

## Chapter 4

### IN-USE INSPECTION, MAINTENANCE AND LUBRICATION

#### 4-1 INTRODUCTION.

This chapter provides instructions for troubleshooting, inspection, engine tune-up and maintenance, adjustment, and lubrication. All servicing and maintenance must be performed at specified intervals to ensure optimum vehicle performance and minimum downtime.

#### 4-2 MALFUNCTION ANALYSIS AND REMEDIAL ACTION.

Table 4-1 is divided into three parts titled Trouble, Probable Cause and Remedial Action. An electrical schematic is also provided to assist personnel in diagnosing and correcting malfunctions that may occur during normal operation. Refer to this table and schematic for information regarding the probable causes and remedial action required for the service troubles listed. When repair or replacement procedures for a component cannot be found here, refer to Chapter 5 and check the component's overhaul procedure.

#### 4-3 SCHEDULED INSPECTION.

Table 4-2 provides a specific list of areas requiring inspection along with the interval at which each inspection is to be performed. Table 4-2 provides specific inspection instructions and identifies all points to be checked. Inspection intervals are based on normal operating conditions. Adjust intervals accordingly for extremes of temperature or other adverse operating conditions.

#### 4-4 PERIODIC MAINTENANCE AND ADJUSTMENTS.

This section provides instructions for performing normal maintenance procedures and all necessary component adjustments. Refer to Chapter 5 for overhaul procedures.

*Table 4-1. Troubleshooting*

Trouble	Probable Cause	Checkout Procedure And Remedial Action
Engine		
Engine will not crank.	<ol style="list-style-type: none"> <li>1. Batteries discharged.</li> <li>2. Starter switch inoperative.</li> <li>3. Starter inoperative.</li> <li>4. Starter drive locked.</li> <li>5. Engine seized.</li> </ol>	<ol style="list-style-type: none"> <li>1. Charge battery.</li> <li>2. Replace defective component.</li> <li>3. Replace starter.</li> <li>4. Loosen starter bolts and free pinion. Replace starter drive if pinion cannot be freed.</li> <li>5. Replace engine.</li> </ol>

Table 4-1. Troubleshooting-Continued

Trouble	Probable Cause	Checkout Procedure And Remedial Action
Engine-Continued		
Engine cranks, but will not start.	<ol style="list-style-type: none"> <li>1. Improper starting procedure.</li> <li>2. No fuel in tank.</li> <li>3. Injection pump timing off.</li> <li>4. Valve timing off.</li> <li>5. Air in fuel system.</li> <li>6. Broken fuel line.</li> <li>7. Defective fuel pump.</li> </ol>	<ol style="list-style-type: none"> <li>1. See Operator's Manual.</li> <li>2. Fill fuel tank.</li> <li>3. Adjust injection pump timing.</li> <li>4. Check condition of timing chain and sprockets and position of timing marks. Repair or replace chain and sprockets and realign timing marks.</li> <li>5. Run air out or bleed fuel lines.</li> <li>6. Check for leakage. Replace damaged line.</li> <li>7. Repair or replace fuel pump.</li> </ol>
Engine hard to start.	<ol style="list-style-type: none"> <li>1. Loose or corroded, shorted battery connections.</li> <li>2. Rundown battery.</li> <li>3. Low ambient temperature.</li> <li>4. Loose or corroded starter wiring connections.</li> <li>5. Starter dragging (excessive amperage draw).</li> <li>6. Faulty starter switch.</li> <li>7. Faulty starter solenoid switch.</li> <li>8. Faulty starter motor.</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean terminals. Tighten or replace cables.</li> <li>2. Recharge battery.</li> <li>3. Perform cold climate starting procedures.</li> <li>4. Tighten loose wiring. Replace corroded wiring.</li> <li>5. Repair or replace starter.</li> <li>6. Replace starter switch.</li> <li>7. Replace solenoid switch.</li> <li>8. Repair or replace starter motor.</li> </ol>

