

# MAINTENANCE

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## GENERAL

Scheduled and unscheduled maintenance services required to keep Jeep vehicles in good running condition are detailed in this section. Services that must be performed at periodic intervals are listed in the Mechanical Maintenance Schedule. These services are scheduled on the basis of mileage as accumulated on the odometer or a specified time interval—whichever comes first—or they are scheduled by accumulated mileage only. This Maintenance section is therefore subdivided into three parts: (1) Services Scheduled by Mileage or Time Interval, (2) Services Scheduled by Accumulated Mileage, and (3) Unscheduled Maintenance. Unscheduled maintenance services are those services which need not be performed regularly, but only as the occasion arises.

### Mechanical Maintenance Schedule

The services listed in the Schedule are those which experience and testing have indicated are the most likely needed at the mileage or time interval shown. They are shown on the schedule as "R," "HD," or "E" services.

"R" services are those maintenance services that are required to keep vehicles in normal service functioning properly.

"HD" services are those services required only if the vehicle is operated in heavy-duty service. Heavy-duty service includes any of the following uses:

- Off-road operation or operation under dusty conditions for over 30% of use.

- Extended idling during normal operation.
- Towing of trailers over 2,000 pounds.
- Short-run usage—that is, most trips average under 6 miles.

Vehicles in heavy-duty use require service at more frequent intervals, as specified by "R."

"E" services are services required at the interval shown in the schedule to help assure continued compliance with U. S. National Emission Control Standards.

### Fuel Requirements

#### CJ Models

All engines require the use of unleaded fuel to reduce exhaust emissions. Use of leaded fuel can result in substantially higher emissions. Fuel should have an anti-knock index (AKI) of at least 87 AKI (A lower octane AKI is acceptable at elevations above 1500 feet). On those vehicles equipped with a catalytic converter, use of leaded fuel can render the catalyst ineffective.

#### Cherokee—Wagoneer—Truck

All engines for these models (except on California vehicles) will operate efficiently on regular grade leaded fuel or unleaded fuel of 87 AKI or higher. California eight-cylinder engines have catalytic converters and require unleaded fuel. The use of unleaded fuel helps in the reduction of hydrocarbon emissions and provides some increase in spark plug and exhaust system life.

## SERVICES SCHEDULED BY MILEAGE OR TIME INTERVALS

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### AT START OF WINTER

Perform the following maintenance services at the start of every winter season:

#### Battery Cables

Inspect the cables for condition and clean the terminals. Coat connections with light mineral grease or an

electrical grease with a high melting temperature. Replace cables if required.

#### Engine Coolant

Change engine coolant *after* the first 25,000 miles or 25 months, whichever comes first, and *then* at the start of every winter season. Refer to Cooling section for draining and refilling procedures.

1977 JEEP MECHANICAL MAINTENANCE SCHEDULE †

SERVICES SCHEDULED by ACCUMULATED MILEAGE				
ODOMETER READING IN THOUSANDS 	5	10, 20, 35, 50, 65, 80, 95, 100	15, 45, 75	30, 60, 90
	Engine Oil, Oil Filter and Fluids (Chart 1)	R	R	R
Complete Body Lubrication and Brake Inspection (Chart 2)	HD	HD	R	R
Front Suspension and Steering – Verify condition and action, and correct as needed	HD	HD	R	R
Manual Transmission Clutch – inspect/Correct adjustment			R	R
Automatic Transmission – adjust linkage			R	R
Chassis Lubrication (Chart 3)			R	R
Shock Absorber Mountings and Bushings – inspect	HD	HD	R	R
Spring Bushings – inspect	HD	HD	R	R
Exhaust System – inspect	R	HD	HD	HD
U.S. Emission Control Services Cherokee, Wagoneer, Truck (Chart 4)			E	E
U.S. Emission Control Services CJ Models (Chart 5)			E	E

NOTE: Immediately after operating in sand, mud, water, etc., brake drums, brake linings, and front axle U-joints and yokes should be cleaned thoroughly to avoid excessive wear and for unnecessary part failure caused by contamination with foreign materials.

HD—If you operate your Jeep vehicle under heavy-duty conditions such as off-road or dusty driving conditions for over 30% of use; extended idling during normal uses; towing heavy trailers (over 2,000 lbs); or short run uses (most trips under 6-8 miles); more frequent servicing intervals are required. HD service intervals are in addition to other indicated.

R—Required for function and durability.

E—Required to help assure compliance with U.S. National Emission Control Standards.

† It's the owner's responsibility to have maintenance services performed at the scheduled intervals, and to pay for the necessary parts and labor.

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EVERY 5,000 MILES/5 MONTHS

Engine Oil Change

Engine oil should be changed after the first 5,000 miles and every 5,000 miles thereafter. As periods for subsequent oil changes are affected by a variety of conditions, no single mileage figure can apply for all types of driving. Five-thousand miles is therefore the maximum amount of miles that should elapse between

SERVICES SCHEDULED BY MILEAGE OR TIME INTERVALS	
<p><b>Engine Oil and Oil Filter</b> Change required (R) every 5,000 miles or 5 months, whichever comes first. If most vehicle uses involve trips under 6 miles, change oil once in between the oil filter changes. Change Heavy-Duty (HD) every 3,000 miles or 3 months, whichever comes first. Check engine oil level every 500-600 miles.</p> <p><b>Engine Coolant</b> Change required at 25,000 miles or 25 months, whichever comes first, and then at the start of every winter season.</p>	<p><b>Tires</b> Tires and tire services are excluded from both the New Vehicle Warranty and the Maintenance Schedule. Tire adjustments are handled directly by the tire manufacturer. "Normal maintenance recommendations" appear as guides under "Tires" in Section 9, Wheels and Tires.</p> <p><b>Wheel Nuts</b> Tighten to specified torque (R) after first 200 miles.</p>

