

Removing and installing final drive, included in Repair Manual MF, model-dependent, from '85, refer to 33 10 010.

Drain ATF.

Secure final drive to special tool 33 1 010 (retaining bracket).

**Installation:**

Add oil.

Oil volume, refer to Technical Data

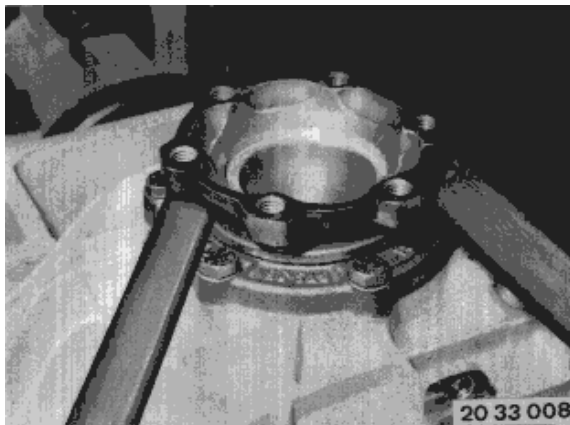
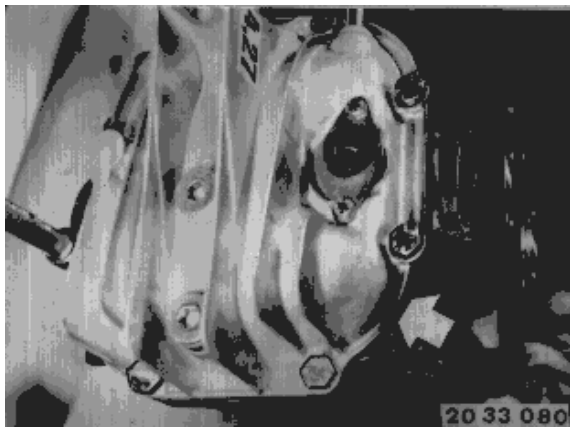
Refer to Fluids and Lubricants for approved oil.

Take off case cover.

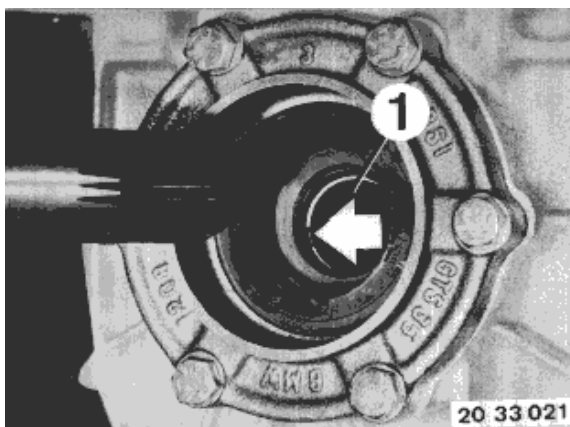
**Installation:**

Replace gasket.

Tightening torque, refer to Technical Data



Press off both drive flanges with a tire iron.

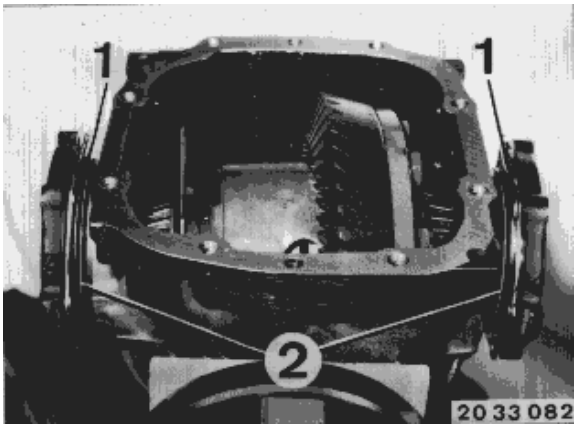


**Installation:**

Place round wire snap ring (1) in groove of differential case prior to installation of the drive flange, that both ends are recessed in the groove. This prevents lateral bending of the ring.

Press in drive flange by hand and turn slightly until wire snap ring is heard to engage.

Replace stretched snap rings.



