

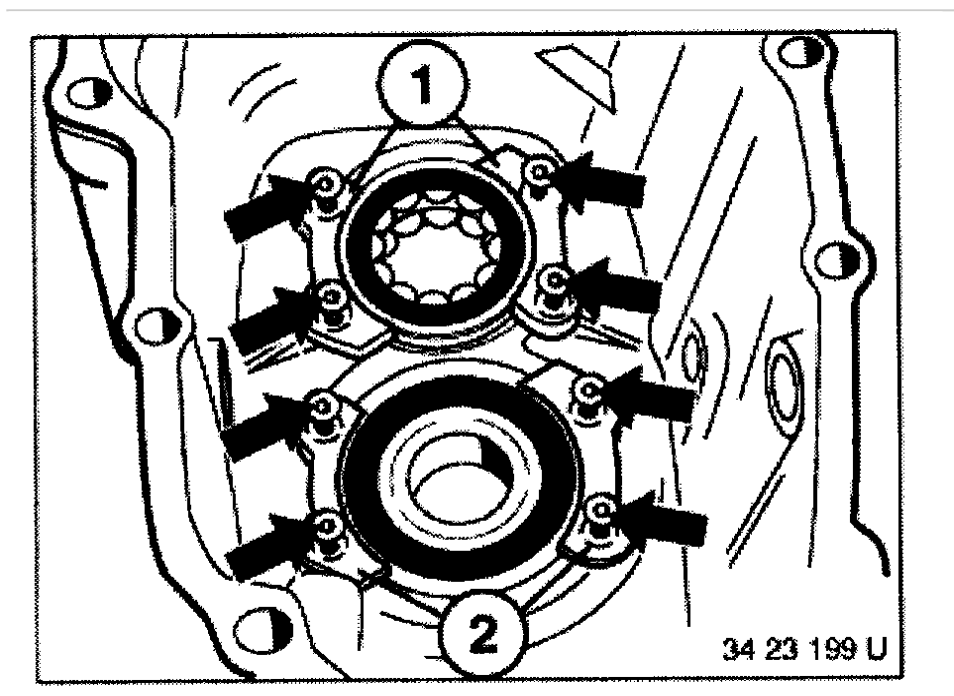
1997 BMW 328is (E36) L6-2793cc 2.8L DOHC (M52)

Vehicle > Transmission and Drivetrain > Manual Transmission/Transaxle > Service and Repair > Procedures

