

2015 **E-SERIES** Owner's Manual



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2015 **E-SERIES** 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 product features and options available throughout the range of available models, sometimes even before they are generally available. It may describe options not fitted to your vehicle.

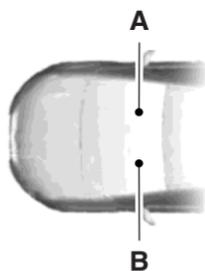
**Note:** Some of the illustrations in this manual may show features as used in different models, so may appear different to you on your vehicle. However, the essential information in the illustrations is always correct.

**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.

**Note:** This vehicle was sold as an incomplete vehicle by Ford Motor Company or an authorized Ford dealer and may have since been upfitted by a vehicle modifier. As a result, some of the options and features on this vehicle may differ from what we describe in this manual.

This manual may qualify the location of a component as left-hand side or right-hand side. The side is determined when facing forward in the seat.



A. Right-hand side

B. Left-hand side

### 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

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
	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

Symbol	Description	Symbol	Description	Symbol	Description
	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
	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. Additionally, when your vehicle is in for service or repair, Ford Motor Company, Ford of Canada, and service and repair facilities may access or share among them data for vehicle improvement purposes. 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 the *SYNC®* chapter 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;**
- **How fast the vehicle was travelling;**
- **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. For more information, see Traffic, Directions and Information, Terms and Conditions. See your SYNC® chapter 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](http://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 to Account Manager, please go to [www.fordcredit.com](http://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 that 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, see 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, see the warranty information that is provided to you along with your owner's manual.

### **Special Instructions**

For your added safety, your vehicle is fitted with sophisticated electronic controls.



**WARNING:** Please read the *Supplementary Restraints System* chapter. Failure to follow the specific warnings and instructions could result in personal injury.



**WARNING:** Front seat mounted rear-facing child or infant seats should **NEVER** be placed in front of an active passenger airbag.

**Notice to owners of pickup trucks and utility type vehicles**

**WARNING:** Utility vehicles have a significantly higher rollover rate than other types of vehicles.

Before you drive your vehicle, please read this Owner's Manual carefully. Your vehicle is not a passenger car. As with other vehicles of this type, failure to operate your vehicle correctly may result in loss of vehicle control, vehicle rollover, personal injury or death.

**Using your vehicle as an ambulance**

If your light truck is equipped with the Ford Ambulance Preparation Package, it may be utilized as an ambulance. Ford urges ambulance manufacturers to follow the recommendations of the *Ford Incomplete Vehicle Manual*, *Ford Truck Body Builder's Layout Book* and the *Qualified Vehicle Modifiers (QVM) Guidelines* as well as pertinent supplements. For additional information, please contact the Truck Body Builders Advisory Service at <http://www.fleet.ford.com/truckbbas/> and then by selecting "Contact Us" or by phone at 1-877-840-4338.

Use of your Ford light truck as an ambulance, without the Ford Ambulance Preparation Package voids the Ford New Vehicle Limited Warranty and may void the Emissions Warranties. In addition, ambulance usage without the preparation package could cause high underbody temperatures, overpressurized fuel and a risk of spraying fuel which could lead to fires.

If your vehicle is equipped with the Ford Ambulance Preparation Package, it will be indicated on the Safety Compliance Certification Label. The label is located on the driver's side door pillar or on the rear edge of the driver's door. You can determine whether the ambulance manufacturer followed Ford's recommendations by directly contacting that manufacturer.

## 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, crash and injury. We strongly recommend that you use extreme caution when using any device 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 and encourage the use of voice-operated systems when possible. Make sure you are aware of all applicable local laws that may affect the 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. **See this owner's manual for all other required information and warnings.**

**GENERAL INFORMATION**

See the following sections for directions on how to properly use safety restraints for children.



**WARNING:** Always make sure your child is secured properly in a device that is appropriate for their height, age and weight. Child safety restraints must be bought separately from your vehicle. Failure to follow these instructions and guidelines may result in an increased risk of serious injury or death to your child.



**WARNING:** All children are shaped differently. The recommendations for safety restraints are based on probable child height, age and weight thresholds from NHTSA and other safety organizations, or are the minimum requirements of law. Ford recommends checking with a NHTSA Certified Child Passenger Safety Technician (CPST) and consulting your pediatrician to make sure your child seat is appropriate for your child, and is compatible with and properly installed in your vehicle. To locate a child seat fitting station and CPST, contact the NHTSA toll free at 1-888-327-4236 or on the internet at <http://www.nhtsa.dot.gov>. In Canada, check with your local St. John Ambulance office for referral to a CPST or for further information, contact your provincial ministry of transportation, or locate your local St. John Ambulance office by searching for St. John Ambulance on the internet, or Transport Canada at 1-800-333-0371 (<http://www.tc.gc.ca>). Failure to properly restrain children in safety seats made especially for their height, age, and weight may result in an increased risk of serious injury or death to your child.

<b>Recommendations for Safety Restraints for Children</b>		
	<b>Child size, height, weight, or age</b>	<b>Recommended restraint type</b>
Infants or toddlers	Children weighing 40 lb (18 kg) or less (generally age four or younger).	Use a child safety seat (sometimes called an infant carrier, convertible seat, or toddler seat).

<b>Recommendations for Safety Restraints for Children</b>		
	<b>Child size, height, weight, or age</b>	<b>Recommended restraint type</b>
Small children	Children who have outgrown or no longer properly fit in a child safety seat (generally children who are less than 4 ft. 9 in. (1.45 m) tall, are greater than age four (4) and less than age twelve (12), and between 40 lb (18 kg) and 80 lb (36 kg) and upward to 100 lb (45 kg) if recommended by your child restraint manufacturer).	Use a belt-positioning booster seat.
Larger children	Children who have outgrown or no longer properly fit in a belt-positioning booster seat (generally children who are at least 4 ft. 9 in. (1.45 m) tall or greater than 80 lb (36 kg) or 100 lb (45 kg) if recommended by child restraint manufacturer).	Use a vehicle safety belt having the lap belt snug and low across the hips, shoulder belt centered across the shoulder and chest, and seat back upright.

- You are required by law to properly use safety seats for infants and toddlers in the U.S. and Canada.
- Many states and provinces require that small children use approved booster seats until they reach age eight, a height of 4 feet 9 inches (1.45 meters) tall, or 80 pounds (36 kilograms). Check your local and state or provincial laws for specific requirements about the safety of children in your vehicle.
- When possible, always properly restrain children twelve (12) years of age and under in a rear seating position of your vehicle. Accident statistics suggest that children are safer when properly restrained in the rear seating positions than in a front seating position. See Passenger Airbag ON and OFF Switch in the Supplemental Restraints System chapter for more information.

**CHILD SEAT POSITIONING**

**WARNING:** Airbags can kill or injure a child in a child seat.

Never place a rear-facing child seat in front of an active airbag. If you must use a forward-facing child seat in the front seat, move the vehicle seat upon which the child seat is installed all the way back. When possible, all children age 12 and under should be properly restrained in a rear seating position. If all children cannot be seated and restrained properly in a rear seating position, properly restrain the largest child in the front seat.



**WARNING:** Always carefully follow the instructions and warnings provided by the manufacturer of any child restraint to determine if the restraint device is appropriate for your child's size, height, weight, or age. Follow the child restraint manufacturer's instructions and warnings provided for installation and use in conjunction with the instructions and warnings provided by your vehicle manufacturer. A safety seat that is improperly installed or utilized, is inappropriate for your child's height, age or weight, or does not properly fit the child, may increase the risk of serious injury or death.



**WARNING:** Never let a passenger hold a child on his or her lap while your vehicle is moving. The passenger cannot protect the child from injury in a crash, which may result in serious injury or death.



**WARNING:** Never use pillows, books, or towels to boost a child. They can slide around and increase the likelihood of injury or death in a crash.



**WARNING:** Always restrain an unoccupied child seat or booster seat. These objects may become projectiles in a crash or sudden stop, which may increase the risk of serious injury.

 **WARNING:** Never place, or allow a child to place, the shoulder belt under a child's arm or behind the back because it reduces the protection for the upper part of the body and may increase the risk of injury or death in a crash.

 **WARNING:** To avoid risk of injury, do not leave children or pets unattended in your vehicle.

## Recommendations for attaching child safety restraints for children

Restraint type	Combined weight of child and child seat	Use any attachment method as indicated below by X.	
		Safety belt and top tether anchor	Safety belt only
Rear-facing child seat	Up to 65 lb (29.5 kg)		<b>X</b>
Rear-facing child seat	Over 65 lb (29.5 kg)		<b>X</b>
Forward-facing child seat	Up to 65 lb (29.5 kg)	<b>X</b>	
Forward-facing child seat	Over 65 lb (29.5 kg)	<b>X</b>	

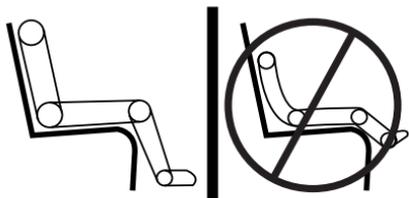
**Note:** The child seat must rest tightly against the vehicle seat upon which it is installed. It may be necessary to lift or remove the head restraint. See the *Seats* chapter for information on head restraints.

**BOOSTER SEATS**

**WARNING:** Never place, or allow a child to place, the shoulder belt under a child's arm or behind the back because it reduces the protection for the upper part of the body and may increase the risk of injury or death in a crash.

Use a belt-positioning booster seat for children who have outgrown or no longer properly fit in a child safety seat (generally children who are less than 4 feet 9 inches (1.45 meters) tall, are greater than age four (4) and less than age twelve (12), and between 40 pounds (18 kilograms) and 80 pounds (36 kilograms) and upward to 100 pounds (45 kilograms) if recommended by your child restraint manufacturer). Many state and provincial laws require that children use approved booster seats until they reach age eight (8), a height of 4 feet 9 inches (1.45 meters) tall, or 80 pounds (36 kilograms).

Booster seats should be used until you can answer YES to ALL of these questions when the child is seated without a booster seat.



- Can the child sit all the way back against their vehicle seat with knees bent comfortably at the edge of the seat cushion?
- Can the child sit without slouching?
- Does the lap belt rest low across the hips?
- Is the shoulder belt centered on the shoulder and chest?
- Can the child stay seated like this for the whole trip?

Always use booster seats in conjunction with your vehicle lap and shoulder belt.

## Types of Booster Seats



- Backless booster seats

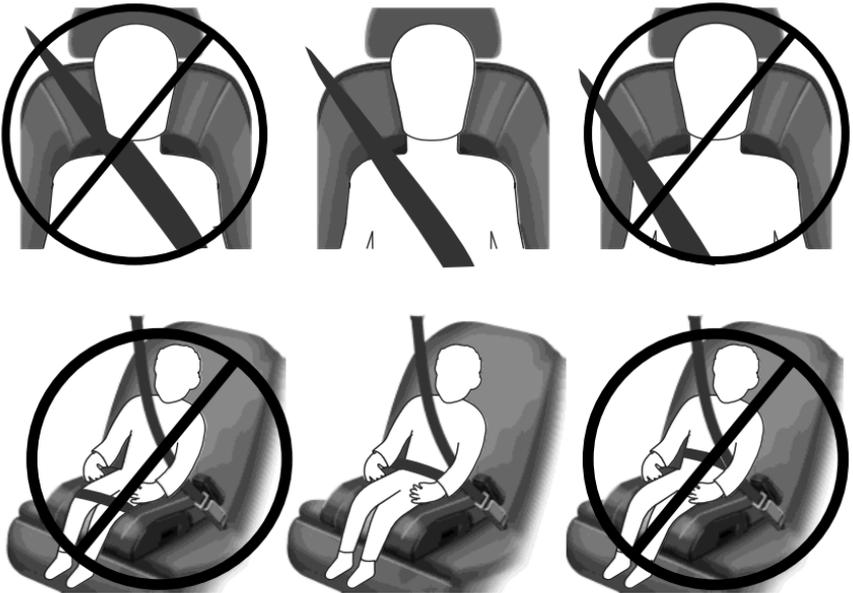
If your backless booster seat has a removable shield, remove the shield. If a vehicle seating position has a low seatback or no head restraint, a backless booster seat may place your child's head (as measured at the tops of the ears) above the top of the seat. In this case, move the backless booster to another seating position with a higher seatback or head restraint and lap and shoulder belts, or consider using a high back booster seat.



- High back booster seats

If, with a backless booster seat, you cannot find a seating position that adequately supports your child's head, a high back booster seat would be a better choice.

Children and booster seats vary in size and shape. Choose a booster that keeps the lap belt low and snug across the hips, never up across the stomach, and lets you adjust the shoulder belt to cross the chest and rest snugly near the center of the shoulder. The following drawings compare the ideal fit (center) to a shoulder belt uncomfortably close to the neck and a shoulder belt that could slip off the shoulder. The drawings also show how the lap belt should be low and snug across the child's hips.



If the booster seat slides on the vehicle seat upon which it is being used, placing a rubberized mesh sold as shelf or carpet liner under the booster seat may improve this condition. Do not introduce any item thicker than this under the booster seat. Check with the booster seat manufacturer's instructions.

## INSTALLING CHILD SEATS

### Child Seats



Use a child safety seat (sometimes called an infant carrier, convertible seat, or toddler seat) for infants, toddlers or children weighing 40 pounds (18 kilograms) or less (generally age four or younger).

### Using Lap and Shoulder Belts



**WARNING:** Airbags can kill or injure a child in a child seat.

Never place a rear-facing child seat in front of an active airbag.

If you must use a forward-facing child seat in the front seat, move the seat upon which the child seat is installed all the way back.



**WARNING:** Airbags can kill or injure a child in a child seat.

Children 12 and under should be properly restrained in the rear seat whenever possible.



**WARNING:** Depending on where you secure a child restraint, and depending on the child restraint design, you may block access to certain safety belt buckle assemblies, rendering those features potentially unusable. To avoid risk of injury, occupants should only use seating positions where they are able to be properly restrained.

When installing a child safety seat with combination lap and shoulder belts:

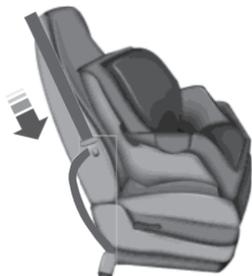
- Use the correct safety belt buckle for that seating position.
- Insert the belt tongue into the proper buckle until you hear a snap and feel it latch. Make sure the tongue is securely fastened in the buckle.
- Keep the buckle release button pointing up and away from the safety seat, with the tongue between the child seat and the release button, to prevent accidental unbuckling.
- Place the vehicle seat upon which the child seat will be installed in the upright position.
- Put the safety belt in the automatic locking mode. See Step 5. This vehicle does not require the use of a locking clip.

Perform the following steps when installing the child seat with lap and shoulder belts:

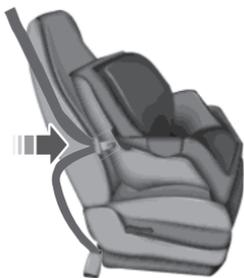
**Note:** Although the child seat illustrated is a forward facing child seat, the steps are the same for installing a rear facing child seat.



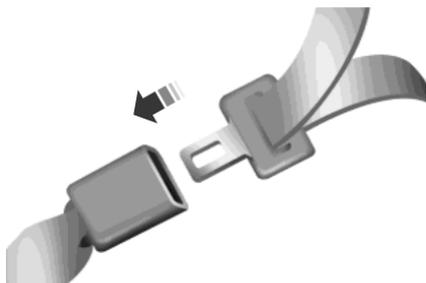
1. Position the child safety seat in a seat with a combination lap and shoulder belt.



2. Pull down on the shoulder belt and then grasp the shoulder belt and lap belt together.



3. While holding the shoulder and lap belt portions together, route the tongue through the child seat according to the child seat manufacturer's instructions. Be sure the belt webbing is not twisted.



4. Insert the belt tongue into the proper buckle (the buckle closest to the direction the tongue is coming from) for that seating position until you hear a snap and feel the latch engage. Make sure the tongue is latched securely by pulling on it.

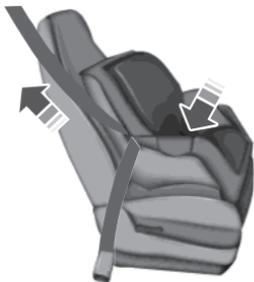


5. To put the retractor in the automatic locking mode, grasp the shoulder portion of the belt and pull downward until all of the belt is pulled out.

**Note:** The automatic locking mode is available on the front passenger and rear seats. This vehicle does not require the use of a locking clip.

6. Allow the belt to retract to remove slack. The belt will click as it retracts to indicate it is in the automatic locking mode.

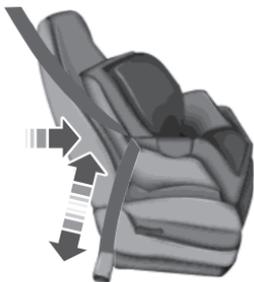
7. Try to pull the belt out of the retractor to make sure the retractor is in the automatic locking mode (you should not be able to pull more belt out). If the retractor is not locked, unbuckle the belt and repeat Steps 5 and 6.



8. Remove remaining slack from the belt. Force the seat down with extra weight, for example, by pressing down or kneeling on the child restraint while pulling up on the shoulder belt in order to force slack from the belt.

This is necessary to remove the remaining slack that will exist once the extra weight of the child is added to the child restraint. It also helps to achieve the proper snugness of the child seat to your vehicle. Sometimes, a slight lean toward the buckle will provide extra help to remove remaining slack from the belt.

9. Attach the tether strap (if the child seat is equipped). See *Using Tether Straps*.



10. Before placing the child in the seat, forcibly move the seat forward and back to make sure the seat is securely held in place.

To check this, grab the seat at the belt path and attempt to move it side to side and forward and back. There should be no more than 1 inch (2.5 centimeters) of movement for proper installation.

Ford recommends checking with a NHTSA Certified Child Passenger Safety Technician to make certain the child restraint is properly installed. In Canada, check with your local St. John Ambulance office for referral to a Child Passenger Safety Technician.

## Using Tether Straps



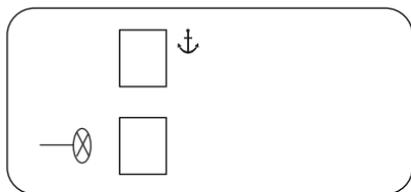
Many forward-facing child safety seats include a tether strap which extends from the back of the child safety seat and hooks to an anchoring point called the top tether anchor. Tether straps are available as an accessory for many older safety seats.

Contact the manufacturer of your child seat for information about ordering a tether strap, or to obtain a longer tether strap if the tether strap on your safety seat does not reach the appropriate top tether anchor in the vehicle.

Attach the tether strap only to the appropriate tether anchor as shown. The tether strap may not work properly if attached somewhere other than the correct tether anchor.

**Note:** If you install a child seat with rigid LATCH attachments, and have attached the top tether strap to the proper top tether anchor, do not tighten the tether strap enough to lift the child seat off the vehicle seat cushion when the child is seated in it. Keep the tether strap just snug without lifting the front of the child seat. Keeping the child seat just touching the vehicle seat gives the best protection in a severe crash.

Perform the following steps to install a child safety seat with tether anchors:

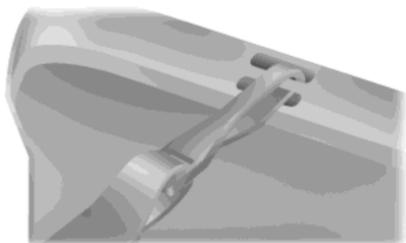


You can attach the tether directly to the rear of the front seat.

1. Adjust the front passenger seat fully forward.



2. Route the child safety seat tether strap over the back of the front passenger seat as shown.



3. Clip the tether strap hook to the seat pedestal at the location shown. If the tether strap is clipped incorrectly, the child safety seat may not be retained properly in the event of a crash.

4. Adjust the front passenger seat to the full rearward position.

5. Tighten the child safety seat tether strap according to the manufacturer's instructions.

If the safety seat is not anchored properly, the risk of a child being injured in a crash greatly increases.

## PRINCIPLES OF OPERATION



**WARNING:** Always drive and ride with your seatback upright and the lap belt snug and low across the hips.



**WARNING:** Never let a passenger hold a child on his or her lap while the vehicle is moving. The passenger cannot protect the child from injury in a crash.



**WARNING:** To reduce the risk of injury, make sure children sit where they can be properly restrained.



**WARNING:** All occupants of the vehicle, including the driver, should always properly wear their safety belts, even when an airbag supplemental restraint system is provided. Failure to properly wear your safety belt could seriously increase the risk of injury or death.



**WARNING:** It is extremely dangerous to ride in a cargo area, inside or outside of a vehicle. In a crash, people riding in these areas are more likely to be seriously injured or killed. Do not allow people to ride in any area of your vehicle that is not equipped with seats and safety belts. Be sure everyone in your vehicle is in a seat and using a safety belt properly.



**WARNING:** In a rollover crash, an unbelted person is significantly more likely to die than a person wearing a safety belt.



**WARNING:** Each seating position in your vehicle has a specific safety belt assembly which is made up of one buckle and one tongue that are designed to be used as a pair. 1) Use the shoulder belt on the outside shoulder only. Never wear the shoulder belt under the arm. 2) Never swing the safety belt around your neck over the inside shoulder. 3) Never use a single belt for more than one person.



**WARNING:** Safety belts and seats can become hot in a vehicle that has been closed up in sunny weather; they could burn a small child. Check seat covers and buckles before you place a child anywhere near them.



**WARNING:** Front seat occupants, including pregnant women, should wear safety belts for optimum protection in an accident.

All seating positions in this vehicle have lap and shoulder safety belts. All occupants of the vehicle should always properly wear their safety belts, even when an airbag supplemental restraint system is provided.

The safety belt system consists of:

- Lap and shoulder safety belts.
- Shoulder safety belt with automatic locking mode (except driver safety belt).
- Height adjuster at the front outboard seating positions.
- Safety belt pretensioner at the front outboard seating positions.



- Safety belt warning light and chime. See *Safety belt warning light and indicator chime*.

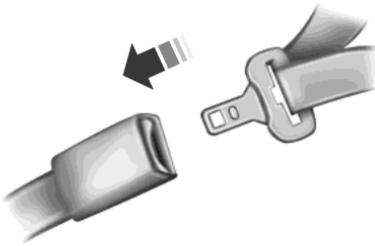


- Crash sensors and monitoring system with readiness indicator. See *Crash sensors and airbag indicator* in the *Supplemental Restraints System* chapter.

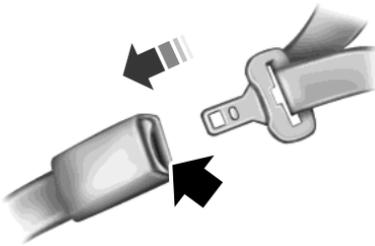
The safety belt pretensioners are designed to activate in frontal or near-frontal crashes and may deploy in rollovers if the vehicle is equipped with roll stability control. The safety belt pretensioners at the front seating positions are designed to tighten the safety belts firmly against the occupant's body when activated. This helps increase the effectiveness of the safety belts.

## FASTENING THE SAFETY BELTS

The front outboard safety restraints in your vehicle are combination lap and shoulder belts.



1. Insert the belt tongue into the proper buckle (the buckle closest to the direction the tongue is coming from) until you hear a snap and feel it latch. Make sure the tongue is securely fastened in the buckle.



2. To unfasten, press the release button and remove the tongue from the buckle.

### Using Safety Belts During Pregnancy



**WARNING:** Always ride and drive with your seatback upright and the safety belt properly fastened. The lap portion of the safety belt should fit snug and be positioned low across the hips. The shoulder portion of the safety belt should be positioned across the chest. Pregnant women should also follow this practice. See the following figure.



Pregnant women should always wear their safety belts. The lap belt portion of a combination lap and shoulder belt should be positioned low across the hips below the belly and worn as tight as comfort will allow. The shoulder belt should be positioned to cross the middle of the shoulder and the center of the chest.

### Safety Belt Locking Modes



**WARNING:** After any vehicle crash, the safety belt system at all passenger seating positions must be checked by an authorized dealer to verify that the automatic locking retractor feature for child seats is still functioning properly. In addition, all safety belts should be checked for proper function.



**WARNING:** The belt and retractor assembly must be replaced if the safety belt assembly automatic locking retractor feature or any other safety belt function is not operating properly when checked by an authorized dealer. Failure to replace the belt and retractor assembly could increase the risk of injury in crashes.

All safety restraints in the vehicle are combination lap and shoulder belts. The driver safety belt has the first type of locking mode. The front outboard passenger safety belt has both types of locking modes described as follows:

### **Vehicle Sensitive Mode**

This is the normal retractor mode, which allows free shoulder belt length adjustment to your movements and locking in response to vehicle movement. For example, if the driver brakes suddenly or turns a corner sharply, or the vehicle receives an impact of about 5 mph (8 km/h) or more, the combination safety belts will lock to help reduce forward movement of the driver and passengers.

In addition, the retractor is designed to lock if the webbing is pulled out too quickly. If this occurs, let the belt retract slightly and pull webbing out again in a slow and controlled manner.

### **Automatic Locking Mode**

In this mode, the shoulder belt is automatically pre-locked. The belt will still retract to remove any slack in the shoulder belt. The automatic locking mode is not available on the driver safety belt.

### **When to Use the Automatic Locking Mode**

This mode should be used any time a child safety seat, except a booster, is installed in the passenger front seating position. See the *Child Safety* chapter.

### **How to Use the Automatic Locking Mode**



1. Buckle the combination lap and shoulder belt.
2. Grasp the shoulder portion and pull downward until the entire belt is pulled out.
3. Allow the belt to retract. As the belt retracts, you will hear a clicking sound. This indicates the safety belt is now in the automatic locking mode.

### ***How to Disengage the Automatic Locking Mode***

Unbuckle the combination lap and shoulder belt and allow it to retract completely to disengage the automatic locking mode and activate the vehicle sensitive (emergency) locking mode.

### **Safety Belt Extension Assembly**



**WARNING:** Do not use extensions to change the fit of the shoulder belt across the torso.

If the safety belt is too short when fully extended, you can obtain a safety belt extension assembly from an authorized dealer.

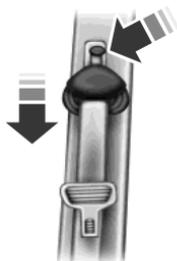
Use only extensions manufactured by the same supplier as the safety belt. Manufacturer identification is on a label located either at the end of the webbing or on the retractor behind the trim. Also, use the safety belt extension only if the safety belt is too short for you when fully extended.

### **SAFETY BELT HEIGHT ADJUSTMENT**



**WARNING:** Position the safety belt height adjusters so that the belt rests across the middle of your shoulder. Failure to adjust the safety belt properly could reduce the effectiveness of the safety belt and increase the risk of injury in a crash.

Adjust the height of the shoulder belt so the belt rests across the middle of your shoulder.



To adjust the shoulder belt height, do the following:

1. Push the button and slide the height adjuster up or down.
2. Release the button and pull down on the height adjuster to make sure it is locked in place.

## SAFETY BELT WARNING LIGHT AND INDICATOR CHIME



This lamp illuminates and an audible warning will sound if the driver's safety belt has not been fastened when the vehicle's ignition is turned on.

### Conditions of Operation

If...	Then...
The driver safety belt is not buckled before the ignition switch is turned to the on position...	The safety belt warning light illuminates 1-2 minutes and the warning chime sounds 4-8 seconds.
The driver safety belt is buckled while the indicator light is illuminated and the warning chime is sounding...	The safety belt warning light and warning chime turn off.
The driver safety belt is buckled before the ignition switch is turned to the on position...	The safety belt warning light and indicator chime remain off.

### SAFETY BELT-MINDER™ (IF EQUIPPED)

This feature supplements the safety belt warning function by providing additional reminders that intermittently sound a tone and illuminate the safety belt warning light when you are in the driver seat and the safety belt is unbuckled.

If...	Then...
You buckle your safety belt before you switch the ignition on or less than 1-2 minutes elapse after you switch the ignition on...	The Belt-Minder feature will not activate.

If...	Then...
You do not buckle your safety belt before your vehicle reaches at least 6 mph (9.7 km/h) and 1-2 minutes elapse after you switch the ignition...	The Belt-Minder feature activates, the safety belt warning light illuminates and a warning tone sounds for 6 seconds every 25 seconds, repeating for about 5 minutes or until you buckle your safety belt.
The driver safety belt is unbuckled for about one minute while the vehicle is traveling at least 6 mph (9.7 km/h) and more than 1-2 minutes elapse after you switch the ignition on...	The Belt-Minder feature activates, the safety belt warning light illuminates and a warning tone sounds for 6 seconds every 25 seconds, repeating for about 5 minutes or until you buckle your safety belt.

### ***Deactivating and Activating the Belt-Minder Feature***



**WARNING:** While the design allows you to deactivate your Belt-Minder, this system is designed to improve your chances of being safely belted and surviving an accident. We recommend you leave the Belt-Minder system activated for yourself and others who may use the vehicle.

*Read Steps 1 - 5 thoroughly before proceeding with the programming procedure.*

Before following the procedure, make sure that:

- The parking brake is set.
- The transmission is in park (P).
- The ignition is off.
- All vehicle doors and the hood are closed.
- The driver safety belt is unbuckled.
- The parking lamps and headlamps are off.

1. Turn the ignition on. Do not start the engine.
2. Wait until the safety belt warning light turns off (about one minute).
  - You must complete Step 3 within 30 seconds after the safety belt warning light turns off.
3. Buckle then unbuckle the safety belt three times at a moderate speed, ending in the unbuckled state.
  - After Step 3, the safety belt warning light turns on for three seconds.
4. Within about seven seconds of the light turning off, buckle then unbuckle the safety belt.
  - This will switch the feature off for that seating position if it is currently on.
  - This will switch the feature on for that seating position if it is currently off.

### **CHILD RESTRAINT AND SAFETY BELT MAINTENANCE**

Inspect the vehicle safety belts and child safety seat systems periodically to make sure they work properly and are not damaged. Inspect the vehicle and child seat safety belts to make sure there are no nicks, tears or cuts. Replace if necessary. All vehicle safety belt assemblies, including retractors, buckles, front safety belt buckle assemblies, buckle support assemblies (slide bar-if equipped), shoulder belt height adjusters (if equipped), shoulder belt guide on seat back (if equipped), child safety seat LATCH and tether anchors, and attaching hardware, should be inspected after a crash. Read the child restraint manufacturer's instructions for additional inspection and maintenance information specific to the child restraint.

Ford Motor Company recommends that all safety belt assemblies in use in vehicles involved in a crash be replaced. However, if the crash was minor and an authorized dealer finds that the belts do not show damage and continue to operate properly, they do not need to be replaced. Safety belt assemblies not in use during a crash should also be inspected and replaced if either damage or improper operation is noted.

For proper care of soiled safety belts, see *Cleaning the Interior* in the *Vehicle Care* chapter.

**PRINCIPLES OF OPERATION**

**WARNING:** Airbags do not inflate slowly or gently, and the risk of injury from a deploying airbag is the greatest close to the trim covering the airbag module.



**WARNING:** All occupants of your vehicle, including the driver, should always properly wear their safety belts, even when an airbag supplemental restraint system is provided. Failure to properly wear your safety belt could seriously increase the risk of injury or death.



**WARNING:** Airbags can kill or injure a child in a child seat. Always transport children 12 years old and under in the back seat and always properly use appropriate child restraints.



**WARNING:** Never place your arm over the airbag module, as a deploying airbag can result in serious arm fractures or other injuries.



**WARNING:** Airbags can kill or injure a child in a child seat. Never place a rear-facing child seat in front of an active airbag. If you must use a forward-facing child seat in the front seat, move the seat upon which the child seat is installed all the way back.



**WARNING:** Do not attempt to service, repair, or modify the airbag supplemental restraint systems or its fuses as you could be seriously injured or killed. Contact your authorized dealer as soon as possible.



**WARNING:** Several airbag system components get hot after inflation. Do not touch them after inflation as this may result in serious injury.



**WARNING:** If the airbag has deployed, the airbag will not function again and must be replaced immediately. If the airbag is not replaced, the unrepaired area will increase the risk of injury in a crash.

The airbags are a supplemental restraint system and are designed to work with the safety belts to help protect the driver and right front passenger from certain upper body injuries. Airbags do not inflate slowly; there is a risk of injury from a deploying airbag.

**Note:** You will hear a loud bang and see a cloud of harmless powdery residue if an airbag deploys. This is normal.

The airbags inflate and deflate rapidly upon activation. After airbag deployment, it is normal to notice a smoke-like, powdery residue or smell the burnt propellant. This may consist of cornstarch, talcum powder (to lubricate the bag) or sodium compounds (for example, baking soda) that result from the combustion process that inflates the airbag. Small amounts of sodium hydroxide may be present which may irritate the skin and eyes, but none of the residue is toxic.

While the system is designed to help reduce serious injuries, contact with a deploying airbag may also cause abrasions or swelling. Temporary hearing loss is also a possibility as a result of the noise associated with a deploying airbag. Because airbags must inflate rapidly and with considerable force, there is the risk of death or serious injuries, such as fractures, facial and eye injuries or internal injuries, particularly to occupants who are not properly restrained or are otherwise out of position at the time of airbag deployment. Thus, it is extremely important that occupants be properly restrained as far away from the airbag module as possible while maintaining vehicle control.

Routine maintenance of the airbags is not required.

## **SOS POST-CRASH ALERT SYSTEM™**

The system flashes the direction indicator lamps and the horn sounds (intermittently) in the event of a serious impact that deploys an airbag equipped on your vehicle.

The horn and lamps turn off when:

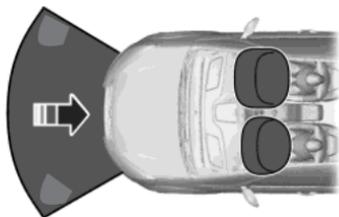
- You press the hazard button.
- You press the panic button (if equipped) on the remote entry transmitter.
- Your vehicle runs out of power.

**DRIVER AND PASSENGER AIRBAGS**

**WARNING:** Never place your arm or any objects over an airbag module. Placing your arm over a deploying airbag can result in serious arm fractures or other injuries. Objects placed on or over the airbag inflation area may cause those objects to be propelled by the airbag into your face and torso causing serious injury.



**WARNING:** Airbags can kill or injure a child in a child seat. Never place a rear-facing child seat in front of an active airbag. If you must use a forward-facing child seat in the front seat, move the seat upon which the child seat is installed all the way back.



The driver and front passenger airbags will deploy during significant frontal and near frontal crashes.

The driver and passenger front airbag system consists of:

- Driver and passenger airbag modules.



- Crash sensors and monitoring system with readiness indicator. See *Crash Sensors and Airbag Indicator* later in this chapter.

**Proper Driver and Front Passenger Seating Adjustment**

**WARNING:** The National Highway Traffic Safety Administration recommends a minimum distance of at least 10 inches (25 centimeters) between an occupant's chest and the driver airbag module.

To properly position yourself away from the airbag:

- Move your seat to the rear as far as you can while still reaching the pedals comfortably.
- Recline the seat slightly (one or two degrees) from the upright position.

After all occupants have adjusted their seats and put on safety belts, it is very important that they continue to sit properly. Properly seated occupants sit upright, lean against the seat back, and center themselves on the seat cushion, with their feet comfortably extended on the floor. Sitting improperly can increase the chance of injury in a crash event. For example, if an occupant slouches, lies down, turns sideways, sits forward, leans forward or sideways, or puts one or both feet up, the chance of injury during a crash is greatly increased.

### Children and Airbags



**WARNING:** Airbags can kill or injure a child in a child seat.

Never place a rear-facing child seat in front of an active airbag.

If you must use a forward-facing child seat in the front seat, move the seat upon which the child seat is installed all the way back.



Children must always be properly restrained. Accident statistics suggest that children are safer when properly restrained in the rear seating positions than in the front seating position. Failure to follow these instructions may increase the risk of injury in a crash.

### Passenger Airbag ON and OFF Switch (If Equipped)



**WARNING:** An airbag ON and OFF switch may have been installed in this vehicle. Before driving, always look at the face of the switch to be sure the switch is in the proper position in accordance with these instructions and warnings. Failure to put the switch in a proper position can increase the risk of serious injury or death in a crash.

**Note:** The passenger airbag ON and OFF switch may be on vehicles with no rear seats and a gross vehicle weight rating greater than 8500 pounds (3856 kilograms). See the *Towing* chapter for more information.

### Turning the Passenger Airbag Off



**WARNING:** If the light fails to illuminate when the passenger air bag switch is in the OFF position and the ignition switch is in ON, contact your authorized dealer as soon as possible.



**WARNING:** In order to avoid inadvertent activation of the switch, always remove the ignition key from the passenger air bag ON and OFF switch.



**WARNING:** An infant in a rear-facing seat faces a high risk of serious or fatal injuries from a deploying passenger airbag. Rear facing infant seats should never be placed in the front seats, unless the passenger airbag is turned off.



1. Insert the ignition key, turn the switch to off, and hold it in the off position while removing the key.

2. When the ignition is turned to off, the off light illuminates briefly, momentarily shuts off and then turns back on. This indicates that the passenger airbag is deactivated.

### Turning the Passenger Airbag Back On



**WARNING:** The safety belts for the driver and right front passenger seating positions have been specifically designed to function together with the airbags in certain types of crashes. When you turn off your airbag, you not only lose the protection of the airbag, you also may reduce the effectiveness of your safety belt system, which was designed to work with the airbag. If you are not a person who meets the requirements stated in the National Highway Traffic Safety Administration or Transport Canada deactivation criteria, turning off the airbag can increase the risk of serious injury or death in a crash.



**WARNING:** If your vehicle has rear seats, always transport children who are 12 and younger in a rear seating position.

Always use safety belts and child restraints properly. Do not place a child in a rear facing infant seat in the front seat unless your vehicle is equipped with an airbag ON and OFF switch and the passenger airbag is turned off. This is because the back of the infant seat is too close to the inflating airbag and the risk of a fatal injury to the infant when the airbag inflates is substantial.



**WARNING:** If the OFF light is illuminated when the passenger airbag switch is in the ON position and the ignition switch is in ON, have the passenger airbag switch serviced at an authorized dealer immediately.

The passenger airbag remains off until you turn it back on.



1. Insert the ignition key and turn the switch to on.
2. The OFF light will briefly illuminate when the ignition is turned on. This indicates that the passenger airbag is operational.

The passenger side airbag should always be on (the airbag OFF light should not be illuminated) unless the passenger is a person who meets the requirements stated either in Category 1, 2 or 3 of the National Highway Traffic Safety Administration/Transport Canada deactivation criteria which follows.

The vast majority of drivers and passengers are much safer with an airbag than without. To do their job and reduce the risk of life threatening injuries, airbags must open with great force, and this force can pose a potentially deadly risk in some situations, particularly when a front seat occupant is not properly buckled up. The most effective way to reduce the risk of unnecessary airbag injuries without reducing the overall safety of the vehicle is to make sure all occupants are properly restrained in the vehicle, especially in the front seat. This provides the

protection of safety belts and permits the airbags to provide the additional protection they were designed to provide. If you choose to deactivate your airbag, you are losing the very significant risk reducing benefits of the airbag and you are also reducing the effectiveness of the safety belts, because safety belts in modern vehicles are designed to work as a safety system with the airbags.

### **National Highway Traffic Safety Administration Deactivation Criteria (excluding Canada)**



**WARNING:** This vehicle has special energy management safety belts for the driver and right front passenger. These particular belts are specifically designed to work with airbags to help reduce the risk of injury in a crash. The energy management safety belt is designed to give or release additional belt webbing in some accidents to reduce concentration of force on an occupant's chest and reduce the risk of certain bone fractures and injuries to underlying organs. In a crash, if the airbag is turned off, this energy management safety belt might permit the person wearing the belt to move forward enough to incur a serious or fatal injury. The more severe the crash, and the heavier the occupant, the greater the risk is. Be sure the airbag is turned on for any person who does not qualify under the National Highway Traffic Safety Administration deactivation criteria.

1. **Infant.** An infant (less than 1 year old) must ride in the front seat because:

- the vehicle has no rear seat;
- the vehicle has a rear seat too small to accommodate a rear-facing infant seat; or
- the infant has a medical condition which, according to the infant's physician, makes it necessary for the infant to ride in the front so that the driver can constantly monitor the child's condition.

2. **Child age 1 to 12.** A child age 1 to 12 must ride in the front seat because:

- the vehicle has no rear seat;
- although children ages 1 to 12 ride in the rear seat(s) whenever possible, children ages 1 to 12 sometimes must ride in the front because no space is available in the rear seat(s) of the vehicle; or

- the child has a medical condition which, according to the child's physician, makes it necessary for the child to ride in the front seat so that the driver can constantly monitor the child's condition.
3. **Medical condition.** A passenger has a medical condition which, according to his or her physician:
- causes the passenger airbag to pose a special risk for the passenger; and
  - makes the potential harm from the passenger airbag in a crash greater than the potential harm from turning off the airbag and allowing the passenger, even if belted, to hit the dashboard or windshield in a crash.

### Transport Canada Deactivation Criteria (Canada Only)



**WARNING:** This vehicle has special energy management safety belts for the driver and right front passenger. These particular belts are specifically designed to work with airbags to help reduce the risk of injury in a crash. The energy management safety belt is designed to give or release additional belt webbing in some accidents to reduce concentration of force on an occupant's chest and reduce the risk of certain bone fractures and injuries to underlying organs. In a crash, if the airbag is turned off, this energy management safety belt might permit the person wearing the belt to move forward enough to incur a serious or fatal injury. The more severe the crash, and the heavier the occupant, the greater the risk is. Be sure the airbag is turned on for any person who does not qualify under the National Highway Traffic Safety Administration deactivation criteria.

1. **Infant:** An infant (less than 1 year old) must ride in the front seat because:
- my vehicle has no rear seat;
  - the rear seat in my vehicle cannot accommodate a rear-facing infant seat; or
  - the infant has a medical condition which, according to the infant's physician, makes it necessary for the infant to ride in the front seat so that the driver can monitor the infant's condition.

