2015 ProMaster

DIESEL SUPPLEMENT

VEHICLES SOLD IN CANADA

With respect to any Vehicles Sold in Canada, the name FCA US LLC shall be deemed to be deleted and the name FCA Canada Inc. used in substitution therefore.

DRIVING AND ALCOHOL

Drunken driving is one of the most frequent causes of accidents.

Your driving ability can be seriously impaired with blood alcohol levels far below the legal minimum. If you are drinking, don't drive. Ride with a designated non-drinking driver, call a cab, a friend, or use public transportation.

WARNING!

Driving after drinking can lead to an accident. Your perceptions are less sharp, your reflexes are slower, and your judgment is impaired when you have been drinking. Never drink and then drive.

This manual illustrates and describes the operation of features and equipment that are either standard or optional on this vehicle. This manual may also include a description of features and equipment that are no longer available or were not ordered on this vehicle. Please disregard any features and equipment described in this manual that are not on this vehicle.

FCA US LLC reserves the right to make changes in design and specifications, and/or make additions to or improvements to its products without imposing any obligation upon itself to install them on products previously manufactured.

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INTRODUCTION

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A MESSAGE FROM FCA US LLC

FCA US LLC welcomes you as a turbocharged diesel-powered vehicle owner. Your diesel vehicle will sound, feel, drive and operate differently from a gasoline-powered vehicle. It is important that you read and understand this manual.

Almost 100% of the heavy trucks in the United States and Canada are diesel-powered because of the fuel economy, rugged durability, and high torque which permits pulling heavy loads.

You may find that some of the starting, operating, and maintenance procedures are different. However, they are simple to follow and careful adherence to them will ensure that you take full advantage of the features of this engine.

NOTE:

- Some aftermarket products may cause severe engine/transmission and/or exhaust system damage. Your vehicle's powertrain control systems can detect and store information about vehicle modifications that increase horsepower and torque output such as whether or not performance-enhancing powertrain components, commonly referred to as downloaders, power boxes, or performance chips have been used.
- Any chassis/suspension or tire size modifications to the vehicle will effect the performance of the Adaptive Cruise Control and Forward Collision Warning System.

This information cannot be erased and will stay in the system's memory even if the modification is removed. This information can be retrieved by FCA US LLC, and service and repair facilities, when servicing your vehicle.

This information may be used to determine if repair will be covered by New Vehicle Limited Warranty.

There is a probability that the use of a "performance chip" will prohibit the engine from starting. In this instance, the vehicle will need to be serviced by a authorized dealer in order to return the vehicle to it's factory settings.

When it comes to service, remember that your authorized dealer knows your vehicle best, has factory-trained technicians and genuine MOPAR® parts, and cares about your satisfaction.

THINGS TO KNOW BEFORE STARTING YOUR VEHICLE

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ENGINE BREAK-IN RECOMMENDATIONS

The diesel engine does not require a break-in period due to its construction. Normal operation is allowed, providing the following recommendations are followed:

- Warm up the engine before placing it under load.
- Do not operate the engine at idle for prolonged periods.
- Use the appropriate transmission gear to prevent engine lugging.
- Observe vehicle oil pressure and temperature indicators.
- Check the coolant and oil levels frequently.
- Vary accelerator pedal position at highway speeds when carrying or towing significant weight.

NOTE: Light duty operation such as light trailer towing or no load operation will extend the time before the engine is at full efficiency. Reduced fuel economy and power may be seen at this time.

The engine oil installed in the engine at the factory is a high-quality energy conserving type lubricant. Oil changes should be consistent with anticipated climate conditions under which vehicle operations will occur. The recommended viscosity and quality grades are shown under “Fluids, Lubricants and Genuine Parts”, under “Maintaining Your Vehicle” in this manual. NON-DETERGENT OR STRAIGHT MINERAL OILS MUST NEVER BE USED.

UNDERSTANDING THE FEATURES OF YOUR VEHICLE

CONTENTS

SWIVEL SEAT — IF EQUIPPED

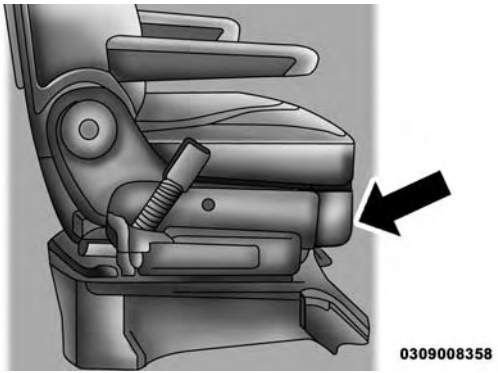
The swivel seat lever is located at the lower front inboard side of the seat. The seat may be turned through 180° toward the seat on the opposite side and approximately 35° toward the door. The seat may be locked in the driving position or at the 180° position. To swivel the seat, pull the swivel seat lever outward, turn the seat to the desired position and release the lever. The swivel seat back lever is located at the lower front outboard side of the seat, to tilt the seat back forward or rearward.

If the vehicle is equipped with interlocking swivel seats, the seats must be locked in facing forward position while driving. If the seats are not in the correct position, a warning will display in the EVIC.

If the driver or the passenger seats are not locked in facing forward position before the first vehicle movement, the Transmission is forced in Neutral position until the seats are both locked in facing forward position. When the seats are not in the right position and the first vehicle movement after the cranking is attempted, a chime and a text message will appear in EVIC. Rotate and lock the swivel seats in the correct position before trying again.

If the driver or the passenger seats are not locked in facing forward position during the first vehicle movement, a text message will be visualized in the EVIC and an intermittent chime will sound until key-off or until the swivel seats are locked in facing forward position. Stop and move the swivel seats in the correct position before proceeding.

If a fault is present in the system and it is not possible to check the correct position of the swivel seats, a text message and the generic warning light appears in the EVIC to inform you about the failure. In these conditions, check the status of the swivel seats and do not drive the vehicle until the swivel seats are locked in facing forward position.



Swivel Seat Lever

ELECTRONIC SPEED CONTROL

When engaged, the Electronic Speed Control takes over accelerator operations at speeds greater than 15 mph (25 km/h) up to the maximum speed of 105 mph (170 km/h).

The Electronic Speed Control Lever is located on the left side of the steering column.

Electronic Speed Control Lever

NOTE: In order to ensure proper operation, the Electronic Speed Control System has been designed to shut down if multiple Speed Control functions are operated at the same time. If this occurs, the Electronic Speed Control System can be reactivated by rotating the Electronic Speed Control ON/OFF center ring and resetting the desired vehicle set speed.

UNDERSTANDING YOUR INSTRUMENT PANEL

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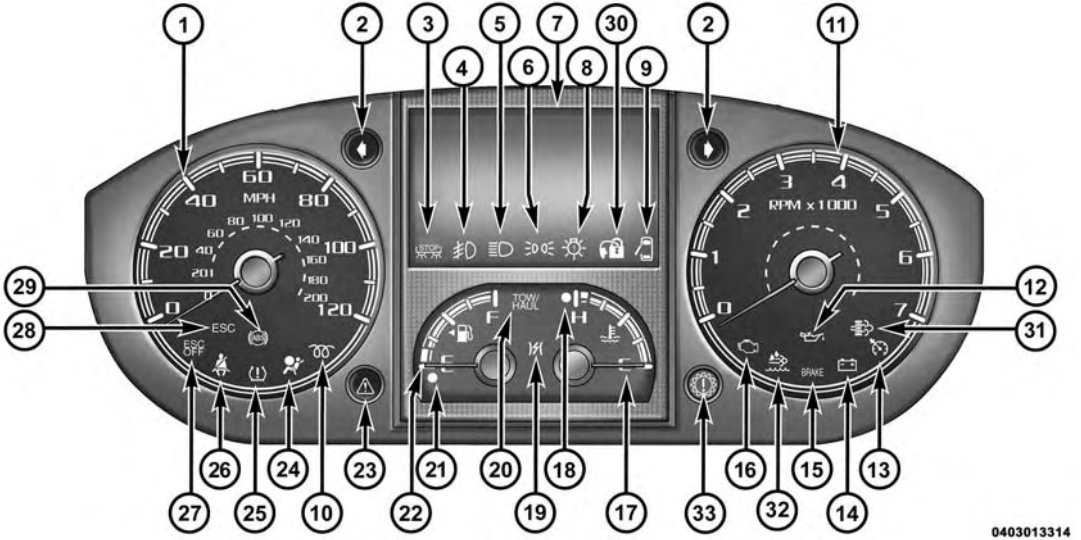
INSTRUMENT CLUSTER



INSTRUMENT CLUSTER DESCRIPTIONS

1. Speedometer

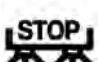
The speedometer shows the vehicle speed in miles per hour (mph) and/or kilometers per hour (km/h).

2. Turn Signal Indicators

The arrow will flash with the exterior turn signal when the turn signal lever is operated.

NOTE: Check for an inoperative outside light bulb if either indicator remains on and does not flash, or flashes at a rapid rate.

3. Stop Light Failure Indicator



This light will illuminate if one or more of the stop light bulb fails. The failure relating to this light could be: one or more blown bulbs, a blown protection fuse or a break in the electrical connection.

4. Front Fog Light Indicator — If Equipped

This indicator will illuminate when the front fog lights are on.

5. High Beam Indicator

This light shows that the high beam headlights are on. Pull the multifunction lever toward you to switch the headlights to high beam. Pull the lever a second time to switch the headlights back to low beam.

6. Park/Headlight ON Indicator — If Equipped

This indicator will illuminate when the park lights or headlights are turned on.

7. Odometer/Trip Odometer/Electronic Vehicle Information Center (EVIC) Display Area

This display indicates the total distance the vehicle has been driven.

U.S. Federal regulations require that upon transfer of vehicle ownership, the seller certify to the purchaser the correct mileage that the vehicle has been driven. If your odometer needs to be repaired or serviced, the repair technician should leave the odometer reading the same as it was before the repair or service. If s/he cannot do so, then the odometer must be set at zero, and a sticker must be placed in the door jamb stating what the mileage was before the repair or service. It is a good idea for you to make a record of the odometer reading before the repair/service, so that you can be sure that it is properly reset, or that the door jamb sticker is accurate if the odometer must be reset at zero.

Shift Lever Position/Transmission Gear Range

The transmission gear range "R, N, D, 1, 2, 3, 4, 5, 6" is displayed in the EVIC whenever the engine is running. With key on/engine off, the display may indicate the shift lever position rather than the actual transmission gear position. Refer to "Shift Lever/Transmission Gear Position" under "Automated Manual Transmission" for further information.

8. External Light Failure Indicator — If Equipped

The External Light Failure Indicator will come on when a failure to one of the following lights is detected:

- Side Marker Lights
- Direction Indicators
- Backup Lights
- Parking Lights
- Daytime Running Lamps (DRL)
- Clearance Lights
- License Plate Lights

The failure relating to these lights could be: one or more blown bulbs, a blown protection fuse or a break in the electrical connection.

9. Door Ajar Indicator

This indicator will illuminate when one or more door(s) are not fully closed.

10. Glow Plug Light — If Equipped

This vehicle will inhibit engine cranking when the transmission oil temperature is less than –22° F (–30° C) and the oil temperature sensor reading indicates an engine block heater has not been used. The Glow Plug light will flash during in cold weather for up to 10 seconds. An externally powered electric engine block heater is available as optional equipment or from your authorized dealer.

Turning the ignition key to the ON/RUN position illuminates the Glow Plug Light, the light will turn off when glow plugs reach the established temperature. You can start the engine immediately after the light turns off.

A blinking Glow Plug Light (together with a display message) indicates a failure on glow plugs. Please see your authorized dealer as soon as possible.

11. Tachometer

The tachometer indicates engine speed in Revolutions Per Minute (RPM x 1000).

CAUTION!

Do not operate the engine with the tachometer pointer at high RPM for extended periods. Engine operation over 3200 RPM can result in significant damage that will not be covered under the New Vehicle Limited Warranty.

12. Oil Pressure Warning Light

This light indicates low engine oil pressure. The light should turn on momentarily when the engine is started. If the light turns on while driving, stop the vehicle and shut off the engine as soon as possible. A chime will sound when this light turns on.

Do not operate the vehicle until the cause is corrected. This light does not indicate how much oil is in the engine. The engine oil level must be checked under the hood.

13. Electronic Speed Control Set Indicator Light

This light will turn on when the electronic speed control is set.

14. Charging System Light — If Equipped

This light shows the status of the electrical charging system. The light should come on when the ignition switch is first turned to ON/RUN and remain on briefly as a bulb check. If the Charging System light remains on, or comes on while driving, it means that the vehicle is experiencing a problem with the charging system. Obtain SERVICE IMMEDIATELY. See your authorized dealer.

Refer to "Jump Starting Procedures" in "What To Do In Emergencies" if jump starting is required.

15. Brake Warning Light

This light monitors various brake functions, including brake fluid level and parking brake application. If the brake light turns on it may indicate that the parking brake is applied or that the brake fluid level is low.

If the light remains on when the parking brake has been disengaged, and the fluid level is at the full mark on the master cylinder reservoir, it indicates a possible brake hydraulic system malfunction. In this case, the light will remain on until the condition has been corrected. If the

problem is related to the brake booster, the ABS pump will run when applying the brake and a brake pedal pulsation may be felt during each stop.

The dual brake system provides a reserve braking capacity in the event of a failure to a portion of the hydraulic system. A leak in either half of the dual brake system is indicated by the Brake Warning Light, which will turn on when the brake fluid level in the master cylinder has dropped below a specified level.

The light will remain on until the cause is corrected.

NOTE: The light may flash momentarily during sharp cornering maneuvers, which change fluid level conditions. The vehicle should have service performed and the brake fluid level checked.

If brake failure is indicated, immediate repair is necessary.

WARNING!

Driving a vehicle with the red brake light on is dangerous. Part of the brake system may have failed. It will take longer to stop the vehicle. You could have a collision. Have the vehicle checked immediately.

Vehicles equipped with the ABS are also equipped with Electronic Brake Force Distribution (EBD). In the event of an EBD failure, the Brake Warning Light will turn on along with the ABS Light. Immediate repair to the ABS system is required.

