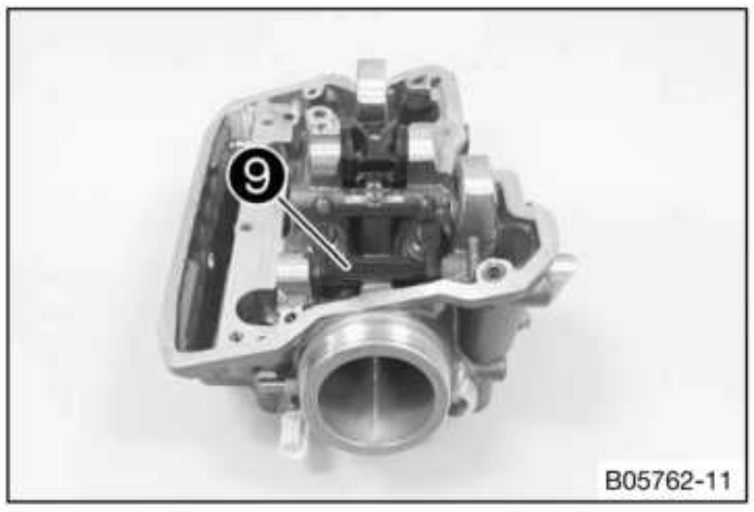
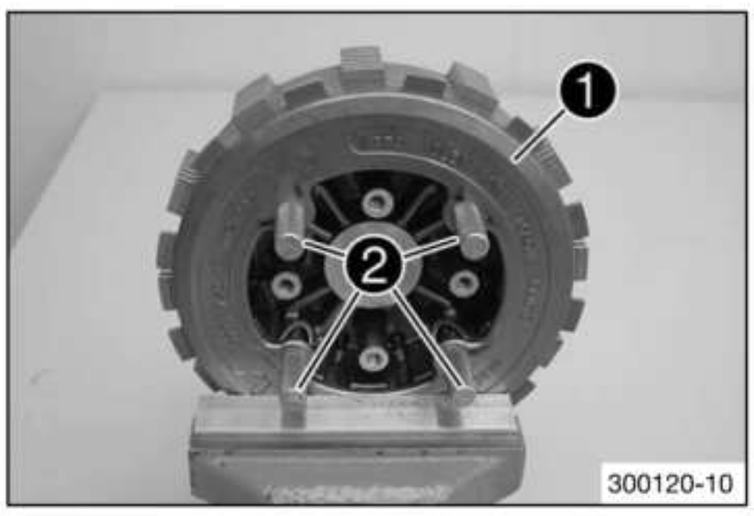


– Mount cam lever clip ❾.

18.4.29 Disassembling the antihopping clutch

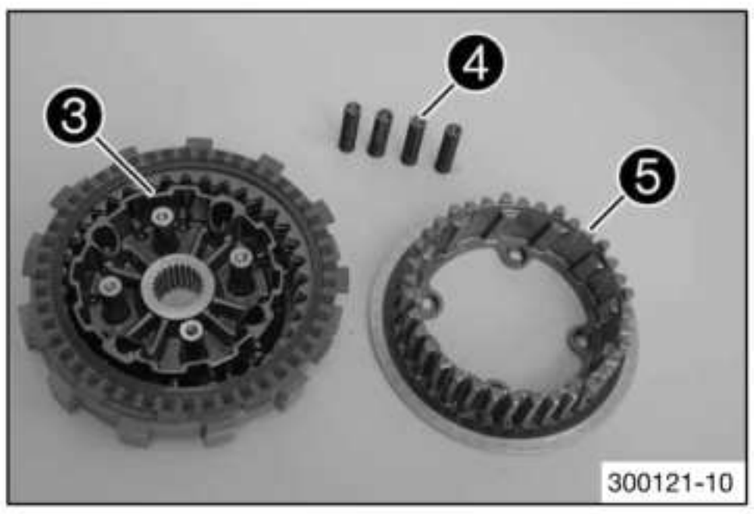


– Clamp clutch ❶ into a vise.

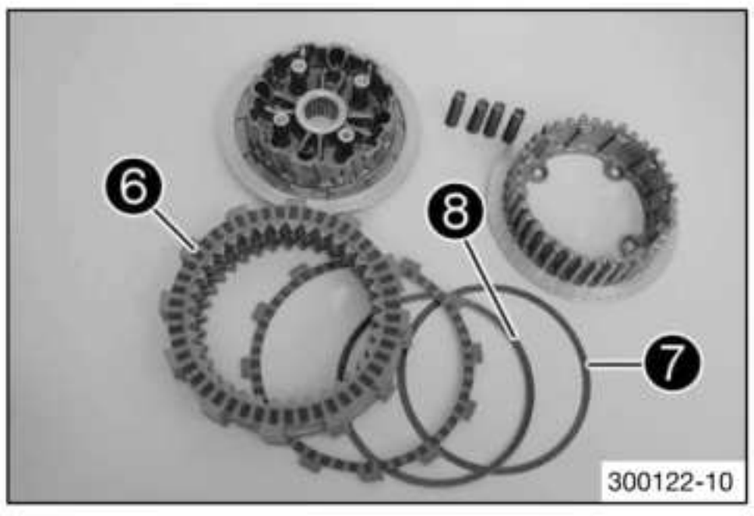
Guideline

Use soft jaws.

– Carefully loosen special tool ❷ in steps and remove it.



– Take the clutch out of the vise and place it on a clean workbench with the outside inner clutch hub ❺ facing downward.
– Remove inner clutch hub ❸ and release springs ❹ from the outer clutch hub ❺.