**Installation:**

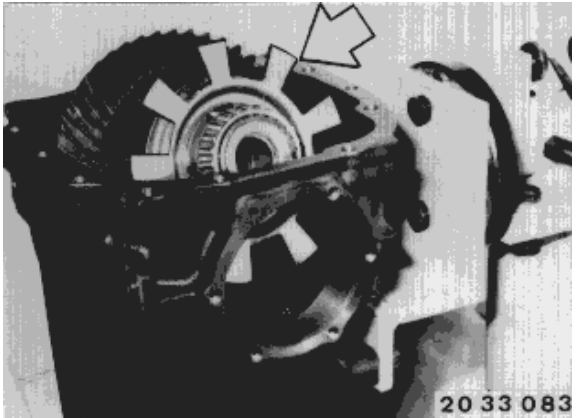
Differential case bearings and backlash are adjusted with shims (1).

Check O-ring (2), replace if necessary.

**Caution!**

Changing the total thickness of shims (1) will change the friction torque value.

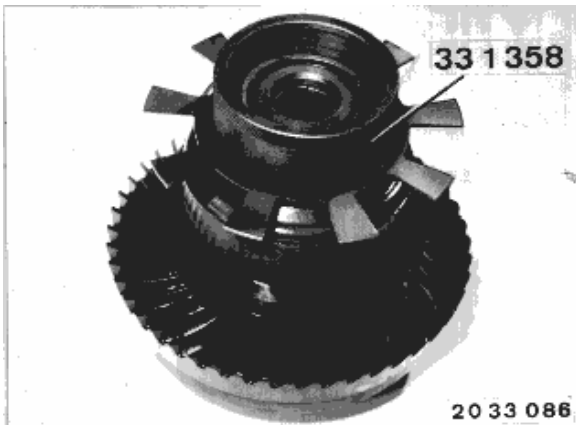
After adjustment of the friction torque, torsion face runout and contact pattern must be readjusted, refer to 33 12 551



Remove complete limited slip differential.

**Installation:**

Don't bend the pulse spider.



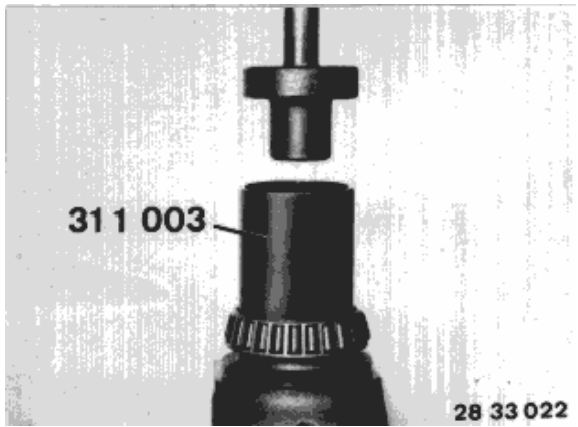
Press off pulse spider.

**Installation:**

Press fit pulse generator wheel with special tool 33 1 358 (union ring).



Remove crown wheel (cold).

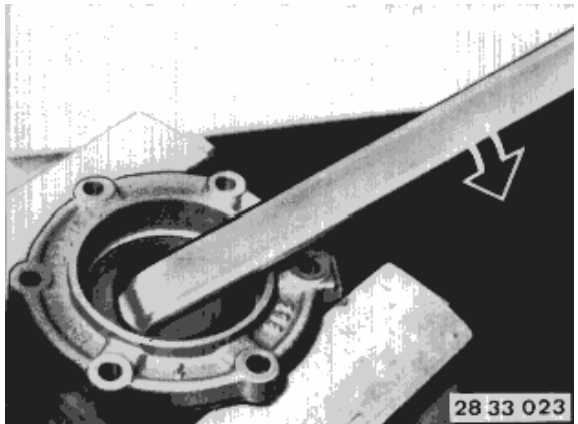


Press-fit new taper roller bearing to new final drive case with limited-slip differential cold using special tool 33 1 003.

