



TROUBLESHOOTING GUIDE

AIR DRYERS - Model 1200
Stock # TB-AD20



MALFUNCTION	POSSIBLE CAUSE (Troubleshoot in sequence)	CORRECTIVE ACTION
• PURGE/REGENERATION CYCLE		
No purge cycle	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. Malfunctioning pressure relief valve @ air dryer	Replace
	5. Air compressor does not reach cut-out pressure	Check compressor output, repair/replace if needed. If OK, see "Excess leakage at purge valve" section - Step 10
No regeneration cycle - no air from purge valve after opening blast	1. One-way check valve installed in wet tank	Remove
	2. Alcohol evaporator is mounted between dryer & wet tank	Remove
	3. Malfunctioning regeneration valve	Clean and inspect regeneration valve for wear. If OK, install kit. If area shows wear or problem persists, replace air dryer.
Purge cycle is too often (accompanied with air compressor cycling) *See Also - "Regeneration cycle too short"	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. Malfunctioning governor, cut-in/cut-out range too tight	Replace
	3. Leakage at outlet check valve	Repair check valve or if area is damaged, replace air dryer.
	4. Leakage at air dryer purge valve	If purge area is damaged, replace air dryer. Also see "Excess leakage at purge valve" below
	5. Malfunctioning regeneration valve	Clean and inspect regeneration valve for wear. If OK, install kit. If area shows wear or problem persists, replace air dryer.
	6. Excessive air usage related to duty cycle	Verify air dryer & air compressor are compatible to the vehicle's air system needs especially if air accessories or additional axles with air suspension have been added. Upgrade air compressor and/or higher duty cycle dryer if needed.
Regeneration cycle too short under 10 seconds	1. Lack of or malfunctioning pressure controlled check valve (PCCV)	Verify PCCV is mounted on front axle (secondary) reservoir. Install if lacking or replace if already installed. See Tec Bulletin TB-AD2, *Exception for variation to PCCV mounting". NOTE: Never combine PCCV with a one-way check valve.
	2. ALL causes listed "Purge cycle is too often" above	See "Purge cycle is too often" above
Regeneration cycle too long over 30 seconds	1. Malfunctioning outlet check valve	Repair check valve or if area is damaged, replace air dryer.
	2. Malfunctioning regeneration valve, not shutting off airflow	Clean and inspect regeneration valve for wear. If OK, install kit. If area shows wear or problem persists, replace air dryer.
Excess leakage at purge valve	1. Malfunctioning governor	Disconnect governor line at air dryer. If purge stops, replace governor. There should be air only when compressor unloads.
	2. Contaminants at purge valve	Check air compressor for excess oil passage, replace as needed. Clean or replace purge valve. Clean sump area below desiccant cartridge and replace cartridge.
	3. Purge valve frozen from moisture	See "DRYER HEATER: Not working" section. Replace purge valve & desiccant cartridge. Clean sump area below cartridge.
	4. Purge valve is jammed open	If purge area is damaged, replace air dryer. If no damage, replace purge valve and desiccant cartridge.
	5. Purge valve components improperly installed	Check aluminum purge valve washer, insure lip faces down, away from dryer. Check purge valve snap ring fits firmly into groove.
	6. Malfunctioning outlet check valve	Repair outlet check valve and replace desiccant cartridge. If check valve area is damaged, replace air dryer.
	7. Leakage at internal turbo cut-off valve	Clean/repair with turbo cut-off kit. Replace purge valve and desiccant cartridge. Clean sump area below desiccant cartridge.
	8. Malfunctioning regeneration valve, not shutting off airflow	Clean and inspect regeneration valve for wear. If OK, install kit. If area shows wear or problem persists, replace air dryer.
	9. Unloader valves in air compressor malfunctioning	Clean or replace unloader valves or replace air compressor.
	10. 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.
	11. Spitting from purge valve (could vary with engine speed)	Troubleshoot compressor per manufacturer's guidelines. This is most common with Holset compressors.
