

## Table of contents

<b>Introduction</b>	<b>4</b>
Congratulations	4
Safety and environment protection	5
Symbol glossary	10
<b>Instrument cluster</b>	<b>12</b>
Warning and control lights	12
Gauges	16
<b>Entertainment systems</b>	<b>20</b>
AM/FM stereo	20
AM/FM stereo cassette	20
AM/FM stereo cassette with CD	31
AM/FM stereo with CD	41
<b>Climate controls</b>	<b>78</b>
Heater only	78
Manual heating and air conditioning	79
<b>Lights</b>	<b>85</b>
Headlamps	85
Bulb replacement	88
<b>Driver controls</b>	<b>94</b>
Windshield wiper/washer control	94
Steering wheel adjustment	95
Power windows	96
Mirrors	97
<b>Locks and security</b>	<b>108</b>
Keys	108
Locks	108
Anti-theft system	109

## Table of contents

### **Seating and safety restraints 113**

Seating	113
Safety restraints	121
Air bags	132
Child restraints	137

### **Driving 148**

Starting	148
Brakes	152
Transmission operation	156
Vehicle loading	160
Trailer towing	163
Recreational towing	172

### **Roadside emergencies 173**

Hazard flasher switch	174
Fuses and relays	177
Changing tires	184
Jump starting	191
Wrecker towing	196

### **Customer assistance 197**

The dispute settlement board	200
Utilizing the mediation/arbitration	203
Getting assistance outside the U.S. and Canada	203
Ordering additional owner's literature	204
Reporting safety defects (U.S. only)	206

### **Cleaning 207**

Cleaning your vehicle	207
Underbody preservation	212

## Table of contents

<b>Maintenance and specifications</b>	<b>214</b>
Hood	215
Engine compartment	216
Engine oil	217
Battery	220
Fuel information	233
Air filter(s)	247
Part numbers	253
Refill capacities	254
Lubricant specifications	258
Engine data	260
Vehicle dimensions	261
<b>Accessories</b>	<b>264</b>
<b>Index</b>	<b>267</b>

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## Introduction

The following warning may be required by California law:

### **CALIFORNIA Proposition 65 Warning**



**WARNING:** Engine exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. In addition, 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.

### **CONGRATULATIONS**

Congratulations on acquiring your new Ford. Please take the time to get well acquainted with your vehicle by reading this handbook. The more you know and understand about your vehicle the greater the safety and pleasure you will derive from driving it.

For more information on Ford Motor Company and its products visit the following website:

In the United States: [www.ford.com](http://www.ford.com)

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

In Australia: [www.ford.com.au](http://www.ford.com.au)

In Mexico: [www.ford.com.mx](http://www.ford.com.mx)

Additional owner information is given in separate publications.



This Owner's Guide describes every option and model variant available and therefore some of the items covered may not apply to your particular vehicle. Furthermore, due to printing cycles it may describe options before they are generally available.



Remember to pass on the Owner's Guide when reselling the vehicle. It is an integral part of the vehicle.



**Fuel pump shut-off switch** In the event of an accident the safety switch will automatically cut off the fuel supply to the engine. The switch can also be activated through sudden vibration (e.g. collision when parking). To reset the switch, refer to the *Fuel pump shut-off switch* in the *Roadside emergencies* chapter.

### SAFETY AND ENVIRONMENT PROTECTION



#### Warning symbols in this guide

How can you reduce the risk of personal injury and prevent possible damage to others, your vehicle and its equipment? In this guide, answers to such questions are contained in comments highlighted by the warning triangle symbol. These comments should be read and observed.



#### Warning symbols on your vehicle

When you see this symbol, it is imperative that you consult the relevant section of this guide before touching or attempting adjustment of any kind.



#### Protecting the environment

We must all play our part in protecting the environment. Correct vehicle usage and the authorized disposal of waste cleaning and lubrication materials are significant steps towards this aim. Information in this respect is highlighted in this guide with the tree symbol.



### BREAKING-IN YOUR VEHICLE

There are no particular guidelines for breaking-in your vehicle. During the first 1 600 km (1 000 miles) of driving, vary speeds frequently. This is recommended to give the moving parts a chance to break in.

## Introduction

### SPECIAL NOTICES

#### Emission warranty

The New Vehicle Limited Warranty includes Bumper-to-Bumper Coverage, Safety Restraint Coverage, Corrosion Coverage, and 7.3L Power Stroke Diesel Engine Coverage. In addition, your vehicle is eligible for Emissions Defect and Emissions Performance Warranties. For a detailed description of what is covered and what is not covered, refer to the *Warranty Guide* that is provided to you along with your Owner's Guide.

#### Special instructions

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



By operating other electronic equipment (e.g. mobile telephone without exterior aerial) electromagnetic fields can occur which can cause malfunctions of the vehicle electronics. Therefore you should observe the instructions of the equipment manufacturers.



Please read the section *Air bag* in the *Seating and safety restraints* chapter. Failure to follow the specific warnings and instructions could result in personal injury.



Rear facing child or baby seats should **NEVER** be used in front of a passenger side air bag.

#### Notice to owners of diesel-powered vehicles

Read the 7.3 Liter Power Stroke Direct Injection Turbo Diesel Owner's Guide Supplement for information regarding correct operation and maintenance of your diesel-powered light truck.

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



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

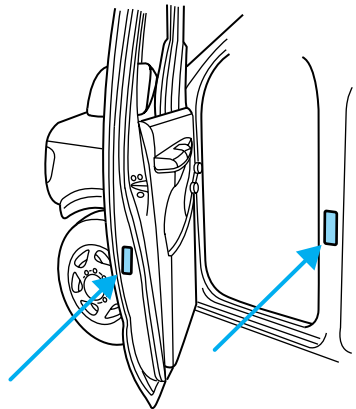
Before you drive your vehicle, please read this Owner's Guide carefully. Your vehicle is not a passenger car. As with other vehicles of this type, failure to operate this vehicle correctly may result in loss of control or an accident.

## 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 *QVM guidelines* as well as pertinent supplements. For additional information, please contact the Truck Body Builders Advisory Service 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 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. Ford Ambulance Preparation Package is only available on certain 7.3L Diesel engine equipped vehicles.



# Introduction

## **Notice to owners of natural gas fueled vehicles**

Before you drive your vehicle, be sure to read the “Natural Gas Vehicle Owner’s Guide Supplement.” This book contains important operation and maintenance information.



### **Middle East/North Africa vehicle specific information**

For your particular global region, your vehicle may be equipped with features and options that are different from the ones that are described in this Owner Guide; therefore, a supplement has been supplied that complements this book. By referring to the pages in the provided supplement, you can properly identify those features, recommendations and specifications that are unique to your vehicle. **Refer to this Owner Guide for all other required information and warnings.**





















# Introduction

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

## Vehicle Symbol Glossary

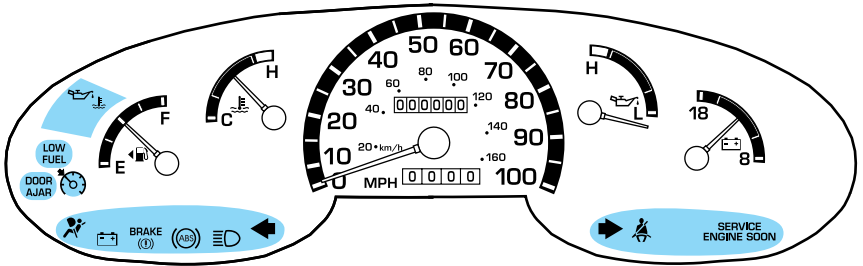
Safety Alert		See Owner's Guide	
Fasten Safety Belt		Air Bag-Front	
Air Bag-Side		Child Seat	
Child Seat Installation Warning		Child Seat Tether Anchorage	
Brake System		Anti-Lock Brake System	
Brake Fluid - Non-Petroleum Based		Traction Control	
Master Lighting Switch		Hazard Warning Flasher	
Fog Lamps-Front		Fuse Compartment	
Fuel Pump Reset		Windshield Wash/Wipe	
Windshield Defrost/Demist		Rear Window Defrost/Demist	
Power Windows Front/Rear		Power Window Lockout	

## Vehicle Symbol Glossary

Child Safety Door Lock/Unlock		Interior Luggage Compartment Release Symbol	
Panic Alarm		Engine Oil	
Engine Coolant		Engine Coolant Temperature	
Do Not Open When Hot		Battery	
Avoid Smoking, Flames, or Sparks		Battery Acid	
Explosive Gas		Fan Warning	
Power Steering Fluid		Maintain Correct Fluid Level	
Emission System		Engine Air Filter	
Passenger Compartment Air Filter		Jack	
Check fuel cap		Low tire warning	

# Instrument cluster

## WARNING LIGHTS AND CHIMES



Warning lights and gauges can alert you to a vehicle condition that may become serious enough to cause expensive repairs. A warning light may illuminate when a problem exists with one of your vehicle's functions. Many lights will illuminate when you start your vehicle to make sure the bulb works. **If any light remains on after starting the vehicle, have the respective system inspected immediately.**

### Service engine soon

Illuminates briefly to ensure the system is functional. If it comes on after the engine is started, one of the engine's emission control systems may be malfunctioning. The light may illuminate without a driveability concern being noted. The vehicle will usually be drivable and will not require towing.

SERVICE  
ENGINE  
SOON

### Light turns on solid:

Temporary malfunctions may cause the light to illuminate. Examples are:

1. The vehicle has run out of fuel.
2. Poor fuel quality or water in the fuel.
3. The fuel cap may not have been properly installed and securely tightened.

These temporary malfunctions can be corrected by filling the fuel tank with high quality fuel of the recommended octane and/or properly installing and securely tightening the fuel cap. After three driving cycles without these or any other temporary malfunctions present, the light should turn off. (A driving cycle consists of a cold engine startup

followed by mixed city/highway driving.) No additional vehicle service is required.

If the light remains on, have your vehicle serviced at the first available opportunity.

### **Light is blinking:**

Engine misfire is occurring which could damage your catalytic converter. You should drive in a moderate fashion (avoid heavy acceleration and deceleration) and have your vehicle serviced at the first available opportunity.



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.

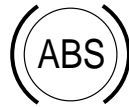
### **Brake system warning**

Illuminates if the parking brake is engaged. Also momentarily illuminates at start up to ensure the circuit is functional. If the brake warning lamp does not illuminate at these times, or illuminates after releasing the parking brake, seek service immediately. Refer to *Brakes* in the *Driving* chapter for more information.



### **Anti-lock brake system (ABS)**

Momentarily illuminates at start up to ensure the circuit is functional. If the light does not illuminate, remains on or continues to flash, the ABS needs to be serviced (refer to *Brakes* in the *Driving* chapter for more information). With the ABS light on, the ABS is disabled and normal braking is still functional.



### **Safety belt**

Illuminates to remind you to fasten your safety belts. For more information, refer to the *Seating and safety restraints* chapter.



## Instrument cluster

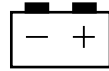
### Air bag readiness

Illuminates to confirm that the air bags (front or side) are operational. If the light fails to illuminate, continues to flash or remains on, have the system serviced immediately.



### Charging system

Illuminates when the battery is not charging properly.



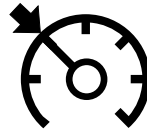
### Low fuel

Illuminates when the fuel level in the fuel tank is at, or near, empty (refer to *Fuel gauge* in this chapter for more information).



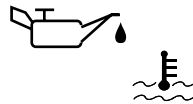
### Speed control (if equipped)

Illuminates when the speed control is activated.



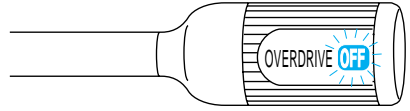
### Oil pressure/Engine coolant

Illuminates when the engine coolant temperature is above the normal range or the engine oil pressure is below normal range. Check the engine oil and coolant level refer to *Adding engine oil* and *Adding coolant* in the *Maintenance and specifications* chapter.



### Transmission control indicator light (TCIL)

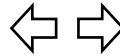
Illuminates when the overdrive function of the transmission has been turned OFF using the Transmission Control Switch (TCS). Refer to the *Driving* chapter for transmission function and operation.



If the light does not come on or if the light flashes steadily, have your vehicle serviced as soon as possible, damage to the transmission could occur.

### Turn signal

Illuminates when the turn signals or the hazard lights are turned on. If the lights stay on continuously or flash faster, check for a burned-out bulb.



### High beams

Illuminates when the high beam headlamps are turned on.



### Door ajar

Illuminates when any door is open (or not fully closed).



### Safety belt warning chime/buzzer

For information on the safety belt warning chime, refer to the *Seating and safety restraints* chapter.

### BeltMinder chime

Sounds intermittently to remind you to fasten your safety belts.

# Instrument cluster

## Supplemental restraint system (SRS) warning chime

Sounds when a malfunction in the supplemental restraint system (front or side airbags) has been detected. Have the supplemental restraint system inspected immediately.

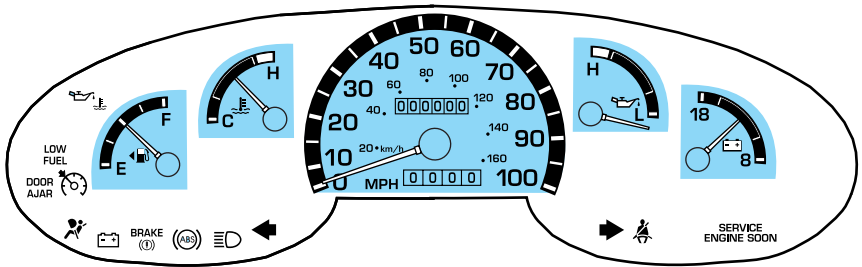
## Headlamps on warning chime (if equipped)

Sounds when the headlamps or parking lamps are on, the key is removed from the ignition and the driver's door is opened.

## Key-in-ignition warning chime/buzzer

Sounds when the key is left in the ignition and the driver's door is opened.

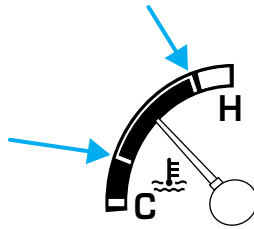
## GAUGES





### Engine coolant temperature gauge

Indicates the temperature of the engine coolant. At normal operating temperature, the needle remains within the normal area (the area between the “H” and “C”). If it enters the red section, the engine is overheating. Stop the vehicle as soon as safely possible, switch off the engine immediately and let the engine cool. Refer to *Engine coolant* in the *Maintenance and specifications* chapter.

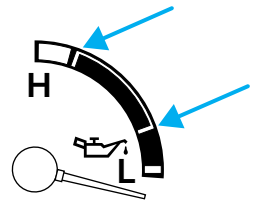


Never remove the coolant reservoir cap while the engine is running or hot. Steam and scalding liquid from a hot cooling system can burn you badly.

This gauge indicates the temperature of the engine coolant, not the coolant level. If the coolant is not at its proper level the gauge indication will not be accurate. If the gauge enters the red section, the oil pressure/engine coolant and *Check Engine/Service Engine Soon* indicators illuminate, refer to *What you should know about fail-safe cooling* in the *Maintenance and specifications* chapter.

### Engine oil pressure gauge

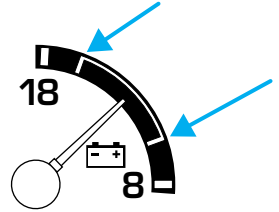
Indicates engine oil pressure. At normal operating temperature, the needle will be in the normal range (the area between the “L” and “H”); if the needle goes below the normal range, stop the vehicle as soon as safely possible and switch off the engine immediately. Check the oil level. Add oil if needed (refer to *Engine oil* in the *Maintenance and specifications* chapter). If the oil level is correct, have your vehicle checked at your dealership or by a qualified technician.



# Instrument cluster

## Battery voltage gauge

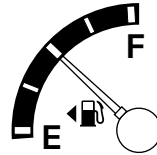
Indicates battery voltage. If the pointer moves and stays outside the normal operating range (as indicated by the arrows), have the vehicle's electrical system checked as soon as possible.



## Fuel gauge

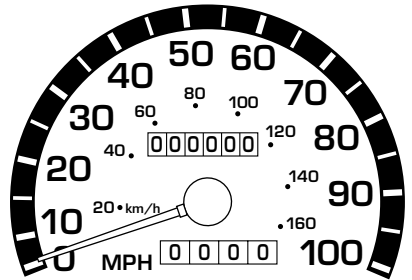
Displays approximately how much fuel is in the fuel tank. The fuel gauge may vary slightly when the vehicle is in motion or on a grade.

When refueling the vehicle from empty indication, the amount of fuel that can be added will be less than the advertised capacity due to the reserve fuel.



## Speedometer

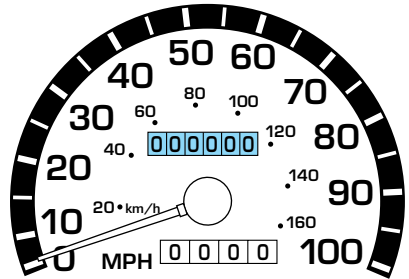
Indicates the current vehicle speed.



## Instrument cluster

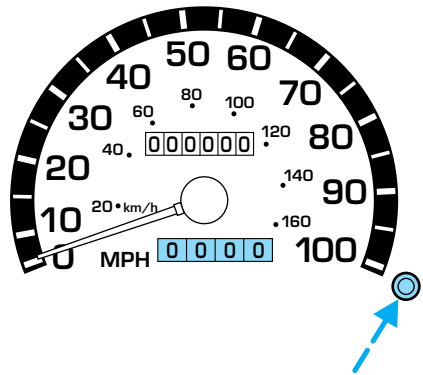
### Odometer

Registers the total kilometers (miles) of the vehicle.



### Trip odometer

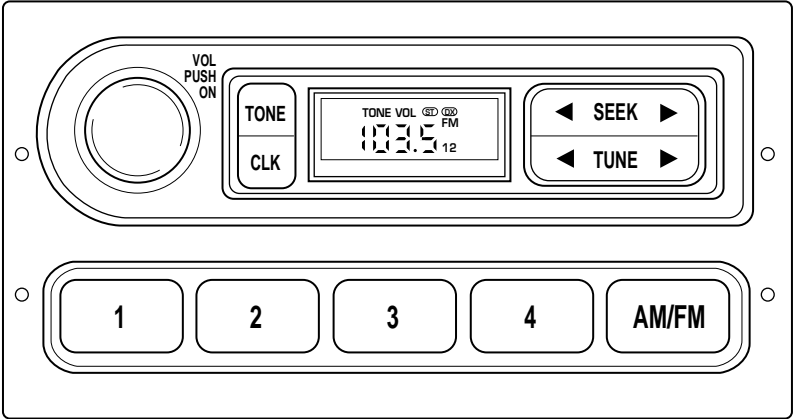
Registers the kilometers (miles) of individual journeys. To reset, depress the control.



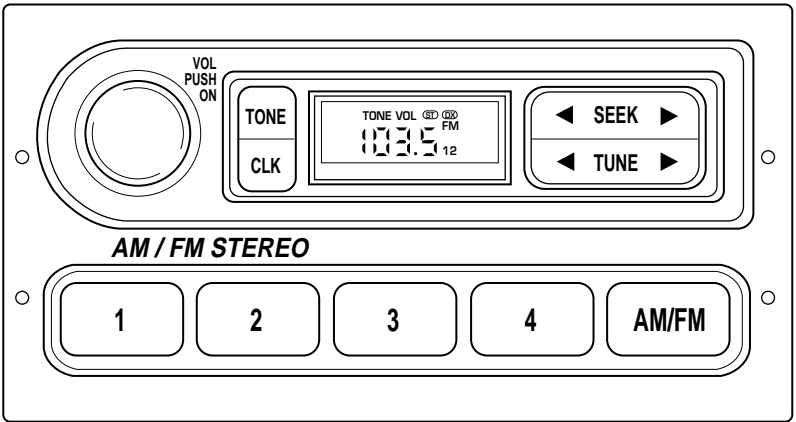
# Entertainment systems

## USING YOUR AUDIO SYSTEM

### AM/FM Stereo (with 2 speakers)

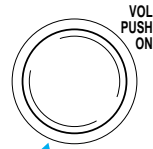


### AM/FM Stereo (with 4 speakers and fade capability)

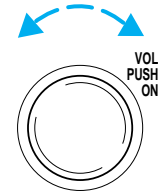


## Volume/power control

Press the control to turn the audio system on or off.



Turn the control to raise or lower volume.

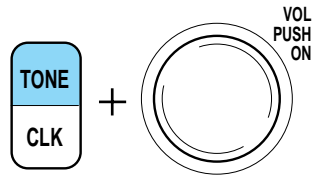


If the volume is set above a certain level and the ignition is turned off, the volume will come back on at a “nominal” listening level when the ignition switch is turned back on.

## Bass adjust

The bass adjust control allows you to increase or decrease the audio system’s bass output.

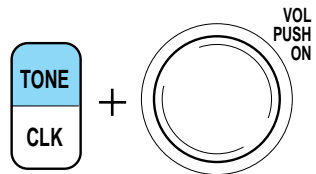
Press the TONE control once, then use the volume knob to adjust the desired level.



## Treble adjust

The treble adjust control allows you to increase or decrease the audio system’s treble output.

Press the TONE control twice, then use the volume knob to adjust the desired level.

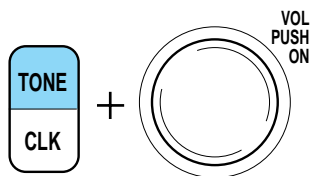


## Entertainment systems

### Speaker balance adjust

Speaker sound distribution can be adjusted between the right and left speakers.

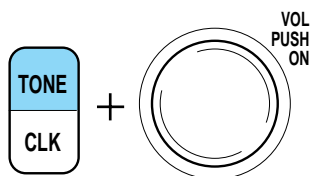
Press the TONE control three times, then use the volume knob to adjust the desired level.



### Speaker fade adjust (if equipped)

Speaker sound can be adjusted between the front and rear speakers.

Press the TONE control four times, then use the volume knob to adjust the desired level.

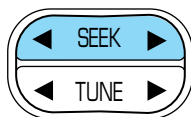


### Seek function

The seek function control works in radio mode.

#### **Seek function in radio mode**

- Press ◀ to find the next listenable station down the frequency band.
- Press ▶ to find the next listenable station up the frequency band.



### AM/FM select

The AM/FM select control works in radio mode.



#### **AM/FM select in radio mode**

This control allows you to select AM or FM frequency bands. Press the control to switch between AM, FM1 or FM2 memory preset stations.

## Radio station memory preset

The radio is equipped with four station memory preset controls. These controls can be used to select up to four preset AM stations and eight FM stations (four in FM1 and four in FM2).

### Setting memory preset stations

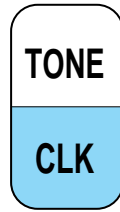
1. Select the frequency band with the AM/FM select control.
2. Select a station. Refer to *Tune adjust* or *Seek function* for more information on selecting a station.
3. Press and hold a memory preset control until the sound returns, indicating the station is held in memory on the control you selected.



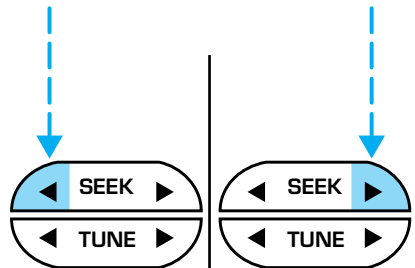
### Setting the clock

Press CLK to toggle between listening frequencies and clock mode.

To set the hour, press and hold the CLK control until CLOCK SET appears in the display and press the SEEK control:



- ◀ to decrease hours and
- ▶ to increase hours.



## Entertainment systems

To set the minute, press and hold the CLK control until CLOCK SET appears in the display and press the TUNE control:

- ◀ to decrease minutes and
- ▶ to increase minutes.

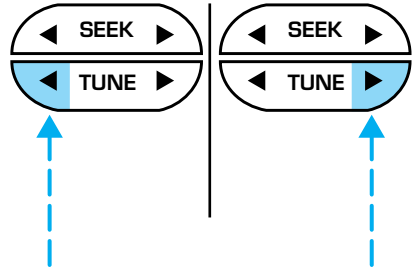
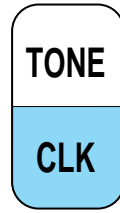
The CLK control will allow you to switch between media display mode (radio station, stereo information, etc.) and clock display mode (time). When in clock mode, the media information will display for ten seconds, when the radio is turned on, and then revert to clock information. Any time that the media is changed, (new radio station, etc.), the media information will again display for ten seconds before reverting back to the clock. In media mode, the media information will always be displayed.

### Tune adjust

The tune control works in radio mode.

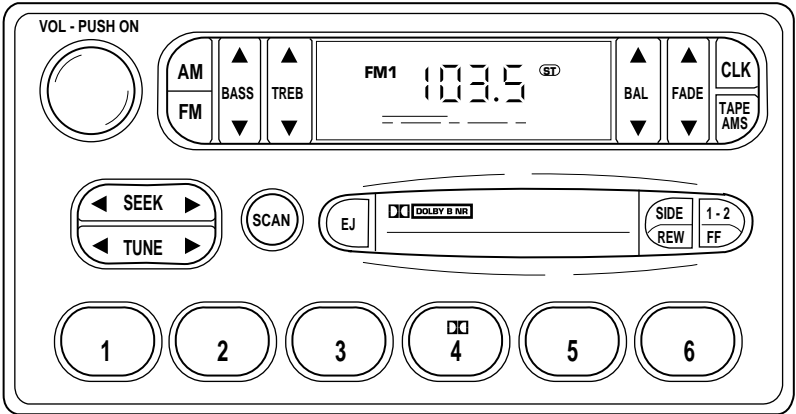
#### *Tune adjust in radio mode*

- Press ◀ to move to the next frequency down the band (whether or not a listenable station is located there). Hold the control to move through the frequencies quickly.
- Press ▶ to move to the next frequency up the band (whether or not a listenable station is located there). Hold for quick movement.





## AM/FM STEREO CASSETTE

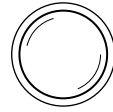


### Volume/power control

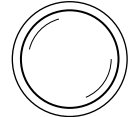
Press the control to turn the audio system on or off.

Turn the control to raise or lower volume.

VOL - PUSH ON



VOL - PUSH ON

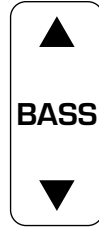


If the volume is set above a certain level and the ignition is turned off, the volume will come back on at a “nominal” listening level when the ignition switch is turned back on.

## Entertainment systems

### Bass adjust

The bass adjust control allows you to increase or decrease the audio system's bass output.



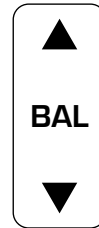
### Treble adjust

The treble adjust control allows you to increase or decrease the audio system's treble output.



### Speaker balance adjust

Speaker sound distribution can be adjusted between the right and left speakers.



### Speaker fade adjust

Speaker sound can be adjusted between the front and rear speakers.

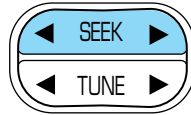


### Seek function

The seek function control works in radio mode.

#### **Seek function in radio mode**

- Press ◀ to find the next listenable station down the frequency band.
- Press ▶ to find the next listenable station up the frequency band.



### Scan function

The scan function works in radio mode.



#### **Scan function in radio mode**

Press the SCAN control to hear a brief sampling of all listenable stations on the frequency band. Press the SCAN control again to stop the scan mode.

### AM/FM select

The AM/FM select control works in radio and tape modes.



## Entertainment systems

### **AM/FM select in radio mode**

This control allows you to select AM or FM frequency bands. Press the AM control to select from AM selections, and press the FM control to select from FM1 or FM2 memory preset stations.

### **AM/FM select in tape mode**

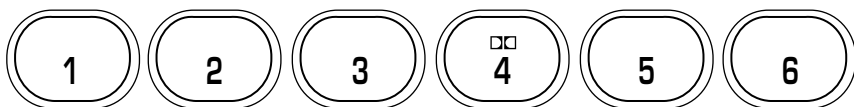
Press this control to stop tape play and begin radio play.

### **Radio station memory preset**

The radio is equipped with six station memory preset controls. These controls can be used to select up to six preset AM stations and twelve FM stations (six in FM1 and six in FM2).

### **Setting memory preset stations**

1. Select the frequency band with the AM or the FM select control.
2. Select a station. Refer to *Tune adjust* or *Seek function* for more information on selecting a station.
3. Press and hold a memory preset control until the sound returns, indicating the station is held in memory on the control you selected.

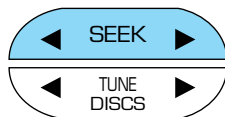


### **Setting the clock**

Press CLK to toggle between listening frequencies and clock mode while in radio mode.

To set the hour, press and hold the CLK control and press the SEEK control:

- ◀ to decrease hours and
- ▶ to increase hours.



## Entertainment systems

To set the minute, press and hold the CLK control and press the TUNE control:

- ◀ to decrease minutes and
- ▶ to increase minutes.



The CLK control will allow you to switch between media display mode (radio station, stereo information, etc.) and clock display mode (time). When in clock mode, the media information will display for 10 seconds, when the radio is turned on, and then revert to clock information. Any time that the media is changed, (new radio station, etc.), the media information will again display for 10 seconds before reverting back to the clock. In media mode, the media information will always be displayed.

### Tune adjust

The tune control works in radio mode.

#### *Tune adjust in radio mode*

- Press ◀ to move to the next frequency down the band (whether or not a listenable station is located there). Hold the control to move through the frequencies quickly.
- Press ▶ to move to the next frequency up the band (whether or not a listenable station is located there). Hold for quick movement.



## Entertainment systems

### Tape select

- To enter tape mode while in radio mode, press the TAPE AMS control.



### Automatic Music Search

The Automatic Music Search feature allows you to quickly locate the beginning of the tape selection being played or to skip to the next selection.

To activate the feature, momentarily depress the TAPE AMS button.

Then, press either REW (for the beginning of the current selection) or FF (to advance to the next selection). The tape deck stops and returns to play mode when the AMS circuit senses a blank section on the tape.

In order to ensure proper operation of the AMS feature, the tape **MUST** have a blank section of at least four seconds duration between programs.



### Rewind

The rewind control works in tape mode.

To rewind in tape mode, press the REW control.



### Fast forward

The fast forward control works in tape mode.

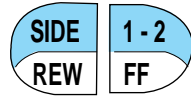
To fast forward in tape mode, press the FF control.



In the tape mode, tape direction will automatically reverse when the end of the tape is reached.

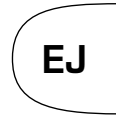
## Tape direction select

Press SIDE and 1-2 at the same time to play the alternate side of a tape.



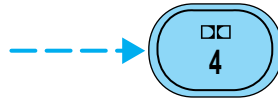
## Eject function


Press the control to stop and eject a tape.



## Dolby® noise reduction

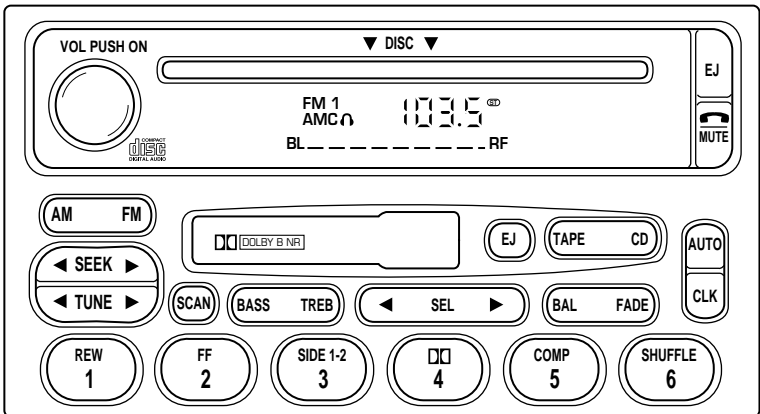
Dolby® noise reduction operates only in tape mode. Dolby® noise reduction reduces the amount of hiss and static during tape playback.



Press the  control to activate (and deactivate) Dolby® noise reduction.

Dolby® noise reduction is manufactured under license from Dolby® Laboratories Licensing Corporation. “Dolby®” and the double-D symbol are registered trademarks of Dolby Laboratories Licensing Corporation.

## PREMIUM AM/FM STEREO/CASSETTE/SINGLE CD



# Entertainment systems

## Volume/power control

Press the control to turn the audio system on or off.

Audio power can also be turned on by pressing the AM/FM select control or the tape/CD select control. Audio power is turned off by using the volume/power control.

Turn control to raise or lower volume.



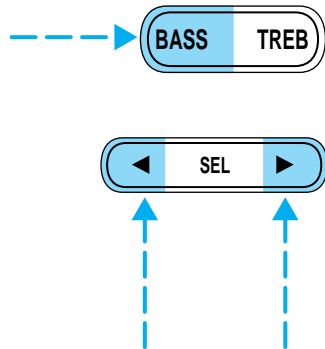
If the volume is set above a certain level and the ignition is turned off, the volume will come back on at a “nominal” listening level when the ignition switch is turned back on.

## Bass adjust

The bass adjust control allows you to increase or decrease the audio system’s bass output.

Press the BASS control then press:

- ◀ to decrease the bass output and
- ▶ to increase the bass output.





## Entertainment systems

### Treble adjust

The treble adjust control allows you to increase or decrease the audio system's treble output.

Press the TREB control then press:

- ◀ to decrease the treble output and
- ▶ to increase the treble output.

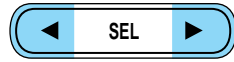


### Speaker balance adjust

Speaker sound distribution can be adjusted between the right and left speakers.

Press the BAL control then press:

- ◀ to shift sound to the left and
- ▶ to shift sound to the right.



### Speaker fade adjust

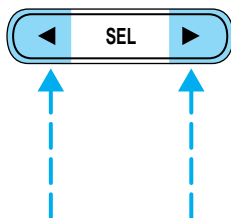
Speaker sound can be adjusted between the front and rear speakers.

Press the FADE control then press:



## Entertainment systems

- ▶ to shift the sound to the front and
- ◀ to shift the sound to the rear.

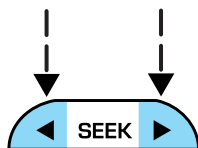


### Seek function

The seek function control works in radio, tape or CD mode.

#### **Seek function in radio mode**

- Press ◀ to find the next listenable station down the frequency band.
- Press ▶ to find the next listenable station up the frequency band.

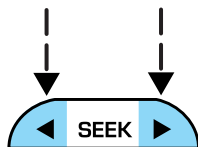


#### **Seek function in tape mode**

- Press ◀ to listen to the previous selection on the tape.
- Press ▶ to listen to the next selection on the tape.

#### **Seek function in CD mode**

- Press ◀ to seek to the previous track of the disc. If a selection has been playing for three seconds or more and you press ◀, the CD will replay that selection from the beginning.
- Press ▶ to seek forward to the next track of the disc. After the last track has been completed, the first track of the current disc will automatically replay.



### Scan function

The scan function works in radio, tape or CD mode.



### **Scan function in radio mode**

Press the SCAN control to hear a brief sampling of all listenable stations on the frequency band. Press the control again to stop the scan mode.

### **Scan function in tape mode**

Press the SCAN control to hear a short sampling of all selections on the tape. (The tape scans in a forward direction. At the end of the tape's first side, direction automatically reverses to the opposite side of the tape.) To stop on a particular selection, press the control again.

### **Scan function in CD mode**

Press the SCAN control to hear a short sampling of all selections on the CD. (The CD scans in a forward direction, wrapping back to the first track at the end of the CD.) To stop on a particular selection, press the control again.

### **AM/FM select**

The AM/FM select control works in radio, tape and CD modes.



### **AM/FM select in radio mode**

This control allows you to select AM or FM frequency bands. Press the control to switch between AM, FM1 or FM2 memory preset stations.

### **AM/FM select in tape mode**

Press this control to stop tape play and begin radio play.

### **AM/FM select in CD mode**

Press this control to stop CD play and begin radio play.

### **Radio station memory preset**

The radio is equipped with six station memory preset controls. These controls can be used to select up to six preset AM stations and twelve FM stations (six in FM1 and six in FM2).

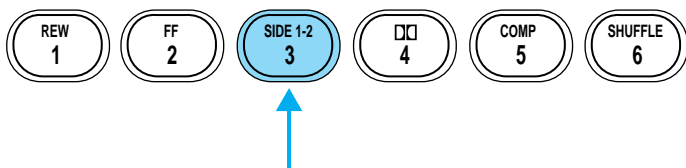
### **Setting memory preset stations**

1. Select the frequency band with the AM/FM select control.



2. Select a station. Refer to *Tune adjust* or *Seek function* for more information on selecting a station.

## Entertainment systems



3. Press and hold a memory preset control until the sound returns, indicating the station is held in memory on the control you selected.

### Autoset memory preset

Autoset allows you to set strong radio stations without losing your original manually set preset stations. This feature is helpful on trips when you travel between cities with different radio stations.

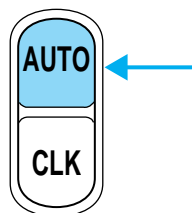
#### **Starting autoset memory preset**

1. Select a frequency using the AM/FM select controls.
2. Press the AUTO control.
3. When the first six strong stations are filled, the station stored in memory preset control 1 will start playing.

If there are less than six strong stations available on the frequency band, the remaining memory preset controls will all store the last strong station available.

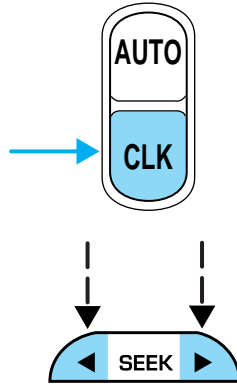
These stations are temporarily stored in the memory preset controls (until deactivated) and are accessed in the same manner as your original presets.

To deactivate autoset and return to your audio system's manually set memory stations, press the AUTO control again.



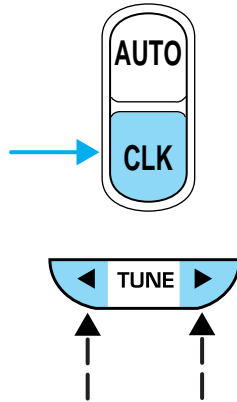
## Setting the clock

To set the hour, press and hold the CLK control and press SEEK:



- ◀ to decrease hours and
- ▶ to increase hours.

To set the minute, press and hold the CLK control and press TUNE:



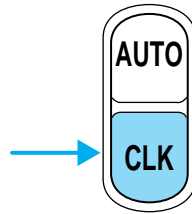
- ◀ to decrease minutes and
- ▶ to increase minutes.

If your vehicle has a separate clock, (other than the digital radio display), the CLK control will not function in the above manner.

## Entertainment systems

The CLK control will allow you to switch between media display mode (radio station, stereo information, etc.) and clock display mode (time). When in clock mode, the media information will display for 10 seconds, when the radio is turned on, and then revert to clock information. Any time that the media is changed, (new radio station, etc.), the media information will again display for 10 seconds before reverting back to the clock. In media

mode, the media information will always be displayed.

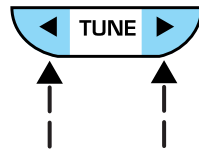


### Tune adjust

The tune control works in radio mode.

#### *Tune adjust in radio mode*

- Press ◀ to move to the next frequency down the band (whether or not a listenable station is located there). Hold the control to move through the frequencies quickly.
- Press ▶ to move to the next frequency up the band (whether or not a listenable station is located there). Hold for quick movement.



### Tape/CD select

- To begin tape play (with a tape loaded into the audio system) while in the radio or CD mode, press the TAPE control. Press the button during rewind or fast forward to stop the rewind or fast forward function.
- To begin CD play (if CD is loaded), press the CD control. The first track of the disc will begin playing. If returning from radio or tape mode, CD play will begin where it stopped last.



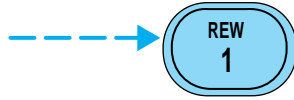
## Entertainment systems

**Do not insert any promotional (odd shaped or sized) discs, or discs with removable labels into the CD player as jamming may occur.**

### Rewind

The rewind control works in tape and CD modes.

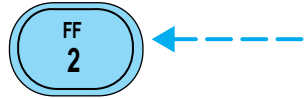
- In tape mode, radio play will continue until rewind is stopped (with the TAPE control) or the beginning of the tape is reached.
- In CD mode, pressing the REW control rewinds the CD within the current track.



### Fast forward

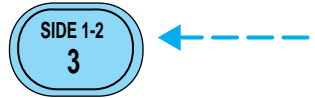
The fast forward control works in tape and CD modes.

- In the tape mode, tape direction will automatically reverse when the end of the tape is reached.
- In CD mode, pressing the control fast forwards the CD within the current track.



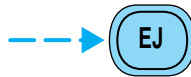
### Tape direction select

Press SIDE 1-2 to play the alternate side of a tape.

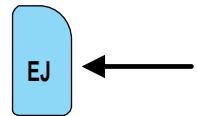


### Eject function

Press the EJ control to stop and eject a tape.



Press the EJ control to stop and eject a CD.




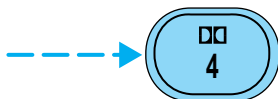
## Entertainment systems

### Dolby® noise reduction

Dolby® noise reduction operates in tape mode. Dolby® noise reduction reduces the amount of hiss and static during tape playback.

Press the  control to activate (and deactivate) the Dolby® noise reduction.

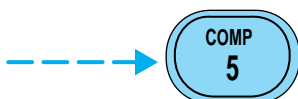
Dolby® noise reduction is manufactured under license from Dolby® Laboratories Licensing Corporation. “Dolby®” and the double-D symbol  are registered trademarks of Dolby® Laboratories Licensing Corporation.



### Compression adjust

Compression adjust brings soft and loud CD passages together for a more consistent listening level.

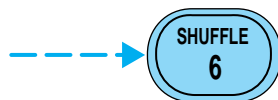
Press the COMP control to activate and deactivate compression adjust.



