



PREVENTATIVE MAINTENANCE SCHEDULE
(FOR: AIR COMPRESSORS, AIR DRYERS AND BRAKE ACTUATORS)

Operating Time (in months)	3	6	9	12	15	18	21	24
Severe Service (miles in thousands)	5	10	15	20	25	30	35	40
Short Haul (miles in thousands)	25	50	75	100	125	150	175	200
Long Haul (miles in thousands)	50	100	150	200	250	300	350	400
Operating Time (in hours)	900	1800	2700	3600	4500	5400	6300	7200

TYPE OF SERVICE:

Air Compressor

**Midland Service
Literature no.**

Check (service only if necessary)								
Check air filter		X		X		X		X
Check compressor mounting bolts		X		X		X		X
Check unloader operation		X		X		X		X
Service (required maintenance)								
Unloader		SERVICE AS REQUIRED or every 400,000 miles (long haul)						X
Service Literature (preventative maintenance and installation requirements)								
Single cylinder air compressor EL850								L30005
Twin cylinder air compressor EL1300 and EL1600								L30002

Spring Brakes, Brake Chambers and Maxibrakes

Check (service only if necessary)								
Check mounting bolts, brackets, yokes and yoke pins		X		X				X
Check spring brakes and Maxibrake power spring			X	X		X		X
Check actuators for leakage (air / fluid)			X					X
Service (required maintenance)								
Replace brake diaphragms		SERVICE AS REQUIRED or every 400,000 miles (long haul)						X
Service Literature (preventative maintenance and installation requirements)								
Service brake chambers								L00003 (03-14)
Double diaphragm spring brakes								L00003 (03-05)
Maxibrake spring brakes								L00003 (03-15)

Air Dryers

Check (service only if necessary)								
Check dryer (moisture in system / purge time / heater)		X	X	X	X	X	X	X
Service (required maintenance)								
Service purge valve		SERVICE AS REQUIRED or every 400,000 miles (long haul)						X
Replace coalescent / air filter		SERVICE AS REQUIRED or every 100,000 miles (long haul)						X
Replace desiccant		SERVICE AS REQUIRED or every 400,000 miles (long haul)						X
Service Literature (preventative maintenance and installation requirements)								
Pure Air								L31041
Pure Air Plus								L31100

SEE REVERSE SIDE FOR CHECK / INSPECTION PROCEDURES

NOTE:

Application Duty Cycles:

Severe Duty = Transit Bus, Refuse Vehicles, Off Hi-way
Short Haul = Pickup and Delivery, Inner City, annual mileage 100,000 miles or less
Long Haul = Over the road vehicles annual mileage 100,000 or more
Do to various application requirements and environmental conditions, component may require servicing prior to the scheduled maintenance period.

Service Intervals:

If a component part does not pass the service inspection / Check, perform the required preventative maintenance as prescribed per Midland service literature.

Warranty Policy:

Preventative maintenance or component servicing is not warrantable.
Midland warranty will be void if preventative maintenance is not conducted

WARNING

When working on air system components the following precautions should be observed.

1. Stop the engine when working under a vehicle. Always block the vehicle wheels to prevent a fore or aft roll. Bleeding off system pressure may cause the vehicle to roll. Keep hands away from brake chamber push rods and slack adjusters; they may apply as system pressure drops.
2. Never connect or disconnect a hose or line containing air pressure. It may whip as air escapes. Never remove a component or a pipe plug unless you are certain all system air pressure has been exhausted.
3. Never exceed recommended working air pressure and always wear safety glasses when working with pressurized air. Never look directly into component ports or direct a pressurized air flow at anyone.
4. Never attempt to disassemble a component until you have read and understood all recommended procedures. Some components contain powerful springs and injury can result if not properly disassembled. Use only proper tools and observe all precautions pertaining to the use of those tools.

AIR COMPRESSORS

A. Mounting Bolt Torque Requirement:

- a) 3/8-16, 40 ft. lb.
- b) 7/16-14, 62 ft. lb.
- c) 1/2-13, 83 ft. lb.

NOTE: Applications may vary, consult your engine manufacturers service manuals for specifics.

B. Check Unloader Operation

- a) Disconnect tractor from any trailers or dollies.
- b) With the engine shut off, open the air tanks drain valve (wet, primary and secondary) and allow all of the air pressure to escape prior to closing the valve.

NOTE: If the vehicle air gauges are not easily read (5 psi increments) install a pressure gauge in the wet tank or in the governor line to the wet tank.

