

2019-12-19



SIB 23 01 19
Recall 19V-692 Converting Gearbox

Recall 19V-692 has two defect codes 0000232300 and 0000232400

Supporting Materials

[insert_drive_file 23 01 19 Recall 19V-692 Converting gearbox Advanced repair instructions attached.docx](#)

Recall 19V-692 Converting Gearbox – **Advanced Copy**

This recall involves two defect codes please verify in AIR which defect applies to the vehicle being worked as it determines the actual work performed:

- 00 00 23 23 00 Converting Gearbox
- 00 00 23 24 00 Replace the Gearshift Forks

NOTICE

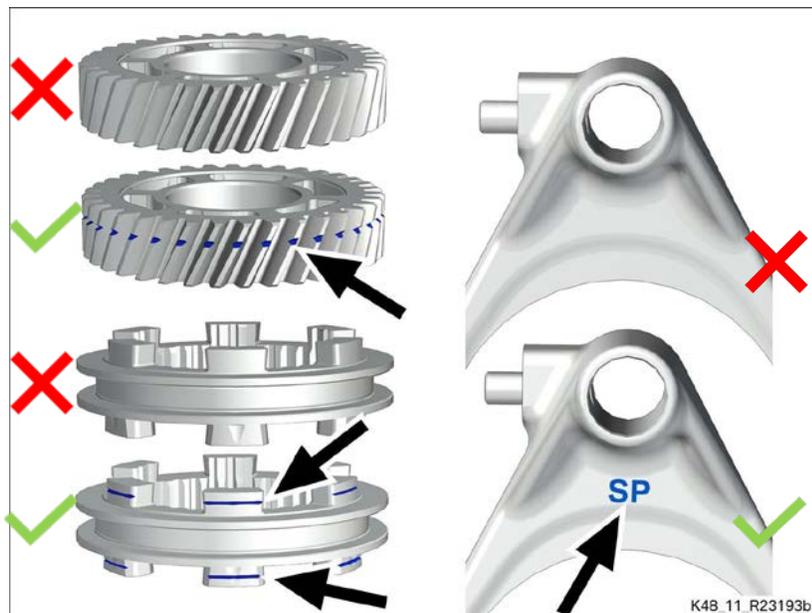
The individual steps of the transmission repair are available as a video tutorial in TMSI under course code MR19V-692 in January. **Technicians are required to view the video course in TMSI** before completing the repair. Training records will be kept. The video will be available in TIS 2.0 for reference.

Situation #1 Models with Defect Code 00 00 23 23 00

Model Description	Engineering Designation	Type Code
K 1600 GT, GTL, GTL Excl.	K48, K48/11, K48/12	0611, 0612, 0F11, 0F12
K 1600 B / Grand America	K61	0F53

Certain internal transmission parts may not have been manufactured to sufficient specifications. This could lead to a double engagement of gears and/or internal damage particularly to the **shift fork, selector sleeve or gearwheel**. In some instances, under unfavorable conditions the transmission may lock and prevent the rear wheel from turning.

Identification of Components (fig. 1)



Free gearwheel:

- The new free gearwheels are marked by grooves on the tooth tips.

Selector sleeve:

- The new selector sleeves are marked by grooves in the shifting claws.

Gearshift fork:

- All new gearshift forks are marked with the laser marking "SP".

Situation #2 Models with Defect Code 00 00 23 24 00

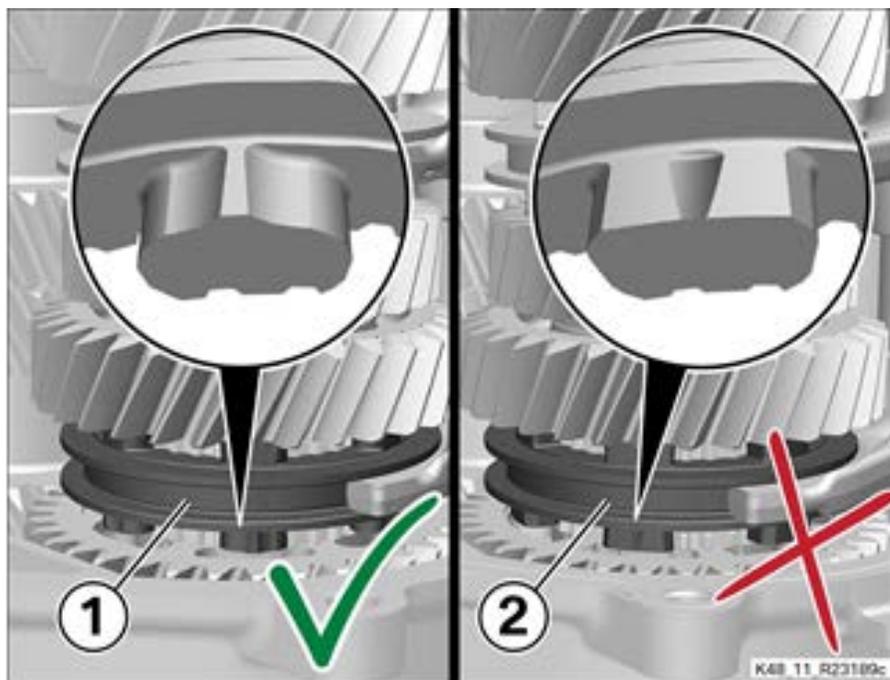
Model Description	Engineering Designation	Type Code
K 1600 GT, GTL	K48/11, K48/12	0F11, 0F12

In individual cases, damage to the **shift fork** might occur. If damage occurs gear change may not happen correctly. In some instances, under unfavorable conditions the transmission may lock and prevent the rear wheel from turning.

Important: The transmission input shafts installed in vehicles with defect 00 00 23 24 00 are manufactured by a different manufacturer than those that are installed in vehicles with defect 00 00 23 23 00. Therefore, **only the gearshift forks must be replaced for vehicles marked with defect code 00 00 23 24 00** (see “Gearshift fork” in Figure 1)

As part of the repair it must be verified that the transmission input shaft that does not have to be converted is actually installed in the affected vehicles. The transmission input shafts can be identified by the selector sleeve for 5th / 6th gear: If the incorrect sleeve is fitted a TSARA case must be created.

Identification of Selector Sleeve (fig. 2)



Important: The selector sleeve (1) must be present in vehicles with defect 00 00 23 24 00. If selector sleeve (2) is installed in the vehicle, a TSARA case must be created.

Service Solution

The transmission repair as described in the accompanying work item “00 60 346 Convert Gearbox” which includes the gearshift fork, selector sleeve of the 5th/6th gear and the free gearwheel of the 6th gear is for defect code 00 00 23 23 00 (Situation #1)

For defect code 00 00 23 24 00 (Situation #2) only perform the gearshift fork replacement task in the same work item.

