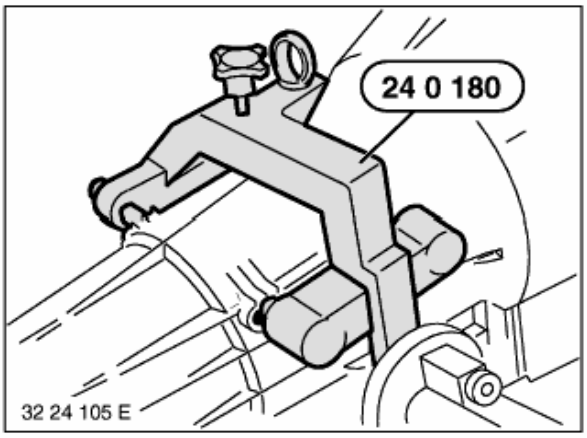
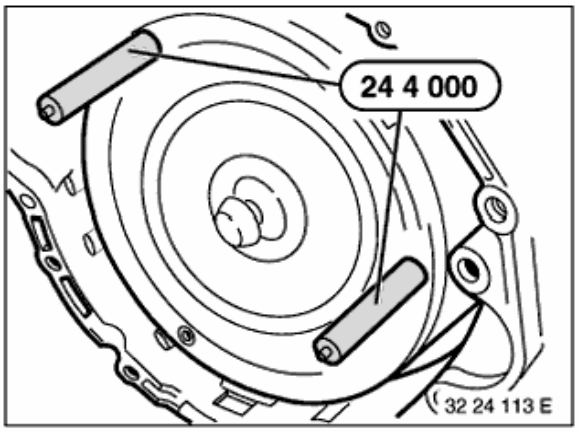
(transmission removed)

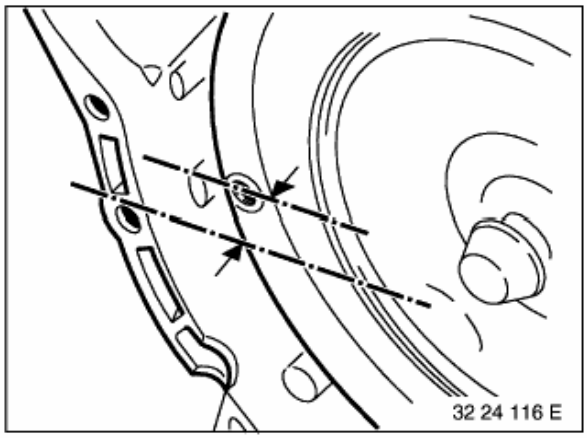


Secure transmission to assembly frame with special tool 24 0 180.

Drain off transmission oil.



Screw special tool 24 4 000 into torque converter and remove torque converter.



Installation:

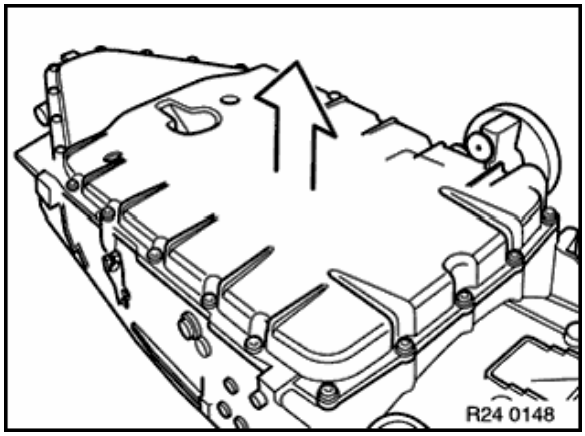
Push the torque converter through the sealing ring until it reaches the first stop position on the gear shaft.

Manually push and turn the torque converter into the converter bell housing until the recess of the converter hub rests in the drive plate of the pump wheel and the torque converter perceptibly slides in.

The torque converter is correctly installed when the distance between the surface of the tapped hole at the torque converter and the contact surface of the converter bell housing is approx. 29 mm.

Caution!

If the torque converter is incorrectly installed, the drive plate of the oil pump will be destroyed when the transmission is bolted to the engine.



Unscrew bolts and remove oil pan.

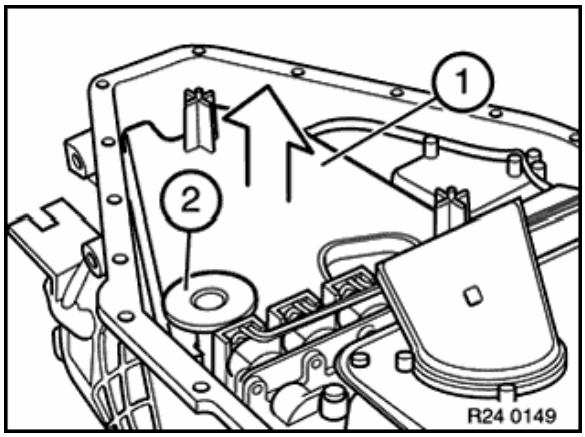
Installation:

Clean sealing surfaces.

Use new gasket.

Tightening torque,

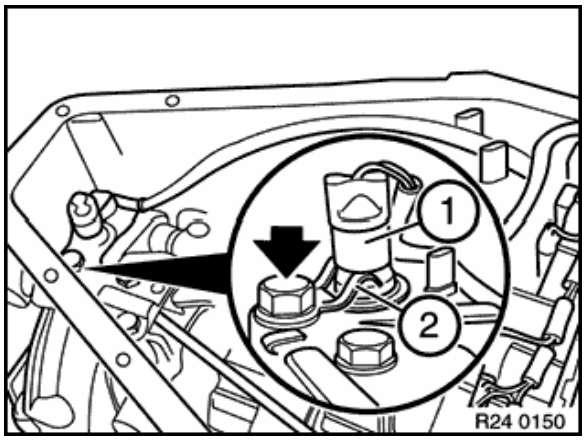
refer to Technical Data 24 11 5AZ.



Remove oil container (1) with magnetic disc (2).

Installation:

Clean magnetic disc.



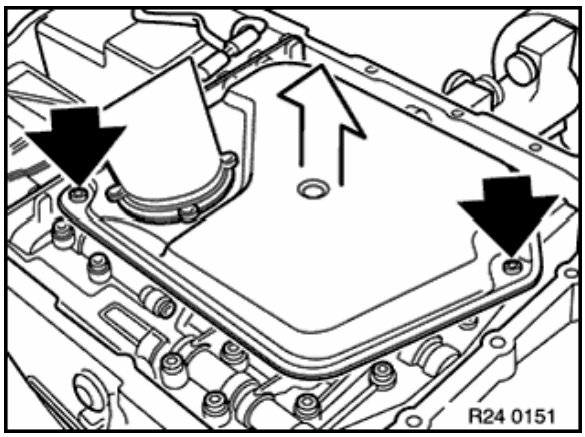
Unfasten screw and remove impulse sensor (1) and retaining clip (2).

Installation:

Note cable routing.

Tightening torque,

refer to Technical Data 24 34 4AZ.



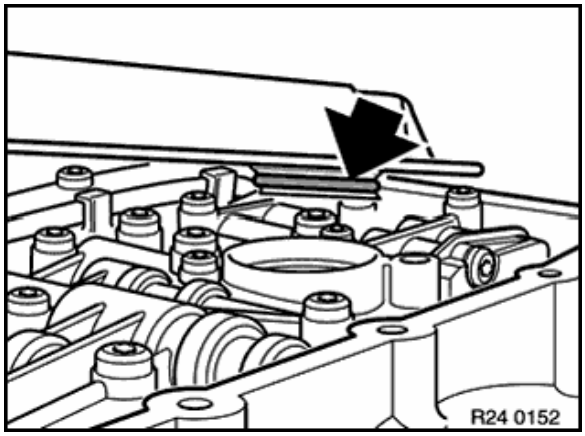
Unfasten screws and remove oil strainer.

Installation:

If necessary, replace oil strainer.

Tightening torque,

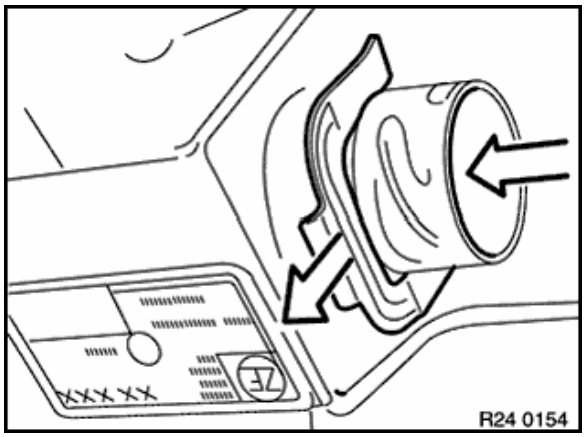
refer to Technical Data 24 31 2AZ.



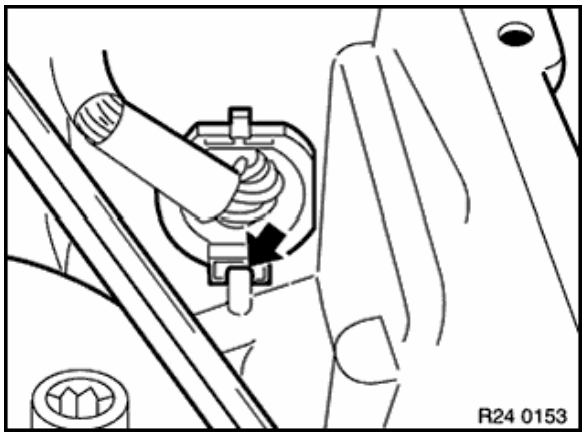
Installation:

Replace O-ring.

For ease of installation, coat O-ring with Vaseline.

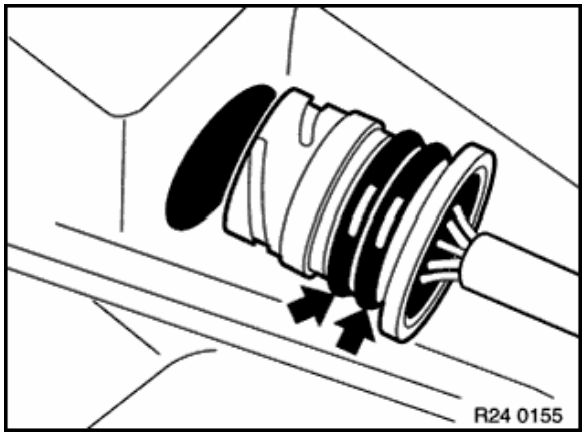


Remove retaining clip and press cable connector into transmission case.



