



GRAND WAGONEER

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Introduction

Thank you for selecting a Grand Wagoneer and welcome to our worldwide family.

We're proud of the Jeep heritage and we're confident that you will share this pride. Please read this manual carefully to familiarize yourself with your new Jeep vehicle and its proper operation.

To keep your vehicle running at its best, follow the maintenance schedules found in this manual. Have your vehicle serviced at recommended intervals by an authorized Jeep Dealer who has the qualified personnel, special tools and equipment to perform all service.

Your authorized Jeep Dealer will be happy to assist you with any questions about your Grand Wagoneer.

This manual should be considered a permanent part of this vehicle. It should stay with the vehicle when sold, to provide the next owner with important operating, safety and maintenance information.

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An Important Message To You From Jeep Corporation

Thank you for selecting one of our 1989 Jeep models. Be assured that your Grand Wagoneer represents the precision workmanship, distinctive styling and high quality traditional with Jeep vehicles.

This is a specialized utility vehicle designed for both on-road and off-road use. It can go places and perform tasks for which conventional 2-wheel drive vehicles were not intended. However, on-pavement ride and handling will have a different feel from what drivers experience with other vehicles, so take time to become familiar with your vehicle.

This vehicle has a higher ground clearance, higher center of gravity and narrower track than many passenger cars. It is capable of performing better in a wide variety of off-road applications. Driven in an unsafe manner, all vehicles can be caused to go out of control. Because of the higher center of gravity and the narrower track, if this vehicle is out of control, it may roll over when some other vehicles may not. You should not attempt sharp turns or abrupt maneuvers or other unsafe driving actions that can cause loss of vehicle control. Failure to operate this vehicle safely may result in an accident, rollover of the vehicle and severe or fatal injury.

Drive carefully. Observe traffic laws. Use driver and passenger seat belts. Don't drive if you have been drinking or taking drugs. These are the best ways to avoid accidents and injury or death.

Human error is the primary or contributing factor in more than 90% of all traffic accidents that result in severe or fatal injury. Alcohol impairment is a major cause of fatal and other serious accidents and is particularly involved in single-vehicle crashes. Between 40% and 50% of

fatally injured drivers were too intoxicated to have legally driven their motor vehicles under the laws of most states. Alcohol impairment may increase the seriousness of injury in an accident and may complicate the medical treatment of a serious injury. Excessive speed is a factor in at least 30% of all accidents that result in severe or fatal injury.

Failure to use driver and passenger seat belts provided as standard equipment on nearly all vehicles is a major cause of serious injury or death. In fact, the U.S. government notes that the universal use of existing seat belts could cut the highway death toll by 10,000 or more each year, and could reduce disabling injuries by 2 million incidents annually.

Motor vehicle accidents are the leading cause of death among persons 15 to 34 years of age...more than disease or illness, more than all other accidents combined.

Operating this vehicle at excessive speeds or while intoxicated may result in loss of control, collision with other vehicles or objects, going off the road, or overturning; any of which may lead to serious injury or death. Also, **failure to use standard seat belts** subjects the driver and passengers to a greater risk of injury or death.

Before you start to drive this vehicle, read this Owner's Manual and be sure you are familiar with all vehicle controls, particularly those used for braking, steering and the transmission. Learn how your vehicle handles on different road surfaces. Your driving skills will improve with experience, but as in driving any vehicle, take it easy as you begin. When driving off-road or working the vehicle, don't overload it or expect it to overcome the laws of nature. Always observe federal, state, provincial and local laws wherever you drive.

As with other vehicles of this type, failure to operate this vehicle correctly may result in loss of control or an

accident. Be sure to read On-Pavement and Off-Road driving guidelines in this manual.

Warnings and Cautions

This manual contains **WARNINGS** against operating procedures which could result in an accident or bodily injury. It also contains **CAUTIONS** against procedures which could result in damage to your Jeep vehicle or accessory equipment. If you do not read this entire manual, you may miss important information. Comply with all Warnings and Cautions.

Warning and Caution Labels

Various information labels which appear on your vehicle use a combination of colors and symbols. Bright orange labels WARN against operating procedures which could result in an accident or bodily injury. Bright yellow labels CAUTION against operating procedures which could result in damage to your vehicle. Observe all Warning and Caution labels and follow all operating and servicing procedures outlined in this manual.

Break-In Procedure

Your Jeep engine is ready for the road from the start. To provide the longest life, there are some guidelines to follow for the first few hundred miles (or kilometers).

- Check fluid and engine oil levels regularly and be alert for indication of overheating in any component of the vehicle. Engines tend to use more fuel and oil until they are broken in, so don't expect top economy for the first 1,200 miles (1,900 km).
- After starting a cold engine, let it warm up for 15 seconds or so before shifting into gear.
- Drive at varying speeds below 50 mph (80 km/h) for the first 100 miles (160 km) and below 55 mph (88

km/h) for the first 500 miles (800 km). Avoid driving at full throttle or top speeds, steady speeds, or excessive idling during this period. Avoid fast starts and quick stops.

- Allow proper break-in, at least 1,200 miles (1,900 km), before requesting engine adjustments, if then needed.
- A break-in oil is not used. The original engine oil is the same type specified for regular oil changes. Under normal conditions, there is no need to change the original engine oil or oil filter before the first scheduled maintenance interval. However, operation at temperatures below 0°F (-18°C) may require oil of a different viscosity, and heavy-duty operation may necessitate more frequent oil changes. See "Oil, Engine, Selecting" and "Heavy -Duty Operation" in the index of this manual. Don't add antifriction compounds or special break-in oils during the first few thousand miles (or kilometers) of operation since these additives might interfere with proper piston ring seating.
- Selec-Trac Jeep vehicles should be driven in the 4WD drive mode for the first 200 miles (320 km) and for a minimum of 10 miles (16 km) each month thereafter.

Note: *Maintaining proper fluid levels is particularly important during the break-in period. Refer to the **Service and Maintenance** section for checking fluid levels.*

Note: *It is best to operate your vehicle under normal driving conditions for at least 500 mi. (805 km) before subjecting it to the stresses of snowplowing.*

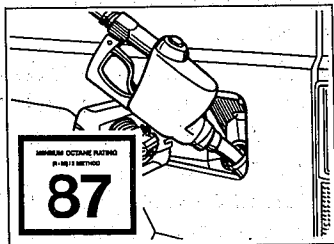
FUEL WARNINGS

Remove the fuel cap slowly. The fuel system may be under pressure and fuel could spray out of the filler opening if cap is removed rapidly. If fuel sprays into eyes or on skin, it could cause burning and should be immediately flushed with large amounts of water.

Do not remove fuel cap when smoking or near an open flame, and never leave the engine running while refueling. Gasoline is highly flammable and explosive.

Fuel Requirements

Your vehicle has been designed to use unleaded fuel. **High quality** unleaded fuels are available from most reputable gasoline marketers. We encourage you to use only the best quality fuels available containing detergents and corrosion inhibitors. These additives will help improve your fuel economy, reduce exhaust emissions, and maintain vehicle performance.



Your engine has been designed to use only fuel with an antiknock index (AKI) of 87 or higher. Look for the AKI rating posted on all service station pumps.

In the event of spark knock (ping), purchase your fuel from a different source. Vehicles may respond differently to fuels of the same AKI rating.

Occasional trace knock at low engine speeds is not harmful. However, continued knock at high speeds can damage the engine and should be reported to your dealer immediately. Engine damage as the result of prolonged operation of a vehicle with continuous high speed spark knock may not be covered by the New Basic Vehicle Limited Warranty.

Fuels Containing Alcohol (Gasohol)

Gasohol

Gasohol, a mixture of 90% unleaded gasoline and 10% ethanol (grain alcohol), is available to some owners of Jeep vehicles. Most drivers will not notice performance differences with occasional use of gasohol, but some

may. If you encounter driveability or other performance problems, you may prefer to use unleaded gasoline.

CAUTION: *Exclusive use of gasohol is not recommended. Vehicle test results have shown that significant fuel system corrosion can result when gasohol is used exclusively.*

Fuel Containing Other Alcohols

Some fuel suppliers sell gasoline containing alcohol without identifying it as "gasohol" (or other special name) or even advertising the presence of alcohol. A number of states now require that service station pumps dispensing fuel containing alcohol be properly labeled with the type and amount of alcohol present in the fuel. If you are not sure whether there is alcohol in the gasoline you buy, check with the service station operator or gasoline supplier.

Some gasolines contain **methanol** (methyl or wood alcohol) along with other alcohols which act as cosolvents.

Do not use gasolines containing methanol. Use of methanol/gasoline blends may result in starting and driveability deterioration and damage to critical fuel system components.

Fuel system damage and vehicle performance problems resulting from the use of gasolines containing methanol may not be covered by the New Basic Vehicle Limited Warranty.

Gasolines Containing MTBE

Gasoline and MTBE blends are a mixture of unleaded gasoline and up to 15% MTBE (Methyl Tertiary Butyl Ether). Gasoline blended with MTBE may be used in your vehicle.

CAUTION: *Take care not to spill gasoline during refueling. Gasolines containing alcohol can cause paint damage, which may not be covered under the New Vehicle Warranty.*

WARNING: *If you pull off the roadway, avoid driving or*

parking over dry grass, brush, or other materials which could be ignited by a hot exhaust system.

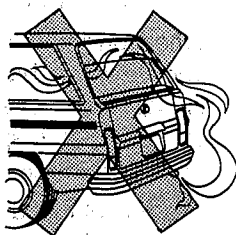
Fuel System Cautions

- The use of leaded gas is prohibited by Federal law. Using leaded gasoline can impair engine performance, damage the emission control system, and could result in loss of warranty coverage.
- An out-of-tune engine, or certain fuel or ignition malfunctions, can cause the catalytic converter to overheat. If you notice a pungent burning odor or some light smoke, your engine may be out of tune or malfunctioning and may require immediate service. Contact your dealer for service assistance.
- When pulling a heavy load or driving a fully loaded vehicle when the humidity is low and the temperature is high, use a premium unleaded fuel to help prevent spark knock. If spark knock persists, lighten the load. Otherwise, engine piston damage may result.
- The use of fuel additives which are now being sold as octane enhancers is not recommended. Most of these products contain high concentrations of methanol. Fuel system damage or vehicle performance problems resulting from the use of such fuels or additives is not the responsibility of Jeep Corporation and may not be covered under the New Vehicle Warranty.

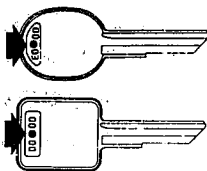
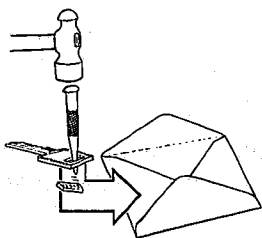
Carbon Monoxide Warnings

- Guard against carbon monoxide with proper maintenance. Have the exhaust system inspected every time the vehicle is raised. If exhaust sound changes, if fumes are detected in the vehicle, or if the underside of the vehicle is damaged, immediately have a competent mechanic inspect the exhaust system and adjacent panels for damage, or open or loose joints which could allow fumes to enter the vehicle interior. Have any abnormal conditions repaired promptly. Until repaired, drive with all side windows fully open.

- Do not inhale exhaust gases. They contain carbon monoxide, a colorless and odorless gas which can kill. Never run the engine in a closed area, such as a garage, and never sit in a parked vehicle with the engine running for an extended period. If the vehicle is stopped in an open area with the engine running for more than a short period, adjust the ventilation system to force fresh, outside air into the vehicle.
- Always open the fresh air vents when driving with any windows open, even if only slightly, to help keep fresh air circulating inside vehicle. Otherwise, poisonous exhaust gases could be drawn into the vehicle.
- Do not drive with the tailgate window open, even slightly. Poisonous carbon monoxide fumes can enter the vehicle.



Starting and Operating Instructions



Key Knock-Out Plugs

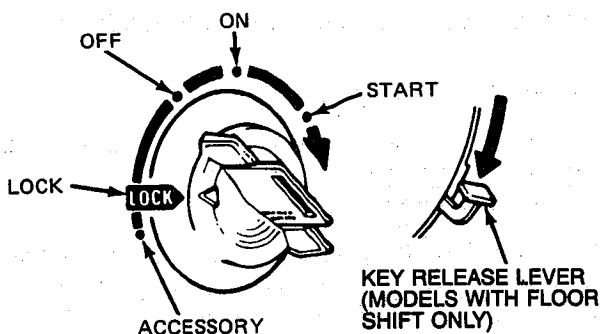
Keys

Two sets of keys are furnished with your new Jeep vehicle. They are identified by code numbers stamped on knock-out plugs. If you lose your keys, a Jeep dealer

or competent locksmith can replace them using the code numbers. Record these numbers, then remove the plugs with a hammer and punch and store the plugs in a safe place.

Ignition Switch

The ignition switch is located on the steering column right side. To operate, insert the square-headed key fully and rotate to one of the four illustrated positions:



Ignition Switch

LOCK — Locks ignition switch and steering wheel. Also locks automatic transmission shift control.

OFF — Unlocks steering wheel and automatic transmission shift controls with engine off.

ON — Connects battery power to ignition and electrical systems. This is the normal running position.

START — Engages starter motor. When the engine starts, release the key. The ignition key will return to ON for normal driving.

Accessory — Allows electrical accessories to be used when engine is not running. To engage, turn key firmly toward you (counterclockwise).

Key Reminder — A warning buzzer or chime will remind

you if the key is left in the ignition and the driver's door is opened.

CAUTION: *Leaving the ignition in ON or Accessory for long time periods without running engine will discharge battery.*

WARNING: *Never Remove the ignition key or move switch to the LOCK position while the vehicle is moving. This could result in a locked steering wheel and loss of steering control. If you must turn the ignition off with the vehicle in motion, turn key to the OFF position only.*

Steering Wheel Warnings

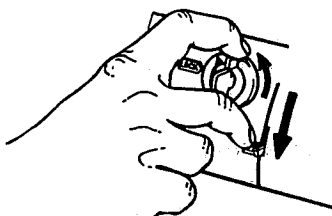
- Never reach through steering wheel to operate steering column controls. Injury to your hands or loss of vehicle control may result.
- When moving the ignition key from the LOCK position, always keep your hands off the steering wheel. If front wheels were turned while vehicle was parked, the steering wheel will spring back, and your hands or arms may be injured.

To Remove Key From Ignition Switch

Place gear shift lever in P (Park), fully apply parking brake, turn ignition key to LOCK position, and remove key. The ignition switch, steering wheel and gearshift lever are now locked for anti-theft protection.

Starting Instructions

The engine is set to run at a faster speed when cold than it is at normal operating temperature. Because it runs best and uses less fuel when warm, a quick, smooth warm-up is desir-



Operating Key Release Lever

able, but you must start it properly for maximum performance.

CAUTION: *Do not operate the starter motor for more than 15 seconds at one time. Battery or starter motor damage may result. Wait 30 seconds between starting attempts. In addition, if engine does not start after a short period of time, continued starter cranking may allow fuel into the catalytic converter, which could cause the converter to overheat or rupture when engine has started.*

CAUTION: *Do not attempt to push or tow your vehicle to get it started. Drivetrain damage could result. In addition, unburned fuel could enter the converter and, once the engine has started, ignite and cause the converter to overheat and rupture.*

Cold Engine

1. With automatic transmission in Park or Neutral, apply brakes and start.
2. Depress accelerator pedal to floor **once**, then release it to set carburetor choke and idle. In temperatures near or below 0°F (-18°C), or if the vehicle was parked for several days, depress accelerator pedal fully again once or twice.
3. Turn key to Start position and release it when the engine starts.
4. Once started, allow the engine to run for at least 15 seconds. High idle speed may be reduced after about 30 seconds by lightly tapping the accelerator pedal.
5. Observe instrument cluster for proper readings. Apply brake pedal, engage transmission, release brake and parking brake, and drive away.

Warm-Up

Drive at moderate speeds for the first few minutes to

warm the engine, transmission and axles in the shortest time. Your vehicle will perform best with the engine and powertrain at normal operating temperatures. During cold weather or on slippery pavement, run the engine for a short time before driving to allow proper warm-up. High idle speed may be reduced after about 30 seconds by tapping the accelerator pedal lightly.

WARNING: *Engines may idle at higher speeds during warm-up, which could cause rear wheels to spin and result in loss of vehicle control. Be especially careful while driving on slippery roads, in close-quarter maneuvering, parking or stopping. Remember, always engage 4-wheel drive when driving on slippery roads.*

Cautions

- *Cold engine speeds higher than necessary for driving or higher than specified for idling may damage engine components.*
- *Avoid long periods of idling. Also avoid frequent short-trip driving, but if you cannot, be sure to change oil more frequently.*

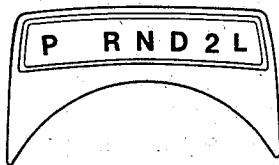
Warm Engine

1. With automatic transmission in Park or Neutral, apply brakes and start.
2. Depress accelerator pedal approximately 1/2-inch and hold. **Do not pump the pedal.**
3. Turn key to Start until engine starts, then release key. If engine fails to start, hold pedal to the floor while starting. When the engine starts, release key then release accelerator pedal gradually as the engine gains speed.
4. Observe instrument cluster for proper readings. Apply brake pedal, engage transmission, release brake and parking brake, and drive away.

Automatic Transmission

The automatic transmission changes forward gear positions automatically or manually for changing conditions. A gearshift pointer indicates the operating range selected. The transmission has six positions.

- P Park** — Locks the transmission. Do not place gearshift in the Park position unless the vehicle is totally stopped. The Park position is used when starting the vehicle.



- After shifting to Park, always check for positive gear shift engagement and always apply parking brake fully.**

- R Reverse** — For moving the vehicle rearward. Always stop the vehicle before moving the lever to R, except when freeing vehicle from snow, mud, or sand. See **Special Driving Techniques** for further information.

- N Neutral** — Engine may be started in this position.

- D Drive** — For all normal driving. Begins at a stop in 1st gear with automatic upshifts to 2nd and 3rd. Downshifts automatically as needed.

- 2 Drive 2** — For moderate grades and to assist braking on dry pavement or in mud or snow. Begins at a stop in low gear with automatic upshift to 2nd gear. Will not shift to 3rd.

- L Low** — For hard pulling at low speeds in mud, sand, snow, or on steep grades. Begins and stays in low gear with no upshift. Before descending grades, stop the vehicle and shift into Low to assure a complete downshift.

Lift the gearshift lever slightly when shifting. No lift is required from N (Neutral) to Drive. A **safety switch**

prevents engine starting unless the gear selector is in P (Park) or N (Neutral).

To move the vehicle, start the engine, apply the brakes, and select the operating range desired. Release the brake and depress the accelerator. (Applying the brakes helps prevent the vehicle from lurching as the transmission engages.)

During normal driving, the transmission will automatically change gears to meet varying road conditions. To increase power for passing while driving in the "D" position, depress the accelerator partially. It is not necessary to floor the accelerator. Between 20 and 50 mph (32 and 80 km/h) the transmission will downshift to 2nd gear. Below 20 mph (32 km/h) it will downshift to 1st. The transmission will automatically upshift when at the proper speed or when you release the accelerator.

Automatic Transmission Warnings

- Do not coast in Neutral and never turn off the ignition to coast down a hill. These are unsafe practices that limit your response to changing traffic or road conditions. You might lose control of the vehicle.
- Do not downshift on icy or slippery roads, because engine braking may cause skidding and loss of control.
- Never use Park position on an automatic transmission as a substitute for the parking brake. Always apply parking brake fully when parked to guard against vehicle movement and possible injury or damage.

Automatic Transmission Cautions

- Before moving the shift lever out of Park, you must turn the ignition from LOCK so steering wheel and shift lever are released. Otherwise, damage to steering column or shifter could result.

- Never race the engine with the brakes on and the vehicle in gear, and never hold the vehicle on an incline without applying brakes. These practices can cause overheating and damage to the transmission.
- When "rocking" a stuck vehicle by moving between D (Drive) and R (Reverse), do not spin the wheels faster than 15 mph (24km/h), or drivetrain damage may result.

Jeep Selec-Trac System

Selec-Trac provides:

- Either 2- or full-time 4-wheel drive in HI range;
- A 4-wheel drive indicator lamp in the instrument cluster to signal that the vehicle is operating in four-wheel drive;
- An N (Neutral) position to disengage axles from the powertrain;
- Part-time four-wheel drive in LO range.

Because Selec-Trac control functions are interrelated, mode switch and range lever must be used in specific combinations to operate the transfer case.

With range lever in the HI range, select either 2-wheel drive (2WD) or full time 4-wheel drive (4WD) by moving mode switch. Mode selection can be made **while the vehicle is moving at any legal speed**. But, the vehicle is in 4WD only when the reminder lamp in the instrument cluster is illuminated. If the 4WD reminder lamp does not illuminate after making a mode shift to 4WD, momentarily release accelerator pedal. Check to be sure the lamp is illuminated; see your dealer if doesn't illuminate.

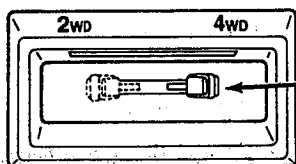
Note: *If mode switch is moved from one position to another while the vehicle is not moving, it may be necessary to move the vehicle forward or backwards*

slightly for the transfer case to fully engage 4WD, especially in cold weather.

If mode switch is in 4WD and the transfer case has completed the shift, as indicated by the reminder lamp, Selec-Trac offers a choice of HI, N, or LO ranges by moving range lever. Range shifts must be made **only at low speed (2-3 mph, 3-5 km/h).**

CAUTION: *Never attempt to engage LO range when vehicle is in 2WD, or when vehicle is moving faster than 2-3 mph (3-5 km/h). Transfer case damage may result.*

WARNING: *Never park your vehicle with range lever in the N (Neutral) position. The vehicle could roll unexpectedly even if the automatic transmission is placed in PARK.*



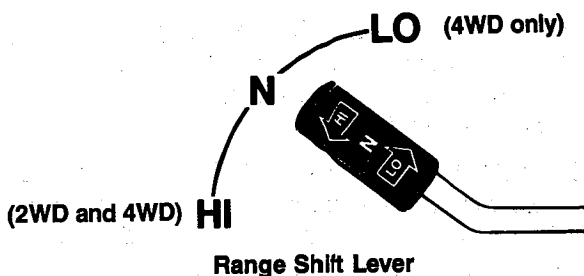
**MOVE LEVER
TO DESIRED
OPERATION
MODE**

Mode Switch

Mode Selection (2WD/4WD)

Mode switch allows you to select 2WD or 4WD whenever you wish, as long as range lever is in the HI range position.

NOTE: *Complete transfer case engagement into HI must be made before you can or should attempt to engage 2WD.*



Range Shifts (HI-N-LO)

Range lever allows you to shift to HI, N (Neutral) or LO range when the transfer case is fully engaged in 4WD, the vehicle is moving slowly (2-3 mph, 3-5 km/h), and the transmission is shifted to Neutral.

CAUTION: *Do not try to move range lever from HI to LO when mode switch is in the 2WD position. The range lever shift linkage could be damaged.*

- **HI Position**
2WD or 4WD—In either position, the vehicle may be operated on all road surfaces. In 4WD, Selec-Trac offers better traction when roads are wet, snow covered or icy. Use Selec-Trac 4WD year-round (full-time) if you wish.
- **N Position (Neutral)**
In this position the axles are disengaged from the powertrain. The vehicle may be towed without removing the propeller shafts. Place an automatic transmission in Park after the N position is engaged.
- **LO Position**
This position provides 4WD for occasional use when **off-road** driving conditions require low speed pulling power.

WARNING: *Do not drive the vehicle unless the transfer*

case is fully engaged. Failure to completely engage a position can cause transfer case damage or loss of power and vehicle control. Be sure you know the shift pattern of your vehicle.

WARNING: *Do not install selective drive hubs on Selec-Trac vehicles. If these hubs are left unlocked when the vehicle is parked, the vehicle could roll unexpectedly—even if an automatic transmission is in Park.*

Power Steering

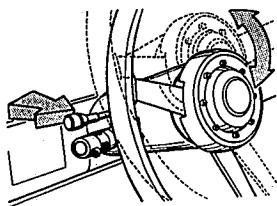
Power steering greatly reduces steering effort by using an engine-driven hydraulic pump to develop assist power.

