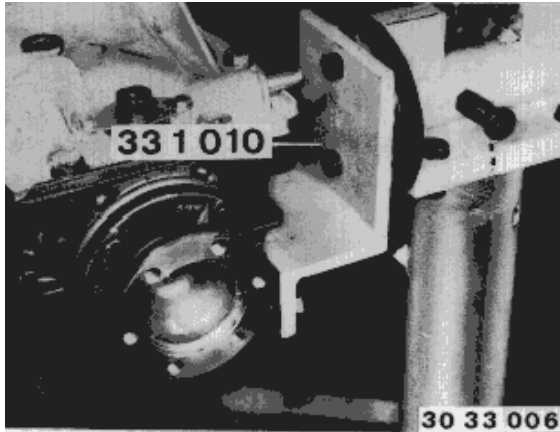


Removing and installing final drive,
refer to 33 10 010



Drain off fluid.

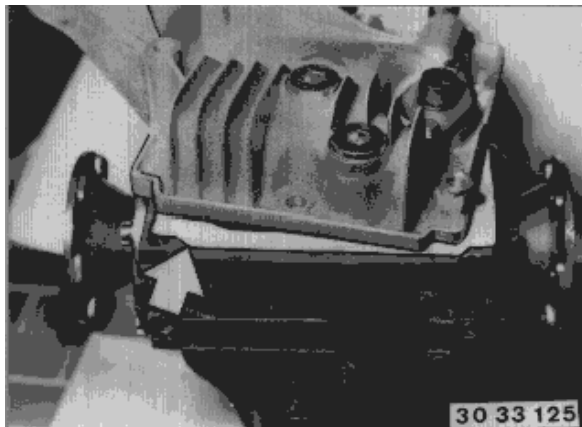
Secure final drive to special tool 33 1 010 (retaining bracket).

Installation:

Add oil.

Oil volume, refer to Technical Data

Refer to Fluids and Lubricants for approved oil.

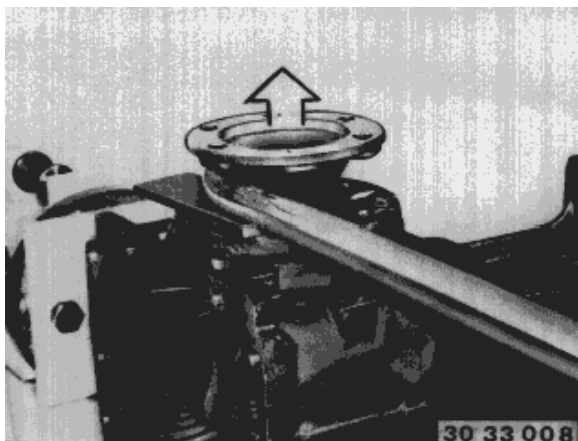


Take off case cover.

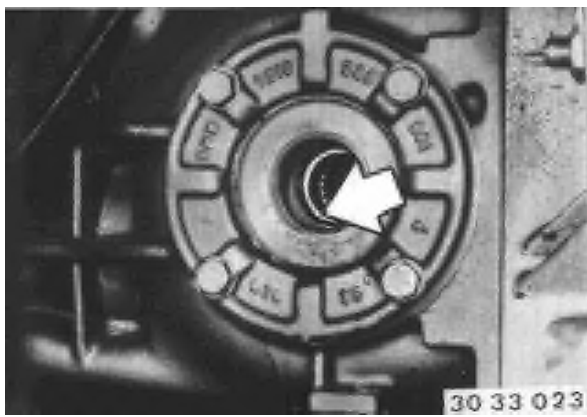
Installation:

Replace gasket.