Table 4-1. Troubleshooting-Continued

Trouble	Probable Cause	Checkout Procedure And Remedial Action
Engine-Continued		
Engine hard to start-cont.	9. Faulty glow plugs. 10. Lack of fuel. 11. Damaged or incorrectly installed fuel line. 12. Air in fuel system. 13. Faulty feed pump. 14. Clogged fuel filter. 15. Faulty nozzle. 16. Incorrect injection timing. 17. Faulty injection pump. 18. Damaged ring gear. 19. High engine oil viscosity. 20. Incorrect valve clearance. 21. Incorrect valve timing. 22. Inadequate compression pressure. 23. Clogged air filter.	9. Replace glow plugs. 10. Add fuel. 11. Repair or replace fuel line. 12. Run out or bleed fuel lines. 13. Repair or replace feed pump. 14. Replace fuel filter. 15. Replace nozzle. 16. Adjust injection timing. 17. Repair or replace injection pump. 18. Replace ring gear. 19. Change oil (use lower weight oil). 20. Adjust valve clearance. 21. Adjust valve timing. 22. Defective piston rings, pistons, valves and head gaskets. Replace or repair. 23. Change air filter.
Engine starts, but fails to keep running.	Engine idle speed set too low.	Speed up engine idle to specifications.
Irregular engine operation.	1. No fuel or insufficient fuel. 2. Dirty fuel filter. 3. Governor instability. 4. Moisture in fuel due to condensation. 5. Fuel leakage from injection pipe. 6. Uneven fuel injection.	1. Fill fuel tank. 2. Replace fuel filter. 3. Repair or replace governor. 4. Check water/fuel separator for saturation. Empty and clean separator. 5. Repair or replace injection pipe. 6. Adjust nozzle.



Table 4-1. Troubleshooting-Continued

Trouble	Probable Cause	Checkout Procedure And Remedial Action
Engine-Continued		
Irregular engine operation-cont.	7. Uneven injection pressure of nozzle.	7. Adjust nozzle.
	8. Improper fuel spray from nozzle.	8. Adjust nozzle.
	9. Improper adjustment of idle spring.	9. Adjust idle spring.
	10. Improper adjustment of damper spring.	10. Adjust damper spring.
	11. Malfunction of delivery valve.	11. Repair or replace delivery valve.
	12. Air in fuel system.	12. Bleed fuel system.
	13. Dirty air cleaner.	13. Replace air filter.
	14. Improper seating of valve seat.	14. Reseat valve seat.
	15. Improper valve clearance.	15. Adjust valve clearance.
	16. Incorrect valve timing.	16. Adjust valve timing.
	17. Uneven compression pressure.	17. Defective piston rings, pistons, valves and head gaskets. Replace or repair.
	18. Inadequate engine temperature.	18. Check cooling system. Repair as necessary.
	19. Improper idle adjustment.	19. Adjust idle.
	20. Incorrect adjustment of link or rod.	20. Adjust link or rod.
	21. Improper mounting of engine.	21. Adjust engine mounting.
	22. Excessive exhaust back pressure.	22. Free obstructions in exhaust system or replace parts as necessary.
Engine lacks power.	1. Incorrect fuel.	1. Drain fuel tank and add correct fuel.
	2. Improper adjustment of injection quantity.	2. Adjust injection quantity.
	3. Incorrect governor adjustment.	3. Adjust governor.

Table 4-1. Troubleshooting-Continued

Trouble	Probable Cause	Checkout Procedure And Remedial Action
Engine-Continued		
Engine lacks power-cont.	4. Clogged fuel filter.	4. Replace fuel filter.
	5. Water or air in fuel.	5. Drain fuel. Check for water/fuel separator saturation. Empty and drain separator. Check for leaks in fuel tank or lines. Replace leaking lines.
	6. Malfunction of overflow valve.	6. Repair or replace overflow valve.
	7. Improper feed spray from nozzle.	7. Adjust nozzle.
	8. Improper injection timing.	8. Adjust injection timing.
	9. Malfunction of delivery valve.	9. Repair or replace delivery valve.
	10. Malfunction of feed pump.	10. Repair or replace feed pump.
	11. Malfunction of injection pump.	11. Repair or replace injection pump.
	12. Clogged air filter.	12. Replace air filter.
	13. Excessive intake air temperature.	13. Determine cause of overheating and correct.
	14. Clogged or crushed exhaust pipe or muffler.	14. Remove and unclog clogged exhaust pipe or muffler. Replace damaged pipe or muffler.
	15. Piston and cylinder liner wear.	15. Replace piston and cylinder liner.
	16. Worn, stuck or broken piston rings.	16. Replace piston rings.
	17. Worn or stuck valve guide.	17. Replace valve guide.
	18. Improper seating of valve seat.	18. Reseat valve seat.

