

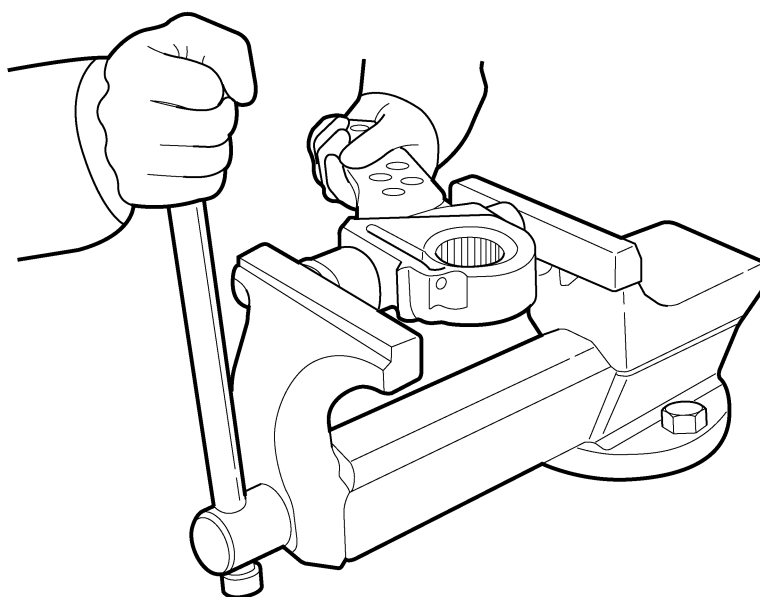
SCANIA

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Issue 1 en

Wheel brake components brake slack adjusters

Work Description



9122317

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Brake slack adjuster, manual adjustment

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Brake slack adjuster, automatic adjustment

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Work Description

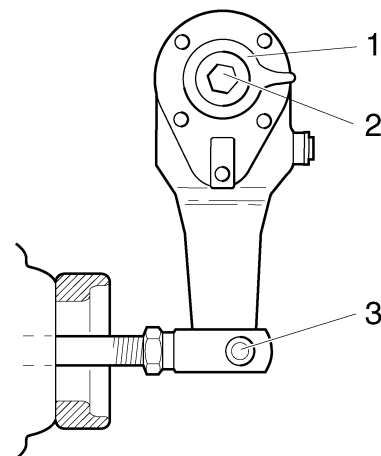
Brake slack adjuster, manual adjustment

Removal

- 1 Remove the split pin and pivot pin 3 on the brake chamber push rod.
- 2 Remove bolt 2, which holds the brake slack adjuster, and remove wear indicator 1.
- 3 Remove the brake slack adjuster.

Fitting

- 1 Fit the brake slack adjuster to the brake eccentric shaft so that the arrow on the adjuster shows the direction it will move during braking.
- 2 Fit wear indicator 1 and bolt 2 which hold the brake slack adjuster. With new brake linings, the wear indicator should point horizontally.
- 3 Fit pivot pin 3 and the split pin to the brake chamber push rod.
- 4 Check push rod basic setting and, if required, adjust the brake slack adjuster, see Adjustment.



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Setting

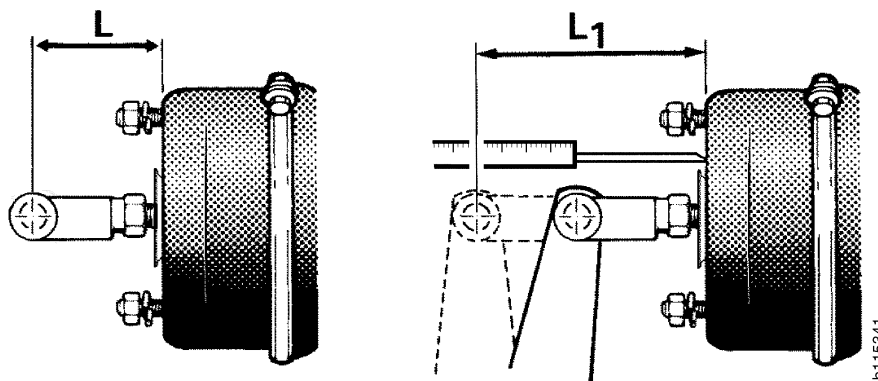
Measuring push rod basic setting

Description

- 1 Release the parking brake pressure by at least 6 bar.
- 2 Remove the pivot pin from the push rod link yoke.
- 3 Measure basic setting L , adjust if required.
- 4 Fit the pivot pin.
- 5 Fully depress the brake pedal. Measure brake position L_1 .

6 Calculate stroke length $L_2 = L_1 - L$.

7 If the stroke length exceeds the maximum permissible, the brake slack adjuster must be adjusted. See Adjusting.



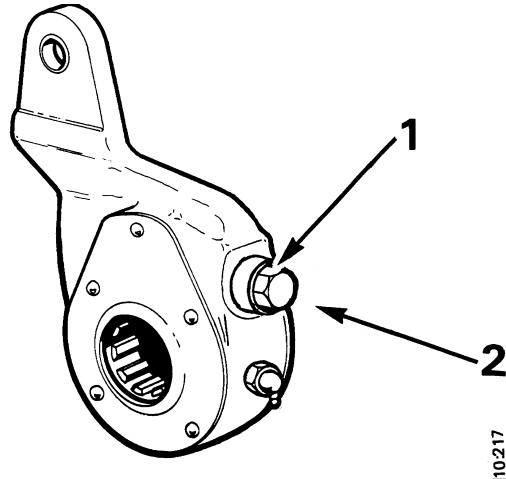
Cylinder size	Outer diameter (above strap)	Basic setting L	Brake position L_1	Stroke length L_2	
16	165 mm	69-71 mm	94-115 mm	25-44 mm	
20	176 mm	69-71 mm	94-115 mm	25-44 mm	
24	186 mm	69-71 mm	94-115 mm	25-44 mm	
30	210 mm	69-71 mm	99-122 mm	30-51 mm	
24	at the rear of HK and all wheel drive vehicles	186 mm	214-216 mm	239 - 260 mm	25 - 44 mm
30		210 mm	214-216 mm	244 - 267 mm	30 - 51 mm
24	on the second rear axle on 6x4 heavy-duty tractors	186 mm	259-261 mm	284 - 305 mm	25 - 44 mm
30		210 mm	259-261 mm	289 - 321 mm	30 - 51 mm

Adjusting

Brake slack adjusters with manual adjustment must be adjusted as brake linings can wear.