Installation:

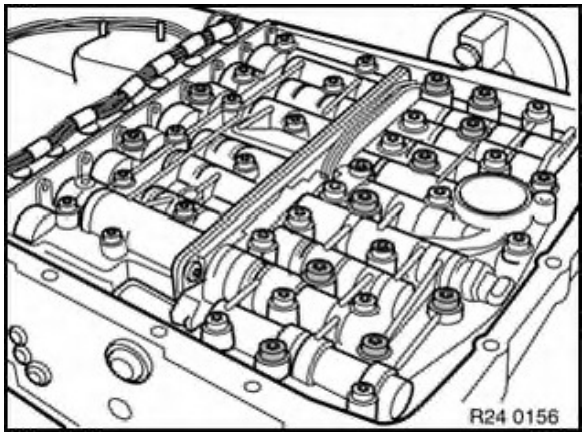
Note installation position in connector housing.



Installation:

Replace O-rings.

For ease of installation, coat O-rings with Vaseline.



Unfasten all screws with large heads (12 off)

Lift off shift unit.

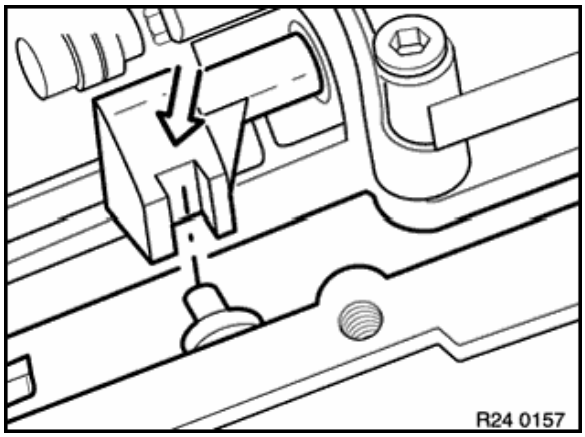
Installation:

The shift unit must lie flat.

Evenly tighten down screws in several passes.

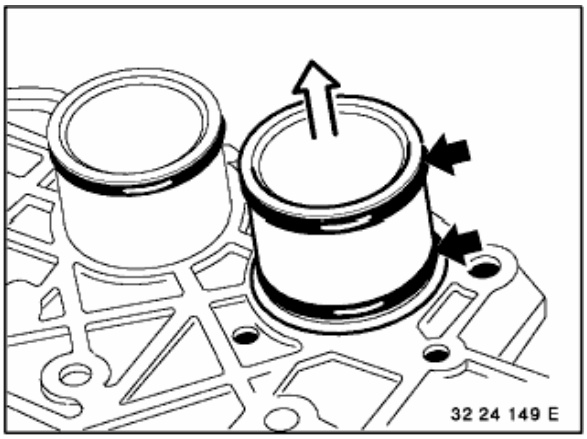
Tightening torque,

refer to Technical Data 24 30 1AZ.



Installation:

When fitting the shift unit, insert spigot of detent disc in groove of slide valve.

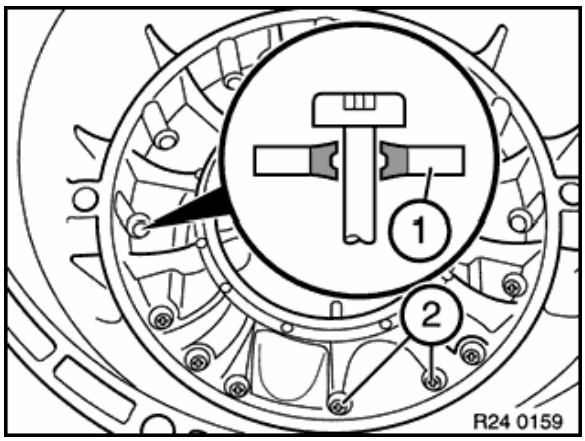


Remove suction and pressure pipes from shift unit and replace all O-rings.

Installation:

For ease of installation, coat O-rings with Vaseline.

Install the suction and pressure pipes into the transmission housing.



Upend the transmission (converter bell housing upward).

Unfasten retaining screws on oil supply unit.

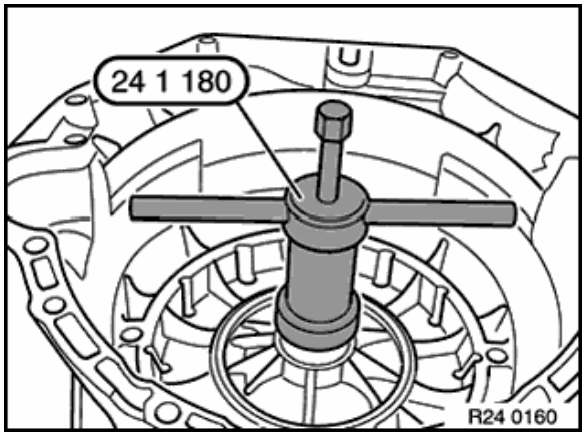
Installation:

Replace sealing rings(1).

Screws (2) on oil duct M6 x 65, remaining screws M6 x 40.

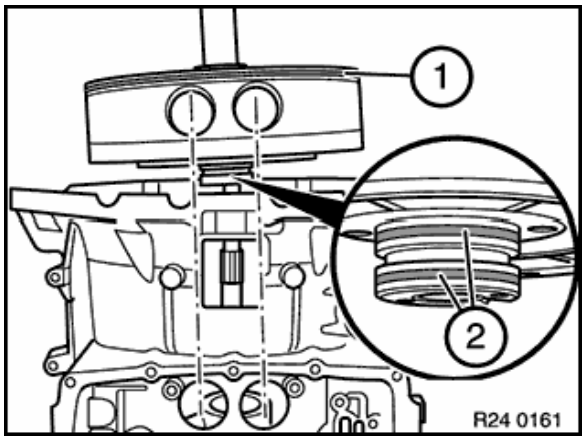
Tightening torque,

refer to Technical Data 24 31 3AZ.



Clamp special tool 24 1 180 on stator shaft.

Remove oil supply line from transmission case.



Installation:

Replace O-ring (1).

Replace damaged rectangular rings (2).

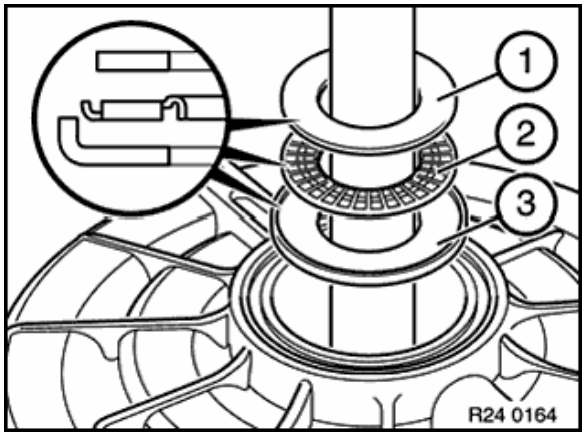
For ease of installation, coat O-ring (1) and rectangular rings (2) with Vaseline.

Push the rectangular rings (2) flush into the grooves.

Suction and pressure ducts in oil supply unit must be aligned with bore in transmission case.

Caution!

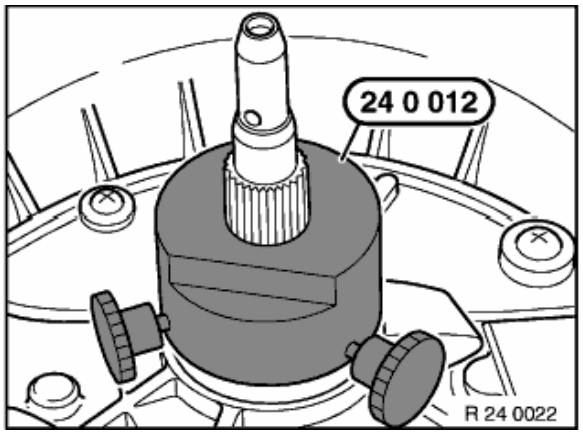
If the rectangular rings (2) are too high, they can be damaged during the installation of the oil supply unit.



Remove adjusting disc (1), needle bearing (2) and angle disc (3).

Installation:

End float is adjusted with shim (1).

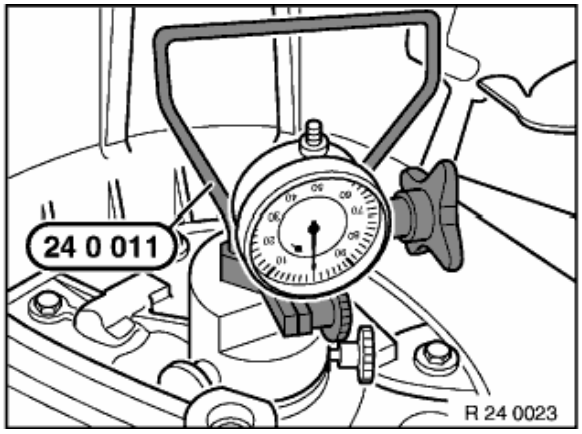


Installation:

Adjust end float:

Install and tighten down oil supply unit.

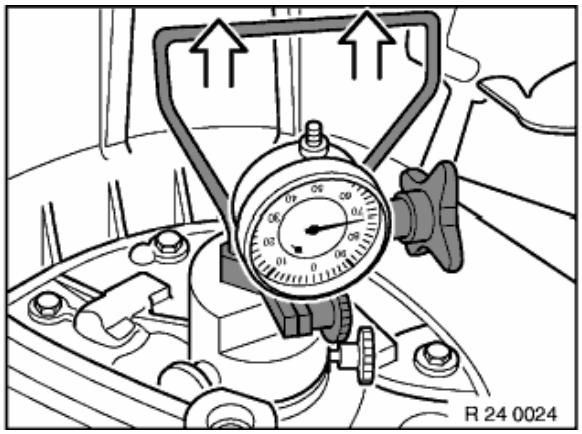
Secure special tool 24 0 012 to stator shaft.



Fit and secure special tool 24 0 011 with dial gauge to the input shaft.

Fit measuring probe to special tool 24 0 012 with slight preload.

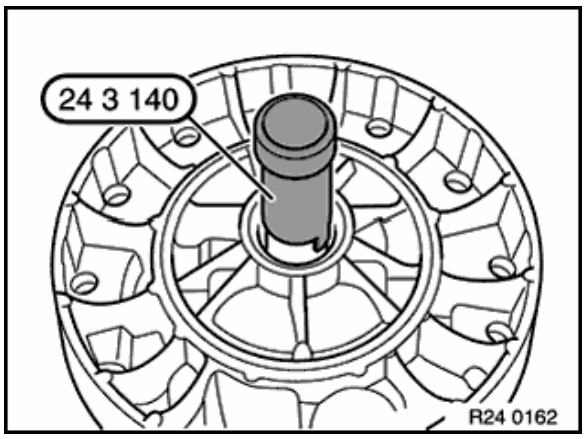
Zeroise measuring scale.



Withdraw input shaft as far as stop and read off measuring value.