Vehicles Affected

In order to determine if a specific vehicle is affected by this Recall Campaign, it will be necessary to verify all VIN's through AIR (Aftersales Information Research). Based on the response of the system, either proceed with the repair or take no further action. Please note, VIN's in DCS Vehicle History Check may

not appear until 24-72 hours after the release of this bulletin, therefore AIR is the recommended method for determining open campaigns.

NOTICE

The possibility exists that potentially affected parts were installed as part of a repair in vehicles that were produced before September 2016. These vehicles are also affected by this recall.

Production Solution

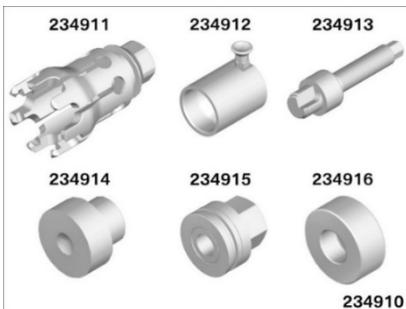
As of 12/01/2019 vehicles are produced correctly.

Special Tools

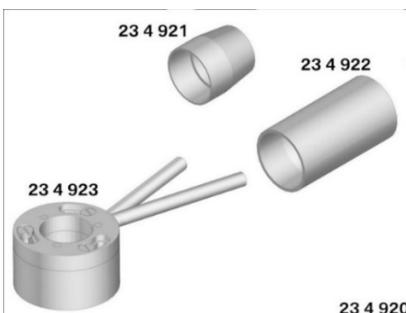
BMW Motorrad developed additional special tools for an easy disassembly/installation of the transmission input shaft. One of each of the below special tools will be auto shipped and can be claimed one time per dealer by adding the part numbers to a single warranty claim related to the recall.



Adapter (00 7 509)
83 30 5 A10 B17



Set of removal and installation tools (23 4 910)
83 30 5 A12 D65



Set for mounting device (23 4 920)
83 30 5 A12 D66

NOTICE

Transmission tool 23 0 800 (83 30 2 311 366) has been available since the introduction of K48 and will also be auto shipped. The extractor-separation set 00 7 500 (83 30 0 490 482) is required and must be ordered or a generic version should be sourced through your local tool company.

NHTSA Statement

Please be reminded that it is a violation of federal law (The Safety Act) for you to sell, lease or deliver any new motorcycle covered by this notification until the recall repair has been performed. This means that dealers may not legally deliver new motorcycles to consumers until they are fixed or use/sell replacement equipment/parts subject to this recall. Note also that substantial civil penalties apply to violations of the Safety Act. Also, you should not sell, lease or deliver any Certified Pre-Owned or used motorcycles subject to a safety recall until the repair is completed. Please follow any special instructions that we provide to you for the return or disposition of recall parts.

Warranty Information

The repairs described in this bulletin are covered under warranty regardless of time or mileage. Reimbursement for this Recall Campaign is through normal claim entry utilizing the following information:

Defect Code Situation #1

00 00 23 23 00	Converting Transmission
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FRU Numbers, Descriptions, Amounts, Parts

*00 60 346	Converting Gearbox, Model-specific - 32 - 33 FRU's
+00 60 728	Converting Gearbox, Model-specific - 31 - 32 FRU's
23 00 505	Additional work removing /installing transmission with reverser, Model-specific - 18 - 20 FRU's

Defect Code Situation #2

00 00 23 24 00	Replace Gearshift Fork
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FRU Numbers, Descriptions, Amounts, Parts

*23 00 020	Removing / installing gearbox, Model-Specific – 19 – 21 FRU's
+23 00 659	Removing / installing gearbox, Model-Specific – 18 - 20 FRU's
23 00 505	Additional work removing / Installing gearbox with reverser, Model-specific -18-20 FRU's
23 31 501	Renew selector forks (gearbox removed) 4 FRU's
23 31 532	Additional work for replacing gearshift forks (transmission removed) (for reverser) 8 FRU's

*Main Work: These main labor operations include all repair procedures to complete the task with allowance for necessary ancillary tasks (e.g. visual inspection, lubrication, cleaning parts etc.) and administrative tasks. Only one main labor operation can be claimed per repair visit. All other labor operations for any other line(s) must be claimed using plus code labor operations. Please refer to the Warranty Policy and Procedures Manual regarding add-ons, proper support, documentation, claims submission and archiving requirements as applicable

Parts Information

As parts stock will be limited for the first few months, we will be allocating parts for urgent requests only. Urgent requests are defined as a customer bike down, an escalated consumer complaint or a sold unit that is waiting delivery. **All request must be made through an IDS ticket with a valid VIN number.**

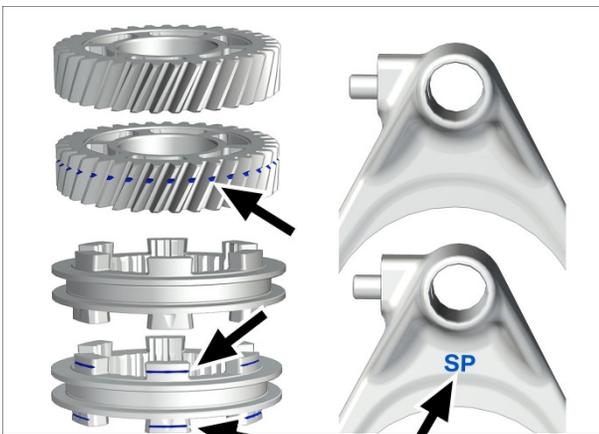
Once sufficient inventory is available, parts will be release on a fair share basis for in-stock units and the bulletin will be updated with parts information.

