



# TROUBLESHOOTING GUIDE

AIR DRYERS - Model 9 & Model PAP

Stock # TB-AD19



MALFUNCTION	POSSIBLE CAUSE (Troubleshoot in sequence)	CORRECTIVE ACTION
<b>• PURGE CYCLE</b>		
<b>Will not purge</b>	1. Malfunctioning governor	Disconnect governor line at air dryer. There should be air when compressor unloads. If not, line may be damaged or replace governor. If governor is replaced and same problems exists, check air compressor for proper operation.
	2. Governor line to air dryer is restricted	Check line for blockage from debris or ice, replace if necessary. If there are line sags, reroute.
	3. Purge valve is jammed closed	If purge area is damaged, replace air dryer. If no damage, replace purge valve and desiccant cartridge.
	4. Defective pressure relief valve at air dryer	Replace
	5. Cut-out pressure never reached by air compressor	Check compressor output, repair/replace if needed. If OK, see " <b>PURGE CYCLE: Excessive air system leakage</b> " section
<b>Too often at idle - more frequently than every 4 min</b>	1. Excessive air system leakage	Check each component starting with the air compressor, including air accessories, for allowable leakage per vehicle manufacturer guidelines. Repair/replace hoses, fittings, components, valves, etc as needed.
	2. Leakage at outlet check valve	Clean/repair check valve or if area is damaged, replace air dryer
	3. Leakage at air dryer purge valve	If purge area is damaged, replace air dryer. Also see "PURGE CYCLE: Continuous leakage at purge valve" below.
<b>Too long - consistently over 40 seconds</b>	1. Malfunctioning outlet check valve	Clean/repair check valve or if area is damaged, replace air dryer.
	2. Partial blockage at purge orifice	Clean area. Replace desiccant cartridge
<b>Too short - consistently under 15 seconds</b>	1. Air compressor loading/unloading too frequently	See " <b>PURGE CYCLE: Too often at idle</b> " above
<b>Continuous leaking at purge valve</b>	1. Malfunctioning governor	Disconnect governor line at air dryer. If purge cycle stops, replace governor. There should be air only when compressor unloads.
	2. Seals / O-rings leaking at purge valve	Replace purge valve and desiccant cartridge.
	3. Contaminants at purge valve	Check air compressor for excess oil passage, replace as needed. Clean or replace purge valve and replace desiccant cartridge.
	4. Malfunctioning outlet check valve	Clean/repair check valve or if area is damaged, replace air dryer.
	5. Leakage at internal turbo cut-off valve	Clean/repair turbo cut-off valve area and replace purge valve. Replace desiccant cartridge.
	6. Purge valve frozen from moisture	See " <b>DRYER HEATER: Not working</b> " section. Replace purge valve and desiccant cartridge.
	7. Purge valve is jammed open	If purge area is damaged, replace dryer. If no damage, replace purge valve & desiccant cartridge.
	8. Unloader valves in air compressor malfunctioning	Clean or replace unloader valves or replace air compressor.
	9. Excessive air system leakage	Check each component starting with the air compressor, including air accessories, for allowable leakage per vehicle manufacturer guidelines. Repair/replace hoses, fittings, components, valves, etc as needed.
<b>Causes compressor to cut-in</b>	1. Damaged governor line	Repair/replace
	2. Governor line too large	Maximum ID should be 3/16", if larger replace
	3. Seals leaking at purge valve	Replace purge valve and replace desiccant cartridge.
<b>"Pinging" sound when compressor is loaded</b>	1. Malfunctioning outlet check valve	Clean/repair check valve or if area is damaged, replace air dryer
	2. Leakage at internal turbo cut-off valve	Clean/repair turbo cut-off valve area and replace purge valve. Replace desiccant cartridge.
	3. Leakage at purge valve	If purge area is damaged, replace dryer. If no damage, replace purge valve & desiccant cartridge

**ALERT-** Always follow the vehicle manufacturer's guidelines to depressurize the air and/or electrical system when performing air dryer maintenance. If vehicle uses a Holset E Compressor, consult the vehicle manufacturer's air dryer troubleshooting guidelines.

MALFUNCTION	POSSIBLE CAUSES (Troubleshoot in sequence)	CORRECTIVE ACTION
<b>• DRYER HEATER</b>		
<b>Not working</b>	1. No power to heater	Verify correct voltage of air dryer. Check for blown fuse. Repair heater circuit as needed.
	2. Poor connection at wiring harness at air dryer	Replace wiring harness. If harness area at dryer is damaged, replace air dryer.
	3. Low voltage to heater	Repair/replace any damaged wiring, corroded areas, etc.
	4. Defective heater element or thermostat	Replace with heater kit or if area is damaged, replace air dryer.
<b>Continuous, will not cut off</b>	1. Defective thermostat in heater assembly	Replace with heater kit or if area is damaged, replace air dryer.
<b>• DRYER PRESSURE RELIEF VALVE</b>		
<b>Exhausting air</b>	1. Defective relief valve	Replace
	2. Signal line from wet tank back to governor is blocked	Replace signal line
	3. Malfunctioning governor	Disconnect governor line at air dryer. If purge cycle stops and relief valve closes, replace governor.
	4. Blockage between air dryer and wet tank	Locate blockage or kink. Repair or replace hose/tubing.
	5. Malfunctioning outlet check valve	Clean/repair check valve or if area is damaged, replace air dryer.
	6. Excessive pulsations from air compressor	Increase diameter or length of air compressor discharge line for increased volume. Insulation may be needed in colder climates.
<b>• RESERVOIRS</b>		
<b>Wet Tank: no air pressure build-up</b>	1. Air compressor discharge line blocked	Check for excess carbon or line sags which can cause ice. Replace/reroute as needed.
	2. Malfunctioning outlet check valve	Clean/repair check valve or if area is damaged, replace air dryer.
	3. Inlet & outlet lines at air dryer are reversed	Reverse to proper configuration
	4. Malfunctioning governor	Disconnect governor line at air dryer. There should be air when compressor unloads. If not, line may be damaged or replace governor. If governor is replaced and same problems exists, check air compressor for proper operation.
	5. Excessive air system leakage	Check each component starting with the air compressor, including air accessories, for allowable leakage per vehicle manufacturer guidelines. Repair/replace hoses, fittings, components, valves, etc as needed.
<b>Wet Tank: slow air pressure build-up</b>	1. Air compressor discharge line restricted	Check for excess carbon or line sags which can cause restrictions including ice in cold weather. Replace/reroute as needed.
	2. Contaminant blockage at desiccant cartridge and/or filter	Replace desiccant cartridge and coalescing filter if Model PAP.
<b>Water</b>	1. Desiccant and/or filter is fully contaminated	Replace desiccant cartridge and coalescing filter if Model PAP.
	2. Blockage at purge orifice	Clean area. Replace desiccant cartridge.
	3. Air temperature too high at air dryer inlet - exceeds 160°F	At minimum, the first 4' from compressor should be 1/2" copper or stainless steel braided Teflon. Total line length should have a constant slope downward and should be 7'-19' to insure inlet temp below 160°F. Insulation may be needed in colder climates.
	4. Air dryer will not purge	See " <b>PURGE CYCLE: Will not purge</b> " section
	5. Excessive air usage related to duty cycle	Verify air dryer and air compressor are compatible to the vehicle's air system needs especially if air accessories or additional axles with air suspension have been added.
<b>Sludge (oil, contaminants &amp; moisture)</b>	1. Desiccant and/or filter is fully contaminated	Check air compressor for excess oil passage, replace as needed. Clean or replace purge valve and replace desiccant cartridge & coalescing filter if Model PAP

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