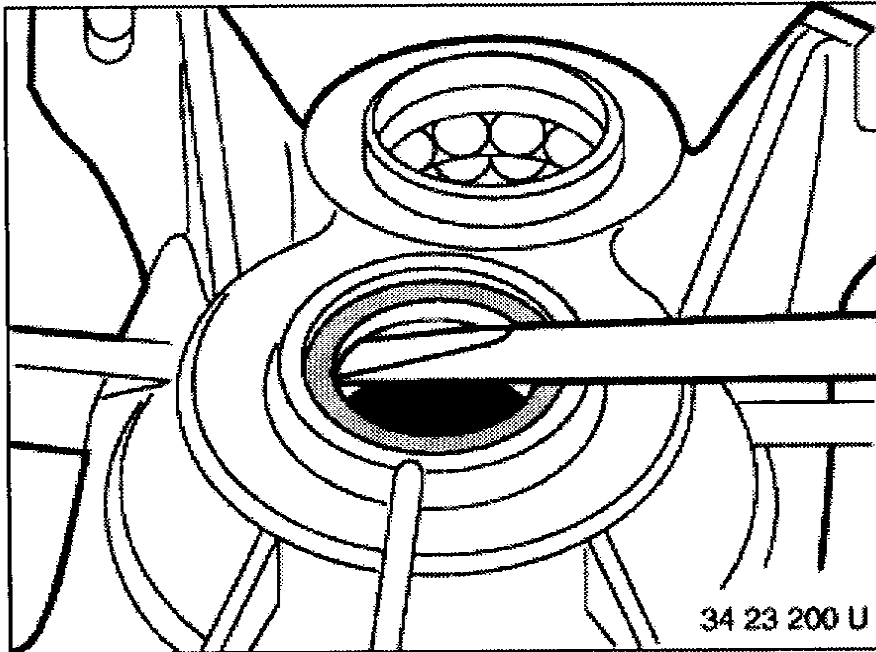
## REPLACING ALL TRANSMISSION BEARINGS

### Replace the bearings of all transmission shafts (S5D 260Z/310Z/320Z)

**Note:** Input and output shafts removed



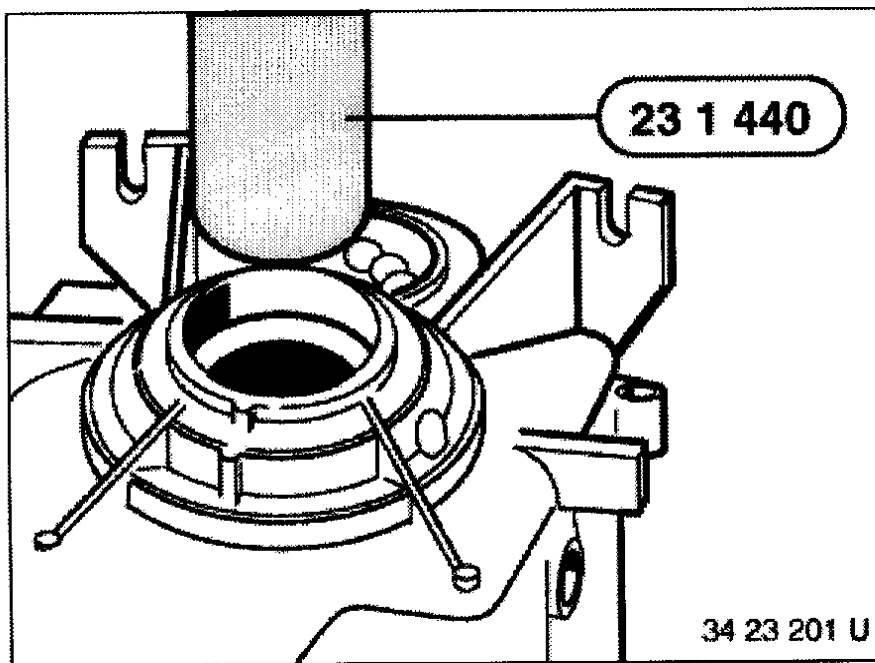
Rear Case Section: Unscrew bolts.  
Remove retaining plates (1 and 2).



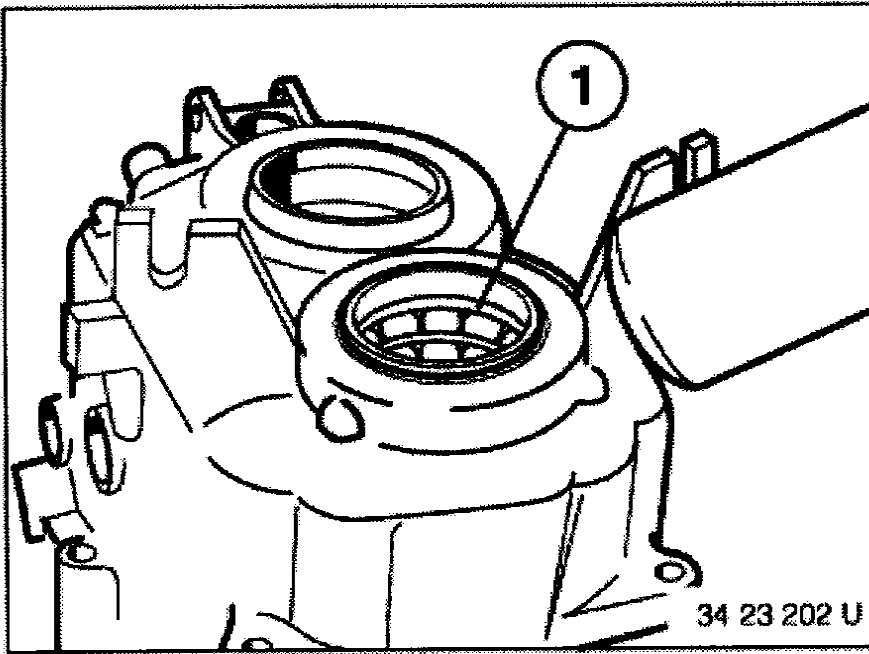
Lever out radial sealing ring for the output flange.