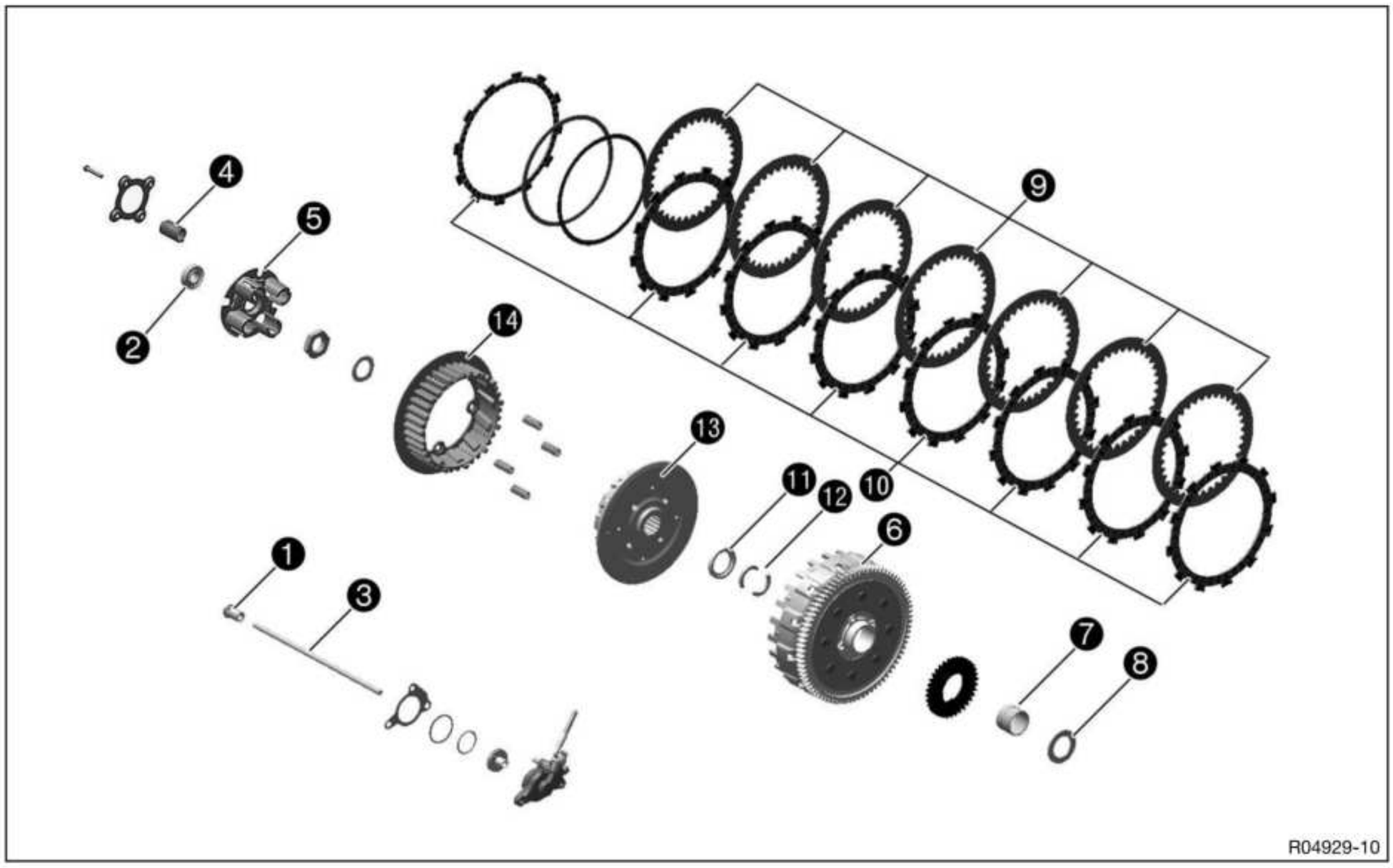


– Take off the clutch facing discs ❻ from the inner clutch hub.
– Remove pretension ring ❼ and support ring ❽.
– Clean all parts well.
– Check the clutch. (📖 p. 229)

18.4.30 Checking the clutch

Preparatory work

– Disassemble the antihopping clutch. (📖 p. 229)



Main work

- Check clutch throw-out ❶ for damage and wear.
  - » If there is damage or wear:
    - Change the clutch push rod.
- Check axial bearing ❷ for damage and wear.
  - » If there is damage or wear:
    - Change the axial bearing.
- Place the clutch push rod ❸ on a flat surface and check for run-out.
  - » If there is run-out:
    - Change the clutch push rod.
- Check the length of clutch springs ❹.

Clutch spring - length	31.5 … 33.5 mm (1.24 … 1.319 in)

  - » If the clutch spring length is shorter than specified:
    - Change all clutch springs.
- Check the contact surface of clutch pressure cap ❺ for damage and wear.
  - » If there is damage or wear:
    - Change the clutch pressure cap.
- Check the thrust surfaces of the clutch facing discs in clutch basket ❻ for wear.

Clutch basket - contact surface of clutch facing discs	≤ 0.5 mm (≤ 0.02 in)

  - » If the thrust surface exhibits excessive wear:
    - Change the clutch facing discs and the clutch basket.
- Check needle bearing ❼ and supporting plate ❽ for damage and wear.
  - » If there is damage or wear:
    - Change the needle bearing and supporting plate.
- Check intermediate clutch discs ❾ for damage and wear.

» If the intermediate clutch discs are not level and are pitted:
– Change all intermediate clutch discs.

– Check clutch facing discs ❿ for discoloration and scoring.
» If there is discoloration or scoring:
– Change all clutch facing discs.

– Check the thickness of clutch facing discs ❿.

Clutch facing disc - thickness	≥ 2.5 mm (≥ 0.098 in)

» If the clutch facing disc does not meet specifications:
– Change all clutch facing discs.

– Check stepped washer ⓫ for damage and wear.
» If there is damage or wear:
– Change the stepped washer.

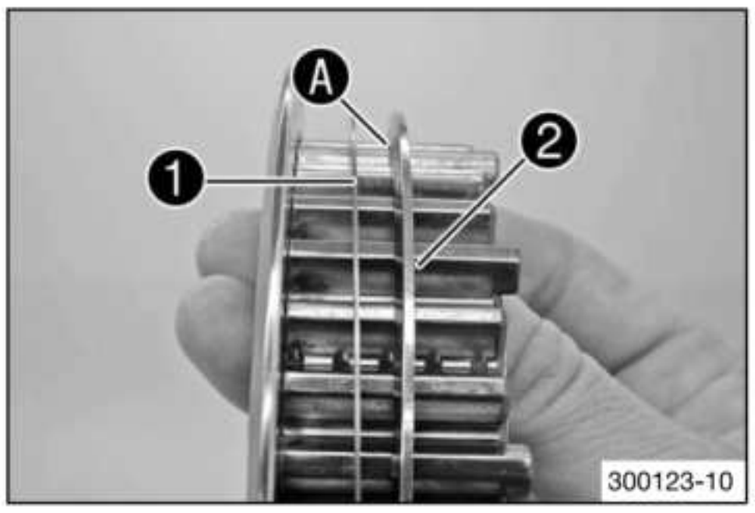
– Check half washers ⓬ for damage and wear.
» If there is damage or wear:
– Change the half washers.