WARNING: *If the engine stalls or power assist fails due to a malfunction, vehicle steering and braking will require greater effort.*

CAUTION: *Do not hold the front wheels turned against the left or right stops longer than five seconds. The power steering pump can overheat, resulting in pump or gear damage.*

Tilt Steering Wheel

The tilt steering wheel can be set in any of six positions. Pull the lever toward the steering wheel to select the desired position.



WARNING: *Never adjust a tilt--* **Tilt Steering Wheel** *wheel while the vehicle is moving, as there may be unexpected steering wheel movement or loss of vehicle control.*

Horn

To operate the horn, press the center section of the steering wheel.

Brakes

The Grand Wagoneer has front disc brakes and rear drum brakes operated by a hydraulic, dual-reservoir master cylinder. The front and rear hydraulic systems are separate from each other but they work together, in tandem.

Brake Warnings

- Do not "ride" the brakes by resting your foot on the pedal. This could overheat the brakes and result in unpredictable braking action, longer stopping distances, or brake damage.
- After going through deep water or a car wash, brakes may become wet, resulting in poor performance and unpredictable braking action. Dry brakes by gentle, intermittent pedal action while driving at very slow speeds.

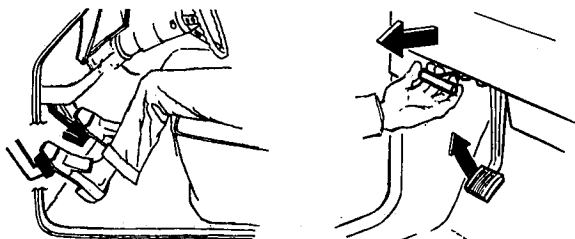
Brake System Warning Light

The Brake warning light in the instrument cluster indicates a loss difference of hydraulic pressure. To test the bulb, turn the ignition switch to START position. The light should glow red. If the bulb does not light, have it repaired immediately. The same light will also illuminate with the ignition switch ON and the parking brake applied, reminding you to release the parking brake. The BRAKE warning light does not indicate brake fluid level in the master cylinder. This must be inspected as described in **Checking and Changing Fluids**.

WARNING: *If the parking brake is released and the BRAKE warning light glows while the ignition switch is ON, or the engine is running, there may be a brake hydraulic system problem. Brake pedal travel, effort and stopping distances may increase, and you should obtain corrective service immediately.*

Parking Brake

The parking brake mechanically operates cables to the rear brakes. To set the parking brake, depress the service brake pedal with your right foot and completely apply the parking brake pedal with your left foot. Before driving, pull out the Parking Brake Release handle. Always apply the parking brake fully when parking.



NOTE: The instrument cluster brake warning light indicates only that the parking brake is applied. You must be sure the parking brake is **fully applied** before leaving the vehicle.

WARNING: Always fully apply the parking brake when leaving your vehicle, or vehicle may roll and cause damage or injury. Also be certain to leave the automatic transmission in Park. Never leave keys in the ignition.

Power Brakes

Power brakes significantly reduce braking effort by using engine vacuum for assist. A vacuum reserve system maintains power assist for one or two brake applications after the engine stops.

WARNING: If the engine stalls or power assist fails due to a malfunction, vehicle steering and braking will require greater effort.

Brake Self-Adjustment

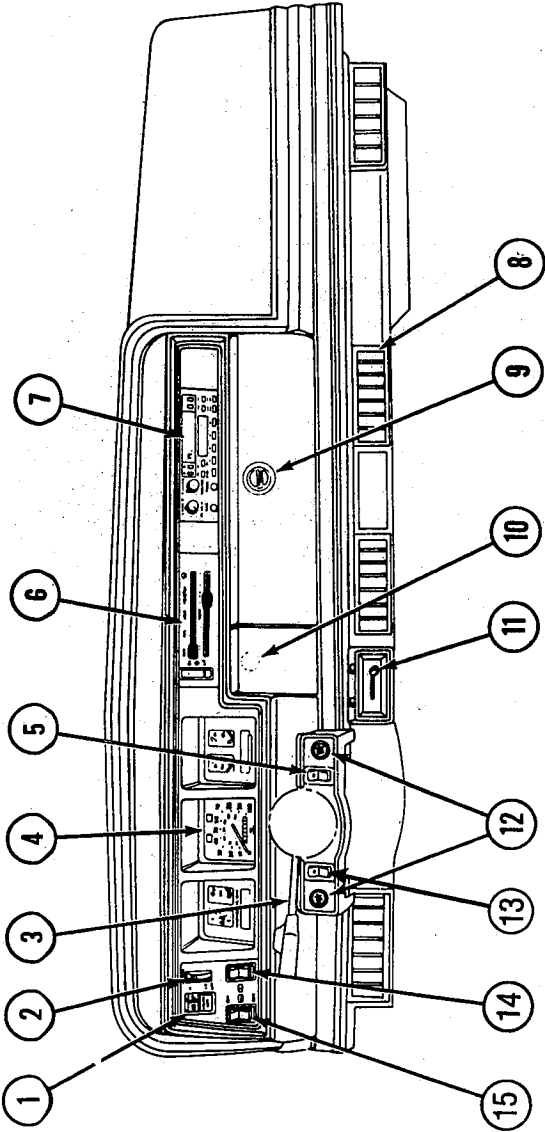
Jeep brakes adjust automatically. The front disc brake

pads move closer to the rotor as they wear. The pads should be inspected when maintenance is performed. The **Maintenance Schedules** section has details.

A wear sensor is attached to the front pads of all models. When brake lining wears to the point that replacement is necessary, the sensor contacts the disc, making a screeching or scraping noise. This warns you that brake service is needed.

Rear drum brakes adjust, if necessary, when you apply the brakes while moving in reverse. This happens enough during normal driving to maintain brake adjustment. If you find your brake pedal at an abnormally low position, stop the vehicle while moving in reverse and then move forward. Repeat three or four times. If this does not move to restore normal brake pedal position, have the brake fluid and linings checked by your dealer.

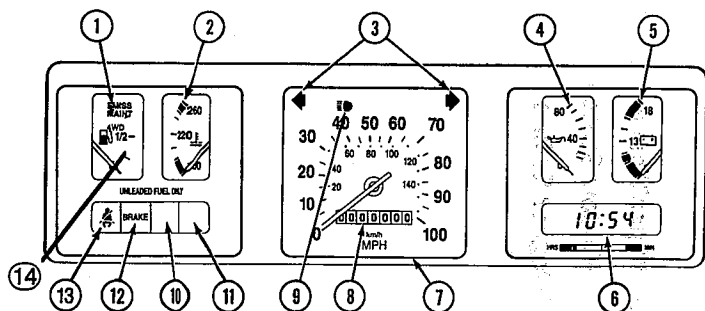
Grand Wagoneer Instrument Panel



Instrument Panel

1. Headlight Switches.
2. Courtesy Lights and Instrument Cluster Light Intensity Control.
3. Multi-function Stalk.
4. Speedometer.
5. Fog Lamp Switch.
6. Heating, Ventilation and Air Conditioning Controls.
7. Radio.
8. Air Conditioning Vents/Directional Control.
9. Glove Box Latch.
10. Cigarette Lighter.
11. Selec-Trac Control.
12. Fresh Air Vent Control Knobs.
13. Tailgate Window Wiper/Washer Switch.
14. Electric Tailgate Window Switch.
15. Rear Window Defogger Switch.

Instrument Cluster



1. Fuel Gauge.

2. Engine Coolant Temperature Gauge. Indicates temperature of engine coolant. The red zone on top indicates possible overheating. Seek authorized service immediately. See Cooling System Operating Information in the **Service and Maintenance** section of this manual.

WARNING: To guard against bodily injury from hot coolant, do not check coolant level at the radiator when engine is hot. If an emergency requires a coolant level check at the radiator, follow Emergency Coolant Level Check procedure.

3. Turn Signal Indicator Lights.

4. Oil Pressure Gauge. Indicates engine oil pressure, but not oil level. Normal pressures are 20 to 60 psi (138-414 kPa) at highway speeds. Pressure varies with engine speed, temperature, and oil viscosity. Cold engines have higher pressure. Sustained high speeds cause lower pressure, and a hot engine idle pressure of 13 psi (90 kPa) is satisfactory. Consistent lower pressure readings indicate possible malfunction or low oil level. Seek authorized service immediately.

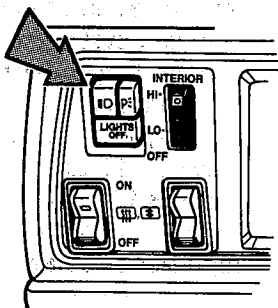
5. **Voltmeter.** Indicates available battery voltage and charging system. The lower red zone indicates that battery charge may be too low to start the engine. The high red zone indicates possible overcharging. With the engine running, the normal operating range is between 11 and 15 volts. Prolonged readings between 8-12 (undercharge) or above 15 (overcharge) indicate possible malfunction of alternator, voltage regulator or battery. Seek authorized service if such indications occur.
6. **Digital Clock.** To set the hour, press the left side of the rocker switch until the correct hour is displayed. Press the right side of the switch until correct minutes are displayed. Use of the minute switch does not affect the hour setting.
7. **Speedometer.**
8. **Odometer.**

CAUTION: *Watch your vehicle's mileage and check your **Maintenance Schedules** for required servicing.*

9. **Headlights High-Beam Indicator Light.**
10. **Emission Maintenance Indicator Light.** Inoperative on this vehicle.
11. **4-Wheel Drive Indicator Light.** Indicates that the vehicle is in 4-wheel drive.
12. **Brake and Brake Pressure Indicator Light.** Indicates parking brake is applied. If the light stays on when the parking brake is released, it indicates a possible brake system fluid leak or low pressure level. See authorized service.
13. **Seat Belt Warning Light.**
14. **Low Fuel Warning Light.** Glows when approx. 2 U.S. gal./1.6 Imp. Gal./7.6L remain in fuel tank.

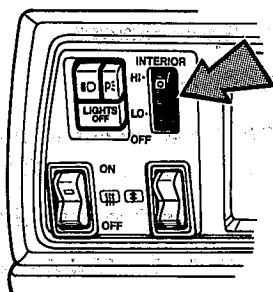
Headlight Switch

Depress right side of switch to turn on parking lights. Depress left side of switch to turn on headlights and parking lights. Press LIGHTS OFF to switch off parking lights and headlights. On models with optional **Headlights-On Chime**, a chime sounds with the headlights on and the ignition OFF.



Interior Lights and Instrument Cluster Lights Intensity Control

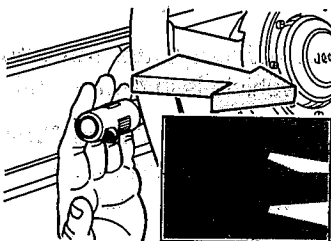
Adjust downward to dim instrument cluster lights. Adjust fully upward to turn on interior lights.



Multifunction Stalk

Headlight Beam Switch

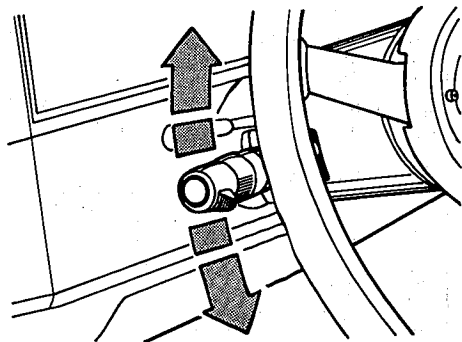
When the left side of the headlight switch is depressed, pull the Multifunction Stalk toward you to change headlights from high-beam to low-beam, or from low-beam to high-beam. A high-beam indicator light is located near the center of the instrument cluster.



Flash-to-Pass Signal

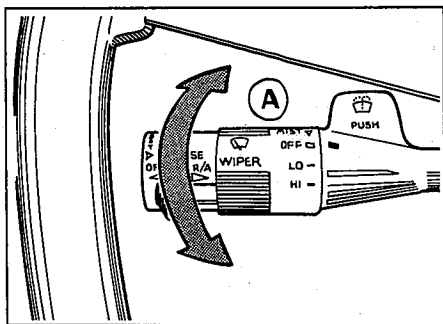
When the dashboard headlight switch is off, pull the multifunction stalk toward you and hold. High-beam will

be activated and releasing the stalk will de-activate the lights.



Turn Signals

Move the Multifunction stalk up or down, depending on the turn. **Up:** right hand turn signal. **Down:** left hand turn signal. **Lane Change:** hold the stalk slightly upward or downward.



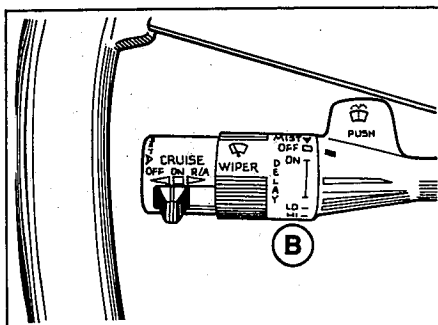
Windshield Wiper

Mist—for a single wiper cycle, rotate the WIPER band (A) toward you and release it. Hold the control in the mist position for several wiper cycles, if desired.

Low Speed—turn WIPER band away from you to first stop.

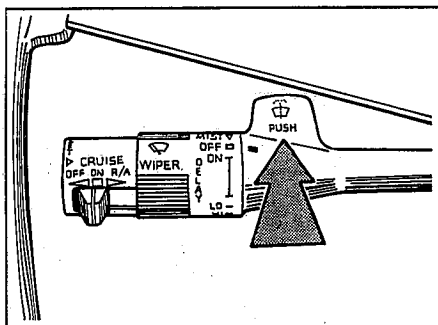
High Speed—turn band to next stop.

Off—turn band to OFF.



Intermittent Wipers—the DELAY band (B) allows you to vary wiper speed from 1/2 second to 20 second delay. To operate, turn to ON and adjust to desired delay speed.

Windshield Washer



To spray washer fluid on windshield, push the “paddle” on top of the stalk. This will also turn on the low speed wipers. Spray continues until you release paddle. To stop the wipers, turn the WIPER band to the OFF position. If you are spraying the windshield while using the Intermittent function, the wipers will resume the Intermittent function a few cycles after the paddle is released.

Tailgate Window Wiper/Washer Switch

Press the top of the switch for intermittent wiper/washer operation. Press and hold the bottom of the switch for constant wiper/washer operation. Release the switch to stop.

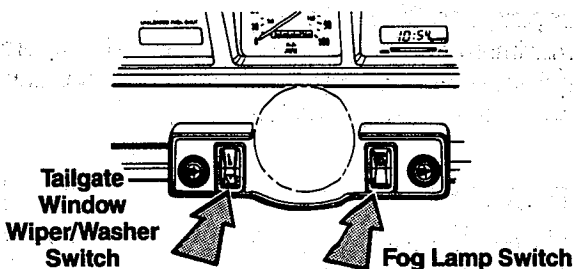
NOTE: *The wiper will operate only when the tailgate window is fully closed.*

Fog Lamp Switch

Before operating fog lamps, be sure to remove the protective covers. Replace covers when lamps are not in use.

Press top of switch to operate fog lamps. An amber pilot light on the switch indicates when fog lamps are on.

Fog lamps may be operated only when low beam headlights are on. If the headlights are switched to high beam, the low beam lamps and the fog lamps will go off. The fog lamps will go back on when the high beams are switched off. The fog lamp indicator light will go off when the high beams are on, and go back on when the high beams are switched off.



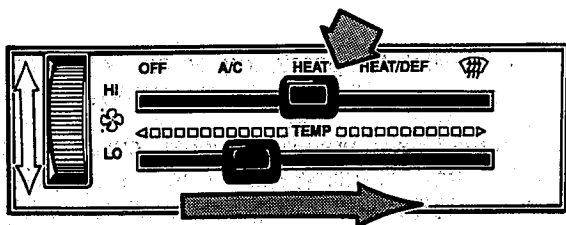
WARNING: *Do not operate Fog Lamps in the face of oncoming traffic. These lamps are intended for use when visibility is limited and the intense brightness may cause excessive glare for other drivers. Some states require*

that the lamps be covered when vehicle is operated on the street. Be sure to check with state and local authorities concerning restrictions for mounting and operating fog lamps.

Heating, Ventilation and Air Conditioning

Heating

In snowy weather, always clear the air inlet grille in the hood before driving your vehicle. For maximum heat, move upper lever to HEAT position and move temperature control lever to the right. Adjust temperature control lever and four-speed fan for your comfort.

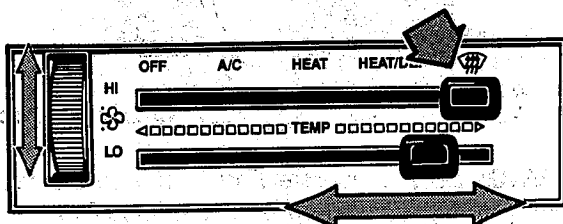


Heating Controls

NOTE: The fan motor remains on at all times unless the upper control lever is off.

Defogging and Defrosting

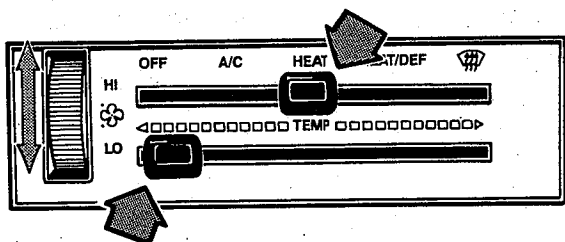
For maximum setting, push upper lever and temperature control lever all the way to the right and position fan switch to HI. Adjust for comfort.



To direct heated air to floor vents and to windshield for defogging, move upper lever to the HEAT/DEF position.

Ventilation

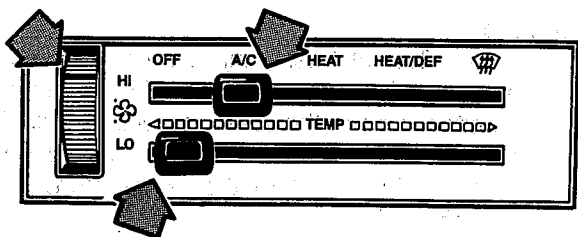
To control the flow of fresh, unheated air through the fresh air vents, pull out one or both of the control knobs located on either side of the steering column. Additional forced air ventilation can be obtained by setting the upper lever to HEAT, putting the temperature control lever to the left, and operating the fan.



Air Conditioning

For vehicles equipped with air conditioning, maximum operation is achieved at normal highway speeds. During stop-and-go traffic, a slight reduction in cooling efficiency will generally occur. When the air conditioner is operating, the engine temperature gauge will indicate slightly higher than normal temperatures. If excessive overheating occurs, check the condition of all water hoses, check the radiator for rust or scaling, and make sure the air conditioning condenser is clear of bugs or other foreign matter.

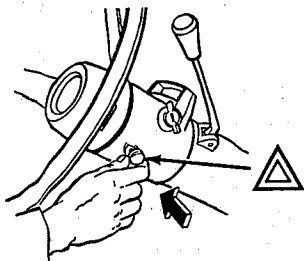
For maximum cooling, set the upper lever to A/C and the temperature control lever to the left, then turn fan to highest speed. Adjust temperature lever and fan speed to comfort, and direct air outlet louvers as desired.



CAUTION: Do not install a fine mesh bug screen in front of the condenser and radiator that will restrict airflow and result in overheating. Periodically remove bugs and foreign matter from the condenser and radiator fins.

Hazard Warning Flasher

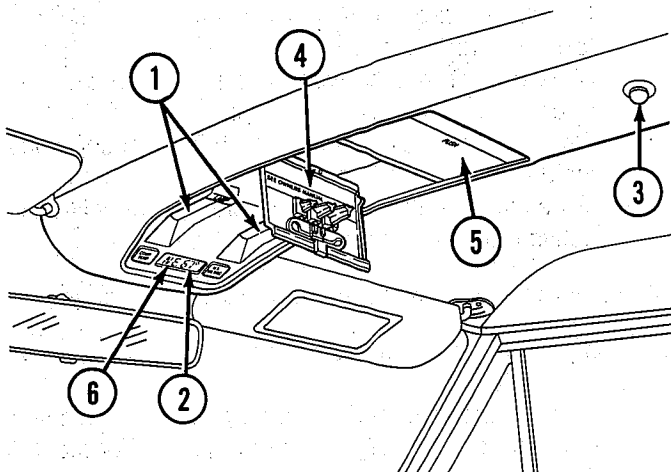
The Hazard Warning Flasher operates with the ignition switch ON or OFF. Push the button on the steering column right side, and all four outside turn signals and the instrument cluster indicators will flash on and off together. Pull



Hazard Warning Flasher Button

button to cancel. Use for emergency stops or warning of dangerous conditions. When the brakes are applied, the brake lights glow continuously and the turn signal lights flash.

Overhead Console



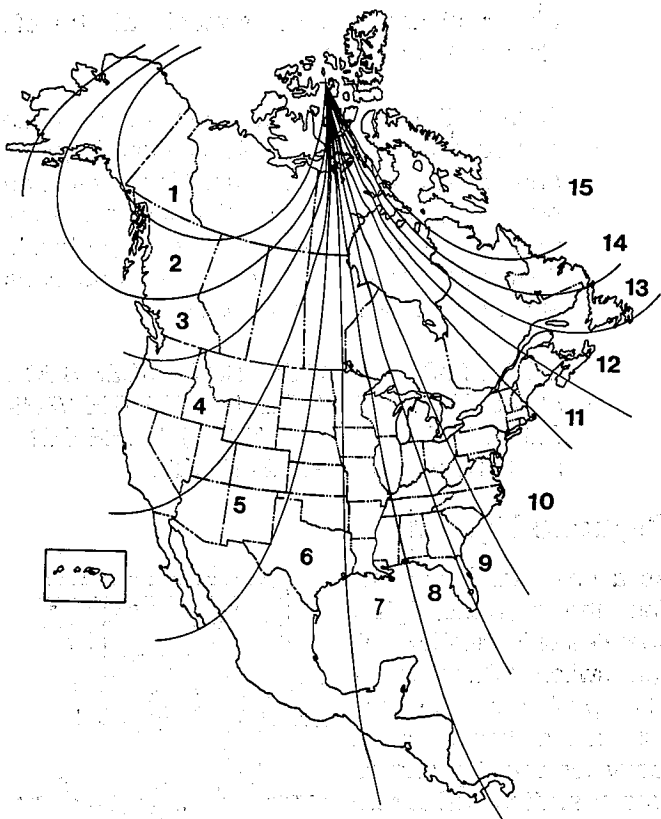
The Console houses these components:

- 1) Courtesy lighting for front and rear seating areas. Rear lamps are equipped with on-off sensors activated by opening doors. Front and rear lamps also have independent on-off switches.

Note: *Lamps will remain on until switch is pressed, so check before leaving the vehicle.*

- 2) Digital display for outside air temperature measurement. Press U.S./Metric button to display degrees Fahrenheit or Centigrade.
- 3) Keyless Entry Receiver—Hold transmitter near the side of the vehicle, point toward the receiver and press to activate. Transmitter will lock or unlock all doors at once.
- 4) Holder for automatic garage door opener.
 - a) Position opener in designated space using velcro fastener provided.
 - b) Select one of the three pegs located inside the holder cover based on thickness of your transmitter. Use medium tab for transmitter 1-1/8" thick. Use longer tab for thinner transmitter and shorter tab for a thicker one.
 - c) Slide chosen tab between two prongs located on door cover until it clicks into place.
 - d) Orient button on transmitter with intersecting lines inside the compartment.
 - e) Pressure on the closed holder cover will now activate the garage door.
- 5) Holder for sunglasses—Push to release cover.
- 6) Compass indicates forward direction of vehicle.
 - a) **Calibration**

This compass is self-calibrating which eliminates the need to manually set the compass. For a short time when the vehicle is new, the compass may appear erratic and the CAL symbol will be displayed. After completing, at most, three 360° turns, the CAL symbol will turn off and the compass will function normally.



b) **Variance**

Variance is the difference between magnetic North and geographic North. In some areas the difference between magnetic and geographic north is great enough to cause the compass to give false readings. If this occurs, the variance must be set.