Operation of the Brake Warning Light can be checked by turning the ignition switch from the OFF position to the ON/RUN position. The light should illuminate for approximately four seconds. The light should then turn off unless the parking brake is applied or a brake fault is detected. If the light does not illuminate, have the light inspected by an authorized dealer.

The light also will turn on when the parking brake is applied with the ignition switch in the ON/RUN position.

NOTE: This light shows only that the parking brake is applied. It does not show the degree of brake application.

16. Malfunction Indicator Light (MIL)

The Malfunction Indicator Light (MIL) is part of an Onboard Diagnostic (OBD) system which monitors the emissions and engine control system. If the bulb does not come on during starting, have the condition investigated promptly.

If this light comes on and remains on while driving, it suggests a potential engine control problem and the need for system service.

Although your vehicle will usually be drivable and not need towing, see your authorized dealer for service as soon as possible.

CAUTION!

Prolonged driving with the Malfunction Indicator Light (MIL) on could cause damage to the engine control system. It also could affect fuel economy and driveability. If the MIL is flashing, severe catalytic converter damage and power loss will soon occur. Immediate service is required.

17. Temperature Gauge

The temperature gauge shows engine coolant temperature. Any reading within the normal range indicates that the engine cooling system is operating satisfactorily.

The gauge pointer will likely indicate a higher temperature when driving in hot weather, up mountain grades, or when towing a trailer. It should not be allowed to exceed the upper limits of the normal operating range.

CAUTION!

Driving with a hot engine cooling system could damage your vehicle. If the temperature gauge reads "H" pull over and stop the vehicle. Idle the vehicle with the air conditioner turned off until the pointer drops back into the normal range. If the pointer remains on the "H" and you hear continuous chimes, turn the engine off immediately and call an authorized dealer for service.

WARNING!

A hot engine cooling system is dangerous. You or others could be badly burned by steam or boiling coolant. You may want to call an authorized dealer for service if your vehicle overheats. If you decide to look under the hood yourself, see "Maintaining Your

(Continued)

WARNING! *(Continued)*

Vehicle." Follow the warnings under the "Cooling System Pressure Cap" paragraph.

18. Engine Temperature Warning Light

This light warns of an overheated engine condition. As engine coolant temperatures rise and the gauge approaches **H**, this indicator will illuminate and a single chime will sound after reaching a set threshold.

If the light turns on while driving, safely pull over and stop the vehicle. If the A/C system is on, turn it off. Also, shift the transmission into NEUTRAL with the park brake applied and idle the vehicle. If the temperature reading does not return to normal, turn the engine off immediately and call for service. Refer to "If Your Engine Overheats" in "What To Do In Emergencies" for further information.

19. Electronic Throttle Control (ETC) Light

This light informs you of a problem with engine torque (or power) generation. If a problem is detected, the light will come on while the engine is running. Cycle the ignition key when the vehicle has completely stopped. The light should turn off. If the light remains lit with the engine running, your vehicle will usually be drivable (although performance will be limited), see an authorized dealer for service as soon as possible. If the light is flashing when the engine is running, immediate service is required and you may experience reduced performance, an elevated/rough idle or engine stall and your vehicle may require towing. The light will come on when the ignition is first turned to ON/RUN and remain on briefly as a bulb check. If the light does not come on during starting, have the system checked by an authorized dealer.

20. TOW/HAUL — If Equipped

This light will illuminate when TOW HAUL mode is selected.

21. Low Fuel Light

When the fuel level reaches approximately 3.0 gal (11.7 L), this light will turn on, and remain on until fuel is added.

22. Fuel Gauge/Fuel Door Reminder

When the ignition switch is in the ON/RUN position, the pointer will show the level of fuel remaining in the fuel tank. The fuel pump symbol points to the side of the vehicle where the fuel door is located.

23. Generic Warning Light

The Generic Warning Light will illuminate in blinking mode if any of the following conditions occur:

- Air Bag Warning Light Fault
- Engine Oil Pressure Sensor Failure
- Parking Sensor Failure
- Water In Fuel Presence
- Fuel Cutoff Intervention
- "Engine Minimum Oil Level"
- "Engine Min Oil Sensor Fail"
- Swivel Seat Malfunction

If the Generic Warning Light is blinking an air bag system failure may be present, see an authorized dealer as soon as possible.

24. Air Bag Warning Light

This light will turn on for four to eight seconds as a bulb check when the ignition switch is first turned to ON/RUN. If the light is either not on during starting, stays on, or turns on while driving, have the system inspected at an authorized dealer as soon as possible. Refer to "Occupant Restraints" in "Things To Know Before Starting Your Vehicle" for further information.

25. Tire Pressure Monitoring Telltale Light

Each tire, including the spare (if provided), should be checked monthly when cold and inflated to the inflation pressure recommended by the vehicle manufacturer on the vehicle placard or tire inflation pressure label. (If your vehicle has tires of a different size than the size indicated on the

vehicle placard or tire inflation pressure label, you should determine the proper tire inflation pressure for those tires.)

As an added safety feature, your vehicle has been equipped with a Tire Pressure Monitoring System (TPMS) that illuminates a low tire pressure telltale when one or more of your tires is significantly under-inflated. Accordingly, when the low tire pressure telltale illuminates, you should stop and check your tires as soon as possible, and inflate them to the proper pressure. Driving on a significantly under-inflated tire causes the tire to overheat and can lead to tire failure. Under-inflation also reduces fuel efficiency and tire tread life, and may affect the vehicle's handling and stopping ability.

Please note that the TPMS is not a substitute for proper tire maintenance, and it is the driver's responsibility to maintain correct tire pressure, even if under-inflation has not reached the level to trigger illumination of the TPMS low tire pressure telltale.

Your vehicle has also been equipped with a TPMS malfunction strategy to indicate when the system is not operating properly. When the system detects a malfunction, the low tire pressure telltale will flash for approximately one minute and then remain continuously illuminated. This sequence will continue upon subsequent vehicle start-ups as long as the malfunction exists. When the low tire pressure telltale is illuminated, the system may not be able to detect or signal low tire pressure as intended. TPMS malfunctions may occur for a variety of reasons, including the installation of replacement or alternate tires or wheels on the vehicle that prevent the TPMS from functioning properly. Always check the TPMS telltale after replacing one or more tires or wheels on your vehicle, to ensure that the replacement or alternate tires and wheels allow the TPMS to continue to function properly.

CAUTION!

The TPMS has been optimized for the original equipment tires and wheels. TPMS pressures and warning have been established for the tire size equipped on your vehicle. Undesirable system operation or sensor damage may result when using replacement equipment that is not of the same size, type, and/or style. Aftermarket wheels can cause sensor damage. Using aftermarket tire sealants may cause the Tire Pressure Monitoring System (TPMS) sensor to become inoperable. After using an aftermarket tire sealant it is recommended that you take your vehicle to an authorized dealership to have your sensor function checked.

NOTE: The TPMS telltale is also accompanied by a "Low Tire" message in the Electronic Vehicle Information Center (EVIC). Refer to "Tire Pressure Monitoring System (TPMS) in "Starting And Operating" for further information.

26. Seat Belt Reminder Light

When the ignition switch is first turned to ON/RUN, during the first six seconds from key ON, if the driver's seat belt is unbuckled, a continuous chime will sound and the light will be ON. After the first six seconds or when driving, if the driver's seat belt remains unbuckled, the seat belt reminder light will flash or remain on continuously. This light also indicates if the front passengers are buckled or not (when the vehicle is equipped with the seat belt alert also for passenger/passengers).

27. Electronic Stability Control (ESC) OFF Indicator Light

This light indicates the Electronic Stability Control (ESC) is off. Refer to "Electronic Stability Control (ESC)" in "Starting And Operating" for further information.

28. Electronic Stability Control (ESC) Activation/ Malfunction Indicator Light

The "ESC Activation/Malfunction Indicator Light" in the instrument cluster will come on when the ignition switch is turned to the ON/RUN position. It should go out with the engine running. If the "ESC Activation/Malfunction Indicator Light" comes on continuously with the engine running, a malfunction has been detected in the ESC system. If this light remains on after several ignition cycles, and the vehicle has been driven several miles (kilometers) at speeds greater than 30 mph (48 km/h), see your authorized dealer as soon as possible to have the problem diagnosed and corrected.

NOTE:

- The "ESC Off Indicator Light" and the "ESC Activation/Malfunction Indicator Light" come on momentarily each time the ignition switch is turned to ON/RUN.
- Each time the ignition is turned to ON/RUN, the ESC system will be ON, even if it was manually turned off previously.
- The ESC system will make buzzing or clicking sounds and flash the ESC activation light when it is active. This is normal; the sounds will stop when ESC becomes inactive following the maneuver that caused the ESC activation.

29. Anti-Lock Brake (ABS) Light

This light monitors the Anti-lock Brake System (ABS). The light will turn on when the ignition switch is turned to the ON/RUN position and may stay on for as long as four seconds.

If the ABS light remains on or turns on while driving, it indicates that the anti-lock portion of the brake system is not functioning and that service is required. However, the conventional brake system will continue to operate normally if the BRAKE warning light is not on.

If the ABS light is on, the brake system should be serviced as soon as possible to restore the benefits of anti-lock brakes. If the ABS light does not turn on when the ignition switch is turned to the ON/RUN position, have the light inspected by an authorized dealer.

30. Vehicle Security Light

If during starting, the key code is not correctly recognized, the Vehicle Security Light comes on in the instrument panel. In this case, turn the key to OFF and then to ON/RUN; if it is still locked, try again with the other keys that come with the vehicle. Contact an authorized dealer if you still cannot start the engine.

If with the engine running the warning light flashes, this means that the car is not protected by the engine inhibitor device. Contact an authorized dealer to have all the keys programmed.

31. Diesel Particulate Filter (DPF)

When the light illuminates solid in the EVIC, the filter loading is above the specified range.

32. Low Diesel Exhaust Fluid (DEF) Indicator — If Equipped

The Low Diesel Exhaust Fluid (DEF) Indicator will illuminate if the vehicle is low on Diesel Exhaust Fluid (DEF). Refer to "Starting And Operating" for further information.

33. Transmission Fault Indicator — If Equipped

This light will illuminate (together with a message in the EVIC and a buzzer) to indicate a transmission fault or a clutch over temperature. Contact your authorized dealer if the message remains after restarting the engine.

ELECTRONIC VEHICLE INFORMATION CENTER (EVIC)

The Electronic Vehicle Information Center (EVIC) features a driver-interactive display that is located in the instrument cluster.

Electronic Vehicle Information Center (EVIC)

The system allows the driver to select information by pressing the following buttons mounted on the instrument panel to the left of the steering column:

EVIC Control Buttons

Refer to "Electronic Vehicle Information Center — If Equipped" in "Understanding Your Instrument Panel" in the Owner's Manual for further information.

EVIC — Displays

Diesel Particulate Filter (DPF) Messages

- "DPF cleaning: safely keep the vehicle moving" message on the EVIC + Engine emission filter lamp lighted solid indicates that the exhaust particulate filter loading is above the specified range and a regeneration is required.
- Safely Drive at Highway Speeds to Remedy (the procedure lasts roughly 15 minutes at speed of about 40 mph (60 km/h) and with engine speed above approximately 2000 rpm).
- When the exaust filter is overloaded, the MIL lamp will turn on and the "Service engine" message will display in the EVIC, ETC lamp blinks and the PCM limits the engine power to limit the likelihood of permanent damage to the after-treatment system. To correct this condition, it will be necessary to have your vehicle serviced by an authorized dealer.

CAUTION!

See your authorized dealer, as damage to the exhaust system could occur soon with continued operation.

Diesel Exhaust Fluid (DEF) Messages

- First low level warning will be given at around 500 miles, which is determined by current consumption rate. DEF Low level lamp icon and display message for refill will be displayed at dashboard. DEF Low level Lamp will stay on until a DEF refill is detected (minimum 1 gallon).
- To correct, this condition it will be necessary to fully refill the DEF tank.
- If refill is not performed, a second low level warning will be given about 200 miles are left to empty the DEF Tank.
- Display message of speed limitation with DEF Low Level lamp will be there on dashboard.
- The driver will be informed about the speed restriction also when about 150 and 125 miles are left to empty the DEF Tank.
- When 100 miles are left to empty, the DEF Tank, a continuous message display with chimes will be there on dashboard.
- When count down is over (0 mile left), continuous message "Speed limited at refuel or next engine start" is shown on EVIC. In this case, if an engine restart or a diesel refuel action in engine-on condition is performed, vehicle's speed will be limited to 5 mph and continuous message "Speed limited DEF low" is shown on EVIC.

- The restriction becomes inactive as soon as the DEF refill event is detected (minimum quantity to be added is 1 gallon).

Transmission Messages

Refer to “Instrument Cluster Messages” under “Automated Manual Transmission” in “Starting And Operating” for detailed information on transmission warning messages.

- Gear unavailable
- Shift not allowed
- Manual unavailable
- Automatic unavailable
- Reduce gear changes
- Press brake and try again
- Transmission temperature high
- Press brake pedal
- Press brake pedal startup delayed
- Shift to neutral
- Tow/Haul ON
- Service transmission

STARTING AND OPERATING

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STARTING PROCEDURES

Before starting your vehicle, adjust your seat, both inside and outside mirrors, and fasten your seat belts.

The starter is allowed to crank for up to 10-second intervals. Waiting a few minutes between such intervals will protect the starter from overheating.

WARNING!

- **Never leave children alone in a vehicle, or with access to an unlocked vehicle.**
- **Allowing children to be in a vehicle unattended is dangerous for a number of reasons. A child or others could be seriously or fatally injured. Children should be warned not to touch the parking brake, brake pedal or the shift lever.**

(Continued)

WARNING! *(Continued)*

- **Do not leave the Key Fob in or near the vehicle (or in a location accessible to children). A child could operate power windows, other controls, or move the vehicle.**

NOTE: Engine start up in very low ambient temperature could result in evident white smoke. This condition will disappear as the engine warms up.

CAUTION!

If the "Generic Warning Light" remains on and a "Service Fuel Filter" message displays, DO NOT START engine before you drain the water from the fuel filter housing to avoid engine damage. Please see your authorized dealer for draining the fuel filter/water separator and fuel filter replacement.