2. **Child age 12 or under:** A child age 12 or under must ride in the front seat because:

- my vehicle has no rear seat;
- although children age 12 and under ride in the rear seat whenever possible, children age 12 and under have no option but to sometimes ride in the front seat because rear seat space is insufficient; or
- the child has a medical condition that, according to the child's physician, makes it necessary for the child to ride in the front seat so that the driver can monitor the child's condition.

3. **Medical condition:** A passenger has a medical condition that, according to his or her physician:

- poses a special risk for the passenger if the airbag deploys; and
- makes the potential harm from the passenger airbag deployment greater than the potential harm from turning off the airbag and experiencing a crash without the protection offered by the airbag

### CRASH SENSORS AND AIRBAG INDICATOR



**WARNING:** Modifying or adding equipment to the front end of your vehicle (including frame, bumper, front end body structure and tow hooks) may affect the performance of the airbag system, increasing the risk of injury. Do not modify the front end of your vehicle.

Your vehicle has a collection of crash and occupant sensors which provide information to the restraints control module. The restraints control module deploys (activates) the front safety belt pretensioners, driver airbag and passenger airbag. Based on the type of accident, the restraints control module will deploy the appropriate safety devices.

The restraints control module also monitors the readiness of the above safety devices plus the crash sensors. The readiness of the safety system is indicated by a warning indicator light in the instrument cluster or by a backup tone if the warning light is not working. See the *Instrument Cluster* chapter. Routine maintenance of the airbag is not required.

A difficulty with the system is indicated by one or more of the following:



- The readiness light will either flash or stay lit.
- The readiness light will not illuminate immediately after the ignition is turned on.
- A series of five beeps will be heard. The tone pattern will repeat periodically until the problem or light are repaired.

If any of these things happen, even intermittently, have the supplemental restraint system serviced at an authorized dealer immediately. Unless serviced, the system may not function properly in the event of a crash.

The safety belt pretensioners and the airbag supplemental restraint system are designed to activate when the vehicle sustains frontal deceleration sufficient to cause the restraints control module to deploy a safety device.

The fact that the safety belt pretensioners or airbags did not activate in a crash does not mean that something is wrong with the system. Rather, it means the restraints control module determined the accident conditions (such as crash severity, belt usage) were not appropriate to activate these safety devices.

- The design of the front airbags is to activate only in frontal and near-frontal crashes (not rollovers, side impacts or rear impacts) unless the crash causes sufficient frontal deceleration.
- The design of the safety belt pretensioners is to activate in frontal or near-frontal crashes and may deploy in rollovers if the vehicle is equipped with roll stability control.

### **AIRBAG DISPOSAL**

Contact your authorized dealer as soon as possible. Airbags must be disposed of by qualified personnel.

## GENERAL INFORMATION ON RADIO FREQUENCIES

This device complies with part 15 of the FCC Rules and with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

**Note:** Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. The term **IC** before the radio certification number only signifies that Industry Canada technical specifications were met.

The typical operating range for your transmitter is approximately 33 feet (10 meters). Vehicles with the remote start feature will have a greater range. A decrease in operating range could be caused by:

- weather conditions
- nearby radio towers
- structures around your vehicle
- other vehicles parked next to your vehicle.

The radio frequency used by your remote control can also be used by other short-distance radio transmissions, for example amateur radios, medical equipment, wireless headphones, remote controls and alarm systems. If the frequencies are jammed, you will not be able to use your remote control. You can lock and unlock the doors with the key.

**Note:** Make sure your vehicle is locked before leaving it unattended.

**Note:** If you are in range, the remote control will operate if you press any button unintentionally.

## REMOTE CONTROL (IF EQUIPPED)



If there are problems with the remote entry system, make sure to take all remote entry transmitters with you to the authorized dealer in order to aid in troubleshooting the problem.

**Note:** If the vehicle is equipped with the E-Guard Cargo Protection System™ the remote transmitter unlock command will only unlock the front doors. The only way to unlock the side or rear cargo doors from outside the vehicle is with the key.

## Replacing the Battery

**Note:** Refer to local regulations when disposing of transmitter batteries.

**Note:** Replacing the battery will not delete the remote control from your vehicle. The remote control should operate normally after battery replacement.

The remote entry transmitter uses one coin type three-volt lithium battery CR2032 or equivalent.

To replace the battery:



1. Twist a thin coin between the two halves of the remote entry transmitter near the key ring.

**Note:** Do not take the rubber cover and circuit board off the front housing of the remote entry transmitter.



2. Do not wipe off any grease on the battery terminals on the back surface of the circuit board.

3. Remove the old battery.

4. Insert the new battery. Refer to the diagram inside the remote entry transmitter for the correct orientation of the battery. Press the battery down to ensure that the battery is fully seated in the battery housing cavity.

5. Snap the two halves back together.

### Car Finder



Press the button twice within three seconds. The horn will sound and the turn signals will flash. We recommend you use this method to locate your vehicle, rather than using the panic alarm.

### Sounding a Panic Alarm



Press the button to activate the alarm. Press the button again or switch the ignition on to deactivate.

**Note:** The panic alarm will operate regardless of the ignition position.

## REPLACING A LOST KEY OR REMOTE CONTROL

You can purchase replacement or additional keys or remote controls from an authorized dealer. A dealer can program the transmitters to your vehicle or you may be able to program them yourself. See the *Security* chapter for information on programming spare keys.

### Reprogramming Your Remote Controls

You must have all remote controls (maximum of four) available before beginning this procedure. If all remote controls are not present during programming, the ones missing will no longer operate the vehicle.

**Note:** Make sure you do not press the brake pedal during this sequence.

To reprogram the remote control:

1. Make sure the vehicle is electronically unlocked.
2. Place the key in the ignition and turn it from lock to off.
3. Cycle eight times rapidly (within 10 seconds) between off and on.

**Note:** The eighth turn must end in the on position.

4. The doors will lock, and then unlock, to confirm that you have activated the programming mode.

5. Within 20 seconds press any button on the remote control.

**Note:** If more than 20 seconds have passed you will need to start the procedure over.

6. The doors will lock, and then unlock, to confirm that you have programmed this remote control.

7. Repeat Step 5 to program each additional remote control (up to four).

8. Turn the ignition off after you have finished programming all of the remote controls.

9. The doors will lock, and then unlock, to confirm that you have exited the programming mode.

## LOCKING AND UNLOCKING

You can use the power door lock control or the remote control to lock and unlock your vehicle.

### Power Door Locks (If Equipped)

The power door lock switches are on the driver and front passenger door panels.



A. Unlock

B. Lock

### Remote Control (If Equipped)

You can use the remote control anytime the vehicle is not running.

#### ***Unlocking the Doors (Two-Stage Unlock)***



Press the button to unlock the driver's door.

Press the button again within three seconds to unlock all doors. The turn signals will flash.

Press and hold both the lock and unlock buttons on the remote control for four seconds to disable or enable two-stage unlocking. Disabling two-stage unlocking allows all vehicle doors to unlock with one press of the button. The turn signals will flash twice to indicate the unlocking mode was changed.

#### ***Locking the Doors***



Press the button to lock all the doors. The turn signals will illuminate.

Press the button again within three seconds to confirm that all the doors are closed. The doors will lock again, the horn will chirp and the turn signals will illuminate if all the doors are closed.

**Note:** If any door is not closed, the horn will chirp twice and the lamps will not illuminate.

#### **Memory Lock**

If you lock your doors with the power lock control or the remote control while the sliding door is open, the door will automatically lock after it is closed.

**Autolock and Unlock**

**Note:** Your vehicle comes with this feature disabled.

The autolock feature will lock all the doors when:

- all doors are closed,
- the ignition is on,
- you shift into any gear putting the vehicle in motion, and
- the vehicle attains a speed greater than 12 mph (20 km/h).

If the vehicle was autolocked, the autounlock feature will unlock all doors when the driver's door is opened within 10 minutes of switching the ignition off.

***Enabling or Disabling Autolock and Autounlock***

These features can be enabled or disabled:

- by your authorized dealer
- through the information display
- using the power door lock procedure.

To enable or disable using the power door locks, do the following:

**Note:** You will have 30 seconds to complete the procedure.

1. Switch the ignition on.
2. Press the power door lock button three times.
3. Switch the ignition off.
4. Press the power door lock button three times.
5. Switch the ignition on. The horn will chirp indicating the programming mode has been entered.

**Autolock:** Once in programming mode, press the power door unlock button then the lock button. The horn will chirp once if autolock was deactivated or twice (one short and one long chirp) if autolock was activated.

**Autounlock:** Once in programming mode, press the power door lock button then the unlock button. The horn will chirp once if autounlock was deactivated or twice (one short and one long chirp) if autounlock was activated.

6. Turn the ignition off. The horn will chirp once to confirm the procedure is complete.

**Note:** The autounlock feature can be enabled or disabled independently of the autolock feature.

### Illuminated Entry

The interior lamps and parking lamps illuminate when the remote entry system is used to unlock the doors or sound the personal alarm.

The illuminated entry system will turn off the lights if:

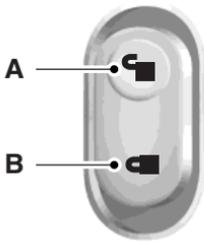
- you switch the ignition on
- you press the lock button on the remote control
- after 25 seconds of illumination.

The dome lamp control (if equipped) must not be set to the off position for the illuminated entry system to operate.

The interior lamps will not turn off if:

- you turn them on with the dimmer control
- any door is open.

### Rear Cargo Door Lock (If Equipped)



The passenger side rear cargo door has a lock control mounted on the inside of the door. Press to unlock or lock all the doors.

### E-Guard Cargo Protection System™ (If Equipped)

The system insures that the side and cargo doors are double locked for extra security.

#### **System Features**

- The system is available with either power or manual door locks.
- The system provides extra security via a double-locked design.
- The cargo doors can only be unlocked from the outside by using the keys.
- The power unlock feature (if equipped with power door locks) will only unlock the front doors.
- The system is equipped with an emergency unlock handle installed in the door inner panel.

***System Procedure – Power Door Locks***

- Lock the vehicle with the key, manual door lock, remote control or use the power door lock on the front door trim panel. The front doors are locked and the cargo doors are double-locked.
- Unlock the vehicle with the remote control or use the power door lock on the front door. The front doors are unlocked and the cargo doors remain double-locked.

**Note:** The only way to unlock the side or rear cargo doors from outside the vehicle is with the key.

***System Procedure – Manual Door Locks***

- The front door locks can be locked by using either the key or the manual door lock.
- In order to activate the system, use the key or the manual door lock to lock the side and rear cargo doors.

**Note:** The cargo doors cannot be unlocked using the manual door lock.

**SECURILOCK® PASSIVE ANTI-THEFT SYSTEM (IF EQUIPPED)**

**Note:** The system is not compatible with non-Ford aftermarket remote start systems. Use of these systems may result in vehicle starting problems and a loss of security protection.

**Note:** Metallic objects, electronic devices or a second coded key on the same key chain may cause vehicle starting issues if they are too close to the key when starting the engine. Prevent these objects from touching the coded key while starting the engine. Switch the ignition off, move all objects on the key chain away from the coded key and restart the engine if a problem occurs.

**Note:** Do not leave a duplicate coded key in the vehicle. Always take your keys and lock all doors when leaving the vehicle.

The system is an engine immobilization system. It helps prevent the engine from starting unless a coded key programmed to your vehicle is used. Using the wrong key may prevent the engine from starting. A message may appear in the information display.

If you are unable to start the engine with a correctly coded key, a malfunction has happened and a message may appear in the information display.

**Anti-Theft Indicator**

The anti-theft indicator is located in the instrument cluster.



- When the ignition is off, the indicator will flash once every two seconds to indicate the SecuriLock system is functioning as a theft deterrent.
- When the ignition is on, the indicator will glow for three seconds, then turn off to indicate normal system functionality.

Vehicles without the SecuriLock Passive Anti-theft system behave as follows:

- When the ignition is off, the indicator will not flash.
- When the ignition is on, the indicator will glow for three seconds to indicate the engine is enabled.

**Automatic Arming**

Your vehicle arms immediately after you switch the ignition off.

**Automatic Disarming**

Your vehicle disarms when you switch the ignition on with a coded key.

**Replacement Keys**

If your keys are lost or stolen and you do not have an extra coded key, you will need to have your vehicle towed to an authorized dealer. The key codes need to be erased from your vehicle and new coded keys will need to be programmed.

Replacing coded keys can be very costly. Store an extra programmed key away from the vehicle in a safe place to help prevent any inconveniences. See an authorized dealer to purchase additional spare or replacement keys.

***Programming a Spare Key***

**Note:** A maximum of eight coded keys can be programmed to your vehicle.

You can program your own coded keys to your vehicle.

Only use SecuriLock® keys.

You must have two previously programmed coded keys and the new unprogrammed key readily accessible. See your authorized dealer to have the spare key programmed if two previously programmed coded keys are not available

Read and understand the entire procedure before you begin.

1. Insert the first previously programmed coded key into the ignition.
2. Turn the ignition from off to on. Keep the ignition on for at least three seconds, but no more than 10 seconds.
3. Turn the ignition off and remove the first coded key from the ignition.
4. After three seconds but within 10 seconds of removing the first coded key, insert the second previously coded key into the ignition.
5. Turn the ignition from off to on. Keep the ignition on for at least one second, but no more than 10 seconds.

6. Turn the ignition off and remove the second previously programmed coded key from the ignition.

7. After three seconds but within 10 seconds of turning the ignition off and removing the previously programmed coded key, insert the new unprogrammed key into the ignition.

8. Turn the ignition from off to on. Keep the ignition on for at least one second, but no more than 10 seconds.

9. Remove the newly programmed coded key from the ignition.

If the key has been successfully programmed it will start the vehicle's engine. The theft indicator light will illuminate for three seconds and then go out.

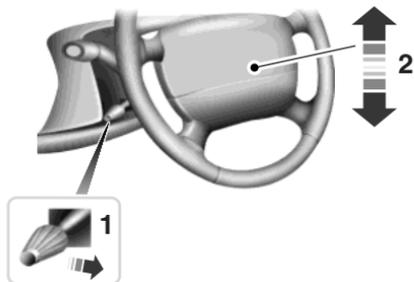
If the key was not successfully programmed, it will not start your vehicle's engine and the theft indicator light will flash rapidly. Wait 20 seconds and repeat Steps 1 through 8. Take your vehicle to your authorized dealer to have the new key programmed if you are still unsuccessful.

Wait 20 seconds and then repeat this procedure from Step 1 to program an additional key.

## ADJUSTING THE STEERING WHEEL



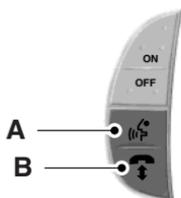
**WARNING:** Do not adjust the steering wheel when your vehicle is moving.



1. Pull and hold the steering wheel release lever.

2. Adjust the steering wheel to the desired position then release the lever.

## VOICE CONTROL (IF EQUIPPED)

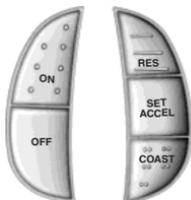


A. Voice recognition

B. Phone mode

See the *SYNC* or *Navigation System* chapter.

## CRUISE CONTROL (IF EQUIPPED)



See the *Cruise Control* chapter.

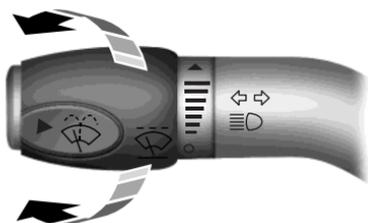
## WINDSHIELD WIPERS

**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 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 washer before wiping a dry windshield.

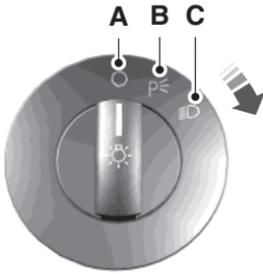
**Note:** Do not operate the washer when the washer reservoir is empty. This may cause the washer pump to overheat.



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.

A wipe will occur a few seconds after washing to clear any remaining washer fluid.

**LIGHTING CONTROL**

A. The first position turns the lamps off.

B. The second position turns on the parking lamps, instrument panel lamps, license plate lamps and tail lamps.

C. The third position turns the headlamps on.

**High Beams**

- Push the lever toward the instrument panel to switch on the high beams.
- Pull the lever toward you to switch of the high beams.

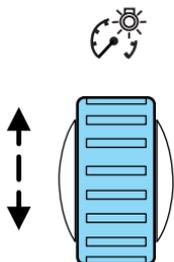
**Headlamp Flasher**

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 (DRL) (IF EQUIPPED)



**WARNING:** The daytime running lamps system does not activate the tail lamps and may not provide adequate lighting during low visibility driving conditions. Always remember to turn on your headlamps at dusk and in all low visibility conditions, such as daytime fog. Failure to activate your headlamps under these conditions may result in a collision.

When you switch the ignition to the on position and the lighting control is in the off or parking lamp position, the daytime running lamps will turn on whenever the headlamps are off. They turn off only when the headlamps are on.

## TURN SIGNAL CONTROL



- Push down to activate the left turn signal.
- Push up to activate the right turn signal.

## INTERIOR LAMPS

### Front and Rear Courtesy/Reading Lamps (If Equipped)



The center dome portion of the lamp, will light when:

- any door is opened
- the panel dimmer control is moved to the full upright position past the detent.

The two outer reading lamps, can only be turned on and off at the lamp.

### Cargo Lamps



Cargo lamps equipped with an on/off control will light when:

- doors are closed and the control is moved to the right ON position
- control is in the middle position and any door is open
- panel dimmer control is moved to the full upright position past the detent

When the control is moved to the left OFF position, it will not illuminate when you open the doors or move the dimmer control past the detent.

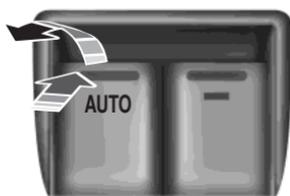
### POWER WINDOWS (IF EQUIPPED)



**WARNING:** Do not leave children unattended in your vehicle and do not let them play with the power windows. They may seriously injure themselves.



**WARNING:** When closing the power windows, you should verify they are free of obstructions and make sure that children and pets are not in the proximity of the window openings.



Press the switch to open the window.

Lift the switch to close the window.

### One-Touch Down

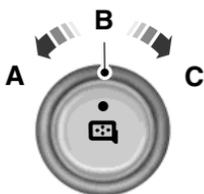
Press the switch fully and release it. Press again or lift it to stop the window.

### Accessory Delay

You can use the window switches for several minutes after you turn the ignition off, or until any door is opened.

**EXTERIOR MIRRORS****Power Exterior Mirrors (If Equipped)**

**WARNING:** Do not adjust the mirror while your vehicle is in motion.



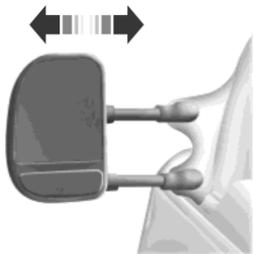
- A. Left mirror
- B. Off
- C. Right mirror

To adjust your mirrors:

1. Select the mirror you want to adjust.
2. Move the control in the direction you want to tilt the mirror.
3. Return the control to the center position to lock mirrors in place.

**Foldaway Exterior Mirrors**

The mirrors can be manually folded forward or backward. Push the mirror toward or away from the door window glass. Make sure that you fully engage the mirror in its support when returning it to its original position.

**Telescoping Mirror (If Equipped)**

This feature allows the mirror to extend approximately 3 inches (80 millimeters). It is especially useful when towing a trailer.

### Spotter Mirror (If Equipped)

**Note:** New spotter mirrors may be stiff, requiring several cycles before the spotter adjustment effort eases.

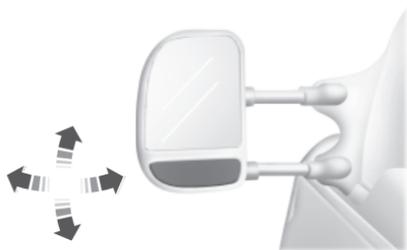
#### *On Standard Mirror*



You can tilt the spotter mirror up or down to increase visibility. Only apply pressure to the center of the top or bottom edges when adjusting the mirror.

**Note:** Do not apply any force to the left or right edges. This may damage the mirror.

#### *On Telescoping Mirror*



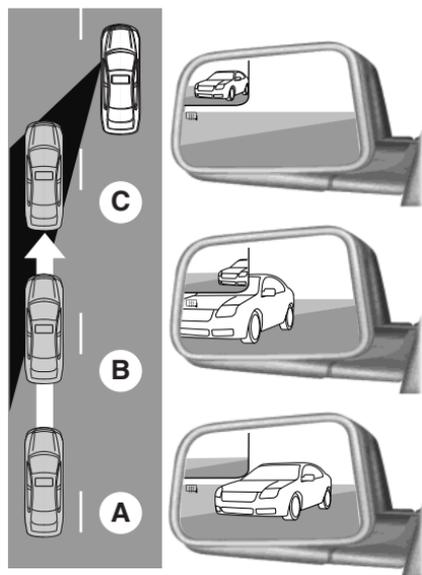
You can tilt the spotter mirror up or down and also left or right to increase visibility.

**Integrated Blind Spot Mirrors (If Equipped)**

**WARNING:** Objects in the blind spot mirror are closer than they appear.

Blind spot mirrors have an integrated convex mirror built into the upper outboard corner of the exterior mirrors. They are designed to assist you by increasing visibility along the side of your vehicle.

Check the main mirror first before a lane change, then check the blind spot mirror. If no vehicles are present in the blind spot mirror and the traffic in the adjacent lane is at a safe distance, signal that you are going to change lanes. Glance over your shoulder to verify traffic is clear, and carefully change lanes.



The image of the approaching vehicle is small and near the inboard edge of the main mirror when it is at a distance. The image becomes larger and begins to move outboard across the main mirror as the vehicle approaches (A). The image will transition from the main mirror and begin to appear in the blind spot mirror as the vehicle approaches (B). The vehicle will transition to your peripheral field of view as it leaves the blind spot mirror (C).

### INTERIOR MIRROR (IF EQUIPPED)



**WARNING:** Do not adjust the mirror when your vehicle is moving.

**Note:** Do not clean the housing or glass of any mirror with harsh abrasives, fuel or other petroleum or ammonia based cleaning products.

You can adjust the interior mirror to your preference. Some mirrors also have a second pivot point. This lets you move the mirror head up or down and from side to side.

Pull the tab below the mirror toward you to reduce glare at night.

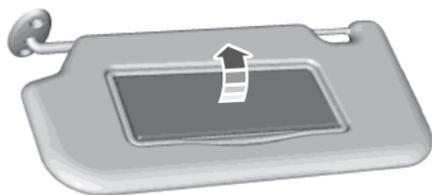
### Auto-Dimming Mirror (If Equipped)

**Note:** Do not block the sensors on the front and back of the mirror. Mirror performance may be affected. A rear center passenger or raised rear center head restraint may also block light from reaching the sensor.

The mirror will dim automatically to reduce glare when bright lights are detected from behind your vehicle. It will automatically return to normal reflection when you select reverse gear to make sure you have a clear view when backing up.

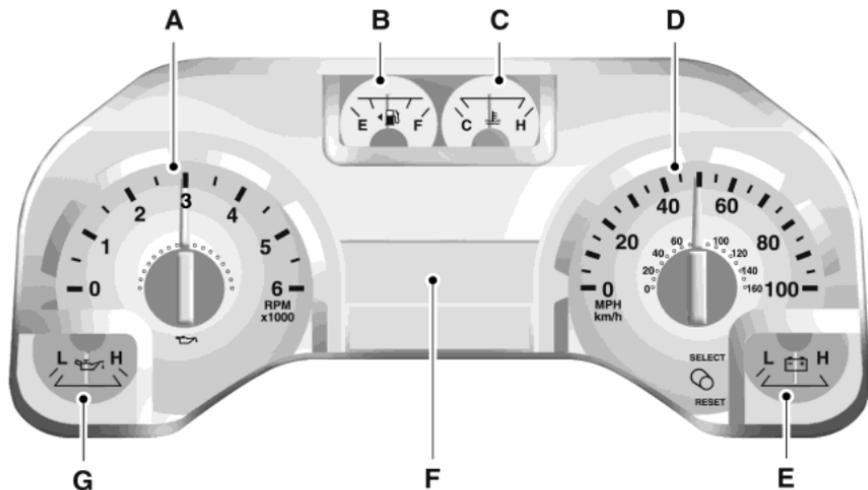
### SUN VISORS

#### Illuminated Visor Vanity Mirror (If Equipped)



Lift the cover to switch on the lamp.

## GAUGES



Cluster shown in standard measure. Metric similar.

- A. Tachometer
- B. Fuel gauge
- C. Engine coolant temperature gauge
- D. Speedometer
- E. Battery voltage gauge
- F. Information display. See *Information displays* for more information.
- G. Engine oil pressure gauge

**Fuel Gauge**

Indicates approximately how much fuel is left in the fuel tank (when the ignition is on). The fuel gauge may vary slightly when the vehicle is in motion or on a grade. The fuel icon and arrow indicates which side of the vehicle the fuel filler door is located.

### Engine Coolant Temperature Gauge

Indicates engine coolant temperature. At normal operating temperature, the level indicator will be in the normal range. If the engine coolant temperature exceeds the normal range, stop the vehicle as soon as safely possible, switch off the engine and let the engine cool.



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

### Battery Voltage Gauge:

Indicates the battery voltage when the ignition is in the on position. If the pointer moves and stays outside the normal operating range, have the vehicle's electrical system checked by your authorized dealer as soon as possible.

### Information Display

#### Odometer

Located in the bottom of the information display Registers the accumulated distance your vehicle has travelled.

#### Trip Computer

See *Trip A/B* in *Information Displays*.

#### Vehicle Settings and Personalization

See *Information Displays*.

### Engine Oil Pressure Gauge

Indicates engine oil pressure. The needle should stay in the normal operating range. 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 at your authorized dealer.

## 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.

**Note:** Some warning indicators appear in the information display and function the same as a warning lamp but do not display when you start your vehicle.

### Airbag – Front



If it fails to illuminate on startup, continues to flash or remains on, it indicates a malfunction. Have the system checked by your authorized dealer. A chime will sound when there is a malfunction in the indicator light.

### Anti-Lock Braking 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.

### Anti-Theft System



Flashes when the SecuriLockt Passive Anti-theft System has been activated.

### 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.

### Charging System



It will illuminate when the 12-volt battery is not charging properly. Contact your authorized dealer as soon as possible. This indicates a problem with the electrical system or a related component.

### Check Fuel Cap



Displays when the fuel cap may not be properly installed. Continued driving with this light on may cause the Service Engine Soon warning light to come on.

### 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 switched on. If the indicators stay on or flash faster, check for a burned out bulb.

### Engine Oil



If it illuminates with the engine running or when you are driving, this indicates a malfunction. Stop your vehicle as soon as it is safe to do so and switch the engine off. Check the engine oil level.

**Note:** Do not resume your journey if it illuminates despite the level being correct. Have the system checked by your authorized dealer.

### Engine Coolant Temperature



Illuminates when the engine coolant temperature is high. Stop the vehicle as soon as possible, switch off the engine and let cool.

### Fasten Safety belt



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

### High Beam



It will illuminate when the headlamp high beam is switched on.

It will flash when you use the headlamp flasher.

### Low Fuel Level



It will illuminate when the fuel level is low or near empty. Refuel as soon as possible.

### Low Tire Pressure Warning



It will illuminate when your tire pressure is low. If the lamp remains on with the engine running or when driving, check your tire pressure as soon as possible.

The lamp also illuminates momentarily when you switch the ignition on to confirm the lamp is functional. If it does not illuminate when you switch the ignition on, or begins to flash at any time, have the system checked by your authorized dealer.

### Overdrive Off (if equipped)



It will illuminate when the overdrive function of the transmission has been turned off. If the light does not illuminate, have the transmission serviced soon, or damage may occur.

### Powertrain Malfunction/Electronic Throttle Control



It will illuminate when a powertrain fault has been detected. Contact your authorized dealer as soon as possible.

### Service Engine Soon



The *service engine soon* indicator light illuminates when the ignition is first turned to the on position 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 the *Readiness for inspection/maintenance (I/M) testing* in the *Fuel and Refueling* chapter.

Solid illumination after the engine is started indicates the on-board diagnostics system (OBD-II) has detected a malfunction. Refer to *On-board diagnostics (OBD-II)* in the *Fuel and Refueling* chapter. 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 by your authorized dealer.



**WARNING:** Under engine misfire conditions, excessive exhaust temperatures could damage the catalytic converter, the fuel system, interior floor coverings or other vehicle components, possibly causing a fire.

### Stability Control System



Displays when the AdvanceTrac®/Traction control is active. If the light remains on, have the system serviced immediately.

### Stability Control System Off



It will illuminate when AdvanceTrac®/Traction control has been disabled by the driver.

### Transmission Tow/Haul



It will illuminate when the Tow/Haul feature has been activated. Refer to the *Transmission* chapter for transmission function and operation. If the light flashes steadily, have the system serviced immediately, damage to the transmission could occur.

## AUDIBLE WARNINGS AND INDICATORS

### 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.

### 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.

### Parking Brake On Warning Chime

Sounds when you have left the parking brake on and 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, crash and injury. We strongly recommend that you use extreme caution when using any device 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 and encourage the use of voice-operated systems when possible. Make sure you are aware of all applicable local laws that may affect the use of electronic devices while driving..

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

**Base Information Display Controls**

Press and release the SELECT/RESET stem, located in the speedometer, to choose settings and confirm messages. Select or reset the function by holding the SELECT/RESET stem for more than two seconds.

INFO	
TRIP A or B	
ALOC	On or OFF
AUnLOC	On or OFF

TRIP A or B: Registers the distance of individual journeys.

**Optional Information Display Controls**

Press and release the SELECT/RESET stem, located in the speedometer, to choose settings and confirm messages. Select or reset the function by holding the SELECT/RESET stem for more than two seconds.

INFO	
TRIP A or B	
MILES (km) TO E	
XX.X AVG MPG (L/100km)	
MPG (L/km)	
HOLD RESET FOR SETUP MENU	
HOLD RESET FOR SYSTEM CHECK	

- TRIP A or B: Registers the distance of individual journeys.
- 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. Distance to empty is calculated using a running average fuel economy, which is based on your recent driving history of 500 miles (800 km). This value is not the same as the average fuel economy display. The running average fuel economy is re-initialized to a factory default value if the battery is disconnected.
- XX.X AVG MPG (L/100km): Average fuel economy displays your average fuel economy in miles/gallon or liters/100 km.
- MPG (L/km): This displays instantaneous fuel economy as a bar graph. Your vehicle must be moving to calculate instantaneous fuel economy. Instantaneous fuel economy cannot be reset.

## System Check and Vehicle Feature Customization

**Note:** System check and vehicle feature customization is only available with the optional information display controls.

**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 SELECT/RESET stem to change back to English.

Press and hold the SELECT/RESET stem to get into the setup menu sequence for the following displays:

SETUP		
OIL LIFE		
UNITS ENG / METRIC	press and hold the SELECT/RESET stem	English or Metric
AUTOLOCK (if equipped)		ON or OFF
AUTOUNLOCK (if equipped)		ON or OFF
COMPASS ZONE (if equipped)		

SETUP		
TBC MODE (if equipped)	press and hold the	Electric or EOH
LANGUAGE = ENGLISH / SPANISH / FRENCH	SELECT/RESET stem	English / Spanish / French
SYSTEM CHECK		
RESET FOR SYSTEM CHECK	press and hold the SELECT/RESET stem	XXX% OIL LIFE
		ENGINE HOURS (if enabled)
		ENGINE IDLE HOURS (if enabled)
		CHARGING SYSTEM
		BRAKE SYSTEM
		TBC GAIN = XX.X or NO TRAILER (if equipped)
		TBC GAIN = XX.X or OUTPUT = ///// (if equipped)
		XXX MILES TO E

- **OIL LIFE XXX% HOLD RESET = NEW:** This displays the remaining oil life. An oil change is required whenever indicated by the message center and according to the recommended maintenance schedule. **USE ONLY RECOMMENDED ENGINE OILS.**

To reset the oil monitoring system to 100% after each oil change, perform the following:

1. Press and release the SELECT/RESET stem to display OIL LIFE XXX% HOLD RESET = NEW.
2. Press and hold the SELECT/RESET stem for two seconds and release to reset the oil life to 100%.

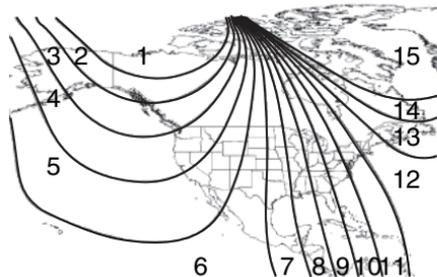
To change oil life 100% value (if equipped):

3. Once "OIL LIFE SET TO XXX%" is displayed, release and press the SELECT/RESET stem to change the oil life start value. Each release and press will reduce the value by 10%.

- UNITS ENG / METRIC: Displays the current units in English or Metric.
- AUTOLOCK: This feature automatically locks all vehicle doors when the vehicle is shifted into any gear, putting the vehicle in motion.
- AUTOUNLOCK: This feature automatically unlocks all vehicle doors when the driver's door is opened within 10 minutes of the ignition being turned off.
- COMPASS (if equipped): Displays the vehicle's heading direction.

The compass reading may be affected when you drive near large buildings, bridges, power lines and powerful broadcast antenna. Magnetic or metallic objects placed in, on or near the vehicle may also affect compass accuracy. If the compass appears to be inaccurate, a manual calibration may be necessary. Refer to *Compass zone adjustment*

### Compass zone adjustment



1. Determine which magnetic zone you are in for your geographic location by referring to the zone map.
2. Press and release the SELECT/RESET stem to scroll through the information displays until the message center displays HOLD RESET FOR SETUP MENU.

3. Press and hold the SELECT/RESET stem to get into the setup menu. Repeatedly press it again to scroll through the setup menu until the message center displays COMPASS ZONE XX.
4. Press and hold the SELECT/RESET stem for approximately two seconds to go to the next zone, then release.
5. Press and hold to go up by one zone then release. Repeat this until you reach the desired zone.
6. Release the SELECT/RESET stem and allow the setup timer to expire to exit the procedure

**Compass calibration adjustment**

**Note:** For optimum calibration, drive to an open, level location away from large metallic objects or structures. Switch off all non-essential electrical accessories (heated rear window, heater, A/C, map lamps, wiper, etc.) and make sure all the doors are closed

**Note:** If the SELECT/RESET stem is pressed during the calibration or three minutes has elapsed since the beginning of the calibration without driving the vehicle, the message center reverts back to normal operation and the CAL will display until a successful calibration is carried out.

1. Press and release the SELECT/RESET stem to scroll through the information displays until the message center displays HOLD RESET FOR SETUP MENU.
2. Press and hold the SELECT/RESET stem to get into the setup menu. Repeatedly press it again to scroll through the setup menu until the message center displays HOLD RESET FOR CALIBRATION.
3. Press and hold the SELECT/RESET stem for approximately two seconds until the message center enters the compass zone adjustment mode.
4. Press and hold the SELECT/RESET stem until the message center displays CIRCLE SLOWLY TO CALIBRATE.
5. Slowly drive the vehicle in a circle less than 3 mph (5 km/h ) until the CIRCLE SLOWLY TO CALIBRATE message changes to CALIBRATION COMPLETED. This may require up to five circles to complete the calibration.
  - TBC MODE (if equipped): Allows you to choose the trailer brake mode.
  - LANGUAGE = ENGLISH / SPANISH / FRENCH: Allows you to choose which language the message center will display in.

Waiting four seconds or pressing the SELECT/RESET stem cycles the message center through each of the language choices.

Press the SELECT/RESET stem to set the language choice when the language you want appears.

- HOLD RESET FOR SYSTEM CHECK: The message center will begin to cycle through the vehicle systems and provide a status of the item if needed. Some systems show a message only if a condition is present.

## INFORMATION MESSAGES

Press the SELECT/RESET stem 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.

<b>AdvanceTrac® / Traction Control Messages</b>	<b>Action / Description</b>
<b>SERVICE ADVANCETRAC</b>	Displayed when the AdvanceTrac® system has detected a condition that requires service. Contact your authorized dealer as soon as possible.

<b>Brake System Messages</b>	<b>Action / Description</b>
<b>BRAKE FLUID LEVEL LOW</b>	Indicates the brake fluid level is low and the brake system should be inspected immediately. Refer to <i>Brake fluid</i> in the <i>Maintenance</i> chapter.
<b>CHECK BRAKE SYSTEM</b>	Displayed when the brake system needs servicing. If the warning stays on or continues to come on, contact your authorized dealer as soon as possible.
<b>PARK BRAKE ENGAGED</b>	Displayed when the parking brake is set and the vehicle is in motion.

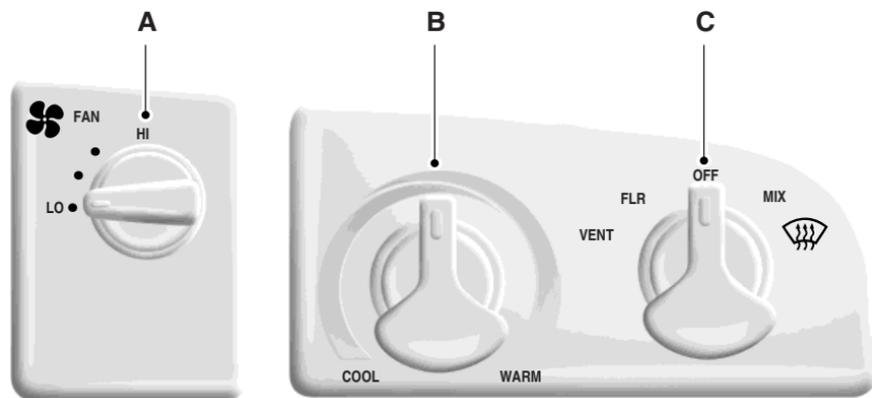
<b>Fuel Messages</b>	<b>Action / Description</b>
<b>XXX MILES TO E FUEL LEVEL LOW</b>	Displayed as an early reminder of a low fuel condition.

Maintenance Messages	Action / Description
<b>ENGINE OIL CHANGE SOON</b>	Displayed when the engine oil life remaining is between 5% and 0%.
<b>OIL CHANGE REQUIRED</b>	Displayed when the oil life left reaches 0%. OIL LIFE OK displays after you have changed the oil.

Tire Messages	Action / Description
<b>LOW TIRE PRESSURE</b>	Displays when one or more tires on your vehicle have low tire pressure.
<b>TIRE PRESSURE MONITOR FAULT</b>	Displays when the tire pressure monitoring system is malfunctioning. If the warning stays on or continues to come on, contact your authorized dealer.
<b>TIRE PRESSURE SENSOR FAULT</b>	Displayed when a tire pressure sensor is malfunctioning, or your spare tire is in use. For more information on how the system operates under these conditions refer to the <i>Tire Pressure Monitoring System</i> in the <i>Wheels and Tires</i> chapter for more information. If the warning stays on or continues to come on, contact your authorized dealer as soon as possible.

Trailer Messages	Action / Description
<b>TRAILER BRAKE MODULE FAULT</b>	Displayed and accompanied by a single chime, in response to faults sensed by the TBC. Refer to <i>Trailer towing</i> in the <i>Towing</i> chapter for more information.
<b>TRAILER CONNECTED</b>	Displayed when a correct trailer connection (a trailer with electric trailer brakes) is sensed during a given ignition cycle.
<b>TRAILER DISCONNECTED</b>	Displayed when a trailer connection becomes disconnected, either intentionally or unintentionally, and has been sensed during a given ignition cycle. Disregard this status if your vehicle is not equipped with a factory installed trailer brake controller. This message may appear when an aftermarket TBC is used even when the trailer is connected.
<b>WIRING FAULT ON TRAILER</b>	Displayed if there are certain faults in the vehicle wiring and trailer wiring/brake system. Refer to <i>Trailer towing</i> in the <i>Towing</i> chapter for more information.

## HEATER ONLY SYSTEM



A. **Fan speed control:** Controls the volume of air circulated in your vehicle. Adjust to select the desired fan speed.

B. **Temperature control:** Controls the temperature of the airflow in your vehicle. Adjust to select the desired temperature.

C. **Air distribution control:** Turn the control to direct airflow from the windshield, instrument panel, or floor vents. The system can distribute air through any combination of these vents.

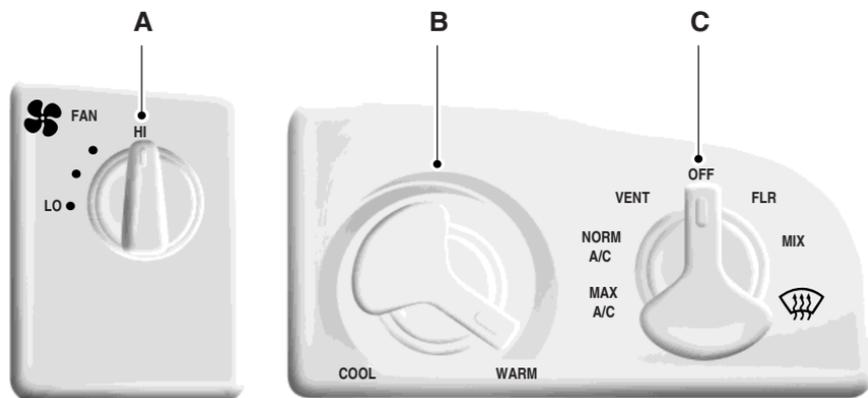
- **VENT:** Select to distribute air through the instrument panel air vents.
- **FLR:** Select to distribute air through the floor vents.
- **OFF:** Select to turn the system off.
- **MIX:** Select to distribute air through the instrument panel and floor air vents.



Select to distribute air to the windshield vents and de-mister. Air distribution to instrument panel and floor vents turn off.

You can use this setting to defog and clear the windshield of a thin covering of ice.

## MANUAL CLIMATE CONTROL



**A. Fan speed control:** Controls the volume of air circulated in your vehicle. Adjust to select the desired fan speed.

**B. Temperature control:** Controls the temperature of the airflow in your vehicle. Adjust to select the desired temperature.