Installation:

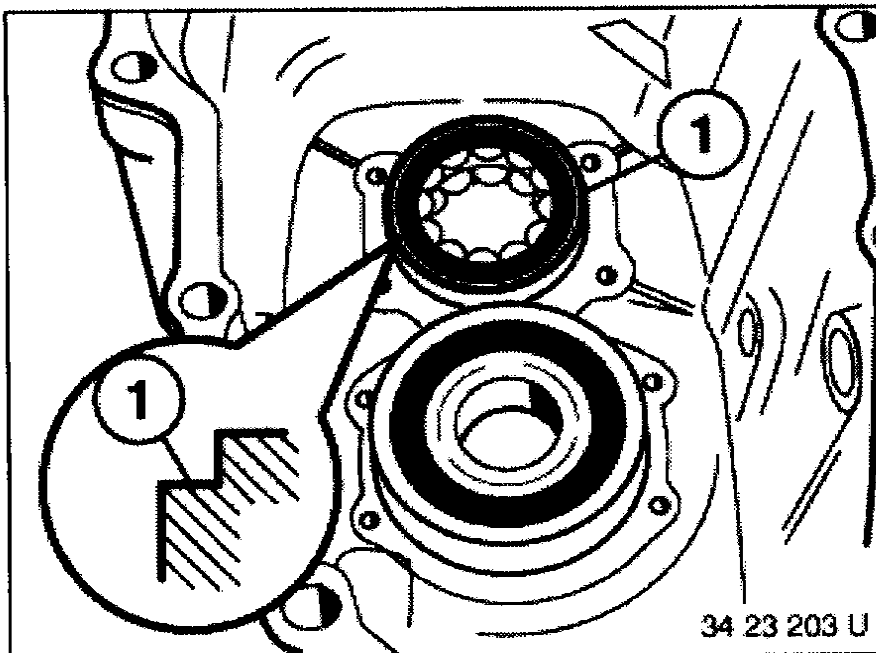
Replace radial sealing ring.



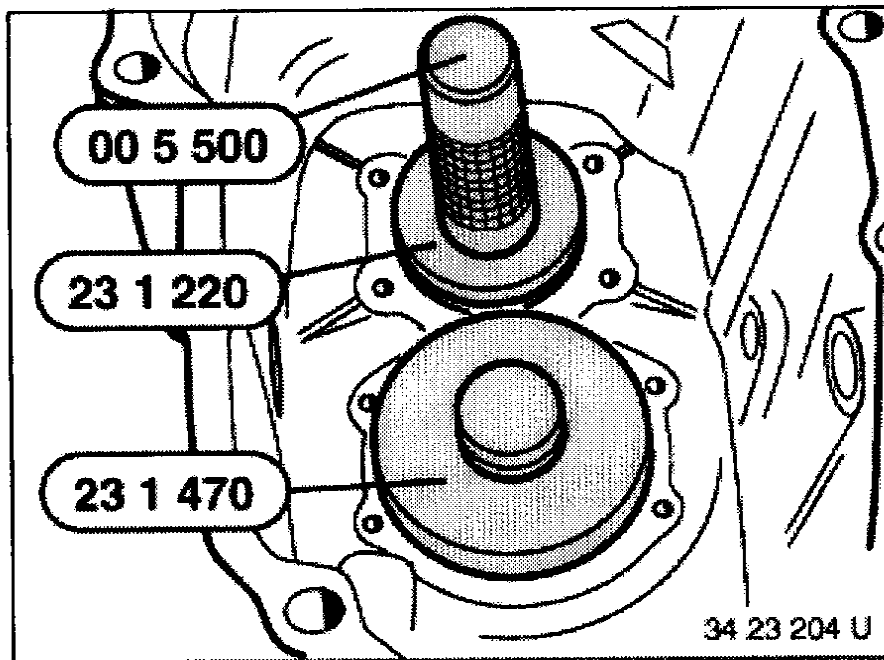
Drive out the ball bearing for the output shaft toward the inside, using Special Tool 23 1 440.



Layshaft: Heat case in area of the ball bearing to about **80°C** with a hot air blower.  
 Remove ball bearing (1) toward the inside.  
 Clean the rear case section to remove dirt.