– Check inner clutch hub ⓭ for damage and wear.
» If there is damage or wear:
– Change the inner clutch hub.

– Check outer clutch hub ⓮ for damage and wear.
» If there is damage or wear:
– Change the outer clutch hub.

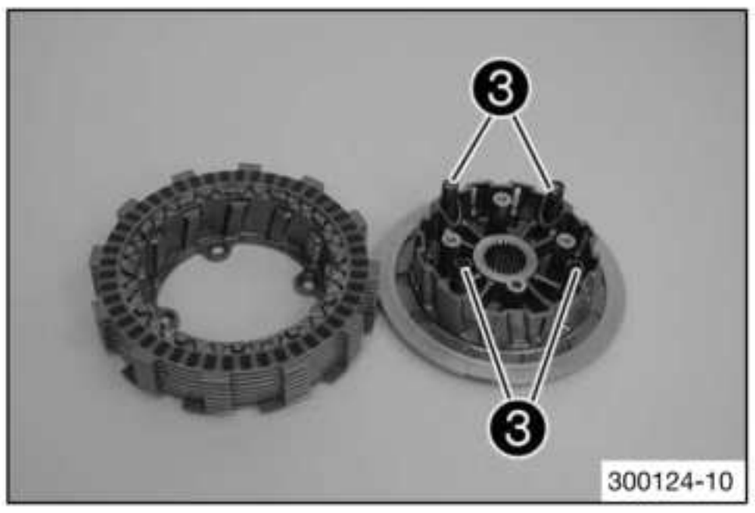
Finishing work
– Preassemble the antihopping clutch. (📖 p. 231)

18.4.31 Preassembling the antihopping clutch

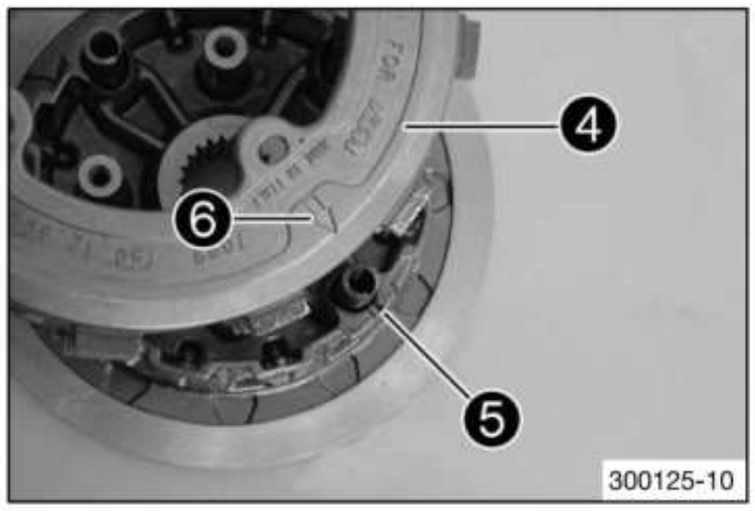


– Thoroughly oil the clutch facing discs.
– Push the support ring ❶ and the pretension ring ❷ on to the outer clutch hub.

Info
The pretension ring must be installed so that it is flush with the inner edge Ⓐ on the support ring.



– Position the trimmed clutch facing disc with the recess for the pretension ring on the outer clutch hub.
– Beginning with the coated intermediate clutch disc, position all further clutch facing discs and intermediate clutch discs alternately.
– Position the release springs ❸.

