

9 . TROUBLESHOOTING

1. ENGINE SYSTEM

Trouble symptom	Probable cause	Remedy
Oil pressure caution lamp fails to go out.	• Low oil level in oil pan. • Oil filter element clogged. • Loose or worn oil pipe joint leaks oil.	• Add oil. • Replace element. • Check and repair.
Radiator pressure valve spouts steam.	• Lack of cooling water or water leakage. • Loosen fan belt. • Dust and scale accumulated in, cooling system.	• Add water or repair. • Adjust belt. • Change water and clean the interior of cooling system.
Water temp gauge indicates red range, on right.	• Radiator fin clogged or fin damaged. • Thermostat or water temp gauge faulty. • Radiator filler cap loosening.	• Clean or repair. • Replace • Retighten cap or replace packing.
Water temp gauge indicates red range, on left.	• Thermostat faulty. • Water temperature gauge faulty.	• Replace • Replace
Engine fails to start.	• Lack of fuel. • Air mixed in fuel system. • Fuel injection pump or nozzle defective. • Starting motor rotates slowly. • Engine compression insufficient. • Valve clearance out of adjustment.	• Addfuel. • Repair. • Replace. • See " Electrical system." • Adjust clearance
Engine emits whitish or bluish smoke.	• Excessive quantity of oil in oil pan. • Poor quality of fuel.	• Reduce oil quantity. • Replace with specified fuel.
Engine emits blackish smoke.	• Air cleaner element clogged.	• Clean or replace element.
Irregular fuel feeding sound heard.	• Fuel feed pump faulty.	• Replace pump.
Abnormal sound heard. (Fuel combustion or mechanical sound)	• Poor quality of fuel. • Overheating • Muffler interior damaged. • Excessively large valve clearance.	• Replace with specified fuel. • See Symptom "Radiator pressure valve spouts steam". • Replace • Adjust clearance.

2. ELECTRICAL SYSTEM

Trouble symptom	Probable cause	Remedy
Lamps dimming even at maximum engine speed.	• Faulty wiring.	• Check for loose terminal and disconnected wire.
Lamps flicker during engine operation.	• Improper belt tension.	• Adjust belt tension.
Charge lamp does not light during normal engine operation.	• Charge lamp defective. • Faulty wiring.	• Replace. • Check and repair.
Alternator makes abnormal sounds.	• Alternator defective.	• Replace
Starting motor fails to run.	• Faulty wiring. • Insufficient battery voltage.	• Check and repair. • Recharge battery.
Starting motor pinion repeats going in and out.	• Insufficient battery voltage.	• Recharge battery.
Excessively low starting motor speed.	• Insufficient battery voltage. • Starting motor defective.	• Recharge battery. • Replace
Starting motor comes to a stop before engine starts up.	• Faulty wiring. • Insufficient battery voltage.	• Check and repair. • Recharge battery.
Heater signal does not become red.	• Faulty wiring. • Glow plug damaged.	• Check and repair. • Replace
Engine oil pressure caution lamp does not light when engine is stopped (with starting switch left in "ON" position).	• Caution lamp defective. • Caution lamp switch defective.	• Replace • Replace

3. TORQUE FLOW SYSTEM

Trouble symptom	Probable cause	Remedy
1. Excessive oil temperature rise 1) Torque converter 2) Transmission	· Improper oil level. · Impeller interfering with surroundings. · Stator and free wheel malfunctioning. · Air sucked in. · Water intruding into transmission case. · Bearing worn or seizing. · Gauge malfunctioning. · Clutch dragging. · Bearing worn or seized.	· Check oil level. Add or drain oil as necessary. · After draining oil from oil tank and transmission, check and replace interfering parts. · Check engine (stalling) speed. If necessary, replace. · Check the inlet side joint or pipe. If necessary, retighten joint or replace gasket. · Check drained oil. If necessary, change oil. · Disassemble, inspect, repair or replace. · Check and, if necessary, replace. · Check to see whether or not machine moves even when transmission is placed in neutral position. If so, replace clutch plate. · Disassemble, check and replace.
2. Noise operation 1) Torque converter 2) Transmission	· Cavitation produced. · Flexible plate damaged. · Bearing damaged or worn. · Gear damaged. · Impeller interfering with surroundings. · Bolt loosening. · Spline worn. · Noise gear pump operation. · Dragging caused by seizing clutch. · Bearing worn or seizing. · Gear damaged. · Bolt loosening. · Spline worn.	· Change oil, replace parts leaking air. · Listen to rotating sound at lowspeed operation. If necessary, replace flexible plate. · Disassemble, check and replace. · Disassemble, check and replace. · Check impeller or check drained oil for mixing of foreign matter. If necessary, change oil. · Disassemble and check. If necessary, retighten or replace. · Disassemble, check and replace. · Disassemble, check and replace. · Check to see whether or not machine moves even when transmission is in neutral position. If so, replace clutch plate. · Disassemble, check and replace · Disassemble, check and replace · Disassemble, check and retighten or replace · Disassemble, check and replace

