

## Removal and installation of wheel hub 33.61

730.3

### Adjustment values


Wheel bearing play	0.02 – 0.04
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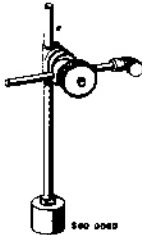
### Tightening torques in Nm (kpm)


Both slotted nuts on wheel hub				200 (20)
Fixed caliper on joint housing	M 14 x 1.5	10.9	190 – 220	(19 – 22)
	M 16 x 1,5		250 – 280	(25 – 28)

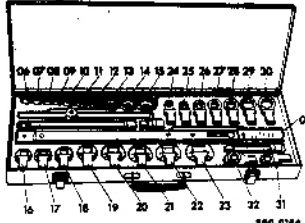
### Special tools

Claw wrench			460 589 00 07 00
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Dial gauge			001 589 53 21 00
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Measuring instrument			363 589 02 21 00
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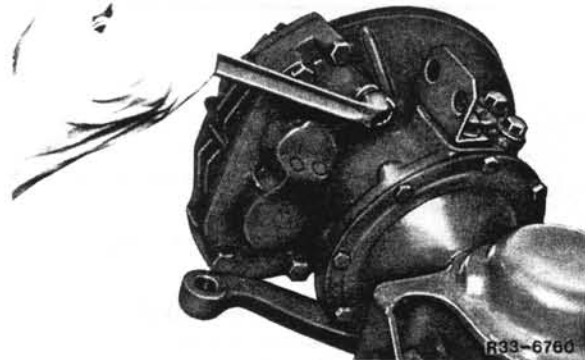
Puller			116 589 22 33 00
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Torque wrench			000 589 10 99 01
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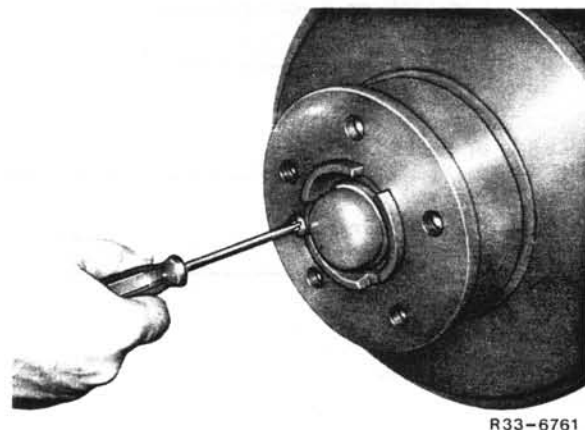
## 33.61 Removal and installation of wheel hub

### Removal

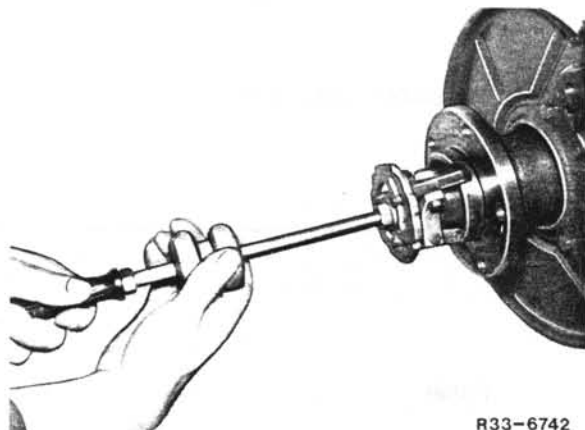
- 1 Unscrew and remove fixed caliper.



- 2 Unscrew brake disk and remove from wheel hub.



- 3 Remove wheel cap from wheel hub with special tool.

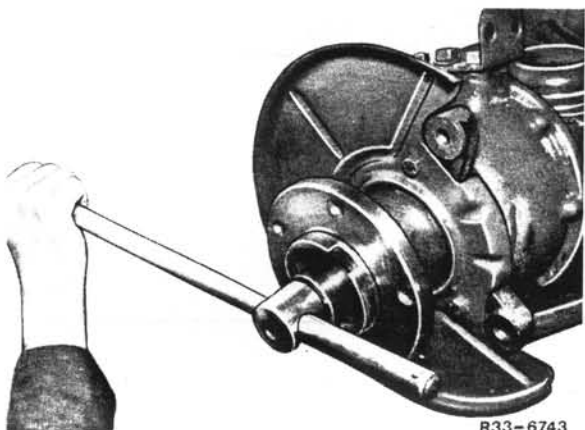


Puller 116 589 22 33 00

- 4 Release outer slotted nut and unscrew with special tool.

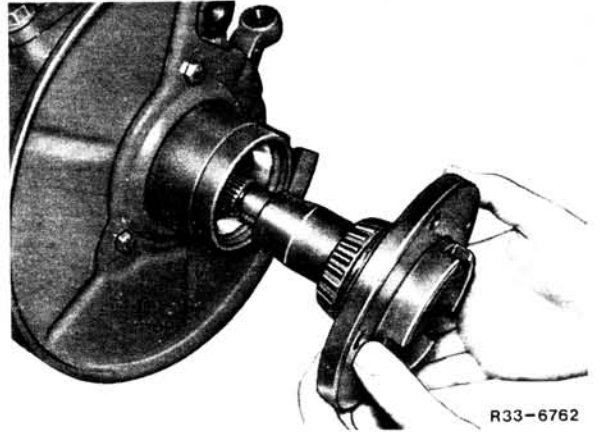
- 5 Remove locking plate.

