,000 lb (7,257 kg), 18,000 lb (8,165 kg) and 19,500 lb (8,845 kg)	Between MIN and MAX on reservoir	Motorcraft® High Performance DOT 3 Motor Vehicle Brake Fluid	PM-1-C / WSS-M6C62-A or WSS-M6C65-A1
Brake fluid-Hydromax brake booster system—Chassis with Gross Vehicle Weight Ratings of 20,500 lb (9,299 kg), 22,000 lb (9,979 kg), 24,000 lb (10,886 kg) and 26,000 lb (11,793 kg)		DOT 5.1 Motor Vehicle Brake Fluid	YS4Z-19542-AA / ESD-M6C57-A or WSS-M6C65-A2
Engine coolant ^{1,2}	30.6 quarts (29.0L)	Motorcraft® Premium Gold Engine Coolant (yellow-colored)	VC-7-B (US) / CVC-7-B (Canada) / WSS-M97B51-A1

Item	Capacity	Ford part name or equivalent	Ford part number / Ford specification
Engine oil ^{3,4}	7.0 quarts (6.6L)	Motorcraft® SAE 5W-20 Premium Synthetic Blend Motor Oil (US) Motorcraft® SAE 5W-20 Super Premium Motor Oil (Canada)	XO-5W20-QSP (US) CXO-5W20-LSP12 (Canada) / WSS-M2C945-A
Automatic transmission TorqShift® 5-speed ^{5,6}	18.2 quarts (17.2L)		
Power steering fluid	Keep in FULL range on dipstick	Motorcraft® MERCON® LV ATF	XT-10-QLV / MERCON® LV WSS-M2C938-A
Parking brake assembly	Fill to bottom of fill plug hole	Motorcraft® MERCON® V ATF	XT-5-QM / MERCON® V WSS-M2C938-A
Rear axle ^{7,8}	4.0 quarts (3.9L) (Dana M80)	Motorcraft® SAE 75W-140 Synthetic Rear Axle Lubricant	XY-75W140-QL / WSL-M2C192-A and GL-5
	8.0 quarts (7.6L) (Dana S110)		
	7.0 quarts (6.6L) (Dana S130)		
	16.0 quarts (15.1L) (Dana Spicer 17060S)		

Item	Capacity	Ford part name or equivalent	Ford part number / Ford specification
Transmission /steering/parking brake linkages and pivots, brake and clutch pedal shaft (if equipped)	—	Premium Long-Life Grease	XG-1-C / ESA-M1C75-B
Windshield washer fluid	Fill as required	Motorcraft® Premium Windshield Washer Concentrate (US) Premium Quality Windshield Washer Fluid (Canada)	ZC-32-A (US) CXC-37-(A, B, D, and F) (Canada) / WSB-M8B16-A2 / - -
Fuel tank	80 gallons (303L) Motorhome	—	—
	40 gallons (151L) Commercial chassis		
¹ Capacity is approximate and will vary due to second-stage manufacturer completion of HVAC system. Fill to the Cold Fill Level on reservoir.			
² Add the coolant type originally equipped in your vehicle.			
³ Use of synthetic or synthetic blend motor oil is not mandatory. Engine oil need only meet the requirements of Ford specification WSS-M2C945-A, SAE 5W-20 and display the API Certification Mark.			
⁴ Your engine has been designed to be used with Ford engine oil, which gives a fuel economy benefit while maintaining the durability of your engine. Using oils other than the one specified can result in longer engine cranking periods, reduced engine performance, reduced fuel economy and increased emission levels.			

Item	Capacity	Ford part name or equivalent	Ford part number / Ford specification
⁵ Indicates only approximate dry-fill capacity. Some applications may vary based on cooler size and if equipped with in-tank cooler. The amount of transmission fluid and fluid level should be set by the indication on the dipstick's normal operating range.			
⁶ Automatic transmissions that require MERCON® LV should only use MERCON® LV fluid. Refer to <i>scheduled maintenance information</i> to determine the correct service interval. Use of any fluid other than the recommended fluid may cause transmission damage.			
⁷ Your vehicle's rear axle is filled with a synthetic rear axle lubricant and is considered lubricated for life. These lubricants do not need to be checked or changed unless a leak is suspected, service is required or the axle assembly has been submerged in water. The axle lubricant should be changed any time the rear axle has been submerged in water.			
⁸ Fill 1/4 inch to 9/16 inch (6 mm to 14 mm) below bottom of fill hole.			

