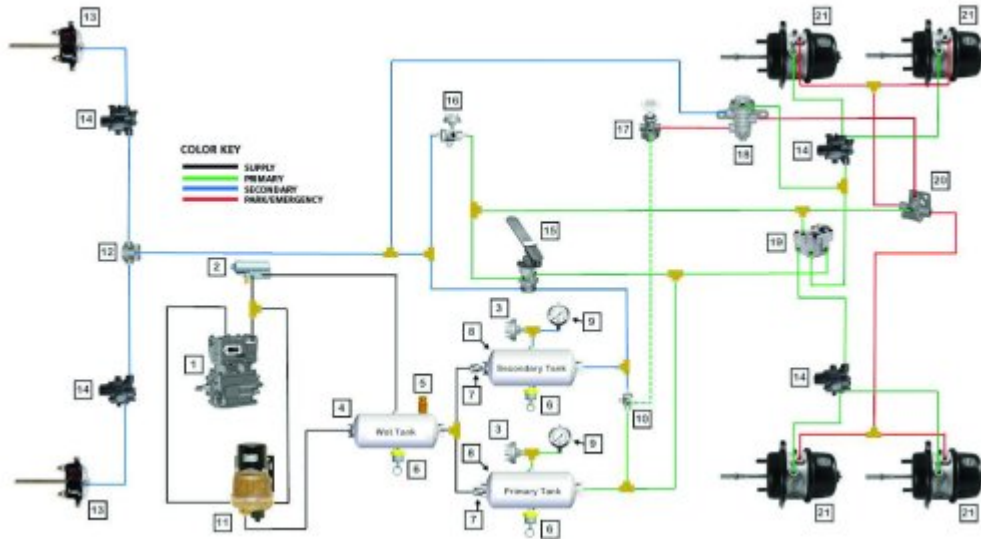


Table of Contents

- Troubleshooting Charging & Air Supply** 3
- Haldex** 3
 - Complaints Common To The Charging & Air Supply System 3
- Bendix** 5
 - Complaints Common To The Charging & Air Supply System 5
 - Complaint: Can Not Build System Pressure 5
 - Complaint: Air system Builds Too Slow 5
 - Complaint: Can Not Build System Pressure Above "X" psi. 6
 - Complaint: Air Dryer Cycles "ON & OFF" Constantly 6
 - Complaint: System Pressure Goes to 150+ psi 6
 - Complaint: Low Pressure Warning After Only 1 or 2 Applications 7
 - Tests Common to More Than One Complaint 7

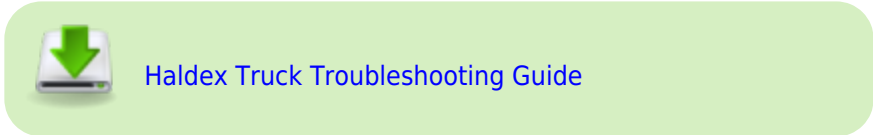
Troubleshooting Charging & Air Supply

Haldex



Overview

The troubleshooting procedures presented below are from Haldex document I20303. The procedure is not all inclusive but rather represents the most commonly encountered complaints.



Complaints Common To The Charging & Air Supply System

COMPRESSOR	
Issue	Solution
PUMPS BEYOND "CUT-OUT"	<ul style="list-style-type: none"> * Check gauge. * Check governor. * Be certain it pressurizes unloader port when above "cut-out". * Check unloader/plungers. Lube, kit or change head.
WON'T PUMP AIR	<ul style="list-style-type: none"> * Check gauge. * Check compressor drive. * Check inlet valves and plungers. If stuck, leak will be evident at intake when unloaded. Install unloader kit, head kit or head assembly.
SLOW PRESSURE BUILD-UP	<ul style="list-style-type: none"> * Check gauge. * Check compressor drive. * Check intake for restriction. * Check discharge line for restriction. * Check unloader function. Lube or kit. * Check inlet and exhaust valves. Leak will be evident at intake when unloaded. Repair or replace head.

PUMPS EXCESSIVE OIL	<ul style="list-style-type: none"> * Check oil return for restriction, kink or loop. * Check for gasket sealant obstructing drain. * Check for undersize return line (1/2" minimum). * Check for fitting restricting drain. * Check for intake vacuum (20" water maximum). * Check for excessive engine crankcase pressure (poor engine ventilation). * Check compressor ring wear. Exchange for service unit.
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GOVERNOR

Issue	Solution
FLUTTERS	<ul style="list-style-type: none"> * Check gauge. * Check unloader line size (5/16" x 5' maximum). * Check air actuated accessory. Is the air volume requirement greater than governor capacity? * Check for plugged governor reservoir line. * Repair, adjust or replace governor.
WON'T PASS AIR TO UNLOADER TO "CUT-OUT" COMPRESSOR	<ul style="list-style-type: none"> * Check governor reservoir line. * Repair or replace.

