

Removal and Installation of Transmission

Type 220a

Special Tools:

Special ring wrench, opening
17 mm (0.67"), for upper
transmission fastening nuts 000 589 05 03

Fork for guiding the propeller
shaft 120 589 02 61

Procedure:

1. Disconnect negative battery cable, loosen all wires at the starter and remove starter.
2. Remove selector and shift rod at bearing body of steering column gear shift.
3. Loosen upper nuts fastening the clutch housing to the engine by means of special ring wrench 000 589 05 03, but do not yet remove the nuts.
4. Unscrew support for exhaust system from bracket plate at transmission and from exhaust pipe bracket. Disconnect speedometer shaft from transmission.
5. Separate propeller shaft from transmission leaving the shaft plate on the propeller shaft. Loosen intermediate bearing and push propeller shaft back by means of fork 120 589 02 61.
If the propeller shaft cannot be pushed back sufficiently, it must be disconnected from the rear axle as well.
6. Remove steering gear shock absorbers and center tie rod (Fig. G 1a/6).
7. Unhook return spring for clutch throwout fork as well as clutch linkage (Fig. G 1a/7).
In case the adapter spring is attached to the clutch intermediate arm and the clutch housing (second design), the adapter spring must be unhooked as well (see Fig. Ku 6a/01).
8. Unscrew shaft plate from clutch pedal arm; slip rubber boot off bearing plate and pull clutch pedal shaft out of the plate (Fig. G 1a/8).

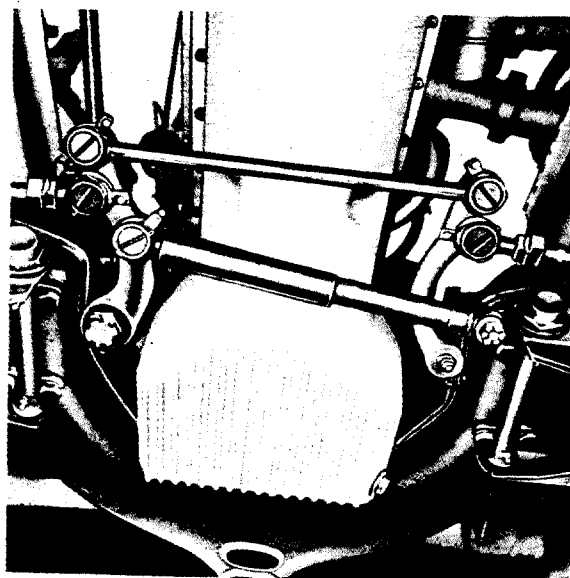


Fig. G 1a/6

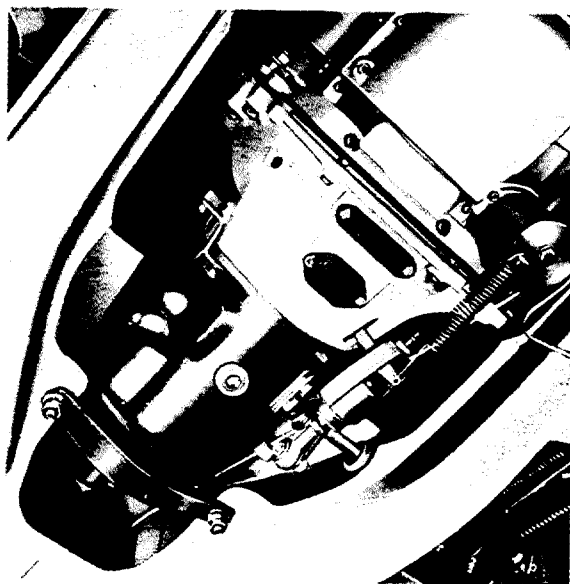


Fig. G 1a/7

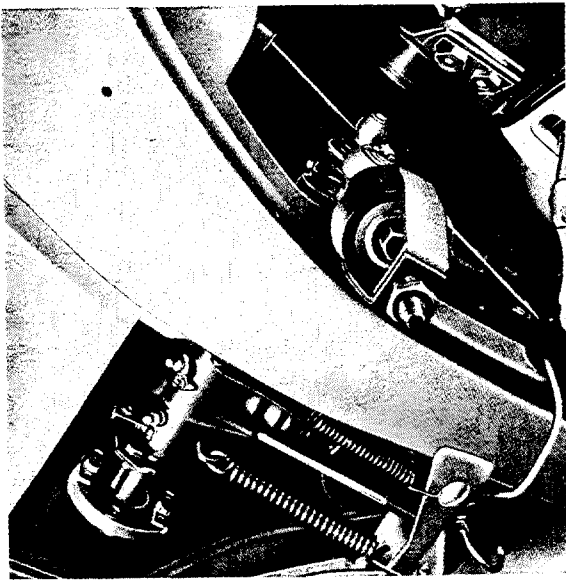


Fig. G 1a/8

9. Support transmission and unscrew rear engine suspension. Lower transmission with engine a little supporting engine under the oil pan.
 10. Unscrew all nuts on clutch housing (before this is done, remove cover plate from clutch housing), pull transmission towards the rear and lower it.
Remove clutch throwout bearing at once so it will not be contaminated when the transmission is cleaned.
The throwout bearing requires no maintenance; keep it at a clean place until it is to be installed again.
The bearing must by no means be washed out!
 11. When installing the transmission note the following:
 - a) Check whether grooved collar bearing in crankshaft operates smoothly.
 - b) Fill hollow space in centering star of propeller shaft with grease.
 - c) It must be possible to push the clutch housing on the pilot pins without applying force (see also Operation No. G 2).
 - d) When inserting the transmission watch out for correct position of selector and shift linkage. If this is not done, it might be necessary to loosen the linkage again from the respective lever on the transmission cover.
 12. Screw rear engine suspension to body frame; do not yet tighten the nuts.
 13. Tighten all nuts and screws on clutch housing, then tighten nuts of rear engine suspension.
- Note:** In the place of nuts M 10 DIN 934 – 5 S for rear engine suspension (two on each side), today self-locking nuts M 10 DIN AGGN 14 440 are used (one on each side).
- The conventional nuts can be exchanged for self-locking nuts. It is desirable to use only nuts of the self-locking type for fastening the rear end of the transmission to the frame floor.
14. Screw on exhaust suspension and cover plate for clutch housing. Connect speedometer shaft to transmission.
 15. Attach propeller shaft to transmission and rear axle, then fasten propeller shaft center bearing again.
 16. Install starter and connect the wires. Connect negative cable to battery as well.
 17. Connect selector and shift rod to pertaining arm at bearing body and secure.
 18. Insert clutch pedal shaft into bearing plate (before this is done grease ball liberally) and slip rubber boot over bearing plate. Screw shaft plate to clutch pedal arm.
 19. Attach clutch linkage, return spring and adapter spring.
The installed length of the adapter spring (second design) must be 155 mm (6.11"). See Figs. Ku 6a/01 and Ku 6a/7.
 20. Check free travel of clutch pedal and readjust, if necessary (see Operation No. Ku 5a).
 21. Check the various positions of the steering column gear shift. If it is not possible to shift the gears smoothly, readjust the system. (See Operation No. G 14a, cf. 9 to 13.)