Causes compressor to cut-in	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 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 CAUSE (Troubleshoot in sequence)	CORRECTIVE ACTION
• PURGE/REGENERATION CYCLE <i>continued</i>		
Pinging sound when compressor is loaded	1. Malfunctioning outlet check valve	Repair check valve or if area is damaged, replace air dryer.
	2. Leakage at internal turbo cut-off valve	Clean/repair with turbo cut-off kit. Replace purge valve and desiccant cartridge. Clean sump area below desiccant cartridge.
	3. Leakage at purge valve	If purge area is damaged, replace air dryer. If no damage, replace purge valve and desiccant cartridge.
• DRYER TURBO CUT-OFF VALVE		
Air leak	1. Heat damage to piston or other parts	Air at inlet is too hot. At minimum, first 4' from compressor should be 1/2" copper or stainless steel braided Teflon. Total line length should have constant slope downward to the air dryer and be 7'-19' to insure inlet temp below 170°F.
	2. Broken piston	Replace with complete kit
	3. Valve bore worn	Replace dryer
	4. Lip seal installed incorrectly (older model only)	Lip on lip seal should face up towards dryer. Lip seal is replaced with O-ring in newer model (repair kit has both).
• DRYER HEATER		
Not working	1. No power to heater	Verify correct voltage of dryer to electrical system. 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. Malfunctioning heater assembly	Replace with heater kit or if area is damaged, replace air dryer.
Continuous, will not cut off	1. Malfunctioning thermostat in heater assembly	Replace with heater kit or if area is damaged, replace air dryer.
• DRYER PRESSURE RELIEF VALVE		
Exhausting air	1. Defective pressure relief valve	Replace
	2. Malfunctioning outlet check valve	Clean/repair check valve. If area is damaged replace air dryer.
	3. Malfunctioning governor	Disconnect governor line at air dryer. If purge cycle stops and relief valve closes, replace governor.
	4. Signal line from wet tank back to governor is blocked	Replace signal line.
	5. Blockage between air dryer and wet tank	Locate blockage or kink. Repair or replace hose/tubing.
	6. Excessive pulsations from air compressor	Increase diameter or length of air compressor discharge line for increased volume.
• RESERVOIRS		
Wet tank (supply reservoir): no air pressure build-up	1. Air compressor discharge line blocked	Check for excess carbon or line sags which can cause restrictions including ice in cold weather. Replace/reroute as needed.
	2. 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.
	3. Malfunctioning outlet check valve	Clean/repair outlet check valve. If area is damaged replace air dryer.
	4. Inlet & outlet lines at air dryer are reversed	Reverse to proper configuration
	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.
Wet tank (supply reservoir): slow air pressure build-up	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.	Clean sump area below desiccant cartridge and replace cartridge.
	3. Continuous leakage at dryer purge valve	See "PURGE/REGENERATION CYCLE: Continuous leakage at purge valve" section
Water or Sludge (oil, contaminants & moisture)	1. Desiccant cartridge is fully contaminated	Check air compressor for excess oil passage, replace as needed. Clean or replace purge valve and replace desiccant cartridge. Clean sump area below cartridge.
	2. Blockage at purge orifice	Clean sump area below desiccant cartridge and replace cartridge.
	3. Lack of or malfunctioning pressure controlled check valve (PCCV)	Verify PCCV is mounted on front axle (secondary) reservoir. Install if lacking or replace if already installed. See TB-AD2 , *Exception for variation to PCCV mounting. NOTE: Never combine PCCV with a one-way check valve.
	4. Air temperature too high at air dryer inlet, exceeds 170°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 to the air dryer & should be 7'-19' to insure inlet temp below 170°F.
	5. Air dryer will not purge	See "PURGE/REGENERATION CYCLE: No purge cycle" section
	6. Excessive air usage related to duty cycle	Verify air dryer and air compressor are compatible to the vehicle's air system needs. Upgrade if needed