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Chart 1 Fluids	
<p><b>INSPECT AND CORRECT LEVELS</b> Normal Service – Every 5,000 Miles* Heavy-Duty Service – Every 3,000 Miles*</p>	
<p>Transmission Transfer Case Differentials – Front and Rear Steering Gear Housing Power Steering Reservoir Brake Master Cylinder Engine Oil Level</p>	<p>Engine Coolant Windshield Washer Solvent Battery Clean Windshield Wiper Blade Elements and Windshield</p>
<p>at each fuel tank fill</p>	
<p><b>DRAIN AND REFILL (At Mileage Indicated)</b></p>	
<p>Transmission – Automatic Normal Service . . . . . 25,000 Heavy-Duty Service 10,000 Manual . . . . . 30,000</p>	<p>Transfer Case – . . . . . 30,000 Differentials – Front and Rear. . . . . 30,000</p>
<p>*Except as otherwise indicated.</p>	

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Chart 2 Complete Body Lubrication And Brake Inspection	
<p>Normal Service – Every 15,000 Miles Heavy-Duty Service – Every 5,000 Miles</p>	
<p>Inspection, and correction as needed, of brake linings and other parts. Hood latch and hinges. Door latches, lock cylinders and door hinges.* Tailgate and liftgate hinges and latches.*</p>	<p>Front seat tracks. Ashtray slides. Glove box door latch and hinge. Courtesy light switch buttons.* Apply silicone lubricant to all door, window, tailgate and liftgate rubber weather seals.</p>
<p>*Where applicable.</p>	

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Chart 3 Chassis Lubrication		
<p>Normal Service Heavy-Duty Service</p>	<p>CJ Models Every 5,000 miles Every 3,000 miles</p>	<p>Cherokee, Wagoneer, &amp; Truck Every 15,000 miles Every 5,000 miles</p>
<p>Inspection and/or lubrication of . . . Steering linkage ball joints (with replacement of suspension and steering system seals and components as necessary). Steering shaft U-joint – Cherokee, Wagoneer, Truck models. Clutch linkage</p>		
<p><b>Lubricate every 25,000 miles:</b> Front wheel bearings - All Models. Transfer case shift linkage - CJ Models. Transfer case shift control lever assembly - Cherokee and Truck.</p>		
<p>Normal Service Every 10,000 miles Heavy-Duty Service Every 5,000 miles Front and rear propeller shafts – all models</p>		
<p>NOTE: Rear wheel bearings do not require periodic or scheduled lubrication; only at time of overhaul or other service.</p>		

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changes; more frequent changes are beneficial, and for this reason, oil should be changed every 5 months even though 5,000 miles may not have elapsed on the vehicle odometer.

Drain crankcase only after engine has reached normal

**Chart 4 U.S. Emission Control Services – Cherokee, Wagoneer, Truck Models**

A precision electronic diagnosis should be purchased whenever questionable engine performance occurs between the scheduled complete precision tune-ups.

**COMPLETE PRECISION TUNE-UP** At 15-30-45-60-75-90,000 miles

- Air Guard System Hoses—inspect and correct as required.
- Carburetor Air Cleaner Element—replace paper cartridge, clean polyurethane element, unless plugged or damaged, then replace.
- Choke Linkage—inspect for free movement (correct as required).
- Coil and Spark Plug Wires—inspect and replace as required.
- Distributor Vacuum and Centrifugal Advance Mechanisms—check and correct as required.
- Distributor Cap and Rotor—inspect and replace as required.
- Drive Belts—inspect condition and tension and correct as required.
- Engine Oil Filler Cap (filter type)—clean.
- Exhaust Gas Recirculation Discharge Port (Six-cylinder)—inspect and clean as required.
- Exhaust Gas Recirculation Valve—inspect and clean.\*

- Fuel Filter—replace.
- Fuel System: Cap, Tank, Lines, Check Valve, and Connections—inspect for integrity and correct as required.
- Fuel Vapor Inlet Filter at Charcoal Canister—replace.
- Heat Valve (exhaust manifold)—inspect and lubricate.
- Idle Speed and Mixture—check and reset as required.
- Ignition Timing—check and set as required.
- PCV Hoses—inspect and replace as required.
- PCV Filter (six-cylinder)—clean.
- PCV Valve—replace.
- Spark Plugs—replace.
- TAC System—inspect and correct as required.
- Vacuum Fittings, Hoses and Connections—inspect and correct as required.

\*Not applicable to California engines.

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**Chart 5 U.S. Emission Control Services – CJ Models**

A precision electronic diagnosis should be purchased whenever questionable engine performance occurs between the scheduled complete precision tune-ups.

**SCHEDULED ROUTINE SERVICES** At 15-45-75-100,000 miles

- Drive Belts – inspect condition and tension and correct as required
- Fuel Filter – replace.

**COMPLETE PRECISION TUNE-UP** At 30-60-90,000 miles.

- Air Guard System Hoses – inspect and correct as required.
- Carburetor Air Cleaner Element – replace
- Choke Linkage – inspect for free movement (correct as required).
- Coil and Spark Plug Wires – inspect and replace as required).
- Distributor Vacuum and Centrifugal Advance Mechanisms – check and correct as required.
- Distributor Cap and Rotor – inspect and replace as required).
- Drive Belts – inspect condition and tension and correct as required.
- EGR System – inspect hoses and connections.
- Engine Oil Filler Cap (filter type) – clean.
- Fuel Filter – replace
- Fuel System, Cap, Tank, Lines, Check Valve, and Connections – inspect for integrity and correct as required.

