

## Data

Lubricant for rear wheel bearing      Multi-purpose grease, refer to Operative Materials page No. 267

Quantity for each end      50 g

## Rear Wheel Bearing

End play of rear axle shaft flange      0.04–0.06

## Rear Axle Shaft Flange

Perm. vertical runout on centering surface  
in installed condition      0.12

Perm. lateral runout in installed condition      0.12

Thickness of flange      9.5–10.0

Perm. vertical runout on bearing seats and on  
running surfaces for sealing rings      0.3

Perm. vertical runout on centering surface      0.02

Recess (diameter) for brake disc      67.00  
66.97

outside      46.028  
46.017

Diameter of bearing seats      inside      41.013  
41.002

Diameter of running surface for outer  
sealing ring      72.00  
71.81

Spiral on running surface for  
outer sealing ring      lefthand flange      righthand spiral  
righthand flange      lefthand spiral

length of spiral on  
circumference of  
running surface      20



# 35.1 Removal and Installation of Rear Axle Shaft Flange Adjustment of Bearing

Tightening Torques	Nm	(kpm)
Hex. bolt for attaching rear axle shaft to rear axle shaft flange	95	(9.5)
<b>Special Tools</b>		
Fixture for rear axle shaft flange	100 589 02 33 00	
Slotted nut wrench	115 589 02 07 00	
Pulling fixture for tapered roller bearing outer race	115 589 00 33 00	
Pulling fixture for tapered roller bearing inner race	115 589 01 33 00	
Mandrel for knocking out tapered roller bearing outer race	115 589 02 43 00	
Installation tool for tapered roller bearing outer race	116 589 11 61 00	
Assembly fixture for rear wheel bearing	115 589 09 61 00	
Dial gauge holder	136 589 04 21 00	
Assembly plate for rear axle shaft flange	136 589 05 31 00	
Extension for assembly plate	Self-made acc. to Fig. 4	
Tubing for tapered roller bearing inner race	Self-made acc. to Fig. 14	

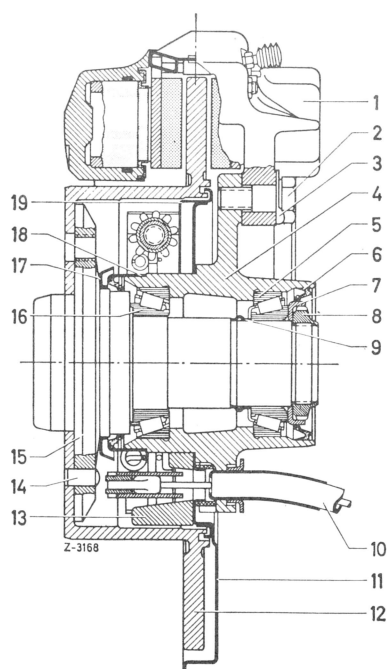


Fig. 1

- 1 Caliper
- 2 Hex. bolt
- 3 Lock washer
- 4 Wheel carrier
- 5 Inner tapered roller bearing
- 6 Inner sealing ring
- 7 Seal running ring (thrust washer)
- 8 Slotted nut
- 9 Spacer sleeve
- 10 Brake cable control
- 11 Cover plate
- 12 Brake disc
- 13 Supporting web
- 14 Centering pin
- 15 Rear axle shaft flange
- 16 Outer tapered roller bearing
- 17 Dust cap
- 18 Outer sealing ring
- 19 Brake carrier

## Note

Jobs on bearing of rear axle shaft flange can also be made with the rear axle installed.

## Removal

- 1 Unscrew hex. bolt for attaching rear axle shaft to rear axle shaft flange (Fig. 2).

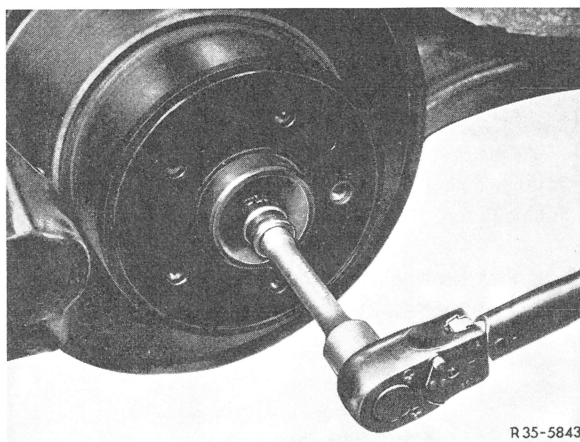


Fig. 2

- 2 Force rear axle shaft out of rear axle shaft flange with fixture (Fig. 3).