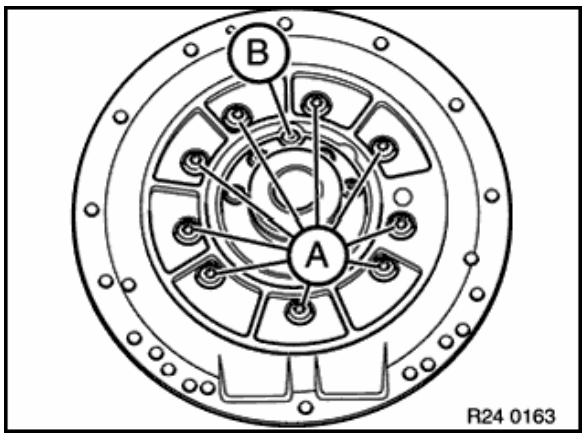
Adjust end float to 0.10 . . . 0.30 mm.

If necessary, remove oil supply unit again and install thicker or thinner shim.



Installation:

Check with special tool 24 3 140 that pump wheel on oil pump is able to rotate easily.



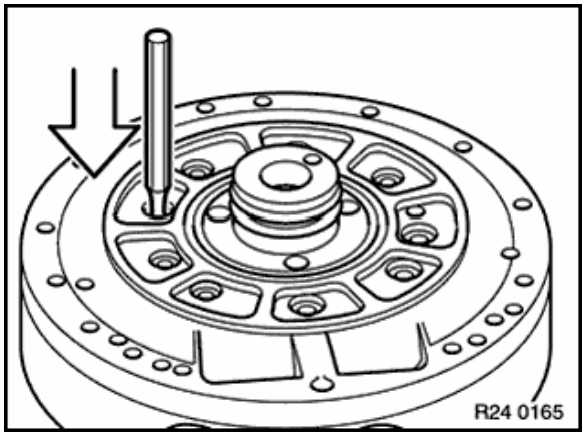
Unfasten screws (A and B).

Installation:

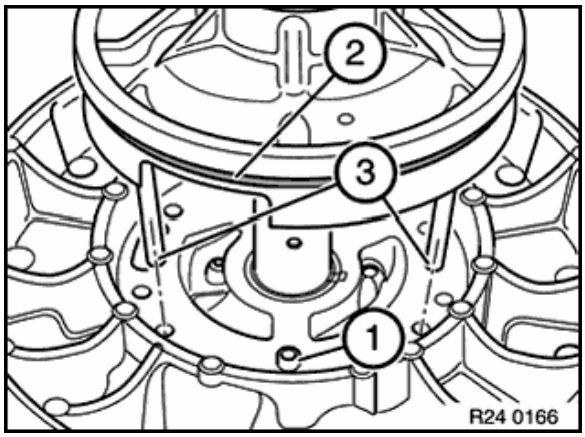
1. Tighten screws (A) M6x40 crosswise.
2. Tighten screw (B) M5x50.

Tightening torque,

refer to Technical Data 24 31 1AZ.



Remove oil pump from oil supply housing with cotter pin extractor and plastic hammer.



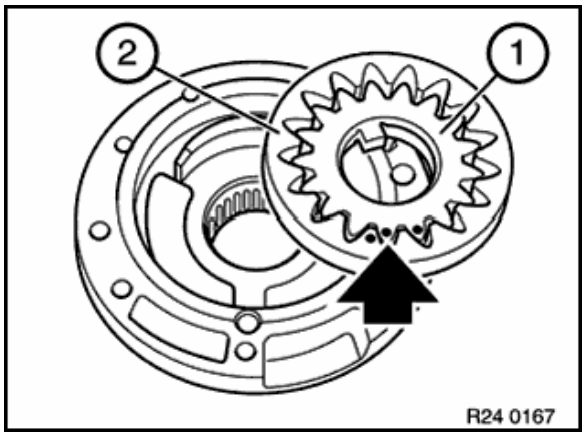
Installation:

Insert dowel pin (1) in oil supply housing.

Replace O-ring (2).

For ease of installation, coat O-ring with Vaseline.

Screw assembly tool (3) (two M6x60 screws without screw head) in pump housing.

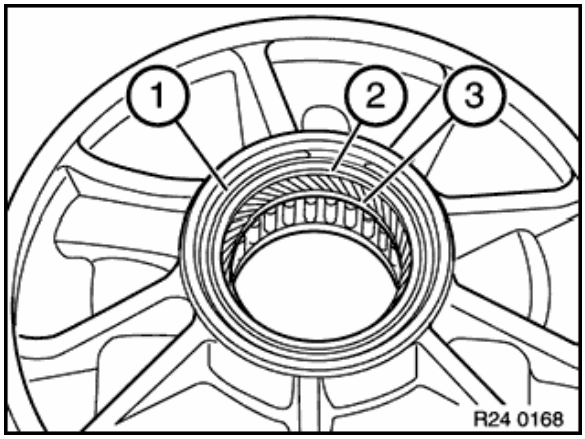


Remove pump wheel (1) and ring gear (2) from pump housing.

Installation:

Insert pump wheel and ring gear with Vaseline in pump housing.

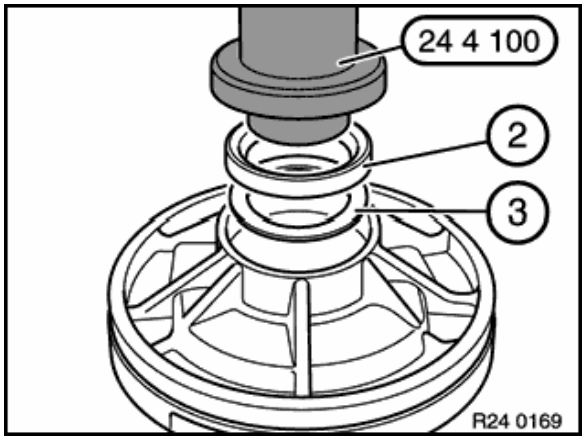
When installed, markings on pump wheel and ring gear must be clearly visible.



Lift out snap ring (1).

Pry out shaft seal (2) with a screwdriver.

Remove thrust washer (3).

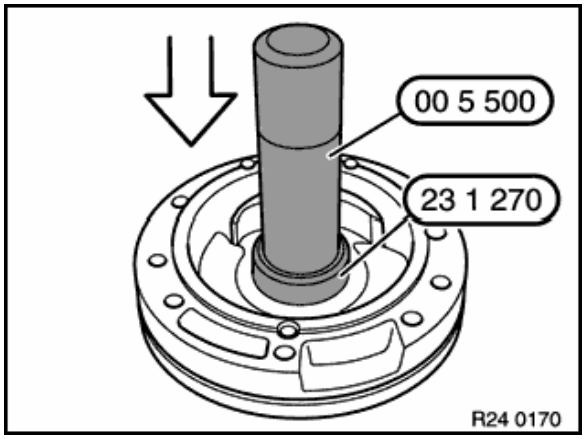


Installation:

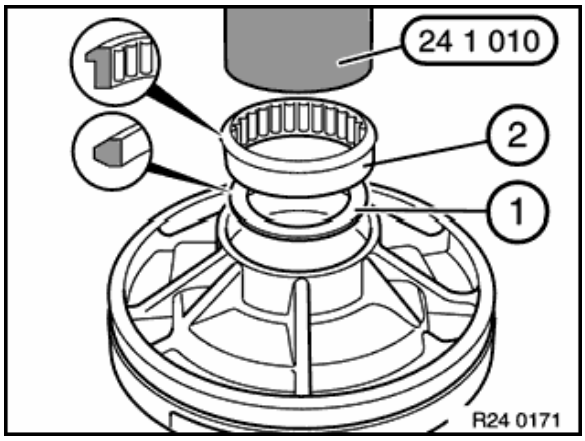
Install thrust washer (3).

Coat new shaft seal (2) with automatic-transmission oil.

Drive in shaft seal with special tool 24 4 100.



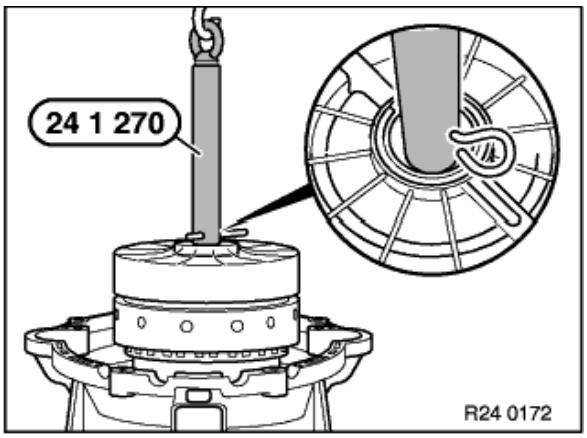
Press out seal and needle bearing with special tool 00 5 500 and 23 1 270 on hydraulic press.



Installation:

Insert seal (1) in pump housing.

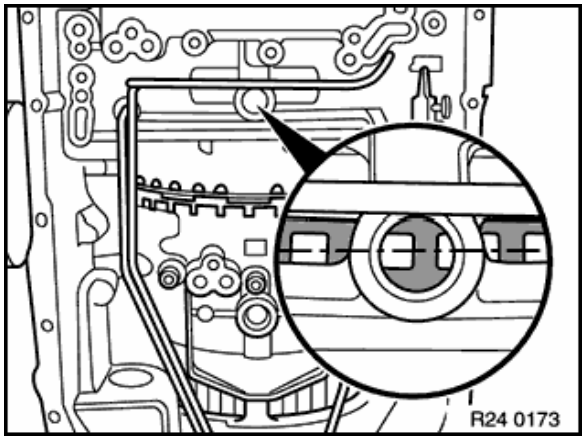
Press in needle bearing (2) with special tool 24 1 010.



Clutches (A/B/C):

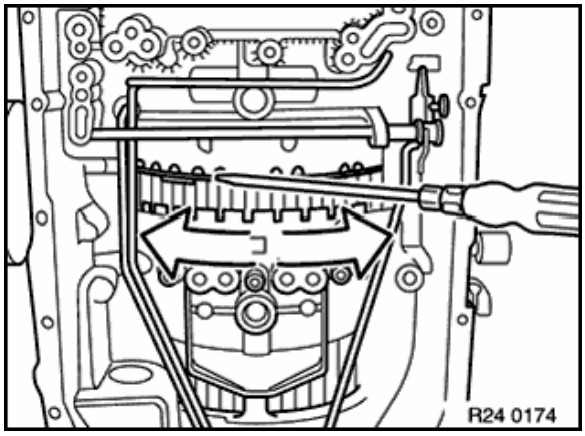
Fit special tool 24 1 270 to the input shaft and secure with pin.

Lift out drive unit with clutches (A/B/C) using a workshop crane and place on 2 wooden blocks.