1

► Preparatory work

- Remove the gearbox per the latest repair instructions in AIR for the respective VIN

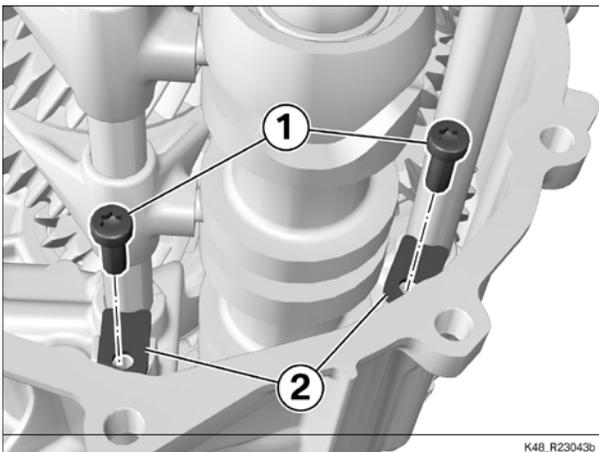
2



► Parts overview

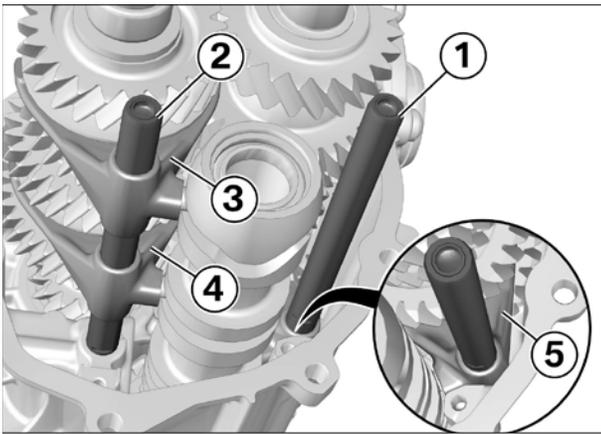
- ◆ The conversion of the transmission includes the gearshift fork, selector sleeve of the 5th/6th gear and the gear wheel of the 6th gear
- ◆ Identification of the new parts (**arrows**):
 - Free gearwheel of 6th gear: peripheral groove on outer side (tooth tips)
 - Gearshift forks: laser marking "SP"
 - Selector sleeve of 5th / 6th gear: **two** peripheral grooves on outer side

3



► Removing selector rails

- ◆ Remove screws (1).
- ◆ Remove the retaining plate (2).



- Remove the gearshift rail **(1)**, if applicable, heat the seat in the housing.

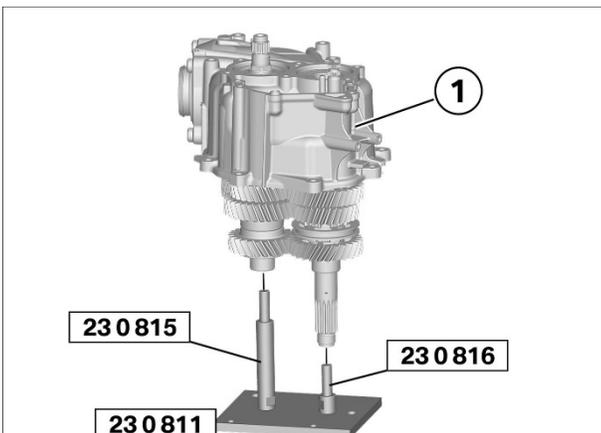


Technical data

Loosening/mat- ing temperature		60 °C	
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- Remove the gearshift rail **(2)** with gearshift forks **(3)** (3rd/4th gear) and **(4)** (5th/6th gear).
- Remove the gearshift fork **(5)** (1st/2nd gear) from the drum track.

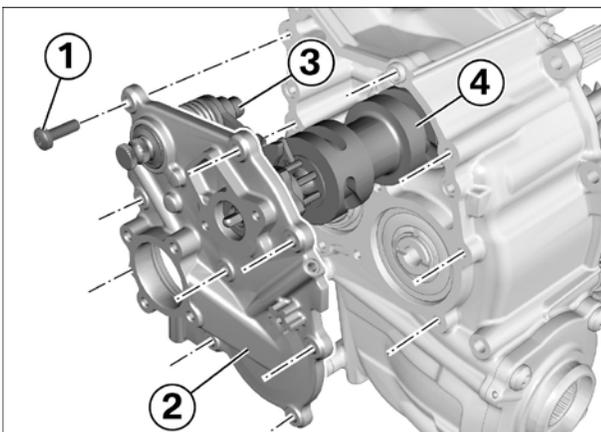
4



Assemble the transmission bearing and mount the transmission

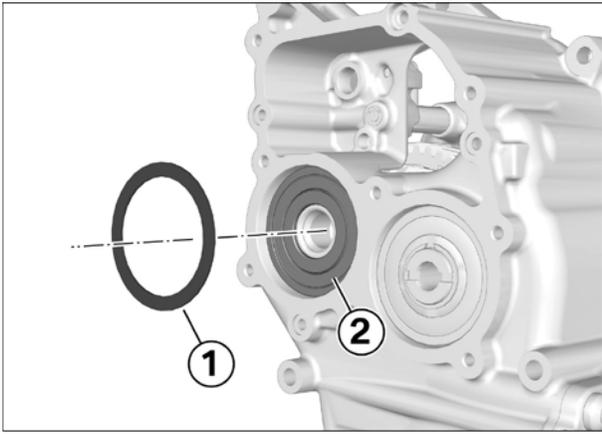
- Assemble retaining plate (23 0 811) and thrust pieces (23 0 815) and (23 0 816).
- Mount the transmission **(1)**.

5



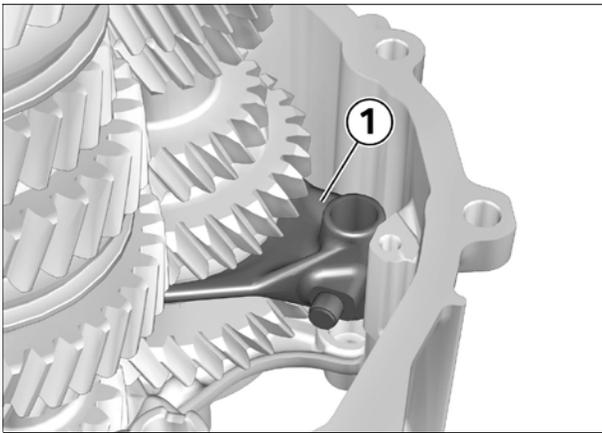
Remove the gearshift cover complete with gearshift mechanism and selector drum

- Remove screws **(1)**.
- Remove the gearshift cover **(2)** complete with gearshift mechanism **(3)** and selector drum **(4)**.



- ◆ Remove the shim **(1)** from the bore hole **(2)** for the drive shaft.