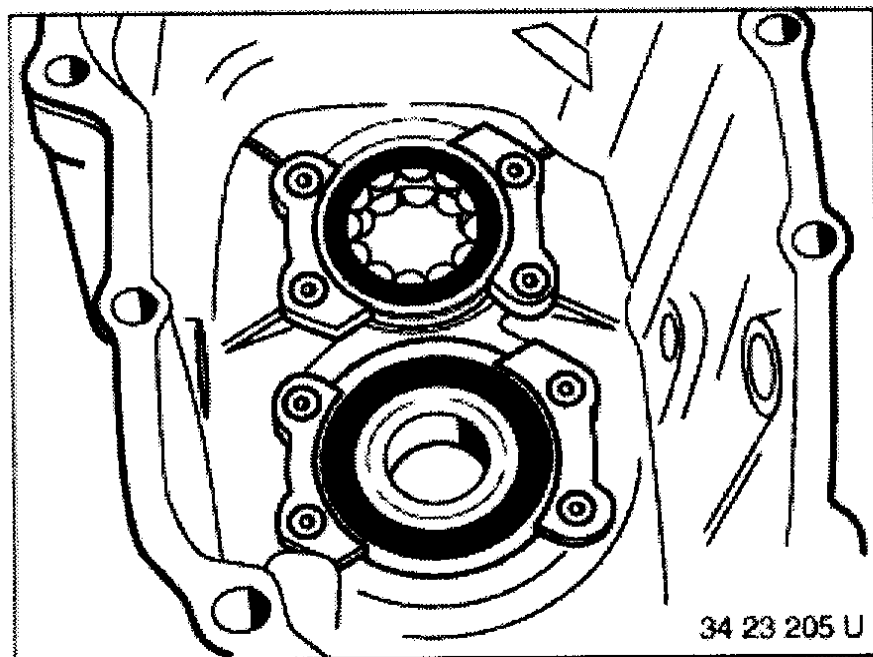


Heat rear case section in area of the ball bearing uniformly at about **80°C** with a hot air blower.  
 Install ball bearings for output shaft and layshaft.  
 Insert ball bearing (1) for the layshaft with the shouldered en( (1) facing in.



If necessary, drive in ball bearings to fit tight.

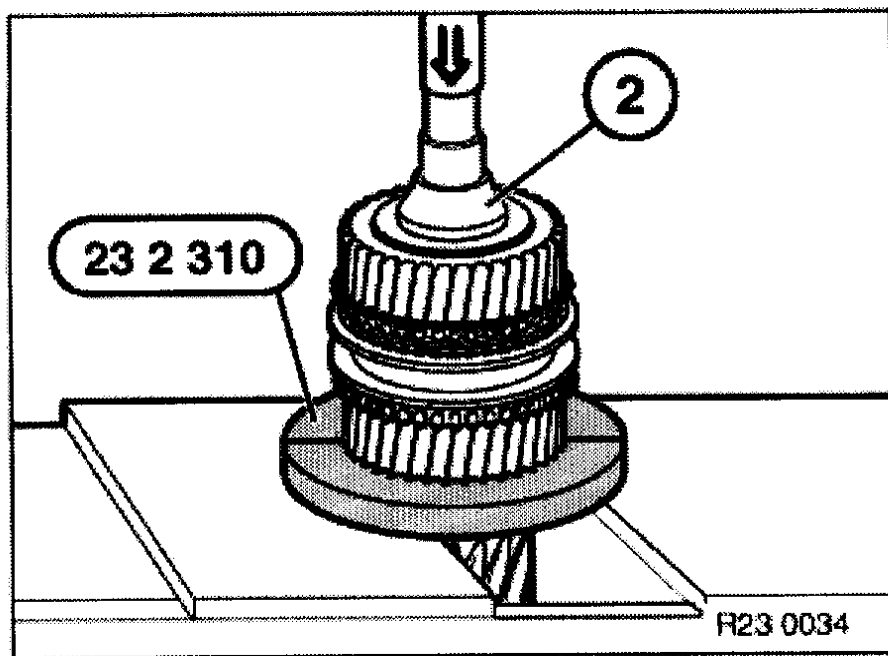
Output shaft, Special Tool 23 1470, countershaft, Special Tool 23 1 220 in conjunction with Special Tool 00 5 500 (handle)