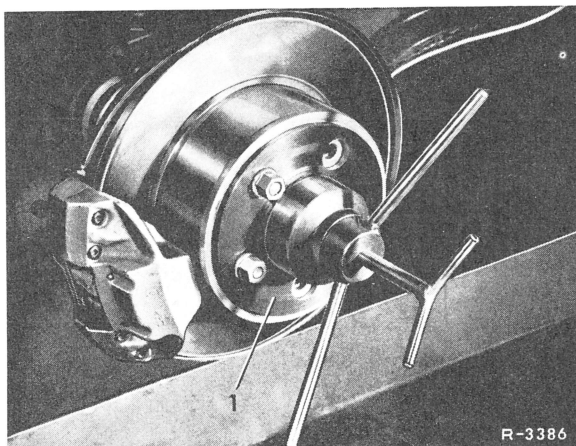


Fig. 3

- 1 Assembly fixture 115 589 09 61 00

Do not permit rear axle shaft to bend excessively or to drop, to prevent any damage or the possibility of leaks on inner synchronizing joint.

**Note:** With the rear axle installed the rear axle shaft is suitably tied with wire to torsion bar to permit continued unobstructed work.

- 3 Remove caliper and brake disc (42.1—228 or 42.2—228).
- 4 Remove brake shoes of parking brake, if required (42.1—530 or 42.2—530).
- 5 Unlock slotted nut on rear axle shaft flange. Attach assembly plate (1) with extension to rear axle shaft flange (15) and loosen slotted nut with slotted nut wrench (2) (Fig. 4).

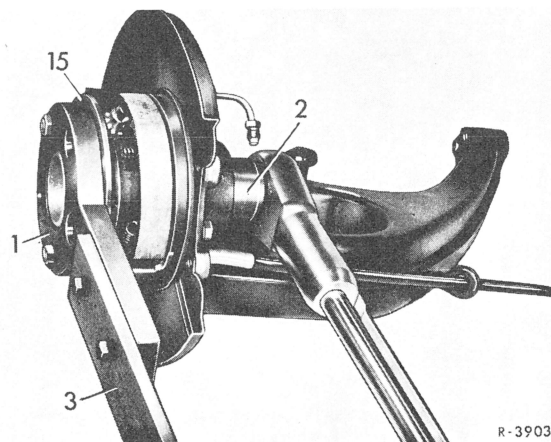


Fig. 4

- |                           |                  |
|---------------------------|------------------|
| 1 Assembly plate          | 136 589 05 31 00 |
| 2 Slotted nut wrench      | 115 589 02 07 00 |
| 3 Extension (self-made)   |                  |
| 15 Rear axle shaft flange |                  |

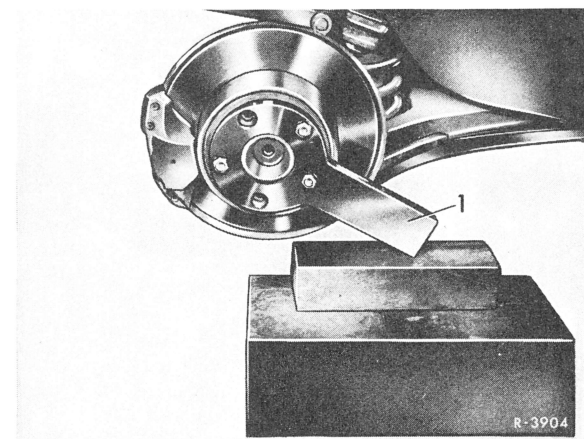


Fig. 5

- 1 Assembly plate 136 589 05 31 00

# 35.1 Removal and Installation of Rear Shaft Flange Adjustment of Bearing

With the rear axle installed the rear axle shaft flange or assembly plate can be supported as shown in Fig. 5.