- Fuel Vapor Inlet Filter at Charcoal Canister – replace.
- Heat Valve (exhaust manifold) – inspect and lubricate.
- Idle Speed (curb and fast) and Mixture – check and reset as required.
- Ignition Timing – check and set as required.
- PCV Filter (Six-cylinder) – clean.
- PCV Hoses – inspect and replace as required.
- PCV Valve – replace.
- Spark Plugs – replace.
- TAC System – inspect and correct as required.
- Transmission Controlled Spark Systems – inspect and correct as required.
- Vacuum Fittings, Hoses and Connections – inspect and correct as required.

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operating temperature to ensure complete drainage of used oil.

For maximum engine protection under all driving conditions, fill crankcase only with engine oil meeting API Engine Oil Service Classification "SE." These letters must appear on the oil container singly or in combination with other letters. SE engine oils provide protection against oil oxidation, high-temperature engine deposits, rust, and corrosion.

Single viscosity or multi-viscosity oils are equally acceptable. Oil viscosity number, however, should be determined by the lowest anticipated temperature before the next oil change.

Crankcase capacity is 5 quarts for six-cylinder engines, 4 quarts for V-8's. Add 1 quart with filter change.

**Engine Oil Viscosity**

Lowest Temperature Anticipated	Recommended Single Viscosity	Recommended Multi-Viscosity
Above +40°F	SAE 30 or 40	SAE 10W-30, 20W-40, or 10W-40
Above 0°F	SAE 20W-20	SAE 10W-30 or 10W-40
Below 0°F	SAE 10W*	SAE 5W-20 or 5W-30

\*Sustained high speeds (above 55 mph) should be avoided when using SAE 10W engine oil since oil consumption may be greater under this condition.

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**Oil Filter Change**

The oil filter should be changed every 5,000 miles or every 5 months, whichever comes first.

A full-flow oil filter is mounted on the lower front right side on V-8 engines and on the lower center right side of six-cylinder engines.

The throwaway filter unit can be removed from the adapter by using Oil Filter Removal Tool J-22700 or equivalent. To install, turn the replacement unit by hand until the gasket contacts the seat and then tighten an additional half turn.

**NOTE:** Long and short oil filter elements are currently

being used. When the short element is used, a slight overflow condition is indicated on the dipstick on some engines. This does not affect engine operation.

**AT 25,000 MILES/25 MONTHS**

**Engine Coolant**

Change the engine coolant at 25,000 miles or 25 months, whichever comes first, and then at the start of every winter season. Refer to Cooling section for draining and refilling procedures.

**SERVICES SCHEDULED BY ACCUMULATED MILEAGE**

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**AFTER FIRST 200 MILES**

**Wheel-to-Hub Nuts**

After the first 200 miles of operation, tighten the wheel-to-hub nuts to the specified torque value:

**Wheel-to-Hub Nuts (Foot-Pounds)**

Model	OK Range	Set-To
CJ Models	65 to 90	80
Cherokee, Wagoneer, Truck (except 8000 GVW Truck)	65 to 80	75
Truck 8000 GVW	110 to 150	130

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**AFTER FIRST 5,000 MILES**

**Exhaust System Inspection—All Models**

Check the exhaust system after 5,000 miles of vehicle operation and inspect for the following conditions. Correct as required.

- Exhaust system leaks, damage, misalignment.
- Grounding against body sheet metal or frame.
- Catalytic converter (if equipped) "bulging" or heat damage.

**Emission Control Services—CJ Models**

**Drive Belts**

Check belts driving fan, air pump, alternator, power

steering pump, and air conditioning compressor for cracks, fraying, wear, and general condition. Use Tension Gauge J-23600 to check drive belt tension. Compare reading obtained against the tension specified for used belts in the following chart. If installing a new belt, use the new belt setting shown in the chart.

**Drive Belt Tension (Pounds)**

Drive Belt	New Belt*	Used Belt
Air Conditioner	125 to 155	90 to 115
Air Pump (except six-cylinder with power steering)	125 to 155	90 to 115
Air Pump (with power steering — 3/8 inch belt)	65 to 75	60 to 70
Fan/Alternator	125 to 155	90 to 115
Power Steering Pump	125 to 155	90 to 115

\*New belt specifications apply only to replacement belts. Once a belt has been tensioned and run, it is considered a used belt and should be adjusted to used belt specifications.

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If drive belt must be replaced or tension must be adjusted, refer to Cooling section for procedure.

**Engine Idle Speeds**

Check curb idle speed and mixture and fast idle speed using equipment known to be accurate. For curb idle speed and mixture, refer to Tune-Up Specifications (On

Car) chart in the Emission Controls section. For fast idle speed, refer to Carburetor Service Specifications chart in the Fuel—Carburetion section.

## EVERY 5,000 MILES

### Fluid Level Checks—All Models

#### Battery

Check electrolyte level and add distilled water, if necessary, to bring level to bottom of ring in filler wells. Check specific gravity with a reliable hydrometer. Coat connections with light mineral grease or an electrical grease with a high melting temperature. Refer to Electrical section for detailed maintenance information.

#### Engine Coolant

Coolant level should be checked when the engine is cold. If coolant should be needed, fill radiator to approximately 1/2 inch to 1 inch below the filler neck when hot or 1-1/2 inch to 2 inches when cold. Add a mixture of equal parts of ethylene glycol antifreeze and pure water. In an emergency, water alone may be used. Check the freeze protection at the earliest opportunity, as the addition of water will reduce the antifreeze and corrosion protection afforded by the coolant mixture. Do not overfill, as loss of coolant—due to expansion—will result.