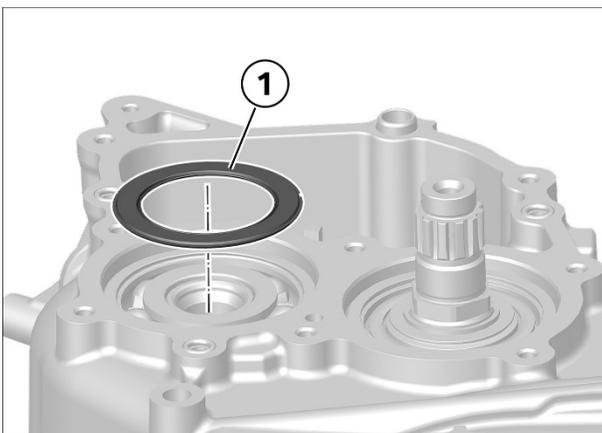
6



▶ **Removing shift fork (1st/2nd gears)**

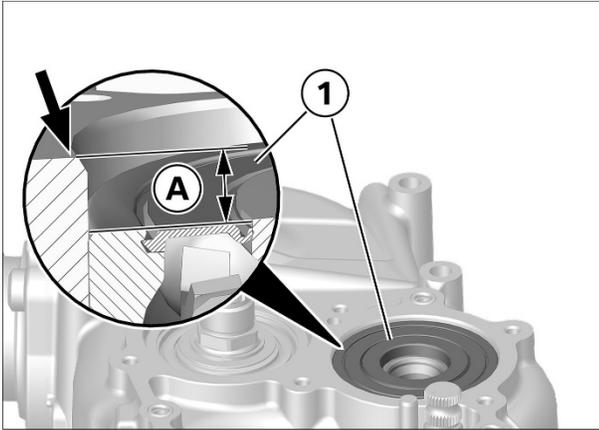
- ◆ Remove shift fork **(1)** (1st/2nd gears).

7



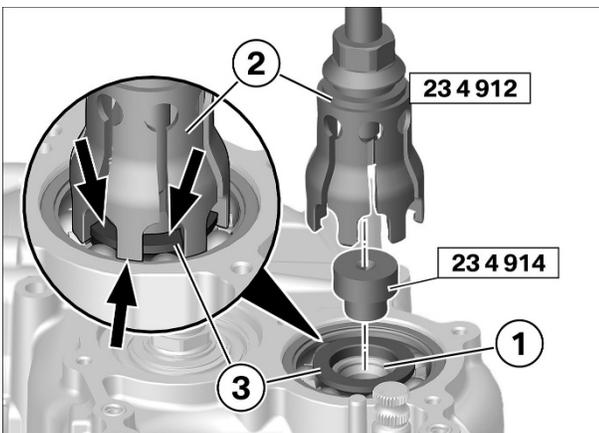
▶ **Remove the cover washer from the bearing of the drive shaft**

- ◆ Carefully lever off the cover washer **(1)**.

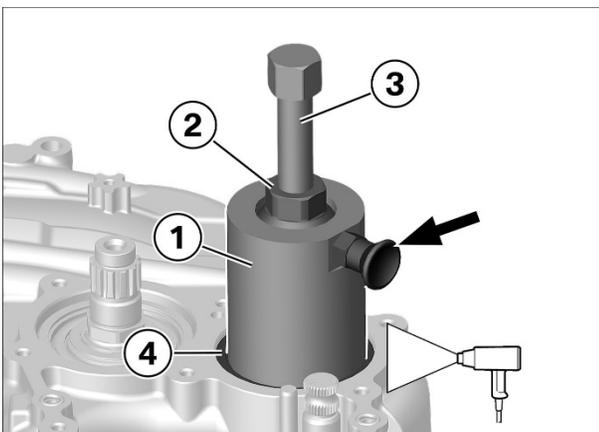


▶ Removing bearing of input shaft

- ♦ Measure the distance **(A)** from the bearing **(1)** to the edge of the housing **(arrow)**.
- ♦ **Note down** distance **(A)**.
- Distance **(A)** must be achieved again when installing later.



- ♦ Insert thrust piece (00 7 521), (23 4 914) into the drive shaft **(1)**.
- ♦ Position the extractor (23 4 911) **(2)** on the bearing **(3)** and engage to inner ring.
- The grippers are situated between the ball bearings on the inner ring **(arrows)**.



- ♦ Slide the sleeve (23 4 912) **(1)** onto the extractor **(2)** **up to the stop**.
- The retaining pin **(arrow)** on the sleeve engages.
- The grippers are pressed onto the internal bearing ring.
- ♦ Heat the housing in the bearing seat area.

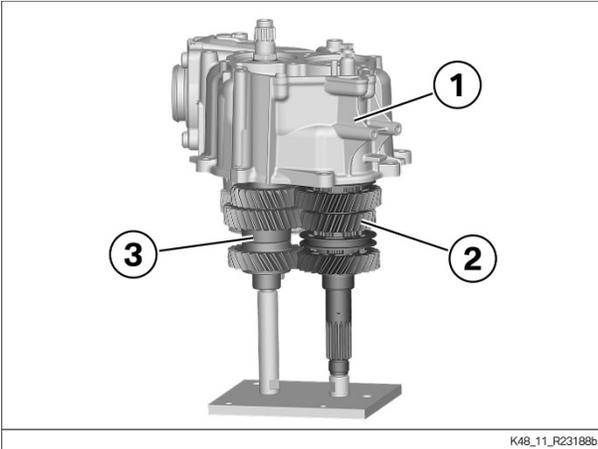


Technical data

Release/mating temperature		80 °C	
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- **Heat the housing from the outer at the side; do not overheat the tool/bearing.**
- ♦ Screw in the spindle **(3)**, while doing so, detach the bearing **(4)** from the shaft and out of the housing.

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▶ Remove the transmission from the drive shaft

- ◆ Remove the transmission **(1)** from the drive shaft **(2)**, while doing so, feed out the drive shaft from the intermediate shaft **(3)**.
- ◆ Remove the drive shaft **(2)** from the retaining plate.