Table 4-1. Troubleshooting-Continued

Trouble	Probable Cause	Checkout Procedure And Remedial Action
Engine-Continued		
Engine overheating.	<ol style="list-style-type: none"> <li>1. Scale or deposits in cooling system.</li> <li>2. Radiator clogged.</li> <li>3. Loose fan belt.</li> <li>4. Lower coolant level.</li> <li>5. Damaged coolant hose.</li> <li>6. Damaged or inoperative thermostat.</li> <li>7. Water pump failure.</li> <li>8. Water leak from cooling waterline.</li> <li>9. Water leak due to faulty seal or packing.</li> <li>10. Malfunction of radiator cap.</li> <li>11. Clogged or crushed core fin.</li> <li>12. Damaged bearing.</li> <li>13. Damaged impeller.</li> <li>14. Improper fuel spray from nozzle.</li> <li>15. Improper injection timing.</li> <li>16. Fuel leaking from cylinder head gasket.</li> <li>17. Clogged or crushed exhaust pipe or muffler.</li> <li>18. Temperature gauge reading incorrect.</li> </ol>	<ol style="list-style-type: none"> <li>1. Drain and flush radiator.</li> <li>2. Drain and flush radiator.</li> <li>3. Adjust fan belt tension. Replace belt if worn.</li> <li>4. Fill cooling system.</li> <li>5. Replace coolant hose.</li> <li>6. Replace thermostat.</li> <li>7. Repair or replace water pump.</li> <li>8. Replace leaking waterline.</li> <li>9. Replace faulty seal or packing.</li> <li>10. Replace radiator cap.</li> <li>11. Clean radiator. Repair or replace radiator as necessary.</li> <li>12. Replace bearing.</li> <li>13. Replace impeller.</li> <li>14. Adjust nozzle.</li> <li>15. Adjust injection timing.</li> <li>16. Repair or replace cylinder head.</li> <li>17. Repair or replace exhaust pipe or muffler.</li> <li>18. Replace temperature gauge.</li> </ol>

Table 4-1. Troubleshooting-Continued

Trouble	Probable Cause	Checkout Procedure And Remedial Action
Engine-Continued		
Engine coolant too cool.	<ol style="list-style-type: none"> <li>1. Thermostat stuck open, or incorrect heat range.</li> <li>2. Temperature transmitting unit defective (causing gauge to indicate low engine temperature).</li> <li>3. Temperature gauge unit defective (not indicating true engine temperature).</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace thermostat.</li> <li>2. Check coolant temperature with thermometer. Replace transmitting unit if necessary.</li> <li>3. Check coolant temperature with thermometer. Replace gauge unit if necessary.</li> </ol>
Loss of coolant.	<ol style="list-style-type: none"> <li>1. Leaking radiator.</li> <li>2. Loose or damaged hose connections.</li> <li>3. Water pump leaking.</li> <li>4. Cylinder head gasket defective.</li> <li>5. Cylinder block core plugs leaking.</li> <li>6. Cracked cylinder head.</li> </ol>	<ol style="list-style-type: none"> <li>1. Repair or replace.</li> <li>2. Tighten or replace hoses.</li> <li>3. Repair or replace.</li> <li>4. Replace gasket.</li> <li>5. Replace plugs.</li> <li>6. Replace cylinder head.</li> </ol>
Excessive oil consumption.	<ol style="list-style-type: none"> <li>1. Worn piston rings and cylinder liners.</li> <li>2. Insufficient piston ring tension.</li> <li>3. Piston ring installed upside down.</li> <li>4. Broken piston rings.</li> <li>5. Scuffing on piston rings and cylinder liner.</li> <li>6. Worn valve stem guide.</li> <li>7. Worn valve stem seal.</li> <li>8. Clogged air filter.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace piston rings and cylinder</li> <li>2. Replace piston rings.</li> <li>3. Replace piston rings.</li> <li>4. Replace piston rings.</li> <li>5. Replace piston rings and cylinder liner.</li> <li>6. Replace valve stem guide.</li> <li>7. Replace valve stem seal.</li> <li>8. Replace air filter.</li> </ol>