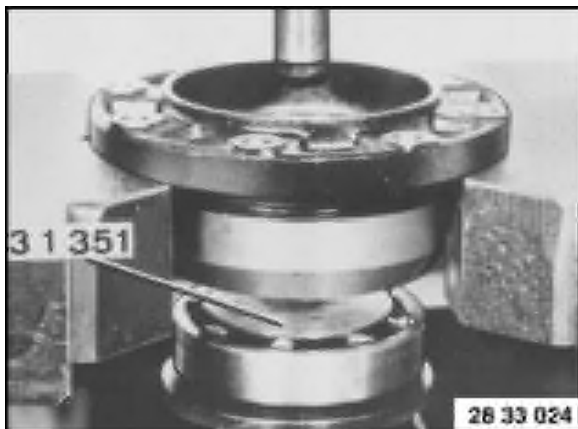
**Caution!**

Only use same make bearings for both bearings.

Note make - this information is required later to determine the friction torque.



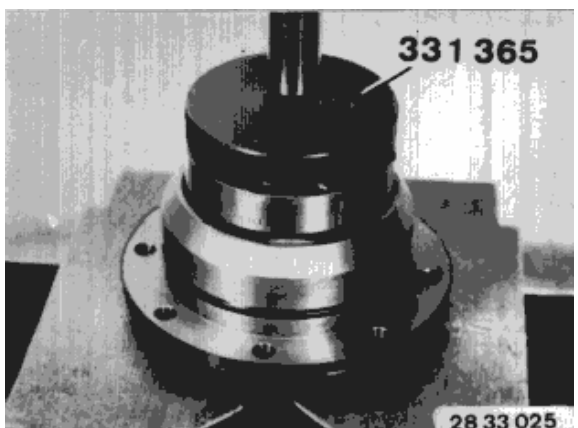
Lift shaft seals out of both bearing caps.



Press out outer bearing race with special tool 33 1 350 (extractor fixture) and special tool 33 1 351 (extractor star tool).

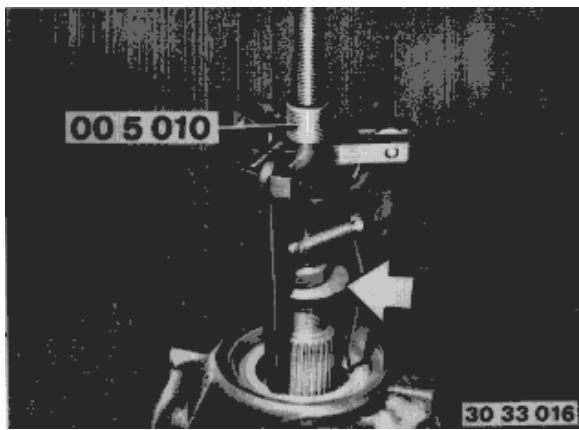
**Caution!**

Special tool must engage in the bearing outer race.

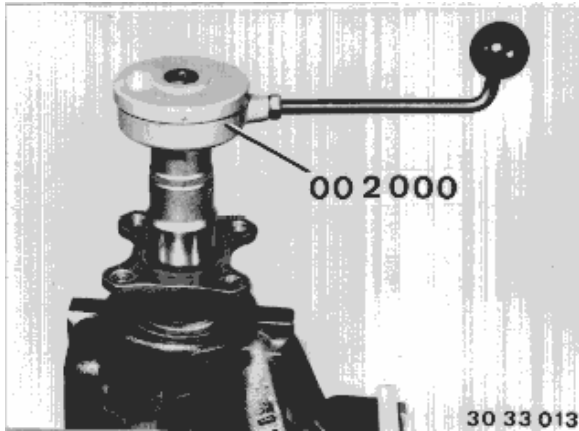


**Installation:**

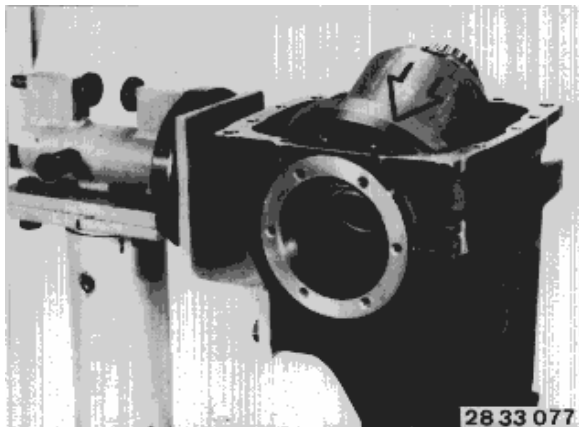
Press-fit new bearing outer races with special tool 33 1 365 (pressure plate).