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▶ Disassembling input shaft

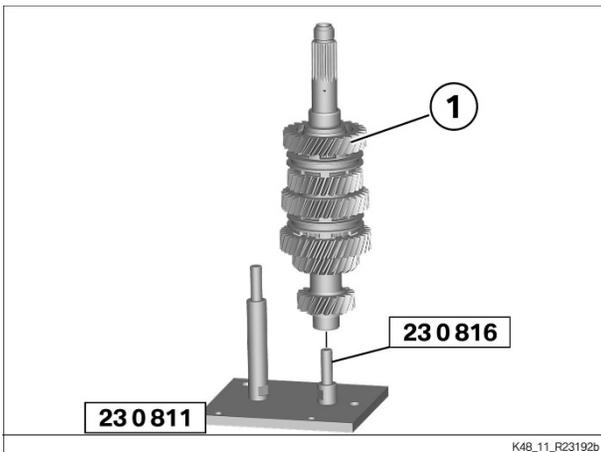
⚠ ATTENTION

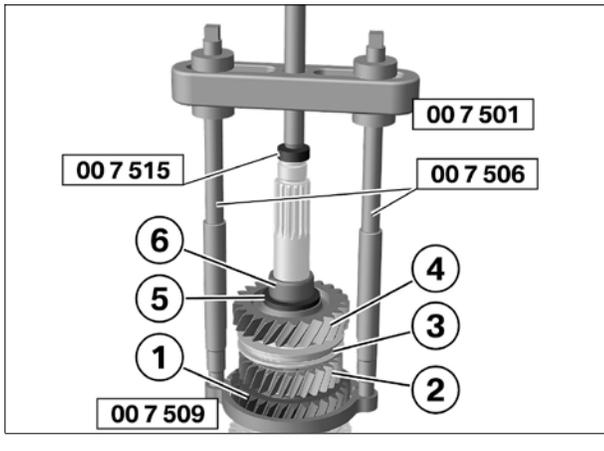
Installation of wrong support disc

Component damage, accelerated wear

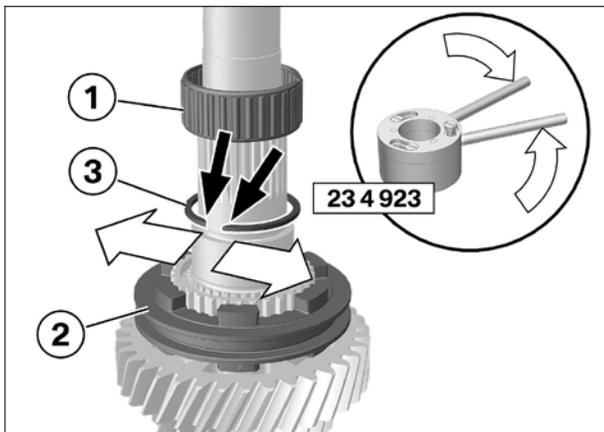
- ◆ The support disc above the needle bearing of the gear shift wheel for the 3rd gear is for adjusting the play.
- ◆ This support disc must be installed on the shaft again and must not be swapped with other transmission shafts.

Insert the drive shaft (1) in the retaining plate.

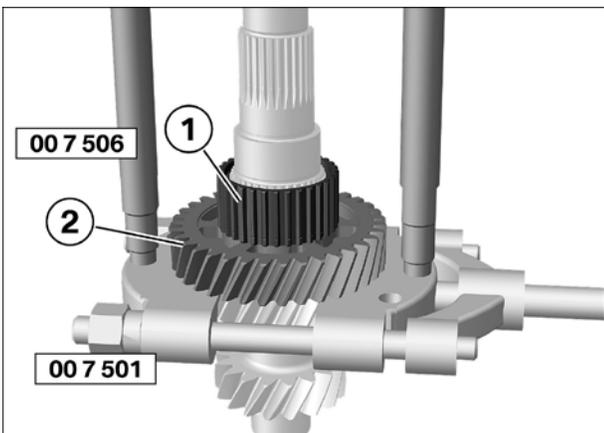




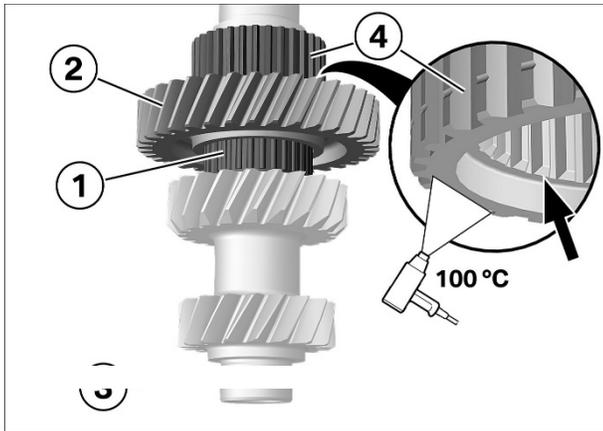
- ◆ Position the retaining ring (00 7 509) under the **free gear- wheel of the 5th gear (1)**.
- The free gearwheel of the 5th gear is the 3rd gear viewed from the clutch teeth.
- ◆ Fasten the extractor (00 7 501) with extensions (00 7 506) in the retaining ring.
- ◆ Place the thrust piece (00 5 015) under the extractor spindle.
- ◆ Preload the extractor, **align straight** and remove the gear package.
- Free gearwheel of 5th gear **(1)**
- Free gearwheel, 3rd gear**(2)**
- Selector sleeve of 3rd/4th gear
- **(3)** Free gearwheel, 4th gear**(4)**
- Thrust washer **(5)**
- Inner ring **(6)**



- ◆ Remove needle bearing **(1)**.
- ◆ Remove selector sleeve of 5th/6th gear **(2)**.
- ◆ Remove the snap ring **(3)** with the disassembly tool (23 4 923).
- Mount the disassembly tool on the snap ring and insert lugs via impact **(arrows)**.
- Close the tool lever (snap ring is expanded) and remove upwards with disassembly tool.



- ◆ Fasten the extractor (00 7 501) with extensions (00 7 506) under gear shift wheel of 6th gear.
- ◆ Place the thrust piece (00 5 015) under the extractor spindle.
- ◆ Remove the guide sleeve **(1)** and free gearwheel of the 6th gear **(2)**.

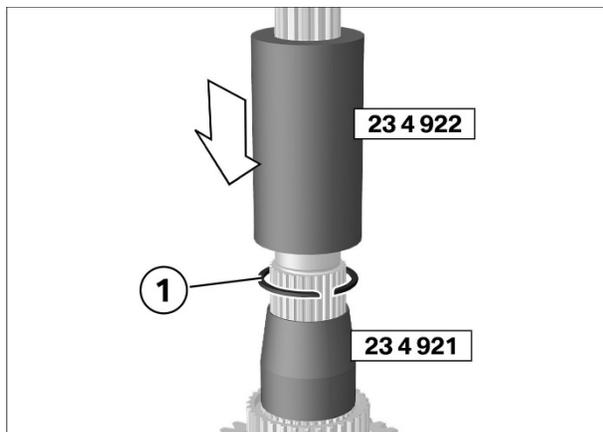
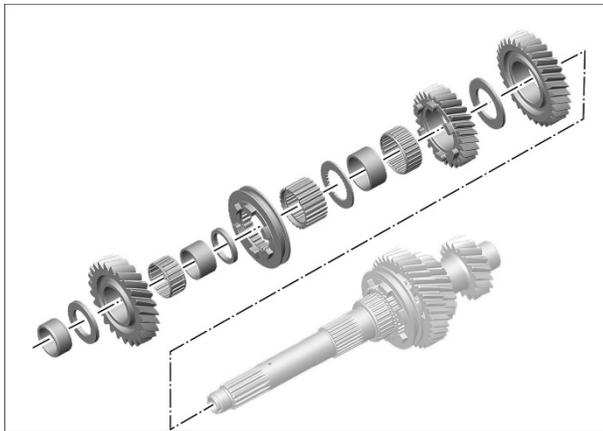