Table 4-1. Troubleshooting-Continued

Trouble	Probable Cause	Checkout Procedure And Remedial Action
Engine-Continued		
Excessive oil consumption-cont.	9. Leakage of engine oil.	9. Perform visual inspection of oil lines, gaskets, seals and engine block. Repair as necessary.
	10. Leakage of fuel.	10. Perform visual inspection of fuel lines, injection pump, fuel pump and fuel tank.
	11. Excess of engine oil.	11. Drain oil to proper level.
	12. Improper quality of engine oil.	12. Drain oil and add correct grade of oil.
Low lubricating oil pressure (engine at operating temperature).	1. Low oil level.	1. Refill.
	2. Oil by-passing oil cooler.	2. Clean oil lines and cooler.
	3. Faulty pressure gauge.	3. Replace pressure gauge.
	4. Faulty pressure sender.	4. Replace pressure sender.
	5. Oil filter clogged.	5. Replace oil filter element; clean filter.
Excessive fuel consumption.	1. Worn piston rings and cylinder liners.	1. Replace piston rings and cylinder
	2. Broken piston rings.	2. Replace piston rings.
	3. Worn valve stem guide.	3. Replace valve stem guide.
	4. Improper seating of valve seat.	4. Reseat valve seat.
	5. Incorrect valve clearance.	5. Adjust valve clearance.
	6. Improper fuel spray from nozzle.	6. Adjust nozzle.
	7. Incorrect injection quantity.	7. Adjust injection pump.
	8. Malfunction of delivery valve.	8. Repair or replace delivery valve.
	9. Improper injection timing.	9. Adjust injection timing.
	10. Clogged air filter.	10. Replace air filter.
	11. Leakage of fuel.	11. Perform visual inspection of fuel lines, injection pump, fuel pump and fuel tank. Repair as necessary.



Table 4-1. Troubleshooting-Continued

Trouble	Probable Cause	Checkout Procedure And Remedial Action
Engine-Continued		
Black exhaust smoke.	<ol style="list-style-type: none"> <li>1. Clogged air filter.</li> <li>2. Excessive air intake temperature.</li> <li>3. Excessive fuel injection</li> <li>4. Uneven wear on plunger.</li> <li>5. Delivery valve malfunction.</li> <li>6. Faulty nozzle.</li> <li>7. Poor fuel quality.</li> <li>8. Excessive advanced injection timing.</li> <li>9. Wear on piston rings and cylinder liner.</li> <li>10. Excessive oil in oil pan.</li> </ol>	<ol style="list-style-type: none"> <li>1. Change air filter.</li> <li>2. Determine cause of overheating and correct.</li> <li>3. Adjust injection pump.</li> <li>4. Replace plunger and adjust position.</li> <li>5. Repair or replace delivery valve.</li> <li>6. Repair or replace nozzle.</li> <li>7. Use better grade fuel.</li> <li>8. Adjust injection pump timing.</li> <li>9. Replace piston rings and cylinder liner.</li> <li>10. Drain excess oil.</li> </ol>
White exhaust smoke.	<ol style="list-style-type: none"> <li>1. Excessive delayed injection timing.</li> <li>2. Excessive oil in oil pan.</li> <li>3. Incorrect valve clearance.</li> <li>4. Engine oil leaking down through valve stem.</li> <li>5. Low engine temperature.</li> <li>6. Wear on piston rings and cylinder liners.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust injection pump timing.</li> <li>2. Drain excess oil.</li> <li>3. Adjust valve clearance.</li> <li>4. Repair or replace valve stem.</li> <li>5. Determine cause of low temperature and correct.</li> <li>6. Replace piston rings and cylinder liners.</li> </ol>
Transmission		
Slips in forward gears only.	<ol style="list-style-type: none"> <li>1. Low transmission fluid level.</li> <li>2. Hydraulic control pressures out of adjustment.</li> <li>3. Control valves sticking in body.</li> </ol>	<ol style="list-style-type: none"> <li>1. Add fluid to bring level to full mark on dip-stick.</li> <li>2. Check and adjust.</li> <li>3. Disassemble and repair control valve assembly.</li> </ol>