Tightening torque, refer to Technical Data



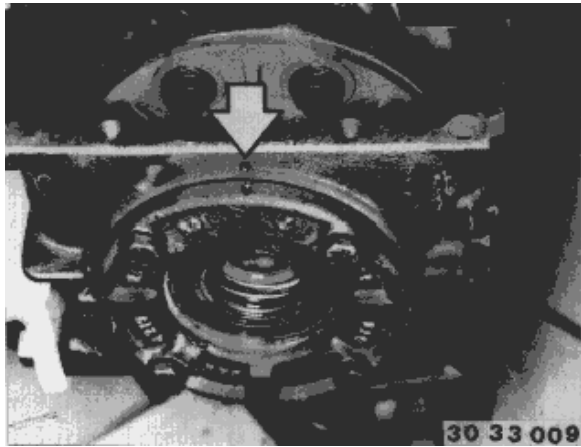
Press off both drive flanges with a tire iron.

**Installation:**

Before installation of the drive flange, place round wire snap ring in groove of the differential case that both ends are recessed in 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.



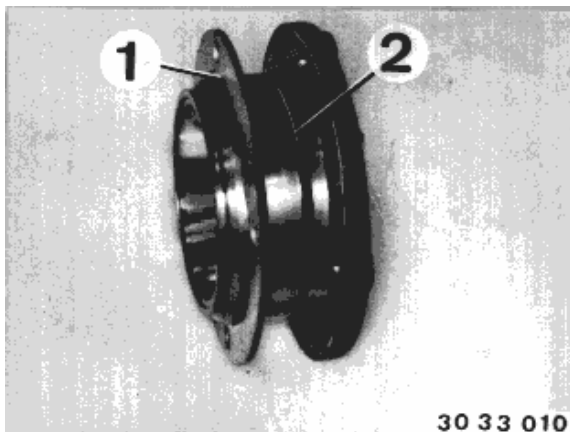
Unscrew and remove both bearing caps.

Caution!

Mark bearing caps - do not mix up bearing caps and shims.

Installation:

For tightening torque, refer to Technical Data



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

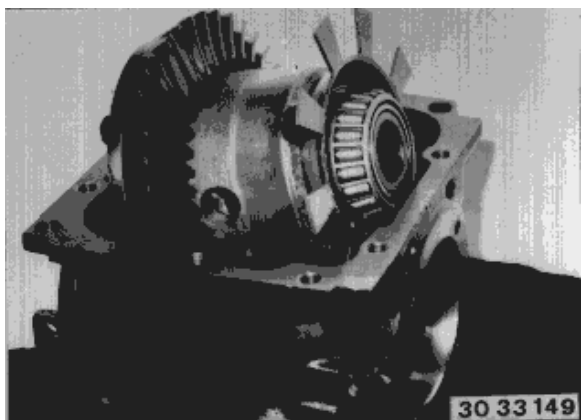
Check O-ring (2), replace if necessary.

Caution!

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

After adjusting the friction torque, the backlash and tooth contact pattern will have to be adjusted again,

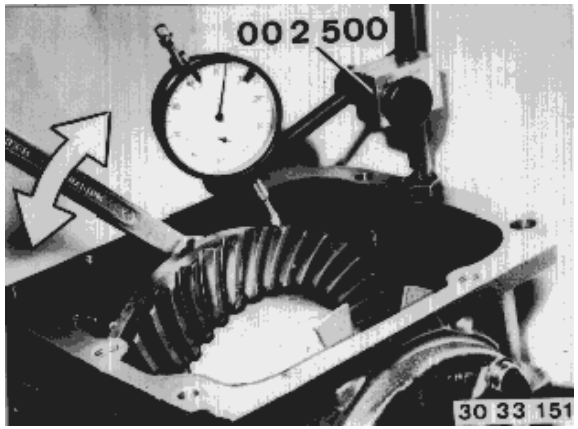
refer to 33 12 551



Remove complete limited slip differential.

