

1 Safety instructions and hints

This instruction will support workshop specialists to assemble a Clutch Servo with a 3/2 way valve on the clutch bell housing and initialize its function.



Fig. 1-1: Clutch Servo - Semi-modular range



Fig. 1-2: Clutch Servo - Modular range

Before starting work, please do the following:

- It is essential that you read these instructions carefully and observe the contents in order to avoid personal injury and/or material loss.
- The reliability of the WABCO Clutch Servos can only be guaranteed if the information provided here is adhered to.
- Only workshop personnel with specialist knowledge of the compressed-air braking system may perform repair or tests of Clutch Servos.
- Always follow specifications and instructions of vehicle manufacturer.
- Always comply with the company and national accident prevention/health and safety regulations.

WARNING Danger of injury due to vehicle rolling!



Before you perform any work on the vehicle, ensure the following:

- Switch the gearbox to "neutral" and actuate the hand brake.
- Secure the vehicle with brake wedges.
- Attach clearly marked note on steering wheel saying that work is being performed on the vehicle and that pedals must not be applied.

2 Requirements

Additionally recommended Documents

„General Repair and Test Instructions“ to be found on www.wabco-auto.com by entering the index word „Repair“ in INFORM.

3 Disassembly

CAUTION



Risk of injury!

- Secure Clutch Servo against falling.
- Never actuate a Clutch Servo if it is not fitted onto the clutch bell housing because of risk of accidents and the device could be damaged.
- Do not move the push-rod in any way, this may cause a malfunction on Clutch Servo and/or gear box.

- Discharge air reservoir.
- Mark piping with port numbers before disconnection.

CAUTION



Risk of injury!

Be careful of fluid leakage when removing piping. It may injure eyes and skin or damage paint.

- If it is not possible to hang or block up the hydraulic hose in the upward position over the hydraulic reservoir, fix the clutch pedal in the actuated position to prevent from losing all fluid.
- Disassemble the old Clutch Servo.
- Clean flange surface of clutch bell housing if necessary.
- Empty hydraulic fluid from old Clutch Servo and dispose according to national regulations.

4 Assembly

- Refer to vehicle manufacturer's documentation to obtain required torque for fixation of screws and piping.
- Identify device's product number by name plate to ensure correct replacement.
- Remove protection caps from new device. Ensure there is no dirt contaminating the ports.



The Clutch Servo's 3/2 valve ensures proper control of gear change while the clutch is disengaged, and no torque is being transmitted from the engine. For correct initialization of the 3/2 valve after fitting on the clutch bell housing, the rod return stroke of the Clutch Servo must be more than 26 mm during first operations

To control the stroke; the following measures have to be done while assembling:

- Hold the Clutch Servo in front of the flange (clutch bell housing) and place the push-rod properly into the clutch fork or lever.
- Push slightly against the fork to take out clearance without back stroke of the rod in the Clutch Servo.
- Hold the Clutch Servo in the position so that the flange surfaces of clutch bell housing and Clutch Servo are parallel.
- Measure the distance between both flanges.
➔ The result must be more than 26 mm.
- If the result of measure is less than 26 mm; check whether the Clutch is damaged (e.g. the fork is not properly placed in its bearing)

! Do not proceed to fit the Clutch Servo if the measurement is less than 26 mm since the appropriate stroke is required to correctly initialize the function of the 3/2 way valve.

- Push the Clutch Servo against the clutch bell housing and screw in 2 fixing screws in opposite corners of the flange.
- Screw in the 2 other screws engaging the Clutch Servo with the clutch bell housing.
- Tighten all mounting screws in cross-over series using torque defined by the vehicle manufacturer.
- Connect the pneumatic hose except Port 22 at the 3/2 way valve.
- Connect the hydraulic hose. Ensure that, from view of the master cylinder, the hose always points downwards.
- Ensure that the hydraulic reservoir contains the correct liquid and level, and bleed the hydraulic network.
- Charge the air reservoir.
- Check the clutch pedal feeling and load with a few actuations.
- Check Port 22 for correct function of the valve.
- ➔ No air at Port 22 when pedal is not actuated (Up position)
- ➔ Air pressure at Port 22 when pedal is depressed (Down position)

5 Functional Test

! Heed the national laws and specifications of the vehicle manufacturer.

- Check all pipings for possible leakage and correct any defects.
- Check for instantaneous reaction of the clutch when the pedal is actuated.
- If the reaction is delayed, check for bends in the piping and possible bleeding.
- Check for proper gear change during the test drive.