Normal Starting Procedure

The shift lever must be in the NEUTRAL (N) position, and the brake pedal must be pressed, to allow engine cranking. Place the shift lever in NEUTRAL (N) and apply the brake pedal BEFORE turning the key to the START/AVV position; otherwise, the engine will not crank and the key must be cycled OFF, then back on, before cranking is allowed.

Observe the instrument panel cluster lights when starting the engine.

NOTE: Normal starting of either a cold or a warm engine is obtained without pumping or pressing the accelerator pedal.

1. Press and hold the brake pedal.
2. Place the shift lever into the NEUTRAL (N) position while keeping the brake pedal depressed.
3. Turn the ignition switch to the ON/RUN/MAR position and watch the instrument panel cluster lights.

CAUTION!

If the "Generic Warning Light" remains on and a "Service Fuel Filter" message displays, DO NOT START engine before you drain the water from the fuel filter housing to avoid engine damage. Please see your authorized dealer for draining the fuel filter/water separator and fuel filter replacement.

4. After the Glow Plug light turns off, turn the ignition switch to the AVV (START) position to start the engine. Do not press the accelerator during starting.
5. If you wish to stop the cranking of the engine prior to the engine starting, release the ignition key so that it turns back to the ON/RUN position.

6. Check that the oil pressure warning light has turned off.
7. Release the parking brake.

To start the engine if the transmission is faulty, the "Delayed startup" procedure may be required.

NOTE: Not all Transmission Failures requires the "Delayed startup" Procedure, it depends on the type of failure.
(refer to "Instrument Cluster Messages" under "Automated Manual Transmission" in this section for further information):

- Begin with the key in the OFF position.
- Press and hold the brake pedal.
- Turn the key to the START/AVV position and hold it there for at least seven seconds with the brake depressed. The engine will start, and the transmission will operate in recovery mode (maximum gear permitted = 3rd, automatic mode not available). If the engine does not start, contact your authorized dealer.

Starting Fluids

The engine is equipped with a glow plug preheating system. If the instructions in this manual are followed, the engine should start in all conditions and no type of starting fluid should be used.

WARNING!

- **Do not leave children or animals inside parked vehicles in hot weather. Interior heat build up may cause serious injury or death.**

(Continued)

WARNING! ***(Continued)***

- **When leaving the vehicle, always remove the key fob and lock your vehicle.**
- **Never leave children alone in a vehicle, or with access to an unlocked vehicle. Allowing children to be in a vehicle unattended is dangerous for a number of reasons. A child or others could be seriously or fatally injured. Children should be warned not to touch the parking brake, brake pedal or the gear selector/shift lever. Do not leave the key fob in or near the vehicle (or in a location accessible to children), A child could operate power windows, other controls, or move the vehicle.**

Extreme Cold Weather

This vehicle has three heating elements; one engine block heater (a resistance heater installed in the water jacket of the engine) and two transmission heaters (one resistance heater installed under the oil reservoir of the hydraulic actuation system and one on the differential cover of the transmission). They require a 110–115 Volt AC electrical outlet with a grounded, three-wire extension cord. Their use is recommended for environments that routinely fall below -10°F (-23°C). They should be used when the vehicle has not been running overnight or longer periods and should be plugged in two hours prior to start. Their use is required for cold starts with temperatures under -17°F (-27°C).

NOTE: The engine is designed to work at an ambient temperature ranging from -22°F to + 122°F (-30°C to + 50C°). Rubber, pipes, timing belt cover and electronic devices are not designed to work out of this range.

In the case of LOW temperature after Starting, the Automated Manual Transmission may not be able to engage first gear. In this case a message ″Shift not allowed″ appears. In this situation use the engine block heater.

NOTE: The engine and transmission block heater cord is a factory installed option. If your vehicle is not equipped, heater cords are available from your authorized MOPAR® dealer.

- A 12 Volt heater built into the fuel filter housing aids in preventing fuel gelling. It is controlled by a built-in thermostat.
- A Diesel Pre-Heat system both improves engine starting and reduces the amount of white smoke generated by a warming engine.

NORMAL OPERATION

Observe the following when the diesel engine is operating.

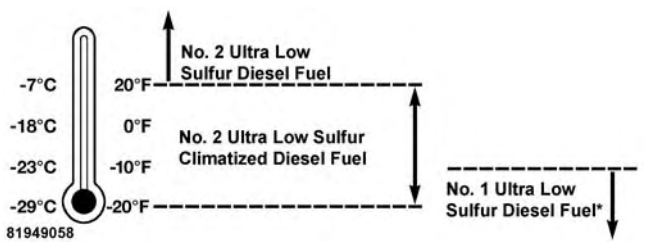
- All message center lights are off.
- Malfunction Indicator Light (MIL) is off.
- Generic Warning Light is off.
- Engine Oil Pressure telltale is not illuminated.

Cold Weather Precautions

Operation in ambient temperature below 32°F (0°C) may require special considerations. The following charts suggest these options:

Fuel Operating Range

NOTE: Use "Ultra Low Sulfur Diesel Fuels" **ONLY.**



Fuel Operating Range Chart

*No. 1 Ultra Low Sulfur Diesel Fuel should only be used where extended arctic conditions (-10°F/-23°C) exist.

NOTE:

- Use of Climatized Ultra Low Sulfur Diesel Fuel or Number 1 Ultra Low Sulfur Diesel Fuel results in a noticeable decrease in fuel economy.
- Climatized Ultra Low Sulfur Diesel Fuel is a blend of Number 2 Ultra Low Sulfur and Number 1 Ultra Low Sulfur Diesel Fuels which reduces the temperature at which wax crystals form in fuel.
- The fuel grade should be clearly marked on the pump at the fuel station.
- The engine requires the use of **"Ultra Low Sulfur Diesel Fuel"**. Use of incorrect fuel could result in engine and exhaust system damage. Refer to "Fuel Requirements" in "Starting And Operating" for further information.
- Commercially available fuel additives are not necessary for the proper operation of your diesel engine. However, if seasonably adjusted fuel is not available and you are operating below 20°F (-6°C), MOPAR Premium Diesel Fuel Treatment (or equivalent) may be beneficial to avoid fuel gelling.

Engine Oil Usage

Refer to "Maintenance Procedures" in "Maintaining Your Vehicle" for the correct engine oil viscosity.

Engine Warm-Up

Avoid full throttle operation when the engine is cold. When starting a cold engine, bring the engine up to operating speed slowly to allow the oil pressure to stabilize as the engine warms up.

If temperatures are below 32°F (0°C), operate the engine at moderate speeds for five minutes before full loads are applied.

Engine Idling

Avoid prolonged idling, long periods of idling may be harmful to your engine because combustion chamber temperatures can drop so low that the fuel may not burn completely. Incomplete combustion allows carbon and varnish to form on piston rings, cylinder head valves, and injector nozzles. Also, the unburned fuel can enter the crankcase, diluting the oil and causing rapid wear to the engine.

Stopping The Engine

Idle the engine a few minutes before routine shutdown. After full load operation, idle the engine three to five minutes before shutting it down. This idle period will allow the lubricating oil and coolant to carry excess heat away from the combustion chamber, bearings, internal components, and turbocharger. This is especially important for turbocharged diesel engines.

NOTE: Refer to the following chart for proper engine shutdown.

Driving Condition	Load	Turbo-charger Tempera-ture	Idle Time (min.) Be-fore Engine Shutdown
Stop and Go	Empty	Cool	Less than One
Stop and Go	Medium		One
Highway Speeds	Medium	Warm	Two
City Traffic	Maximum GCWR		Three
Highway Speeds	Maximum GCWR		Four
Uphill Grade	Maximum GCWR	Hot	Five

Cooling System Tips — Automated Manual Transmission

To reduce potential for engine and transmission overheating in high ambient temperature conditions, take the following actions:

- **City Driving** — When stopped, shift the transmission into NEUTRAL and increase engine idle speed.
- **Highway Driving** — Reduce your speed.
- **Up Steep Hills** — Select a lower transmission gear.
- **Air Conditioning** — Turn it off temporarily.

Do Not Operate The Engine With Low Oil Pressure

If the low oil pressure warning light turns on while driving, stop the vehicle and shut down the engine as soon as possible. A chime will sound when the light turns on.

NOTE: Do not operate the vehicle until the cause is corrected. This light does not show how much oil is in the engine. The engine oil level must be checked under the hood.

CAUTION!

If oil pressure falls to less than normal readings, shut the engine off immediately. Failure to do so could result in immediate and severe engine damage.

Do Not Operate The Engine With Failed Parts

All engine failures give some warning before the parts fail. Be on the alert for changes in performance, sounds, and visual evidence that the engine requires service. Some important clues are:

- engine misfiring or vibrating severely
- sudden loss of power
- unusual engine noises
- fuel, oil or coolant leaks
- sudden change, outside the normal operating range, in the engine operating temperature
- excessive smoke
- oil pressure drop

ENGINE BLOCK/TRANSMISSION HEATER — IF EQUIPPED

To ensure reliable starting/operating at these temperatures, use of an externally powered electric engine block/transmission heater (available from your authorized dealer) is recommended.

The engine block heater warms engine coolant and permits quicker starts in cold weather. The transmission heaters warm gearbox oil and hydraulic actuation system oil to operate in cold weather. Connect the heater cord to a ground-fault interrupter protected 110–115 Volt AC electrical outlet with a grounded, three-wire extension cord.

Its use is recommended for environments that routinely fall below -10°F (-23°C). It should be used when the vehicle has not been running overnight or longer periods

and should be plugged in two hours prior to start. Its use is required for cold starts with temperatures under -17°F (-27°C).

In the case of LOW temperature after Starting, the Automated Manual Transmission may not be able to engage first gear. In this case a message "Shift not allowed" appears. In this situation use the engine block heater.

WARNING!

Remember to disconnect the cord before driving. Damage to the 110–115 Volt electrical cord could cause electrocution.

NOTE: The block heater will require 110 Volts AC and 6.5 Amps to activate the heater element.

AUTOMATED MANUAL TRANSMISSION

WARNING!

You or others could be injured if you leave the vehicle unattended without fully applying the parking brake. The parking brake should always be applied when the driver is not in the vehicle.

The automated manual transmission is a conventional six-speed manual transmission with an electronically-controlled hydraulic system that controls the clutch and gear shifting. In forward gears, this transmission offers two modes of operation:

- **MANUAL (M) Mode** — where the driver controls the transmission shifting.
- **Automatic Mode (the DRIVE [D] position)** — where the electronic system controls the gear shifts.

NOTE: In either mode, there is no clutch pedal; the electronic system always controls the clutch operation.

Shift Lever/Transmission Gear Position

The transmission shift lever has REVERSE (R), NEUTRAL (N), DRIVE (D) and MANUAL (M) positions.

In the MANUAL (M) position, the lever can be toggled rearward or forward (+/-) to upshift or downshift the transmission to the next gear.

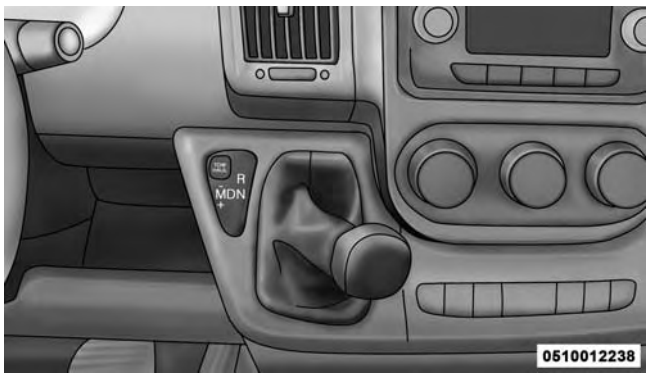
With the key ON and the engine OFF the shift lever can be moved freely from NEUTRAL (N) to DRIVE (D) or REVERSE (R), however the transmission will not actually shift unless the brake pedal is pressed. Therefore, the shift lever and the Electronic Vehicle Information Center (EVIC) display may not correspond to the actual transmission gear range. With the engine running transmission shifts are allowed even if the brake pedal is not pressed.

NOTE:

- The Automated Manual Transmission must be in NEUTRAL (N) to start the vehicle.
- The actual transmission gear range (R, N, D, 1, 2, 3, 4, 5, or 6) is displayed in the EVIC whenever the engine is running.
- When the key is turned OFF the transmission remains in its previous gear position, regardless of the shift lever position.
- When the key is turned ON (engine off), the EVIC display may indicate the shift lever position rather than the actual transmission gear position.

To shift the transmission to a particular gear range (with key ON/engine off), press and hold the brake pedal, move the shift lever to NEUTRAL (N), then move the shift lever to the desired position.

To drive, press the brake pedal and start the engine, then move the shift lever from NEUTRAL (N) to the DRIVE (D) position for automatic mode, the MANUAL (M) position for manual mode or the REVERSE (R) position.



Shift Lever

Only shift into DRIVE (D) or REVERSE (R) when the accelerator pedal is released and the vehicle is stopped. It is necessary to keep your foot on the brake pedal when shifting between these gears.

Gear Ranges

DO NOT race the engine when shifting from NEUTRAL into another gear range.

NOTE: After selecting any gear range, wait to allow the selected gear to engage before accelerating. This is especially important when the engine is cold.

REVERSE (R)

This range is for moving the vehicle backward. Shift into REVERSE only after the vehicle has come to a complete stop.

To engage REVERSE (R):

- Press and hold the brake pedal.
- Move the shift lever to the REVERSE (R) position.

NOTE: If the vehicle is moving, REVERSE engagement will only occur if the vehicle speed is less than 2 mph (3 km/h). Otherwise, a chime will sound, a "Shift not allowed" message will be displayed in the EVIC, the transmission will shift to NEUTRAL, and the REVERSE request must then be repeated by returning the lever to NEUTRAL then back into REVERSE one the vehicle has come to a complete stop.

- Release the brake pedal and gently press the accelerator pedal.

NEUTRAL (N)

Use this range when the vehicle is standing for prolonged periods with the engine running. The engine can only be started in this range. Apply the parking brake, shift the transmission into gear, and turn the engine OFF if you must leave the vehicle.

With the engine running, you may shift to NEUTRAL (N) at any time if the accelerator pedal is released. Attempting to shift to NEUTRAL when the accelerator pedal is depressed will display a "Shift not allowed" message in the EVIC, and will activate a continuous chime until the shift lever is returned to its previous position.