Table 4-1. Troubleshooting-Continued

Trouble	Probable Cause	Checkout Procedure And Remedial Action
Transmission-Continued		
Slips in forward gears only -cont.	<ol style="list-style-type: none"> <li>Kickdown servo failure.</li> <li>Accumulator failure.</li> <li>Oil pump failure.</li> <li>Clutch failure.</li> </ol>	<ol style="list-style-type: none"> <li>Disassemble, clean and repair.</li> <li>Disassemble, clean and repair.</li> <li>Disassemble and repair pump.</li> <li>Disassemble, clean and repair.</li> </ol>
Slips in reverse only.	<ol style="list-style-type: none"> <li>Low transmission fluid level.</li> <li>Hydraulic control pressures out of adjustment.</li> <li>Low and reverse band out of adjustment.</li> <li>Control valves sticking in body.</li> <li>Low and reverse servo failure.</li> <li>Oil pump or clutch failure.</li> </ol>	<ol style="list-style-type: none"> <li>Add fluid to bring level to full mark on dip-stick.</li> <li>Check and adjust.</li> <li>Adjust low and reverse band.</li> <li>Disassemble and repair control valve assembly.</li> <li>Disassemble, clean and repair.</li> <li>Disassemble, clean and repair.</li> </ol>
Slips in all gears.	<ol style="list-style-type: none"> <li>Oil pump or seal ring failure.</li> <li>Low transmission fluid.</li> <li>Load too heavy.</li> <li>Overheating.</li> <li>Hydraulic control pressures out of adjustment.</li> <li>Control valves sticking in body.</li> </ol>	<ol style="list-style-type: none"> <li>Disassemble and repair or replace defective parts.</li> <li>Add fluid to bring level to full mark on dip-stick.</li> <li>Reduce load.</li> <li>Check oil cooler for blockage. Clean if blocked. Check oil hoses for leaks. Replace leaking hoses.</li> <li>Check and adjust.</li> <li>Disassemble and repair control valve assembly.</li> </ol>

Table 4-1. Troubleshooting-Continued

Trouble	Probable Cause	Checkout Procedure And Remedial Action
Transmission-Continued		
No drive in any position.	<ol style="list-style-type: none"> <li>1. Low transmission fluid.</li> <li>2. Hydraulic control pressures out of adjustment.</li> <li>3. Oil strainer clogged.</li> <li>4. Control valves sticking in body.</li> <li>5. Torque converter drive plate or oil pump failure.</li> </ol>	<ol style="list-style-type: none"> <li>1. Add fluid to bring level to full mark on dip-stick.</li> <li>2. Check and adjust.</li> <li>3. Clean oil strainer; refill with clean fluid.</li> <li>4. Disassemble and repair control valve assembly.</li> <li>5. Disassemble and repair or replace defective parts.</li> </ol>
No drive in forward gears only.	<ol style="list-style-type: none"> <li>1. Hydraulic control pressures out of adjustment.</li> <li>2. Kickdown band out of adjustment or broken.</li> <li>3. Control valves sticking in body.</li> <li>4. Kickdown servo failure.</li> <li>5. Accumulator failure.</li> <li>6. Clutch failure.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check and adjust.</li> <li>2. Adjust or replace kickdown band.</li> <li>3. Disassemble and repair control valve assembly.</li> <li>4. Disassemble, clean and repair.</li> <li>5. Disassemble, clean and repair.</li> <li>6. Disassemble, clean and repair.</li> </ol>
No drive in reverse gear only.	<ol style="list-style-type: none"> <li>1. Hydraulic control pressures out of adjustment.</li> <li>2. Low and reverse band out of adjustment.</li> <li>3. Control valves sticking in body.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check and adjust.</li> <li>2. Adjust low and reverse band.</li> <li>3. Disassemble and repair control valve assembly.</li> </ol>



Table 4-1. Troubleshooting-Continued

Trouble	Probable Cause	Checkout Procedure And Remedial Action
Transmission-Continued		
No drive in reverse gear only-cont.	<ol style="list-style-type: none"> <li>Low and reverse servo failure.</li> <li>Clutch failure.</li> </ol>	<ol style="list-style-type: none"> <li>Disassemble, clean and repair.</li> <li>Disassemble, clean and repair.</li> </ol>
Erratic shifting.	<ol style="list-style-type: none"> <li>Low transmission fluid.</li> <li>Engine idle speed too high.</li> <li>Hydraulic control pressures out of adjustment.</li> <li>Kickdown band out of adjustment.</li> <li>Governor stuck or malfunctioning.</li> <li>Oil strainer clogged.</li> <li>Control valves sticking in body.</li> <li>Oil pump malfunction.</li> </ol>	<ol style="list-style-type: none"> <li>Add fluid to bring level to full mark on dip-stick.</li> <li>Adjust engine idle speed.</li> <li>Check and adjust.</li> <li>Adjust kickdown band.</li> <li>Disassemble and repair governor.</li> <li>Clean oil strainer; refill with clean fluid.</li> <li>Disassemble and repair control valve assembly.</li> <li>Disassemble and repair, or replace oil pump.</li> </ol>
Hard to fill, oil blows out filler tube during operation.	<ol style="list-style-type: none"> <li>Transmission overfilled.</li> <li>Oil strainer clogged.</li> <li>Control valves sticking in body.</li> <li>Transmission vent clogged.</li> <li>Oil pump failure.</li> </ol>	<ol style="list-style-type: none"> <li>Drain excess oil.</li> <li>Clean oil strainer; refill with clean fluid.</li> <li>Disassemble and repair control valve assembly.</li> <li>Clean vent to remove obstruction.</li> <li>Disassemble and repair oil pump.</li> </ol>
Transmission overheats.	<ol style="list-style-type: none"> <li>Low transmission fluid level.</li> <li>Kickdown band out of adjustment.</li> <li>Low and reverse band out of adjustment.</li> <li>Oil cooler clogged.</li> </ol>	<ol style="list-style-type: none"> <li>Add fluid to bring level to full mark on dip-stick.</li> <li>Adjust kickdown band.</li> <li>Adjust low and reverse band.</li> <li>Clean radiator and oil cooler.</li> </ol>