MOTORCRAFT PART NUMBERS

Component	6.8L V10 engine
Air filter element	FA-1782
Battery	BXT-65-750
Oil filter	FL-820-S
Spark plugs	¹
Transmission fluid filter	FT-180

¹For spark plug replacement, see your authorized dealer. Refer to *scheduled maintenance information* for the appropriate intervals for changing the spark plugs.

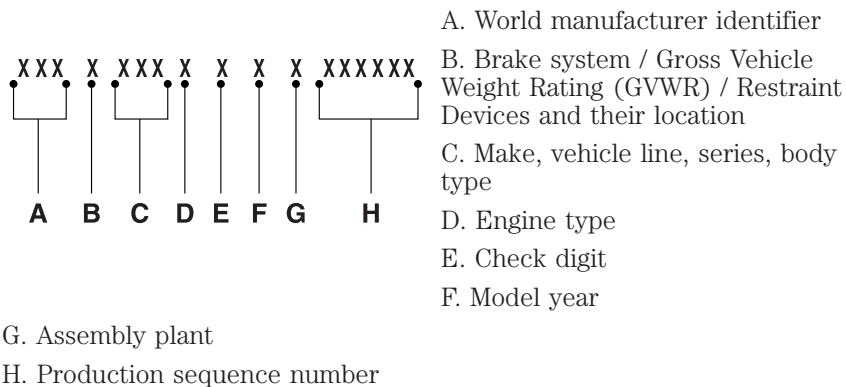
Note: Replace the spark plugs with ones that meet Ford material and design specifications for your vehicle, such as Motorcraft® or equivalent replacement parts. The customer warranty may be void for any damage to the engine if such spark plugs are not used.

VEHICLE IDENTIFICATION NUMBER

The vehicle identification number is located near the cowl to the right of the air filter.

If you ever find it necessary to communicate with Ford Motor Company about your vehicle, always include the VIN in your communication.

The Vehicle Identification Number (VIN) contains the following information:



VEHICLE CERTIFICATION LABEL

On completed derivations of incomplete vehicles, the certification label is affixed at a location determined by a subsequent stage manufacturer of the completed vehicle. In these cases the completed vehicle is manufactured in two or more stages by two or more separate manufacturers.

TRANSMISSION CODE DESIGNATION

MFD. BY FORD MOTOR CO.

DATE: XX/XX

GVWR: XXXXXLB/ XXXXXKG

FRONT GAWR: XXXXL

REAR GAWR: XXXXLB

XXXXKG

WITH XXXXKG

WITH XXXXKG

XXXX/XXXXXXX

TIRES XXXX/XXXXXXX

TIRES XXXX/XXXXXXX

XXXX.XX

RIMS XXXX.XX

RIMS XXXX.XX

AT XXX kPa/XX

PSI COLD AT XXX kPa/XX

PSI COLD

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR

VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF

MANUFACTURE SHOWN ABOVE.

VIN: XXXXXXXXXXXXXXXXXX

XXXXX

TYPE: XXX

XXXXX

XXXXXXXXXXXXXXXXXXXX

XXXXXXXXXXXX-XX

EXT PNT: XX

RC: XX

DSO: XXX

WB INT TR TP/PS R AXLE TR SPR XXXX

XXX XX X XX X XX XXX

You can find a transmission code on the Safety Compliance Certification Label. The following table tells you which transmission each code represents.

Description	Code
Five-speed automatic, TorqShift®	T

FORD ESP EXTENDED SERVICE PLANS (U.S. ONLY)

More than 32 million Ford and Lincoln owners have discovered the powerful protection of Ford ESP. It is the only extended service plan backed by Ford Motor Company, and provides “peace of mind” protection beyond the New Vehicle Limited Warranty coverage.

Up to 500+ Covered Vehicle Components

There are four, new-vehicle Extended Service Plans with different levels of coverage. Ask your dealer for details.