Installation:

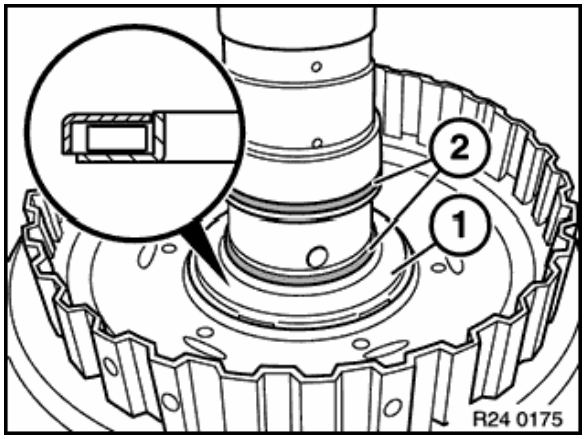
The impulse spring on the top clutch housing must be located in centre of bore for impulse sensor.



Installation:

Lower drive unit with clutches (A/B/C) into transmission case with a workshop crane.

Twist disc carrier D (1) to and fro with a screwdriver until it engages fully in discs of D brake.



Place drive unit with clutches (A/B/C) on its head.

Remove axial needle bearing (1).

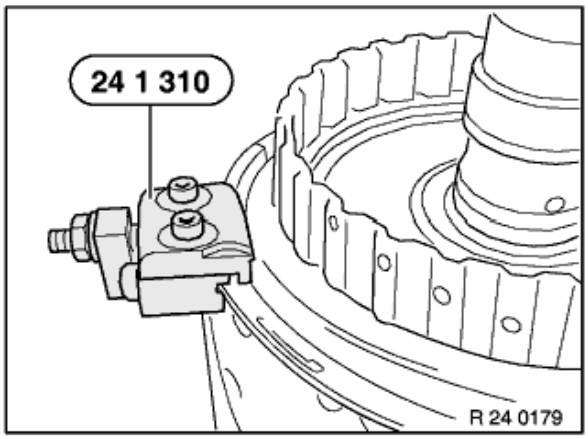
Installation:

Secure axial needle bearing (1) with Vaseline.

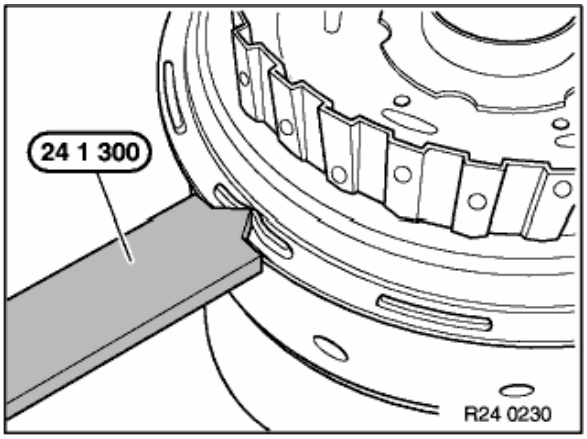
Coat the rectangular rings (2) with Vaseline and push them into the grooves.

Caution!

If the rectangular rings (2) are too high, they can be damaged during installation.



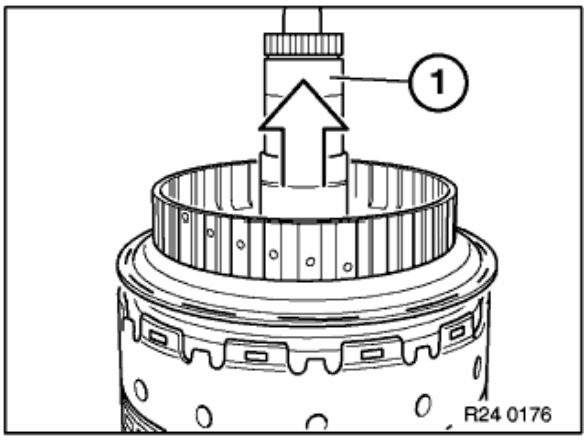
Bend back retaining tabs with special tool 24 1 310.



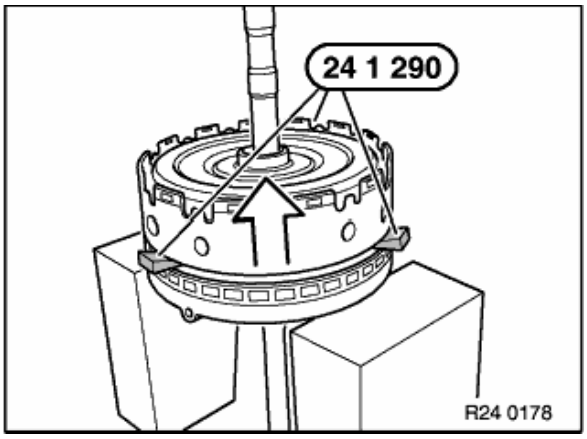
Installation:

Do not reuse bent retaining tabs for securing purposes.

Using special tool 24 1 300, first bend two opposing retaining tabs, then 4 more retaining tabs at regularly spaced intervals.

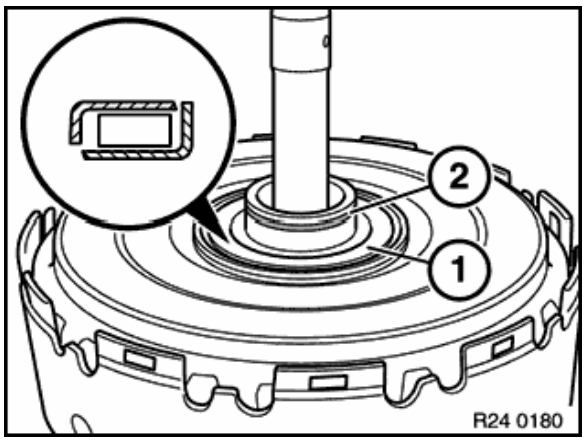


Remove sun shaft (1).



Installation:

Tension disc carrier C upwards with special tool 24 1 290.

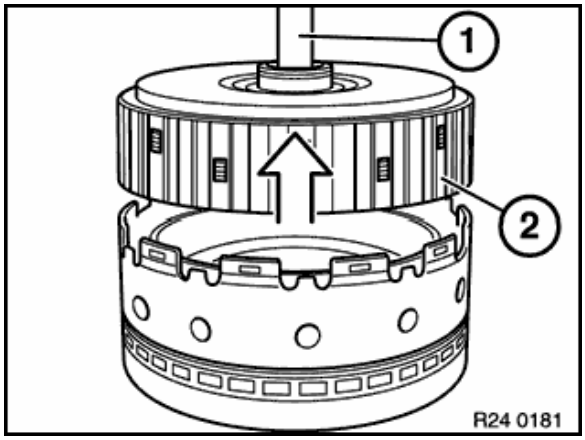


Remove axial needle bearing (1).

Installation:

Note installation position of axial needle bearing (1).

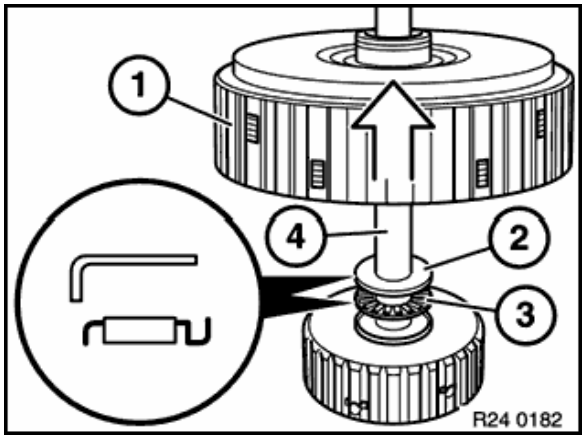
Coat rectangular ring (2) with Vaseline.



Lift off idler shaft (1) with clutch B (2).

Installation:

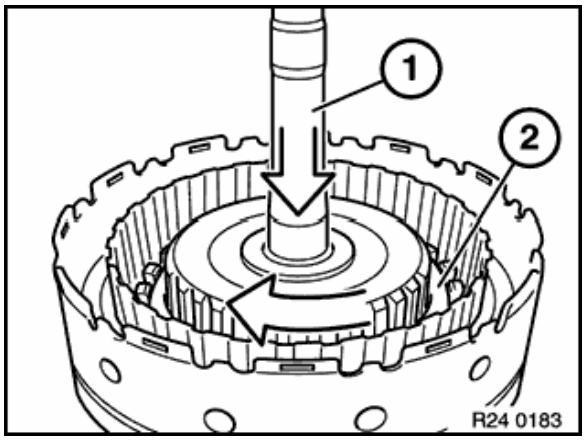
Install clutch B (2) by rotating to and fro.



Remove B clutch (1), angled disc (2) and axial needle bearing (3) from idler shaft (4).

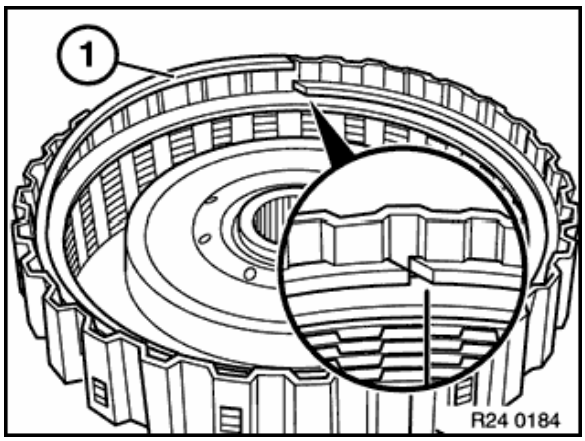
Installation:

Note installation position of angled disc (2).



Installation:

Install idler shaft (1) in A clutch (2), rotating it to do so.

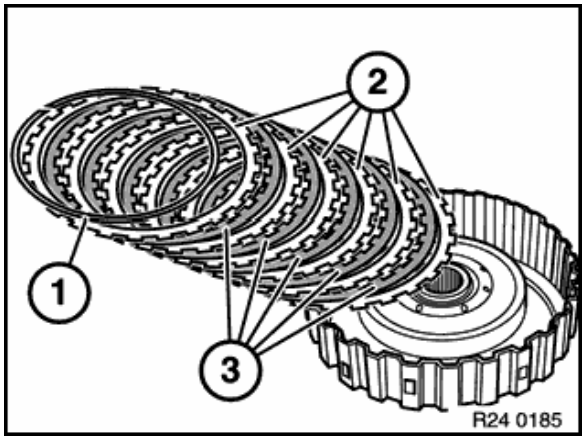


Lift out snap ring (1) from B clutch and remove complete disc pack.