DRIVE (D) (Automatic Mode)

This range may be used for both city and highway driving. The transmission will shift gears automatically, based on vehicle speed, engine RPM and accelerator pedal position. There are some instances where this mode may be necessary (climbing slippery slopes).

NOTE: Do not press the brake and accelerator pedals at the same time. Use only one foot to operate the brake and accelerator.

To operate in DRIVE (D) (Automatic mode):

- Press and hold the brake pedal.

- Move the shift lever to the DRIVE (D) position.

NOTE: If the vehicle is moving, DRIVE engagement will only occur if the vehicle speed is less than 2 mph (3 km/h). Otherwise, a chime will sound, the transmission will shift to NEUTRAL, and the DRIVE request must then be repeated by returning the lever to NEUTRAL and then back into DRIVE once the speed has been sufficiently reduced.

- To drive, release the brake pedal and press the accelerator pedal.

When in DRIVE (D) the transmission will shift gears automatically, the Automated Manual Transmission uses a geartrain and clutch similar to a other manual transmissions. Therefore, you should become familiar with some of the normal operational characteristics of the Automated Manual Transmission:

- Engine torque will be interrupted briefly during the transmission upshifts, making these shifts more abrupt than with a typical automatic transmission. This is normal.
- Although transmission shifting is performed automatically, the vehicle will not ″creep″ when the brake pedal is released, and may in fact roll down on an incline. Leaving from a stop, the accelerator pedal must be pressed to transmit driving torque to the wheels.
- In Automatic Mode, the Automated Manual Transmission adapts the gear changing strategy evaluating the road condition such as slopes in the road.
- During low-speed driving conditions in first gear, vehicle momentum changes may feel exaggerated in response to changes in accelerator pedal position. This behavior is normal and is similar to other vehicles equipped with manual transmissions.

- At low speeds you may hear mechanical noises similar to a manual transmission as the transmission changes gears. These noises are normal and will not damage the transmission.
- Very aggressive driving may result in some clutch odor. A warning message will display in the EVIC if cool down actions are needed.
- Before and after the engine is started, you may hear a hydraulic pump for a short period of time. This noise is normal and will not damage the transmission.
- During extremely cold temperatures, the transmission will not operate if the oil temperature is -22°F (-30°C) or below. When transmission actuation oil temperature is lower than -22°F (-30°C), engine start will not be allowed by PCM. For this reason the block heater is recommended below -17°F (-27°C). Normal operation will resume once the transmission temperature has risen to a suitable level.

Manual (M) (Manual Mode)

In the MANUAL (M) position the driver is responsible for choosing the best gear ratio to engage, depending on driving conditions.

NOTE: Do not press the brake and accelerator pedals at the same time. Use only one foot to operate the brake and accelerator.

To operate in MANUAL (M) mode:

- Press and hold the brake pedal.
- Move the shift lever to the MANUAL (M) position. The current gear will be displayed in the EVIC.
- To drive, release the brake pedal and press the accelerator pedal.
- Tap the shift lever towards the (+) to engage a higher gear.

- Tap the shift lever towards the (–) position to engage a lower gear.
- The accelerator pedal need not be released during gear changes in MANUAL mode.
- You can shift between DRIVE (D) and MANUAL (M) positions at any speed, without taking your foot off the accelerator pedal.
- The system will shift down through the gears automatically (to prevent engine lugging) during closed-throttle decelerations.
- The transmission will automatically downshift to first gear when coming to a stop. After a stop, the driver should manually upshift (+) the transmission as the vehicle is accelerated.
- You can start out, from a stop, in first or second gear. Tap (+) (at a stop) to select second gear. Starting out in second gear may be helpful in snowy or icy conditions.
- The system will ignore shift commands that would cause engine lugging or overspeed. An audible beep will sound and a ″Shift not allowed″ message will display in the EVIC if an inappropriate gear is requested.

NOTE: Avoid keeping your hand on the lever when you are not requesting a gear shift.

Warning Buzzers

To provide awareness, a warning buzzer sounds when the vehicle is parked with the transmission in NEUTRAL (N) (the warning sounds when the ignition is turned to the off position).

The warning buzzer also sounds to indicate an inconsistent shift lever position (i.e. when the shift lever position does not match the actual transmission gear position).

This can occur, for example, if the driver moves the shift lever to request a transmission gear that is not allowed under the current operating conditions.

With the vehicle at a standstill, engine running and the shift lever in DRIVE (D), REVERSE (R), or MANUAL (M), the buzzer sounds and the transmission automatically shifts to NEUTRAL (N) when:

- The accelerator and/or brake pedals are not operated for at least three minutes.
- The brake pedal is pressed for longer than 10 minutes.
- The driver's door is opened and the accelerator and brake are not operated for at least 1.5 seconds.
- The driver selected gear does not match the engaged transmission gear.
- A fault has been detected in the transmission.

A Blinking Warning:

- The driver selected gear does not match the engaged transmission gear, the gear information in the cluster and on the bezel will blink.

When To Use TOW/HAUL Mode

When driving in hilly areas, towing a trailer, carrying a heavy load, etc., and frequent transmission shifting occurs, press the TOW/HAUL switch to activate TOW/HAUL mode. This will improve performance and reduce the potential for transmission overheating or failure due to excessive shifting. When operating in TOW/HAUL mode, the transmission shift calibration is modified to accommodate steep grades in the smoothest possible manner. TOW/HAUL mode is only applicable in the DRIVE (D) position.

Parking The Vehicle

WARNING!

You or others could be injured if you leave the vehicle unattended without fully applying the parking brake. The parking brake should always be applied when the driver is not in the vehicle.

To ensure proper parking performance, it is essential to engage MANUAL (1st) gear, DRIVE (D) or REVERSE (R) gear while your foot is on the brake pedal. Once MANUAL (1st) gear, DRIVE (D) or REVERSE (R) gear is displayed in the EVIC, turn the engine off and engage the parking brake. It is essential to wait until the gear engaged appears in the display before turning the engine off and releasing the brake pedal. Always remember to set your parking brake.

NOTE: NEVER leave your vehicle with the gearbox in NEUTRAL (N) without the parking brake engaged. Always remember to fully apply your parking brake. Always remember to set the parking brake when the "Set Park Brake" message is displayed.

General Warnings

- With the vehicle at a standstill and a gear engaged, keep the brake pedal pressed until you decide to drive away. Then release the brake and accelerate gradually.
- When parked for long periods with the engine running, it is advisable to place the transmission in NEUTRAL (N) and apply the parking brake.
- To avoid accelerated clutch wear, do not use the accelerator to keep the vehicle at a standstill (for

example, holding on a hill); the clutch could be damaged by overheating. Use the brake pedal instead and operate the accelerator only when you are ready to drive away.

- Only launch (from a stop) in second gear when you need more control on surfaces with low traction.
- Only shift between DRIVE (D) and REVERSE (R) gears when the vehicle has come to a stop and the brake pedal is pressed.
- Although very inadvisable, if the vehicle is unexpectedly allowed to roll downhill with the gearbox in NEUTRAL (N) the system will automatically engage the gear best suited to vehicle speed when a gear shift is requested to allow drive to be correctly transmitted to the wheels.
- If necessary, with the engine off, it is possible to engage 1st, REVERSE (R) or NEUTRAL (N) with the key in ON/RUN/MAR position and the brake pressed.
- During hill starts, accelerate immediately after releasing the parking brake or brake pedal to allow the engine to increase its rpm to a greater extent and overcome higher gradients with more torque.

Instrument Cluster Messages

Messages will be displayed in the instrument cluster to alert the driver when certain unusual conditions occur. These messages are described below.

MESSAGE	DESCRIPTION
Service Transmission	When the ignition key is turned to ON/RUN/MAR, the Transmission Fault Indicator light turns on and should go off after a few seconds. The Transmission Fault Indicator illuminates either steady or blinking (together with this message and a buzzer) to indicate a transmission fault. Contact your authorized dealer if the message continues to appear.
Reduce Gear Changes	This message indicates that the driver is operating the transmission incorrectly. Incorrect use (by the driver) could automatically activate a procedure for protecting the system. Contact you authorized dealer if the message continues to appear.
Manual Unavailable	MANUAL (M) mode is not available, due to a fault or other condition. Use the DRIVE (D) position to operate the vehicle. Contact your authorized dealer if the message continues to appear.

MESSAGE	DESCRIPTION
Automatic Unavailable	Automatic (DRIVE) mode is not available due to a fault or other condition. Use MANUAL (M) mode to operate the vehicle. Contact your authorized dealer if the message continues to appear.
Transmission Temperature High	This message appears, together with a buzzer, when the clutch overheats. In this situation, limit stop and go driving and gear shifts or if necessary stop the vehicle and turn the engine off to allow the clutch to cool. If the message continues to appear, contact your Authorized Dealer. To avoid clutch malfunction, do not use the accelerator to keep the vehicle at a standstill (for example holding on a hill); the clutch could be damaged by overheating. Use the brake pedal instead and operate the accelerator only when you are ready to drive away.

MESSAGE	DESCRIPTION
Press Brake Pedal / Startup Delayed	This messages appears when the key is first turned ON, if the brake pedal is not depressed and/or the shift lever is not in NEUTRAL (N). The shift lever must be in the NEUTRAL (N) position, and the brake pedal must be pressed, to allow engine cranking. Place the shift lever in NEUTRAL (N) and apply the brake pedal BEFORE turning the key to the START/AVV position; otherwise, the engine will not crank and the key must be cycled OFF, then back on, before cranking is allowed.
Gear Unavailable	This message appears, along with a warning buzzer: • When it is not possible to change gear due to a fault in the system. • When, due a fault in the system, it is only possible to engage 1st (1), 2nd (2), 3rd (3) or REVERSE (R). Contact your authorized dealer if the message continues to appear.
Shift Not Allowed	This message may appear when starting the engine at low temperature. In this case the Automated Manual transmission isn't able to engage first gear, in this situation either use the engine block/transmission heater or allow the engine to idle in NEUTRAL (N) until the transmission has warmed.

MESSAGE	DESCRIPTION
Press Brake And Try Again	This message appears accompanied, in some cases, by a warning buzzer, if you attempt to change gear with the vehicle parked without pressing the brake pedal. To shift the transmission (with key on/engine off), press and hold the brake pedal, move the shift lever to NEUTRAL (N), then move the shift lever to the desired position.
Shift To Neutral	This message appears, together with a warning buzzer, when the shift lever must be moved to the NEUTRAL (N) position. When the shift lever is moved to NEUTRAL (N) the message on the display should go off. Contact your authorized dealer if the message continues to appear.
Press Brake Pedal	This message is shown in the display together with an acoustic signal, when the brake pedal is not pressed during a starting attempt.
Press Brake Shift to N key to start	This message appears, after the door opening, to remind to Press the Brake pedal and shift the lever in N to permit the cranking.

Towing The Vehicle

- The manufacturer recommends towing your vehicle with all four wheels **OFF** the ground using a flatbed.
- Automated Manual transmission vehicles can also be flat towed (all four wheels on the ground) with the transmission in NEUTRAL. Ensure the transmission is in NEUTRAL (N) (by checking that the vehicle moves when pushed) and tow in the same way as a normal vehicle with a manual transmission.

CAUTION!

- **DO NOT flat tow any disabled vehicle if condition is related to the clutch, transmission or driveline. Additional damage to the drivetrain could result.**
- **Towing this vehicle in violation of the above requirements can cause severe engine, transmission,**

(Continued)

CAUTION! ***(Continued)***

or drivetrain damage. Damage from improper towing is not covered under the New Vehicle Limited Warranty.

If it is not possible to shift the transmission to NEUTRAL (N), do not flat tow the vehicle and contact your authorized dealer.

FUEL REQUIREMENTS

Use good quality diesel fuel from a reputable supplier in your vehicle. Federal law requires that you must fuel this vehicle with Ultra Low Sulfur Highway Diesel fuel (15 ppm Sulfur maximum) and prohibits the use of Low Sulfur Highway Diesel fuel (500 ppm Sulfur maximum) to avoid damage to the emissions control system.

For most year-round service, No. 2 diesel fuel meeting ASTM (formerly known as the American Society for Testing and Materials) specification D-975 Grade S15 will provide good performance.

If the vehicle is exposed to extreme cold (below 20°F or -7°C), or is required to operate at colder-than-normal conditions for prolonged periods, use climatized No. 2 diesel fuel or dilute the No. 2 diesel fuel with 50% No. 1 diesel fuel. This will provide better protection from fuel gelling or wax-plugging of the fuel filter.

WARNING!

Do not use alcohol or gasoline as a fuel blending agent. They can be unstable under certain conditions and hazardous or explosive when mixed with diesel fuel.

Diesel fuel is seldom completely free of water. If water is detected in the water separator while the engine is running or while the ignition switch is in the ON/RUN position, the "Generic Warning Light" will illuminate and the specific message, "Service Fuel Filter" will appear in the Electronic Vehicle Information Center (EVIC).

If this occurs you should stop the engine and drain the water from the filter housing.

NOTE: Please see your authorized dealer for draining the fuel/water separator and fuel filter replacement.

Purchasing good quality fuel and by following the cold weather advice above, fuel conditioners should not be required in your vehicle.

NOTE: If available in your area, a high cetane "premium" diesel fuel may offer improved cold-starting and warm-up performance.

CAUTION!

If the "Generic Warning Light" remains on and a "Service Fuel Filter" message displays, DO NOT START engine before you drain the water from the fuel filter housing to avoid engine damage. Please see your authorized dealer for draining the fuel filter/water separator and fuel filter replacement.

Fuel Specifications

This diesel engine has been developed to take advantage of the high energy content and generally lower cost No. 2 Ultra Low Sulfur diesel fuel or No. 2 Ultra Low Sulfur climatized diesel fuels.

NOTE:

- If you accidentally fill the fuel tank with gasoline on your diesel vehicle, do not start the engine. Damage to the engine and fuel system could occur. Please call your authorized dealer for service.
- A maximum blend of 5% biodiesel meeting ASTM specification D-975 may be used with your diesel engine without any adjustments to regular service schedules.
- Commercially available fuel additives are not necessary for the proper operation of your diesel engine.
- No. 1 Ultra Low Sulfur diesel fuel should only be used where extended arctic conditions (-10°F or -23°C) exist.

