KNOTT
Brakes - Axles

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TECHNICAL INFORMATION
Automatic Adjuster for Hydraulic Servo Brakes
Functional Characteristics and Mounting Instructions

1. Functional characteristics of hydraulic servo brakes

The functional principle of this brake is the application of the two brake shoes in the brake drum after expansion of the wheel cylinder. One brake shoe (primary shoe) is driven in the sense of rotation of the brake drum. The secondary shoe, determined by its floating suspension, rests against an upper fixed stop at the brake plate. The resulting travel of the brake shoes is used to actuate the automatic adjuster.

2. Automatic adjuster

2.1 Function and working method

By means of an adjusting bolt **(1)**, the primary shoe pushes a sleeve **(2)** through a U-shaped bracket **(3).** At the same time this acts as the bearing bracket. The thrust movement causes the adjusting lever **(4)** to be actuated by an adjusting disc **(5)** and to migrate to the side as the result of transmission. As soon as the braking process is completed, the shoes return to their ideal position and are supported by the compression spring **(6)**. This serves as a centering point. A toothed-adjusting wheel **(7)** is rotated as a result of the adjusting lever engagement. This is tensioned by a compressed spring **(8)** and is restored by the support of the compression spring **(6)** and the adjusting disc **(5)**. In this way, the adjusting bolt **(1)**, where the brake shoe is mounted, is unscrewed. This adjusting process per braking action is repeated until the sliding movement of the primary brake shoe is no longer sufficient to overcome a fixed clearance marked in the adjusting lever. This set clearance ensures that the diameter of the brake remains constantly adjustable at a certain dimension.

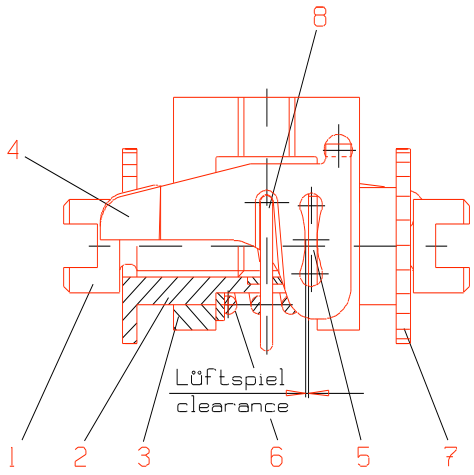

Bild 1
fig. 1

The automatic adjustment function is equally effective for forward or reverse travel.

MAINTENANCE AND SETTING INSTRUCTIONS

3. Maintenance

The automatic adjuster must be examined in the course of every periodic brake inspection by making a visual check for damaged components.

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Note:
No repairs may be carried out on the automatic adjuster. If necessary, the entire adjuster unit must be exchanged.
The adjuster is largely maintenance-free. All that is necessary is to lightly grease the thread of the adjusting bolt **(1)** when dismantling the brake shoes with a heat-resistant grease (at intervals of max. 500 hours).

When soiled, the adjuster may only be cleaned using compressed air. Do not dismantle individual components.

4. Setting specification:

Brake setting is essential when:

4.1 Renewing, removing or mounting the automatic adjuster.

4.2 Mounting new brake shoes and brake drums at all stages of repair.

4.3 Repair work on the brake, when the basic setting of the threaded bolts (Fig. 2) has been altered at the automatic adjuster.

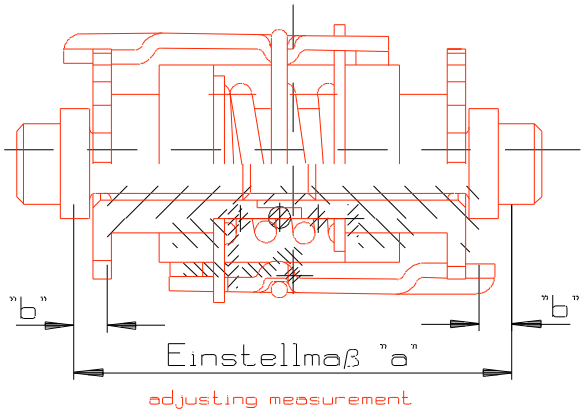

Bild 2
Fig. 2

Setting work, as well as checking the clearance between the brake shoes and brake drum must be carried out when the brake is cold. The driving and parking brake must always be adjusted together.

5. Setting procedure:

During setting, the parking brake must be released (the cables should not be tensioned).

5.1 Jack up the vehicle.

5.2 Release the brake cables

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5.3 Remove the brake drum

Caution:
With run-in brake drums, remember that when resetting the adjusting wheel, it is locked by the adjusting lever. *Do not use force.* Carefully raise the adjusting lever using a screwdriver or similar tool through the opening in the brake plate to permit the adjusting wheel to turn freely.

5.4 Adjust setting dimension "A" (see Fig. 2) in accordance with the following breakdown by adjusting screw **(1)** of the automatic adjuster.

Adjuster Part Number	Setting Dimension "A"	Brake Size (mm)
36113.01	54	160x35, 170x40, 200x50
36130.01/.02 36156.01/.02	60 60	200x40 203x60
35856.01/.02	79	203x60, 200x40
35878.01/.02	85	245x60, 300x55
35914.01/.02 35914.03/.04	79	228,5x50, 245x60, 250x55 230x50, 260,4x57, 267x64
35916.01/.02/.02	84/80	250x60, 270x60, 310x60
35959.01	85	
36160.01/.02/.03 36160.01/.02/.03 36165.01	100 100 100	315/325x80, 400x80 432x90, 438,2x102 270x60

Note:
During this setting work, take care to ensure an even distance "B" of the adjusting screws **(1)** to the relevant adjusting wheel **(7)**.

5.5 If necessary, adjust this evenly at the two adjusting gears **(7)**, as specified in the instructions after checking the brake diameter.

Note:
Precise adjustment of the relevant brake diameter is of decisive importance for the function of the automatic adjuster. An insufficiently high setting could result in damage to the adjuster.

5.6 Adjust the brake cables in such a way that the relevant brake diameter is not altered.

Note:
The brake cables may not be pretensioned. Otherwise it is not possible to guarantee perfect function of the adjuster.

5.7 Mount the brake drum.

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5.8 Release hexagon bolt for fastening the automatic adjuster.

5.9 Actuate the brake several times to center the brake shoes/adjuster in the brake drum.

5.10 Tighten hexagonal screw with following tightening torque:

	TYPE OF FASTENING		
SCREW SIZE	HEXAGON SCREW GRAD 8.8 W/ WASHER & SPRING WASHER	HEXAGON SCREW GRAD 8.8 W/ NORD - LOCK WASHER	SAFETY SCREW PROPERTY CLASS 100 (Verbus Ripp, Kamax Ripp Durlok, Tensilock)
M 8	23 + 5	27 + 5	42 + 5
M 10	45 + 5	53 + 5	80 + 5
M 12	80 + 10	90 + 10	140 + 10
M 12 x 1,5	85 + 10	100 + 15	150 + 15
M 14	110 + 15	120 + 20	225 + 20

5.11 Tighten the hand brake lever in accordance with the latch specification of the vehicle manufacturer. The wheels should be equally difficult to turn in this setting.

Caution!
Correction of wheels which are not equally difficult to turn may only be carried out at the brake cables and not at the automatic adjuster.

5.12 Lower the vehicle.

5.13 Carry out approx. 10 stops (not emergency braking) with a starting speed of around 10 kph in forward/reverse travel. Observing the braking characteristics of the vehicle. The automatic adjuster is now ideally set.

This setting procedure must always be carried out on all the brakes of the vehicle.