- 6 Unscrew inner slotted nut with special nut



Claw wrench 460 589 00 07 00

7 Remove wheel hub from axle

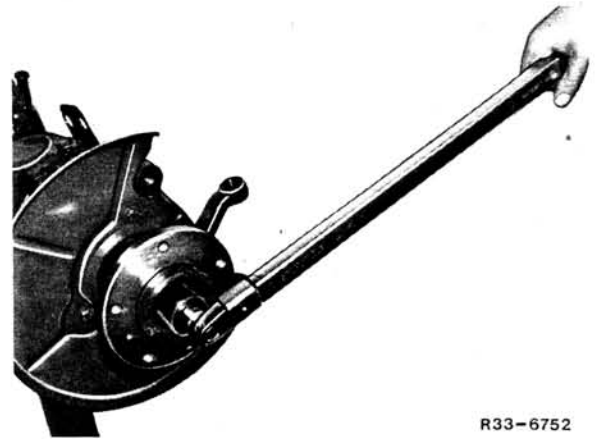


R33-6762

**Installation**

1 Push wheel hub on axle.

2 Push wheel hub onto constant velocity propeller shaft and tighten inner slotted nut with 200 Nm turning the wheel hub at the same time. Loosen inner slotted nut approx. 0.12–0.15 mm and fit locking plate. Torque outer slotted nut to 200 Nm, pull back wheel hub and release tension with blows from hammer.

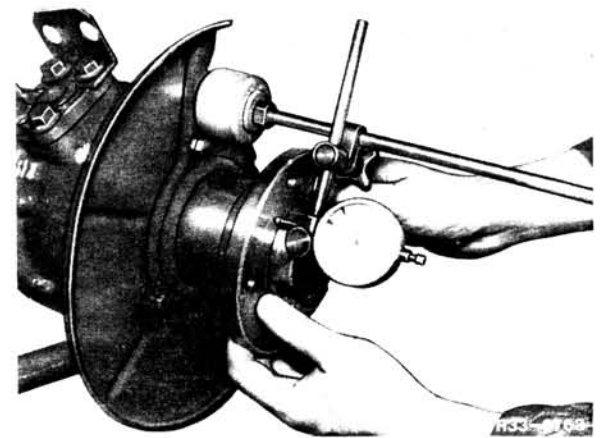


R33-6752

Dog wrench 480 589 00 07 00

3 Check wheel bearing play. Specified wheel bearing play 0.02–0.4 mm.

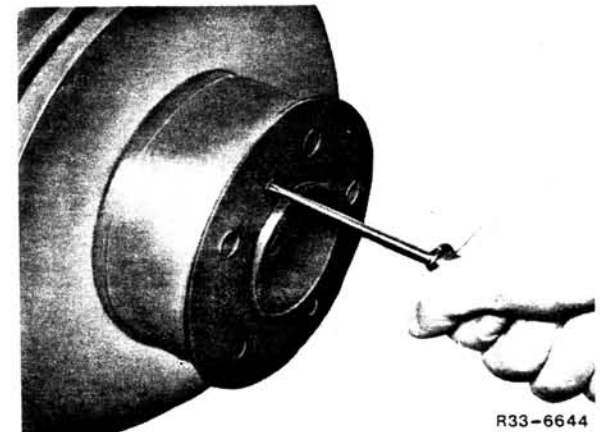
**Note:** After adjusting wheel bearing play, secure slotted nut with locking plate.



R33-6769

Measuring instrument 363 589 02 21 00  
Dial gauge 001 589 53 21 00

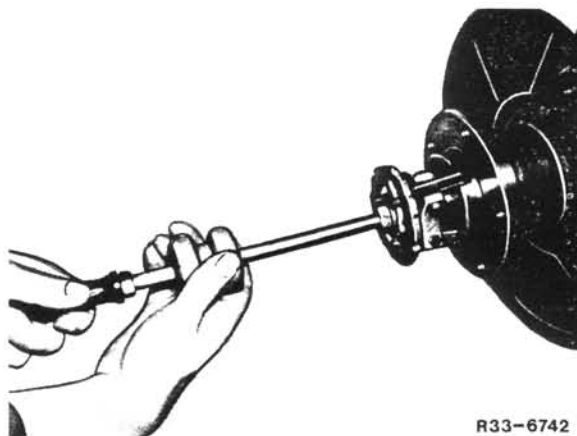
4 Fit brake disk to wheel hub and tighten.