PremiumCare – Our most comprehensive coverage. With over 500 covered components, this plan is so complete that we generally only discuss what’s not covered!

ExtraCare – Covers 113 components, and includes many high-tech items.

BaseCare – Covers 84 components.

PowertrainCare – Covers 29 critical components.

Ford ESP is honored by all Ford and Lincoln Dealers in the U.S. and Canada It’s the only extended service plan authorized and backed by Ford Motor Company. That means you get:

- Reliable, quality service anywhere you go.
- **Factory-trained technicians.**
- **Ford Authorized Parts used with every covered repair.**

Rental car reimbursement

If your vehicle is kept overnight for covered repairs, you are eligible for rental car coverage, including Bumper-to-Bumper warranty repairs, or manufacturer’s recalls.

Transferable coverage

If you sell your vehicle before your Ford ESP coverage expires, you can transfer any remaining coverage to the new owner. Whenever you’re ready to sell your car, prospective buyers may feel better about taking a risk on your used vehicle. Ford ESP may add resale value!

Plus, **exclusive 24/7 roadside assistance**, including:

- Towing, flat-tire change and battery jump starts.
- Out-of-fuel and lock-out assistance.
- Travel expense reimbursement for lodging, meals and rental car.
- Destination assistance for taxi, shuttle, rental car coverage and emergency transportation.

Ford ESP Can Quickly Pay for Itself

One service bill – the cost of parts and labor – can easily exceed the price of your Ford ESP Service Contract. With Ford ESP, you minimize your risk for unexpected repair bills and rising repair costs.

Avoid the rising cost of properly maintaining your vehicle!

Ford ESP also offers a Premium Maintenance Plan that covers items that **routinely wear out**.

The coverage is prepaid, so you never have to worry about affording your vehicle maintenance. It covers regular checkups, routine inspections, preventive care and replacement of items that require periodic attention for **normal “wear”**:

- Wiper blades
- Spark plugs (except California)
- Clutch disc
- Brake pads and linings
- Shock absorbers
- Belts and hoses

Contact your selling Ford or Lincoln dealership today so they can customize a Ford Extended Service Plan that fits your driving lifestyle and budget.

Interest free finance options available

Take advantage of our installment payment plan, just a 10% down payment will provide you with an affordable no interest, no-fee payment opportunity.

Protect Yourself From the Rising Cost of Vehicle Repairs With a Ford Extended Service Plan

To learn more, call our Ford ESP specialists at 800-367-3377, and don't forget to ask about our interest free payment program, allowing you all the security and benefits Ford ESP has to offer while paying over time. Your pre-approved with no credit checks, no hassels!

Or, mail your name, address, city, state and zip code to:

Ford ESP
P.O. Box 8072
Royal Oak, MI 48068-9933

FORD ESP EXTENDED SERVICE PLANS (CANADA ONLY)

You can get more protection for your vehicle by purchasing a Ford Extended Service Plan (ESP). Ford ESP is the only service contract backed by Ford Motor Company of Canada, Limited. Depending on the plan you purchase, Ford ESP provides benefits such as:

- Rental reimbursement
- Coverage for certain maintenance and wear items
- Protection against repair costs after your New Vehicle Limited Warranty Coverage expires
- Roadside Assistance benefits

There are several Ford ESP plans available in various time, distance and deductible combinations. Each plan is tailored to fit your own driving needs, including reimbursement for towing and rental.

When you purchase Ford ESP, you receive added peace-of-mind protection throughout Canada and the United States, provided by a network of participating Ford Motor Company dealers. The Lincoln Maintenance Protection Plan is honored at authorized Lincoln dealers.

Note: Repairs performed outside of Canada and the United States are not eligible for Ford ESP coverage.

This information is subject to change.

For more information, visit your local Ford of Canada dealer or www.ford.ca to find the Ford Extended Service Plan that is right for you.

GENERAL MAINTENANCE INFORMATION**Why Maintain Your Vehicle?**

Carefully following the maintenance schedule helps protect against major repair expenses resulting from neglect or inadequate maintenance and may also help to increase the value of your vehicle when you sell or trade it. Keep all receipts for completed maintenance with the vehicle.