If necessary, replace shaft seal for input flange,  
refer to 33 11 021



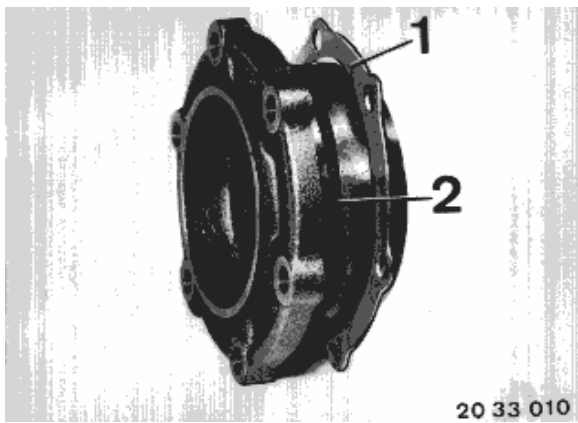
If necessary input bevel gear,  
refer to 33 12 551



Install new limited slip differential with new bearings.  
Use both bearings of same make. Note make.



Lubricate new bearings with approved final drive gear lube  
thoroughly (refer to Fluids and Lubricants) and let them drip dry.



Install side bearing caps marked with belonging shims (1), but at first without O-rings (2).

Evenly tighten bearing cover screws opposite the crown wheel, Tightening torque, refer to Technical Data.



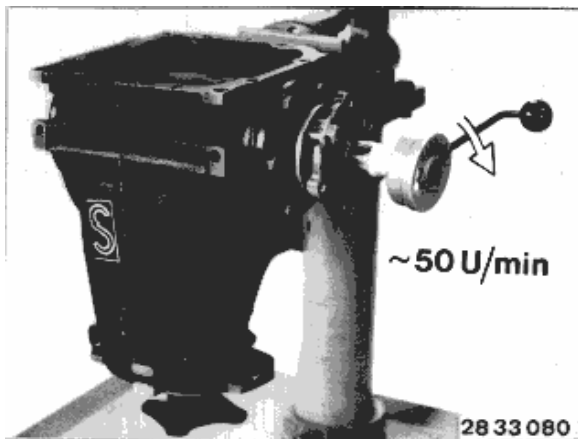
**Installation:**

Compensating bores (1), recognized on the outside tab (2), always face up in installed position of transmission.



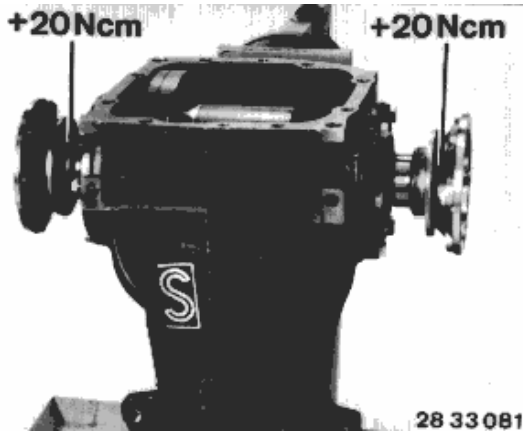
The axial preload force of the final drive mount (4000 N) can be determined from the friction torque, refer to Technical Data

Tighten bolts of second bearing cap uniformly only enough, that the differential can still be turned easily.



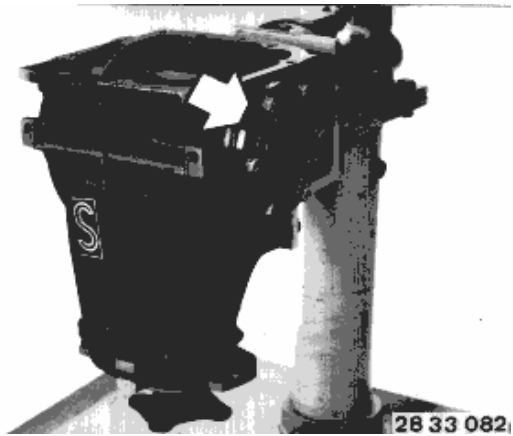
On side opposite crown wheel, fit an output flange and determine friction torque using a bracket with welded on nut (in-house manufacture) and special tool 00 2 000 (friction torque gauge).