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### 33.61 Removal and installation of wheel hub

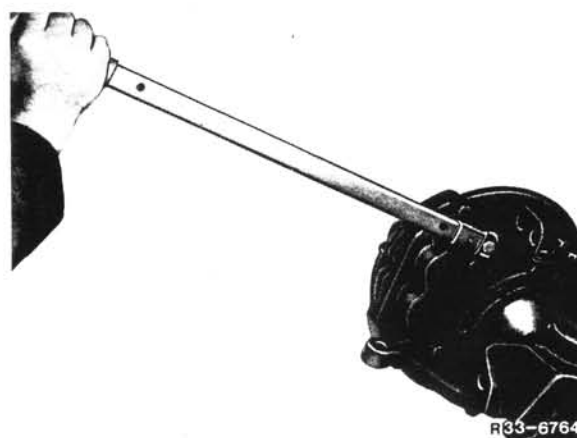
5 Fit wheel cap with special tool.



Puller 118 589 22 33 00

R33-6742

6 Fit fixed caliper to joint housing and torque fastening bolt M 14 × 1.5 to 190–220 Nm and M 16 × 1.5 to 250–280 Nm.

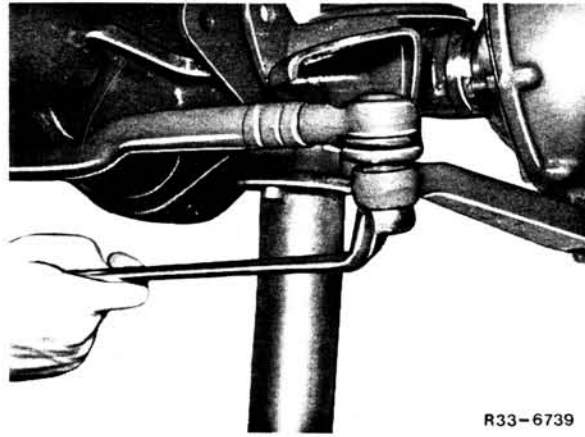


R33-6764

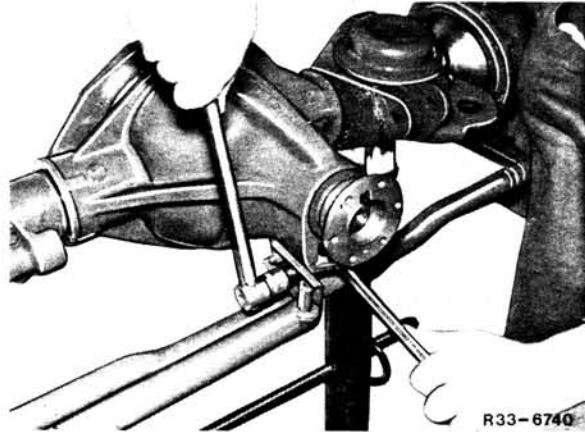
## 33.61 Removal and installation of universal joint housing and track rod

### Removal

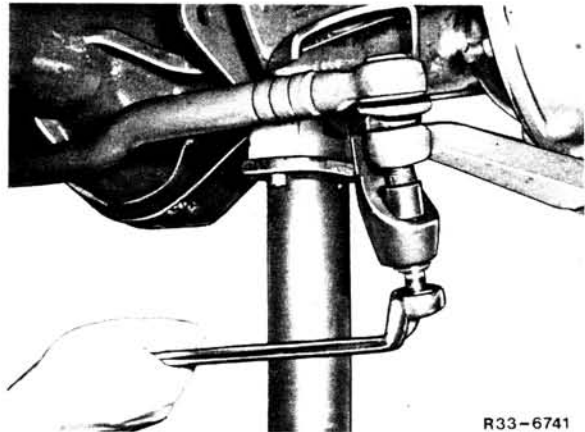
- 1 Remove split pins of castle nuts at track rod.
- 2 Unscrew castle nuts.



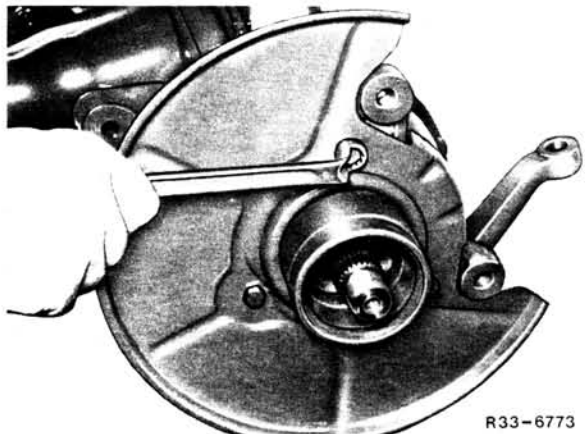
- 3 Unscrew steering shock absorber from axle.



- 4 Press track rod off with special tool.



- 5 Remove wheel hub (33.61-220).
- 6 Unscrew guard plate from universal joint housing.