LOW PRESSURE INDICATOR SWITCH

Issue	Solution
BUZZER OR LIGHT INOPERABLE	<ul style="list-style-type: none"> * Check ground and wiring on switch and buzzer/light. * Replace switch or buzzer/light.
WON'T OPERATE AT PRESSURES BELOW 60 PSI	<ul style="list-style-type: none"> * Check dash gauge for accuracy. * Replace switch or buzzer/light

WET TANK

Issue	Solution
EXCESS OIL ACCUMULATION	* See PUMPS EXCESSIVE OIL (above)
EXCESS WATER ACCUMULATION	* Drain daily. Install automatic drain on wet tank.
DAMAGED WET TANK	* Replace.

SAFETY VALVE

Issue	Solution
"POPS" OFF EXCESSIVELY.	<ul style="list-style-type: none"> * Check system pressure. * Valve operating properly if venting at 140/150 PSI * Check unloader/governor.
"POPS" OFF AT LESS THAN 140 PSI	* Replace.
LEAKS	* Replace.
WON'T FUNCTION	<ul style="list-style-type: none"> * Periodic Test: remove and test above 150 PSI with shop air. * Replace if non-functional.

MANUAL DRAIN VALVES

Issue	Solution
Leaks	* Replace.

AUTOMATIC DRAIN VALVES

Issue	Solution
WON'T DRAIN	* Repair or replace.
WON'T DRAIN IN COLD WEATHER	* Replace with heated unit.
LEAKS - MALFUNCTIONS	<ul style="list-style-type: none"> * Repair or replace. * Periodic Test with system pressure stabilized (compressor unloaded) no leak evident at discharge port - make several foot brake applications to reduce wet tank pressure. Moisture should drain from discharge port.

SINGLE CHECK VALVE

Issue	Solution
ALLOW BLEED BACK TO SUPPLY RESERVOIR	* Periodic Test: bleed supply reservoir and observe gauges. Check valves should maintain rear and front reservoir pressure. * Replace it if results are negative.
AIR DRYER	
Issue	Solution
AIR LEAKING CONSTANTLY FROM PURGE VALVE	* Purge valve seal damaged. Replace. * Purge valve frozen.
HEATER INOPERATIVE	* Blown fuse. Check fuse and replace with 8 - 10 amp fuse. * Broken wires or poor connections. Repair or replace wiring to heater.
SLOW WET TANK BUILD-UP	* Filter and or desiccant plugged. Service air dryer.
PUSH-PULL PARKING BRAKE VALVE	
Issue	Solution
PARK BRAKE WON'T RELEASE	* Check for full system pressure.
PARK BRAKE WON'T APPLY	* Repair or replace if valve will not release pressure.
LEAKS AT EXHAUST PORT WITH SERVICE BRAKES APPLIED	* Check inversion relay valve #18.
LEAKS AT EXHAUST PORT WITH SERVICE BRAKES RELEASED	* Repair or replace

Bendix

The troubleshooting procedure presented below is from Bendix document BW1779. The procedure is not all inclusive but rather represents the most commonly encountered complaints.



[Bendix BW1779 / Troubleshooting Charging & Air Supply Systems](#)

Complaints Common To The Charging & Air Supply System

Complaint: Can Not Build System Pressure

- Discharge line plugged or restricted (See Common Test 1)
- Air pressure trapped between governor and compressor unloaders (See Common Test 2)
- Blow Leakage at Air Dryer Exhaust (See Common Test 3)

Complaint: Air system Builds Too Slow

- Discharge line restricted (See Common Test 1)
- Discharge line leakage (See Common Test 5)
- Air Leaking at Air Dryer Exhaust (See Common Test 3)
- Compressor head gasket failure
 - Apply soap solution around cylinder head. If leakage between head and block noted repair or replace comp.
- Air pressure trapped between governor and compressor unloaders (See Common Test 2)
- Air system leakage (See Common Test 4)

Complaint: Can Not Build System Pressure Above “X” psi.

- Blow leakage at compressor unloaders
 - Remove all hardware from comp. inlet then remove governor. With 120 psi shop air applied to comp. unloader port listen for leakage at inlet. If noted, repair leak or replace comp.
- Incorrect setting on governor
 - Verify Safety Valve operation. Drain air from system, remove or disconnect governor from comp. and install gauge in governor unloader (UNL) port. Build system pressure and note when pressure on dash gauge and test gauge are equal. Should be equal at maximum setting of governor.
- Discharge line leakage (See Common Test 5)
- Air system leakage (See Common Test 4)
- Compressor head gasket failure
 - Apply soap solution around cylinder head. If leakage between head and block noted repair or replace comp.