Biodiesel Fuel Requirements

A maximum blend of 5% biodiesel meeting ASTM specification D975 is recommended for use with your diesel engine. If frequent operation with Biodiesel blends that are between 6% and 20% (B6–B20) is desired, the maintenance schedule is subject to shorter intervals.

The oil and filter change along with fuel filter replacement is subject to shorter intervals when operating your engine on biodiesel greater than 5%. Do not use biodiesel greater than 20%.

For regular use of biodiesel blends between 6% and 20% (B6–B20) it is important that you understand and comply with these requirements. Refer to the "Maintenance Chart" in the "Maintenance Schedules" section for further direction.

CAUTION!

Failure to comply with Oil Change requirements for vehicles operating on biodiesel blends between 6% and 20% (B6–B20) will result in premature engine wear. Such wear is not covered by the New Vehicle Limited Warranty.

Biodiesel is a fuel produced from renewable resources typically derived from animal fat, rapeseed oil (Rapeseed Methyl Ester (RME) base), or soybean oil (Soy Methyl Ester (SME or SOME) base).

Biodiesel fuel has inherent limitations which require that you understand and adhere to the following requirements if you use blends of Biodiesel between 6% and 20% (B6–B20). There are no unique restrictions for the use of B5.

CAUTION!

Use of blends greater than 20% is not approved. Use of blends greater than 20% can result in engine damage. Such damage is not covered by the New Vehicle Limited Warranty.

Biodiesel Fuel Properties — Low Ambient Temperatures

Biodiesel fuel may gel or solidify at low ambient temperatures, which may pose problems for both storage and operation. Precautions can be necessary at low ambient temperatures, such as storing the fuel in a heated building or a heated storage tank, or using cold temperature additives.

Fuel Quality — Must Comply With ASTM Standards

The quality of Biodiesel fuel may vary widely. Only fuel produced by a BQ9000 supplier to the following specifications may be blended to meet Biodiesel blend B6 – B20 fuel meeting ASTM specification D-7467:

- Petrodiesel fuel meeting ASTM specification D-975 and Biodiesel fuel (B100) meeting ASTM specification D-6751

Fuel Oxidation Stability — Must Use Fuel Within Six Months Of Manufacture

Biodiesel fuel has poor oxidation stability which can result in long term storage problems. Fuel produced to approved ASTM standards, if stored properly, provides for protection against fuel oxidation for up to six months.

Fuel Water Separation — Must Use MOPAR Approved Fuel Filter Elements

Biodiesel fuel has a natural affinity to water and water accelerates microbial growth. Your MOPAR filtration system is designed to provide adequate fuel water separation capabilities.

Fuel In Oil Dilution — Must Adhere To Required Oil Change

Fuel dilution of lubricating oil has been observed with the use of biodiesel fuel. Fuel in oil must not exceed 5%. To ensure this limit is met your oil change interval must be maintained with in the suggested schedule.

The regular use of biofuels greater than 5% and less than 20% require intervals shorter than the outlined 18,500 miles (29 773 km) and must not exceed the suggested schedule. When routinely operating on biofuels greater that 5% and less than 20%, oil and filter replacement intervals must not exceed 10,000 miles (16 093 km) or 6 months, which ever comes first.

Biodiesel Fuel Filter Change Intervals

The use of biofuels require intervals shorter than the outlined 30,000 miles (48 280 km) and must not exceed the suggested schedule. When operating on biofuels greater that 5% and less than 20%, fuel filter replacement intervals must not exceed 20,000 Miles (40 233 km).

NOTE:

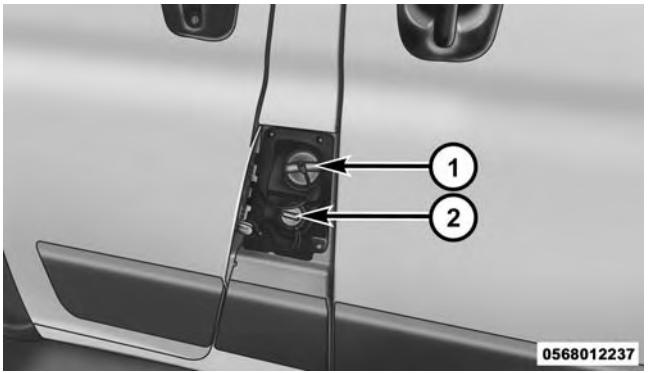
- Under no circumstances should oil change intervals exceed 10,000 miles (16 093 km) or 6 months, if regular operation occurs with greater than 5% and less than 20% biodiesel blends.
- Under no circumstances should fuel filter intervals exceed 20,000 miles (40 233 km), if regular operation occurs with greater than 5% and less than 20% biodiesel blends.

CAUTION!

Failure to comply with these Oil Change and fuel filter requirements for vehicles operating on biodiesel blends up to B20 may result in premature engine wear. Such wear is not covered by the New Vehicle Limited Warranty. The engine may suffer severe damage if operated with concentrations of biodiesel higher than 20%.

ADDING FUEL

The fuel cap is located behind the fuel filler door on the left side of the vehicle. If the fuel cap is lost or damaged, be sure the replacement cap is for use with this vehicle.



1 — Diesel Fuel Fill Location
2 — Diesel Exhaust Fluid (DEF) Fill Location

CAUTION!

To avoid fuel spillage and overfilling, do not "top off" the fuel tank after filling.

NOTE:

- When the fuel nozzle "clicks" or shuts off, the fuel tank is full.
- Tighten the fuel filler cap until you hear a "clicking" sound. This is an indication that the fuel filler cap is properly tightened.
- Make sure that the fuel filler cap is tightened each time the vehicle is refueled.

WARNING!

A fire may result if fuel is pumped into a portable container that is on a truck bed. You could be burned. Always place fuel containers on the ground while filling.

Avoid Using Contaminated Fuel

Fuel that is contaminated by water or dirt can cause severe damage to the engine fuel system. Proper maintenance of the engine fuel filter and fuel tank is essential. Refer to "Maintenance Procedures" in "Maintaining Your Vehicle" for further information.

Bulk Fuel Storage — Diesel Fuel

If you store quantities of fuel, good maintenance of the stored fuel is also essential. Fuel contaminated with water will promote the growth of "microbes." These microbes form "slime" that will clog the fuel filtration system and lines. Drain condensation from the supply tank and change the line filter on a regular basis.

NOTE: When a diesel engine is allowed to run out of fuel, air is pulled into the fuel system.

If the vehicle will not start, refer to "Maintenance Procedures/Priming If The Engine Has Run Out Of Fuel" in "Maintaining Your Vehicle" for further information.

WARNING!

Do not open the high pressure fuel system with the engine running. Engine operation causes high fuel pressure. High pressure fuel spray can cause serious injury or death.

Diesel Exhaust Fluid Storage

Diesel Exhaust Fluid (DEF) is considered a very stable product with a long shelf life. If DEF is kept in temperatures between 10° and 90°F (-12° and 32°C), it will last a minimum of one year.

DEF is subject to freezing at the lowest temperatures. For example, DEF may freeze at temperatures at or below 12° F (-11° C). The system has been designed to operate in this environment.

NOTE: When working with DEF, it is important to know that:

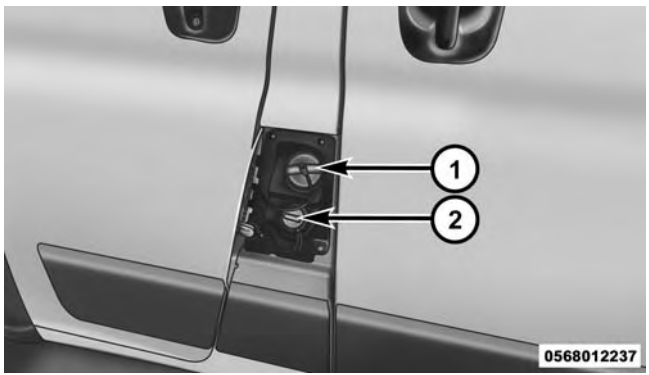
- Any containers or parts that come into contact with DEF must be DEF compatible (plastic or stainless steel). Copper, brass, aluminum, iron or non-stainless steel should be avoided as they are subject to corrosion by DEF.
- If DEF is spilled, it should be wiped up completely.

Adding Diesel Exhaust Fluid

NOTE: Driving conditions (altitude, vehicle speed, load, etc.) will effect the amount of DEF that is used by your vehicle.

DEF Fill Procedure

NOTE: Refer to "Fluids, Lubricants, And Genuine Parts" in "Maintaining Your Vehicle" for the correct fluid type.



1 — Diesel Fuel Fill Location
2 — Diesel Exhaust Fluid (DEF) Fill Location

1. Remove cap from DEF filler neck (located on drivers side of the vehicle in the fuel door).
2. Insert DEF fill adapter/nozzle into DEF tank filler neck.

CAUTION!

- **To avoid DEF spillage, and possible damage to the DEF tank from overfilling, do not "top off" the DEF tank after filling.**
- **DO NOT OVERFILL. DEF will freeze below 12°F (-11°C). The DEF system is designed to work in temperatures below the DEF freezing point, however, if the tank is overfilled and freezes, the system could be damaged.**
- **When DEF is spilled, clean the area immediately with water and use an absorbent material to soak up the spills on the ground.**

(Continued)

CAUTION! ***(Continued)***

- **Do not attempt to start your engine if DEF is accidentally added to the diesel fuel tank as it can result in severe damage to your engine, including but not limited to failure of the fuel pump and injectors.**
- **Never add anything other than DEF to the tank – especially any form of hydrocarbon such as diesel fuel, fuel system additives, gasoline, or any other petroleum-based product. Even a very small amount of these (less than 100 parts per million or less than 1 oz. per 78 gallons) will contaminate the entire DEF system and will require replacement. If owners use a container, funnel or nozzle when refilling the tank, it should either be new or one that is has only been used for adding DEF. MOPAR provides an attachable nozzle with its DEF for this purpose.**

3. Stop filling the DEF tank immediately when any of the following happen:
   - DEF stops flowing from the fill bottle into the DEF tank.
   - DEF splashes out the filler neck.
   - DEF pump nozzle automatically shuts off.
4. Reinstall cap onto DEF filler neck.

Filling The Def Tank In Cold Climates

Since DEF will begin to freeze at 12°F (-11°C), your vehicle is equipped with an automatic DEF heating system. This allows the DEF injection system to operate properly at temperatures below 12°F (-11°C). If your vehicle is not in operation for an extended period of time with temperatures below 12°F (-11°C), the DEF in the tank may freeze. If the tank is overfilled and freezes, it could be damaged. Therefore, do not overfill the DEF tank.

Extra care should be taken when filling with portable containers to avoid overfilling.

DIESEL EXHAUST FLUID

Your vehicle is equipped with a Selective Catalytic Reduction system to meet the very stringent diesel emissions standards required by the Environmental Protection Agency.

The purpose of the SCR system is to reduce levels of NOx (oxides of nitrogen emitted from engines) that are harmful to our health and the environment to a near-zero level. Small quantities of Diesel Exhaust Fluid (DEF) is injected into the exhaust upstream of a catalyst where, when vaporized, it converts smog-forming nitrogen oxides (NOx) into harmless nitrogen (N2) and water vapor (H2O), two natural components of the air we breathe. You can operate with the comfort that your vehicle is contributing to a cleaner, healthier world environment for this and generations to come.

System Overview

This vehicle is equipped with a Diesel Exhaust Fluid (DEF) injection system and a Selective Catalytic Reduction (SCR) catalyst to meet the emission requirements.

The DEF injection system consists of the following components:

- DEF tank
- DEF pump
- DEF injector
- Electronically-heated DEF lines
- NOx sensors
- Temperature sensors
- SCR catalyst

The DEF injection system and SCR catalyst enable the achievement of diesel emissions requirements; while maintaining outstanding fuel economy, drivability, torque and power ratings.

Refer to "Electronic Vehicle Information Center (EVIC)" in "Understanding Your Instrument Panel" for system messages and warnings.

NOTE:

- Your vehicle is equipped with a DEF injection system. You may occasionally hear an audible clicking noise from under the vehicle at a stop. This is normal operation.
- The DEF pump will run for a period of time after engine shutdown to purge the DEF system. This is normal operation and may be audible from under the vehicle.

TRAILER TOWING

In this section you will find safety tips and information on limits to the type of towing you can reasonably do with your vehicle. Before towing a trailer, carefully review this information to tow your load as efficiently and safely as possible.

To maintain the New Vehicle Limited Warranty coverage, follow the requirements and recommendations in this manual concerning vehicles used for trailer towing.

Common Towing Definitions

The following trailer towing related definitions will assist you in understanding the following information:

Gross Vehicle Weight Rating (GVWR)

The GVWR is the total allowable weight of your vehicle. This includes driver, passengers, cargo and tongue weight. The total load must be limited so that you do not

exceed the GVWR. Refer to "Vehicle Loading/Vehicle Certification Label" in "Starting And Operating" for further information.

Gross Trailer Weight (GTW)

The GTW is the weight of the trailer plus the weight of all cargo, consumables and equipment (permanent or temporary) loaded in or on the trailer in its "loaded and ready for operation" condition.

The recommended way to measure GTW is to put your fully loaded trailer on a vehicle scale. The entire weight of the trailer must be supported by the scale.

Gross Axle Weight Rating (GAWR)

The GAWR is the maximum capacity of the front and rear axles. Distribute the load over the front and rear axles evenly. Make sure that you do not exceed either front or rear GAWR. Refer to "Vehicle Loading/Vehicle Certification Label" in "Starting And Operating" for further information.

WARNING!

It is important that you do not exceed the maximum front or rear GAWR. A dangerous driving condition can result if either rating is exceeded. You could lose control of the vehicle and have a collision.

Tongue Weight (TW)

The tongue weight is the downward force exerted on the hitch ball by the trailer. The recommended tongue weight is 10% to 15% of the vehicle's GTW for a conventional hitch. You must consider this as part of the load on your vehicle.

Frontal Area

The frontal area is the maximum height multiplied by the maximum width of the front of a trailer.