## Removal and installation of universal joint housing and track rod 33.61

730.3

### Filling capacities

Universal grease per universal joint housing	800 g
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### Adjustment values

Preload of steering knuckle bearing	0.3 ± 0.05
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### Tightening torques in Nm (kpm)


Gasket holder on joint housing	20 – 25	(2 – 2.5)
Stop bolt (check nut)	15 – 20	(1.5 – 2)
Kingpin top on joint housing	110 – 125	(11 – 12.5)
Track or steering arm on joint housing	150 – 170	(15 – 17)
Track rod on track arm	90 – 100	(9 – 10)
Steering shock absorber bracket on axle housing	20 – 25	(2 – 2.5)
Guard plate on joint housing	20 – 25	(2 – 2.5)

### Special tools

Mandrel		395 589 02 15 00
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Torque wrench 20 – 100 Nm		000 589 64 21 00
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Torque wrench		000 589 67 21 00
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Internal puller		000 589 29 33 00
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Counter support		000 589 34 33 00
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Puller		186 589 10 33 00
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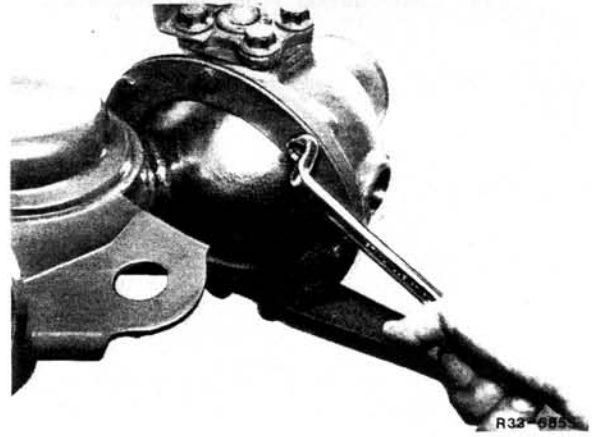
Torque wrench 80 – 400 Nm		000 589 10 99 01
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Split ring		460 589 01 63 00
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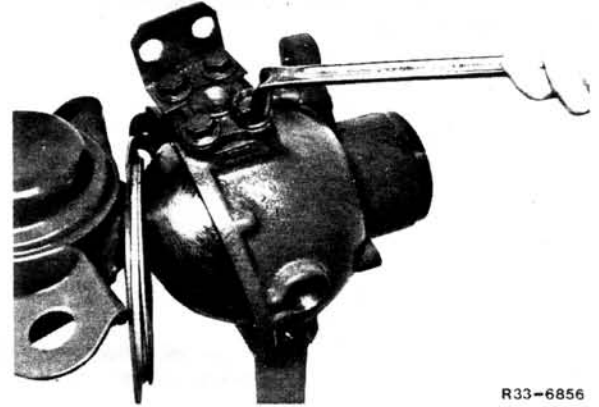
## Removal and installation of universal joint housing and track rod 33.61

7 Unscrew gasket holder from joint housing.



8 Unscrew kingpin at top and track arm or steering arm underneath and remove.

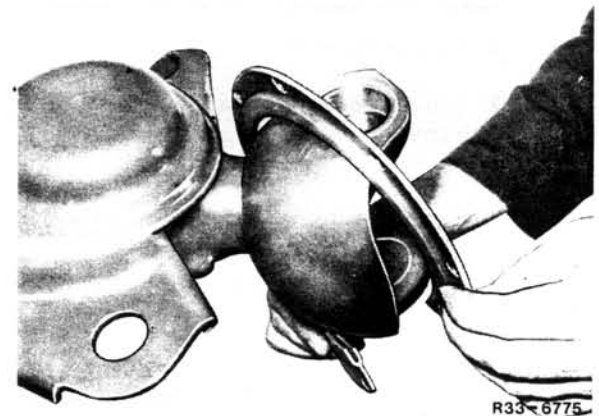
**Note:** Mark the shims and taper roller bearings on the kingpins so that they can be reinstalled in their original positions.



9 Remove joint housing with taper roller bearing at the bottom from the axle.

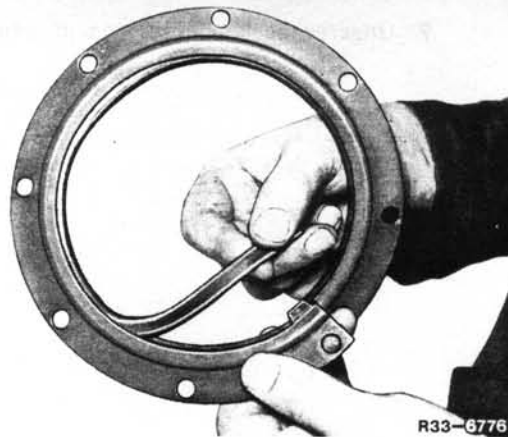


10 Remove gasket holder with gasket from axle.



## 33.61 Removal and installation of universal joint housing and track rod

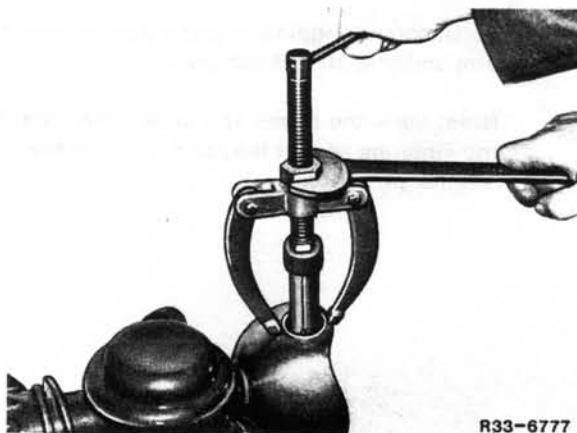
11 Check gasket, renewing if necessary.



