External Vehicle Walkaround Air Brake System Inspection

Please refer to BW1971 (Advanced Troubleshooting Guide for Air Brake Compressors) for Troubleshooting Information

Date:	Invoice Number:	Customer Name:
Completed By:		

Brake System Component	Check For:	OK	Requires Repair or Adjustment	Needs Further Diagnosis	Quoted	Symptom	Notes/Clarification/Impact
Compressor							
	Broken, Cracked, or Loose Mounting Flange					Replace	
	Oil Leaks					Exterior leaks at the gaskets. *(See Symptom 2.0)*	Exterior leaks at the gaskets are a sign of loose or broken parts. Excessive oil at the head gasket can indicate over pressurized condition.
	Discoloration					Compressor Head Discoloration or Rust *(See Symptom 4.0 items e, f, g & h)*	Discoloration or rust can be an indication that the compressor is running hot. High operating temperatures will cause excessive oil carry over and will shorten the life of the compressor.
	Condition of Inlet Line. Engine Air Filter.					A broken, bent, kinked, or restricted Inlet Line, or a poorly maintained inlet air filter or engine air filter. *(See Symptom 9.0 items f & g)*	A restricted inlet will cause slow pressure build and oil to pass into the air system. An inlet open to atmosphere and/or a poorly maintained engine air filter will allow dirt to enter the compressor. Compressor life will be significantly reduced as a result.
	Condition of Discharge Line					Bent, Kinked, Porous or Restricted Discharge Line. *(See Symptom 9.0 items f & g)*	A restricted discharge line will cause slow pressure build and the compressor to run hot. Compressor life will be significantly reduced and could cause engine damage.
Governor							
	Broken or Loose Mounting Components					Replace	Some governors are mounted at the air dryer. They require a special mounting gasket and are normally set to cut out at 130 PSI.
	Exhaust Port Location					The governor should be mounted so the exhaust port is pointing down.	If the governor's exhaust port can't be mounted pointing down, an exhaust check valve may be installed to stop contamination from entering the port. Contamination will reduce the life of the governor.
Air Dryer							
	Broken or Loose Mounting Components					Replace	
	The Air Dryer is Bypassed					If the air dryer has been bypassed, make the necessary repairs and drain all reservoirs.	When the air dryer is bypassed, moisture enters the air system and freezes. Moisture washes lubrication off of valves and creates rust. Contamination in the air system can cause brake failure.
	Heater and Wire Condition					Replace broken wires. Make sure the plug is seated properly.	12v DC or 24v DC should be at the plug when the vehicles ignition is turned on. An inoperable heater will cause air dryer freeze up in cold weather.
	Excessive Oil at Exhaust Port					Though some oil and water is normal at the exhaust port, excessive oil and water are an indication of poor air dryer/ compressor maintenance. *(See Symptom 3.0)*	Poor maintenance will cause premature valve failure and possible system freeze up in colder temperatures. **Never pour liquids such as alcohol into the air brake system.**
Reservoirs							
	Broken or Loose Mounting Components					Replace	
	Proper Drain Cock Operation					Air leaking with the drain cock in the closed position. Air won't drain when the drain cocks are open.	FMVSS 121 requires drain cocks function properly so that operation of the reservoir's single check valves can be validated. Leakage reduces compressor life.
Drain Reservoirs							
	Contamination in Reservoirs					Though some oil and water is normal in reservoirs, excessive amounts are not. In order to determine what is excessive it will be necessary to run an the Basic Oil Passing test. The test requires the vehicle to be retested at a later date. *(See Symptom 4.0)*	Excessive oil and water in the reservoirs takes up capacity which causes the compressor to run longer and hotter leading to compressor failure. Contamination can exit the reservoirs and make it into the braking system. Contamination causes early valve failure and could cause loss of brakes.