Assembling input shaft

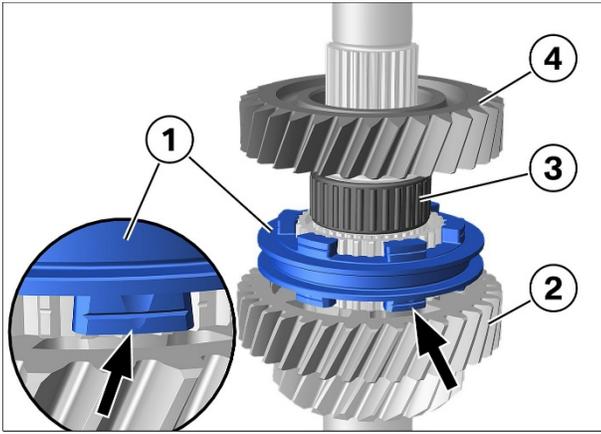
- ♦ Lubricate the needle bearing (1) with engine oil.
- Mount the needle bearing (1) and free gearwheel of the 6th gear (2) on the drive shaft (3).
- ♦ Shift pockets in free gearwheel (2) point upward (to guide sleeve (4)).
- ♦ Heat the guide sleeve (4) and install.

 Technical data			
Release/mating temperature		100 °C	

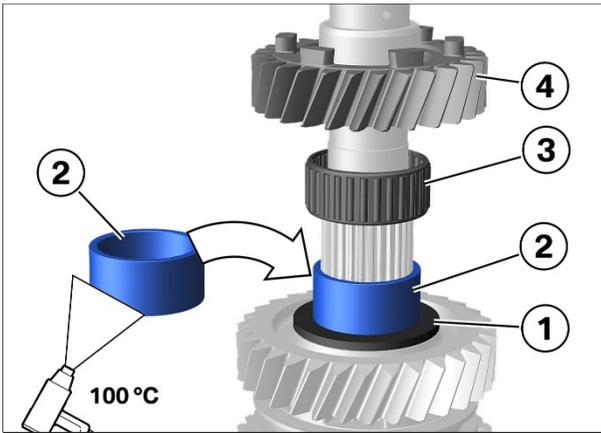
- The chamfer (**arrow**) on the guide sleeve (4) points downward in direction of the shaft gearing.
- ♦ Overview of the separate components.
- Heat the inner sleeve before installation, chamfer is in direction of shaft gearing.
- Heat the inner ring before installation.



- ♦ Install the tapered sleeve (no. 23 4 921) with taper up-wards.
- ♦ Slide the new snap ring (1) with cylindrical sleeve (no. 23 4 922) over the sleeve (no. 23 4 921) up to the stop.
- The snap ring must audibly engage in the groove.
- ♦ Remove both tools and check snap ring for correct fit.
- The snap ring must be seated in its groove all around be rotatable.



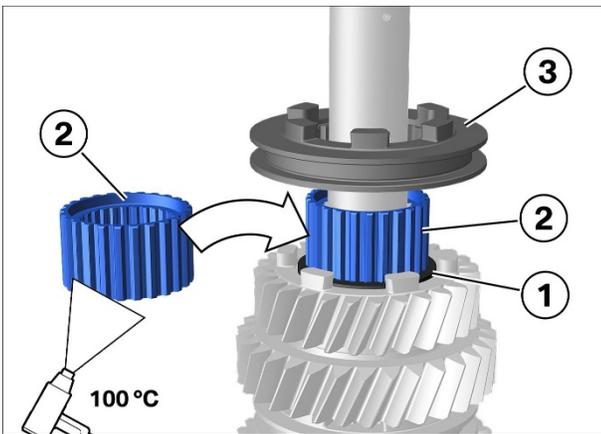
- Install the selector sleeve of the 5th/6th gear (1).
- The milled "pockets" in the claws point downward and grip into the free gearwheel of the 6th gear (2).
- Lubricate needle bearings (3) with engine oil and install.
- Install the free gearwheel of the 5th gear (4).
- The shift pockets point to the selector sleeve (1).



- Install the support disc (1).
- Heat the inner ring (2) and install.

 Technical data			
Release/mating temperature		100 °C	

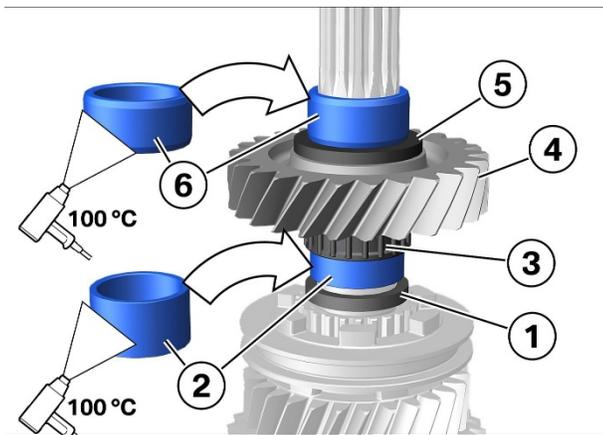
- Do not overheat the inner ring, adhere to the temperature specification!
- Allow the inner ring to cool down, lubricate needle bearings (3) with engine oil and install.
- Install the free gearwheel of the 3rd gear (4).
- The shifting claws point upwards.



- Install the support disc (1).
- The support disc is for distancing, do not swap with support discs from other drive shafts.
- Heat the guide sleeve (2) and install.

 Technical data			
Release/mating temperature		100 °C	

- The chamfer on the guide sleeve points in direction of the shaft gearing.
- Do not overheat the guide sleeve, adhere to the temperature specification!



- ♦ Install the selector sleeve of the 3rd/4th gear **(3)**.
- The shifting claws point upwards.
- ♦ Install the support disc **(1)**.
- ♦ Heat the inner ring **(2) without chamfer** and install.



Technical data

Release/mating temperature		100 °C	
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- Do not overheat the inner ring, adhere to the temperature specification!
- ♦ Lubricate needle bearings **(3)** with engine oil and install.
- ♦ Install the free gearwheel of the 4th gear **(4)**.
- The shift pockets face down.
- ♦ Install the support disc **(5)**.
- ♦ Heat the inner ring **with chamfer (6)** and install.

