
Date	Group	No.	Page
8.2003	500	012	1(3)

General Safety Practices
Brakes and Air Systems
VN, VHD

General Safety Practices

The following information covers General Safety Practices for components related to brakes and air systems.

There is no substitute for common sense and careful practices in the workplace. Improper practices or carelessness can cause burns, cuts, mutilation, asphyxiation, or other bodily injury or death.

This information contains general safety precautions and guidelines that must be followed to reduce risk to personal safety. Special safety precautions are listed in specific procedures when they apply.

Read and understand all of the safety precautions and guidelines before performing any repair.

Contents:

- [“General Safety Practices” page 2](#)
- [“Inspection” page 2](#)
- [“Operation Test” page 2](#)
- [“Air Leak Test” page 2](#)
- [“Asbestos Warning” page 3](#)

General

General Safety Practices

For further information refer to "General Safety Practices" page 1.

DANGER

Before working on a vehicle, set the parking brakes, place the transmission in neutral and chock the wheels. Failure to do so can result in unexpected vehicle movement and can cause serious personal injury or death.

WARNING

Before beginning any service work on any part or the air system, be certain that the air pressure has been released. Failure to do so may cause components to violently separate causing serious eye and or personal injury.

WARNING

Always wear appropriate eye protection to prevent the risk of eye injury due to contact with engine debris or fluids.

WARNING

HOT ENGINE! Keep yourself and your test equipment clear of all moving parts or hot engine parts and/or fluids. A hot engine and/or fluids can cause burns or can permanently damage test equipment.

WARNING

Do not work near the fan with the engine running. The engine fan can engage at any time without warning. Anyone near the fan when it turns on could be seriously injured. Before turning on the ignition, be sure that no one is near the fan.

Inspection

It is of the utmost importance that the compressor receives a clean supply of air. The air strainer must be properly installed and kept clean. If the compressor intake is connected to the engine air cleaner, this connection must be properly installed and maintained. Check the drive for proper alignment belt tension, etc. Inspect the oil supply and return lines. Be sure these lines are properly installed and that the compressor is getting the proper supply of oil, and just as important that the oil is returning to the engine. Check the coolant lines to and from the compressor. Check the unloader mechanism for proper operation.

Operation Test

Vehicles manufactured after the effective dates of FMVSS 121, with the minimum required reservoir volume, must have a compressor capable of raising the air system pressure from 585-690 kPa (85-100 psi) in 25 seconds or less. This test is performed with the engine operating at maximum recommended governed speed.

Air Leak Test

Air leaks past the discharge valve can be detected as follows:

- 1 Remove the discharge line and cylinder head from the compressor and apply shop air back through the discharge port.
- 2 Coat the discharge valve seats with soapy water.

Note: Air leaks should not exceed a one inch diameter soap bubble in 3 seconds.

The unloader pistons can be checked for air leaks as follows:

- 1 Build up the air system to governor cut out and shut the engine off.
- 2 Listen for escaping air at the compressor intake.
- 3 To pinpoint air leaks, apply a small amount of oil around the unloader pistons.
- 4 No leaks are permitted. If the compressor does not function as described above, or leakage is excessive, replacement is recommended.

Asbestos Warning



WARNING

Some linings contain asbestos fibers, which can pose a possible cancer hazard. When working around asbestos brake linings avoid creating dust and wear an approved dust mask or respirator.

- Having the brake work area separate and marked.
- Using an air purifying respirator with efficiency filters for asbestos dust. (OSHA no longer considers disposable masks acceptable).
- Cleaning the brake assembly with a vacuum cleaner with a high efficiency filter.
- Never using compressed air to clean the brake assembly.
- Using special brake cleaning fluids if a vacuum is not available.
- Having special vacuums, filters and ventilation arrangements with high efficiency filters in rooms where grinding of brake linings is done.
- Always wearing a respirator in the room where grinding of brake linings is done.
- Cleaning brake work areas with special vacuums and wet wiping with industrial cleaners.
- Never using brooms to dry sweep brake work areas.
- Always washing hands and face after brake work.
- Never wearing work clothes home after doing brake work. Work clothes should be vacuumed and laundered, without shaking, after use.