#### Brake Master Cylinder

Fluid level in both brake master cylinder reservoirs should be within 1/4 inch of the rim. Use AM Brake Fluid, or equivalent, conforming to SAE J1703 and FMVSS No. 116, DOT 3 fluid.

#### Automatic Transmission

To make an accurate fluid level check perform the following steps:

- (1) Bring transmission up to normal operating temperature.
- (2) Place vehicle on level surface.
- (3) Have engine running at hot idle speed.
- (4) Apply parking brake.
- (5) Move gearshift lever through all gears, leaving it in Park.
- (6) Remove dipstick, located in fill tube at right rear of engine near firewall, and wipe clean.
- (7) Insert dipstick until cap seats.
- (8) Remove dipstick and note reading. The fluid level should be between the ADD and FULL marks. If at or below the ADD mark, add sufficient fluid to raise level to FULL mark.

Use AM Automatic Transmission Fluid, Dexron, or Dexron II or equivalent.

**CAUTION:** Do not overfill. Overfilling can cause foaming which in turn can lead to overheating, fluid

oxidation, or varnish formation. These conditions can cause interference with normal valve, clutch, and servo operation. Foaming can also cause fluid to escape from the transmission vent where it may be mistaken for a leak.

When checking fluid level, also check fluid condition. If fluid smells burned or is full of metal or friction material particles, a complete transmission overhaul may be needed. Examine the fluid closely. If doubtful about its condition, drain out a sample for a doublecheck.

#### Manual Transmission and Model 20 Transfer Case

Fluid levels in the Model 20 transfer case and manual transmission must be checked at the same time. Fill plugs for all manual transmissions are located on the right side of the assembly. Fill plug for the Model 20 transfer case is located on the back of the unit.

To check lubricant level, remove the transmission and transfer case fill plugs. Lubricant should be level with each fill plug hole. If not, bring up to level with make-up lubricant and replace fill plug. Use SAE 80 Gear Lubricant of API-GL-4 quality.

#### Quadra-Trac Transfer Case and Low Range Reduction Unit

Fluid levels in the Quadra-Trac transfer case and the low range reduction unit (if equipped) must be checked at the same time. Fill plugs are shown in figure B-1. Lubricant should be level with each fill plug hole. If not, bring up to level with a blend of Jeep Quadra-Trac Lubricant or equivalent.

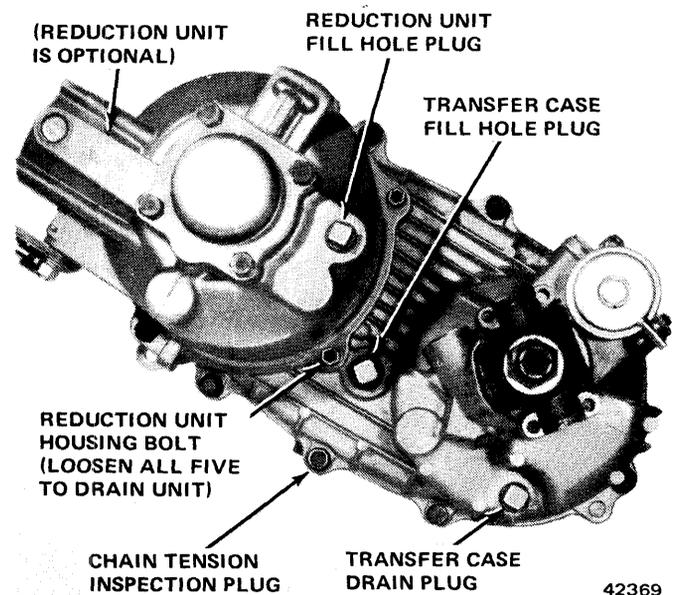
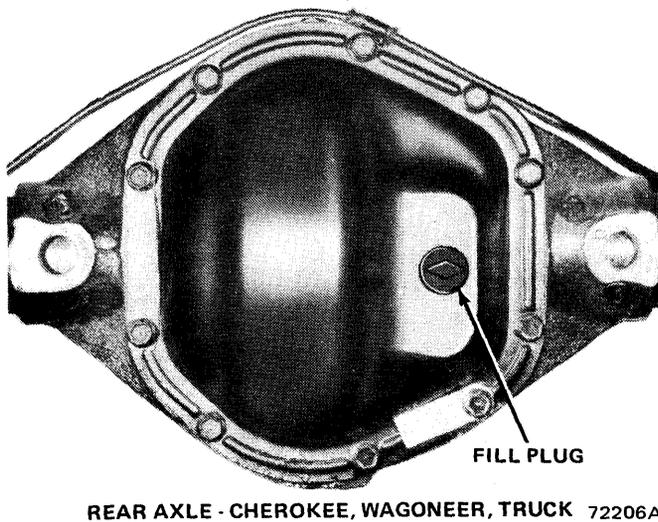
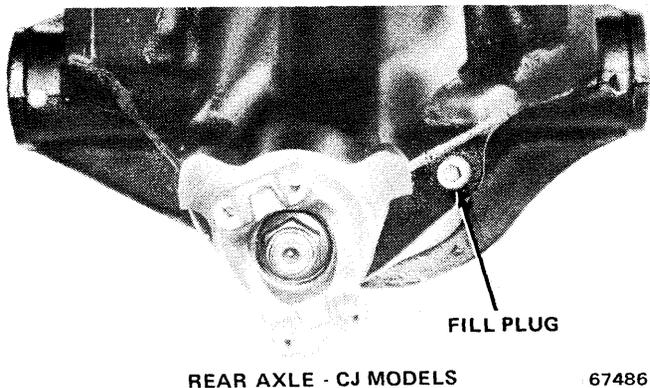
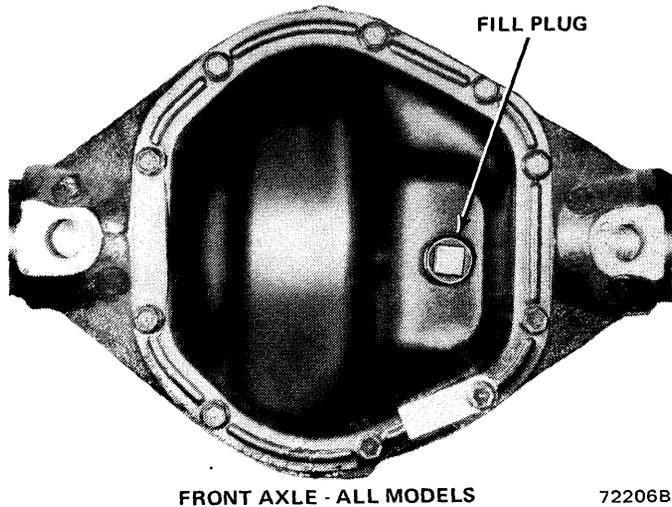