Regular maintenance intervals for your vehicle have been established based upon rigorous testing. It is important that you have your vehicle serviced at the proper times. These intervals serve two purposes; one is to maintain the reliability of your vehicle and the second is keep your cost of owning the vehicle down.

It is your responsibility to see that all scheduled maintenance is performed and that the materials used meet the specifications identified in the *Capacities and Specifications* chapter. Failure to perform scheduled maintenance invalidates warranty coverage on parts affected by the lack of maintenance.

Why Maintain Your Vehicle at Your Dealership?***Factory-Trained Technicians***

Service technicians participate in extensive factory-sponsored certification training to help them become experts on the operation of your vehicle. Ask your dealership about the training and certification their technicians, have received. Your vehicle is very sophisticated and built with multiple complex performance systems. Every manufacturer develops these systems using different specifications and performance features. That's why it's important to rely upon your dealership to properly diagnose and repair your vehicle.

Genuine Ford and Motorcraft® Replacement Parts

Dealerships stock Ford, Motorcraft® and Ford-authorized branded remanufactured replacement parts. These parts meet or exceed Ford Motor Company's specifications. Parts installed at your dealership carry a nationwide, 12 month/12000 mile (20000 kilometer) parts and labor limited warranty. If you do not use Ford authorized parts, they may not meet Ford specifications and, depending on the part, it could affect emissions compliance.

Convenience

Many dealerships have extended evening and Saturday hours to make your service visit more convenient and they offer one stop shopping. They can perform any services that are required on your vehicle, from general maintenance to collision repairs.

Note: Not all dealers have extended hours or bodyshops. Please contact your dealer for details.

Protecting Your Investment

Maintenance is an investment that will pay dividends in the form of improved reliability, durability and resale value. To maintain the proper performance of your vehicle and its emission control systems, it is imperative that scheduled maintenance be completed at the designated intervals.

Your vehicle is very sophisticated and built with multiple complex performance systems. Every manufacturer develops these systems using different specifications and performance features. That's why it's important to rely upon your dealership to properly diagnose and repair your vehicle.

Ford Motor Company has recommended maintenance intervals for various parts and component systems based upon engineering testing. Ford Motor Company relies upon this testing to determine the most appropriate mileage for replacement of oils and fluids to protect your vehicle at the lowest overall cost to you and recommends against maintenance schedules that deviate from the scheduled maintenance information.

Ford strongly recommends the using only genuine Ford, Motorcraft® or Ford-authorized remanufactured replacement for parts because they are engineered for your vehicle.

Additives and Chemicals

Ford Motor Company recommended additives and chemicals are listed in the Owner Manual and in the Ford Workshop Manual. Additional chemicals or additives not approved by Ford Motor Company and are not recommended as part of normal maintenance. Please consult your *Warranty Manual* for complete warranty information.

Oils, Fluids and Flushing

In many cases, fluid discoloration is a normal operating characteristic and, by itself, does not necessarily indicate a concern or that the fluid needs to be changed. However, discolored fluids that also show signs of overheating and/or foreign material contamination should be inspected immediately by a qualified expert such as the factory-trained technicians at your dealership. Your vehicle's oils and fluids should be changed at the specified intervals or in conjunction with a repair. Flushing is a viable way to change fluid for many vehicle sub-systems during scheduled maintenance. It is critical that systems are flushed only with new fluid that is the same as that required to fill and operate the system, or using a Ford-approved flushing chemical.

Owner Checks and Services

Certain basic maintenance checks and inspections should be performed every month or at six months intervals.

Check Every Month
Engine oil level.
Function of all interior and exterior lights.
Tires (including spare) for wear and proper pressure.
Windshield washer fluid level.
Check Every Six Months
Battery connections. Clean if necessary.
Body and door drain holes for obstructions. Clean if necessary.
Cooling system fluid level and coolant strength.
Door weatherstrips for wear. Lubricate if necessary.
Hinges, latches and outside locks for proper operation. Lubricate if necessary.
Parking brake for proper operation.
Safety belts and seat latches for wear and function.
Safety warning lamps (brake, ABS, airbag, safety belt) for operation.
Washer spray and wiper operation. Clean or replace blades as necessary.

