

SECTION 7: TROUBLESHOOTING

7.1 GENERAL INFORMATION

This troubleshooting guide has been compiled from operational and test data. It lists malfunctions/fault conditions, possible causes, and suggested corrective actions for the most common types of problems that may occur. However, **DO NOT** assume that these are the only problems that may occur. All available data concerning the trouble should be systematically analyzed before undertaking any repairs or component replacement procedures. While it is intended to be comprehensive, operators and maintainers can encounter malfunctions or problems not listed in this table.

A detailed visual inspection is worth performing for almost all problems, and may avoid unnecessary additional damage to the machine. The procedures which can be performed in the least amount of time and with the least amount of removal or disassembly of parts, should be performed first. Always remember to:

1. Check for loose wiring.
2. Check for damaged piping.
3. Check for parts damaged by heat or an electrical short circuit, usually noticeable by discoloration or a burnt odor.

Should the problem persist after making the recommended check, consult your nearest Vanair® representative or the Vanair Mfg., Inc. Service Department.



WARNING

DO NOT operate the compressor or any of its systems if there is a known unsafe condition. Disable the equipment by disconnecting it from its power source. Install a lock-out tag to identify the equipment as inoperable to other personnel.



WARNING

Before performing maintenance:
Shut down machine, relieve all system pressure and lock out all power, as per the Safety Section of this manual. If machine is hot, allow package to cool before removing any panel.

NOTE THAT THE SYSTEM CAN BE STARTED REMOTELY:

Always clearly tag the start-up instrumentation against accidental system start-ups during maintenance.

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7.2 TROUBLESHOOTING GUIDE

MALFUNCTION/FAULT	POSSIBLE CAUSE	CORRECTIVE ACTION
Compressor will not start	PTO/hydraulics not engaged	Ensure hydraulics engaged.
	Compressor switch OFF	Turn switch ON.
	25a fuse blown	Check and replace fuse if necessary (Section 6.4.15).
	Compressor pressure switch stuck	Replace; consult Service Department for reset instructions.
	Diverter valve not operating	Check power and ground/replace valve.
	Hydraulic motor stalled	Switch OFF and attempt to turn the motor by hand to restart—replace if this fails.
	Hydraulic pump failure	Replace.
	Hydraulic relief valve set too low	Check with pressure gauge and reset.
	Power unit speed is too low	Check and correct.
	Hydraulic line obstructed	Check hoses for kinks, crimping, or damage.
Low hydraulic oil level	Check and refill.	
Compressor runs slow	Hose/connection leaks	Check for leaks or damage/repair (Section 6.4.14 and Section 8.16).
	Low hydraulic flow/pressure	Check and reset.
	Hydraulic motor or pump worn	Replace.
	Low hydraulic oil level	Check and refill.
	Hydraulic relief valve set too low	Check and reset.
	Power speed too slow	Check and correct.
	Hydraulic oil line restriction	Check for blockages, kinks, or other obstructions.
Priority valve set too low	Reset.	
Compressor runs hot	Cooling fan not operating	Check/power ground to fan motor (Figure 4-5).