Installation:

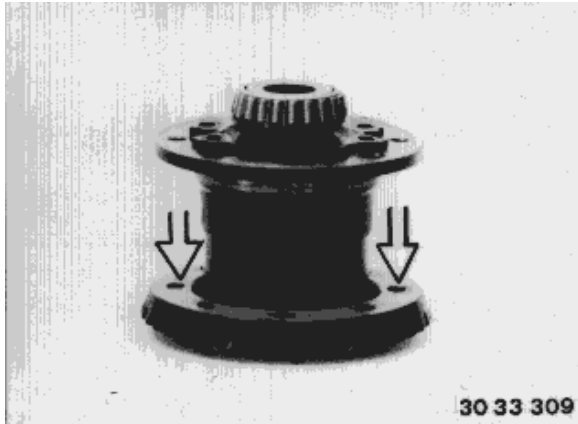
Do not bend the pulse generator wheel.



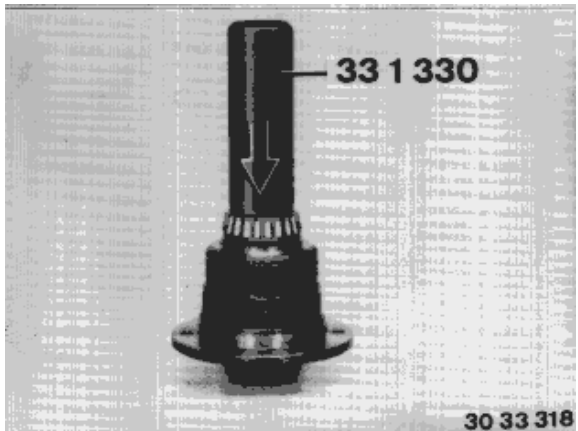
Press off pulse spider.

Installation:

Press fit pulse alternator wheel using special tool 33 1 304.



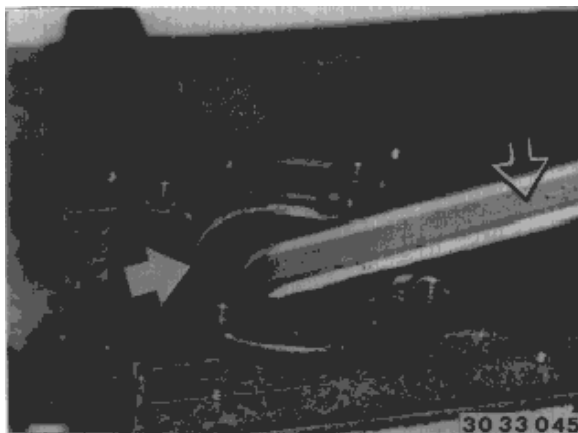
Remove crown wheel (cold).



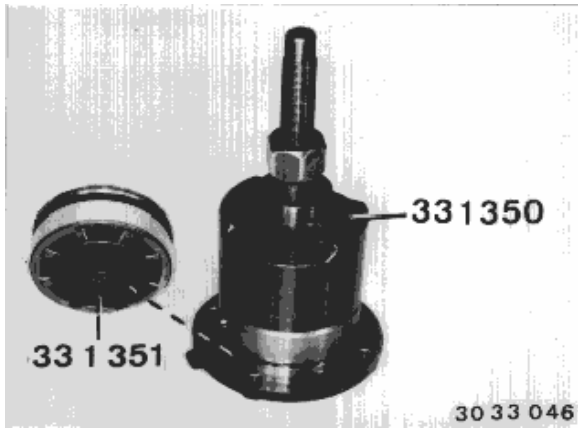
Press-fit new taper roller bearing to new final drive housing with limited-slip differential cold using special tool 33 1 330.

Caution!

Only install both bearings of same make. Note make, which is needed later to determine the friction torque.



