

SECTION 6: TROUBLESHOOTING

6.1 GENERAL INFORMATION

The information in this section has been compiled from field report data and factory observations. It lists common fault/malfunctions, possible causes, and corrective actions in a table format.

Not all fault/malfunctions or abnormal conditions are addressed in this manual since they can be unique to a particular installation or operating condition. While it is intended to be comprehensive, operators and maintainers can encounter malfunctions or problems not listed in this section. Users should also be aware that these procedures are not exhaustive, and further troubleshooting may be required to correct the problem beyond what is contained in this manual.

It is good maintenance practice to apply the simplest solutions first after a problem has been identified. This can prevent extra downtime and unnecessary work. Careful visual inspections of the equipment can also be useful in this regard.

In addition to the troubleshooting section in this manual, assistance with diagnosing and overcoming a problem may be found in the engine, generator, controller (V-TEC Operation Manual for models utilizing the V-TEC speed controller), or the vehicle operation manuals.



WARNING

DO NOT operate the compressor if there is a known unsafe condition.



WARNING

Before performing maintenance or replacing parts, relieve the entire system pressure by opening a service valve, which will vent all pressure into the atmosphere: remove all electrical power.

NOTE

If the vehicle's ECM/TCM are replaced or re-programmed, ensure the compressor programming is retained or reset in the vehicle's ECM/TCM to Vanair® specifications. For assistance, contact the Vanair Service Department.

NOTE

If inquiring to the Service Department, please have the machine serial number available for prompt service (refer to *Figure 6-1* for machine serial number location).

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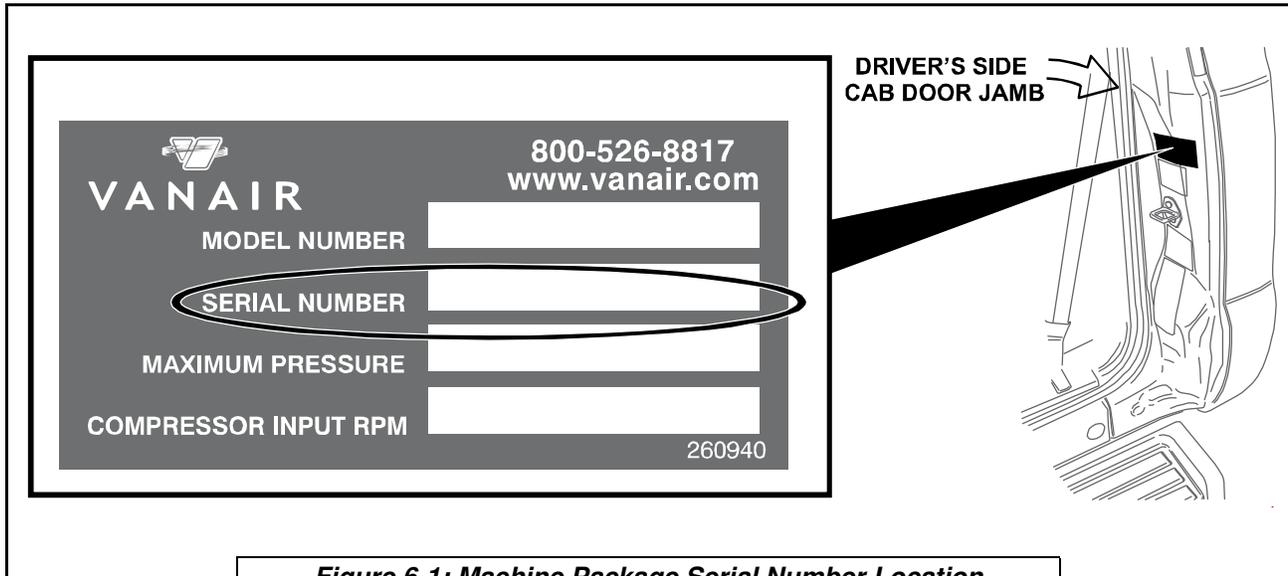


Figure 6-1: Machine Package Serial Number Location

6.2 TROUBLESHOOTING GUIDE		
Fault/Malfunction	Possible Cause	Corrective Action
Vehicle engine stalls	Most problems are not compressor related	Consult vehicle and/or engine manual. If unresolved, have the vehicle checked by a licensed truck dealer.
	PTO or compressor locked	Check/rotate driveshaft by hand with vehicle engine shut off .
	Manual transmissions or split shaft driveline	Check the control box reset button to see if it is popped out (see "Compressor overheats" Fault).
Compressor overheats This will cause a compressor shutdown and the control box reset pops out. Before restarting the compressor, determine the cause for overheating and push to reset the instrument panel reset button	Low oil level	Check oil level and refill to proper level if necessary (ensure vehicle is parked on a level surface).
	Incorrectly set/defective temperature gauge (switch)	Reset to 240°F (121°C) and retest system: replace if overtemperature condition persists after resetting.
	Obstructed oil cooler	Clear debris/dirt from cooler core/flush shroud.
	Insufficient airflow over cooler	Check for obstructions (frame, body, etc) to cooling air flow.