Fig. B-1 Quadra-Trac Transfer Case and Low Range Reduction Unit Fill Plugs

**Axle Differentials—Front and Rear**

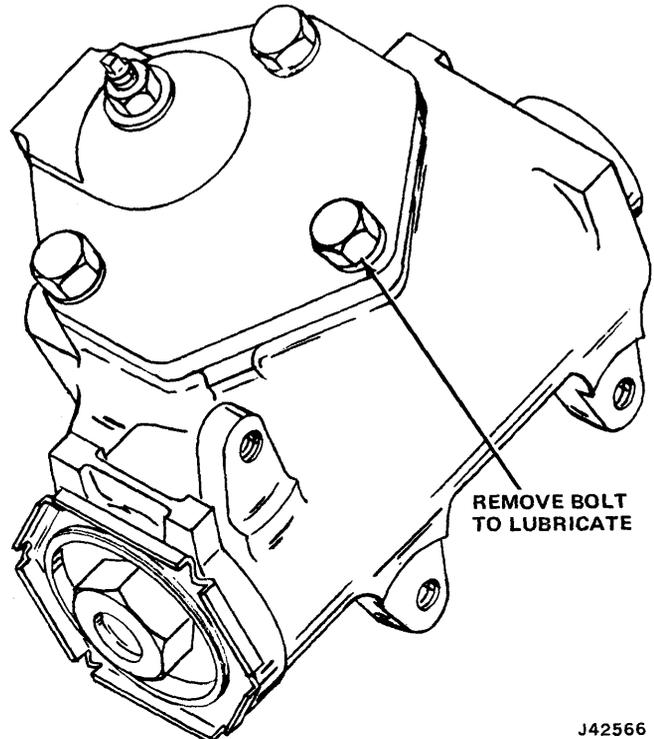
Check the lube level every 5,000 miles or at each oil change. The lubricant level of all differentials should be at the level of the fill hole (fig. B-2). If not, bring to level by adding lubricant. Use AM Rear Axle Lubricant or equivalent of SAE 80W-90 (API-GL-5) quality. For Trac-Lok axles, use Limited-Slip Gear Lubricant of SAE 80W-90 (API-GL-5) quality.



**Fig. B-2 Axle Fill Plug Locations**

**Manual Steering Gear**

Check by removing the side cover bolt opposite the adjuster screw (fig. B-3). Lubricant should be to level of bolt hole. If not, add make-up fluid such as AM All-Purpose Lubricant or Multi-Purpose Chassis Lubricant (Lithium Base).



**Fig. B-3 Manual Steering Gear Fill Hole Location**

**Power Steering Pump**

Lubricant level can be checked with fluid either hot or cold. If below the FULL HOT or FULL COLD marking on the dipstick attached to the reservoir cap (fig. B-4), add make-up fluid such as AM Power Steering Fluid or equivalent.

**Windshield Washer Solution**

The use of washer solvent mixed with water is recommended all year long. In addition to the ice inhibitor, it contains detergent effective in removing road film. Do not use anti-freeze or other solutions that can damage the paint.

**Windshield and Wiper Blade Elements**

Dry windshield glass accumulates road film which will result in hazing and/or smearing when the wipers are first turned on. This film is not readily washed with water. For this reason, it is important that both the glass as well as the wiper blade rubber element is washed with mild detergent solution regularly.

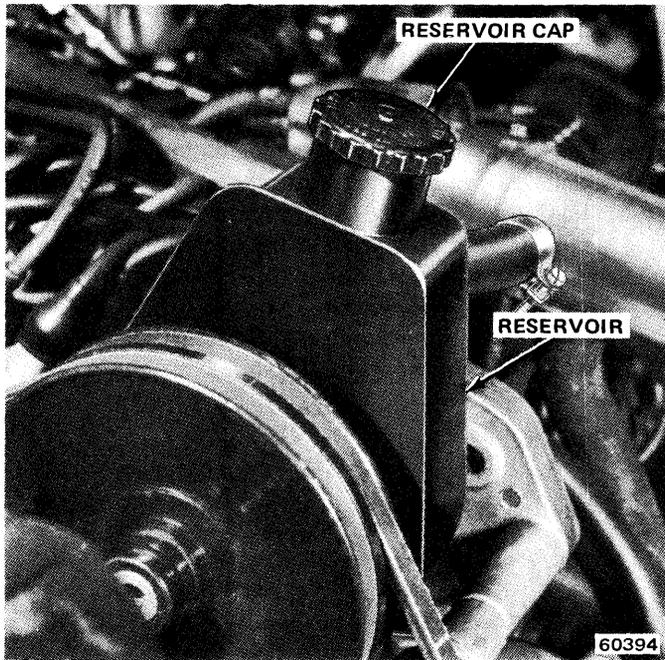


Fig. B-4 Power Steering Gear Pump Dipstick Location

### Chassis Lubrication—CJ Models

Lubricate the following components every 5,000 miles for vehicles in normal service. For vehicles in heavy-duty service, lubricate every 3,000 miles.