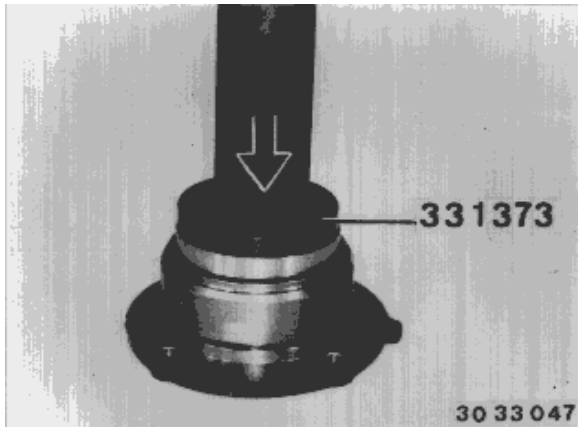
Lift shaft seals out of both bearing caps.



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.

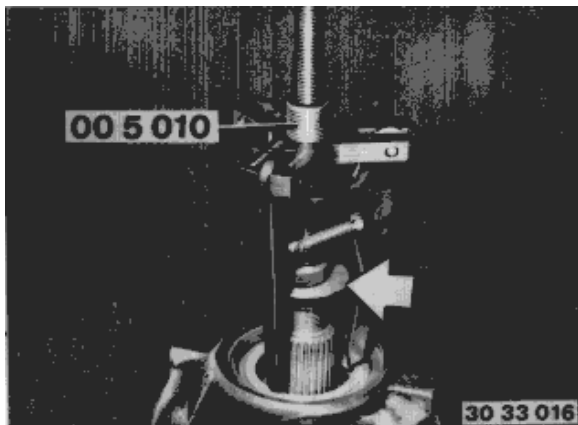


Installation:

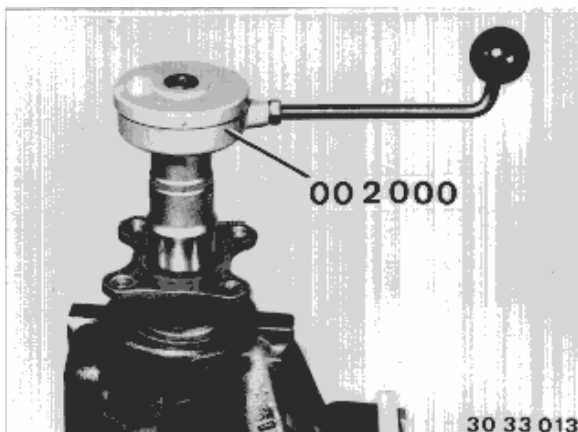
Press-fit new bearing outer races with special tool 33 1 373 (pressure plate).

Caution!

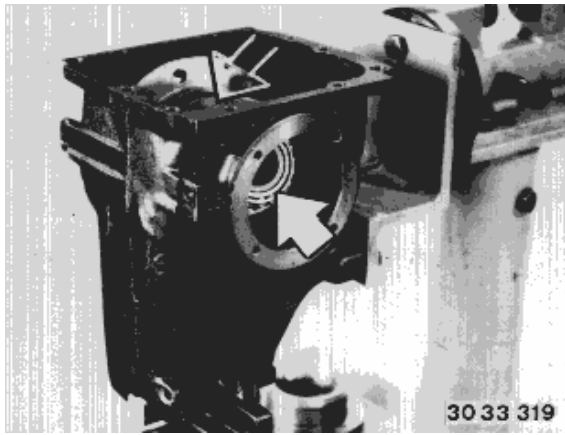
Only use same make bearings for both bearings.



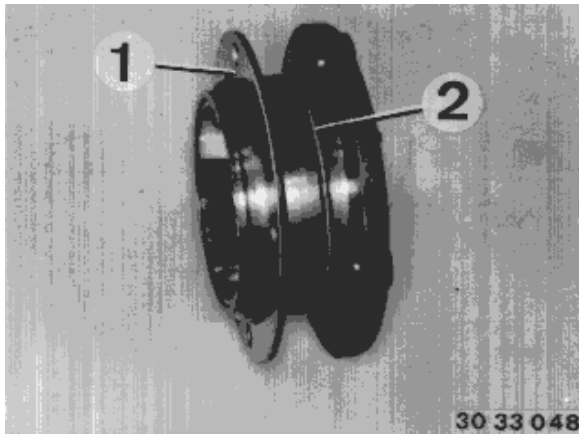
If applicable, replace shaft seal for input flange, refer to 33 11 021