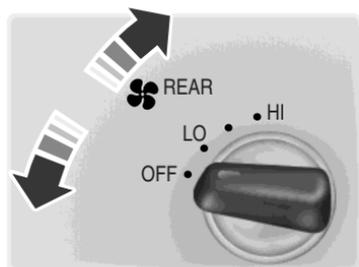
**C. Air distribution control:** Turn the control to direct airflow from the windshield, instrument panel, or floor vents. The system can distribute air through any combination of these vents.

- **MAX A/C:** Select to maximize cooling. Recirculated air flows through the instrument panel vents, air conditioning automatically turns on, and the fan automatically adjusts to the highest speed.
- **NORM A/C:** Select to turn air conditioning compressor on or off. Use air conditioning with recirculated air to improve cooling performance and efficiency.
- **VENT:** Select to distribute air through the instrument panel air vents.
- **OFF:** Select to turn the system off.
- **FLR:** Select to distribute air through the floor vents.
- **MIX:** Select to distribute air through the instrument panel and floor air vents.



Select to distribute air to the windshield vents and de-mister. Air distribution to instrument panel and floor vents turn off.

You can use this setting to defog and clear the windshield of a thin covering of ice.

**REAR FAN SPEED CONTROL (IF EQUIPPED)**

Controls the volume of air circulated in the rear of your vehicle. Adjust to select the desired fan speed or switch off.

**HINTS ON CONTROLLING THE INTERIOR CLIMATE****General Hints**

**Note:** You may feel a small amount of air from the floor air vents regardless of the air distribution setting.

**Note:** To reduce humidity build-up inside your vehicle, do not drive with the system switched off.

**Note:** Do not place objects under the front seats as this may interfere with the airflow to the rear seats.

**Note:** Remove any snow, ice or leaves from the air intake area at the base of the windshield.

**Note:** To reduce fogging of the windshield during humid weather, adjust the air distribution control to the windshield air vents position. Increase the temperature and fan speed to improve clearing, if required.

**Heating the Interior Quickly**

1	Adjust the fan speed to the highest speed setting.
2	Adjust the temperature control to the highest setting.
3	Select <b>FLR</b> using the air distribution control.

**Recommended Settings for Heating**

1	Adjust the fan speed to the center setting.
2	Adjust the temperature control to the midway point of the hot settings.
3	Select <b>MIX</b> using the air distribution control.

**Cooling the Interior Quickly**

1	Adjust the fan speed to <b>HI</b> .
2	Adjust the temperature control to <b>COOL</b> .
3	Select <b>MAX A/C</b> using the air distribution control.

**Recommended Settings for Cooling**

1	Adjust the fan speed to the second speed setting.
2	Adjust the temperature control to the midway point of the cold settings.
3	Select <b>NORM A/C</b> using the air distribution control.

**Vehicle Stationary for Extended Periods during Extreme High Ambient Temperatures**

1	Apply the parking brake.
2	Place the transmission in position <b>P</b> .
3	Select <b>MAX A/C</b> using the air distribution control.
4	Adjust the fan speed to <b>LO</b> .

**Side Window Defogging in Cold Weather**

1	Adjust the air distribution control to <b>NORM A/C</b> .
2	Adjust the temperature control to the desired setting.
3	Adjust the fan speed to <b>HI</b> .
4	Direct the instrument panel side air vents toward the side windows.
5	Close the instrument panel vents.

**SITTING IN THE CORRECT POSITION**

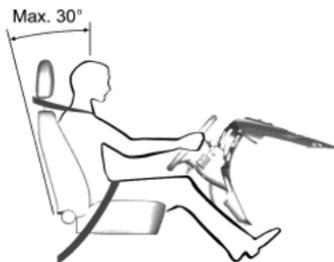
**WARNING:** Sitting improperly out of position or with the seatback reclined too far can take off weight from the seat cushion and affect the passenger sensing system, resulting in serious injury or death in a crash. Always sit upright against your seatback, with your feet on the floor.



**WARNING:** Do not recline the seatback as this can cause the occupant to slide under the seat's safety belt, resulting in severe personal injury in the event of a crash.



**WARNING:** Do not place objects higher than the seatbacks to reduce the risk of injury in a crash or during heavy braking or when stopping suddenly.



When you use them properly, the seat, head restraint, safety belt and airbags will provide optimum protection in the event of a crash. We recommend that you follow these guidelines:

- Do not recline the seatback more than 30 degrees from vertical.
- Sit in an upright position with the base of your spine as far back as possible.
- Adjust the head restraint so that the top of it is level with the top of your head and as far forward as possible, remaining comfortable.
- Keep sufficient distance between yourself and the steering wheel. We recommend a minimum of 10 inches (25 centimeters) between your breastbone and the airbag cover.
- Hold the steering wheel with your arms slightly bent.

- Bend your legs slightly so that you can press the pedals fully.
- Position the shoulder strap of the safety belt over the center of your shoulder and position the lap strap tightly across your hips.

Make sure that your driving position is comfortable and that you can maintain full control of your vehicle.

## HEAD RESTRAINTS



**WARNING:** To minimize the risk of neck injury in the event of a crash, the driver and passenger occupants should not sit in and operate the vehicle until the seatback is placed in its proper position. The driver should never adjust the head restraint while the vehicle is in motion.



The front row outboard non-adjustable head restraints consist of a trimmed foam covering over the upper structure of the seatback. Properly adjust the seatback to an upright driving or riding position, so that the head restraint is positioned as close as possible to the back of your head.

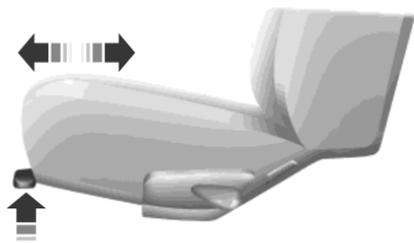
## MANUAL SEATS



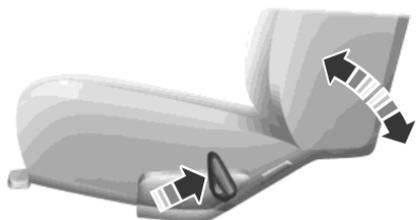
**WARNING:** Do not adjust the driver seat or seatback when your vehicle is moving. This may result in sudden seat movement, causing loss of control of your vehicle.



**WARNING:** Rock the seat backward and forward after releasing the lever to make sure that it is fully engaged.



**Moving the Seats Backward and Forward (If Equipped)**

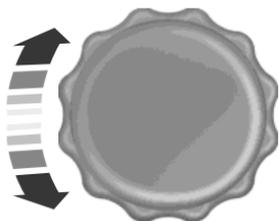


**Recline Adjustment (If Equipped)**



**WARNING:** Before returning the seatback to its original position, make sure that cargo or any objects are not trapped behind the seatback. After returning the seat back to its original position, pull on the seatback to make sure that it has fully latched. An unlatched seat may become dangerous in the event of a sudden stop or crash.

**Manual Lumbar (If Equipped)**

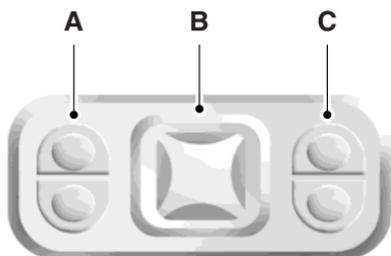


The lumbar support control is located on the inboard side of the driver seat. Turn the control to adjust your support.

**POWER SEATS**

**WARNING:** Do not adjust the driver seat while the vehicle is moving. This may result in sudden seat movement, causing loss of control of your vehicle.

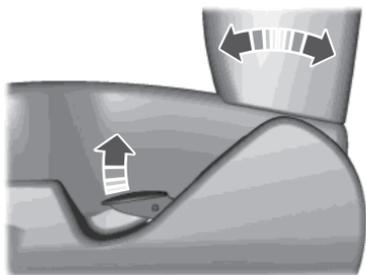
The control is located on the outboard side of the seat cushion.



Press A to raise or lower the front portion of the seat cushion.

Press B to move the seat forward, backward, up or down.

Press C to raise or lower the rear portion of the seat cushion.

**Recline Adjustment (If Equipped)**

### AUXILIARY POWER POINTS



**WARNING:** Do not plug optional electrical accessories into the cigarette lighter socket (if equipped). Improper use of the lighter can cause damage not covered by your warranty, and can result in fire or serious injury.

**Note:** If used when the engine is not running, the battery will discharge. There may be insufficient power to restart your engine.

**Note:** Do not insert objects other than an accessory plug into the power point. This will damage the outlet and blow the fuse.

**Note:** Do not hang any type of accessory or accessory bracket from the plug.

**Note:** Do not use the power point over the vehicle capacity of 12 volts DC 180 watts or a fuse may blow.

**Note:** Do not use the power point for operating a cigarette lighter element.

**Note:** Improper use of the power point can cause damage not covered by your warranty.

**Note:** Always keep the power point caps closed when not in use.

Run the engine for full capacity use of the power point. To prevent the battery from being discharged:

- Do not use the power point longer than necessary when the engine is not running.
- Do not leave devices plugged in overnight or when the vehicle is parked for extended periods.

### Locations

Power points may be found:

- on the instrument panel
- in the glove box
- behind the driver's seat on the upper trim panel (if equipped).

### 110 Volt AC Power Point (If Equipped)



**WARNING:** Do not keep electrical devices plugged in the power point whenever the device is not in use. Do not use any extension cord with the 110 volt AC power point, since it will defeat the safety protection design. Doing so may cause the power point to overload due to powering multiple devices that can reach beyond the 150 watt load limit and could result in fire or serious injury.

**Note:** The cap should always be closed whenever the power point outlet is not in use.

**Note:** Keep the engine running to use the power point.

The 110 volt AC power point outlet is used for powering electrical devices that require up to 150 watt. Exceeding the 150 watt limit will cause the power point to cut off the power temporarily to provide overload protection.



The power point is located on the instrument panel.

The power point is not designed for the following electric appliances; they may not work properly:

- Cathode ray tube type televisions
- Motor loads, such as vacuum cleaners, electric saws and other electric power tools, compressor-driven refrigerators, etc.
- Measuring devices, which process precise data, such as medical equipment, measuring equipment, etc.
- Other appliances requiring an extremely stable power supply: microcomputer-controlled electric blankets, touch sensor lamps, etc.

The power point can switch to a fault mode when it is overloaded, overheated, or shorted. Unplug your device and turn the ignition off then on for overloading and shorting conditions. Let the system cool off, then turn the ignition off then on for an overheating condition.

The power point can provide power whenever the ignition is on and the indicator light is on. The indicator light is located in the top left corner of the power point.

When the indicator light is:

- on — power point is ready to supply power
- off — power point power supply is off; ignition is not on
- blinking — power point is in fault mode

## 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.

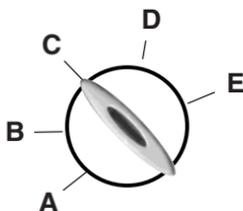
If you disconnect the battery, your vehicle may exhibit some unusual driving characteristics for approximately 5 miles (8 kilometers) after you connect it. This is because the engine management system must realign itself with the engine. You may disregard any unusual driving characteristics during this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

The powertrain control system meets all Canadian interference-causing equipment standard requirements regulating the impulse electrical field or radio noise.

Do not press the accelerator pedal while starting the engine. If you have difficulty starting the engine, see *Failure to start* later in this section.

**IGNITION SWITCH**

**Note:** Do not store the key in the ignition after the vehicle is turned off and you have left the vehicle. This could cause a drain on the battery.



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

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

C. **Off:** Shuts off the engine and all accessories without locking the steering wheel.

D. **On:** All the electrical circuits are operational. Warning lights are illuminated. This is the key position when driving.

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

**STARTING A GASOLINE ENGINE**

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

Before starting the engine check the following:

- Make sure all occupants have fastened their safety belts.
- Make sure the headlamps and electrical accessories are off.
- Make sure the parking brake is on.
- Make sure the gearshift is in position **P**.
- Turn the ignition key to the on position.

**Note:** Do not touch the accelerator pedal.

1. Fully press the brake pedal.
2. Turn the key to the start position. Release the key when the engine starts.

**Note:** The engine may continue cranking for up to 15 seconds or until it starts.

**Note:** If you cannot start the engine on the first try, wait for a short period and try again.

### Failure to Start

If you cannot start the engine after three attempts, wait 10 seconds and follow this procedure:

1. Fully press the brake pedal.
2. Fully press the accelerator pedal and hold it there.
3. Start the engine.

### Stopping the Engine When Your Vehicle Is Stationary

1. Move the transmission selector lever to position **P**.
2. Turn the key to the off position.
3. Apply the parking brake.

**Note:** This switches off the ignition, all electrical circuits, warning lamps and indicators.

**Note:** If the engine is idling for 30 minutes, the ignition and engine automatically shut down.

### Stopping the Engine When Your Vehicle Is Moving



**WARNING:** Switching off the engine when the vehicle is still moving will result in a loss of brake and steering assistance.

The steering will not lock, but higher effort will be required. When the ignition is switched off, some electrical circuits, warning lamps and indicators may also be off.

1. Move the transmission selector lever to position **N** and use the brakes to bring your vehicle to a safe stop.
2. When your vehicle has stopped, move the transmission selector lever to position **P** and turn the key to the off position.
3. Apply the parking brake.

### Cold Weather Starting (Flexible Fuel Vehicles Only)

**Note:** Do not crank the engine for more than 10 seconds at a time as starter damage may occur. If the engine fails to start, turn the key to off and wait 30 seconds before trying again.

**Note:** Do not use starting fluid such as ether in the air intake system. Such fluid could cause immediate explosive damage to the engine and possible personal injury.

**Note:** You may experience a decrease in peak performance when the engine is cold when operating on E85 ethanol.

The starting characteristics of all grades of E85 ethanol make it unsuitable for use when ambient temperatures fall below 0°F (-18°C). Consult your fuel distributor for the availability of winter grade ethanol. As the outside temperature approaches freezing, ethanol fuel distributors should supply winter grade ethanol (same as with unleaded gasoline). If summer grade ethanol is used in cold weather conditions, 0°F to 32°F (-18°C to 0°C), you may experience increased cranking times, rough idle or hesitation until the engine has warmed up.

If you should experience cold weather starting problems on E85 ethanol, and neither an alternative brand of E85 ethanol nor an engine block heater is available, adding unleaded gasoline to your tank improves cold starting performance. Your vehicle is designed to operate on E85 ethanol alone, unleaded gasoline alone, or any mixture of the two.

See *Choosing the right fuel* in the *Fuels and Refueling* chapter for more information on ethanol.

### Guarding Against Exhaust Fumes



**WARNING:** If you smell exhaust fumes inside your vehicle, have this checked immediately. Do not drive your vehicle 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, we recommend that you do one of the following:

- Open the windows at least 1 inch (2.5 centimeters).
- Set your climate control to outside air.

## ENGINE BLOCK HEATER (IF EQUIPPED)



**WARNING:** Failure to follow engine block heater instructions could result in property damage or personal injury.



**WARNING:** Do not use your heater with ungrounded electrical systems or two-pronged (cheater) adapters. There is a risk of electrical shock.

**Note:** The heater is most effective when outdoor temperatures are below 0°F (-18°C).

The heater acts as a starting aid by warming the engine coolant. This allows the climate control system to respond quickly. The equipment includes a heater element (installed in the engine block) and a wire harness. You can connect the system to a grounded 120-volt A/C electrical source.

We recommend that you do the following for safe and correct operation:

- Use a 16-gauge outdoor extension cord that is product certified by Underwriter's Laboratory or Canadian Standards Association. This extension cord must be suitable for use outdoors, in cold temperatures, and be clearly marked *Suitable for Use with Outdoor Appliances*. Never use an indoor extension cord outdoors; it could result in an electric shock or become a fire hazard.
- Use as short an extension cord as possible.
- Do not use multiple extension cords.
- Make sure that when in operation, the extension cord plug and the heater cord plug connections are free and clear of water. This could cause an electric shock or fire.
- Make sure your vehicle is parked in a clean area, clear of combustibles.
- Make sure the heater, heater cord and extension cord are firmly connected.
- Check for heat anywhere in the electrical hookup once the system has been operating for approximately 30 minutes.
- Make sure the system is unplugged and properly stowed before driving your vehicle. Make sure the protective cover seals the prongs of the block heater cord plug when not in use.
- Keep plug terminals clean and free of dirt and corrosion.
- Make sure the heater system is checked for proper operation before winter.

**Using the Engine Block Heater**

Make sure the receptacle terminals are clean and dry before use. To clean them, use a dry cloth.

The heater uses 0.4 to 1.0 kilowatt-hours of energy per hour of use. The system does not have a thermostat. It achieves maximum temperature after approximately three hours of operation. Using the heater longer than three hours does not improve system performance and unnecessarily uses electricity.

## 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 you hear a hissing sound near the fuel filler inlet, do not refuel until the sound stops. Otherwise, fuel may spray out, which could cause serious personal injury.



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



**WARNING:** The flow of fuel through a fuel pump nozzle can produce static electricity. This can cause a fire if you are filling an ungrounded container.



**WARNING:** Fuel ethanol and 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:** Do not remove the fuel pump nozzle from its full inserted position when refueling.

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 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 and a loss of vehicle performance; repairs may not be covered under warranty.

### **Choosing the Right Fuel with a Flex Fuel Vehicle (If Equipped)**

Use only UNLEADED fuel or UNLEADED fuel blended with a maximum of 85% ethanol (E-85) in your Flex Fuel Vehicle (FFV). If your vehicle is flex fuel capable, it will have a yellow fuel filler cap placed over the fuel fill inlet.

Do not use:

- Fuels containing more than 85% ethanol or E-100 fuel.
- Fuels containing methanol.
- Fuels containing metallic based additives, including manganese-based compounds.
- Fuels containing the octane booster additive, methylcyclopentadienyl manganese tricarbonyl (MMT).
- Leaded-fuel (The use of leaded fuel is prohibited by law).

Use of any fuel other than recommended fuel can cause powertrain damage, impair the emission control system or cause loss of vehicle performance. Any damage to a vehicle that is caused by use of fuel not recommended will not be covered under warranty.

### ***Choosing the Right Fuel (Gasoline Engines)***

Use only UNLEADED gasoline or UNLEADED gasoline blended with a maximum of 15% ethanol in your gasoline vehicle. If your vehicle is a Flex Fuel Vehicle (FFV), it will have a yellow fuel filler cap placed over the fuel fill inlet.

Do not use:

- Fuels containing more than 15% ethanol or E-85 fuel.
- Fuels containing methanol.
- Fuels containing metallic based additives, including manganese-based compounds.
- Fuels containing the octane booster additive, methylcyclopentadienyl manganese tricarbonyl (MMT).
- Leaded-fuel (The use of leaded fuel is prohibited by law).

**Note:** Use of any fuel other than recommended fuel can cause powertrain damage, impair the emission control system or cause loss of vehicle performance. Any damage to vehicle that is caused by use of fuel not recommended will not be covered under warranty.

### **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, crank time will be a few seconds longer than normal. With keyless ignition, just start the engine. Crank time will be longer than usual.
- Normally, adding 1 gallon (3.8 liters) of fuel is enough to restart the engine. If the vehicle is out of fuel and on a steep grade, more than 1 gallon (3.8 liters) may be required.
- The service engine soon indicator may come on. For more information on the service engine soon indicator, see *Warning Lamps and Indicators* 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.



**WARNING:** Stop refueling after the fuel pump nozzle automatically shuts off for the second time. Failure to follow this will fill the expansion space in the fuel tank and could lead to fuel overflowing.

**Note:** Wait at least 10 seconds before removing the fuel pump nozzle to allow any residual fuel to drain into the fuel tank.

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 vacuum in the fuel tank may damage the fuel system or cause the fuel cap to disengage in a collision, which may result in personal injury.

**Note:** If the fuel filler cap must be replaced, 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 1/4 turn on/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 until it clicks at least once.

## 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 1000 miles (1600 kilometers) of driving (this is your engine's break-in period); a more accurate measurement is obtained after 2000 miles–3000 miles (3200 kilometers–4800 kilometers). 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.

### 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 information 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. See *Fuel filler cap* in this chapter.
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 closing the fuel fill inlet 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. See *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 or 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 the engine is 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**

**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:** 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.

Your vehicle has been designed to improve fuel economy by reducing fuel usage during coasting or deceleration. When you take your foot off the accelerator pedal and the vehicle begins to slow down the torque converter clutch locks up and aggressively shuts off fuel flow to the engine while decelerating. This fuel economy benefit may be perceived as a light to medium braking sensation when removing your foot from the accelerator pedal.

**P R N D 3 2 1****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).

**R (Reverse)**

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

**D (Drive with 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 (Drive with 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 depressed.

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).

**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 ) (Drive with Overdrive)** or Drive.
- Press the accelerator to the floor.
- Allows transmission to select an appropriate gear.

## Brake-Shift Interlock



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



**WARNING:** When doing this procedure, you will be taking the vehicle out of park which means the vehicle can roll freely. To avoid unwanted vehicle movement, always fully set the parking brake prior to doing this procedure. Use wheel chocks if appropriate.

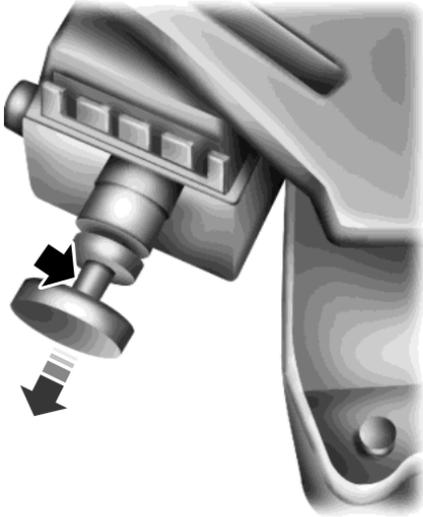


**WARNING:** If the parking brake is fully released, but the brake warning lamp remains illuminated, the brakes may not be working properly. See your authorized dealer.

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) with the ignition in the on position and the brake pedal pressed, it is possible that a fuse has blown or the vehicle's brake lamps are not operating properly. Refer to *Fuses* chapter.

If the fuse is not blown and the brake lamps are working properly, the following procedure will allow you to move the gearshift lever from P (Park):



1. Apply the parking brake, and turn the ignition to the on position.
2. Use a screwdriver to remove the lower trim panel under the steering column. Make sure to not disturb the wires on the electrical connector.
3. Locate the brake-shift interlock solenoid underneath the steering column.
4. Pull back on the solenoid, and at the same time, shift the transmission into N (Neutral).
5. Start the vehicle.

See your authorized dealer as soon as possible if this procedure is used.

## 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.

**Automatic Transmission Adaptive Learning**

This feature is designed to increase durability and provide consistent shift feel over the life of the vehicle. A new vehicle or transmission may have firm shifts, soft 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. Additionally, whenever the battery is disconnected or a new battery installed, the strategy must be relearned.

**AXLE INFORMATION****Traction-Lok axle (if equipped)**

This axle provides added traction on slippery surfaces, particularly when one wheel is on a poor traction surface. Under normal conditions, the traction-lok axle functions like a standard rear axle. The axle may exhibit a slight noise or vibration in tight turns with low vehicle speed. This is normal behavior and indicates the axle is working.

## 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. Have them inspected by an authorized dealer. If your vehicle has continuous vibration or shudder in the steering wheel while braking, have your vehicle 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. See the *Vehicle Care* chapter for wheel cleaning instructions.



See 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 your 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 park (P) and apply the parking brake. Inspect the accelerator pedal and the area around it for any items or debris that may be obstructing its movement. If none are found and the condition persists, have your vehicle towed to the nearest authorized dealer.

## Anti-Lock Brake System

This system helps you maintain steering control during emergency stops by keeping the brakes from locking.



This lamp momentarily illuminates when you turn the ignition on. If the light does not illuminate during start-up, remains on or flashes, the anti-lock brake system may be disabled. Have the system checked by an authorized dealer. If the anti-lock brake system is disabled, normal braking is still effective.



If the brake warning lamp illuminates when you release the parking brake, have the system checked by an authorized dealer.

**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 anti-lock braking system will not eliminate the risks 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 that the transmission is securely latched in park (P).

To set the parking brake, press the parking brake pedal down until the pedal stops.

The brake warning lamp will illuminate and will remain illuminated until the parking brake is released.

To release, pull the brake release lever located at the lower left side of the instrument panel.

## PRINCIPLES OF OPERATION

The traction control system helps avoid drive wheel spin and loss of traction. If the wheels spin when accelerating on slippery or loose surfaces, the system reduces engine power in order to increase traction.

## USING TRACTION CONTROL (IF EQUIPPED)

In certain situations (for example, stuck in snow or mud), turning the traction control off may be beneficial as this allows the wheels to spin with full engine power. Turn the traction control system off using the **TCS OFF** button located on the instrument panel.

## System indicator lights and messages



**WARNING:** If a failure has been detected within the Traction Control System, the stability control light will illuminate steadily. Verify that the Traction Control System was not manually disabled. If the stability control light still illuminates steadily, have the system serviced by an authorized dealer immediately. Operating your vehicle with Traction Control disabled could lead to an increased risk of loss of vehicle control, vehicle rollover, personal injury and death.



The stability control light temporarily illuminates on engine start-up and flashes when a driving condition activates the traction control system.



The traction control off light temporarily illuminates on engine start-up and stays on when the traction control system is turned off or if a problem occurs in the stability system.

## PRINCIPLES OF OPERATION

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

## USING CRUISE CONTROL (IF EQUIPPED)

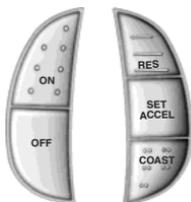


**WARNING:** Do not use cruise control in heavy traffic, on winding roads or when the road surface is slippery. This could result in loss of vehicle control, serious injury or death.



**WARNING:** When you are going downhill, your vehicle speed may increase above the set speed. The system will not apply the brakes. Change down a gear to assist the system in maintaining the set speed. Failure to do so could result in loss of vehicle control, serious injury or death.

**Note:** Cruise control will disengage if your 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 Cruise Control On

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

**Note:** If you accelerate by pressing the accelerator pedal, the set speed will not change. When you release the accelerator pedal, you will return to the speed that you previously set.

- Press and hold **SET ACCEL** to increase or **COAST** to decrease the set speed. Release the control 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 or brake pedal until you reach the desired speed. Press and release **SET ACCEL**.

## Canceling the Set Speed

Tap the brake pedal. You will not erase the set speed.

## Resuming the Set Speed

Press and release **RES**.

## Switching Cruise Control Off

**Note:** You will erase the set speed if you switch the system off.

Press and release **OFF** or switch the ignition off.

**STEERING**

To help prevent damage to the power steering system:

- Never hold the steering wheel at its furthest turning points (until it stops) for more than a few seconds when the engine is running.
- Do not operate the vehicle with a low power steering pump fluid level (If the fluid level is below the MIN line mark on the reservoir).
- Some noise is normal during operation. If the noise is excessive, check for low power steering pump fluid level before seeking service by your authorized dealer.
- Heavy or uneven steering efforts may be caused by low power steering pump fluid level. Check for low power steering pump fluid level before seeking service by your authorized dealer.
- Do not fill the power steering pump reservoir above the MAX line mark, as this may result in leaks from the reservoir.

If the power steering system breaks down (or if the engine is turned off), you can steer the vehicle manually, but it takes more effort.

If the steering wanders or pulls, check for:

- an improperly inflated tire.
- uneven tire wear.
- loose or worn suspension components.
- loose or worn steering components.
- improper steering alignment.

A high crown in the road or high crosswinds may also make the steering seem to wander/pull.

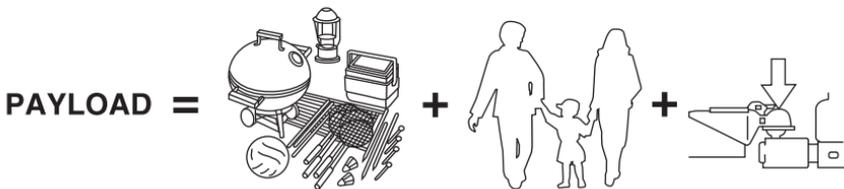
## LOAD LIMIT

### 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.



**Payload** – is the combined weight of cargo and passengers that the vehicle is carrying. Look for **“THE COMBINED WEIGHT OF OCCUPANTS AND CARGO SHOULD NEVER EXCEED XXX kg OR XXX lb.”** for maximum payload.



**WARNING:** The appropriate loading capacity of your vehicle can be limited either by volume capacity (how much space is available) or by payload capacity (how much weight the vehicle should carry). Once you have reached the maximum payload of your vehicle, do not add more cargo, even if there is space available. Overloading or improperly loading your vehicle can contribute to loss of vehicle control and vehicle rollover.

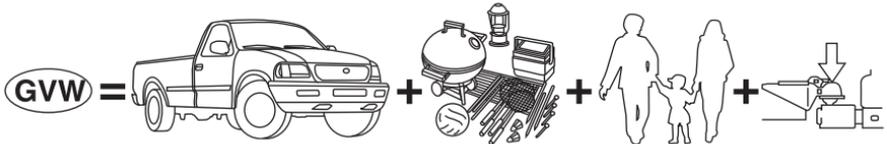


**Cargo Weight** – includes all weight added to the Base Curb Weight, including cargo and optional equipment. When towing, trailer tongue load or king pin weight is also part of cargo weight.

**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 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: XXXX GVWR: XXXXXLB/ XXXXXKG  
 FRONT GAWR: XXXXL REAR GAWR: XXXXXLB  
 XXXXXKG WITH XXXXXKG WITH  
 XXXX/XX/XXXXX 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: XXXXXXXXXXXXXXXXXXXX  
 TYPE: XXXX

XXXXX  
XXXXX



EXT PNT: XX	RC: XX	DSO:
WB <sup>1</sup> INT TR <sup>1</sup> TP/PS <sup>1</sup> R <sup>1</sup> AXLE <sup>1</sup> TR <sup>1</sup> SPR		XXXXX
XXX XX X XX X XX		XXX
XXXXXXXXXXXXX XXX XXXX-XXXXXXX-XX		

**MFD. BY FORD MOTOR CO.**

DATE: xx/xx GVWR/PNBV: xxxxxLB/xxxxxKG  
 FRONT GAWR/PNBE AV / REAR GAWR/ PNBE AR  
 xxxxx kPa/xx B / xxxxxKG/xxxxxB  
 WITH/AVEC TIRES/PNEUS  
 xxxxx/xxxxx  
 xxxxx/xxxxx  
 xxxxxx RIMS/JANTES xxxxxx

AT/A kPa/PSI/LPC xxx/xx COLD/A FROID xxx/xx  
 /JUMEELES

VIN: XXXXXXXXXXXXXXXXXXXX  
 TYPE: xxx/xxxxx COMPLIES: xxx/xxx - xxx

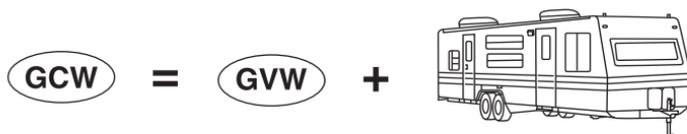
XXXXXX  
XXXXXX



EXT PNT: U	RC: XX	DSO:
WB <sup>1</sup> INT TR <sup>1</sup> TP/PS <sup>1</sup> R <sup>1</sup> AXLE <sup>1</sup> TR <sup>1</sup> SPR		XXXXXX
XXX XX X XX X XXXX XXX		XXXXXX
XXXXXXXXXXXXX XXX XXXX-XXXXXXX-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.



**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) or king pin weight of 15–25% (fifth wheel 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.**

**Tongue Load or Fifth Wheel King Pin Weight** – refers to the amount of the weight that a trailer pushes down on a trailer hitch.

**Examples:** For a 5,000 lb. (2,268 kg) conventional trailer, multiply 5,000 by 0.10 and 0.15 to obtain a proper tongue load range of 500 to 750 lb. (227 to 340 kg). For an 11,500 lb. (5,216 kg) fifth wheel trailer, multiply by 0.15 and 0.25 to obtain a proper king pin load range of 1,725 to 2,875 lb. (782 to 1,304 kg)



**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 lb.” 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 lb.
4. The resulting figure equals the available amount of cargo and luggage load capacity. For example, if the “XXX” amount equals 1,400 lb. and there will be five 150 lb. passengers in your vehicle, the amount of available cargo and luggage load capacity is 650 lb. ( $1400 - 750 (5 \times 150) = 650$  lb.).
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:

- Suppose your vehicle has a 1400 lb. (635 kg) 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.

- Suppose your vehicle has a 1400 lb. (635 kg) 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 your vehicle and could result in engine damage, transmission damage, structural damage, loss of vehicle control, vehicle rollover and personal injury.

**Note:** For information on electrical items such as fuses or relays, see the *Fuses* chapter.

The load capacity of your vehicle is designated by weight not volume. You may not necessarily be able to use all available space when loading your vehicle or trailer.

Towing a trailer places extra load on the engine, transmission, axle, brakes, tires, and suspension. Inspect these components before, during and after towing.

### Load Placement

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

- Load the heaviest items closest to the trailer floor.
- Load the heaviest items 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 your 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. You can find more information about proper trailer loading and setting your vehicle up for towing under *Load limit* in the *Load Carrying* chapter.

You can also find information in the *RV and Trailer Towing Guide* available at your authorized dealer.

**RECOMMENDED TOWING WEIGHTS**

**Note:** Calculate the maximum trailer weight for all cutaway vehicles by subtracting the weight of your vehicle (including incomplete vehicle weight and payload, which includes second unit body weight, cargo and passengers) from the gross combined weight. Otherwise, maximum trailer weight is 10000 pounds (4536 kilograms).

**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 feet<sup>2</sup> (5.57 meters<sup>2</sup>) trailer frontal area.

**Note:** Exceeding this limitation may significantly reduce the performance of your towing vehicle. Selecting a trailer with a low aerodynamic drag and rounded front design helps optimize performance and fuel economy.

**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 your vehicle's electrical system may not include the wiring connector needed to use electric trailer brakes.

Your vehicle may tow a 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.

To calculate the maximum loaded trailer weight for your vehicle:

1. Start with the gross combined weight rating for your vehicle model and axle ratio. See the following chart.
2. Subtract all of the following that apply to your vehicle:
  - Vehicle curb weight
  - Hitch hardware weight, such as a draw bar, ball, locks or weight distributing
  - Driver weight
  - Passenger(s) weight
  - Payload, cargo and luggage weight
  - Aftermarket equipment weight.
3. This equals the maximum loaded trailer weight for this combination.

**Note:** The trailer tongue load figures into the payload for your vehicle. Reduce the total payload by the final trailer tongue weight.

Consult an authorized dealer to determine the maximum trailer weight allowed for your vehicle if you are not sure.

Engine	Rear axle ratio	Maximum GCWR	Maximum trailer weight
<b>E-350 Cutaway single rear wheel</b>			
5.4L	4.10	13000 lb (5896 kg)	8000 lb (3629 kg)
6.8L	4.10	18500 lb (8391 kg)	10000 lb (4536 kg)
<b>E-350 Cutaway dual rear wheel</b>			
5.4L	4.10	13000 lb (5897 kg)	7700 lb (3493 kg)
6.8L	4.10	18500 lb (8391 kg)	10000 lb (4536 kg)
<b>E-350 Stripped chassis 138-inch wheelbase</b>			
5.4L	4.10	13000 lb (5897 kg)	8400 lb (3810 kg)
6.8L	4.10	18500 lb (8391 kg)	10000 lb (4536 kg)
<b>E-350 Stripped chassis 158-inch and 176-inch wheelbase</b>			
5.4L	4.10	13000 lb (5897 kg)	8300 lb (3765 kg)
6.8L	4.10	18500 lb (8391 kg)	10000 lb (4536 kg)
<b>E-450 Cutaway</b>			
5.4L	4.56	14050 lb (6373 kg)	8500 lb (3856 kg)
6.8L	4.56	22000 lb (9979 kg)	10000 lb (4536 kg)
<b>E-450 Stripped chassis</b>			
5.4L	4.56	14050 lb (6373 kg)	9200 lb (4173 kg)
6.8L	4.56	22000 lb (9979 kg)	10000 lb (4536 kg)

## ESSENTIAL TOWING CHECKS

Follow these guidelines for safe towing:

- Do not tow a trailer until you drive your vehicle at least 1000 miles (1600 kilometers).
- Consult your local motor vehicle laws for towing a trailer.
- See the instructions included with towing accessories for the proper installation and adjustment specifications.
- Service your vehicle more frequently if you tow a trailer. See 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 your vehicle load when calculating the total vehicle weight.

### Trailer Towing Connector (Vehicles with a Trailer Towing Package and 7-Pin Connector)



When attaching the trailer wiring connector to your vehicle, only use a proper fitting connector that works with the vehicle and trailer functions. If your vehicle has a trailer towing package, it may have a 7-pin connector. Some connectors may have the SAE J2863 logo, which confirms that it is the proper

wiring connector and works correctly with your vehicle.

Color	Function
1. Yellow	Left turn signal and stop lamp
2. White	Ground (-)
3. Blue	Electric brakes
4. Green	Right turn signal and stop lamp
5. Orange	Battery (+)
6. Brown	Running lights
7. Grey	Reverse lights

### 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 Hitches



**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.

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 your vehicle's front wheel opening on the fender. This is H1.
3. Securely attach the loaded trailer to your vehicle without the weight-distributing bars connected.
4. Measure the height to the top of your vehicle's 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 your 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 toward your vehicle. If not, adjust the ball height accordingly and repeat Steps 2–6.

Once the trailer is level or slightly nose down toward the vehicle:

- Lock the bar tension adjuster in place.
- Check that the trailer tongue securely attaches and locks onto the hitch.
- Install safety chains, lighting, and trailer brake controls as required by law or the trailer manufacturer.

## Safety Chains

**Note:** Do not attach safety chains to the bumper.

Always connect the trailer's safety chains to the frame or hook retainers of your vehicle hitch.

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

## Trailer Brakes



**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.

Electric brakes and manual, automatic or surge-type trailer brakes are safe if you install them properly and adjust them to the manufacturer's specifications. The trailer brakes must meet local and federal regulations.

**The rating for the tow vehicle's braking system operation is at the gross vehicle weight rating, not the gross combined weight rating.**

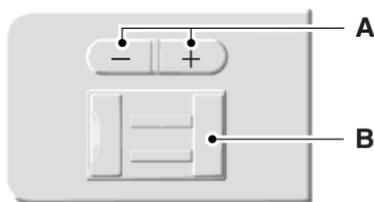
**Separate functioning brake systems are required for safe control of towed vehicles and trailers weighing more than 1500 pounds (680 kilograms) when loaded.**

### **Integrated Trailer Brake Controller (If Equipped)**



**WARNING:** The Ford TBC has only been verified to be compatible with trailers having electric-actuated drum brakes (one to four axles) and some electric-over-hydraulic (EOH) brakes. It will not activate hydraulic surge-style trailer brakes. It is the responsibility of the customer to ensure that the trailer brakes are adjusted appropriately, functioning normally and all electric connections are properly made. Failure to do so may result in loss of vehicle control, crash or serious injury.

When used properly, the trailer brake controller assists in smooth and effective trailer braking by powering the trailer's electric or electric-over-hydraulic brakes with a proportional output based on the towing vehicle's brake pressure.



The controller user interface consists of the following:

**A. + and - (Gain adjustment buttons):** Pressing these buttons adjusts the controller's power output to the trailer brakes in 0.5 increments. You can increase the gain setting to 10.0 (maximum trailer braking) or decrease it to 0 (no trailer braking). Pressing and holding a button raises or lowers the setting continuously. The gain setting displays in the message center as follows: TBC GAIN = XX.X.

The controller shows gain setting, output bar graph, and trailer connectivity status in the information display. They appear in the information display as follows:

- **TBC GAIN = XX.X NO TRAILER:** Shows the current gain setting during a given ignition cycle and when adjusting the gain. This also displays if you use the manual control lever or make gain adjustments with no trailer connected.
- **TBC GAIN = XX.X OUTPUT = // // // // //:** Displays when you push your vehicle's brake pedal, or when you use the manual control. Bar indicators illuminate in the information display to indicate the amount of power going to the trailer brakes relative to the brake pedal or manual control input. One bar indicates the least amount of output; six bars indicate maximum output.
- **TRAILER CONNECTED:** Displays when the system senses a correct trailer wiring connection (a trailer with electric trailer brakes) during a given ignition cycle.
- **TRAILER DISCONNECTED:** Displays, accompanied by a single audible chime, when the system senses a trailer connection and then a disconnection, either intentional or unintentional, during a given ignition cycle. It also displays if a truck or trailer-wiring fault occurs causing the trailer to appear disconnected. This message can also display if you use the manual control lever without a trailer connected.

B. **Manual control lever:** Slide the control lever to the left to turn on the trailer's electric brakes independent of the tow vehicle's brakes. See the following *Procedure for adjusting gain* section for instructions on proper use of this feature. If you use the manual control while the brake is also applied, the greater of the two inputs determines the power sent to the trailer brakes.

- **Stop lamps:** Using the manual control lever illuminates both the trailer brake lamps and your vehicle brake lamps except the center high-mount stop lamp, if you make the proper electrical connection to the trailer. Pressing your vehicle brake pedal also illuminates both trailer and vehicle brake lamps.

### ***Procedure for Adjusting Gain***

**Note:** Only perform this procedure in a traffic-free environment at speeds of approximately 20–25 mph (30–40 km/h).

The gain setting sets the trailer brake controller for the specific towing condition. You should change the setting as towing conditions change. Changes to towing conditions include trailer load, vehicle load, road conditions and weather.

The gain should be set to provide the maximum trailer braking assistance while making sure the trailer wheels do not lock when using the brakes. Locked trailer wheels may lead to trailer instability.

1. Make sure the trailer brakes are in good working condition, functioning normally and properly adjusted. See your trailer dealer if necessary.
2. Hook up the trailer and make the electrical connections according to the trailer manufacturer's instructions.
3. When you plug in a trailer with electric or electric-over-hydraulic brakes, **TRAILER CONNECTED** appears in the information display.
4. Use the gain adjustment (+ and -) buttons to increase or decrease the gain setting to the desired starting point. A gain setting of 6.0 is a good starting point for heavier loads.
5. In a traffic-free environment, tow the trailer on a dry, level surface at a speed of 20–25 mph (30–40 km/h) and squeeze the manual control lever completely.
6. If the trailer wheels lock up, indicated by squealing tires, reduce the gain setting. If the trailer wheels turn freely, increase the gain setting. Repeat Steps 5 and 6 until the gain setting is at a point just below trailer wheel lock-up. If towing a heavier trailer, trailer wheel lock-up may not be attainable even with the maximum gain setting of 10.