#### Clutch Linkage

Apply AM All-Purpose Lubricant (or equivalent) or multi-purpose chassis lubricant (lithium base) at the clutch bellcrank. There is one lube fitting on the bellcrank.

#### Steering Linkage

Lubricate tie-rod ends and connecting rod ends using AM All-Purpose Lubricant (or equivalent) or multi-purpose chassis lubricant (lithium base).

### EVERY 10,000 MILES

#### Propeller Shafts—All Models

Lubricate the following propeller shaft components every 10,000 miles for vehicles in normal service and every 5,000 miles for vehicles in heavy-duty service. Use AM All-Purpose or Multi-Purpose Chassis Lubricant (lithium base) or equivalent.

#### Sleeve Yokes (Splines)

Apply grease gun pressure to sleeve yoke grease fitting until lubricant appears at pressure relief hole in expansion plug at sleeve yoke end of spline. At this

point, cover pressure relief hole with finger and continue to apply pressure until grease appears at sleeve yoke seal. This will ensure complete lubrication of spline.

#### Single Cardan Joint

The single cardan joint must be lubricated every 10,000 miles for normal use and every 5,000 miles for heavy-duty use.

#### Double Cardan Joint

Lubricate the constant velocity center bearing at the transfer case end of the front propeller shaft as follows:

- (1) Mark propeller shaft and pinion yoke to ensure proper alignment upon assembly.
- (2) Disconnect front universal joint from front axle. Move front end of shaft to right as far as possible.
- (3) Rotate shaft until lube hole plug in center bearing can be seen.
- (4) Lube joint using an extended point lubrication adapter such as Alemite Adapter No. 6783.
- (5) Align marks on propeller shaft and pinion yoke.
- (6) Connect front universal joint to front axle.

**NOTE:** Undercoating or rustproofing compounds could cause the propeller shafts to become unbalanced and cause drive train vibrations. Remove any such compounds using the appropriate solvent.

### EVERY 15,000 MILES

Perform all the services scheduled to be performed at 5,000-mile intervals in addition to the following maintenance tasks:

#### Body Lubrication—All Models

Lubricate all models every 15,000 miles for vehicles in normal service and every 5,000 miles for vehicles in heavy-duty service. Refer to Recommended Lubricants chart at end of this section for items to be lubricated and lubricants to use.

#### Brake Inspection—All Models

Examine brake linings for wear. If vehicle has drum-type brakes, check the self-adjusting mechanism for proper function.

On all vehicles, inspect hydraulic system for leaks and condition at wheel cylinders, calipers, and at master cylinder. Check condition of all lines, fittings, and hoses. Correct as required.

Check parking brake adjustment. Adjust parking brake using procedure in Brakes section, if necessary.

#### Steering and Front Suspension—All Models

Refer to Front Wheel Alignment procedure in Steering section and inspect caster and toe. Correct as required. Camber is preset at the time of manufacture and does not require adjustment.



Inspect spring bushings and shock absorber mountings and bushings and correct as required.

### Automatic Transmission Linkage Adjustment—All Models

Adjust the linkage every 15,000 miles. The following procedure applies for all vehicles with automatic transmission.

- (1) Place steering column gearshift lever in Neutral (N) position.
- (2) Raise vehicle on hoist.
- (3) Loosen locknut on gearshift rod trunnion just enough to permit movement of gearshift rod in trunnion.
- (4) Place outer range selector lever fully into neutral detent position and tighten locknut at trunnion to 9 foot-pounds torque.
- (5) Lower car and operate steering column gearshift lever in all ranges. Vehicle should start only in Park or Neutral and column gearshift lever should engage properly in all detent positions. Readjust linkage if operation is not satisfactory.

### Manual Transmission Clutch Inspection and Adjustment

Inspect clutch by driving vehicle and checking for clutch chatter, grabbing, slippage, and incomplete release. Correct as required. Use following procedure for adjustment, if required.

- (1) Adjust bellcrank outer support bracket to provide approximately 1/8-inch bellcrank end play.
- (2) Lift clutch pedal up against pedal stop.
- (3) On clutch push rod (pedal-to-bellcrank), adjust lower ball pivot assembly on or off of rod as required to position bellcrank inner lever parallel to front face of clutch housing (slightly forward from vertical).
- (4) Adjust clutch for release rod (bellcrank-to-release fork) to obtain specified clutch pedal free play.

### Emission Control Routine Services—CJ Models

#### Drive Belts

Inspect drive belts for condition and tension as described under "AFTER FIRST 5,000 MILES."  
Replace or adjust as required.

#### Fuel Filter

Replace the fuel filter at the carburetor every 15,000 miles or whenever a complete precision tune-up (Chart 5) is performed.

### Chassis Lubrication—Cherokee-Wagoneer-Truck

Lubricate the steering linkage and steering shaft universal joint at 15,000-mile intervals using AM All-Purpose Lubricant or Multi-Purpose Lubricant (lithium base) or equivalent.

### Complete Precision Tune-Up—Cherokee-Wagoneer-Truck

A complete precision tune-up should be performed on Cherokee, Wagoneer, and Truck models at 15,000-mile intervals and a precision electronic diagnosis purchased whenever questionable engine performance occurs between scheduled precision tune-ups.

Refer to Chart 4 of the 1977 Mechanical Maintenance Schedule for a complete listing of items requiring attention during the tune-up. Refer to Emission Controls section for detailed procedures and specifications. Procedures for air cleaner servicing and fuel filter replacement can be found in the Fuel—Carburetion section.