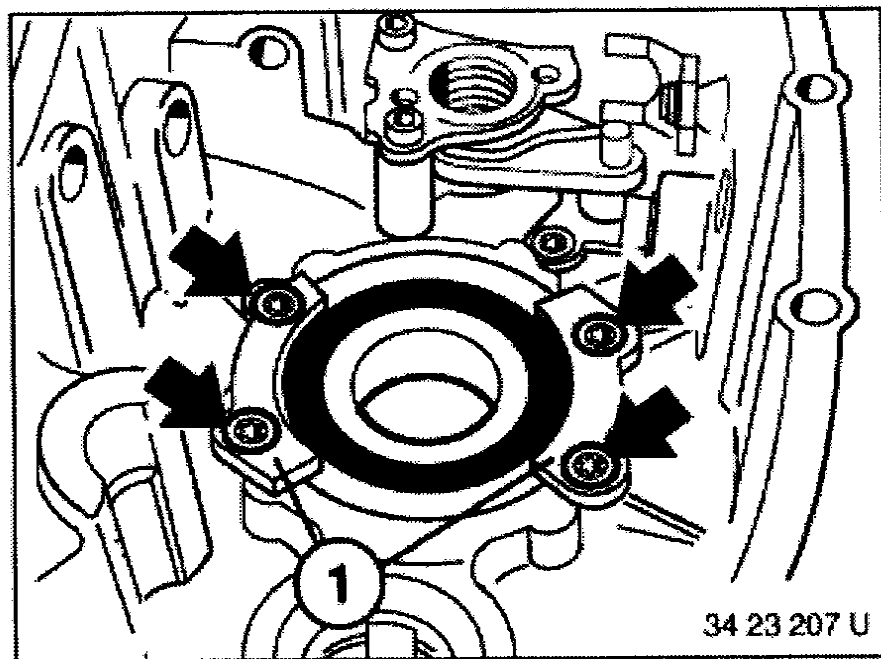
Install retaining plates.

Insert and secure screws with screw retaining agent.

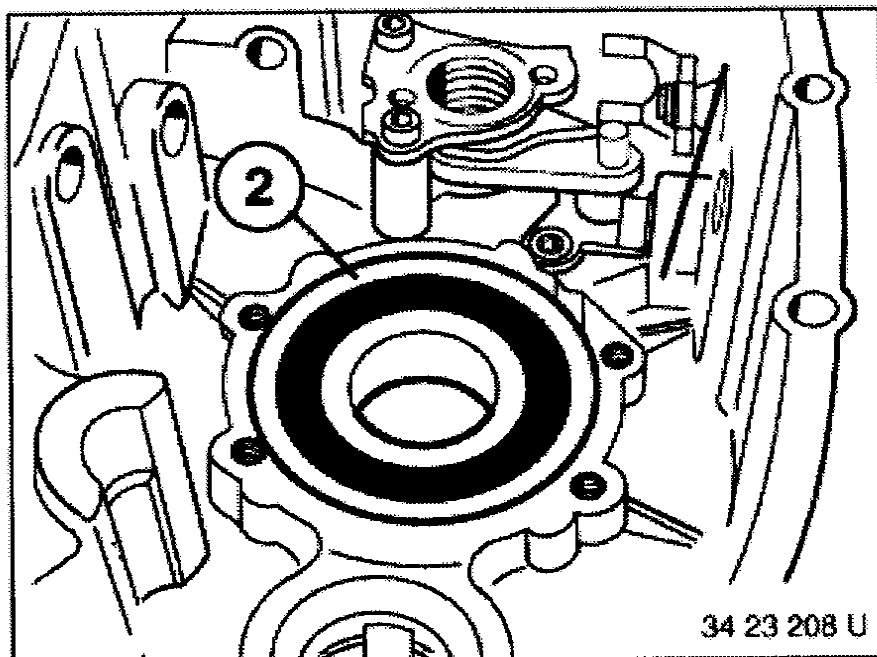
Tightening torque, refer to Manual Transmission/Transaxle, Specifications.