Turn friction torque meter at speed of approx. 50 rpm.



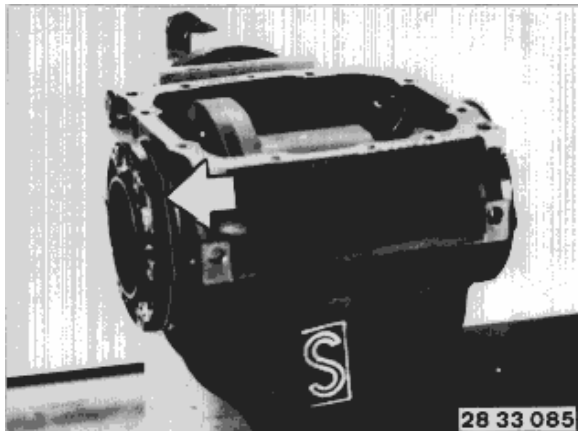
The friction torque specified in the final drive mount table should be achieved but not exceeded,  
refer to Technical Data

If new shaft seals have already been fitted, 20 Ncm must be added to each seal in which an output shaft rotates during the measurement process.



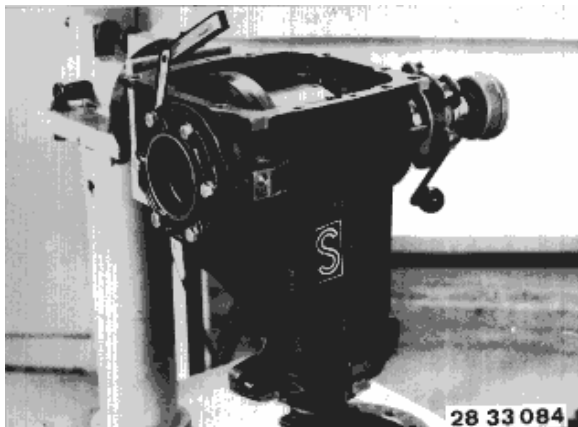
If the specified friction torque is not achieved although both bearing covers are at specified tightening torque,  
refer to Technical Data

a thinner shim must be installed opposite the crown wheel and the measurement must be repeated.

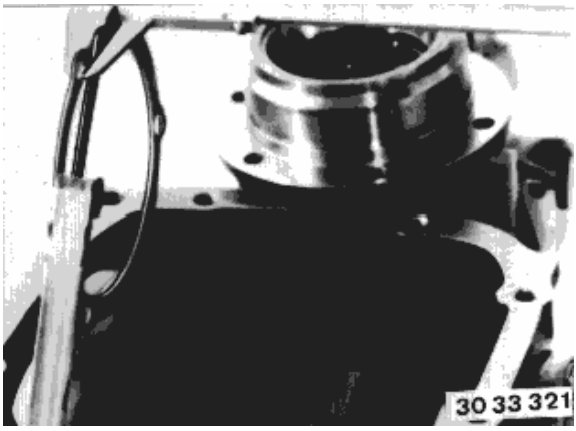


If the specified friction torque is reached although both bearing covers are tightened to the specified tightening torque,  
refer to Technical Data

a thicker shim must be installed opposite the crown wheel and the measurement must be repeated.



To make finding the thickness of shims easier, the distance between the shim and case can be measured with a feeler gage blade and this value is then added to the thickness of the used shims.



Example:

Second bearing cover not tightened down (screws tightened evenly).