- a) Start the engine and run it at maximum governed speed.
- b) Using a stop watch, record the pressure build-up time from 85 to 100 psi. If necessary, repeat the test several times to verify the accuracy of the results.
 1. 25 seconds or less no service is required.
 2. 26 seconds or more require unloader servicing.

NOTE: The best way to evaluate a compressor's performance is to compare today's build-up time to what it was originally. If the build-up time has increased more than 30%, service the unloaders (i.e. original build-up time was 10 seconds then at 13 seconds service the unloaders).

AIR COMPRESSORS (cont.)

- c) If build-up time remains slow after servicing the unloaders, check for blocked or restricted discharge line, air dryer, or inlet air filter (if used).

NOTE: Depending on engine govern speed, air tank capacity and the compressor size, build-up times may vary slightly.

C. Compressor Air Filter Inspection.

- a) Hold a strong light next to the air filter. If the light passes through the filter, consider it suitable. If any dark spots are noticed replace the filter. Midland does not recommend cleaning the filter with compressed air or solvents.

Service literature #L30002 (EL1300-EL1600) and L30005 (EL850).

BRAKE ACTUATORS

A. Chamber Mounting Bolt torque requirement:

- a) Type 12 and 16 30 ft. lb.
- b) Type 20, 24 and 30 80 ft. lb.

NOTE: All tests should be done with the engine off, wheels blocked and at full system pressure (120 psi). If the vehicle air pressure decreases rapidly during this inspection we recommend the use of shop air to maintain vehicle air pressure only.

B. Air Leakage Test (Parking/Emergency Brakes Released)

- a) Have the driver release the parking brake and emergency brakes.
- b) With a stethoscope listen to each spring brake actuator for the sound of air leakage. If needed, apply liquid soap to all air line connections and at the seam between actuator housing and the diaphragm cover.

NOTE: Minor air leaks in the seam area around the diaphragm may be corrected by tightening the assembly clamp band.

C. Air Leakage Test (Brakes Applied)

- a) With parking brake released have the driver make a hard brake application.
- b) With a stethoscope listen to each spring brake actuator and service chamber for the sound of air leakage. If needed apply liquid soap to all air line connections and at the seam between actuator housing and the diaphragm cover.

NOTE: Minor air leaks in the seam area around the diaphragm may be corrected by tightening the assembly clamp band.

D. Parking Brake/Emergency Brake Test (Air)

- a) Have the driver release and apply the parking brake/emergency brakes several times.
- b) Look at the slack adjuster as the parking brake valve is being applied and released. Every time you hear the exhaust of air, the slack adjusters should move and apply the parking brake/emergency brake.

NOTE: If the vehicle fails this test it should be immediately placed in "Dead Line Status".

BRAKE ACTUATORS (cont.)

E. Fluid Leakage Test (Hydraulic Maxibrakes)

- a) Inspect the outside of the canister for any signs of shiny wet oil, this is a sign of leakage. The vehicle should be placed in dead line immediately. Dull dirty film is a sign of weepage and requires no action.

F. Parking Brake (Hydraulic Automatic Transmission Vehicles)

- a) With the parking brake applied start the engine.
- b) Apply the service brakes and place the vehicle in drive.
- c) Slowly release the service brakes. If the vehicle starts moving, the vehicle has failed the test. Immediately place the vehicle in dead line status. Do not exceed idle speed.

G. Parking Brake (Hydraulic Standard Transmission Vehicles)

- a) With the parking brake applied start the engine.
- b) Apply the service brakes and place the vehicle in first gear.
- c) Slowly release the service brakes and ease up on the clutch. If the vehicle starts moving, the vehicle has failed the test. Immediately dead line the vehicle. Do not exceed idle speed.

AIR DRYERS

NOTE: To perform the test properly, completely drain the wet tank prior to a day in service. Allow the vehicle to complete it's normal daily route. At the end of the day perform the following test:

A. Air dryer performance Inspection:

- a) With a container under the wet tank drain valve (petcock), open the drain valve and collect the moisture that has accumulated in the wet tank, (for the one day of service).
- b) Measure the amount of moisture in the container.
 - 1) 2 ounces or under the dryer is functioning properly.
 - 2) 3 ounces or more verify the purge time is greater than 17 seconds. If so, replace the coalescent filter and desiccant canister.

NOTE: Dryer purge time is the time in seconds that it takes to drop the purge volume pressure from 120 psi to 5 psi.

Service literature L31100 (Pure Air Plus) and L31041 (Pure Air).