1 Important instructions and safety instructions

- It is essential that you read these test instructions carefully and observe the contents in order to avoid personal injury and/or material loss.
- The reliability of the WABCO hand brake valves 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 tests of the hand brake valves.
- Always follow specifications and instructions of vehicle manufacturer.
- Always comply with the company and national accident prevention/ health & safety regulations.

WARNING

Danger of injury due to vehicle rolling!

Before you perform any installation 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 brake must not be applied.

CAUTION

Danger of bodily injury!

Undo the screw plugs, hoses and equipment parts only when the respective lines have been vented.

2 Preconditions

- Perform the following test steps in the specified order.
- Only start testing after you have read and understood all information required for testing.
- Test the device only on a calibrated test bench.
- In case of doubt, use test values specified by the vehicle manufacturer.
- If test values do not fit, the device must be readjusted.
- Reservoir pressure is 10 bar max.
- Do not install a repaired device in the vehicle unless it has passed the following tests.

Additionally Recommended Documents:

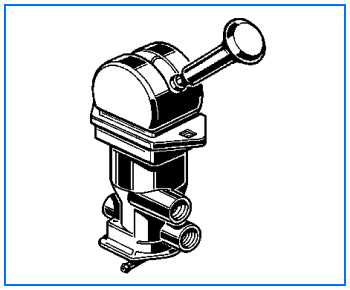
- Test Bench 435 197 000 0 - Operating Instructions
- General Repair and Test Information

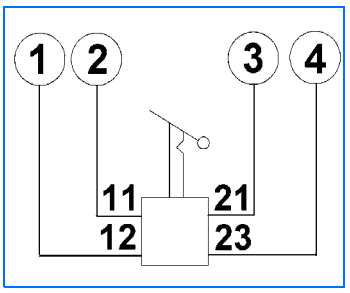
The documents are available on the WABCO website:
http://www.wabco-auto.com
Simply enter the product or document number in INFORM.

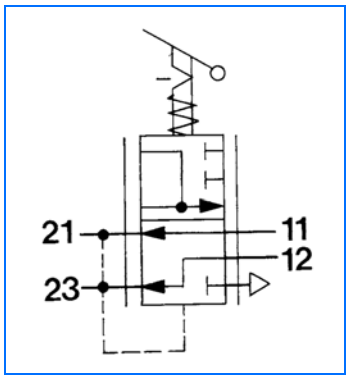
Equipment/tools required:

- Test bench 435 197 000 0 or adequate testing equipment
- Workholding fixture for clamping the hand brake valve in a vice
- Soapsuds and brush

3 Test







3.1 External evaluation

– Inspect device for external damage.

– Check all ports of the device for contamination by carrying out a visual inspection.

3.2 Preparations

Test bench

– Ensure before starting any test that the shut-off cocks are in their correct normal position. The output side of pressure regulator D must be pressureless.

Shut-off cocks	A	B	C	F	L	V	2	3	4	6	7	11	12	21	22
on	x												x		x
off		x	x	x	x	x	x	x	x	x	x	x		x	

Tabelle 1: Normal position of stopcocks on the test bench

CAUTION **Damage to the device!**

Never clamp the device into the vice directly! Fasten it to a suitable workholding fixture first to avoid damaging the device.

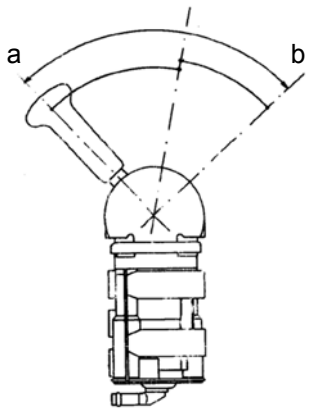
– Connect the device to test bench ports or according to test diagram.

CAUTION **Danger of bodily injury!**

Make sure that plug-in connections on test bench and device are plugged-in securely.

3.3 Leakage test

– Charge ports 11 and 12 with 9.7 $^{+0.3}$ bar.



a = Driving position
b = Locked position

Put hand lever into driving position

– Check tightness:
  - on the entire device
  - on the air vent
  - on the base plate
  - on the air vent and the base plate while the hand lever is at a position of 8°

Permissible leakage of the entire device at 20° C: max. 20 Ncm^3/min

Move the hand lever into 30° position

– Check tightness at air vent and base plate.

Permissible leakage of the entire device at 20° C: max. 50 Ncm^3/min

Put hand lever into parking position

– Check tightness at air vent and base plate.

Permissible leakage of the entire device at 20° C: max. 50 Ncm^3/min

Put hand lever into test position

– Check tightness at air vent and base plate.

Permissible leakage of the entire device at 20° C: max. 50 Ncm^3/min

3.4 Functional test

– Actuate hand lever.

Port 23 (pressure gauge 4) must be vented to 0 bar between 3° and 8°.

At 10° the pressure at pressure gauge 3 must drop to 5.9 +0.3/-04 bar.

– Continue to actuate hand lever.

At 67° the point of pressure must be reached.

– Move the hand lever into locked position (73°).

Pressure gauge 3 must indicate 0 bar.

– Release hand lever.

The hand lever must move back into driving position automatically. During this process the pressure on pressure gauge 3 must reach 9.7 $^{+0,3}$ bar.

Graduation during charging and venting must be max. 0.2 bar.

– Before disconnecting the hose connection, vent the device to 0 bar.

– Clean device and unclamp.