To set the variance: turn the ignition switch ON, depress and hold the Comp/Temp button, then depress and hold the US/M button for approximately 5 seconds. The VAR symbol will be

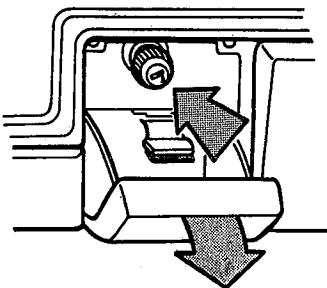
displayed and all other symbols will be off. Release the buttons.

Consult the map to determine the variance number for your geographic location. Depress and release the US/M button until your variance number appears on the display, then press the Comp/Temp button. The display will go blank, then reappear after approximately 5 seconds and will be functioning normally.

DO NOT ATTACH MAGNETIC DEVICES SUCH AS MAGNETIC CB ANTENNAS TO THE VEHICLE ROOF AS THEY CAN CAUSE THE COMPASS TO GIVE FALSE READINGS.

Cigarette Lighter

As a child safety precaution, the cigarette lighter operates only with the ignition switch ON. It heats when pushed in, and pops out automatically when ready for use. **To ensure safe operation and to preserve the heating element, do not hold the lighter in the heating position.**

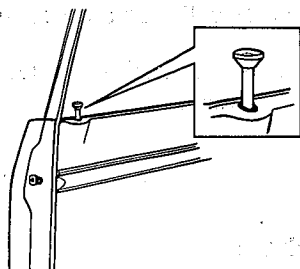


Windows, Doors and Storage Compartments

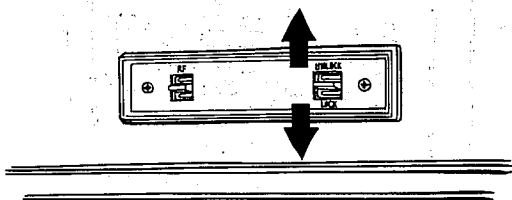
Door Locks

The **square-headed key**, stamped "K" on the knock-out plug, operates the ignition switch only. The **oval-headed key**, stamped "L" on the knock-out plug, operates all other locks.

The **oval-headed key** operates the front door locks from the outside. Lock the doors when inside by depressing the lock buttons. With the buttons depressed, the doors cannot be opened from the inside.



Door Lock Button



Power Door Lock Switch

WARNING: *For personal security reasons and safety in the event of an accident, lock the vehicle doors when you drive as well as when you park and leave the vehicle.*

To lock the doors from the outside, depress the locking button and close the door fully.

Keyless Entry System

On models equipped with the Keyless Entry System, the transmitter will lock or unlock all door locks at once.

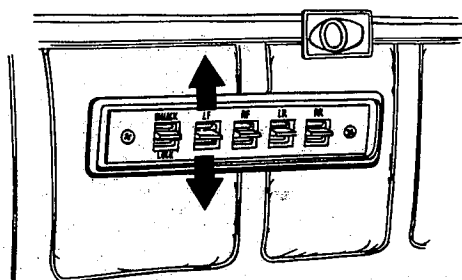
To operate the system:

- Hold the transmitter near the side of the vehicle.

- Point the transmitter at the receiver located on the Overhead Console.
- Press the transmitter to lock or unlock the doors. The indicator light glows when the unit is operating to show that the transmitter batteries are operating properly.
- Replace transmitter batteries as needed with two CR2016 3-volt batteries.

Windows

Power-Lift Windows

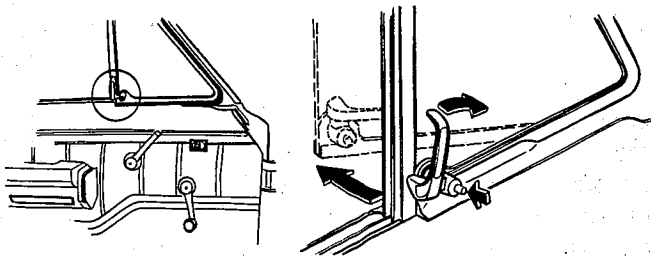


Power Window Control

As a child safety precaution, the optional power windows operate only with the ignition switch in the ON position. An individual button controls each side window. A set of buttons on the driver's door provides remote control of all side windows plus a lock to prevent other passengers from operating the power windows. Press the button down to lower a window, press up to raise it.

Front Vent Windows

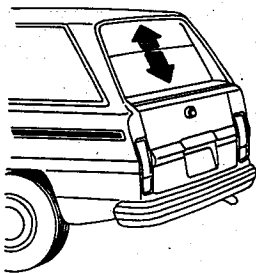
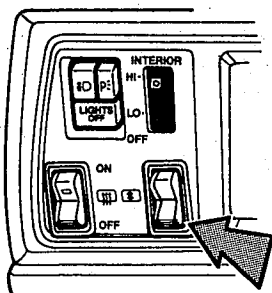
To open vent windows, depress the latch button, rotate handle and push window outward.



Front Vent Window — Typical

Tailgate Window

To operate the **electric tailgate window** from outside, turn the **oval-headed** key in the tailgate lock clockwise to raise, counterclockwise to lower. From inside the vehicle, use the switch located on the instrument panel. As a child safety precaution, the ignition switch must be in the ON or Accessory position before the switch will operate. Move switch down to lower the window, and up to raise it. The switch returns to mid-position when released. A safety device prevents operation unless the tailgate is fully closed.

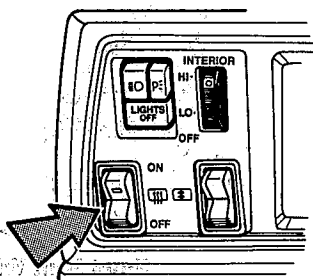


Electrically Operated Tailgate Window Controls

NOTE: On models with a tailgate window wiper, approximately 1.5 inches of glass will remain when the window is in its fully lowered position.

Tailgate Window Defogger

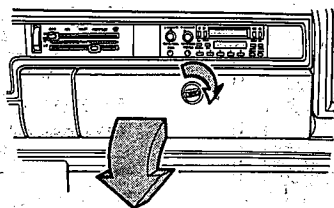
The rear defogger switch controls the electric grid attached to the inside glass surface. An amber pilot light glows when the system is on. An automatic timer disconnects the defogger after approximately ten minutes, or when the ignition is turned OFF. The defogger can also be turned off manually using the switch. For additional defogging, turn switch on again.



Tailgate Window Defogger

CAUTION: Use care when washing the inside of the rear window to prevent damage to heating elements. Use a soft cloth and mild washing solution, wiping parallel to the heating elements. Also keep all objects a safe distance from the window to prevent damaging the heating elements.

Glove Box

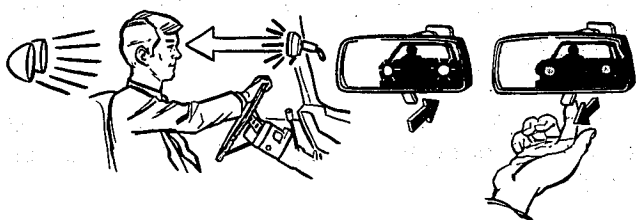


Mirrors

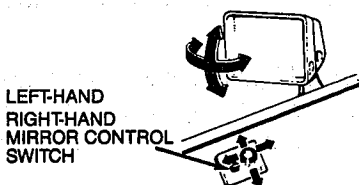
Rearview Mirrors

Adjust all mirrors for maximum rear visibility while sitting in a comfortable driving position.

NOTE: Objects are closer than they appear in the right hand convex outside rearview mirror.

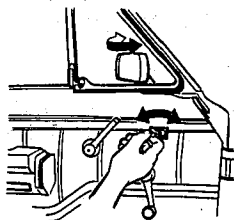


Day/Night Mirror



LEFT-HAND
RIGHT-HAND
MIRROR CONTROL
SWITCH

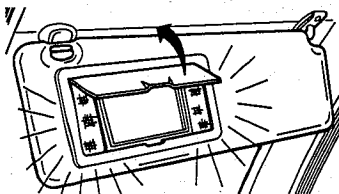
Power Remote Mirror Control



Remote Control Mirror

Lighted Vanity Mirror

Lift the cover to reveal the mirror. The light will turn on automatically.



Lighted Vanity Mirror

Cargo Area Warnings

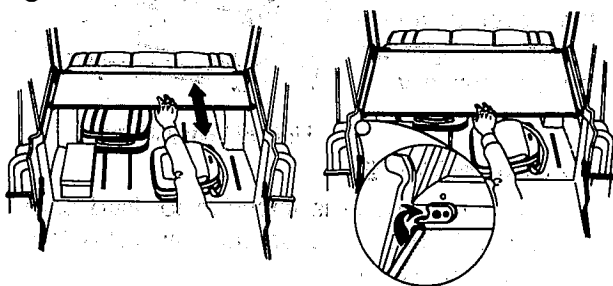
- The rear cargo space is intended for load carrying purposes only, not for passengers, who should sit in seats and use seat belts.
- Do not drive with the tailgate or tailgate window open, even slightly. Poisonous carbon monoxide fumes can enter the vehicle.
- The weight and position of cargo and passengers can change the vehicle center of gravity and vehicle handling. To avoid loss of control resulting in personal injury, follow these guidelines:

- Do not carry loads which exceed the load limits described on the label attached to the left door or left door center pillar.
- Always place cargo evenly on the cargo floor, and locate heavier objects as low and as far forward as possible.
- Place as much cargo as possible in front of the rear axle. Too much weight or improperly placed weight over or behind the rear axle can cause the rear of the vehicle to sway.
- Do not pile luggage or cargo higher than the top of the seat back. This could impair visibility or become a dangerous projectile in a sudden stop or collision.

Cargo Area Lamp

The lamp will not automatically illuminate when the tailgate is opened. An on-off switch is located at the rear of the headliner near the tailgate window.

Cargo Area Cover



Grand Wagoneer Retractable Cargo Area Cover

WARNING: Do not store the cargo cover on the cargo floor or in the passenger compartment. In the event of an accident, a loose cover may cause personal injury. The cargo cover must be removed from the vehicle when taken from its mounting. Do not store in the vehicle.

Tailgate

To open the tailgate, lower the window fully. **The window must be lowered completely to prevent damage to the glass.** Pull upward on the tailgate latch located on the inside top center portion of the tailgate and lower the tailgate.

When closing the tailgate, do not lift the door by grasping the wiper arm.

Luggage Rack

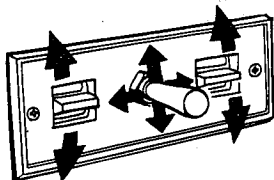
A roof-top luggage rack is available for the Grand Wagoneer model. To position the end rails, loosen the adjustment wheels, move the end rails down the slide rails and re-tighten the wheels.

Seats

WARNING: Do not adjust the driver's seat with the vehicle moving.

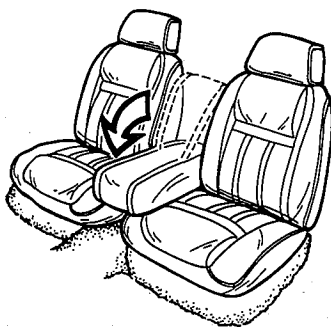
Power Front Seats

The controls for the Power Seats are located on the side of the seat at the lower edge of the seat bottom.



- **To raise/lower seat:** move center control upward/downward.
- **To move seat forward/rearward:** move center control forward/rearward.
- **To tilt front of seat upward/downward:** move foremost control

Power Seat Controls



Fold Down Arm Rest

upward/downward.

- **To tilt rear of seat upward/downward:** move rear-most control upward/downward.

Front Seat Headrests

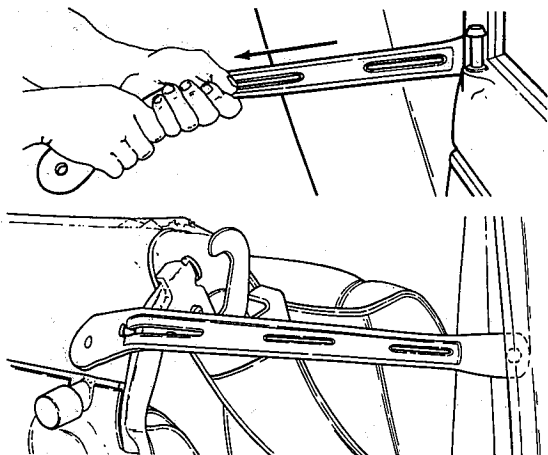
Adjust the headrest by raising or lowering it so that its top is aligned with the top of the seat occupant's ears.



Headrest Adjustment

Rear Seats

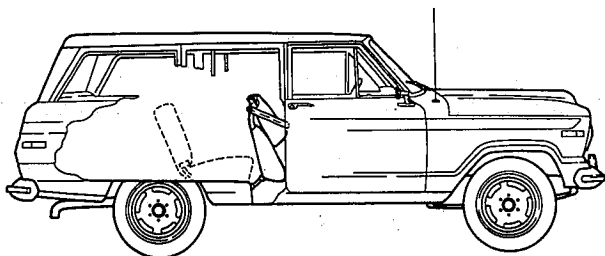
The double-hinged rear seat can be folded forward to increase cargo space or it can be removed from the vehicle.



To fold the seat forward: Lift the latch on the side of the seat to release the seatback lock, and lower the seat-

back. Tilt the seat assembly forward, and hook the holding strap over the seat frame stud to secure it to the door pillar.

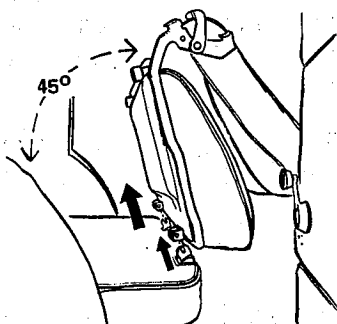
NOTE: When using the strap for the first time or after a long period without use, pull the strap firmly to overcome the natural "set" in the material. The strap will then be easier to use.



Grand Wagoneer Cargo Area— Rear Seat Folded

To remove the rear seat:

Lift seatback release latch and fold the seatback forward. Swing the seat upward about 45° from floor. In this position the hinge pin flats align with the floor hinge slots. Raise the seat to disengage the floor hinges.



Rear Seat Folded

Seat Belts

For your safety, drive with properly adjusted seat belts. Many states and all Canadian provinces require belt use. Check the laws of the area in which you drive.

The system used at the front outboard seat positions on all models employs a one-piece combination lap/shoulder belt with a connector tongue that slides up and down the belt for proper fit. **This continuous loop system has a single emergency-locking retractor reel which locks upon very rapid acceleration or deceleration of the vehicle.** Follow the directions under ***“To Buckle-Up”*** for proper belt adjustment.

The center position on all rear seats is equipped with manual-adjusting lap belt. The rear seat outboard positions are equipped with automatic-locking lap belt retractors.

Seat Belt Warning System

A red seat belt indicator light and a buzzer or chime alert the driver to buckle the seat belt on all models. The **light** operates when the ignition switch is first turned to the ON position, whether or not the belts are buckled. The **buzzer or chime** will sound only if the driver fails to buckle up before turning the ignition switch to the ON position. In any case, it will stop automatically after several seconds.

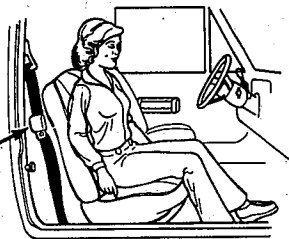
The warning light and buzzer work independently of each other and only for the driver's seat.

To “Buckle-Up”

Front Seat Lap/Shoulder Belt

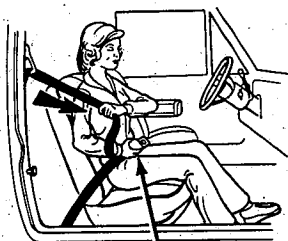
- Adjust front seat to the satisfaction of the driver. Sit up straight and well back in the seat.

LAP/SHOULDER BELT
CONNECTOR



Location of Lap/Shoulder Belt

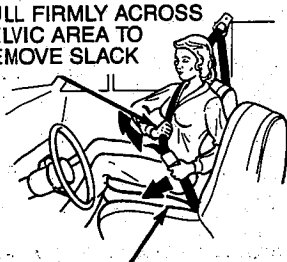
- Grasp the connector and slide it as far up or down as necessary for the belt to go around your lap. Move the connector toward the buckle, pulling the belt from the retractor as you go. The retractor will not lock up if you stop or hesitate when pulling the belt.



MOVE CONNECTOR TOWARD
BUCKLE WHILE PULLING
BELT FROM RETRACTOR

Connecting Lap/ Shoulder Belt

PULL FIRMLY ACROSS
PELVIC AREA TO
REMOVE SLACK



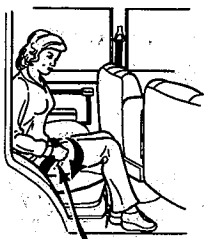
ADJUST BELT
LOW ON HIPS

Adjusting Correct Belt Fit

Insert the connector into the buckle until you hear a "click" and feel it latch. Position the lap portion of the belt across the hips **as low as possible**. Grasp the shoulder portion of the belt near the connector and pull firmly across the pelvic area. This will ensure a snug fit on the lap portion of the belt.

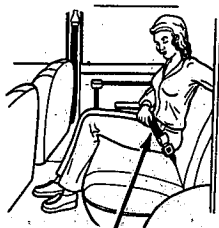
Rear Seat Lap Belts

- For outboard seats equipped with automatic-locking retractors, pull the belt from the retractor in a single, continuous motion, and insert the metal latch plate into the buckle until a "click" is heard. If the belt won't reach, let it rewind to release the locking mechanism so belt can be pulled to the proper length. **Position the belt low across hips and pull in direction of the retractor to provide a snug fit.**
- For center seat positions without automatic locking retractors, insert the metal latch plate into the buckle until a "click" is heard. **Position the belt low across hips and pull free end of webbing at the latch side of the belt to provide a snug fit.**



CONNECT BELT, ADJUST
LOW ON HIPS FOR
SNUG FIT.

Outboard Position

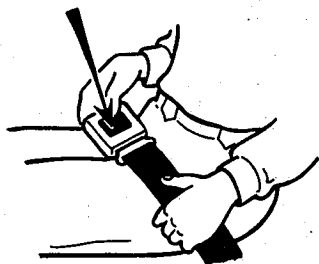


CONNECT BELT, ADJUST
LOW ON HIPS AND PULL
FIRMLY TO REMOVE SLACK

Center Position

To Disconnect and Stow Belts

Depress the button in the buckle center. When not in use, front seat lap/shoulder belts will rewind into their retractors. It may be necessary, after disconnecting the lap/shoulder belt, to pull the belt forward a few inches and then release it in order for belt to rewind.



Disconnecting Belts

Seat Belt Warnings

Failure to use seat belts properly may result in unnecessary injuries or death in the event of an accident. Always follow these warnings:

- Do not operate vehicle unless seat belts for driver and all passengers are securely fastened. Movement of an unrestrained occupant during an accident can result in severe injury for other vehicle occupants as well as for the unrestrained occupant.
- Adjust seat belts low and snug across the hips. Never adjust seat belts loosely.
- Never adjust seats while driver or passengers are wearing seat belts, which could cause excessive slack. Always fasten seat belts after seat is adjusted.
- Do not operate the vehicle with a seatback in the reclined position, if equipped. The occupant could slide under the seat belt in event of an abrupt stop or accident.
- Do not position shoulder belts under the arms.
- Do not use the same belt on more than one person, and you never attach a belt over an infant or child held in your lap. Such use increases the chances and

severity of injury in the event of an accident or sudden stop.

- Be sure each seat belt connector is inserted in the correct buckle. It is possible, especially for children, to cross the buckles on bench-type seats.

Seat Belt Safety Checks — Inspect the belt system periodically; checking for cuts, frays, and loose parts. Damaged parts must be replaced immediately. Do not disassemble or modify the system.

Safety belt assemblies must be replaced after an accident if they have been damaged (bent retractor, torn webbing, etc.). If there is any question regarding belt or retractor condition, replace the belt.

Seat Belt Maintenance — Do not bleach, dye, or clean the belts with chemical solvents or abrasive cleaners. This will weaken the fabric.

If the belts need cleaning, use a mild soap solution or lukewarm water. Do not remove the belts from the vehicle to wash them.

Replace the belts if they appear frayed or worn, or if the buckles do not work.

When Children Are Passengers

All states and many Canadian provinces require the use of child restraint devices. Check the laws of your state or province. An infant or child restraint system can help protect a child in a vehicle in the event of an accident or sudden stop.

All child restraint systems are designed to be secured in a vehicle seat by a lap belt or the lap belt portion of a lap/shoulder belt system. Your child may be endangered in an accident or sudden stop if the child restraint is not properly secured in the vehicle.

According to accident statistics, children are safer when properly restrained in the rear seating positions than in the front seating positions.

Child Seat Warnings

Follow these guidelines when selecting and using a child restraint system:

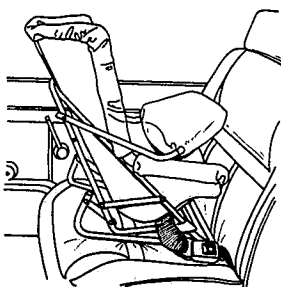
- Read instructions for the restraint system carefully. Be sure you understand the instructions so you can install and operate the restraint system properly in your vehicle.
- Be certain to secure any child or infant seat in strict compliance with the instructions of the seat manufacturer.
- The restraint system should have a label certifying that it meets Motor Vehicle Safety Standard No. 213.
- Make sure the child restraint system is suited to the child's height, weight, and build. A label on the restraint system should provide this information.
- To help lessen the chance and/or severity of injury to a child in an accident, always use the child seat belt tether straps (if equipped) and vehicle lap belt to secure the child seat. Check seat by pulling top of seat forward to be sure there is no slack in the tether straps, which could reduce the protection of a child during an accident.
- When using a child restraint system that requires top tether strap(s) in your vehicle, use only the specified anchor positions for your vehicle.
- The metal parts of the child seat, plus any metal part in your vehicle, can become hot in both direct and cloud filtered sunlight, and might possibly cause a flesh burn. Under such conditions, the metal parts should be covered with a cloth. Before placing a child in the

seat, always check the metal parts to ensure they will not cause injury.

- Children should never be left alone in your vehicle.
- When not in use, secure the child restraint system using the seat belt or remove it and place it somewhere other than in the vehicle to prevent injury to passengers in the event of a sudden stop or accident.

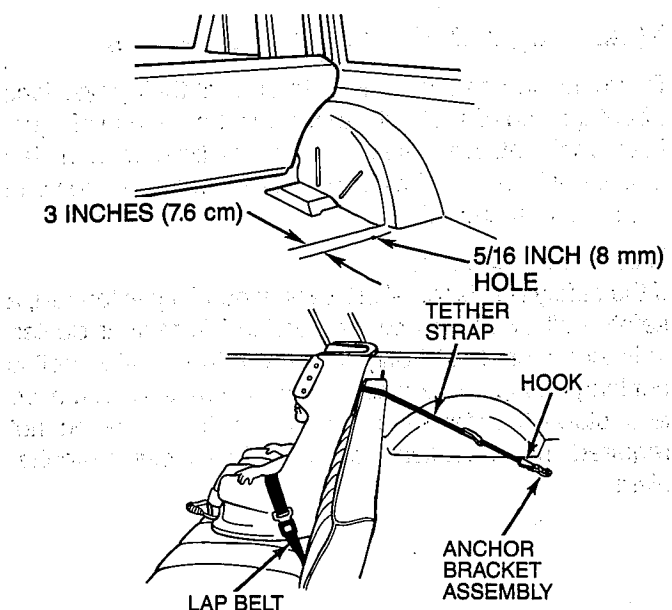
Tetherless Child Restraints

Forward or rearward facing child restraints that are designed for use without a top tether strap may be used. The following illustration shows a typical rear-facing infant seat installation. Be sure that you carefully follow the seat manufacturer's instructions for proper installation and operation of the restraint system.