Trouble symptom	Probable cause	Remedy
3. Low output power 1) Torque converter	· Insufficient hydraulic pressure : - Low oil level. - Air sucked in. - Oil filter clogging. - Oil pump worn. (Low delivery flow) - Regulator valve coil spring fatigued. - Control valve spool malfunctioning. - Piston or O-ring worn. · Stator free wheel cam damaged. · Stator free wheel seizing. · Impeller damaged for interfering with the surroundings.	- Check oil level and add oil - Check joints and pipes. If necessary, retighten joint or replace packing. - Check and replace - Check oil pressure. If necessary replace pump. - Check spring tension. If necessary, replace. - Disassemble, check and repair or replace. - Disassemble, check measure and replace. - Check stalling speed. (Increased engine load will cause excessive drop of stalling speed.) - Check oil temperature rise. If any, replace free wheel. - Check temperature plate. (No-load will cause temperature rise) - Replace free wheel if a drop of starting output is found. - Check drained oil for foreign matter. If any, change oil.
2) Transmission	· Flexible plate deformed · Use of poor quality of oil or arising of air bubbles. - Air sucked in from inlet side. - Low torque converter oil pressure accelerates generation of air bubbles. - Oil mixing with water. - Inching rod out of adjustment. · Clutch slipping - Lowering of power. - Piston ring or O-ring worn. - Clutch piston damaged. - Clutch plate seizing or dragging.	- Replace flexible plate - Check and change oil. - Check joints and pipes. If necessary, retighten joint or replace packing. - Check oil pressure. - Check drained oil and change oil. - Check and adjust. - Check oil pressure. - Disassemble, check, measure and replace. - Disassemble, check and replace. - Check to see whether or not machine moves even when transmission is in neutral position. If so, replace.

Trouble symptom	Probable cause	Remedy
5. Power is not transmitted (Continue)	• Foreign matter intruding into oil passage to clutch. • Shaft spline worn.	• Disassemble, check and repair or replace. • Disassemble, check and replace.
6. Oil leakage (Transmission and torque converter)	• Oil leaks from oil seal. • Oil leaks from case joining surfaces. • Oil leaks from joint or pipe. • Oil leaks from drain plug. • Oil leaks from a crack.	• Disassemble and check for wear of seal lips and mating sliding surfaces (pump boss, coupling etc.) Replace oil seal, pump boss, coupling, etc. • Check and retighten or replace packing. • Check and repair or replace gasket. • Check and retighten or gasket. • Check and replace cracked part.

4. STEERING SYSTEM

Trouble symptom	Probable cause	Remedy
1. Steering wheel drags.	• Low oil pressure. • Bearing faulty. • Spring spool faulty. • Reaction plunger faulty. • Ball-and-screw assembly faulty. • Sector shaft adjusting screw excessively tight. • Gears poorly meshing. • Flow divider coil spring fatigued. • Brake valve spool malfunctioning.	• Check locknut. Repair. • Clean or replace. • Clean or replace. • Replace. • Clean or replace. • Adjust. • Check and correct meshing. • Replace. • Clean or replace.
2. Steering wheel fails to return smoothly.	• Bearing faulty. • Reaction plunger faulty. • Ball-and-screw assy faulty. • Gears poorly meshing.	• Clean or replace. • Replace. • Clean or replace. • Check and correct meshing.
3. Steering wheel turns unsteadily. Steering system makes abnormal sound or vibration.	• Locknut loosening. • Metal spring deteriorated. • Gear backlash out of adjustment. • Locknut loosening. • Air in oil circuit.	• Retighten. • Replace. • Adjust. • Retighten. • Bleed air.
4. Abnormal sound heard when steering wheel is turned fully	Valve • Faulty. (Valve fails to open.) Piping • Pipe (from pump to power steering cylinder) dented or clogged.	• Adjust valve set pressure and check for specified oil pressure. • Repair or replace.
5. Piping makes abnormal sounds.	Oil pump • Lack of oil. • Oil inlet pipe sucks air. • Insufficient air bleeding.	• Add oil. • Repair. • Bleed air completely.
6. Valve or valve unit makes abnormal sounds.	Oil pump • Oil inlet pipe sucks air. Valve • Faulty. (Unbalance oil pressure) Piping • Pipe (from pump to power steering) dented or clogged. • Insufficient air bleeding.	• Repair or replace. • Adjust valve set pressure and check specified oil pressure. • Repair or replace. • Bleed air completely.
7. Insufficient or variable oil flow.	• Flow control valve orifice clogged.	• Clean.
8. Insufficient or variable discharge pressure.	Piping • Pipe (from tank to pipe) dented or clogged.	• Repair or replace.