### Shuffle feature

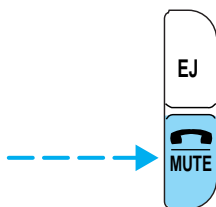
The shuffle feature operates in CD mode and plays all tracks in random order.

Press the SHUFFLE control to start this feature. Random order play will continue until the SHUFFLE control is pressed again.



### Mute mode

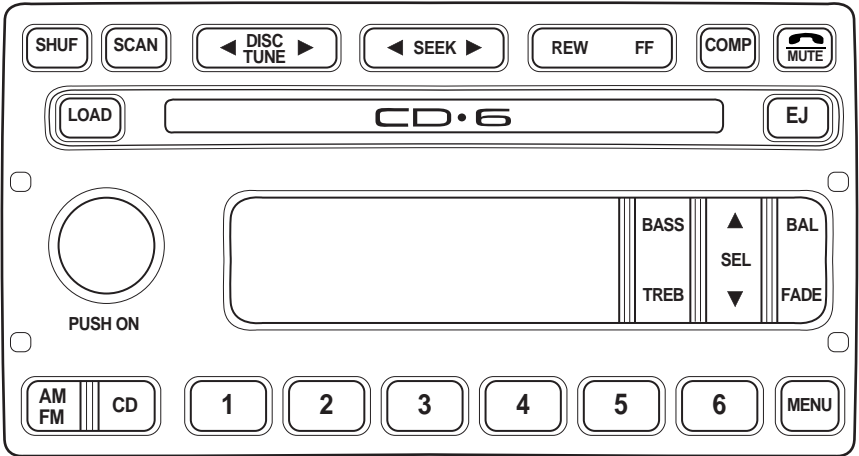
Press the MUTE control to mute the playing media. Press the MUTE control again to return to the playing media.





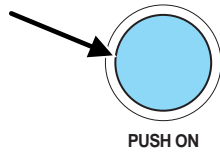
# Entertainment systems

## PREMIUM AM/FM STEREO IN DASH SIX CD RADIO

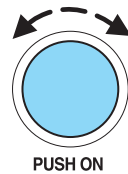


### Volume/power control

Press the control to turn the audio system on or off.



Turn the control to raise or lower volume.



If the volume is set above a certain level and the ignition is turned off, the volume will come back on at a “nominal” listening level when the ignition switch is turned back on.

## Entertainment systems

### Bass adjust

The bass adjust control allows you to increase or decrease the audio system's bass output.

Press the BASS control. Use the SEL control to increase or decrease the amount of bass.



### Treble adjust

The treble adjust control allows you to increase or decrease the audio system's treble output.

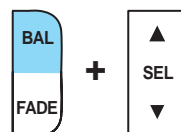
Press the TREB control. Use the SEL control to increase or decrease the amount of treble.



### Speaker balance adjust

Speaker sound distribution can be adjusted between the right and left speakers.

Press the BAL control. Use the SEL control to adjust the sound between the speakers.



### Speaker fade adjust

Speaker sound can be adjusted between the front and rear speakers.

Press the FADE control. Use the SEL control to adjust the sound between the front and rear speakers.



### Seek function

The seek function works in radio or CD mode.

### **Seek function in radio mode**

- Press ◀ to find the next listenable station down the frequency band. SEEK DOWN will display.
- Press ▶ to find the next listenable station up the frequency band. SEEK UP will display.



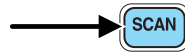
### **Seek function in CD mode**

- Press ◀ to seek to the previous track of the current disc. If the beginning of the disc is reached, the CD player seeks to the beginning of the last track on the current disc and begins playing.
- Press ▶ to seek forward to the next track of the current disc. After the last track has been completed, the first track of the current disc will automatically replay.



### **Scan function**

The scan function works in radio or CD mode.



### **Scan function in radio mode**

Press the SCAN control to hear a brief sampling of all listenable stations on the frequency band. Press the SCAN control again to stop the scan mode.

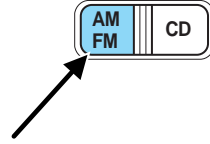
### **Scan function in CD mode**

Press the SCAN control to hear a short sampling of all selections on the CD. (The CD scans in a forward direction, wrapping back to the first track at the end of the CD.) To stop on a particular selection, press the control again.

## Entertainment systems

### AM/FM select

The AM/FM select control works in radio and CD modes.



### AM/FM select in radio mode

This control allows you to select AM or FM frequency bands. Press the control to switch between AM, FM1 or FM2 memory preset stations.

### AM/FM select in CD mode

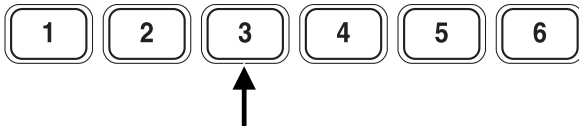
Press this control to stop CD play and begin radio play.

### Radio station memory preset

The radio is equipped with six station memory preset controls. These controls can be used to select up to six preset AM stations and twelve FM stations (six in FM1 and six in FM2).

### Setting memory preset stations

1. Select the frequency band with the AM/FM select control. Press the AM/FM control to toggle between AM, FM1, or FM2.
2. Press the SEEK control to access the next listenable station up or down the frequency band. Press the TUNE control to go up or down the listening band in individual increments.
3. Select a station. Refer to *Seek function* for more information on selecting a station.
4. Press and hold a memory preset control. The playing media will mute momentarily. When the sound returns, the station is held in memory on the control you selected. The display will read **SAVED**.

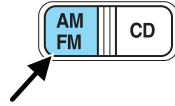


## Autostore

Autostore allows you to set the strongest local radio stations without losing your original manually set preset stations. This feature is helpful on trips when you travel between cities with different radio stations.

### Starting autostore

1. Press and momentarily hold the AM/FM control.
2. AUTOSET will flash in the display as the frequency band is scrolled through.
3. When the six strongest stations are filled, the station stored in memory preset control 1 will start playing.

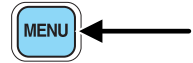


If there are less than six strong stations available on the frequency band, the remaining memory preset controls will all store the last strong station available.

To deactivate autostore and return to your audio system's manually set memory stations, press the AM/FM control again.

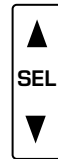
### Setting the clock

Press the MENU control until SELECT HOUR or SELECT MINUTE is displayed. (The menu mode must be engaged to enable clock mode).



Use the SEL control to manually set the time.

- Press ▲ to increase hours/minutes.
- Press ▼ to decrease hours/minutes.



Press the MENU control again to disengage the clock mode.

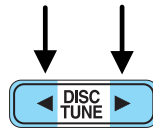
### Tune adjust

The tune control works in radio or CD mode.

## Entertainment systems

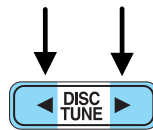
### **Tune adjust in radio mode**

- Press ◀ to move to the next frequency down the band (whether or not a listenable station is located there). Hold the control to move through the frequencies quickly.
- Press ▶ to move to the next frequency up the band (whether or not a listenable station is located there). Hold for quick movement.



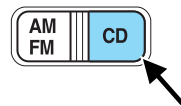
### **Tune adjust for CD mode**

- Press ◀ to select the previous disc. (Play will begin on the first track of the disc unless shuffle mode is engaged.) Refer to *Shuffle feature* for more information. Hold the control to continue reversing through the discs.
- Press ▶ to select the next disc. Hold the control to fast-forward through the remaining discs.



### **CD select**

CD mode may be entered by pressing the CD control and the LOAD control. Load the CD into the audio system. The first track of the disc will begin playing. After that, CD play will begin where it stopped last.



If an alternative CD is desired, press the corresponding preset control (1–6) of a loaded CD, or press the TUNE control to access the other loaded CDs.

NO CD will display if the CD control is activated when there is not a CD present in the audio system.

NO CD will illuminate in the display if the CD control and a present number (that is currently empty) are pressed. The system will play the next available disc.

If your vehicle is equipped with a CD changer, pressing the CD control again will allow you to toggle between accessing the multi disc system and the CD changer. The display will read CD or CDDJ.

## Entertainment systems

**Do not insert any promotional (odd shaped or sized) discs, or discs with removable labels into the CD player as jamming may occur.**

### ***Display description***

Six circles are always lit in the digital display. These signify the six CD slots in the audio system. When a disc is loaded into a particular slot (1–6), the number inside that specific circle lights. If the circle is empty, there is no CD in that particular slot.

### **Rewind**

The rewind control works in CD modes.

Press and hold the REW control until the desired selection is reached. If the beginning of the disc is reached, the CD will begin play at the first track. Release the control to disengage rewind mode.

When in rewind mode, your audio system will automatically lower the volume level of the playing media.



### **Fast forward**

The fast forward control works in CD modes.

Press and hold the FF control until the desired selection is reached. If the end of the disc is reached, the CD will return to the first track. Release the control to disengage fast forward mode.

When in fast forward mode, your audio system will automatically lower the volume level of the playing media.



### **Load**

The load feature allows you to load single CDs into the player internal to the radio.



**This six disc CD player is equipped with a CD door. Compact discs should only be inserted into the player after the door has been opened by the player. Do not attempt to force the door**

## Entertainment systems

**open.** Compact discs should only be loaded by pressing the **LOAD** control.

Press the **LOAD** control. (You can choose which slot will be loaded by pressing the desired preset number. If you do not choose a slot, the system will choose the next available one.) Wait until the CD door opens. Load the CD into the player. **LOADING CD#** is displayed. When the CD has been loaded, the door will close and the CD will begin to play. For example, to load a CD into slot 2, press the **LOAD** control and then press preset 2.

### **Auto load**

This feature allows you to autoload up to 6 discs into the multi disc CD player internal to the radio.



Press and hold the **LOAD** control until **AUTOLOAD #** is displayed. The CD door will open. Load the desired disc, one at a time. The CD is loaded into position and the audio system will display **CD#**. Each time the CD door opens, **INSERT CD#** is displayed. The door will close and the player will move to the next slot after each disc has been loaded. The process is repeated until all 6 slots are full. The audio system plays the last CD loaded and the display is updated. If some slots are already full and autoload is activated, the system will fill all empty slots.

### **Eject**

Press the **EJ** control to stop and eject a CD. You can choose which CD will be ejected by pressing the **EJ** control and the desired preset number (1–6). For example, to eject CD 2, press the **EJ** control and then press the preset 2 control. If you do not choose a specific CD, the player will eject the current CD.



If a CD is ejected and not removed from the door of the CD player, the player will automatically reload the CD. This feature may be used when the ignition is **ON** or **OFF**.



### **Auto eject**

Press and momentarily hold the EJ control to engage auto eject. All CDs which are present in the player will be ejected one at a time. If a CD is ejected and not removed from the door of the CD player, the player will automatically reload the CD. This feature may be used when the ignition is ON or OFF.



### **Shuffle feature**

Press the SHUF control until the desired shuffle mode is displayed. The audio system will then engage the desired shuffle mode.



When engaged, the shuffle feature has two different modes: SHUFFLE DISC and SHUFFLE TRK.

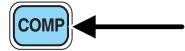
SHUFFLE DISC randomly plays tracks from all the discs presently in the audio system.

SHUFFLE TRK plays all the tracks on the current disc in random order.

### **Compression feature**

The compression feature operates in CD mode and brings soft and loud CD passages together for a more consistent listening level.

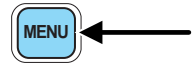
Press the COMP control until COMP ON is displayed.



## Entertainment systems

### Menu mode

The MENU control allows you to access many different features within your audio system. There are three sets of menus available depending upon which mode or feature is activated.



While in FM mode, two menus are available. **If RDS is turned OFF**, you can access the following:

- SELECT HOURS — Refer to *Setting the clock*.
- SELECT MINUTES — Refer to *Setting the clock*.
- RDS OFF — Refer to *Radio data system feature*.

**If RDS is turned ON**, you can access the following:

- TRAFFIC ON/OFF-Refer to *Traffic announcements*.
- FIND type-Refer to *Program type*.
- SHOW (NAME, TYPE, NONE)- Refer to *Radio data system feature*.
- RDS ON— Refer to *Radio data system feature*.
- SELECT HOURS — Refer to *Setting the clock*.
- SELECT MINUTES —Refer to *Setting the clock*.

When in CD mode, you can access: SELECT HOURS, SELECT MINUTES or COMP ON/OFF.

SELECT HOURS, SELECT MINUTES— Allows you to adjust the hours and minutes. Refer to *Setting the clock*.

TRAFFIC ON/OFF— Traffic announcements can be programmed as local or distant. Refer to *Traffic announcements*.

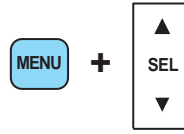
RDS ON/OFF— This feature allows your audio system to receive text information from RDS-equipped FM radio stations. Refer to *Radio Data System feature*.

FIND type — Allows you to select your desired FM program type and search for that selection.

SHOW — Allows you to select from NAME (displays the name of the radio station), TYPE (displays the RDS program type: rock, jazz, etc.), or NONE (deactivates the RDS display).

### Radio data system (RDS) feature

This feature allows your audio system to receive text information from RDS-equipped FM radio stations.



#### To activate RDS:

- When in FM mode, press the MENU control until RDS OFF displays.
- Press the SEL control to engage this feature (RDS ON).

#### RDS features:

Once the RDS feature is on, press the MENU control to scroll through the following selections:

##### **Traffic announcements**

This feature allows you to hear traffic announcements while in CD mode. These announcements are broadcast by traffic capable RDS stations.

When in this mode, traffic announcements will interrupt radio and CD play.

- Press the MENU control until TRAFFIC is displayed.
- Press the SEL control to engage the feature. The display will read TRAFFIC ON.

This feature also allows you to control the volume of traffic announcements. With the display reading TRAFFIC ON, adjust the volume using the volume control to the desired level. The volume level will show at the bottom of the display. Interrupting traffic announcements will be at the selected volume level.

To disengage the feature, press the MENU control until TRAFFIC ON displays. Press the SEL control. The display will read TRAFFIC OFF.

**Traffic announcements are not available in most U.S. markets.**

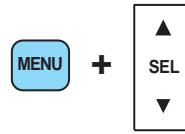
##### **Program type**

This feature allows you to search for RDS stations selectively by their program type.

## Entertainment systems

Press the MENU control until FIND program type is displayed.

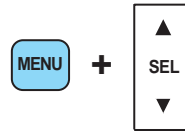
Use the SEL control to select the program type. With the feature on, use the SEEK or SCAN control to find the desired program type from the following selections:



- Classic
- Country
- Info
- Jazz
- Oldies
- R & B
- Religious
- Rock
- Soft
- Top 40

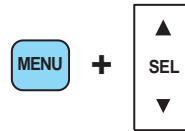
### Show

This feature allows you to select the type of RDS broadcast information the radio will regularly show in the display.



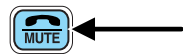
With RDS activated, press the MENU control until SHOW is displayed.

Use the SEL control to select TYPE (displays the RDS program type: rock, jazz, etc), NAME (displays the name of the radio station) or NONE (deactivates the RDS display).



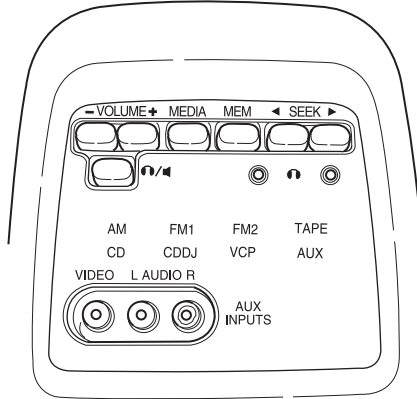
### Mute mode

Press the control to mute the playing media. Press the control again to return to the playing media.



### REAR SEAT ENTERTAINMENT SYSTEM

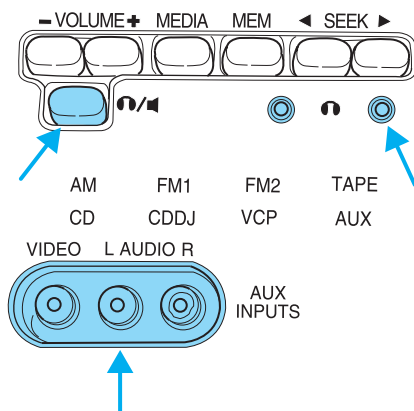
#### Quick Start — How to get going




#### To operate the system:

1. Your AutoVision® system is automatically activated when the vehicle ignition and the audio system are ON.
2. If a movie is desired, insert a VHS cassette into the VCP and the video should start playing.
3. Press the MEDIA control to toggle to any other desired media source.

## Entertainment systems



### To play a video game:

1. Connect the video line from your game device to the VIDEO jack.
2. Connect the left and right audio cables to the left (L) and right (R) audio jacks.
3. Ensure that the system is in AUX mode. The LCD screen will turn on and the AUX indicator will illuminate.
4. If desired, press the  control and plug a 3.5mm headphone into the headphone jack. With the headphones ON, the rear speakers will not operate.

Your AutoVision® System allows you to watch movie rentals and your favorite home videocassettes. It also allows you to plug in and play a variety of standard video games. Please review this user manual to become familiar with the AutoVision® features and controls as well as the very important safety information.

Should you have any questions regarding your AutoVision® System, please feel free to call the toll free assistance hotline at 1 (877) 848-6434.

### Safety information

Read all of the safety and operating instructions before operating the system and retain for future reference.

## Entertainment systems

Do not attempt to service, repair or modify the AutoVision® System. See your Ford or Lincoln Mercury dealer.

Do not insert foreign objects into the videocassette player (VCP) tape cassette compartment.



The front glass on the liquid crystal display may break when hit with a hard surface. If the glass breaks, do not touch the liquid crystalline material. In case of contact with skin, wash immediately with soap and water.



The driver must not attempt to operate any function of the floor console mounted VCP while the vehicle is in motion. Give full attention to driving and to the road. Pull off the road and park in a safe place before inserting or extracting video tapes from the VCP. A remote control is included in the system to allow the rear seat occupants to operate the VCP functions without distracting the driver.

Be sure to review User Manuals for video games and video game equipment when used as auxiliary inputs for your AutoVision® System.

Do not operate video games or video equipment if the power cords and/or cables are broken, split or damaged. Carefully place cords and/or cables where they will not be stepped on or interfere with the operation of seats and/or compartments.

Disconnect video games and video equipment power cords and/or cables when not in use.

Avoid touching auxiliary input jacks with your fingers. Do not blow on them or allow them to get wet or dirty.

Do not clean any part of the AutoVision® system with benzene, paint thinner or any other solvent.

### ***Federal Communication Commission (FCC) Compliance***

Changes or modifications not approved by Ford Lincoln Mercury could void user's authority to operate the equipment. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with

## Entertainment systems

the instructions, may cause harmful interference and radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to consult the dealer or an experienced radio/TV technician for help.

### **Care of the videocassette player (VCP)**

#### ***Environmental extremes***

Videocassette players subjected to harsh environmental conditions may be damaged or perform at less than maximum capability. To avoid these outcomes, avoid leaving the VCP:

- in extremely hot or cold temperatures.
- in direct sunlight.
- in high humidity.
- in a dusty environment.
- in locations where strong magnetic fields are generated.
- on a surface that is instable or subject to vibrations.

#### ***Temperature extremes***

When the vehicle is parked under direct sunlight or in an extremely cold place for a long period of time, wait until the cabin temperature of the vehicle is at normal temperature before operating the system.

#### ***High/low temperature sensor circuit***

- Excessively high or low temperatures may cause damage to the VCP.
- When the temperature of the VCP becomes too high or low, the temperature sensor circuit stops machine operation, ejects the cassette and the WAIT indicator illuminates. The lamp will remain illuminated until the system has returned to a safe operating temperature.



### ***Humidity and moisture condensation***

Moisture in the air will condense in the VCP under extremely humid conditions or when moving from a cold place to a warm one. Moisture condensation on the tape playback head drum may damage the videocassette and/or drum. If moisture condensation occurs, do not insert a videocassette into the player. If a videocassette is already in the player, remove it. Turn the VCP power ON to dry the moisture before inserting a videocassette. This could take an hour or more.

### ***Dew sensor circuit***

- Under high moisture (dewed) conditions, the tape heads and cassette tape may be damaged if the VCP is operated.
- When the vehicle's cabin temperature is very low and then is heated quickly, or the humidity is very high within the vehicle, the inside of the windows most likely will be fogged. Under these conditions, the inside of the VCP most likely is dewed.
- When a dewed condition exists, the dew sensor circuit stops machine operation, ejects the cassette and the WAIT indicator illuminates. The lamp will remain illuminated until the system is dry enough to operate safely.

### ***Cleaning video heads***

Magnetic video heads convert the videocassette into pictures on the screen during playback. Over a period of time, particles rub off the tape and are left on the heads. Using an old or poor quality tape together with dust and air particles, high temperature and humidity cause dirty heads. Dirty heads generally cause "snowy" pictures and, in some severe cases, blurred or interrupted pictures. A variety of products are available at video stores to clean tape heads. Use these products sparingly, because some are abrasive to the video heads. If normal head cleaning procedures do not resolve the problem, have the system checked by a service technician.

### ***Foreign substances***

Exercise care to prevent dirt and foreign objects from entering the VCP compartment. Be especially careful not to spill liquids of any kind onto the media controls or into the videocassette player. If liquid is accidentally spilled onto the system, immediately turn the system OFF and consult a qualified service technician.

# Entertainment systems

## AutoVision® system

### **Features**

- 2-head hi-fi playback
- AutoPlay feature
- Digital auto tracking
- Dual stereo headphone with electric volume control
- Self docking connection for easy mobile installation
- Latching system for secure safety
- Carrying handle for portability
- Water resistant tape door
- On screen display
- Protection circuits

### **Playback and format**

- The videocassette player of your AutoVision® system can only be used in the “playback” mode. You are not able to record with your system.
- The system plays standard videocassettes marked “VHS” (or “S-VHS”).

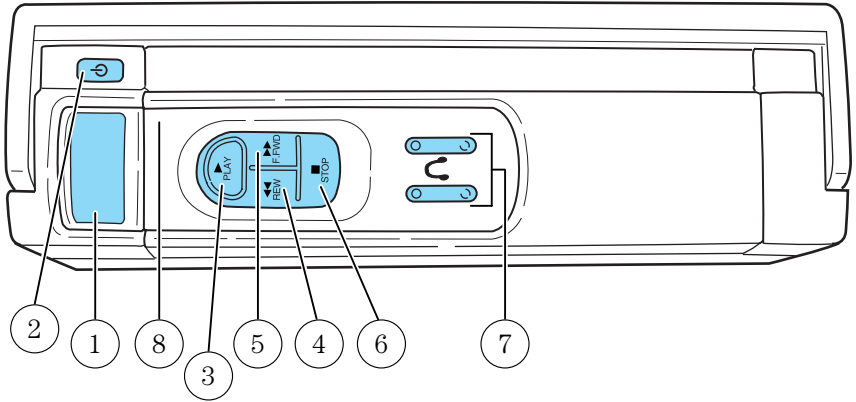
## VCP protection circuits

### **Tape protection circuit**

- When the system is in PAUSE mode, the tape mechanism will continue to create tension on the tape.
- When the VCP is in still playback, FFWD (fast forward) or REW (reverse) mode for more than five minutes, the tape protection circuit automatically returns the system to PLAY mode to avoid damage to the tape.

Your AutoVision System is also equipped with a Dew sensor circuit and a High/low temperature sensor circuit. For more information on these circuits, please refer to *Humidity and moisture condensation* and *Temperature extremes* in the Introduction chapter.

### VCP controls



1. **LED** display

The display lamp will light up in green when power is supplied to the videocassette player.

2. **POWER** key

Press to toggle between ON/OFF. When the power is ON, other keys (PLAY, FF, REW, STOP) will illuminate.

3. **PLAY** key

Press to playback a videocassette tape.

4. **REWIND/REVIEW** button

Press to enter the reverse picture mode when in PLAYBACK mode. If in STOP mode, the tape will rewind at a high speed.

5. **FAST FORWARD/CUE** button

Press to enter forward picture search mode when in PLAYBACK mode. If in STOP mode, the tape will fast-forward at a high speed.

6. **STOP** button

Press to stop the tape.

7. **HEADPHONE VOLUME UP/DOWN KEYS** button

For home use only, please refer to the *In-Home Use* section.

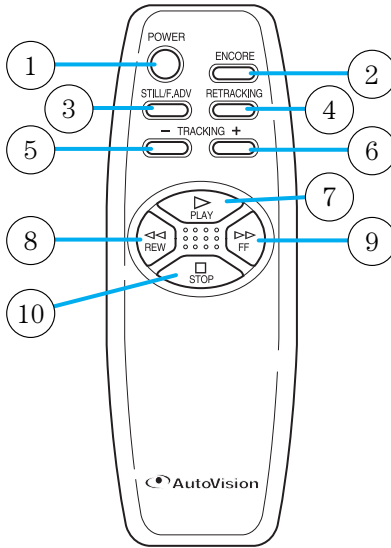
8. **EJECT** button

Located inside the videocassette cover. Press to eject the tape.

# Entertainment systems

## Remote control

The remote control enables third row passengers to control the rear seat entertainment system. The remote control will *not* operate from the second row seats. The sensor for the remote control is located on the rear of the entertainment system.



### 1. **POWER** button

Press to turn the videocassette player (VCP) ON or OFF.

### 2. **ENCORE** button

Press to reverse the cassette for 5 seconds. Normal playback will then resume when in **PLAYBACK** mode.

### 3. **STILL/ADVANCE** (frame advance button)

Press to temporarily suspend playback. Press again to make the tape advance one frame at a time.

### 4. **RETRACKING** button

Press to activate Auto Tracking in the playback mode.

5. **TRACKING +** button

Press for manual tape tracking.

6. **TRACKING —** button

Press for manual tape tracking.

7. **PLAY** button

Press to play the tape.

8. **REW** button

Press to rewind the tape.

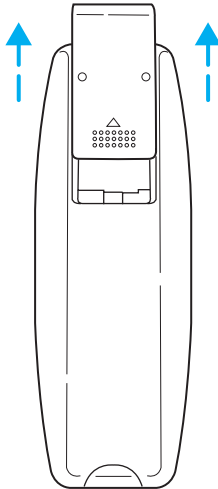
9. **FF** button

Press to fast forward the tape.

10. **STOP** button

Press to stop the tape.

### ***Battery replacement***



Batteries are supplied with the remote control unit. However, they are simply for operation check and will only work for a short time.

Slide battery cover off as shown on remote control to access the batteries.

## Entertainment systems

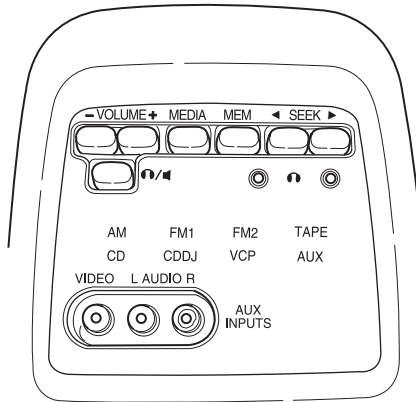
The remote control unit uses two AAA batteries.

The need for battery replacement is usually indicated if the remote control only functions at extremely close distances to the entertainment center or not at all.

When replacing batteries, use two new batteries (alkaline recommended) and install with correct orientation (+ and – polarities). Ensure that you use only new batteries of the same brand.


If you will not be using the remote control for a considerably long time, remove the batteries.

### AutoVision® controls



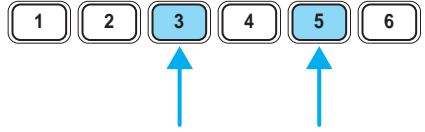
The AutoVision® controls allow the rear seat passengers to operate the radio, tape, CD or CD DJ(if equipped).

### Parental control

Your AutoVision® system allows you to have control over the rear seat controls. The system is automatically activated when the ignition is ON. This enables rear seat passengers to play a videocassette or listen to any of the available media sources. Once the headphone mode is activated, the  symbol will appear in the radio display.

## Entertainment systems

Press the memory preset controls 3 and 5 simultaneously on the front audio controls to disable the AutoVision® controls. They will remain disabled until the front seat passengers “enable” them again by simultaneously pressing the 3 and 5 preset controls. The settings of the front seat controls will always override those of the rear seat controls.

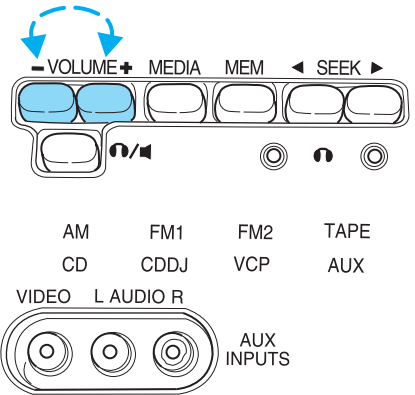


### Adjusting the volume

This control allows the rear seat passengers to adjust the volume level of the audio system.

Press the + control to increase the volume.

Press the — control to decrease the volume.





From the AutoVision® controls, the speaker volume cannot be set higher than the current volume radio setting. When in headphone mode, the AutoVision® controls can change the volume setting to any desired level.

## Entertainment systems

### Using headphones/Personal Audio Feature

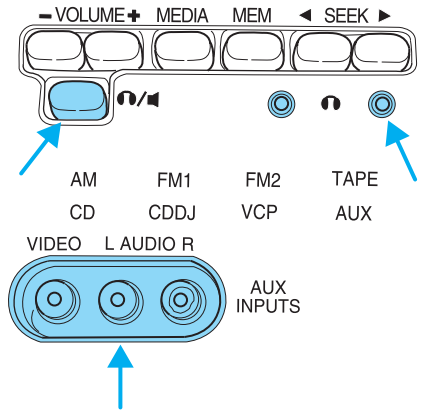
The Personal Audio Feature allows the rear seat passengers to listen to one media source (radio, TAPE, CD, CDDJ, VCP, or AUX) while the front seat passengers listen to another.

To activate, press the  /  control and plug a 3.5mm headphone into the headphone jack. With the headphones ON, the rear speakers will not operate.

Press the MEDIA control to toggle to the desired media source.

Use the SEEK, VOLUME and MEM controls to make any desired adjustments.

Press the  /  control again to engage the rear speakers and deactivate the Personal Audio Feature.



### Speakers ON/OFF mode

With the speakers ON, you can adjust the audio output to all system speakers — front and rear together (headphones are disabled in this mode). The rear seat passengers can not raise the volume of the system above the level on the front radio bezel.

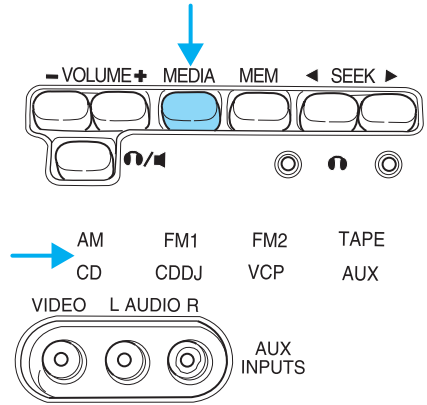
With the speakers OFF, the headphones are enabled. The rear seat passengers have control over the desired volume levels.



## Entertainment systems

### Media select

Press the MEDIA control to toggle between AM, FM1, FM2, TAPE, CD, CDDJ, VCP and AUX modes. When selected, the media source will illuminate.



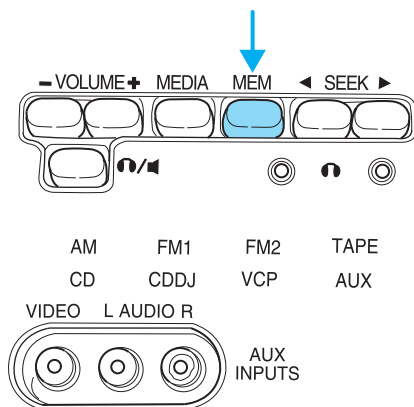
- AM  
AM radio frequency band
- FM1, FM2  
FM radio frequency bands
- TAPE  
cassette tape (if equipped)
- CD  
single cd player (if equipped)
- CDDJ  
compact disc changer (if equipped)
- VCP  
video cassette player
- AUX  
auxiliary jack input

## Entertainment systems

### Memory preset control

In radio mode, press the MEM (Memory) control successively to scroll through the memory presets in AM, FM1 or FM2.

In CDDJ mode, press the MEM (Memory) control to select the next disc in the compact disc changer. Play will begin with the first track.



### Seek function

The SEEK control has varying functions depending on which mode is enabled.

In radio mode (AM, FM1, FM2):

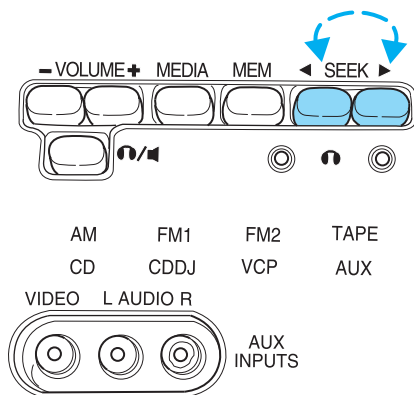
Press the ◀ control to find the next listenable station down the frequency band.

Press the ▶ control to find the next listenable station up the frequency band.

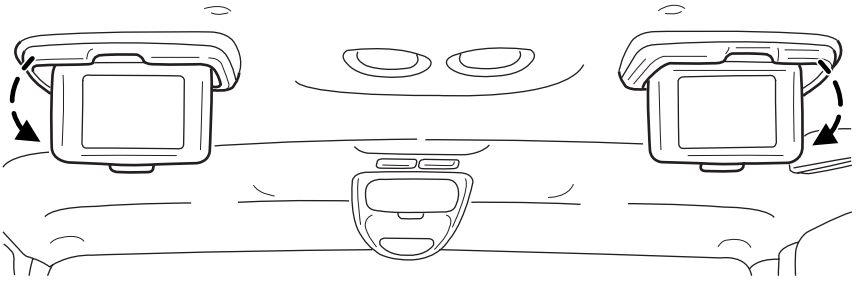
In tape mode, press the SEEK control to access the previous (◀) or the next (▶) selection.

In CD mode, press the SEEK control to access the previous (◀) or the next (▶) track.

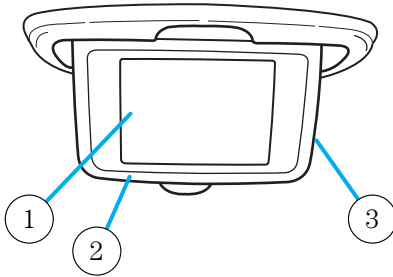
In CDDJ mode, press the SEEK control to access the previous (◀) or the next (▶) track of the currently selected disc.



### Flip-down screens



The screens rotate down to view and up into the housing to store when not in use. Ensure that the screens are latched into the housing when being stored.




1. 6.4" (diagonal) color liquid crystal display (LCD) screen.
2. Screen housing.
3. Dimmer switch. Rotate to increase/decrease the brightness of the screen.

### General operation

- When the engine is not running, use the system sparingly otherwise it will run the battery down.
- Do not leave the videocassette in the VCP overnight or for long periods of time.

## Entertainment systems

- When the ignition is turned ON, audio is through the headphones as LOW volume. Press the (+) control to increase volume. To listen through the vehicle's speaker system, press the speaker button (  ) on the media control panel.

### ***Inserting/removing cassette***

#### ***Inserting cassette***

- Open the AutoVision® console cover.
- Insert the videocassette into the cassette compartment.

Inserting a videocassette into the VCP automatically turns the power ON (the indicator lamp will illuminate) and the tape will begin playback.

If the vehicle is traveling over rough terrain, it may be difficult to insert the cassette because the machine attempts to hold the cassette firmly to prevent vibration. If this condition is encountered, either press firmly or remove the cassette and insert it again.

The system will not allow a cassette to be inserted in the wrong position.

- Once the cassette is completely inserted, close the VCP and console covers.

#### ***Removing cassette***

1. Open the console cover, open the VCP cover and press the STOP button.
2. Press the EJECT button.

Do not insert any foreign substances into the cassette compartment.

After removing the cassette from the VCP, close the door.

When the engine is turned OFF, the cassette is ejected from the compartment.

#### ***To play a video game***

1. Connect the video line from your video game device to the YELLOW jack.
2. Connect the left and right audio cables to the WHITE and RED jacks respectively.
3. Ensure that the system is in AUX mode. The LCD screen will turn on and the AUX indicator will illuminate.

### ***On-screen indicators***

#### ***Playback operation***

1. Press the POWER control on the VCP.
2. Insert a videocassette into the VCP.
3. The videocassette should automatically begin playback, and the picture will appear within approximately nine seconds.
4. Press the STOP control to stop playback or press EJECT to remove the cassette.

#### ***Fast-forward or rewind (no picture)***

1. Press the FF/REW control on the VCP.
2. Press the STOP control to stop or press EJECT to remove the cassette.

The tape will fast forward or rewind until it has reached the end or the beginning.

#### ***Fast-forward or rewind (with picture)***

1. While in playback mode, momentarily press the FF/REW key. The VCP will search the playback direction five times faster than normal playback mode.
2. Press the PLAY key to resume normal playback.

#### ***Special effects playback***

##### ***Still playback/ Frame-to-frame playback (on remote control)***

1. Press the STILL/F.ADV key while in playback mode. The playback picture becomes still.
2. Press the STILL/F.ADV key again. Each time the control is pressed, the pictures are played back one frame at a time.

The still playback feature can also be used in REW (reverse) mode.

If still playback/or frame-to-frame playback is engaged for five minutes or longer, the VCP will automatically begin playback to protect the tape.

Automatic tracking is automatically activated the moment the VCP is turned ON or a cassette is inserted.

If a videocassette is in poor shape (i.e., badly recorded), any tracking adjustment may result in failure. The VCP will eject the videocassette.

# Entertainment systems

## Encore (on remote control)

- Press the ENCORE control while in playback mode.

The VCP will reverse to the previous five seconds of the selection and then operate at normal playback mode.

## Auxiliary input jacks

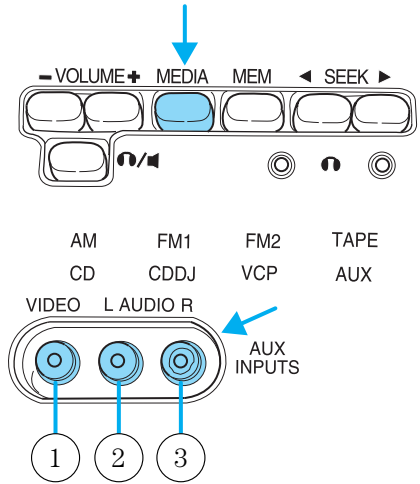
The auxiliary input jacks on the AutoVision® control panel accepts video and audio connectors for all standard video games (Nintendo®, PlayStation®, etc.) Other compatible devices such as DVD players, camcorders and portable CD players can also be connected to the auxiliary jacks.

The auxiliary jack is color-coded for identification purposes. They are as follows:

- YELLOW (1)— video input
- WHITE (2)— left channel audio input
- RED (3)— right channel audio input

Press the MEDIA control until AUX is illuminated in the control panel. This will allow you to view the video and listen to the audio from the auxiliary input.

To listen to another audio source while viewing video from the auxiliary input, press the MEDIA control until the desired media source is illuminated.

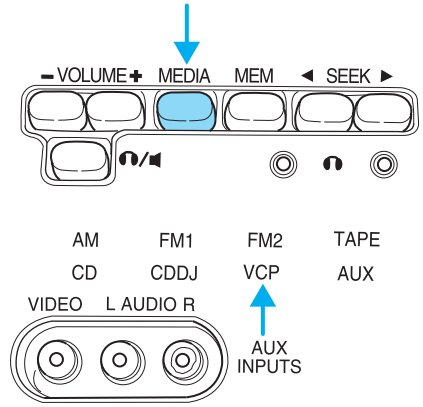


## Entertainment systems

### Video source selection

The MEDIA control determines which video (VCP or Auxiliary input) is seen on the AutoVision® screen.

When the vehicle ignition is ON and the system is not in VCP mode, the AutoVision® selects the Auxiliary input as the video source. (If there is not a video source connected to the Auxiliary input jack, the screen will be blank.)



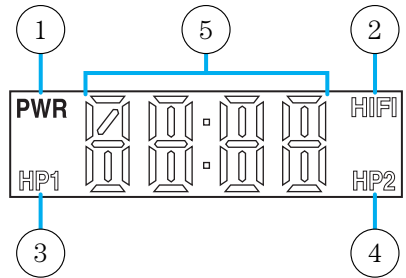
### AutoPlay feature

Your AutoVision® system is equipped with an AutoPlay Feature. When a video cassette is inserted into the player, video and audio sources are automatically switched to VCP. This will override any other selections currently made.

### Indications on the VCP

The operation and status of the VCP can be checked by the indications appearing on the LED display.

1. The **Power indicator** flashes on during POWER ON and will blink when in emergency mode.
2. The **HI-FI indicator** illuminates when a HI-FI tape is loaded.
3. The **HP1 indicator** illuminates when the headphone jack 1 is plugged in.
4. The **HP2 indicator** illuminates when the headphone jack 2 is plugged in.
5. The **Operation indicators** illuminate when the system is powered ON, a HIFI tape is being played, or headphones are being used.



## Entertainment systems

The following are some possible messages that may illuminate on your LED display and their meanings.

Illuminates when there is a videocassette in the system during power off.



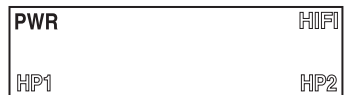
Illuminates when there is a videocassette in the system during power on.



Illuminates when a videocassette is ejected from the system.



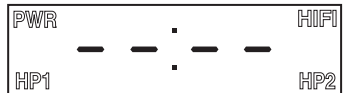
Flashes during emergency mode.



Illuminates during power on when there is not a videocassette present in the system.



Illuminates during power off when there is not a cassette present in the system.



Illuminates when the videocassette is in REW (rewind) mode.



Illuminates when the videocassette is in FF (fast forward) mode.