Installation:

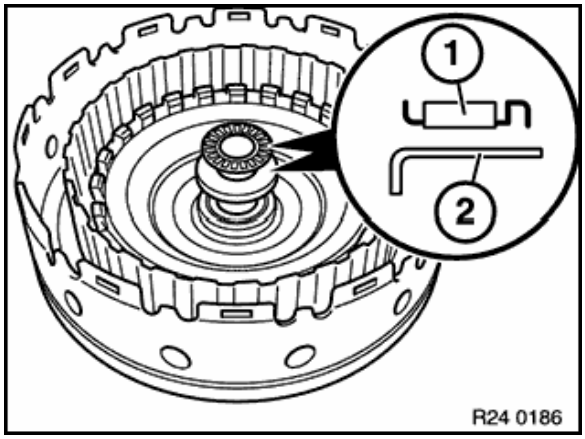
Note installation position of snap ring ends.

Align lined discs.

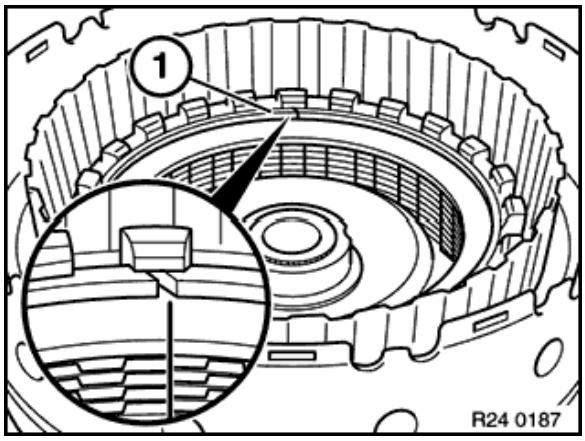


Installation:

1. Circlip
2. Outer discs
3. Lined discs



Remove axial needle bearing (1) and angled disc (2) from cylinder C (3).



Lift snap ring (1) out of A clutch.

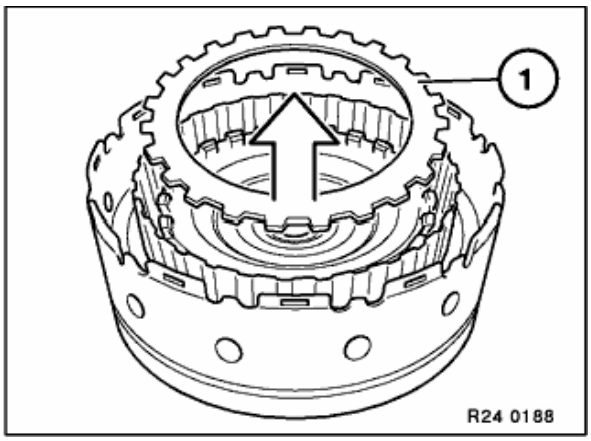
Note:

The axial play of the A clutch is factory set over the thickness of the snap ring (1). Mark the snap ring (1) and install at the same location.

Installation:

Note installation position of snap ring ends.

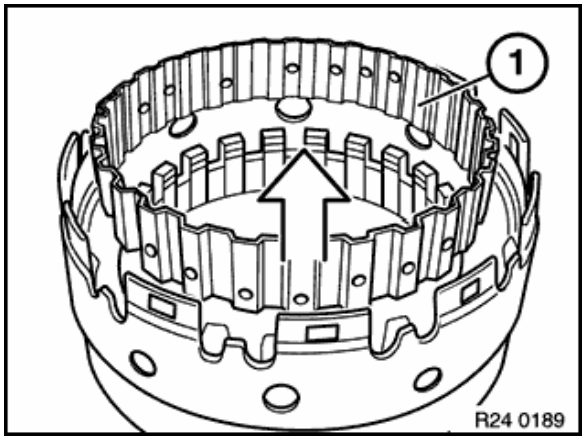
Align discs on A clutch.



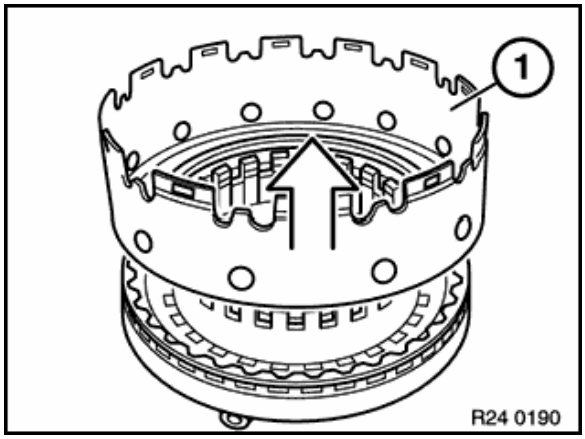
Remove end disc (1) from A clutch.

Note:

The end disc (1) can be identified by its longer teeth.



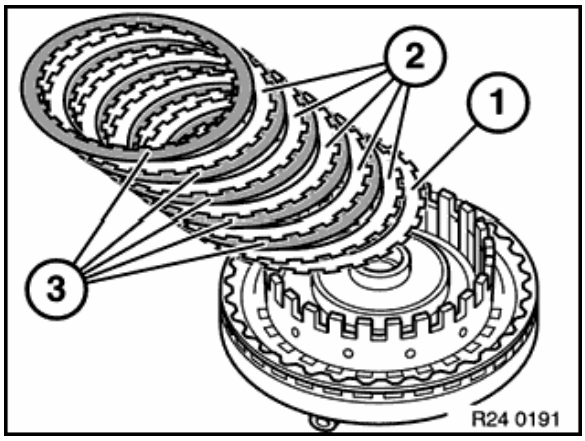
Remove internal disc carrier B (1).



Remove disc carrier C (1).

Installation:

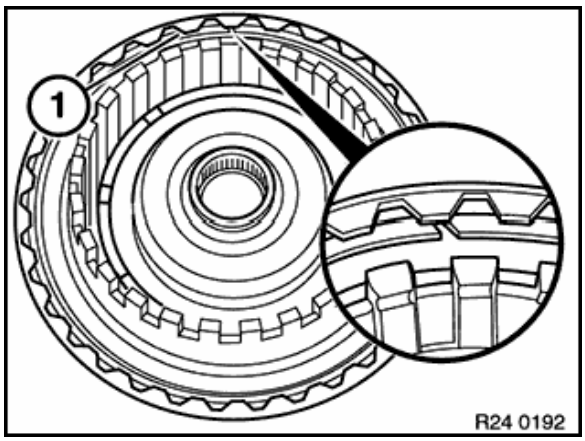
Install disc carrier C (1), rotating it to do so.



Remove complete disc pack from A clutch.

Installation:

1. Spring disc
2. Outer discs
3. Lined discs

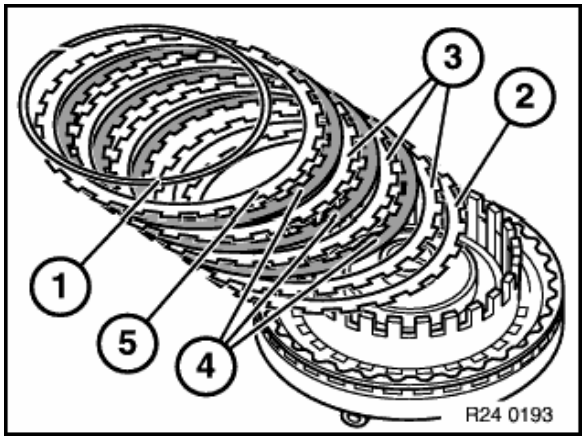


Lift snap ring (1) out of C clutch and remove complete disc pack.

Installation:

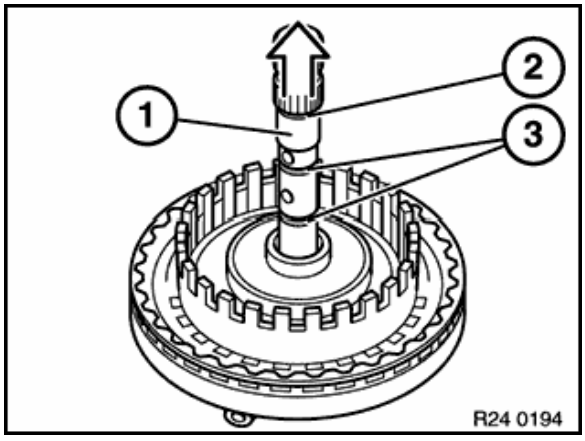
Note installation position of snap ring ends.

Align lined discs.



Installation:

1. Circlip
2. Spring disc
3. Outer discs
4. Lined discs
5. Top outer disc (thicker)



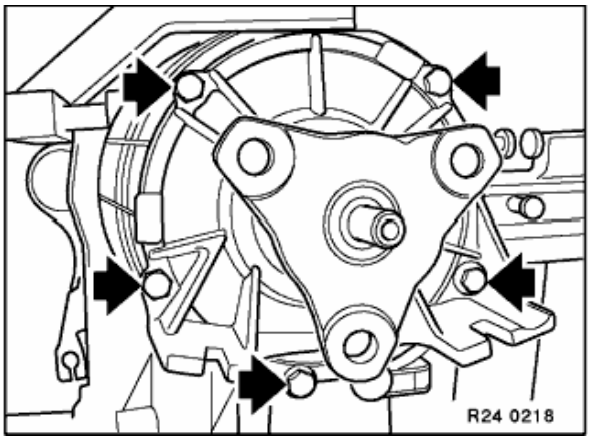
Press input shaft (1) out of cylinder A + C.

Installation:

Replace O-ring (2).

Replace damaged rectangular rings (3).

For ease of assembly, coat O-ring (2) and rectangular rings (3) with Vaseline.



D brake/E1/E2 and planetary gear set:

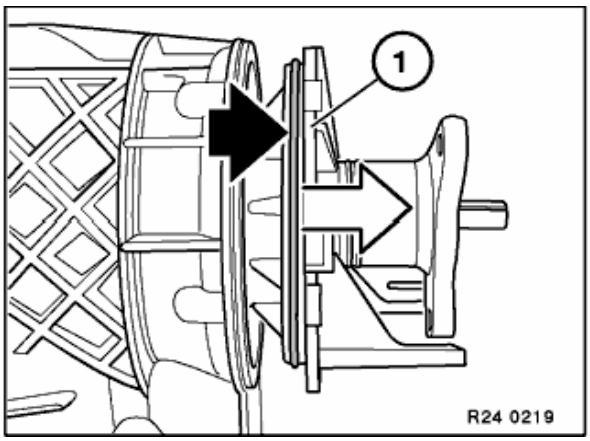
Arrange transmission horizontally.

Unscrew bolts.

Installation:

Tightening torque,

refer to Technical Data 24 11 1AZ.