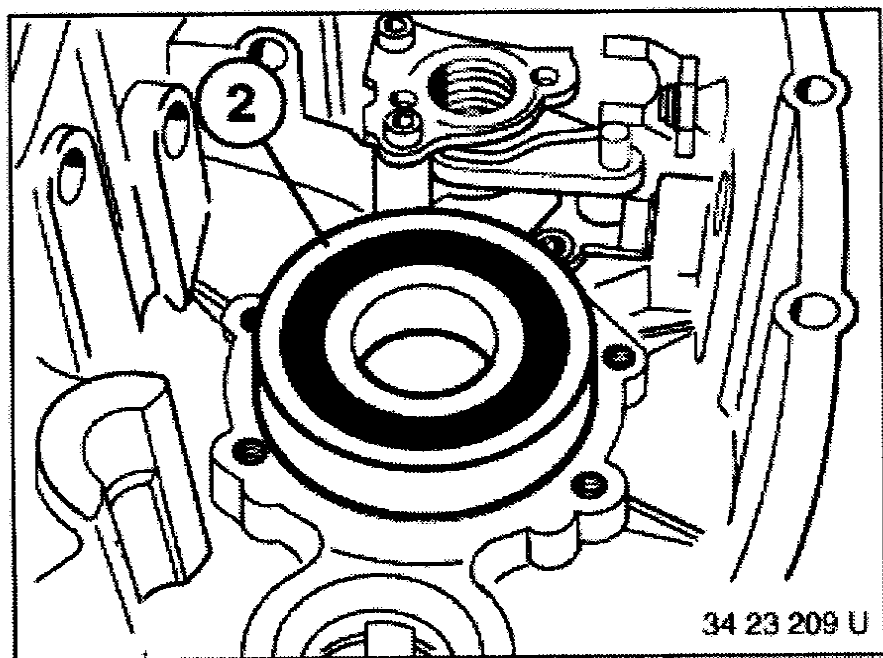
In order to replace the inner bearing race (2), the 3rd/4th gear wheel must be pressed off using tool 23 2 310. Removal, refer to Replacing the Synchronizing Device 3rd/4 gear.



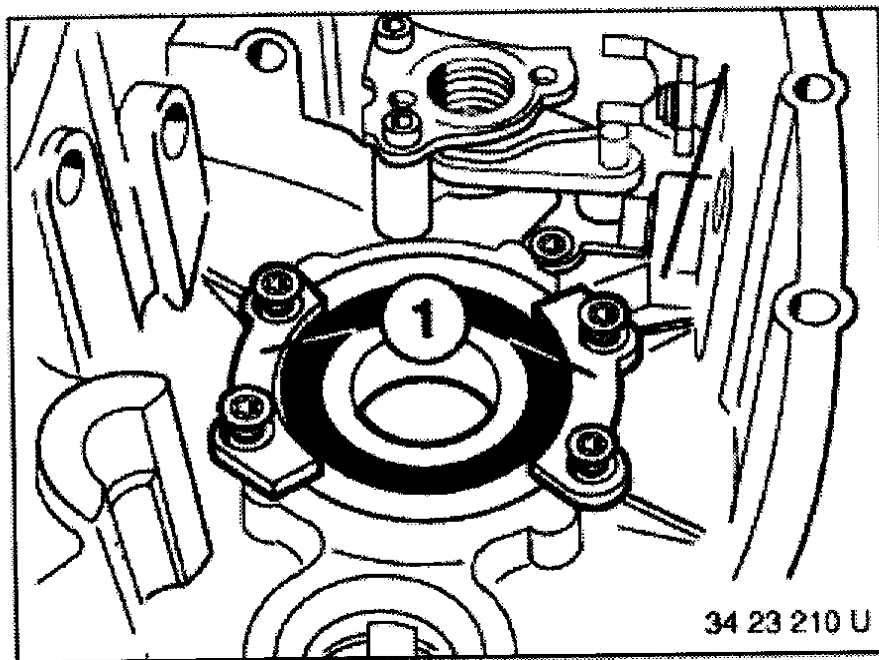
Bearings in Front Case Section:  
Input Shaft: Unscrew bolts.  
Remove retaining plates (1).



Heat case in area of the ball bearing to about 80°C with a hot air blower.  
Pull out ball bearing (2); if necessary drive it out from outside to inside with help of Special Tool 23 1 440.