Table 4-1. Troubleshooting-Continued

Trouble	Probable Cause	Checkout Procedure And Remedial Action
Transmission-Continued		
Transmission overheats-cont.	5. Control valves sticking in valve body.	5. Disassemble and repair valve body.
	6. Oil pump failure.	6. Disassemble and repair oil pump.
	7. Clutch failure.	7. Disassemble, clean and repair.
Steering System		
Hard steering.	1. Incorrect tire pressure.	1. Check tire pressure.
	2. Lack of lubrication.	2. Lubricate
	3. Incorrect front wheel alignment.	3. Align
	4. Steering gear sluggish.	4. Overhaul steering gear. Check for wear or damage.
	5. Belt out of adjustment.	5. Tighten belt.
Erratic steering.	1. Defective power steering gear.	1. Repair or replace steering gear.
	2. Defective pump assembly.	2. Repair or replace pump assembly.
	3. Loose, worn or damaged steering linkage or connections.	3. Tighten or replace as necessary.
	4. Dirt in steering hydraulic system.	4. Disassemble and clean or replace parts as required.
	5. Incorrect front wheel bearing adjustment.	5. Adjust.
Loose steering.	1. Loose, worn or damaged steering linkage or connections.	1. Tighten or replace as necessary.
	2. Excessive wear in valve or cylinder.	2. Disassemble and repair.
	3. Incorrect front wheel bearing adjustment.	3. Adjust.

Table 4-1. Troubleshooting-Continued

Trouble	Probable Cause	Checkout Procedure And Remedial Action
Steering-Continued		
Vehicle pulls to one side.	<ol style="list-style-type: none"> <li>1. Incorrect tire pressure.</li> <li>2. Rear spring tie bolt off center.</li> <li>3. Bent spindle or spindle arm.</li> <li>4. Incorrect front wheel bearing adjustment.</li> <li>5. Incorrect front wheel alignment.</li> <li>6. Power steering spool misaligned or stuck.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check and correct tire pressure.</li> <li>2. Position correctly.</li> <li>3. Replace.</li> <li>4. Adjust.</li> <li>5. Align.</li> <li>6. Clean or replace power steering spool.</li> </ol>
Brakes		
Spongy brake pedal action.	<ol style="list-style-type: none"> <li>1. Air in hydraulic lines.</li> <li>2. Fluid level in master cylinder reservoir low.</li> <li>3. Incorrect brake adjustment.</li> <li>4. Master cylinder piston cup leaking.</li> <li>5. Wheel cylinder or cylinders leaking.</li> </ol>	<ol style="list-style-type: none"> <li>1. Repair system to prevent air entering lines. Bleed brake system.</li> <li>2. Refill master cylinder reservoir and check entire brake system for fluid leaks. Repair if necessary. Bleed brakes.</li> <li>3. Adjust or reline.</li> <li>4. Repair or replace master cylinder. Bleed brake system.</li> <li>5. Repair or replace defective wheel cylinders. Bleed brake system.</li> </ol>
Excessive pedal travel.	<ol style="list-style-type: none"> <li>1. Low hydraulic pressure.</li> <li>2. Normal brake wear.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check brake fluid level. Add fluid. Check brake lines and connections for leaks. Replace leaking lines.</li> <li>2. Adjust or reline brakes as necessary.</li> </ol>
Uneven, noisy, grabbing or hard brakes.	<ol style="list-style-type: none"> <li>1. Excessive dust or dirt in brake lining rivet holes or in brake drum.</li> <li>2. Drums out of round.</li> <li>3. Frozen master cylinder or wheel cylinder pistons.</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean dirt with scraper or air hose.</li> <li>2. Turn drums to restore roundness or replace drums.</li> <li>3. Replace defective cylinder.</li> </ol>