Multi-point Inspection

In order to keep your vehicle running right, it is important to have the systems on your vehicle checked regularly. This can help identify potential issues and prevent major problems. Ford Motor Company recommends the following multi-point inspection be performed at every scheduled maintenance interval to help make sure your vehicle keeps running great.

Multi-point inspection	
Accessory drive belt(s)	Horn operation
Battery performance	Radiator, cooler, heater and A/C hoses
Engine air filter	Suspension component for leaks or damage
Exhaust system	Steering and linkage
Exterior lamps and hazard warning system operation	Tires for wear and proper pressure, including spare
Fluid levels*; fill if necessary	Windshield for cracks, chips or pits
For oil and fluid leaks	Washer spray and wiper operation

*Brake, coolant recovery reservoir, automatic transmission, power steering and window washer

Be sure to ask your dealership service advisor or technician about the multi-point vehicle inspection. It's a comprehensive way to perform a thorough inspection of your vehicle. It's your checklist that gives you immediate feedback on the overall condition of your vehicle. You'll know what's been checked, what's okay, as well as those things that may require future or immediate attention. The multi-point vehicle inspection is one more way to keep your vehicle running great!

[illegible]

NORMAL SCHEDULED MAINTENANCE AND LOG

The following section contains the “Normal Schedule”. This schedule is presented at specific mileage (kilometer) intervals with exceptions noted.

Normal Scheduled Maintenance	
Every 7500 miles (12000 km) or six months (whichever comes first)	Change engine oil and filter.
	Rotate tires*, inspect tire wear and measure tread depth.
	Inspect wheels and related components for abnormal noise, wear, looseness or drag.
	Perform multi-point inspection (recommended).
Every 15000 miles (24000 km) or 12 months (whichever comes first)	Inspect automatic transmission fluid level. Consult dealer for requirements.
	Inspect brake pads, shoes, rotors, drums, brake linings, hoses and parking brake.
	Inspect engine cooling system strength and hoses.
	Inspect exhaust system and heat shields.
	Inspect steering linkage, ball joints, suspension, tie-rod ends, driveshaft and U-joints. Lubricate if equipped with grease fittings.

*Vehicles equipped with dual rear wheels should rotate the front wheels when specified; rear wheels only if unusual wear is noted.

Additional Maintenance Items	
Every 30000 miles (48000 km)	Replace engine air filter.
Every 60000 miles (96000 km)	Change automatic transmission fluid and filter. Consult dealer for requirements.
	Replace front wheel bearing grease and grease seal if non-sealed bearings are used.
Every 97500 miles (156000 km)	Replace spark plugs.
Every 105000 miles (168000 km)	Change engine coolant.*
	Replace rear axle fluid.
	Inspect accessory drive belt(s).**
Every 150000 miles (240000 km)	Replace accessory drive belt(s) if not replaced within the last 100000 miles (160000 km).
	Replace front wheel bearings and seals if non-sealed bearings are used.

*Initial replacement at six years or 105000 miles (168000 kilometers), then every three years or 45000 miles (72000 kilometers).

**Perform a follow-up inspection at 120000 miles (192000 kilometers).

Maintenance Schedule Log

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Scheduled Maintenance

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SPECIAL OPERATING CONDITIONS

If you operate your vehicle **primarily** in one of the more demanding conditions listed below, you need to have some items maintained more frequently. If you only **occasionally** operate your vehicle under these conditions, it is not necessary to perform the additional maintenance. For specific recommendations, see your dealership service advisor or technician.

Towing a Trailer or Using a Camper or Car-top Carrier	
Inspect frequently, service as required	Inspect and lubricate U-joints. See axle maintenance items under <i>Exceptions</i> .
Every 5000 miles (8000 km)	Inspect the wheels and related components for abnormal noise, wear, looseness or drag. Rotate tires*, inspect tires for wear and measure tread depth.
Every 5000 miles (8000 km) or six months	Change engine oil and filter. Inspect and lubricate U-joints.
Every 30000 miles (48000 km)	Replace front wheel bearing grease and grease seals if non-sealed bearings are used.

*Vehicles equipped with dual rear wheels should rotate the front wheels when specified; rear wheels only if unusual wear is noted.