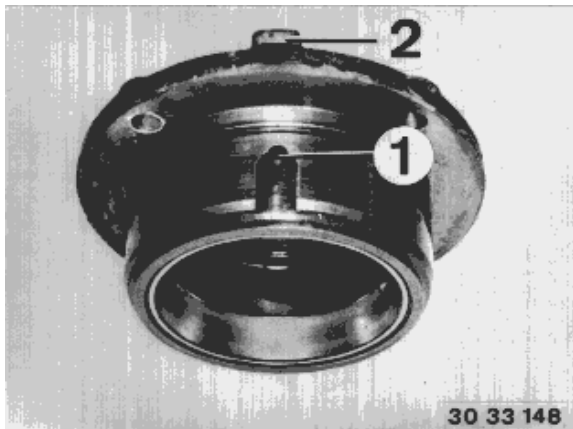
If applicable, replace drive pinion, refer to 33 12 551



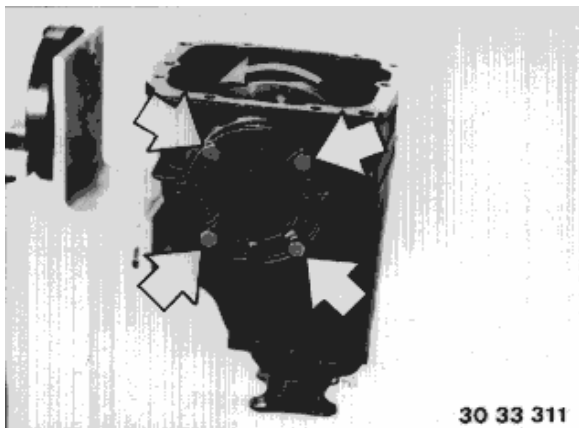
Install new limited slip differential with new bearings.
 Use both bearings of same make. Note make.
 Lubricate new bearings with approved final drive gear lube thoroughly (refer to Fluids and Lubricants) and let them drip dry.



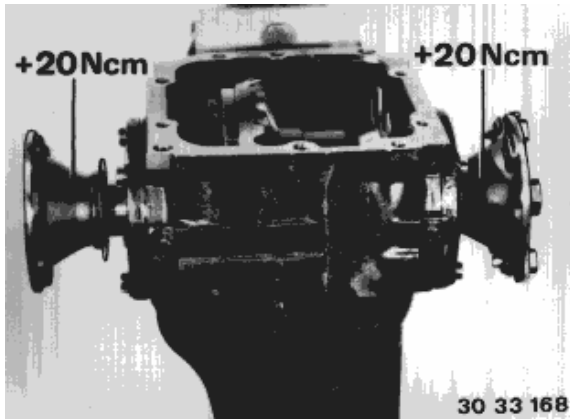
Install side bearing caps marked with belonging shims (1), but at first without O-rings (2).
 Tighten bolts of bearing cap opposite the crown wheel end uniformly to correct tightening torque.
 Tightening torque, refer to Technical Data



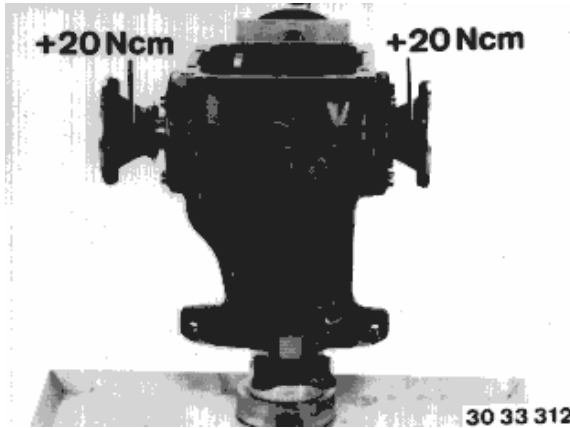
The compensating bore (1), recognized on the outside by tab (2), always faces up in installed position of the transmission.