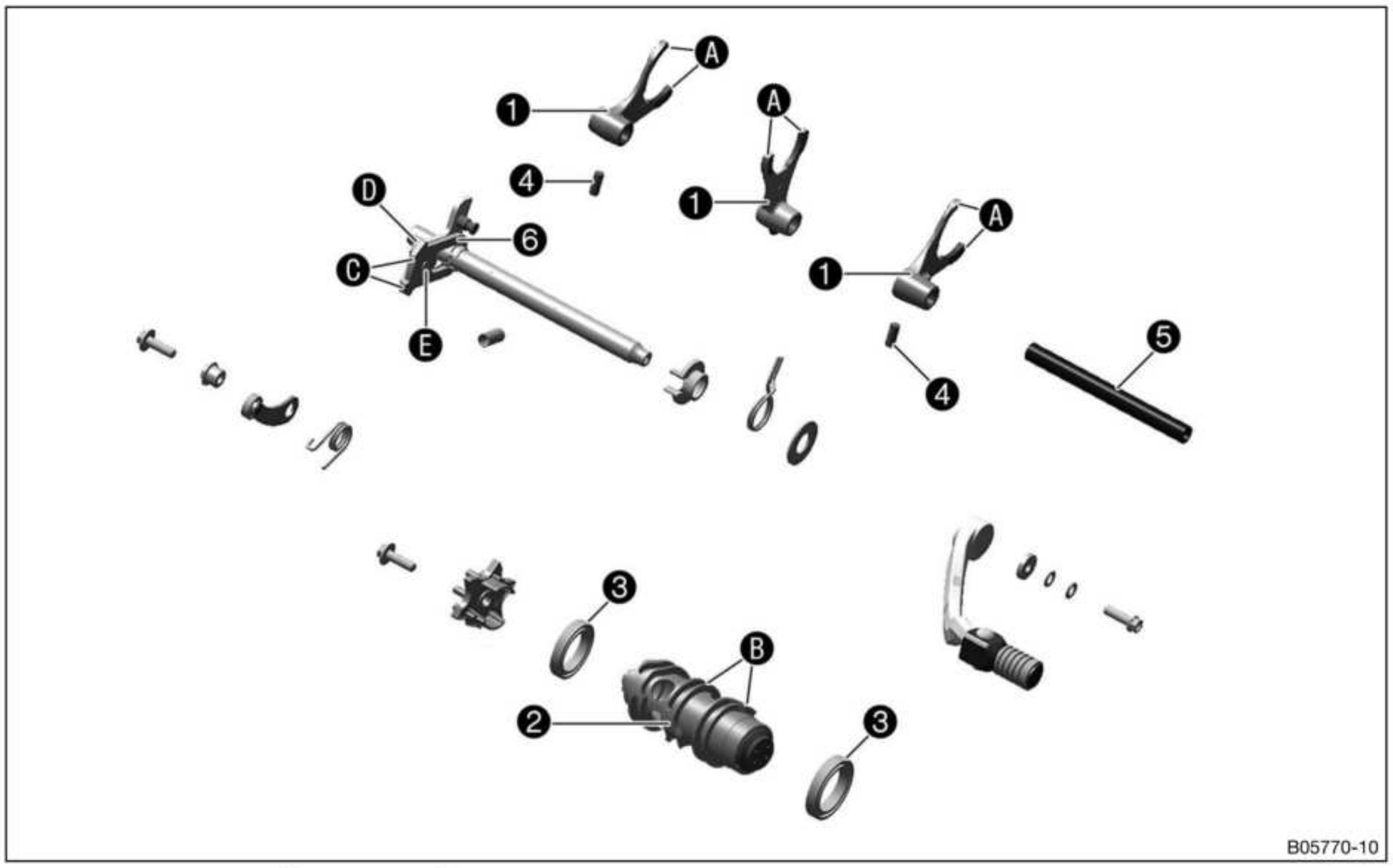


– Push on the outer clutch hub ❹ and pay attention to the markings.
  ✓ The arrow ❻ of the outer clutch hub must point to the notch ❺ of the inner clutch hub.
– Tightly press both inner clutch hubs together and have an assistant screw in the special tool.

Assembly screws (75029033000) (📖 p. 387)

Info
Apply the special tool by hand only; do not use another tool.
Only tighten the special tool to the point where the clutch facing discs cannot be shifted relative to each other; they will need to be aligned when they are mounted in the clutch basket.

18.4.32 Checking the shift mechanism



– Check shift forks ❶ on plate Ⓐ for damage and wear (visual check).
  » If there is damage or wear:
    – Change the shift fork and gear wheel pair.
– Check shift grooves Ⓑ of shift drum ❷ for wear.
  » If the shift groove is worn:
    – Change the shift drum.
– Check the seat of the shift drum in bearings ❸.
  » If the shift drum is not seated correctly:
    – Change the shift drum and/or the bearing.
– Check bearing ❸ for stiffness and wear.

» If the bearings are stiff or are worn:
– Change the bearings.

– Check needle bushing ❹ for stiffness and wear.
» If the needle bushing does not move freely or is worn:
– Change the needle bushing.

– Check shift rail ❺ for run-out on a flat surface.
» If there is run-out:
– Change the shift rail.

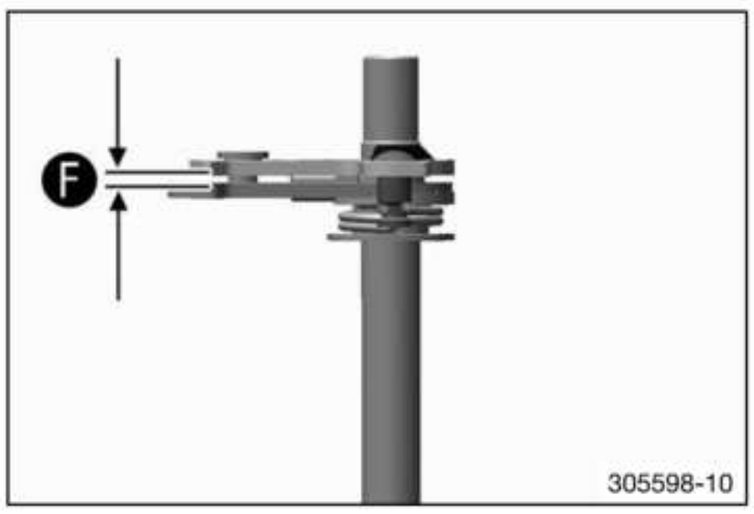
– Check the shift rails for scoring, wear and smooth operation in the shift forks.
» If there is scoring or corrosion, or if the shift fork is stiff:
– Change the shift rail.

– Check sliding plate ❻ in contact areas Ⓒ for wear.
» If the sliding plate is worn:
– Change the sliding plate.

– Check return surface Ⓓ on the sliding plate for wear.
» If deep notches are present:
– Change the sliding plate.

– Check guide pin Ⓔ for looseness and wear.
» If the guide pin is loose and/or worn:
– Change the sliding plate.

– Preassemble the shift shaft. (📖 p. 233)

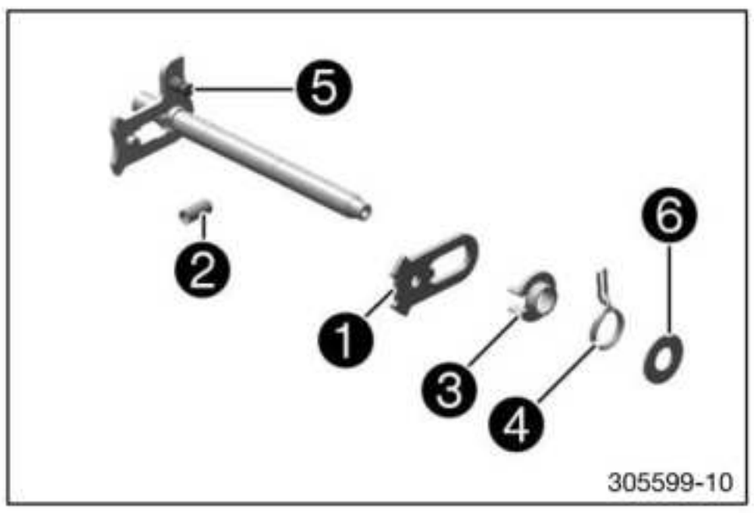


– Check clearance Ⓕ between the sliding plate and the shift quadrant.

Shift shaft - play in sliding plate/shift quadrant	0.40 … 0.80 mm (0.0157 … 0.0315 in)

» If the measured value does not meet specifications:
– Change the sliding plate.