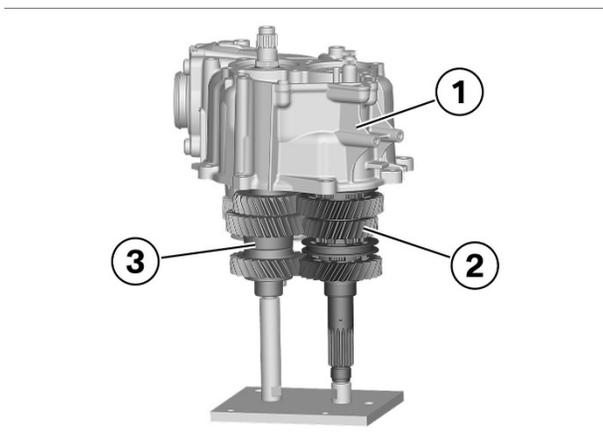


Technical data

Release/mating temperature		100 °C	
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- Do not overheat the inner ring, adhere to the temperature specification!
- ♦ Check the **support disc (5) for secure fit**: the support disc must be clamped by the inner ring **(6)**, it must not be rotatable.
- If applicable, support the shaft and reset the inner ring **(6)**.

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▶ Mount the transmission on the drive shaft

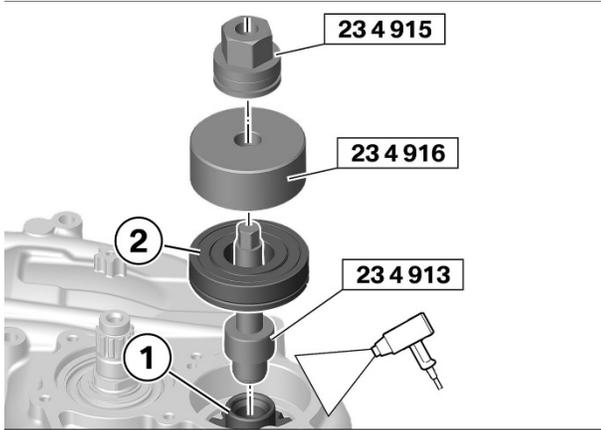
- ♦ **Swivel in** and feed in the drive shaft **(2)** into the intermediate shaft **(3)** and transmission **(1)**.

⚠ ATTENTION

The bearing migrates in the transmission housing towards the outer

The ball bearings are damaged during the assembly.

- ♦ Do not tap the housing when the transmission with shafts is on the retaining plate, this can result in the ball bearings migrating upward.
- ♦ Set the drive shaft **(2)** and intermediate shaft **(3)** on the retaining plate.



Install the bearing of the drive shaft with shim

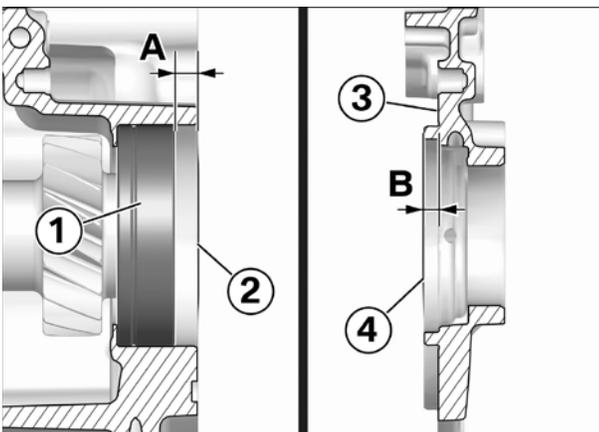
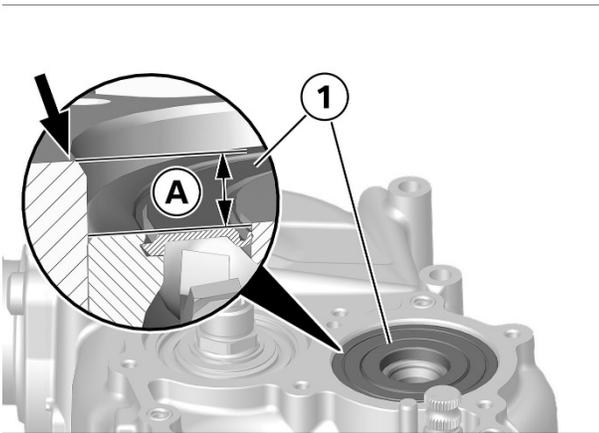
- Install the thread cleaner / guide pin (23 4 913) in the drive shaft **(1)**.
- Mount the bearing **(2)** on the thread cleaner / guide pin (no. 23 4 913).
- Sealed side faces up.
- Mount the pressure disc (23 4 914) and thrust nut (23 4 915).
- Heat the bearing seat.



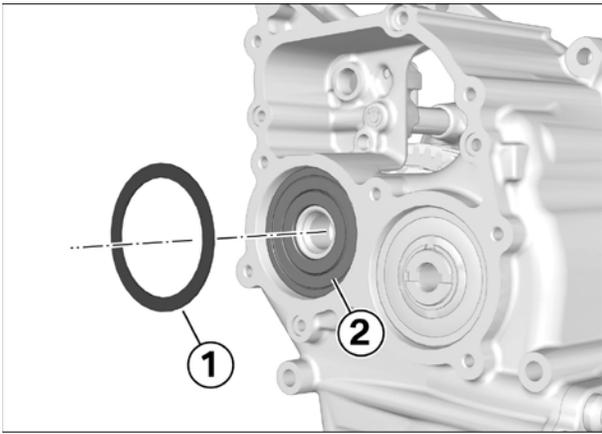
Technical data

Release/mating temperature, gearbox housing		80 °C	
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- Tighten the thrust nut (23 4 915) and install the bearing **(2)** up to the stop.
- Remove the tools, clean the thread in the drive shaft **(1)** with brake cleaner.
- Measure the distance **(A)** from the bearing **(1)** to the edge of the housing **(arrow)**.
- Compare the distance with the value noted down before removal, if applicable, reset the bearing **with pressure disc without spindle up to contact**.
- If applicable, adjust distance **(A)** with the shim.

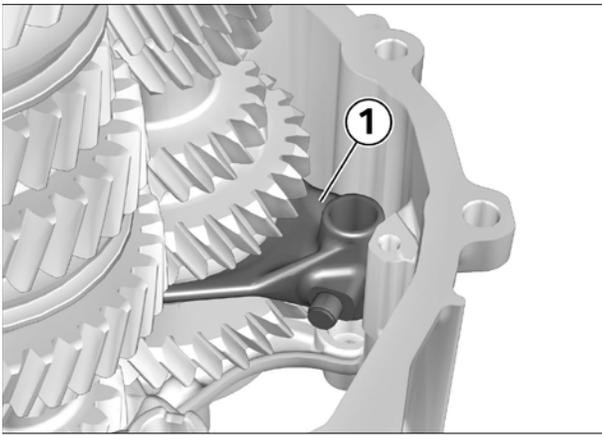


- Perform the following measurement to determine the thickness of the shim:
- Measure distance **(A)** from bearing **(1)** to edge of housing **(2)**.
- Measure distance **(B)** from gearshift cover surface **(3)** to gearshift cover collar **(4)**.
- **Formula for calculating the thickness of the shim:**
- Distance **(A)** - distance **(B)** = shim thickness + 0.03/-0.02 mm
- **Worked example:**
- A 5.54 mm - B 4.42 mm = 1.12 mm
- » Use 1.10 mm shim.