**Note:** For loosening slotted nut with the semi-trailing arm removed the assembly plate can also be clamped in a vise.

**6** Remove seal running ring and inner sealing ring from wheel carrier with screw driver (Fig. 6).

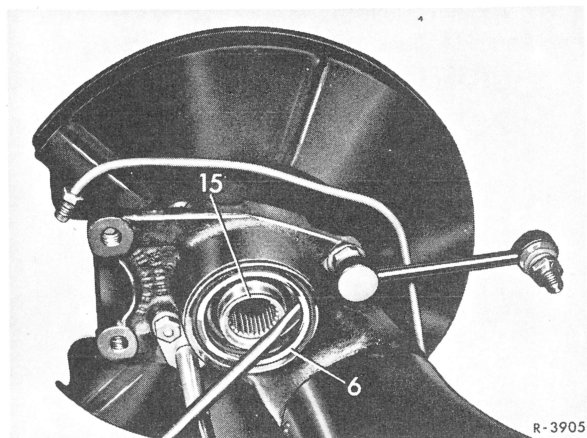


Fig. 6

6 Sealing ring

15 Rear axle shaft flange

**7** Knock rear axle shaft flange out of wheel carrier with fixture and remove bearing inner race together with spacer sleeve (Fig. 7).

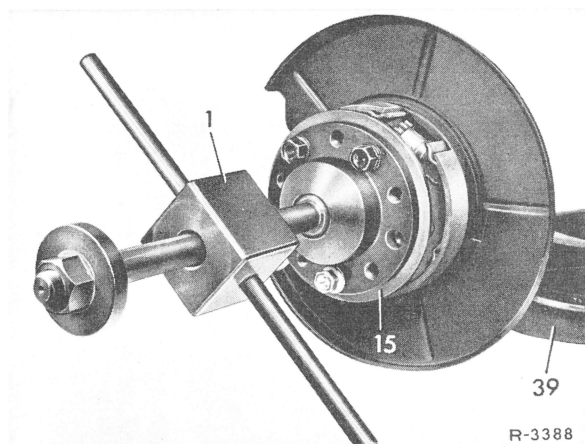


Fig. 7

1 Fixture 100 589 02 33 00

15 Rear axle shaft flange

39 Semi-trailing arm

**8** Force outer sealing ring from wheel carrier.

**9** Pull bearing outer race of outer tapered roller bearing from wheel bearing with fixture (Fig. 8).

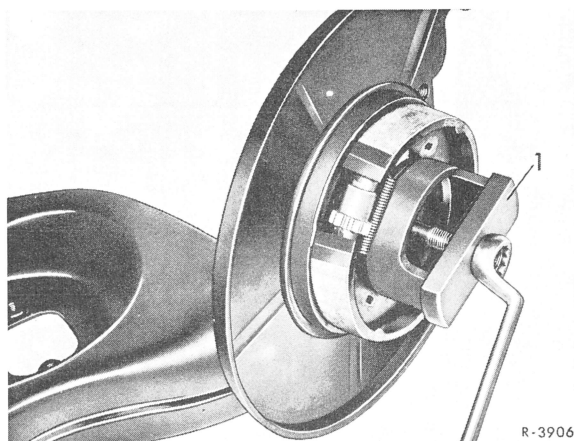


Fig. 8

1 Pulling fixture 115 589 00 33 00

**10** Knock bearing outer race of inner tapered roller bearing from wheel carrier with mandrel (Fig. 9).

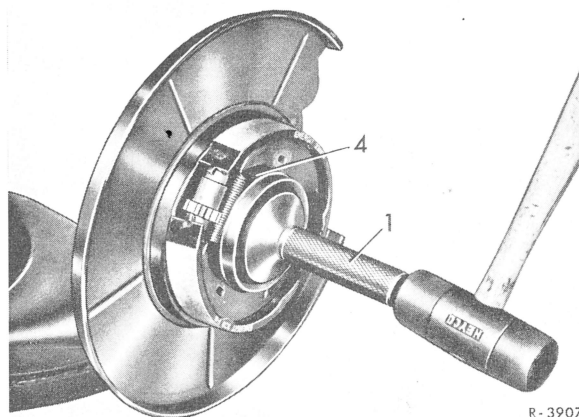


Fig. 9

1 Knocking-out mandrel 115 589 02 43 00

4 Wheel carrier

**11** Force outer bearing inner race (16) from rear axle shaft flange (15) (Fig. 10).

**12** Check all single parts for reuse. Pay special attention to running surfaces for sealing rings on rear axle shaft flange and on seal running ring. Worn parts must be replaced. Check vertical and lateral runout of rear axle shaft flange.