18.4.33 Preassembling the shift shaft

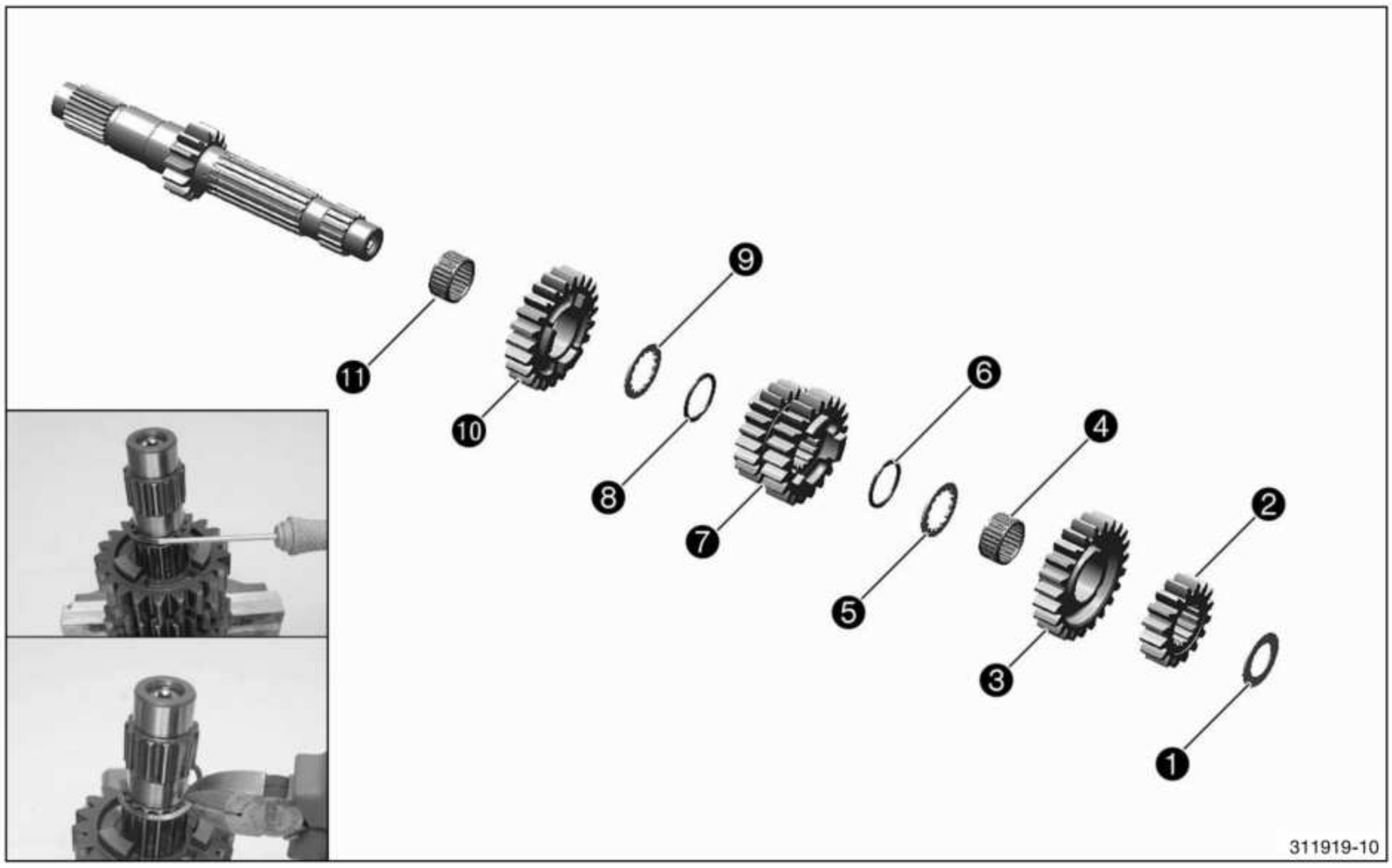


– Fix the short end of the shift shaft in a vise.
Guideline

Use soft jaws.

– Mount sliding plate ❶ with the guide pin facing down and attach the guide pin to the shift quadrant.
– Mount pressure spring ❷.
– Push on spring guide ❸, push return spring ❹ over the spring guide with the offset end facing upward and lift the offset end over abutment bolt ❺.
– Mount stop disk ❻.

18.4.34 Disassembling the main shaft



– Secure the main shaft with the toothed end facing downward in the vise.