Axial preload force of differential case bearings (4000 N) can be determined with help of the friction torque, refer to Technical Data
 Tighten bolts of second bearing cap uniformly only enough, that the differential can still be turned easily.

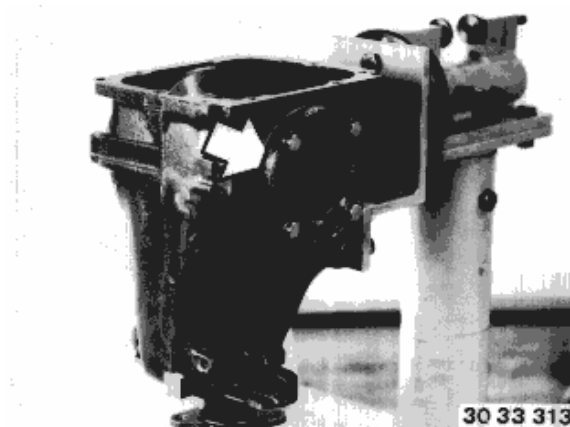


On side opposite crown wheel, fit an output flange and determine friction torque using a bracket with welded on nut (in-house manufacture) and special tool 00 2 000 (friction torque gauge). Turn friction torque meter at speed of approx. 50 rpm.

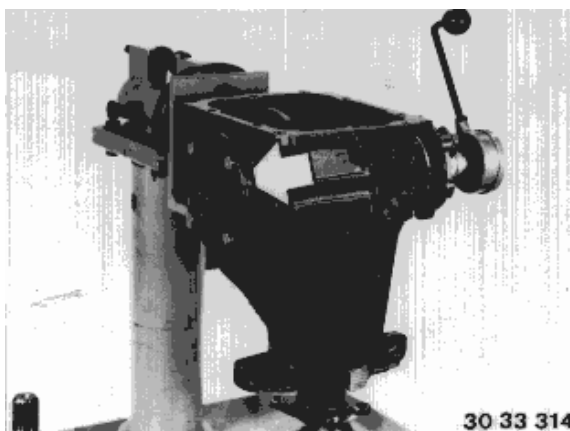


The friction torque specified in the differentail case bearing table should be reached, but must not be exceeded, refer to Technical Data

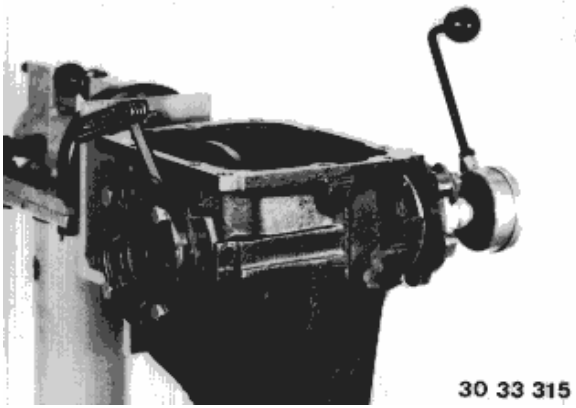
If new shaft seals have already been installed, add 20 Ncm to each seal in which an output shaft runs during the measuring process.



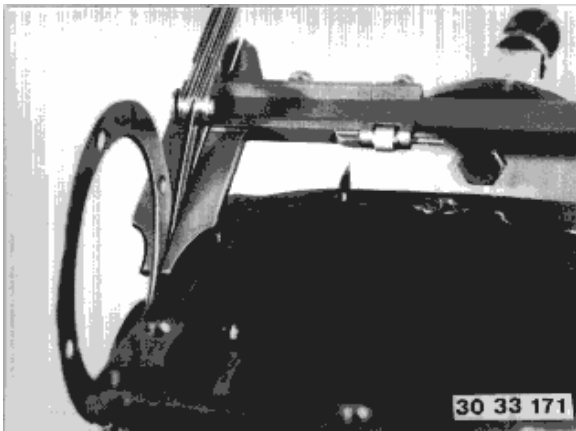
If the specified friction torque is not achieved although both bearing covers are not at specified tightening torque, refer to Technical Data, a thinner shim must be installed opposite the crown wheel and the measurement should be repeated.