## Entertainment systems

Illuminates when the videocassette is in STIL (pause) mode.



Illuminates when the videocassette is in PLAY mode.



Illuminates when the videocassette is in REV (review) mode.



Illuminates when the videocassette is in CUE mode.



Flashes separately when the videocassette is in ENCORE mode.



Displays when:

- the thermistor detects an extremely high or low temperature
- the dew sensor is activated for high humidity



### In-home use

Your AutoVision® system is UL registered for in-home use. This system has the unique feature of also being a completely portable and able to be used in your home.

To remove your AutoVision® system from your vehicle, depress the lever on the center console labeled VCP RELEASE. This will release the VCP and enable you to remove the system from the vehicle. If pressing the lever does not release your system, please contact your dealer.

## Entertainment systems

To re-install the VCP in your vehicle, insert the VCP into the console and push lightly until the VCP clicks into place.

To use the AutoVision® system in your home, you will need:

- 12 V DC power converter rated for 1.5 amps/min
- Patch cords with RCA style connectors

These parts are available in your local electronics store or call toll free 1 (877) 848-6434 for assistance.

### **Auxiliary jacks for home use**

#### **1. VIDEO OUT**

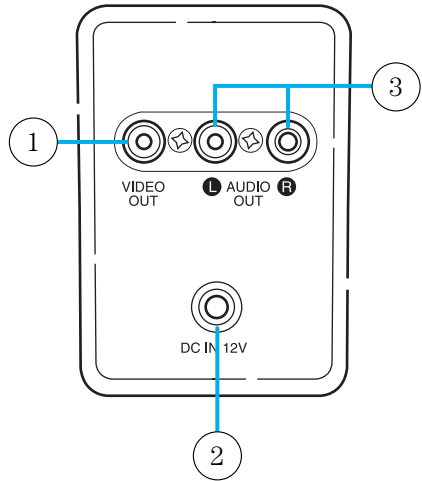
Connect this terminal to the VIDEO IN terminal of your display (LCD, TV).

#### **2. DC jack in**

Connect this jack to the DC source (DC 12V).

#### **3. AUDIO OUT LR**

Connect these terminal(s) to the AUDIO IN terminals of your display (LCD, TV).



## Entertainment systems

### 1. VIDEO IN

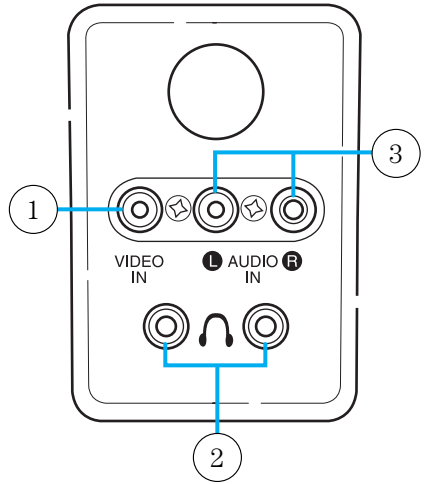
Connect this terminal to the AUDIO OUT terminal of your other apparatus (DVD, game machine, etc.).

### 2. AUDIO IN LR

Connect these terminal(s) to the AUDIO OUT terminals of your other apparatus (DVD, game machine, etc.).

### 3.

Plug headphones into these jacks.



## TROUBLESHOOTING THE CD PLAYER (IF EQUIPPED)



The laser beam used in the compact disc player is harmful to the eyes. Do not attempt to disassemble the case.

If sound skips:

- You may be traveling on a rough road, playing badly scratched discs or the disc may be dirty. Skipping will not scratch the discs or damage the player.

If your changer does not work, it may be that:

- A disc is already loaded where you want to insert a disc.
- The disc is inserted with the label surface downward.
- The disc is dusty or defective.
- The player's internal temperature is above 60°C (140°F). Allow the player to cool down before operating.
- A disc with format and dimensions not within industry standards is inserted.

## Entertainment systems

### CLEANING COMPACT DISCS

Inspect all discs for contamination before playing. If necessary, clean discs only with an approved CD cleaner and wipe from the center out to the edge. Do not use circular motion.

### CD AND CD PLAYER CARE

- Handle discs by their edges only. Never touch the playing surface.
- Do not insert more than one disc at a time.
- Do not expose discs to direct sunlight or heat sources for extended periods of time.
- After playing, store the disc in its case.

**Do not insert any promotional (odd shaped or sized) discs, or discs with removable labels into the CD player as jamming may occur.**

### CLEANING CASSETTE PLAYER (IF EQUIPPED)

Clean the tape player head with a cassette cleaning cartridge after 10 to 12 hours of play in order to maintain the best sound and operation.

### CASSETTE AND CASSETTE PLAYER CARE

- Use only cassettes that are 90 minutes long or less.
- Do not expose tapes to direct sunlight, high humidity, extreme heat or extreme cold. Allow tapes that may have been exposed to extreme temperatures to reach a moderate temperature before playing.
- Tighten very loose tapes by inserting a finger or pencil into the hole and turning the hub.
- Remove loose labels before inserting tapes.
- Do not leave tapes in the cassette player for a long time when not being played.

## Entertainment systems

### RADIO FREQUENCY INFORMATION

The Federal Communications Commission (FCC) and the Canadian Radio and Telecommunications Commission (CRTC) establish the frequencies AM and FM stations may use for their broadcasts. Allowable frequencies are:

AM 530, 540–1600, 1610 kHz

FM 87.7, 87.9–107.7, 107.9 MHz

Not all frequencies are used in a given area.

### RADIO RECEPTION FACTORS

Three factors can affect radio reception:

- **Distance/strength.** The further an FM signal travels, the weaker it is. The listenable range of the average FM station is approximately 40 km (24 miles). This range can be affected by “signal modulation.” Signal modulation is a process radio stations use to increase their strength/volume relative to other stations.
- **Terrain.** Hills, mountains and tall buildings between your vehicle’s antenna and the radio station signal can cause FM reception problems. Static can be caused on AM stations by power lines, electric fences, traffic lights and thunderstorms. Moving away from an interfering structure (out of its “shadow”) returns your reception to normal.
- **Station overload.** Weak signals are sometimes captured by stronger signals when you pass a broadcast tower. A stronger signal may temporarily overtake a weaker signal and play while the weak station frequency is displayed.

The audio system automatically switches to single channel reception if it will improve the reception of a station normally received in stereo.

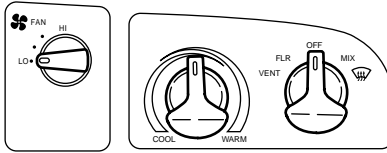
### AUDIO SYSTEM WARRANTIES AND SERVICE

Refer to the *Warranty Guide* for audio system warranty information.

If service is necessary, see your dealer or a qualified technician.

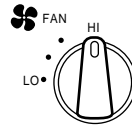
# Climate controls

## HEATER ONLY SYSTEM (IF EQUIPPED)



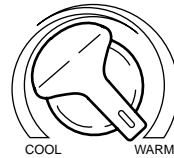
### Fan speed control

Controls the volume of air circulated in the vehicle.




### Temperature control knob

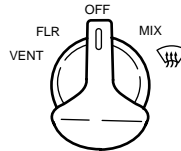
Controls the temperature of the airflow inside the vehicle. On heater-only systems, the air cannot be cooled below the outside temperature.



### Mode selector control

Controls the direction of the airflow to the inside of the vehicle.

- **VENT** – Distributes outside air through the instrument panel registers.
- **FLR** – Allows for maximum heating. Distributes outside air through the floor ducts.
- **OFF** – Outside air is shut out and the fan will not operate. For short periods of time only, use this mode to prevent undesirable odors from entering the vehicle.
- **MIX** – Distributes outside air through the floor ducts and the windshield defroster ducts.
-  (Defrost) – Distributes outside air through the windshield defroster ducts. It can be used to clear ice or fog from the windshield.



## Climate controls

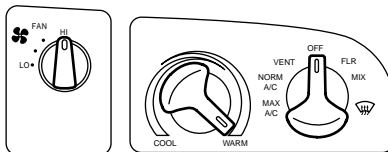
### Operating tips

- In humid weather, place the climate control system in DEF before driving. This will reduce fogging on your windshield. Once the windshield has been cleared, select any desired position.
- To reduce humidity buildup inside the vehicle, do not drive with the climate control system in the OFF position.
- Under normal weather conditions, your vehicle's climate control system should be left in any position other than OFF position when the vehicle is parked. This allows the vehicle to "breathe" through the outside air inlet duct.
- Under snowy or dirty weather conditions, your vehicle's climate control system should be left in the OFF position when the vehicle is parked. This allows the climate control system to be free from contamination of outside pollutants.
- Do not place objects under the front seat which may interfere with the airflow to the rear seats.
- Remove any snow, ice, or leaves from the air intake area (at the base of the windshield and underneath the hood).
- Do not place objects over the defroster outlets. These objects may block airflow and reduce your visibility through the windshield. Avoid placing small objects on top of the instrument panel. These objects can fall into the defroster outlets and block airflow, in addition to, damaging your climate control system.



Do not place objects on top of the instrument panel, as these objects may become projectiles in instances of sudden impact or a sudden stop.

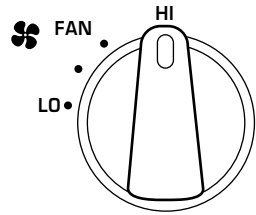
### MANUAL HEATING AND AIR CONDITIONING SYSTEM (IF EQUIPPED)



# Climate controls

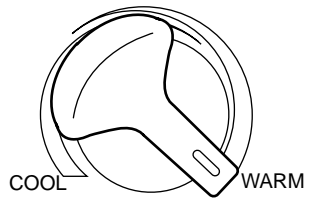
## Fan speed control

Controls the volume of air circulated in the vehicle.



## Temperature control knob

Controls the temperature of the airflow inside the vehicle.



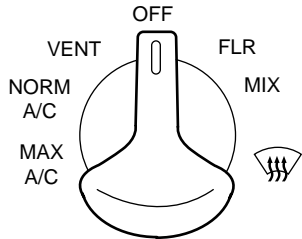
## Mode Selector Control

Controls the direction of the airflow to the inside of the vehicle.

The air conditioning compressor can operate in all modes except VENT and FLR. However, the air conditioning will only function if the outside temperature is about 6°C (43°F) or higher.


Since the air conditioner removes considerable moisture from the air during operation, it is normal if clear water drips on the ground under the air conditioner drain while the system is working and even after you have stopped the vehicle.

- **MAX A/C** – Uses recirculated air to cool the vehicle. MAX A/C is noisier than NORM A/C but more economical and will cool the inside of the vehicle faster. Airflow will be from the instrument panel registers. This mode can also be used to prevent undesirable odors from entering the vehicle.





## Climate controls

- **NORM A/C** – Uses outside air to cool the vehicle. It is quieter than MAX A/C but not as economical. Airflow will be from the instrument panel registers.
- **VENT** – Distributes outside air through the instrument panel registers. However, the air will not be cooled below the outside temperature because the air conditioning does not operate in this mode.
- **OFF** – Outside air is shut out and the fan will not operate. For short periods of time only, use this mode to prevent undesirable odors from entering the vehicle.
- **FLR** – Allows for maximum heating by distributing outside air through the floor ducts. However, the air will not be cooled below the outside temperature because the air conditioning does not operate in this mode.
- **MIX** – Distributes outside air through the windshield defroster ducts and the floor ducts. Heating and air conditioning capabilities are provided in this mode. For added customer comfort, when the temperature control knob is anywhere in between the full hot and full cold positions, the air distributed through the floor ducts will be slightly warmer than the air sent to the windshield defroster ducts. If the temperature is about 6°C (43°F) or higher, the air conditioner will automatically dehumidify the air to reduce fogging.
-  (Defrost) – Distributes outside air through the windshield defroster ducts. It can be used to clear ice or fog from the windshield. If the temperature is about 6°C (43°F) or higher, the air conditioner will automatically dehumidify the air to reduce fogging.

### Operating tips

- In humid weather conditions, place the climate control system in Defrost mode before driving. This will reduce fogging on your windshield. Once the windshield has been cleared, operate the climate control system as desired.
- To reduce humidity buildup inside the vehicle in cold weather conditions, don't drive with the climate control system in the OFF or MAX A/C position.
- To reduce humidity buildup inside the vehicle in warm weather conditions, don't drive with the climate control system in the OFF position.

## Climate controls

- Under normal weather conditions, your vehicle's climate control system should be left in any position other than the MAX A/C or OFF when the vehicle is parked. This allows the vehicle to “breathe” through the outside air inlet duct.
- Under snowy or dirty weather conditions, your vehicle's climate control system should be left in the OFF position when the vehicle is parked. This allows the climate control system to be free from contamination of outside pollutants.
- If your vehicle has been parked with the windows closed during warm weather conditions, the air conditioner will perform more efficiently in cooling the vehicle if driven for two or three minutes with the windows open. This will force most of the hot, stale air out of the vehicle. Once the vehicle has been “aired out”, operate the climate control system as desired.
- Do not put objects under the front seat which may interfere with the airflow to the rear seats (if equipped).
- Remove any snow, ice or leaves from the air intake area (at the bottom of the windshield and underneath the hood).
- Do not place objects over the defroster outlets. These objects can block airflow and reduce visibility through your windshield. Avoid placing small objects on top of the instrument panel. These objects may fall down into the defroster outlets and block airflow, in addition to, damaging the climate control system.

To aid in side window defogging/demisting in cold weather conditions:

1. Select the position that distributes air through the Panel and Floor.
2. Set the temperature control to full heat.
3. Set the fan speed to full fan.
4. Direct the outer panel vents towards the side windows.
5. To increase airflow to the outer panel vents, close the central panel vents.

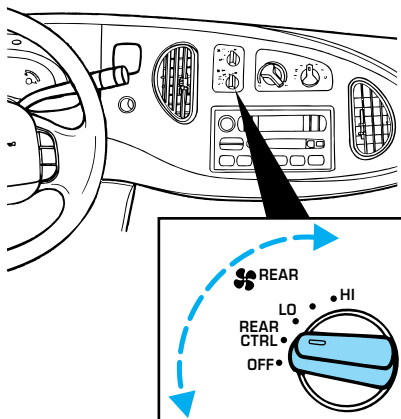


Do not place objects on top of the instrument panel as these objects may become projectiles in a collision or sudden stop.

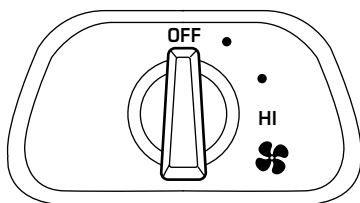
## Climate controls

### AUXILIARY HEATER AND AIR CONDITIONER (IF EQUIPPED)

If your vehicle is equipped with a factory installed auxiliary unit, the main climate control panel will include separate controls for the front fan speed and the rear fan speed. In conjunction with the front fan speed control, an additional fan speed control is located overhead between the second and third row seating.




The fan speed of the auxiliary unit can be controlled either by the front seat using the front auxiliary control or by the rear seat passengers using the rear auxiliary control, but not both. To control the auxiliary unit using the rear control, the front control must be in the REAR position.



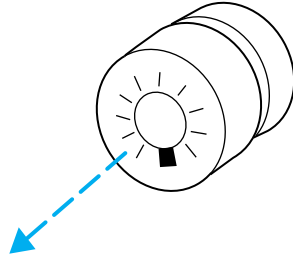
## Climate controls

Air temperature and air distribution are dependent upon the mode that is selected on the main climate control panel:

- MAX A/C-Distributes recirculated air conditioning through the overhead vents of the rear compartment.
- NORM A/C-Distributes recirculated air conditioning through the overhead vents of the rear compartment.
- VENT-Distributes recirculated ambient air through the overhead vents of the rear compartment.
- OFF-No air, cooled, ambient, or heated, is distributed through any vents
- FLR-Distributes heated air through the floor vents of the rear compartment.
- MIX-Distributes heated air through the floor vents of the rear compartment.
-  (Defrost)-Distributes heated air through the floor vents of the rear compartment.

## HEADLAMP CONTROL

- Pull the headlamp control toward you to the first position to turn on the parking lamps, tail lamps, license plate lamps and marker lamps.
- Pull the headlamp control toward you to the outer position to turn on the headlamps (in addition to the previous lamps).



## Daytime running lamps (DRL) (if equipped)

Turns the headlamps on with a reduced output. To activate:

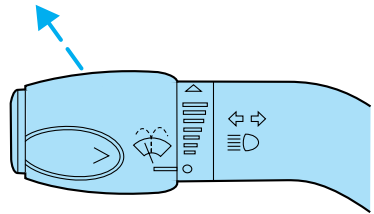
- the ignition must be in the ON position and
- the headlamp control is in the OFF or Parking lamps position.



Always remember to turn on your headlamps at dusk or during inclement weather. The Daytime Running Lamp (DRL) system does not activate with your tail lamps and generally may not provide adequate lighting during these conditions. Failure to activate your headlamps under these conditions may result in a collision.

## High beams

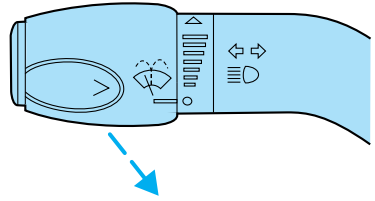
- Push forward to activate.
- Pull toward you to deactivate.



# Lights

## Flash to pass

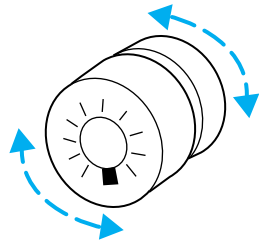
Pull toward you to activate and release to deactivate.



## PANEL DIMMER CONTROL

To adjust the brightness of the instrument panel:

- Rotate clockwise/counterclockwise when the headlamp control is in the parking lamp or low-beam position.



To turn on the courtesy lamp, cargo lamps or the dome lamp:

- Rotate fully counterclockwise.

The dome lamp will not illuminate if the control switch is in the OFF position.

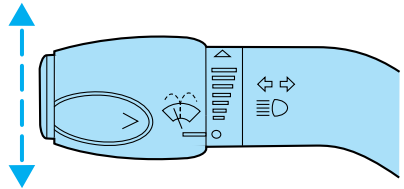
## AIMING THE HEADLAMPS

The headlamps on your vehicle are properly aimed at the assembly plant.

If your vehicle has been in an accident the alignment of your headlamps should be checked by a qualified service technician.

## TURN SIGNAL CONTROL

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



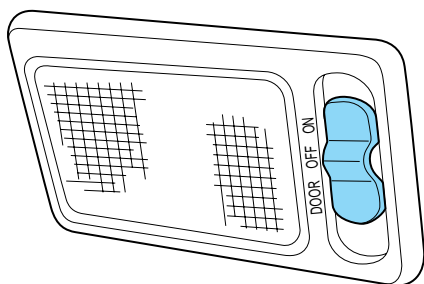
## INTERIOR LAMPS

### Cargo and dome lamps

Rear cargo lamps equipped with an ON/OFF/DOOR control will light when:

- doors are closed and the control is in the ON position
- control is in the DOOR position and any door is open
- headlamp control is rotated fully counterclockwise

When the control is in the OFF position, it will not illuminate when you open the doors or fully rotate the headlamp control.

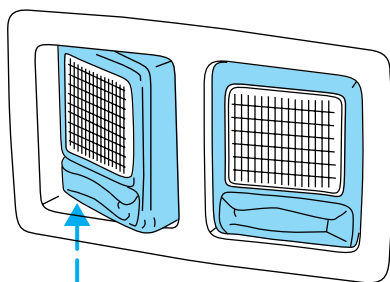


### Front and rear courtesy/reading lamps

Rotate the lens to illuminate the lamp.

With the lens in the flat position, the courtesy lamp lights when:

- any door is opened
- the headlamp control is rotated fully counterclockwise



# Lights

## BULBS

### Replacing exterior bulbs

Check the operation of the following lamps frequently:

- Headlamps
- Tail lamps
- Brakelamps
- High-mount brakelamp
- Turn signals
- Backup lamps
- License plate lamp

Do not remove lamp bulbs unless they will be replaced immediately. If a bulb is removed for an extended period of time, contaminants may enter the lamp housings and affect performance.

### Using the right bulbs

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 assure 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.

Function	Number of bulbs	Trade number
Headlamps (low series)	2	H5054
Headlamps (high series)	2	9007
Park lamp and turn signal (front)	2	3157 AK (amber)
Back-up lamps	2	3156K
License plate lamp	1	168
Stop/tail/turn/side marker lamp	2	3357 K
High-mount brakelamp	2	912
Cargo lamp	1	211-2
Dome lamp (standard)	1	912

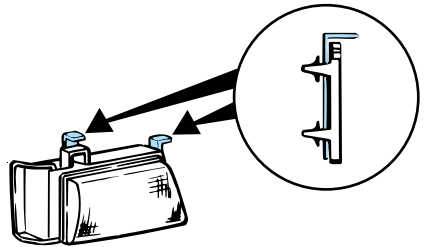


Function	Number of bulbs	Trade number
Map/reading lamp	2	211-2
All replacement bulbs are clear in color except where noted.		
To replace all instrument panel lights - see your dealer		

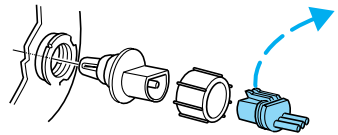
## Replacing headlamp bulbs (aerodynamic)

To remove the headlamp bulb:

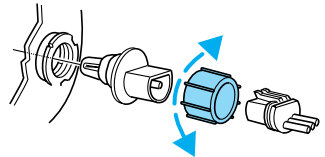
1. Make sure headlamp switch is in OFF position.
2. Open the hood.
3. Push each clip tab toward the engine compartment and lift upward to the stop position.
4. Remove the headlamp assembly.



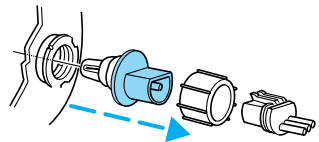
5. Disconnect the electrical connector from the bulb by pulling rearward.



6. Remove the bulb retaining ring by rotating it counterclockwise (when viewed from the rear) to free it from the bulb socket, and slide the ring off the plastic base. Keep the ring to retain the new bulb.



7. Without turning, remove the old bulb from lamp assembly by gently pulling it straight back out of the lamp assembly and replace.



# Lights

To install the new bulb:



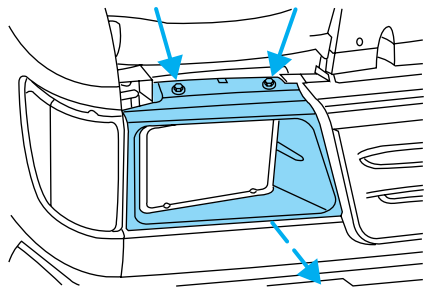
Handle a halogen headlamp bulb carefully and keep out of children's reach. Grasp the bulb only by its plastic base and do not touch the glass. The oil from your hand could cause the bulb to break the next time the headlamps are operated.

1. With the flat side of the bulb's plastic base facing upward, insert the glass end of the bulb into the lamp assembly. You may need to turn the bulb left or right to align the grooves in the plastic base with the tabs in the lamp assembly. When the grooves are aligned, push the bulb into the socket until the plastic base contacts the rear of the lamp assembly.
2. Install the bulb retaining ring over the plastic base until it contacts the rear of the lamp assembly by rotating clockwise until you feel a "stop."
3. Install the electrical connector into the rear of the plastic base until it snaps, locking it into position.
4. Install the headlamp assembly into the vehicle and secure it with the clip tabs.
5. Turn the headlamps on and make sure they work properly. If the headlamp was correctly aligned before you changed the bulb, you should not need to align it again.

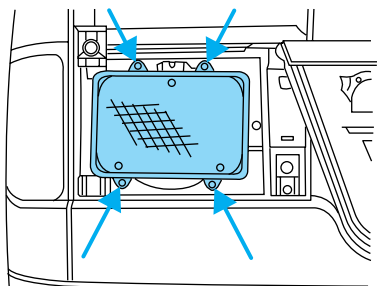
## ***Replacing headlamp bulbs (low series)***

To remove the headlamp bulb:

1. Make sure headlamp switch is in OFF position.
2. Open the hood.
3. Remove the two headlamp screws and bezel from the headlamp housing.



4. Remove the four headlamp bulb retaining screws.
5. Disconnect the electrical connector from the bulb.
6. Remove the headlamp.

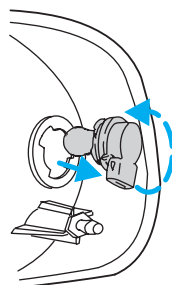


To install the new bulb, follow the removal procedures in reverse order.

### ***Replacing front parking lamp/turn signal bulbs***

1. Make sure the headlamp control is in the OFF position.
2. Open the hood.
3. Remove two screws and pull lamp assembly away from the vehicle.
4. Rotate the bulb socket counterclockwise and remove.
5. Carefully pull out the bulb straight out of the socket and push in new bulb.

To complete installation, follow the removal procedures in reverse order.



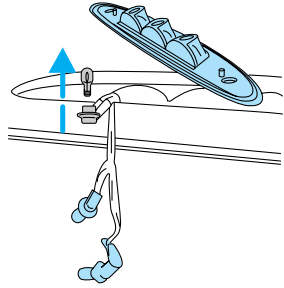
### ***Replacing high-mount brakelamp bulbs***

The interior cargo lamp (if equipped) will have to be removed from under the high-mount brakelamp assembly located inside the vehicle.

## Lights

To change the high-mount brakelamp bulbs:

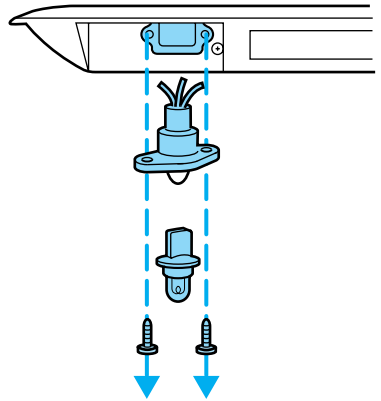
1. Remove the two screws from the high-mount brakelamp assembly.
2. Remove the bulb from the lamp assembly by turning counterclockwise.
3. Carefully pull the bulb straight out of the socket and push in the new bulb.
4. Install bulb socket in lamp assembly by turning clockwise.
5. Install brakelamp assembly on the vehicle with two screws.



### **Replacing license plate lamp bulbs**

To change the license plate bulbs:

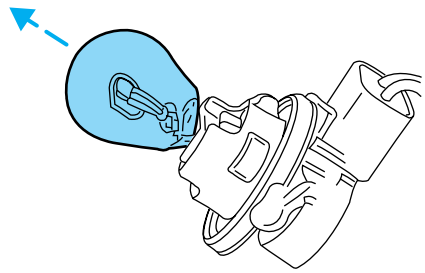
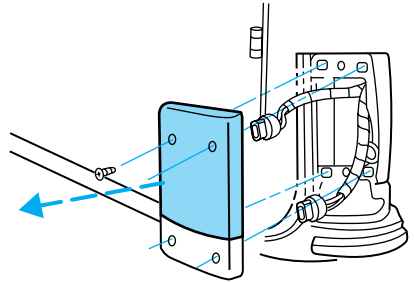
1. Remove two screws and the license plate lamp assembly from the rear door.
2. Remove bulb socket from lamp assembly by turning counterclockwise.
3. Pull the bulb out from socket and push in the new bulb.
4. Install the bulb socket in lamp assembly turning it clockwise,
5. Install the lamp assembly on rear door with two screws.



## Replacing tail lamp/turn/backup lamp bulbs

The tail lamp/turn/backup lamp bulbs are located the tail lamp assembly, one just below the other. Follow the same steps to replace either bulb:

1. Remove the four screws and the lamp assembly from vehicle.
2. Rotate bulb socket counterclockwise and remove from lamp assembly.
3. Carefully pull the bulb straight out of the socket and push in the new bulb.
4. Install the bulb socket in lamp assembly by turning clockwise.
5. Install the lamp assembly and secure with four screws.



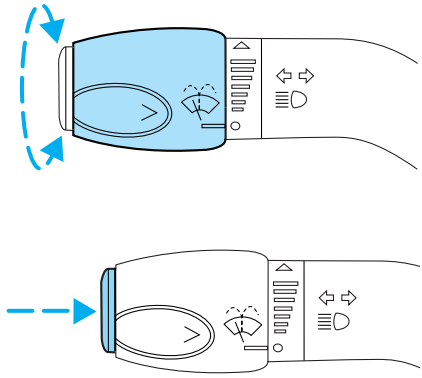
## Driver controls

### WINDSHIELD WIPER/WASHER CONTROLS

Rotate the windshield wiper control to the desired interval, low or high speed position.

The bars of varying length are for intermittent wipers. When in this position rotate the control upward for fast intervals and downward for slow intervals.

Push the control on the end of the stalk to activate washer. Push and hold for a longer wash cycle. The washer will automatically shut off after ten seconds of continuous use.



### Windshield wiper blades

Check the wiper blades at least twice a year or when they seem less effective. Substances such as tree sap and some hot wax treatments used by commercial car washes reduce the effectiveness of wiper blades.

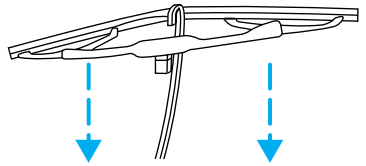
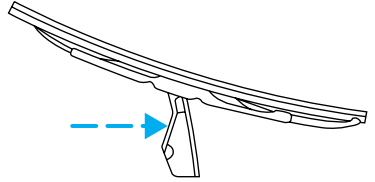
#### ***Checking the wiper blades***

If the wiper blades do not wipe properly, clean both the windshield and wiper blades using undiluted windshield wiper solution or a mild detergent. Rinse thoroughly with clean water. To avoid damaging the blades, do not use fuel, kerosene, paint thinner or other solvents.

### **Changing the wiper blades**

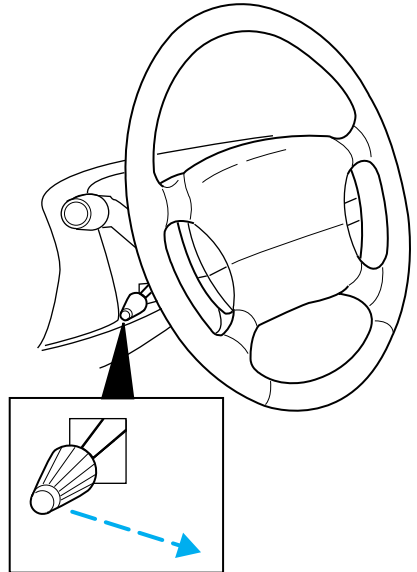
To replace the wiper blades:

1. Pull the wiper arm away from the windshield and lock into the service position.
2. Turn the blade at an angle from the wiper arm. Push the lock pin manually to release the blade and pull the wiper blade down toward the windshield to remove it from the arm.
3. Attach the new wiper to the wiper arm and press it into place until a click is heard.



### **TILT STEERING**

Pull the tilt steering control toward you to move the steering wheel up or down. Hold the control while adjusting the wheel to the desired position, then release the control.



## Driver controls



Never adjust the steering wheel when the vehicle is moving.

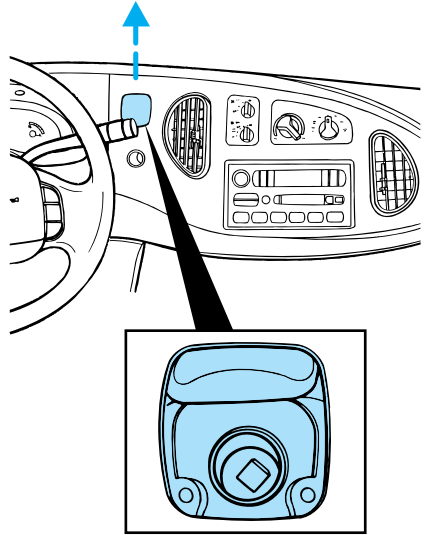
### AUXILIARY POWER POINT <sup>12V</sup>

Power outlets are designed for accessory plugs only. Do not hang any type of accessory or accessory bracket from the plug. Improper use of the power outlet can cause damage not covered by your warranty.

The auxiliary power point is located on the instrument panel.

A second power point (if equipped) is located behind the driver's seat on the upper trim panel.

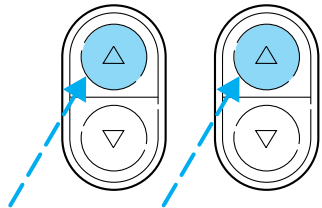
Do not plug optional electrical accessories into the cigarette lighter. Use the power point.



### POWER WINDOWS (IF EQUIPPED)

Press and hold the rocker switches to open and close windows.

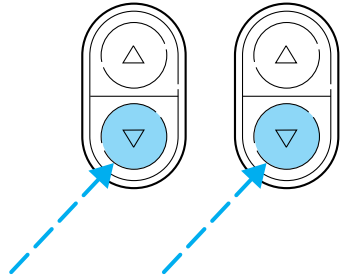
- Press the top portion of the rocker switch to close.





## Driver controls



- Press the bottom portion of the rocker switch to open.

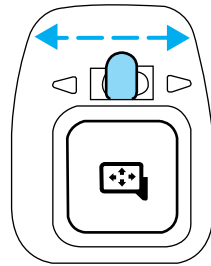


### POWER SIDE VIEW MIRRORS (IF EQUIPPED)

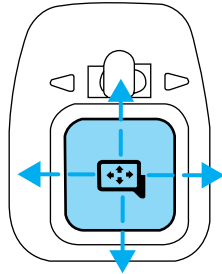
The ignition may be in any position to adjust the power side view mirrors.

To adjust your mirrors:

1. Select  to adjust the left mirror or  to adjust the right mirror.



2. Move the control in the direction you wish to tilt the mirror.

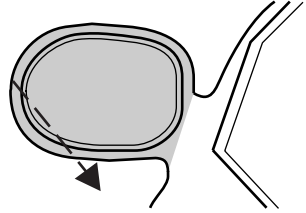


3. Return to the center position to lock mirrors in place.

# Driver controls

## Fold-away mirrors

Pull the side mirrors in carefully when driving through a narrow space, like an automatic car wash.



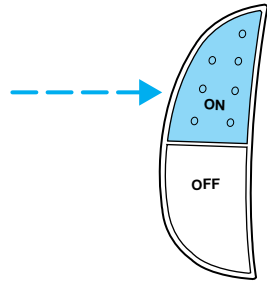
## SPEED CONTROL (IF EQUIPPED)

### To turn speed control on

- Press ON.

Vehicle speed cannot be controlled until the vehicle is traveling at or above 48 km/h (30 mph).

**Do not shift the gearshift lever into N (Neutral) with the speed control on.**

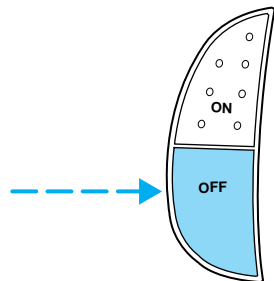


Do not use the speed control in heavy traffic or on roads that are winding, slippery, or unpaved.

### To turn speed control off

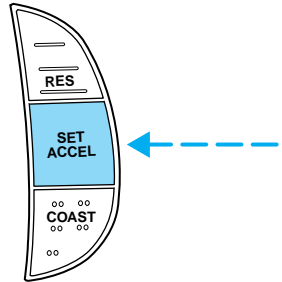
- Press OFF or
- Turn off the vehicle ignition.

Once speed control is switched off, the previously programmed set speed will be erased.



### To set a speed

- Press SET ACCEL. For speed control to operate, the speed control must be ON and the vehicle speed must be greater than 48 km/h (30 mph).



If you drive up or down a steep hill, your vehicle speed may vary momentarily slower or faster than the set speed. This is normal.

Speed control cannot reduce the vehicle speed if it increases above the set speed on a downhill. If your vehicle speed is faster than the set speed while driving on a downhill, you may want to shift to the next lower gear or apply the brakes to reduce your vehicle speed.

If your vehicle slows down more than 16 km/h (10 mph) below your set speed on an uphill, your speed control will disengage. This is normal. Pressing RES will re-engage it.

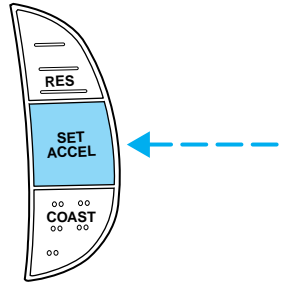


Do not use the speed control in heavy traffic or on roads that are winding, slippery, or unpaved.

## Driver controls

### To set a higher set speed

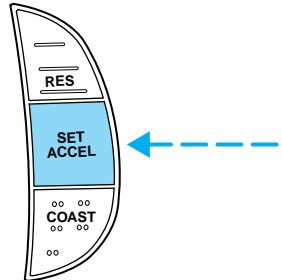
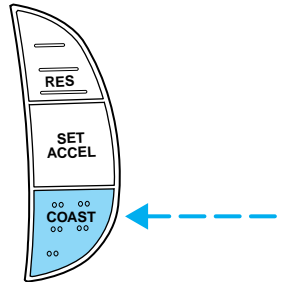
- Press and hold SET ACCEL. Release the control when the desired vehicle speed is reached or
- Press and release SET ACCEL to operate the Tap-Up function. Each press will increase the set speed by 1.6 km/h (1 mph) or
- Accelerate with your accelerator pedal. When the desired vehicle speed is reached, press and release SET ACCEL.



You can accelerate with the accelerator pedal at any time during speed control usage. Releasing the accelerator pedal will return your vehicle to the previously programmed set speed.

### To set a lower set speed

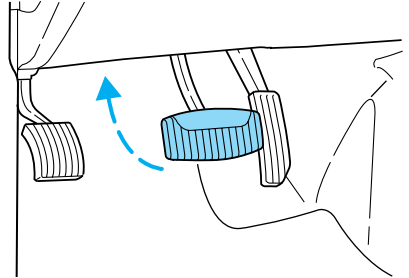
- Press and hold COAST. Release the control when the desired speed is reached or
- Press and release COAST to operate the Tap-Down function. Each press will decrease the set speed by 1.6 km/h (1 mph) or
- Depress the brake pedal. When the desired vehicle speed is reached, press SET ACCEL.



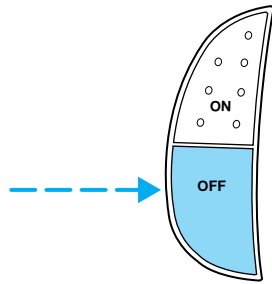
### To disengage speed control

- Depress the brake pedal.

Disengaging the speed control will not erase the previously programmed set speed.

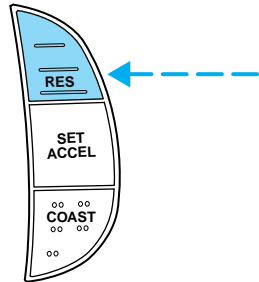


Pressing OFF will erase the previously programmed set speed.



### To return to a previously set speed

- Press RES. For RES to operate, the vehicle speed must be faster than 48 km/h (30 mph).



## Driver controls

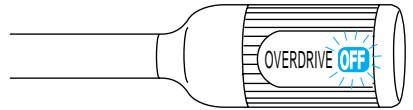
### OVERDRIVE CONTROL

#### Activating overdrive

**D** (Overdrive) is the normal drive position for the best fuel economy. The overdrive function allows automatic upshifts and downshifts through all available gears.

#### Deactivating overdrive

Press the Transmission Control Switch (TCS) located on the end of the gearshift lever. The Transmission Control Indicator Light (TCIL) (the word OFF) will illuminate on the end of the gearshift lever. The transmission will operate in all gears except overdrive.



To return to normal overdrive mode, press the Transmission Control Switch again. The TCIL (the word OFF) will no longer be illuminated.



When you shut off and re-start your vehicle, the transmission will automatically return to normal **D** (Overdrive) mode.

For additional information about the gearshift lever and the transmission control switch operation refer to the *Automatic Transmission Operation* section of the *Driving* chapter.

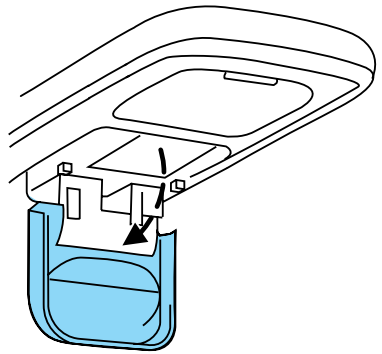
#### OVERHEAD CONSOLE (IF EQUIPPED)

The appearance of your vehicle's overhead console will vary according to your option package.

### Storage compartment (if equipped)

Press the OPEN control to open the storage compartment. The door will open slightly and can be moved to full open.

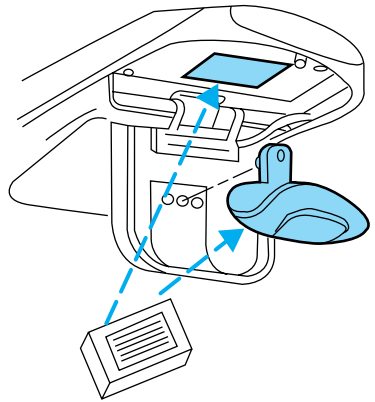
The storage compartment may be used to secure sunglasses or a similar object.



### Installing a garage door opener (if equipped)

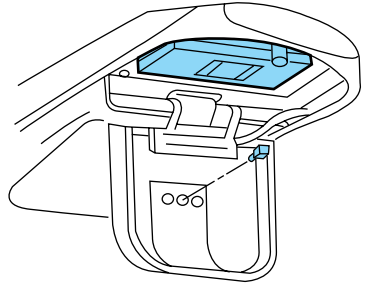
The storage compartment can be converted to accommodate a variety of aftermarket garage door openers:

- Remove the storage clip from the door.
- Place Velcro hook onto side of aftermarket transmitter opposite of actuator control.
- Place the transmitter into storage compartment, control down.