R33-6776

12 Remove taper roller bearing on top of kingpin and pull off taper roller bearing outer race with special tool.

Internal puller 000 589 29 33 00  
Counter support 000 589 34 33 00



R33-6777

13 Remove closing cover.

14 Clean all parts or check for wear.



R33-6778

### Installation

1 Fit closing cover.

2 Drive taper roller bearing outer race into axle with special tool. Insert taper roller bearing.

Installer 395 589 02 15 00



R33-6779

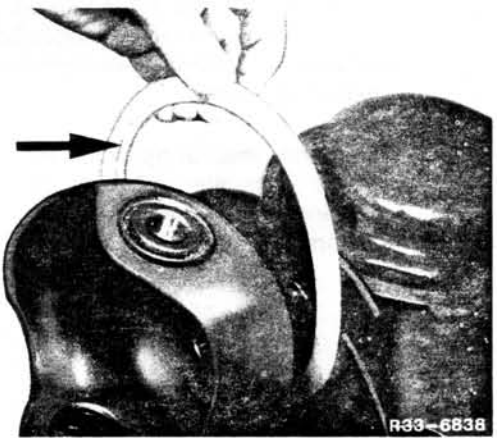


3 Fit gasket holder with gasket to axle so that the chamfer of the gasket agrees with the chamfer of the ball.



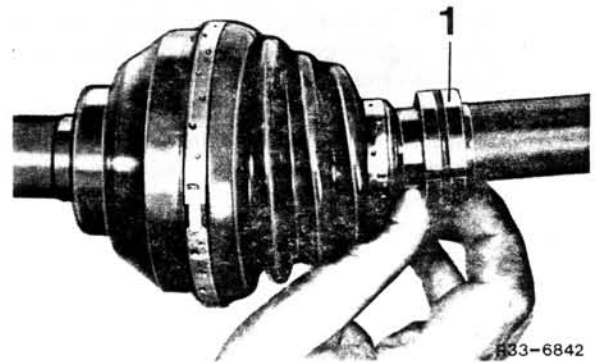
R33-6780

**Note:** A closed ball gasket is fitted from axle number 7 000 561. When installing, ensure that the chamfer points toward the ball.



R33-6838

4 If it is necessary to measure the shims at the top and bottom of the universal joint housing because of fitting new parts, mount the special tool on the constant velocity propeller shaft.



1 Split ring 460 589 01 63 00

R33-6842

5 Insert constant velocity propeller shaft into axle.

6 Install joint housing without shims but with taper roller bearings. Torque slotted nut on wheel hub to 200 Nm. Torque fastening bolts of kingpin top and steering arm or track arm bottom to 10 Nm (100 kpcm).

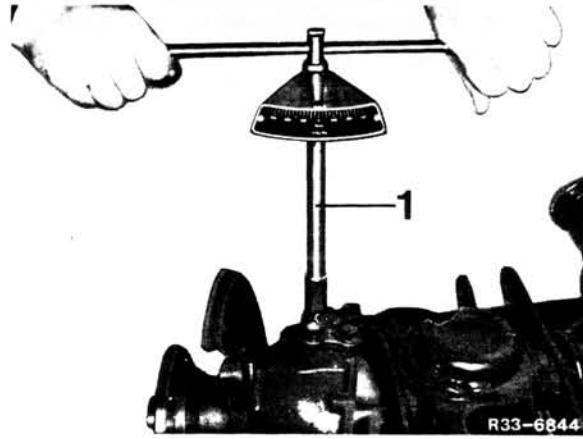


R33-6843



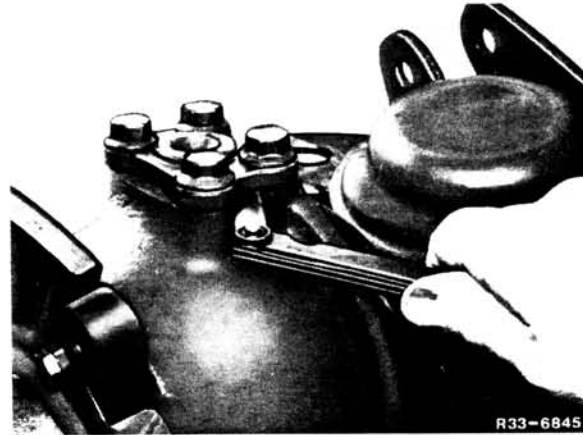
### 33.61 Removal and installation of universal joint housing and track rod

1 Torque wrench 000 589 67 21 00



7 Measure the gap at top and bottom of universal joint housing with feeler gauge. Select for the **top** and **bottom** a 0.15 mm thinner shim to achieve a total preload of 0.3 mm.

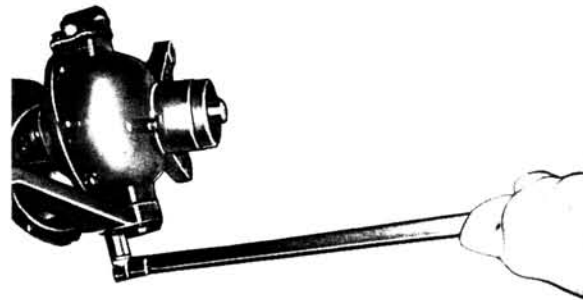
**Note:** After measuring or determining the shims, remove complete universal joint housing with constant velocity propeller shaft and remove split ring (special tool).