- 1 Lift up the axle.
- 2 Check brake chamber stroke length. See Measuring push rod basic setting.
- 3 Rotate the wheel whilst pressing in lock sleeve 1 and fitting adjusting screw 2.
- 4 When the wheel cannot be rotated manually, unscrew the adjusting screw a half turn so that the brake lining comes free from the brake drum.

Note: Ensure that lock sleeve 1 comes out and locks the adjusting screw.



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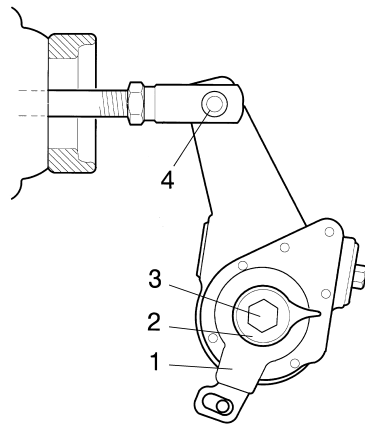
Brake slack adjuster, automatic adjustment

Removal

- 1 Remove the split pin and pivot pin 4 on the brake chamber push rod.
- 2 Remove bolt 3, which holds the brake slack adjuster, and remove wear indicator 2.
- 3 Remove the nut or bolt holding guide arm 1. Remove the brake slack adjuster.

Fitting

- 1 Fit the brake slack adjuster to the brake eccentric shaft so that the arrow on the adjuster shows the direction it will move during braking.
- 2 Fit wear indicator 2 and bolt 3 which hold the brake slack adjuster. With new brake linings, wear indicator 2 should point horizontally.
- 3 Fit pivot pin 4 and the split pin to the brake chamber push rod.
- 4 Check push rod basic setting, see Setting, Measuring push rod basic setting.



- 1 *Steering arm*
- 2 *Wear indicator*
- 3 *Screw*
- 4 *Pivot pin*

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Setting

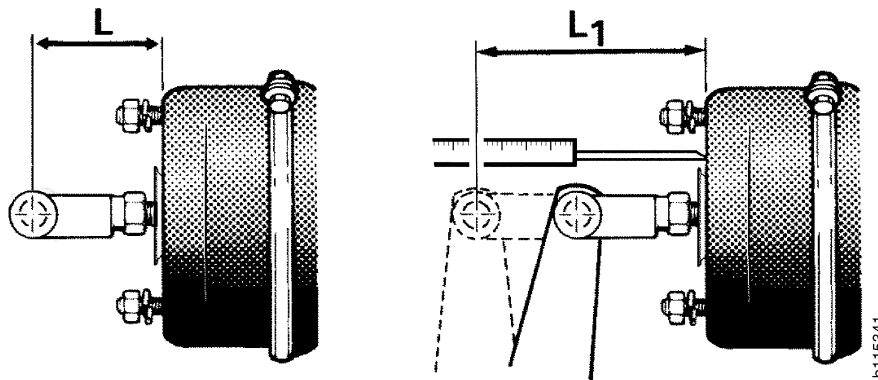
Measuring push rod basic setting

Description

- 1 Release the parking brake pressure by at least 6 bar.
- 2 Remove the pivot pin from the push rod link yoke.
- 3 Measure basic setting L , adjust if required.
- 4 Fit the pivot pin.

5 Fully depress the brake pedal. Measure brake position L_1 .

6 Calculate stroke length $L_2 = L_1 - L$.



Cylinder size	Outer diameter (above strap)	Basic setting L	Brake position L_1	Stroke length L_2	
16	165 mm	69-71 mm	94-115 mm	25-44 mm	
20	176 mm	69-71 mm	94-115 mm	25-44 mm	
24	186 mm	69-71 mm	94-115 mm	25-44 mm	
30	210 mm	69-71 mm	99 - 122 mm	30-51 mm	
24	at the rear of HK and all wheel drive vehicles	186 mm	214-216 mm	239 - 260 mm	25 - 44 mm
30		210 mm	214-216 mm	244 - 267 mm	30 - 51 mm
24	on the second rear axle on 6x4 heavy-duty tractors	186 mm	259-261 mm	284 - 305 mm	25 - 44 mm
30		210 mm	259-261 mm	289 - 312 mm	30 - 51 mm

Adjusting

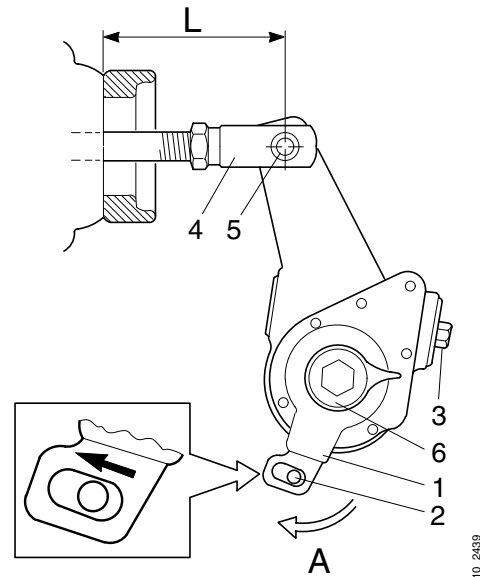
- 1 Raise the relevant wheel. Place chocks in front of and behind at least two wheels and release the parking brake.
- 2 Unscrew support pin 2 through the rectangular hole in guide arm 1. Adjust the position of the slack adjuster by turning worm screw 3 until the hole for pin 5 in the slack adjuster coincides with push rod link yoke 4. Fit pivot pin 5.
- 3 Press guide arm 1 in direction A until there is a stop in brake direction.

Note: Check that the basic setting (measurement L) remains unchanged during adjustment.

- 4 Lock support pin 2 with the lock nut.
- 5 Lock the guide arm with a washer and bolt or nut.
- 6 Turn the eccentric shaft with worm screw 3 clockwise at the same time as the wheel spins. Turn until the lining is in contact with the brake drum (the wheel cannot be rotated manually).
- 7 Turn the worm screw 3/4 of a turn anti-clockwise. The brake slack adjuster now has its basic setting.

Note: The worm screw may only be turned using a hand tool.