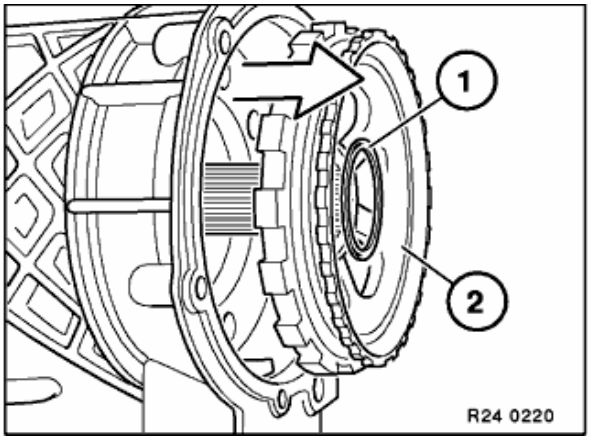


Pull off transmission extension (1).

Installation:

Replace O-ring

For ease of assembly, coat O-ring with Vaseline.



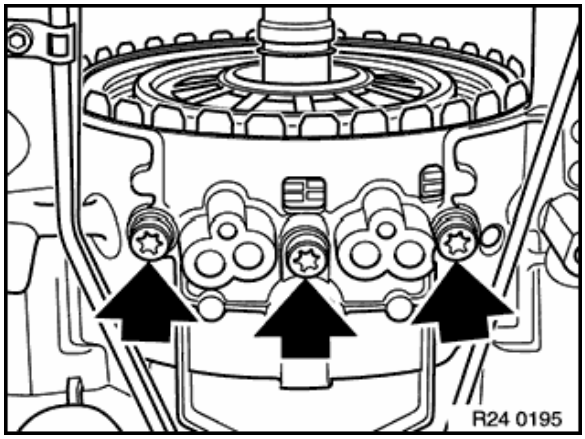
Remove shim (1) and sprag wheel (2).

Installation:

End float is adjusted with the shim (1).

Adjust end float,

refer to 24 13 156



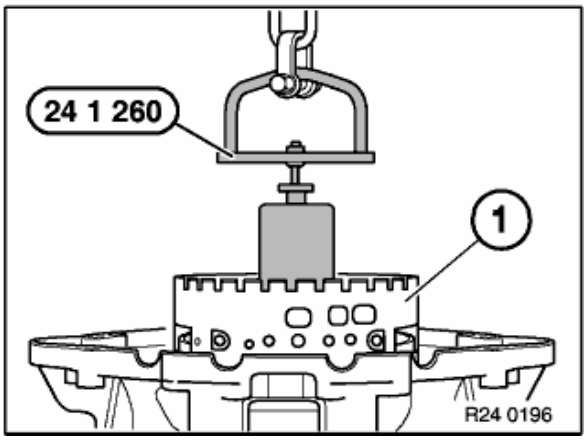
Arrange transmission vertically with output end facing downwards.

Unscrew bolts.

Installation:

Tightening torque,

refer to Technical Data 24 22 1AZ.

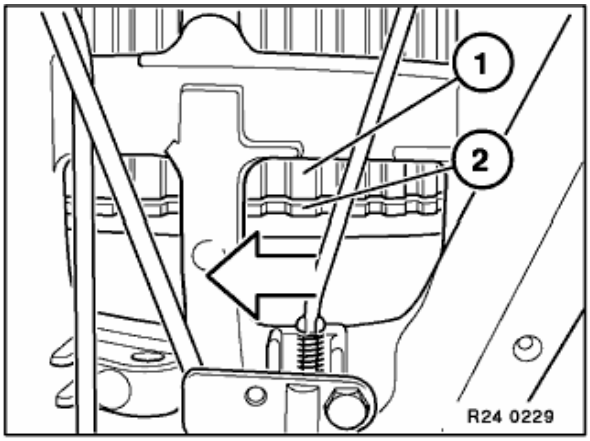


Screw special tool 24 1 260 into planetary gear set, tighten down knurled screw.

Note:

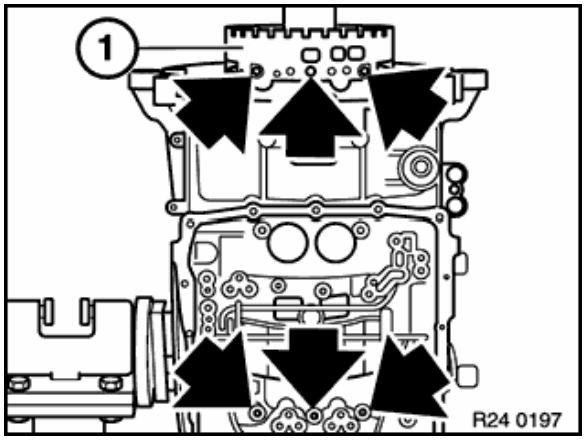
Cylinder D/E (1) and the planetary gear set are held together by tightening down the knurled screw.

Lift out complete unit with a workshop crane and place on two wooden blocks.



Installation:

Twist spline (2) with a screwdriver until it locates in housing of planetary gear set (1).



Installation:

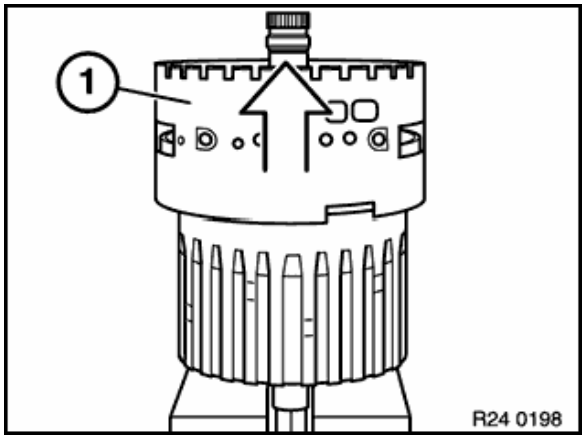
For ease of assembly, coat perimeter of cylinder D/E (1) with Vaseline.

Align threaded bores in cylinder D/E (1) with bores in transmission case.

Carefully insert complete unit.

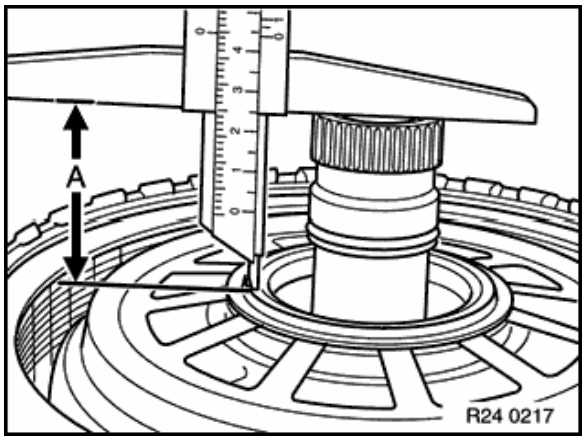
Caution!

Do not abut against transmission case.



Remove special tool.

Lift off cylinder D/E (1).

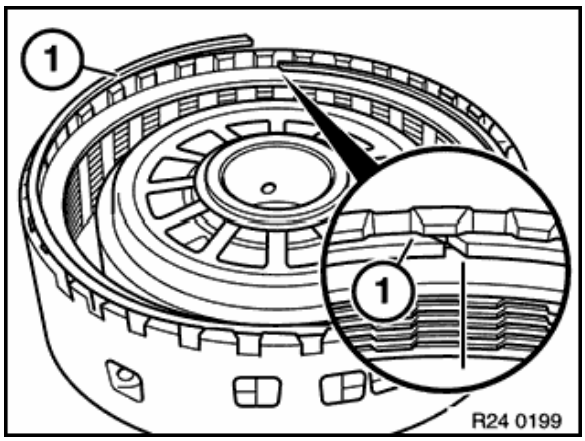


Installation:

Fit cylinder D/E with aligned discs on the planetary drive.

Twist housing of planetary gear set to and fro briskly until discs on multi-disc brakes engage completely in the spline teeth.

Control dimension (A) approx. 45mm.

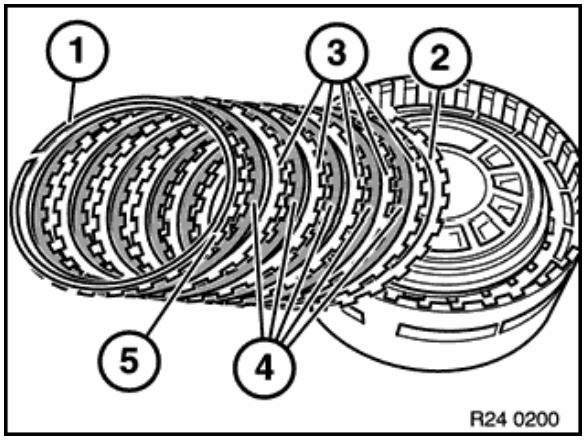


Lift out snap ring (1) from multi-disc brake D and remove complete disc pack.

Installation:

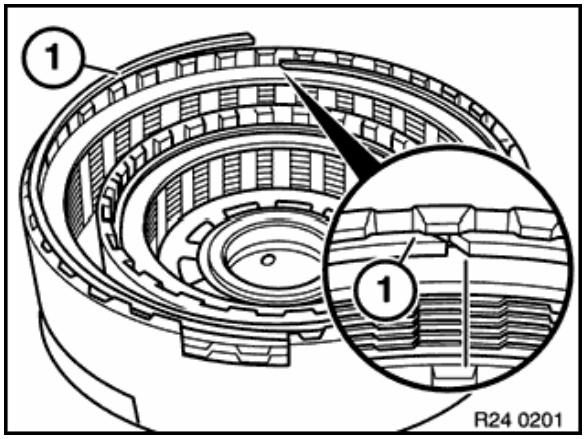
Note installation position of snap ring ends.

Align lined discs.



Installation:

1. Circlip
2. Spring disc
3. Outer discs
4. Lined discs
5. Top outer disc (may be thicker)

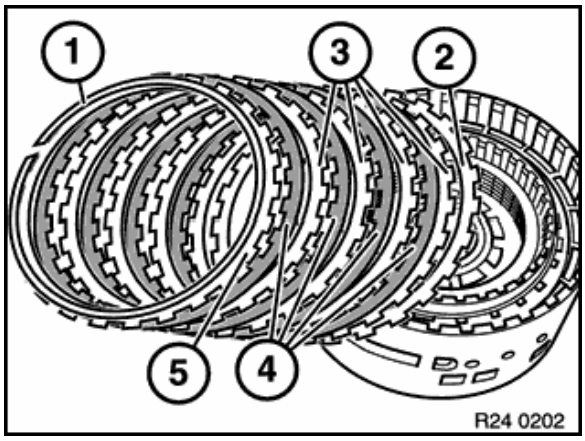


Lift snap ring (1) out of multi-disc brake E2 and remove complete disc pack.