## Driver controls

- Place the provided height adaptors onto the back of the GARAGE control as needed.
- Press the GARAGE control to activate the transmitter.



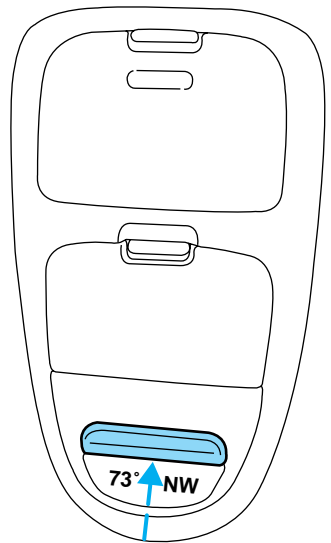
## Electronic compass/temperature display (if equipped)

### Outside air temperature

The outside temperature display is contained in the overhead console unless the vehicle is equipped with an EATC system. Refer to *Electric automatic temperature control* in the *Climate controls* chapter.

The temperature display can be turned off and on by pressing the SELECT control on the overhead console. The temperature can be displayed in Centigrade or Fahrenheit by pressing the SELECT control. The ignition key must be in the ON or ACC position.

If the outside temperature falls below 3°C (38°F), the display will alternate from “ICE” to the outside temperature at a two second rate for one minute.



### Compass

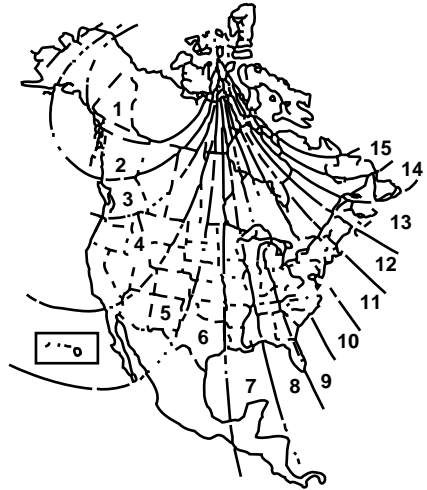
The compass display is contained in the overhead console. The vehicle heading is displayed as one of N, NE, E, SE, S, SW, W and NW.



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 or on the vehicle may also affect compass accuracy. Adjustments may need to be made to the zone and calibration of the compass.

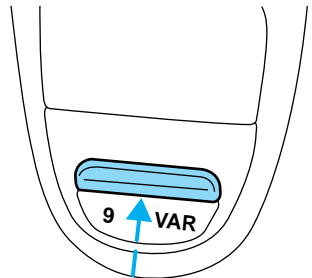
### Compass zone adjustment

1. Determine which magnetic zone you are in by referring to the zone map.
2. Turn the ignition to the ON position.



3. Press and hold the SELECT control until VAR appears in the display, then release. The display should show the current zone number.

4. Press the SELECT control until the desired zone number appears. The display will flash and then return to normal operation. The zone is now updated.

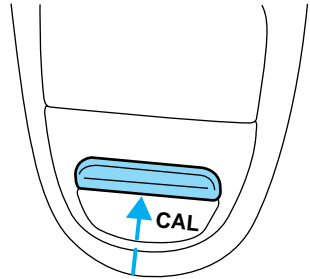


## Driver controls

### Compass calibration adjustment

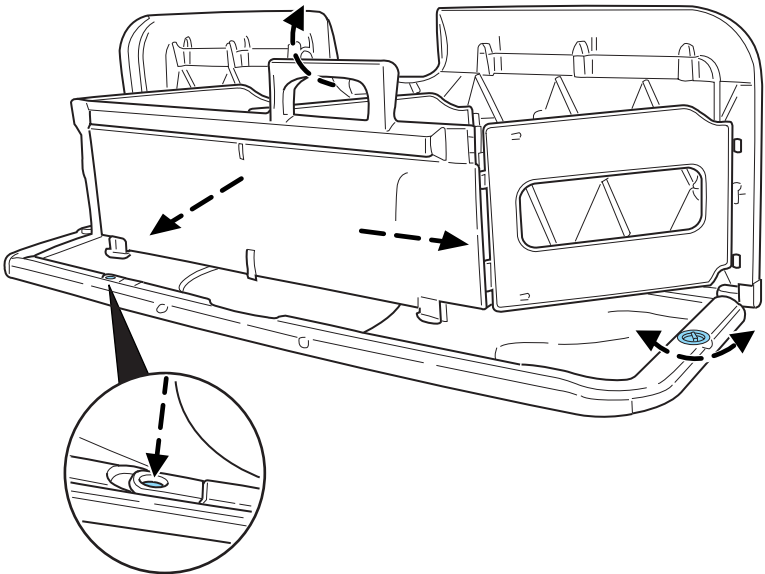
Perform this adjustment in an open area free from steel structures and high voltage lines:

- Press and hold the SELECT control until CAL appears in the display (approximately eight seconds) and release.
- Drive the vehicle slowly (less than 5 km/h [3 mph]) in circles until CAL indicator turns off in about 2–3 complete circles.
- The compass is now calibrated.



### CARGO ORGANIZER (IF EQUIPPED)

Your vehicle comes equipped with a cargo organizer located on the floor of the cargo area.



## Driver controls

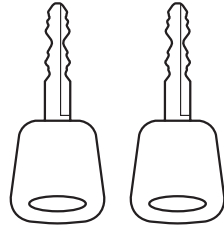
- To open, lift the cargo organizer up to the upright position, pull the front panel away from the rear panel sliding it to the right until it locks.
- To close, press the release button, slide the front panel towards the rear panel and fold down to the stowed position.
- To remove, lift the cargo organizer up to the upright position, unscrew the screw caps on each side of the organizer and remove.

## Locks and security

### KEYS

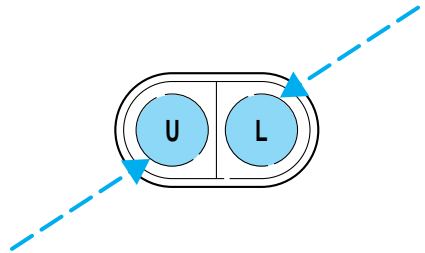
The key operates all locks on your vehicle. In case of loss, replacement keys are available from your dealer.

You should always carry a second key with you in a safe place in case you require it in an emergency.



### POWER DOOR LOCKS (IF EQUIPPED)

Press U to unlock all doors and L to lock all doors.

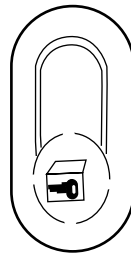


### Memory lock

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

### Back cargo door lock (if equipped)

The passenger side rear cargo door has a power door lock control mounted on the inside of the door. When this lock is pressed, all doors will lock/unlock.



### REMOTE ENTRY SYSTEM (IF EQUIPPED)

This device complies with part 15 of the FCC rules and with RS-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.

**Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.**

The remote entry system allows you to lock or unlock all vehicle doors without a key.

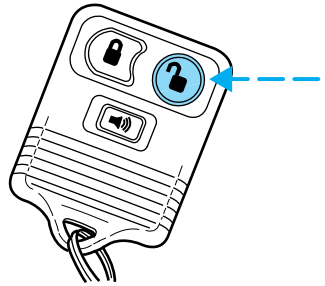
The remote entry features only operate with the ignition in the LOCK position.

If there is any potential remote keyless entry problem with your vehicle, ensure **ALL key fobs** (remote entry transmitters) are brought to the dealership, to aid in troubleshooting.

#### Unlocking the doors

Press this control to unlock the driver's door. The interior lamps will illuminate.

Press the control a second time within three seconds to unlock all doors.

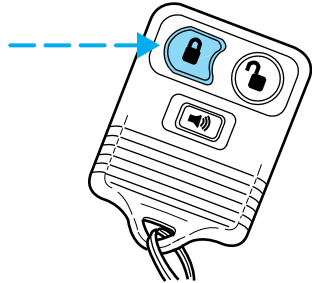


## Locks and security

### Locking the doors

Press this control to lock all doors.

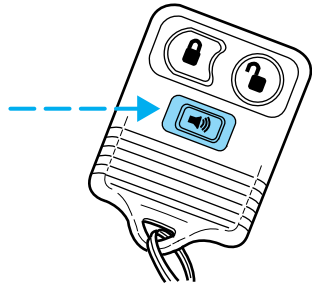
To confirm all doors are closed and locked, press the control a second time within three seconds. The doors will lock again and the horn will chirp.



### Sounding a panic alarm

Press this control to activate the alarm.

To deactivate the alarm, press the control again or turn the ignition to ACC or ON.



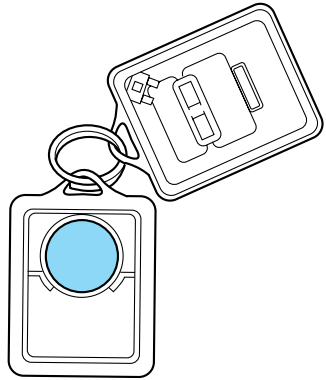
### Replacing the battery

The transmitter is powered by one coin type three-volt lithium battery CR2032 or equivalent. Typical operating range will allow you to be up to 10 meters (33 feet) away from your vehicle. A decrease in operating range can be caused by:

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

To replace the battery:

1. Twist a thin coin between the two halves of the transmitter near the key ring. **DO NOT TAKE THE FRONT PART OF THE TRANSMITTER APART.**
2. Place the positive (+) side of new battery **UP**. Refer to the diagram inside the transmitter unit.
3. Snap the two halves back together.



Replacement of the battery will **not** cause the remote transmitter to become deprogrammed from your vehicle. The remote transmitter should operate normally after battery replacement.

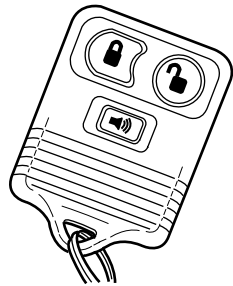
### Replacing lost transmitters

Take all your vehicle's transmitters to your dealer if service is required.

If you purchase additional transmitters (up to four may be programmed into memory), perform the following procedure:

To reprogram the transmitters yourself, place the key in the ignition and turn from 2 (LOCK) to 3 (OFF) and cycle between 3 (OFF) and 4(ON) eight times in rapid succession (within 10 seconds) ending in the ON position. After doors lock/unlock, press any control on all transmitters (up to four). With each control press of the transmitters, the door should cycle (lock/unlock) to confirm programming. When completed, turn the ignition to OFF. The door locks should cycle (lock/unlock) one last time to confirm completion of programming.

All transmitters **must** be programmed at the same time.



## Locks and security

### Illuminated entry

The interior lamps illuminate when the remote entry system is used to unlock the door(s) or sound the personal alarm.

The system automatically turns off after 25 seconds or when the ignition is turned to the RUN or ACC position. The dome lamp control (if equipped) must **not** be set to the OFF position for the illuminated entry system to operate.

The inside lights will not turn off if:

- they have been turned on with the dimmer control or
- any door is open



## Seating and safety restraints

### SEATING

#### Adjusting the front manual seat



Never adjust the driver's seat or seatback when the vehicle is moving.



Do not pile cargo higher than the seatbacks to reduce the risk of injuring people in a collision or sudden stop.

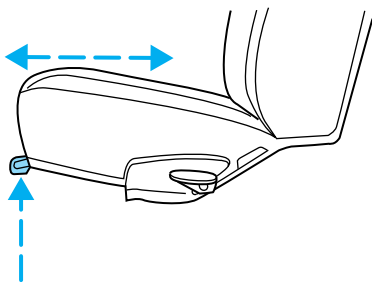


Always drive and ride with your seatback upright and the lap belt snug and low across the hips.



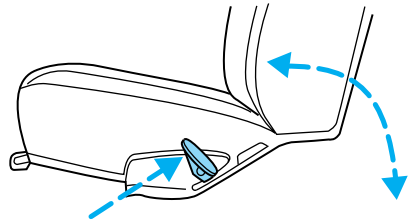
Reclining the seatback can reduce the effectiveness of the seat's safety belt in the event of a collision.

Lift handle to move seat forward or backward.



## Seating and safety restraints

Pull lever up to adjust seatback.

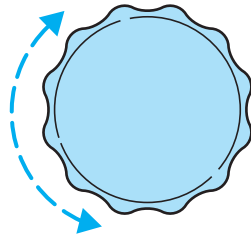


### Using the manual lumbar support

The lumbar support control is located on the inboard side of the driver's seat.

Turn the lumbar support control clockwise to increase firmness.

Turn the lumbar support control counterclockwise to increase softness.



### Adjusting the front power seat (if equipped)



Never adjust the driver's seat or seatback when the vehicle is moving.



Do not pile cargo higher than the seatbacks to avoid injuring people in a collision or sudden stop.



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

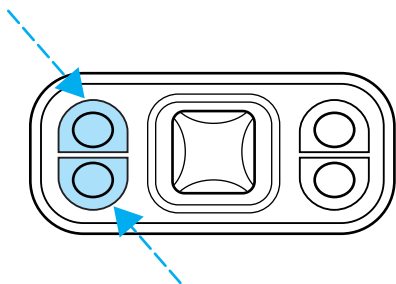


Reclining the seatback can reduce the effectiveness of the seat's safety belt in the event of a collision.

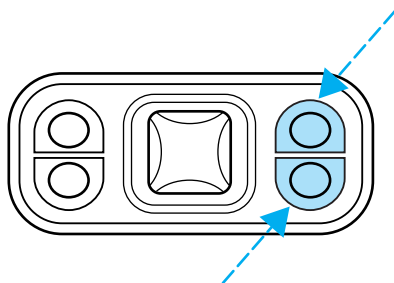
The control is located on the outboard side of the seat cushion.

## Seating and safety restraints

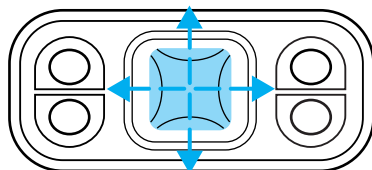
Press to raise or lower the front portion of the seat cushion.



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



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

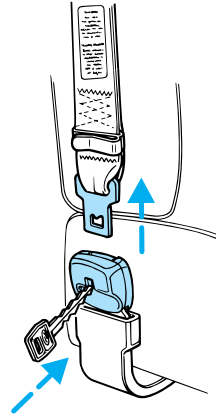


## Seating and safety restraints

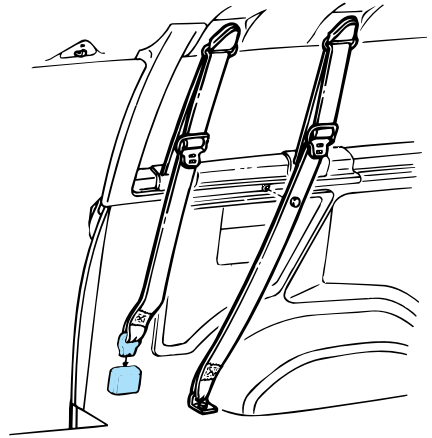
### Quick release captains chair

#### To remove the seat:

1. Disengage the lap/shoulder belt from the seat by inserting a key or small screwdriver into the slot in the detachable anchor and lifting upward.



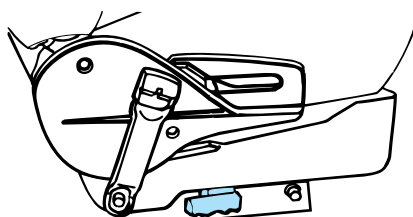
- Stow the tongue end of the detachable anchor.



## Seating and safety restraints

2. Pull the seat latch handle, then pull the seat toward the right side of the vehicle to disengage four pins from the floor mount.

3. Remove the seat.



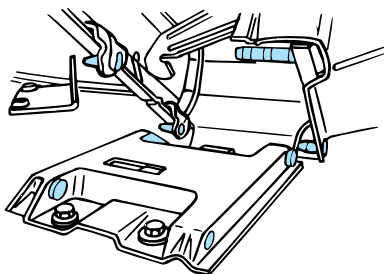
### **To install the seat:**



Check to see that the seat and seatback is latched securely in position. Keep floor area free of objects that would prevent proper seat engagement. Never attempt to adjust the seat while the vehicle is in motion.

1. Position the seat to the floor mount.

2. Engage the four pins into the floor mount hole and push the seat toward the left side of the vehicle to fully engage.



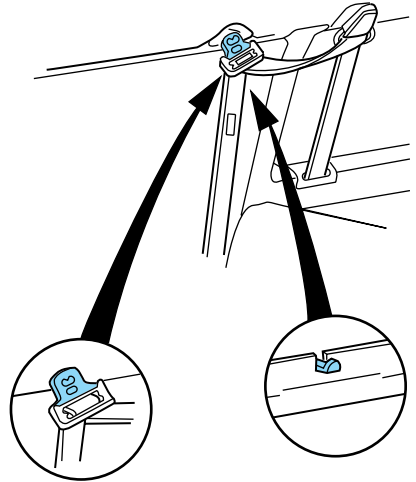
3. Pull the seat latch handle downward to lock the seat in position.

4. Make sure the safety belt is not twisted, then insert the seat belt tongue into detachable anchor until you hear a “click” and feel the latch engage.

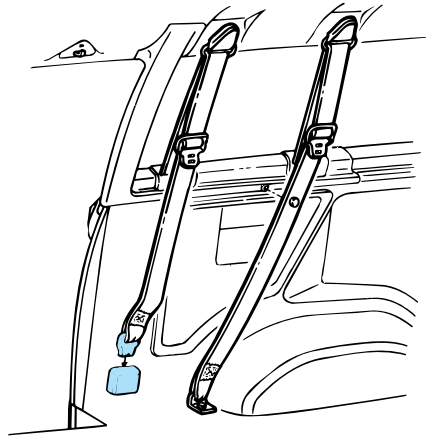
## Seating and safety restraints

### ACCESSING THE 3RD, 4TH AND 5TH ROW SEATS (IF EQUIPPED)

Stow the 2nd row passenger side seat belt on the overhead hook to make access to the rear seats easier.



To make access to the 4th and 5th row seats easier, attach the 3rd and 4th row passenger side seat belts to the trim panel by using the snaps attached to the seat belt webbing and the trim panel.

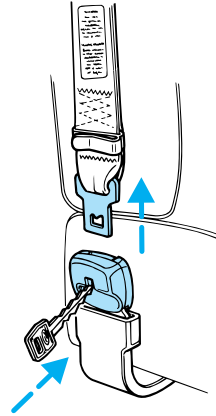


# Seating and safety restraints

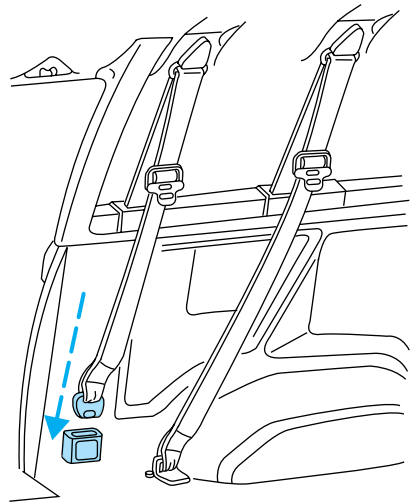
## REAR BENCH SEAT

### To remove the seats:

1. Disengage the lap/shoulder belt from the seat by inserting a key or small screwdriver into the slot in the detachable anchor and lifting upward (2nd row passenger side only).

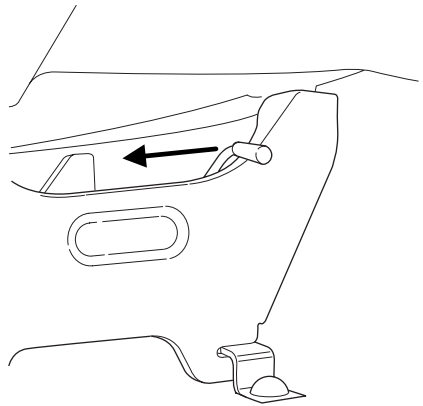


Stow the tongue end of the detachable anchor (2nd row only).



## Seating and safety restraints

2. Pull the LH/RH seat latch handles, located under the seat, rearward to release the latch hook ends from the front strikers.



3. Move the seat rearward and lift the seats rear hooks away from the rear strikers prior to lifting the front hooks out from the front strikers.

4. With assistance, remove the seat assembly.

- To remove the 3rd, 4th, and 5th row seats (if equipped), repeat steps 2 through 4.

### To install the seat:

1. Position the seat in the vehicle.

2. Align front hooks to front strikers, prior to lowering the rear hooks and aligning them with the rear strikers.

3. Engage the LH/RH latch rod hook ends in the front striker locking holes.

4. Rotate the LH/RH latch handles forward, and at the same time slide the seat assembly forward to engage the strikers. Continue forward movement until the seat reaches the end of its travel.

5. Make sure the safety belt is not twisted, then insert the seat belt tongue into detachable anchor until you hear a “click” and feel the latch engage (2nd row only).



Always latch the vehicle seat to the floor, whether the seat is occupied or empty. If not latched, the seat may cause injury during a sudden stop.



## Seating and safety restraints

### SAFETY RESTRAINTS

#### Safety restraints precautions



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



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



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 collision.



All occupants of the vehicle, including the driver, should always properly wear their safety belts, even when an air bag (SRS) is provided.



It is extremely dangerous to ride in a cargo area, inside or outside of a vehicle. In a collision, 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.



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



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.

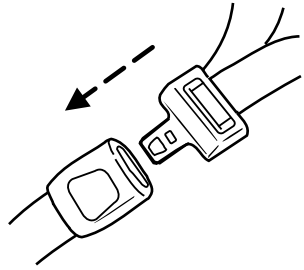
## Seating and safety restraints



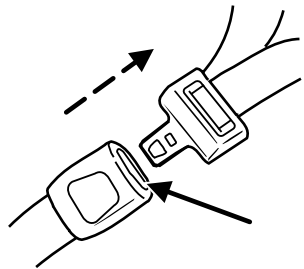
Always transport children 12 years old and under in the back seat and always properly use appropriate child restraints.

### 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, push the release button and remove the tongue from the buckle.



The front and rear outboard safety restraints in the vehicle are combination lap and shoulder belts. The front passenger and rear seat outboard safety belts have two types of locking modes described below:

### Vehicle sensitive mode

The vehicle sensitive mode is the normal retractor mode, allowing 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 approximately 8 km/h (5 mph) or more, the combination safety belts will lock to help reduce forward movement of the driver and passengers.

## Seating and safety restraints

### 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.

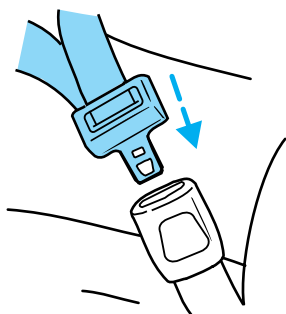
The automatic locking mode is not available on the driver safety belt.

### When to use the automatic locking mode

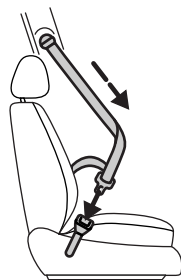
- **Any time** a child safety seat is installed in a passenger front or outboard rear seating position (if equipped). Children 12 years old and under should be properly restrained in the rear seat whenever possible. Refer to *Safety Restraints for Children* or *Safety Seats for Children* later in this chapter.

### How to use the automatic locking mode

- Buckle the combination lap and shoulder belt.



- Grasp the shoulder portion and pull downward until the entire belt is extracted.



- 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.

## Seating and safety restraints

### *How to disengage the automatic locking mode*



Ford recommends that all safety belt assemblies and attaching hardware should be inspected by a qualified technician after any collision. Safety belt assemblies not in use during a collision should also be inspected and replaced if either damage or improper operation is noted.

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



After any vehicle collision, the front passenger and rear outboard seat belt systems must be checked by a qualified technician to verify that the “automatic locking retractor” feature for child seats is still functioning properly. In addition, all seat belts should be checked for proper function.



**BELT AND RETRACTOR ASSEMBLY MUST BE REPLACED** if the seat belt assembly “automatic locking retractor” feature or any other seat belt function is not operating properly when checked according to the procedures in Workshop Manual.



Failure to replace the Belt and Retractor assembly could increase the risk of injury in collisions.

### **Safety belt pretensioner**

Your vehicle is equipped with safety belt pretensioners at the driver and front passenger seating positions.

The safety belt pretensioner is a device which removes excess webbing from the safety belt system. The safety belt pretensioner uses the same crash sensor system as the front air bag supplemental restraint system (SRS). When the safety belt pretensioner deploys, webbing from the lap and shoulder belt is tightened. The driver and front passenger seat belt system (including retractors, buckles and height adjusters) must be replaced if the vehicle is involved in a collision that results in deployment of front air bags and safety belt pretensioners. Refer to the *Safety belt maintenance* section in this chapter.

## Seating and safety restraints

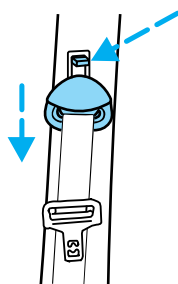


Failure to replace the safety belt assembly under the above conditions could result in severe personal injuries in the event of a collision.

### Front safety belt height adjustment

Your vehicle has safety belt height adjustments for the driver and front passenger. Adjust the height of the shoulder belt so the belt rests across the middle of your shoulder.

To lower the shoulder belt height, push the button and slide the height adjuster down. To raise the height of the shoulder belt, slide the height adjuster up. Pull down on the height adjuster to make sure it is locked in place.



Position the shoulder 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 seat belt and increase the risk of injury in a collision.

### Lap belts

#### *Adjusting the center lap belt*

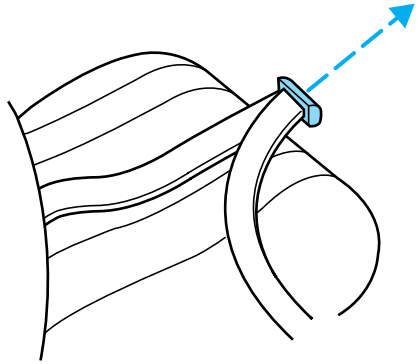
The lap belt does not adjust automatically.



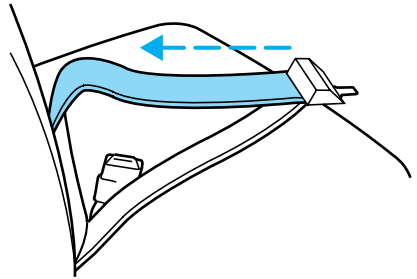
The lap belt should fit snugly and as low as possible around the hips, not across the waist.

## Seating and safety restraints

Insert the tongue into the correct buckle (the buckle closest to the direction the tongue is coming from). To lengthen the belt, turn the tongue at a right angle to the belt and pull across your lap until it reaches the buckle. To tighten the belt, pull the loose end of the belt through the tongue until it fits snugly across the hips.



Shorten and fasten the belt when not in use.



### Safety belt warning light and indicator chime

The seat belt warning light illuminates in the instrument cluster and a chime sounds to remind the occupants to fasten their safety belts.

## Seating and safety restraints

### Conditions of operation

If...	Then...
The driver's safety belt is not buckled before the ignition switch is turned to the ON position...	The safety belt warning light illuminates and the warning chime sounds 4-8 seconds.
The driver's 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's safety belt is buckled before the ignition switch is turned to the ON position...	The indicator chime will remain off and the safety belt warning lamp will illuminate for 4-8 seconds.

### BeltMinder

The BeltMinder feature is a supplemental warning to the safety belt warning function. This feature provides additional reminders to the driver that the driver's safety belt is unbuckled by intermittently sounding a chime and illuminating the safety belt warning lamp in the instrument cluster.

If...	Then...
The driver's safety belt is not buckled approximately 5 seconds after the safety belt warning light has turned off...	The BeltMinder feature is activated - the safety belt warning light illuminates and the warning chime sounds for 6 seconds every 30 seconds, repeating for approximately 5 minutes or until safety belt is buckled.
The driver's safety belt is buckled while the safety belt indicator light is illuminated and the safety belt warning chime is sounding...	The BeltMinder feature will not activate.

## Seating and safety restraints

If...	Then...
The driver's safety belt is buckled before the ignition switch is turned to the ON position...	The BeltMinder feature will not activate.

The purpose of the BeltMinder is to remind occasional wearers to wear safety belts all of the time.

The following are reasons most often given for not wearing safety belts: (All statistics based on U.S. data)

Reasons given...	Consider...
"Crashes are rare events"	<b>36 700 crashes occur every day.</b> The more we drive, the more we are exposed to "rare" events, even for good drivers. <i>1 in 4 of us will be seriously injured in a crash during our lifetime.</i>
"I'm not going far"	<b>3 of 4</b> fatal crashes occur within <b>25</b> miles of home.
"Belts are uncomfortable"	We design our safety belts to enhance comfort. If you are uncomfortable - try different positions for the safety belt upper anchorage and seatback which should be as upright as possible; this can improve comfort.
"I was in a hurry"	<b>Prime time for an accident.</b> BeltMinder reminds us to take a few seconds to buckle up.
"Seat belts don't work"	<b>Safety belts</b> , when used properly, <b>reduce risk of death</b> to front seat occupants by <b>45% in cars</b> , and by <b>60% in light trucks</b> .
"Traffic is light"	<b>Nearly 1 of 2 deaths occur in single-vehicle crashes</b> , many when no other vehicles are around.



## Seating and safety restraints

Reasons given...	Consider...
“Belts wrinkle my clothes”	Possibly, but a serious crash can do much more than wrinkle your clothes, particularly if you are unbelted.
“The people I’m with don’t wear belts”	Set the example, teen deaths occur 4 times more often in vehicles with TWO or MORE people. Children and younger brothers/sisters imitate behavior they see.
“I have an air bag”	Air bags offer greater protection when used with safety belts. Frontal airbags are not designed to inflate in rear and side crashes or rollovers.
“I’d rather be thrown clear”	Not a good idea. <b>People</b> who are <b>ejected are 40 times more likely to DIE.</b> Safety belts help prevent ejection, WE CAN’T “PICK OUR CRASH”.



Do not sit on top of a buckled safety belt to avoid the Belt Minder chime. Sitting on the safety belt will increase the risk of injury in an accident. To disable (one-time) or deactivate the Belt Minder feature please follow the directions stated below.

### **One time disable**

Any time the safety belt is buckled and then unbuckled during an ignition ON cycle, BeltMinder will be disabled for that ignition cycle only.

### **Deactivating/activating the BeltMinder feature**

*Read steps 1 - 9 thoroughly before proceeding with the deactivation/activation programming procedure.*

The BeltMinder feature can be deactivated/activated by performing the following procedure:

Before following the procedure, make sure that:

- the parking brake is set
- the gearshift is in P (Park) (automatic transmission)

## Seating and safety restraints

- the ignition switch is in the OFF position
- all vehicle doors are closed
- the driver's safety belt is unbuckled
- the parklamps/headlamps are in OFF position (If vehicle is equipped with Autolamps, this will not affect the procedure.)



To reduce the risk of injury, do not deactivate/activate the Belt Minder feature while driving the vehicle.

1. Turn the ignition switch to the RUN (or ON) position. (DO NOT START THE ENGINE)
2. Wait at least one minute after the safety belt warning light turns off.
  - Steps 3–5 must be completed within 60 seconds or the procedure will have to be repeated.
3. Buckle then unbuckle the safety belt three times, ending with the safety belt unbuckled. This can be done before or during BeltMinder warning activation.
4. Turn on the parklamps/headlamps, turn off the parklamps/headlamps.
5. Buckle then unbuckle the safety belt three times, ending with the safety belt unbuckled.
  - After step 5 the safety belt warning light will be turned on for three seconds.
6. Within seven seconds of the safety belt warning light turning off, buckle then unbuckle the safety belt.
  - This will disable BeltMinder if it is currently enabled, or enable BeltMinder if it is currently disabled.
7. Confirmation of disabling BeltMinder is provided by flashing the safety belt warning light four times per second for three seconds.
8. Confirmation of enabling BeltMinder is provided by flashing the safety belt warning light four times per second for three seconds, followed by three seconds with the safety belt warning light off, then followed by flashing the safety belt warning light four times per second for three seconds again.
9. After receiving confirmation, the deactivation/activation procedure is complete.

## Seating and safety restraints

### Safety belt extension assembly

If the safety belt is too short when fully extended, there is a 20 cm (8 inch) safety belt extension assembly that can be added (part number 611C22). This assembly can be obtained from your dealer at no cost.

Use only extensions manufactured by the same supplier as the safety belt. Manufacturer identification is located at the end of the webbing on the label. Also, use the safety belt extension only if the safety belt is too short for you when fully extended. Do not use extensions to change the fit of the shoulder belt across the torso.

### Safety belt maintenance

Inspect the safety belt systems periodically to make sure they work properly and are not damaged. Inspect the safety belts to make sure there are no nicks, tears or cuts. Replace if necessary. All safety belt assemblies, including retractors, buckles, front seat belt buckle assemblies, buckle support assemblies (slide bar-if equipped), shoulder belt height adjusters (if equipped), shoulder belt guide on seatback (if equipped), child safety seat tether bracket assemblies (if equipped), LATCH child seat tether anchors and lower anchors (if equipped), and attaching hardware, should be inspected after a collision. Ford Motor Company recommends that all safety belt assemblies used in vehicles involved in a collision be replaced. However, if the collision was minor and a qualified technician 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 collision should also be inspected and replaced if either damage or improper operation is noted.

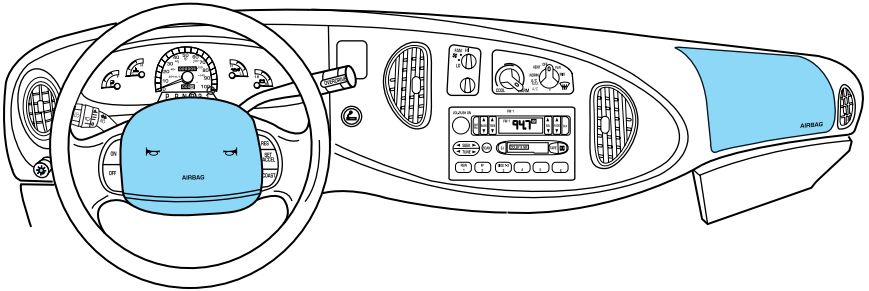


Failure to inspect and if necessary replace the safety belt assembly under the above conditions could result in severe personal injuries in the event of a collision.

Refer to *Cleaning and maintaining the safety belts* in the *Cleaning* chapter.

# Seating and safety restraints

## AIR BAG SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

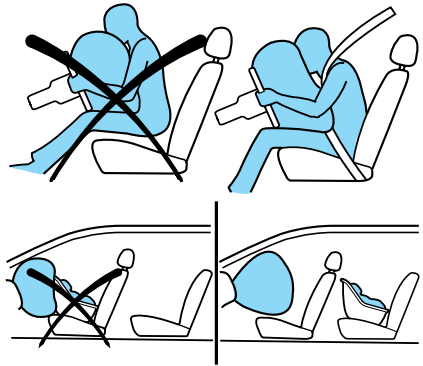


Your vehicle is equipped with a crash sensing and diagnostic module which records information about the air bag and sensor systems. In the event of a collision this module may save information related to the collision including information about the air bag system and impact severity. This information will assist Ford Motor Company in the servicing vehicle and helping to better understand real world collisions and further improve the safety of future vehicles.

### Important supplemental restraint system (SRS) precautions

The supplemental restraint system is designed to work with the safety belt to help protect the driver and right front passenger from certain upper body injuries.

Air bags DO NOT inflate slowly or gently and the risk of injury from a deploying air bag is greatest close to the trim covering the air bag module.



## Seating and safety restraints



All occupants of the vehicle, including the driver, should always properly wear their safety belts, even when an air bag (SRS) is provided.



Always transport children 12 years old and under in the back seat and always properly use appropriate child restraints.



National Highway Traffic Safety Administration (NHTSA) recommends a minimum distance of at least 25 cm (10 inches) between an occupant's chest and the driver air bag module.



Never place your arm over the air bag module as a deploying air bag can result in serious arm fractures or other injuries.

Steps you can take to properly position yourself away from the air bag:

- 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.



Do not put anything on or over the air bag module. Placing objects on or over the air bag inflation area may cause those objects to be propelled by the air bag into your face and torso causing serious injury.



Do not attempt to service, repair, or modify the air bag supplemental restraint systems or its fuses. See your Ford or Lincoln Mercury dealer.



Modifications to the front end of the vehicle, including frame, bumper, front end body structure and tow hooks may affect the performance of the air bag sensors increasing the risk of injury. Do not modify the front end of the vehicle.

## Seating and safety restraints



Additional equipment may affect the performance of the air bag sensors increasing the risk of injury. Please refer to the Body Builders Layout Book for instructions about the appropriate installation of additional equipment.

### Children and air bags

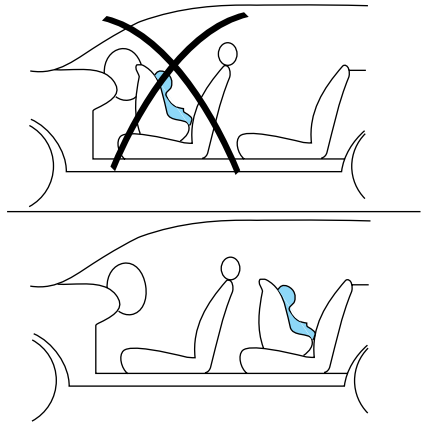
For additional important safety information, read all information on safety restraints in this guide.

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 collision.



Air bags can kill or injure a child in a child seat.

**NEVER** place a rear-facing child seat in front of an active air bag. If you must use a forward-facing child seat in the front seat, move the seat all the way back.



## Seating and safety restraints

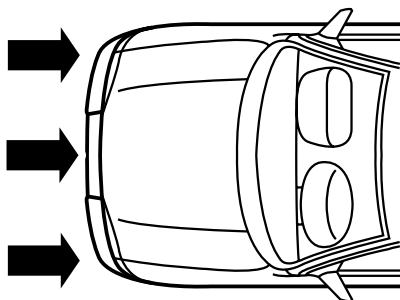
### How does the air bag supplemental restraint system work?

The air bag SRS is designed to activate when the vehicle sustains longitudinal deceleration sufficient to cause the sensors to close an electrical circuit that initiates air bag inflation.

The fact that the air bags did not inflate in a collision does not mean that something is wrong with the system. Rather, it means the forces were not of the type sufficient to cause activation. Air bags are designed to inflate in frontal and near-frontal collisions, not rollover, side-impact, or rear-impacts unless the collision causes sufficient longitudinal deceleration.

The air bags inflate and deflate rapidly upon activation. After air bag 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 (e.g., baking soda) that result from the combustion process that inflates the air bag. 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 air bag may also cause abrasions, swelling or temporary hearing loss. Because air bags 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 air bag deployment. Thus, it is extremely important that occupants be properly restrained as far away from the air bag module as possible while maintaining vehicle control.



## Seating and safety restraints

The SRS consists of:

- driver and passenger air bag modules (which include the inflators and air bags)
- one or more impact and safing sensors
- a readiness light and tone
- a diagnostic module
- and the electrical wiring which connects the components

The diagnostic module monitors its own internal circuits and the supplemental air bag electrical system warning (including the impact sensors), the system wiring, the air bag system readiness light, the air bag back up power and the air bag ignitors.



Several air bag system components get hot after inflation. Do not touch them after inflation.



If the air bag has deployed, **the air bag will not function again and must be replaced immediately.** If the air bag is not replaced, the unrepaired area will increase the risk of injury in a collision.

### Determining if the system is operational

The SRS uses a readiness light in the instrument cluster or a tone to indicate the condition of the system. Refer to *Air bag readiness* section in the *Instrument cluster* chapter. Routine maintenance of the air bag 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 ignition is turned on.
- A series of five beeps will be heard. The tone pattern will repeat periodically until the problem and/or light are repaired.



If any of these things happen, even intermittently, have the SRS serviced at your dealership or by a qualified technician immediately. Unless serviced, the system may not function properly in the event of a collision.



## Seating and safety restraints

### Disposal of air bags and air bag equipped vehicles (including pretensioners)

For disposal of air bags or air bag equipped vehicles, see your local dealership or qualified technician. Air bags **MUST BE** disposed of by qualified personnel.

### SAFETY RESTRAINTS FOR CHILDREN

See the following sections for directions on how to properly use safety restraints for children. Also see *Air bag supplemental restraint system (SRS)* in this chapter for special instructions about using air bags.

#### Important child restraint precautions

You are required by law to use safety restraints for children in the U.S. and Canada. If small children ride in your vehicle (generally children who are four years old or younger and who weigh 18 kg [40 lbs] or less), you must put them in safety seats made especially for children. Check your local and state or provincial laws for specific requirements regarding the safety of children in your vehicle.



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 collision.

Always follow the instructions and warnings that come with any infant or child restraint you might use.

When possible, always place children under age 12 in the rear seat of your vehicle. Accident statistics suggest that children are safer when properly restrained in the rear seating positions than in the front seating position.

Install forward-facing convertible safety seats only in vehicle seating positions equipped with lap-shoulder belts. Forward facing convertible safety seats can be used in the center of the three-passenger second row bench seat only if a top tether strap is used. Ford recommends placing forward-facing safety seats in the second row and using safety seats with top tether straps for added protection. For more information on top tether straps, see *Attaching safety seats with tether straps* in this section.

## Seating and safety restraints

Any booster seat that places the vehicle's lap belt or shoulder belt around a shield above and ahead of the child's hips should not be used in this vehicle.



**Do not** use a forward-facing safety seat or an infant seat in the last row of a 12- or 15-passenger Club Wagon.

### Children and safety belts

If the child is the proper size, restrain the child in a safety seat.

Children who are too large for child safety seats (as specified by your child safety seat manufacturer) should always wear safety belts.

Follow all the important safety restraint and air bag precautions that apply to adult passengers in your vehicle.

If the shoulder belt portion of a combination lap and shoulder belt can be positioned so it does not cross or rest in front of the child's face or neck, the child should wear the lap and shoulder belt. Moving the child closer to the center of the vehicle may help provide a good shoulder belt fit.