Tetherless Infant Seat

Tether Strap Installation



Grand Wagoneer

1. Remove the floor covering behind the right rear seat and drill a 5/16" (8 mm) diameter hole through the floor 3 inches (7.6 cm) behind the bottom plug for the body holddown bolt.
2. Install anchor bracket assembly.

Harnessing Instructions

1. Place the child seat firmly against the vehicle seat and seat back.
2. Latch the child seat tether strap hook onto the anchor bracket and **SECURELY TIGHTEN THE TETHER STRAP.**
3. Carefully follow the recommendations of the child

seat manufacturer regarding adjustment of restraint system around child.

When Pregnant Women Are Passengers

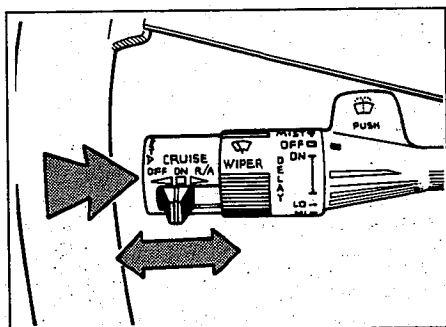
Pregnant women are advised to consult their physicians about the use of seat belts to reduce the chance of injury in an accident. When seat belt is worn, be certain the lap belt is positioned as low as possible across the hips and adjusted to a snug fit.

Safety Belt Extender

If the safety belt is too short, even when fully extended, a safety belt extender can be obtained from your dealer. This extender should only be used if the existing belt is not long enough. When not required, it must be removed and stowed because use of the extender when not required may deactivate the seat belt locking mechanism.

Special Equipment Operation

Cruise Control



Cruise Control Switch

Cruise Control on the Multifunction stalk allows you to maintain a constant speed of 30 mph (48 km/h) or more during long-distance driving, without keeping your foot on the accelerator pedal. You can also resume a pre-set cruising speed after braking or slowing your vehicle.

To Set Cruise Control

Accelerate to the desired speed, turn the CRUISE switch to ON, push in the engagement button, then release it. Take your foot off the accelerator pedal and the set speed will be maintained, with some variations when going up or down hills.

To reset Cruise Control to a faster speed, accelerate to faster speed using the accelerator pedal or R/A (Resume/Accelerate) button, then push in the engagement button and release it. To reset to a slower speed, push in the button all the way and hold it there until your Jeep vehicle slows to the desired speed, then release the button.

To disengage Cruise Control, apply the brakes lightly,

turn the control to OFF. When the ignition switch is OFF, the Cruise Control is also disengaged.

To Resume a Pre-Set Speed

To resume the last-set cruising speed after braking, depressing the clutch, or stopping, first accelerate to a speed close to the last-set cruising speed, slide the CRUISE switch to R/A, then release both the switch and the accelerator pedal.

Driving Up or Down Hills

When going up or down hills, it is possible for your vehicle to lose or gain speed, even though the Cruise Control is engaged. If this happens while going uphill, merely press down the accelerator pedal to maintain the desired speed. If going down a hill steep enough to cause the vehicle to gain speed, press the brake pedal, which will disengage the Cruise Control and help slow your vehicle.

To Pass A Vehicle

Use the accelerator pedal for more speed when passing. When you take your foot off the pedal, your vehicle will slow to the speed set before passing.

Cruise Control Warnings

To help you keep your vehicle under control, do not use Cruise Control under these conditions:

- When it is not possible to keep your vehicle at a set speed.
- On slippery roads, such as on snow or ice.
- In heavy or varying traffic volume, in traffic that varies in speed, or on winding roads.
- Be sure to turn the Cruise Control switch to the OFF position when not in use to avoid accidental engagement.

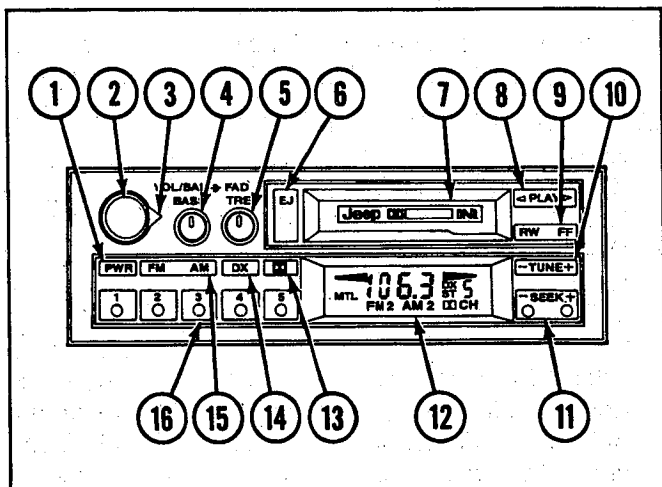
Audio Systems

Jeep solid-state radios operate with the ignition switch in the ON or Accessory positions.

Antenna

The antenna is a solid one-piece mast, providing maximum performance. Its length is not adjustable.

Electronically Tuned AM/FM Stereo Cassette Radio with Dolby Noise Reduction

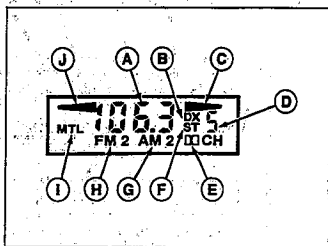


1. **ON/OFF Switch.**
2. **Volume/Balance Control.** Turn to adjust volume. To adjust left/right speaker balance, pull knob and turn.
3. **Fader Control.** Adjusts front/rear speaker balance.
4. **Bass Control.** Press to release knob, then turn to adjust.

5. **Treble Control.** Press to release knob, then turn to adjust.
6. **Tape Eject Button.**
7. **Tape Entry Door.**
8. **Program/Play Switch.** Touch to reverse tape direction or to stop Fast Forward/Rewind function.
9. **Fast Forward/Rewind Switch.** For cassette tape function.
10. **Electronic Tuning Control.** Touch to fine tune on the AM or FM band.
11. **Seek.** Touch to start search for a station higher (+) or lower (-) on the AM or FM band.

12. Digital Display Screen.

Radio and cassette deck function indicators: (A) Digital Program Display; (B) DX Indicator; (C) Tape Direction Indicator; Fast Forward when flashing; (D) Pre-selected Station Channel Indicator; (E) Dolby Noise Reduction Indicator; (F) Stereo Station Indicator; (G) AM/Double Memory Indicator; (H) FM/Double Memory Indicator; (I) Metal/CrO₂ Tape Indicator (automatic); (J) Tape Direction Indicator, Rewind when flashing.



13. **Dolby Noise Reduction Switch.** Touch when playing a tape recorded with Dolby Noise Reduction.
14. **DX (Local/Distant) Selector.** Affects only Seek stop level. In areas where many stations are available, touch for Local setting. When few stations are available, touch again for Distant setting, which is displayed by the **DX** indicator.

15.FM/AM and Double Memory Selector. Touch once to select AM or FM band and first set of pre-selected stations. The Display Screen will indicate Double Memory selection, either **FM1** or **AM1**, as selected. Touch the same side of the switch again to select second set of pre-selected stations. Display Screen will indicate Double Memory selection, either **FM2** or **AM2**, as selected. Receives AM stereo using C-Quam® Stereo Decoder.

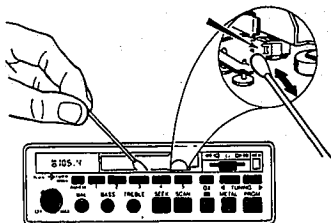
16.Station Selectors. To program a station to memory:

- 1) Find desired station by using **Seek** (11).
- 2) Touch a station selector and hold. The station will cut out, then return. When it returns, release selector.
- 3) After each of the five selectors have programed one station into memory, a second set of stations can be selected by touching **AM** or **FM** a second time. In this way, each selector can program two AM and two FM stations into memory, for a total of 10 AM and 10 FM stations.

- DNR is a trademark of National Semiconductor Corporation.
- Noise Reduction system manufactured under license from Dolby Laboratories Licensing Corporation.
- "Dolby" and "Double-D" symbol are trademarks of Dolby Laboratories Licensing Corporation.
- C-Quam® is a registered trademark of Motorola.

Stereo Tape Head Cleaning

During normal operation, iron oxide particles deposit on the tape head, causing undesirable sound reproduction. Clean the tape head occasionally with a cotton swab moistened with tape-head cleaner or rubbing alcohol. Wipe the



Stereo Tape Head Cleaning

capstan and head dry with clean swabs.

Cassette Cautions

- *Do not touch the tape head with magnetic or hard objects. Head damage may occur resulting in undesirable sound reproduction.*
- *Do not use C-120 or longer cassettes. These tapes are thin and may stretch or break.*
- *Make sure there is no slack in the tape before inserting the cassette. Slack may be removed by rotating the hub with a pencil.*
- *Remove cassettes from the tape player when not in use and store them in a cool, dry place. Exposure to direct sunlight, extreme temperatures, high humidity or magnetic fields may damage cassettes. Use of damaged cassettes may adversely affect performance of the tape player.*

Radio Reception Characteristics

AM radio broadcasts differ from FM broadcasts, causing different reception qualities. Reception quality also varies as conditions change. The following information describes typical reception characteristics.

AM Radio Tips

AM radio can receive broadcasts from strong stations as far away as several hundred miles. Radio volume drops as the station gets weaker. AM radio signals are susceptible to certain types of electrical interference, such as power lines, thunderstorms and traffic lights. Reception usually does not fade, but it may stop under bridges or around tall buildings. An AM radio may receive several station signals when your vehicle is near broadcast towers.

FM Radio Tips

NOTE: *FM and FM/Stereo broadcasts have some characteristics that are different than AM broadcasts. These conditions are not due to any fault in your radio.*

FM and FM/Stereo reception is limited to 25-40 miles (40-65 km). Hills, signal reflections from tall buildings, and broadcasting towers may produce temporary interference. If reception is weak, hissing, popping or station switching will occur, select another station.

Troubleshooting Radio Problems

If you experience poor radio performance, check the reception characteristics above to see if changing conditions cause your problem. Make sure the antenna is in good condition. If radio stops working, check the fuse. A protection fuse is located on the back side of the radio chassis.

Grand Wagoneer Power Sunroof

Refer to the sunroof folder located in your glove box for operation instructions.

Sunroof Warnings

- Do not allow small children to operate the sunroof, and never allow objects or occupants to project through the sunroof opening. Injury may result.
- To avoid personal injury or property damage, never remove or install the sunroof while vehicle is moving. Stop the vehicle, place transmission in Park, and fully apply the parking brake. Then remove or install the sunroof.
- To prevent the sunroof from becoming a dangerous projectile during a sudden stop or collision, do not store the sunroof loosely in vehicle. Always follow the correct storage procedure, and be certain to fasten

the sunroof securely in storage areas or remove it from vehicles.

Trac-Lok Rear Axle

The optional Trac-Lok rear axle provides constant driving force to both rear wheels and reduces wheel spin caused by the loss of traction at one driving wheel. If traction differs between the two rear wheels, the differential automatically proportions the usable torque by providing more torque to the wheel that has traction.

Trac-Lok is especially helpful during slippery driving conditions. With both rear wheels on a slippery surface, a slight application of the accelerator will supply maximum traction. When starting with only one rear wheel on an excessively slippery surface, slight application of the parking brake may be necessary to gain maximum traction.

Special Driving Techniques

On-Pavement Driving Tips

Utility vehicles have higher ground clearance and a narrower track to make them capable of performing in a wide variety of off-road applications. Specific design characteristics give them a higher center of gravity than ordinary cars. An advantage of the higher ground clearance is a better view of the road, allowing you to anticipate problems. Utility vehicles are not designed for cornering at the same speeds as conventional 2-wheel drive vehicles any more than low-slung sports cars are designed to perform satisfactorily under off-road conditions. If at all possible, avoid sharp turns or abrupt maneuvers. As with other vehicles of this type, failure to operate this vehicle correctly may result in loss of control or vehicle rollover.

On-pavement, you do experience advantages over two-wheel driving. For instance, you sit higher off the pavement and have greater visibility. And, in bad weather conditions, a four-wheeler offers greater traction.

Specifically, there are a few things to keep in mind while driving down the highway. First of all, take a minute to review the suggestions that follow on how to best utilize your vehicle.

WARNING: *Do not drive too fast for road conditions, especially when roads are wet or slushy. A wedge of water can build up between the tire tread and the road. This hydroplaning action can cause loss of traction, braking ability, and control. Under such conditions, engage 4-wheel drive.*

Off-Road Driving Tips

If your vehicle becomes stuck in snow, mud or sand, a mild "rocking" action may help free the vehicle. Move the shift lever from D (Drive) to R (Reverse) in a repeat pattern. Apply **light pressure** on the accelerator pedal while the transmission is in the D or R position. Remove your foot from the accelerator while shifting. Do not race the engine. For best traction, avoid spinning the wheels.

CAUTION: *When "rocking" a stuck vehicle by moving between a forward gear and reverse, do not spin wheels faster than 15 mph (24 km/h), or transmission damage may result.*

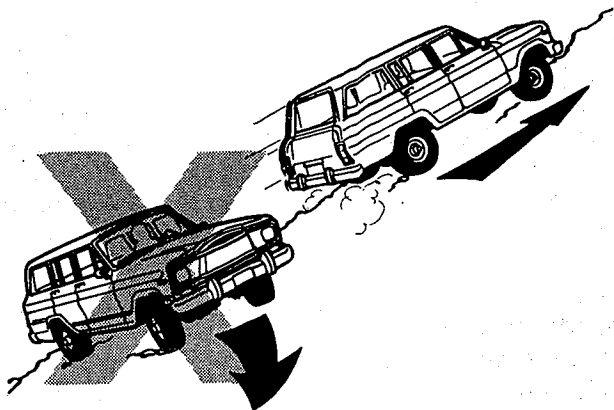
CAUTION: *Vehicles equipped with standard suspension should be operated with special care during severe off-road operation. Otherwise, damage to body and driveline components may result.*

Driving On Slopes and Hills

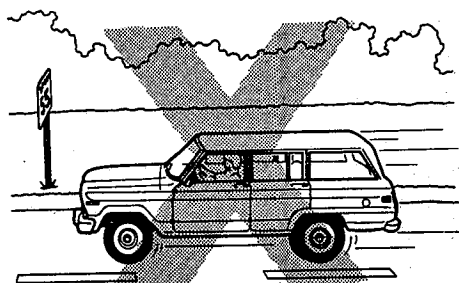
WARNING: *When descending mountains or hills, repeated braking can cause brake fade with loss of*

braking control. Avoid repeated heavy braking by downshifting the transmission whenever possible.

WARNING: *If the engine stalls or you lose headway or cannot make it to the top of a steep hill or grade, never attempt to turn around. To do so may result in tipping and rolling the vehicle. Always back carefully straight down a hill in reverse gear. Never back down a hill in Neutral or with the clutch pedal depressed, using only the brake. Remember, never drive diagonally across a hill — always drive straight up or down.*



Driving on a Slope



When Not To Use Four-Wheel Drive

When To Use Four-Wheel Drive

Shift to four-wheel drive when off-road, or to improve handling and control when on slippery or difficult terrain. Use it on the road in ice, snow, mud or sand, or whenever normal two-wheel drive traction will not do the job.

When To Use Lo Position

Shift to Lo when off-road for additional traction, in pulling forward or descending a hill, for low-speed pulling power in industrial or agricultural use, or to improve handling and control when on slippery or difficult terrain. Use it on the road in ice, snow, mud or sand to get heavy loads rolling, or whenever normal four-wheel traction will not do the job.

In Snow, Mud and Sand

In heavy snow, when pulling a load for additional control at slower speeds, shift the transmission to the "2" or "L" position and shift the transfer case to Lo if necessary. Don't shift into any lower gear than necessary to maintain headway. Over-revving the engine can spin the wheels and traction will be lost.

Hill Climbing

Before climbing a steep hill change gear positions. Shift the transmission into "2" position and the transfer case into Lo. Use first gear and Lo for very steep hills.

If you stall or begin to lose headway while climbing a steep hill, quickly apply the brakes with your left foot. Shift to Neutral, restart the engine and shift into Reverse. At idle speed, engine and transmission drag will aid the brakes in controlling the vehicle on a hill and help you back down with greater safety.

If the wheels start to slip as you approach the crest of a hill, ease off the accelerator and maintain headway by turning the front wheels sharply left and right. This will provide fresh "bite" into the surface and will usually provide traction to complete the climb.

Traction Downhill

Shift the transmission into the "L" position and the transfer case to Lo. Let the vehicle go slowly down the hill with all four wheels turning against engine compression.

This will permit you to control vehicle speed and direction.

Heavy-Duty Operation

If your vehicle is subjected to the conditions listed below, maintenance should be performed twice as frequently, for example, 3 1/2 months instead of every 7 months, or every 3,750 miles instead of every 7,500 miles. This is especially important for engine oil and filter changes.

- Frequent starting and stopping
- Frequent long periods of engine idling
- Frequent short trips of less than 15 miles (24 km)
- Desert operation
- Cold climate operation
- Sustained high speed operation
- Trailer towing
- Commercial service
- Frequent operation on dusty roads
- Off-road driving

Cautions

- Under frequent heavy-duty driving conditions, change all lubricants and lubricate body components, all driveline joints and steering linkage more often than in normal service to prevent excessive wear.
- Vehicles equipped with standard suspension should be operated with special care during severe off-road operation. Otherwise, damage to body and driveline components may result.

Warnings

- When hauling cargo or towing a trailer, do not over-

load your vehicle or trailer. Overloading can cause poor performance or damage to brakes, axles, engine, transmission, steering, suspension, body structure or tires.

- Do not “ride” the brakes by resting your foot on the pedal. This could overheat the brakes and result in unpredictable braking action, longer stopping distances or brake damage.
- After extended operation in mud, sand, water, or similar dirty conditions, have your brake drums, brake linings, and axle joints inspected and cleaned as soon as possible. This will prevent any abrasive material from causing excessive wear or unpredictable braking action.

WARNING: *Following off-road usage, completely inspect the underbody of your vehicle. Check tires, body structure, steering, suspension and exhaust system for damage. Check threaded fasteners for looseness, particularly on the chassis, drivetrain components, steering and suspension. Retighten, if required, to torque values specified in the Repair Manual. Also check for accumulations of vegetation or brush that could become a fire hazard or conceal damage to fuel lines, brake hoses, axle pinion seals, and propeller shafts.*

	Trailer Hitch Class				5th Wheel
	I	II	III	IV	
Max. Loaded Trailer Wt.	N/A	3500	5000	N/A	N/A
Tongue Load Limit	N/A	350	750	N/A	N/A

Trailer Towing and Campers

To maintain Warranty coverage, including its conditions and limitations, follow the requirements and recommendations in this manual and other factory literature concerning vehicles used for trailer towing.

Perform maintenance services as prescribed in the **Maintenance Schedules** section. When your vehicle is used for trailer towing, never exceed the gross axle weight rating (GAWR) by the addition of:

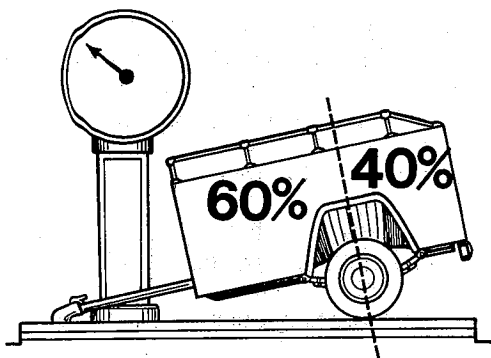
- The tongue weight of a trailer;
- The weight of any other type of vehicle or equipment put in or on your Jeep vehicle.

Remember that everything put in or on the trailer adds to the load on your Jeep vehicle. Refer to the Jeep Vehicle Weight Capacities chart in **Specifications**.

Gross Trailer Weight (GTW) means the weight of the trailer plus the weight of all cargo, consumables and equipment loaded on the trailer when in any actual underway towing condition. The best way to measure GTW is to put the fully loaded trailer on a vehicle scale. The entire weight of the trailer must be supported by the scale as shown.

Trailer Towing

The trailer must be loaded heavier in front. Load 60% of the cargo weight in the front half of the trailer. This will place approximately 10% of the loaded trailer weight on the tow vehicle hitch.



Gross Trailer Weight and Towing

Trailer Towing Warnings

- Be sure a trailer is loaded heavier in front, because loads balanced over the wheels or heavier in the rear cause the trailer to sway back and forth. Failure to load trailers heavier in front is the cause of many vehicle-trailer accidents.
- When hauling cargo or towing a trailer, do not overload your vehicle or trailer. Overloading can cause poor performance or damage to brakes, axles, engine, transmission, steering, suspension, body structure or tires.
- Do not interconnect the hydraulic brake system of your vehicle with that of the trailer. This could cause inadequate braking and possible personal injury.
- Do not connect a trailer lighting system directly to the lighting system of your vehicle. Use an approved wiring harness. Failure to do so could damage the electrical system and possibly result in personal injury.

Cooling System Tips—Trailer Towing

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

- City Traffic—When stopped, put transmission in Neutral and increase engine idle speed.
- Highway Driving—Reduce speed.
- Air Conditioning—Turn off temporarily.

See Cooling System Operating Information in the **Service and Maintenance** section.

Wiring for Trailer Towing Packages

The factory installed trailer wiring harness is located in a bag in the right rear quarter panel.

Package A harness is connected to the rear crossmember harness located under the rear of the vehicle.

Package B harness plugs into a receptacle located next to the hitch.

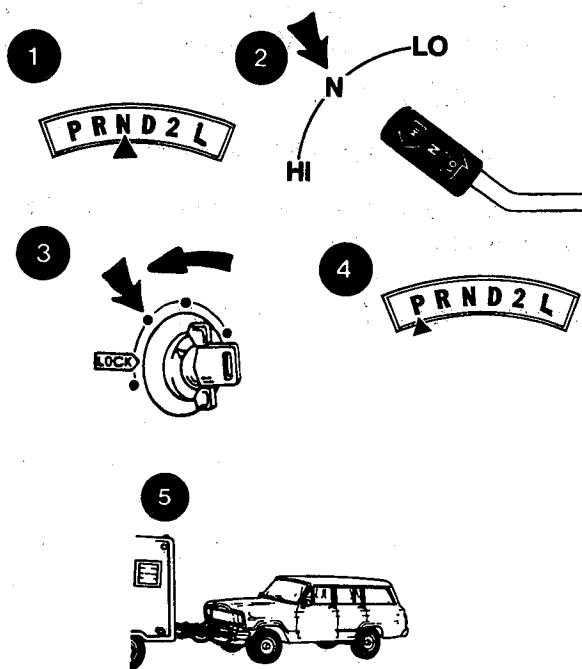
Towing Your Jeep Vehicle

Recreational Towing

Your Jeep vehicle can be towed, but be sure you comply with the following instructions to avoid damage to drivetrain components. Also check federal, state, provincial and local requirements regarding vehicle lighting and trailer hitches or tow bars. Do not exceed legal speed limits while recreationally towing your Jeep vehicle.

With Automatic Transmission and Selec-Trac

When the transfer case range selector lever is in the neutral position both axles are disconnected from the powertrain. This allows the vehicle to be towed without removing the propeller shafts.



Recreational Towing

1. With the vehicle moving slowly (2-3 mph, 3-5 km/h), shift the transmission to the neutral position.
2. Using a firm, positive hand movement, shift the range selector lever to the Neutral position.
3. Turn ignition switch to the unlocked OFF position.
4. Shift automatic transmission into Park position.
5. Connect vehicle to tow vehicle.

Service and Maintenance

This section includes technical information and maintenance procedures. If you perform your own maintenance, use the **Maintenance Schedules** as a guide for when and what services to perform. More information is available, including operational explanations, illustrations, repair procedures and specifications in the Jeep Repair Manuals. See **Service Publications** at the back of this manual.