Installation:

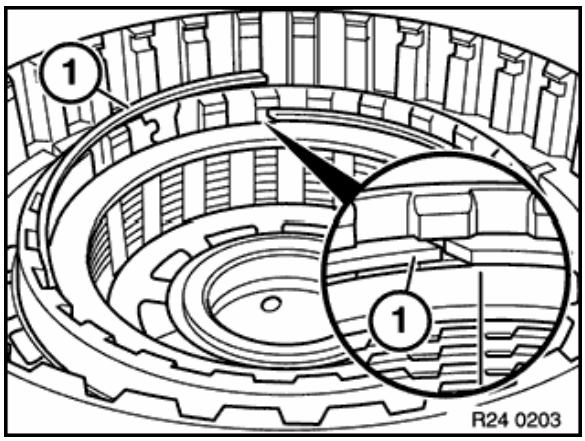
Note installation position of snap ring ends.

Align lined discs.



Installation:

1. Circlip
2. Spring disc
3. Outer discs
4. Lined discs
5. Top outer disc (may be thicker)

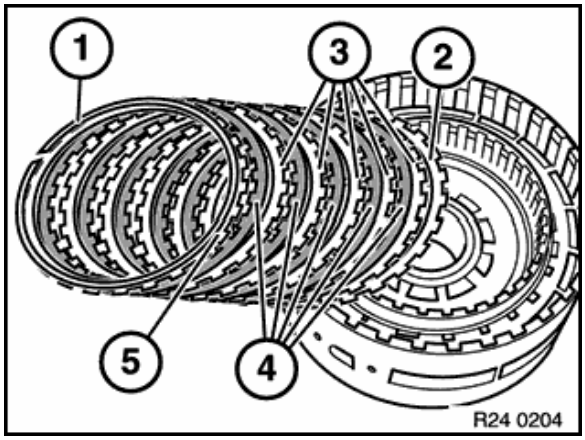


Lift snap ring (1) out of multi-disc brake E1 and remove complete disc pack.

Installation:

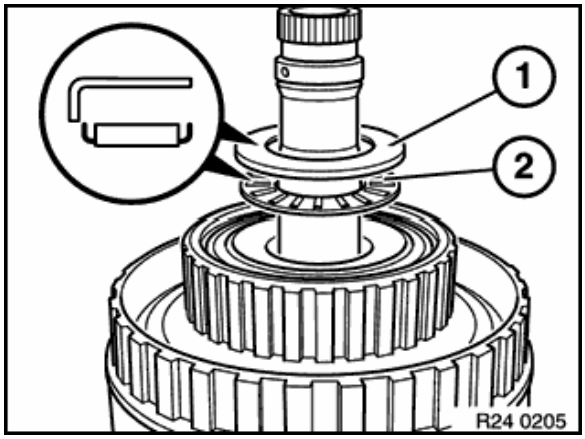
Note installation position of snap ring ends.

Align lined discs.

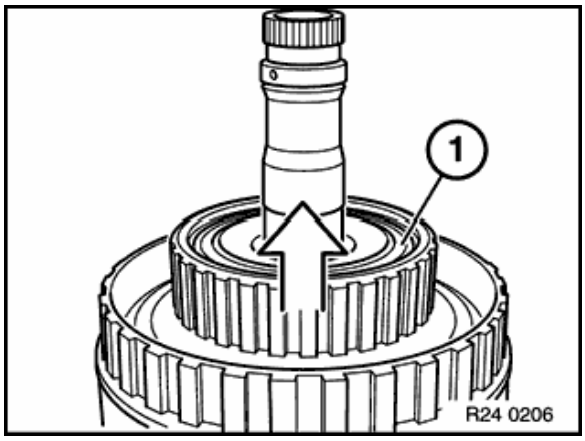


Installation:

1. Circlip
2. Spring disc
3. Outer discs
4. Lined discs
5. Top outer disc (thicker)



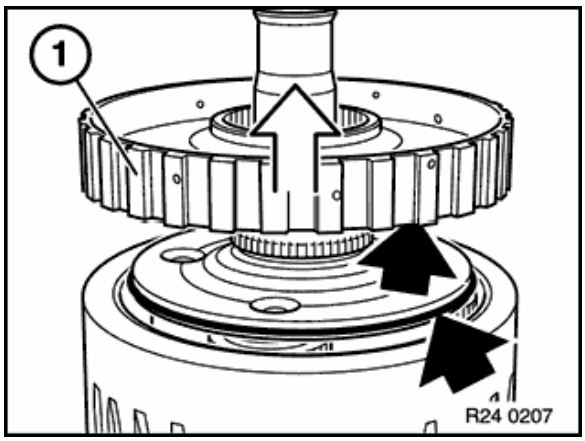
Remove angled disc (1) and axial needle bearing (2).



Lift freewheel off 2nd gear (1).

Note:

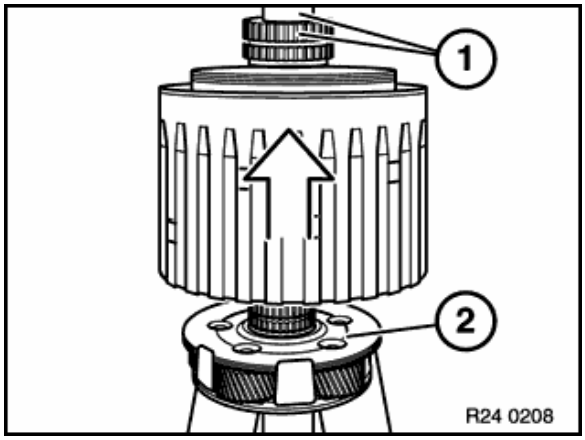
Fitted freewheel must lock in clockwise direction and should be easy to rotate in anti-clockwise direction.



Lift out disc carrier E2 (1).

Installation:

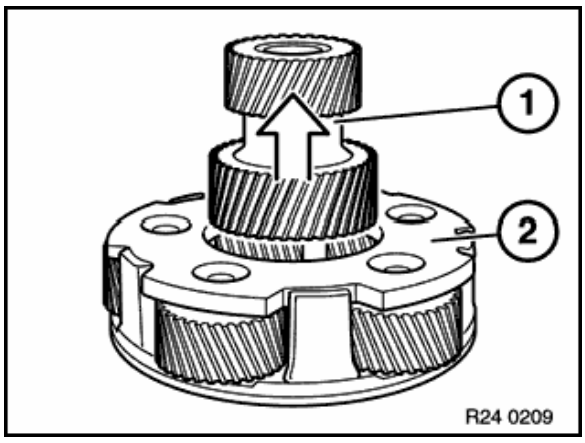
For ease of assembly, coat disc carrier, O-ring and sealing face with Vaseline.



Lift planetary gear set I + II (1) off planetary gear set III (2).

Installation:

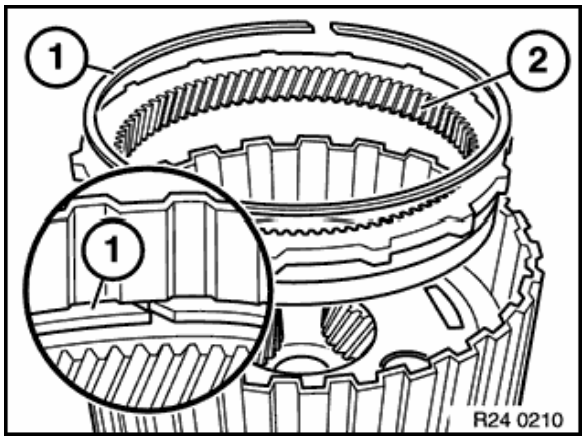
Rotate planetary gear set I + II to fit on planetary gear set III.



Remove sun gear II + III (1) from planet carrier III (2).

Installation:

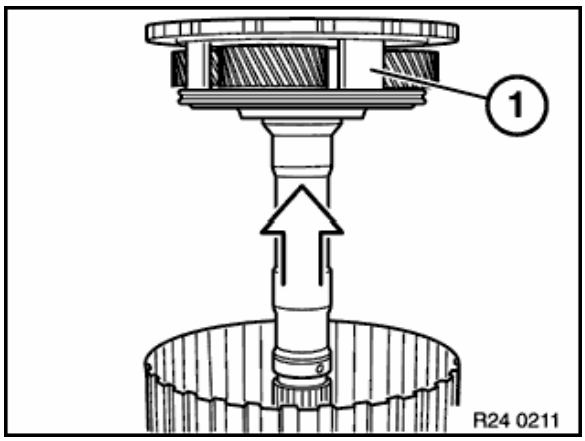
Install sun gear, rotating to do so.



Place planetary gear set I + II on two wooden blocks
Lift out snap ring (1) and remove ring gear III (2).

Installation:

Note installation position of snap ring ends.

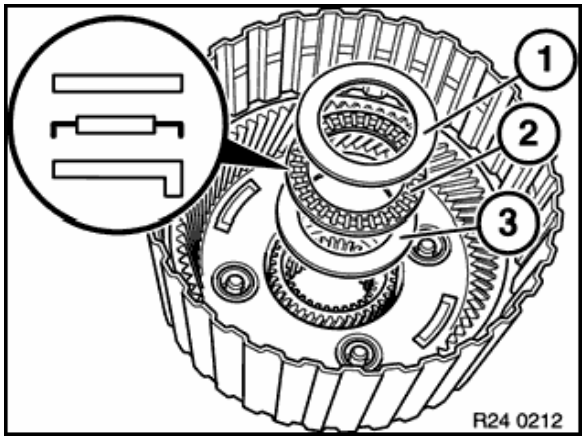


Lift out planet spider II (1).

Installation:

Replace O-ring.

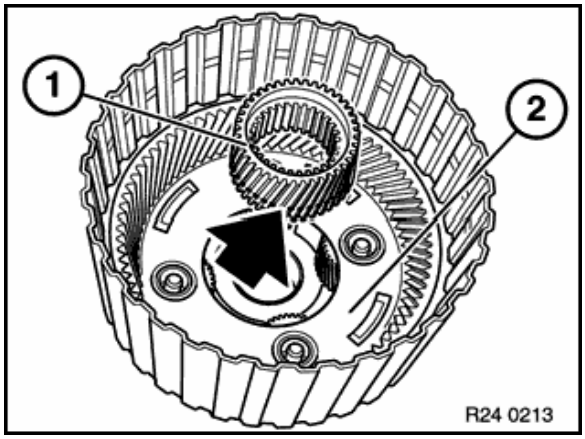
For ease of assembly, coat O-ring with Vaseline.



Remove thrust washer (1), axial needle bearing (2) and angled disc (3).