**Do not** leave children, unreliable adults, or pets unattended in your vehicle.

To improve the fit of lap and shoulder belts on children who have outgrown child safety seats, Ford recommends use of a belt-positioning booster seat that is labelled as conforming to all applicable Federal motor vehicle safety standards. Belt-positioning booster seats raise the child and provide a shorter, firmer seating cushion that encourages safer seating posture and better fit of lap and shoulder belts on the child.

A belt-positioning booster seat should be used if the shoulder belt rests in front of the child's face or neck, or if the lap belt does not fit snugly on both thighs, or if the thighs are too short to let the child sit all the way back on the seat cushion when the lower legs hang over the edge of the seat cushion. You may wish to discuss the special needs of your child with your pediatrician.

## Seating and safety restraints

### SAFETY SEATS FOR CHILDREN



#### Child and infant or child safety seats

Use a safety seat that is recommended for the size and weight of the child. Carefully follow all of the manufacturer's instructions with the safety seat you put in your vehicle. If you do not install and use the safety seat properly, the child may be injured in a sudden stop or collision.

When installing a child safety seat:

- Review and follow the information presented in the *Air Bag Supplemental Restraint System* section in this chapter.
- Use the correct safety belt buckle for that seating position (the buckle closest to the direction the tongue is coming from).
- 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.
- For the front passenger seat, 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.
- For the front passenger seat, place seat back in upright position.



## Seating and safety restraints

- Put the safety belt in the automatic locking mode. Refer to *Automatic locking mode* (passenger side front and outboard rear seating positions) (if equipped).

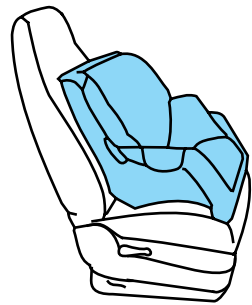
Ford recommends the use of a child safety seat having a top tether strap. Install the child safety seat in a seating position which is capable of providing a tether anchorage. For more information on top tether straps, refer to *Attaching safety seats with tether straps*.



Carefully follow all of the manufacturer's instructions included with the safety seat you put in your vehicle. If you do not install and use the safety seat properly, the child may be injured in a sudden stop or collision.

### Installing child safety seats in combination lap and shoulder belt seating positions

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



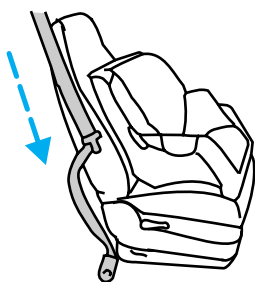
An air bag can kill or injure a child in a child seat. If you must use a forward-facing child seat in the front seat, move seat all the way back.



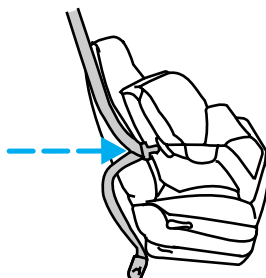
Children 12 and under should be properly restrained in the rear seat whenever possible.

## Seating and safety restraints

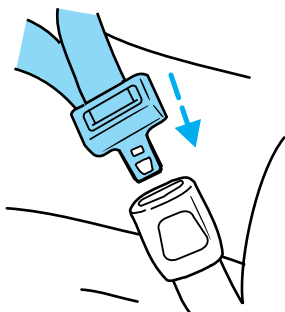
2. Pull down on the shoulder belt and then grasp the shoulder belt and lap belt together.



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.

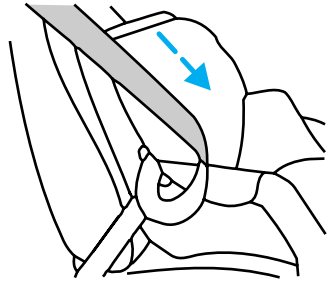


4. Insert the belt tongue into the proper buckle (the buckle closest to the direction the tongue is coming from) for that seating position until you hear a snap and feel the latch engage. Make sure the tongue is latched securely by pulling on it.



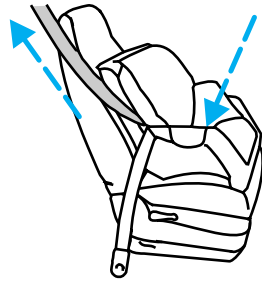
## Seating and safety restraints

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 extracted.



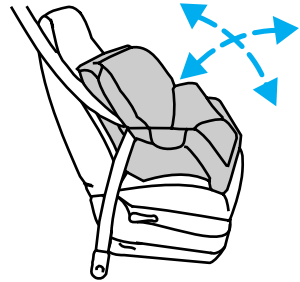
6. Allow the belt to retract. The belt will click as it retracts to indicate it is in the automatic locking mode.

7. Pull the lap belt portion across the child seat toward the buckle and pull up on the shoulder belt while pushing down with your knee on the child seat.



8. Allow the safety belt to retract to remove any slack in the belt.

9. Before placing the child in the seat, forcibly tilt 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 one inch of movement for proper installation.



10. 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 two through nine.

Check to make sure the child seat is properly secured before each use.

## Seating and safety restraints

### Attaching safety seats with tether straps



Children should be placed in the rear in an appropriate child safety seat that is properly secured to the vehicle.



When using forward-facing child safety seats in vehicles with only two seating positions so the forward-facing child safety seat cannot be placed in the rear of the vehicle, move the passenger seat as far back from the instrument panel as possible.

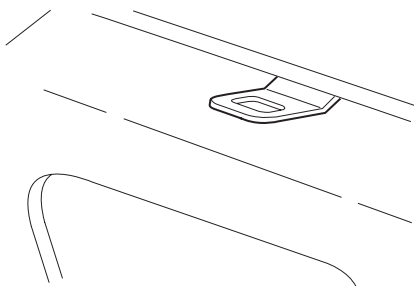


Rear-facing child seats or infant carriers should never be placed in the front seats.

### ***Front passenger seating position***

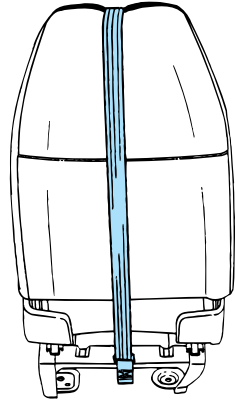
The tether can be attached directly to the rear of the front seat.

1. Position the child safety seat on the front right-hand passenger seat.
2. Adjust the front right-hand passenger seat full forward.

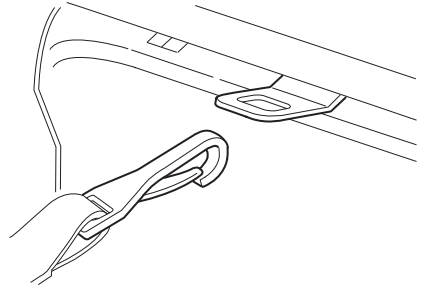


## Seating and safety restraints

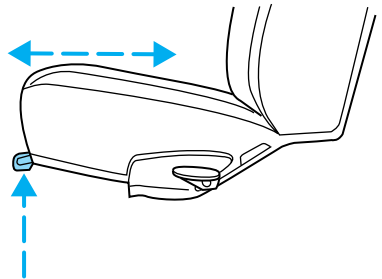
3. Route the child safety seat tether strap over the back of the front right-hand passenger seat as shown.



4. Clip the tether strap hook to the seat pedestal to the location shown.



5. Adjust the front right hand passenger seat to the full rearward position.

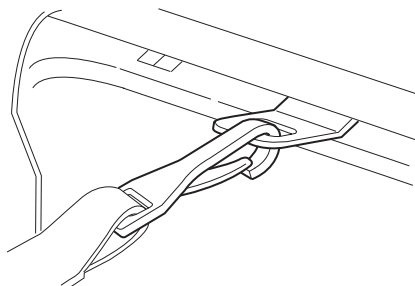




## Seating and safety restraints

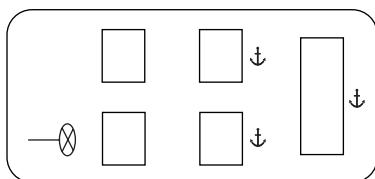
6. Refer to the instructions in this section under *Installing child safety seats in combination lap and shoulder belt seating positions* to secure the child safety seat.

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



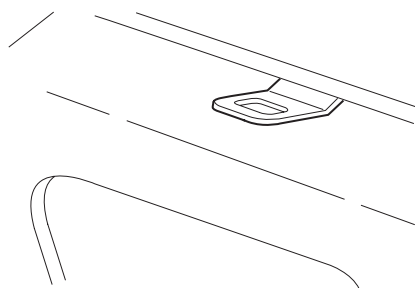
### **Second row bucket seats (Chateau Quads)**

The tether strap can be attached directly to the tether bracket under the back edge of the seat cushion.



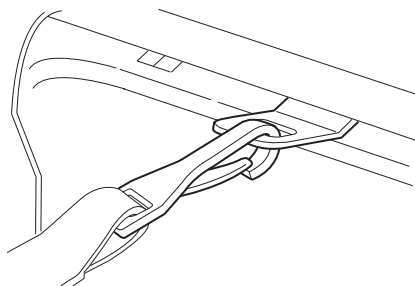
1. Position the child safety seat on the second row left hand or right hand bucket seat.

2. Route the child safety tether strap over the back of the left hand or right hand second row bucket seat.



## Seating and safety restraints

3. Clip the tether strap hook to the seat pedestal at the location shown.

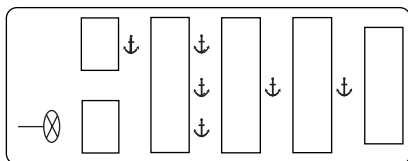


4. Refer to the instructions in this section under *Installing child safety seats in combination lap and shoulder belt seating positions* to secure the child safety seat.

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

### **Second, Third and Fourth row three passenger bench seats**

The tether strap can be attached directly to the tether bracket provided under the back edge of the seat cushion.

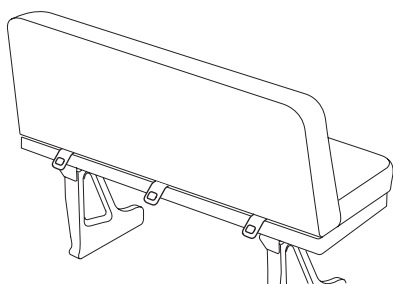


1. For second row 3-Passenger bench seat, place the child safety seat on the left hand outboard position, the center position, or the right hand outboard position as desired.

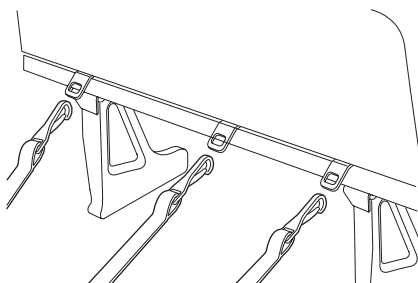
For third row or fourth row 3-Passenger bench seat, place the child safety seat on the center position.

## Seating and safety restraints

2. Route the child safety tether strap over the back of 3-Passenger bench seat.



3. Clip the tether strap hook to the tether bracket mounted under rear rail of seat cushion frame.



4. Refer to the instructions in this section under *installing child safety seats in combination lap and shoulder belt seating positions* to secure the child safety seat.

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

For additional important safety information on the proper use of seat belts, child seats and infant seats, please read the entire *Seating and Safety Restraints* chapter in this Owner's Guide.

# Driving

## STARTING

### Positions of the ignition

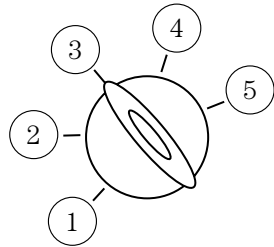
1. ACCESSORY, allows the electrical accessories such as the radio to operate while the engine is not running.

2. LOCK, locks the steering wheel, automatic transmission gearshift lever and allows key removal.

3. OFF, shuts off the engine and all accessories without locking the steering wheel.

4. ON, all electrical circuits operational. Warning lights illuminated. Key position when driving.

5. START, cranks the engine. Release the key as soon as the engine starts.



### Preparing to start your vehicle

Engine starting is controlled by the powertrain control system. This system meets all Canadian Interference-Causing Equipment standard requirements regulating the impulse electrical field strength of radio noise.


When starting a fuel-injected engine, avoid pressing the accelerator before or during starting. Only use the accelerator when you have difficulty starting the engine. For more information on starting the vehicle, refer to *Starting the engine* in this chapter.




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.



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.

 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. See *Guarding against exhaust fumes* in this chapter for more instructions.

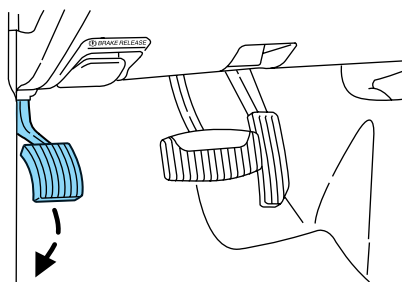
 If you smell exhaust fumes inside your vehicle, have your dealer inspect your vehicle immediately. Do not drive if you smell exhaust fumes.

### **Important safety precautions**

A computer system controls the engine's idle revolutions per minute (RPM). When the engine starts, the idle RPM runs faster to warm the engine. If the engine idle speed does not slow down automatically, have the vehicle checked. Do not allow the vehicle to idle for more than 10 minutes at the higher engine RPM.

Before starting the vehicle:

1. Make sure all vehicle occupants have buckled their safety belts. For more information on safety belts and their proper usage, refer to the *Seating and safety restraints* chapter.
2. Make sure the headlamps and vehicle accessories are off.
3. Make sure the parking brake is set.



4. Make sure the gearshift is in P (Park).

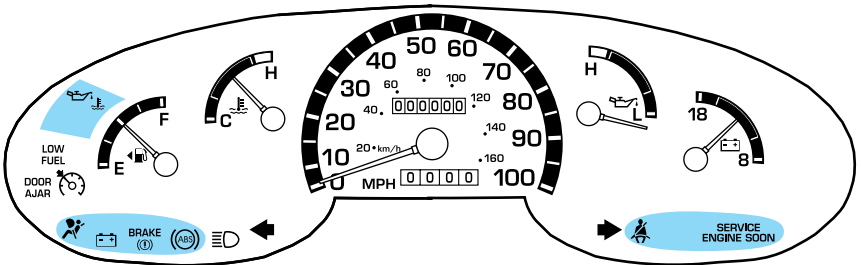
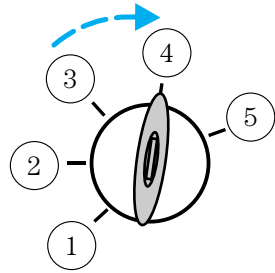


# Driving

5. Turn the key to 4 (ON) without turning the key to 5 (START).

If there is difficulty in turning the key, firmly rotate the steering wheel left and right until the key turns freely. This condition may occur when:

- front wheels are turned
- front wheel is against the curb
- steering wheel is turned when getting in or out of the vehicle



Make sure the corresponding lights illuminate or illuminate briefly. If a light fails to illuminate, have the vehicle serviced.

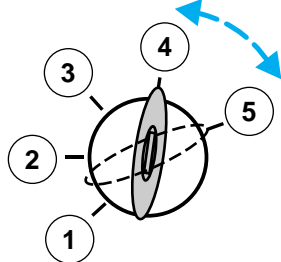
- If the driver's safety belt is fastened, the  light may not illuminate.

## Starting the engine

**Note:** Whenever you start your vehicle, release the key as soon as the engine starts. Excessive cranking could damage the starter.

1. Turn the key to 5 (START) without pressing the accelerator pedal and release as soon as the engine starts. The key will return to 4 (ON).

2. If the temperature is above  $-12^{\circ}\text{C}$  ( $10^{\circ}\text{F}$ ) and the engine does not start within five seconds on the first try, turn the key to OFF, wait 10 seconds and try again.



3. If the temperature is below  $-12^{\circ}\text{C}$  ( $10^{\circ}\text{F}$ ) and the engine does not start in 15 seconds on the first try, turn the key OFF and wait 10 seconds and try again. If the engine does not start in two attempts, press the accelerator pedal all the way to floor and hold. Turn the key to START position.
4. When the engine starts, release the key, then release the accelerator pedal gradually as the engine speeds up.
5. After idling for a few seconds, apply the brake and release the parking brake.

### Using the engine block heater (if equipped)

An engine block heater warms the engine coolant, which improves starting, warms up the engine faster and allows the heater-defroster system to respond quickly. Use of an engine block heater is strongly recommended if you live in a region where temperatures reach  $-23^{\circ}\text{C}$  ( $-10^{\circ}\text{F}$ ) or below.

For best results, plug the heater in at least three hours before starting the vehicle. Using the heater for longer than three hours will not harm the engine, so the heater can be plugged in the night before starting the vehicle.



To prevent electrical shock, do not use your heater with ungrounded electrical systems or two-pronged (cheater) adapters.

### Guarding against exhaust fumes

Although odorless and colorless, carbon monoxide is present in exhaust fumes. Take precautions to avoid its dangerous effects.



If you ever smell exhaust fumes of any kind inside your vehicle, have your dealer inspect and fix your vehicle immediately. Do not drive if you smell exhaust fumes. These fumes are harmful and could kill you.

Have the exhaust and body ventilation systems checked whenever:

- the vehicle is raised for service
- the sound of the exhaust system changes
- the vehicle has been damaged in a collision

## Driving



**WARNING:** Engine exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. In addition, 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.

### Important ventilating information

If the engine is idling while the vehicle is stopped in an open area for long periods of time, open the windows at least 2.5 cm (one inch).

Adjust the heating or air conditioning (if equipped) to bring in fresh air.

Improve vehicle ventilation by keeping all air inlet vents clear of snow, leaves and other debris.

### BRAKES

Your service brakes are self-adjusting. Refer to the scheduled maintenance guide for scheduled maintenance.

Occasional brake noise is normal and often does not indicate a performance concern with the vehicle's brake system. In normal operation, automotive brake systems may emit occasional or intermittent squeal or groan noises when the brakes are applied. Such noises are usually heard during the first few brake applications in the morning; however, they may be heard at any time while braking and can be aggravated by environmental conditions such as cold, heat, moisture, road dust, salt or mud. If a "metal-to-metal," "continuous grinding" or "continuous squeal" sound is present while braking, the brake linings may be worn-out and should be inspected by a qualified service technician.

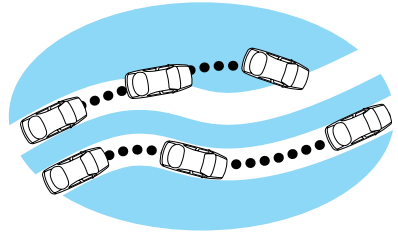
### Four-wheel anti-lock brake system (ABS)

This vehicle is equipped with an anti-lock braking system (ABS). A noise from the hydraulic pump motor and pulsation in the pedal may be observed during ABS braking events. Pedal pulsation coupled with noise while braking under panic conditions or on loose gravel, bumps, wet or snowy roads is normal and indicates proper functioning of the vehicle's anti-lock brake system. If the vehicle has continuous vibration or shudder



in the steering wheel while braking, the vehicle should be inspected by a qualified service technician.

The ABS operates by detecting the onset of wheel lockup during brake applications and compensates for this tendency. The wheels are prevented from locking even when the brakes are firmly applied. The accompanying illustration depicts the advantage of an ABS equipped vehicle (on bottom) to a non-ABS equipped vehicle (on top) during hard braking with loss of front braking traction.



### **Using ABS**

- In an emergency or when maximum efficiency from the four-wheel ABS is required, apply continuous force on the brake. The four wheel ABS will be activated immediately, thus allowing you to retain full steering control of your vehicle and, providing there is sufficient space, will enable you to avoid obstacles and bring the vehicle to a controlled stop.
- The anti-lock system does not decrease the time necessary to apply the brakes or always reduce stopping distance. Always leave enough room between your vehicle and the vehicle in front of you to stop.
- We recommend that you familiarize yourself with this braking technique. However, avoid taking any unnecessary risks.

### **ABS warning lamp** (ABS)

The (ABS) warning lamp in the instrument cluster momentarily illuminates when the ignition is turned to the ON position. If the light does not illuminate momentarily at start up, remains on or continues to flash, the ABS needs to be serviced.

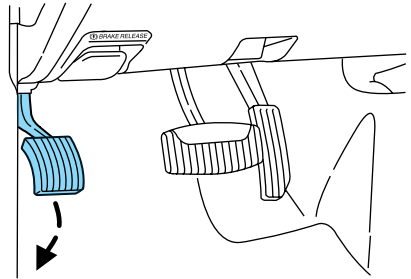
With the ABS light on, the anti-lock brake system is disabled and normal braking is still effective unless the brake warning light also remains illuminated with parking brake released. (If your brake warning lamp illuminates, have your vehicle serviced immediately.)

**BRAKE**  
(!)

# Driving

## Parking brake (P)

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



The BRAKE warning lamp in the instrument cluster illuminates and remains illuminated (when the ignition is turned ON) until the parking brake is released.

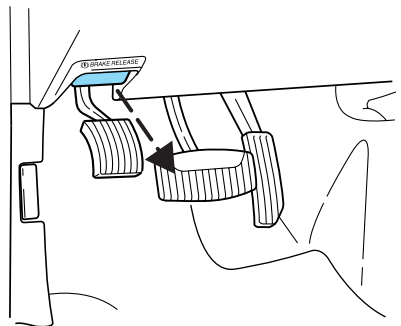
**BRAKE**  
(!)



Always set the parking brake fully and make sure the gearshift is latched in P (Park). Turn off the ignition whenever you leave your vehicle.

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

Pull the release lever to release the parking brake. Driving with the parking brake on will cause the brakes to wear out quickly and reduce fuel economy.



### STEERING

Your vehicle is equipped with power steering. Power steering uses energy from the engine to help steer the vehicle.

To prevent damage to the power steering pump:

- Never hold the steering wheel to the extreme right or the extreme left for more than a few seconds when the engine is running.
- Do not operate the vehicle with a low power steering pump fluid level (below the MIN mark on 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, the condition could be caused by any of the following:

- underinflated tire(s) on any wheel(s)
- uneven vehicle loading
- high crown in center of road
- high crosswinds
- wheels out of alignment
- loose or worn suspension components

### 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.

Extended use of other than the manufacturer's specified size tires on a Traction-Lok rear axle could result in a permanent reduction in effectiveness. This loss of effectiveness does not affect normal driving and should not be noticeable to the driver.



To avoid injury, never run the engine with one wheel off the ground, such as when changing a tire.

## Driving

### PREPARING TO DRIVE YOUR VEHICLE



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



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

Your vehicle has special design and equipment features to make it capable of performing in a wide variety of circumstances. These special design features, such as larger tires and increased ground clearance, give the vehicle a higher center of gravity than a passenger car.



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 vehicle rollover, personal injury and death.



Loaded vehicles, with a higher center of gravity, 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 has the capability to haul more cargo and people than most passenger cars. Depending upon the type and placement of the load, hauling people and cargo may raise the center of gravity of the vehicle.

Use extra caution while becoming familiar with your vehicle. Know the capabilities and limitations of both you as a driver and your vehicle.

### AUTOMATIC TRANSMISSION OPERATION

#### Brake-shift interlock

This vehicle is equipped with a brake-shift interlock feature that prevents the gearshift lever from being moved from P (Park) when the ignition is in the ON position unless brake pedal is depressed.

If you cannot move the gearshift lever out of P (Park) with ignition in the ON position and the brake pedal depressed:

1. Apply the parking brake, turn ignition key to LOCK, then remove the key.
2. Insert the key and turn it to OFF. **Apply the brake pedal and shift to N (Neutral).**
3. Start the vehicle.

If it is necessary to use the above procedure to move the gearshift lever, it is possible that a fuse has blown or the vehicle's brakelamps are not operating properly. Refer to *Fuses and relays* in the *Roadside emergencies* chapter.



Do not drive your vehicle until you verify that the brakelamps are working.

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

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

**Do not rock the vehicle for more than a few minutes or damage to the transmission and tires may occur or the engine may overheat.**



Always set the parking brake fully and make sure the gearshift is latched in P (Park). Turn off the ignition whenever you leave your vehicle.



If the parking brake is fully released, but the brake warning lamp remains illuminated, the brakes may not be working properly. See your dealer or a qualified service technician.

## Driving with a 4-speed automatic transmission

### **Understanding gearshift positions**

To put your vehicle in gear, start the engine, depress the brake pedal, then move gearshift lever out of P (Park).

## Driving



Hold the brake pedal down while you move the gearshift lever from P (Park) to another position. If you do not hold the brake pedal down, your vehicle may move unexpectedly and injure someone.

### **P (Park)**

Always come to a complete stop before shifting into P (Park). Make sure the gearshift lever is securely latched in P (Park). This position locks the transmission and prevents the rear wheels from turning.



Always set the parking brake fully and make sure the gearshift lever is latched in P (Park). Turn off the ignition whenever you leave your vehicle.

### **R (Reverse)**

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



### **N (Neutral)**

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

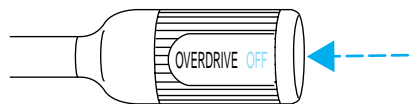


### **D (Overdrive)**

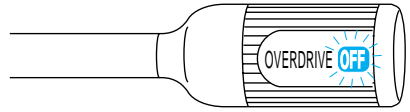
The normal driving position for the best fuel economy. Transmission operates in gears one through four.



**D** (Overdrive) can be deactivated by pressing the transmission control switch (TCS) on the end of the gearshift lever.



The transmission control indicator light (TCIL) (the word OFF) on the end of the gearshift lever will illuminate.



**Drive** – Not shown on the display. Activate by pressing the transmission control switch (TCS) on the end of the gearshift lever with the gearshift in the **D** position. The TCIL (the word OFF) will illuminate on the gearshift lever. Transmission operates in gears one through three. **D** (Drive) provides more engine braking than **D** (Overdrive) and is useful when:

- driving with a heavy load.
- towing a trailer up or down steep hills.
- additional engine downhill braking is desired. If towing a trailer, refer to *Driving while you tow* in the *Trailer towing* section.

To return to **D** (Overdrive) mode, press the transmission control switch (TCS). The TCIL (the word OFF) will no longer be illuminated.

Each time the vehicle is started, the transmission will automatically return to normal overdrive mode.

Every time the vehicle is shut off and restarted, you must press the transmission control switch to cancel overdrive operation if driving in overdrive is not desired.

## 2 (Second)

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



## 1 (First)

Use 1 (Low) to provide maximum engine braking on steep downgrades. Upshifts can be made by shifting to 2 (Second) or to **D** (Overdrive). Selecting 1 (Low) at



higher speeds causes the transmission to shift to a lower gear, and will shift to 1 (Low) after vehicle decelerates to the proper speed.

## Driving

### **Forced Downshifts**

To gain acceleration in **D** (Overdrive) or Drive (O/D OFF) when passing another vehicle, push the accelerator to the floor. The transmission will downshift to the appropriate gear: third, second or first gear.

### **Shift strategy (4R100 automatic transmission)**

To account for customer driving habits and conditions, your 4R100 automatic transmission electronically controls the shift quality by using an adaptive learning strategy. The adaptive learning strategy is maintained by power from the battery. When the battery is disconnected or a new battery is installed, the transmission must relearn its adaptive strategy. Optimal shifting will resume within a few hundred kilometers (miles) of operation.

**If the shift quality does not improve within a few hundred kilometers (miles) of operation, or if the downshifts and other throttle conditions do not function normally, see your dealer or a qualified service technician as soon as possible.**

### **DRIVING THROUGH WATER**

Do not drive quickly through standing water, especially if the depth is unknown. Traction or brake capability may be limited and if the ignition system gets wet, your engine may stall. Water may also enter your engine's air intake and severely damage your engine.

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

Once through the water, always try the brakes. Wet brakes do not stop the vehicle as effectively as dry brakes. Drying can be improved by moving your vehicle slowly while applying light pressure on the brake pedal.

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

### **VEHICLE LOADING**

Before loading a vehicle, familiarize yourself with the following terms:



- **Base Curb Weight:** Weight of the vehicle including any standard equipment, fluids, lubricants, etc. It does not include occupants or aftermarket equipment.
- **Payload:** Combined maximum allowable weight of cargo, occupants and optional equipment. The payload equals the gross vehicle weight rating minus base curb weight.
- **GVW (Gross Vehicle Weight):** Base curb weight plus payload weight. The GVW is not a limit or a specification.
- **GVWR (Gross Vehicle Weight Rating):** Maximum permissible total weight of the base vehicle, occupants, optional equipment and cargo. The GVWR is specific to each vehicle and is listed on the Safety Certification Label on the driver's door pillar.
- **GAWR (Gross Axle Weight Rating):** Carrying capacity for each axle system. The GAWR is specific to each vehicle and is listed on the Safety Certification Label on the driver's door pillar.
- **GCW (Gross Combined Weight):** The combined weight of the towing vehicle (including occupants and cargo) and the loaded trailer.
- **GCWR (Gross Combined Weight Rating):** Maximum permissible combined weight of towing vehicle (including occupants and cargo) and the loaded trailer
- **Maximum Trailer Weight Rating:** Maximum weight of a trailer the vehicle is permitted to tow. The maximum trailer weight rating is determined by subtracting the vehicle curb weight for each engine/transmission combination, any required option weight for trailer towing and the weight of the driver from the GCWR for the towing vehicle.
- **Maximum Trailer Weight:** Maximum weight of a trailer the loaded vehicle (including occupants and cargo) is permitted to tow. It is determined by subtracting the weight of the loaded trailer towing vehicle from the GCWR for the towing vehicle.
- **Trailer Weight Range:** Specified weight range that the trailer must fall within that ranges from zero to the maximum trailer weight rating.

Remember to figure in the tongue load of your loaded trailer when figuring the total weight.



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

## Driving

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

The Safety Certification Label, found on the driver's door pillar, lists several important vehicle weight rating limitations. Before adding any additional equipment, refer to these limitations. If you are adding weight to the front of your vehicle, (potentially including weight added to the cab), the weight added should not exceed the front axle reserve capacity (FARC). Additional frontal weight may be added to the front axle reserve capacity provided you limit your payload in other ways (i.e. restrict the number of occupants or amount of cargo carried).

Always ensure that the weight of occupants, cargo and equipment being carried is within the weight limitations that have been established for your vehicle including both gross vehicle weight and front and rear gross axle weight rating limits. Under no circumstance should these limitations be exceeded.



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

### Special loading instructions for owners of pickup trucks and utility-type vehicles



For important information regarding safe operation of this type of vehicle, see the **Preparing to drive your vehicle** section in this chapter.



Loaded vehicles, with a higher center of gravity, 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 has the capability to 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.

## Calculating the load your vehicle can carry/tow

1. Use the appropriate maximum gross combined weight rating (GCWR) chart to find the maximum GCWR for your type engine and rear axle ratio.
2. Weigh your vehicle as you customarily operate the vehicle without cargo. To obtain correct weights, try taking your vehicle to a shipping company or an inspection station for trucks.
3. Subtract your loaded vehicle weight from the maximum GCWR on the following charts. This is the maximum trailer weight your vehicle can tow and must fall below the maximum shown under maximum trailer weight on the chart.

## TRAILER TOWING

Refer to *7.3 Liter Power Stroke Direct Injection Turbo Diesel Owner's Guide Supplement* for diesel engine towing information.

Your vehicle may tow a class I, II or III trailer provided the maximum trailer weight is less than or equal to the maximum trailer weight listed for your engine and rear axle ratio on the following charts.

<b>GCWR (Gross Combined Weight Rating)/Trailer Weights</b>				
<b>Engine</b>	<b>Rear axle ratio</b>	<b>Maximum GCWR - kg (lbs.)</b>	<b>Trailer weight range - kg (lbs.) (0-Maximum)</b>	<b>Maximum frontal area of trailer - m<sup>2</sup> (ft<sup>2</sup>)</b>
<b>Regular Van E-150</b>				
4.2L	3.55	4 536 (10 000)	2 313 (5 100)	5.52 (60)
4.6L	3.55	5 216 (11 500)	2 993 (6 600)	5.52 (60)
5.4L	3.55	5 443 (12 000)	3 130 (6 900)	5.52 (60)
<b>Regular Van E-250</b>				
4.2L	3.73	4 763 (10 500)	2 359 (5 200)	5.52 (60)
5.4L	3.73	5 897 (13 000)	3 402 (7 500)	5.52 (60)

## Driving

<b>GCWR (Gross Combined Weight Rating)/Trailer Weights</b>				
<b>Engine</b>	<b>Rear axle ratio</b>	<b>Maximum GCWR - kg (lbs.)</b>	<b>Trailer weight range - kg (lbs.) (0-Maximum)</b>	<b>Maximum frontal area of trailer - m<sup>2</sup> (ft<sup>2</sup>)</b>
<b>Regular Van E-250 HD (3 901 kg [8 600 lb.]-3 924 kg [8 650 lb.] GVW)</b>				
4.2L	4.09	4 990 (11 000)	2 586 (5 700)	5.52 (60)
5.4L	3.73	5 897 (13 000)	3 402 (7 500)	5.52 (60)
<b>Super Van E-250</b>				
4.2L	3.73	4 763 (10 500)	2 313 (5 100)	5.52 (60)
5.4L	3.73	5 897 (13 000)	3 357 (7 400)	5.52 (60)
<b>Super Van E-250 HD (3 901 kg [8 600 lb.]-3 924 kg [8 650 lb.] GVW)</b>				
4.2L	4.09	4 990 (11 000)	2 540 (5 600)	5.52 (60)
5.4L	3.73	5 897 (13 000)	3 356 (7 400)	5.52 (60)
<b>Regular Van E-350</b>				
5.4L	3.55	5 443 (12 000)	2 948 (6 500)	5.52 (60)
5.4L	4.10	5 897 (13 000)	3 402 (7 500)	5.52 (60)
6.8L	3.73	6 804 (15 000)	4 218 (9 300)	5.52 (60)
6.8L	4.10	8 392 (18 500)	4 536 (10 000)	5.52 (60)

<b>GCWR (Gross Combined Weight Rating)/Trailer Weights</b>				
<b>Engine</b>	<b>Rear axle ratio</b>	<b>Maximum GCWR - kg (lbs.)</b>	<b>Trailer weight range - kg (lbs.) (0-Maximum)</b>	<b>Maximum frontal area of trailer - m<sup>2</sup> (ft<sup>2</sup>)</b>
<b>Super Van E-350</b>				
5.4L	3.55	5 443 (12 000)	2 858 (6 300)	5.52 (60)
5.4L	4.10	5 897 (13 000)	3 311 (7 300)	5.52 (60)
6.8L	3.73	6 804 (15 000)	4 173 (9 200)	5.52 (60)
6.8L	4.10	8 392 (18 500)	4 536 (10 000)	5.52 (60)
<b>E-150 8 passenger Wagon</b>				
4.2L	3.55	4 536 (10 000)	2 132 (4 700)	5.52 (60)
4.6L	3.55	5 216 (11 500)	2 767 (6 100)	5.52 (60)
5.4L	3.55	5 443 (12 000)	2 948 (6 500)	5.52 (60)
<b>E-350 7 passenger Wagon</b>				
5.4L	3.73	5 443 (12 000)	2 812 (6 200)	5.52 (60)
6.8L	3.73	6 804 (15 000)	3 992 (8 800)	5.52 (60)
6.8L	4.10	8 392 (18 500)	4 536 (10 000)	5.52 (60)

## Driving

<b>GCWR (Gross Combined Weight Rating)/Trailer Weights</b>				
<b>Engine</b>	<b>Rear axle ratio</b>	<b>Maximum GCWR - kg (lbs.)</b>	<b>Trailer weight range - kg (lbs.) (0-Maximum)</b>	<b>Maximum frontal area of trailer - m<sup>2</sup> (ft<sup>2</sup>)</b>
<b>E-350 8 passenger Wagon</b>				
5.4L	3.73	5 443 (12 000)	2 858 (6 300)	5.52 (60)
6.8L	3.73	6 804 (15 000)	4 037 (8 900)	5.52 (60)
6.8L	4.10	8 392 (18 500)	4 536 (10 000)	5.52 (60)
<b>E-350 12 passenger Wagon</b>				
5.4L	3.55	5 443 (12 000)	2 722 (6 000)	5.52 (60)
5.4L	4.10	5 897 (13 000)	3 175 (7 000)	5.52 (60)
5.4L	3.73	5 443 (12 000)	2 812 (6 200)	5.52 (60)
6.8L	3.73	6 804 (15 000)	4 037 (8 900)	5.52 (60)
6.8L	4.10	8 392 (18 500)	4 536 (10 000)	5.52 (60)
<b>Super E-350 15 passenger Wagon</b>				
5.4L	3.55	5 443 (12 000)	2 586 (5 700)	5.52 (60)
5.4L	4.10	5 897 (13 000)	3 039 (6 700)	5.52 (60)
6.8L	3.73	6 804 (15 000)	3 901 (8 600)	5.52 (60)
6.8L	4.10	8 392 (18 500)	4 536 (10 000)	5.52 (60)

<b>GCWR (Gross Combined Weight Rating)/Trailer Weights</b>				
<b>Engine</b>	<b>Rear axle ratio</b>	<b>Maximum GCWR - kg (lbs.)</b>	<b>Trailer weight range - kg (lbs.) (0-Maximum)</b>	<b>Maximum frontal area of trailer - m<sup>2</sup> (ft<sup>2</sup>)</b>
<b>E-350 Cutaway (dual rear wheel)</b>				
5.4L	4.10	5 897 (13 000)	*	5.52 (60)
6.8L	4.10	8 392 (18 500)	*	5.52 (60)
<b>E-450 Cutaway (dual rear wheel)</b>				
6.8L	4.63	9 072 (20 000)	*	5.52 (60)
<b>E-250/350 Stripped Chassis (single rear wheel-124"wheelbase for E-250 only)</b>				
4.2L	4.09	4 990 (11 000)	1 090 (2 400)	5.52 (60)
5.4L	4.10	5 897 (13 000)	1 542 (3 400)	5.52 (60)
<b>E-350 Stripped Chassis (dual rear wheel)</b>				
5.4L	4.10	5 897 (13 000)	1 361 (3 000)	5.52 (60)

## Driving

GCWR (Gross Combined Weight Rating)/Trailer Weights				
Engine	Rear axle ratio	Maximum GCWR - kg (lbs.)	Trailer weight range - kg (lbs.) (0-Maximum)	Maximum frontal area of trailer - m <sup>2</sup> (ft <sup>2</sup> )
<b>E-450 Stripped Chassis (dual rear wheel)</b>				
5.4L	4.10	5 897 (13 000)	1 361 (3 000)	5.52 (60)
6.8L	4.63	9 072 (20 000)	*	5.52 (60)
* Maximum trailer weight for all cutaway (E-350 and E-450) vehicles must be calculated by subtracting the weight of the vehicle (including incomplete vehicle weight, and payload which includes second unit body weight, cargo, and passengers) from the GCW. Otherwise, maximum trailer weight is 4 536 kg (10 000 lbs).				
For high altitude operation reduce GCWR by 2% per 300 meters (1 000 ft) elevation. To determine the maximum trailer weight designed for your particular vehicle as equipped, follow the section <i>Calculating the load your vehicle can tow/carry</i> earlier in this chapter.				

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

Distribute the load so that only 10 to 15% of the total is on the tongue. Tie down the load so that it does not shift and change the weight on the hitch.

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



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



Towing trailers beyond the maximum recommended gross trailer weight could result in engine damage, transmission/axle damage, structural damage, loss of control, and personal injury.



### Preparing to tow

Use the proper equipment for towing a trailer, and make sure it is properly attached to your vehicle. See your dealer or a reliable trailer dealer if you require assistance.

### Hitches

Do not use or install hitches that clamp onto the bumper or to the axle. Underbody hitches are acceptable if installed properly.

### Safety chains

Always connect the trailer's safety chains to the frame or hook retainers of the vehicle hitch. To connect the trailer's safety chains, cross the chains under the trailer tongue and allow slack for turning corners.

If you use a rental trailer, follow the instructions that the rental agency gives to you.

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

### Trailer brakes

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



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

The braking system of the tow vehicle is rated for operation at the GVWR not GCWR.

### Trailer lamps

Trailer lamps are required on most towed vehicles. Make sure your trailer lamps conform to local and Federal regulations. See your dealer or trailer rental agency for proper instructions and equipment for hooking up trailer lamps.

## Driving

### Using a step bumper (if equipped)

The rear bumper is equipped with an integral hitch and only requires a ball with a 25.4 mm (one inch) shank diameter. The bumper has a 2 270 kg (5 000 lb.) trailer weight and 227 kg (500 lb.) tongue weight capacity.

If it is necessary to relocate the trailer hitch ball position, a frame-mounted trailer hitch must be installed.

### Driving while you tow

When towing a trailer:

- Ensure that you turn off your speed control. The speed control may shut off automatically when you are towing on long, steep grades.
- Consult your local motor vehicle speed regulations for towing a trailer.
- Use D (Drive) or a lower gear when towing up or down steep hills. This will eliminate excessive downshifting and upshifting for optimum fuel economy and transmission cooling.
- Anticipate stops and brake gradually.

When descending long, steep downhill grades, always use a lower gear to provide engine braking to save wear on brakes. Use Drive (Overdrive OFF) on moderately steep hills, Second (2) on steep hills, and First (1) on very steep hills.

### Servicing after towing

If you tow a trailer for long distances, your vehicle will require more frequent service intervals. Refer to your scheduled maintenance guide for more information.

### Trailer towing tips

- Practice turning, stopping and backing up before starting on a trip to get the feel of the vehicle trailer combination. When turning, make wider turns so the trailer wheels will clear curbs and other obstacles.
- Allow more distance for stopping with a trailer attached.
- The trailer tongue weight should be 10–15% of the loaded trailer weight.