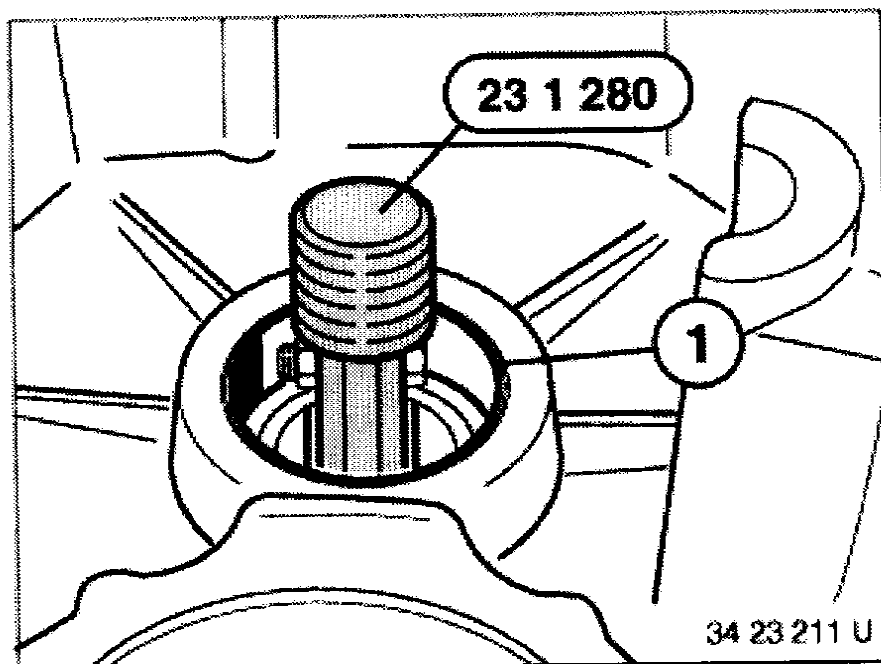
Heat case in area of the ball bearing to about 80°C with a hot air blower.  
Install ball bearing (2); if necessary drive it in to fit tight with Special Tool 23 1470.



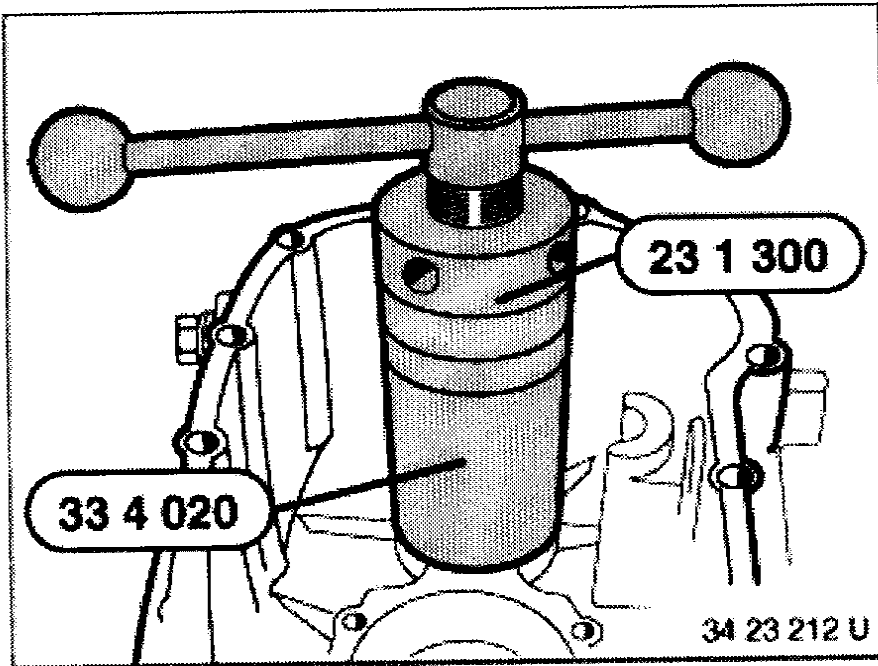
Insert retaining plates (1).

Insert and secure screws with screw retaining agent.