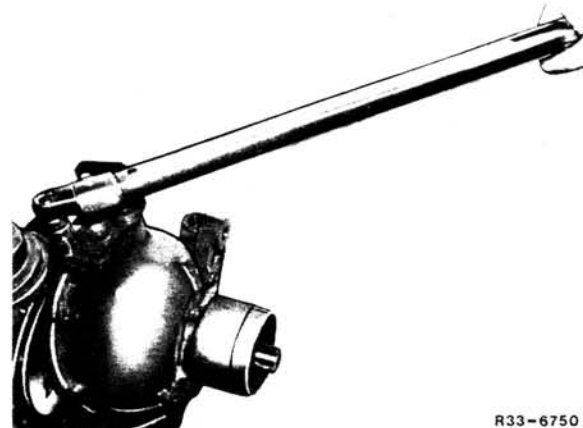
8 Fit universal joint housing with taper roller bearing to bottom of axle and install track or steering arm and torque to 150–170 Nm.

**Note 1:** Install the shims and taper roller bearings in their original position or, if replacing parts, in the side determined previously.

**Note 2:** Connex dowel pins are installed in the universal joint housing from axle No. 7004272. When carrying out repairs, check these for damage and wear, renewing if necessary.

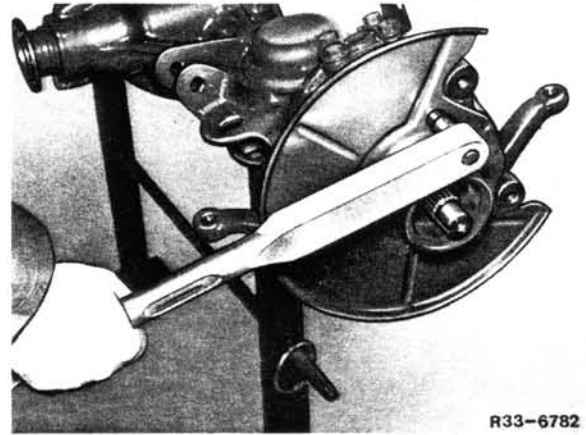


9 Fit kingpin at top and bolt tight with bracket. Tightening torque of bolts: 110–125 nm.



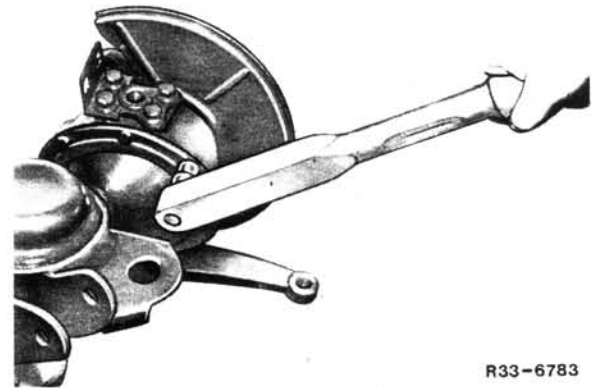
## Removal and installation of universal joint housing and track rod 33.61

10 Bolt guard plate onto joint housing with 20–25 Nm.



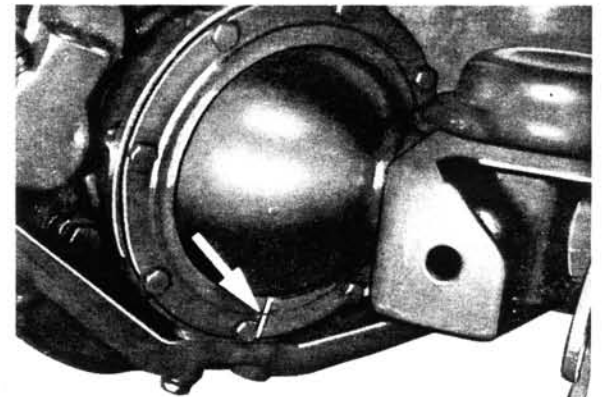
R33-6782

11 Bolt gasket holder onto joint housing with 20–25 Nm.



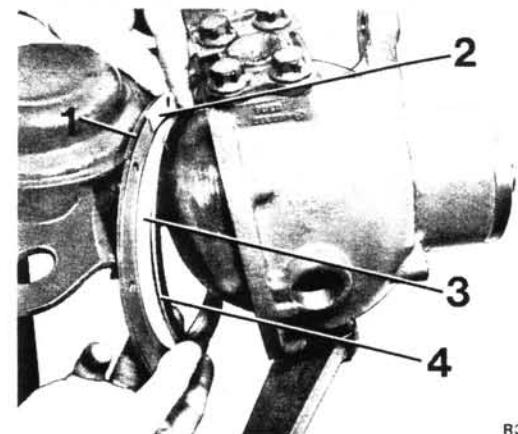
R33-6783

**Note 1:** Up to axle No. 7 000 560 bolt on gasket holder so that the parting surface points downward.



R33-6839

**Note 2:** From axle No. 7 000 561 a closed ball gasket with an inner and outer gasket holder and a paper gasket is installed. The paper gasket should be fitted between the outer gasket holder and the universal joint housing.