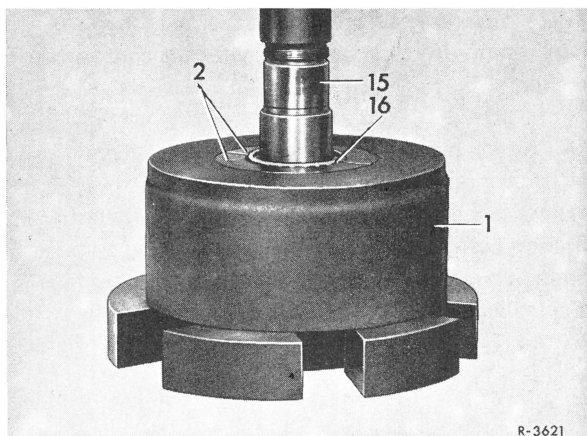


Fig. 10

- 1 Forcing-off fixture
- 2 Split forcing-off ring
- 15 Rear axle shaft flange
- 16 Bearing inner race

**Note:** As a result of the grease returning spiral on running surface for outer sealing ring, the rear axle shaft flanges for the righthand and the lefthand end are different. For identification, the bevel on the centering surface carries a punched-in "R" (right-hand end) or an "L" (lefthand end) (Fig. 11).

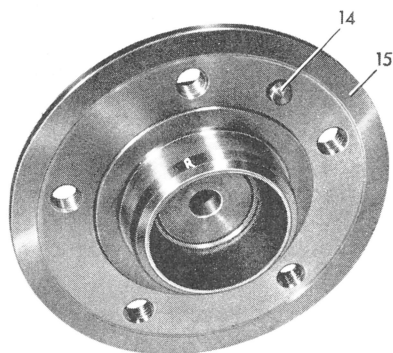


Fig. 11

- 14 Set pin
- 15 Rear axle shaft flange

## Installation

**Caution!** For rear axle shaft flanges of the latest version (Fig. 12) only tapered roller bearings with increased radius may be used (compare Fig. 12 and 13).

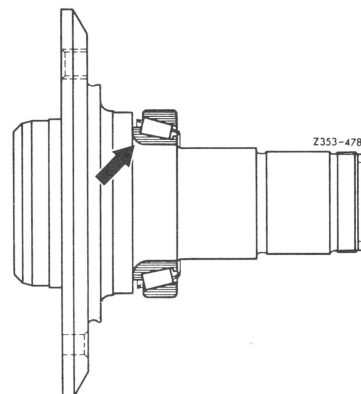


Fig. 12 (new version)

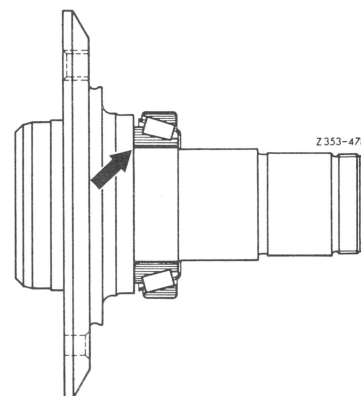


Fig. 13 (old version)

**13** Press bearing inner race of outer tapered roller bearing (16) onto rear axle shaft flange (15) with a suitable tube (1) (Fig. 14).