- If you will be towing a trailer frequently in hot weather, hilly conditions, at GCW, or any combination of these factors, consider refilling your rear axle with synthetic gear lube. Refer to the *Maintenance and specifications* chapter for the lubricant specification.
- After you have traveled 80 km (50 miles), thoroughly check your hitch, electrical connections and trailer wheel lug nuts.
- When stopped in traffic for long periods of time in hot weather, place the gearshift in P (Park) and increase idle speed. This aids engine cooling and air conditioner efficiency.
- Vehicles with trailers should not be parked on a grade. If you must park on a grade, place wheel chocks under the trailer's wheels.

### Launching or retrieving a boat

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 and
- do not allow waves to break higher than 15 cm (6 inches) above the bottom edge of the rear bumper.

Exceeding these limits may allow water to enter critical vehicle components, adversely affecting driveability, emissions, reliability and causing internal transmission damage.

Replace the rear axle lubricant any time the axle has been submerged in water. Rear axle lubricant quantities are not to be checked or changed unless a leak is suspected or repair required.

Disconnect the wiring to the trailer before backing the trailer into the water. Reconnect the wiring to the trailer after the trailer is removed from the water.

## Driving

### RECREATIONAL TOWING (ALL WHEELS ON THE GROUND)

An example of recreational towing would be towing your vehicle on a trip behind a motorhome. Follow these guidelines if you have the need for recreational towing your vehicle with all four wheels on the ground. These guidelines are designed to ensure that your transmission is not damaged.

#### **2WD vehicles (with automatic transmissions)**

- Place the transmission in N (Neutral)
- Maximum speed is 56 km (35 mph)
- Maximum distance is 80 km (50 miles)

If a distance of 80 km (50 miles) or a speed of 56 km (35 mph) must be exceeded, the drive shaft will have to be removed.

Ford recommends the driveshaft be removed/installed only by a qualified technician. See your local dealer for driveshaft removal/installation.

**Improper removal/installation of the driveshaft can cause transmission fluid loss, damage to the driveshaft and internal transmission components.**

## Roadside emergencies

### GETTING ROADSIDE ASSISTANCE

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

- 24-hours, seven days a week
- for the Basic warranty period (Canada) or New Vehicle Limited Warranty period (U.S.) of three years or 60 000 km (36 000 miles), whichever comes first on Ford and Mercury vehicles, and four years or 80 000 km (50 000 miles) on Lincoln vehicles

Roadside assistance will cover:

- changing a flat tire
- jump-starts
- lock-out assistance
- limited fuel delivery\*
- towing of your disabled vehicle to the nearest Ford Motor Company dealership, or your selling dealer if within 25 kms (15.5 miles) of the nearest Ford Motor Company dealership (one tow per disablement). Even non-warranty related tows, like accidents or getting stuck in the mud or snow, are covered (some exclusions apply, such as impound towing or repossession).

\* Canadian customers refer to your *Roadside Assistance supplement* for exact fuel amounts.

### USING ROADSIDE ASSISTANCE

Complete the roadside assistance identification card and place it in your wallet for quick reference. In the United States, this card is found in the Owner Guide portfolio in the glove compartment in Ford vehicles and is mailed to you if you own a Mercury or Lincoln. In Canada, the card is found in the Roadside Assistance book in the glove compartment.

U.S. Ford or Mercury vehicle customers who require roadside assistance, call 1-800-241-3673; Lincoln vehicle customers call 1-800-521-4140.

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

## Roadside emergencies

If you need to arrange roadside assistance for yourself, Ford Motor Company will reimburse a reasonable amount. To obtain reimbursement information, U.S. Ford or Mercury vehicles customers call 1-800-241-3673; Lincoln vehicle customers call 1-800-521-4140.

Canadian customers who need to obtain reimbursement information, call 1-800-665-2006.

### ROADSIDE COVERAGE BEYOND BASIC WARRANTY

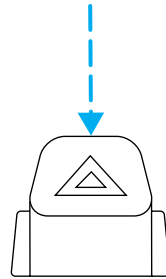
In the United States, you may purchase additional roadside assistance coverage beyond this period through the Ford Auto Club by contacting your Ford or Lincoln Mercury dealer.

Similarly in Canada, for uninterrupted Roadside Assistance coverage, you may purchase extended coverage prior to your Basic Warranty's Roadside Assistance expiring. For more information and enrollment, contact 1-877-294-2582 or visit our website at [www.ford.ca](http://www.ford.ca).

### HAZARD FLASHER

Use only in an emergency to warn traffic of vehicle breakdown, approaching danger, etc. The hazard flashers can be operated when the ignition is off.

- The hazard lights control is located on top of the steering column.
- Depress hazard lights control to activate all hazard flashers simultaneously.
- Depress control again to turn the flashers off.



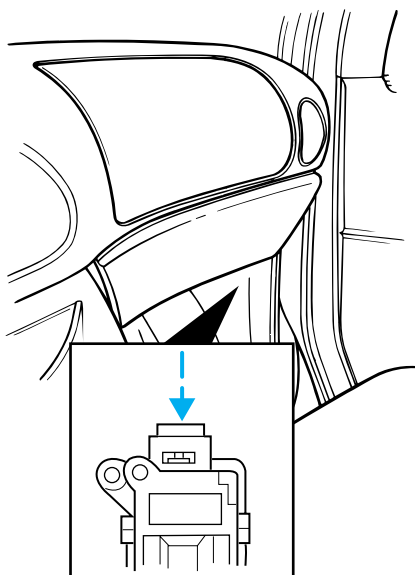
## Roadside emergencies

### FUEL PUMP SHUT-OFF SWITCH FUEL RESET

The fuel pump shut-off switch is a device intended to stop the electric fuel pump when your vehicle has been involved in a substantial jolt.

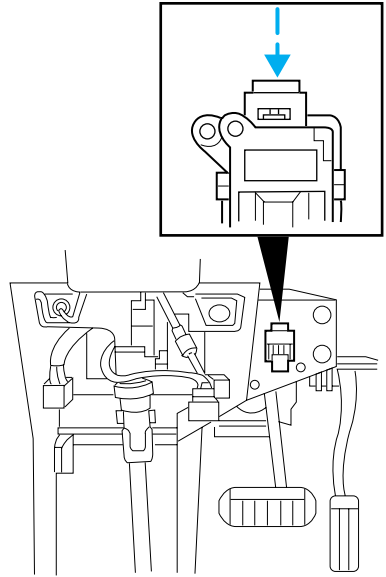
After a collision, if the engine cranks but does not start, the fuel pump shut-off switch may have been activated.

The fuel pump shut-off switch is located in the passenger's foot well, behind the kick panel, except for commercial stripped chassis vehicles.



## Roadside emergencies

For commercial stripped chassis vehicles, the fuel pump shut-off switch is located on a bracket above the brake pedal.



Use the following procedure to reset the fuel pump shut-off switch.

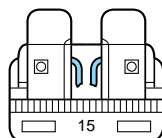
1. Turn the ignition to the OFF position.
2. Check the fuel system for leaks.
3. If no fuel leak is apparent, reset the fuel pump shut-off switch by pushing in on the reset button.
4. Turn the ignition to the ON position. Pause for a few seconds and return the key to the OFF position.
5. Make a further check for leaks in the fuel system.



## FUSES AND RELAYS

### Fuses

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



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

### *Standard fuse amperage rating and color*

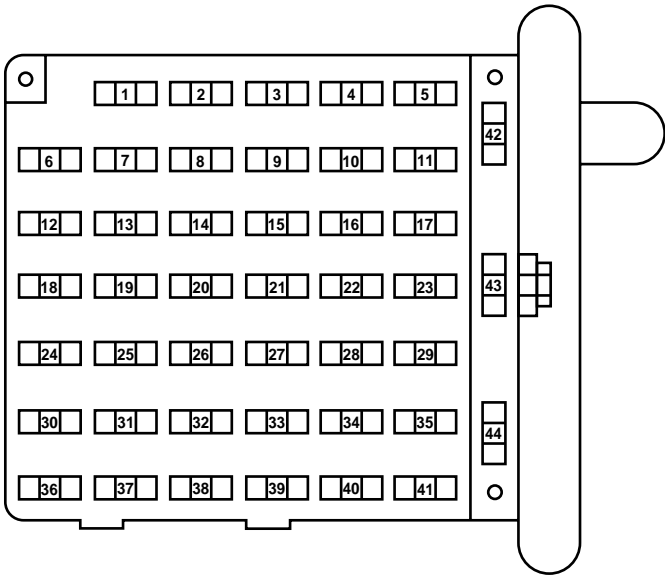
COLOR					
Fuse rating	Mini fuses	Standard fuses	Maxi fuses	Cartridge maxi fuses	Fuse link cartridge
2A	Grey	Grey	—	—	—
3A	Violet	Violet	—	—	—
4A	Pink	Pink	—	—	—
5A	Tan	Tan	—	—	—
7.5A	Brown	Brown	—	—	—
10A	Red	Red	—	—	—
15A	Blue	Blue	—	—	—
20A	Yellow	Yellow	Yellow	Blue	Blue
25A	Natural	Natural	—	—	—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

## Roadside emergencies

### Passenger compartment fuse panel

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

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



The fuses are coded as follows.

Fuse/ Relay Location	Fuse Amp Rating	Passenger Compartment Fuse Panel Description
1	20A	4WABS Module
2	15A	Brake Warning Lamp, Instrument Cluster, Warning Chime, 4WABS Relay, Warning Indicators, Low Vacuum Warning Switch (Diesel Only)

## Roadside emergencies

Fuse/ Relay Location	Fuse Amp Rating	Passenger Compartment Fuse Panel Description
3	15A	Main Light Switch, RKE Module, Radio, Instrument Illumination, E Traveler VCP and video screens, Overhead Console
4	15A	Power Locks w/RKE, Illuminated Entry, Warning Chime, Modified Vehicle, Main Light Switch, Courtesy Lamps
5	20A	RKE Module, Power Lock Switches, Memory Lock, Power Locks with RKE
6	10A	Brake Shift Interlock, Speed Control, DRL Module
7	10A	Multi-Function Switch, Turn Signals
8	30A	Radio Capacitor(s), Ignition Coil, PCM Diode, PCM Power Relay, Fuel Heater (Diesel Only), Glow Plug Relay (Diesel Only)
9	30A	Wiper Control Module, Windshield Wiper Motor
10	20A	Main Light Switch, Park Lamps, License Lamp, (External Lamps) Multi-Function Switch (Flash-to-pass)
11	15A	Brake Pressure Switch, Multi-Function Switch (Hazards), Brake Lamp Switch, Brake Lamps
12	15A	Transmission Range (TR) Sensor, Backup Lamps, Auxiliary Battery Relay
13	15A	Blend Door Actuator, A/C Heater, Function Selector Switch

## Roadside emergencies

Fuse/ Relay Location	Fuse Amp Rating	Passenger Compartment Fuse Panel Description
14	5A	Instrument Cluster (Air Bag and Charge Indicator)
15	5A	Trailer Battery Charge Relay
16	30A	Power Seats
17	—	Not Used
18	—	Not Used
19	10A	Air Bag Diagnostic Monitor
20	5A	Overdrive Cancel Switch
21	30A	Power Windows*
22	15A	Memory Power Radio, E Traveler Radio, E Traveler Console
23	20A	Cigar Lighter, Data Link Connector (DLC)
24	—	Not Used
25	10A	Left Headlamp (Low Beam)
26	20A	Rear Power Point
27	5A	Radio
28	20A	Power Plug
29	—	Not Used
30	15A	Headlamps (High Beam Indicator), DRL10A
31	10A	Right Headlamp (Low Beam), DRL
32	5A	Power Mirrors
33	20A	E Traveler Power Point #2
34	10A	Transmission Range (TR) Sensor
35	30A	RKE Module
36	5A	(Cluster, A/C, Illumination, Radio), Steering Column Assembly
37	20A	Power Plug
38	10A	Air Bag Diagnostic Monitor

## Roadside emergencies

Fuse/ Relay Location	Fuse Amp Rating	Passenger Compartment Fuse Panel Description
39	20A	E Traveler Power Point #1
40	30A	Modified Vehicle
41	30A	Modified Vehicle
42	—	Not Used
43	20A C.B.	Power Windows*
44	—	Not Used

\* Either Fuse 21 or Circuit breaker 43 will be present for power windows.

### Power distribution box

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

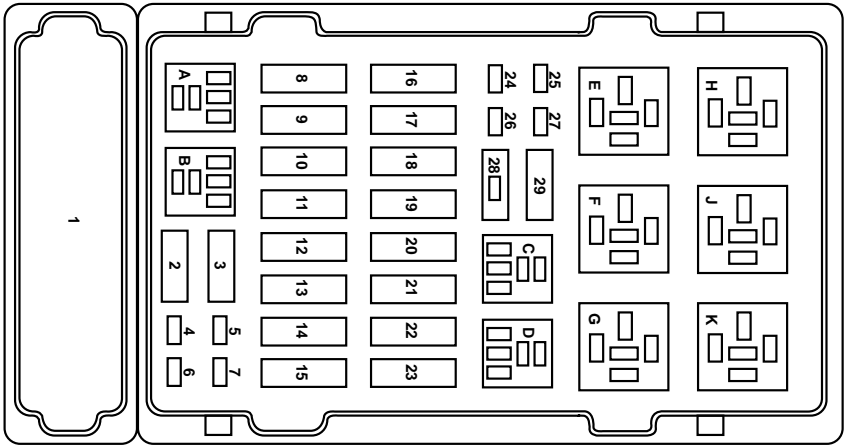


Always disconnect the battery before servicing high current fuses.

### Always replace the cover to the power distribution box before reconnecting the battery or refilling fluid reservoirs

If the battery has been disconnected and reconnected, refer to the *Battery* section of the *Maintenance and specifications* chapter.

## Roadside emergencies



The high-current fuses are coded as follows.

Fuse/Relay Location	Fuse Amp Rating	Power Distribution Box Description
1	—	Not Used
2	—	Not Used
3	—	Not Used
4	10A*	PCM Keep Alive Memory, Instrument Cluster, Voltmeter
5	10A*	Right Trailer Turn Signal
6	10A*	Left Trailer Turn Signal
7	—	Not Used
8	60A**	I/P Fuses 5, 11, 23, 38, 4, 10, 16, 22, 28, 32
9	30A**	PCM Power Relay, Engine Compartment Fuse 4
10	60A**	Auxiliary Battery Relay, Engine Compartment Fuses 14, 22
11	30A**	IDM Relay (Diesel Only)

## Roadside emergencies

Fuse/Relay Location	Fuse Amp Rating	Power Distribution Box Description
12	60A**	Engine Compartment Fuses 25, 27
13	50A**	Blower Motor Relay (Blower Motor)
14	30A**	Trailer Running Lamps Relay, Trailer Backup Lamps Relay
15	40A**	Main Light Switch, Daytime Running Lights (DRL)
16	50A**	Auxiliary Blower Motor Relay
17	30A**	Fuel Pump Relay
18	60A**	I/P Fuses 40, 41, 26, 33, 39
19	60A**	4WABS Module
20	20A**	Electric Brake Controller
21	50A**	Modified Vehicle Power
22	40A**	Trailer Battery Charge Relay, Modified Vehicles
23	60A**	Ignition Switch, Fuse Panel
24	20A*	Natural Gas Tank Valves (NGV only)
25	20A*	NGV Module (Natural Gas Only)
26	10A*	A/C Clutch (4.2L Only)
27	15A*	DRL Module, Horn Relay
28	—	PCM Diode
29	—	Not Used
A	—	Not Used
B	—	Stop Lamp Relay
C	—	Trailer Backup Lamps Relay
D	—	Trailer Running Lamps Relay
E	—	Trailer Battery Charge Relay
F	—	IDM Relay (Diesel Only), A/C Clutch Relay (4.2L Only)
G	—	PCM Relay

## Roadside emergencies

Fuse/Relay Location	Fuse Amp Rating	Power Distribution Box Description
H	—	Blower Motor Relay
J	—	Horn Relay
K	—	Fuel Pump Relay
* Mini Fuses ** Maxi Fuses		

### Relays

Relays are located in the power distribution box and should be replaced by qualified technicians.

### CHANGING THE TIRES

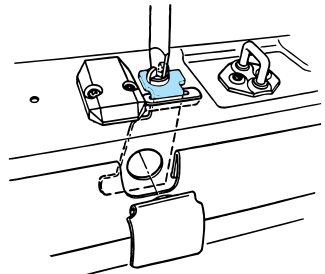
If you get a flat tire while driving, do not apply the brake heavily. Instead, gradually decrease your speed. Hold the steering wheel firmly and slowly move to a safe place on the side of the road.

### Spare tire information

The spare tire for your vehicle is stowed under the rear of your vehicle (except cutaway and stripped chassis models).

#### **To remove the spare tire:**

1. Open both rear doors and remove thumb screw and anti-theft bracket. If finger pressure will not remove the thumb screw, use the lug wrench to loosen the screw.
2. Remove the access cover from the rubber strip behind the left door.



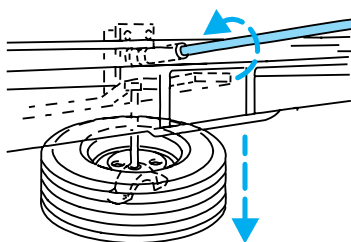


## Roadside emergencies

3. 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.

4. Turn the jack handle counterclockwise until the cable is slack and the tire can be slid rearward from under the vehicle.

5. 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.

### **To stow the spare tire:**

1. Lay the tire on the ground under the rear of the vehicle with the valve stem facing up.

### **Stow aluminum wheels with valve stem facing down.**

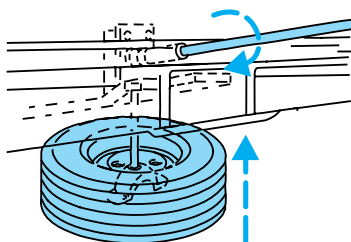
2. Install the retainer through the wheel center.

3. Raise the tire by turning the jack handle clockwise. Continue until the lift mechanism “clicks.”

4. Check that the tire is tightly seated under the vehicle by pushing against the tire. Retighten as necessary.

5. Replace the access cover, anti-theft bracket and thumb screw.

Use finger pressure only to secure the thumb screw.



Make sure the spare tire and jacking equipment are stowed and secured in the proper storage location.



Never run the engine with one wheel off the ground.

# Roadside emergencies

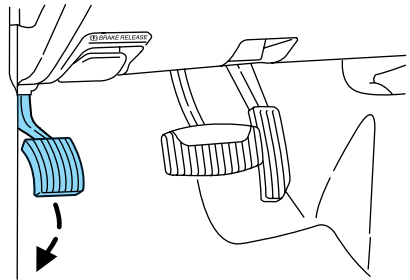
## Tire change procedure

### Preparing to change the tire



To prevent the vehicle from moving when you change a tire, be sure the parking brake is set, then block (in both directions) the wheel that is diagonally opposite (other side and end of the vehicle) to the tire being changed.

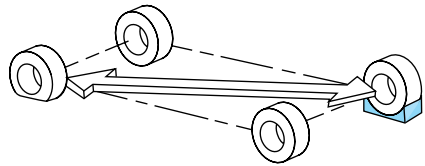
1. Park on a level surface.
2. Activate the warning flashers.
3. Place the gearshift in P (Park)(automatic transmission).
4. Apply the parking brake and turn engine OFF.



5. Block the wheel that is diagonally opposite the tire you are changing.

On E-450 vehicles, the parking brake is on the transmission.

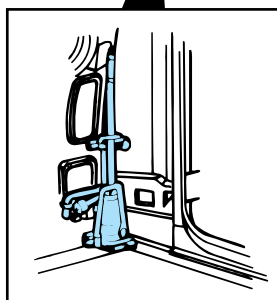
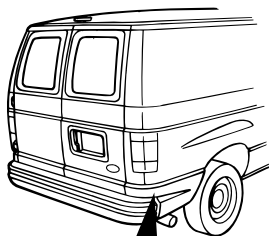
Therefore, the vehicle will not be prevented from moving when a rear wheel is lifted, even if the parking brake is applied. Be sure to block both directions of the wheel that is diagonally opposite to the wheel that is being lifted.



If the vehicle slips off the jack, you or someone else could be seriously injured.

## Roadside emergencies

6. Remove the spare tire and jack from the storage location.
7. Use the tapered end of the lug nut wrench to unscrew wheel ornaments attached by retaining screws. Remove any wheel trim. Insert the tapered end of the lug nut wrench behind wheel covers or hubcaps and twist off.
8. 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 jack. Use the jack handle to slide the jack under the vehicle.

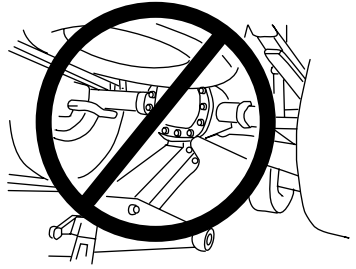


To lessen the risk of personal injury, do not put any part of your body under the vehicle while changing a tire. Do not start the engine when your vehicle is on the jack. The jack is only meant for changing the tire.

2. Position the jack to raise the front or rear wheel.

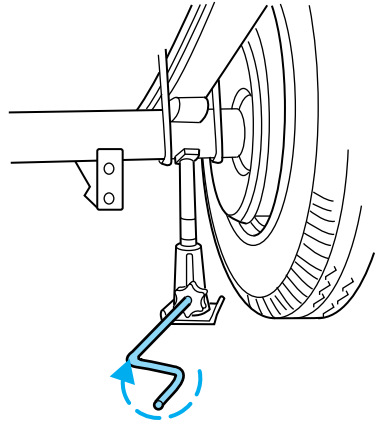
## Roadside emergencies

- Never use the front or rear differential as a jacking point.

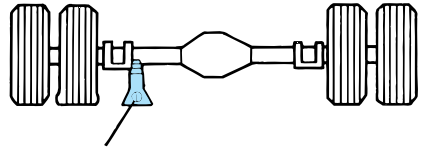


### Rear axle jacking points:

- All models except E-Super Duty



- E-Super Duty



## Roadside emergencies

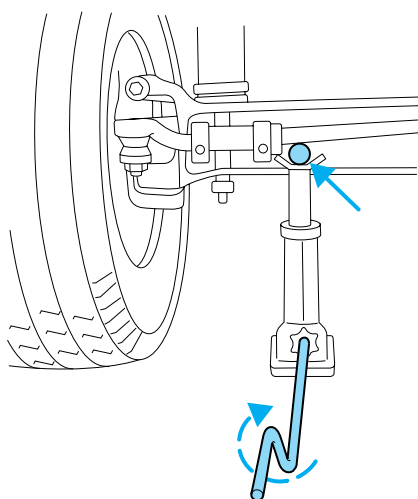
### Front axle jacking points:

- All models

Place the jack under the **pin** on the front surface of the front axle.

**Do not place the jack under or on the steering linkage.**

3. Turn the jack handle clockwise until the wheel is completely off the ground.
4. Remove the lug nuts with the lug nut wrench.
5. Replace the flat tire with the spare tire.

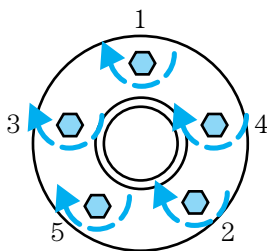


If your vehicle has single rear wheels, thread the lug nuts on the studs with the beveled face toward the wheel.

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:

- 5-lug wheel

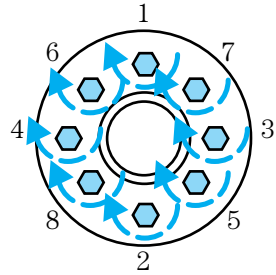


## Roadside emergencies

- 8-lug wheel



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.



9. Replace any wheel covers, ornaments or hub caps. Make sure they are screwed or snapped in place.

10. Stow the jack, handle and lug wrench.

11. Unblock the wheels.

On vehicles equipped with dual rear wheels, retighten the wheel lug nuts to the specified torque at 160 km (100 miles), and again at 800 km (500 miles) of new vehicle operation.

On vehicles equipped with single rear wheels, retighten the lug nuts to the specified torque at 800 km (500 miles) of operation after any wheel change or any time the lug nuts are loosened.

Model	Bolt size	Wheel lug nut torque*	
		Nm	Lb-ft
E-150	1/2-20	135	100
E-250, E-350 and E-Super Duty	9/16-18	190	140

\* Torque specifications are for nut and bolt threads free of dirt and rust. Do not use oil or grease on threads. Use only Ford recommended replacement fasteners.

## Roadside emergencies

### JUMP STARTING YOUR VEHICLE



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



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

**Do not attempt to push-start your vehicle. Automatic transmissions do not have push-start capability; also, the catalytic converter may become damaged.**

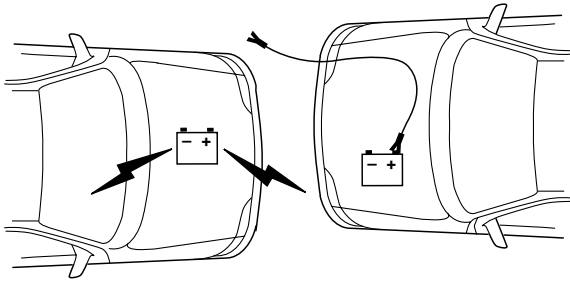
### Preparing your vehicle

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

1. **Use only a 12-volt supply to start your vehicle.**
2. Do not disconnect the battery of the disabled vehicle as this could damage the vehicle's electrical system.
3. 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.
4. Check all battery terminals and remove any excessive corrosion before you attach the battery cables. Ensure that vent caps are tight and level.
5. Turn the heater fan on in both vehicles to protect any electrical surges. Turn all other accessories off.

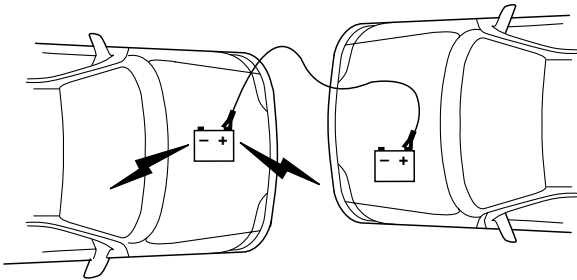
# Roadside emergencies

## Connecting the jumper cables



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

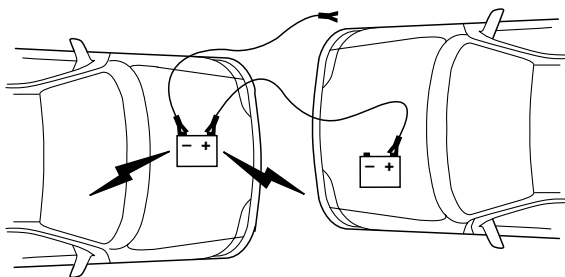
**Note:** In the illustrations, *lightning bolts* are used to designate the assisting (boosting) battery.



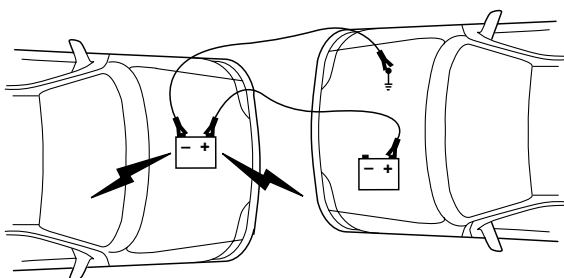
2. Connect the other end of the positive (+) cable to the positive (+) terminal of the assisting battery.



## Roadside emergencies



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



4. Make the final connection of the negative (-) cable to an exposed metal part of the stalled vehicle's engine, away from the battery and the carburetor/fuel injection system. **Do not** use fuel lines, engine rocker covers or the intake manifold as *grounding* points.



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.

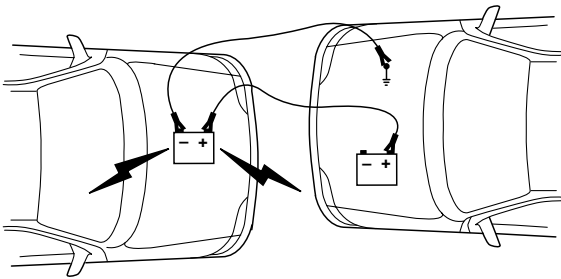
5. Ensure that the cables are clear of fan blades, belts, moving parts of both engines, or any fuel delivery system parts.

## Roadside emergencies

### Jump starting

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

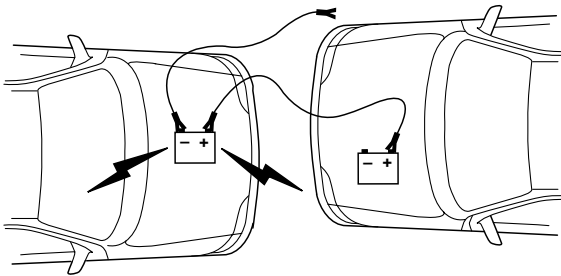
### Removing the jumper cables



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

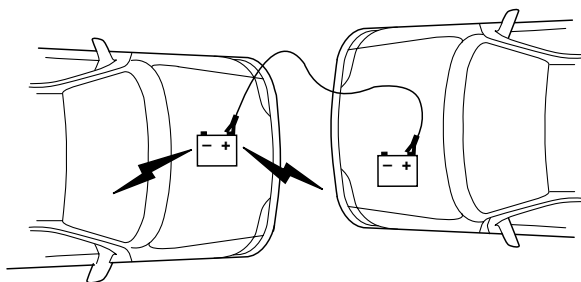
1. Remove the jumper cable from the *ground* metal surface.

**Note:** In the illustrations, *lightning bolts* are used to designate the assisting (boosting) battery.

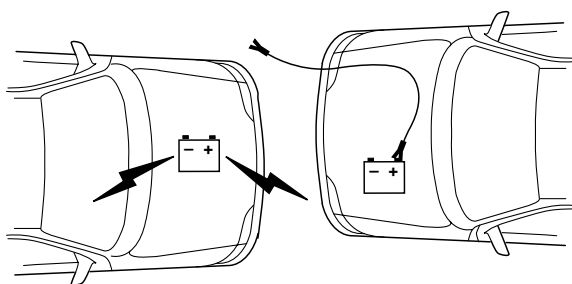


2. Remove the jumper cable on the negative (-) connection of the booster vehicle's battery.

## Roadside emergencies



3. Remove the jumper cable from the positive (+) terminal of the booster vehicle's battery.

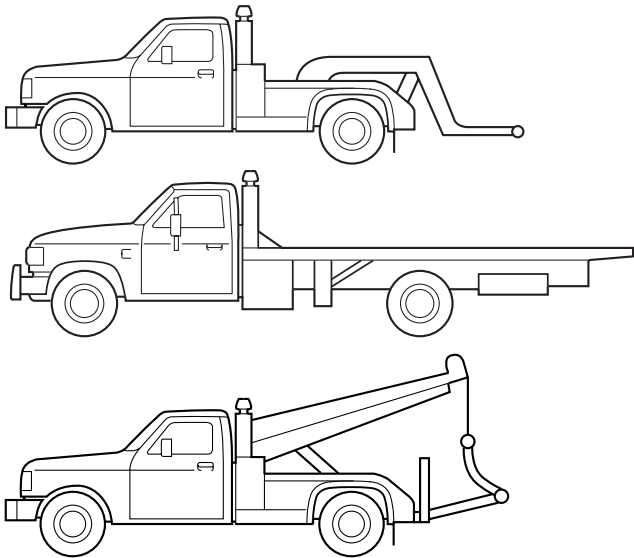


4. Remove the jumper cable from the positive (+) terminal of the disabled vehicle's battery.

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.

## Roadside emergencies

### WRECKER TOWING



If you need to have your vehicle towed, contact a professional towing service or, if you are a member, your roadside assistance center.

It is recommended that your vehicle be towed by wheel lift or flatbed equipment. However, a slingbelt with T-hooks can also be used.

If your vehicle is equipped with an air dam and must be towed from the front, it is recommended that your vehicle be towed by wheel lift or flatbed equipment to prevent damage to the air dam.

**If the vehicle is towed by other means or incorrectly, vehicle damage may occur.**

Ford Motor Company provides 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.

### GETTING THE SERVICES YOU NEED

#### At home

Ford Motor Company and Ford of Canada have authorized dealerships to service your vehicle. It is preferred that you return to the Ford dealer where your vehicle was purchased when warranty repairs are needed. However, you may also take your vehicle to another Ford Motor Company or Ford of Canada dealership authorized for warranty repairs. Certain warranty repairs require special training though, so not all dealers are authorized to perform all warranty repairs. That means that depending on the warranty repair needed, the vehicle may need to be taken to another dealer. If a particular dealership can not assist you, then contact the Customer Relationship Center.

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/servicing dealership.
2. If your inquiry or concern remains unresolved, contact the Sales Manager or Service Manager at the dealership.
3. If the inquiry or concern cannot be resolved at the dealership level, please contact the Ford Customer Relationship Center.

#### Away from home

If you own a Ford or Mercury vehicle and are away from home when your vehicle needs service, or if you need more help than the dealership could provide, after following the steps described above, contact the Ford Customer Relationship Center to find an authorized dealership to help you. In the United States:

Ford Motor Company  
Customer Relationship Center  
16800 Executive Plaza Drive  
P.O. Box 6248  
Dearborn, Michigan 48121  
1-800-392-3673 (FORD)  
(TDD for the hearing impaired: 1-800-232-5952)

## Customer assistance

In Canada:

Customer Relationship Centre  
Ford Motor Company of Canada, Limited  
P.O. Box 2000  
Oakville, Ontario L6J 5E4  
1-800-565-3673 (FORD)

If you own a Lincoln vehicle and are away from home when your vehicle needs service, or if you need more help than the dealership could provide, after following the steps described above, contact the Ford Customer Relationship Center to find an authorized dealership to help you.

In the United States:

Ford Motor Company  
Customer Relationship Center  
16800 Executive Plaza Drive  
P.O. Box 6248  
Dearborn, Michigan 48121  
1-800-521-4140  
(TDD for the hearing impaired: 1-800-232-5952)

In Canada:

Customer Relationship Centre  
Ford Motor Company of Canada, Limited  
P.O. Box 2000  
Oakville, Ontario L6J 5E4  
1-800-565-3673 (FORD)

In order to help you service your Ford or Lincoln Mercury vehicle, please have the following information available when contacting a Customer Relationship Center:

- Your telephone number (home and business).
- The name of the dealer and the city where the dealership is located.
- The year and make of your vehicle.
- The date of vehicle purchase.
- The current odometer reading.
- The vehicle identification number (VIN).

If you still have a complaint involving a warranty dispute, you may wish to contact the Dispute Settlement Board (U.S.).

## Customer assistance

In some states (in the U.S.) 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 Dispute Settlement Board 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.

### **FORD EXTENDED SERVICE PLAN**

You can get more protection for your new car or light truck by purchasing Ford Extended Service Plan (Ford ESP) coverage. Ford ESP is an optional service contract which is backed by Ford Motor Company or Ford Motor Service Company (in the U.S.) and Ford of Canada (in Canada). It provides the following:

- Benefits during the warranty period depending on the plan you purchase (such as: reimbursement for rentals; coverage for certain maintenance and wear items).
- Protection against covered repair costs after your Bumper-to-Bumper Warranty expires.

You may purchase Ford ESP from any participating Ford and Lincoln Mercury and Ford of Canada dealer. There are several plans available in various time, distance and deductible combinations which can be tailored to fit your own driving needs. Ford ESP also offers reimbursement benefits for towing and rental coverage.

When you buy Ford ESP, you receive Peace-of-Mind protection throughout the United States and Canada, provided by a network of more than 5,000 participating Ford or Lincoln Mercury and Ford of Canada dealers.

If you did not take advantage of the Ford Extended Service Plan at the time of purchasing your vehicle, you may still be eligible. Please contact your dealer for further information. Since this information is subject to change, please ask your dealer for complete details about Ford Extended Service Plan coverage options, or visit the Ford ESP website at [www.ford-esp.com](http://www.ford-esp.com).

## Customer assistance

### THE DISPUTE SETTLEMENT BOARD (U.S. ONLY)

The Dispute Settlement Board is:

- an independent, third-party arbitration program for warranty disputes
- available free to owners and lessees of qualifying Ford Motor Company vehicles

The Dispute Settlement Board may not be available in all states. Ford Motor Company reserves the right to change eligibility limitations, modify procedures and/or to discontinue this service without notice and without incurring obligations per applicable state law.

### What kinds of cases does the Board review?

Unresolved warranty repair concerns or vehicle performance concerns as on Ford and Lincoln Mercury cars and Ford and Lincoln Mercury light trucks which are within the terms of any applicable written new vehicle warranty are eligible for review, except those involving:

- a non-Ford product
- a non-Ford dealership
- sales disputes between customer and dealer except those associated with warranty repairs or concerns with the vehicle's performance as designed
- a request for reimbursement of consequential expenses unless a service or product concern is being reviewed
- items not covered by the New Vehicle Limited Warranty (including maintenance and wear items)
- alleged personal injury/property damage claims
- cases currently in litigation
- vehicles not used primarily for family, personal or household purposes (except in states where the Dispute Settlement Board is required to review commercial vehicles)
- vehicles with non-U.S. warranties

Concerns are ineligible for review if the New Vehicle Limited Warranty has expired at receipt of your application and, in certain states eligibility is dependent upon the customer's possession of the vehicle.

Eligibility may differ according to state law. For example, see the unique brochures for California, West Virginia, Georgia and Wisconsin purchasers/lessees.



### Board membership

The Board consists of:

- three consumer representatives
- a Ford or Lincoln Mercury dealership representative

Consumer candidates for Board membership are recruited and trained by an independent consulting firm. The dealership Board member is chosen from Ford and Lincoln Mercury dealership management, recognized for their business leadership qualities.

### *What the Board needs*

To have your case reviewed you must complete the application in the DSB brochure and mail it to the address provided on the application form. Some states will require you to use certified mail, with return receipt requested.

Your application is reviewed and, if it is determined to be eligible, you will receive an acknowledgment indicating:

- The file number assigned to your application.
- The toll-free phone number of the DSB's independent administrator.

Your dealership and a Ford Motor Company representative will then be asked to submit statements.

To properly review your case, the Board needs the following information:

- Legible copies of all documents and maintenance or repair orders relevant to the case.
- The year, make, model, and Vehicle Identification Number (VIN) listed on your vehicle ownership license.
- The date of repair(s) and mileage at the time of occurrence(s).
- The current mileage.
- The name of the dealer(s) who sold or serviced the vehicle.
- A brief description of your unresolved concern.
- A brief summary of the action taken by the dealer(s) and Ford Motor Company.
- The names (if known) of all the people you contacted at the dealership(s).
- A description of the action you expect to resolve your concern.

## Customer assistance

You will receive a letter of explanation if your application does not qualify for Board review.

### ***Oral presentations***

If you would like to make an oral presentation, indicate YES to question 6 on the application. While it is your right to make an oral presentation before the Board, this is not a requirement and the Board will decide the case whether or not an oral presentation is made. An oral presentation may be requested by the Board as well.

### ***Making a decision***

Board members review all available information related to each complaint, including oral presentations, and arrive at a fair and impartial decision. Board review may be terminated at any time by either party.

Every effort is made to decide the case within 40 days of the date that all requested information is received by the Board. Since the Board generally meets once a month, it may take longer for the Board to consider some cases.

After a case is reviewed, the Board mails you a decision letter and a form on which to accept or reject the Board's decision. The decisions of the Board are binding on Ford (and, in some cases, on the dealer) but not on consumers who are free to pursue other remedies available to them under state or federal law.

### **To Request a DSB Brochure/Application**

For a brochure/application, speak to your dealer or write/call to the Board at the following address/phone number:

Dispute Settlement Board  
P.O. Box 5120  
Southfield, MI 48086-5120  
1-800-428-3718

You may also contact the North American Customer Relationship Center at 1-800-392-3673 (Ford), TDD for the hearing impaired: 1-800-232-5952 or by writing to the Center at the following address:

Ford Motor Company  
Customer Relationship Center  
16800 Executive Plaza Drive  
P.O. Box 6248  
Dearborn, Michigan 48121

### **UTILIZING THE MEDIATION/ARBITRATION PROGRAM (CANADA ONLY)**

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

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

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

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

### **GETTING ASSISTANCE OUTSIDE THE U.S. AND CANADA**

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

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

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

In the United States, using leaded fuel may also result in difficulty importing your vehicle back into the U.S.

## Customer assistance

If your vehicle must be serviced while you are traveling or living in Central or South America, the Caribbean, or the Middle East, contact the nearest Ford dealership. If the dealership cannot help you, write or call:

FORD MOTOR COMPANY  
WORLDWIDE DIRECT MARKET OPERATIONS

1555 Fairlane Drive  
Fairlane Business Park #3  
Allen Park, Michigan 48101  
U.S.A.

Telephone: (313) 594-4857

FAX: (313) 390-0804

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

If you buy your vehicle in North America and then relocate outside of the U.S. or Canada, register your vehicle identification number (VIN) and new address with Ford Motor Company Worldwide Direct Market Operations.

### **ORDERING ADDITIONAL OWNER'S LITERATURE**

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

HELM, INCORPORATED  
P.O. Box 07150  
Detroit, Michigan 48207

Or call:

**For a free publication catalog, order toll free: 1-800-782-4356**

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

*(Items in this catalog may be purchased by credit card holders only.)*

### Obtaining a French owner's guide

French Owner's Guides can be obtained from your dealer or by writing to Ford Motor Company of Canada, Limited, Service Publications, P.O. Box 1580, Station B, Mississauga, Ontario L4Y 4G3.

### 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 29 000 km (18 000 miles), 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:

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

## Customer assistance

### 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.

*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.

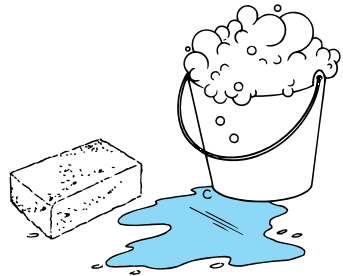
To contact NHTSA, you may either call the Auto Safety Hotline toll-free at 1-800-424-9393 (202-366-0123 in the Washington D.C. area) or write to:

NHTSA  
U.S. Department of Transportation  
400 Seventh Street  
Washington, D.C. 20590

You can also obtain other information about motor vehicle safety from the Hotline.