- ◆ Place the shim **(1)** on the bearing **(2)** for the drive shaft.

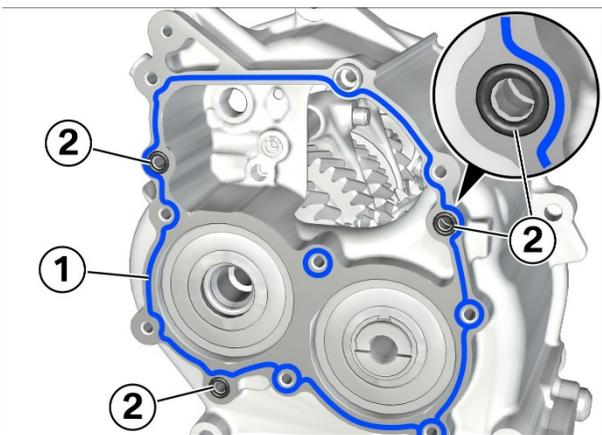
14



▶ Installing shift fork (1st/2nd gears)

- ◆ Insert shift fork **(1)** (1st/2nd gears) into drum track.

15



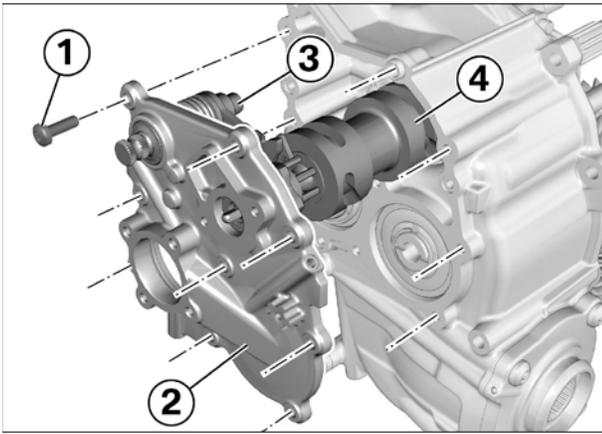
▶ Installing shift-mechanism cover

- ◆ Clean the sealing surfaces.
- ◆ Install the O-rings **(2)**.
- ◆ Apply **(1) thin layer** of sealing compound.
- Do not clog the O-rings or threaded holes!

Sealant

Dow Corning

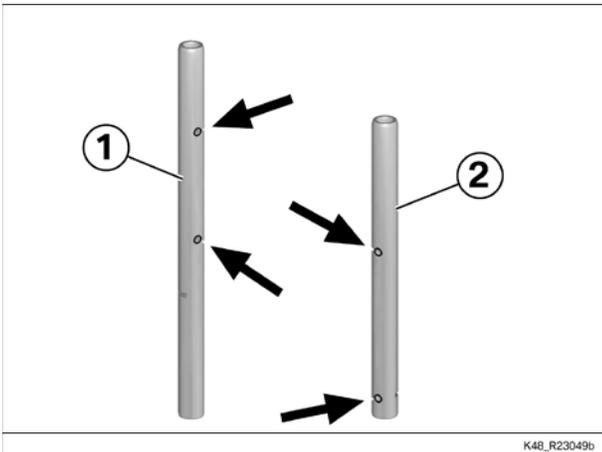
07 58 0 397 777



- ◆ Position the gearshift cover **(2)** complete with gearshift mechanism **(3)** and selector drum **(4)**.
- ◆ Install screws **(1)**.

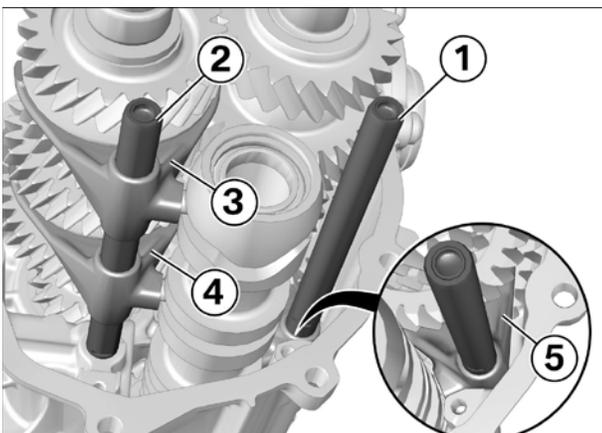
 Tightening torques		
Shift-linkage cover to crankcase		
M6 x 20	9 Nm	

16

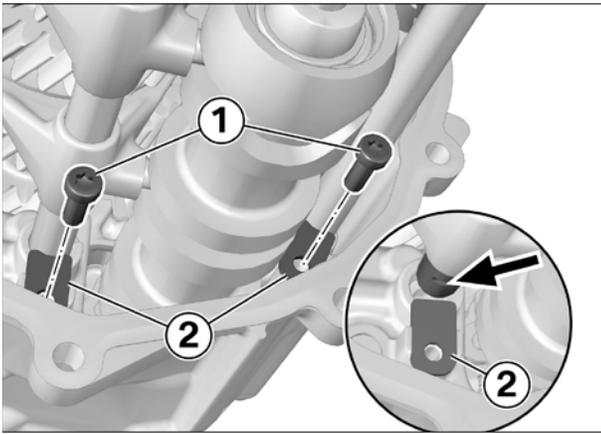


Installing selector rails

- ◆ Before installing selector rails **(1)** and **(2)**, check that the holes **(arrow)** are unobstructed.



- ◆ Insert shift forks **(3)** (3rd/4th gears), **(4)** (5th/6th gears) and **(5)** (1st/2nd gears) into the corresponding drum tracks.
- ◆ Install selector rails **(2)** and **(1)**.



- ♦ Align the selector rails such that the grooves **(arrow)** engage retainers **(2)**.
- ♦ Install retainers **(2)**.
- ♦ Install screws **(1)**.

 Tightening torques		
Retaining plate for selector rod to gearbox housing		
M6 x 16	8.6 Nm	

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► Follow-up work

- Install the gearbox per the latest repair instructions in AIR for the respective VIN