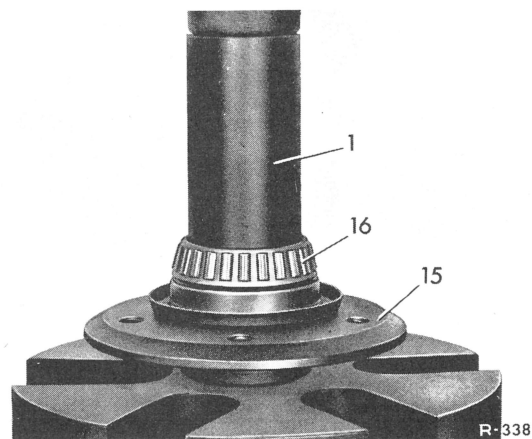


Fig. 14

- 1 Tube
- 15 Rear axle shaft flange
- 16 Outer tapered roller bearing

# 35.1 Removal and Installation of Rear Axle Shaft Flange Adjustment of Bearing

**14** Install both bearing outer races in wheel carrier with installation tool (Fig. 15).

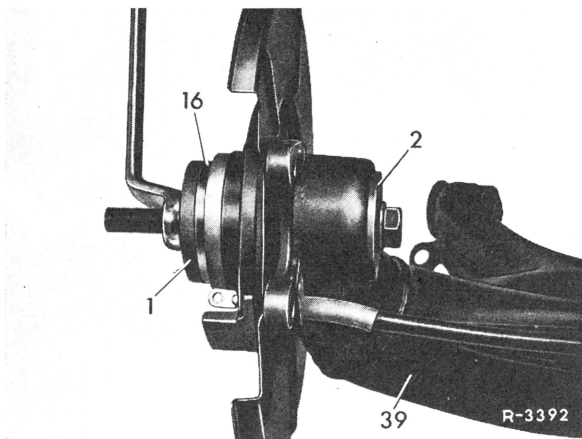


Fig. 15

- 1, 2 Installation tool
- 16 Tapered roller bearing outer race
- 39 Semi-trailing arm

**15** Coat seat for outer sealing ring (18) on wheel carrier with sealing compound and install new sealing ring with installing tool (Fig. 16).

**Note:** Fit sealing ring with care to rest straight against chamfer at bottom of wheel carrier.

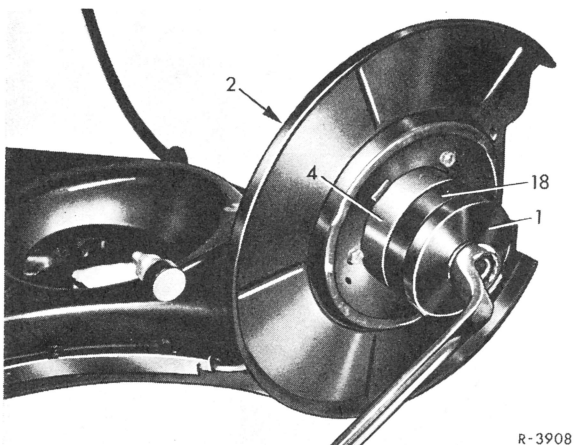


Fig. 16

- 1, 2 Installation tool
- 4 Wheel carrier
- 18 Sealing ring

**16** Fill cavity between the two bearing outer races in wheel carrier with 50 grams multi-purpose grease.

**17** Attach new spacer sleeve to rear axle shaft flange and introduce rear axle shaft flange into wheel carrier.

**18** Attach bearing inner race for inner tapered roller bearing to rear axle shaft flange. Fill new sealing ring between the two sealing lips with anti-friction bearing grease and coat with sealing compound on outside diameter. Press bearing inner race and sealing ring together on or in with assembly fixture (Fig. 17).

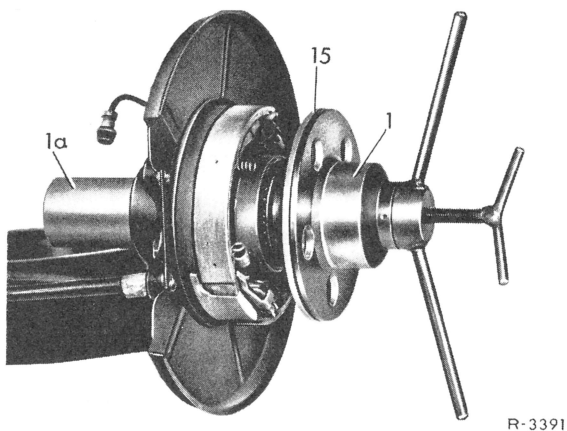


Fig. 17

- 1 Assembly fixture
- 1a Thrust piece
- 15 Rear axle shaft flange

**19** Attach seal running ring and screw on new slotted nut.

## Adjustment

**20** Attach assembly plate with extension to rear axle shaft flange (Fig. 4).

Carefully tighten slotted nut with slotted nut wrench until the end play is between 0.04 to 0.06 mm (Fig. 18):



