

SECTION 7: TROUBLESHOOTING

7.1 GENERAL INFORMATION

The information contained in this section has been compiled from years' worth of information gathered from the field. It contains symptoms and usual causes for the most common types of problems that may occur. All available data concerning the trouble should be systematically analyzed before undertaking any repairs or component replacement.

A 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. Adherence to a routine maintenance regimen will minimize the occurrence of many common problems. Refer to **Section 6.3, Maintenance Schedule Table** for a typical maintenance regimen program.

Although Vanair® strives to anticipate situations that may occur during the operation life of the machine package, the **Troubleshooting Guide** may not cover all possible situations. Be aware that additional troubleshooting information may be found in other sources such as the Engine Operator's Manual and the Generator Operator's Manual. Should the situation remain unresolved after exhausting available sources, contact the Vanair Service Department at:


Phone: 800-526-8817 (toll free)

Phone: 219-879-5100, ext. 400


Fax: 219-879-5335

NOTE

When contacting the Vanair Service Department, please have machine serial number on hand to quickly expedite service. See *Figures W-1 (machine) and/or W-2 (compressor unit)* in the *Warranty Details Section* for serial plate locations.

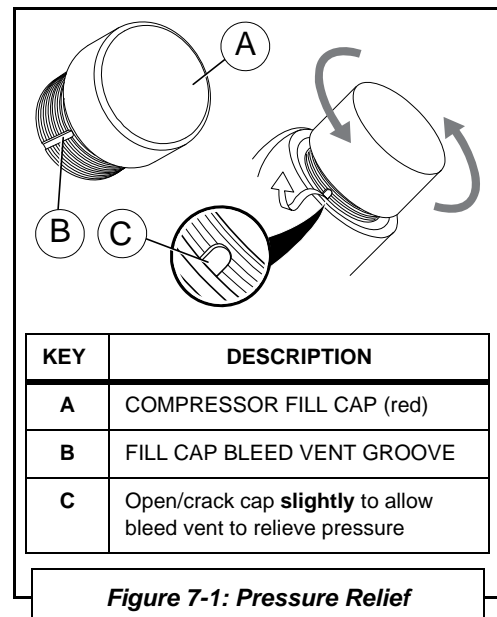
 **WARNING**

DO NOT operate any of the Air N Arc 300 Serie's functions 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 to prevent accidental application.

 **WARNING**

Before starting, performing maintenance, or replacing parts, relieve system pressure by opening the air tank drain/vent valve. Carefully open cap to relieve compressor pressure.

Refer to Figure 7-1. Open fill cap SLOWLY (contents under pressure) to make sure all pressure has been relieved.