5. BRAKE SYSTEM

Trouble symptom	Probable cause	Remedy
1. Insufficient braking force	- Hydraulic system leaks oil. - Hydraulic system has air in line. - Friction plate worn. - Brake valve or brake piston mal-functioning. - Hydraulic system clogged.	- Repair and add oil. - Bleed air. - Replace. - Repair or replace. - Clean.
2. Brake acting unevenly. (Machine is turned to one side during braking.)	- Tires unequally inflated. - Brake out of adjustment. - Friction plate worn. - Disc worn or damaged (distortion or rusting). - Piston in axle mal-functioning. - Hydraulic system clogged.	- Adjust tire pressure. - Adjust(Refer to service manual). - Replace. - Replace. - Repair or replace. - Clean.
3. Brake trailing.	- Pedal has no play. - Piston in axle mal-functioning. - Return spring damaged. - Parking brake fails to return or out of adjustment. - Brake valve return port clogged. - Hydraulic system clogged.	- Adjust. - Repair or replace. - Relace. - Repair or adjust. - Clean. - Clean.
4. Brake chirps	- Brake trailing. - Piston fails to return. - Friction plate worn.	- See 3. Brake trailing. - Replace. - Replace.
5. Brake noise	- Incorrect axle oil. - Oil change interval passed. - Friction plate worn.	- Replace with approved oil. - Replace. - Replace.
6. Large pedal stroke	- Brake out of adjustment. - Hydraulic line sucking air. - Oil leaks from hydraulic line, or lack of oil. - Friction plate worn.	- Adjust. - Bleed air. - Check and repair or add oil. - Replace.
7. Pedal dragging.	- Twisted push rod caused by improperly fitted brake valve. - Brake valve seal faulty. - Flow control valve orifice clogged. - Lack of grease on pivot.	- Adjust. - Replace. - Clean or replace. - Add grease.

6. HYDRAULIC SYSTEM

Trouble symptom	Probable cause	Remedy
1. Large fork lowering speed.	• Seal inside control valve defective. • Oil leaks from joint or hose. • Seal inside cylinder defective.	• Replace spool or valve body. • Replace. • Replace packing.
2. Large spontaneous tilt of mast.	• Tilting backward : Check valve defective. • Tilting forward : tilt lock valve defective. • Oil leaks from joint or hose. • Seal inside cylinder defective.	• Clean or replace. • Clean or replace. • Replace. • Replace seal.
3. Slow fork lifting or slow mast tilting.	• Lack of hydraulic oil. • Hydraulic oil mixed with air. • Oil leaks from joint or hose. • Excessive restriction of oil flow on pump suction side. • Relief valve fails to keep specified pressure. • Poor sealing inside cylinder. • High hydraulic oil viscosity. • Mast fails to move smoothly. • Oil leaks from lift control valve spool. • Oil leaks from tilt control valve spool.	• Add oil. • Bleed air. • Replace. • Clean filter. • Adjust relief valve. • Replace packing. • Change to SAE10W, class CF engine oil. • Adjust roll to rail clearance. • Replace spool or valve body. • Replace spool or valve body.
4. Hydraulic system makes abnormal sounds.	• Excessive restriction of oil flow pump suction side. • Gear or bearing in hydraulic pump defective.	• Clean filter. • Replace gear or bearing.
5. Control valve lever is locked	• Foreign matter jammed between spool and valve body. • Valve body defective.	• Clean. • Tighten body mounting bolts uniformly.
6. High oil temperature.	• Lack of hydraulic oil. • High oil viscosity. • Oil filter clogged.	• Add oil. • Change to SAE10W, class CF engine oil. • Clean filter.