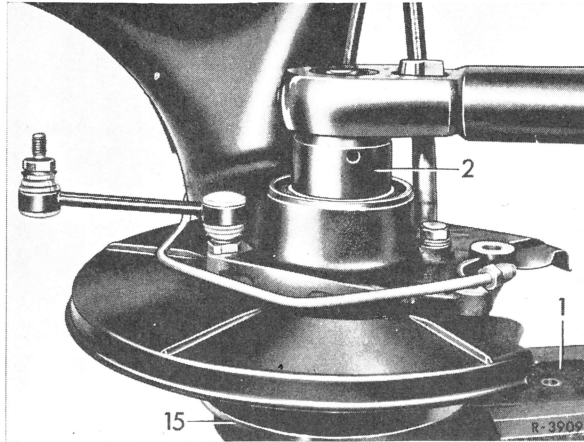


Fig. 18

- 1 Assembly plate
- 2 Slot nut wrench
- 15 Rear axle shaft flange

**21** Attach dial gauge holder to wheel carrier and check end play of rear axle shaft flange, while moving rear axle shaft flange axially back and forth and simultaneously rotating clockwise and counterclockwise (Fig. 19).

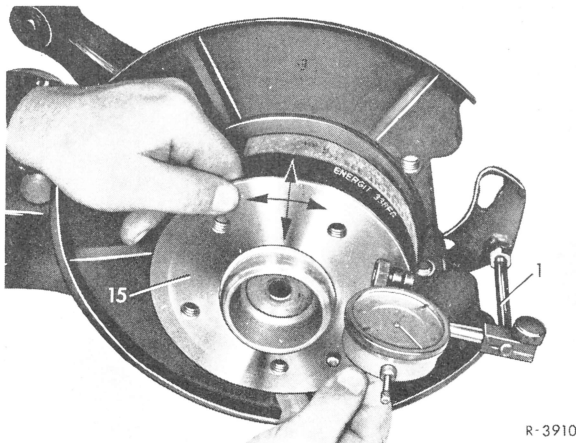


Fig. 19

- 1 Dial gauge holder
- 15 Rear axle shaft flange

**Caution!** When excessive tightening of slot nut leaves no end play, corrections cannot be made while loosening slot nut only. Instead, a new spacer sleeve must be installed in such a case.

**22** Lock slot nut (8) by bending into pertinent grooves in rear axle shaft flange (15) at two points (Fig. 2).

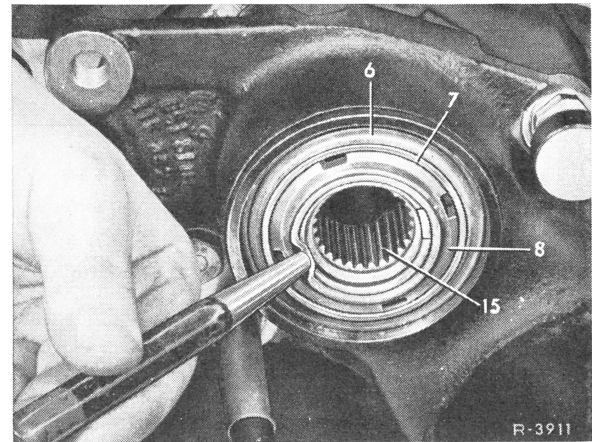


Fig. 20

- 6 Sealing ring
- 7 Seal running ring (thrust washer)
- 8 Slot nut
- 15 Rear axle shaft flange

**23** Install rear axle shaft (Fig. 21).

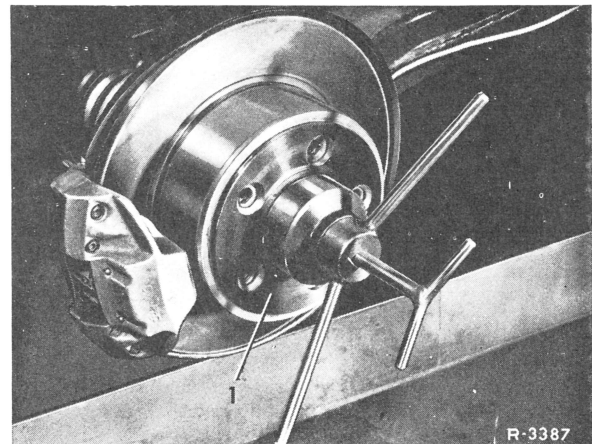


Fig. 21

- 1 Assembly fixture

**24** Tighten hex. bolt for attaching rear axle shaft to rear axle flange to 93 Nm (9.5 kpm) (Fig. 2).

**25** Install brake shoes of parking brake, if removed (Service Manual „Brakes, Steering“ 42.1-530 or 42.2-530).

**26** Mount brake disc and brake caliper and bleed brake system (Service Manual „Brakes, Steering“ 42.1-228, 42.2-228 and 42.0-010).