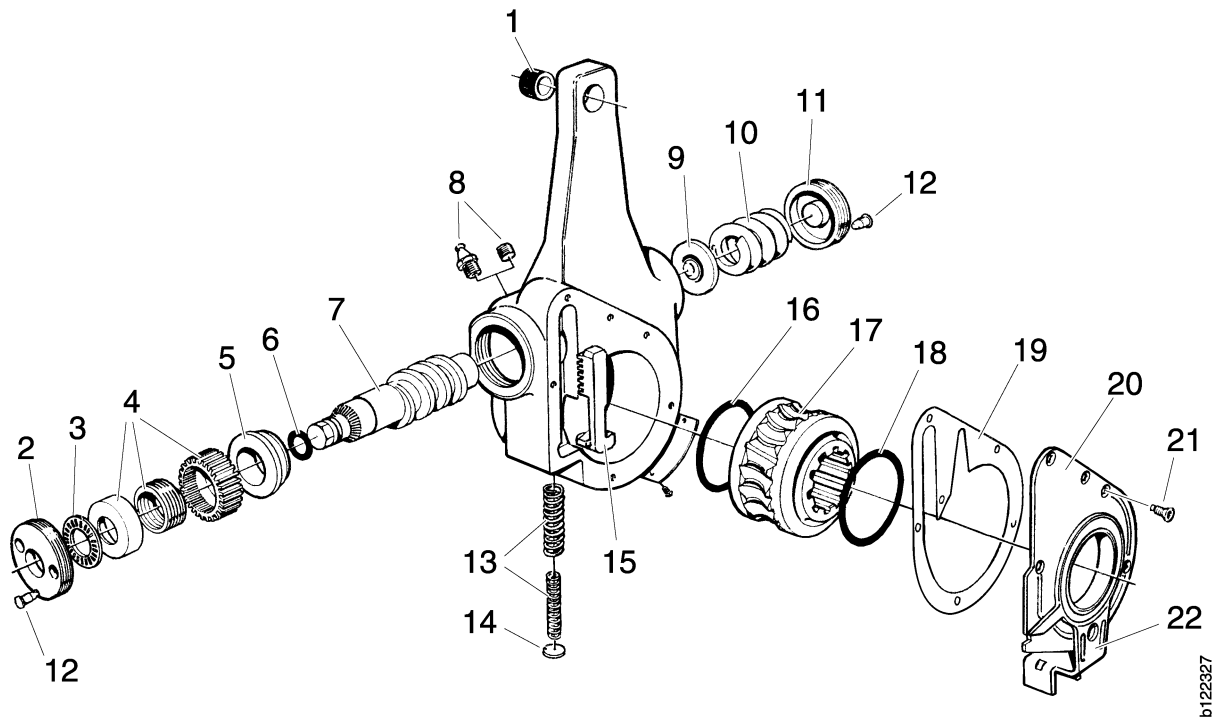
- 8 Apply the parking brake and lower the wheel.



- 1 Steering arm
 - 2 Support pin
 - 3 Worm screw
 - 4 Link yoke
 - 5 Pivot pin
 - 6 Wear indicator
- A = Direction of rotation for steering arm
L = Basic setting

Reconditioning

Overview, brake slack adjuster with automatic adjustment

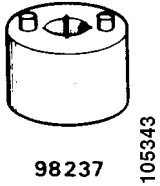
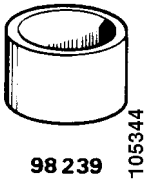
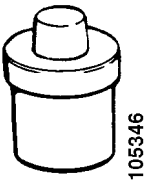


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- | | |
|-----------------------|------------------------|
| 1 Bushing | 12 Rivet |
| 2 Front cap | 13 Compression springs |
| 3 Needle bearing | 14 Disc plug |
| 4 One-way coupling | 15 Rack |
| 5 Bushing | 16 O-ring |
| 6 O-ring | 17 Worm gear |
| 7 Worm screw | 18 O-ring |
| 8 Grease nipple/plug | 19 Gasket |
| 9 Thrust washer | 20 Guide plate |
| 10 Compression spring | 21 Screw |
| 11 Rear cap | 22 Steering arm |

Dismantling the brake slack adjuster

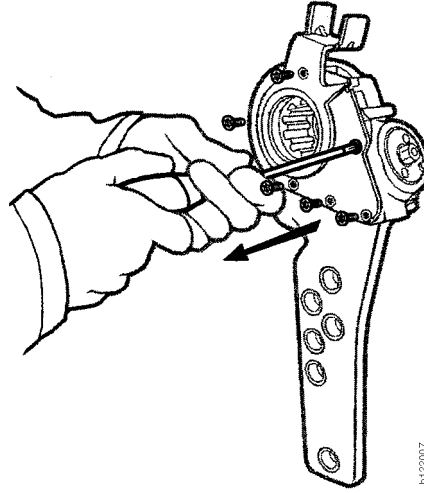
Special tools

No.	Description	Illustration	Tool board
98 237	Fork spanner, included in 98 232	 <p>98 237 105343</p>	B1
98 239	Spacer ring, included in 98 232	 <p>98 239 105344</p>	B1
98 557	Drift, included in 98 232	 <p>98 557 105346</p>	B1