### WASHING THE EXTERIOR OF YOUR VEHICLE

Never wash a vehicle that is “hot to the touch” or during exposure to strong, direct sunlight. It is recommended that you wash your vehicle regularly with cool or lukewarm water and a neutral Ph shampoo, such as Detail Wash (ZC-3-A), which is available from your authorized Ford, Lincoln or Mercury dealer. Always use a clean sponge or carwash mitt with plenty of water for best results. Dry the vehicle with a chamois or soft terry cloth towel in order to eliminate water spotting.



**Never use strong household detergents or soap, such as dish washing or laundry liquid. These products can discolor and spot painted surfaces.**

It is especially important to wash the vehicle regularly during winter months, as dirt and road salt are difficult to remove and do cause damage to the vehicle.

Items such as gasoline, diesel fuel, bird droppings and insect deposits should be washed and sponged off as soon as possible. Deposits not removed promptly can cause damage to the vehicle's paintwork and trim over time.

**Remove any exterior accessories, such as antennas, before entering a car wash.**

### PROTECTING THE PAINT FINISH OF YOUR VEHICLE

Applying a polymer paint sealant to your vehicle on a regular basis will assist in reducing minor scratches and paint damage.

A typical paint sealant lasts approximately six months to a year, depending on local weather conditions and the cleaning soap that is used in washing the vehicle.

**Do not use a wax that beads excessively.**

## Cleaning

**Do not allow paint sealant to come in contact with any non-body (low-gloss black) colored trim, such as grained door handles, roof racks, bumpers, side moldings, mirror housings or the windshield cowl area. The paint sealant will “gray” or stain the parts over time.**

### REPAIRING PAINT CHIPS

Remove particles such as bird droppings, tree sap, insect deposits, tar spots, road salt and industrial fallout before repairing paint chips.

Minor scratches or paint damage from road debris may be repaired using the Ultra Touch Prep and Finishing Kit (F7AZ-19K507-BA), which is available at your authorized Ford, Lincoln or Mercury dealer. This kit contains:

- Lacquer Touch-Up Paint (ALBZ-19500-XXXXA)
- Exterior Acrylic Spray Lacquer (ALAZ-19500-XXXXA)

Please note that the part numbers (shown as XXXX above) will vary with your vehicle's specific coloring. **Carefully observe the application instructions on the products.**

### CLEANING THE WHEEL RIMS AND COVERS

**Aluminum wheel rims or covers are coated with a clearcoat paint finish.**

Some automatic car washes may cause damage to the finish on your wheel rims or covers. Chemical-strength cleaners, or cleaning chemicals, in combination with brush agitation to remove brake dust and dirt, could wear away the clearcoat finish over time.

**Do not use hydrofluoric acid-based or high caustic-based wheel cleaners, steel wool, fuels or strong household detergents for soiled wheel rims and covers.**

Never apply any cleaning chemical to hot or warm wheel rims or covers.

Clean wheel rims and covers with Detail Wash (ZC-3-A), which is available from your authorized Ford, Lincoln or Mercury dealer. Spray cleaner on cool wheel rims or covers and allow to set for 2–5 minutes. Agitate the area with a sponge and rinse off with plenty of water.

Use Extra Strength Tar and Road Oil Removal (B7A-19520-AA), available from your authorized Ford, Lincoln or Mercury dealer, in order to remove tar and grease from wheel rims and covers.

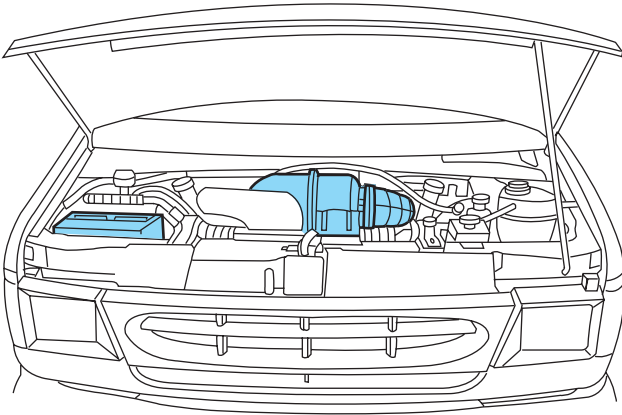


## CLEANING THE ENGINE

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

- The engine must be cool to the touch before spraying with water.
- **Never spray a hot engine with cold water, as damage to the engine block or engine components may occur.**
- Use caution when using a self-serve power washer (1000psi maximum pressure) to clean the engine, as the high-pressure fluid could penetrate the sealed parts and cause damage.
- **Never apply anything to any exposed belts in the engine compartment, including the belt dressing.**

For general cleaning of the engine and engine compartment, spray Engine Shampoo and Degreaser (F4AZ-19A536-A) on all parts that require cleaning and pressure rinse the area with cool water.



- Cover the highlighted areas to prevent water damage when cleaning the engine.
- **Never wash or rinse the engine while it is running; water in the running engine may cause internal damage.**

## Cleaning

### WASHING NON-PAINTED PLASTIC EXTERIOR PARTS

Use Detail Wash (ZC-3-A) for routine cleaning.

If tar or grease spots are present, clean with Extra Strength Tar and Road Oil Removal (B7A-19520-AA).

**Use only approved products to clean plastic parts.** These products are available from your authorized Ford, Lincoln or Mercury dealer.

### WASHING THE EXTERIOR LAMPS

**In order to avoid scratching the plastic lamps, do not use dry paper towels, non-approved chemical solvents or abrasive cleaners.**

Use a soft cloth and a solution of Triple Clean (EOAZ-19526-AA), mixed properly with water, in order to remove bug residue. If tar or grease spots are present, clean with Extra Strength Tar and Road Oil Removal (B7A-19520-AA).

### CLEANING THE WINDSHIELD, WIPER BLADES AND REAR WINDOW

If the wiper does not wipe properly, substances on the windshield, rear window or the wiper blades may be the cause. These may include hot wax treatments used by commercial car washes, tree sap, or other organic contamination.

**Do not clean the windshield or rear window glass with abrasives, as they may cause scratches.**

**Do not use fuel, kerosene, or paint thinner to clean the windshield, rear window or the wiper blades as damage may occur.**

Clean the outside of the windshield or rear window with a non-abrasive cleaner such as Ultra Clear Spray Glass Cleaner (E4AZ-19C507-AA), available from your authorized Ford, Lincoln or Mercury dealer. If after cleaning the glass surface, the water sheets from the glass (e.g., does not bead), then the window is clean.

The windshield, rear window and wiper blades should be cleaned regularly. Wiper blades can be cleaned with isopropyl (rubbing) alcohol or windshield washer solution. Be sure to replace wiper blades when they appear worn or do not function properly.

### CLEANING THE INSTRUMENT PANEL

Clean the instrument panel with a damp cloth, then dry with a dry cloth.

Avoid cleaners or polish 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.



Do not use chemical solvents or strong detergents when cleaning the steering wheel or instrument panel to avoid contamination of the air bag system.

### Cleaning the instrument cluster lens

Wipe the cluster area with a soft, damp cotton towel. Dry the area with a clean, dry towel.

### CLEANING THE INTERIOR FABRIC, CARPETS AND CLOTH SEATS

Remove dust and loose dirt with a vacuum cleaner. Remove light stains and soil with Extra Strength Upholstery Cleaner (E8AZ-19523-AA).

**Never saturate the seat covers with cleaning solution.**

**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.**

If grease or tar is present on the material, spot-clean the area first with Spot and Stain Remover (F3AZ-19521-WA). Follow up by recleaning the area with Extra Strength Upholstery Cleaner (E8AZ-19523-AA).

### CLEANING LEATHER SEATS (IF EQUIPPED)

All Ford, Lincoln and Mercury vehicles with leather seating surfaces have a clear, protective coating over the leather.

To clean the leather seats, simply use a soft cloth with Deluxe Leather and Vinyl Cleaner (F2AZ-19521-WA). Dry the area with a soft cloth.

It is recommended that you use the Deluxe Leather Care Kit (F8AZ-19G253-AA), available from your authorized Ford, Lincoln or Mercury dealer. The mild cleaner and special pad available in the kit cleans the leather and maintains its natural beauty. For best results, follow the instructions printed on the cleaner label. Regular cleaning of your leather upholstery helps maintain its resiliency and color.

## Cleaning

**Do not use household cleaning products, alcohol solutions, solvents or cleaners intended for rubber, vinyl and plastics, or oil/petroleum-based leather conditioners. These products may cause premature wearing of the clear, protective coating.**

### CLEANING THE INSIDE WINDOWS

Use Ultra Clear Spray Glass Cleaner (E4AZ-19C507-AA) for the inside windows if they become fogged.

To clean, use two lint-free, soft towels, folded into a pad-shape. Mist the glass completely with cleaner, and use one of the towels to evenly agitate the surface. Use the other towel to remove the residue.

### CLEANING AND MAINTAINING THE SAFETY BELTS

Clean the safety belts with Extra Strength Upholstery Cleaner (E8AZ-19523-AA), available from your authorized Ford, Lincoln or Mercury dealer.

**Do not use bleach, dye or any other solvent to clean the belts, as these actions may weaken the belt webbing.**

### UNDERBODY

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

### FORD, LINCOLN AND MERCURY CAR CARE PRODUCTS

Your Ford, Lincoln or Mercury dealer has many quality products available to clean your vehicle and protect its finishes. These quality products have been specifically engineered to fulfill your automotive needs; they are custom designed to complement the style and appearance of your vehicle. Each product is made from high quality materials that meet or exceed rigid specifications. For best results, use the following or products of equivalent quality:

Ford Custom Clearcoat Polish\*

Ford Custom Silicone Gloss Polish

Ford Custom Vinyl Protectant\* (not available in Canada)

Motorcraft Vinyl Conditioner (Canada only)

Ford Deluxe Leather and Vinyl Cleaner (not available in Canada)

Motorcraft Vinyl Cleaner (Canada only)

Ford Extra Strength Tar and Road Oil Remover\* (not available in Canada)

Ford Extra Strength Upholstery Cleaner (not available in Canada)

Ford Custom Bright Metal Cleaner

Motorcraft Premium Car Wash Concentrate

Motorcraft Carlite Glass Cleaner (Canada only)

Ford Spot and Stain Remover\*

Ford Super Premium Tire and Trim Dressing

Ford Triple Clean

Ford Ultra-Clear Spray Glass Cleaner (not available in Canada)

Ford Engine Shampoo and Degreaser

\* May be sold with the Motorcraft name

# Maintenance and specifications

## SERVICE RECOMMENDATIONS

To help you service your vehicle:

- We highlight do-it-yourself items in the engine compartment for easy location.
- We provide a scheduled maintenance guide which makes tracking routine service easy.

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

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

## PRECAUTIONS WHEN SERVICING YOUR VEHICLE

Be especially careful when inspecting or servicing your vehicle.

- Do not work on a hot engine.
- When the engine is running, make sure that loose clothing, jewelry or long hair does not get caught up 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 lit cigarettes, open flames and other lit material away from the battery and all fuel related parts.

If you disconnect the battery, the engine must “relearn” its idle conditions before your vehicle will drive properly, as explained in *Battery* in this chapter.

### Working with the engine off

1. Set the parking brake and ensure the gearshift is securely latched in P (Park).
2. Turn off the engine and remove the key.
3. Block the wheels to prevent the vehicle from moving unexpectedly.

### Working with the engine on

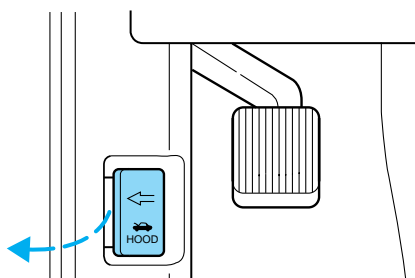
1. Set the parking brake and ensure the gearshift is securely latched in P (Park).
2. Block the wheels to prevent the vehicle from moving unexpectedly.

## Maintenance and specifications

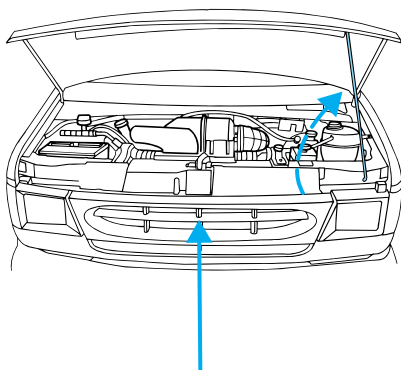
**Note:** Do not start your engine with the air cleaner removed and do not remove it while the engine is running.

### OPENING 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 release the auxiliary latch that is located in the center top of the grill.



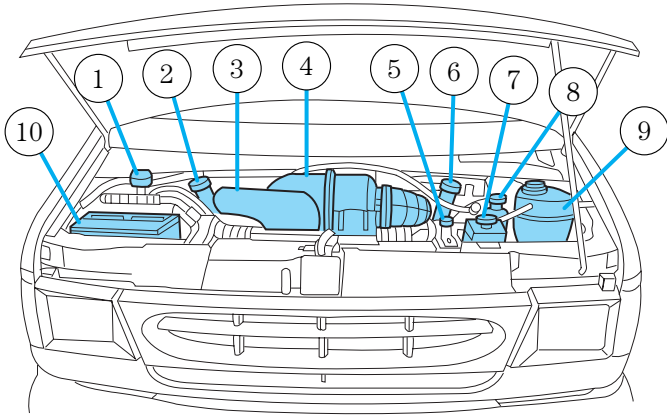
3. Lift the hood and secure it with the prop rod.

## Maintenance and specifications

### IDENTIFYING COMPONENTS IN THE ENGINE COMPARTMENT

#### Engine compartment component locations

Refer to the *7.3 Liter Power Stroke Direct Injection Turbo Diesel Owner's Guide Supplement* for diesel engine component locations.




1. Windshield washer fluid reservoir
2. Engine oil filler cap (except 4.2L V6 engine)
3. Automatic transmission fluid dipstick
4. Air filter assembly
5. Engine oil dipstick
6. Engine oil filler cap (4.2L V6 engine only)
7. Power steering fluid reservoir
8. Brake fluid reservoir
9. Engine coolant reservoir
10. Battery



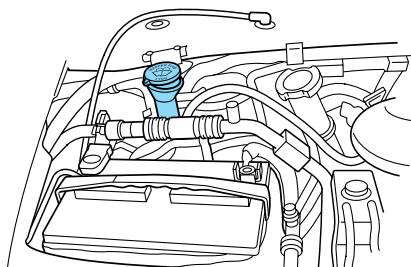
## Maintenance and specifications

### WINDSHIELD WASHER FLUID

#### Washer fluid

Check the washer fluid whenever you stop for fuel. The reservoir is highlighted with a  symbol.

If the level is low, add enough fluid to fill the reservoir. In very cold weather, do not fill the reservoir all the way.



Only use a washer fluid that meets Ford specification ESR-M17P5-A. Refer to *Lubricant specifications* in this 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.

**Note:** Do not put washer fluid in the engine coolant reservoir. Washer fluid placed in the cooling system may harm engine and cooling system components.

### ENGINE OIL

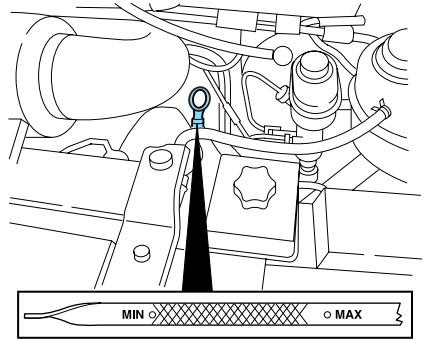
#### Checking the engine oil

Refer to the scheduled maintenance guide 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 a few 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.

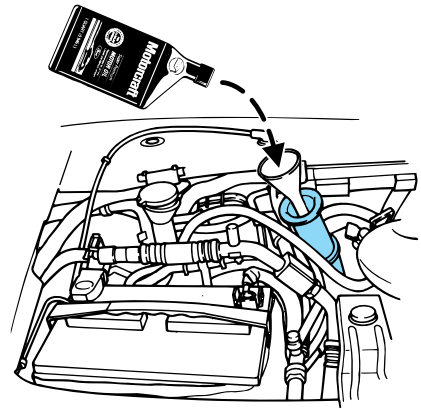
## Maintenance and specifications

5. Locate and carefully remove the engine oil level indicator (dipstick).



6. Wipe the indicator clean. Insert the indicator fully, then remove it again.

- If the oil level is **between the MIN and MAX marks**, the oil level is acceptable. **DO NOT ADD OIL.**
- If the oil level is below the MIN mark, add enough oil to raise the level within the MIN-MAX range.



- Oil levels above the MAX mark may cause engine damage. Some oil must be removed from the engine by a service technician.

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

## Maintenance and specifications

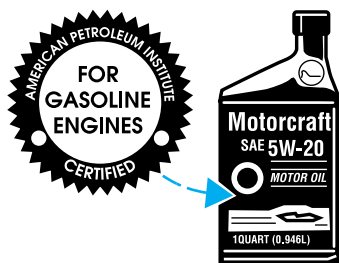
### Adding engine oil

1. Check the engine oil. For instructions, refer to *Checking the engine oil* in this chapter.
2. If the engine oil level is not within the normal range, add only certified engine oil of the recommended viscosity. 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 MAX mark on the engine oil level indicator (dipstick).
4. Install the indicator and ensure it is fully seated.
5. Fully install the engine oil filler cap by turning the filler cap clockwise 1/4 of a turn until three clicks are heard or until the cap is fully seated.

**To avoid possible oil loss, DO NOT operate the vehicle with the engine oil level indicator and/or the engine oil filler cap removed.**

### Engine oil and filter recommendations

Look for this certification trademark.



### **SAE 5W-20 engine oil is recommended.**

Only use oils “Certified For Gasoline Engines” by the American Petroleum Institute (API). Use Motorcraft or an equivalent oil meeting Ford specification WSS-M2C153-H. **SAE 5W-20 oil provides optimum fuel economy and durability performance meeting all requirements for your vehicle’s engine.**

Do not use supplemental engine oil additives, oil treatments or engine treatments. They are unnecessary and could, under certain conditions, lead to engine damage which is not covered by your warranty.

Change your engine oil and filter according to the appropriate schedule listed in the scheduled maintenance guide.

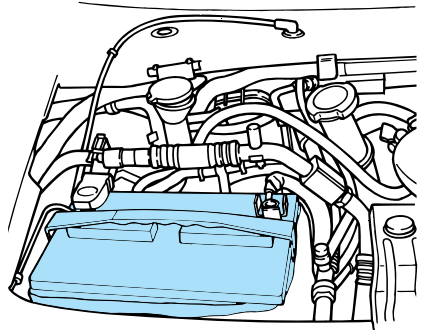
## Maintenance and specifications

Ford production and aftermarket (Motorcraft) oil filters are designed for added engine protection and long life. If a replacement oil filter is used that does not meet Ford material and design specifications, start-up engine noises or knock may be experienced.

It is recommended you use the appropriate Motorcraft oil filter (or another brand meeting Ford specifications) for your engine application.

### **BATTERY**

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



However, for severe usage or in high temperature climates and for frame mounted batteries, check the battery electrolyte level. Refer to the scheduled maintenance guide for the service interval schedules.

**Keep the electrolyte level in each cell up to the “level indicator”. Do not overfill the battery cells.**

If the electrolyte level in the battery is low, you can add plain tap water to the battery, as long as you do not use hard water (water with a high mineral or alkali content). If possible, however, try to only fill the battery cells with distilled water. If the battery needs water often, have the charging system checked.

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

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

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

## Maintenance and specifications

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.



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.



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.



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.



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

For information on transmission operation after the battery has been disconnected see “Shift strategy” in the driving section.

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

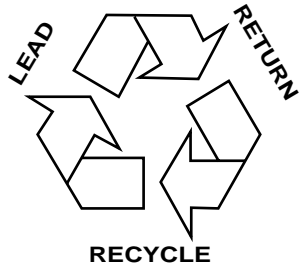
1. With the vehicle at a complete stop, set the parking brake.
2. Put the gearshift in P (Park), turn off all accessories and start the engine.
3. Run the engine until it reaches normal operating temperature.

## Maintenance and specifications

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. 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 16 km (10 miles) or more to relearn the idle and fuel trim strategy.
  - **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.**

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

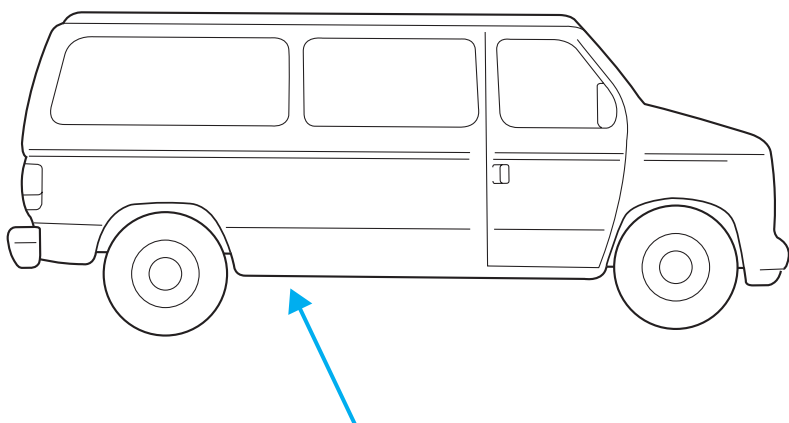
- Always dispose of automotive batteries in a responsible manner. Follow your local authorized standards for disposal. Call your local authorized recycling center to find out more about recycling automotive batteries.



### Disconnecting dual batteries (if equipped)

The primary battery is located under the hood.

## Maintenance and specifications

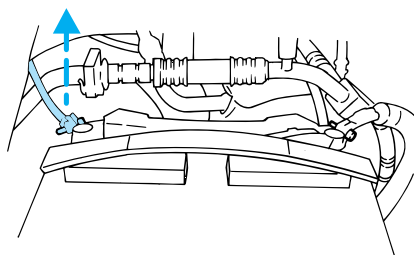


The auxiliary battery is located on the passenger side frame rail.

### **Gasoline engines**

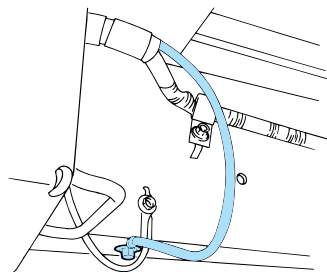
#### **Disconnect:**

1. Disconnect the primary battery ground cable.



2. Disconnect the auxiliary battery frame ground.

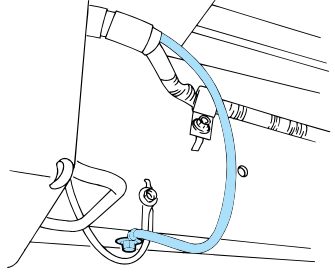
- Remove the ground bolt.
- Pull the cable away from the frame and make sure that the cable does not contact the frame.



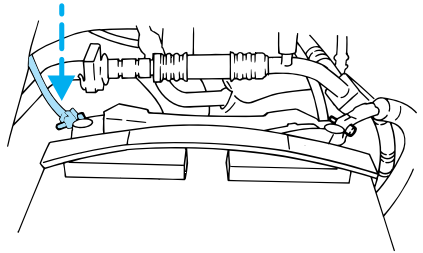
# Maintenance and specifications

## Connect:

1. Reconnect the auxiliary battery frame ground.



2. Reconnect the primary battery ground cable.



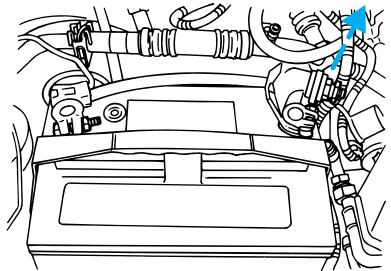
## *Diesel engines*

### Disconnect:



Secondary positive cable remains energized after disconnection. Make sure the tool does not contact any ground surface.

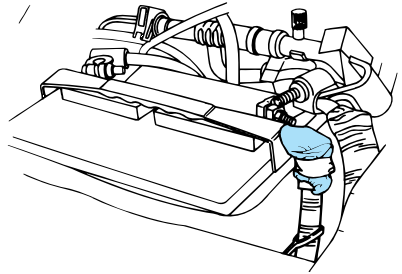
1. Disconnect the secondary positive cable from the primary battery terminal.





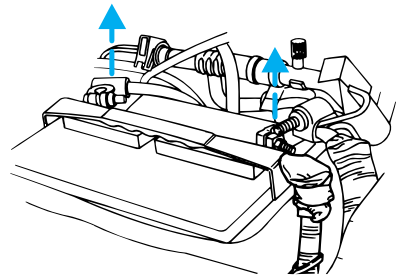
## Maintenance and specifications

2. Wrap the secondary positive cable with a non-conductive material to insulate.



3. Disconnect the primary battery ground cable.

4. Disconnect the primary battery positive cable.



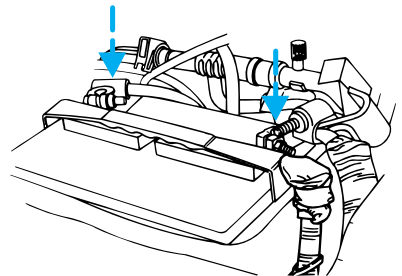
### Connect:



Secondary positive cable remains energized after disconnection. make sure the tool does not contact any ground surface.

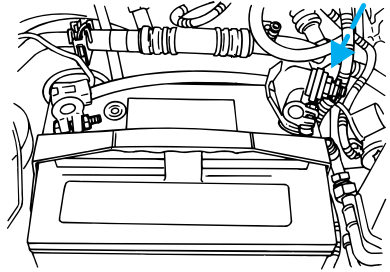
1. Reconnect the primary battery positive cable.

2. Reconnect the primary battery ground cable.



## Maintenance and specifications

3. Unwrap the secondary positive cable and reconnect to the primary battery terminal.



### ENGINE COOLANT

#### Checking engine coolant

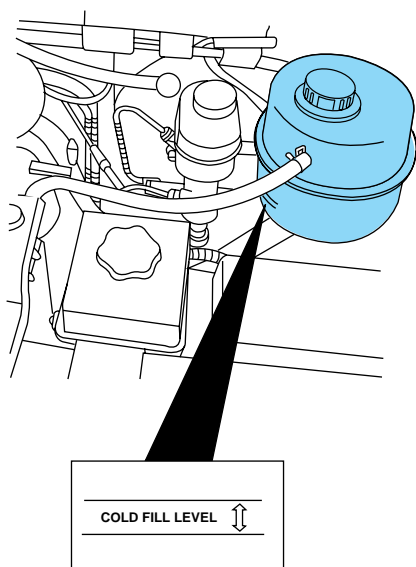
The concentration and level of engine coolant should be checked at the mileage intervals listed in the scheduled maintenance guide. The coolant concentration should be maintained at 50/50 coolant and water, which equates to a freeze point of  $-36^{\circ}\text{C}$  ( $-34^{\circ}\text{F}$ ). Coolant concentration testing is possible with a hydrometer or antifreeze tester (such as the Rotunda Battery and Antifreeze Tester, 014-R1060). The level of coolant should be maintained at the “cold full” or “cold fill range” level in the coolant reservoir. If the level falls below, add coolant per the instructions in the *Adding Engine Coolant* section.

Your vehicle was factory-filled with a 50/50 engine coolant and water concentration. If the concentration of coolant falls below 40% or above 60%, the engine parts could become damaged or not work properly. **A 50-50 mixture of coolant and water provides the following:**

- **Freeze protection down to  $-36^{\circ}\text{C}$  ( $-34^{\circ}\text{F}$ ).**
- **Boiling protection up to  $129^{\circ}\text{C}$  ( $265^{\circ}\text{F}$ ).**
- **Protection against rust and other forms of corrosion.**
- **Enables calibrated gauges to work properly.**

## Maintenance and specifications

When the engine is cold, check the level of the engine coolant in the reservoir.



- The engine coolant should be at the “cold fill level” or within the “cold fill range” as listed on the engine coolant reservoir (depending upon application).
- Refer to the Scheduled Maintenance Guide for service interval schedules.
- Be sure to read and understand *Precautions when servicing your vehicle* in this chapter.

If the engine coolant has not been checked at the recommended interval, the engine coolant reservoir may become low or empty. If the reservoir is low or empty, add engine coolant to the reservoir. Refer to *Adding engine coolant* in this chapter.

**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

When adding coolant, make sure it is a 50/50 mixture of engine coolant and distilled water. Add the mixture to the coolant reservoir, **when the engine is cool**, until the appropriate fill level is obtained.

## Maintenance and specifications



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.



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.

The cooling system in your vehicle is filled with either green-colored Motorcraft Premium Engine Coolant meeting Ford specification ESE-M97B44-A or yellow-colored Motorcraft Premium Gold Engine Coolant meeting Ford Specification WSS-M97B51-A1. To determine your vehicle's coolant type (color), check your coolant reservoir.

- **Add Motorcraft Premium Engine Coolant (green-colored), VC-4-A (U.S.) or CXC-10 (Canada) or Motorcraft Premium Gold Engine Coolant (yellow-colored), VC-7-A, depending on the type of coolant originally equipped in your vehicle.** If you are unsure which type of coolant your vehicle requires, check your coolant reservoir or contact your local dealer.
- **Do not add/mix an orange-colored, extended life coolant such as Motorcraft Speciality Orange Engine Coolant, VC-2 (US) or CXC-209 (Canada), meeting Ford specification WSS-M97B44-D with the factory-filled coolant.** Mixing Motorcraft Speciality Orange Engine Coolant or any orange-colored extended life product with your factory filled coolant can result in degraded corrosion protection.
- A large amount of water without engine coolant may be added, in case of emergency, to reach a vehicle service location. In this instance, the cooling system must be drained and refilled with a 50/50 mixture of engine coolant and distilled water as soon as possible. Water alone (without engine coolant) can cause engine damage from corrosion, overheating or freezing.
- **Do not use alcohol, methanol or 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.

## Maintenance and specifications

- **Do not mix with recycled coolant unless from a Ford-approved recycling process (see *Use of Recycled Engine Coolant* section).**

For vehicles with overflow coolant systems with a non-pressurized cap on the coolant recovery system, add coolant to the coolant recovery reservoir when the engine is cool. Add the proper mixture of coolant and water to the “cold full” level. For all other vehicles, which have a coolant degas system with a pressurized cap, or if it is necessary to remove the coolant pressure relief cap on the radiator of a vehicle with an overflow system, follow these steps to add engine coolant.



To avoid 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.

1. Before you begin, turn the engine off and let it cool.
2. When the engine is cool, wrap a thick cloth around the coolant pressure relief cap on the coolant reservoir (an opaque plastic bottle). Slowly turn cap counterclockwise (left) until pressure begins to release.
3. Step back while the pressure releases.
4. When you are sure that all the pressure has been released, use the cloth to turn it counterclockwise and remove the cap.
5. Fill the coolant reservoir slowly with the proper coolant mixture (see above), to within the “cold fill range” or the “cold full” level on the reservoir. If you removed the radiator cap in an overflow system, fill the radiator until the coolant is visible and radiator is almost full.
6. Replace the cap. Turn until tightly installed. (Cap must be tightly installed to prevent coolant loss.)

After any coolant has been added, check the coolant concentration see Checking Engine Coolant section). If the concentration is not 50/50 (protection to  $-34^{\circ}\text{F}/-36^{\circ}\text{C}$ ), drain some coolant and adjust the concentration. It may take several drains and additions to obtain a 50/50 coolant concentration.

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

## Maintenance and specifications

If you have to add more than 1.0 liter (1.0 quart) of engine coolant per month, have your dealer check the engine cooling system. Your cooling system may have a leak. Operating an engine with a low level of coolant can result in engine overheating and possible engine damage.

### Recycled engine coolant

Ford Motor Company recommends the use of a recycled engine coolant produced by Ford-approved processes in vehicles originally equipped with Motorcraft Premium Engine Coolant (green-colored). However, not all coolant recycling processes produce coolant that meets Ford specification ESE-M97B44-A. Use of such coolant may harm the engine and cooling system components.

Ford Motor Company does NOT recommend the use of recycled engine coolant in vehicles originally equipped with Motorcraft Premium Gold 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.

### Coolant refill capacity

To find out how much fluid your vehicle's cooling system can hold, refer to *Refill capacities* in this chapter.

Fill your engine coolant reservoir as outlined in *Adding engine coolant* in this chapter.

### Severe climates

If you drive in extremely cold climates (less than  $-36^{\circ}\text{C}$  [ $-34^{\circ}\text{F}$ ):

- **It may be necessary to increase the coolant concentration above 50%.**
- **NEVER increase the coolant concentration above 60%.**
- **Increased engine coolant concentrations above 60% will decrease the overheat protection characteristics of the engine coolant and may cause engine damage.**
- **Refer to the chart on the coolant container to ensure the coolant concentration in your vehicle will provide adequate freeze protection at the temperatures in which you drive in the winter months.**

## Maintenance and specifications

If you drive in extremely hot climates:

- **It is still necessary to maintain the coolant concentration above 40%.**
- **NEVER decrease the coolant concentration below 40%.**
- **Decreased engine coolant concentrations below 40% will decrease the corrosion protection characteristics of the engine coolant and may cause engine damage.**
- **Decreased engine coolant concentrations below 40% will decrease the freeze protection characteristics of the engine coolant and may cause engine damage.**
- **Refer to the chart on the coolant container to ensure the coolant concentration in your vehicle will provide adequate protection at the temperatures in which you drive.**



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

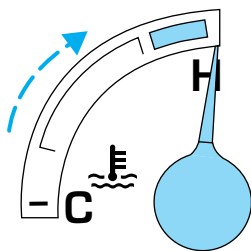
### What you should know about fail-safe cooling (if equipped)

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.
- The  and  symbol will illuminate.
- The *Service Engine Soon* indicator light 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.

## Maintenance and specifications

When this occurs the vehicle will still operate. However:

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

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

Once the engine temperature cools, the engine can be re-started. Take your vehicle to a service facility as soon as possible to minimize engine damage.

### ***When fail-safe mode is activated***

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 a service facility.
3. If this is not possible, wait a short period for the engine to cool.
4. Check the coolant level and replenish if low.



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

5. Re-start the engine and take your vehicle to a service facility.

**Driving the vehicle without repairing the engine problem increases the chance of engine damage. Take your vehicle to a service facility as soon as possible.**



## Maintenance and specifications

### WHAT YOU SHOULD KNOW ABOUT AUTOMOTIVE FUELS

#### Important safety precautions



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



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.



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



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

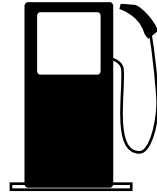


Gasoline may contain benzene, which is a cancer-causing agent.

## Maintenance and specifications

Observe the following guidelines when handling automotive fuel:

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



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.

## Maintenance and specifications



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

Use the following guidelines to avoid static 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

Your fuel tank filler cap has an indexed design with a 1/8 turn on/off feature.

When fueling your vehicle:

1. Turn the engine off.
2. Carefully turn the filler cap counterclockwise 1/8 of a turn until it stops.
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 1/8 of a turn until it stops.

If the “Service Engine Soon/Check Engine” indicator comes on and stays on after you start the engine, the fuel filler cap may not be properly installed. Turn off the engine, remove the fuel filler cap, align the cap properly and reinstall it.

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

## Maintenance and specifications



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.



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

### Choosing the right fuel

Use only UNLEADED FUEL. The use of leaded fuel is prohibited by law and could damage your vehicle.

Do not use fuel containing methanol. It can damage critical fuel system components.

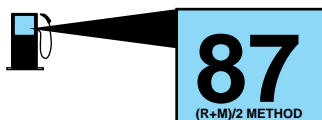
Your vehicle was not designed to use fuel or fuel additives with metallic compounds, including manganese-based compounds containing MMT.

Repairs to correct the effects of using a fuel for which your vehicle was not designed may not be covered by your warranty.

### Octane recommendations

Your vehicle is designed to use “Regular” unleaded gasoline with pump (R+M)/2 octane rating of 87.

We do not recommend the use of gasolines labeled as “Regular” that are sold with octane ratings of 86 or lower in high altitude areas.



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 dealer or a qualified service technician to prevent any engine damage.

## Maintenance and specifications

### Fuel quality

If you are experiencing starting, rough idle or hesitation driveability problems during a cold start, try a different brand of “Regular” unleaded gasoline. “Premium” unleaded gasoline is not recommended (particularly in the United States) because it may cause these problems to become more pronounced. If the problems persist, see your dealer or a qualified service technician.

It should not be necessary to add any aftermarket products to your fuel tank if you continue to use high quality fuel of the recommended octane rating. Aftermarket products could cause damage to the fuel system. Repairs to correct the effects of using an aftermarket product in your fuel may not be covered by your warranty.

Many of the world’s automakers issued the World-wide Fuel Charter that recommends gasoline specifications to provide improved performance and emission control system protection for your vehicle. Gasolines that meet the World-wide Fuel Charter should be used when available. Ask your fuel supplier about gasolines that meet the World-wide Fuel Charter. In Canada,



look for fuels that display the **Auto Makers' Choice**<sup>™</sup> logo.

### Cleaner air

Ford endorses the use of reformulated “cleaner-burning” gasolines to improve air quality.

### Running out of fuel

Avoid running out of fuel because this situation may have an adverse affect 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.
- Your “Service Engine Soon” indicator may come on. For more information on the “Service Engine Soon” indicator, refer to the *Instrument Cluster* chapter.

## Maintenance and specifications

### Fuel Filter

For fuel filter replacement, see your dealer or a qualified service technician. Refer to the scheduled maintenance guide for the appropriate intervals for changing the fuel filter.

**Replace the fuel filter with an authorized Motorcraft part. The customer warranty may be void for any damage to the fuel system if an authorized Motorcraft fuel filter is not used.**

### ESSENTIALS OF GOOD FUEL ECONOMY

#### Measuring techniques

Your best source of information about actual fuel economy is you, the driver. You must gather information as accurately and consistently as possible. Fuel expense, frequency of fillups or fuel gauge readings are NOT accurate as a measure of fuel economy. We do not recommend taking fuel economy measurements during the first 1 600 km (1 000 miles) of driving (engine break-in period). You will get a more accurate measurement after 3 000 km–5 000 km (2 000 miles–3 000 miles).

#### Filling the tank

The advertised fuel capacity of the fuel tank on your vehicle is equal to the rated refill capacity of the fuel tank as listed in the *Refill capacities* section of this chapter.

The advertised capacity is the amount of 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 small amount of fuel remaining in the fuel tank after the fuel gauge indicates empty.

**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 engine/ignition switch to the off position prior to refueling, an error in the reading will result if the engine is left running.
- Use the same filling rate setting (low — medium — high) each time the tank is filled.

## Maintenance and specifications

- Allow no more than 2 automatic click-offs when filling.
- Always use fuel with the recommended octane rating.
- Use a known quality gasoline, preferably a national brand.
- Use the same side of the same pump and have the vehicle facing the same direction each time you fill up.
- Have the vehicle loading and distribution the same every time.

Your results will be most accurate if your filling method is consistent.

### Calculating fuel economy

1. Fill the fuel tank completely and record the initial odometer reading (in kilometers or miles).
2. Each time you fill the tank, record the amount of fuel added (in liters or gallons).
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. Follow one of the simple calculations in order to determine fuel economy:

**Multiply liters used by 100, then divide by total kilometers traveled.**

**Divide total miles traveled by total gallons used.**

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

### Driving style — good driving and fuel economy habits

Give consideration to the lists that follow and you may be able to change a number of variables and improve your fuel economy.

#### **Habits**

- Smooth, moderate operation can yield up to 10% savings in fuel.
- Steady speeds without stopping will usually give the best fuel economy.

## Maintenance and specifications

- Idling for long periods of time (greater than one minute) may waste fuel.
- Anticipate stopping; slowing down may eliminate the need to stop.
- Sudden or hard accelerations may reduce fuel economy.
- Slow down gradually.
- Driving at reasonable speeds (traveling at 88 km/h [55 mph] uses 15% less fuel than traveling at 105 km/h [65 mph]).
- Revving the engine before turning it off may reduce fuel economy.
- Using the air conditioner or defroster may reduce fuel economy.
- You may want to turn off the speed control in hilly terrain if unnecessary shifting between third and fourth gear occurs. Unnecessary shifting of this type could result in reduced fuel economy.
- Warming up a vehicle on cold mornings is not required and may reduce fuel economy.
- Resting your foot on the brake pedal while driving may reduce fuel economy.
- Combine errands and minimize stop-and-go driving.

### **Maintenance**

- Keep tires properly inflated and use only recommended size.
- Operating a vehicle with the wheels out of alignment will reduce fuel economy.
- Use recommended engine oil. Refer to *Lubricant specifications* in this chapter.
- Perform all regularly scheduled maintenance items. Follow the recommended maintenance schedule and owner maintenance checks found in your vehicle scheduled maintenance guide.

### **Conditions**

- Heavily loading a vehicle or towing a trailer may reduce fuel economy at any speed.
- Carrying unnecessary weight may reduce fuel economy (approximately 0.4 km/L [1 mpg] is lost for every 180 kg [400 lb] of weight carried).



## Maintenance and specifications

- Adding certain accessories to your vehicle (for example bug deflectors, rollbars/light bars, running boards, ski/luggage racks) may reduce fuel economy.
- Using fuel blended with alcohol may lower fuel economy.
- Fuel economy may decrease with lower temperatures during the first 12–16 km (8–10 miles) of driving.
- Driving on flat terrain offers improved fuel economy as compared to driving on hilly terrain.
- Transmissions give their best fuel economy when operated in the top cruise gear and with steady pressure on the gas pedal.
- Close windows for high speed driving.

### EPA window sticker

Every new vehicle should have the EPA window sticker. Contact your dealer if the window sticker is not supplied with your vehicle. The EPA window sticker should be your guide for the fuel economy comparisons with other vehicles.