If you rely on your dealer for maintenance, be assured he is equipped with the latest technical information, approved tools and genuine parts and accessories. **We recommend you record all services and retain receipts for repairs or parts you purchase.**

WARNING: *To guard against injury, always set the parking brake before working on the vehicle.*

Maintenance

It is the Owner's Responsibility to:

1. Read the **Maintenance Schedules**.
2. Determine the miles (or kilometers) between service, and driving conditions (normal or heavy-duty operation), and have the vehicle serviced according to the specified **Maintenance Schedule** intervals.
3. Pay for necessary parts and labor.
4. Use only fluids and lubricants which meet Jeep specifications; and
5. Have unscheduled maintenance performed when changes in handling or performance occur.

CAUTION: *Failure to perform maintenance services at the specified intervals as outlined in the **Maintenance***

Schedules constitutes negligence and may void provisions of your Basic New Vehicle Limited Warranty.

Scheduled Maintenance

Certain services are required regularly, as time or mileage accumulates, to maintain peak efficiency. Perform these services more frequently during heavy-duty operation. Based on Jeep Corporation testing and experience as a manufacturer of 4-wheel drive vehicles, the services are vitally important for the upkeep of your vehicle. Follow the **Maintenance Schedules** for details on when your vehicle needs service.

Unscheduled Maintenance

These maintenance services are required, depending on driving conditions, weather, or the loads carried. The need for these services changes, so you must consider your driving situation often and have your vehicle serviced as described in the **Maintenance Schedules** section for changing conditions.

Unscheduled maintenance services include such items as fuel system cleaning, engine carbon deposit removal, retightening loose parts and connections, replacement of manual transmission clutch components, brake linings, shock absorbers, light bulbs, wiper blades, belts, hoses, soft trim, bright metal trim, painted parts, other appearance items plus other rubber and rubber like parts. Need for these unscheduled maintenance services is usually indicated by a change in performance, handling, or the appearance of your vehicle or a particular component. You should also perform unscheduled maintenance following heavy-duty operation if needed. The **Special Driving Techniques** section describes the underbody inspection required after heavy-duty service.

When Your Vehicle Needs Service

Prepare an accurate description of the symptoms or

problem and discuss the problem with the service department so they know where to start and you will know what to expect.

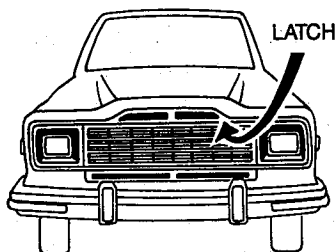
Checking and Changing Fluids

The following procedures describe how to check and change various fluids in your vehicle. In most cases, the text does not indicate when to change fluids. the **Maintenance Schedules** section provides this information.

Hood Release

WARNING: *Be sure all hood latches are fully latched before driving. If hood is not latched, it could fly up when the vehicle is moving, causing obstructed vision, vehicle damage and/or personal injury.*

To open the hood, pull the hood release located below the instrument panel, then lift the latch located above the grille and open hood.



Grand Wagoneer

Guidelines For Checking Fluid Levels

1. Use only fluids and lubricants specified in the **Recommended Fluids, Lubricants and Genuine Parts** section located in the back of this manual.
2. Maintain maximum cleanliness. Fluids lubricate parts or provide chemical or mechanical action. Dirt, water or lint from rags will severely reduce the effectiveness of a fluid and can cause component damage or a personal injury, such as the result of using contaminated brake fluid.

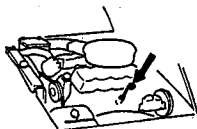
3. Check fluids at the prescribed temperatures. Fluid levels change as temperature changes.
4. Observe operating instructions. Some components must be operating for an accurate reading to be taken.
5. Check both sides of a dipstick for accurate reading.
6. Position the vehicle on a level surface to avoid false readings.
7. When checking a fluid through a fill plug hole, such as on a manual transmission, transfer case or axle, fluid level should be at the bottom of the fill hole or slightly below when the unit is COLD. If low, **add fluid in small amounts** to raise the level. When a unit is WARM, fluid may ooze out of the filler hole. This is acceptable. **Fluid should not gush out.**
8. Never overfill. Too much water weakens a battery or anti-freeze protection. Too much oil causes excess heat and foaming which can cause leaks out vent tubes, blown seals or damage from loss of fluid or lubricant breakdown.
9. Periodically observe the area where you normally park your vehicle. If you notice any fluid spots on the ground, check the fluid/lubricant levels of your vehicle. During the summer, spotting may result from water condensing in vehicles equipped with air conditioning. This is normal.

Engine Oil

Check oil at each fuel fill. Allow the oil to settle a few minutes after stopping the engine, remove the dipstick and wipe it clean. Insert the dipstick in the tube and remove it again. Check the oil level on both sides of the stick. Oil levels should be between the ADD and FULL marks. If the level has dropped to the ADD mark, add one

quart (0.95L) to raise the level to FULL. Some oil is inevitably used in normal operation. A consumption rate of one quart (0.95L) per 1,000 miles (1 600 km) is not excessive.

Dipstick Location



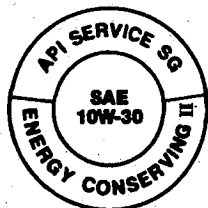
Oil Dipsticks



Selecting Engine Oil

Oil Quality

For maximum engine protection and fuel economy benefit under all driving conditions, use only "Energy Conserving II" engine oils that conform to the API Service Categories "SG" or "SG/CD". When selecting an engine oil look for the API Service Symbol shown in the engine oil viscosity chart.

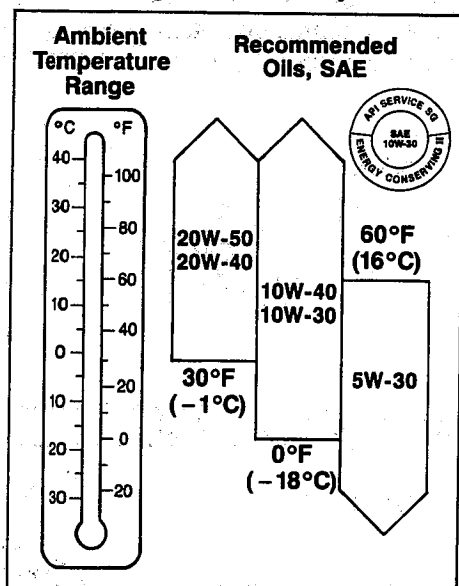


See **Recommended Fluids, Lubricants & Parts**, at the back of this manual.

Viscosity

Multi-viscosity oils protect the engine over a wide range of operating temperatures and driving conditions and therefore can be used all year round. Select oil viscosity according to the lowest air temperature expected before the next oil change using the following chart.

Engine Oil Viscosity



Engine Oil and Filter Changes

Change the engine oil and oil filter at intervals specified in the **Maintenance Schedules**. Drain the oil soon after the engine reaches operating temperature to assure complete removal of used oil and contaminants.

After installing the oil pan drain plug and oil filter, add new oil to the crankcase. Four quarts, (3.8 liters) plus one more quart or liter if the filter was replaced.

Operate the engine first at idle speed, then at fast idle and check the drain plug and filter for leaks.

CAUTION: The engine oil filter mount has metric threads. Use of a filter with improper threads can result in oil leakage and possible engine damage. Look for the symbol M20 x 1.5 on the filter.

Engine Coolant

Emergency Coolant Level Check

WARNING: *To guard against bodily injury from hot coolant, do not check coolant level at the radiator when the engine is hot. If an emergency requires a coolant level check at the radiator, proceed as follows:*

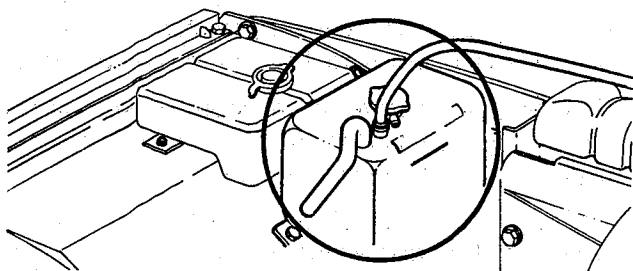
1. Stop the engine and raise the hood.
2. Let the engine cool at least 15 minutes or until the radiator cap is cool enough to touch without burning yourself.
3. Place a heavy rag or towel over the radiator cap and turn it counterclockwise to the first stop to release the coolant system pressure. Do not press down on cap.
4. Only after all pressure has escaped, push down on the cap and continue to turn it counterclockwise to the second stop, then remove the cap.
5. The coolant should be filled to the bottom of the filler neck and also between the ADD and FULL marks on the coolant recovery bottle.
6. Add coolant, if necessary, first to a cooled radiator, then to the coolant recovery bottle.
7. Install radiator cap.
8. Obtain corrective service immediately to determine the cause of overheating.

Coolant Recovery Bottle Level Check

Check the coolant level at the recovery bottle, not at the radiator. The proper level is between the ADD and FULL marks with the engine at operating temperature. If necessary to raise the level, add to the bottle a 50/50 mixture of clear water and Jeep All Season Coolant (P/N J8993, 850, Canada P/N J9115) or equivalent. Do not remove the radiator cap unless necessary. Do not fill the reservoir

above the FULL mark. A special radiator cap ensures sealing and allows the normal expansion of coolant to flow to the bottle when hot and return as the engine cools. Use only the proper cap if replacement is necessary.

WARNING: *If the engine begins overheating, and the coolant recovery bottle level is above the ADD mark, follow procedure for Emergency Coolant Level Check. You should find coolant level at the base of the radiator filler neck. If not, check radiator bottle for leakage, which would prevent coolant from returning to the radiator during recovery. See your dealer for service.*



Coolant Recovery Bottle

Changing Coolant

All Season coolant is installed at the factory. This will maintain protection through the first scheduled coolant change, if the coolant is maintained at the original concentration. In normal operation flush and refill the cooling system at the specified **Maintenance Schedule** interval.

When adding or replacing coolant, use a mixture of half distilled water and half Jeep All Season Coolant (P/N J8993 850, Canada P/N J9115) or equivalent. Use this mixture year-round for protection against corrosion, boiling and engine damage. (Consult your Jeep dealer for recommendations if greater protection is required.)

Thermostat

The operating temperature of the engine cooling system is controlled by a pre-set thermostat. If the thermostat malfunctions, heater performance will be poor or the engine will overheat or underheat. Consult your Jeep dealer for diagnosis.

Draining Cooling System

Loosen the draincock on the radiator bottom tank. Drain coolant from the engine block by removing the drain plugs located on each side of the block.

Vehicles with coolant recovery bottle:

1. Leave radiator cap on and loosen the draincock on the bottom of radiator.
2. Drain coolant from a cooled engine by removing the drain plugs.
3. After the coolant recovery bottle has drained, remove the radiator cap.

WARNING: *Do not open engine block drain when system is hot or under pressure as serious burns from coolant may occur.*

Filling Cooling System

Install all drain plugs and tighten the radiator draincock. Add the designated coolant. Fill the radiator to the proper coolant level. On vehicles with coolant recovery, fill the radiator to the top.

After filling the system, operate the engine until normal operating temperature is attained with the cap off. Depress the HEAT button on the heater control so coolant also enters the heater core. When the engine is warm, add coolant to obtain the specified level and install the radiator cap.

With coolant recovery, fill the radiator to the top, install the cap and add additional coolant to the recovery bottle.

It may be necessary to add more coolant to the recovery bottle after several heating and cooling periods of engine operation.

Cooling System Operating Information

Your cooling system may temporarily overheat during severe operating conditions such as:

- climbing a long steep hill on a hot day,
- stopping after high speed driving,
- idling for long periods in traffic, or
- towing a trailer.

If the coolant temperature gauge needle goes into the red zone or the engine coolant warning light illuminates and your **air conditioner is on, turn it off**. If the gauge needle goes into the red zone or the warning light illuminates while you are stopped in traffic, move the transmission shift lever to N (Neutral).

NOTE: *If the coolant temperature gauge needle is in the upper half of the gauge, always let the engine idle for at least a minute before turning it off.*

If the gauge needle doesn't start to drop or the warning light doesn't go off within a minute or two:

- Pull over to a safe place and stop the vehicle. Shift to P (Park) and set the parking brake.
- **Don't turn off the engine.** Increase engine speed slightly. Bring the idle speed back to normal after two or three minutes.

If the gauge needle doesn't start to drop, or the warning light does not go off, **turn off the engine** and proceed as follows:

Lift the engine hood. Check for coolant leaks at the radiator hoses, radiator or radiator overflow outlets.

Check to see if all drive belts are intact. If you are losing coolant or a fan drive belt is broken or loose and/or the overheating condition persists, stop the engine until the cause of overheating is corrected. Following temporary cooling system overload, proceed on the highway at a reduced speed after the overheating condition is corrected. About ten minutes later, resume normal driving.

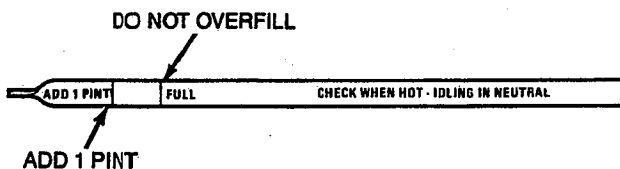
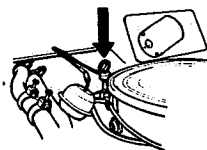
WARNING: *To guard against bodily injury from hot coolant, do not check coolant level at the radiator when the engine is hot. If an emergency requires a coolant level check at the radiator, follow the Emergency Coolant Level Check procedure.*

Automatic Transmission Fluid

Check while the transmission is at normal operating temperature. This occurs after at least 15 miles (25 km) of expressway driving or equivalent city driving. At normal operating temperature, the gauge end of the dipstick will be too hot to hold comfortably.

NOTE: *If it's necessary to check the transmission below operating temperature, the fluid level should be approximately at the ADD mark with the fluid approximately 75°F (24°C) (room temperature). If the fluid level is correctly established at room temperature, it should be at the FULL mark on the dipstick when the transmission reaches normal operating temperature (170°F or 77°C). It is best to check the level at normal operating temperature.*

1. Operate engine at idle speed and normal operating temperature.
2. Place vehicle on a level surface. Block wheels to prevent vehicle movement. Apply parking brake fully and move gearshift lever through all ranges. Shift to Neutral (not Park).



Automatic Transmission Dipstick

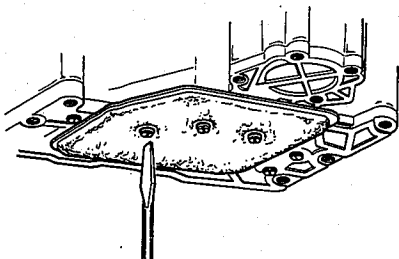
3. Remove dipstick. Wipe stick clean and insert fully. Remove dipstick again and note fluid level on both sides. Fluid level should be between the ADD and FULL marks at normal operating temperature. If fluid is low, add as required into the dipstick tube. Use Jeep Automatic Transmission Fluid P/N 82200 922 or equivalent labeled MERCON® or DEXRON II®. **Do not overfill.** Check for leaks.

CAUTION: *Never overfill the automatic transmission. Foaming and loss of fluid through the vent or filler tube, and malfunction, may result.*

Fluid Change

1. Drain fluid immediately after vehicle operation, before it cools. Remove the transmission bottom pan screws, pan and gasket.
2. Remove filter and discard.
3. Remove and discard O-ring seal from the pick-up pipe.
4. Install new O-ring on the pick-up pipe and install the filter and pipe assembly.

5. Thoroughly clean the bottom pan and position a new gasket on the pan. Use petroleum jelly or equivalent to position the gasket.
6. Install bottom pan and tighten screws snugly to 10 to 13 foot-pounds (13.6 to 17.6 Newton meters).



Removing Automatic Transmission Filter

7. Pour 4 to 5 quarts (3.8 to 4.8 liters) of Jeep Automatic Transmission Fluid P/N 82200 922 or equivalent labeled MERCON® or DEXRON II® in the filler pipe.
8. Start engine and allow it to idle for a few minutes.
9. Apply brake pedal and parking brake. Shift transmission lever into all positions, then place the selector lever in N (Neutral).
10. With transmission warm, check fluid level. Add fluid to raise level to the FULL mark.

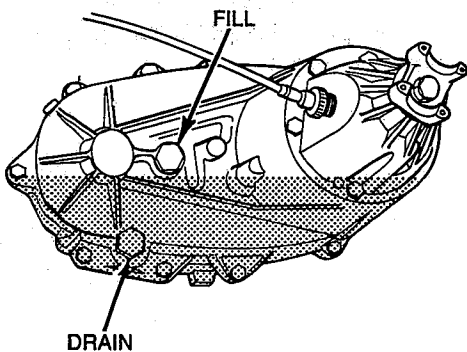
Selec-Trac Transfer Case

Remove Selec-Trac transfer case fill hole plug. Check level and add if necessary. Install plug.

Fluid Change

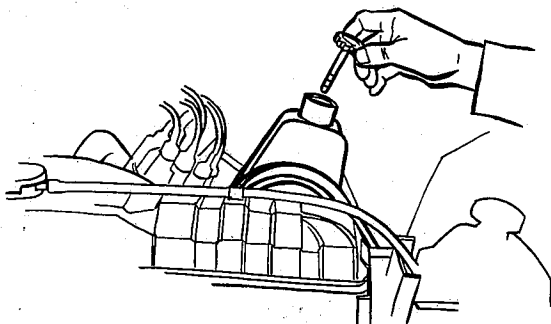
Change fluid as specified in the **Maintenance Schedules** for normal and heavy-duty operation. Use Jeep Automatic Transmission Fluid P/N 82200 922, or equivalent labeled MERCON® or DEXRON II®. Refer to the Fluid Capacities chart for quantity.

Remove fill plug and drain plug, and allow the transfer case to drain completely. Install drain plug. Fill to bottom of fill hole with the designated fluid. Install fill plug.



Selec-Trac Transfer Case

Power Steering Pump



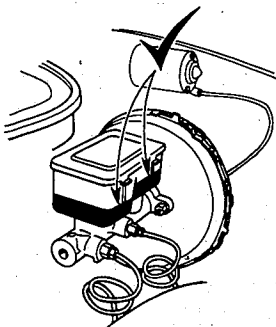
Power Steering Pump Filler Cap

Wipe the cap and neck clean, remove the filler cap and observe the fluid level on the dipstick. Fluid level should be between the ADD and FULL marks. If abnormally low, check the power steering system for leaks. Fill to the proper level with Jeep Power Steering Fluid (P/N 82200 946, Canada P/N J9073).

Brake Master Cylinder

Brake fluid level is visible without removing cover.

If additional fluid is required, clean the top of the cover and surrounding housing area. Remove the cover. The fluid should be 1/4 inch (6 mm) below the rim of each well in the reservoir. If not, add brake fluid as required and install cover. Use only Jeep Brake Fluid (P/N 82220 215, Canada P/N J9193), or equivalent labeled DOT 3 and SAE J-1703.



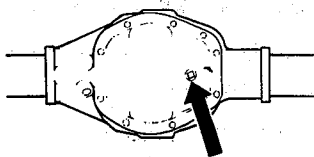
Brake Master Cylinder

Brake Warnings

- Under normal service, brake fluid level should not drop rapidly. If you have to frequently replenish the master cylinder reservoir, immediately obtain corrective service.
- Clean all dirt and grease from the reservoir cover before removing it to check or add fluid. Contamination of brake fluid could cause brake failure, resulting in bodily injury.
- Do not use reclaimed fluid, mineral oil, fluid that was stored in old or open containers, or brake fluid inferior to SAE Standard J-1703. Be sure to handle the brake fluid in clean containers that will not introduce even a slight amount of foreign liquids or particles. Such contamination of brake fluid could lead to brake failure.

Front and Rear Axle Differentials

The lubricant level of all differentials should be at the bottom level of the fill hole or slightly below.



Front and Rear Axles

Fluid Change

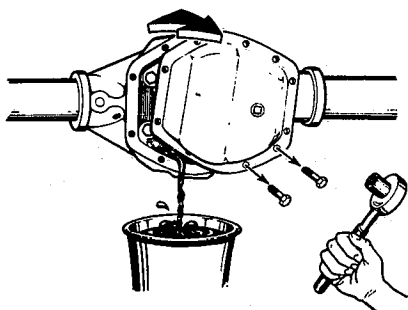
Use the fluid listed in the **Recommended Fluids and Lubricants** chart. The **Maintenance Schedules** list the change interval. Quantity required is listed in the Fluid Capacities chart.

To Change Fluid

1. Remove the filler plug.

2. Remove the axle differential housing cover.

3. Allow lubricant to drain completely.



4. Flush all the differentials (except Trac-Lok®) with a flushing oil or light engine oil to clean out the housing. Do not use water, steam, kerosene or gasoline for flushing. Trac-Lok® differential may be cleaned only by disassembling the unit and wiping with clean, lint-free rags. Do not flush Trak-Loc® units.

5. Check condition of the differential housing cover gasket. Replace if necessary.

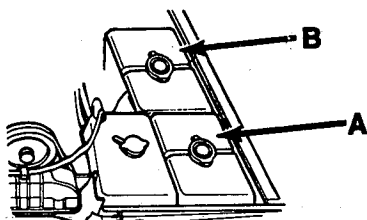
6. Install gasket and differential housing cover.

7. Tighten the cover bolts to 15 to 25 foot-pounds (20 to 34 N·m) torque.

8. Add new lubricant to the fill hole level and install filler plug.

Windshield/Tailgate Window Washer Fluid

The windshield (A) and tailgate window (B) washer reservoirs, located under the hood, must be refilled periodically with water or All Weather Windshield Washer Solvent (P/N J8992 487) or an equivalent commercial



**Windshield/Tailgate
Window Washer
Fluid Reservoirs**

solvent/antifreeze. Jeep All Weather Windshield Washer Solvent or equivalent has an ice inhibitor and a washing detergent. In freezing weather, warm the windshield with the defroster before using the washer to prevent icing on the glass.

WARNING: *Commercially available windshield washer solvents are flammable. Care must be exercised when filling or working around the washer solvent.*

Tune-Up Specifications

They are not listed in this manual. The Jeep Repair Manuals and the Jeep Service Specifications Handbook list tune-up procedures and service specifications for all Jeep vehicles. Service literature can be ordered from your dealer.

Altitude Performance Adjustments

A **Vehicle Emission Control Information Update Packet** is available to Jeep owners who operate their vehicles primarily at altitudes higher or lower than those for which their vehicles were originally certified.

This packet consists of a supplementary **Vehicle Emission Control Information Label** and specific instructions for making adjustments to improve emission control performance either above or below 4,000 foot (1,219 m) elevations.

The **Vehicle Emission Control Information Label Packet** may be obtained from your dealer.

Drive Belts

With ignition switch off, check tension and condition of belts at the specified **Maintenance Schedule** interval. Replace belts that are worn, cracked or frayed.

WARNING: *To guard against injury, stay clear of fan and drive belts when engine is cranking or running.*

Electrical System

Your vehicle is equipped with a 12-volt negative-ground electrical system, charged by an alternator and controlled by a voltage regulator.

Battery

The low-maintenance battery may require the addition of water at intervals depending on vehicle usage. In temperatures up to 90°F (32°C), check the battery fluid level at least every 24 months or 24,000 miles (40 000 km). At higher temperatures, check more often.

To add water to the battery, use a wide bladed tool to carefully lift the battery cell caps. Check the fluid level in each filler well. Add distilled water to maintain the fluid level above the battery plates but no higher than the bottom of the fill well. In freezing weather, add water just before driving to assure mixing with the battery fluid to prevent freezing.

1. Remove battery negative cable and then the positive cable. Remove the felt washer from the positive post, if so equipped.

2. Clean the cables and terminal posts with a wire brush terminal cleaner.
3. Clean the battery and battery box with a solution of baking soda and water, then rinse thoroughly.
4. Remove battery holddown and tip battery slightly to drain dirty water through the slots provided.
5. Fasten the battery holddown, but do not overtighten.
6. Replace felt washer, if so equipped.
7. Attach the positive cable and then the negative cable.
8. Apply a small amount of grease or protective coating to the battery terminals to minimize corrosion. Not necessary when felt washer is used.