Trailer Sway Control

The trailer sway control can be a mechanical telescoping link that can be installed between the hitch receiver and the trailer tongue that typically provides adjustable friction associated with the telescoping motion to dampen any unwanted trailer swaying motions while traveling.

If equipped, the electronic Trailer Sway Control (TSC) recognizes a swaying trailer and automatically applies individual wheel brakes and/or reduces engine power to attempt to eliminate the trailer sway.

Weight-Carrying Hitch

A weight-carrying hitch supports the trailer tongue weight, just as if it were luggage located at a hitch ball or some other connecting point of the vehicle. These kinds of hitches are the most popular on the market today and they are commonly used to tow small and medium sized trailers.

Weight-Distributing Hitch

A weight-distributing system works by applying leverage through spring (load) bars. They are typically used for heavier loads to distribute trailer tongue weight to the tow vehicle's front axle and the trailer axle(s). When used in accordance with the manufacturer's directions, it provides for a more level ride, offering more consistent steering and brake control thereby enhancing towing safety. The addition of a friction/hydraulic sway control also dampens sway caused by traffic and crosswinds and contributes positively to tow vehicle and trailer stability.

Trailer sway control and a weight distributing (load equalizing) hitch are recommended for heavier Tongue Weights (TW) and may be required depending on vehicle and trailer configuration/loading to comply with Gross Axle Weight Rating (GAWR) requirements.

WARNING!

- **An improperly adjusted Weight Distributing Hitch system may reduce handling, stability, braking performance, and could result in a collision.**
- **Weight Distributing Systems may not be compatible with Surge Brake Couplers. Consult with your hitch and trailer manufacturer or a reputable Recreational Vehicle dealer for additional information.**

Trailer Hitch Classification

The following chart provides the industry standard for the maximum trailer weight a given trailer hitch class can tow and should be used to assist you in selecting the correct trailer hitch for your intended towing condition.

Trailer Hitch Classification Definitions	
Class	**Max. Trailer Hitch Industry Standards**
Class I - Light Duty	2,000 lbs (907 kg)
Class II - Medium Duty	3,500 lbs (1 587 kg)
Class III - Heavy Duty	5,000 lbs (2 268 kg)
Class IV - Extra Heavy Duty	10,000 lbs (4 540 kg)
Refer to the "Trailer Towing Weights (Maximum Trailer Weight Ratings)" chart for the Maximum Gross Trailer Weight (GTW) towable for your given drivetrain.	
All trailer hitches should be professionally installed on your vehicle.	

Trailer Towing Weights (Maximum Trailer Weight Ratings)

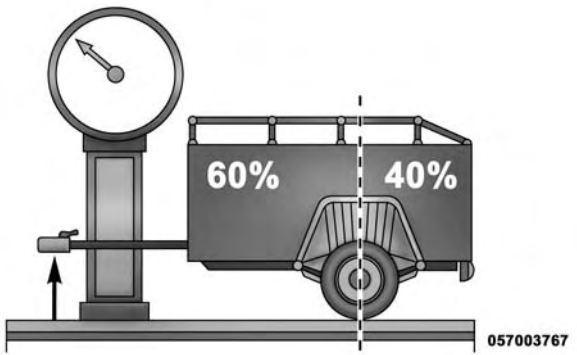
NOTE: For additional trailer towing information (maximum trailer weight ratings) refer to the following website addresses:

- **ramtrucks.com/en/towing_guide/**
- **ramtruck.ca (Canada)**
- **rambodybuilder.com**

Trailer And Tongue Weight

Always load a trailer with 60% to 65% of the weight in the front of the trailer. This places 10% to 15% of the Gross Trailer Weight (GTW) on the tow hitch of your vehicle. Loads balanced over the wheels or heavier in the rear can cause the trailer to sway **severely** side to side which will cause loss of control of the vehicle and trailer. Failure to load trailers heavier in front is the cause of many trailer collisions.

Never exceed the maximum tongue weight stamped on your bumper or trailer hitch.



Consider the following items when computing the weight on the rear axle of the vehicle:

- The tongue weight of the trailer.
- The weight of any other type of cargo or equipment put in or on your vehicle.
- The weight of the driver and all passengers.

NOTE: Remember that everything put into or on the trailer adds to the load on your vehicle. Also, additional factory-installed options or dealer-installed options must be considered as part of the total load on your vehicle. Refer to the "Tire And Loading Information" placard for the maximum combined weight of occupants and cargo for your vehicle.

Towing Requirements

To promote proper break-in of your new vehicle drivetrain components, the following guidelines are recommended.

CAUTION!

- **Do not tow a trailer at all during the first 500 miles (805 km) the new vehicle is driven. The engine, axle or other parts could be damaged.**
- **Then, during the first 500 miles (805 km) that a trailer is towed, do not drive over 50 mph (80 km/h) and do not make starts at full throttle. This helps the engine and other parts of the vehicle wear in at the heavier loads.**

Perform the maintenance listed in the "Maintenance Schedule." Refer to "Maintenance Schedule" for the proper maintenance intervals. When towing a trailer, never exceed the GAWR or GCWR ratings.

WARNING!

Improper towing can lead to a collision. Follow these guidelines to make your trailer towing as safe as possible:

- **Make certain that the load is secured in the trailer and will not shift during travel. When trailering cargo that is not fully secured, dynamic load shifts can occur that may be difficult for the driver to control. You could lose control of your vehicle and have a collision.**
- **When hauling cargo or towing a trailer, do not overload your vehicle or trailer. Overloading can**

(Continued)

WARNING! *(Continued)*

cause a loss of control, poor performance or damage to brakes, axle, engine, transmission, steering, suspension, chassis structure or tires.

- **Safety chains must always be used between your vehicle and trailer. Always connect the chains to the hook retainers of the vehicle hitch. Cross the chains under the trailer tongue and allow enough slack for turning corners.**
- **Vehicles with trailers should not be parked on a grade. When parking, apply the parking brake on the tow vehicle. For four-wheel drive vehicles, make sure the transfer case is not in NEUTRAL. Always, block or "chock" the trailer wheels.**
- **GCWR must not be exceeded.**

(Continued)

WARNING! ***(Continued)***

Total weight must be distributed between the tow vehicle and the trailer such that the following four ratings are not exceeded:

1. **GVWR**
2. **GTW**
3. **GAWR**
4. **Tongue weight rating for the trailer hitch utilized**

Towing Requirements — Tires

- Do not attempt to tow a trailer while using a compact spare tire.
- Proper tire inflation pressures are essential to the safe and satisfactory operation of your vehicle. Refer to "Tires – General Information" in "Starting And Operating" for proper tire inflation procedures.
- Check the trailer tires for proper tire inflation pressures before trailer usage.
- Check for signs of tire wear or visible tire damage before towing a trailer. Refer to "Tires – General Information" in "Starting And Operating" for the proper inspection procedure.
- When replacing tires, refer to "Tires – General Information" in "Starting And Operating" for the proper tire replacement procedures. Replacing tires with a higher load carrying capacity will not increase the vehicle's GVWR and GAWR limits.

Towing Requirements — Trailer Brakes

- Do **not** interconnect the hydraulic brake system or vacuum system of your vehicle with that of the trailer. This could cause inadequate braking and possible personal injury.

- An electronically actuated trailer brake controller is required when towing a trailer with electronically actuated brakes. When towing a trailer equipped with a hydraulic surge actuated brake system, an electronic brake controller is not required.
- Trailer brakes are recommended for trailers over 1,000 lbs (454 kg) and required for trailers in excess of 2,000 lbs (907 kg).

WARNING!

- **Do not connect trailer brakes to your vehicle's hydraulic brake lines. It can overload your brake system and cause it to fail. You might not have brakes when you need them and could have a collision.**

(Continued)

WARNING! *(Continued)*

Towing any trailer will increase your stopping distance. When towing you should allow for additional space between your vehicle and the vehicle in front of you. Failure to do so could result in a collision.

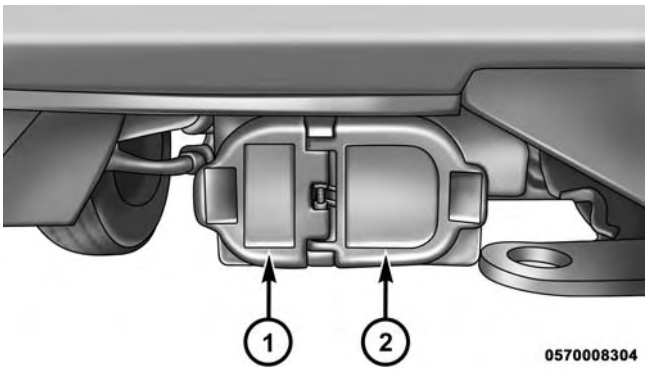
CAUTION!

If the trailer weighs more than 1,000 lbs (454 kg) loaded, it should have its own brakes and they should be of adequate capacity. Failure to do this could lead to accelerated brake lining wear, higher brake pedal effort, and longer stopping distances.

Towing Requirements — Trailer Lights And Wiring

Whenever you pull a trailer, regardless of the trailer size, stoplights and turn signals on the trailer are required for motoring safety.

The Trailer Tow Package may include a four- and seven-pin wiring harness. Use a factory approved trailer harness and connector.

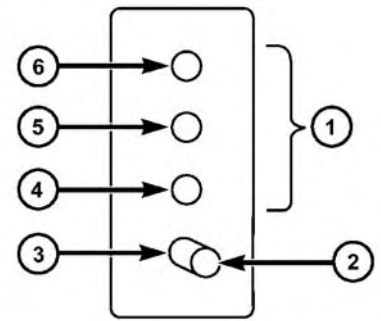


Trailer Electrical Connector Location

1 — Four-Pin Connector Location
2 — Seven-Pin Connector Location

NOTE: Do not cut or splice wiring into the vehicles wiring harness.

The electrical connections are all complete to the vehicle but you must mate the harness to a trailer connector. Refer to the following illustrations.



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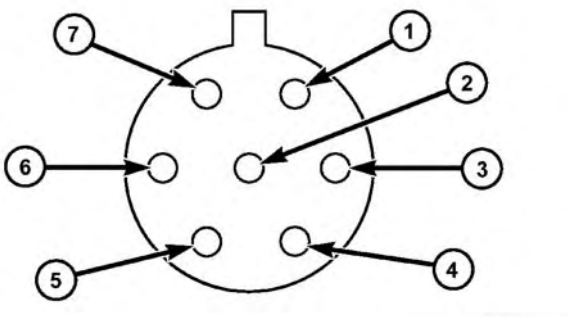
Four-Pin Connector

1 — Female Pins
2 — Male Pin
3 — Ground
4 — Park
5 — Left Stop/Turn
6 — Right Stop/Turn



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Seven-Pin Connector

1 — Battery
2 — Backup Lamps
3 — Right Stop/Turn
4 — Electric Brakes
5 — Ground
6 — Left Stop/Turn
7 — Running Lamps

Towing Tips

Before setting out on a trip, practice turning, stopping, and backing up the trailer in an area located away from heavy traffic.

Automated Manual Transmission

DRIVE (D) (automatic mode) can be used when towing. If frequent shifting occur while in DRIVE, select TOW/HAUL mode, or change to MANUAL (M) mode and manually select a lower gear.

NOTE: Using a lower gear while operating the vehicle under heavy loading conditions will improve performance and extend transmission life by reducing excessive shifting and heat build up. This action will also provide better engine braking.

Tow/Haul Mode

To reduce the potential for transmission overheating, activate the "TOW/HAUL" feature when using DRIVE (D) (automatic mode) in hilly areas.

Electronic Speed Control — If Equipped

- Do not use in hilly terrain or with heavy loads.
- When using the speed control, if you experience speed drops greater than 10 mph (16 km/h), disengage until you can get back to cruising speed.
- Use speed control in flat terrain and with light loads to maximize fuel efficiency.

Cooling System

To reduce potential for engine and transmission overheating, take the following actions:

City Driving

When stopped for short periods, shift the transmission into NEUTRAL and increase engine idle speed.

Highway Driving

Reduce speed.

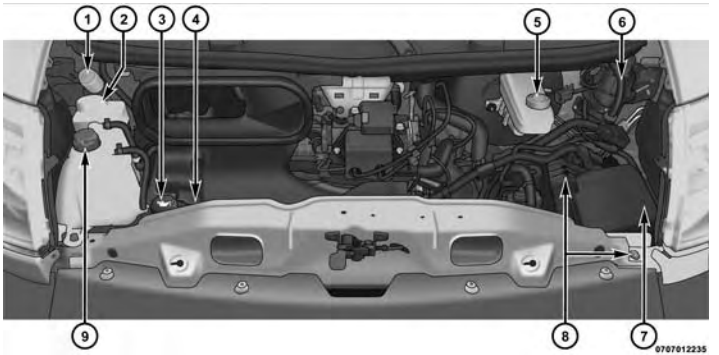
Air Conditioning

Turn off temporarily.

MAINTAINING YOUR VEHICLE

CONTENTS

ENGINE COMPARTMENT — 3.0L DIESEL



1 — Washer Solvent Reservoir
2 — Power Steering Reservoir
3 — Engine Oil Fill
4 — Engine Oil Dipstick
5 — Brake Fluid Reservoir
6 — Fuel Filter Housing Location
7 — Front Power Distribution Center (Fuses)
8 — Jump Starting Location
9 — Coolant Reservoir

MAINTENANCE PROCEDURES

The pages that follow contain the **required** maintenance services determined by the engineers who designed your vehicle.

Besides those maintenance items specified in the fixed maintenance schedule, there are other components which may require servicing or replacement in the future.

CAUTION!

- **Failure to properly maintain your vehicle or perform repairs and service when necessary could result in more costly repairs, damage to other components or negatively impact vehicle performance. Immediately have potential malfunctions examined by an authorized dealership or qualified repair center.**

(Continued)

CAUTION! *(Continued)*

- **Your vehicle has been built with improved fluids that protect the performance and durability of your vehicle and also allow extended maintenance intervals. Do not use chemical flushes in these components as the chemicals can damage your engine, transmission, power steering or air conditioning. Such damage is not covered by the New Vehicle Limited Warranty. If a flush is needed because of component malfunction, use only the specified fluid for the flushing procedure.**

Engine Oil

Engine Oil Selection

For best performance and maximum protection under all types of operating conditions, the manufacturer recommends engine oils that meet the requirements of FCA US Material Standard MS-11106, and that are approved to ACEA C3.