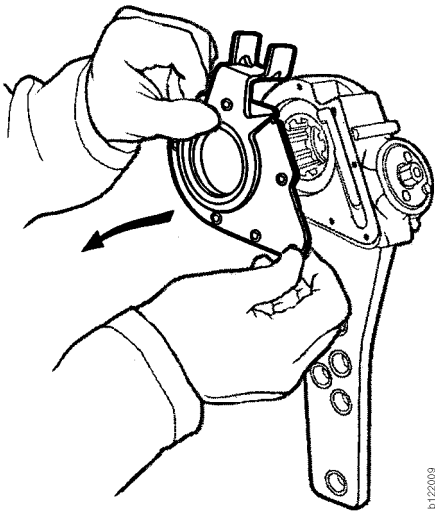
Dismantling

1 Clean the brake slack adjuster.

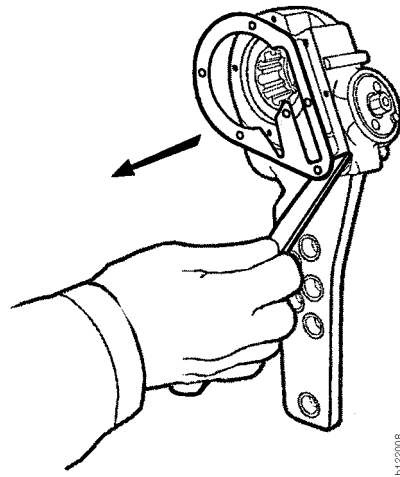
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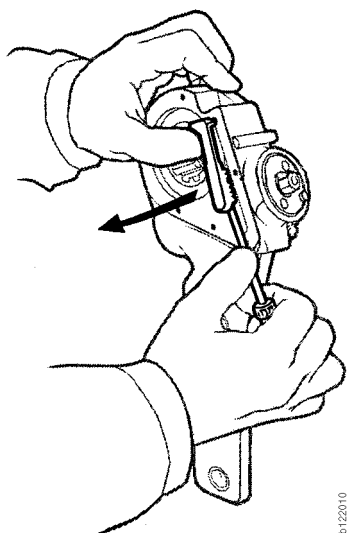
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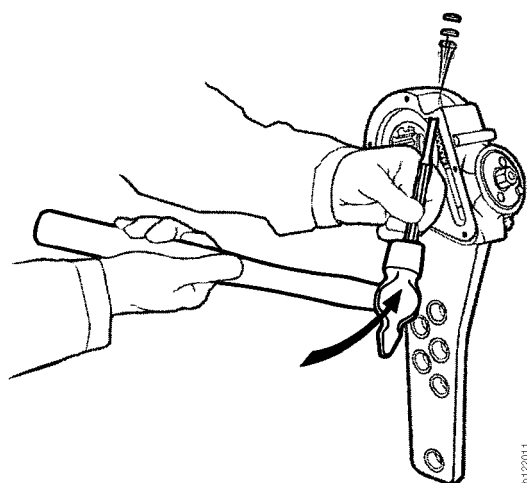
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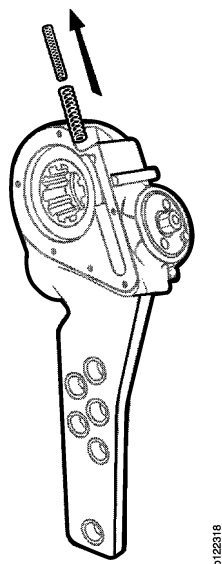
5 Remove the spring-loaded rack.



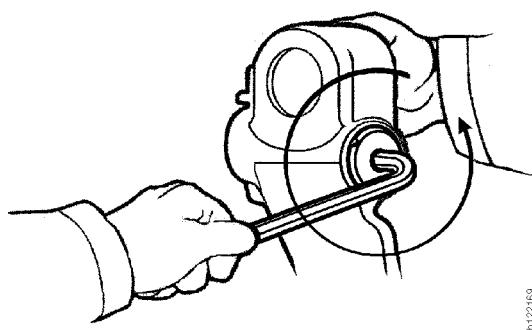
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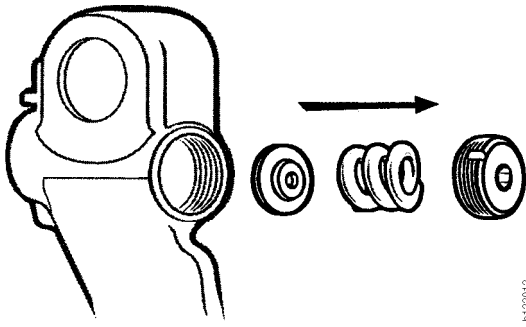
7



8 First remove the rivet and then unscrew and remove the rear cap.

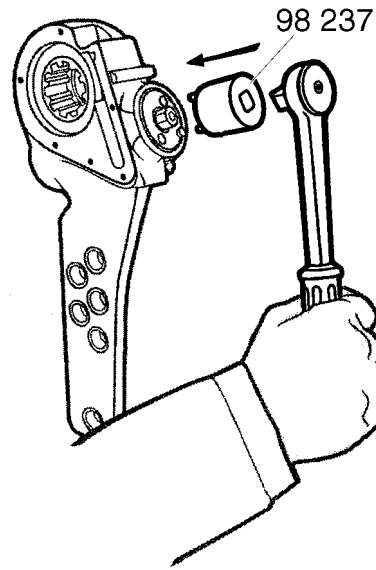


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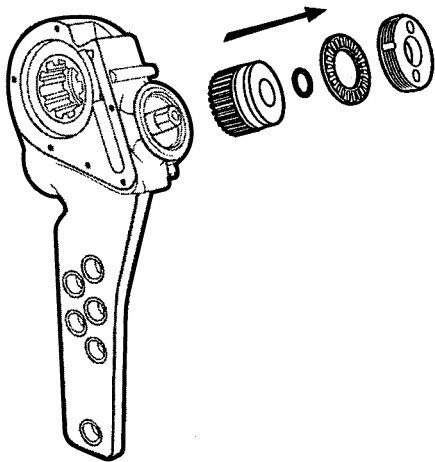
b122012

10 First remove the rivet and then unscrew the front cap. Use tool 98 237.



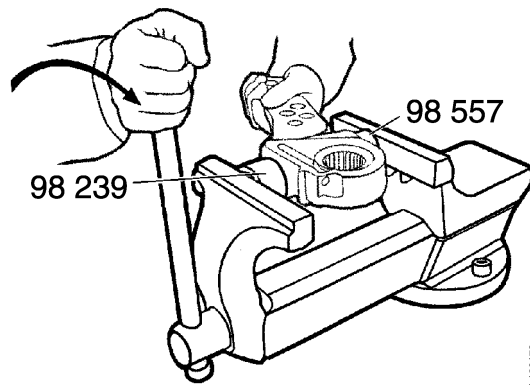
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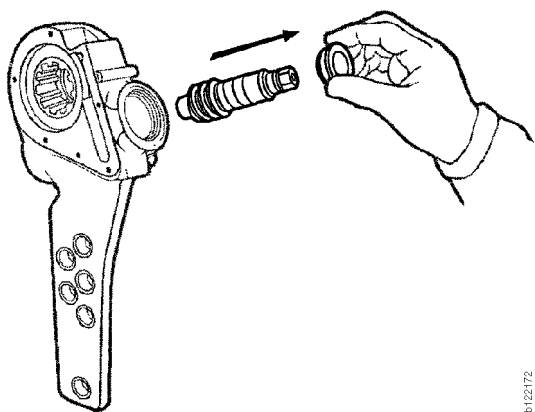
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12 Press out the bushing and worm screw