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Fault/Malfunction	Possible Cause	Corrective Action
Compressor overheats This will cause a compressor shutdown and the control box reset pops out. Before restarting the compressor, determine the cause for overheating and push to reset the instrument panel reset button	Ambient air too warm	Check cooler for proximity to heat sources (exhaust, etc.).
	Oil filter plugged	Change filter.
	Input rpm too high	Adjust to proper setting.
	Fan not operating	Check fan switch.
		Check fan motor.
		Check fan relay.
Check all electrical connections.		
Check pressure switch on back of instrument panel (vehicles made before 8/06).		
Obstructed cooler fins	Clear/clean if required.	
Compressor system over-pressure	Pressure regulator setting too high	Check regulator setting and adjust if necessary.
	Pressure regulator malfunction	Check for operation/damage: repair or replace.
	Ruptured pressure regulator diaphragm	Replace regulator.
	Cold ambient operating conditions/regulator frozen	Warm-up using low heat (heater option available; contact Vanair® Parts Dept.).
	Control line damage	Check lines for proper routing/damage: reroute/replace if necessary.
	Damaged/kinked control lines	Check lines for damage/kinks: repair/replace.
	Control line connections not properly seated/poor connection quality	Check lines for proper seating/ensure line ends have been cut cleanly and are square (DO NOT use wire cutters: use a loom cutting tool or a clean, sharp razor blade).
See Corrective Actions for Pressure Regulator/Control Lines.		

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6.2 TROUBLESHOOTING GUIDE

Fault/Malfunction	Possible Cause	Corrective Action
Compressor system overpressure (continued)	Inlet valve Teflon "O" ring popped out of groove	Replace "O" ring (order Inlet Valve Repair Kit—see Section 7, Table 7A: Recommended Spare Parts List).
	Inlet valve piston stuck in down position.	Check for proper operation with an auxiliary air source—replace or rebuild inlet valve.
	Leaking compressor shaft seal	Replace shaft seal with available kit.
	Control air lines too small	Use minimum ¼" I.D. control lines.
PTO stops rotating (manual transmission)	Transmission not in neutral	Put transmission in neutral.
	Clutch not engaged or not functioning properly	Check clutch function.
	PTO cable is not fully engaged or seated	Check for PTO cable function—ensure cable is tight, taught and properly adjusted.
	PTO damage—malfunction	Check for PTO damage/malfunction: vehicle transmission damage/malfunction.
Repair or replace (see PTO manufacturer for repair/replacement instructions and specifications).		
No service air output	Driveshaft not turning	See PTO stops rotating.
	If equipped (OSHA valve/velocity fuse) not functioning properly	Reset or replace OSHA valve.
Low service air output	Clogged air filter	Replace filter.
	Regulator sending continuous signal to inlet valve	Adjust or replace regulator if defective.
	Incorrect compressor speed	Adjust speed.
Compressor stalls	Pressure set too high	Adjust pressure regulator.
	Speeds set too low	Check to see if compressor goes to high speed.
	Blowdown valve, muffler, plugged	Replace blowdown valve and muffler.
PTO does not engage/light does not illuminate (automatic transmission)	Parking brake not set/vehicle not in PARK/foot on accelerator or brake	Correct.
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6.2 TROUBLESHOOTING GUIDE

