

1. WARNING

Brake linings are part of the brake system. Therefore they are vital parts regarding safety. Accordingly, all the present operations shall be performed with the greatest of care. Brake linings must thus be replaced by personnel having the necessary skills. Incorrect work can cause the complete failure of the brake system.

- Never allow brake linings, drums, pads, brake shoes etc. to come into contact with grease, oil, other lubricants or cleaning products based on mineral oil as this could cause brake failure. If necessary, replace all contaminated parts.
- Never use pointed tools because their incorrect use could cause damage.
- Only use special tools (torque wrenches, spring pliers etc.)
- If you see any signs of damage on any part of the brake system during your work, repair them correctly before putting the vehicle back into service.

2. DISASSEMBLY

Before working on the brake system, set up a sign on the steering wheel indicating : «Vehicle under re-pair». Chock the wheels in contact with the ground, lift the vehicle and check that it is stable. Start work on one brake of one axle at a time, using the other brake as a guide for the correct positioning of the parts on assembly. The method of work shall be the same for the two sides of the same axle.

- Do not operate the brakes when the drum has been removed.
- The return and retaining springs of the shoes are under mechanical tension. Release them in a controlled manner. They should not be loose or deformed.
- Having removed the shoes, use a spring pliers to maintain the pistons of the wheel cylinder in place.

To ease the removal of the drum, release the play compensation system in accordance with the instructions of the brake manufacturer.

In the case of a separate structure (hub/drum), remove the drum alone. For the monobloc structures, remove the grease cap, if there is one, and remove the attaching nut.

Take out the taper roller bearing of the cage bearing and remove the hub using an appropriate hub-puller. Protect the bearings from dirt.

Note the positions and orientations of the various parts to be removed. If necessary make a drawing.

Remove the devices retaining the shoes (e.g., bearing springs, tension springs), by means of an appropriate pair of pliers. Remove the shoes, and if necessary, unhook the parking brake cable.

3. PRECAUTIONS ON ASSEMBLY

Clean the shoes and the parts of the brake reused with cleaning products that are not based on mineral oil (e.g. containing methyl alcohol).

Do not clean the brakes with compressed air, a stiff brush or a similar object as this could cause generate dust liable to endanger your health if inhaled. Wear a mask if you are working in a badly ventilated place.

All the mechanical parts must move freely and be in good condition.
Grease lightly the moving parts of the brake as recommended by the manufacturer.

Make sure that the grease is not in contact with the material of the linings of the bearing surface of the drum and this could cause defective braking.

Simultaneously push back the brake cylinder pistons as far as possible, while applying regular pressure. Lock them in position using a pair of spring pliers.
Do not spill any of the brake fluid contained in the cylinder by draining, if necessary, some of the fluid into a suitable recipient.

In the event of mishandling, the brake fluid can cause serious damage or injury. Follow the instructions of the brake fluid manufacturer.

Make sure there is no leakage from the cylinders (presence of fluid under the protection bellows). In the event of leakage, it will be necessary to replace the brake cylinders for the complete axle and purge the circuit.

The drum diameter shall not exceed the permitted wear tolerance. In the event of cracking or deep fractures, the drums of an axle may be reground to within the permitted tolerances of the manufacturer or both drums of an axle may be replaced.

If the drums are reground, choose an overthickness size of lining in order to compensate for the increased inside diameter of the drum.

Assemble the parts in the opposite order to disassembly, ensuring that each component is properly positioned. After installing a drum, tighten the nut to the prescribed torque load and grease the bearings lightly.

4. ADJUSTING THE BRAKES

Comply with the manufacturer's instructions for the adjustment operation described here. On adjustment, the level of the brake fluid in the cylinder may vary. Top it up from time to time, using only the new fluid recommended by the maker.

Bring the brake linings into contact with the drum by means of the manual adjusting device and release it enough for the drum to be able to turn freely.

Do not adjust the parking brake until the two brakes on the same axle have been adjusted. Tighten the handbrake adjusting device or that of the mechanical brake linkage until the specific action stroke of the control device is correct.

If the event of light action, the brake couple on the two wheels of the axle shall be the same when the vehicle is on chocks. After releasing the brake, the two wheels on the axle should turn freely.

If you are using an automatic adjusting device, the necessary adjustment can be obtained by operating the brake pedal or the parking brake several times. The process is complete when the effective travel of the pedal and of the parking brake is stable and should not exceed about one third of the overall travel of the pedal while the travel of the parking brake should correspond to the manufacturer's instructions.

5. OPERATING TEST

Once the wheels are put back on the vehicle and tightened to the correct torque, with the vehicle on the ground, check out the following points :

Operate the brake pedal several times and check that the stroke of the pedal has stabilised at about one third of total travel, the travel shall not vary.