7.2 TROUBLESHOOTING GUIDE

Fault/Malfunction	Possible Cause	Corrective Action
COMPRESSOR		
Compressor overheats This condition will cause a compressor shutdown and compressor fault light to turn on. Before restarting the compressor, determine the cause for overheating.	Low compressor oil level	Check oil level and refill to proper level if necessary (ensure machine is parked on a level surface). Refer to Section 6.6.3, <i>Checking the Compressor Oil.</i>
	Obstructed fluid cooler	Clear debris/dirt from cooler core/flush shroud.
	Obstructed cooler fins	Clear/clean if required. Refer to Section 6.6.11.
	Insufficient air flow over cooler	Check for obstructions (frame, body, etc.) to cooling air flow.
	Defective temperature switch	Check switch; replace if necessary.
	Compressor oil filter plugged	Replace filter; refer to Section 6.6.4, <i>Replacing the Compressor Oil Filter Element.</i>
	Input rpm too high	Adjust to proper setting; refer to Section 6.6.12, <i>Adjusting the Motor Speed.</i>
	Fan not operating	Low oil; check oil level and refill to proper level if necessary (ensure machine is parked on a level surface). Refer to Section 6.6.3, <i>Checking the Compressor Oil.</i>
Compressor shuts down with air demand present	Compressor temperature switch opening	Check compressor oil level. Replenish if necessary.
	Restricted cooling air intake	Reposition machine.
	Fan not operating	Low oil; check oil level and refill to proper level if necessary (ensure machine is parked on a level surface). Refer to Section 6.6.3, <i>Checking the Compressor Oil.</i>
		Belt slip on hydraulic pump. Refer to Section 6.6.14 or Section 6.6.14.1.
	Compressor oil filter plugged	Replace filter; refer to Section 6.6.4, <i>Replacing the Compressor Oil Filter Element.</i>
	Improper speed	Check hydraulic GPM and pressure.
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7.2 TROUBLESHOOTING GUIDE		
Fault/Malfunction	Possible Cause	Corrective Action
COMPRESSOR (CONTINUED)		
Compressor shuts down with air demand present (continued)	Plugged or restricted cooler core	Flush cooler. Consult the Vanair Service Department for assistance in cleaning/flushing the cooler core.
	Contaminated cooler fins	Clean cooler fins. Refer to Section 6.6.11, Inspecting the System Coolers.
Compressor will not build up pressure	Pressure switch out of adjustment	Reset pressure switch. Refer to Section 2.2.7, Adjustable Pressure Switch, and Section 6.6.13, Adjusting the Pressure Setting. Replace if switch continues to deviate from setting.
	Low compressor oil level	Check oil level and refill to proper level if necessary (ensure machine is parked on a level surface). Refer to Section 6.6.3, Checking the Compressor Oil.
	Air demand too high	Check for leaks and take corrective action.
		Check air tools for wear, damage, or malfunctions. Replace or repair.
	Compressor capacity too low to accommodate demand	Substitute larger capacity compressor system.
	Compressor air filter plugged	Check air filter. Replace if necessary; refer to Section 6.6.1, Compressor Air Filter.
	Defective pressure switch	Replace pressure switch.
	Control throttle solenoid stuck	Replace throttle solenoid.
	Belt(s) slipping	Re-situate and adjust belt tension, or replace belt if necessary. Consult Section 6.6.14, Replacing and Re-tensioning the Serpentine Belts
	Pressure gauge is malfunctioning	Check pressure gauge function/control line routing: adjust, repair or replace as necessary.
	Check for proper operation with an auxiliary air source. Replace if necessary	
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7.2 TROUBLESHOOTING GUIDE		
Fault/Malfunction	Possible Cause	Corrective Action
COMPRESSOR (CONTINUED)		
Compressor will not build up pressure (continued)	Inlet valve fails to open or is frozen shut.	Repair/replace inlet valve. Refer to Section 6.6.2, Repairing the Air Inlet Valve . Order inlet valve repair kit—see Table 9A: Recommended Spare Parts List .
Compressor system over-pressures This condition will cause a compressor shutdown, and a fault light will turn on. Before restarting the compressor, determine the cause of the over-pressure. May also cause the relief valve to open.	Pressure switch setting too high	Reset pressure switch. Refer to Section 2.2.7, Adjustable Pressure Switch , and Section 6.6.13, Adjusting the Pressure Setting . Replace if switch continues to deviate from setting.
	Pressure switch malfunction	Check for operation/damage: repair or replace.
	Unload solenoid valve defective	Replace solenoid valve.
	Leak in air control line	Check for leaks and take corrective action.
	Restriction in control line	Clean if soiled; if ice is present, clear and remove.
	Damaged/kinked control line	Check line for damage (wear, kinks, etc.). Re-route, re-tie or replace if necessary (refer to Appendix A, A.6 Hose Installation Guide for assistance in running or checking hose lines).
	Control line connections are 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).
	Inlet valve Teflon “O” ring popped out of groove	Replace “O” ring: Refer to Section 6.6.2, Repairing the Air Inlet Valve . Order inlet valve repair kit—see Table 9A: Recommended Spare Parts List .
	Damaged inlet seat	Rebuild inlet assembly.
	Inlet valve piston is stuck in down position.	Check for proper operation with an auxiliary air source—replace or rebuild inlet valve. Consult Section 6.6.2 .
Compressor shaft seal is leaking	Replace shaft seal with available kit. Refer to Section 6.6.7 .	
Minimum pressure/check valve is malfunctioning	Rebuild or replace check valve: Refer to Section 6.6.10 ; order check valve repair kit—see Table 9A: Recommended Spare Parts List .	
