

Technical Bulletin



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Subject: **Steps to Prevent Air Brake System Contamination – Best Practices**

There are many myths and much misinformation when it comes to minimizing the impact of contamination in the air braking system. Bendix Commercial Vehicle Systems LLC (Bendix) has found that the majority of the procedures available today do not reflect current recommended practices for air treatment and storage systems. Chief among our concerns are the concepts that air system antifreeze or alcohol is often considered acceptable, along with the practice of draining air system reservoirs daily.

Refer to Bendix Technical Bulletin TCH-008-042 which strongly discourages the use of alcohol in the air braking system.

Recommended Reservoir Draining & Dryer Service Intervals

Bendix discourages draining air system reservoirs daily when powered vehicles are equipped with a properly functioning desiccant type air dryer. Why? Because daily draining tends to saturate an air system (with a properly functioning air treatment system) on initial charge, and because it also causes the system's air compressor to work unnecessarily, thus reducing its durability.

Refer to the chart below for recommended reservoir draining and air dryer service intervals for powered vehicles:

Air Usage	Typical Vehicle Vocation	Axles	*Reservoir Drain Interval (Whichever comes first)			*Desiccant Cartridge Replacement
			Hours	Mileage	Time	
Standard	Line haul, city delivery	5 or less	900	25,000	3 months	Every 3 years
Medium	Double trailer trains, light transit, light off-highway	8 or less	450	12,000	2 months	Every 2 years
High	Multiple trailer trains, city transit, school bus, heavy duty off-road	11 or less	300	6,000	1 month	Every year

* If more than just a trace of moisture is found in any of the reservoirs it may be necessary to replace the desiccant cartridge.



Introducing alcohol or antifreeze chemicals can reduce the life expectancy of all of the components in the air braking system by flushing internal lubrication.

System Design Limitations

Total air system demand must be considered for proper sizing of the charging, treatment, and storage system on a powered vehicle. It is very important to take into account the number of axles — and all auxiliary features for the entire vehicle combination — as this will minimize the possibility of system freeze-up on combinations including any trailers. Air system leakage can cause contamination in the system by challenging the charging and air treatment system capacity. Refer to *Bendix Application Guidelines BW2600 for air dryers* and *BW2625 for air compressors*. For acceptable air leakage recommendations refer to video BW2327.

Shutting Vehicle Down in Cold Temperatures

When powered vehicles must be shut down for a period of time and ambient temperatures are expected to be below freezing, it is beneficial to fan the air brake system down to just below the system cut-in pressure. Doing this with the engine OFF, while it is still at operating temperature, allows the compressor and dryer to be in the “charge mode” on engine start-up. This minimizes the potential for these components to be frozen in the “unloaded mode” until the air dryer heater and power train heat allows these units to reach normal operating temperature.

Protecting Towing Connections on all Towing Vehicles

For all tractors, towing trucks, trailers and converter dollies, Bendix recommends that vehicle operators take precautions to ensure that all glad-hand connections are protected from the environment when not coupled. This involves using glad-hand hangers and glad-hand dummy couplings for both front (input on trailers & dollies) and rear (output on tractors, trailers, & dollies) couplings to protect against the entry of foreign airborne contaminants. This includes protection from road debris, contaminants and weather elements in the form of precipitation. These items can be sucked into the open glad-hands due to the vortex created at the back of the trailer as it travels down the highway.

Please note that all front (input) glad-hands still need to be vented to atmosphere. This can be through a small hole—or breather valve—to prevent mishaps such as “false parking” via trapped pressure in the trailer service line, or to prevent the unintentional release of the trailer parking brakes by pressurizing the trailer supply line as a result of system leakage. To further reduce any potential issues related to liquid water entering via open glad-hand connections, Bendix offers the Cyclone DuraDrain® trailer water separator which helps remove all liquid water and other contaminants from the trailer control and supply lines. See SD-08-2402 for information on the Cyclone DuraDrain trailer water separator.

Also, note that Bendix recommends vented shut-off valves on the back of trailers and the use of the Bendix® SV-4™ synchro valve in the supply line on converter dollies to prevent false charging on trailers and dollies. Refer to technical bulletin TCH-003-027 for details concerning this recommendation.

Shown below are the documents referenced in this bulletin, as well as additional pieces that may be of interest. To download or order these items and more, visit the document library online at www.bendix.com.

Technical Bulletins	Service Data		Miscellaneous
TCH-003-027	SD-08-187	SD-08-2412	BW2600
TCH-008-021	SD-08-187B	SD-08-2416	BW2625
TCH-008-022	SD-08-2401	SD-08-2417	BW2327
TCH-008-042	SD-08-2402	SD-08-2418	
	SD-08-2403	SD-08-2433	
	SD-08-2407	SD-98-9808	

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