### ***Explanation of Information Display Warning Messages***

**Note:** An authorized dealer can diagnose the trailer brake controller to determine exactly which trailer fault has occurred. However, your Ford warranty does **not** cover this diagnosis if the fault is with the trailer.

**TRAILER BRAKE MODULE FAULT:** Displays in response to faults sensed by the trailer brake controller, accompanied by a single chime. If this message appears, contact an authorized dealer as soon as possible for diagnosis and repair. The controller may still function, but performance may be degraded.

**WIRING FAULT ON TRAILER:** Displays when there is a short circuit on the electric brake output wire. If the **WIRING FAULT ON TRAILER** message displays, accompanied by a single chime, with no trailer connected, the problem is with your vehicle wiring between the trailer brake controller and the 7-pin connector at the bumper. If the message only displays with a trailer connected, the problem is with the trailer wiring. Consult your trailer dealer for assistance. This can be a short to ground (such as a chaffed wire), short to voltage (such as a pulled pin on trailer emergency breakaway battery) or the trailer brakes may be drawing too much current.

### **Points to Remember**

**Note:** Do not attempt removal of the trailer brake controller without consulting the *Workshop Manual*. Damage to the unit may result.

- Adjust gain setting before using the trailer brake controller for the first time.
- Adjust gain setting, using the procedure above, whenever road, weather and trailer or vehicle loading conditions change from when the gain was initially set.
- Only use the manual control lever for proper adjustment of the gain during trailer setup. Misuse, such as application during trailer sway, could cause instability of trailer or tow vehicle.
- Avoid towing in adverse weather conditions. The trailer brake controller does not provide anti-lock control of the trailer wheels. Trailer wheels can lock up on slippery surfaces, resulting in reduced stability of trailer and tow vehicle.
- The trailer brake controller is equipped with a feature that reduces output at vehicle speeds below 11 mph (18 km/h) so trailer and vehicle braking is not jerky or harsh. This feature is only available when applying the brakes using your vehicle's brake pedal, not the controller.
- The controller interacts with the brake control system and powertrain control system of your vehicle to provide the best performance on different road conditions.
- Your vehicle's brake system and the trailer brake system work independently of each other. Changing the gain setting on the controller does not affect the operation of your vehicle's brakes whether you attach a trailer or not.
- When you turn the engine off, the controller output is disabled and the display and module shut down. The controller module and display turn on when you turn the ignition on.
- The trailer brake controller is only a factory-installed or dealer-installed item. Ford is not responsible for warranty or performance of the controller due to misuse or customer installation.

## Trailer Lamps



**WARNING:** Never connect any trailer lamp wiring to the vehicle's tail lamp wiring; this may damage the electrical system resulting in a fire. Contact an authorized dealer as soon as possible for assistance in proper trailer tow wiring installation. Additional electrical equipment may be required.

Trailer lamps are required on most towed vehicles. Make sure all running lights, brake lights, turn signals and hazard lights are working.

### Before Towing a Trailer

Practice turning, stopping and backing up to get the feel of your vehicle-trailer combination before starting on a trip. When turning, make wider turns so the trailer wheels 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 the gearshift in position **P** to aid engine and transmission cooling and to help air conditioning 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.
- If your vehicle is equipped with AdvanceTrac™ with RSC, this system may turn on during typical cornering maneuvers with a heavily loaded trailer. This is normal. Turning the corner at a slower speed while towing may reduce this tendency.
- If you are towing a trailer frequently in hot weather, hilly conditions, at the gross combined weight rating (or any combination of these factors), consider refilling your rear axle with synthetic gear lubricant

(if the axle is not already filled with it). See the *Capacities and Specifications* chapter for the lubricant specification.

- 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 your vehicle tires away from traffic flow.
  2. Set your vehicle parking brake.
  3. Place the automatic transmission in position **P**.
  4. Place wheel chocks in front and back of the trailer wheels. (Chocks not included with vehicle.)

Your vehicle may be equipped with a temporary or conventional spare tire. A “temporary” spare tire is different in size (diameter or width), tread-type (All-Season or All-Terrain) or is from a different manufacturer than the road tires on your vehicle. Consult information on the tire label or Safety Compliance label for limitations when using.

### Launching or Retrieving a Boat or Personal Watercraft (PWC)

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

**Note:** Reconnect the wiring to the trailer **after** removing the trailer from the water.

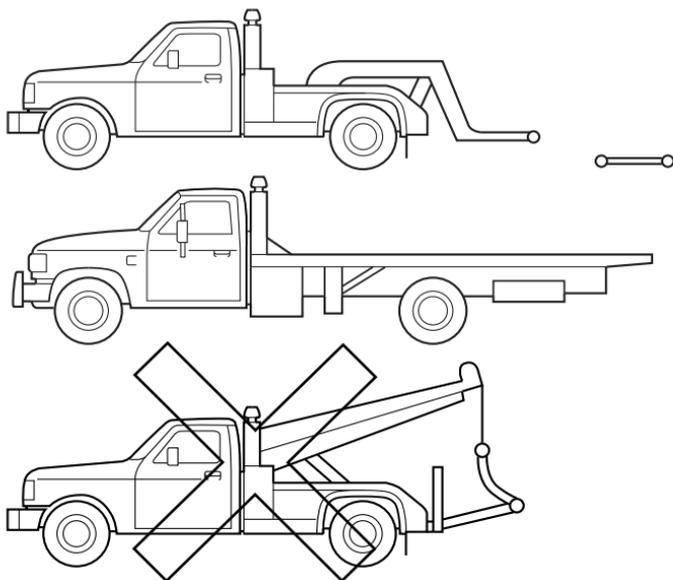
When backing down a ramp during boat launching or retrieval:

- Do not allow the static water level to rise above the bottom edge of the rear bumper.
- Do not allow waves to break higher than 6 inches (15 centimeters) above the bottom edge of the rear bumper.

Exceeding these limits may allow water to enter vehicle components:

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

Replace the rear axle lubricant anytime the rear axle submerges in water. Water may have contaminated the rear axle lubricant, which does not normally require checking or changing unless it is leaking or other axle repair is required.

**TRANSPORTING THE VEHICLE**

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.

We recommend the use of a wheel lift and dollies or flatbed equipment to tow your vehicle. Do not tow with a slingbelt. Ford Motor Company has not approved a slingbelt towing procedure. Vehicle damage may occur if towed incorrectly, or by any other means.

Ford Motor Company produces a towing manual for all authorized tow truck operators. Have your tow truck operator refer to this manual for proper hook-up and towing procedures for your vehicle.

If your vehicle is equipped with an air dam, we recommend using wheel lift or flatbed equipment if towing from the front. This prevents damage to the air dam.

## TOWING THE VEHICLE ON FOUR WHEELS

### Emergency Towing

If your vehicle becomes inoperable (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 and transmission configuration) under the following conditions:

- Your vehicle is facing forward for towing in a forward direction.
- Place the transmission in position **N**. See *Automatic transmission* in the *Transmission* chapter if you cannot move the transmission into **N**.
- Maximum speed is 35 mph (56 km/h).
- Maximum distance is 50 miles (80 kilometers).

### Recreational Towing

**Note:** Put your climate control system in recirculated air mode to prevent exhaust fumes from entering your vehicle. See the *Climate Control* chapter.

Follow these guidelines if you have a need for recreational towing, such as towing your vehicle behind a motorhome. We designed these guidelines to prevent damage to your transmission.

Do not tow your vehicle with any wheels on the ground, as vehicle or transmission damage may occur. It is recommended to tow your vehicle with all four (4) wheels off the ground such as when using a car-hauling trailer. Otherwise, you cannot tow your vehicle.

## PREPARING TO DRIVE



**WARNING:** Utility vehicles have a significantly higher rollover rate than other types of vehicles.



**WARNING:** In a rollover crash, an unbelted person is significantly more likely to die than a person wearing a seat belt.



**WARNING:** Vehicles with a higher center of gravity such as utility vehicles and trucks handle differently than vehicles with a lower center of gravity. Utility vehicles and trucks are **not** designed for cornering at speeds as high as passenger cars any more than low-slung sports cars are designed to perform satisfactorily under off-road conditions. Avoid sharp turns, excessive speed or abrupt maneuvers in these vehicles. Failure to drive cautiously could result in an increased risk of loss of vehicle control, vehicle rollover, personal injury and death.



**WARNING:** Loaded vehicles, with a higher center of gravity, may handle differently than unloaded vehicles. Do not overload your vehicle and use extra precautions, such as driving at slower speeds, avoiding abrupt steering changes and allowing for increased stopping distance, when driving a heavily loaded vehicle. Over-loading or loading the vehicle improperly can deteriorate handling capability and contribute to loss of vehicle control and vehicle rollover.

Utility vehicles and trucks have larger tires and increased ground clearance, giving the vehicle a higher center of gravity than a passenger car.

### Vehicle stability and handling

This van or wagon, like any vehicle designed to carry very heavy loads, must be driven differently from a passenger car. The extra weight can affect stopping distance and maneuverability. The higher center of gravity and other features may reduce the ability to make abrupt maneuvers and may increase the risk of rollover compared to a passenger car. Do not place any loads on the roof of passenger wagons. This raises the center of gravity, which increases the risk of rollover. When loading your wagon, passengers should fill the front rows of seats

first. Do not exceed the weight limits specified on the certification label. Exceeding any vehicle weight rating limitation could result in serious damage to the vehicle, loss of vehicle control, vehicle rollover or personal injury.

The van should be operated by an experienced driver. An organization that owns a 15-passenger van should select one or two experienced drivers to drive the van on a regular basis. These drivers will gain valuable experience handling the van. This experience will help make each trip safer.

The van should be operated at a safe speed which, in some conditions, may be less than the posted speed limit.

Further, all occupants should be properly restrained. Most people killed in rollover crashes were unbelted. Occupants can dramatically reduce their risk of being killed or seriously injured in a rollover crash by simply using their seat belts. Organizations that own 15-passenger vans should have a written seat belt use policy. Drivers should be responsible for enforcing the policy.

### **Emergency Maneuvers**



**WARNING:** Vehicles with a higher center of gravity such as utility and four-wheel drive vehicles handle differently than vehicles with a lower center of gravity. Utility and four-wheel drive vehicles are **not** designed for cornering at speeds as high as passenger cars any more than low-slung sports cars are designed to perform satisfactorily under off-road conditions. Avoid sharp turns, excessive speed and abrupt maneuvers in these vehicles. Failure to drive cautiously could result in an increased risk of loss of vehicle control, vehicle rollover, personal injury and death.

- In an unavoidable emergency situation where a sudden sharp turn must be made, remember to avoid “over-driving” your vehicle, i.e., turn the steering wheel only as rapidly and as far as required to avoid the emergency. Excessive steering will result in less vehicle control, not more. Additionally, smooth variations of the accelerator and/or brake pedal pressure should be utilized if changes in vehicle speed are called for. Avoid abrupt steering, acceleration or braking which could result in an increased risk of loss of vehicle control, vehicle rollover and/or personal injury. Use all available road surface to return the vehicle to a safe direction of travel.
- In the event of an emergency stop, avoid skidding the tires and do not attempt any sharp steering wheel movements.

- If the vehicle goes from one type of surface to another (i.e., from concrete to gravel) there will be a change in the way the vehicle responds to a maneuver (steering, acceleration or braking). Again, avoid these abrupt inputs.
- If your vehicle goes off the edge of the pavement, slow down, but avoid severe brake application, ease the vehicle back onto the pavement only after reducing your speed. Do not turn the steering wheel too sharply while returning to the road surface.
- It may be safer to stay on the apron or shoulder of the road and slow down gradually before returning to the pavement. You may lose control if you do not slow down or if you turn the steering wheel too sharply or abruptly.
- It often may be less risky to strike small objects, such as highway reflectors, with minor damage to your vehicle rather than attempt a sudden return to the pavement which could cause the vehicle to slide sideways out of control or roll over. Remember, your safety and the safety of others should be your primary concern.

### **BREAKING-IN**

You need to break in new tires for approximately 1000 miles (1600 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 pounds [180 kilograms] of weight carried).
- Add particular accessories to your vehicle (e.g.; bug deflectors, rollbars or light bars, running boards, ski racks).
- Drive with the wheels out of alignment.

## DRIVING THROUGH WATER



**WARNING:** Do not drive through flowing or deep water as you may lose control of your vehicle.

**Note:** Driving through standing water can cause vehicle damage.

**Note:** Engine damage can occur if water enters the air filter.

Before driving through standing water, check the depth. Never drive through water that is higher than the bottom of the wheel hubs.



When driving through standing water, drive very slowly and do not stop your vehicle. Your brake performance and traction may be limited. After driving through water and as soon as it is safe to do so:

- Lightly press the brake pedal to dry the brakes and to check that they work.
- Check that the horn works.
- Check that the exterior lights work.
- Turn the steering wheel to check that the steering power assist works.

## FLOOR MATS



**WARNING:** Always use floor mats that are designed to fit the foot well of your vehicle. Only use floor mats that leave the pedal area unobstructed. Only use floor mats that are firmly secured to retention posts so that they cannot slip out of position and interfere with the pedals or impair safe operation of your vehicle in other ways.



**WARNING:** Pedals that cannot move freely can cause loss of vehicle control and increase the risk of serious personal injury.



**WARNING:** Always make sure that the floor mats are properly attached to the retention posts in the carpet that are supplied with your vehicle. Floor mats must be properly secured to both retention posts to make sure mats do not shift out of position.



**WARNING:** Never place floor mats or any other covering in the vehicle foot well that cannot be properly secured to prevent them from moving and interfering with the pedals or the ability to control the vehicle.

 **WARNING:** Never place floor mats or any other covering on top of already installed floor mats. Floor mats should always rest on top of vehicle carpeting surface and not another floor mat or other covering. Additional floor mats or any other covering will reduce the pedal clearance and potentially interfere with pedal operation.

 **WARNING:** Check attachment of floor mats on a regular basis. Always properly reinstall and secure floor mats that have been removed for cleaning or replacement.

 **WARNING:** Always make sure that objects cannot fall into the driver foot well while the vehicle is moving. Objects that are loose can become trapped under the pedals causing a loss of vehicle control.

 **WARNING:** Failure to properly follow floor mat installation or attachment instructions can potentially cause interference with pedal operation causing a loss of vehicle control.



To install the floor mats, position the floor mat eyelet over the retention post and press down to lock in position.

To remove the floor mat, reverse the installation procedure.

## ROADSIDE ASSISTANCE

### Vehicles Sold in the United States: 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 a day, seven days a week.
- For the coverage period listed on the Roadside Assistance Card included in your Owner's Manual portfolio.

Roadside assistance will cover:

- A flat tire change with a good spare (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 up to 2.0 gallons (7.5 liters) of gasoline or 5.0 gallons (18.9 liters) of diesel fuel to a disabled vehicle. Fuel delivery service is limited to two no-charge occurrences within a 12-month period.
- Winch out – available within 100 feet (30.5 meters) of a paved or county maintained road, no recoveries.
- Towing – Ford eligible vehicles will be towed to an authorized dealer within 35 miles (56.3 kilometers) 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 kilometers) from the disablement location, the member shall be responsible for any mileage costs in excess of 35 miles (56.3 kilometers).

Roadside Assistance will include up to \$200 coverage for a towed trailer if the disabled eligible vehicle requires service at the nearest authorized dealer. If the towing vehicle is operational but the trailer is not, then the trailer does not qualify for any roadside services.

**Vehicles Sold in the United States: Using Roadside Assistance**

Complete the roadside assistance identification card and place it in your wallet for quick reference. This card is found in the owner's manual portfolio in the glove compartment.

U.S. Ford vehicle customers who require Roadside Assistance, call 1-800-241-3673.

If you need to arrange roadside assistance for yourself, Ford Motor Company will reimburse a reasonable amount for towing to the nearest dealership within 35 miles (56.3 kilometers). To obtain reimbursement information, U.S. Ford vehicle customers call 1-800-241-3673. Customers will be asked to submit their original receipts.

**Vehicles Sold in Canada: Getting Roadside Assistance**

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

**Vehicles Sold in Canada: Using Roadside Assistance**

For your convenience, you may complete the roadside assistance identification card found in the centerfold of this warranty guide and retain for future reference.

Canadian roadside coverage and benefits may differ from the U.S. coverage. If you require more information, please refer to the coverage section of your warranty guide, call us in Canada at 1-800-665-2006 or visit our website at [www.ford.ca](http://www.ford.ca).

Sykes Assistance Services Corporation administers the Roadside Assistance program. You must receive covered services in Canada or the continental United States. Coverage extends to vehicles that use public, non-seasonal, annually traveled roadways. Roadside Assistance coverage does not extend to vehicles involved in cross-country driving, logging, autocross and any other form of off-road use. Well maintained roads and surfaces help ensure safe travel for the supplier, and allow their representatives to perform service as per the standard operating procedures.

**In Remote Locations**

If our supplier cannot take your vehicle by road to the nearest authorized dealership, transportation by rail or water may be necessary. The program covers a tow to the dock or rail terminal and also to the dealership at the end of the trip. For rail or water transportation, however, contact your authorized dealer to confirm if you are eligible for additional coverage before you authorize or pay for the service. Call the Ford Roadside Assistance at 1-800-665-2006 for additional information.

## 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 operate when the ignition is in any position or if the key is not in the ignition.

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

- Press the flasher control again to turn them off.

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

## Fuel Shutoff



**WARNING:** Failure to inspect and, if necessary, repair fuel leaks after a collision may increase the risk of fire and serious injury.

Ford Motor Company recommends that the fuel system be inspected by an authorized dealer after any collision.

In the event of a moderate to severe collision, this vehicle includes a fuel pump shut-off feature that stops the flow of fuel to the engine. Not every impact will cause a shut-off.

Should your vehicle shut off after a collision, you may restart your vehicle by doing the following:

1. Switch off the ignition.
2. Switch on the ignition.
3. Repeat Steps 1 and 2 to re-enable fuel pump.

**Note:** When you try to restart your vehicle after a fuel shutoff, the vehicle makes sure that various systems are safe to restart. Once your vehicle determines that the systems are safe, then the vehicle will allow you to restart.

**Note:** In the event that your vehicle does not restart after your third attempt, contact an authorized dealer.

## 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 exhibit a combination of firm and soft shifts. 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. Remove the positive terminal cover (if equipped) and 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.

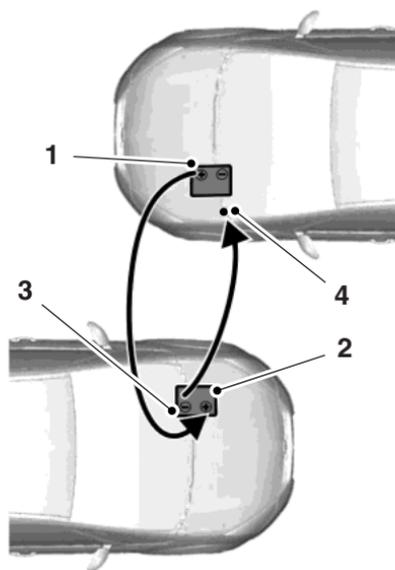
## Connecting the Jumper Cables



**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 or fuel injection system.

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

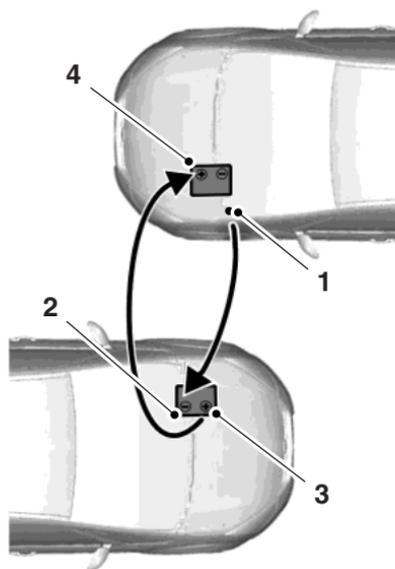
## Jump Starting

1. Start the engine of the booster vehicle and run the engine at a 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

Warranty repairs to your vehicle must be performed by an authorized dealer. 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.

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.

### Away from Home

If you are away from home when your vehicle needs service, contact the Ford Customer Relationship Center or use the online resources listed below to find the nearest authorized dealer.

In the United States:

#### **Mailing Address**

Ford Motor Company  
Customer Relationship Center  
P.O. Box 6248  
Dearborn, MI 48121

#### **Telephone**

1-800-392-3673 (FORD)  
(TDD for the hearing impaired: 1-800-232-5952)

#### **Online**

Additional information and resources are available online at [www.fordowner.com](http://www.fordowner.com).

These are some of the items that can be found online:

- U.S. Dealer Locator by Dealer Name, City/State, or Zip Code
- Owner Manuals
- Maintenance Schedules
- Recalls
- Ford Extended Service Plans

- Ford Genuine Accessories
- Service specials and promotions.

In Canada:

**Mailing address**

Customer Relationship Centre  
Ford Motor Company of Canada, Limited  
P.O. Box 2000  
Oakville, Ontario L6K 1C8

**Telephone**

1-800-565-3673 (FORD)

**Online**

[www.ford.ca](http://www.ford.ca)

**Twitter**

@FordServiceCA (English Canada)

@FordServiceQC (Quebec)

***Additional Assistance***

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, please contact the Ford Customer Relationship Center.

In order to help serve you better, please have the following information available when contacting a Customer Relationship Center:

- Vehicle Identification Number (VIN)
- Your telephone number (home and business)
- The name of the authorized dealer and city where located
- The vehicle's current odometer reading.

In some states, you must directly notify Ford in writing before pursuing remedies under your state's warranty laws. Ford is also allowed a final repair attempt in some states.

In the United States, a warranty dispute must be submitted to the BBB AUTO LINE before taking action under the Magnuson-Moss Warranty Act, or to the extent allowed by state law, before pursuing replacement or repurchase remedies provided by certain state laws. This dispute handling procedure is not required prior to enforcing state created rights or other rights which are independent of the Magnuson-Moss Warranty Act or state replacement or repurchase laws.

### **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 mi (29 000 km), whichever occurs first:

1. Two or more repair attempts are made on the same nonconformity 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, resorting 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 40 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  
3033 Wilson Boulevard, Suite 600  
Arlington, Virginia 22201**

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 or ARBITRATION PROGRAM (CANADA ONLY)**

This pertains to 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 or arbitration program administered by the Canadian Motor Vehicle Arbitration Plan (CAMVAP).

The CAMVAP program is a straightforward 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](http://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 our Customer Relationship Center.

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 or 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 United States.

**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**

Customer Relationship Center

1555 Fairlane Drive

Fairlane Business Park #3

Allen Park, Michigan 48101

U.S.A.

Telephone: (313) 594-4857

FAX: (313) 390-0804

Email: expcac@ford.com

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

(800) 841-FORD (3673)

**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 MOTOR COMPANY**

Customer Relationship Center

1555 Fairlane Drive

Fairlane Business Park #3

Allen Park, Michigan 48101

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 MOTOR COMPANY**

Customer Relationship Center

1555 Fairlane Drive

Fairlane Business Park #3

Allen Park, Michigan 48101

Telephone: +971 4 3326084

Toll-Free Number of the Kingdom of Saudi Arabia: 800 8971409

Local Telephone Number of Kuwait: 24810575

FAX: +971 4 3327299

Email: [menacac@ford.com](mailto:menacac@ford.com)

[www.me.ford.com](http://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](mailto:expcac@ford.com).

**If you are in another foreign country, contact the nearest authorized dealer. In the event your inquiry is unresolved, communicate your concern with the dealership's Sales Manager, Service Manager or Customer Relations Manager. If you require additional assistance or clarification, please contact the respective Customer Relationship Center as previously listed.**

**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](http://www.helminc.com).

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

**Obtaining a French Owner's Manual**

A 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)**

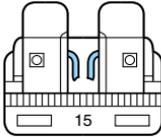
If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform Transport Canada, using their toll-free number: 1-800-333-0510, or online at: <http://www.tc.gc.ca/eng/roadsafety/menu.htm>

## CHANGING A FUSE

### Fuses



**WARNING:** 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.



If electrical components in your 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.

### 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.

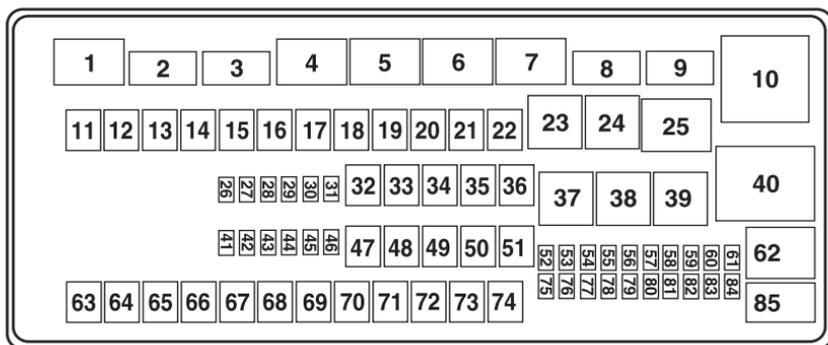


**WARNING:** To reduce risk of electrical shock, always replace the cover to the power distribution box before reconnecting the battery or refilling fluid reservoirs.

**Note:** If your vehicle is equipped with a dual battery, disconnecting the primary under-hood battery does not remove power from all circuits.

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 or relay location	Fuse amp rating	Protected components
1	HC micro relay	Powertrain control module
2	HC micro relay	Starter solenoid
3	HC micro relay	Wiper

Fuse or relay location	Fuse amp rating	Protected components
4	HC micro relay	Trailer tow battery charge
5	HC micro relay	Fuel pump
6	HC micro relay	Trailer tow park lamp
7	HC micro relay	Auxiliary switch #4
8	HC micro relay	Auxiliary switch #3
9	HC micro relay	Modified vehicle and stripped chassis run/start
10	—	Not used
11	—	Not used
12	40A**	Modified vehicle and stripped chassis run/start
13	30A**	Starter solenoid relay
14	40A**	Run start relay
15	40A**	Modified vehicle and stripped chassis battery
16	50A**	Auxiliary air conditioning blower
17	50A**	Trailer tow battery charge, Trailer tow park feed
18	30A**	Electric trailer brake, Trailer brake controller
19	30A**	Auxiliary switch #1
20	30A**	Auxiliary switch #2
21	—	Not used
22	—	Not used
23	G8VA relay	Air conditioning clutch
24	G8VA relay	Horn relay (stripped chassis)
25	HC micro relay	Run/start
26	—	Not used
27	—	Not used
28	20A*	Back-up lamp
29	10A*	Air conditioning clutch
30	10A*	Brake on/off switch

Fuse or relay location	Fuse amp rating	Protected components
31	10A*	Cluster battery (stripped chassis)
32	50A**	Blower motor
33	40A**	Anti-lock brake system pump
34	20A**	Stripped chassis horn
35	40A**	Powertrain control module relay
36	20A**	Ignition switch (stripped chassis)
37	G8VA relay	Trailer tow stop — left turn signal
38	G8VA relay	Trailer tow stop — right turn signal
39	G8VA relay	Back up lamp
40	ISO relay	Blower motor
41	—	Not used
42	15A*	Diagnostic connector (stripped chassis)
43	20A*	Fuel pump
44	10A*	Auxiliary switch #3
45	15A*	Auxiliary switch #4
46	10A*	Powertrain control module keep alive power, Canister vent, Powertrain control module relay coil
47	40A**	Anti-lock brake system coil
48	20A**	Trailer tow stop lamp/turn signal
49	30A**	Wiper motor
50	—	Not used
51	20A**	Cutaway
52	10A*	Stripped chassis and modified vehicle run/start relay coil
53	10A*	Anti-lock brake system run/start feed
54	10A*	Fuel pump relay coil
55	—	Not used
56	—	Not used
57	20A*	Trailer tow park lamp

Fuse or relay location	Fuse amp rating	Protected components
58	15A*	Trailer tow backup lamp
59	—	Not used
60	—	One-touch integrated start (diode)
61	—	Not used
62	HC micro relay	Auxiliary switch #2
63	30A**	Trailer tow battery charge
64	—	Not used
65	20A**	Power point 2 (glove box)
66	20A**	Power point 3 (cutaway B+)
67	20A**	Power point 1 (instrument panel)
68	50A**	Modified vehicle
69	—	Not used
70	30A**	Stripped chassis
71	—	Not used
72	20A**	Cigar lighter / Power point
73	—	Not used
74	30A**	Power seat
75	20A*	Vehicle power 1, Powertrain control module power
76	20A*	Vehicle power 2, Powertrain control module – emission related powertrain components
77	10A*	Vehicle power 3, Powertrain control module – general powertrain components
78	15A*	Vehicle power 4, Fuel pump relay coil
79	10A*	Vehicle power 5, Transmission
80	10A*	Cluster run/start (stripped chassis)
81	—	Not used
82	—	Not used
83	—	Fuel pump (diode)

Fuse or relay location	Fuse amp rating	Protected components
84	—	Not used
85	HC micro relay	Auxiliary switch #1
* Mini fuses ** AIS fuses		

### Passenger Compartment Fuse Panel

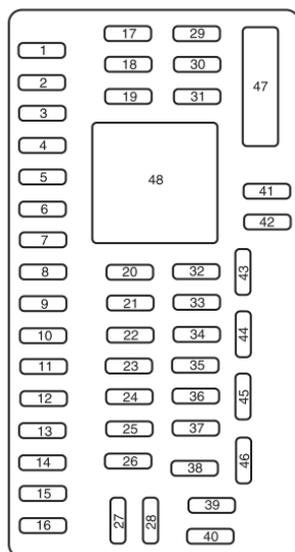


**WARNING:** Always disconnect the battery before servicing high current fuses.

**Note:** If your vehicle is equipped with a dual battery, disconnecting the primary under-hood battery does not remove power from all circuits.

The fuse panel is located to the left of the brake pedal and mounted onto the lower left cowl panel. Remove the fuse panel cover to access the fuses.

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



The fuses are coded as follows:

Fuse or relay location	Fuse amp rating	Protected components
1	30A	Inverter B+
2	15A	Not used (spare)
3	15A	Not used (spare)
4	30A	Not used (spare)
5	10A	Passenger compartment fuse panel, Brake-shift interlock
6	20A	Turn signal, Hazard, Stop lamps
7	10A	Left low beam
8	10A	Right low beam
9	15A	Courtesy lamps
10	15A	Switch illumination
11	10A	Not used (spare)

Fuse or relay location	Fuse amp rating	Protected components
12	7.5A	Not used (spare)
13	5A	Mirrors
14	10A	SYNC, Global positioning system module
15	10A	Not used (spare)
16	15A	Not used (spare)
17	20A	Door locks
18	20A	Not used (spare)
19	25A	Not used (spare)
20	15A	Diagnostic connector (except stripped chassis)
21	15A	Not used (spare)
22	15A	Park lamps, License plate lamps
23	15A	High beams
24	20A	Horn (except stripped chassis)
25	10A	Demand lighting
26	10A	Cluster (except stripped chassis)
27	20A	Ignition switch feed
28	5A	Audio mute (start)
29	5A	Cluster (except stripped chassis)
30	5A	Not used (spare)
31	10A	Not used (spare)
32	10A	Restraints module
33	10A	Trailer brake controller
34	5A	Not used (spare)
35	10A	Cutaway run/start
36	5A	Passive anti-theft system radio frequency module
37	10A	Climate control, Stripped chassis instrument panel #1 run/start
38	20A	Not used (spare)

Fuse or relay location	Fuse amp rating	Protected components
39	20A	Radio
40	20A	Not used (spare)
41	15A	Radio, Switch illumination, Automatic dimming rear view mirror, Inverter
42	10A	Auxiliary switch
43	10A	Stripped chassis instrument panel connector #1
44	10A	Trailer tow battery charge relay
45	5A	Wipers, Stripped chassis Engine connector 3
46	7.5A	Passenger airbag deactivation indicator
47	30A circuit breaker	Windows accessory delay
48	Relay	Delayed accessory

## GENERAL INFORMATION

Have your vehicle serviced regularly to help maintain its roadworthiness and resale value. There is a large network of Ford authorized dealers who 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 information 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 (if equipped).
3. Block the wheels.

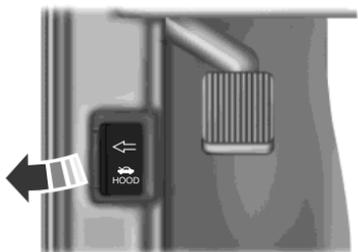
## Working with the Engine On



**WARNING:** To reduce the risk of vehicle damage 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 position **P** (Park) .
2. Block the wheels.

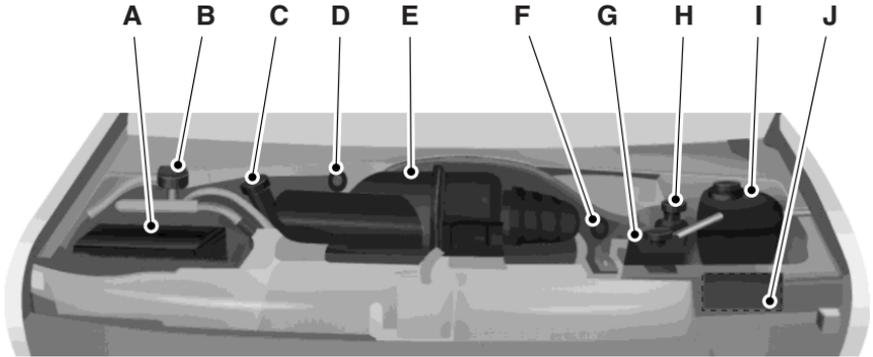
## OPENING AND CLOSING THE HOOD



1. Inside the vehicle, pull the hood release handle located under the bottom left corner of the instrument panel.

2. Go to the front of the vehicle and push the auxiliary latch, located in the center top of the grille, to the left in order to release the hood.
3. Lift the hood and secure it with the prop rod.

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**UNDER HOOD OVERVIEW**

- A. Battery
- B. Windshield washer fluid reservoir
- C. Engine oil filler cap
- D. Automatic transmission fluid dipstick
- E. Air filter assembly
- F. Engine oil dipstick
- G. Power steering fluid reservoir
- H. Brake fluid reservoir
- I. Engine coolant reservoir
- J. Power distribution box

**ENGINE OIL DIPSTICK**

A. – MIN  
B. – MAX

**ENGINE OIL CHECK**

Refer to the *scheduled maintenance information* for the appropriate intervals for checking the engine oil.

1. Make sure the vehicle is on level ground.
2. Turn the engine off and wait 15 minutes for the oil to drain into the oil pan.
3. Set the parking brake and ensure the gearshift is securely latched in P (Park).
4. Open the hood. Protect yourself from engine heat.
5. Locate and carefully remove the engine oil level dipstick. See the *Under Hood Overview* in this chapter for location of dipstick.
6. Wipe the dipstick clean. Insert the dipstick fully, then remove it again.

If the oil level is between the lower and upper holes or between the MIN and MAX marks (depending on application), the oil level is acceptable. **DO NOT ADD OIL.**

If the oil level is below the lower hole or the MIN mark, add enough oil to raise the level within the lower and upper holes or within the MIN-MAX range.

Oil levels above the upper hole or the MAX mark may cause engine damage. Some oil must be removed from the engine by an authorized dealer.

7. Put the dipstick back in and ensure it is fully seated.

## Adding Engine Oil

**Note:** Do not remove the engine oil level dipstick or 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. Check the engine oil level.
2. If the engine oil level is not within the normal range, add engine oil that meets Ford specifications. See *Capacities and Specifications* for more information. Remove the engine oil filler cap and use a funnel to pour the engine oil into the opening.
3. Recheck the engine oil level. Make sure the oil level is not above the normal operating range on the engine oil level dipstick.
4. Install the dipstick and ensure it is fully seated.
5. Fully install the engine oil filler cap by turning the filler cap clockwise until three clicks are heard or until the cap is fully seated.

## 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 within 48% to 50%, which equates to a freeze point between -30°F (-34°C) and -34°F (-37°C).

**Note:** For best results, coolant concentration should be tested with a refractometer such as Robinair Coolant and Battery Refractometer 75240. We do 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 FULL COLD mark.

**Note:** Do not use stop leak pellets, cooling system sealants or additives as they can cause damage to the engine cooling 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 engine coolant 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 prediluted 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 prediluted engine coolant 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.



Used engine coolant should be disposed of in an appropriate 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 have a Ford authorized dealer increase the coolant concentration above 50%.
- 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 you drive in extremely hot climates:

- It may be necessary to have a Ford authorized dealer decrease the coolant concentration to 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.

Vehicles driven year-round in non-extreme climates should use prediluted engine coolant 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 restarted. 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. Restart 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.

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**TRANSMISSION FLUID CHECK****Checking Automatic Transmission Fluid (If Equipped)**

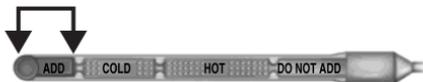
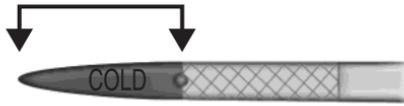
Refer to your *scheduled maintenance information* for scheduled intervals for fluid checks and changes. Your transmission does not consume fluid. However, the fluid level should be checked if the transmission is not working properly, i.e., if the transmission slips or shifts slowly or if you notice some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

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 kilometers]). 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 before checking.

1. Drive the vehicle 20 miles (30 kilometers) 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.
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**

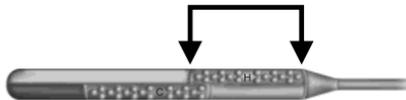
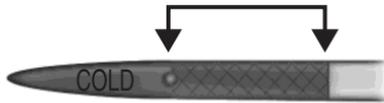
Do not drive the vehicle if there is no indication of fluid on the dipstick and the ambient temperature is above 50°F (10°C).



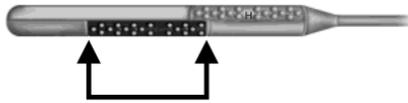
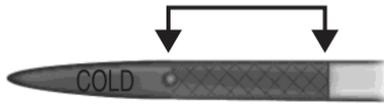
**Correct Fluid Level**

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.

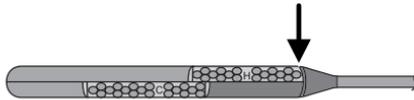


The transmission fluid should be in this range if at normal operating temperature (150°F-170°F [66°C-77°C]).



The transmission fluid should be in this range if at ambient temperature (50°F-95°F [10°C-35°C]).

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**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**

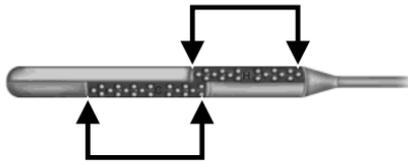
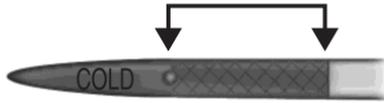
**Note:** Use of a non-approved automatic transmission fluid may cause internal transmission component damage.

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

**Note:** 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.

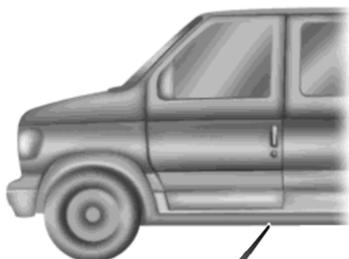
Before adding any fluid, make sure the correct type is used. The type of fluid used is normally indicated on the dipstick. Refer to the *Technical Specifications* table in the *Capacities and Specifications* chapter.

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.

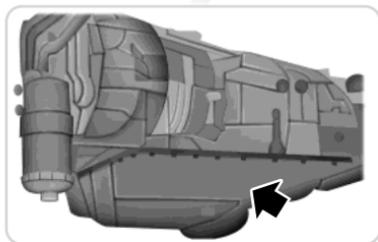
### Automatic Transmission Fluid Filter



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

Refer to your *Scheduled Maintenance Information* for service intervals for automatic transmission fluid and transmission filter.

For transmission filter maintenance, see your authorized dealer.



### DRIVELINE UNIVERSAL JOINT AND SLIP YOKE

All universal joints and slip joints are lubricated for life - no grease fittings. If the original universal joints are replaced with universal joints equipped with grease fittings, lubrication will be necessary.

### BRAKE FLUID CHECK

Fluid levels between the MIN and MAX lines are within the normal operating range; there is no need to add fluid. If the fluid levels are outside of the normal operating range, the performance of the system could be compromised; seek service from your authorized dealer immediately.

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**POWER STEERING FLUID CHECK**

**WARNING:** For E-350 and E-450 vehicles with the Hydro-Boost Brake System, do not press the brake pedal after the engine has been turned off. Pressing the brake pedal after the engine has been turned off will give a false power steering fluid level reading.

**Note:** Do not operate the vehicle with a low power steering pump fluid level (if the fluid level is below the MIN line on the reservoir).

**Note:** Do not fill the power steering pump reservoir above the MAX line, as this may result in leaks from the reservoir.

Check the power steering fluid at the appropriate intervals. Refer to the *scheduled maintenance information*.

1. Start the engine and let it run until it reaches normal operating temperature.
2. While the engine idles, turn the steering wheel left and right several times.
3. Turn the engine off.
4. Check the fluid level in the reservoir. It should be between the MIN and MAX lines on the reservoir. Do not add fluid if the level is in this range.
5. If the fluid is low, add fluid in small amounts, continuously checking the level until it reaches the range between the MIN and MAX lines. Be sure to put the cap back on the reservoir. Refer to the technical specifications table in the *Capacities and Specifications* chapter for the proper fluid type.

**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.

## WASHER FLUID CHECK



**WARNING:** If you operate your vehicle in temperatures below 40°F (5°C), use washer fluid with antifreeze protection. Failure to use washer fluid with antifreeze protection in cold weather could result in impaired windshield vision and increase the risk of injury or accident.