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7.2 TROUBLESHOOTING GUIDE		
Fault/Malfunction	Possible Cause	Corrective Action
COMPRESSOR (CONTINUED)		
Compressor system over-pressures (continued)	Pressure gauge is malfunctioning	Check gauge for proper operation; replace if necessary and check controls.
No service air output	If equipped, OSHA valve/velocity fues, not functioning properly	Reset or replace OSHA valve.
Low service air output (See also <i>Compressor will not build up pressure</i>)	Clogged compressor air filter	Check air filter. Replace if necessary; refer to Section 6.6.1, Compressor Air Filter .
	Solenoid valve sending continuous signal to inlet valve	Rebuild or replace solenoid valve if defective. Refer to Section 6.6.8
	Incorrect compressor speed	Adjust speed. Refer to Section 6.6.12 .
	Minimum pressure valve stuck	Rebuild minimum pressure valve
Compressor stalls	Pressure switch setting too high	Adjust pressure switch setting. Refer to Section 2.2.7, Adjustable Pressure Switch , and Section 6.6.13 Adjusting the Pressure Setting . Replace if switch continues to deviate from setting.
	Speed is set too low	Check hydraulic pressure and GPM
System operating pressure below specified minimum	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 or is damaged	Inspect for leaks. Repair and/or replace damaged parts as necessary. Use Section 9, Illustrated Parts List to visually confirm/ identify any part that needs to be replaced before ordering part.
	Pressure switch set too low/ malfunction	Adjust pressure switch setting. Refer to Section 2.2.7, Adjustable Pressure Switch , and Section 6.6.13, Adjusting the Pressure Setting . Replace if switch continues to deviate from setting.
	Input rpm too low	Adjust to proper setting.
	Inlet valve contaminated or fails to open.	Remove valve and clean piston; repair/ replace inlet valve. Refer to Section 6.6.2, Repairing the Air Inlet Valve . Order inlet valve repair kit—see Table 9A: Recommended Spare Parts List .
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7.2 TROUBLESHOOTING GUIDE		
Fault/Malfunction	Possible Cause	Corrective Action
COMPRESSOR (CONTINUED)		
Excess amount of oil in air discharge	Machine not on level surface	Move machine to level surface.
	Compressor oil level too high	The correct oil level is between the bottom of the oil port threads (low level) to the top lip of the port's threads (high level). Drain excess oil to correct level.
		Tank not positioned with the drain at its lowest point. Reposition machine. NOTE: Machine must be operated while on a level surface in order for proper compressor oil circulation throughout the system.
	Scavenger system not operating	Inspect scavenger line for obstructions or leaks. Replace if necessary.
	Coalescer element plugged or damaged	Replace the coalescer element. Consult Section 6.6.6, Replacing the Spin-on Air/Oil Coalescer . Order replacement coalescer element—see Table 9A: Recommended Spare Parts List .
Excessive moisture in the compressed air	Moisture accumulating in air tank	Drain water from air tank. Refer to Section 6.6.9, Draining the Air Tank .
	Compressor not running long enough	Run compressor long enough to get hot.
WELDER		
Welder and battery charger behave erratically	Connection cables or receptacles are soiled/contaminated	Check for twisted cables and/or soiled/contaminated or loose receptacle connections.
		Untwist and/or straighten out any suspected cable tensions. Carefully wipe off any contaminants to receptacle connectors before re-connecting. Replace any worn or damaged cables or receptacles. Contact Vanair® Mfg., Inc. Service Department if behavior persists.
	Connections not making contact	Correct connection at lug and clamp
	Belt slipping	Re-tension or replace belt. Refer to Section 6.6.14.3, Re-tensioning the Generator Serpentine Belt , and Section 6.6.14.4, Replacing the Generator Serpentine Belt .
	Welding function is not drawing enough operating power	If running more than one function simultaneously, turn off competing function.
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7.2 TROUBLESHOOTING GUIDE		
Fault/Malfunction	Possible Cause	Corrective Action
WELDER (CONTINUED)		
No welder output	Fuse at welder field blown	Replace the welder field fuse. Refer to Section 6.7, Servicing the System Fuses and Circuit Breakers
	Low battery voltage	Check/replace battery
No welder output in CC mode	Bad ground connection	Make sure of connection. Clean welding surface.
BATTERY BOOSTER/CHARGER		
No output (Note: Must be hooked to a battery for output)	Bad connection	Check all connections
	Battery damaged or voltage too low	Replace battery
	Fuse at generator blown	Replace fuse. Refer to Section 6.7, Servicing the System Fuses and Circuit Breakers
AC GENERATOR		
No AC generator output	Serpentine belt slipping or damaged	Re-situate and adjust belt tension, or replace belt if necessary. Consult Section 6.6.14, Replacing and Re-tensioning the Serpentine Belts . Order replacement belt—see Table 9A: Recommended Spare Parts List .
	Circuit breaker tripped	Reset circuit breaker (two located on machine and two located on panel)
	Faulty AC generator relay	Check; replace if necessary.
	Faulty capacitor	Check; replace if necessary.
Low AC voltage	Motor speed too low	Check Hz and adjust PTO
	Weak or faulty capacitor	Check; replace if necessary.
	Belt slipping	Check tension or replace belt if necessary. Consult Section 6.6.14, Replacing and Re-tensioning the Serpentine Belts . Order replacement belt—see Table 9A: Recommended Spare Parts List .
	Cap mF too small	Check cap mF
High AC voltage	Motor speed too high	Check Hz and adjust PTO
	Cap mF too large	Check cap mF