Installation:

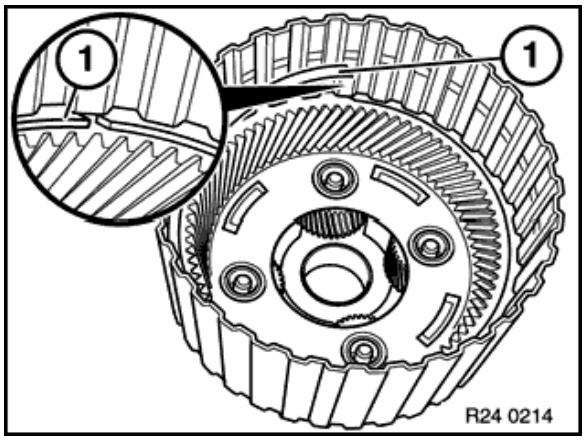
Note installation position.



Note:

When removing the sun gear, check whether marking groove in sun gear is facing upwards or downwards. The sun gear (1) must be installed in the same position.

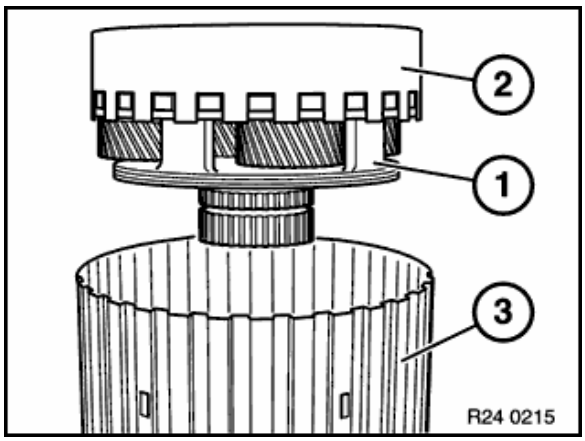
Remove sun gear I (1) from planet spider I (2).



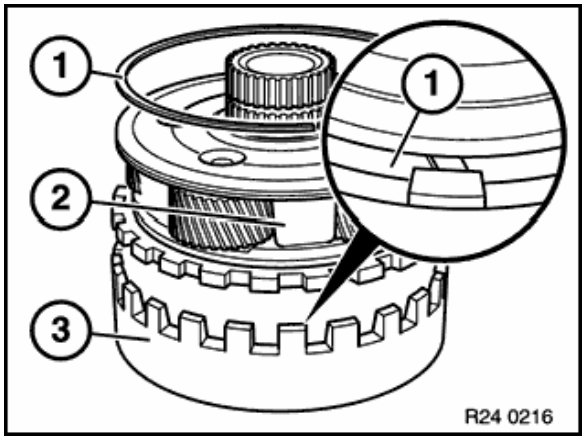
Lift out snap ring (1).

Installation:

Note installation position of snap ring ends.



Remove planet spider I (1) and ring gear II (2) from ring gear I (3).



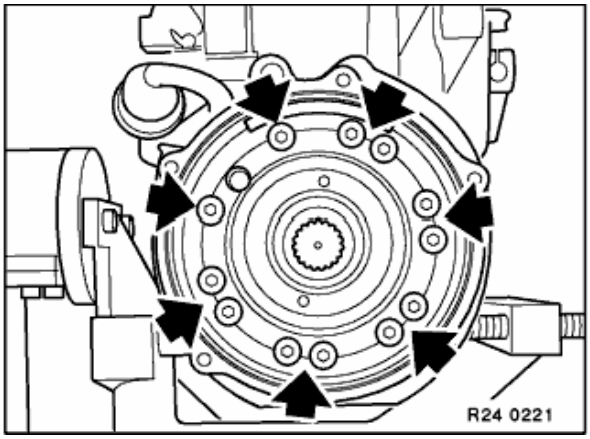
Lift out snap ring (1).

Remove planet spider I (2) from ring gear II (3).

Installation:

Replace O-ring.

Note installation position of snap ring ends.



Arrange transmission horizontally.

Unscrew bolts.

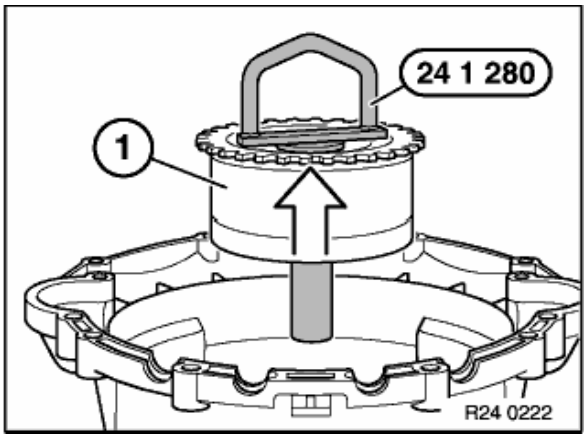
Note:

If necessary, strike screws when unfastening.

Installation:

Tightening torque,

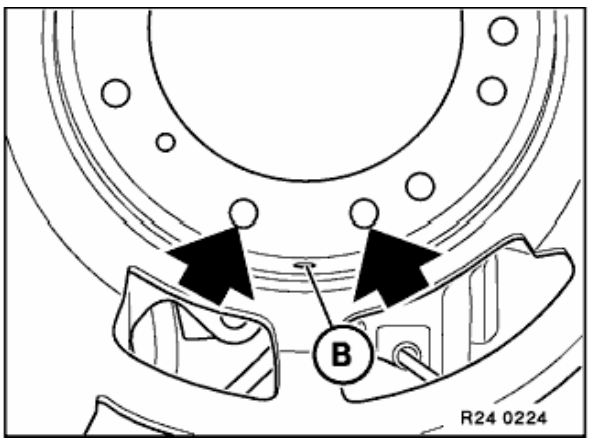
refer to Technical Data 24 23 1AZ.



Arrange transmission vertically with output end facing downwards.

Secure special tool 24 1 280 to cylinder F (1).

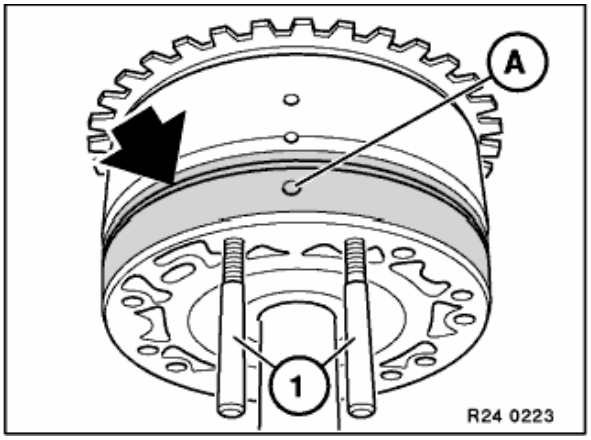
Pull out cylinder F (1).



Installation:

When installing cylinder F, insert guide bolts in two bores beside bore (B).

Bore (A) in cylinder F and bore (B) in transmission case must be aligned.

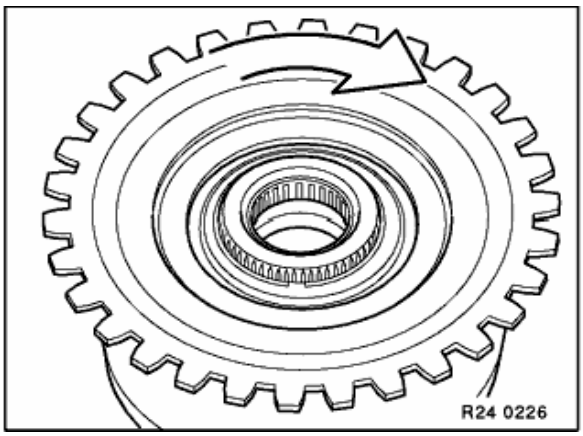


Installation:

Screw the guide bolts (1) (2 bolts M8x70 without bolt heads) into cylinder F, each next to the bore (A).

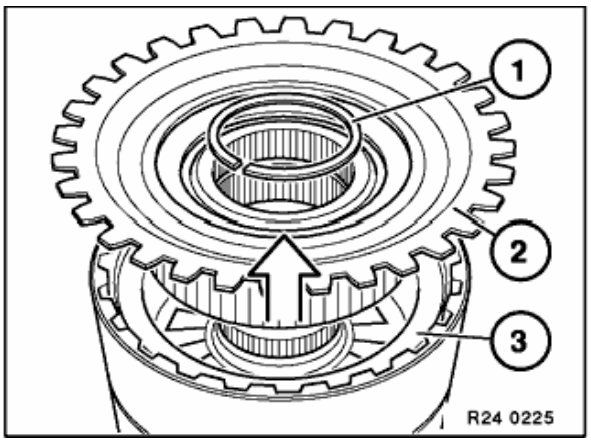
Replace O-ring.

For ease of assembly, coat grey area with Vaseline.



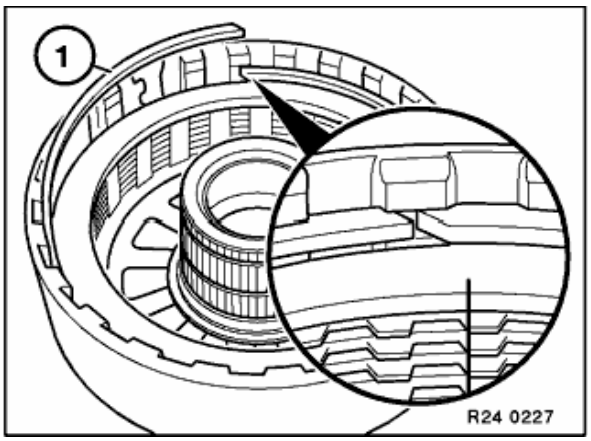
Installation:

Freewheel on 1st gear must rotate easily in clockwise direction and should lock when turned anti-clockwise.



Lift out snap ring (1).

Lift freewheel for 1st gear (2) out of multi-disc brake F (3).

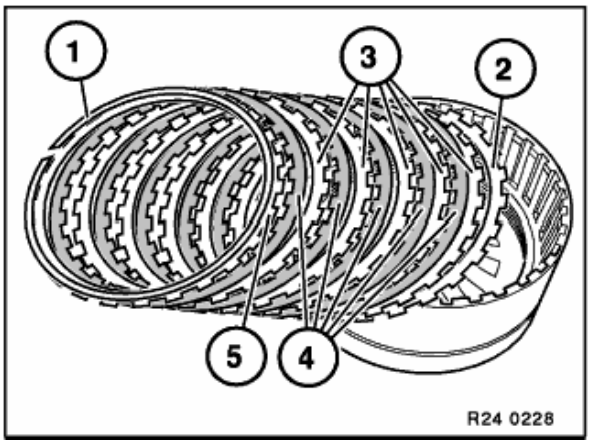


Lift snap ring (1) out of multi-disc brake F (2) and remove complete disc pack.

Installation:

Note installation position of snap ring ends.

Align lined discs.



Installation:

1. Circlip
2. Spring disc
3. Outer discs
4. Lined discs
5. Top outer disc (thicker)