Add fluid to fill the reservoir if the level is low. Only use a washer fluid that meets Ford specifications. See the technical specifications chart in the *Capacities and Specifications* chapter.

State or local regulations on volatile organic compounds may restrict the use of methanol, a common windshield washer antifreeze additive. Washer fluids containing non-methanol antifreeze agents should be used only if they provide cold weather protection without damaging the vehicle's paint finish, wiper blades or washer system.

## CHANGING THE VEHICLE BATTERY



**WARNING:** This vehicle may be equipped with more than one battery, removal of cable from only one battery does not disconnect the vehicle electrical system. Be sure to disconnect cables from all batteries when disconnecting power. Failure to do so may cause serious personal injury or property damage.



**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.

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

**Note:** Electrical or electronic accessories or components added to the vehicle by the dealer or the owner may adversely affect battery performance and durability.

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

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.

When the battery is disconnected or a new battery installed, the transmission must learn its adaptive strategy. As a result of this, the transmission may shift firmly. This operation is considered normal and will fully update transmission operation to its optimum shift feel.

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. This will minimize the discharge of your battery during storage.

For information on transmission operation after the battery has been disconnected, refer to *Automatic transmission operation* in the *Driving* chapter.

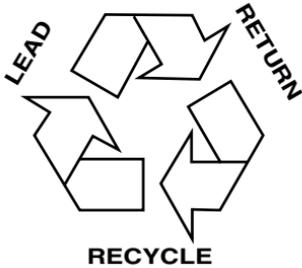
### Dual Batteries (If Equipped)

Your vehicle may be equipped with a frame-mounted battery located on the passenger side frame rail, behind the front passenger door. This battery is connected in parallel with the battery in the engine compartment. Both batteries are used to start the vehicle.

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. Flexible fuel vehicles (FFV) must also relearn the ethanol content of the fuel for optimum driveability and performance. To begin this process:

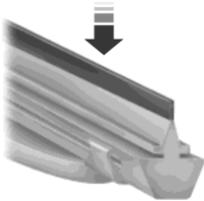
1. With the vehicle at a complete stop, set the parking brake.
2. Put the gearshift in P (Park), turn off all accessories and start the engine.
3. Run the engine until it reaches normal operating temperature.
4. Allow the engine to idle for at least one minute.
5. Turn the A/C on and allow the engine to idle for at least one minute.
6. Release the parking brake. With your foot on the brake pedal and with the A/C on, put the vehicle in D (Drive) and allow the engine to idle for at least one minute.
7. Drive the vehicle to complete the relearning process.
  - The vehicle may need to be driven 10 miles (16 km) or more to relearn the idle and fuel trim strategy along with the ethanol content for flexible fuel vehicles.
  - **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.
  - For flexible fuel vehicles, if you are operating on E85, you may experience poor starts or an inability to start the engine and driveability problems until the fuel trim and ethanol content have been relearned.

If the battery has been disconnected or a new battery has been installed, the clock and radio settings 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.

### CHECKING THE WIPER BLADES

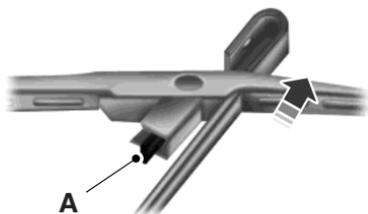


Run the tip of your fingers over the edge of the blade to check for roughness.

Clean the wiper blades with washer fluid or water applied with a soft sponge or cloth.

## CHANGING THE WIPER BLADES

Replace wiper blades at least once per year for optimum performance.



To replace the wiper blades:

1. Fold back the wiper arm and position the wiper blade at a right angle to the wiper arm.
2. To remove the wiper blade, press the retaining clip (A) to disengage the wiper blade, then pull the blade down toward the windshield to remove it from the arm.

3. Install the new wiper blade on the arm and press it into place until a click is heard.

Poor wiper quality can be improved by cleaning the wiper blades and windshield. Refer to *Windows and wiper blades* in the *Cleaning* chapter.

To prolong the life of the wiper blades, it is highly recommended to scrape off the ice on the windshield before turning on the wipers. The layer of ice has many sharp edges and can damage the micro edge of the wiper rubber element.

## 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.

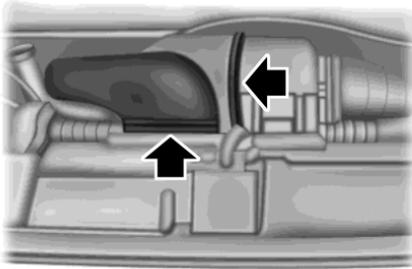
**Note:** Failure to use the correct air filter element may result in severe engine damage. The customer warranty may be void for any damage to the engine if the correct air filter element is not used.

When changing the air filter element, use only the air filter element listed. See *Motorcraft® Part Numbers* in the *Capacities and Specifications* chapter.

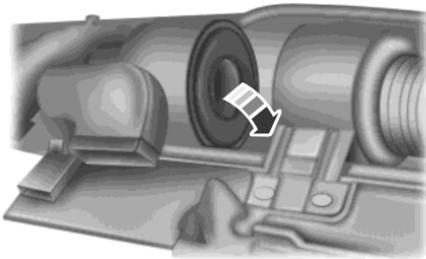
See *Scheduled Maintenance Information* for the appropriate intervals for changing the air filter element.

**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.

### Changing the Air Filter Element



1. Disconnect the fresh air inlet tube from the radiator support.
2. Open the clamp that secures the two halves of the air filter housing together.



3. Carefully separate the two halves of the air filter housing.
4. Remove the air filter element from the housing.

5. 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 unfiltered air to enter the engine if not properly seated.

6. Replace the two halves of the air filter housing and secure the clamp.
7. Connect the fresh air inlet tube to the radiator support.

### ADJUSTING THE HEADLAMPS

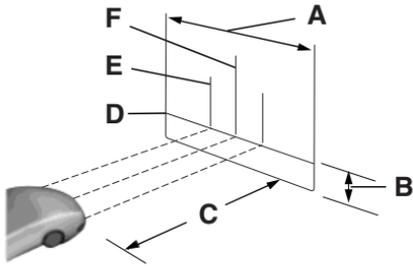
The headlamps on your vehicle are properly aimed at the assembly plant. If your vehicle has been in an accident, an authorized dealer should check the alignment of your headlamps.

### Vertical and Horizontal Aim Adjustment (Sealed Beam Headlamps)

The headlamps on your vehicle are intended to be aimed using mechanical aimers. If mechanical aimers are used and the cross-car sight line is in any way blocked, set the legs of the universal adaptor all to the same setting, such that the cross-car sight line is no longer blocked, per the instructions for the brand of mechanical aimer used. You can also aim the headlamps visually using the procedure below.

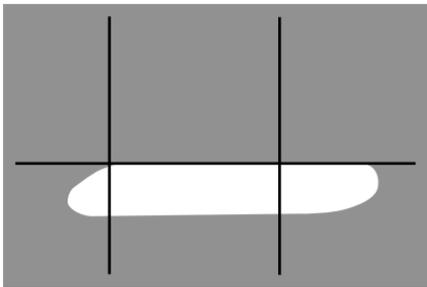
To adjust the headlamps:

1. Park your vehicle on a level surface about 25 feet (7.6 meters) away from a vertical plain surface. Check your headlamp alignment at night or in a dark area so that you can see the headlamp beam pattern.



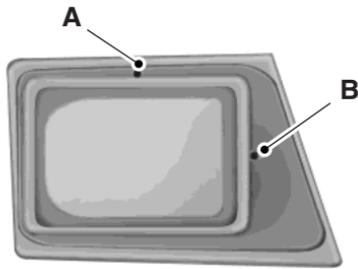
- (A) 8 feet (2.4 meters)
- (B) Center height of lamp to ground
- (C) 25 feet (7.6 meters)
- (D) Horizontal reference line
- (E) Vertical reference line for the center of the headlamp
- (F) Vertical reference line for the center of the vehicle

2. The center of the headlamp is marked either on the lens (a circle or cross marker) or on the bulb shield, internal to the lamp (mark or feature). Measure the height from the center of your headlamp to the ground (B) and mark an 8 foot (2.4 meter) long horizontal line on the wall or screen (D) at this height (masking tape works well).



3. Turn on the low beam headlamps and open the hood.

4. Locate the high intensity area of the beam pattern and place the top edge of the intensity zone even with the horizontal reference line (D). If the top edge of the high intensity area is not even with the horizontal line, follow the next step to adjust it.



5. Locate the vertical adjuster (A) for each headlamp. Turn the adjuster control either clockwise or counterclockwise to adjust the vertical aim of the headlamp.

6. In addition to the horizontal line marked in step 2, a pair of vertical lines (E) must be marked at the center line of the headlamps on the wall or screen.

7. On the wall or screen, locate the high intensity area of the beam pattern. The left edge of the high intensity area should be even with the vertical line corresponding to the headlamp under adjustment. If the left edge of the high intensity area is not even with the vertical line, follow the next step to adjust it.

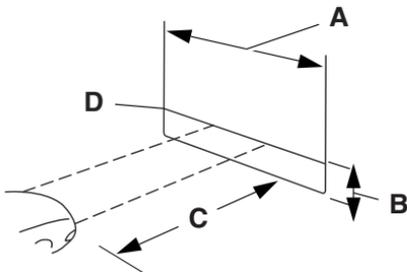
8. Locate the horizontal adjuster (B) for each headlamp. Turn it clockwise or counterclockwise to place the left edge of the high intensity area even with the vertical line corresponding to the headlamp under adjustment.

### **Vertical Aim Adjustment (Aerodynamic Headlamps)**

The headlamps on your vehicle can only be vertically adjusted. Your vehicle does not require horizontal aim adjustments.

To adjust the headlamps:

1. Park the vehicle directly in front of a wall or screen on a level surface, approximately 25 feet (7.6 meters) away.



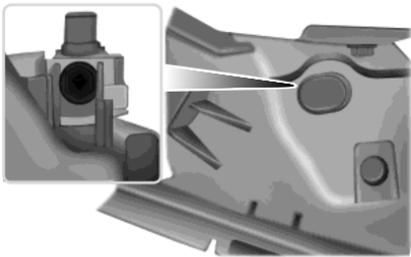
- (A) 8 feet (2.4 meters)
- (B) Center height of lamp to ground
- (C) 25 feet (7.6 meters)
- (D) Horizontal reference line

2. Measure the height from the center of your headlamp (indicated by a 3.0 millimeter circle on the lens) to the ground and mark an 8 foot (2.4 meter) horizontal reference line on the vertical wall or screen at this height (a piece of masking tape works well).

3. Turn on the low beam headlamps to illuminate the wall or screen and open the hood. Cover one of the headlamps so no light hits the wall.



4. On the wall or screen you will observe a light pattern with a distinct horizontal edge towards the right. If this edge is not at the horizontal reference line, the beam will need to be adjusted so the edge is at the same height as the horizontal reference line.



5. Locate the vertical adjuster on the back of each headlamp, then use a long Phillips #2 screwdriver to turn the adjuster either counterclockwise or clockwise in order to adjust the vertical aim of the headlamp. The upper edge of the light pattern should align with the horizontal reference line.

6. Repeat step 3–5 for the other headlamp.

7. Close the hood and turn off the lamps.

## CHANGING A BULB

### Lamp Assembly Condensation

Exterior lamps are vented to accommodate normal changes in pressure. Condensation can be a natural by-product of this design. When moist air enters the lamp assembly through the vents, there is a possibility that condensation can occur when the temperature is cold. When normal condensation occurs, a thin film of mist can form on the interior of the lens. The thin mist eventually clears and exits through the vents during normal operation. Clearing time may take as long as 48 hours under dry weather conditions.

These are examples of acceptable condensation:

- Presence of thin mist (no streaks, drip marks or droplets).
- Fine mist covers less than 50% of the lens.

These are examples of unacceptable moisture (usually caused by a lamp water leak):

- Water puddle inside the lamp.
- Large water droplets, drip marks or streaks present on the interior of the lens.

Take your vehicle to a dealer for service if any of the above conditions of unacceptable moisture are present.

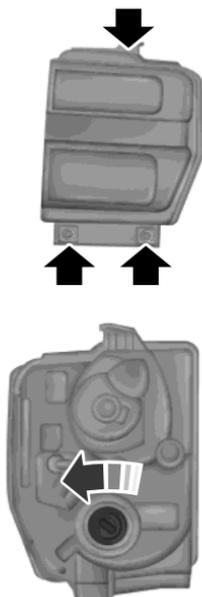
### Replacing Headlamp Bulbs (Aerodynamic)



**WARNING:** Handle a halogen headlamp bulb carefully and keep out of children's reach. Grasp the bulb only by its plastic base and do not touch the glass. The oil from your hand could cause the bulb to break the next time the headlamps are operated.

**Note:** If the bulb is accidentally touched, it should be cleaned with alcohol before being used.

1. Make sure the headlamp switch is in the off position, then open the hood.



2. Remove the three screws from the headlamp assembly and pull the assembly straight out.

3. Disconnect the electrical connector by squeezing the release tab and pushing the connector forward, then pulling it rearward.

4. Remove the bulb assembly by turning it counterclockwise and pulling it straight out.

To install the new bulb, follow the removal procedures in reverse order.

### **Replacing Headlamps (Sealed Beam)**

1. Make sure the headlamp switch is in the off position, then open the hood.



2. Remove the four screws from the headlamp assembly and carefully remove the lamp/bezel.

3. Remove the four screws and the retaining ring.

4. Disconnect the electrical connector from the lamp and remove the lamp.

To install the new lamp, follow the removal procedures in reverse order.

**Replacing Front Parking Lamp and Turn Signal Bulbs**

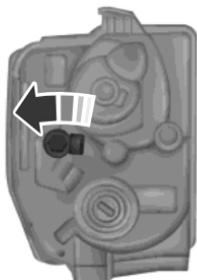
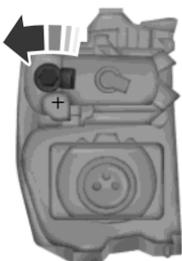
1. Make sure the headlamp control is in the off position.
2. Remove the headlamp assembly. Refer to *Replacing headlamp bulbs* in this section.

**Aerodynamic****Sealed Beam**

3. Rotate the bulb socket counterclockwise and remove.
  4. Carefully pull the bulb straight out of the socket.
- To complete installation, follow the removal procedures in reverse order.

**Replacing Side Marker Bulbs**

1. Make sure the headlamp control is in the off position.
2. Remove the headlamp assembly. Refer to *Replacing headlamp bulbs* in this section.

**Aerodynamic****Sealed Beam**

3. Rotate the bulb socket counterclockwise and remove.

4. Carefully pull the bulb straight out of the socket.

To complete installation, follow the removal procedures in reverse order.

### **Replacing High-Mount Brake Lamp Bulbs**

On vehicles without a rear headliner, the interior cargo lamp (if equipped) must be removed from under the high-mount brake lamp assembly located inside the vehicle. Then, do the following:

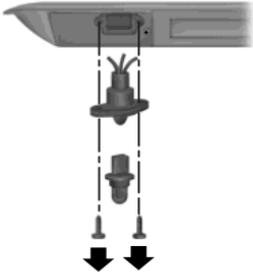


1. Remove the two screws from the high-mount brake lamp assembly and lift the lamp from the vehicle.

2. Remove the bulb socket from the lamp assembly by turning it counterclockwise.

3. Carefully pull the bulb straight out of the socket.

To install the new bulb, follow the removal procedure in reverse order.

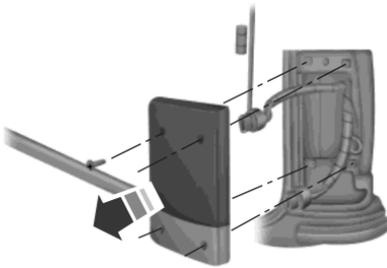
**Replacing License Plate Lamp Bulbs**

1. Turn the headlamp switch to the off position.
2. Remove the two screws and the license plate lamp assembly from the rear door.
3. Remove bulb socket from lamp assembly by turning it counterclockwise.
4. Pull the bulb out from socket and push in the new bulb.

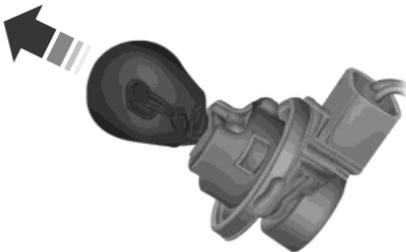
To install the new bulb, follow the removal procedures in reverse order.

**Replacing Stop, Turn, Tail, Side Marker, and Backup Lamp Bulbs**

The stop, turn, tail, side marker, and backup lamp bulbs are located in the tail lamp assembly. Follow the same steps to replace any of the bulbs:



1. Turn the headlamp switch to the off position, then remove the four screws and the lamp assembly from the vehicle.



2. Rotate the bulb socket counterclockwise and remove it from lamp assembly.
3. Carefully pull the bulb straight out of the socket and push in the new bulb.

To install the lamp, follow the removal procedures in reverse order.

**BULB SPECIFICATION CHART**

Replacement bulbs are specified in the chart below. Headlamp bulbs must be marked with an authorized "D.O.T." for North America and an "E" for Europe to ensure lamp performance, light brightness and pattern and safe visibility. The correct bulbs will not damage the lamp assembly or void the lamp assembly warranty and will provide quality bulb burn time.

<b>Function</b>	<b>Number of bulbs</b>	<b>Trade number</b>
Headlamps (aerodynamic)	2	H13/9008
Headlamps (sealed beam)	2	H6054
Park lamp with aerodynamic	2	3157A or 3157AK
Park lamp with sealed beam	2	3157K
Side marker with aerodynamic	2	W5W
Side marker with sealed beam	2	194
Back-up lamps	2	3156K or 3156
License plate lamp	1	168
Stop/tail/turn/side marker lamp	2	3157K
High-mount brake lamp	2	912
Cargo lamp	1	578
Dome lamp (standard)	1	912
Map/reading lamp	2	578
All replacement bulbs are clear in color except where noted.		
To replace all instrument panel lights - see your authorized dealer		

## GENERAL INFORMATION

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

## CLEANING PRODUCTS

For best results, use the following products or products of equivalent quality:

Motorcraft Bug and Tar Remover (ZC-42)

Motorcraft Custom Bright Metal Cleaner (ZC-15)

Motorcraft Detail Wash (ZC-3-A)

Motorcraft Dusting Cloth (ZC-24)

Motorcraft Engine Shampoo and Degreaser (United States only) (ZC-20)

Motorcraft Engine Shampoo (Canada only) (CXC-66-A)

Motorcraft Multi-Purpose Cleaner (Canada only) (CXC-101)

Motorcraft Premium Glass Cleaner (Canada only) (CXC-100)

Motorcraft Premium Quality Windshield Washer Fluid (Canada only) [CXC-37-(A, B, D or F)]

Motorcraft Premium Windshield Wash Concentrate with Bitterant (United States only) (ZC-32-B2)

Motorcraft Professional Strength Carpet & Upholstery Cleaner (ZC-54)

Motorcraft Premium Leather and Vinyl Cleaner (ZC-56)

Motorcraft Spot and Stain Remover (United States only) (ZC-14)

Motorcraft Ultra-Clear Spray Glass Cleaner (ZC-23)

Motorcraft Wheel and Tire Cleaner (ZC-37-A)

## CLEANING THE EXTERIOR

Wash your vehicle regularly with cool or lukewarm water and a neutral pH shampoo, such as Motorcraft® Detail Wash.

- Never use strong household detergents or soap, such as dish washing or laundry liquid. These products can discolor and spot painted surfaces.
- Never wash a vehicle that is hot to the touch or during exposure to strong, direct sunlight.
- Dry the vehicle with a chamois or soft terry cloth towel in order to eliminate water spotting.

- Immediately remove items such as gasoline, diesel fuel, bird droppings and insect deposits because they can cause damage to the vehicle's paintwork and trim over time. Use Motorcraft Bug and Tar Remover.
- **Note:** Suntan lotions and insect repellents can damage any painted surface; if these substances come in contact with your vehicle, wash it off as soon as possible.
- Remove any exterior accessories before entering a car wash.

### Stripes or Graphics (if equipped)

Do not use a commercial or high-pressure wand on the surface or edge of stripes and graphics. This can cause damage to the film and cause the edge of the film to peel away from the vehicle surface.

### Exterior Chrome

**Note:** Never use abrasive materials such as steel wool or plastic pads as they can scratch the chrome surface.

**Note:** Do not use chrome cleaner, metal cleaner or polish on wheels and wheel covers.

- Wash the vehicle first, using cool or lukewarm water and a neutral pH shampoo, such as Motorcraft Detail Wash.
- Use Motorcraft Custom Bright Metal Cleaner. Apply the product as you would a wax to clean bumpers and other chrome parts; allow the cleaner to dry for a few minutes, then wipe off the haze with a clean, dry rag.
- Do not apply cleaning product to hot surfaces and do not leave cleaning product on chrome surfaces for a period of time exceeding that which is recommended.
- **Note:** Using other non-recommended cleaners can result in severe and permanent cosmetic damage.

### Underbody

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

## Cleaning Plastic Exterior Parts

Use only approved products to clean plastic parts.

- For routine cleaning, use Motorcraft Detail Wash.
- If tar or grease spots are present, use Motorcraft Bug and Tar Remover.

## WAXING

Regular waxing is necessary to protect the paint on your car from the elements. We recommend that you wash and wax the painted surface once or twice a year.

When washing and waxing, park your vehicle in a shaded area out of direct sunlight. Always wash your vehicle before applying wax.

- Use a quality wax that does not contain abrasives.
- Follow the manufacturer's instructions to apply and remove the wax.
- Apply a small amount of wax in a back-and-forth motion, not in circles.
- Do not allow wax to come in contact with any non-body (low-gloss black) colored trim. The wax discolors or stains the parts over time, such as:
  - Bumpers
  - Grained door handles
  - Side mouldings
  - Mirror housings
  - Windshield cowl area.
- Do not apply wax to glass areas.
- After waxing, your car's paint should feel smooth, and be free of streaks and smudges.

## REPAIRING MINOR PAINT DAMAGE

Your authorized dealer has touch-up paint to match your vehicle's color. Take your color code (printed on a sticker in the driver's door jamb) to an authorized dealer to make sure you get the correct color.

- Before repairing minor paint damage, use a cleaner such as Motorcraft Bug and Tar Remover to remove particles such as bird droppings, tree sap, insect deposits, tar spots, road salt and industrial fallout before repairing paint chips.
- Always read the instructions before using the products.

**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 on all parts that require cleaning and pressure rinse clean. In Canada, use Motorcraft Engine Shampoo.
- 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.
- Cover the battery, power distribution box, and air filter assembly to prevent water damage when cleaning the engine.

**CLEANING THE WINDOWS AND WIPER BLADES**

The windows and wiper blades should be cleaned regularly. If the wipers do not wipe properly, substances on the vehicle's glass or the wiper blades may cause squeaking or chatter noise from the blades, and streaking and smearing of the windshield. To clean these items, follow these tips:

- The windows may be cleaned with a non-abrasive cleaner such as Motorcraft® Ultra-Clear Spray Glass Cleaner (U.S.) or Motorcraft Premium Glass Cleaner (Canada).
- The wiper blades can be cleaned with isopropyl (rubbing) alcohol or Motorcraft Premium Windshield Washer Concentrates in the U.S., or Motorcraft Premium Quality Windshield Washer Fluid in Canada. Replace your wiper blades when they appear worn or do not function properly.
- Do not use abrasive materials, as they may cause scratches.
- Do not use fuel, kerosene, or paint thinner to clean any parts.

If you cannot remove those streaks after cleaning with the glass cleaner or if the wipers chatter and move in a jerky motion, clean the outer surface of the windshield and the wiper blades using a sponge or soft cloth with a neutral detergent or mild-abrasive cleaning solution. After cleaning, rinse the windshield and wiper blades with clean water. The windshield is clean if beads do not form when you rinse the windshield with water.

**Note:** Do not use sharp objects, such as a razor blade, to clean the inside of the rear window or to remove decals, as it may cause damage to the rear window defroster's heated grid lines.

## CLEANING THE INTERIOR



**WARNING:** Do not use cleaning solvents, bleach or dye on the vehicle's safety belts, as these actions may weaken the belt webbing.



**WARNING:** On vehicles equipped with seat-mounted airbags, do not use chemical solvents or strong detergents. Such products could contaminate the side airbag system and affect performance of the side airbag in a collision.

For fabric, carpets, cloth seats, safety belts and seats equipped with side airbags:

- Remove dust and loose dirt with a vacuum cleaner.
- Apply a layer of high quality foam cleaner designed for automotive interiors, such as Motorcraft Carpet and Upholstery Cleaner, to the dry stained area(s) of the item you are cleaning and let it soak in for one minute.
- If grease or tar is present on the material, spot-clean the area first with Motorcraft Spot and Stain Remover. In Canada, use Motorcraft Multi-Purpose Cleaner.
- If a ring forms on the fabric after spot cleaning, clean the entire area immediately (but do not oversaturate) or the ring can set.
- Do not use household cleaning products or glass cleaners, which can stain and discolor the fabric and affect the flame retardant abilities of the seat materials.

## CLEANING THE INSTRUMENT PANEL AND INSTRUMENT CLUSTER LENS



**WARNING:** Do not use chemical solvents or strong detergents when cleaning the steering wheel or instrument panel to avoid contamination of the airbag system.

**Note:** Follow the same procedure as cleaning leather seats for cleaning leather instrument panels and leather interior trim surfaces. See *Cleaning Leather Seats* in this chapter.

Clean the instrument panel and cluster lens with a clean, damp, white, cotton cloth, then use a clean and dry, white, cotton cloth to dry these areas.

- Avoid cleaners or polishes that increase the gloss of the upper portion of the instrument panel. The dull finish in this area helps protect the driver from undesirable windshield reflection.
- Be certain to wash or wipe your hands clean if you have been in contact with certain products, such as insect repellent and suntan lotion, in order to avoid possible damage to the interior painted surfaces.
- Do not use household or glass cleaners as these may damage the finish of the instrument panel, interior trim and cluster lens.
- Do not allow air fresheners and hand sanitizers to spill on interior surfaces. If a spill occurs, wipe off immediately. Damage may not be covered by your warranty.

If a staining liquid like coffee or juice has been spilled on the instrument panel or on interior trim surfaces, clean as follows:

1. Wipe up spilled liquid using a clean, white, cotton cloth.
2. Use Motorcraft Premium Leather and Vinyl Cleaner or a commercially available leather cleaning product for automotive interiors. Test any cleaner or stain remover on an inconspicuous area.
3. Alternatively, wipe the surface with a damp, clean, white, cotton cloth and a mild soap and water solution. Dry the area with a clean, soft cloth.
4. If necessary, apply more soap and water solution or cleaning product to a clean, white, cotton cloth and press the cloth onto the soiled area. Allow this to set at room temperature for 30 minutes.

5. Remove the soaked cloth, then with a clean, damp cloth, use a rubbing motion for 60 seconds on the soiled area.
6. Following this, wipe area dry with a clean, white, cotton cloth.

### **CLEANING LEATHER SEATS (IF EQUIPPED)**

**Note:** Follow the same procedure as cleaning leather seats for cleaning leather instrument panels and leather interior trim surfaces.

For routine cleaning, wipe the surface with a soft, damp cloth and a mild soap and water solution. Dry the area with a clean, soft cloth.

For cleaning and removing spots and stains such as dye transfer, use Motorcraft Premium Leather and Vinyl Cleaner or a commercially available leather cleaning product for automotive interiors.

**Note:** Test any cleaner or stain remover on an inconspicuous area.

You should:

- Remove dust and loose dirt with a vacuum cleaner.
- Clean and treat spills and stains as soon as possible.

Do not use the following products as these may damage the leather:

- Oil and petroleum or silicone-based leather conditioners.
- Household cleaners.
- Alcohol solutions.
- Solvents or cleaners intended specifically for rubber, vinyl and plastics. Motorcraft

**Note:** Do not use Motorcraft Premium Leather and Vinyl Cleaner ZC-56 on Lincoln Black Label, Presidential or Reserve Leathers because it can damage these and other semi-aniline leather seating fabrics. It can also damage surrounding microfiber accent surfaces. To clean Lincoln Black Label, Presidential or Reserve Leather, first vacuum the seats to remove loose dirt. Then wipe the leather with a clean soft cloth dampened with lukewarm water and a mild soap. Wipe the leather again with a slightly damp cloth to remove soap residue, and dry with a soft cloth. To maintain the leather's resiliency, it should be cleaned whenever soiled.

### CLEANING THE ALLOY WHEELS

**Note:** Do not use chrome cleaner, metal cleaner or polish on wheels and wheel covers.

A clearcoat paint finish coats aluminum wheels and wheel covers. In order to maintain their condition:

- Clean weekly with Motorcraft Wheel and Tire Cleaner. Use a sponge to remove heavy deposits of dirt and brake dust accumulation. Rinse thoroughly with a strong stream of water when you have completed the cleaning process.
- To remove tar and grease, use Motorcraft Bug and Tar Remover.
- 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.
- Industrial-strength (heavy-duty) 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.
- If you intend on parking your vehicle for an extended period after cleaning the wheels with a wheel cleaner, drive your vehicle for a few minutes before doing so. This reduces the risk of increased corrosion of the brake discs.

### 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 hood latch, all door latches and trunk lid hinges 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 contains 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.

### *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.

**Removing Vehicle from Storage**

When your vehicle is ready to come out of storage, do the following:

- Wash your vehicle to remove any dirt or grease film build-up on window surfaces.
- Check windshield wipers for any deterioration.
- Check under the hood for any foreign material that may have collected during storage (mice/squirrel nests).
- Check the exhaust for any foreign material that may have collected during storage.
- Check tire pressures and set tire inflation per the Tire Label.
- Check brake pedal operation. Drive the vehicle 15 feet (4.5 meters) back and forth to remove rust build-up.
- Check fluid levels (including coolant, oil and gas) to make sure there are no leaks and fluids are at recommended levels.
- If the battery was removed, clean the battery cable ends and inspect.

Contact your authorized dealer if you have any concerns or issues.

### GENERAL INFORMATION

#### Notice to Utility Vehicle, Van and Truck Owners



**WARNING:** Utility vehicles have a significantly higher rollover rate than other types of vehicles. To reduce the risk of serious injury or death from a rollover or other crash you must:

- Avoid sharp turns and abrupt maneuvers.
- Drive at safe speeds for the conditions.
- Keep tires properly inflated.
- Never overload or improperly load your vehicle.
- Make sure every passenger is properly restrained.

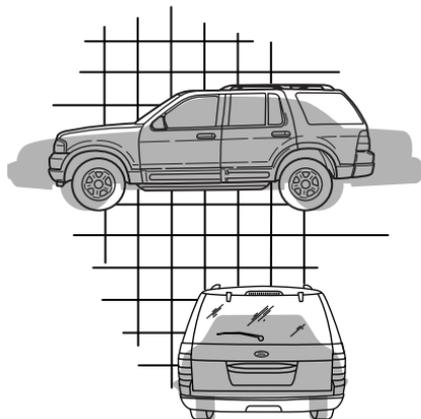


**WARNING:** In a rollover crash, an unbelted person is significantly more likely to die than a person wearing a seat belt. All occupants must wear seat belts. Children and infants must use appropriate restraints to minimize the risk of injury or ejection.

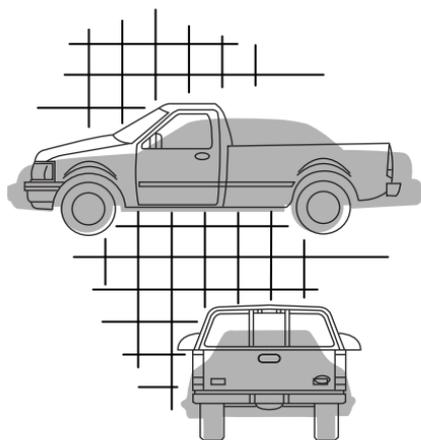


Utility vehicles, vans and trucks handle differently than passenger cars in the various driving conditions that are encountered on streets, highways and off-road. Utility vehicles, vans and trucks are not designed for cornering at speeds as high as passenger cars any more than low-slung sports cars are designed to perform satisfactorily under off-road conditions.

### How Your Vehicle Differs from Other Vehicles



wheelbase may make your vehicle quicker to respond to steering inputs than a vehicle with a longer wheelbase.



Sport-utility vehicles, vans and trucks can differ from some other vehicles in a few noticeable ways. Your vehicle may be:

- Higher – to allow higher load carrying capacity and to allow it to travel over rough terrain without getting hung up or damaging underbody components.
- Shorter – to give it the capability to approach inclines and drive over the crest of a hill without getting hung up or damaging underbody components. All other things held equal, a shorter wheelbase may make your vehicle quicker to respond to steering inputs than a vehicle with a longer wheelbase.
- Narrower – to provide greater maneuverability in tight spaces, particularly in off-road use.

As a result of the above dimensional differences, sport-utility vehicles, vans and trucks often will have a higher center of gravity and a greater difference in center of gravity between the loaded and unloaded condition.

These differences that make your vehicle so versatile also make it handle differently than an ordinary passenger car.

## TIRE CARE

### Information About Uniform Tire Quality Grading



Tire Quality Grades apply to new pneumatic passenger car tires. The Tire 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 1½ 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.

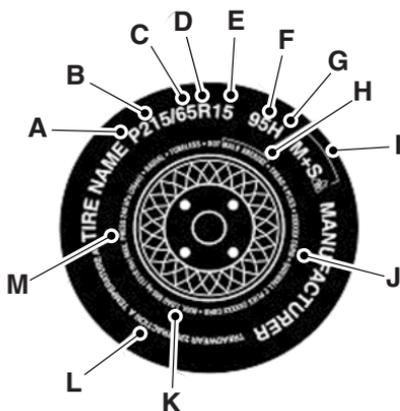
### Glossary of Tire Terminology

- **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 set pressure. For example: For P-metric tires 35 psi (2.4 bar) or 36 (2.5 bar) depending on tire size and for Metric tires 36 psi (2.5 bar). Increasing the inflation pressure beyond this pressure will not increase the tire capability.
- **Extra load:** A class of P-metric or Metric tires designed to carry a heavier maximum load at 42 psi (2.9 bar). 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 tire 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 kilometers).
- **Recommended inflation pressure:** The cold inflation pressure found on 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 Tire Label located on the B-Pillar or the edge of the driver's door.
- **B-pillar:** The structural member at the side of the vehicle behind the front door.
- **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 CONTAINED ON THE TIRE SIDEWALL

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.

**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, that may be used for service on cars, sport utility vehicles, minivans and light trucks.

**Note:** If your tire size does not begin with a letter, this may mean it is designated by either the European Tire and Rim Technical Organization or the 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 manual. 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 (130)
N	87 (140)
Q	99 (159)
R	106 (171)
S	112 (180)
T	118 (190)
U	124 (200)
H	130 (210)
V	149 (240)
W	168 (270)
Y	186 (299)

**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.

**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. See 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), for the correct tire pressure for your vehicle.

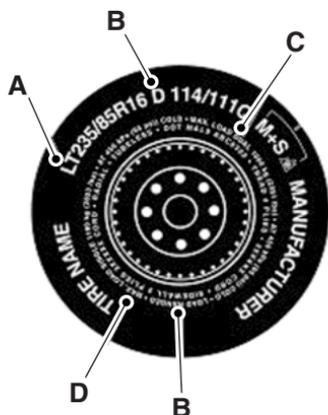
#### **L. Treadwear, Traction and Temperature Grades**

- **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 (1½) 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 Inflation Pressure:** Indicates the tire manufacturer's maximum permissible pressure or the pressure at which the maximum load can be carried by the tire. This pressure is normally higher than the vehicle manufacturer's recommended cold inflation pressure, which can be found on 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 Tire Label which is located on the B-Pillar or the edge of the driver's door. 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 or radial tubeless.

### **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.

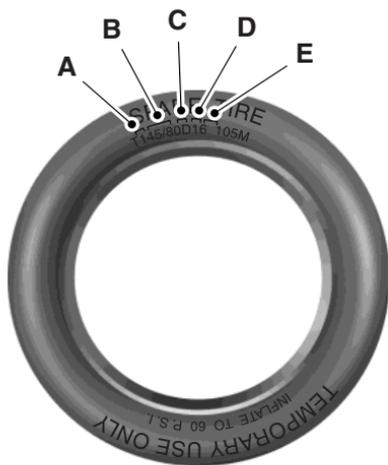
**Note:** Tire Quality Grades do not apply to this type of tire.

A. **LT:** Indicates a tire, designated by the Tire and Rim Association, 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, that is intended for temporary service on cars, sport-utility vehicles, 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.

### Location of the Tire Label

You will find a Tire Label containing tire inflation pressure by tire size and other important information located on the B-Pillar or the edge of the driver's door. See the payload description and graphic in the *Load Carrying* chapter.

### 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 build-up 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 (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 Tire Label which is located on the B-Pillar or the edge of the driver's door. Failure to follow the tire

pressure recommendations can cause uneven treadwear patterns and adversely affect the way your vehicle handles.

**Maximum Inflation Pressure** is the tire manufacturer's maximum permissible pressure 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 (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 Tire Label which is located on the B-Pillar or the edge of the driver's door. 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.

**Note:** If you are checking tire pressure when the tire is hot (for example, driven more than 1 mile [1.6 kilometers]), 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.

3. Add enough air to reach the recommended air pressure.

**Note:** If you overfill the tire, release air by pressing 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 the *Dissimilar Spare Tire and Wheel Assembly Information* section. Store and maintain at 60 psi (4.15 bar). For full-size and dissimilar spare tires, see *Dissimilar Spare Tire and Wheel Assembly Information* under *Changing a Road Wheel* in this chapter. Store and maintain at the higher of the front and rear inflation pressure as shown on 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.

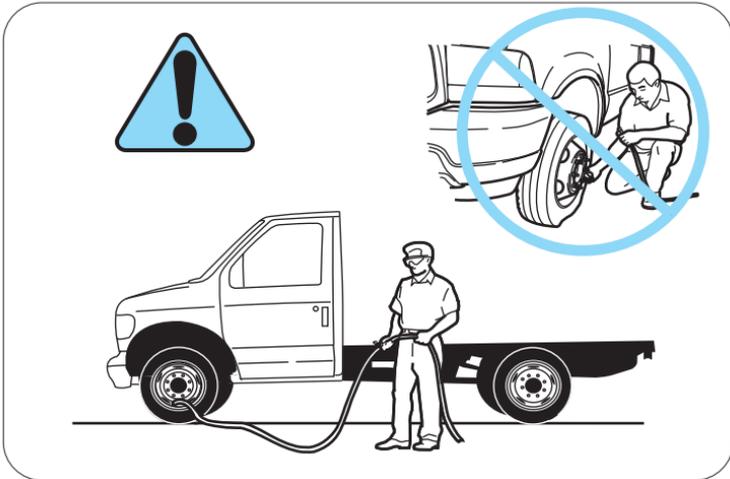
### **Tire Inflation Information**

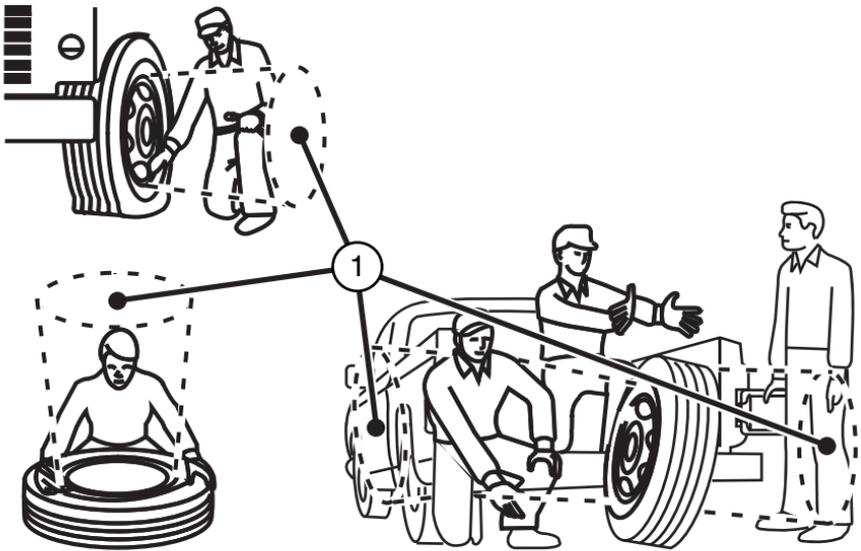


**WARNING:** An inflated tire and rim can be very dangerous if improperly used, serviced or maintained. To reduce the risk of serious injury, never attempt to re-inflate a tire which has been run flat or seriously under-inflated without first removing the tire from the wheel assembly for inspection. 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 regulations. For example, during any procedure involving tire inflation, the technician or individual must utilize a remote inflation device, and make sure that all persons are clear of the trajectory area.





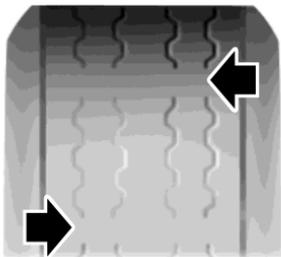
**WARNING:** Stay out of the trajectory (1) as indicated in the illustration.

### 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 millimeters), 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 millimeters).

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 (such as load, speed, inflation pressure) 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

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, transfer case or power transfer unit failure. If you have questions regarding tire replacement, contact your authorized dealer as soon as possible.



**WARNING:** To reduce the risk of serious injury, 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 feet (3.66 meters) 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, a Ford 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 feet (3.66 meters) away from the tire wheel assembly.

Your vehicle is equipped with tires 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.

The two front tires or two rear tires should generally be replaced as a pair.

The tire pressure sensors mounted in the wheels (originally installed on your vehicle) are not designed to be used in aftermarket wheels.

The use of wheels or tires not recommended by Ford Motor Company may affect the operation of your tire pressure monitoring system.

If the tire pressure monitoring system indicator is flashing, the system is malfunctioning. Your replacement tire might be incompatible with your tire pressure monitoring system, or some component of the system may be damaged.

## ***Replacing a Tire That is Greenhouse Gas Certified***

The tires installed on this vehicle at the factory as original equipment are certified for Greenhouse Gas and Fuel Efficiency regulations. Replacement tires must be of equal or lower rolling resistance level (TRRL or Crr). Consult with your tire supplier(s) for appropriate replacement tires.