CAUTION: *Keep battery fluid and any deposits removed from the battery connections away from paint, sheet metal and plastics. Damage to these materials could result.*

Battery Warnings

- Use extreme care when servicing the battery. Battery fluid contains sulfuric acid and must be kept from the eyes and skin. Safety glasses, rubber gloves and protective clothing are recommended. If acid contacts eyes or skin, flush immediately with large amounts of water. Get emergency medical attention immediately.
- Batteries produce hydrogen gas and can explode and cause serious bodily injury. Don't smoke while checking or servicing battery. Keep open flames and sparks away from battery filler caps.
- To avoid a short circuit which could cause injury, never allow tools or metal objects to contact the battery posts and vehicle at the same time. Also, disconnect the negative battery cable when checking or servicing battery.
- See Jump Starting Procedure and Jump Starting Warnings for other battery guidelines.

- Always keep battery fluid away from children and pets.
- Do not store the battery where there is a likelihood of open fire, sparks, or accessibility to children.

Engine Fan

WARNING: *Never stand in direct line of fan blades while observing an operating engine. If fan blades become bent or damaged in any way, do not attempt repair. Replace fan before starting engine as damaged blade could fly off fan.*

Ignition System

All models have an electronic ignition that has an electronic control unit, trigger wheel and pick-up coil circuit requiring minimum service. The **Maintenance Schedule** lists the items requiring periodic service.

Spark Plugs

Replace spark plugs according to the specified engine maintenance interval (refer to the **Maintenance Schedule**), and use resistor-type plugs which improve radio reception. When replacing spark plugs, be sure to install original equipment or equivalent, and avoid damage to electrode tip. Do not overtighten.

Ignition Timing

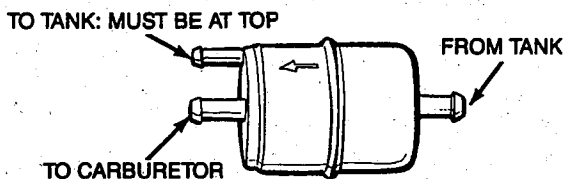
Refer to the Emission Control Information Label located on the front of the radiator, for ignition timing specifications and to the Jeep Repair Manuals for detailed procedures required to correctly check the ignition timing of your vehicle's engine.

Air Cleaner

A replaceable paper element filters incoming air for combustion. Replace the paper cartridge at the **Maintenance Schedule** interval listed. Replace more frequently if operating under dusty conditions.

NOTE: The air cleaner filter element should be inspected regularly because poor engine performance and fuel economy can result when the element becomes restricted by dirt.

Fuel Filter

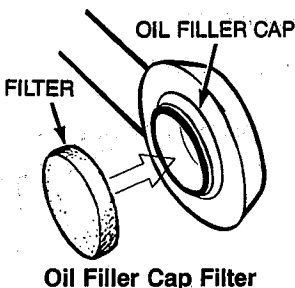


Correct Fuel Filter Installation

The in-line filter prevents foreign particles from clogging the carburetor jets. Ordinarily, replacement of the fuel filter is not necessary before the specified interval. However, abnormal operating conditions or dirty gasoline could clog the element sooner.

Positive Crankcase Ventilation (PCV) System

Inspect hoses and connections. Clean the urethane filter inside the plastic container located on the oil filler cap by applying light air pressure in the reverse direction of the normal airflow. Replace the filler cap if the filter has deteriorated. **Replace the PCV valve as prescribed.**



Exhaust Manifold Heat Control Valve

Lubricate the valve shaft with Jeep Heat Valve Lubricant or equivalent when the valve is cold. Do not use any type of grease. The valve is on the engine right side, at the end of the exhaust manifold.

Tires and Wheels

Tire Changing

To assist you in time of emergency, the tire change procedure is located in the **Emergency Information** section.

Sealant Tires

Your vehicle is equipped with sealant tires, refer to the tire warranty in the glove box kit for these tires.

Tire Pressure and Capacity

Refer to the Tire Inflation Pressure Chart (PSI) for your vehicle's tire inflation pressures. Pressures specified are precisely measured for the tires sizes recommended for each Jeep vehicle model at the GVW rating.

Correct tire pressures depend on tire size, tire construction, gross vehicle weight rating (GVWR), vehicle load and the type of driving.

For satisfactory 4-wheel drive operation, the vehicle **MUST** be equipped with the same size tires of equal circumference on all four wheels (except when necessary to temporarily use the Polyspare tire). The tires must be inflated at all times to the pressures recommended by Jeep Corporation. Check and correct tire inflation monthly, especially when extreme changes in average seasonal temperatures occur. Check pressures when tires are cold—driven less than 2 miles at speeds of less than 40 mph (64 km/h) or after the vehicle has been at rest for at least 6 hours.

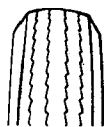
Tire Pressure Label

The tire pressures required for your vehicle appear on a label located in the glove box.

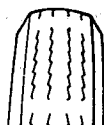
Tire Warnings

- Your vehicle must be equipped with the same size and type tires of equal circumference on all four wheels, except when temporarily using the limited mileage spare tire. Do not mix radial-ply and bias-ply or bias-belted tires. If all tires are not of the same size and type, unpredictable handling may result.
- Sustained high speeds of more than 75 mph (121 km/h) for one hour or more are not recommended for mud and snow tires, and may lead to tire failure.
- Certain combinations of special aftermarket tires and wheels may change tread measurement, resulting in changes of steering and suspension geometry. This can cause unpredictable handling and stress to steering and suspension components. Therefore, use only tire and wheel sizes and types approved for your vehicle.

- Low tire pressure causes premature wear and heat build-up, which could result in adverse vehicle handling or possible blowout, as well as poor traction on wet roads (especially with worn tires). Do not decrease inflation pressure if tires are hot. If tire pressure must be adjusted while tires are hot, temporarily set pressure at 6 psi (42kPa) greater than pressure specified (10 psi [70 kPa] greater for sustained high speed driving). When adjusting inflation pressure on cold tires, do not exceed specified maximum pressure.
- Driving accidents, such as hitting curbs, can damage tires and also disrupt wheel alignment, so check these periodically.



Tread Still Good



Tread Worn Out

Tire Condition

Inspect tires often, every 2,000 miles (3 200 km), for visible signs of wear, which may indicate under inflation or need for front-end alignment, tire rotation or wheel balancing.

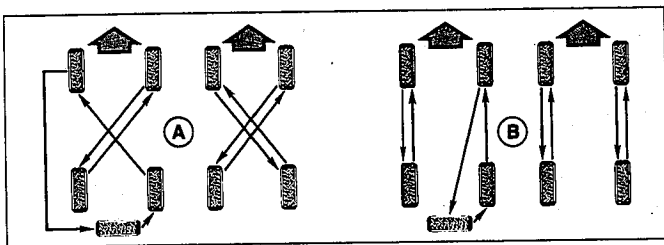
Polyspare Tire

The limited use Polyspare tire is designed for emergency use only. Operation of the tire at speeds over 50 mph (80 km/h) and travel in excess of 100 continuous miles (160 km) is not recommended.

The Polyspare tire is mounted on a standard 15 x 6-inch steel wheel. Correct inflation pressure is 35 psi (241 kPa) and the tire can be inflated with conventional inflation equipment. Installation and removal of Polyspare does

not require special tools and the anticipated tread life is approximately 3,000 miles (4 800 km).

Tire Rotation



Rotating tires every 5,000 to 10,000 mi. (8 000 to 16 000 km) is usually recommended by tire manufacturers to assure longer overall tire life by equalizing wear. Rebalance the tires if they were balanced on the vehicle.

Follow either the Preferred Rotation sequence (A) or the Alternate Rotation sequence (B). These are shown with and without a full size spare in the rotation sequence.

NOTE: *Do not use the Polyspare in rotation.*

Wide-Tread and Radial-Ply Tires

These types of tires must be installed on the vehicle in complete sets and be used only when there is adequate clearance.

Mud and Snow Tires

All Jeep vehicles must be equipped with the same size and type of tires of equal circumference on all four wheels. Therefore, should mud and snow tires be required, they must be installed on all four wheels.

Aftermarket Wheels and Tires

CAUTION: *Replacing original tires with tires of a different size may result in false speedometer and odometer indications. Check with your dealer before replacing tires with those of different size.*

Front Suspension and Steering

Wheel Bearing Adjustment

Front wheel bearings are adjustable. Rear wheel bearings do not require adjustment.

Front End Alignment

Whenever uneven tire wear is evident, or when the front end shimmies, wanders or pulls, front end alignment should be checked.

Alignment Specifications

Model	Caster	Camber	Toe-In
Grand	+4° (+1°)	0° (+1/2°)	3/64-3/32"
Wagoneer			(1.19-2.38 mm)

Front Wheel Turning Angles

Turning angle is set at 36° - 37°.

Chassis Lubrication

Lubricate your vehicle according to the intervals in the **Maintenance Schedules** section. Use only lubricants listed in the **Recommended Fluids and Lubricants** chart. Lubricate or change fluids more frequently during heavy-duty or severe operation.

Propeller Shaft Lubrication

Lubricate the propeller shafts as specified in the **Maintenance Schedules** with Jeep All Purpose Lubricant (P/N J8993 630, Canada P/N J3630) or Lithium Base Multipurpose Chassis Lubricant.

CAUTION: If you have had your vehicle undercoated, inspect for undercoating material on the propeller shafts. Such material could cause the shafts to become unbalanced and result in drivetrain vibrations. Remove any undercoating with solvent.

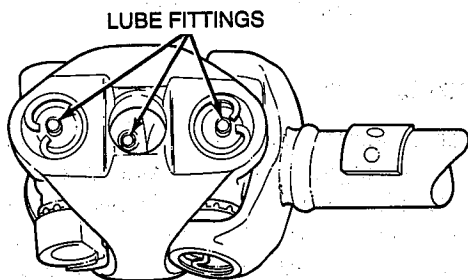
Slip Yokes (Splines)

Apply grease gun pressure to slip yoke grease fitting until lubricant appears at the pressure relief hole in the expansion plug at the slip yoke end of spline. Cover pressure relief hole with your finger and continue to grease until it appears at the slip yoke seal. This will ensure complete lubrication of spline.

Double Cardan Joint

CAUTION: *To prevent damage to driveline, it is very important to lubricate all double cardan joints at the intervals specified in the **Maintenance Schedule**.*

1. Raise vehicle on frame-contact type hoist (front wheels must be free to rotate).
2. Clean dirt from around double cardan joint.
3. Lubricate joint using needle-type lubrication adapter (J-25512-2).



Double Cardan Joint

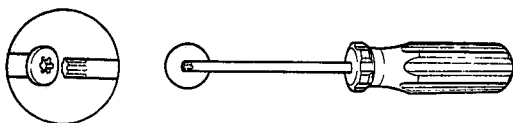
Body and Accessory Care and Cleaning

General Information

Body care requirements vary according to geographic locations and usage. Follow the Body Lubrication instructions listed in the **Maintenance Schedules**. Perform service more frequently as needed.

Torx®-Head Fasteners

Various sizes of internal and external hex-lobular (Torx®) head fasteners are used as attaching hardware for numerous components and assemblies in your Jeep vehicle. These fasteners may be removed using special Torx®-head tools available at most tool and auto-accessories retailers.



Torx®-Head Fasteners

Body Lubrication

All body pivot points, including such items as locks, seat tracks, doors, liftgate, tailgate, windshield and hood hinges should be lubricated periodically to assure quiet, easy operation and prevent seizing. Apply silicone lubricant to door, window, liftgate and tailgate rubber weatherseals to minimize deterioration and reduce damage from scuffing.

Exterior Care

Chemicals that make roads passable in snow and ice, and that are sprayed on trees and road surfaces during other seasons, are highly corrosive to the metal in your vehicle. Outside parking, which exposes your vehicle to

airborne contaminants, extreme hot or cold weather and other extreme conditions will have an adverse affect on paint, metal trim and rubber parts. Repairs as a result of these conditions are the owner's responsibility, as are the damages caused by misuse, negligence or accident.

Jeep Corporation uses treatments in the construction and finish of vehicles including rust-prevention coating of the body, plus the application of high-quality enamels to provide a surface highly resistant to corrosion. Undercoating, when applied, adds further protection, but precautions are still needed.

Paint

Weekly washing with cold, clear water, and polishing with a soft cloth or chamois will preserve the original luster of the finish. Never wash your vehicle in direct sunlight. Allow the metal surfaces to cool before washing. Use care in removing stains and road film to prevent scratching the finish. Jeep Polish may be used to remove road film and normal stains and to restore gloss to the finish. Avoid using abrasive compounds and power buffing that may diminish the gloss or thin out the enamel.

Paint scratches should be retouched as soon as discovered. Your dealer can supply touch-up paint in spray cans or brush applicators to match the color of your vehicle. This paint, when properly applied, will cover minor nicks and scratches and prevent additional chipping and future rust.

Woodgrain panels and exterior tape stripes are made of vinyl, and are applied over the finish with a special applique process. Use special care in cleaning such areas. They require no polishing.

Bright Metal Trim and Wheel Covers

Wash chrome and bright metal trim frequently to protect the appearance. Jeep Polish will protect against severe exposure.

CAUTION: *Do not use abrasive or strong cleaning materials such as steel wool or scouring powder, which will scratch metal and painted surfaces.*

Interior Care

Floor Coverings

Carpeting will resist wear for a much longer time if it is vacuumed frequently to prevent dust and dirt from being ground into the fibers. Wash rubber or vinyl mats with soap and water.

Headlining

Clean vinyl-coated headliner using light pressure with a clean cloth or sponge and mild soap.

Ashtray

Ashtrays are removable for cleaning. To remove rear seat ashtrays on models with bucket seats, pull upward. To install, push the tray into position.

Upholstery

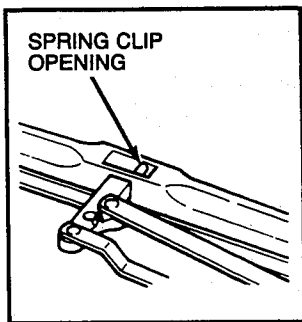
Frequent dusting with a whisk broom or vacuum, and wiping with a damp cloth, followed by a towel-drying, will help keep your upholstery and interior trim attractive. Remove imbedded dust, grease, oil, lipstick, and other stains from fabrics with Jeep Fabric Cleaner. Jeep Vinyl Roof Cleaner and Protector is specifically recommended for interior vinyl trim.

WARNING: *Do not use volatile solvents for cleaning purposes. Many are potentially flammable, and if used in closed areas they may cause respiratory harm.*

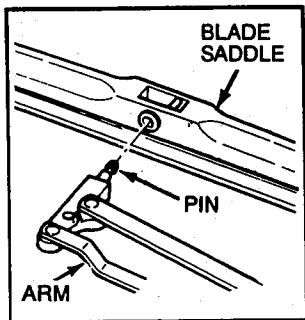
Windshield Wiper Care

Dry windshield glass accumulates road film which will result in hazing and/or smearing when the wipers are first started. This film is not readily removed with water. It is important that both glass and wiper blade rubber elements be washed regularly with mild detergent.

Windshield Wiper Blade Replacement



Wiper Blade Removal

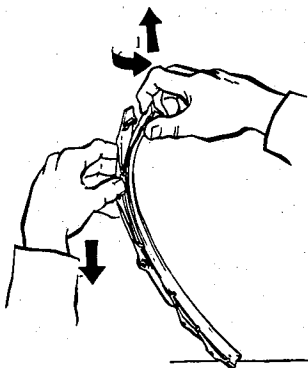


Wiper Blade Installation

To remove, lift up on spring clip and pull blade from arm. To install, push blade saddle on pin so that spring clip engages pin. Be sure saddle is securely attached to arm.

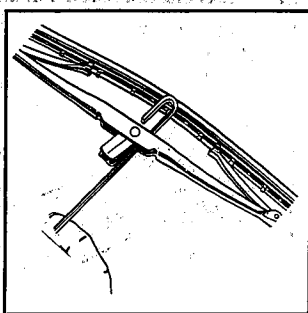
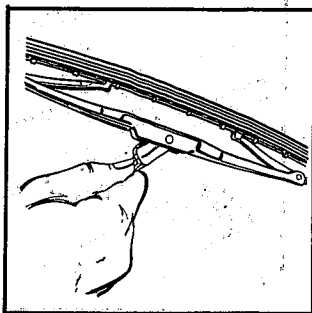
Windshield Wiper Element Replacement

Remove the rubber blade element from the bridge. When installing the new rubber element, the metal backing must engage all eight tabs on the bridge.



Wiper Blade Replacement

Tailgate Wiper Blade Replacement



To replace, press the release lever then pull blade down and off the arm as shown.

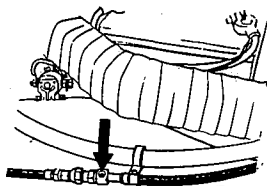
Air Conditioning Check

The air conditioner uses Refrigerant-12 to cool the passenger compartment. Occasionally check the amount of refrigerant charge by observing the sight glass, located in the engine compartment.

1. Operate the engine at fast idle (about 1500 rpm) and set air conditioning for maximum cooling.

2. Clean the sight glass.

3. While a helper cycles the system by turning the FAN switch from OFF to HI, observe the sight glass:



Sight Glass Location

- If a continuous stream of bubbles appears, it indicates an undercharge of refrigerant. See your dealer for service. A short spurt of bubbles when the FAN is turned on is normal.
- If no bubbles appear during the OFF to HI cycle, the system is charged or completely empty of refrigerant.

In the latter case, your air conditioner will not provide cooling—see your dealer for service.

WARNING: *NEVER open the air conditioning circuit. Refrigerant-12 is dangerous if it contacts your eyes or skin.*

WARNING: *Never add air conditioning refrigerant to correct a non-cooling problem unless pressure gauges are connected to the system by a certified technician. Lack of cooling could be due to a restriction and adding refrigerant may cause a dangerous pressure rise.*

Storing Your Vehicle

If you won't be using your vehicle for approximately 30 days, there are suggested steps to protect its operation. For extended storage, the routine is more extensive.

30-Day Storage

1. Wash the exterior finish.
2. Check antifreeze protection.
3. Recharge battery if specific gravity is below 1.250 to protect against freezing or deterioration. Disconnect cables at battery.
4. Inflate tires to 40 psi.
5. Store the vehicle inside. If it must be left where severe weather exposure is certain, cover it. Be sure the cover will not loosen in heavy wind, thus rubbing the finish.
6. Run engine at fast idle for 15 minutes to assure oiling of parts.
7. Place automatic transmission in Park and the transfer case in Neutral. Release the parking brake.
8. Check storage area and glove box for items that might be damaged by extreme temperatures.

9. Close windows.

Extended Storage

If your vehicle will not be operated for more than 30 days, **the following should be done in addition to the short-term storage procedure.**

1. Wax and polish the exterior finish.
2. Run engine until it is thoroughly warmed, then drain oil. Install a new oil filter and fresh oil.
3. Remove air cleaner and pour up to one pint of SAE-10W (or lighter) engine oil into the carburetor air intake with the engine operating. Pour slowly, then faster until the last quick pour stalls the engine. Install air cleaner.
4. Drain radiator, block and heater.
5. Remove the battery and store it in a dry, cool (above freezing) area. **Do not store the battery where there is a likelihood of open fire or sparks, or accessibility to children.** Batteries produce gas which is highly combustible and sulfuric acid which is highly corrosive.
6. Remove wiper blades.
7. Place blocks under the front and rear to raise tires off the ground.

Ready for Use After Storage

1. Check oil, fluid, and coolant levels in engine and transmission, transfer case, differentials, front axle steering knuckle housing, brake master cylinder, power steering pump and radiator.
2. Check under vehicle and hood for leaks.
3. Clean and attach battery cables. Be sure battery is fully charged.

4. Lubricate steering linkage ball joints.
5. Remove spark plugs and crank engine to remove excess oil from cylinders.
6. Clean and gap spark plugs and install them.
7. Clean the carburetor air cleaner.
8. Fill the fuel tank.
9. Inflate tires to correct pressure.

Specifications

Weight Capacities

As with any vehicle, it is very important that you do not overload your Jeep vehicle in excess of its Gross Vehicle Weight Rating (GVWR) or Gross Axle Weight Rating (GAWR). These ratings are shown on the Federal Safety Certification label located on the driver's door center pillar. GVWR and GAWR indicate the weight capacities for which a vehicle is designed. These gross ratings include the weight of the vehicle plus the weight of people, cargo and everything that is put in or on the vehicle. Because GAWR is the total allowable load on an individual axle, be sure that neither the front nor the rear rating is exceeded and that the total of the axle loads does not exceed the GVWR.

Fluid Refill Capacities

CAPACITIES Approximate	U.S. Measure	Imperial Measure	Metric Measure
Engine Oil 360 CID engine (includes 1 quart for filter change)	5.0 quarts	4.2 quarts	4.8 liters
Cooling System (includes 1 quart for heater) 360 CID Engine	14.0 quarts	11.6 quarts	13.2 liters
Transfer Case	6.0 pints	5.0 pints	2.8 liters
Transmission Automatic (Change Only) Automatic (At Overhaul)	8.5 pints 17.0 pints	7.1 pints 14.1 pints	4.0 liters 8.0 liters
Axles Front Rear	3.75 pints 3.75 pints	3.12 pints 3.12 pints	1.77 liters 1.77 liters
Fuel Tanks (Approximate Capacity)	20.3 gallons	16.9 gallons	76.8 liters

Jeep Vehicle Weight Capacities

MODEL	GROSS VEHICLE WEIGHT RATING		GROSS AXLE WEIGHT RATING			
			FRONT		REAR	
	pounds	kg.	pounds	kg.	pounds	kg.
GRAND WAGONEER	5975	2710	3200	1451	3200	1451

Technical Specifications

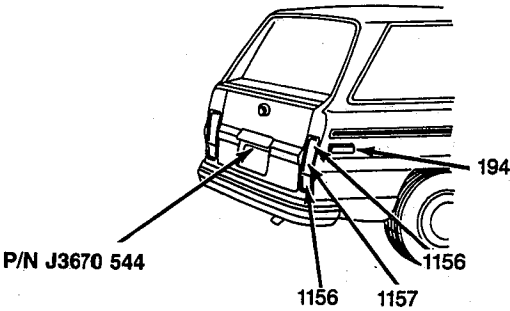
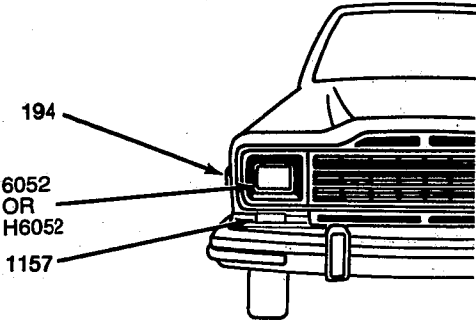
Engine	360 V-8 2-V Carb.
Bore & Stroke (inches)	4.08 x 3.44
Displacement (cubic inches)	360
Compression ratio	8.25:1
Horsepower, Taxable (Licensed)	53.27
Radiator Cap Pressure (PSI)	15
Thermostat Rating—°F (°C)	195 (90.6)
Electrical System	12-Volt Negative Ground

General Dimensions Inches (cm)

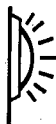
Wheelbase	108.7 (276.1)
Overall Length—Body	186.4 (473.5)
Overhang—Front	31.3 (79.5)
Overhang—Rear	46.4 (117.9)
Overall Width	74.8 (190.1)
Overall Height	66.4 (168.7)
Step height—front	19.1 (48.5)
Step height—rear	20.0 (50.8)
Front Tread	59.4 (150.9)
Rear Tread	57.8 (146.8)
Minimum Ground Clearance	7.2 (18.3)
Minimum Turning Diameter-ft. (meters) curb to curb	37.7 (95.8)
Effective Leg Room	
Front (Accelerator)	40.5 (102.9)
Rear (Minimum)	36.8 (93.5)
Hip Room—front	60.5 (153.7)
Him Room—rear	60.9 (154.7)
Shoulder Room—front	58.3 (148.1)
Shoulder Room—rear	58.3 (148.1)
Effective Head Room	
Front	37.1 (94.2)
Rear	36.8 (93.5)
Cargo Floor Height	24.8 (63.1)
Cargo Capacity—Cubic Feet (meters)	95.1 (2.69) ¹
Cargo Space	
Length at Floor	81.6 (207.3)
Width at Wheelhouse	44.3 (112.5)
Width at Floor	60.9 (154.7)
Width at Tailgate Opening	54.9 (139.4)

¹ With rear seat removed.