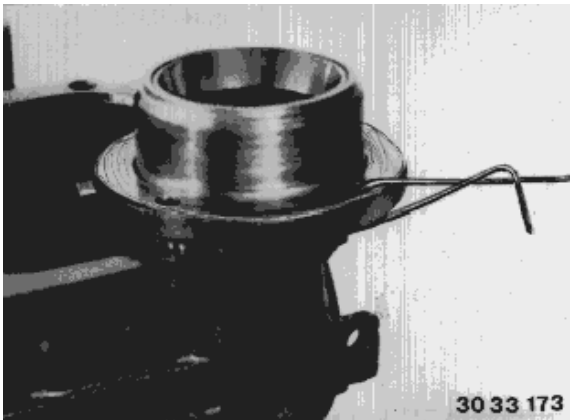
Friction torque, refer to Technical Data

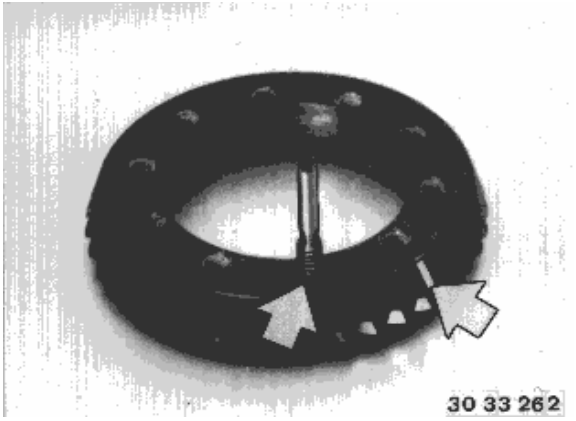
Gap measured with blade	0.20 mm
Used shim	1.40 mm
Install shim of thickness	1.60 mm

Measure again.

Remove differential case.

Arrange side covers and shims of determined thickness - don't mix them up.

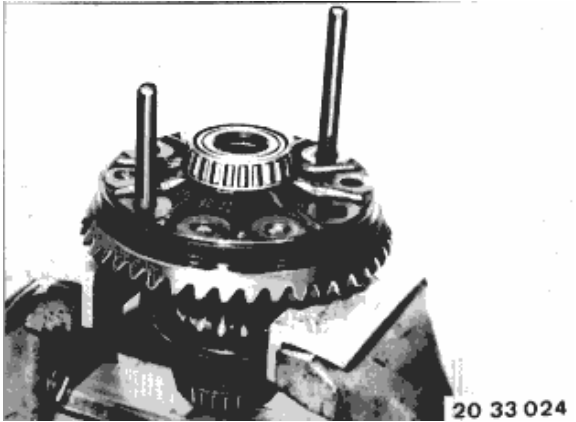




### Installation:

Clean tapped bores thoroughly (tapper).

Heat plate spring to max. 100° C (thermo-chrome pin).

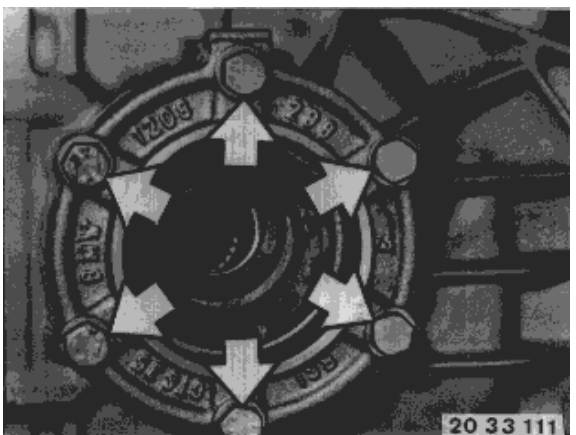


Mount crown wheel with two locally manufactured staybolts for guiding.



Install new bolts with Loctite No. 270. Tighten bolts in order of 1 ... 10.

Tightening torque and torsion angle, refer to Technical Data



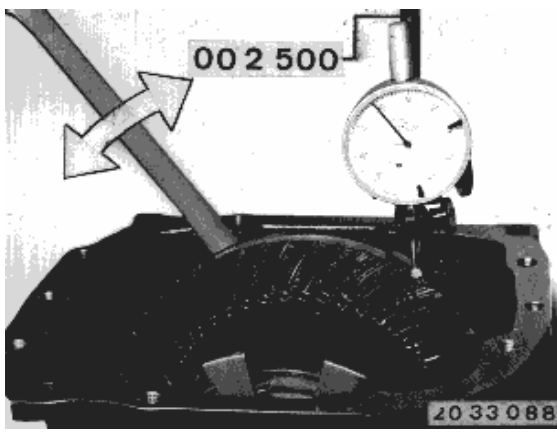
Install new limited slip differential with crown wheel and pulse sender.