Fault/Malfunction	Possible Cause	Corrective Action
PTO does not engage/light does not illuminate (automatic transmission) (continued)	Low transmission oil pressure	Correct.
	PTO switch fuse blown	Replace.
	Faulty PTO pressure switch	Replace.
PTO does not engage/light illuminates (automatic transmission)	PTO switch not fully engaging	Correct.
	PTO clutch packs	Replace.
System operating pressure below specified minimums	Air demand too high	Check air tools for wear, damage, or malfunctions/replace or repair.
	Compressor capacity too low to accommodate demand	Substitute larger capacity compressor system.
	System leaks/damaged	Inspect for leaks/repair/replace.
	Pressure regulator set too low/malfunction	Check regulator setting and adjust if necessary/check for damage—repair or replace.
	Input rpm too low	Adjust to proper setting.
	Inlet control malfunction	Repair/replace.
Excess amount of oil in air discharge	Vehicle not on level surface	Move vehicle to level surface.
	Receiver tank oil level too high—correct oil level is the half-way mark on the sightglass with the compressor shut down—tank not positioned with the drain at its lowest point	Drain excess oil to correct level.
	Incorrectly mounted receiver tank	Check tank mounting and remount if necessary.
	Fill tube not level	Adjust and support fill tube if necessary.
	Scavenger system not operating Faulty check valve in scavenge line	Inspect orifice check valve located in the scavenge line of the compressor for obstructions and proper operation/repair or replace.
	Plugged tank orifice in scavenge line	Inspect scavenger line for obstructions or leaks/replace if necessary.

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6.2 TROUBLESHOOTING GUIDE

Fault/Malfunction	Possible Cause	Corrective Action
Excess amount of oil in air discharge (continued)	Separator element plugged or damaged	Replace the separator element.
Compressor operating speed incorrect	Incorrect speed control setting	Reset speed control to proper setting.
	AUTOMATIC TRANSMISSION/ compressor input RPM incorrect/ engine rpm correct	Torque convertor not locked up. PTO clutch slipping.
PTO fails to turn (automatic transmission)	Vehicle not in park/neutral	Place vehicle into park/neutral.
	PTO switch 5amp fuse blown	Replace fuse.
	Safety Shutdown Switch open	Reset switch.
	No power to 12 vdc shift solenoid	Check solenoid/wiring: repair/replace.
	Shift solenoid ground defective	Replace shift solenoid.
	Incorrect supply pressure to PTO	Check supply pressure (90 psi [6.2 bar]).
	Main transmission pressure too low	90 - 270 psi (6.2 - 18.6 bar).
	Defective PTO	Replace.
	Transmission fluid level too low	Refill to correct level.
PTO plumbing lines incorrect	Check PTO manual and make corrections if necessary.	
Compressor fails to turn	Driveline connections binding up	Ensure driveline connections are secure and properly installed on the compressor and PTO shafts/repair if necessary.
Inlet valve fails to open	Inlet valve frozen	Repair/replace inlet valve.
	Dirty inlet valve	Remove valve and clean piston and bleed orifice in bottom of inlet valve piston (chamber) (Powertech models).
Compressor system fails to build-up pressure	Open service valve	Close service valve.
	Compressor rotating in wrong direction	Check that PTO rotation is correct (See Figure 3-2).
	Pressure gauge malfunction	Check pressure gauge function/control line routing: adjust/repair/replace.

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Fault/Malfunction	Possible Cause	Corrective Action
Compressor system fails to build-up pressure (continued)	Inlet control malfunction, not opening properly	Repair/replace inlet valve.
Oil discharge from regulator weep hole	Compressor operating more than one hr / <i>Blocked scavenge line</i>	See scavenge line/excess oil in air discharge.
	Compressor operating more than one hr / <i>Scavenge line orifice (internal separator tanks)</i>	Clean.
	Compressor operating more than one hr / <i>Separator</i>	Replace if required.
	Compressor operating less than one hr (problem clears)	Check for plugged scavenge line check valve/replace if required.
	Blowdown cycle / <i>Blocked scavenge line</i>	Clear/clean scavenge line.
	Blowdown cycle / <i>Scavenge line orifice (internal separator tanks)</i>	Clean scavenge line orifice.
	Blowdown cycle / <i>Inlet control check valve (Powertech models)</i>	Replace check valve.
	Blowdown cycle / <i>Separator</i>	Replace separator.
	Blowdown cycle / <i>Blowdown valve</i>	Replace blowdown valve.
Compressor will not run at high speed	Pressure switch or High-Low relay faulty	Replace.
	Regulator improperly signalling inlet valve	Replace.
	Truck programming incorrect (recent service can be cause)	Reprogram.
	Speed control fuse	Check and replace if required.
Compressor will not run at low speed	Pressure switch in port#4 defective	Check and replace.
	Timer	Check and replace if required.
	Speed control relay defective	Check and replace if necessary.
	Truck programming incorrect (recent service can be cause)	Reprogram.

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6.2 TROUBLESHOOTING GUIDE

Fault/Malfunction	Possible Cause	Corrective Action
Compressor will not run at low speed (continued)	Speed control fuse	Check and replace if required.
Receiver tank relief valve opening	Safety switches not operating (these should shut down the compressor before the relief valve opens)	Check press safety switch/control box.