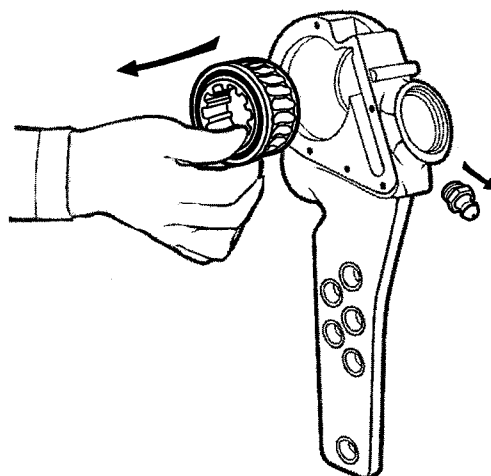
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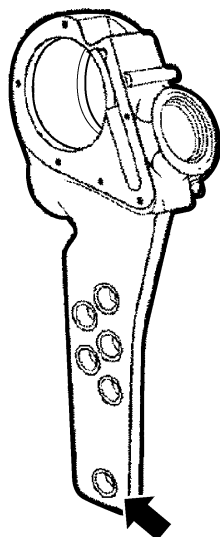
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14



b122174

15 Knock out the bushing.



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Cleaning and checking

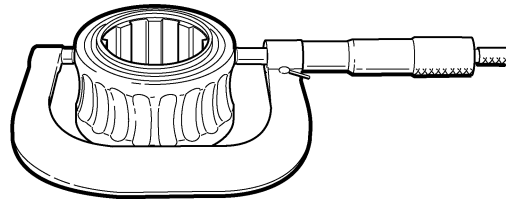
Specifications

Tolerances	
Maximum diameter in the worm gear hole (wear limit)	62.20 mm
Minimum outside diameter of worm gear	61.87 mm
Maximum clearance for guide arm gear teeth	0.4 mm

- 5 The worm gear outside gear teeth must not be deformed. Replace with a new worm gear if the gear teeth are deformed.

- 6 Check the diameter on both the upper and lower edge of the worm gear.

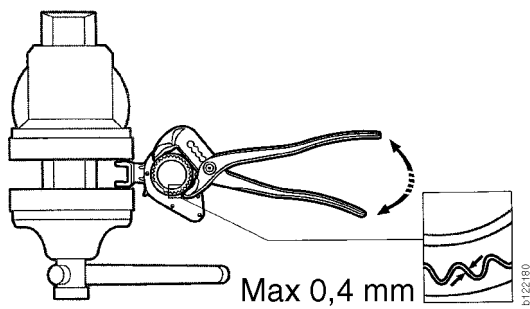
Min 61,87 mm



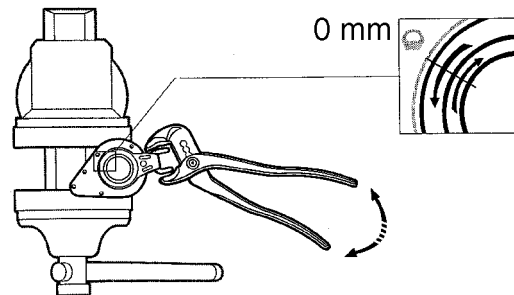
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- 7 The clearance on the guide plate gear teeth should not exceed 0.4 mm.

- 8 Check that the guide plate arm is firmly secured. There should be no play.

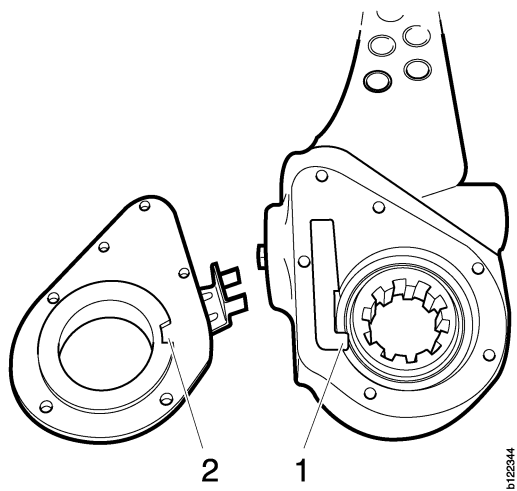


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b122179

- 9 Rack mounting 1, which engages with guide plate 2, should not be worn.




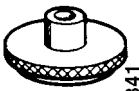
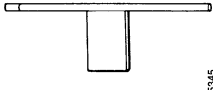
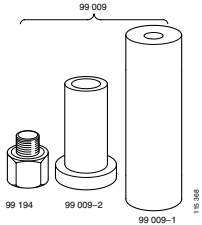
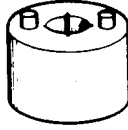
Assembly of brake slack adjuster

Specifications

Tolerances	
Maximum diameter in the worm gear hole (wear limit)	62.20 mm
Axial clearance for worm screw	0.15 -0.60 mm
Minimum tooth height of cone clutch in one-way coupling.	0.08 mm

Tightening torque	
Front cap	50 Nm

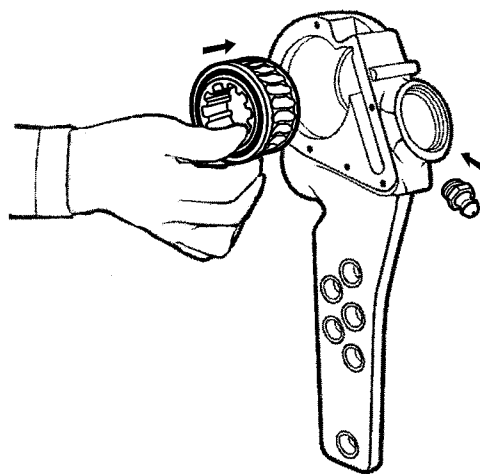
Special tools

No.	Description	Illustration	Tool board
98 075	Dial gauge		D2
98 234	Accessory to dial gauge, Included in 98 232	 98 234 105341	B1
98 240	Wrench, included in 98 232	 98 240 105345	B1
99 009-2	Drift	 99 194 99 009-2 99 009-1 103306	-
98 237	Fork spanner, included in 98 232	 98 237 105343	B1

Assembly

1 Grease all parts with chassis lubricant.

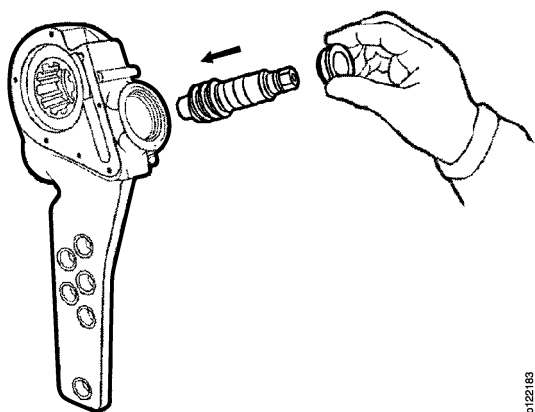
2 The worm gear flange should face outwards.