If the friction torque is reached, even though the second bearing cap is not yet tightened to correct tightening torque (refer to Technical Data), use a thicker shim on the crown wheel end and repeat the measuring procedures.



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.

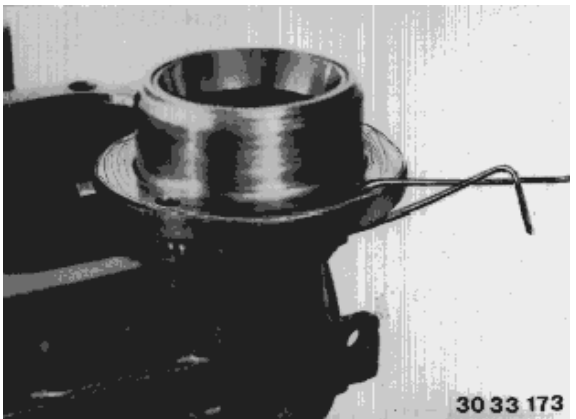


Example:

Second bearing cap not tightened fully (bolts screwed in uniformly).
Friction torque, refer to Technical Data

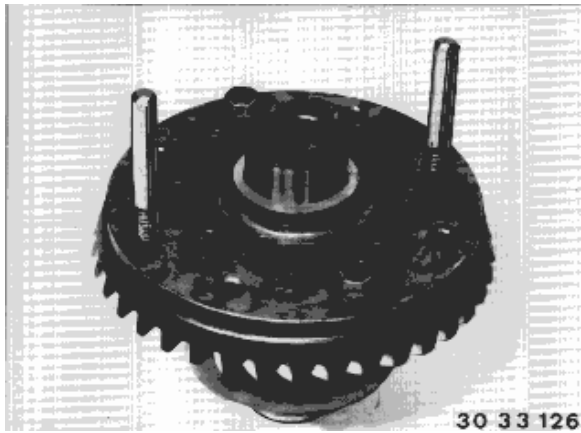
Gap measured with blade	0.20 mm
Used shim	1.40 mm
Install shim of thickness	1.60 mm

Measure again.



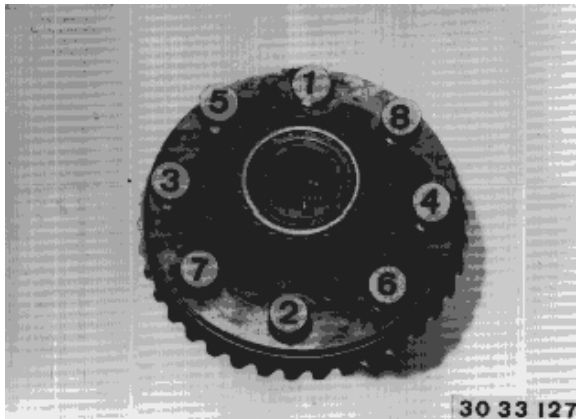
Remove differential case.

Arrange side covers and shims of determined thickness - do not mix them up.