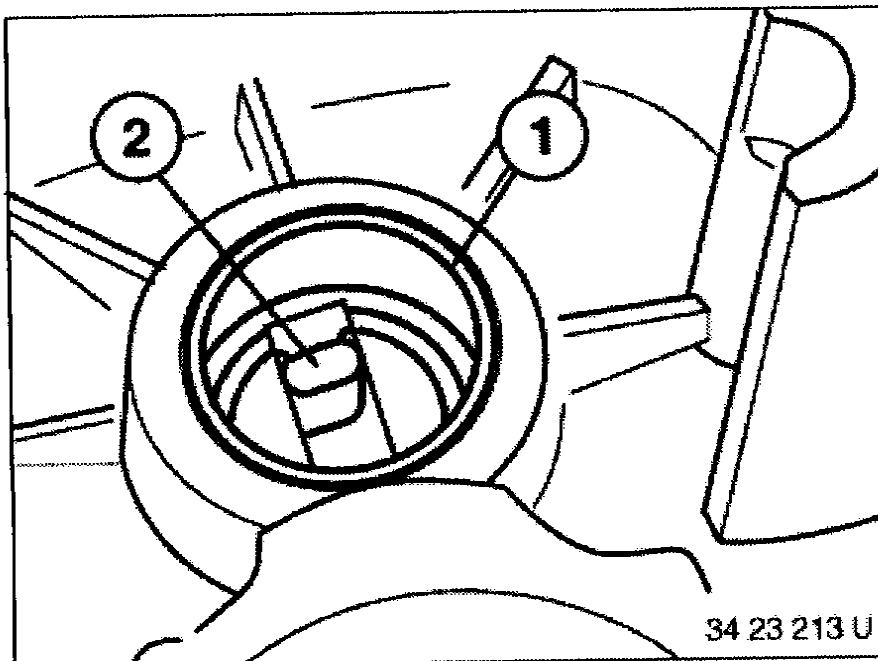
Tightening torque, refer to Manual Transmission/Transaxle, Specifications.



Layshaft: Bearing shell (1) for needle bearing. Place Special Tool 23 1 280 in bearing shell (1).

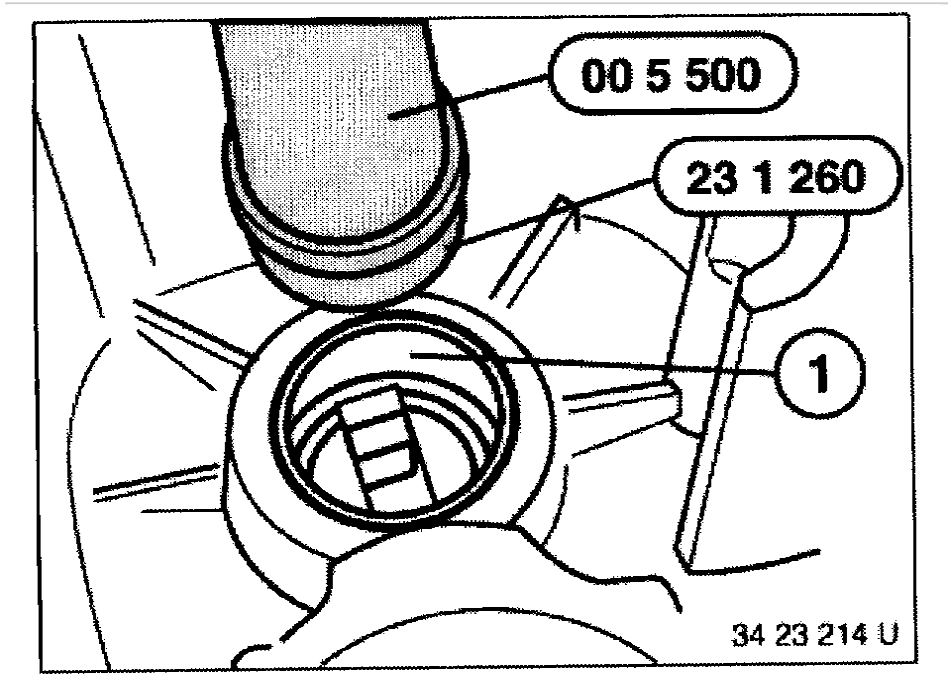


Apply Special Tool 33 4 020.  
Screw on Special Tool 23 1 300.  
Pull out bearing shell.



Installation:

Insert bearing shell (1) so that the slot in the bearing shell is aligned with beads (2) (turning lock) in the case.



Drive in bearing shell (1) with Special Tool 23 1 260 in conjunction with Special Tool 00 5 500 (handle).