Checking Oil Level

To assure proper lubrication of your vehicle's engine, the engine oil must be maintained at the correct level. Check the oil level at regular intervals. The best time to check the oil level is before starting the engine after it has been parked overnight. When checking oil after operating the engine, first ensure the engine is at full operating temperature, then wait for 30 minutes after engine shutdown to check the oil.

Engine Oil Dipstick

1 — Maximum Notch
2 — Minimum Notch

Checking the oil while the vehicle is on level ground will improve the accuracy of the oil level readings. Add oil

only when the level on the dipstick is below the minimum notch. The total capacity from the minimum notch to the maximum notch is 1.7 quarts (1.6 liters).

CAUTION!

Overfilling or underfilling the crankcase will cause oil aeration or loss of oil pressure. This could damage your engine.

NOTE: It is possible for your oil level to be slightly higher than a previous check. This would be due to diesel fuel that may temporarily be in the crankcase due to operation of the diesel particulate filter regeneration strategy. This fuel will evaporate out under normal operation.

Never operate the engine with oil level below the minimum notch or above the upper maximum notch.

Change Engine Oil

Refer to the "Maintenance Schedule" for the proper maintenance intervals.

Engine Oil Viscosity (SAE Grade)

CAUTION!

Your vehicle is equipped with an advanced technology Diesel Engine and an emission device designed to limit Diesel Particulate Emissions from being released into the atmosphere. The durability of your engine and life expectancy of this diesel particulate filter emission device is highly dependent on the use of the correct engine oil.

Only use ACEA C3 SAE 5W-30 Synthetic Low Ash engine oil meeting FCA US Material Standard MS-11106 or Pennzoil Ultra Euro L full synthetic 5W-30 motor oil,

which is recommended for all operating temperatures. This engine oil improves low temperature starting and vehicle fuel economy.

Materials Added To Engine Oil

The manufacturer strongly recommends against the addition of any additives (other than leak detection dyes) to the engine oil. Engine oil is an engineered product and its performance may be impaired by supplemental additives.

Engine Oil Filter

Refer to "Fluids, Lubricants, And Genuine Parts" in "Maintaining Your Vehicle" for further information. The engine oil filter should be changed at every engine oil change.

Disposing Of Used Engine Oil And Oil Filters

Care should be taken in disposing of used engine oil and oil filters from your vehicle. Used oil and oil filters, indiscriminately discarded, can present a problem to the environment. Contact your authorized dealer, service station or governmental agency for advice on how and where used oil and oil filters can be safely discarded in your area.

Engine Air Cleaner Filter

Refer to the "Maintenance Schedule" for the proper maintenance intervals.

CAUTION!

All air entering the engine intake must be filtered. The abrasive particles in unfiltered air will cause rapid wear to engine components.

WARNING!

The air induction system (air cleaner, hoses, etc.) provides a measure of protection. Do not remove the air induction system (air cleaner, hoses, etc.) unless such removal is necessary for repair or maintenance. Make sure that no one is near the engine compartment before starting the vehicle with the air induction system (air cleaner, hoses, etc.) removed. Failure to do so can result in serious personal injury.

CAUTION!

Many aftermarket performance air filter elements do not adequately filter the air entering the engine. Use of such filters can severely damage your engine.

Engine Air Cleaner Filter Selection

The quality of replacement engine air cleaner filters varies considerably. Only high quality filters should be used to assure most efficient service. MOPAR® engine air cleaner filters are a high quality filter and are recommended.

Draining Fuel Filter/Water Separator

If water is detected in the water separator while the engine is running or while the ignition switch is in the ON/RUN position, the "Generic Warning Light" will illuminate and the specific message, "Service Fuel Filter" will appear in the EVIC. At this point you should stop the engine and drain the water from the filter housing.

Please see your authorized dealer for draining the fuel/water separator and fuel filter replacement.

NOTE: If the "Generic Warning Light" comes on, a Service Fuel Filter message displays and a single chime is heard with the ignition in the ON/RUN position or while driving, there may there may be a problem with your water separator wiring or sensor.

Please see your authorized dealer for service.

CAUTION!

If the "Generic Warning Lamp" remains on and a Service Fuel Filter message displays, DO NOT START engine before you drain the water from the fuel filter to avoid engine damage.

Fuel Filter Replacement

Please see your authorized dealer for fuel filter replacement.

Priming If The Engine Has Run Out Of Fuel

WARNING!

- **Do not open the high pressure fuel system with the engine running. Engine operation causes high fuel pressure. High pressure fuel spray can cause serious injury or death.**
- **Do not drain the fuel filter/water separator when the engine is running. Fuel and fuel vapors may escape causing as fire that can result in serious injury or death.**

1. Add a substantial amount of fuel to the tank, approximately 2 to 5 gal (8L to 19L).
2. Turn the ignition to the ON/RUN position. This will activate the in-tank fuel pump for approximately 30 seconds. Repeat this process twice.

3. Start the engine using the "Normal Starting" procedure. Refer to "Starting Procedures" in "Starting And Operating" for further information.

CAUTION!

The starter motor will engage for approximately 30 seconds at a time. Allow two minutes between cranking intervals.

NOTE: The engine may run rough until the air is forced from all the fuel lines.

WARNING!

Do not use alcohol or gasoline as a fuel blending agent. They can be unstable under certain conditions and be hazardous or explosive when mixed with diesel fuel.

CAUTION!

Due to lack of lubricants in alcohol or gasoline, the use of these fuels can cause damage to the fuel system.

NOTE:

- We recommend you use a blend of up to 5% biodiesel, that meets ASTM specification D-975 with your diesel engine. Use of biodiesel mixture in excess of 20% can negatively impact the fuel filter's ability to separate water from the fuel, resulting in high pressure fuel system corrosion or damage.
- In addition, commercially available fuel additives are not necessary for the proper operation of your diesel engine.

Intervention Regeneration Strategy — Message Process Flow

This engine meets all required diesel engine emissions standards. To achieve these emissions standards, your vehicle is equipped with a state-of-the-art engine and exhaust system. These systems are seamlessly integrated into your vehicle and managed by the Powertrain Control Module (PCM). The PCM manages engine combustion to allow the exhaust system's catalyst to trap and burn Particulate Matter (PM) pollutants, with no input or interaction on your part.

Additionally, your vehicle has the ability to alert you to additional maintenance required on your vehicle or engine.

Refer to "Electronic Vehicle Information Center (EVIC)" in "Understanding Your Instrument Panel" for further information.

WARNING!

A hot exhaust system can start a fire if you park over materials that can burn. Such materials might be grass or leaves coming into contact with your exhaust system. Do not park or operate your vehicle in areas where your exhaust system can contact anything that can burn.

Maintenance-Free Batteries

Your vehicle is equipped with a maintenance-free battery. The top of the maintenance-free battery is permanently sealed. You will never have to add water, nor is periodic maintenance required.

CAUTION!

It is essential when replacing the cables on the battery that the positive cable is attached to the positive post and the negative cable is attached to the negative post. Battery posts are marked (+) positive and negative (-) and are identified on the battery case. Also, if a "fast charger" is used while the battery is in vehicle, disconnect both vehicle battery cables before connecting the charger to the battery. Do not use a "fast charger" to provide starting voltage.

WARNING!

Battery posts, terminals, and related accessories contain lead and lead compounds. Always wash hands after handling the battery.

Cooling System

WARNING!

You or others can be badly burned by hot engine coolant (antifreeze) or steam from your radiator. If you see or hear steam coming from under the hood, do not open the hood until the radiator has had time to cool. Never try to open a cooling system pressure cap when the radiator is hot.

Engine Coolant Checks

Check the engine coolant (antifreeze) protection every 12 months (before the onset of freezing weather, where applicable). If the engine coolant (antifreeze) is dirty or rusty in appearance, the system should be drained, flushed and refilled with fresh coolant. Check the front of the A/C condenser (if equipped) or radiator for any accumulation of bugs, leaves, etc. If dirty, clean by gently

spraying water from a garden hose vertically down the face of the A/C condenser (if equipped) or the back of the radiator core.

Check the engine cooling system hoses for brittle rubber, cracking, tears, cuts and tightness of the connection at the coolant recovery bottle and radiator. Inspect the entire system for leaks.

With the engine at normal operating temperature (but not running), check the cooling system pressure cap for proper vacuum sealing by draining a small amount of engine coolant (antifreeze) from the radiator drain cock. The radiator drain cock is located in the lower radiator tank. If the cap is sealing properly, the engine coolant (antifreeze) will begin to drain from the coolant expansion bottle. DO NOT REMOVE THE COOLANT PRESSURE CAP WHEN THE COOLING SYSTEM IS HOT.

Cooling System — Drain Flush And Refill

If the engine coolant (antifreeze) is dirty or contains a considerable amount of sediment, clean and flush with a reliable cooling system cleaner. Follow with a thorough rinsing to remove all deposits and chemicals. Properly dispose of old engine coolant (antifreeze).

Refer to the “Maintenance Schedule” for the proper maintenance intervals.

Selection Of Coolant

Refer to “Fluids, Lubricants, And Genuine Parts” in “Maintaining Your Vehicle” for further information.

CAUTION!

- **Mixing of engine coolant (antifreeze) other than specified Organic Additive Technology (OAT) engine coolant (antifreeze), may result in engine damage and may decrease corrosion protection. Organic Additive Technology (OAT) engine coolant is different and should not be mixed with Hybrid Organic Additive Technology (HOAT) engine coolant (antifreeze) or any "globally compatible" coolant (antifreeze). If a non-OAT engine coolant (antifreeze) is introduced into the cooling system in an emergency, the cooling system will need to be drained, flushed, and refilled with fresh OAT coolant (conforming to MS.90032), by an authorized dealer as soon as possible.**

(Continued)

CAUTION! *(Continued)*

- **Do not use water alone or alcohol-based engine coolant (antifreeze) products. Do not use additional rust inhibitors or antirust products, as they may not be compatible with the radiator engine coolant and may plug the radiator.**
- **This vehicle has not been designed for use with propylene glycol-based engine coolant (antifreeze). Use of propylene glycol-based engine coolant (antifreeze) is not recommended.**

Adding Coolant

Your vehicle has been built with an improved engine coolant (OAT coolant conforming to MS.90032) that allows extended maintenance intervals. This engine coolant (antifreeze) can be used up to ten years or 150,000 miles (240,000 km) before replacement. To prevent reducing this extended maintenance period, it is

important that you use the same engine coolant (OAT coolant conforming to MS.90032) throughout the life of your vehicle.

Please review these recommendations for using Organic Additive Technology (OAT) engine coolant (antifreeze) that meets the requirements of FCA Material Standard MS.90032. When adding engine coolant (antifreeze):

- We recommend using MOPAR® Antifreeze/Coolant 10 Year/150,000 Mile Formula OAT (Organic Additive Technology) that meets the requirements of FCA Material Standard MS.90032.
- Mix a minimum solution of 50% OAT engine coolant that meets the requirements of FCA Material Standard MS.90032 and distilled water. Use higher concentrations (not to exceed 70%) if temperatures below –34° F (–37° C) are anticipated.
- Use only high purity water such as distilled or deionized water when mixing the water/engine coolant (antifreeze) solution. The use of lower quality water will reduce the amount of corrosion protection in the engine cooling system.

Please note that it is the owner's responsibility to maintain the proper level of protection against freezing according to the temperatures occurring in the area where the vehicle is operated.

NOTE:

- Some vehicles require special tools to add coolant properly. Failure to fill these systems properly could lead to severe internal engine damage. If any coolant is needed to be added to the system please contact your local authorized dealer.

- Mixing engine coolant (antifreeze) types is not recommended and can result in cooling system damage. If HOAT and OAT coolant are mixed in an emergency, have a authorized dealer drain, flush, and refill with OAT coolant (conforming to MS.90032) as soon as possible.

Cooling System Pressure Cap

The cap must be fully tightened to prevent loss of engine coolant (antifreeze), and to ensure that the engine coolant (antifreeze) will return to the radiator from the coolant expansion bottle.

The cap should be inspected and cleaned if there is any accumulation of foreign material on the sealing surfaces.

WARNING!

- **Do not open hot engine cooling system. Never add engine coolant (antifreeze) when the engine is overheated. Do not loosen or remove the cap to cool an overheated engine. Heat causes pressure to build up in the cooling system. To prevent scalding or injury, do not remove the pressure cap while the system is hot or under pressure.**
- **Do not use a pressure cap other than the one specified for your vehicle. Personal injury or engine damage may result.**

Disposal Of Used Engine Coolant

Used ethylene glycol-based engine coolant (antifreeze) is a regulated substance requiring proper disposal. Check with your local authorities to determine the disposal rules for your community. To prevent ingestion by animals or children, do not store ethylene glycol-based

engine coolant (antifreeze) in open containers or allow it to remain in puddles on the ground. If ingested by a child or pet, seek emergency assistance immediately. Clean up any ground spills immediately.

Points To Remember

NOTE: When the vehicle is stopped after a few miles/kilometers of operation, you may observe vapor coming from the front of the engine compartment. This is normally a result of moisture from rain, snow, or high humidity accumulating on the radiator and being vaporized when the thermostat opens, allowing hot engine coolant (antifreeze) to enter the radiator.

If an examination of your engine compartment shows no evidence of radiator or hose leaks, the vehicle may be safely driven. The vapor will soon dissipate.

- Do not overfill the coolant expansion bottle.
- Check the coolant freeze point in the radiator and in the coolant expansion bottle. If engine coolant (antifreeze) needs to be added, the contents of the coolant expansion bottle must also be protected against freezing.
- If frequent engine coolant (antifreeze) additions are required, the cooling system should be pressure tested for leaks.
- Maintain engine coolant (antifreeze) concentration at a minimum of 50% OAT coolant (conforming to MS.90032) and distilled water for proper corrosion protection of your engine which contains aluminum components.
- Make sure that the coolant expansion bottle overflow hoses are not kinked or obstructed.
- Keep the front of the radiator clean. If your vehicle is equipped with air conditioning, keep the front of the condenser clean.

- Do not change the thermostat for Summer or Winter operation. If replacement is ever necessary, install ONLY the correct type thermostat. Other designs may result in unsatisfactory engine coolant (antifreeze) performance, poor gas mileage, and increased emissions.