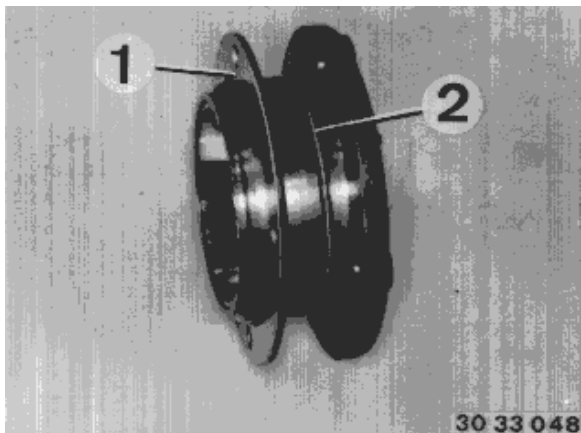


Installation:

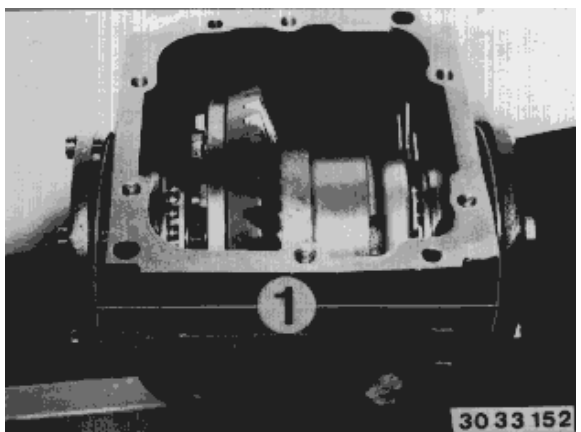
Clean tapped bores thoroughly (tapper).
 Heat plate spring to max. 100 °C (thermo-chrome pin).
 Mount crown wheel with two locally manufactured staybolts for guiding.



Install new bolts with Loctite No. 270. Tighten bolts in order of 1 ... 8.
 Tightening torque and torque angle, refer to Technical Data.



Install differential with crown wheel and pulse gear.
 Install side cover acc. to designation with corresponding washers (1) and new O-rings (2).
 Tightening torque, refer to Technical Data

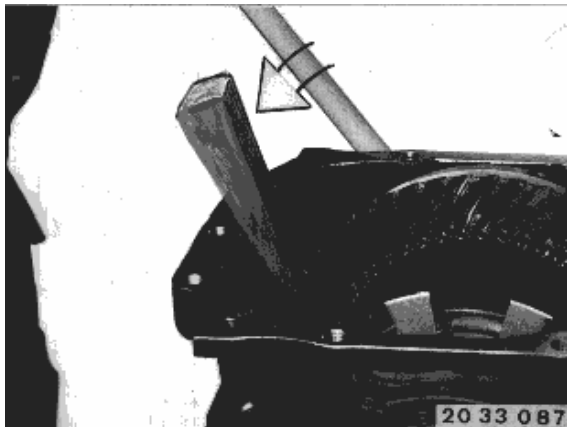


Backlash/tooth contact pattern adjustments
 Attach special tool 00 2 500 (dial gauge holder) and measure torsional face runout,
 refer to Technical Data

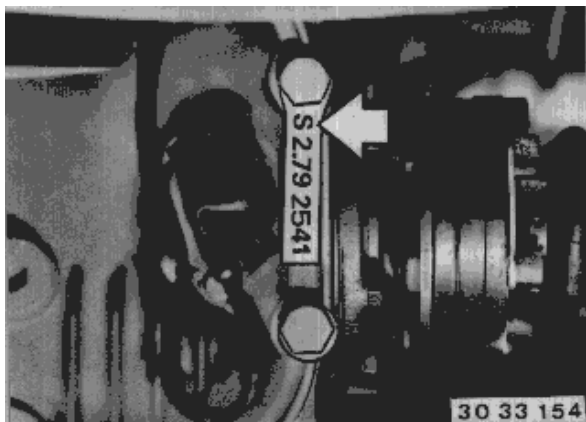
Caution!

The tooth contact pattern is always most important for a perfectly adjusted pinion/crown wheel.

For general information on tooth contact pattern adjustments, refer to "Replacing Drive Pinion with crown wheel" in 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 for both shim thicknesses cannot be altered any more.

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.