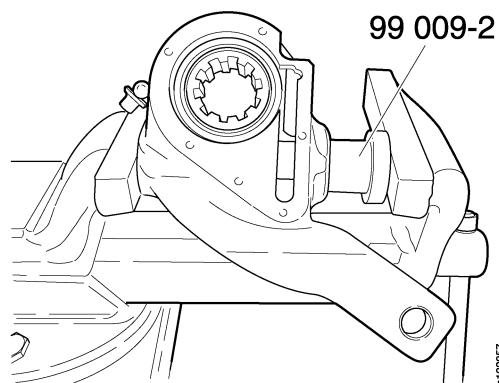
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3

4 Press in the bushing over the worm screw.

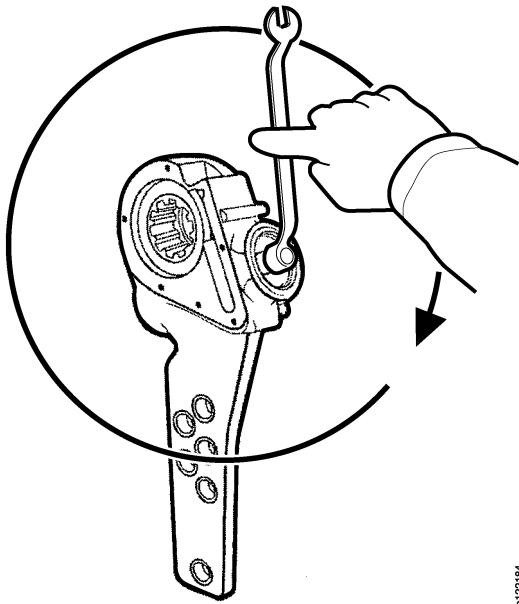


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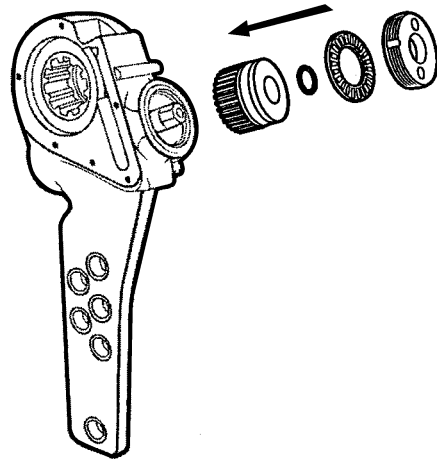
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- 5 Check that the worm gear rotates 1 turn, when 22 turns are made on the worm screw.



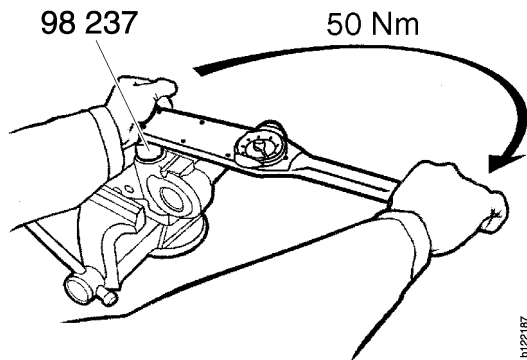
b122184

- 6 Check that the engaging sleeve and lock sleeve are in contact with each other.



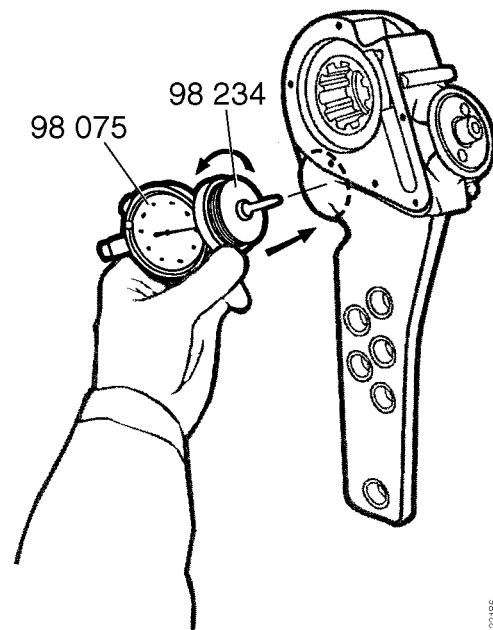
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- 7 Tighten the front cap to 50 Nm.



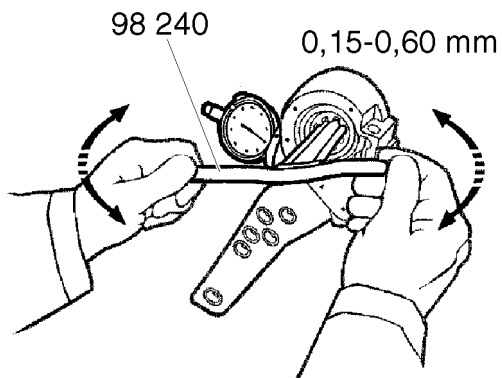
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- 8 Fit the special tool.