Guideline

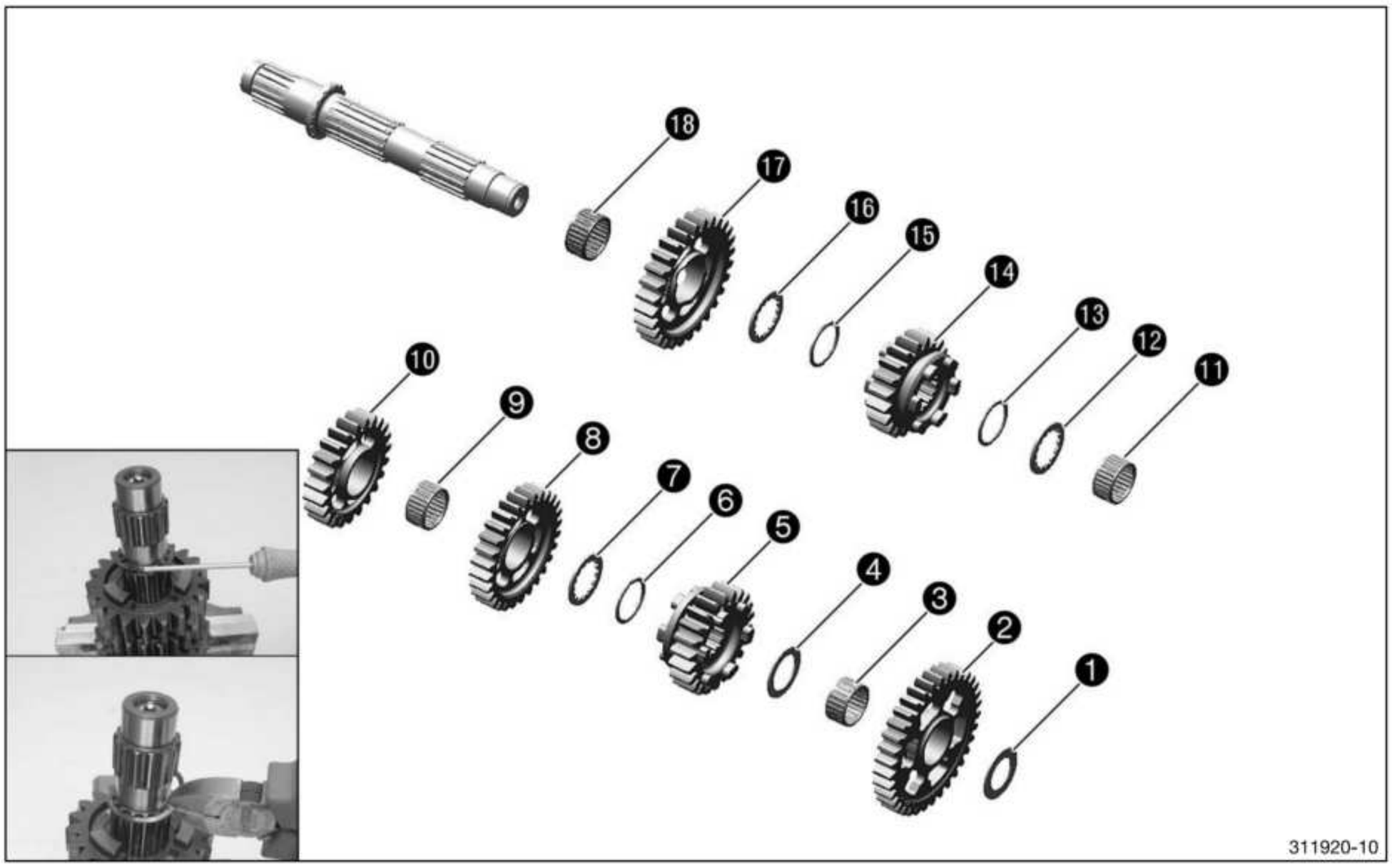
Use soft jaws.

– Remove stop disk ❶ and second-gear fixed gear ❷.
– Remove sixth-gear idler gear ❸.
– Remove needle bearing ❹ and stop disk ❺.
– Remove lock ring ❻.

Info
Open the lock ring with a screwdriver and twist it off the transmission shaft with pliers.

– Remove third/fourth-gear sliding gear ❼.
– Remove lock ring ❽.
– Remove stop disk ❾ and fifth-gear idler gear ❿.
– Remove needle bearing ⓫.

18.4.35 Disassembling the countershaft



– Secure the countershaft in the bench vise with the toothed end facing downward.

Guideline

Use soft jaws.

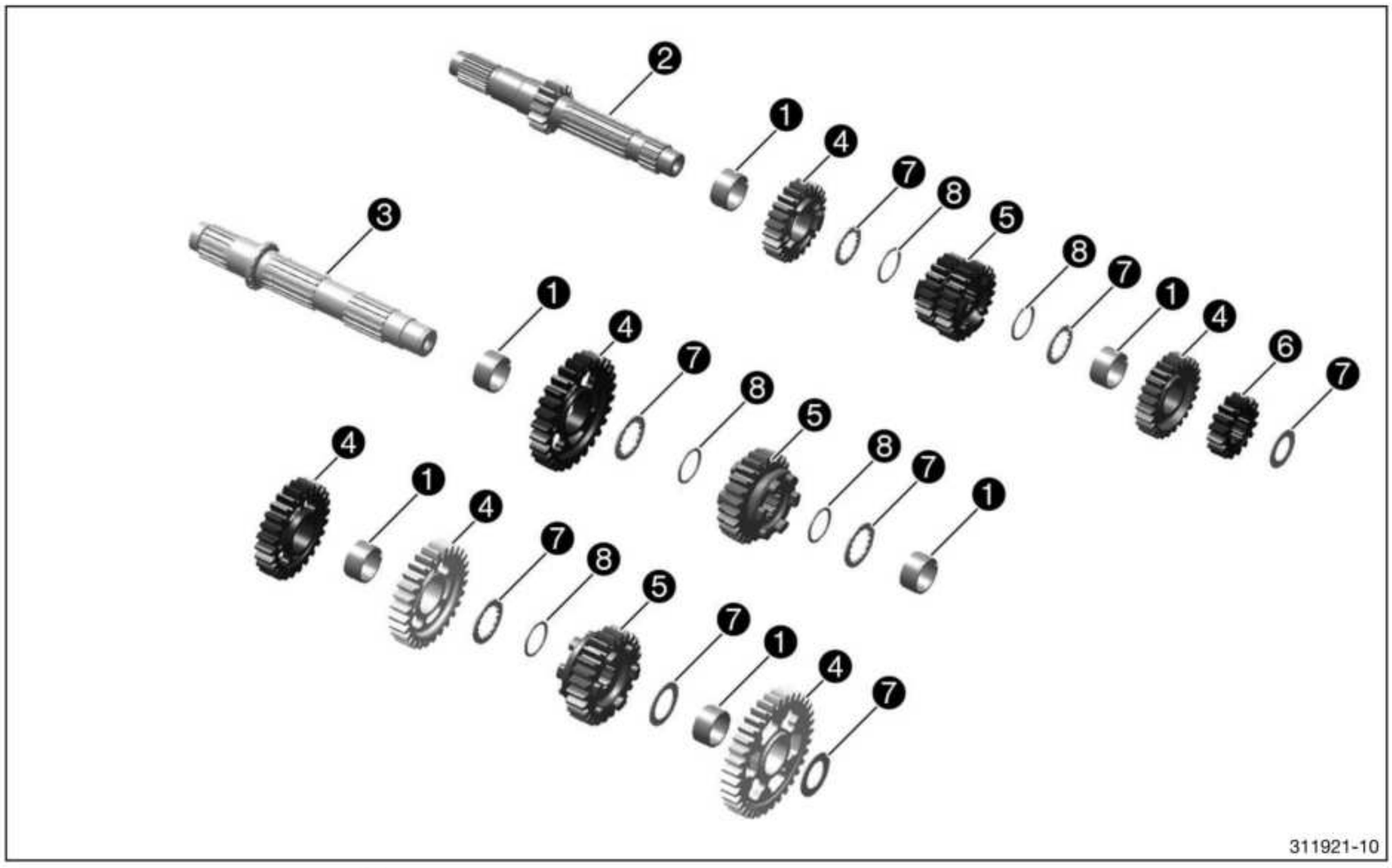
– Remove stop disk ❶ and first-gear idler gear ❷.
– Remove needle bearing ❸ and stop disk ❹.
– Remove fifth-gear sliding gear ❺ and lock ring ❻.