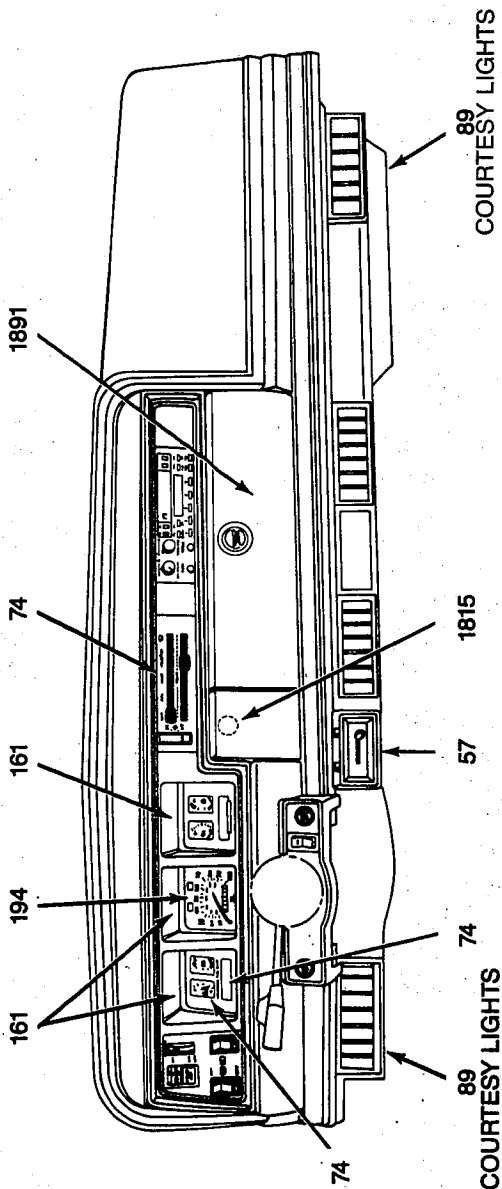
Bulb Replacement—Exterior (All Models)



Bulb Replacement — Interior (All Models)



DOME LIGHT-561
 DOME/READING LIGHT-211 & 105
 LAMP IN OVERHEAD CONSOLE-912



Emergency Information

Mechanical Difficulties

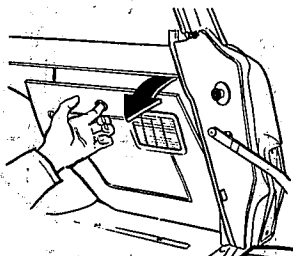
If mechanical difficulties force you to stop your vehicle, follow these guidelines:

- Use the Hazard Warning Flasher to warn other drivers any time your vehicle becomes a traffic hazard, day or night.
- Raise the hood of your vehicle and/or tie a white handkerchief to the radio antenna as signal for help.
- Only if you know of, or can see, a service or aid station near your location, proceed there for assistance. If you do not know of any service or aid station near you, stay with your vehicle until help arrives.
- **WARNING:** *If working on or near a roadway, be extremely careful of motor traffic.*
- **WARNING:** *If you pull off the roadway, avoid driving or parking over dry grass, brush, or other materials which could be ignited by a hot exhaust system.*

Tire Changing

Jack and Lug Wrench Location

They are behind the rear interior trim panel. The jack is stored in a bag with one padded side. When placing the jack and bag in the vehicle, be sure the padded side of the bag is against the outside body sheetmetal to prevent rattles.

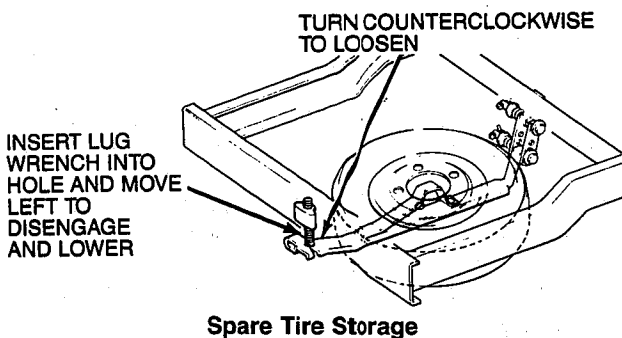


Jack Storage Location

Spare Tire Storage

The spare tire is stored under the rear floorpan. To

remove tire, turn lug wrench counterclockwise to loosen holding bracket bolt. Support the tire while disengaging the holding arm from the bolt, then lower the holding arm and tire. When installing tire, position it on the holding arm and engage the bolt. Turn the lug wrench clockwise and tighten the assembly firmly.



Temporary Spare Tire

This temporary spare tire is ready to use as is and requires no additional inflation providing the cold tire pressure is 35 psi (241 kPa). Follow instructions in Tire Changing Procedure. The vehicle can then be driven cautiously to a place where the road tire can be repaired or replaced. The Polyspare tire is designed to have a tread life of 3,000 miles (4 800 km) when used as described.

WARNING: *Temporary-use spare tires are for emergency use only. With these tires, do not drive more than 50 miles (80 km) or exceed 50 mph (80 km/h). Temporary-use spare tires have a total tread life of 3,000 miles (4800 km). Be sure to follow the warnings which apply to your spare. Failure to do so could result in spare tire failure and loss of vehicle control.*

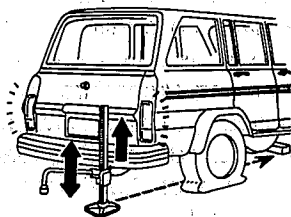
Tire Changing Procedure

WARNING: Failure to follow the Tire Changing Procedure may result in personal injury or damage to your vehicle.

1. Park on a firm, level surface well off the road, to provide ample work space. Place transmission in Park and **stop engine. Set parking brake firmly and activate Hazard Warning Flasher.**
2. Block tire diagonally opposite tire to be changed to prevent forward and backward vehicle movement.
3. Pry off wheel cover, if equipped; using flat end of lug wrench starting at edge opposite the tire valve.
4. **Loosen** lug nuts one-half turn counterclockwise. Do not remove nuts.

NOTE: If forced to raise the vehicle on loose or soft ground, a strong, flat board will provide a better base for the jack.

5. Place the jack under the bumper and position the jack tongue in the slot on the bumper at the side nearest the wheel to be changed.



Bumper Jack

WARNING: Do not permit the jack to touch the shock absorber mounting bracket.

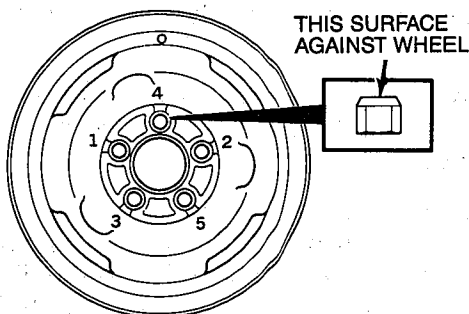
NOTE: If changing a flat tire, you must raise the vehicle high enough to permit installation of the spare tire, which when inflated will be taller than the flat tire.

6. Position jack base plate in line with bumper. Move lever to UP position and move lug wrench up and

down completely to raise jack so tongue engages the bumper slot. Continue moving lug wrench to raise vehicle sufficiently to install spare tire.

7. Remove lug nuts and wheel.
8. Position spare wheel/tire on vehicle and install lug nuts with cone-shaped end toward wheel. Tighten nuts clockwise until uniformly snug, using a criss-cross pattern.

NOTE: *The lug wrench can serve as a lever to assist lifting the tire. Position the flat end of lug wrench beneath the wheel hub and roll the tire up on the lug wrench. Hold the tire with one hand while raising the lug wrench. Guide the tire onto the wheel studs.*



Typical Wheel Nut Installation Pattern

9. Lower vehicle **only until the tire contacts ground.**
Move jack lever to DOWN position and operate handle up and down fully.
10. Tighten lug nuts securely in crisscross pattern to 75 foot-pounds (102 Newton meters).
11. Lower vehicle completely and remove jack assembly.
12. Install wheel cover securely, starting directly over valve stem, and remove wheel blocks.

13. Secure jack lug wrench and tire at storage location,

NOTE: *Aluminum wheels must be turned upside down if placed in the spare tire storage area under the floorpan.*

Jack Warnings

- Do not work under vehicle without jack stands supporting it. The jack is for changing wheels only. The vehicle could slide off, injuring anyone beneath it. Always check for vehicle stability after the vehicle is raised. Passengers should not remain in vehicle when someone is changing wheels.
- Do not use a block under the jack that would prevent the jack from rising at least 3 inches (75 mm) before contacting the vehicle. Attempting to raise the vehicle with the jack completely collapsed can cause the jack to fail.
- Do not start engine while vehicle is on the jack, because engine vibration or wheel movement can cause vehicle to slip off the jack.
- Always store the jack, lug wrench and spare, flat or damaged tire securely in the proper place. Never leave them loose in the vehicle where they could become dangerous projectiles during a quick stop or collision.

Emergency Starting Procedures

WARNING: *Do not attempt to push or tow a vehicle to get it started. Unburned fuel could enter the converter and, once the engine has started, ignite and cause the converter to overheat and rupture.*

Jump Starting

The booster battery must be 12-volt and negatively grounded, similar to the one in your vehicle. You should

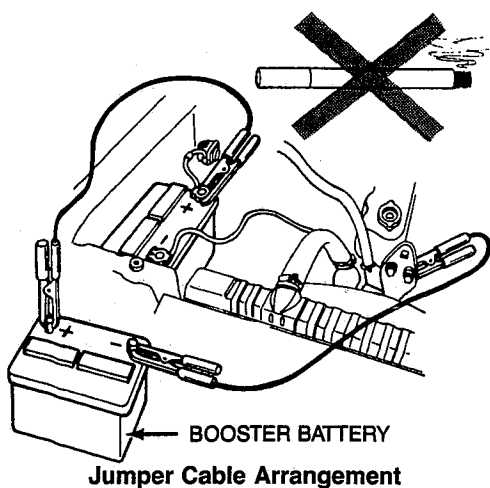
check the other vehicle's owner manual to be sure. External energy sources exceeding 15-volts DC must not be used or damage to the battery, starter motor or alternator could result.

Procedure

1. Place transmission in Park and set parking brake fully.
2. Turn off lights, heater, and all other electrical loads.
3. Remove rings, metal watch bands, and other metal jewelry and wear eye protection.
4. Make sure fender or body of other vehicle is not in contact with the vehicle to be started.
5. Raise vent caps from discharged battery with a flat, nonmetal tool and remove the caps.
6. Check fluid level. If low, fluid must be brought to proper level before jump starting is attempted.
7. Check fluid condition. If slushy or frozen, **do not attempt jump starting. The battery could rupture or explode.** Battery must be brought up to 40°F (4.4°C) before it can be safely jump started or charged.
8. Install vent caps on discharged battery vent well. A relief valve in the cap prevents pressure build-up.
9. Connect a jumper cable between the positive posts of the two batteries. The positive post may be identified by a "+" sign on the post and the letters "POS" embossed on the battery cover adjacent to the battery post.
10. Connect one end of the other jumper cable to the negative terminal of the battery in the other vehicle. The negative terminal has "NEG" embossed adjacent to the terminal. Do not connect the other end of the

jumper cable to the negative terminal of the discharged battery. Connect to a bolt or a nut on the engine. Do not connect the jumper cable to the carburetor, air cleaner or fuel line. Keep the cables clear of belts and pulleys.

11. Start the engine in the vehicle providing the jump start. Let it run for a few minutes, then start your engine.
12. Remove negative end of jumper cable from your engine first and then other end of the same cable. Remove the positive cable.



Jump Starting Warnings

Jump starting can be dangerous. To avoid personal injury or damage to electrical components in vehicle, observe the following warnings with care:

- Never jump start with a voltage source greater than 15V DC. This will damage the electrical system.
- Never attempt to jump start a discharged battery that

is frozen, because it could rupture or explode during jump starting.

- Be sure your vehicle is not touching the jump start vehicle.
- Observe all Battery Warnings while attempting to jump start your vehicle.

Towing Disabled Vehicle

If your vehicle is disabled and must be towed with the front or rear wheels off the ground, towing speed should be limited to 30 mph (48 km/h) for a distance no greater than 15 miles (24 km).

Towing Cautions

- *If the vehicle must be towed with the front wheels on the ground, the ignition key must be turned to the OFF position to unlock the steering column. The steering column lock is not strong enough to withstand shock transmitted from the front wheels while towing. Also, before towing the vehicle with the rear wheels lifted, secure the steering column with a steering wheel clamping device for towing service.*
- *If either propeller shaft has been removed for emergency towing, check the transmission fluid level and add fluid if necessary. Driving with insufficient transmission fluid may damage the transmission.*

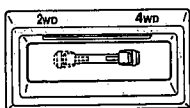
Automatic Transmission With Selec-Trac

When the transfer case range selector is in the neutral position both axles are disconnected from the powertrain. This allows the vehicle to be towed without removing the propeller shafts.

1. Shift mode switch to 4WD position.
2. With the vehicle moving slowly (2-3 mph, 3-5 km/h), shift the transmission to the neutral position.

3. Using a firm, positive hand movement, shift the range selector lever to the Neutral (N) position.
4. Turn ignition key switch to the unlock (OFF) position.
5. Shift automatic transmission to PARK position.
6. Connect vehicle to tow vehicle.

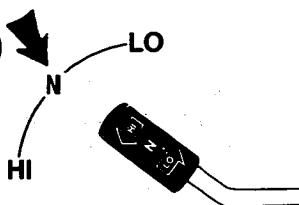
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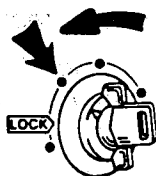
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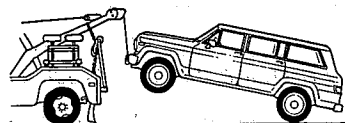
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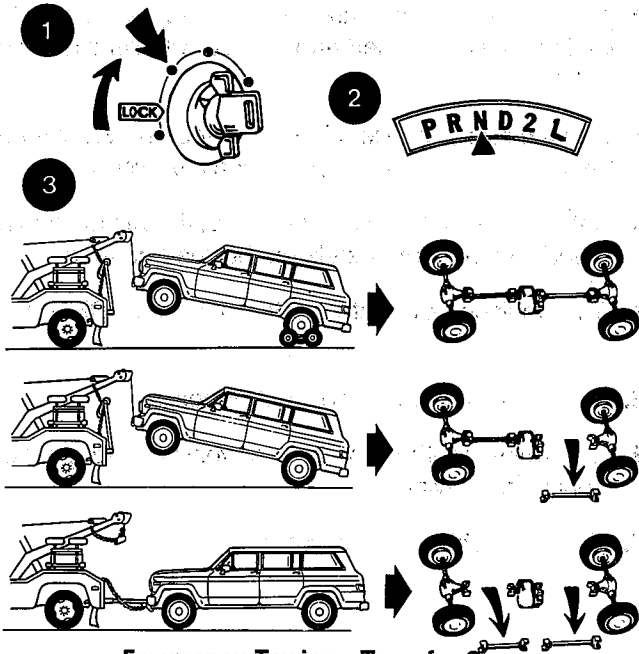


Normal Towing

Emergency Towing—Transfer Case Cannot Be Shifted to Neutral

Whenever an emergency situation arises and the transfer case cannot be shifted to neutral, one of three methods can be used to tow a Jeep vehicle.

- If the propeller shafts are not removed, the front of the vehicle must be raised and the rear wheels placed on a dolly.
 - With the rear propeller shaft removed, the vehicle can be towed with the front of the vehicle raised.
 - With both propeller shafts removed, the vehicle can be towed with all four wheels on the road surface.
1. Turn ignition key switch to the unlocked (OFF) position.
 2. Shift transmission to the Neutral position.
 3. Determine method of towing vehicle and prepare vehicle for towing.
 4. Connect vehicle to tow vehicle.

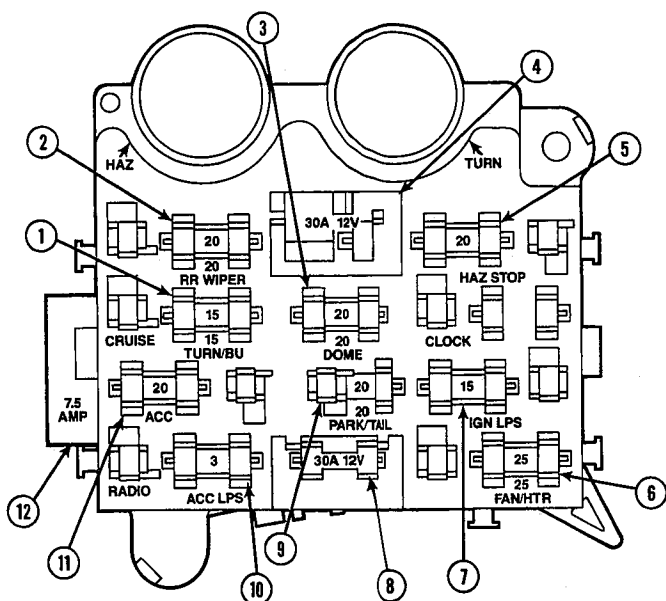


**Emergency Towing—Transfer Case
Cannot Be Shifted to Neutral**

Snow Plowing

CAUTION: Do not install a snow plow on Grand Wagoneer models. Damage to the suspension or structure may result.

Fuse Panel



	Fuse	Circuits
1.	15 Amp	Turn Signal, Back-up Lamps
2.	20 Amp	Rear Window Wiper
3.	20 Amp	Dome, Courtesy, Underhood, Glove Box Lamps, Radio Memory, Overhead Console
4.	30 Amp	Rear Window Defogger
5.	20 Amp	Hazard, Stop Lamps, Cruise Control
6.	25 Amp	Blower Motor Fan, A/C Switch, Emission Sys.
7.	15 Amp	4WD Lamp, Cluster, Keyless Entry, Compass
8.	30 Amp	Power Windows, Power Mirror
9.	20 Amp	Headlamp Switch & Rheostat, Park/Tail Lamps, Chime Module, Radio
10.	3 Amp	I/P Lamps, Illumination Lamps
11.	20 Amp	Clock, Cigar Lighter, Radio Illumination
12.	7.5 Amp	Wipers, Washer Pump

Maintenance Schedules

On the following pages you will find the required and recommended scheduled maintenance services for your Jeep vehicle, along with the operations to be performed at each service.

The maintenance schedule is divided into required maintenance and recommended maintenance. Required maintenance is defined as those maintenance operations which must be performed at the prescribed mileage interval in order to retain the emission control performance standards originally built into your Jeep vehicle. Failure to have the required maintenance performed at the stated interval may affect your warranty coverage.

Recommended maintenance is necessary to maintain the safety, durability and performance level of your vehicle. The Jeep maintenance schedules have been developed to give you maximum economy, dependability and performance from your vehicle. However, because of varying climatic conditions, the type of terrain on which you drive, your individual driving habits, and severe operating conditions, additional service may be necessary for proper maintenance. Your authorized Jeep Dealer can best advise you on your requirements.

Important: If your vehicle is subjected to the conditions listed below, maintenance should be performed twice as frequently, for example, every 3 1/2 months instead of every 7 months or every 3,750 miles instead of every 7,500 miles. This is especially important for engine oil and filter changes.

- Frequent starting and stopping
- Frequent long periods of engine idling
- Frequent short trips of less than 15 miles (24 km)

- Desert operation
- Cold climate operation
- Sustained high speed driving
- Trailer towing
- Commercial service
- Frequent operation on dusty roads
- Off-road driving

It is your responsibility to identify the operating conditions for your vehicle and to make certain that the vehicle is properly serviced according to the required and recommended schedules.

The service intervals indicated on the charts are based on the odometer reading on your vehicle in thousands of miles (kilometers) since the vehicle was first used. For mileage beyond that indicated on the charts, you should continue to have maintenance services performed every 7,500 miles (12 000 km).

You are responsible for keeping maintenance records since, in some instances, it may be necessary for you to show that the required and recommended maintenance has been performed. If you dispose of the vehicle, these records should be left in the glove box and passed on to the subsequent owner.

Ask your service advisor about the services you need and discuss the cost involved. Remember, it pays to protect your investment with the proper service at the proper time.

Recommended Monthly Maintenance Checks

- Tires—Check tire pressure and any sign of unusual wear or damage.

- Battery—Inspect and clean terminals (tighten if necessary). Check electrolyte level and add distilled water as needed.
- Check fluid levels for Coolant, Brake Fluid, Power Steering Fluid, Clutch Fluid and Automatic Transmission Fluid and add as needed. See detailed procedures in Fluids & Lubricants section of this manual.
- Lights and Electrical—Check for correct operation of all electrical items.

It is advisable that the operator also check the oil level and the windshield washer solvent with each gasoline fill-up.

Jeep Grand Wagoneer Maintenance Schedule (Except California)

Miles (Thousands) Kilometers (Thousands)	5		7.5		15		22.5		30		37.5		45		52.5		60	
	8		12		24		36		48		60		72.5		84.5		96.5	
1. Oil — Change			•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
2. Oil Filter—Change			•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
3. Exhaust System—Check			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4. Propeller Shafts—Lubricate Double Cardan Joint, Inspect Seals			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5. Steering Linkage—Check & Lubricate			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6. Manual Steering Gear—Check			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7. Automatic Transmission Fluid—Replace									X									
8. Manual Transmission Fluid—Check			X	X	X	X	X	X			X	X	X	X	X	X		
Manual Transmission Fluid—Replace									X									
9. Axles, Transfer Case Fluid—Check			X	X	X	X	X	X			X	X	X	X	X	X		
Axles, Transfer Case Fluid—Replace									X									
10. Spark Plugs—Replace ²									•	•							•	•
11. Air Filter—Replace									•	•							•	•
12. Drive Belts—Inspect & Adjust					•				•	•							•	•
13. Drive Belts—Replace									•	•							•	•
14. Idle Speed (Curb & Fast)—Check & Adjust	• ¹															•		

INSPECTION AND SERVICE SHOULD ALSO BE PERFORMED ANYTIME A MALFUNCTION IS OBSERVED OR SUSPECTED. RETAIN ALL RECEIPTS.

¹ No Charge To Owner

² Required EPA Designated Emission-Related Maintenance Item.

³ Required EPA Designated Critical Emission-Related Item. • = Required X = Recommended

Jeep Grand Wagoneer Maintenance Schedule (Except California)

Miles (Thousands) Kilometers (Thousands)	5	7.5	15	22.5	30	37.5	45	52.5	60
	8	12	24	36	48	60	72.5	84.5	96.5
15. Choke Linkage—Clean					•			•	
16. Fuel Filter—Replace					•				•
17. Coolant—Replace				X			X		
18. Brakes—Check					X				X
19. Front Wheel Bearings—Lubricate					X				X
20. Body Components—Lubricate					X				X
21. Emission System Vacuum Hoses—Replace ²								•	
22. Ignition Wires—Replace ²								•	
23. Ignition Timing—Check								•	
24. Distributor Cap and Rotor—Replace								•	
25. Fuel Filter Cap—Replace								•	
26. Exhaust Heat Valve—Lubricate					•				•
27. PCV Filter—Clean and Re-Oil					•				•
28. PCV Valve—Replace ³									
29. Battery—Replace									X

INSPECTION AND SERVICE SHOULD ALSO BE PERFORMED ANYTIME A MALFUNCTION IS OBSERVED OR SUSPECTED.
RETAIN ALL RECEIPTS.