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Glad Hands/Hoses							
	Broken / Cracked / Worn Condition					Replace	A worn locking tab could cause the glad hand to come loose during operation.
	Contamination					Clear contamination from glad hand. Make sure dummy glad hands are used when glad hands are not connected.	Contamination in the glad hand has a direct path to the trailer relay valve. Contamination can cause loss of brakes on the trailer as well as the potential that the brakes won't release and will drag. ***Never pour liquids such as alcohol down glad hand lines.***
	Seals					Worn or cracked glad hand seals should be replaced.	Leaking glad hand seals can cause the compressor to run excessively, resulting in a reduction of its service life.
Valves/Air Lines							
	Broken or Loose Mounting Components					Replace	
	Excessive Oil at Exhaust Port					Though some oil and water is normal at the exhaust port, excessive oil and water are an indication of poor air dryer/compressor maintenance. It will be necessary to run an oil passing test such as the Bendix® BASIC™ test. The test requires that the vehicle be re-tested at a later date. *(See Symptom 4.0)*	Poor maintenance will cause premature valve failure and possible freeze up. A loss of system brakes or slow brake release are possible.
	Broken or Loose Fittings					Replace	Use DOT air brake fittings. Never use regular pipe fittings. Replacing fittings with non-genuine fittings (other than those for specified by the vehicle manufacturer) can cause brake imbalance.
	Air Line Condition					Worn or cut air lines must always be replaced.	Always use the same size and type. Replacing air lines with non-genuine lines (lines other than those for specified by the vehicle manufacturer) can cause brake imbalance.
Brake Chambers							
	Broken or Loose Mounting Components					Replace	
	Size					The brake chamber size should match across an axle.	Incorrect brake chamber size can cause unstable braking. Normally, if one brake chamber fails, the opposite brake on the same axle will fail shortly thereafter.
	Push Rod Rubbing on Housing					Push rods rubbing on the housing are an indication that the rod is not cut to the proper size. Another cause could be that the brake chamber is not aligned with the slack adjuster.	Rubbing push rods can weaken and fail, or bind and bend, causing dragging brakes or brake failure on that wheel end.
	Bent Push Rod					Bent push rods are an indication that a) the brake chamber push rod is not cut to size properly; or b) that the slack adjuster is not functioning properly.	Bent push rods or in-operable slack adjusters will cause brake dragging or brake failure on the impacted wheel end.
Slack Adjusters							
	Broken or Loose Mounting Components					Replace	
	Size					Slack adjusters must be the same size across an axle. Slacks are measured from the center of the yoke to the center of the S-Cam.	Incorrect slack adjuster size can drastically change brake torque on the affected wheel end. Incorrect slack adjuster size can cause the vehicle to be put in an out of service condition upon inspection.
	Type					Slack adjusters must be the identical model and manufacturer across an axle.	Some slack adjusters function on each brake application, while others adjust on each brake application. Never mix manufacturers across an axle.
	Stroke					Check the operating stoke per the manufacturers instructions. *(North American Standard Vehicle Out of Service Criteria)*	Improper stroke adjustment can cause brake failure on the impacted wheel end. Improper stroke adjustment can cause the vehicle to be put in an out of service condition upon inspection.
Brake Lining							
	Ensure the Lining is in Place					Visually check the foundation brake, looking for broken parts and missing lining block.	Broken parts and missing lining block may cause brake failure on the affected wheel end. Broken parts and missing lining block can cause the vehicle to be put in an out of service condition during inspection.
	Cracked, loose or missing Lining					Visually check for cracks or voids on the edge of the lining. Check for segments that are missing and the rivet or bolt is exposed. *(See North American Standard Vehicle Out of Service Criteria)*	Cracked or missing lining block may cause brake failure on the affected wheel end. Cracked or missing lining block may cause the vehicle to be put out of service.
	Worn to Wear Indicator					Most lining blocks are manufactured with a wear indicator. If the wear indicator is not present, use the Bendix® Brake Lining Wear Gauge BW7261	Excessive worn brake lining may cause brake failure. Excessive worn linings can cause the vehicle to be put in an out of service condition upon inspection.
	Leaking Wheel Seals					If the leaking wheel seal has allowed oil to leak onto the lining block, the block should be replaced on both axle ends.	Oil soaked block will reduce brake torque, causing brake imbalance.
Drums and Rotors							
	Visually Check for Cracks					Replace	Do not turn brake drums.