Brake System

Brake Master Cylinder — Brake Fluid Level Check

The fluid level of the master cylinder should be checked when performing under the hood service, or immediately if the "Brake System Warning Light" indicates system failure.

The brake master cylinder has a translucent plastic reservoir. On the outboard side of the reservoir, there is a "MAX" mark and a "MIN" mark. The fluid level must be kept within these two marks. Do not add fluid above the full mark because leakage may occur at the cap.

With disc brakes, the fluid level can be expected to fall as the brake linings wear. However, an unexpected drop in fluid level may be caused by a leak and a system check should be conducted.

Refer to "Fluids, Lubricants, And Genuine Parts" in "Maintaining Your Vehicle" for further information.

WARNING!

- **Use only manufacturer's recommended brake fluid. Refer to "Fluids, Lubricants, and Genuine Parts" in "Maintaining Your Vehicle" for further information. Using the wrong type of brake fluid can severely damage your brake system and/or impair its performance. The proper type of brake fluid for your vehicle is also identified on the original factory installed hydraulic master cylinder reservoir.**

(Continued)

WARNING! *(Continued)*

- **To avoid contamination from foreign matter or moisture, use only new brake fluid or fluid that has been in a tightly closed container. Keep the master cylinder reservoir cap secured at all times. Brake fluid in a open container absorbs moisture from the air resulting in a lower boiling point. This may cause it to boil unexpectedly during hard or prolonged braking, resulting in sudden brake failure. This could result in a accident.**
- **Overfilling the brake fluid reservoir can result in spilling brake fluid on hot engine parts, causing the brake fluid to catch fire. Brake fluid can also damage painted and vinyl surfaces, care should be taken to avoid its contact with these surfaces.**
- **Do not allow petroleum based fluid to contaminate the brake fluid. Brake seal components could be damaged, causing partial or complete brake failure. This could result in an accident.**

Automated Manual Transmission

Checking Fluid Levels

To check the gear oil and check/replace the hydraulic clutch operating system fluid, contact only your authorized dealer.

NOTE: Do not add or use leak detection dye in the hydraulic clutch operating system fluid.

WARNING!

Used gear oil contains substances that are hazardous for the environment. It is advisable to have oil changed by your authorized dealer where used oil will be disposed of according to the law.

FLUID CAPACITIES

	U.S.	Metric
Fuel (Approximate)		
3.0L Diesel Engine	24 Gallons	90 Liters
Diesel Exhaust Fluid Tank	5 Gallons	18.9 Liters
Engine Oil with Filter		
3.0L Diesel Engine	9.5 Quarts	9.0 Liters
Cooling System *		
3.0L Diesel Engine With MTA Transmission (MOPAR® Antifreeze/Engine Coolant 10 Year/150,000 Mile Formula or equivalent)	12.7 Quarts	12 Liters
* Includes heater and coolant recovery bottle filled to MAX level. Add 2.9 Qts (2.8 L) if equipped with a rear heater.		

FLUIDS, LUBRICANTS AND GENUINE PARTS

Engine

Component	Fluid, Lubricant, or Genuine Part
Engine Coolant	We recommend you use MOPAR® Antifreeze/Coolant 10 Year/150,000 Mile Formula OAT (Organic Additive Technology).
Engine Oil	Only use ACEA C3 5W-30 Synthetic Low Ash engine oil meeting FCA US Material Standard MS-11106 or Pennzoil Ultra Euro L full synthetic 5W-30 motor oil.
Engine Oil Filter	We recommend you use MOPAR® Engine Oil Filters.
Fuel Filter	We recommend you use MOPAR® Fuel Filter. Must meet 3 micron rating. **Using a fuel filter that does not meet the manufacturers filtration and water separating requirements can severely impact fuel system life and reliability.**

Component	Fluid, Lubricant, or Genuine Part
Fuel Selection	Use good quality diesel fuel from a reputable supplier in your vehicle. Federal law requires that you must fuel this vehicle with Ultra Low Sulfur Highway Diesel fuel (15 ppm Sulfur maximum) and prohibits the use of Low Sulfur Highway Diesel fuel (500 ppm Sulfur maximum) to avoid damage to the emissions control system. For most year-round service, No. 2 diesel fuel meeting ASTM specification D-975 Grade S15 will provide good performance. We recommend you use a blend of up to 5% biodiesel, meeting ASTM specification D-975 with your diesel engine.**This vehicle is compatible with biodiesel blends greater than 5% but no greater than 20% biodiesel meeting ASTM specification D-7467 provided the shortened maintenance intervals are followed as directed.**
Diesel Exhaust Fluid	MOPAR® Diesel Exhaust Fluid (API Certified) (DEF) or equivalent that has been API Certified to the ISO 22241 standard. Use of fluids not API Certified to ISO 22241 may result in system damage.

NOTE: If the vehicle is exposed to extreme cold (below 20°F or -7°C), or is required to operate at colder-than-normal conditions for prolonged periods, use climatized No. 2 diesel fuel or dilute the No. 2 diesel fuel with 50% No. 1 diesel fuel. This will provide better protection from fuel gelling or wax-plugging of the fuel filter.

CAUTION!

- **Mixing of engine coolant (antifreeze) other than specified Organic Additive Technology (OAT) engine coolant (antifreeze), may result in engine damage and may decrease corrosion protection. Organic Additive Technology (OAT) engine coolant is different and should not be mixed with Hybrid Organic Additive Technology (HOAT) engine coolant (antifreeze) or any "globally compatible" coolant (antifreeze). If a non-OAT engine**

(Continued)

CAUTION! *(Continued)*

coolant (antifreeze) is introduced into the cooling system in an emergency, the cooling system will need to be drained, flushed, and refilled with fresh OAT coolant (conforming to MS.90032), by an authorized dealer as soon as possible.

- **Do not use water alone or alcohol-based engine coolant (antifreeze) products. Do not use additional rust inhibitors or antirust products, as they may not be compatible with the radiator engine coolant and may plug the radiator.**
- **This vehicle has not been designed for use with propylene glycol-based engine coolant (antifreeze). Use of propylene glycol-based engine coolant (antifreeze) is not recommended.**

Chassis

Component	Fluid, Lubricant, or Genuine Part
Automated Manual Transmission	• Gearbox: Full synthetic 75W-85 manual transmission fluid meeting the API GL4 specification. • Control system: MOPAR® C Series DDCT SAE 75W Hydraulic Fluid or equivalent. • Hydraulic Clutch Operating System: MOPAR® Brake and Clutch Fluid DOT 4 Motor Vehicle or equivalent. Failure to use the correct fluid may affect the function or performance of your transmission.
Brake Master Cylinder	We recommend you use MOPAR® DOT 4.
Power Steering Reservoir	Use Pentosin CHF 11S power steering fluid meeting FCA US Material Standard MS-11655.

MAINTENANCE SCHEDULE

CONTENTS

MAINTENANCE SCHEDULE — DIESEL ENGINE

Your vehicle is equipped with an automatic oil change indicator system. The oil change indicator system will remind you that it is time to take your vehicle in for scheduled maintenance.

Based on engine operation conditions, the oil change indicator message will illuminate in the instrument cluster. This means that service is required for your vehicle. Operating conditions such as frequent short-trips, trailer tow, and extremely hot or cold ambient temperatures will influence when the "Oil Change Required" message is displayed. Severe Operating Conditions can cause the change oil message to illuminate as early as 3,500 miles (5,600 km) since last reset. Have your vehicle serviced as soon as possible, within the next 500 miles (805 km).

Your authorized dealer will reset the oil change indicator message after completing the scheduled oil change. If a scheduled oil change is performed by someone other than your authorized dealer, the message can be reset by referring to the steps described under "Electronic Vehicle Information Center (EVIC)" in "Understanding Your Instrument Panel" for further information.

NOTE: Under no circumstances should oil change intervals exceed 18,500 miles (29,773 km) or twelve months, whichever comes first.

Once A Month Or Before A Long Trip:

- Check engine oil level
- Check windshield washer fluid level
- Check the tire inflation pressures and look for unusual wear or damage
- Check the fluid levels of the coolant reservoir, brake master cylinder, and power steering and fill as needed
- Check function of all interior and exterior lights

Required Maintenance Intervals.

Refer to the maintenance schedules on the following page for the required maintenance intervals.

At Every Oil Change Interval As Indicated By The Oil Change Indicator System:
• Change oil and filter.
• Rotate the tires. **Rotate at the first sign of irregular wear, even if it occurs before your next scheduled service.**
• Inspect battery and clean and tighten terminals as required.

At Every Oil Change Interval As Indicated By The Oil Change Indicator System:
• Inspect brake pads, rotors, hoses and park brake.
• Inspect engine cooling system protection and hoses.
• Inspect exhaust system.
• Inspect engine air cleaner if using in dusty or off-road conditions.

Maintenance Chart — Diesel Fuel Up To B5 Biodiesel

Mileage or time passed (whichever comes first)	10,000	20,000	30,000	40,000	50,000	60,000	70,000	80,000	90,000	100,000	110,000	120,000	130,000	140,000	150,000
Or Years:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Or Kilometers:	16,000	32,000	48,000	64,000	80,000	96,000	112,000	128,000	144,000	160,000	176,000	192,000	208,000	224,000	240,000
Additional Inspections															
Completely fill the Diesel Exhaust Fluid tank.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Inspect the CV joints.			X			X			X			X			X
Inspect front suspension, tie rod ends, boot seals, and replace if necessary.		X		X		X		X		X		X		X	
Inspect the brake pads, replace as necessary.		X		X		X		X		X		X		X	

Mileage or time passed (whichever comes first)	10,000	20,000	30,000	40,000	50,000	60,000	70,000	80,000	90,000	100,000	110,000	120,000	130,000	140,000	150,000
Or Years:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Or Kilometers:	16,000	32,000	48,000	64,000	80,000	96,000	112,000	128,000	144,000	160,000	176,000	192,000	208,000	224,000	240,000
Check Transmission Actuation System Oil and Hydraulic Clutch Operating Oil			X			X			X			X			X
Additional Maintenance															
Replace fuel filter and drain water from fuel.			X			X			X			X			X
Replace engine air filter.			X			X			X			X			X
Replace cabin/air conditioning filter.		X		X		X		X		X		X		X	
Replace Brake Fluid every two years.		X		X		X		X		X		X		X	

Mileage or time passed (whichever comes first)	10,000	20,000	30,000	40,000	50,000	60,000	70,000	80,000	90,000	100,000	110,000	120,000	130,000	140,000	150,000
Or Years:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Or Kilometers:	16,000	32,000	48,000	64,000	80,000	96,000	112,000	128,000	144,000	160,000	176,000	192,000	208,000	224,000	240,000
Replace Hydraulic Clutch Oil every two years or 60,000 miles (96,000 km) which ever comes first.		X		X		X		X		X		X		X	
Flush and replace the engine coolant at 10 years or 150,000 miles (240,000 km) whichever comes first.										X					X
Change FEAD Belt every four years or 80,000 miles (128,000 km) which ever comes first.				X				X				X			

Mileage or time passed (whichever comes first)	10,000	20,000	30,000	40,000	50,000	60,000	70,000	80,000	90,000	100,000	110,000	120,000	130,000	140,000	150,000
Or Years:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Or Kilometers:	16,000	32,000	48,000	64,000	80,000	96,000	112,000	128,000	144,000	160,000	176,000	192,000	208,000	224,000	240,000
Change Glow Plugs every five years or 150,000 miles (240,000 km) which ever comes first.					X					X					X
Change Automatic Belt tensioner every five years or 150,000 miles (240,000 km) which ever comes first.					X					X					X

NOTE: Change Timing Chain and Gear at 249,000 miles (400,000 km).

WARNING!

- **You can be badly injured working on or around a motor vehicle. Do only service work for which you have the knowledge and the right equipment. If you have any doubt about your ability to perform a service job, take your vehicle to a competent mechanic.**
- **Failure to properly inspect and maintain your vehicle could result in a component malfunction and effect vehicle handling and performance. This could cause an accident.**

ADDITIONAL MAINTENANCE — B6 TO B20 BIODIESEL

NOTE:

- Under no circumstances should oil change intervals exceed 10,000 miles (16 093km) or six months, whichever comes first.
- The owner is required to monitor mileage for B6-B20 biodiesel, the automatic oil change indicator system does not reflect the use of biofuels.

Additional Maintenance Chart — B6 To B20 Biodiesel

Mileage or time passed (whichever comes first)	10,000	20,000	30,000	40,000	50,000	60,000	70,000	80,000	90,000	100,000	110,000	120,000	130,000	140,000	150,000
Or Years:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Or Kilometers:	16,000	32,000	48,000	64,000	80,000	96,000	112,000	128,000	144,000	160,000	176,000	192,000	208,000	224,000	240,000
Additional B6 to B20 Maintenance															
Replace fuel filter and drain water from the fuel filter assembly.		X		X		X		X		X		X		X	

WARNING!

- **You can be badly injured working on or around a motor vehicle. Do only service work for which you have the knowledge and the right equipment. If you have any doubt about your ability to perform a service job, take your vehicle to a competent mechanic.**
- **Failure to properly inspect and maintain your vehicle could result in a component malfunction and effect vehicle handling and performance. This could cause an accident.**

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INSTALLATION OF RADIO TRANSMITTING EQUIPMENT

Special design considerations are incorporated into this vehicle's electronic system to provide immunity to radio frequency signals. Mobile two-way radios and telephone equipment must be installed properly by trained personnel. The following must be observed during installation.

The positive power connection should be made directly to the battery and fused as close to the battery as possible. The negative power connection should be made to body sheet metal adjacent to the negative battery connection. This connection should not be fused.

Antennas for two-way radios should be mounted on the roof or the rear area of the vehicle. Care should be used in mounting antennas with magnet bases. Magnets may affect the accuracy or operation of the compass on vehicles so equipped.

The antenna cable should be as short as practical and routed away from the vehicle wiring when possible. Use only fully shielded coaxial cable.

Carefully match the antenna and cable to the radio to ensure a low Standing Wave Ratio (SWR).

Mobile radio equipment with output power greater than normal may require special precautions.

All installations should be checked for possible interference between the communications equipment and the vehicle's electronic systems.

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