It is important to note the box in the lower left corner of the window sticker. These numbers represent the Range of L/100 km (MPG) expected on the vehicle under optimum conditions. Your fuel economy may vary depending upon the method of operation and conditions.

### EMISSION CONTROL SYSTEM

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 your scheduled maintenance guide performed according to the specified schedule.

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

## Maintenance and specifications

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.



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.

Illumination of the “Service Engine Soon” light, 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.



Exhaust leaks may result in entry of harmful and potentially lethal fumes into the passenger compartment.

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 identifies engine displacement and gives some tune up specifications.

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

### Readiness for Inspection/Maintenance (I/M) testing

In some localities, it may be a legal requirement to pass an I/M test of the on-board diagnostics system. If your “Check Engine/Service Engine Soon” light is on, refer to the description in the *Warning lights and chimes* section of the *Instrument Cluster* chapter. Your vehicle may not pass the I/M test with the “Check Engine/Service Engine Soon” light on.

If the vehicle’s powertrain system or its battery has just been serviced, the on-board diagnostics system is reset to a “not ready for I/M test” condition. To ready the on-board diagnostics system for I/M testing, a minimum of 30 minutes of city and highway driving is necessary as described below:

- First, at least 10 minutes of driving on an expressway or highway.

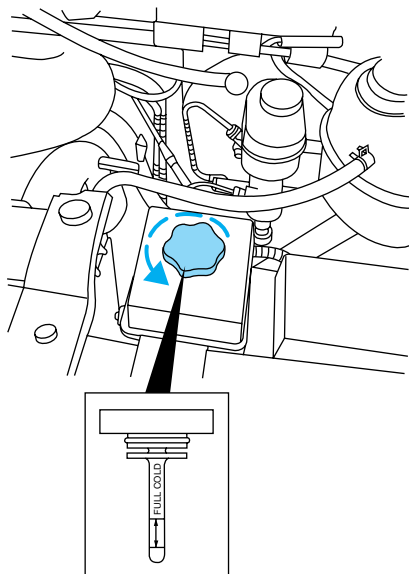
## Maintenance and specifications

- Next, at least 20 minutes driving in stop-and-go, city-type traffic with at least four idle periods.

Allow the vehicle to sit for at least eight hours without starting the engine. Then, start the engine and complete the above driving cycle. The engine must warm up to its normal operating temperature. Once started, do not turn off the engine until the above driving cycle is complete.

### CHECKING AND ADDING POWER STEERING FLUID

Check the power steering fluid. Refer to the scheduled maintenance guide for the service interval schedules. If adding fluid is necessary, use only MERCON® ATF.



Check the fluid level when it is at ambient temperature, 20° – 80° F (-7° – 25° C):

1. Check the fluid level on the dipstick. It should be between the arrows in the FULL COLD range. Do not add fluid if the level is within this range.
2. If the fluid level is low, start the engine.
3. While the engine idles, turn the steering wheel left and right several times.
4. Turn the engine off.

## Maintenance and specifications



For E-SuperDuty vehicles with the Hydro-Boost Brake System, do not press the brake pedal after the engine has been turned off.

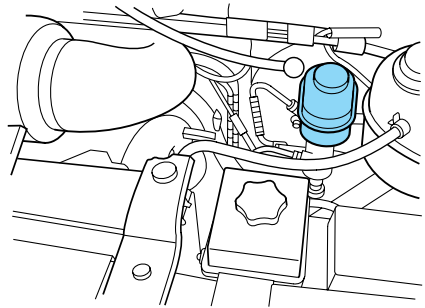
5. Recheck the fluid level on the dipstick. Do not add fluid if the level is between the arrows in the FULL COLD range.
6. If the fluid is low, add fluid in small amounts, continuously checking the level until it reaches the FULL COLD range. Be sure to put the dipstick back in the reservoir.

### BRAKE FLUID (ⓘ)

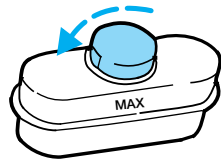
#### Checking and adding brake fluid

Brake fluid should be checked and refilled as needed. Refer to the scheduled maintenance guide for the service interval schedules.

1. Clean the reservoir cap before removal to prevent dirt or water from entering the reservoir.



2. Visually inspect the fluid level.
3. If necessary, add brake fluid from a clean un-opened container until the level reaches MAX. Do not fill above this line.



4. Use only a DOT 3 brake fluid certified to meet Ford specification ESA-M6C25-A. Refer to *Lubricant specifications* in this chapter.



Brake fluid is toxic. If brake fluid contacts the eyes, flush eyes with running water for 15 minutes. Seek medical attention if irritation persists. If taken internally, drink water and induce vomiting. Seek medical attention immediately.

## Maintenance and specifications



If you use a brake fluid that is not DOT 3, you will cause permanent damage to your brakes.



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

### DRIVELINE UNIVERSAL JOINT AND SLIP YOKE

Your vehicle may be equipped with universal joints that require lubrication. Refer to the scheduled maintenance guide for maintenance intervals. If the original universal joints are replaced with universal joints equipped with grease fittings, lubrication will also be necessary.

### TRANSMISSION FLUID

#### Checking automatic transmission fluid (if equipped)

Refer to your scheduled maintenance guide 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 30 km [20 miles]). 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.

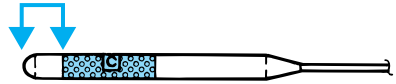
1. Drive the vehicle 30 km (20 miles) or until it reaches normal operating temperature.
2. Park the vehicle on a level surface and engage the parking brake.
3. With the parking brake engaged and your foot on the brake pedal, start the engine and move the gearshift lever through all of the gear ranges. Allow sufficient time for each gear to engage.
4. Latch the gearshift lever in P (Park) and leave the engine running.
5. Remove the dipstick, wiping it clean with a clean, dry lint free rag. If necessary, refer to *Identifying components in the engine compartment* in this chapter for the location of the dipstick.

## Maintenance and specifications

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 the fluid level is at the bottom of the dipstick and the ambient temperature is above 10°C (50°F).

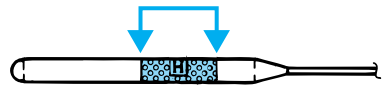


### **Correct fluid level**

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

You can check the fluid without driving if the ambient temperature is above 10°C (50°F). 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 (66°C-77°C [150°F-170°F]).



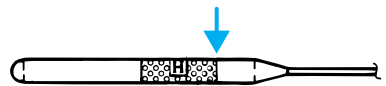
The transmission fluid should be in this range if at ambient temperature (10°C-35°C [50°F-95°F]).



### **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.



## Maintenance and specifications

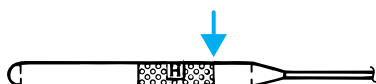
### **Adjusting automatic transmission fluid levels**

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

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

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

If an overfill occurs, excess fluid should be removed by a qualified technician.



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

### **AIR FILTER MAINTENANCE**

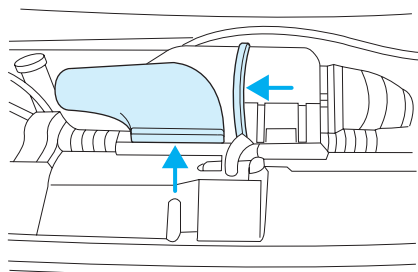
Refer to the scheduled maintenance guide for the appropriate intervals for changing the air filter element.

When changing the air filter element, use only the Motorcraft air filter element listed. Refer to *Motorcraft Part Numbers*.

**Note:** Do not start your engine with the air cleaner removed and do not remove it while the engine is running.

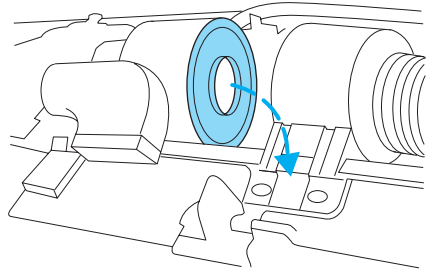
### **Changing the air filter element**

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



## Maintenance and specifications

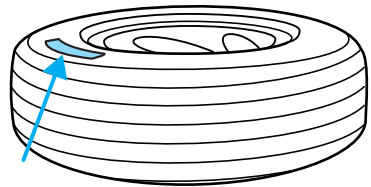
- Carefully separate the two halves of the air filter housing.
- Remove the air filter element from the housing.



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

### INFORMATION ABOUT UNIFORM TIRE QUALITY GRADING

New vehicles are fitted with tires that have a rating on them called Tire Quality Grades. The Quality grades can be found where applicable on the tire sidewall between tread shoulder and maximum section width. For example:



#### • Treadwear 200 Traction AA Temperature A

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

Tire Quality Grades apply to new pneumatic tires for use on passenger cars. They do not apply to deep tread, winter-type snow tires, space-saver or temporary use spare 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 to give you the following information about tire grades exactly as the government has written it.



## Maintenance and specifications

### Treadwear

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

### Traction AA A B C

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.



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.

### Temperature A B C

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. 109. Grades B and A represent higher levels of performance on the laboratory test wheel than the minimum required by law.



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.

# Maintenance and specifications

## SERVICING YOUR TIRES

### Checking the tire pressure

- Use an accurate tire pressure gauge.
- Check the tire pressure when tires are cold, after the vehicle has been parked for at least one hour or has been driven less than 5 km (3 miles).
- Adjust tire pressure to recommended specifications found on the Certification Label. Tire pressure information can also be found on the Tire Information label located on the inside of the fuel filler door.



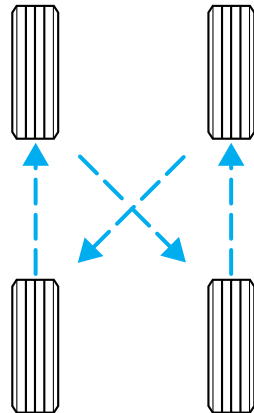
Improperly inflated tires can affect vehicle handling and can fail suddenly, possibly resulting in loss of vehicle control.

### Tire rotation

Because your vehicle's tires perform different jobs, they often wear differently. To make sure your tires wear evenly and last longer, rotate them as indicated in the scheduled maintenance guide. If you notice that the tires wear unevenly, have them checked.

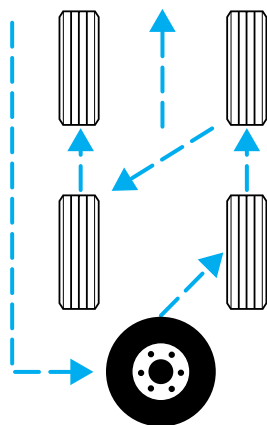
The following procedure applies to vehicles equipped with single rear wheels, if your vehicle is equipped with dual rear wheels it is recommended that only the front wheels be rotated (side to side).

- Four tire rotation



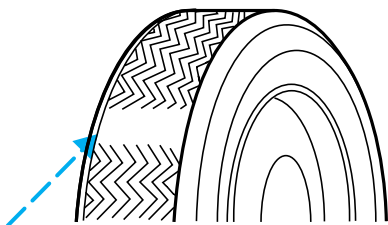
## Maintenance and specifications

- Five tire rotation



### Replacing the tires

Replace the tires when the wear band is visible through the tire treads.



When replacing full size tires, never mix radial bias-belted, or bias-type tires. Use only the tire sizes that are listed on the Certification Label. Make sure that all tires are the same size, speed rating, and load-carrying capacity. Use only the tire combinations recommended on the label. If you do not follow these precautions, your vehicle may not drive properly and safely.



Make sure that all replacement tires are of the same size, type, load-carrying capacity and tread design (e.g., "All Terrain", etc.), as originally offered by Ford.

## Maintenance and specifications



Do not replace your tires with “high performance” tires or larger size tires.



Failure to follow these precautions may adversely affect the handling of the vehicle and make it easier for the driver to lose control and roll over.

Tires that are larger or smaller than your vehicle’s original tires may also affect the accuracy of your speedometer.

### SNOW TIRES AND CHAINS



Snow tires must be the same size and grade as the tires you currently have on your vehicle.

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.

Follow these guidelines when using snow tires and chains:

- 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 re-tighten the chains. If this does not work, remove the chains to prevent damage to your vehicle.
- If possible, avoid fully loading your vehicle.
- Remove the tire chains when they are no longer needed. Do not use tire chains on dry roads.
- The suspension insulation and bumpers will help prevent vehicle damage. Do not remove these components from your vehicle when using snow tires and chains.

## Maintenance and specifications

### MOTORCRAFT PART NUMBERS

Component <sup>1</sup>	4.2L V6 engine	4.6L V8 engine	5.4L V8 engine	6.8L V10 engine
Air filter element	FA-1634	FA-1634	FA-1634	FA-1634
Battery (standard)	BXT-65-750	BXT-65-750	BXT-65-750	BXT-65-750
Battery (auxiliary)	BH-65DC	BH-65DC	BH-65DC	BH-65DC
Fuel filter	FG-872	FG-872	FG-872	FG-872
Oil filter	FL-400-S	FL-820-S	FL-820-S	FL-820-S
PCV valve	EV-251	EV-233	EV-233	EV-233
Spark plugs <sup>2</sup>	AGSF-34EEM <sup>3</sup>	AWSF-32PP <sup>4</sup>	AGSF-22W	AGSF-22W

<sup>1</sup>Refer to the *7.3 Liter Power Stroke Direct Injection Turbo Diesel Owner's Guide Supplement* for Motorcraft diesel engine service part numbers.

<sup>2</sup>Refer to Vehicle Emissions Control Information (VECI) decal for spark plug gap information.

<sup>3</sup>If a spark plug is removed for inspection, it must be reinstalled in the same cylinder. Cylinders No. 1, 2 and 3 have a "EGM" suffix. Cylinders No. 4, 5 and 6 have a "EM" suffix. If a spark plug needs to be replaced, use only spark plugs with the service part number suffix letter "EEM" as shown on the engine decal.

<sup>4</sup> If a spark plug is removed for inspection, it must be reinstalled in the same cylinder. Cylinders No. 1, 2, 3 and 4 have a "PG" suffix. Cylinders No. 5, 6, 7 and 8 have a "P" suffix. If a spark plug needs to be replaced, use only spark plugs with the service part number suffix letter as shown on the engine decal.

## Maintenance and specifications

### REFILL CAPACITIES

Fluid	Ford Part Name	Application	Capacity
Brake fluid	Motorcraft High Performance DOT 3 Motor Vehicle Brake Fluid	All	Fill to line on reservoir
Engine oil-gasoline engine (includes filter change)	Motorcraft SAE 5W-20 Super Premium Motor Oil	All	5.7L (6.0 quarts)
Engine oil-diesel engine (includes filter change)	Refer to the <i>7.3L Power Stroke Direct Injection Turbo Diesel Owner's Guide Supplement</i> .		
Engine coolant-gasoline engine <sup>1</sup>	Motorcraft Premium Engine Coolant (green-colored) <b>or</b> Motorcraft Premium Gold Engine Coolant (yellow-colored)	4.2L V6 engine	22.0L (23.3 quarts)
		4.2L V6 engine with aux rear heat	24.0L (25.4 quarts)
		4.6L V8 engine	23.7L (25.0 quarts)
		4.6L V8 engine with aux rear heat	25.7L (27.2 quarts)
		5.4L V8 engine	27.4L (29.0 quarts)
		5.4L V8 engine with aux rear heat	29.4L (31.0 quarts)
		6.8L V10 engine	29.0L (30.6 quarts)
		6.8L V10 engine with aux rear heat	31.0L (32.8 quarts)

## Maintenance and specifications

<b>Fluid</b>	<b>Ford Part Name</b>	<b>Application</b>	<b>Capacity</b>
Engine coolant-diesel engine	Refer to the <i>7.3L Power Stroke Direct Injection Turbo Diesel Owner's Guide Supplement</i> . <sup>1</sup>		
Power steering fluid	Motorcraft MERCON® ATF	All	Keep in FULL range on dispstick
Rear axle <sup>4</sup>	Motorcraft SAE 75W-140 Synthetic rear axle lubricant	Visteon 8.8/9.75 inch conventional and Traction-Lok	2.6-2.7L (5.5-5.8 pints) <sup>2</sup>
	Motorcraft 80W-90 Premium rear axle lubricant	Dana 9.75 inch (M60-IU)	3.0L (6.3 pints) <sup>3</sup>
		Dana 10.5 inch (M70-2U)	3.1L (6.6 pints) <sup>3</sup>
		Dana 10.5 inch (M70-1HD)	3.5L (7.5 pints) <sup>3</sup>

## Maintenance and specifications

Fluid	Ford Part Name	Application	Capacity
Fuel tank	N/A	All regular and extended length vans and wagons	132.4L (35.0 gallons)
		138 inch wheelbase (except E-Super Duty)	140.0L (37.0 gallons)
		158 inch wheelbase (except E-Super Duty)	140.0L (37.0 gallons) <sup>5</sup>
		176 inch wheelbase (except E-Super Duty)	140.0L (37.0 gallons)
		158 inch and 176 inch wheelbase (E-Super Duty)	208.0L (55.0 gallons)
Transmission fluid <sup>6</sup>	Motorcraft MERCON®V ATF	Automatic (4R70W)	13.2L (13.9 quarts) <sup>7</sup>
	Motorcraft MERCON® ATF	Automatic (4R100 except E-Super Duty)	16.1L (17.0 quarts) <sup>7</sup>
		Automatic (4R100 E-Super Duty)	16.7L (17.7 quarts) <sup>7</sup>
Windshield washer fluid	Ultra-Clear Windshield Washer Concentrate	All	4.0L (4.2 quarts)

<sup>1</sup>Add the coolant type originally equipped in your vehicle.



## Maintenance and specifications

<sup>2</sup>If your vehicle's rear axle is filled with a synthetic rear axle lubricant it is considered lubricated for life. These lubricants do not need to be checked or changed unless a leak is suspected, service is required or the axle assembly has been submerged in water. The axle lubricant should be changed any time the rear axle has been submerged in water.

Fill 6 mm to 14 mm (1/4 inch to 9/16 inch) below bottom of fill hole. Add 118 ml (4 oz.) of Additive Friction Modifier C8AZ-19B546-A or equivalent meeting Ford specification EST-M2C118-A, for complete refill of 8.8 inch and 9.75 inch Traction-Lok axles.

<sup>3</sup>Fill Dana rear axles to 6 mm to 19 mm (1/4 inch to 3/4 inch) below bottom of fill hole.

<sup>4</sup>Visteon conventional and Traction-Lok axles require 118 ml (4 oz.) of Additive Friction Modifier C8AZ-19B546-A or equivalent meeting Ford specification EST-M2C118-A. Dana conventional and limited-slip axles (E250/350/450) require 237ml (8 oz.) of Additive Friction Modifier C8AZ-19B546-A or equivalent meeting Ford specification EST-M2C118-A.

<sup>5</sup>Optional fuel tank 208L (55 gallon).

<sup>6</sup>Ensure the correct automatic transmission fluid is used. Transmission fluid requirements are indicated on the dipstick or on the dipstick handle. Check the container to verify the fluid being added is of the correct type. Refer to your scheduled maintenance guide to determine the correct service interval.

Some transmission fluids may be labeled as dual usage, such as MERCON® and MERCON® V. These dual usage fluids are not to be used in an automatic transmission that requires use of the MERCON® type fluid. However, these dual usage fluids may be used in transmissions that require the MERCON® V type fluid.

**MERCON® and MERCON® V type fluids are not interchangeable. DO NOT mix MERCON® and MERCON® V. Use of a transmission fluid that indicates dual usage (MERCON® and MERCON® V) in an automatic transmission application requiring MERCON® may cause transmission damage. Use of any fluid other than the recommended fluid may cause transmission damage.**

<sup>7</sup>Approximate dry fill capacity including transmission fluid cooling system, actual refill capacities will vary based on vehicle application and transmission fluid cooling system (i.e. coolers size, cooling lines, auxiliary cooler capacities). The amount of transmission fluid and fluid level should be set by the indication on the dipstick's normal operating range.

## Maintenance and specifications

### LUBRICANT SPECIFICATIONS

Item	Ford part name	Ford part number	Ford specification
Brake fluid	Motorcraft High Performance DOT 3 Motor Vehicle Brake Fluid	PM-1	ESA-M6C25-A and DOT 3
Door weatherstrips	Silicone Lubricant	F7AZ-19G208-BA and F5AZ-19553-AA	ESR-M13P4-A
Engine coolant	Motorcraft Premium Engine Coolant (green-colored)	VC-4-A (in Canada, Motorcraft CXC-10)	ESE-M97B44-A
	Motorcraft Premium Gold Engine Coolant (yellow-colored)	VC-7-A	WSS-M97B51-A1
Engine oil-gasoline engine	Motorcraft SAE 5W-20 Super Premium Motor Oil	XO-5W20-QSP	WSS-M2C153-H with API Certification Mark
Engine oil-diesel engine	Refer to the <i>7.3 Liter Power Stroke Direct Injection Turbo Diesel Owner's Guide Supplement</i> .		
Hinges, latches, Striker plates, fuel filler door hinge, and seat tracks	Motorcraft Multi-Purpose Grease	XG-4 or F5AZ-19G209-AA	ESR-M1C159-A
Lock cylinders	Motorcraft Penetrating and Lock Lubricant	Motorcraft XL-1	none
Power steering fluid	Motorcraft MERCON® ATF	XT-2-QDX	MERCON®

## Maintenance and specifications

Item	Ford part name	Ford part number	Ford specification
Automatic transmission (4R100) <sup>1</sup>	Motorcraft MERCON® ATF	XT-2-QDX	MERCON®
Automatic transmission (4R70W) <sup>1</sup>	Motorcraft MERCON®V ATF	XT-5-QM	MERCON®V
Disc brake caliper rails	Motorcraft Silicone Brake Caliper Grease and Dielectric Compound	XG-4	ESE-M1C171-A
Parking brake assembly (E-Super Duty)	Motorcraft MERCON® Automatic Transmission Fluid	XT-2-QDX	MERCON®
Visteon conventional and Traction-Lok axles (E-150) <sup>2</sup>	Motorcraft SAE 75W-140 High Performance Synthetic Rear Axle Lubricant	XY-75W140-QL	WSL-M2C192-A
Dana 9.75 inch (M60-1U) 10.5 inch (M70-2U) (M70-1HD) (E-250/350/450) <sup>3</sup>	Motorcraft SAE 80W-90 Premium Rear Axle Lubricant	XY-80W90-QL	WSP-M2C197-A
Windshield washer fluid	Ultra-clear Windshield Washer Concentrate	C9AZ-19550-AC	ESR-M17P5-A

<sup>1</sup>Ensure the correct automatic transmission fluid is used. Transmission fluid requirements are indicated on the dipstick or on the dipstick handle. Check the container to verify the fluid being added is of the

## Maintenance and specifications

correct type. Refer to your scheduled maintenance guide to determine the correct service interval.

Some transmission fluids may be labeled as dual usage, such as MERCON® and MERCON® V. These dual usage fluids are not to be used in an automatic transmission that requires use of the MERCON® type fluid. However, these dual usage fluids may be used in transmissions that require the MERCON® V type fluid.

**MERCON® and MERCON® V type fluids are not interchangeable. DO NOT mix MERCON® and MERCON® V. Use of a transmission fluid that indicates dual usage (MERCON® and MERCON® V) in an automatic transmission application requiring MERCON® may cause transmission damage. Use of any fluid other than the recommended fluid may cause transmission damage.**

<sup>2</sup>Add 118 ml (4 oz.) of Additive Friction Modifier C8AZ-19B546-A or equivalent meeting Ford specification EST-M2C118-A for complete refill of Visteon Traction-Lok rear axles.

<sup>3</sup>Add 237 ml (8 oz.) of Additive Friction Modifier C8AZ-19B546-A or equivalent meeting Ford specification EST-M2C118-A for complete refill of Dana Traction-Lok rear axles.

### ENGINE DATA

Engine*	4.2L V6 engine	4.6L V8 engine	5.4L V8 engine	6.8L V10 engine
Cubic inches	256	281	330	415
Required fuel	87 octane	87 octane	87 octane	87 octane
Firing order	1-4-2-5-3-6	1-3-7-2-6 -5-4-8	1-3-7-2-6 -5-4-8	1-6-5-10-2-7 -3-8-4-9
Spark plug gap	1.3-1.4 mm (0.052-0.056 inch)	1.3-1.4 mm (0.052-0.056 inch)	1.3-1.4 mm (0.052-0.056 inch)	1.3-1.4 mm (0.052-0.056 inch)
Ignition system	EDIS	EDIS	Coil on plug	Coil on plug
Compression ratio	9.3:1	9.37:1	9.0:1	9.0:1

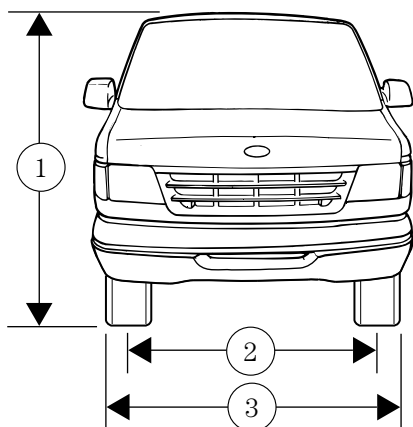
\*Refer to the *7.3 Liter Power Stroke Direct Injection Turbo Diesel Owner's Guide Supplement* for diesel engine information.

## Maintenance and specifications

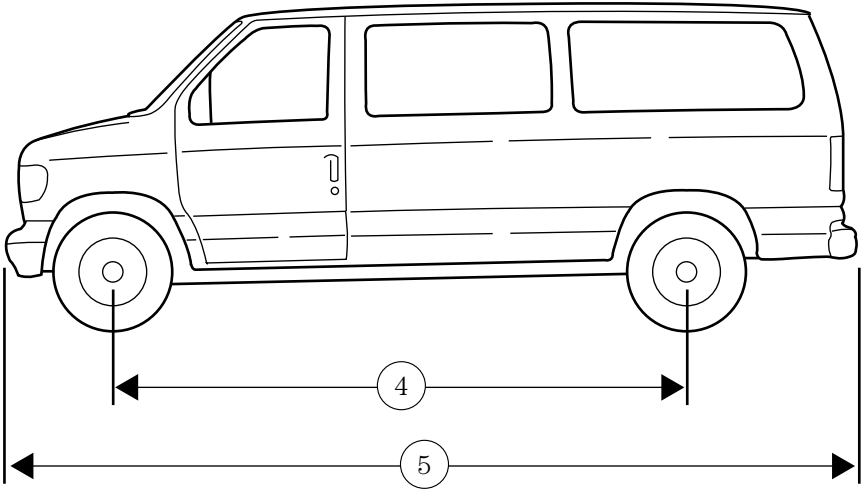
### VEHICLE DIMENSIONS

#### Van/wagon models

	<b>E-150</b>	<b>E-250</b>	<b>E-350</b>
(1) Overall height	2 055 mm (80.9 in)	2 118 mm (83.4 in)	2 136 mm (84.1 in)
(2) Track front/rear	1 763 mm (69.4 in)/ 1 702 mm (67.0 in)		
(3) Overall width (excluding mirrors)	2 014 mm (79.3 in)		
(4) Wheelbase	3 505 mm (138 in)		
(5) Overall length	Regular van, 5 382 mm (211.9 in) Extended, 5 890 mm (231.9 in)		



## Maintenance and specifications



### Cutaway/commercial stripped chassis models

	<b>E-250</b>	<b>E-350</b>	<b>E-Super Duty</b>
(1) Overall height	Refer to Body Builder for specifications		
(2) Track front/rear	1 763 mm (69.4 in)/ 1 689 mm (66.5 in)	1 763 mm (69.4 in)/ SRW 1689 mm (66.5 in), DRW 1 859 mm (73.2 in)	1 763 mm (69.4 in)/ 1 973 mm (77.7 in)
(3) Overall width (excluding mirrors)	Refer to Body Builder for specifications.		

## Maintenance and specifications

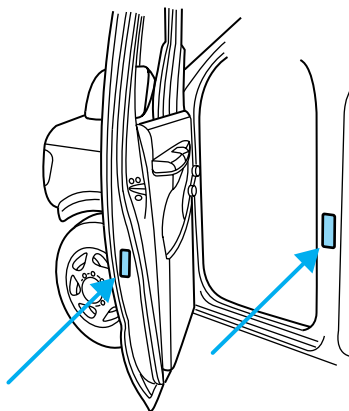
	<b>E-250</b>	<b>E-350</b>	<b>E-Super Duty</b>
(4) Wheelbase	3 149.6 mm (124 in)	3 505 mm (138 in) 4 013 mm (158 in) 4 470 mm (176 in)	4 013 mm (158 in) 4 470 mm (176 in)
(5) Overall length	Refer to Body Builder for specifications.		

### VEHICLE IDENTIFICATION NUMBER

#### Complete Ford built vehicles

The vehicle identification number is attached to your vehicle in the following places:

- On the metal tag attached to the top of the instrument panel on the driver's side.
- On the certification label. This label is required by the National Highway Traffic Safety Administration and is made of special material. If it is tampered with, it will be destroyed or a destruction pattern will appear.



#### Certification label for incomplete vehicles

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

## Accessories

### FORD ACCESSORIES FOR YOUR VEHICLE

A wide selection of genuine Ford accessories are available for your vehicle through your local authorized Ford, Lincoln, Mercury or Ford of Canada dealer. These quality accessories have been specifically engineered to fulfill your automotive needs; they are custom designed to complement the style and aerodynamic appearance of your vehicle. In addition, each accessory is made from high quality materials and meets or exceeds Ford's rigorous engineering and safety specifications. Ford Motor Company will repair or replace any properly dealer-installed Ford accessory found to be defective in factory-supplied materials or workmanship during the warranty period, as well as any component damaged by the defective accessory. The accessory will be warranted for whichever provides you the greatest benefit:

- 12 months or 20 000 km (12 000 miles) (whichever occurs first), or
- The remainder of your new vehicle limited warranty.

This means that genuine Ford accessories purchased along with your new vehicle and installed by the dealer are covered for the full length of your New Vehicle's Limited Warranty — 3 years or 60 000 km (36 000 miles) (whichever occurs first). Contact your dealer for details and a copy of the warranty.

**Not all accessories are available for all models.**

#### Vehicle Security

Styled wheel locks

Vehicle security systems

#### Comfort and convenience

Air conditioner

Engine block heaters

Remote start

Tire step

#### Travel equipment

Auto head lamps with DRL

Bicycle rack

Cell phone holder



- Console (Engine cover)
- Daytime running lights (DRL)
- First aid and highway kits
- Fog lights
- Hitch mount bicycle carrier
- Inside mirror, electrochromic with compass (with and without temperature display)
- Removable roof rack
- Running boards — Aluminum
- Speed control
- Trailer hitch (Class III)
- Trailer hitch bars and balls
- Trailer hitch wiring adaptor
- Trailgate table

### **Protection and appearance equipment**

- Air bag anti-theft locks
- Battery warmer
- Carpet floor mats
- Cleaners, waxes and polishes
- Door edge guards
- Flat splash guards
- Front end covers (full)
- Hood deflector
- Rear step bumpers
- Side window air deflectors
- Underbody security lighting

## Accessories

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). Consult your dealer for specific weight information.
- The Federal Communications Commission (FCC) and Canadian Radio Telecommunications Commission (CRTC) regulate the use of mobile communications systems - such as two-way radios, telephones and theft alarms - that are equipped with radio transmitters. Any such equipment installed in your vehicle should comply with FCC or CRTC regulations and should be installed only by a qualified service technician.
- Mobile communications systems may harm the operation of your vehicle, particularly if they are not properly designed for automotive use or are not properly installed. When operated, such systems may cause the engine to stumble or stall or cause the transmission to be damaged or operate improperly. In addition, such systems may be damaged or their performance may be affected by operating your vehicle. (Citizens band [CB] transceivers, garage door openers and other transmitters with outputs of five watts or less will not ordinarily affect your vehicle's operation.)
- Ford cannot assume responsibility for any adverse effects or damage that may result from the use of such equipment.

- A**
- Air bag supplemental restraint system .....132
    - and child safety seats .....134
    - description .....132
    - disposal .....137
    - driver air bag .....135
    - indicator light .....14, 136
    - operation .....135
    - passenger air bag .....135
  - Air cleaner filter .....247, 253
  - Air conditioning
    - manual heating and air conditioning system .....79
  - Ambulance packages .....7
  - Antifreeze (see Engine coolant) .....226
  - Anti-lock brake system (see Brakes) .....152–153
  - Audio system (see Radio) ...20, 41
  - Automatic transmission
    - driving an automatic overdrive .....157
    - fluid, adding .....245
    - fluid, checking .....245
    - fluid, refill capacities .....254
    - fluid, specification .....260
  - Auxiliary power point .....96
  - Axle
    - lubricant specifications ..258, 260
    - refill capacities .....254
    - traction lok .....155
- B**
- Battery .....220
    - acid, treating emergencies .....220
    - charging system warning light 14
    - disconnecting .....222
    - jumping a disabled battery ...191
    - maintenance-free .....220
    - replacement, specifications ...253
    - servicing .....220
    - voltage gauge .....18
  - Belt minder .....127
  - Brakes .....152
    - anti-lock .....152–153
    - anti-lock brake system (ABS) warning light .....13, 153
    - brake warning light .....13
    - fluid, checking and adding ...244
    - fluid, refill capacities .....254
    - fluid, specifications .....258, 260
    - lubricant specifications ..258, 260
    - shift interlock .....156
  - Break-in period .....5
- C**
- Capacities for refilling fluids ...254
  - Child safety restraints .....138
    - child safety belts .....138
  - Child safety seats .....139
    - in front seat .....140
    - in rear seat .....140
    - tether anchorage hardware ...143
  - Cleaning your vehicle
    - engine compartment .....209
    - exterior .....212
    - instrument cluster lens .....211
    - instrument panel .....211
    - interior .....211
    - plastic parts .....210
    - safety belts .....212
    - washing .....207
    - waxing .....207

## Index

- wheels .....208
- windows .....212
- wiper blades .....210
- Clock .....23, 28, 37, 45
- Compass, electronic .....104
  - calibration .....106
  - set zone adjustment .....105
- Console
  - overhead .....102–103
- Controls
  - power seat .....114
- Coolant
  - checking and adding .....226
  - refill capacities .....230, 254
  - specifications .....258, 260
- Cruise control (see Speed control) .....98
- Customer Assistance .....173
  - Ford accessories for your vehicle .....212
  - Ford Extended Service Plan .199
  - Getting assistance outside the U.S. and Canada .....203
  - Getting roadside assistance ...173
  - Getting the service you need .....197
  - Ordering additional owner's literature .....204
  - The Dispute Settlement Board .....200
  - Utilizing the Mediation/Arbitration Program .....203
- D**
- Daytime running lamps (see Lamps) .....85
- Dipstick
  - automatic transmission fluid .245
  - engine oil .....217
- Doors
  - door ajar warning .....15
  - lubricant specifications .....258
- Driveline universal joint and slip yoke .....245
- Driving under special conditions
  - through water .....160
- E**
- Emergencies, roadside
  - jump-starting .....191
- Emission control system .....241
- Engine .....260–261
  - check engine/service engine soon light .....12
  - cleaning .....209
  - coolant .....226
  - diesel .....6
  - fail-safe coolant .....231
  - idle speed control .....220
  - lubrication specifications .....258, 260
  - refill capacities .....254
  - service points .....216
  - starting after a collision .....175
- Engine block heater .....151
- Engine oil .....217
  - checking and adding .....217
  - dipstick .....217
  - filter, specifications .....219, 253
  - recommendations .....219
  - refill capacities .....254
  - specifications .....258, 260

- Exhaust fumes .....151
- F**
- Fail safe cooling .....231
- Fluid capacities .....254
- Four-Wheel Drive vehicles  
preparing to drive your  
vehicle .....156
- Fuel .....233  
calculating fuel economy .....238  
cap .....235  
capacity .....254  
choosing the right fuel .....236  
comparisons with EPA fuel  
economy estimates .....241  
detergent in fuel .....237  
filling your vehicle with  
fuel .....233, 235, 238  
filter, specifications .....238, 253  
fuel pump shut-off switch .....175  
gauge .....18  
improving fuel economy .....238  
low fuel warning light .....14  
octane rating .....236, 260–261  
quality .....237  
running out of fuel .....237  
safety information relating to  
automotive fuels .....233
- Fuses .....177–178
- G**
- Garage door opener .....103
- Gas cap (see Fuel cap) .....235
- Gas mileage (see Fuel  
economy) .....238
- Gauges .....16  
battery voltage gauge .....18
- engine coolant temperature  
gauge .....17  
engine oil pressure gauge .....17  
fuel gauge .....18  
odometer .....19  
speedometer .....18  
trip odometer .....19
- GAWR (Gross Axle Weight  
Rating) .....160  
calculating .....163  
definition .....160  
driving with a heavy load .....160  
location .....160
- GVWR (Gross Vehicle Weight  
Rating) .....160  
calculating .....160, 163  
definition .....160  
driving with a heavy load .....160  
location .....160
- H**
- Hazard flashers .....174
- Headlamps .....85  
aiming .....86  
bulb specifications .....88  
daytime running lights .....85  
flash to pass .....86  
high beam .....15, 85  
replacing bulbs .....89–90  
turning on and off .....85  
warning chime .....16
- Heating  
auxiliary heater and air  
conditioner .....83  
heater only system .....78  
heating and air conditioning  
system .....79
- Hood .....215

# Index

## I

- Ignition ..... 148, 260–261
- Infant seats  
(see Safety seats) ..... 139
- Inspection/maintenance (I/M)  
testing ..... 242
- Instrument panel
  - cleaning ..... 211
  - cluster ..... 12, 211
  - lighting up panel and  
interior ..... 86

## J

- Jack ..... 184
  - positioning ..... 184
  - storage ..... 184
- Jump-starting your vehicle ..... 191

## K

- Keys
  - key in ignition chime ..... 16
  - positions of the ignition ..... 148

## L

- Lamps
  - bulb replacement  
specifications chart ..... 88
  - cargo lamps ..... 86
  - daytime running light ..... 85
  - headlamps ..... 85
  - headlamps, flash to pass ..... 86
  - instrument panel, dimming ..... 86
  - interior lamps ..... 87
  - replacing bulbs ..... 88–93
- Lane change indicator (see  
Turn signal) ..... 86

- Lights, warning and indicator ... 12
  - air bag ..... 14
  - anti-lock brakes (ABS) ... 13, 153
  - brake ..... 13
  - charging system ..... 14
  - check coolant ..... 14
  - cruise indicator ..... 14
  - door ajar ..... 15
  - engine oil pressure ..... 14
  - high beam ..... 15
  - low fuel ..... 14
  - safety belt ..... 13
  - service engine soon ..... 12
  - turn signal indicator ..... 15

- Load limits ..... 160
  - GAWR ..... 160
  - GVWR ..... 160
  - trailer towing ..... 160

- Loading instructions ..... 162

- Lubricant specifications ... 258, 260

- Lumbar support, seats ..... 114

## M

- Mirrors
  - fold away ..... 98
  - side view mirrors (power) ..... 97
- Motorcraft parts ..... 238, 253

## O

- Octane rating ..... 236
- Odometer ..... 19
- Oil (see Engine oil) ..... 217
- Overdrive ..... 102

**P**

- Panic alarm feature, remote entry system .....110
- Parking brake .....154
- Parts (see Motorcraft parts) ....253
- Power distribution box (see Fuses) .....181
- Power door locks .....108
- Power steering .....155
  - fluid, checking and adding ....243
  - fluid, refill capacity .....254
  - fluid, specifications .....258, 260
- Preparing to drive your vehicle .....156

**R**

- Radio .....20
- Relays .....177, 184
- Remote entry system .....109–110
  - illuminated entry .....112
  - locking/unlocking doors .....108–110
  - panic alarm .....110
  - replacement/additional transmitters .....111
  - replacing the batteries .....110

**S**

- Safety belts (see Safety restraints) .....16, 121–125
- Safety defects, reporting .....206
- Safety restraints .....121–125
  - belt minder .....127
  - cleaning the safety belts .....131, 212

- extension assembly .....131
  - for adults .....122–124
  - for children .....137–138
  - lap belt .....125
  - warning light and chime .....13, 15, 126–127
- Safety seats for children .....139
- Seat belts (see Safety restraints) .....121
- Seats .....113
  - child safety seats .....139
- Servicing your vehicle .....214
- Spark plugs, specifications .....253, 260–261
- Special notice
  - ambulance conversions .....7
  - diesel-powered vehicles .....6
  - utility-type vehicles .....7
- Specification chart, lubricants .....258, 260
- Speed control .....98
- Speedometer .....18
- Starting your vehicle .....148–150
  - jump starting .....191
- Steering wheel
  - controls .....95, 98
  - tilting .....95

**T**

- Temperature control (see Climate control) .....78
- Tires .....184, 248–250
  - changing .....184, 186
  - checking the pressure .....250
  - replacing .....187, 251
  - rotating .....250

## Index

- snow tires and chains .....252
  - tire grades .....249
  - treadwear .....249
  - Towing .....163
    - recreational towing .....172
    - trailer towing .....163
    - wrecker .....196
  - Traction-lok rear axle .....155
  - Transmission .....156
    - fluid, checking and adding (automatic) .....245
    - fluid, refill capacities .....254
    - lubricant specifications ..258, 260
  - Transmission control indicator light .....15
  - Trip odometer .....19
  - Trunk .....106
  - Turn signal .....15, 86
- V**
- Vehicle dimensions .....261
  - Vehicle Identification Number (VIN) .....263
  - Vehicle loading .....160
  - Ventilating your vehicle .....152
- W**
- Warning chimes .....15–16
  - Warning lights (see Lights) .....12
  - Washer fluid .....217
  - Water, Driving through .....160
  - Windows
    - power .....96
  - Windshield washer fluid and wipers
    - checking and adding fluid ....217
    - checking and cleaning .....94
    - operation .....94
    - replacing wiper blades .....95
  - Wrecker towing .....196