## **Safety Practices**



**WARNING:** If your vehicle is stuck in snow, mud, or sand, 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 is 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 the 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 are 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 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



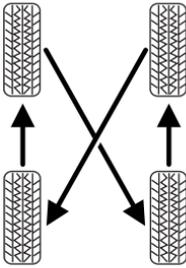
**WARNING:** If the tire label shows different tire pressures for the front and rear tires and the vehicle is equipped with a tire pressure monitoring system, then the settings for the system sensors need to be updated. Always perform the system reset procedure after tire rotation. If the system is not reset, it may not provide a low tire pressure warning when necessary. See the TPMS reset procedure in this chapter.

**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.

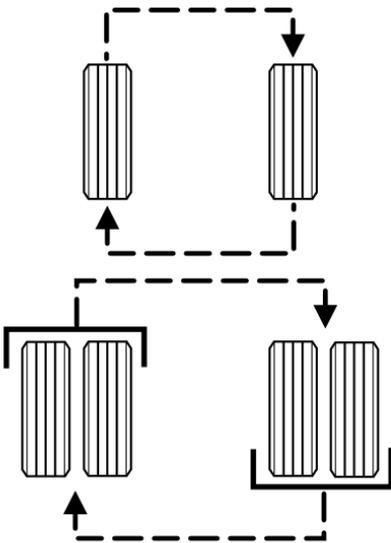
**Note:** Your vehicle may be equipped with a dissimilar spare tire and wheel assembly. A dissimilar spare tire and wheel assembly is defined as a spare tire or wheel that is different in brand, size or appearance from the road tires and wheels. If you have a dissimilar spare tire and wheel assembly,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

**Note:** After having your tires rotated, inflation pressure must be checked and adjusted to the vehicle requirements.

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



- Rear-wheel drive vehicles/Four-wheel drive vehicles (front tires at top of diagram)



- Dual rear wheel vehicles – 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 pair. 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, transfer case or 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.

**TIRE PRESSURE MONITORING SYSTEM**

**WARNING:** The tire pressure monitoring system is NOT a substitute for manually checking tire pressure. The tire pressure should be checked periodically (at least monthly) using a tire gauge. See *Inflating Your Tires* in this chapter. Failure to properly maintain your tire pressure could increase the risk of tire failure, loss of control, vehicle rollover and personal injury.



Each tire, including the spare (if provided), should be checked monthly when cold and inflated to the inflation pressure recommended by the vehicle manufacturer on the vehicle placard or tire inflation pressure label. (If your vehicle has tires of a different size than the size indicated on the vehicle placard or tire inflation pressure label, you should determine the proper tire inflation pressure for those tires.)

As an added safety feature, your vehicle has been equipped with a tire pressure monitoring system (TPMS) that illuminates a low tire pressure telltale when one or more of your tires is significantly under-inflated. Accordingly, when the low tire pressure telltale illuminates, you should stop and check your tires as soon as possible, and inflate them to the proper pressure. Driving on a significantly under-inflated tire causes the tire to overheat and can lead to tire failure. Under-inflation also reduces fuel efficiency and tire tread life, and may affect the vehicle's handling and stopping ability.

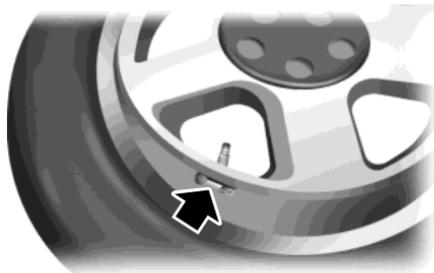
Please note that the TPMS is not a substitute for proper tire maintenance, and it is the driver's responsibility to maintain correct tire pressure, even if under-inflation has not reached the level to trigger illumination of the TPMS low tire pressure telltale.

Your vehicle has also been equipped with a TPMS malfunction indicator to indicate when the system is not operating properly. The TPMS malfunction indicator is combined with the low tire pressure telltale. When the system detects a malfunction, the telltale will flash for approximately one minute and then remain continuously illuminated. This sequence will continue upon subsequent vehicle start-ups as long as the malfunction exists.

When the malfunction indicator is illuminated, the system may not be able to detect or signal low tire pressure as intended. TPMS malfunctions may occur for a variety of reasons, including the installation of replacement or alternate tires or wheels on the vehicle that prevent the TPMS from functioning properly. Always check the TPMS malfunction telltale after replacing one or more tires or wheels on your vehicle to ensure that the replacement or alternate tires and wheels allow the TPMS to continue to function properly.

The tire pressure monitoring system complies with part 15 of the FCC rules and with RSS-210 of Industry Canada. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

### Changing Tires with a Tire Pressure Monitoring System



**Note:** Each road tire is equipped with a tire pressure sensor located inside the tire and wheel assembly cavity. The pressure sensor is attached to the valve stem. The pressure sensor is covered by the tire and is not visible unless the tire is removed. Take care when changing the tire to avoid damaging the sensor.

You should always have your tires serviced by an authorized dealer.

Check the tire pressure periodically (at least monthly) using an accurate tire gauge. See *Inflating Your Tires* in this chapter.

### Understanding Your Tire Pressure Monitoring System

The tire pressure monitoring system measures pressure in your four road tires and sends the tire pressure readings to your vehicle. The low tire pressure warning light will turn on if the tire pressure is significantly low. Once the light is illuminated, your tires are under-inflated and need to be inflated to the manufacturer's recommended tire pressure. Even if the light turns on and a short time later turns off, your tire pressure still needs to be checked.

#### ***When your temporary spare tire is installed***

When one of your road tires needs to be replaced with the temporary spare, the tire pressure monitoring system will continue to identify an issue to remind you that the damaged road wheel or tire needs to be repaired and put back on your vehicle.

To restore the full function of the tire pressure monitoring system, have the damaged road wheel and tire assembly repaired and remounted on your vehicle. For additional information, see *Changing Tires with a Tire Pressure Monitoring System* in this section.

***When you believe your system is not operating properly***

The main function of the tire pressure monitoring system is to warn you when your tires need air. It can also warn you in the event the system is no longer capable of functioning as intended. See the following chart for information concerning your tire pressure monitoring system:

<b>Low tire pressure warning light</b>	<b>Possible cause</b>	<b>Customer action required</b>
Solid warning light	Tire(s) under-inflated	1. Make sure tires are at the proper pressure. See <i>Inflating your tires</i> in this chapter. 2. After inflating your tires to the manufacturer's recommended pressure as shown on the Tire Label (located on the edge of driver's door or the B-Pillar), the vehicle must be driven for at least two minutes over 20 mph (32 km/h) before the light turns off.
	Spare tire in use	Repair the damaged road wheel and tire assembly and reinstall it on the vehicle to restore system function. For a description on how the system functions, see <i>When your temporary spare tire is installed</i> in this section.
	TPMS malfunction	If the tires are properly inflated and the spare tire is not in use but the light remains on, contact your authorized dealer as soon as possible.
	Tire rotation without sensor training	On vehicles with different front and rear tire pressures, the tire pressure monitoring system must be retrained following every tire rotation. See <i>Tire rotation</i> in this chapter.

Low tire pressure warning light	Possible cause	Customer action required
Flashing warning light	Spare tire in use	Repair the damaged road wheel and tire assembly and reinstall it on the vehicle to restore system function. For a description on how the system functions, see <i>When your temporary spare tire is installed</i> in this section.
	TPMS malfunction	If the tires are properly inflated and the spare tire is not in use but the light remains on, contact your authorized dealer as soon as possible.

### ***When inflating your tires***

When putting air into your tires (such as at a gas station or in your garage), the tire pressure monitoring system may not respond immediately to the air added to your tires.

It may take up to two minutes of driving over 20 mph (32 km/h) for the light to turn off after you have filled your tires to the recommended inflation pressure.

### ***How temperature affects your tire pressure***

The tire pressure monitoring system monitors tire pressure in each pneumatic tire. While driving in a normal manner, a typical passenger tire inflation pressure may increase approximately 2 to 4 psi (14 to 28 kPa) from a cold start situation. If the vehicle is stationary overnight with the outside temperature significantly lower than the daytime temperature, the tire pressure may decrease approximately 3 psi (21 kPa) for a drop of 30°F (17°C) in ambient temperature. This lower pressure value may be detected by the system as being significantly lower than the recommended inflation pressure and activate the system warning light for low tire pressure. If the low tire pressure warning light is on, visually check each tire to verify that no tire is flat. If one or more tires are flat, repair as necessary. Check air pressure in the road tires. If any tire is under-inflated, carefully drive the vehicle to the nearest location where air can be added to the tires. Inflate all the tires to the recommended inflation pressure.

## Tire Pressure Monitoring System Reset Procedure



**WARNING:** To determine the required pressure(s) for your vehicle, see 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 Tire Label located on the B-Pillar or the edge of the driver's door. See the *Load Carrying* chapter for more information.

**Note:** The system reset procedure needs to be performed after each tire rotation on vehicles that require different recommended tire pressures in the front tires as compared to the rear tires.

### Overview

To provide the vehicle's load carrying capability, some vehicles require different recommended tire pressures in the front tires as compared to the rear tires. The tire pressure monitoring system equipped on these vehicles is designed to illuminate the low tire pressure warning light at two different pressures; one for the front tires and one for the rear tires.

Since tires need to be rotated to provide consistent performance and maximum tire life, the tire pressure monitoring system needs to know when the tires are rotated to determine which set of tires are on the front and which are on the rear. With this information, the system can detect and properly warn of low tire pressures.

### System reset tips:

- To reduce the chances of interference from another vehicle, the system reset procedure should be performed at least three feet (one meter) away from another Ford Motor Company vehicle undergoing the system reset procedure at the same time.
- Do not wait more than two minutes between resetting each tire sensor or the system will time-out and the entire procedure will have to be repeated on all four wheels.
- A double horn chirp indicates the need to repeat the procedure.

### Performing the System Reset Procedure

It is recommended that you read the entire procedure before attempting.

1. Drive the vehicle above 20 mph (32 km/h) for at least two minutes and then park in a safe location where you can easily get to all four tires and have access to an air pump.
2. Place the ignition in the off position and keep the key in the ignition.

3. Cycle the ignition to the on position with the engine off.
4. Turn the hazard flashers on then off three times. This must be accomplished within 10 seconds.

If the reset mode has been entered successfully, the horn will sound once, the system indicator will flash and the message center (if equipped) will display **TRAIN LEFT FRONT TIRE**. If this does not occur, please try again starting at Step 2.

If after repeated attempts to enter the reset mode, the horn does not sound, the system indicator does not flash and the message center (if equipped) does not display **TRAIN LEFT FRONT TIRE**, seek service from your authorized dealer.

5. Train the tire pressure monitoring system sensors in the tires using the following system reset sequence starting with the left front tire in the following clockwise order:

- Left front (Driver's side front tire)
- Right front (Passenger's side front tire)
- Right rear (Passenger's side rear tire)
- Left rear (Driver's side rear tire)

6. Remove the valve cap from the valve stem on the left front tire; decrease the air pressure until the horn sounds.

**Note:** The single horn chirp confirms that the sensor identification code has been learned by the module for this position. If a double horn is heard, the reset procedure was unsuccessful, and must be repeated.

7. Remove the valve cap from the valve stem on the right front tire; decrease the air pressure until the horn sounds.

8. Remove the valve cap from the valve stem on the right rear tire; decrease the air pressure until the horn sounds.

9. Remove the valve cap from the valve stem on the left rear tire; decrease the air pressure until the horn sounds.

Training is complete after the horn sounds for the last tire trained (driver's side rear tire), the system indicator stops flashing, and the message center (if equipped) displays:

**TRAINING COMPLETE.**

10. Turn the ignition off. If two short horn beeps are heard, the reset procedure was unsuccessful and must be repeated.

If after repeating the procedure and two short beeps are heard when the ignition is turned to off, seek assistance from your authorized dealer.

11. Set all four tires to the recommended air pressure as indicated on the Safety Compliance Certification Label or Tire Label.

### **Full-size matching spare tire and wheel information**

This spare tire and wheel will match the road tire and wheel. When driving with the full size matching spare tire and wheel, do not exceed 70 mph (113 km/h). It is intended for temporary use only. This means if you need to use it, you should replace it as soon as possible.

## **CHANGING A ROAD WHEEL**



**WARNING:** The use of tire sealant may damage your tire pressure monitoring system and should only be used in roadside emergencies. If you must use a sealant, the Ford Tire Mobility Kit sealant should be used. The tire pressure monitoring system sensor and valve stem on the wheel must be replaced by an authorized dealer after use of the sealant.



**WARNING:** See *Tire Pressure Monitoring System* in this chapter for important information. If the tire pressure monitoring sensor becomes damaged, it will no longer function.

**Note:** The tire pressure monitoring system indicator light will illuminate when the spare tire is in use. To restore the full function of the monitoring system, all road wheels equipped with tire pressure monitoring sensors must be mounted on this vehicle.

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.

Have a flat serviced by an authorized dealer in order to prevent damage to the system sensors. See *Tire Pressure Monitoring System* earlier in this chapter. Replace the spare tire with a road tire as soon as possible. During repairing or replacing of the flat tire, have the authorized dealer inspect the tire pressure monitoring system sensor for damage.

**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

### 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 is in park (P) or neutral (N).



**WARNING:** To help prevent the vehicle from moving when you change a tire, be sure to place the transmission in park (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.

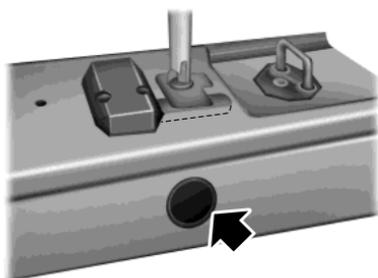


**WARNING:** Never use wheels or lug nuts different than the original equipment as this could damage the wheel or mounting system. This damage could allow the wheels to come off while the vehicle is being driven.

**Note:** Passengers should not remain in the vehicle when the vehicle is being jacked.

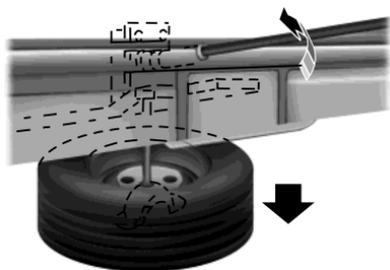
1. Park on a level surface, set the parking brake and activate the warning flashers.

2. Place the transmission in park (P) and turn the engine off.



3. To remove the spare tire, open the rear doors and remove the thumb screw and anti-theft bracket. If finger pressure will not remove the thumb screw, use the lug wrench to loosen the screw.

4. Remove the access plug under the left door.



5. Remove the jack handle from the right side compartment and insert the tip of the jack handle through the access hole and into the tube.

6. Turn the jack handle counterclockwise until the cable is slack and the tire can be slid from under the vehicle.

7. Remove the retainer from the spare tire.

To stow the cable retainer with the spare removed, turn the jack handle clockwise until all slack is removed.

8. Block the wheel that is diagonally opposite the tire you are changing.

On E-450 vehicles, 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.

9. Remove the spare tire and jack from the storage location.

10. Remove any wheel trim. Insert the tapered end of the lug nut wrench behind the wheel covers or hubcaps and twist off.

11. 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.

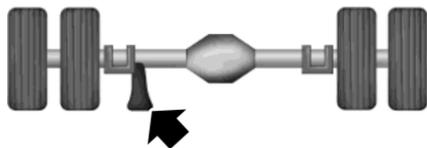
**Replacing the Tire**

1. Assemble the jack handle sections together and lock into the jack. Use the jack handle to slide the jack under the vehicle.
2. Position the jack to raise the front or rear wheel.

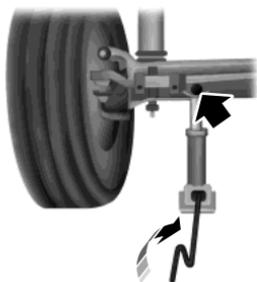
**Note:** Jack at the specified locations to avoid damage to the vehicle.



Rear axle jacking points - All models except E-350 dual rear wheel and E-450



Rear axle jacking points - E-350 dual rear wheel and E-450

**Front axle jacking points:**

**Note:** Do not place the jack under or on the steering linkage.

Place the jack under the pin on the front surface of the front axle.

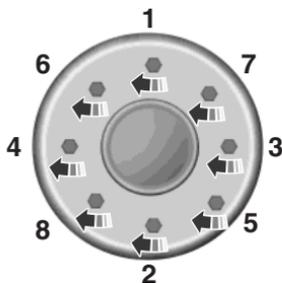
3. Raise the jack until the wheel is completely off the ground. Turn the jack handle clockwise if your vehicle is equipped with a screw-type jack or pump the jack if equipped with a hydraulic jack.

4. Remove the lug nuts with the lug nut wrench.
5. Replace the flat tire with the spare tire.

If your vehicle has single rear wheels, thread the lug nuts on the studs with the beveled face toward the wheel.

If your vehicle has dual rear wheels, thread the two element swiveling lug nuts on the studs with the flange facing toward the wheel.

6. Use the lug nut wrench to screw the lug nut snugly against the wheel.
7. Lower the vehicle by turning the jack handle counterclockwise.



8. Remove the jack and fully tighten the lug nuts in the following pattern. See *Wheel Lug Nut Torque Specifications*.

9. Install any wheel covers, ornaments or hub caps. Make sure they are snapped in place.
10. Stow the jack, handle and lug wrench.
11. Unblock the wheels.

### **Stowing the Flat or Spare Tire**

**Note:** Failure to follow spare tire stowage instructions may result in failure of cable or loss of spare tire.

1. Lay the tire on the ground with the valve stem facing in the direction specified on the Tire Changing Instructions located with the jack hardware.
2. Slide the wheel partially under the vehicle and install the retainer through the wheel center. Pull on the cable to align the components at the end of the cable.
3. Turn the jack handle clockwise until the tire is raised to its stowed position underneath the vehicle. The effort to turn the jack handle increases significantly and the spare tire carrier ratchets or slips when the tire is raised to the maximum tightness. Tighten to the best of your ability, to the point where the ratchet/slip occurs, if possible. The spare tire carrier will not allow you to overtighten. If the spare tire carrier ratchets or slips with little effort, take the vehicle to your authorized dealer for assistance at your earliest convenience.

4. Check that the tire lies flat against the frame and is properly tightened. Try to push or pull, then turn the tire to be sure it will not move. Loosen and retighten, if necessary. Failure to properly stow the spare tire may result in failure of the winch cable and loss of the tire.
5. Repeat this tightness check procedure when servicing the spare tire pressure (every six months, as per your *scheduled maintenance information*), or at any time that the spare tire is disturbed through service of other components.
6. If removed, install the spare tire lock into the bumper drive tube with the spare tire lock key and jack handle.

## TECHNICAL SPECIFICATIONS

### Wheel Lug Nut Torque Specifications



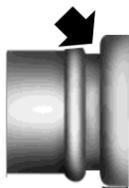
**WARNING:** When a wheel is installed, always remove any corrosion, dirt or foreign materials present on the mounting surfaces of the wheel or the surface of the wheel hub, brake drum or brake disc that contacts the wheel. Make sure that any fasteners that attach the rotor to the hub are secured so 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 single rear wheels, retighten the lug nuts to the specified torque at 100 miles (160 kilometers) after any wheel disturbance (such as tire rotation, changing a flat tire, wheel removal).

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

Bolt size and wheel lug nut type	Wheel lug nut torque*	
	ft-lb	N•m
9/16 x 18 conical lug nut	150	200
9/16 x 18 two-piece lug nut	140	190

\* 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.

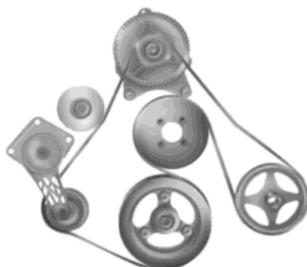


**Note:** Inspect the wheel pilot hole and mounting surface prior to installation. Remove any visible corrosion or loose particles.

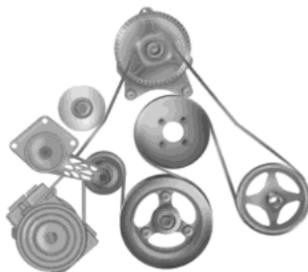
**ENGINE SPECIFICATIONS**

<b>Engine</b>	<b>5.4L V8 engine</b>	<b>6.8L V10 engine</b>
Cubic inches	330	415
Required fuel	Minimum 87 octane or E85	Minimum 87
Firing order	1-3-7-2-6-5-4-8	1-6-5-10-2-7-3-8-4-9
Ignition system	Coil on plug	Coil on plug
Spark plug gap	0.051–0.057 inch (1.29–1.45 mm)	0.052–0.056 inch (1.32–1.42 mm)
		0.051–0.057 inch (1.29–1.45 mm) (With CNG Prep Package)
Compression ratio	9.0:1	9.0:1

## Engine Drivebelt Routing



- 5.4L V8 and 6.8L V10 engines without A/C



- 5.4L V8 and 6.8L V10 engines with A/C

## TECHNICAL SPECIFICATIONS

Item	Capacity	Ford part name or equivalent	Ford part number / Ford specification
Brake fluid <sup>1</sup>	Between MIN and MAX on reservoir	Motorcraft High Performance DOT 4 LV Motor Vehicle Brake Fluid	PM-20 / WSS-M6C65-A2
Door weatherstrips	—	Silicone Spray Lubricant	XL-6 / ESR-M13P4-A
Hinges, latches, striker plates and rotors, seat tracks, fuel filler door hinge and spring	—	Motorcraft Multi-Purpose Grease Spray	XL-5 or equivalent / ESB-M1C93-B
Lock cylinders	—	Motorcraft Penetrating and Lock Lubricant	XL-1 / None
Engine coolant <sup>2</sup>	5.4L engine 28.8 qt (27.2L)	Motorcraft Gold Antifreeze/Coolant Prediluted.	VC-7DIL-B (U.S.); CVC-7DIL-B2 (Canada) / WSS-M97B51-A1
	5.4L engine with auxiliary rear heat 30.8 qt (29.1L)		
	6.8L engine 30.4 qt (28.8L)		
	6.8L engine with auxiliary rear heat 32.6 qt (30.8L)		

Item	Capacity	Ford part name or equivalent	Ford part number / Ford specification
Engine oil <sup>3,4,5</sup>	6.0 qt (5.7L)	Motorcraft SAE 5W-20 Premium Synthetic Blend or Motorcraft SAE 5W-20 Full Synthetic Motor Oil (U.S.)	XO-5W20-QSP or XO-5W20-QFS (U.S.) / WSS-M2C945-A
		Motorcraft SAE 5W-20 Super Premium or Motorcraft SAE 5W-20 Synthetic Motor Oil (Canada)	CXO-5W20-LSP12 or CXO-5W20-LFS12 (Canada) / WSS-M2C945-A
Power steering fluid	Between MIN and MAX on reservoir	MERCON LV	XT-10-QLV (U.S.) / WSS-M2C928-A
Automatic transmission fluid <sup>6,7</sup>	TorqShift (5-speed) 18.8 qt (17.7L)	MERCON LV	CXT-10-LV12 (Canada) WSS-M2C928-A
Dana Limited Slip Axle fluid M70FF (M267FF) E-350 <sup>8</sup>	6.6 pt (3.1L)		XT-10-QLV (U.S.) / WSS-M2C928-A
Dana Limited Slip Axle fluid M70HD (M273HD) E-450 <sup>8</sup>	9.0 pt (4.3L)	Motorcraft SAE 90 Hypoid Gear Lubricant	CXT-10-LV12 (Canada) WSS-M2C928-A
			ESW-M2C105-A

Item	Capacity	Ford part name or equivalent	Ford part number / Ford specification
Dana conventional axle fluid M70FF (M267FF) E-350 <sup>8</sup>	6.6 pt (3.1L)	SAE 80W-90 Premium Rear Axle Lubricant	XY-80W90-QL / WSP-M2C197-A
Dana conventional axle fluid M70HD (M273HD) E-450 <sup>8</sup>	9.0 pt (4.3 L)	Motorcraft Premium Windshield Washer Concentrate With Bitterant (U.S.)	ZC-32-B2 (U.S.) / WSB-M8B16-A2
Windshield washer fluid	Fill as required	Premium Quality Windshield Washer Fluid (Canada)	CXC-37-(A, B, D, and F) (Canada) / WSB-M8B16-A2

Item	Capacity	Ford part name or equivalent	Ford part number / Ford specification			
Fuel tank <sup>9</sup>	138 inch wheelbase (except E-Super Duty) 40.0 gal (151.0L)	—	—			
	158 inch wheelbase (except E-Super Duty) 40.0 gal (151.0L)					
	176 inch wheelbase (except E-Super Duty) 40.0 gal (151.0L)					
	158 inch and 176 inch wheelbase (E-Super Duty) 55.0 gal (208.0L)					
	A/C refrigerant <sup>10</sup>			1.87 lb (0.85kg)	Motorcraft R-134a Refrigerant	YN-19 (U.S.) / WSH-M17B19-A
						CYN-16-R (Canada) / WSH-M17B19-A
A/C refrigerant compressor oil <sup>10</sup>	8 fl oz (237ml)	Motorcraft PAG Refrigerant Compressor Oil	YN-12-D / WSH-M1C231-B			

Item	Capacity	Ford part name or equivalent	Ford part number / Ford specification
A/C refrigerant compressor oil (With prep package) <sup>10</sup>	16 fl oz (473ml)	Motorcraft PAG Refrigerant Compressor Oil	YN-12-D / WSH-M1C231-B
<sup>1</sup> Ford recommends using Motorcraft (Ford) DOT 4 LV High Performance Brake Fluid or equivalent meeting WSS-M6C65-A2. Use of any fluid other than the recommended fluid may cause degraded brake performance and not meet the Ford performance standards. Keep brake fluid clean and dry. Contamination with dirt, water, petroleum products or other materials may result in brake system damage and possible failure.			
<sup>2</sup> Add the coolant type originally equipped in your vehicle.			
<sup>3</sup> Use of synthetic or synthetic blend motor oil is not mandatory. Your engine has been designed to use Motorcraft engine oils or equivalent oils that meet Ford specifications. It is also acceptable to use an engine oil of recommended viscosity grade that meets API SN requirements and displays the API Certification Mark for gasoline engines.			
<sup>4</sup> Do not use supplemental engine oil additives in your engine. They are unnecessary and could lead to engine damage that is not covered by your Ford warranty.			
<sup>5</sup> Do not use API S category oils labeled as SN, SM, SL or lower category unless the label also display the API certification mark. These oils do not meet the requirements of the engine and emission systems.			
<sup>6</sup> 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.			
<sup>7</sup> See your authorized dealer for fluid level checking or filling.			
<sup>8</sup> Fill Dana rear axles to 1/4 inch to 9/16 inch (6 mm to 14 mm) below bottom of fill hole.			
<sup>9</sup> Optional fuel tank 55.0 gallons (208.0L).			
<sup>10</sup> See warning below.			



**WARNING:** The air conditioning refrigerant system contains refrigerant R-134a under high pressure. Opening the air conditioning refrigerant system can cause personal injury. Only qualified personnel should service the air conditioning refrigerant system.

## MOTORCRAFT® PART NUMBERS

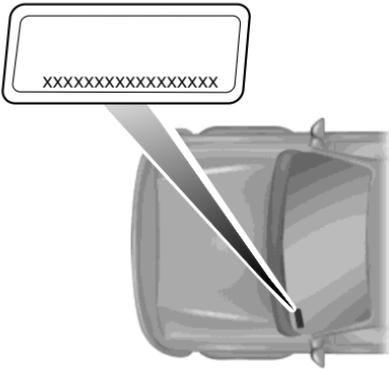
Component	5.4L V8 engine	6.8L V10 engine
Air filter element	FA-1632	FA-1632
Battery- standard / (auxiliary)	BXT-65-650 / (BXT-65-750)	BXT-65-650 / (BXT-65-750)
Oil filter	FL-820-S	FL-820-S
Spark plugs	SP-521	SP-521
Torqshift automatic transmission internal bottom-pan filter	FT-180	FT-180
Windshield wiper blade	WW-2005	WW-2005

Motorcraft replacement parts are recommended for scheduled maintenance and are available at your Ford dealer or at [fordparts.com](http://fordparts.com). These parts meet or exceed Ford Motor Company's specifications, and are engineered for your vehicle. Use of other parts may impact vehicle performance, emissions, and durability. Your warranty may be void for any damage related to use of other parts.

Should a Motorcraft oil filter not be available, use an oil filter that meets industry performance specification SAE/USCAR-36.

For spark plug replacement, see your authorized dealer. Replace the spark plugs at the appropriate intervals. Refer to *Scheduled Maintenance* for the replacement intervals.

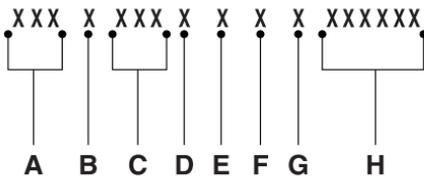
**VEHICLE IDENTIFICATION NUMBER**



The vehicle identification number is located on the driver's side instrument panel.

Please note that in the graphic, XXXX is representative of your vehicle identification number.

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



- A. World manufacturer identifier
- B. Brake system / Gross Vehicle Weight Rating (GVWR) / Restraint Devices and their location
- C. Make, vehicle line, series, body type
- D. Engine type
- E. Check digit
- F. Model year

G. Assembly plant

H. Production sequence number.



**ACCESSORIES**

For a complete listing of the accessories that are available for your vehicle, please contact an authorized dealer or visit our online store at [www.Accessories.Ford.com](http://www.Accessories.Ford.com) (United States only).

Ford Motor Company will repair or replace any properly authorized dealer-installed Ford Genuine Accessory found to be defective in factory-supplied materials or workmanship during the warranty period, as well as any component damaged by the defective accessories.

Ford Motor Company will warrant your accessory through the warranty that provides the greatest benefit:

- 24 months, unlimited mileage.
- The remainder of your new vehicle limited warranty.

Contact an authorized dealer for details and a copy of the warranty.

**Interior style**

- Carpeted floor mats
- Interior mirrors with electrochromic compass and temperature
- All-weather floor mats
- Seat covers\*

**Lifestyle****Peace of mind**

- Keyless entry keypad
- Remote start
- Vehicle security systems
- Back up alarm\*
- Bumper mounted parking sensors\*

\*The accessory manufacturer designs, develops and therefore warrants Ford Licensed Accessories, and does not design or test these accessories to Ford Motor Company engineering requirements. Contact an authorized Ford dealer for the manufacturer's limited warranty details, and request a copy of the Ford Licensed Accessories product limited warranty from the accessory manufacturer.

For maximum vehicle performance, keep the following information in mind when adding accessories or equipment to your vehicle:

- When adding accessories, equipment, passengers and luggage to your vehicle, do not exceed the total weight capacity of the vehicle or of the front or rear axle (GVWR or GAWR as indicated on the Safety Compliance Certification label). Ask an authorized dealer for specific weight information.
- The Federal Communications Commission (FCC) and Canadian Radio Telecommunications Commission (CRTC) regulate the use of mobile communications systems that are equipped with radio transmitters, for example, two-way radios, telephones and theft alarms. Any such equipment installed in your vehicle should comply with Federal Communications Commission (FCC) and Canadian Radio Telecommunications Commission (CRTC) regulations and should be installed only by an authorized dealer.
- An authorized dealer needs to install mobile communications systems. Improper installation may harm the operation of your vehicle, particularly if the manufacturer did not design the mobile communication system specifically for automotive use.
- If you or an authorized Ford dealer add any non-Ford electrical or electronic accessories or components to your vehicle, you may adversely affect battery performance and durability. In addition, you may also adversely affect the performance of other electrical systems in the vehicle.

### AUXILIARY SWITCHES (IF EQUIPPED)



The upfitter option package provides four switches, mounted in the center of the instrument panel. These switches will operate only while the ignition is in the on position, whether the engine is running or not. Ford recommends that the engine remain running in

order to maintain battery charge when using the upfitter switches for extended duration or higher current draws.

When switched on, the upfitter switches provide 10 amps, 15 amps or 30 amps of electrical battery power for a variety of personal or commercial uses.

This option also includes a fuse and relay kit. This kit contains the required fuses and relays that need to be installed into the power distribution box located under the hood. Refer to the instruction sketch included in the kit. See an authorized dealer for service.

There will also be one power lead for each switch found as a blunt-cut and sealed wire located in the underhood cowl shield above the engine block powertrain control module.

They are coded as follows:

<b>Switch</b>	<b>Circuit Number</b>	<b>Wire Color</b>	<b>Fuse Amp Rating</b>
AUX 1	CAC05	Yellow	30A
AUX 2	CAC06	Green with Brown Trace	30A
AUX 3	CAC07	Violet with Green Trace	10A
AUX 4	CAC08	Brown	15A

Visit [www.fleet.ford.com/truckbbas](http://www.fleet.ford.com/truckbbas) for more detailed information about upfitter switches.

## Extended Service Plan

PROTECT YOURSELF FROM THE RISING COST OF VEHICLE REPAIRS WITH A FORD EXTENDED SERVICE PLAN.

### SERVICE PLANS (U.S. Only)

More than 32 million Ford owners have discovered the powerful protection of Ford Extended Service Plan. 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.

### Ford ESP Can Quickly Pay for Itself

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

### Up to 1,000+ Covered Vehicle Components

There are four Extended Service Plans with different levels of coverage. Ask your authorized dealer for details.

1. PremiumCARE - Our most comprehensive coverage. With over 1,000 covered components, this plan is so complete that we generally only discuss what's not covered.
2. ExtraCARE - Covers 113 components, and includes many high-tech items.
3. BaseCARE - Covers 84 components.
4. PowertrainCARE - Covers 29 critical components.

Ford Extended Service Plan is honored by all authorized Ford dealers in the U.S. and Canada. It is the only extended service plan authorized and backed by Ford Motor Company.

That means you get:

- Reliable, quality service at any Ford or Lincoln dealership
- Repairs performed by factory trained technicians, using genuine parts

### Rental Car Reimbursement

#### *1st day Rental Benefit*

You take advantage of replacement transportation if your vehicle is at your authorized dealer for same day covered repairs.

#### *Extended Rental Benefits*

If your vehicle is kept overnight for covered repairs, you are eligible for rental car coverage, including bumper to bumper warranty repairs, and Field Service Actions.

**Roadside Assistance**

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

**Transferable Coverage**

If you sell your vehicle before your Ford Extended Service Plan coverage expires, you can transfer any remaining coverage to the new owner. Whenever you sell your vehicle, prospective buyers may have a higher degree of confidence that vehicle was properly maintained with Ford ESP, thereby improving resale value.

**Avoid the Rising Cost of Properly Maintaining Your Vehicle!**

Ford Extended Service Plan also offers a Premium Maintenance Plan that covers all scheduled maintenance, and selected wear items. The coverage is prepaid, so you never have to worry about affording your vehicle's maintenance. It covers regular checkups, routine inspections, preventive care and replacement of select items that require periodic attention for normal wear:

- Windshield wiper blades
- Spark plugs (except in California)
- The clutch disc
- Brake pads and linings
- Shock absorbers
- Belts and hoses
- Diesel exhaust fluid replenishment

Contact your selling authorized 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 interest free installment payment plan. Just a 10% down payment will provide you with an affordable, no interest, no fee payment program allowing you all the security and benefits Ford ESP has to offer while paying over time. You are pre-approved with no credit checks, no hassles! To learn more, call our Ford ESP specialists at 800-367-3377.

Ford ESP  
P.O. Box 8072  
Royal Oak, MI 48068-0039

### SERVICE PLANS (CANADA ONLY)

You can get more protection for your vehicle by purchasing a Ford Extended Service Plan. Ford Extended Service Plan is the only service contract backed by Ford Motor Company of Canada, Limited. Depending on the plan you purchase, Ford Extended Service Plan 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 Extended Service 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 Extended Service Plan, you receive added peace-of-mind protection throughout Canada and the United States, provided by a network of participating authorized Ford Motor Company dealers.

**Note:** Repairs performed outside of Canada and the United States are not eligible for Ford Extended Service Plan coverage.

This information is subject to change. For more information, visit your local Ford of Canada dealer or [www.ford.ca](http://www.ford.ca) to find the Ford Extended Service Plan that is right for you.

## GENERAL INFORMATION

### Radio Frequencies and Reception Factors

AM and FM frequencies are established by the Federal Communications Commission (FCC) and the Canadian Radio and Telecommunications Commission (CRTC). Those frequencies are:

AM: 530, 540–1700, 1710 kHz

FM: 87.9–107.7, 107.9 MHz

Radio reception factors	
<b>Distance and strength</b>	The further you travel from an FM station, the weaker the signal and the weaker the reception.
<b>Terrain</b>	Hills, mountains, tall buildings, bridges, tunnels, freeway overpasses, parking garages, dense tree foliage and thunderstorms can interfere with the reception.
<b>Station overload</b>	When you pass a ground-based broadcast repeating tower, a stronger signal may overtake a weaker one and result in the audio system muting.

### CD and CD Player Information

**Note:** CD units play commercially pressed 4.75-inch (12 centimeter) audio compact discs only. Due to technical incompatibility, certain recordable and re-recordable compact discs may not function correctly when used in Ford CD players.

**Note:** Do not insert CDs with homemade paper (adhesive) labels into the CD player as the label may peel and cause the CD to become jammed. You should use a permanent felt tip marker rather than adhesive labels on your homemade CDs. Ballpoint pens may damage CDs. Please contact your authorized dealer for further information.

**Note:** Do not use any irregularly shaped discs or discs with a scratch protection film attached.

Always handle discs by their edges only. Clean the disc with an approved CD cleaner only. Wipe it from the center of the disc toward the edge. Do not clean in a circular motion.

Do not expose discs to direct sunlight or heat sources for extended periods.

## MP3 Track and Folder Structure

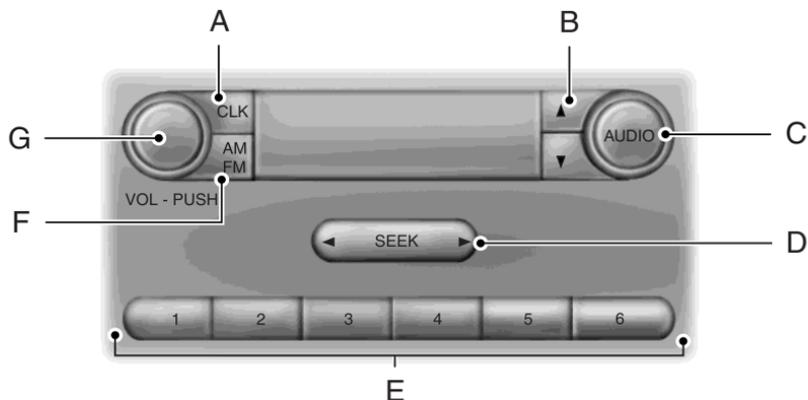
Audio systems capable of recognizing and playing MP3 individual tracks and folder structures work as follows:

- There are two different modes for MP3 disc playback: MP3 track mode (system default) and MP3 folder mode.
- MP3 track mode ignores any folder structure on the MP3 disc. The player numbers each MP3 track on the disc (noted by the .mp3 file extension) from T001 to a maximum of T255. **Note:** The maximum number of playable MP3 files may be less depending on the structure of the CD and exact model of radio present.
- MP3 folder mode represents a folder structure consisting of one level of folders. The CD player numbers all MP3 tracks on the disc (noted by the .mp3 file extension) and all folders containing MP3 files, from F001 (folder) T001 (track) to F253 T255.
- Creating discs with only one level of folders helps with navigation through the disc files.

If you are burning your own MP3 discs, it is important to understand how the system reads the structures you create. While various files may be present, (files with extensions other than mp3), only files with the .mp3 extension are played; other files are ignored by the system. This enables you to use the same MP3 disc for a variety of tasks on your work computer, home computer and your in-vehicle system.

In track mode, the system displays and plays the structure as if it were only one level deep (all .mp3 files play, regardless of being in a specific folder). In folder mode, the system only plays the .mp3 files in the current folder.

## AM/FM



**WARNING:** Driving while distracted can result in loss of vehicle control, crash and injury. We strongly recommend that you use extreme caution when using any device 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 hand-held device while driving and encourage the use of voice-operated systems when possible. Make sure you are aware of all applicable local laws that may affect the use of electronic devices while driving.

**A. CLK:** Press this button to switch the display between the clock and radio frequency. To set the time:

1. Press and hold **CLK** until the hours start to flash.
2. Press the arrow buttons to adjust the hours. Repeat Steps 1 and 2 to set the minutes.
3. Press **CLK** again to exit clock mode.

**B. Tune:** Press these arrow buttons to manually search through the radio frequency band. Press and hold for a fast search. In **AUDIO** mode, press the buttons to adjust different sound settings.

**C. AUDIO:** Press this button to access settings for Treble, Middle, Bass, Fade and Balance.

D. **SEEK:** Press this button to go to the previous or next strong station on the frequency band.

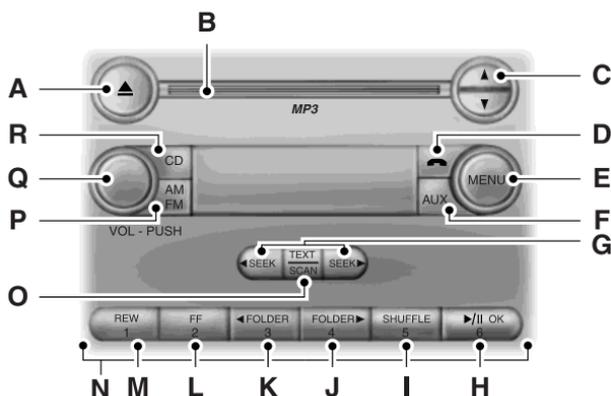
E. **Memory presets:** Store your favorite radio stations. To store a radio station, tune to the station, then press and hold a preset button until sound returns.

F. **AM/FM:** Press this button to select a frequency band and access media through the auxiliary input jack.

G. **VOL-PUSH:**

- Press this button to switch the system off and on.
- Turn the control to adjust the volume.