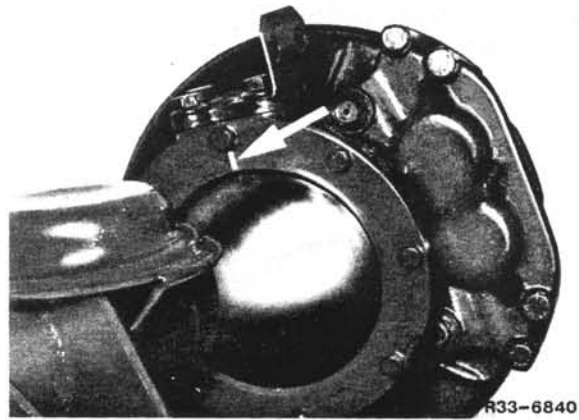
- 1 Outer gasket holder
- 2 Paper gasket
- 3 Ball gasket (closed)
- 4 Inner gasket holder

R33-6859

### 33.61 Removal and installation of universal joint housing and track rod

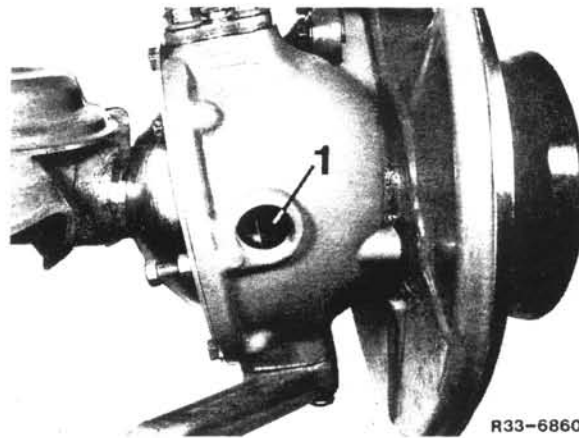
**12** From axle No. 7 000 561 the parting surface of the gasket holder must point upward. Conversion of old axles to the closed ball gasket is only possible if the new universal joint housing is fitted at the same time.

**13** Install wheel hub (33.61-220).



R33-6840

**Note:** From axle no. 7 000 561 the universal joint housing is fitted with a screwplug. When reassembling pack in 800 g universal grease per joint housing.



R33-6860

1 Opening for grease packing

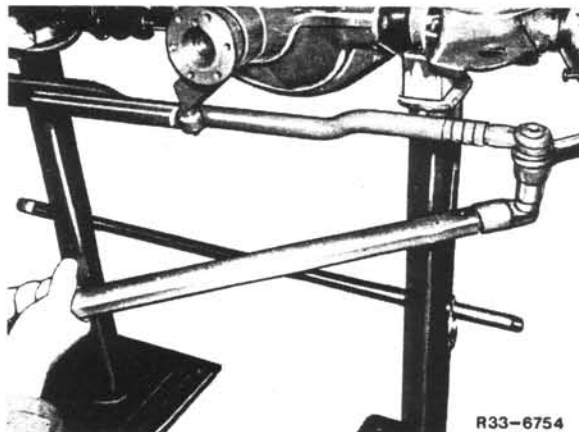
**14** If a damaged rubber cup seal is detected on a used joint, the joint in question must be completely replaced.

If the rubber capsleeve has been damaged when removing or installing the track rod, it is sufficient to renew the rubber seal.



R33-6784

**15** Fit track rod and torque castle nuts to 90-100 Nm. Secure castle nuts with split pin.



R33-6754

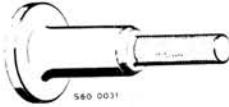

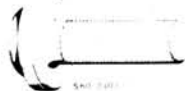
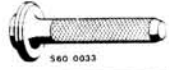
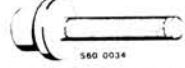



# Disassembly and reassembly of joint housing 33.61

730.3

## Filling capacities

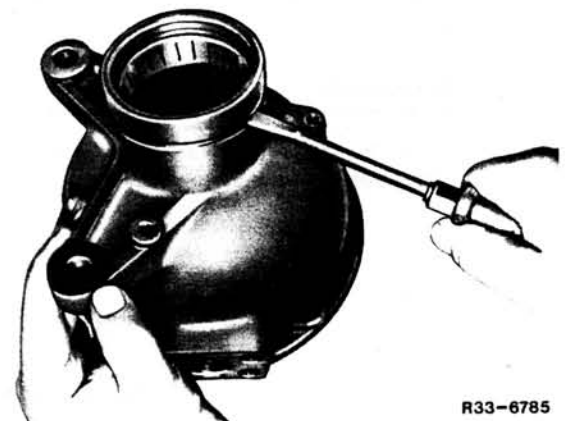
Universal grease per joint housing 800 g

## Special tools

Mandrel		312 589 05 15 00
Mandrel		352 589 04 15 00
Mandrel		305 589 00 15 00
Mandrel		360 589 00 15 00
Mandrel		363 589 04 15 00
Mandrel		387 589 04 15 00
Puller		000 589 31 33 00
Counter support		000 589 34 33 00