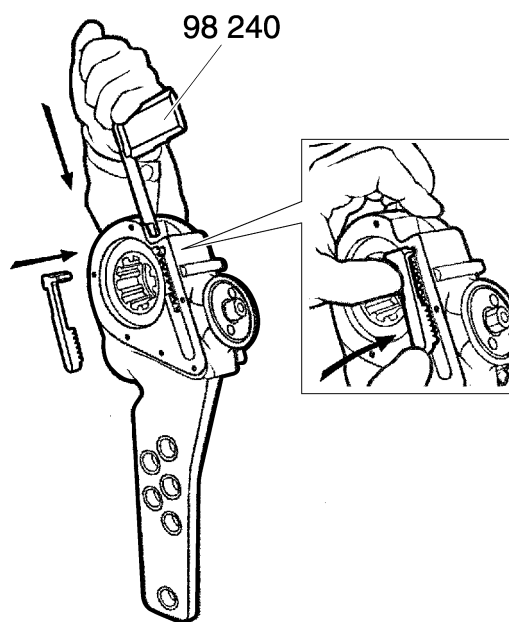
b122186

9 If the clearance is outside the limits the one-way coupling and worm screw should be replaced.



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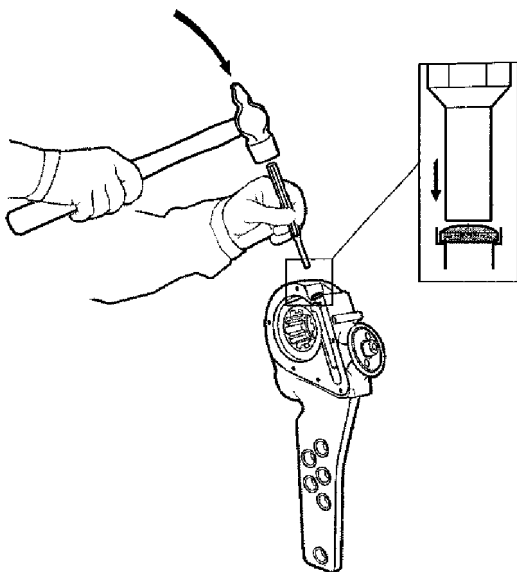
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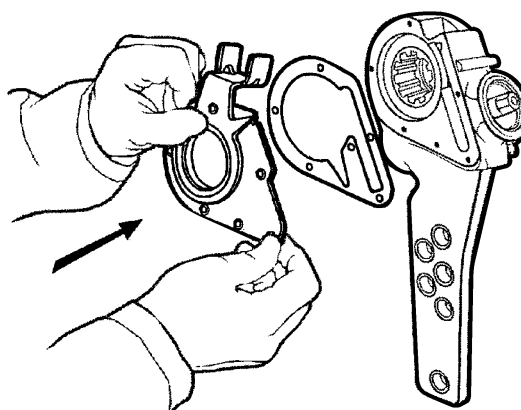
11 Knock in the disc plug.

Note! Make sure that the plug goes right down to the bottom and that it does not get twisted.



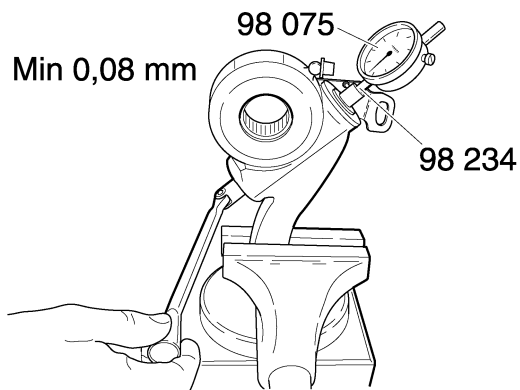
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12

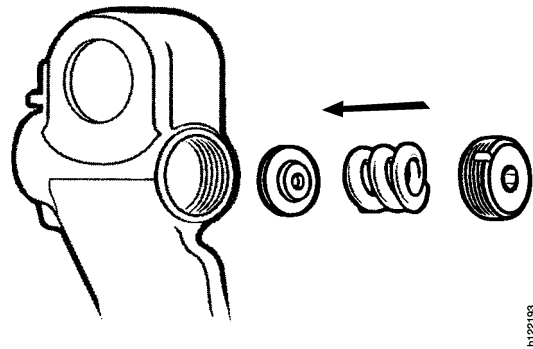


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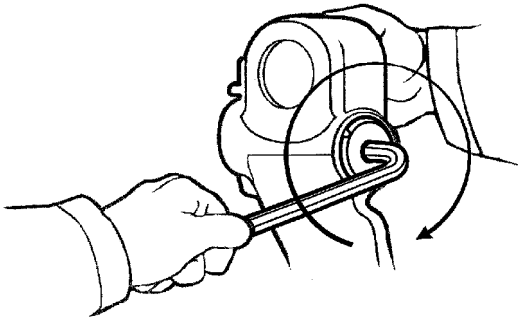
13



14



15 Screw in the rear cover 4 turns.



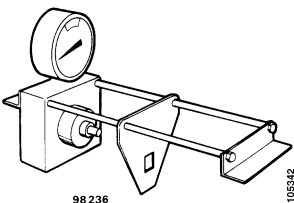
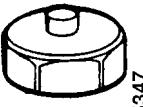
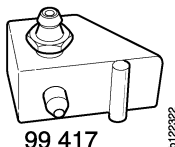
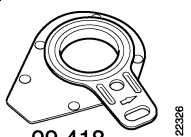
16 Set the spring force, see Setting the brake slack adjuster spring force.

Setting the brake slack adjuster spring force

Specifications

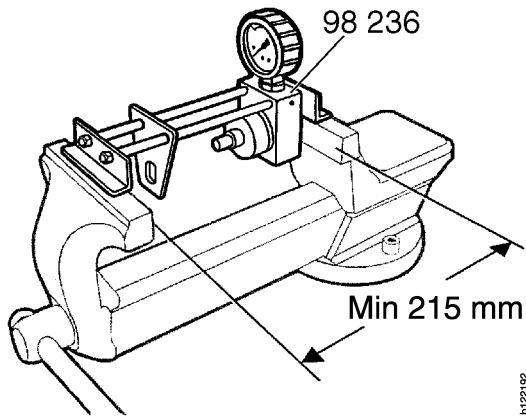
Pretensioning	
Helical spring pretensioning	3530-3730 N

Special tools

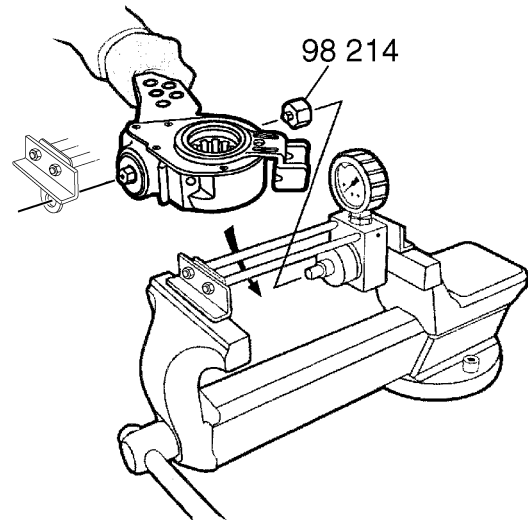
No.	Description	Illustration	Tool board
98 236	Setting tool Included in 98 232	 A mechanical setting tool with a circular gauge on top and a long handle. The number 98 236 is printed below the tool, and 105342 is printed vertically to the right.	B1
99 214	Hexagonal grip Included in 98 232	 A hexagonal metal grip with a central hole. The number 99 214 is printed below the grip, and 105347 is printed vertically to the right.	B1
99 417	Adapter for grease filling Included in 98 232	 A rectangular metal adapter with a central hole and a side hole. The number 99 417 is printed below the adapter, and b122322 is printed vertically to the right.	B1
99 418	Guide plate Included in 98 232	 A metal guide plate with a circular hole and a handle. The number 99 418 is printed below the plate, and b122326 is printed vertically to the right.	B1

Setting

- 1 Use setting tool 98 236 to set the spring force.