### AM/FM/CD WITH SYNC®



**WARNING:** Driving while distracted can result in loss of vehicle control, crash and injury. We strongly recommend that you use extreme caution when using any device 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 hand-held device while driving and encourage the use of voice-operated systems when possible. Make sure you are aware of all applicable local laws that may affect the use of electronic devices while driving.

A. **Eject:** Press this button to eject a CD.

B. **CD slot:** Insert a CD.

C. **Tune:** Press this button to manually search through the radio frequency band. Press and hold for a fast search.

D. **Phone:** Press this button to access the phone features of the SYNC® system. See the *SYNC®* chapter for more information.

E. **MENU:** Press this button to access different audio system features.

- If your vehicle is equipped with satellite radio, you can access different menus by pressing **OK**.
- Set the time by pressing **MENU** until **SET HOURS** or **SET MINUTES** appears and using the arrow buttons to adjust the time.
- Set the strongest stations on the radio frequency by pressing **MENU** until **AUTOSET** appears. **AUTOSET** does not override your original presets.
- **SPEEDVOL** (speed compensated volume) allows you to adjust radio volume to compensate for noise levels when vehicle speed increases.
- **Track/Folder** is only available on MP3 files when in CD mode. In track mode, pressing the **SEEK** arrows allows you to scroll through all the tracks on the disc. In folder mode, pressing the **SEEK** arrows allows you to scroll through all the tracks within the selected folder. Press the **FOLDER** buttons to access other folders.
- **COMPRESS** (Compression) is only available in CD and MP3 modes. Switching compression on brings the soft and loud passages together for a more consistent listening level. Use the **SEEK** buttons and up and down arrow buttons to switch it on and off.

F. **AUX:** Press this button to access the media features of the SYNC® system. See the *SYNC®* chapter for more information.

G. **SEEK:**

- In radio mode, press and release these buttons to go to the next (or previous) preset radio station or disc track.
- In CD and MP3 modes, press these buttons to select the next (or previous) track, or press and hold to advance (or reverse) within the same track.

H. **Play, Pause and OK:**

- Play and Pause allow you to play or pause a track when listening to a CD.
- **OK** allows you to confirm commands with phone and media features of the SYNC system. See the *SYNC®* chapter for more information.

I. **SHUFFLE:** Play music on the selected CD or MP3 folder in random order.

J. **Folder:** Press this button to access the next folder on an MP3 disc.

K. **Folder:** Press this button to access the previous folder on an MP3 disc.

L. **FF:** Press this button to manually fast forward in a CD track or MP3 file.

M. **REW:** Press this button to manually rewind in a CD track or MP3 file.

N. **Memory presets:** Store your favorite radio stations. To store a radio station, tune to the station, then press and hold a preset button until sound returns.

O. **TEXT/SCAN:**

- In radio, CD and MP3 modes, press and hold to hear a brief sampling of radio stations, CD tracks or MP3 files.
- In CD and MP3 modes, press and release to display track title, artist name and disc title.

**Note:** In text mode, sometimes the display requires additional text to show. When the < / > indicator is on, press TEXT and then use the SEEK buttons to view the additional display text.

P. **AM/FM:** Press this button to select a frequency band.

Q. **VOL-PUSH:**

- Press this button to switch the system off and on.
- Turn it to adjust the volume.

R. **CD:** Press this button to enter CD or MP3 mode.

## SATELLITE RADIO INFORMATION (IF EQUIPPED)

### Satellite Radio Channels

Sirius broadcasts a variety of music, news, sports, weather, traffic and entertainment satellite radio channels. For more information and a complete list of Sirius satellite radio channels, visit [www.siriusxm.com](http://www.siriusxm.com) in the United States, [www.sirius.ca](http://www.sirius.ca) in Canada, or call Sirius at 1-888-539-7474.

**Note:** This receiver includes the eCos real-time operating system. eCos is published under the eCos License.

### Satellite Radio Reception Factors

Potential satellite radio reception issues	
<b>Antenna obstructions</b>	For optimal reception performance, keep the antenna clear of snow and ice build-up and keep luggage and other material as far away from the antenna as possible.
<b>Terrain</b>	Hills, mountains, tall buildings, bridges, tunnels, freeway overpasses, parking garages, dense tree foliage and thunderstorms can interfere with your reception.
<b>Station overload</b>	When you pass a ground-based broadcast-repeating tower, a stronger signal may overtake a weaker one and the audio system may mute.
<b>Satellite radio signal interference</b>	Your display may show ACQUIRING . . . to indicate the interference and the audio system may mute.

### Sirius Satellite Radio Service

**Note:** Sirius reserves the unrestricted right to change, rearrange, add or delete programming including canceling, moving or adding particular channels, and its prices, at any time, with or without notice to you. Ford Motor Company shall not be responsible for any such programming changes.



Sirius satellite radio is a subscription-based satellite radio service that broadcasts a variety of music, sports, news, weather, traffic and entertainment programming. Your factory-installed Sirius satellite radio system includes hardware and

a limited subscription term which begins on the date of sale or lease of your vehicle. See an authorized dealer for availability.

For more information on extended subscription terms (a service fee is required), the online media player and a complete list of Sirius satellite radio channels, and other features, please visit [www.siriusxm.com](http://www.siriusxm.com) in the United States, [www.sirius.ca](http://www.sirius.ca) in Canada, or call Sirius at 1-888-539-7474.

## Satellite Radio Electronic Serial Number (ESN)

You need your ESN to activate, modify or track your satellite radio account. When in satellite radio mode, you can view this number by pressing **SIRIUS** and memory preset 1 at the same time. To access your ESN, press the bottom left corner of the touchscreen, then **SIRIUS > Options**.

## Troubleshooting

Radio display	Condition	Possible action
Acquiring	Radio requires more than two seconds to produce audio for the selected channel.	No action required. This message should disappear shortly.
Sat Fault/SIRIUS system failure	There is an internal module or system failure present.	If this message does not clear shortly, or with an ignition key cycle, your receiver may have a fault. See an authorized dealer for service.
Invalid Channel	The channel is no longer available.	Tune to another channel or choose another preset.
Unsubscribed Channel	Your subscription does not include this channel.	Contact Sirius at 1-888-539-7474 to subscribe to the channel, or tune to another channel.
No Signal	The signal is lost from the Sirius satellite or Sirius tower to your vehicle antenna.	The signal is blocked. When you move into an open area, the signal should return.
Updating	Update of channel programming in progress.	No action required. The process may take up to three minutes.

Radio display	Condition	Possible action
Call SIRIUS 1-888-539-7474	Your satellite service is no longer available.	Call Sirius at 1-888-539-7474 to resolve subscription issues.
None Found. Check Channel Guide.	All the channels in the selected category are either skipped or locked.	Use the channel guide to turn off the Lock or Skip function on that station.
Subscription Updated	Sirius has updated the channels available for your vehicle.	No action required.

### AUXILIARY INPUT JACK



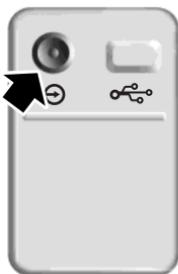
**WARNING:** Driving while distracted can result in loss of vehicle control, crash and injury. We strongly recommend that you use extreme caution when using any device that may take your focus off the road. Your primary responsibility is the safe operation of your vehicle. We recommend against the use of any hand-held device while driving and encourage the use of voice-operated systems when possible. Make sure you are aware of all applicable local laws that may affect the use of electronic devices while driving.



**WARNING:** For safety reasons, do not connect or adjust the settings on your portable music player while your vehicle is moving.



**WARNING:** Store the portable music player in a secure location, such as the center console or the glove box, when your vehicle is moving. Hard objects may become projectiles in a crash or sudden stop, which may increase the risk of serious injury. The audio extension cable must be long enough to allow the portable music player to be safely stored while your vehicle is moving.



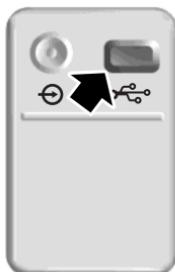
The auxiliary input jack allows you to connect and play music from your portable music player through your vehicle speakers. You can use any portable music player designed for use with headphones. Your audio extension cable must have male 1/8-inch (3.5 millimeter) connectors at each end.

1. Switch off the engine, radio and portable music player. Set the parking brake and put the transmission in position **P**.
2. Plug the extension cable from the portable music player into the auxiliary input jack.
3. Switch the radio on. Select either a tuned FM station or a CD.
4. Adjust the volume as desired.
5. Switch your portable music player on and adjust its volume to half its maximum level.
6. Press **AUX** until **LINE** or **LINE IN** appears in the display. You should hear music from your device even if it is low.
7. Adjust the volume on your portable music player until it reaches the volume level of the FM station or CD. Do this by switching back and forth between the AUX and FM or CD controls.

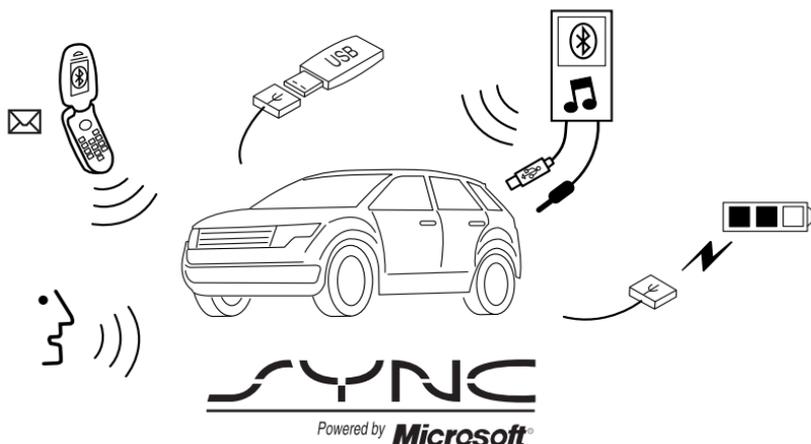
### USB PORT (IF EQUIPPED)



**WARNING:** Driving while distracted can result in loss of vehicle control, crash and injury. We strongly recommend that you use extreme caution when using any device 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 hand-held device while driving and encourage the use of voice-operated systems when possible. Make sure you are aware of all applicable local laws that may affect the use of electronic devices while driving.



The USB port allows you to plug in media playing devices, memory sticks and charge devices (if supported). See the *SYNC* chapter for more information.



SYNC is an in-vehicle communications system that works with your Bluetooth-enabled cellular phone and portable media player. This allows you to:

- Make and receive calls.
- Access and play music from your portable music player.
- Use 911 Assist, Vehicle Health Report and SYNC Services (Traffic, Directions & Information) (if equipped).
- Use applications, such as Pandora and Stitcher, via SYNC AppLink™ (if applicable).
- Access phonebook contacts and music via voice commands.
- Stream music from your connected phone.
- Text message.
- Use the advanced voice recognition system.
- USB device charging (if your device supports this).

## GENERAL INFORMATION

Make sure you review your device's manual before using it with SYNC.

### Support

The SYNC support team is available to help you with any questions you cannot answer on your own.

Monday-Saturday, 8:30am-9:00pm EST.

Sunday, 10:30am-7:30pm EST.

In the United States, call: 1-800-392-3673.

In Canada, call: 1-800-565-3673.

Times are subject to change due to holidays.

### SYNC Owner Account

Why do I need a SYNC owner account?

- Required to activate Vehicle Health Report and to view the reports online.
- Required to activate the subscription-based SYNC Services and to personalize your Saved Points and Favorites.
- Essential for keeping up with the latest software downloads available for SYNC.
- Access to customer support for any questions you may have.

### Driving Restrictions

For your safety, certain features are speed-dependent and restricted when your vehicle is traveling over 3 mph (5 km/h).

### Safety Information



**WARNING:** Driving while distracted can result in loss of vehicle control, crash and injury. We strongly recommend that you use extreme caution when using any device 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 and encourage the use of voice-operated systems when possible. Make sure you are aware of all applicable local laws that may affect the use of electronic devices while driving.

When using SYNC:

- Do not operate playing devices if the power cords or cables are broken, split or damaged. Place cords and cables out of the way, so they do not interfere with the operation of pedals, seats, compartments or safe driving abilities.
- Do not leave playing devices in your vehicle during extreme conditions as it could cause them damage. See your device's manual for further information.
- Do not attempt to service or repair the system. See your authorized dealer.

For your safety, some SYNC functions are speed-dependent. Their use is limited to when your vehicle is traveling at speeds under 3 mph (5 km/h).

Make sure that you review your device's manual before using it with SYNC.

### **Privacy Information**

When a cellular phone is connected to SYNC, the system creates a profile within your vehicle that is linked to that cellular phone. This profile is created in order to offer you more cellular features and to operate more efficiently. Among other things, this profile may contain data about your cellular phone book, text messages (read and unread), and call history, including history of calls when your cell phone was not connected to the system. In addition, if you connect a media device, the system creates and retains an index of supported media content. The system also records a short development log of approximately 10 minutes of all recent system activity. The log profile and other system data may be used to improve the system and help diagnose any problems that may occur.

The cellular profile, media device index, and development log remain in the vehicle unless you delete them and are generally accessible only in the vehicle when the cellular phone or media player is connected. If you no longer plan to use the system or the vehicle, we recommend you perform a Master Reset to erase all stored information.

System data cannot be accessed without special equipment and access to the vehicle's SYNC module. Ford Motor Company and Ford of Canada do not access the system data for any purpose other than as described absent consent, a 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. For further privacy information, see the sections on 911 Assist, Vehicle Health Report, and Traffic, Directions and Information.

## USING VOICE RECOGNITION

This system helps you control many features using voice commands. This allows you to keep your hands on the wheel and focus on what is in front of you.

### Initiating a Voice Session



Push the voice icon; a tone sounds and Listening appears in the display. Say any of the following:

Say:	If you want to:
“Phone”	Make calls.
“USB”	Access the device connected to your USB port.
“Bluetooth Audio”	Stream audio from your phone.
“Line in”	Access the device connected to the auxiliary input jack.
“Cancel”	Cancel the requested action.
“SYNC”	Return to the main menu.
“Voice settings”	Adjust the level of voice interaction and feedback.
“Vehicle Health Report”	Run a vehicle health report.*
“Services”	Access the SYNC Services portal.*
“Mobile apps”	Access mobile applications.*
“Help”	Hear a list of voice commands available in the current mode.

\*If equipped, U.S. only.

**System Interaction and Feedback**

The system provides feedback through audible tones, prompts, questions and spoken confirmations depending on the situation and the chosen level of interaction (voice settings). You can customize the voice recognition system to provide more or less instruction and feedback.

The default setting is to a higher level of interaction in order to help you learn to use the system. You can change these settings at any time.

**Adjusting the Interaction Level**



Push the voice icon; when prompted, say “Voice settings”, then any of the following:

When you say:	The system:
“Interaction mode standard”	Provides more detailed interaction and guidance.
“Interaction mode advanced”	Provides less audible interaction and more tone prompts.

The system defaults to the standard interaction mode.

Confirmation prompts are short questions the system asks when it is not sure of your request or when there are multiple possible responses to your request. (For example, the system may ask “Phone, is that correct?”) If turned off, the system simply makes a best guess as to what you requested and you may still occasionally be asked to confirm settings.

“Confirmation prompts on”
“Confirmation prompts off”

The system creates candidate lists when it has the same confidence level of several options based on your voice command. When turned on, you may be prompted with as many as four possibilities for clarification.

For example, “Say 1 after the tone to call John Doe at home. Say 2 after the tone to call Johnny Doe on mobile. Say 3 after the tone to call Jane Doe at home.” Or, “Say 1 after the tone to play John Doe, Say 2 after the tone to play Johnny Doe.”

“Phone candidate lists on”
“Phone candidate lists off”
“Media candidate lists on”
“Media candidate lists off”

### **Helpful Hints**

- Make sure the interior of the vehicle is as quiet as possible. Wind noise from open windows and road vibrations may prevent the system from correctly recognizing spoken commands.
- After pressing the voice icon, wait until after the tone sounds and Listening appears before saying a command. Any command spoken prior to this does not register with the system.
- Speak naturally, without long pauses between words.
- At any time you can interrupt the system while it is speaking by pressing the voice icon.

### **USING SYNC WITH YOUR PHONE**

Hands-free calling is one of the main features of SYNC. While the system supports a variety of features, many are dependent on your cellular phone's functionality. At a minimum, most cellular phones with Bluetooth wireless technology support the following functions:

- Answering an incoming call
- Ending a call
- Using privacy mode
- Dialing a number
- Redialing
- Call waiting notification
- Caller ID.

Other features, such as text messaging using Bluetooth and automatic phonebook download, are phone-dependent features. To check your phone's compatibility, see your phone's user manual and visit [www.SYNCMYRide.com](http://www.SYNCMYRide.com), [www.SYNCMYRide.ca](http://www.SYNCMYRide.ca) or [www.syncmaroute.ca](http://www.syncmaroute.ca).

### **Pairing a Phone for the First Time**

**Note:** SYNC can support downloading up to approximately 1000 entries per Bluetooth-enabled cellular phone.

**Note:** Make sure the vehicle ignition and radio are turned on and the transmission is in position **P**.

**Note:** To scroll through the menus, press the up and down arrows on your audio system.

Wirelessly pairing your phone with SYNC allows you to make and receive hands-free calls.

1. Press the phone button; when the display indicates no phone is paired, press **OK**.
2. When **Find SYNC** appears in the display, press **OK**.
3. Put your phone into Bluetooth discovery mode. See your phone's user guide if necessary.
4. When prompted on your phone's display, enter the six-digit PIN provided by SYNC in the radio display.
5. The display indicates when the pairing is successful.

Depending on your phone's capability and your market, the system may prompt you with questions such as setting the current phone as the primary phone (the phone SYNC automatically tries to connect with first upon vehicle start-up), downloading your phone book, etc.

### Pairing Subsequent Phones

**Note:** To scroll through the menus, press the up and down arrows on your audio system.

**Note:** Make sure the vehicle ignition and radio are turned on and that the transmission is in position **P**.

1. Press the phone button and scroll until System Settings is selected.
2. Press OK and scroll until Bluetooth Devices is selected and press OK.
3. Scroll until Add Bluetooth Device is selected and press OK.
4. When Find SYNC appears in the display, press OK.
5. Put your phone into Bluetooth discovery mode. See your phone's user guide if necessary.
6. When prompted on your phone's display, enter the six-digit PIN provided by SYNC in the radio display. The display indicates when the pairing is successful.
7. The system then prompts with questions such as if you would like to set the current phone as the primary phone (the phone SYNC automatically tries to connect with first upon vehicle start-up), download your phone book, etc.

## Phone Voice Commands



Press the voice icon and say “Phone”. Say any of the following:

<b>“PHONE”</b>
“Call <name>” <sup>1,2</sup>
“Call <name> on mobile OR cell” <sup>1,2</sup>
“Call <name> on other” <sup>1,2</sup>
“Phone book <name> at home” <sup>2</sup>
“Phone book <name> on mobile OR cell” <sup>2</sup>
“Call history outgoing” <sup>2</sup>
“Phone book <name> on Other” <sup>2</sup>
“Call history missed” <sup>2</sup>
“Menu” <sup>2,3</sup>
“Join”
“Call <name> at home” <sup>1,2</sup>
“Call <name> at work” OR “Call <name> in office” <sup>1,2</sup>
“Dial” <sup>1,4</sup>
“Phone book <name>” <sup>2</sup>
“Phone book <name> at work” OR “Phone book <name> at office” <sup>2</sup>
“Call history incoming” <sup>2</sup>
“Connections” <sup>2</sup>
“Go to privacy”
“Hold”

<sup>1</sup>These commands do not require you to say “Phone” first.

<sup>2</sup>These commands are not available until phone information is completely downloaded using Bluetooth.

<sup>3</sup>See “MENU” table below.

<sup>4</sup>See “DIAL” table below.

<b>“MENU”</b>
“(Phone) connections” <sup>*</sup>
“(Phone) settings (message) notification off” <sup>*</sup>
“(Phone) settings (message) notification on” <sup>*</sup>
“(Phone) settings (set) phone ringer” <sup>*</sup>

“MENU”
“(Phone) settings (set) ringer 1”*
“(Phone) settings (set) ringer 2”*
“(Phone) settings (set) ringer 3”*
“(Phone) settings (set) ringer off”*
“Battery”
“Phone name”
“Signal”
“Text message inbox”

\*Words in ( ) are optional and do not have to be spoken for the system to understand the command.

**Phone book commands:** When you ask SYNC® to access a phone book name, number, etc., the requested information appears in the display to view. Press the phone button and say “Call” to call the contact.

“DIAL”
“411” (four-one-one), “911” (nine-one-one)
“700 (seven hundred)” (seven hundred)
“800 (eight hundred)” (eight hundred)
“900 (nine hundred)” (nine hundred)
“#” (pound)
“<number> 0-9”
“Asterisk” (*)
“Clear” (deletes all entered digits)
“Delete” (deletes one digit)
“Plus”
“Star”

**Note:** To exit dial mode, press and hold the phone button or press MENU to go to the PHONE menu.

## Making Calls

Press the voice icon and when prompted say:

1. Say “Call <name>” or “Dial”, then the desired number.
2. When the system confirms the number, say “Dial” again to initiate the call.

To erase the last spoken digit, say “Delete” or press the left arrow button. To erase all spoken digits, say “Clear” or press and hold the left arrow button.

To end the call, press and hold the phone button.

## Receiving Calls

When receiving a call, you can:

- Answer the call by pressing the phone button.
- Reject the call by pressing and holding the phone button.
- Ignore the call by doing nothing.

## Phone Options during an Active Call

During an active call, you have additional menu features which become available such as putting a call on hold, joining calls, etc. Use the arrow buttons to scroll through the menu options.

To access:

1. Press MENU during an active call.
2. When Active Call Menu is selected, press OK.
3. Scroll to cycle through the following options:

When you select:	You can:
<b>Mute Call?</b>	Mute the call.
<b>Privacy</b>	Switch a call from an active hands-free environment to your cellular phone for a more private conversation. Press OK when Privacy on/off appears. (The display indicates In Privacy and the system transfers your call.)
<b>Call Hold</b>	Put an active call on hold. Press OK when Place Call on Hold? appears. To answer another call at this time, press the phone button.

When you select:	You can:
<b>Join Calls</b>	Join two separate calls. 1. Press the phone button. 2. Access the desired contact through SYNC or use voice commands to place the second call. Once actively in the second call, press MENU. 3. Scroll until Join Calls appears and press OK. Press OK again when Join Calls? appears. <b>Note:</b> SYNC supports a maximum of three callers on a multiparty/conference call.
<b>Enter Tones</b>	Enter “tones” such as numbers for passwords. Scroll until the desired number appears in the display, then press OK; a tone sounds as confirmation. Repeat as necessary.
<b>Phonebook</b>	Access your phonebook contacts. 1. Press OK to select, then scroll through your phonebook contacts. 2. Press OK again when the desired selection appears in the display. 3. Press the phone button.
<b>Call History</b>	Access your call history log. 1. Press OK to select, then scroll through your call history options (incoming, outgoing or missed). 2. Press OK when the desired selection appears in the display. 3. Press the phone button to call the selection.
<b>Return</b>	Exit the current menu.

## Accessing Features through the Phone Menu

The SYNC phone menu allows you to redial a number, access your call history and phone book and send text messages as well as access phone and system settings. You can also access advanced features, such as 911 Assist, Vehicle Health Report and SYNC Services.

1. Press the phone button to enter the Phone Menu.
2. Scroll to cycle through:

When you select:	You can:
<b>Phone Redial</b>	Redial the last number called (if available). Press OK to select, then press OK again to confirm.
<b>Call History</b> <sup>1</sup>	<p>Allows you to access any previously dialed, received or missed calls while your phone has been connected to the system.</p> <ol style="list-style-type: none"> <li>1. Press OK to select.</li> <li>2. Scroll to select from Call History Incoming, Call History Outgoing or Call History Missed. Press OK make your selection.</li> <li>3. Press OK or the phone button to call the desired selection.</li> </ol> <p><b>Note:</b> The system attempts to automatically re-download your phone book and call history each time your phone connects to SYNC (if the auto download feature is on and your Bluetooth-enabled cellular phone supports this feature).</p>
<b>Phonebook</b> <sup>1,2</sup>	<p>Allows you to access your downloaded phonebook.</p> <ol style="list-style-type: none"> <li>1. Press OK to confirm and enter. If your phonebook has fewer than 255 listings, they appear alphabetically in flat file mode. If there are more, they are organized into alphabetical categories.</li> <li>2. Scroll until the desired contact appears, then press OK.</li> <li>3. Press OK or the phone button.</li> </ol>

When you select:	You can:
<b>Text Message</b> <sup>1</sup>	Enables you to send, download and delete text messages.
<b>Phone Settings</b> <sup>1</sup>	Allows you to view your phone's status, set ring tones, select your message notification, change phone book entries and automatically download your cellular phone among other features.
<b>SYNC Services</b> <sup>3</sup>	Access the SYNC services portal where you can request various types of information, traffic reports and directions.
<b>911 Assist</b> <sup>4</sup>	Place an emergency call to a 911 operator for you after an accident (if the feature is used properly).
<b>Vehicle Health Report</b> <sup>3</sup>	Create and receive a diagnostic report card on your vehicle.
<b>Mobile Apps</b> <sup>3</sup>	Interact with SYNC-capable mobile applications on your smartphone.
<b>System Settings</b>	Access Bluetooth Devices menu listings (add, connect, set as primary, on/off, delete) as well as Advanced menu listings (prompts, languages, defaults, master reset, install application and system information).
<b>Exit Phone Menu</b>	Exit the phone menu by pressing OK.

<sup>1</sup>This is a phone-dependent feature.

<sup>2</sup>This is a phone-dependent and speed-dependent feature.

<sup>3</sup>If equipped, United States only.

<sup>4</sup>If equipped, United States and Canada only.

### Text Messaging

**Note:** This is a phone-dependent feature.

SYNC allows you to receive, send, download and delete text messages. The system can also read incoming text messages to you so that you do not have to take your eyes off the road.

### ***Receiving a Text Message***

**Note:** This is a phone-dependent feature. Your phone must support downloading text messages using Bluetooth to receive incoming text messages.

**Note:** Forwarding a text message is a speed-dependent feature and can only be done when the vehicle is traveling at 3 mph (5 km/h) or less.

**Note:** Only one recipient is allowed per text message.

When a new message arrives, an audible tone sounds and the display indicates you have a new message. You have these options:

1. Press the voice button, wait for the prompt and say “Read Message” to have SYNC read the message to you.
2. Press OK to receive and open the text message or do nothing and the message goes into your text message inbox. Press OK again and SYNC reads your message aloud as you are not able to view the message. You can then also choose whether you’d like to reply or forward the message.
3. Press OK and scroll to choose between:
  - Reply to Text Message: Press OK to access and then scroll through the list of pre-defined messages to send.
  - Forward Text Message: Press OK to forward the message to anyone in your Phonebook or Call History. You can also choose Enter Number.

### ***Sending, Downloading and Deleting Your Text Messages***

Text messaging is a phone-dependent feature. If your phone is compatible, SYNC allows you to receive, send, download and delete text messages.

1. Press the phone button.
2. Scroll until Text Message appears and press OK.
3. Scroll to select from the following options:

**Send Text Message?** enables you to send a new text message based on a pre-defined set of 15 messages.

**Download Unread Msgs** allows you to download your unread messages (only) to SYNC. To download the messages, press OK to select. The display indicates your messages are being downloaded. When complete, SYNC takes you to your inbox.

**Delete All Messages?** allows you to delete current text messages from SYNC (not your phone). To delete the messages, press OK to select. The display indicates when all your text messages have been deleted and SYNC returns you to the text message menu.

**Note:** SYNC does not automatically download all of your unread text messages at every ignition cycle (as it does with call history and phonebook if automatic download is set to on).

**Return** exits the current menu when you press OK.

If you select **Send Text Message?**:

1. Press OK to select. If the system detects your phone does not support this feature, Unsupported appears in the display and SYNC returns to the main menu.
2. Scroll to cycle through the message options in the following chart.
3. Press OK when the desired selection is in the display. The system now needs to know who to send the message to.
4. Scroll to cycle through Phonebook or Call History entries. You can also select Enter Number to audibly enter a desired number.
5. Press OK to enter the desired menu and scroll to select the specific contact.
6. Press OK when the contact appears and press OK again to confirm when the system asks if you would like to send the message. Each text message is sent with the following signature: "This message was sent from my <Ford or Lincoln>".

Pre-defined text message options
Can't talk right now
Call me
Call you later
Be there in 10 minutes
Be there in 20 minutes
Yes
No
Why?
Thanks
Where R you?
I need more directions
I love you
Too funny
Can't wait to see you
I'm stuck in traffic

## Accessing Your Phone Settings

These are phone-dependent features. Your phone settings allow you to access and adjust features such as your ring tone, text message notification, modify your phone book and also set up automatic download.

1. Press the phone button.
2. Scroll until Phone Settings appears, then press OK.
3. Scroll to select from the following options:

When you select:	You can:
<b>Phone Status</b>	See the provider, name, signal power, battery power and roaming status of your connected phone. Press OK to select and scroll to view the information. When done, press OK again to return to the phone status menu.
<b>Set Ringer</b>	Select which ring tone sounds during an incoming call (one of the system's or your phone's). 1. Press OK to select and scroll to hear Ringer 1, Ringer 2, Ringer 3 and Phone Ringer. 2. Press OK to select. <b>Note:</b> If your phone supports in-band ringing, your phone's ringer sounds when Phone Ringer is chosen.
<b>Message Notification</b>	Have the option of hearing an audible tone to notify you when a text message arrives. 1. Press OK to select and scroll between Message Notification On or Message Notification Off. 2. Press OK to select.

When you select:	You can:
<p><b>Modify Phonebook</b></p>	<p>Modify the contents of your phone book (such as add, delete, download). Press OK to select and scroll between:</p>
	<p>Add Contacts: Press OK to add more contacts from your phone book. Push the desired contact(s) on your phone. See your phone's user guide on how to push contacts.</p>
	<p>Delete Phonebook: Press OK to delete the current phone book and call history. When Delete Phonebook appears, press OK to confirm. SYNC takes you back to the Phone Settings menu.</p>
	<p>Download Phonebook: Press OK to select and press OK again when Confirm Download? appears.</p>
<p><b>Auto Download</b></p>	<p>Automatically download your phone book each time your phone connects to SYNC. Press OK to select. When Auto Download On? appears, press OK to have your phonebook automatically downloaded each time.</p> <p>Select Off to NOT download your phonebook every time your phone connects to SYNC. Your phonebook, call history and text messages can only be accessed when your specific phone is connected to SYNC.</p> <p><b>Note:</b> Downloading times are phone- and quantity-dependent.</p> <p><b>Note:</b> When auto download is on, any changes, additions or deletions saved since your last download are deleted.</p>
<p><b>Return</b></p>	<p>Exit the current menu.</p>

## **System Settings**

System Settings provide access to your Bluetooth Devices and Advanced menu features. Use the arrow buttons to scroll through the menu options.

The Bluetooth Devices menu allows you to add, connect, delete and set a phone as primary as well as turn your Bluetooth feature on and off.

The Advanced menu allows you to access and set prompts, languages, defaults, perform a master reset, install an application and view system information.

### ***Bluetooth Devices Menu Options***

This menu allows you to add, connect, delete, set a phone as primary, and turn Bluetooth on or off.

1. Press the phone button to enter the Phone Menu.
2. Scroll until System Settings appears and press OK.
3. Scroll until Bluetooth Devices appears and select OK.

4. Scroll to select from the following options:

If you select:	You can:
<b>Add Bluetooth Device*</b>	See <i>Using SYNC with your phone</i> earlier in this chapter for pairing instructions.
<b>Connect Bluetooth Device</b>	Connect a previously paired Bluetooth-enabled phone. 1. Press OK to select and view a list of previously paired phones. 2. Scroll until the desired device is chosen, then press OK to connect the phone. <b>Note:</b> Only one device can be connected at a time. When another phone is connected, the previous one is disconnected.
<b>Set Primary Phone</b>	Set a previously paired phone as your primary phone. Press OK to select and scroll to select the desired phone. Press OK to confirm. <b>Note:</b> SYNC attempts to connect with the primary phone at every ignition cycle. When a phone is selected as primary, it appears first in the list and is marked with an asterisk (*).
<b>Set Bluetooth On/Off</b>	Turn the Bluetooth feature on and off. Press OK and scroll to toggle between On and Off. When the desired selection is chosen, press OK. <b>Note:</b> Turning Bluetooth off disconnects all Bluetooth devices and deactivates all Bluetooth features.
<b>Delete Device</b>	Delete a paired phone. Press OK and scroll to select the device. Press OK to confirm.
<b>Delete All Devices</b>	Delete all previously paired phones (and all information originally saved with those phones). Press OK to select.
<b>Return</b>	Exit the current menu.

\*This is a speed-dependent feature.

### **Advanced Menu Options**

This menu allows you to access settings such as prompts, languages, defaults, perform a master reset, install an application and view system information.

1. Press the phone button to enter the Phone Menu.
2. Scroll until System Settings appears and press OK.
3. Scroll until Advanced appears and select OK.
4. Scroll to select from the following options:

<b>If you select:</b>	<b>You can:</b>
<b>Prompts</b>	Get help from SYNC by using questions, helpful hints or asking you for a specific action. To turn these prompts on or off: <ol style="list-style-type: none"> <li>1. Press OK to select and scroll to select between on or off.</li> <li>2. Press OK when the desired selection appears in the display. SYNC takes you back to the Advanced menu.</li> </ol>
<b>Languages</b>	Choose between English, Espanol and Francais. Once selected, all of SYNC's radio displays and prompts are in the selected language. <ol style="list-style-type: none"> <li>1. Press OK to select and then scroll through the languages.</li> <li>2. Press OK when the desired selection appears in the display. If you change the language setting, the display indicates that the system is updating. When complete, SYNC takes you back to the Advanced menu.</li> </ol>
<b>Factory Defaults</b>	Return to the factory default settings. This selection does not erase your indexed information (phonebook, call history, text messages and paired devices). <ol style="list-style-type: none"> <li>1. Press OK to select and then press OK again when Restore Defaults? appears in the display.</li> <li>2. Press OK to confirm.</li> </ol>

If you select:	You can:
<b>Master Reset</b>	Completely erase all information stored on SYNC (phonebook, call history, text messages and paired devices) and return to the factory default settings. Press OK to select. The display indicates when complete and SYNC takes you back to the Advanced menu.
<b>Install Application</b>	Install applications you have downloaded. Press OK and scroll to select. Press OK to confirm.
<b>System Info</b>	Access the Auto Version number as well as the FPN number. Press OK to select.
<b>MAP Profile</b>	This is a Bluetooth component which can further help your phone with the exchange of text messages.
<b>Return</b>	Exit the current menu.

**SYNC APPLICATIONS AND SERVICES (IF EQUIPPED)**

**Note:** In order for the following features to work, your cellular phone must be compatible with SYNC. To check your phone’s compatibility, visit [www.SYNCMYride.com](http://www.SYNCMYride.com), [www.SYNCMYride.ca](http://www.SYNCMYride.ca) or [www.syncmaroute.ca](http://www.syncmaroute.ca).

- SYNC Services (if equipped, United States only): Provides access to traffic, directions and information such as travel, horoscopes, stock prices and more.
- 911 Assist: Can alert 911 in the event of an emergency.
- Vehicle Health Report (if equipped, United States only): Provides a diagnostic and maintenance report card of your vehicle.
- SYNC AppLink: Allows you to connect to and use certain applications such as Pandora and Stitcher (if your phone is compatible).

**911 Assist®**

**WARNING:** Unless the 911 Assist setting is set on prior to a crash, the system will not dial for help which could delay response time, potentially increasing the risk of serious injury or death after a crash.



**WARNING:** Do not wait for 911 Assist to make an emergency call if you can do it yourself. Dial emergency services immediately to avoid delayed response time which could increase the risk of serious injury or death after a crash. If you do not hear 911 Assist within five seconds of the crash, the system or phone may be damaged or non-functional.



**WARNING:** Always place your phone in a secure location in the vehicle so it does not become a projectile or get damaged in a crash. Failure to do so may cause serious injury to someone or damage the phone which could prevent 911 Assist from working properly.

**Note:** SYNC 911 Assist feature must be set on prior to the incident.

**Note:** Before setting this feature on, ensure that you read the 911 Assist privacy notice later in this section for important information.

**Note:** If 911 Assist is turned on or off by any user, that setting applies for all paired phones. If 911 Assist is turned off, a voice message plays and/or a display message/icon comes on when the vehicle is started after a previously paired phone connects.

**Note:** Every phone operates differently. While SYNC 911 Assist works with most cellular phones, some may have trouble using this feature.

If a crash deploys an airbag (excludes knee airbags and rear inflatable safety belts [if equipped]) or activates the fuel pump shut-off, your SYNC equipped vehicle may be able to contact emergency services by dialing 911 through a paired and connected Bluetooth-enabled phone. For more information about 911 Assist, visit [www.SYNCMYRide.com](http://www.SYNCMYRide.com), [www.SYNCMYRide.ca](http://www.SYNCMYRide.ca) or [www.syncmaroute.ca](http://www.syncmaroute.ca).

- For information on airbag deployment, see the *Supplementary Restraints System* chapter.
- For information on the fuel pump shut-off, see the *Roadside Emergencies* chapter.

### **Setting 911 Assist On**

Perform the following:

1. Press the phone button to enter the Phone Menu.
2. Scroll until 911 Assist is selected.
3. Press OK to confirm and enter the 911 Assist menu.
4. Scroll to select between On and Off selections.
5. Press OK when the desired option appears in the radio display. Set On or Set Off appears in the display as confirmation.

Off selections include: Off with reminder and Off without reminder. Off with reminder provides a display and voice reminder at phone connection at vehicle start. Off without reminder provides a display reminder only without a voice reminder at phone connection.

To make sure that 911 Assist works properly:

- SYNC must be powered and working properly at the time of the incident and throughout feature activation and use.
- SYNC 911 Assist feature must be set on prior to the incident.
- A Bluetooth-enabled and compatible phone has to be paired and connected to SYNC.
- A connected Bluetooth-enabled phone must have the ability to make and maintain an outgoing call at the time of the incident.
- A connected Bluetooth-enabled phone must have adequate network coverage, battery power and signal strength.
- The vehicle must have battery power and be located in the United States, Canada or in a territory in which 911 is the emergency number.

### **In the Event of a Crash**

Not all crashes deploy an airbag or activate the fuel pump shut-off (which would activate 911 Assist); however, if 911 Assist is triggered, SYNC tries to contact emergency services. If a connected phone is damaged or loses connection to SYNC, SYNC searches for, and tries to connect to, any available previously paired phone and tries to make the call to 911.

Before making the call:

- SYNC provides a short window of time (about 10 seconds) to cancel the call. Failure to cancel the call results in SYNC attempting to dial 911.
- SYNC says the following, or a similar message: “SYNC will attempt to call 911, to cancel the call, press Cancel on your screen or press and hold the phone button on your steering wheel.”

If the call is not cancelled and a successful call is made, a pre-recorded message is played for the 911 operator, then the occupant(s) in the vehicle is able to talk with the operator. Be prepared to provide your name, phone number and location immediately, because not all 911 systems are capable of receiving this information electronically.

### **911 Assist May Not Work If**

- Your cellular phone or 911 Assist hardware was damaged in a crash.
- The vehicle's battery or SYNC system has no power.
- The phone(s) paired and connected to the system was thrown from the vehicle.

### **911 Assist Privacy Notice**

Once 911 Assist is set on, it may disclose to emergency services that the vehicle has been in a crash involving the deployment of an airbag or activation of the fuel pump shut-off. Certain versions or updates to 911 Assist may also be capable of electronically or verbally disclosing to 911 operators the vehicle location, and/or other details about the vehicle or crash to assist 911 operators to provide the most appropriate emergency services. If you do not want to disclose this information, do not turn the feature on.

## **Vehicle Health Report**



**WARNING:** Always follow scheduled maintenance instructions, regularly inspect your vehicle, and seek repair for any damage or problem you suspect. Vehicle Health Report supplements, but cannot replace normal maintenance and vehicle inspection. Vehicle Health Report only monitors certain systems that are electronically monitored by the vehicle and will not monitor or report the status of any other system, (such as brake lining wear). Failure to perform scheduled maintenance and regularly inspect your vehicle may result in vehicle damage and serious injury.

**Note:** Your Vehicle Health Report feature requires activation prior to use. Visit [www.SYNCMYride.com](http://www.SYNCMYride.com) to register. There is no fee or subscription associated with Vehicle Health Report, but you must register to use this feature.

**Note:** This feature may not function properly if you have enabled caller ID blocking on your mobile phone. Before running a report, review the *Vehicle Health Report privacy notice*.

**Note:** In order to allow a break-in period for your vehicle, you may not be able to create a Vehicle Health Report until your vehicle odometer has reached 200 miles.

Register for Vehicle Health Report and set your report preferences at [www.SYNCMYride.com](http://www.SYNCMYride.com). After registering, you can request a Vehicle Health Report (inside your vehicle). Return to your account at [www.SYNCMYride.com](http://www.SYNCMYride.com) to view your report. You can also choose for SYNC to automatically remind you to run reports at specific mileage intervals. Cellular phone airtime usage may apply when reporting.

The system allows you to check your vehicle’s overall health in the form of a diagnostic report card. The vehicle health report contains valuable information such as:

- Vehicle Diagnostic Information
- Scheduled maintenance
- Open Recalls and Field Service Actions
- Unserviced items from vehicle inspections by your authorized dealer.

You can run a report (after the vehicle has been running a minimum of 60 seconds) by pressing the voice button and saying “Vehicle health report”, or pressing the phone button.

To run a report using the phone button:

1. Press the phone button to enter Phone Menu.
2. Scroll until Vehicle Health is selected and press OK.
3. Scroll to select from the following options:

<b>Vehicle Health Report options</b>	
<b>User Preferences:</b> <b>Press OK to select and enter the menu.</b> <b>Scroll to select from:</b>	<b>Automatic Reports:</b> Press OK and select on or off. Select On to have SYNC automatically prompt you to run a health report at certain mileage intervals. <b>Note:</b> You must first turn this feature on before you can select the mileage intervals at which you would like to be prompted.
	<b>Mileage Intervals:</b> Press OK. Scroll to select between 5000, 7500 or 10000 mile intervals and press OK to make your selection.
	<b>Return:</b> Press OK to exit the menu.