- ¹ No Charge To Owner
² Required EPA Designated Emission-Related Maintenance Item.
³ Required EPA Designated Critical Emission-Related Item. • = Required X = Recommended

Jeep Grand Wagoneer Maintenance Schedule (Except California)

Miles (Thousands)	67.5	75	82.5	90	97.5	105	112.5	120
Kilometers (Thousands)	108.5	120.5	133	145	157	169	181	193
1. Oil — Change	●	●	●	●	●	●	●	●
2. Oil Filter — Change	●	●	●	●	●	●	●	●
3. Exhaust System — Check	X	X	X	X	X	X	X	X
4. Propeller Shafts — Lubricate Double Cardan Joint, Inspect Seals	X	X	X	X	X	X	X	X
5. Steering Linkage — Check & Lubricate	X	X	X	X	X	X	X	X
6. Manual Steering Gear — Check	X	X	X	X	X	X	X	X
7. Automatic Transmission Fluid — Replace				X				X
8. Manual Transmission Fluid — Check	X	X	X		X	X	X	
Manual Transmission Fluid — Replace				X				X
9. Axles, Transfer Case Fluid — Check	X	X	X		X	X	X	
Axles, Transfer Case Fluid — Replace				X				X
10. Spark Plugs — Replace ²				●				●
11. Air Filter — Replace				●				●
12. Drive Belts — Inspect & Adjust			●		●		●	
13. Drive Belts — Replace								
14. Idle Speed (Curb & Fast) — Check & Adjust						●		

INSPECTION AND SERVICE SHOULD ALSO BE PERFORMED ANYTIME A MALFUNCTION IS OBSERVED OR SUSPECTED. RETAIN ALL RECEIPTS.

¹ No Charge To Owner

² Required EPA Designated Emission-Related Maintenance Item.

³ Required EPA Designated Critical Emission-Related Item.

● = Required X = Recommended

Jeep Grand Wagoneer Maintenance Schedule (Except California)

Miles (Thousands) Kilometers (Thousands)	67.5	75	82.5	90	97.5	105	112.5	120
	108.5	120.5	133	145	157	169	181	193
15. Choke Linkage—Clean			•			•		
16. Fuel Filter—Replace				•				•
17. Coolant—Replace	X			X			X	
18. Brakes—Check				X				X
19. Front Wheel Bearings—Lubricate				X				X
20. Body Components—Lubricate				X				X
21. Emission System Vacuum Hoses—Replace ²						•		
22. Ignition Wires—Replace ²						•		
23. Ignition Timing—Check						•		
24. Distributor Cap and Rotor—Replace						•		
25. Fuel Filter Cap—Replace						•		
26. Exhaust Heat Valve—Lubricate				•				•
27. PCV Filter—Clean and Re-Oil				•				•
28. PCV Valve—Replace ³			• ¹					
29. Battery—Replace								X

INSPECTION AND SERVICE SHOULD ALSO BE PERFORMED ANYTIME A MALFUNCTION IS OBSERVED OR SUSPECTED.
RETAIN ALL RECEIPTS.

¹ No Charge To Owner

² Required EPA Designated Emission-Related Maintenance Item.

³ Required EPA Designated Critical Emission-Related Item. • = Required X = Recommended

Maintenance Schedule Text

Perform the operations listed below at the intervals indicated on the chart. Add fluid, adjust, repair or replace worn or damaged components, as necessary. Refer to the **Service and Maintenance** section of this manual for fluid and lubricant specifications.

1. Change engine oil.
2. Change oil filter at every oil change.
3. Check exhaust system for leaks and damage.
4. Lubricate propeller shafts and double cardan joints and inspect seals.
5. Inspect steering linkage and ball joints for any worn or damaged components. Lubricate steering components.
6. Check lubricant level in the manual steering gear.
7. Replace automatic transmission fluid and replace the filter.
8. Check manual transmission fluid level every 7,500 miles (12,000 km). Replace manual transmission fluid every 30,000 miles (48 000 km).
9. Check axle fluid and transfer case fluid every 7,500 miles (12 000 km). Replace axle fluid and transfer case fluid every 30,000 miles (48 000 km).
10. Replace spark plugs.
11. Replace air cleaner filter.
12. Inspect condition of drive belts.
13. Replace drive belts.
14. Check curb and fast idle speed.
15. Clean choke linkage with lubricant or solvent.
16. Replace fuel filter.

17. Drain cooling system, flush and refill with new coolant.

18. Inspect the following brake components:

- Wheel Cylinders
- Calipers
- Pads
- Linings
- Self-Adjusting Mechanism
- Combination Valve
- Lines
- Fittings
- Hoses
- Master Cylinder
- Parking Brake Mechanism

19. Lubricate front wheel bearings.

20. Lubricate door, hood, liftgate and tailgate latches and hinges. Lubricate ashtray slides and courtesy light buttons.

21. Replace emission system vacuum hoses.

22. Replace ignition wires.

23. Check ignition timing, centrifugal and vacuum advance.

24. Replace distributor cap and rotor.

25. Replace fuel filler cap.

26. Lubricate exhaust heat valve using Jeep Heat Valve Lubricant or equivalent.

27. Inspect, clean and re-oil PCV filter.

28. Replace PCV valve.

29. Replace battery.

Jeep Grand Wagoneer Maintenance Schedule (California)

Miles (Thousands)	5	7.5	15	22.5	30	37.5	45
Kilometers (Thousands)	8	12	24	36	48	60	72.5
1. Oil—Change		•	•	•	•	•	•
2. Oil Filter—Change		•	•	•	•	•	•
3. Exhaust System—Check		•	•	•	•	•	•
4. Propeller Shafts—Lubricate Double Cardan Joints, Inspect Seals		X	X	X	X	X	X
5. Steering Linkage—Check & Lubricate		X	X	X	X	X	X
6. Manual Steering Gear—Check		X	X	X	X	X	X
7. Automatic Transmission Fluid—Replace					X		
8. Manual Transmission Fluid—Check		X	X	X		X	X
Manual Transmission Fluid—Replace					X		
9. Axles, Transfer Case Fluid—Check		X	X	X		X	X
Axles, Transfer Case Fluid—Replace					X		
10. Spark Plugs—Replace ²					•		
11. Air Filter—Replace			X		•		X
12. Drive Belts—Inspect & Adjust			•		•		•
13. Idle Speed (Curb & Fast)—Check & Adjust	• ¹				X		

INSPECTION AND SERVICE SHOULD ALSO BE PERFORMED ANYTIME A MALFUNCTION IS OBSERVED OR SUSPECTED.
RETAIN ALL RECEIPTS.

¹ No Charge To Owner

• = Required

X = Recommended

Jeep Grand Wagoneer Maintenance Schedule (California)

Miles (Thousands)	5	7.5	15	22.5	30	37.5	45
Kilometers (Thousands)	8	12	24	36	48	60	72.5
14. Choke—Clean					•		
15. Fuel Filter—Replace					•		
16. Coolant—Replace				X			X
17. Brakes—Check					X		
18. Front Wheel Bearings—Lubricate					X		
19. Body Components—Lubricate					X		
20. Ignition Timing—Check					X		
21. Distributor Cap and Rotor—Inspect					X		
22. Exhaust Heat Valve—Lubricate					•		
23. PCV Filter—Clean and Re-Oil					•		
24. PCV Valve—Replace					X		
25. PCV Hoses—Inspect					X		
26. Distributor Vacuum & Centrifugal Advance—Check					X		
27. Thermostatic Air Cleaner Control Valve—Inspect					X		
28. Vacuum Fitting, Hoses and Connections—Inspect					X		
29. Fuel System, Cap, Tank, Lines and Connections—Inspect					X		

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RETAIN ALL RECEIPTS.

¹ No Charge To Owner

• = Required

X = Recommended

Maintenance Schedule Text (California Only)

Perform the operations listed below at the intervals indicated on the chart. Add fluid, adjust, repair or replace worn or damaged components, as necessary. Refer to the Service and Maintenance section index of this manual for fluid and lubricant specifications.

1. Change engine oil.
2. Change oil filter at every oil change.
3. Check exhaust system for leaks and damage.
4. Lubricate propeller shafts and double cardan joints and inspect seals.
5. Inspect steering linkage and ball joints for any worn or damaged components. Lubricate steering components.
6. Check lubricant level in the manual steering gear.
7. Replace automatic transmission fluid and replace the filter.
8. Check manual transmission fluid level every 7,500 miles (12 000 km). Replace manual transmission fluid every 30,000 miles (48 000 km).
9. Check axle fluid and transfer case fluid every 7,500 miles (12 000 km). Replace axle fluid and transfer case fluid every 30,000 miles (48 000 km).
10. Replace spark plugs.
11. Replace air cleaner filter.
12. Inspect condition of drive belts and adjust tension.
13. Check curb and fast idle speed. Adjust as necessary.
14. Clean choke system linkage.
15. Replace fuel filter.
16. Drain cooling system, flush and refill with new coolant.

17. Inspect the following brake components:

- Wheel Cylinders.
- Calipers
- Pads
- Linings
- Self-Adjusting Mechanism
- Combination Valve
- Lines
- Fittings
- Hoses
- Master Cylinder
- Parking Brake Mechanism

18. Lubricate front wheel bearings.

19. Lubricate door, hood, liftgate and tailgate latches and hinges. Lubricate ashtray slides and courtesy light buttons.

20. Check ignition timing, centrifugal and vacuum advance.

21. Inspect distributor cap and rotor.

22. Lubricate exhaust heat valve with Jeep Heat Valve Lubricant or equivalent.

23. Inspect, clean and re-oil PCV filter.

24. Replace PCV valve.

25. Inspect PCV system hoses.

26. Check vacuum and centrifugal advance.

27. Inspect thermostatic air cleaner control valve.

28. Inspect vacuum fittings, hoses and connections.

29. Inspect fuel system cap, tank, lines, hoses and connections.

Recommended Fluids, Lubricants and Genuine Parts

Chassis

Component	Specification
Automatic Transmission	Jeep Automatic Transmission Fluid P/N 82200 922 or equivalent labeled Mercon® or Dexron II®.
Axle Differential (front-rear)	Jeep Gear Lubricant P/N 82200 046 (Canada J9121) or equivalent of SAE 75W-90 (API-GL5) quality. For Trailer Towing Package use 80W-140 API GL5 gear lubricant.
Brake master cylinder	Jeep Brake Fluid P/N 82220 215 (Canada J9193) or equivalent marked FMVSS No. 116, DOT-3 and SAE J-1703. CAUTION: Use only recommended brake fluids.
Manual transmission	Jeep Manual Transmission Lubricant P/N 82200 734 (Canada 912) or SAE 75W90 API GL5 gear lubricant.
Parking brake pedal mechanism*	Jeep White Spray Grease P/N J8993 887 (Canada J1472)
Power Steering Pump and gear*	Jeep Power Steering Fluid PN 82200 946 (Canada J9073).
Steering gear and linkage, ball joints, propeller shafts, wheel bearings, U-joints.	Jeep All Purpose Lubricant P/N J8993 720 (Canada J3630).
Transfer Case	Jeep Automatic Transmission Fluid P/N 82200 922 or equivalent labeled Mercon® or Dexron II®.
Windshield Washer Fluid	Jeep Windshield Washer Solvent PN J8992 487. (Canada J9088).

* No routine drain and refill application of lubricant is required.

Recommended Fluids, Lubricants and Genuine Parts

Engine

Component	Specification
Engine coolant	Jeep All Season Coolant PN J8993 850 (Canada J9115) or equivalent.
Engine oil	API classification "SG" or "SG/CD" Energy Conserving Jeep Oil P/N 82200 287 (Canada 83505 092) or equivalent. Refer to oil viscosity chart for correct SAE grade.
Spark Plugs	RN 12YC P/N 521 3693
Oil Filter	P/N 33004 195 (M20X1.5)
Air Filter	P/N J8992 661
Exhaust manifold heat valve	Jeep Heat Valve Lubricant P/N J8993 552 (Canada J1632)

Body

Ashtay slides	Jeep White Spray Grease P/N J8993 887 (Canada J1472)
Front seat tracks	Jeep White Spray Grease P/N J8993 887 (Canada J1472)
Hinges: door, hood, liftgate	Jeep White Spray Grease P/N J8993 887 (Canada J1472)
Key lock cylinders	Jeep Lock Lubricant PN J1025 527
Latches: door, hood, liftgate, glove box	Jeep White Spray Grease P/N J8993 887 (Canada J1472)
Weatherstrips: door, window, trunk	Jeep Silicone Lubricant Spray P/N J8993 542 (Canada J1141)
Windshield Wiper Blade	PN 56001 133

CUSTOMER ASSISTANCE

Chrysler Motors and its dealers are vitally interested in your satisfaction with their products and services. If a servicing problem or other difficulty should occur, we recommend that you take the following steps:

- Discuss the problem at the dealership with the dealer principal or the service manager. Dealership management people are in the best position to resolve the problem quickly.
- If this action does not prove satisfactory, contact the Customer Relations Manager at the Chrysler Zone Service & Parts Office closest to you. Addresses and telephone numbers of all Zone Offices follow]
- If you should need further assistance, you should contact the Manager, Customer Relations at the following addresses:

In U.S.:

Chrysler Motors
P.O. Box 1718
Detroit, Michigan 48288-1718

In Canada:

Chrysler Center
P.O. Box 1621
Windsor, Ontario N9A 4H6

When you contact the appropriate Customer Relations Department, please provide all of the following information:

- Your name, address (including zip code) and phone number.
- Vehicle Identification Number (this 17 digit number is available from your vehicle registration or title, or from the plate located in the upper left corner of the instrument panel and visible through the windshield.

- Selling and servicing dealer.
- Vehicle's delivery date and current mileage.
- Service history of your vehicle.
- An accurate description of the problem and the conditions under which it occurs.

CUSTOMER ARBITRATION BOARD

In the 50 United States, and Washington, D.C., if a warranty dispute has not been resolved to your satisfaction, you may submit the issue to a Chrysler Arbitration Board. The case must be submitted to the Customer Arbitration Board before action under the Magnuson-Moss Warranty Act can be taken. However, this does not apply for enforcement of state created rights or other rights which exist independent from the Magnuson-Moss Warranty Act.

Additional information and the address of each Customer Arbitration Board is contained in the Customer Arbitration Board Brochure included in the Glove Box Kit.

SERVICE ASSISTANCE — Your dealer is fully equipped to perform expert service on your vehicle. He also has direct access to our Zone technical staff when needed. These Zones are in direct communication with the home office should further assistance be required.

ATLANTA
900 Circle 75 Parkway
Suite 1600
Atlanta, GA 30339
Phone: (404) 953-8880

BOSTON
P.O. Box 50
Natick, MA 01760-1578
Phone: (617) 655-2810

CHARLOTTE
4944 Parkway Plaza Blvd.
Suite 470
Charlotte, N.C. 28217
Phone: (704) 529-4165

CHICAGO
P.O. Box 1102
Itasca, IL 60143-1102
Phone: (312) 773-7780

CINCINNATI
P.O. Box 41902
Cincinnati, OH 45241
Phone: (513) 530-1500

DALLAS
P.O. Box 110162
Carrollton, TX 75011
Phone: (214) 242-8462, 63

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P.O. Box 39006
Denver, CO 80239
Phone: (303) 371-1330

DETROIT
P.O. Box 3000
Troy, MI 48067-3000
Phone: (313) 879-3600

HOUSTON
363 North Belt
Suite 590
Houston, TX 77060-2405
Phone: (713) 820-7062, 63

KANSAS CITY
11020 King St., Suite 401
P.O. Box 25668
Overland Park, KS
66225-5668
Phone: (913) 469-3090

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P.O. Box 3019C
Anaheim, CA 92803-3019C
Phone: (714) 870-4000

MEMPHIS
P.O. Box 18008
Memphis, TN 38181-0008
Phone: (901) 797-3870

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445 S. Moorland Rd.
Suite 470
Brookfield, WI 53005
Phone: (414) 797-3750

MINNEAPOLIS
P.O. Box 1231
Minneapolis, MN 55440
Phone: (612) 553-2546

NEW ORLEANS
P.O. Box 157
Metairie, LA 70044
Phone: (504) 836-6788

NEW YORK
500 Route 303
Tappan, NY 10983-1992
Phone: (914) 359-0110

ORLANDO
8000 S. Orange Blossom Tr.
Orlando, FL 32859-3428
Phone: (305) 352-7402, 03,
Phone: (305) 352-7404

PHILADELPHIA
3 Great Valley Parkway East
Suite 201
Great Valley Corp.
Center Malvern, PA 19355
Phone: (215) 251-2990

PHOENIX
P.O. Box 35666
Phoenix, AZ 85029
Phone: (602) 868-6060

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Penn Center
West Three
Suite 420
Pittsburgh, PA 15276
Phone: (412) 788-6622

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P.O. Box 744
Beaverton, OR 97075
Phone: (503) 526-5555

ST. LOUIS
P.O. Box 278
Hazelwood, MO 63042
Phone: (314) 985-0731

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P.O. Box 5009
Pleasanton, CA 94566-0509
Phone: (415) 463-0656

SYRACUSE
P.O. Box 603
Syracuse, NY 13201-0603
Phone: (315) 445-6941

WASHINGTON
P.O. Box 1900
Bowie, MD 20716
Phone: (301) 464-4040, 41
Phone: (301) 464-4042, 43

DETROIT
CUSTOMER RELATIONS
P.O. Box 1718
Detroit, MI 48288-1718
Phone: (313) 956-5970

CANADA
QUEBEC REGION
3000 Trans Canada
Highway
P.O. Box 550
Pointe-Claire Dorval,
Quebec H9R 4P6
Phone: (514) 630-2500

ONTARIO REGION
4500 Mississauga Rd. N.
Mississauga, Ontario
L5N 1A9
Phone: (416) 821-6010
Phone: (416) 821-6014

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879 Keewatin
P.O. Box 757
Winnipeg, Manitoba
R3C 2M4
Phone: (204) 631-2214

ATLANTIC REGION
615 St. George Blvd.
P.O. Box 630
Moncton, New Brunswick
ETC 8M8
Phone: (506) 857-3316

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P.O. Box 670
Red Deer, Alberta
T4N 5G9
Phone: (403) 343-5727

PACIFIC REGION
26 S.W. Marine Drive
Vancouver, British Columbia
V5X 2P2
Phone: (604) 321-7525

WINDSOR
CUSTOMER RELATIONS
Chrysler Center
P.O. Box 1621
Windsor, Ontario
N9A 4H6
Phone: (519) 973-2338

CHRYSLER DE MEXICO
Division Servicio
Poniente 145, #625
Mexico 15, D.F., Mexico
Phone: (904) 250-9980

Any communication to a zone office should include the following information:

- Owner's name and address
- Owner's telephone number (home and office)
- Dealership name
- Vehicle identification number
- Vehicle delivery date and mileage

To order a combined Chassis — Body and Electrical Service Manual; tear out this page, fill in all information (please type or print), and mail to:

In U.S.A.:

JEEP/EAGLE PUBLICATIONS

c/o Dymet Distribution Service

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Strongsville, OH 44136

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36 Overlea Blvd.

Toronto, Ontario M4H 1B7

- ☐ Jeep: Wrangler, Cherokee, Wagoneer, Comanche and Grand Wagoneer Service Manual Set 81-370-9046 \$40.00 plus State and Local taxes (no tax in Canada)

Prices subject to change without notice.

You may also use this form to order Owners Manuals for a previous model year (manuals for the previous 10 year period are usually available).

- ☐ Owners Manuals specify year, make, and model. (example: 1985 Jeep CJ7)

\$3.50 plus State and Local taxes (no tax in Canada)

Enclose check or money order payable to: Chrysler Motors.

Please allow 60 days for delivery.

Name _____

Address _____

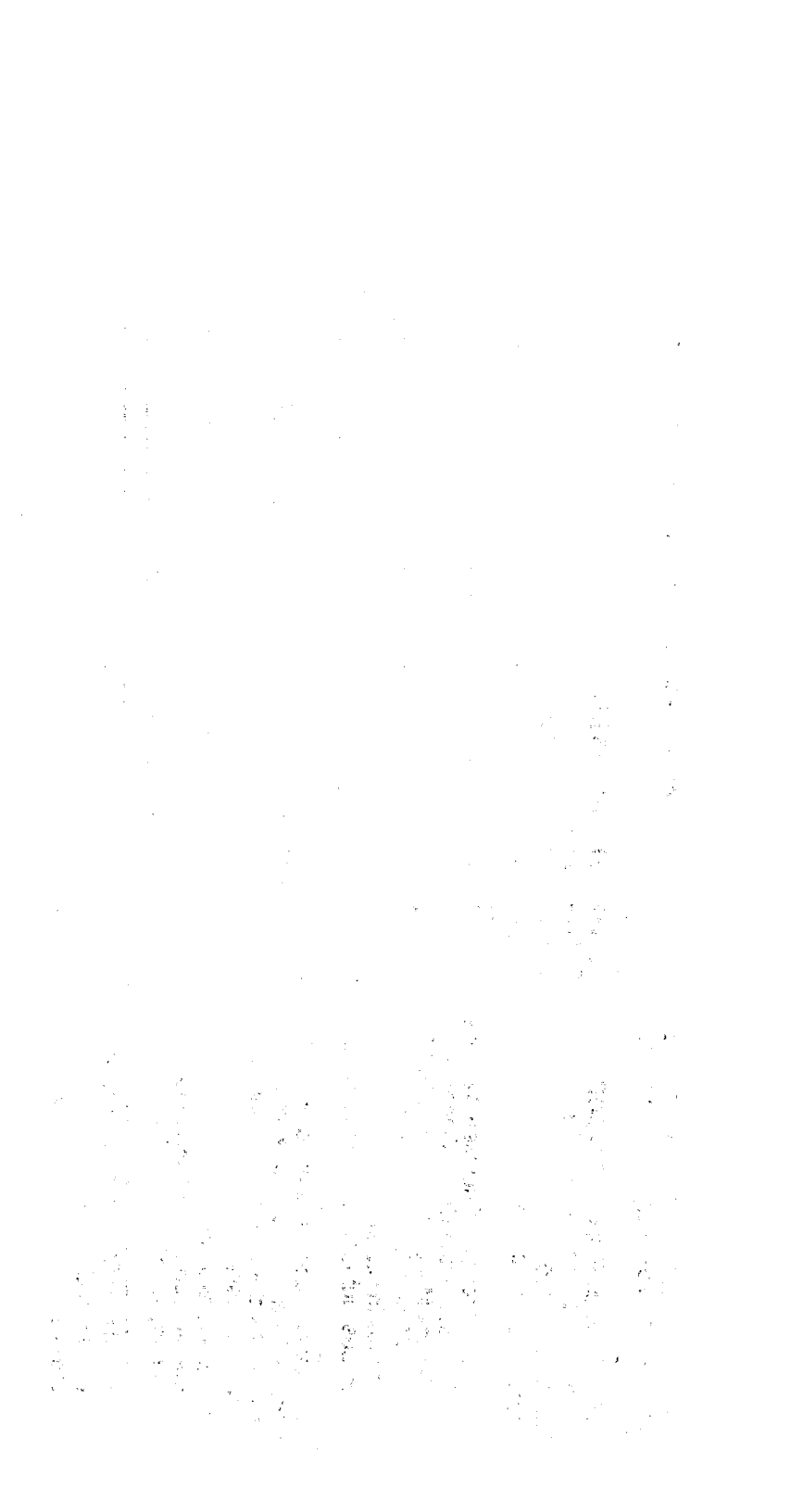
City _____

State/Prov. _____

Zip _____

Date _____

Amount of check or money order \$ _____



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NOTES

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10 FEB	177420	FUEL (6.2)
17 FEB	177573	15.5
	177725	16.5

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INFO CONFERENCE SPARE

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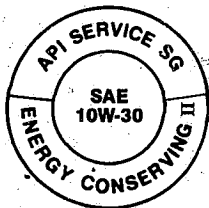
Gas Station Reference

Fuel Selection

Unleaded Gasoline - 87 octane or higher

Engine Oil - API Quality

SERVICE SG OR SG/CD
(SAE 10W-30 Preferred)



FLUID CAPACITIES (also see page 11.1)

	U.S. Measure	Imperial Measure	Metric Measure
Fuel (approximate)	20.3 gal.	16.9 gal.	76.8 liter
Engine Oil	5 qt.	4.2 qt.	4.8 liter
Transmission	8.5 pt.	7.1 pt.	4.0 liter

ENGINE SPECIFICATIONS

	Spark Plug	Spark Plug Gap
V-8	RN12YC	.035" (0.9 mm)

TIRE PRESSURE

P235/75R15	35 psi (241 kPa)
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**CHRYSLER
MOTORS**