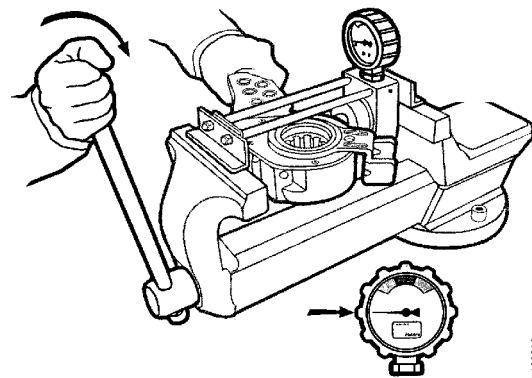
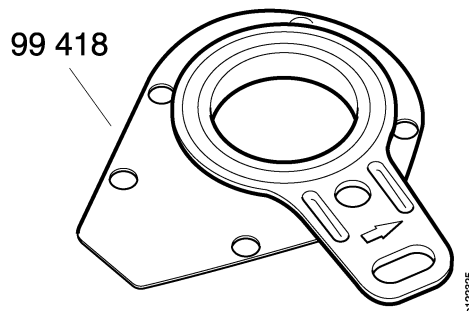


- 2

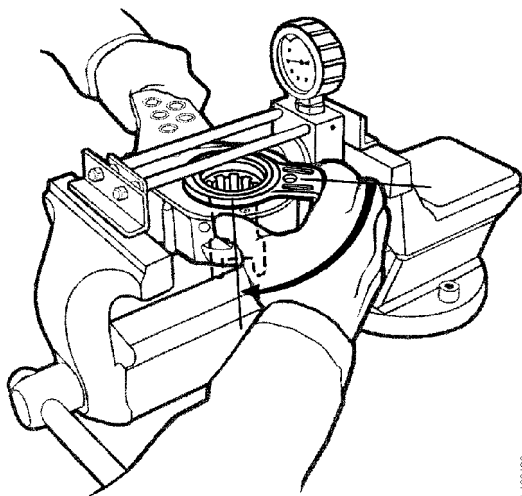


- 3 The guide arm must be positioned facing towards the pressure gauge, otherwise there will not be enough space to set the brake slack adjuster spring force. If necessary, replace guide plate with tool 99 418. Adjust the spring force in accordance with points 4-10. Then change back to the original guide arm.

- 4 Load the adjuster until the pressure gauge reads like the sensor by the arrow in the illustration.

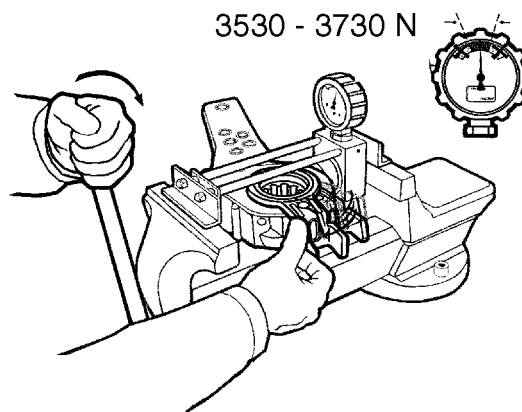


- 5 Turn the guide arm so that the rack in the slack adjuster is pushed up into its groove.



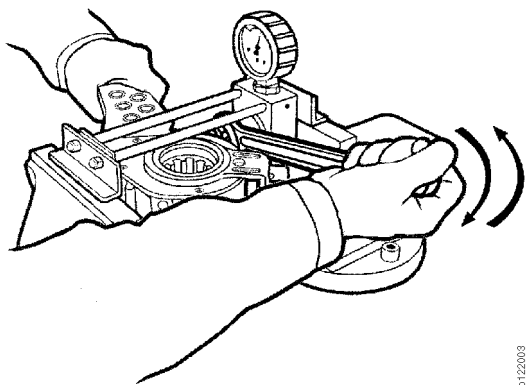
b122182

- 6 Load the brake slack adjuster further until the pressure gauge enters the red marking. The guide arm should then go back to the starting position when the cone clutch is released. If the guide arm goes slowly, it may be necessary to move it back with slight pressure (with the finger).



b122005

- 7 If the guide arm goes back when the pressure gauge indicator is outside the red marking, the force is adjusted by tightening or loosening the rear cap.

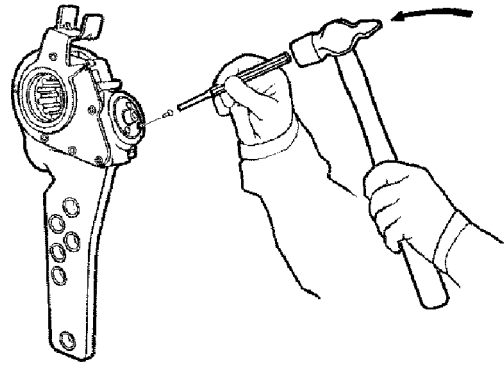


b122003

- 8 Release the pressure on the slack adjuster.

9 Repeat points 6-8 until the correct clutch force is obtained on two measurements.

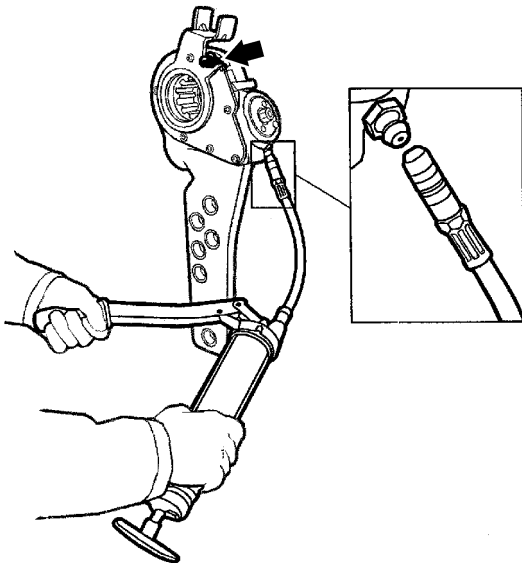
10



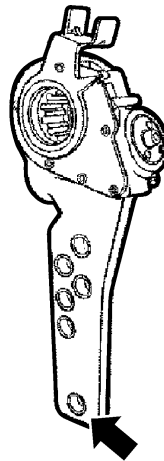
b122000

11 Fill with grease until grease comes out at the point marked with an arrow. If there is no grease nipple, use grease filling adapter 99 417

12 Install a new bushing.



b122194



b122198