Vehicle Health Report options	
<b>Run Report?</b>	Press OK for SYNC to run a health report of your vehicle's diagnostic systems and send the results to Ford where it is combined with scheduled maintenance information, open recalls and other field service actions and unserviced vehicle inspection items from your authorized dealer.

### **Vehicle Health Report Privacy Notice**

When you run a Vehicle Health Report, Ford Motor Company may collect your cellular phone number (to process your report request) and diagnostic information about your vehicle. Certain versions or updates to Vehicle Health Report may also collect additional vehicle information. Ford may use the vehicle information it collects for any purpose. If you do not want to disclose your cellular phone number or vehicle information, do not run the feature or set up your Vehicle Health Report profile at [www.SYNCMYride.com](http://www.SYNCMYride.com). See [www.SYNCMYride.com](http://www.SYNCMYride.com) - Vehicle Health Report Terms and Conditions, and Privacy Statement - for more information.

### **SYNC Services: Traffic, Directions & Information (TDI) (If Equipped, United States Only)**

**Note:** SYNC Services varies by trim level and model year and may require a subscription. Traffic alerts and turn-by-turn directions available in select markets. Message and data rates may apply. Ford Motor Company reserves the right to change or discontinue this product service at any time without prior notification or incurring any future obligation.

**Note:** SYNC Services requires activation prior to use. Visit [www.SYNCMYride.com](http://www.SYNCMYride.com) to register and check your eligibility for complimentary services. Standard phone and message rates may apply. Subscription may be required. You must also have the active SYNC Services Bluetooth-enabled cellular phone paired and connected to the system in order to connect to, and use, SYNC Services. See the *Using SYNC with your phone* for pairing instructions.

**Note:** This feature does not function properly if you have enabled caller ID blocking on your mobile phone. Make sure your mobile phone is not blocking caller ID before using SYNC Services.

**Note:** The driver is ultimately responsible for the safe operation of the vehicle, and therefore, must evaluate whether it is safe to follow the suggested directions. Any navigation features are provided only as an aid.

Make your driving decisions based on your observations of local conditions and existing traffic regulations. Do not follow the route suggestions if doing so would result in an unsafe or illegal maneuver, if you would be placed in an unsafe situation, or if you would be directed into an area that you consider unsafe. Maps used by this system may be inaccurate because of errors, changes in roads, traffic conditions or driving conditions.

**Note:** When you connect, the service uses GPS technology and advanced vehicle sensors to collect the vehicle's current location, travel direction and speed to help provide you with the directions, traffic reports, or business searches you request. Further, to provide the services you request and for continuous improvement, the service may collect and record call details and voice communications. For more information, see SYNC Services Terms and Conditions at [www.SYNCMYRide.com](http://www.SYNCMYRide.com). If you do not want Ford or its service providers to collect the vehicle travel information or other information identified in the Terms and Conditions, do not activate or use the service.

SYNC Services uses advanced vehicle sensors, integrated GPS technology and comprehensive map and traffic data, to give you personalized traffic reports, precise turn-by-turn directions, business search, news, sports, weather and more. For a complete list of services, or to learn more, please visit [www.SYNCMYRide.com](http://www.SYNCMYRide.com).

### ***Connecting to SYNC Services Using Voice Commands***

1. Press the voice button.
2. When prompted, say "Services". This initiates an outgoing call to SYNC Services using your paired and connected Bluetooth-enabled cellular phone.
3. Once you are connected to the service, follow the voice prompts to request the desired service, such as "Traffic" or "Directions". You can also say "What are my choices?" to receive a complete list of available services from which to choose.
4. Say "Services" to return to the services main menu or for help, say "Help".

### ***Connecting to SYNC Services Using the Navigation Screen***

1. Select the Phone hard button.
2. Select the SYNC Apps soft button tab.
3. Select the SYNC Services soft button to connect to SYNC Services.

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***Receiving Turn-by-Turn Directions***

1. When connected to SYNC Services, say “Directions” or “Business search”. To find the closest business or type of business to your current location, just say “Business search” and then “Search near me”. If you need further assistance in finding a location you can say “Operator” at any time within a Directions or Business search to speak with a live operator. You may also be prompted to speak with an operator when the automatic system has difficulty matching your voice request. The live operator can assist you by searching for businesses by name or by category, residential addresses by street address or by name or specific street intersections. Operator Assist is a feature of your SYNC Services subscription. For more information on Operator Assist visit [www.SYNCMYRide.com/support](http://www.SYNCMYRide.com/support).
2. Follow the voice prompts to select your destination. Once your destination is selected, your current vehicle location is uploaded and a route based on current traffic conditions is calculated and sent back to your vehicle. After the route download is complete, the phone call is automatically ended. You then receive audible and visual driving instructions as you travel toward your destination.
3. While on an active route, you can select or say “Route summary” or “Route status” to view the Route Summary turn list or the Route Status ETA. You can also turn voice guidance on or off, cancel the route or update the route.

If you miss a turn, SYNC automatically asks if you want the route updated. Just say, “Yes” when prompted and a new route will be delivered to your vehicle.

***Disconnecting from SYNC Services***

1. Press and hold the phone button on the steering wheel.
2. Say “Good-bye” from the SYNC Services main menu.

SYNC Services quick tips	
<b>Personalizing</b>	You can personalize your Services feature to provide quicker access to your most used or favorite information. You can save address points such as work or home. You can also save favorite information like sports teams or a news category. To learn more, log onto <a href="http://www.SYNCMYride.com">www.SYNCMYride.com</a> .
<b>Push to interrupt</b>	Press the voice button at any time (while you are connected to SYNC Services) to interrupt a voice prompt or an audio clip (such as a sports report), wait for the listening tone, and say your voice command.
<b>Portable</b>	Your subscription is associated with your Bluetooth-enabled cellular phone number, not your VIN (Vehicle Identification Number). You can pair and connect your phone to any vehicle equipped with SYNC Services and continue enjoying your personalized services. You can even access your account outside the vehicle. Just use the number on your phone's call history. Traffic and Directions features do not function properly but information services and the 411 connect and text message features are available.

**SYNC AppLink™**

**Note:** This feature is only available in the United States.

**Note:** Your smartphone must be paired and connected to SYNC to access AppLink.

**Note:** iPhone users need to connect the phone to the USB port in order to start the application. It is recommended to lock your iPhone after starting an application.

**Note:** The AppLink feature is not available if your vehicle is equipped with the MyFord Touch or MyLincoln Touch system.

Depending on your display type, you can access AppLink from the media menu, the phone menu, or by using voice commands. Once an app is running through AppLink, you can control main features of the app through voice commands and steering wheel controls.

**To Access Using the Phone Menu**

1. Press the Phone button.
2. Browse to Mobile Applications and press **OK**.
3. Browse to your desired app and press **OK**.
4. Once an app is running through SYNC, you can access an app's menu by pressing the **MENU** button to first access the SYNC menu.
5. Scroll until "<App name> Menu" is displayed (such as Pandora Menu), then press **OK**. From here, you can access an application's features, such as Thumbs up, Thumbs down, etc. For more information, please visit [www.SYNCMYride.com](http://www.SYNCMYride.com).

**To Access Using the Media Menu**

1. Press the **AUX** button to access the SYNC menu.
2. Press the Menu button to access the SYNC Media menu.
3. Browse to Mobile Applications and press **OK**.
4. Browse to your desired app and press **OK**.
5. Once an app is running through SYNC, you can access an app's menu by pressing the **MENU** button to first access the SYNC menu.
6. Scroll until "<App name> Menu" is displayed (such as Pandora Menu), then press **OK**. From here, you can access an application's features, such as Thumbs up, Thumbs down, etc. For more information, please visit [www.SYNCMYride.com](http://www.SYNCMYride.com).

**To Access Using the Navigation Screen (If Equipped)**

1. Press the Phone button.
2. Press the SYNC Apps tab.
3. Press Mobile Apps.
4. Select the app to start it.

**To Access Using Voice Commands**

1. Press the voice icon.
2. When prompted, say "Mobile Apps".
3. Say the name of the application after the tone.
4. The app should start. While an app is running through SYNC, you can press the voice button and speak commands specific to the app, such as "Play Station Quickmix". Say "Help" to discover available voice commands.

## USING SYNC WITH YOUR MEDIA PLAYER

You can access and play music from your digital music player over the vehicle's speaker system using the system's media menu or voice commands. You can also sort and play your music by specific categories, such as artists or albums.

**Note:** The system is capable of indexing up to 6,000 songs.

SYNC is capable of hosting nearly any digital media player including: iPod, Zune™, Plays from device players, and most USB drives. SYNC also supports audio formats such as MP3, WMA, WAV and ACC.

### Connecting Your Digital Media Player via the USB Port

**Note:** If your digital media player has a power switch, ensure that the device is turned on.

To connect using voice commands:

1. Plug the device into the vehicle's USB port.
2. Press the voice icon and when prompted, say "USB".
3. You can now play music by saying any of the appropriate voice commands. See the media voice commands.

To connect using the system menu:

1. Plug the device into the vehicle's USB port.
2. Press AUX and then MENU to enter the Media Menu.
3. Scroll until Select Source appears and press OK.
4. Scroll to select USB and press OK.
5. Depending on how many digital media files are on your connected device, Indexing may appear in the radio display. When indexing is complete, the screen returns to the Play Menu.
6. Press OK and scroll through selections of:
  - Play All
  - Artists
  - Albums
  - Genres
  - Playlists
  - Tracks
  - Explore USB
  - Similar Music
  - Return

When the desired selection appears in the display, press OK to build your desired music selection.

## What's Playing?



At any time when a track is playing, you can press the voice icon and ask the system, “What’s playing?”. The system reads the metadata tags (if populated) of the playing track to you.

## Media Voice Commands



Press the voice icon and, when prompted, say “USB” then any of the following:

“USB”
“Autoplay off”
“Autoplay on”
“(Phone) (Media) (Bluetooth) Connections”
“Pause”
“Play”
“Play album <name>” <sup>1,3</sup>
“Play all”
“Play artist <name>” <sup>1,3</sup>
“Play genre <name>” <sup>1,3</sup>
“Play next folder” <sup>2</sup>
“Play next track”
“Play playlist <name>” <sup>1,3</sup>
“Play previous folder” <sup>2</sup>
“Play previous track”
“Play song <name>” <sup>1,3</sup>
“Play track <name>” <sup>1,3</sup>
“Refine album <name>” <sup>1,3</sup>
“Refine artist <name>” <sup>1,3</sup>
“Refine song <name>” <sup>1,3</sup>
“Refine track <name>” <sup>1,3</sup>
“Repeat off”
“Repeat on”
“Search album <name>” <sup>1,3</sup>
“Search artist <name>” <sup>1,3</sup>
“Search genre <name>” <sup>1,3</sup>

<b>“USB”</b>
“Search song <name>” <sup>1,3</sup>
“Search track <name>” <sup>1,3</sup>
“Shuffle off”
“Shuffle on”
“Similar music”
“What’s playing?”

<sup>1</sup><name>” is a dynamic listing, meaning that it could be the name of any desired group, artist, etc.

<sup>2</sup>Voice commands which are only available in folder mode.

<sup>3</sup>Voice commands which are not available until indexing is complete.

<b>Voice command guide</b>	
<b>“Autoplay”</b>	Turn on to listen to music which has already been randomly indexed during the indexing process. Turn off and the system does not begin to play any of your music until all media has all been indexed. Indexing times can vary from device to device and also with regard to the number of songs being indexed.
<b>“Search/Play Genre”</b>	The system searches all the data from your indexed music and, if available, begins to play the chosen type of music. You can only play genres of music which are present in the GENRE metadata tags that you have on your digital media player.
<b>“Similar Music”</b>	The system compiles a playlist and then plays similar music to what is currently playing from the USB port using indexed metadata information.
<b>“Search/Play Artist/Track/Album”</b>	The system searches for a specific artist/track/album from the music indexed through the USB port.

<b>Voice command guide</b>	
<b>“Refine”</b>	This allows you to make your previous command more specific. For example, if you asked to search and play all music by a certain artist, you could then say “refine album” and choose a specific album from the list to view. If you then select Play, the system only plays music from that specific album.

Press the voice icon and when prompted say “Bluetooth Audio” and then any of the following:

<b>“BLUETOOTH AUDIO”</b>
“(Phone) (Media) (Bluetooth) Connections”
“Pause”
“Play”
“Play next track ”
“Play previous track ”

### Media Menu Features

The media menu allows you to select your media source, how to play your music (by artist, genre, shuffle, repeat, etc.), and also to add, connect or delete devices.

1. Press AUX and then MENU to enter the Media Menu.
2. Scroll to cycle through:

<b>When you select:</b>	<b>You can:</b>
<b>Play Menu</b>	Play your music by artist, album, genre, playlists, tracks, similar music or to simply, play all. You can also choose to Explore USB to view the supported digital music files on your playing device. See Play Menu later in this section for more information.

When you select:	You can:
<p><b>Select Source</b></p>	<p><b>SYNC USB:</b> Press OK to access music plugged into your USB port. You can also plug in devices to charge them (if supported by your device). Once connected, the system indexes any readable media files. (The time required to complete this depends on the size of the media content being indexed.) If Autoplay is on, you can access media files randomly as they are indexed. If turned off, indexed media is not available until the indexing process is complete. SYNC is capable of indexing thousands of average size media and notifies you if the maximum indexing file size is reached.</p>
	<p><b>Bluetooth Audio:</b> This is a phone-dependent feature which allows you to stream music playing on your Bluetooth-enabled phone. If supported by your device, you can press SEEK to play the previous or next track.</p>
	<p><b>SYNC Line In:</b> Press OK to select and play music from your portable music player over the vehicle's speakers.</p> <p><b>Note:</b> If you have already connected a device to the USB port, you cannot access the line in feature. Some digital media players require both USB and line in ports to stream data and music separately.</p>

When you select:	You can:
<b>Media Settings</b>	<p>Choose to shuffle or repeat your music and select your Autoplay settings. Once these selections are turned on, they remain on until turned off. Press SEEK to play the previous or next track.</p> <p><b>Note:</b> Some digital media players require both USB and line in ports to stream data and music separately. Press OK to select and then scroll to choose from:</p> <p><b>Shuffle:</b> Press OK to shuffle available media files in the current playlist. <b>Note:</b> To shuffle all media tracks, you must select Play All in the Play Menu and then select Shuffle.</p> <p><b>Repeat:</b> Press OK to repeat any song.</p> <p><b>Autoplay:</b> Press OK to listen to music which has already been randomly indexed during the indexing process.</p>
<b>Mobile Apps</b>	Interact with SYNC-capable mobile applications on your smart phone. See <i>SYNC AppLink</i> earlier in this chapter for more information.
<b>System Settings</b>	<p>Access Bluetooth Device menu listings (add, connect, set as primary, on/off, delete) as well as Advanced menu listings (prompts, languages, defaults, master reset, install application and system information).</p> <p><b>Note:</b> See System Settings for more information.</p>
<b>Exit Media Menu</b>	Press OK to exit the media menu.

### Accessing Your Play Menu

This menu allows you to select and play your media by artist, album, genre, playlist, track, similar music or even to explore what is on your USB device.

1. Make sure that your device is plugged into the USB port and is turned on.
2. Press AUX and then MENU to enter the Media Menu.
3. Scroll to select the Play Menu and press OK.

If there are no media files to access, the display indicates there is no media. If there are media files, you have the following options to scroll through and select from:

When you select:	You can:
<b>Play All</b>	Play all indexed media (tracks) from your playing device in flat file mode, one at a time in numerical order. Press OK to select. The first track title appears in the display.
<b>Artists</b>	Sort all indexed media by artist. Once selected, the system lists and then play all artists and tracks alphabetically. If there are less than 255 indexed artist, they are listed alphabetically in flat file mode. If there are more, they are categorized in alphabetical categories. 1. Press OK to select. You can select to play All Artists or any indexed artist. 2. Scroll until the desired artist is chosen and press OK.
<b>Albums</b>	Sort all indexed media by albums. If there are less than 255 indexed albums, they are listed alphabetically in flat file mode. If there are more, they are organized into alphabetical categories. 1. Press OK to enter the album menu and select from playing all albums or from any individual indexed album. 2. Scroll until the desired album is chosen and press OK.

<b>When you select:</b>	<b>You can:</b>
<b>Genres</b>	Sort indexed music by genre (category) type. SYNC lists the genres alphabetically in flat file mode. If there are more than 255, SYNC automatically organizes them into alphabetical categories. Press OK to select and then scroll to select the desired genre and press OK.
<b>Playlists</b>	Access your playlists (from formats such as ASX, .M3U, .WPL, .MTP.). The system lists your playlists alphabetically in flat file mode. If there are more than 255, they are organized into alphabetical categories. Press OK to select. Then scroll to select the desired playlist and press OK.
<b>Tracks</b>	Search for and play a specific track which has been indexed. SYNC lists your tracks alphabetically in flat file mode. If there are more than 255, SYNC automatically organizes them into alphabetical categories. Press OK to select. Then scroll to select the desired track and press OK.
<b>Explore USB</b>	Explore all supported digital media on your media device connected to the USB port. You can only view media content which is compatible with SYNC; other files saved are not visible. Press OK to select. Then scroll to explore indexed media on your flash drive.

When you select:	You can:
<b>Similar Music</b>	<p>Play music similar to what is currently playing from the USB port. The system uses the metadata information of each song to compile a playlist for you.</p> <p>Press OK to select. The system creates a new list of similar songs and begins playing. The metadata tags must be populated for this feature to include each track.</p> <p><b>Note:</b> With certain playing devices, if your metadata tags are not populated, the tracks won't be available in voice recognition, play menu or similar music. However, if you place these tracks onto your playing device in "Mass Storage Device Mode", they are available in voice recognition, play menu browsing and similar music. Unknowns are placed into any unpopulated metadata tag.</p>
<b>Return</b>	Exit the current menu.

### System Settings

System settings provide access to your Bluetooth Devices and Advanced menu features.

The Bluetooth Devices menu allows you to add, connect and delete a device as turn the Bluetooth feature on and off.

Your Advanced menu allows you to access and set prompts, languages, defaults and perform a master reset.

#### **Bluetooth Devices Menu Options**

This menu allows you to add, connect and delete devices as well as turn Bluetooth on and off.

1. Press AUX and then MENU to enter the Media Menu.
2. Scroll until System Settings appears and select OK.
3. Scroll until Bluetooth Devices appears.

4. Press OK and then scroll to select from:

When you select:	You can:
<b>Add Bluetooth Device</b> *	Allows you to pair additional devices to the system. 1. Press OK to select and press OK again when Find SYNC appears in the display. 2. Follow the directions in your phone's user guide to put your phone into discovery mode. A six-digit PIN appears in the display. 3. When prompted on your phone's six-digit display, enter the PIN.
<b>Connect Bluetooth Device</b>	Connect a previously paired Bluetooth-enabled phone. 1. Press OK to select and view a list of devices. 2. Scroll until the desired device is chosen and press OK to connect the device.
<b>Set Bluetooth On/Off</b>	Turn the Bluetooth feature on and off. Press OK and scroll to toggle between On and Off. When the desired selection is chosen, press OK. Turning Bluetooth off disconnects all Bluetooth devices and deactivates Bluetooth features.
<b>Delete Device</b>	Delete a paired media device. Press OK and scroll to select the device. Press OK to confirm.
<b>Delete All Devices</b>	Delete all previously paired devices. Press OK to select.
<b>Return</b>	Exit the current menu.

\*This is a speed-dependent feature

**Advanced Menu Options**

This menu allows you to access settings such as prompts, language, performing a master reset as well as returning to factory defaults.

1. Press AUX and then MENU to access the Media Menu.
2. Scroll until System Settings appears and select OK.
3. Scroll until Advanced appears.
4. Press OK and then scroll to select from the following:

<b>When you select:</b>	<b>You can:</b>
<b>Prompts</b>	Have SYNC guide you via questions, helpful hints or ask you for a specific action. <ol style="list-style-type: none"> <li>1. Press OK to select and scroll to select between on or off.</li> <li>2. Press OK when the desired selection appears in the display. SYNC takes you back to the Advanced menu.</li> </ol>
<b>Languages</b>	Choose from English, Francais and Espanol. The displays and prompts are in the selected language. <ol style="list-style-type: none"> <li>1. Press OK to select and then scroll through the languages.</li> <li>2. Press OK when the desired selection appears in the display.</li> <li>3. If you change the language setting, the display indicates that the system is updating. When complete, SYNC takes you back to the Advanced menu.</li> </ol>
<b>Factory Defaults</b>	Return to the factory default settings. This selection does not erase your indexed information (phonebook, call history, text messages and paired devices). <ol style="list-style-type: none"> <li>1. Press OK to select and then press OK again when Restore Defaults? appears in the display.</li> <li>2. Press OK to confirm.</li> </ol>

<b>When you select:</b>	<b>You can:</b>
<b>Master Reset</b>	Completely erase all information stored on SYNC (all phonebook, call history, text messages and all paired devices) and return to the factory default settings.
<b>Application</b>	Download new software applications (if available) and then load the desired applications through your USB port. See the web site for more information.
<b>Return</b>	Exit the current menu.

## TROUBLESHOOTING

Your SYNC system is easy to use. However, should questions arise, see the tables below.

Use the website at any time to check your phone's compatibility, register your account and set preferences as well as access a customer representative via an online chat (during certain hours). Visit [www.SYNCMyRide.com](http://www.SYNCMyRide.com), [www.SYNCMyRide.ca](http://www.SYNCMyRide.ca) or [www.syncmaroute.ca](http://www.syncmaroute.ca) for more information.

<b>Phone issues</b>		
<b>Issue</b>	<b>Possible cause(s)</b>	<b>Possible solution(s)</b>
There is excessive background noise during a phone call.	The audio control settings on your phone may be affecting SYNC performance.	Review your phone's user guide regarding audio adjustments.
During a call, I can hear the other person but they cannot hear me.	Possible phone malfunction.	Try turning off the device, resetting the device, removing the device's battery, then trying again.

<b>Phone issues</b>		
<b>Issue</b>	<b>Possible cause(s)</b>	<b>Possible solution(s)</b>
<p>SYNC is not able to download my phonebook.</p>	<ul style="list-style-type: none"> <li>• This is a phone-dependent feature, OR</li> <li>• Possible phone malfunction.</li> </ul>	<ul style="list-style-type: none"> <li>• Go to the website to review your phone's compatibility.</li> <li>• Try turning off the device, resetting the device or removing the device's battery, then trying again.</li> <li>• Try pushing your phonebook contacts to SYNC by using the Add Contacts feature.</li> <li>• Use the SYNCmyphone feature available on the website.</li> </ul>
<p>The system says Phonebook Downloaded but my phonebook in SYNC is empty or is missing contacts.</p>	<p>Limitations on your phone's capability.</p>	<ul style="list-style-type: none"> <li>• Try pushing your phonebook contacts to SYNC by using the Add Contacts feature.</li> <li>• If the missing contacts are stored on your SIM card, try moving them to the device memory.</li> <li>• Remove any pictures or special ring tones associated with the missing contact.</li> </ul>

<b>Phone issues</b>		
<b>Issue</b>	<b>Possible cause(s)</b>	<b>Possible solution(s)</b>
I am having trouble connecting my phone to SYNC.	<ul style="list-style-type: none"> <li>• This is a phone-dependent feature, OR</li> <li>• Possible phone malfunction.</li> </ul>	<ul style="list-style-type: none"> <li>• Go to the website to review your phone's compatibility.</li> <li>• Try turning off the device, resetting the device or removing the device's battery, then trying again.</li> <li>• Try deleting your device from SYNC, deleting SYNC from your device and trying again.</li> <li>• Check the security and auto accept/prompt always settings relative to the SYNC Bluetooth connection on your phone.</li> <li>• Update your device's software firmware.</li> <li>• Turn off the Auto phonebook download setting.</li> </ul>
Text messaging is not working on SYNC.	<ul style="list-style-type: none"> <li>• This is a phone-dependent feature, OR</li> <li>• Possible phone malfunction.</li> </ul>	<ul style="list-style-type: none"> <li>• Go to the website to review your phone's compatibility.</li> <li>• Try turning off the device, resetting the device or removing the device's battery, then trying again.</li> </ul>

<b>USB and media issues</b>		
<b>Issue</b>	<b>Possible cause(s)</b>	<b>Possible solution(s)</b>
I am having trouble connecting my device.	Possible device malfunction.	<ul style="list-style-type: none"> <li>• Try turning off the device, resetting the device or removing the device's battery, then trying again.</li> <li>• Make sure you are using the manufacturer's cable.</li> <li>• Make sure the USB cable is properly inserted into the device and the vehicle's USB port.</li> <li>• Make sure that the device does not have an auto-install program or active security settings.</li> </ul>
SYNC does not recognize my device when I turn on the car.	This is a device limitation.	Make sure you are not leaving the device in your vehicle during very hot or cold temperatures.
Bluetooth audio does not stream.	<ul style="list-style-type: none"> <li>• This is a phone-dependent feature, OR</li> <li>• The device is not connected.</li> </ul>	Make sure the device is connected to SYNC and that you have pressed play on your device.
SYNC does not recognize music that is on my device.	<ul style="list-style-type: none"> <li>• Your music files may not contain the proper artist, song title, album or genre information, OR</li> <li>• The file may be corrupted, OR</li> <li>• The song may have copyright protection which does not allow it to play.</li> </ul>	<ul style="list-style-type: none"> <li>• Make sure that all song details are populated.</li> <li>• Some devices require you to change the USB settings from mass storage to MTP class.</li> </ul>

<b>Vehicle Health Report and SYNC Services (Traffic, Directions and Information) issues</b>		
<b>Issue</b>	<b>Possible cause(s)</b>	<b>Possible solution(s)</b>
I received a text that the Vehicle Health Report is not activated.	<ul style="list-style-type: none"> <li>Your account may not be activated on the website, OR</li> <li>You may have the wrong VIN (vehicle identification number) listed.</li> </ul>	<ul style="list-style-type: none"> <li>This is a free feature, but you must first register online to use it.</li> <li>Make sure that your VIN is correctly listed in your account.</li> </ul>
I am unable to retrieve the report on the website, or I receive a system error.	The preferred dealer information did not load correctly.	When you register your account, you must list a preferred dealer. If one is already listed, try selecting another dealer and logging out. Log back in and change it back to your preferred dealer and retrieve the report.
I am unable to submit a report.	<ul style="list-style-type: none"> <li>This could be due to your phone's compatibility, OR</li> <li>Bad signal strength, OR</li> <li>Your phone may not be activated on the website.</li> </ul>	<ul style="list-style-type: none"> <li>Update your mobile number in your account on the website.</li> <li>Make sure you have full signal strength and that your <i>Bluetooth</i> volume level has been turned up.</li> <li>Try deleting your phone and performing a clean pairing.</li> </ul>
I heard a commercial when I tried to use Traffic, Directions and Information.	<ul style="list-style-type: none"> <li>The phone in use is not activated, OR</li> <li>Your phone has ID blocker active.</li> </ul>	<ul style="list-style-type: none"> <li>This is a free feature, but you must first register online to use it.</li> <li>Turn off ID blocker on your phone as the system recognizes you by your phone number.</li> <li>Make sure the currently connected phone is the same one that is registered on your SyncMyRide account.</li> </ul>

<b>Voice command issues</b>		
<b>Issue</b>	<b>Possible cause(s)</b>	<b>Possible solution(s)</b>
<p>SYNC does not understand what I am saying.</p>	<ul style="list-style-type: none"> <li>• You may be using the wrong voice commands, OR</li> <li>• You may be speaking too soon or at the wrong time.</li> </ul>	<ul style="list-style-type: none"> <li>• Review the Phone voice commands and the Media voice commands at the beginning of their respective sections.</li> <li>• Be aware that the microphone for SYNC is either in your rear view mirror or in the headliner just above the windshield.</li> </ul>
<p>SYNC does not understand the name of a song or artist.</p>	<ul style="list-style-type: none"> <li>• You may be using the wrong voice commands, OR</li> <li>• You may not be saying the name exactly as it is saved, OR</li> <li>• The system may not be reading the name the same way you are saying it.</li> </ul>	<ul style="list-style-type: none"> <li>• Review the media voice commands at the beginning of the media section.</li> <li>• Say the song or artist exactly as listed. If you say, “Play Artist Prince”, the system does not play music by Prince and the Revolution or Prince and the New Power Generation.</li> <li>• Make sure you are saying the complete title, such as “California remix featuring Jennifer Nettles”.</li> <li>• If the songs are saved in all CAPS, you have to spell them. LOLA requires you to say, “Play L-O-L-A”.</li> <li>• Do not use special characters in the title as the system does not recognize them.</li> </ul>

<b>Voice command issues</b>		
<b>Issue</b>	<b>Possible cause(s)</b>	<b>Possible solution(s)</b>
<p>SYNC does not understand or is calling the wrong contact when I want to make a call.</p>	<ul style="list-style-type: none"> <li>• You may be using the wrong voice commands, OR</li> <li>• You may not be saying the name exactly as it is saved, OR</li> <li>• Contacts in your phonebook may be very short and similar, or they may contain special characters, OR</li> <li>• Your phonebook contacts may be saved in CAPS.</li> </ul>	<ul style="list-style-type: none"> <li>• Review the phone voice commands at the beginning of the phone section.</li> <li>• Make sure you are saying the contacts exactly as listed. For example, if a contact is saved as Joe Wilson, say “Call Joe Wilson”.</li> <li>• The system works better if you list full names, such as “Joe Wilson” rather than “Joe”.</li> <li>• Do not use special characters such as 123 or ICE, as the system does not recognize them.</li> <li>• If contacts are saved in CAPS, you have to spell them. JAKE requires you to say, “Call J-A-K-E”.</li> </ul>

<b>AppLink issues</b>		
<b>Issue</b>	<b>Possible cause(s)</b>	<b>Possible solution(s)</b>
AppLink Mobile Applications: When I select "Find New Apps," SYNC does not find any applications.	An AppLink capable phone is not connected to SYNC.	<ul style="list-style-type: none"> <li>• Ensure you have a compatible smartphone; an Android with OS 2.3 or higher or an iPhone 3GS or newer with iOS 5.0 or higher.</li> <li>• Additionally, ensure your phone is paired and connected to SYNC in order to find AppLink-capable apps on your device. iPhone users must also connect to SYNC's USB port with an Apple USB cable.</li> </ul>
My phone is connected, but I still cannot find any apps.	AppLink-enabled apps are not installed and running on your mobile device.	<ul style="list-style-type: none"> <li>• Ensure you have downloaded and installed the latest version of the app from your phone's app store. Ensure the app is running on your phone.</li> <li>• Some apps require you to register or login on the app on the phone before using them with AppLink. Also, some may have a "Ford SYNC" setting, so check the app's settings menu on the phone.</li> </ul>

<b>AppLink issues</b>		
<b>Issue</b>	<b>Possible cause(s)</b>	<b>Possible solution(s)</b>
My phone is connected, my app(s) are running, but I still cannot find any apps.	Sometime apps do not properly close and re-open their connection to SYNC, over ignition cycles, for example.	<ul style="list-style-type: none"> <li>• Closing and restarting apps may help SYNC find the application if you cannot discover it inside the vehicle. On an Android device, if apps have an "Exit" or "Quit" option, select that then restart the app.</li> <li>• If the app does not have that option, you can also manually "Force Close" the app by going to the phone's settings menu, selecting 'Apps.' then finding the particular app and choosing 'Force stop.' Don't forget to restart the app afterwards, then select "Find New Apps" on SYNC.</li> <li>• On an iPhone with iOS7+, to force close an app, double tap the home button then swipe up on the app to close it. Tap the home button again, then select the app again to restart it. After a few seconds, the app should then appear in SYNC's Mobile App's Menu.</li> </ul>

<b>AppLink issues</b>		
<b>Issue</b>	<b>Possible cause(s)</b>	<b>Possible solution(s)</b>
My Android phone is connected, my app(s) are running, I restarted them, but I still cannot find any apps.	There is a bluetooth bug on some order versions of the Android OS that may cause apps that were found on your previous vehicle drive to not be found again if you have not turned off bluetooth.	Reset the Bluetooth on your phone by turning it off and then turning Bluetooth back on. If you are in your vehicle, SYNC should be able to automatically reconnect to your phone if you press the "Phone" button.
My iPhone phone is connected, my app is running, I restarted the app but I still cannot find it on SYNC.	The USB connection to SYNC may need to be reset.	Unplug the USB cable from the phone, wait a moment, and plug the USB cable back in to the phone. After a few seconds, the app should appear in SYNC's Mobile Apps Menu. If not, "Force Close" the application and restart it.
I have an Android phone. I found and started my media app on SYNC, but there is no sound or the sound is very low.	The bluetooth volume on the phone may be low.	Try increasing the Bluetooth volume of the device by using the device's volume control buttons which are most often found on the side of the device.

<b>AppLink issues</b>		
<b>Issue</b>	<b>Possible cause(s)</b>	<b>Possible solution(s)</b>
I can only see some of the AppLink apps running on my phone listed in SYNC's Mobile Apps Menu.	Some Android devices have a limited number of bluetooth ports apps can use to connect. If you have more AppLink apps on your phone than the number of available Bluetooth ports, you will not see all of your apps listed in SYNC's mobile apps menu.	Force close or uninstall the apps you do not want SYNC to find. If the app has a "Ford SYNC" setting, disable that setting in the app's settings menu on the phone.

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**End user notice*****Microsoft® Windows® Mobile for Automotive Important Safety Information***

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**Read and follow instructions**

Before using your Windows Automotive-based system, read and follow all instructions and safety information provided in this end user manual (“User’s Guide”). Not following precautions found in this User’s Guide can lead to an accident or other serious consequences.

**Keep User’s Guide in Vehicle**

When kept in the vehicle, the User’s Guide will be a ready reference for you and other users unfamiliar with the Windows Automotive-based system. Please make certain that before using the system for the first time, all persons have access to the User’s Guide and read its instructions and safety information carefully.



**WARNING:** Operating certain parts of this system while driving can distract your attention away from the road, and possibly cause an accident or other serious consequences. Do not change system settings or enter data non-verbally (using your hands) while driving. Stop the vehicle in a safe and legal manner before attempting these operations. This is important since while setting up or changing some functions you might be required to distract your attention away from the road and remove your hands from the wheel.

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## ***General operation***

### **Voice Command Control**

Functions within the Windows Automotive-based system may be accomplished using only voice commands. Using voice commands while driving allows you to operate the system without removing your hands from the wheel.

### **Prolonged Views of Screen**

Do not access any function requiring a prolonged view of the screen while you are driving. Pull over in a safe and legal manner before attempting to access a function of the system requiring prolonged attention. Even occasional short scans to the screen may be hazardous if your attention has been diverted away from your driving task at a critical time.

### **Volume Setting**

Do not raise the volume excessively. Keep the volume at a level where you can still hear outside traffic and emergency signals while driving. Driving while unable to hear these sounds could cause an accident.

### **Use of Speech Recognition Functions**

Speech recognition software is inherently a statistical process which is subject to errors. It is your responsibility to monitor any speech recognition functions included in the system and address any errors.

### **Navigation Features**

Any navigation features included in the system are intended to provide turn by turn instructions to get you to a desired destination. Please make certain all persons using this system carefully read and follow instructions and safety information fully.

### **Distraction Hazard**

Any navigation features may require manual (non-verbal) setup. Attempting to perform such set-up or insert data while driving can seriously distract your attention and could cause an accident or other serious consequences. Stop the vehicle in a safe and legal manner before attempting these operations.

**Let Your Judgment Prevail**

Any navigation features are provided only as an aid. Make your driving decisions based on your observations of local conditions and existing traffic regulations. Any such feature is not a substitute for your personal judgment. Any route suggestions made by this system should never replace any local traffic regulations or your personal judgment or knowledge of safe driving practices.

**Route Safety**

Do not follow the route suggestions if doing so would result in an unsafe or illegal maneuver, if you would be placed in an unsafe situation, or if you would be directed into an area that you consider unsafe. The driver is ultimately responsible for the safe operation of the vehicle and therefore, must evaluate whether it is safe to follow the suggested directions.

**Potential Map Inaccuracy**

Maps used by this system may be inaccurate because of changes in roads, traffic controls or driving conditions. Always use good judgment and common sense when following the suggested routes.

**Emergency Services**

Do not rely on any navigation features included in the system to route you to emergency services. Ask local authorities or an emergency services operator for these locations. Not all emergency services such as police, fire stations, hospitals and clinics are likely to be contained in the map database for such navigation features.

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**Vehicle with SYNC only**

FCC ID: KMHSG1G1 IC: 1422A-SG1G1

**Vehicle with SYNC and MyFord Touch or MyLincoln Touch**

FCC ID: KMHSYNG2 IC: 1422A-SYNG2

This device complies with Part 15 of the FCC Rules and with RSS-210 of Industry Canada. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



**WARNING:** Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. The term "IC:" before the radio certification number only signifies that Industry Canada technical specifications were met.

The antenna used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

**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 help to increase the value of your vehicle when you sell or trade it. Keep all receipts for completed maintenance with your vehicle.

We have established regular maintenance intervals for your vehicle 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 to keep your cost of owning your vehicle down.

It is your responsibility to have all scheduled maintenance performed and to make sure that the materials used meet the specifications identified in the *Capacities and Specifications* chapter of this owner's manual.

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.

***Genuine Ford and Motorcraft® Replacement Parts***

Dealerships stock Ford, Motorcraft and Ford-authorized branded re-manufactured replacement parts. These parts meet or exceed our specifications. Parts installed at your dealership carry a nationwide 24-month or unlimited miles (kilometers) parts and labor limited warranty.

If you do not use Ford authorized parts they may not meet our 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 body shops. Please contact your dealer for details.

### **Protecting Your Investment**

Maintenance is an investment that pays 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 is why it is 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 using only genuine Ford, Motorcraft or Ford-authorized remanufactured replacement parts because they are engineered for your vehicle.

### **Additives and Chemicals**

Ford Motor Company recommended additives and chemicals are listed in this book and in the *Workshop Manual*. Additional chemicals or additives not approved by Ford Motor Company are not recommended as part of normal maintenance. Please consult your 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 month intervals.

<b>Check every month</b>
Engine oil level.
Function of all interior and exterior lights.
Tires (including spare) for wear and proper pressure.
Windshield washer fluid level.

<b>Check every six months</b>
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 (including spare) for wear and proper pressure <sup>**</sup>
Fluid levels <sup>*</sup> ; fill if necessary	Windshield for cracks, chips or pits
For oil and fluid leaks	Washer spray and wiper operation

<sup>\*</sup>Brake, coolant recovery reservoir, automatic transmission, power steering and window washer.

<sup>\*\*</sup>If your vehicle is equipped with a temporary mobility kit, check the tire sealant expiration Use By date on the canister. Replace as needed.

Be sure to ask your dealership service advisor or technician about the multi-point vehicle inspection. It is a comprehensive way to perform a thorough inspection of your vehicle. It is your checklist that gives you immediate feedback on the overall condition of your vehicle. You will know what has been checked, what is 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!



### NORMAL SCHEDULED MAINTENANCE AND LOG

<b>Normal scheduled maintenance</b>	
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.

Other 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.*
	Change rear axle fluid (Dana axles).
	Inspect accessory drive belt(s).**
Every 150000 miles (240000 km)	Change rear axle fluid (non-Dana axles).
	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).

\*\*If not replaced, inspect every 15000 miles (24000 kilometers).

# Scheduled Maintenance

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## Maintenance Schedule Log

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

<b>Towing a trailer or car-top carrier</b>	
Inspect frequently, service as required	Inspect and lubricate U-joints, if equipped with grease fittings. 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, if equipped with grease fittings.
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.

<b>Extensive idling or low-speed driving for long distances as in heavy commercial use (such as delivery, taxi, patrol car or livery)</b>	
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.

<b>Extensive idling or low-speed driving for long distances as in heavy commercial use (such as delivery, taxi, patrol car or livery)</b>	
Every 5000 miles (8000 km) or six months	Change engine oil and filter.
	Inspect and lubricate U-joints, if equipped with grease fittings.
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.

<b>Operating in dusty or sandy conditions such as unpaved or dusty roads</b>	
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, if equipped with grease fittings.
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.

<b>Exclusive use of E85 (flex fuel vehicles only)</b>	
Every oil change interval	If ran exclusively on E85, fill the fuel tank full with regular unleaded fuel.

## Special Operating Condition Log

<p>DEALER VALIDATION:</p> <p>P&amp;A CODE:</p> <p>RO#: HOURS:</p> <p>DATE: MILEAGE:</p>	<p>DEALER VALIDATION:</p> <p>P&amp;A CODE:</p> <p>RO#: HOURS:</p> <p>DATE: MILEAGE:</p>
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**EXCEPTIONS****Normal Vehicle Axle Maintenance**

Rear axles and power take-off 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 (see *Technical specifications* in the *Capacities and Specifications* chapter for details).

**Axle Maintenance**

Change the axle fluid anytime an axle is submerged in water.

**California Fuel Filter Replacement**

If you register your vehicle in California, the California Air Resources Board has determined that the failure to perform this maintenance item does not nullify the emission warranty or limit recall liability before the completion of your 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.

**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 3000 miles (5000 kilometers).

If the available API SM or SN oils are not available, then the oil change interval is 1800 miles (3000 kilometers).

**Engine Air Filter and Cabin Air Filter Replacement**

The life of the engine air filter and cabin air filter is dependent on exposure to dusty and dirty conditions. Vehicles operated in these conditions require frequent inspection and replacement of the engine air filter and cabin 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 style="text-align: center;"><b>DEALER VALIDATION:</b></p>  <p><b>P&amp;A CODE:</b></p> <p><b>RO#:</b>           <b>HOURS:</b></p> <p><b>DATE:</b>       <b>MILEAGE:</b></p>	<p style="text-align: center;"><b>DEALER VALIDATION:</b></p>  <p><b>P&amp;A CODE:</b></p> <p><b>RO#:</b>           <b>HOURS:</b></p> <p><b>DATE:</b>       <b>MILEAGE:</b></p>
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