## Disassembly

1 Remove outer radial sealing ring from joint housing.

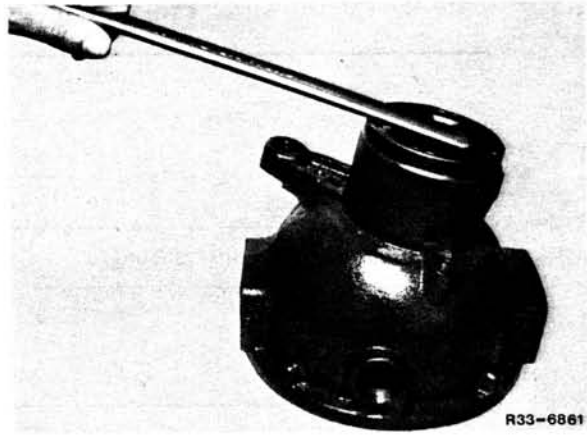


R33-6785



## 33.61 Disassembly and reassembly of joint housing

**Note:** From axle No. 7 000 561 the radial sealing ring is seated in the joint housing and should be removed using a mounting iron.



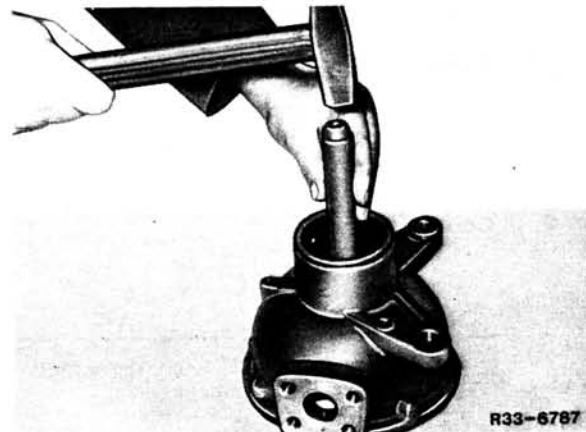
**2** Pull outer taper roller bearing outer race out of joint housing with special tool.



Puller 000 589 31 33 00  
Counter support 000 589 34 33 00

**3** Drive out inner wheel bearing and radial sealing ring using special tool.

**Note:** Mandrels Part No. 360 589 00 15 00 supplied up to mid-1980 have to be re-turned to an outer diameter of 0.4 mm less to enable them to also be used for the modified joint housing axle no. 7 000 561.



Mandrel 360 589 00 15 00

**4** Clean all parts and check for wear. Replace worn parts.

### Reassembly

**1** Drive in taper roller bearing outer race of inner wheel bearing with special tool.



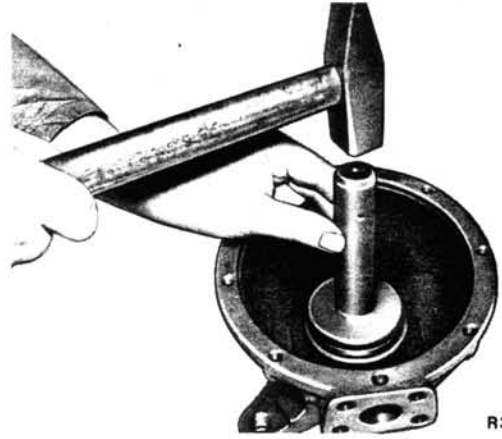
Mandrel 352 589 04 15 00

## Disassembly and reassembly of joint housing 33.61

**2** Insert well-greased roller cage of inner wheel bearing in joint housing.

**3** Drive radial sealing ring into joint housing using special tool.

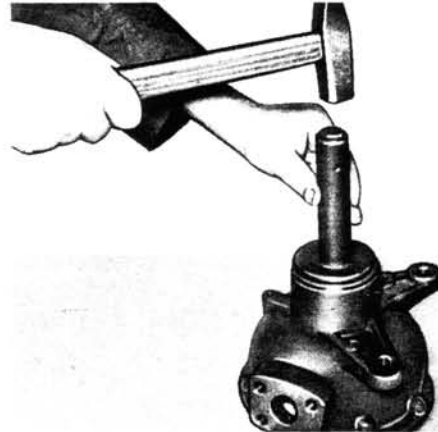
Mandrel 363 589 04 15 00 up to axle No. 7 000 560  
Mandrel 305 589 00 15 00 from axle No. 7 000 561



R33-6789

**4** Turn joint housing around and drive in taper roller bearing outer race of outer wheel bearing with special tool and insert well-greased taper roller bearing.

Mandrel 363 589 04 15 00



R33-6790

**5** Coat contact surface of radial sealing ring pointing toward joint housing with Teroson Fluid T 307 or Dichtin 51 sealing compound and drive in with special tool.

**6** Pack joint housing with specified quantity of grease.

Mandrel 312 589 05 15 00 up to axle No. 7 000 560  
Mandrel 387 589 04 15 00 from axle No. 7 000 561



R33-6791

**Note:** From axle No. 7 0004 272 the steering or track arm is additionally secured at the joint housing with a Connex dowel pin. During repairs, check this pin for damage, renewing if necessary.