### EVERY 25,000 MILES

#### Front Wheel Bearings

Lubricate the front wheel bearings every 25,000 miles using a high quality wheel bearing lubricant. Clean, inspect, and repack front wheel bearings when they are removed for servicing.

Adjust wheel bearings after lubrication in accordance with procedures in Brakes—Wheels section.

#### Transfer Case Shift Linkage—CJ Models

Lubricate every 25,000 miles using AM All-Purpose Lubricant or Multi-Purpose Chassis Lubricant (lithium base) or equivalent.

#### Transfer Case Shift Control Lever Case—Cherokee—Truck

Lubricate every 25,000 miles using AM All-Purpose Lubricant or Multi-Purpose Chassis Lubricant (lithium base) or equivalent.

#### Automatic Transmission Fluid Change

Drain and refill the automatic transmission at 25,000 miles for vehicles in normal service and every 10,000 miles for vehicles in heavy-duty service. Change fluid immediately after vehicle operation, before it cools.

- (1) Remove transmission pan screws, pan, and gasket.
- (2) Remove and discard oil strainer.
- (3) Remove and discard O-ring seal from the pick-up pipe.
- (4) Install new oil strainer.
- (5) Install new O-ring seal on pick-up pipe and install strainer and pipe assembly.
- (6) Clean pan thoroughly and position new gasket on pan. Use petrolatum or equivalent to hold gasket.
- (7) Install pan. Secure with attaching screws and tighten to 10 to 13 foot-pounds torque.
- (8) Pour approximately 5 quarts of Dexron or Dexron II automatic transmission fluid down filler pipe. Be sure container spout, funnel, or other items in contact with fluid are clean.

- (9) Start engine—allow to idle a few minutes.
- (10) Place gearshift lever in Park (P) position and apply parking brake.
- (11) With transmission warm, check fluid level. Add fluid, if necessary, to bring level to FULL mark.

## EVERY 30,000 MILES

At every 30,000-mile interval, perform all of the services listed under "EVERY 5,000 MILES," "EVERY 10,000 MILES," and "EVERY 15,000 MILES" in addition to the following scheduled maintenance.

### Manual Transmission and Model 20 Transfer Case Fluid Change

Manual transmission (3- or 4-speed) and Model 20 transfer case lubricating fluid must be changed at the same time. Change every 30,000 miles. Use SAE 80 Gear Lubricant of API-GL-4 quality—see Fluid Capacities chart at the end of this section for quantity. To change fluid:

- (1) Remove fill plugs and drain plugs.
- (2) Allow units to drain completely.
- (3) Replace drain plugs.
- (4) Fill to level of fill holes.
- (5) Replace fill plugs.

### Quadra-Trac Transfer Case Fluid Change

#### Without Reduction Unit

Use Jeep Quadra-Trac Lubricant or equivalent only. Capacity is 4 pints (3.4 Imperial pints or 1.9 liters).

Remove fill plug and drain plug (fig. B-1) and allow the transfer case to drain completely. Replace drain plug. Fill to fill-hole level with specified lubricant. Replace fill plug.

#### With Reduction Unit

Use Jeep Quadra-Trac Lubricant or equivalent only. Capacity is 5 pints (4.2 Imperial Pints or 2.4 liters).

Remove the fill plugs from the transfer case and reduction unit. Remove the transfer case drain plug. After it has drained *completely*, replace the drain plug.

Loosen the five bolts on the reduction unit housing (no drain plug), so that the unit can be pulled back far enough to permit the unit to drain. After it has drained completely, move the housing back into position and tighten the bolts.

First, install the reduction unit and then fill to fill-hole level with specified lubricant. Replace the fill plug.

Next, fill the transfer case to fill-hole level with the specified lubricant. Replace fill plug.

**CAUTION:** *Fill plugs, drain plugs, and reduction housing bolts should not be overtightened. Tighten plugs and 3/8-16 bolts to 15 to 25 foot-pounds and 5/16-18 bolts to 10 to 20 foot-pounds torque. Overtightening may result in thread stripping or breakage of the aluminum unit.*

After draining and refilling, it may be necessary to drive the vehicle in circles (in an open area) both clockwise and counterclockwise for about 15 minutes to allow the fresh lubricant to enter the differential unit and to force the clutches to operate.

**CAUTION:** *When driving in tight circles, do not turn half a turn off the stop position.*

### Axle Differentials (Front and Rear) Fluid Change

Change every 30,000 miles using AM Rear Axle Lubricant or Limited-Slip Gear Lubricant of SAE 80W-90 (API-GL-5) quality or equivalent. For Trac-Lok differentials, use Jeep Differential Oil, Part Number 8991018 or equivalent. Quantity required is listed in the Fluid Capacities chart at the end of this section by axle model. To change fluid:

- (1) Remove axle differential housing cover.
- (2) Allow lubricant to drain out completely.
- (3) On all differentials (except Trac-Lok), flush the differential 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 differentials may be cleaned only by disassembling the unit and wiping with clean rags. Do not flush the unit.
- (4) Check condition of differential housing cover gasket. Replace if necessary.
- (5) Install gasket and differential housing cover.
- (6) Tighten cover bolts to 15 to 25 foot-pounds torque.
- (7) Remove fill plug (fig. B-2) and add new lubricant to fill-hole level.
- (8) Install fill plug.

### Complete Precision Tune-Up—CJ Models

A complete precision tune-up should be performed on CJ models at 30,000-mile intervals and a precision electronic diagnosis purchased whenever questionable engine performance occurs between the scheduled precision tune-ups.