Info
Open the lock ring with a screwdriver and twist it off the transmission shaft with pliers.

– Remove stop disk ❼ and third-gear idler gear ❽.
– Remove needle bearing ❾ and fourth-gear idler gear ❿.
– Remove needle bearing ⓫ and stop disk ⓬.
– Remove lock ring ⓭ and sixth-gear sliding gear ⓮.
– Remove lock ring ⓯ and stop disk ⓰.
– Remove second-gear idler gear ⓱ and needle bearing ⓲.

18.4.36 Checking the transmission

Condition
The transmission has been disassembled.



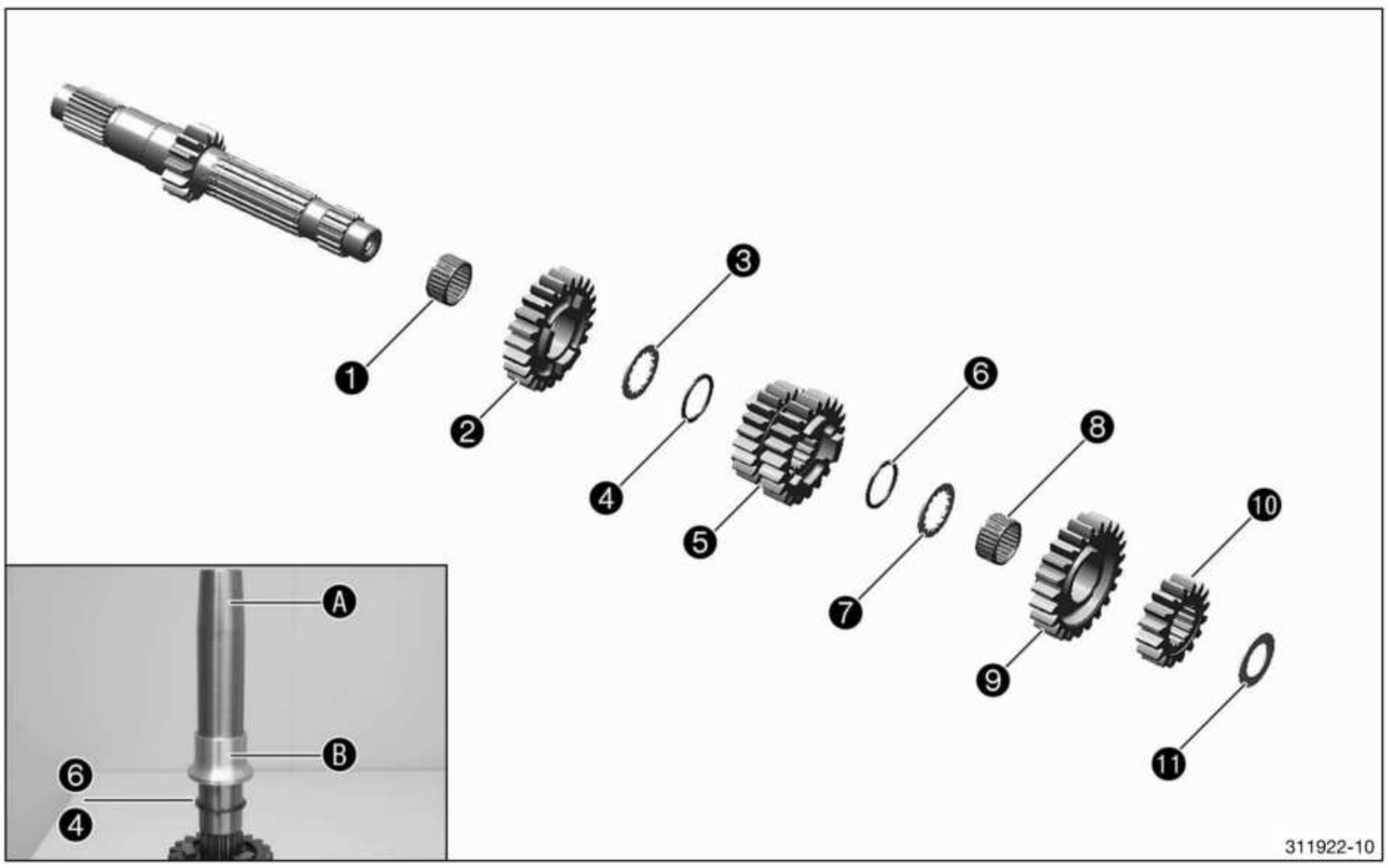
- Check needle bearings ❶ for damage and wear.
  - » If there is damage or wear:
    - Change the needle bearing.
- Check the pivot points of main shaft ❷ and countershaft ❸ for damage and wear.
  - » If there is damage or wear:
    - Change the main shaft and/or countershaft.
- Check the tooth profiles of main shaft ❷ and countershaft ❸ for damage and wear.
  - » If there is damage or wear:
    - Change the main shaft and/or countershaft.
- Check the pivot points of idler gears ❹ for damage and wear.
  - » If there is damage or wear:
    - Change the gear wheel pair.
- Check the shift dogs of idler gears ❹, sliding gears ❺, and fixed gear ❻ for damage and wear.
  - » If there is damage or wear:
    - Change the gear wheel pair.
- Check the tooth faces of idler gears ❹, sliding gears ❺, and fixed gear ❻ for damage and wear.
  - » If there is damage or wear:
    - Change the gear wheel pair.
- Check the tooth profiles of sliding gears ❺ for damage and wear.
  - » If there is damage or wear:
    - Change the gear wheel pair.
- Check sliding gears ❺ for smooth operation in the profile of main shaft ❷.
  - » If the sliding gear does not move freely:
    - Change the sliding gear or the main shaft.
- Check sliding gears ❺ for smooth operation in the profile of countershaft ❸.
  - » If the fixed gear does not move freely:
    - Change the sliding gear or the countershaft.