Extensive Idling or Low-speed Driving for Long Distances as in Heavy Commercial Use (i.e. Delivery, Taxi, Patrol Car or Livery)	
Every 5000 miles (8000 km)	Inspect brake system. Inspect wheels and related components for abnormal noise, wear, looseness or drag. Lubricate control arm and steering ball joints if equipped with grease fittings. Rotate tires*, inspect tires for wear and measure tread depth.
Every 5000 miles (8000 km) or six months	Change engine oil and filter. Inspect and lubricate U-joints.

Extensive Idling or Low-speed Driving for Long Distances as in Heavy Commercial Use (i.e. Delivery, Taxi, Patrol Car or Livery)	
Every 30000 miles (48000 km)	Replace front wheel bearing grease and grease seals if non-sealed bearings are used.
Every 60000 miles (96000 km)	Replace spark plugs.

*Vehicles equipped with dual rear wheels should rotate the front wheels when specified; rear wheels only if unusual wear is noted.

Operating in Dusty or Sandy Conditions Such as Unpaved or Dusty Roads	
Inspect frequently, service as required	Replace engine air filter.
Every 5000 miles (8000 km)	Inspect the wheels and related components for abnormal noise, wear, looseness or drag.
	Rotate tires*, inspect tires for wear and measure tread depth.
Every 5000 miles (8000 km) or six months	Change engine oil and filter.
	Inspect and lubricate U-joints.
Every 30000 miles (48000 km)	Replace front wheel bearing grease and grease seals if non-sealed bearings are used.
Every 50000 miles (80000 km)	Change rear axle fluid.

*Vehicles equipped with dual rear wheels should rotate the front wheels when specified; rear wheels only if unusual wear is noted.

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Special Operating Condition Log

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EXCEPTIONS

Normal vehicle axle maintenance: Rear axles and power take-off (PTO) units with synthetic fluid and light-duty trucks equipped with Ford-design axles are lubricated for life; do not check or change fluid unless a leak is suspected, service is required or the assembly has been submerged in water. During long periods of trailer towing with outside temperatures above 70°F (21°C) and at wide-open throttle for long periods above 45 mph (72 km/h), non-synthetic rear axle fluids should be changed every 3000 miles (4800 kilometers) or three months, whichever comes first. This interval can be waived if the axle is filled with 75W140 synthetic gear fluid meeting Ford specification WSL-M2C192-A, part number F1TZ-19580-B or equivalent. Add friction modifier XL-3 (EST-M2C118-A) or equivalent for complete refill of Traction-Lok rear axles (refer to *Technical specifications* in the *Capacities and Specifications* chapter for details).

California fuel filter replacement: If the vehicle is registered in California, the California Air Resources Board has determined that the failure to perform this maintenance item will not nullify the emission warranty or limit recall liability prior to the completion of the vehicle's useful life. Ford Motor Company, however, urges you to have all recommended maintenance services performed at the specified intervals and to record all vehicle service.

Class A Motorhome: Change brake fluid every two years.

Hot climate oil change intervals: Vehicles operating in the Middle East, North Africa, Sub-Saharan Africa or locations with similar climates using an American Petroleum Institute (API) Certified for Gasoline Engines (Certification mark) oil of SM or SN quality, the normal oil change interval is 5000 miles (8000 kilometers). If the available API "SM" or "SN" oils are not available, then the oil change service interval is 3000 miles (4800 kilometers).

Engine air filter replacement: Engine air filter life is dependent on exposure to dusty and dirty conditions. Vehicles operated in these conditions require frequent inspection and replacement of the engine air filter.

ENGINE COOLANT CHANGE RECORD

Initial change	Six years or 105000 miles (168000 km) (whichever comes first)
After initial change	Every three years or 45000 miles (72000 km)

Engine Coolant Change Log

<p>DEALER VALIDATION:</p> <p>P&A CODE:</p> <p>RO#: HOURS:</p> <p>DATE: MILEAGE:</p>	<p>DEALER VALIDATION:</p> <p>P&A CODE:</p> <p>RO#: HOURS:</p> <p>DATE: MILEAGE:</p>
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