Install marked side bearing covers with corresponding washers and new O-rings.

Tighten bearing cover screws evenly.

Tightening torque, refer to Technical Data

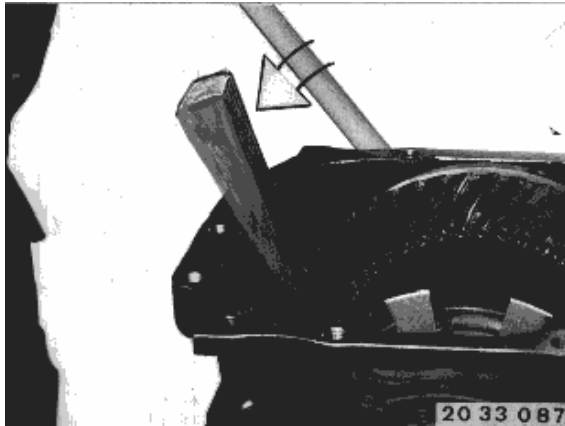




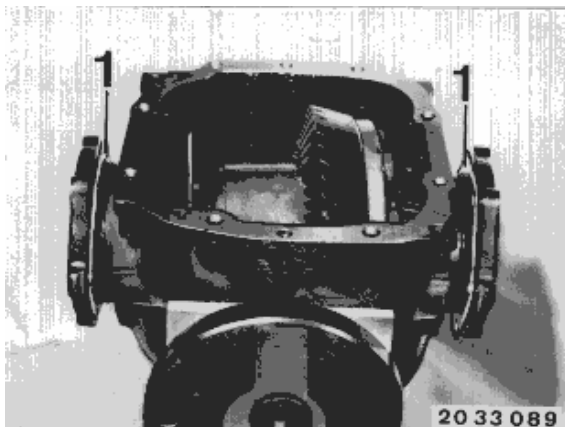
Secure special tool 00 2 500 (dial gauge holder) and measure torsion flank clearance, refer to Technical Data

**Caution!**

The contact pattern is always the indicator for perfect gear adjustment, refer to 33 12 551



To check the tooth contact pattern, coat the crown wheel teeth with printer's ink, turn in both directions several times and stop crown wheel suddenly with a piece of hard wood.



Correction of torsion clearance, refer to Technical Data

and contact pattern is performed by altering the thickness of both shims (1).

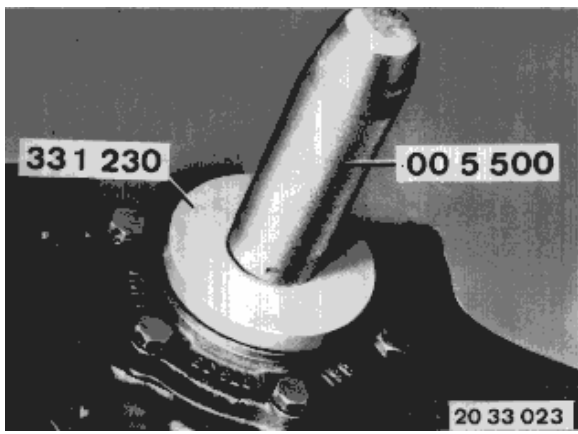
If backlash is too great, install a thinner shim on the crown wheel end.

If backlash is too small, use a thicker shim on the crown wheel end.

Axial displacement of the crown wheel of 0.01 mm signifies a change in tooth flank clearance of 0.0076 mm.

**Caution!**

The total thickness of both shims may no longer be changed. If a thicker or thinner shim was required to correct the tooth contact pattern, the total thickness must be corrected with the second shim, since otherwise the friction torque of the bearings would be changed again.



### Installation:

Dip new shaft seals in final drive gear lube.

Drive in shaft seal firmly with special tool 33 1 230 (impact bush) in conjunction with special tool 00 5 500 (handle).

### Note:

It is possible that the special tool 33 1 230 might have to be reworked to compensate for casting tolerances on the side cover.