- Check stop disks ❼ for damage and wear.
  - » If there is damage or wear:
    - Change the stop disks.
- Use new lock rings ❽ with every repair.

18.4.37 Assembling the main shaft

Info
Use new lock rings with every repair.

Preparatory work
- Lubricate all parts carefully before assembling.
- Check the transmission. (p. 235)



Main work
- Secure the main shaft in the vise with the gear teeth facing downward.

  Guideline

Use soft jaws.

- Mount needle bearing ❶.
- Push on fifth-gear idler gear ❷ with the shift dogs facing upward.
- Mount stop disk ❸.
- Position special tool Ⓐ on the transmission shaft.

Mounting tool for lock ring (76629032000) (p. 391)

- Position lock ring ❹ on special tool Ⓐ and push down with sleeve Ⓑ.
  - ✓ The lock ring engages in the groove of the transmission shaft.
- Push on third/fourth-gear sliding gear ❺ with the small gear wheel facing downward.

- Position special tool Ⓐ on the transmission shaft.

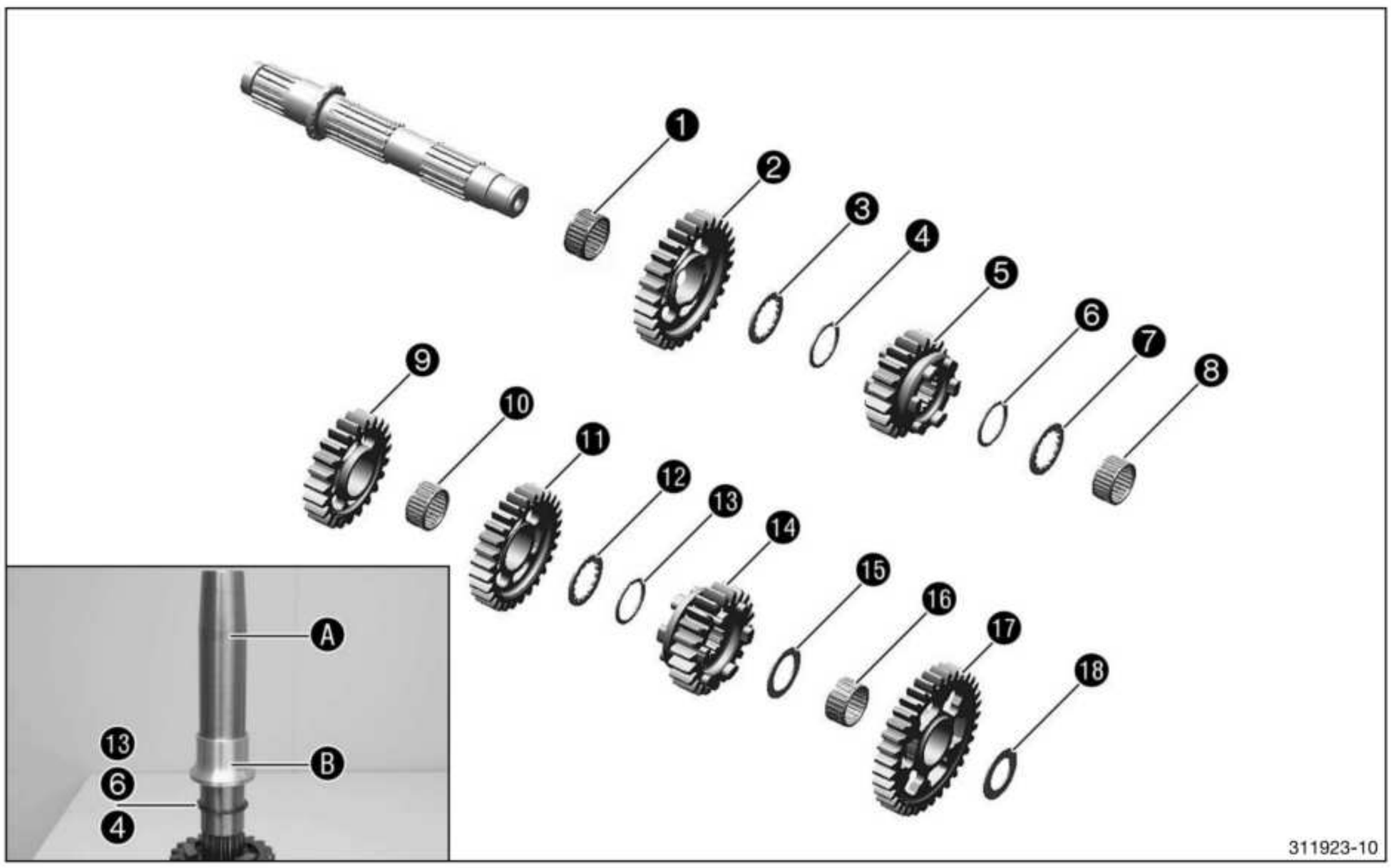
Mounting tool for lock ring (76629032000) (📖 p. 391)

- Position lock ring ❻ on special tool Ⓐ and push down with sleeve Ⓑ.
  ✓ The lock ring engages in the groove of the transmission shaft.
- Attach stop disk ❼ and needle bearing ❽.
- Push on sixth-gear idler gear ❾ with the shift dogs facing downward.
- Push on second-gear fixed gear ❿ with the collar facing downward and attach stop disk ⓫.
- Finally, check all the gear wheels for smooth operation.

18.4.38 Assembling the countershaft

Info
Use new lock rings with every repair.

Preparatory work
- Lubricate all parts carefully before assembling.
- Check the transmission. (📖 p. 235)



Main work
- Secure the countershaft in the bench vise with the toothed end facing downward.

  Guideline

Use soft jaws.

- Mount needle bearing ❶ and second-gear idler gear ❷ onto the countershaft with the protruding collar facing downward.
- Mount stop disk ❸.
- Position special tool Ⓐ on the transmission shaft.