Refer to Chart 5 of the 1977 Mechanical Maintenance Schedule for a complete listing of items requiring attention during the tune-up. Refer to Emission Controls section for detailed procedures and specifications. Procedures for air cleaner servicing and fuel filter replacement can be found in the Fuel—Carburetion section.

## UNSCHEDULED MAINTENANCE

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### GENERAL

Services detailed in this subsection are not listed in the Mechanical Maintenance Schedule for performance at a specified interval. They are to be performed as the occasion arises. Owners, users, and service mechanics should be alert for indications that service or replacement is needed.

### CATALYTIC CONVERTER

The catalytic converter used on certain 1977 Jeep models could become contaminated if leaded gas is used

or if the engine or emission controls are not maintained as scheduled. If this occurs, the catalyst—the alumina-coated beads in the converter—must be replaced. Refer to the catalyst replacement procedure in the Emission Control section.

### TIRES

Tires and tire services are excluded from the New Vehicle Warranty and Mechanical Maintenance Schedule. Tire adjustments are handled directly by their manufacturers. Their normal maintenance recommendations appear as guides under Tire Condition in this manual.

### Recommended Lubricants

Component	Lubricant
Manual Transmission Model 20 Transfer Case	SAE 80W Gear Lubricant API-GL-4
Automatic Transmission	AM Automatic Transmission Fluid or equivalent brand labelled Dexron or Dexron II
Power Steering Gear Pump*	AM Power Steering Fluid or equivalent
Quadra-Trac Transfer Case Low Range Reduction Unit	Jeep Quadra-Trac Lubricant or equivalent
Manual Steering Gear*	AM All-Purpose Lubricant or Multi-Purpose Chassis Lubricant (Lithium Base)
Brake Master Cylinder* (Drum or Disc Brakes)	AMC/Jeep Brake Fluid or equivalent conforming to SAE Standard J1703 and FMVSS No. 116, DOT 3 Brake Fluid
Axle Differentials—Front & Rear Trac-Lok Axle Differential	AM Rear Axle Lubricant or Limited-Slip Gear Lubricant of SAE 80W-90 (API-GL5) quality
Propeller Shaft Double Cardan Joint; Propeller Shaft Single Cardan Joint; Propeller Shaft Sleeve Yokes; Model 20 Transfer Case Shift Lever; Model 20 Transfer Case Shift Linkage; Steering Linkage Ball Joints; Steering Shaft Universal Joint; Clutch Linkage Bellcrank	AM All-Purpose Lubricant or Multi-Purpose Chassis Lubricant (Lithium Base)
Front Wheel Bearings	Wheel Bearing Lubricant
Exhaust Manifold Heat Valve	AM Heat Valve Lubricant or equivalent
Ash Tray Slides Door, Hood, Liftgate, and Tailgate Lock Mechanisms Glove Box Latch and Hinges Parking Brake	AM Lubriplate or equivalent
Accelerator Linkage Door, Hood, Tailgate, and Liftgate Pivot Points	AM Motor Oil or equivalent brand
Weatherstripping	AM Silicone Lubricant Spray or equivalent
Key Lock Cylinders	Apply AM Silicone Lubricant Spray or light oil to key and insert in lock cylinder. Repeat several times.
Air Cleaner Polyurethane Element	SAE 10W-30 Engine Oil

\*No drain or refill required except when overhauled or serviced. See "Fluid Capacities" chart for refill quantities. Fluids specified are to be used for maintaining recommended levels as well as service refills.

**Fluid Capacities**

Capacities, Approximate Refill	U.S. Measure	Imperial Measure	Metric Measure-Litres
<b>Engine Oil</b> (Includes 1 quart for filter change) 232 CID & 258 CID Engines 304 CID, 360 CID & 401 CID Engines	6.0 quarts 5.0 quarts	5.0 quarts 4.2 quarts	5.7 litres 4.7 litres
<b>Cooling System</b> (Includes 1 quart for heater) 232 CID & 258 CID Engines 304 CID Engine 360 CID & 401 CID Engines	10.5 quarts 13.0 quarts 14.0 quarts	8.7 quarts 10.8 quarts 11.6 quarts	10.0 litres 12.3 litres 13.2 litres
<b>Transfer Case</b> Model 20 Quadra-Trac Quadra-Trac with Reduction Unit	3.2 pints 2.0 quarts 2.5 quarts	2.7 pints 3.4 pints 4.2 pints	1.5 litres 1.9 litres 2.4 litres
<b>Transmission</b> Manual 3-Speed – CJ Models Manual 3-Speed – Cherokee, Wagoneer & Truck Manual 4-Speed – All Models Automatic – Change Only Automatic – At Overhaul	3.0 pints 2.7 pints 6.5 pints 5.0 quarts 11.0 quarts	2.5 pints 2.2 pints 5.5 pints 4.2 quarts 9.2 quarts	1.4 litres 1.3 litres 3.1 litres 4.7 litres 10.4 litres
<b>Axles</b> AMC Model Rear Axle – CJ Models Model 30 – Front Axle – CJ Models Model 44 – Front or Rear Axle – All but CJ Models ① Model 60-3 (FF) Rear Axle – Trucks over 6800 GVW ①	4.0 pints 2.5 pints 3.0 pints 6.0 pints	3.4 pints 2.1 pints 2.5 pints 5.0 pints	1.9 litres 1.2 litres 1.4 litres 2.8 litres
<b>Gas Tank</b> (Approximate gallons) CJ Models Cherokee & Wagoneer Truck	15.5 gallons 22.0 gallons 19.0 gallons	12.9 gallons 18.3 gallons 15.8 gallons	58.7 litres 83.3 litres 71.9 litres

① Capacities of conventional and Trac-Lok rear axles are identical.