Complaint: Air Dryer Cycles “ON & OFF” Constantly

This complaint caused by leakage, either Service system or Supply system. Service system leakage is shown on dash gauges. Supply system leakage is not. Note: System purge air dryers will purge more often than those with integral purge volume.

- Service system leakage (See Common Test 4)
- Supply system component leakage
- Drain system, install gauge and shop air hose in place of drain cock in supply reservoir. Fill system to 120 psi, shut off shop air and check leakage on following components in order presented.
 - Comp. unloader leakage
 - Drain system, remove governor from comp. plug governor UNL port and re-test. If leakage OK repair comp. unloader mechanism or replace comp. If leakage NOT OK then next.
 - Holset ECON valve (used with Holset Type “E & QE” comp.) missing, malfunctioning, leaking
 - Is ECON valve required but missing? If YES, install, along with special Holset check valve w/choke. If NO and ECON valve present replace ECON valve and special check valve. If NO and ECON not required then next
 - Air dryer leakage
 - Remove line from air dryer inlet and with 120 psi in supply res. soap exhaust and inlet port of air dryer. If leakage greater than 1 inch bubble in 1 second at exhaust port, repair or replace check valve (on dryers with integral purge volume) or replace body assy. on system purge air dryers. If leakage greater than 1 inch bubble in 1 second at inlet port, repair or replace purge valve assy. (on dryers with integral purge volume) or replace turbo cut-off valve on system purge air dryers

Complaint: System Pressure Goes to 150+ psi

- Drain air system to 0 psi, remove/disconnect governor from comp.
- Start engine and note air pressure rise on dash gauges. Apply 120 psi shop air to comp. unloader port. If air pressure continues to rise, repair comp. unloaders or replace comp. If air ceases to rise, repair or replace governor.

Complaint: Low Pressure Warning After Only 1 or 2 Applications

- Brakes out of adjustment
 - Adjust brakes
- Excessive system leakage on service (application) side of system
 - Build system pressure to 120 psi and shut off engine. With park brakes released, make full service application and note dash gauges for 2 minutes. Pressure drop on either gauge should not exceed 4 psi. (2 psi per min.) If pressure drop excessive, find leakage in service system, if OK, then next.
- Incorrect low pressure switch in use or setting incorrect
 - Build system to 120 psi. Engine OFF ignition ON, slowly drain air pressure from one service reservoir. Low pressure warning on at minimum 60 psi, maximum 10-15 psi less than governor cut-in pressure.

Tests Common to More Than One Complaint

1. Discharge plugged or restricted
 1. Connect temporary discharge line from comp. discharge port to supply res. & re-check build-up. If build-up OK replace plugged discharge line. If build-up NOT OK go to next cause.
2. Air pressure trapped between governor and compressor
 1. Verify Safety Valve operation then remove or disconnect governor from comp. & check build-up.
 2. If build-up OK, repair or replace governor or line between gov. and comp.
 3. If build-up NOT OK repair or replace comp.
3. Blow Leakage at Air Dryer Exhaust
 1. Drain all air from Supply reservoir then remove control air line from Air Dryer, plug line and plug control port in Air Dryer. Re-check build-up.
 2. If build-up OK, repair or replace governor or line between governor and Air Dryer
 3. If build-up NOT OK, and below 32 deg. F, turn ignition ON and allow heater to warm Air Dryer then check build-up. If NOT OK, remove wire (connector or terminal) from Air Dryer. Using test light, check wire end or terminal for battery voltage with vehicle ignition ON. If voltage OK, repair or replace Air Dryer heater and thermostat. If voltage NOT OK, Repair or replace the vehicle wire connected to Air Dryer. Retest build-up.
 4. If build-up still NOT OK or temp. above 32 deg. F, replace Air Dryer purge valve assembly.
4. Air system leakage
 1. Build system pressure to governor cut-out, wait 2 minutes for dryer purge completion. Note pressures on dash gauges then watch dash gauges for 2 minutes. Leakage not to exceed 2 psi in 2 mins. for truck, bus, tractor (no trailer).
 2. If leakage NOT OK on gauges, find leak(s) in service and park system and repair. Retest and if system purge air dryer in use and still not OK repair or replace dryer.
 3. If leakage OK on gauges, drain air from supply reservoir, remove drain cock and install air gauge. Build system air in supply reservoir and note leakage. If OK continue checking. If NOT OK find leaks and repair.
5. Discharge line leakage
 1. Soap cover on flex discharge line, if leakage noted replace line
 2. Soap fittings to check leakage, tighten as needed

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