Continued on next page

7.2 TROUBLESHOOTING GUIDE		
MALFUNCTION/FAULT	POSSIBLE CAUSE	CORRECTIVE ACTION
Compressor runs hot (continued)	Faulty relay	Check for presence of power - if present, replace relay.
	Circuit breaker tripped	Replace breaker (Section 6.4.15). Replace fan assembly, if faulty.
	Insufficient ventilation	Relocate unit for better ventilation/circulation.
	Low compressor oil level	Check and refill (Section 6.4.3).
	Soiled compressor cylinder cooling fins	Clean.
	Soiled air intake filters	Replace filter elements (Section 6.4.4).
	Faulty compressor valves	Inspect and replace (Section 6.4.6).
Low output air	Air filters soiled or plugged	Replace filter elements (Section 6.4.4).
	Air line leak	Inspect and replace hose or tighten connections.
	Discharge valve stuck	Remove and clean, or replace.
	Faulty compressor valves	Inspect and replace (Section 6.4.6).
	Insufficient hydraulic oil flow	Refer to <i>Compressor runs slow</i> section of this table.
	Safety/relief valve leak	Replace valve.
Low air pressure	Air filters soiled/plugged	Replace filter elements (Section 6.4.4).
	Pressure switch setting too low	May need to be replaced or reset; consult Service Department for reset instructions.
	Air line leak	Inspect and replace hose or tighten connections.
	Air consumption exceeds capacity	Check applied demand on supply air.
	Faulty compressor valves	Inspect and replace.
	Defective air pressure gauge	Replace (Section 6.4.2 and Section 8.4).
	Discharge valve soiled or stuck	Remove and clear, or replace.
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7.2 TROUBLESHOOTING GUIDE		
MALFUNCTION/FAULT	POSSIBLE CAUSE	CORRECTIVE ACTION
Low air pressure (continued)	Blown head gasket	Replace (Section 6.4.6).
Abnormal pressure fluctuations	Air line leak	Inspect and replace hose or tighten connections.
Abnormal pressure fluctuations (continued)	Pressure switch incorrectly set	May need to be replaced or reset; consult Service Department for reset instructions.
	Pressure switch faulty	Replace; consult Service Department for reset instructions.
	Hydraulic supply problems	Refer to <i>Compressor runs slow</i> section of this table.
Pressure relief valve(s) open continuously	Defective air pressure gauge	Replace gauge (Section 8.4).
	Damaged, worn, or leaking valve	Replace valve (Section 6.4.17).
	Pressure switch set too high	May need to be replaced or reset; consult Service Department for reset instructions.
Compressor cycles too frequently	Air line leak	Inspect and replace hose or tighten connections.
	Pressure switch differential setting is too small	May need to be replaced or reset; consult Service Department for reset instructions.
	Pressure switch faulty	Replace; consult Service Department for reset instructions.
	Excessive moisture in receiver tank	Drain tank; check/drain on more frequent interval to prevent moisture build-up.
	Discharge air valve leaking	Replace.
	Pressure switch faulty (if it does not remove power from the solenoid valve)	Replace; consult Service Department for reset instructions.
<i>Continued on next page</i>		

7.2 TROUBLESHOOTING GUIDE		
MALFUNCTION/FAULT	POSSIBLE CAUSE	CORRECTIVE ACTION
Compressor will not shut OFF or unload	Solenoid valve does not operate (no power to solenoid valve)	Replace solenoid valve (Section 8.9 [12V] , or Section 8.11 [24V]).
	Air line leak	Inspect and replace hose or tighten connections.
Oil in discharge air	Air intake restricted	Change air filters (Section 6.4.4).
	Compressor crankshaft overfilled	Drain to correct level.
	Compressor crankcase has oil with the wrong viscosity	Drain crankcase and refill with the correct oil (Section 6.4.3).
Oil in discharge air (continued)	Restricted crankcase breather	Clean or replace breather.
	Worn piston rings	Replace rings (Section 6.4.8).
	Piston rings incorrectly installed	Reinstall ensuring that they are installed according to the directions in this manual (Section 6.4.8).
	Worn or scored cylinder	Replace cylinder and rings (Section 6.4.8).
Knocking sound	Crankcase oil level low	Add oil to the correct level (Section 6.4.3).
	Soiled or defective check valve	Clean or replace.
	Worn piston ring	Replace piston and pin (Section 6.4.8).
	Worn main bearing	Replace bearings and/or shaft.
	Worn connecting rod	Replace connecting rod (Section 6.4.8).
	Excessive crankshaft end movement	Replace crank shaft bearings.
	Piston contacting piston plate	Inspect, repair, replace valves and piston (Section 6.4.8).