

📍 10051

NSU
TT & TTS

4 & 5-speed gearbox

WWW.CAE-RACING.DE



PLEASE NOTE

SAFETY FIRST!

- 📍 Raise the vehicle safely with a vehicle lift for installation. Improper lifting can cause damage to the vehicle and/or personal injury or even death!
- 📍 Please only do the installation if you have appropriate experience in the automotive sector and have the right tools! An incorrectly installed Shifter can seriously damage the transmission or make the vehicle undriveable or not shiftable and lead to serious accidents!
- 📍 If work on the electrical system is necessary, please follow the manufacturer's specifications.
- 📍 Carry out all work with care and cleanliness! For the professional assembly of a shifter is no force required. All parts are designed to fit your vehicle.
- 📍 If you are unsure, please contact your trusted workshop about the installation!

BASICALLY

- 📍 Use ethyl alcohol/brake cleaner to clean all aluminum parts.
- 📍 Occasionally lubricate all moving parts with spray grease, which has good creeping properties. Our recommendation: Würth HHS 2000 (WD-40 or similar is unsuitable because it is too thin)
- 📍 All screws and nuts that are not self-locking or are fitted with tooth lock washers glue in during assembly!

📍 SURFACES AND THEIR CARE

Please note that an untreated aluminum surface (ALU) is sensitive to aggressive Liquids to which i.a. Hand sweat also counts. Especially the high-strength 7075 aluminum we use has a tendency to form black spots of corrosion due to its high copper content. Under special circumstances, very salty air near the sea and coast can lead to corrosion. The surfaces should therefore be cleaned regularly and treated with care to prevent this. For this purpose, e.g. ethyl alcohol or brake cleaner. Only spray these onto a cloth and wipe the shifter with it, NEVER spray the shifter directly. If stains have already formed, they can be removed with commercially available aluminum polish, but that is also not allowed get into the movable parts of the shifter. The anodized versions of our shifters (EXS, EXGR) are more resistant to corrosion. The steel parts have to be also cared in all variants.

TIPS FOR GEAR SHIFTING

📍 FORCE DOESN'T MAKES YOU FASTER - IT ONLY HARMS THE TRANSMISSION

The question arises again and again: "Does a CAE shifter puts more strain on a gearbox than a standard gear lever?" The answer is clear: "No!" The things that are most stressful for a synchronizer ring in a transmission are excessive shifting forces or a wrong shift in gear. Basically, the shift travel with a CAE Shifter is significantly shorter than with the standard lever. We achieve 30 - 55 % reduction depending on the vehicle and transmission type. This can only be achieved by using the appropriate gear ratio on the shift lever. You can feel it through the precision of a CAE shifter engaging the gears is much better than with a standard gear lever designed for comfort. The force for this decreases in the same proportion - we put in the gears with significantly less load for the synchronizer rings. In addition, with a correctly adjusted CAE shifter put in the gears is very precise and shifting into the wrong gear is extremely rare. Even in motorsport, fast, precise, but still sensitive shifting leads to the goal! Everything else is pure tugging and tearing (often seen on various YT channels), which looks "important", but in no way makes it faster - but it puts a disproportionately high strain on a transmission and in the worst case causes a fatal wrong shift in gear!

Included in delivery

- ▶ 1x shifter completely assembled, design depending on ordered variant (Picture A)
- ▶ 1x Shift knob incl. counter screw M6x20 V2A, design depending on ordered variant (Picture B)
- ▶ Universal joint (image C)
- ▶ Fixing bolt x 2 pieces (image D)



- i** The shifter is designed for racing vehicles without interior fittings. The levers for the heater actuation must be removed.

The rear shift rod joint, the front bearing bush of the shift rod and the engine bearing must be in a play-free condition; this is a prerequisite for perfect functioning.

The removal

- Completely remove the original gearshift including the shift rod end. (Picture 1, Picture 2)

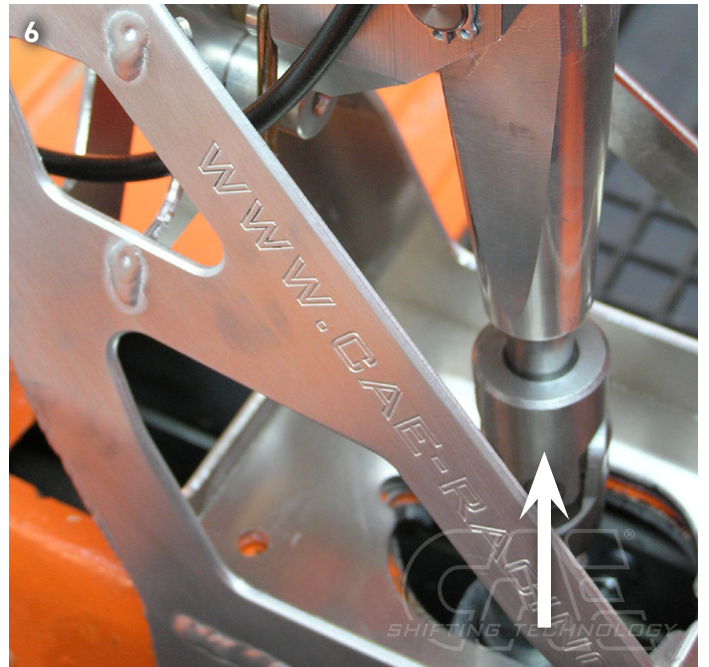
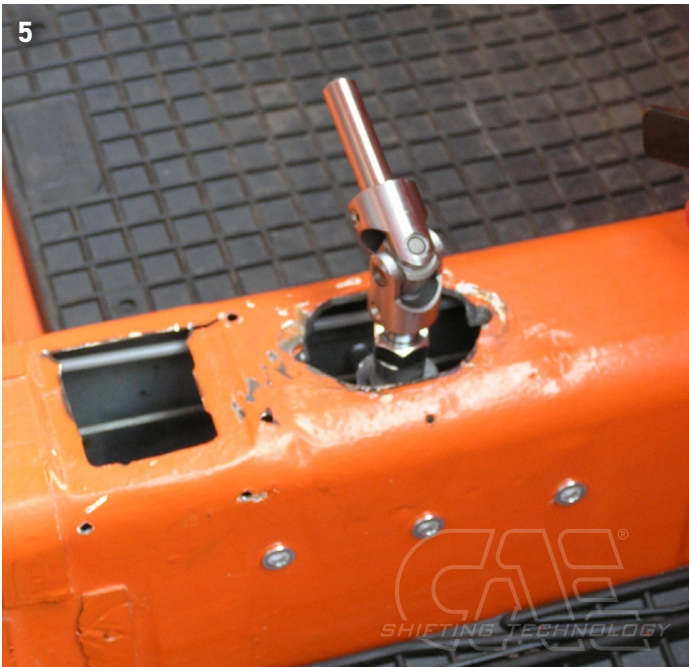
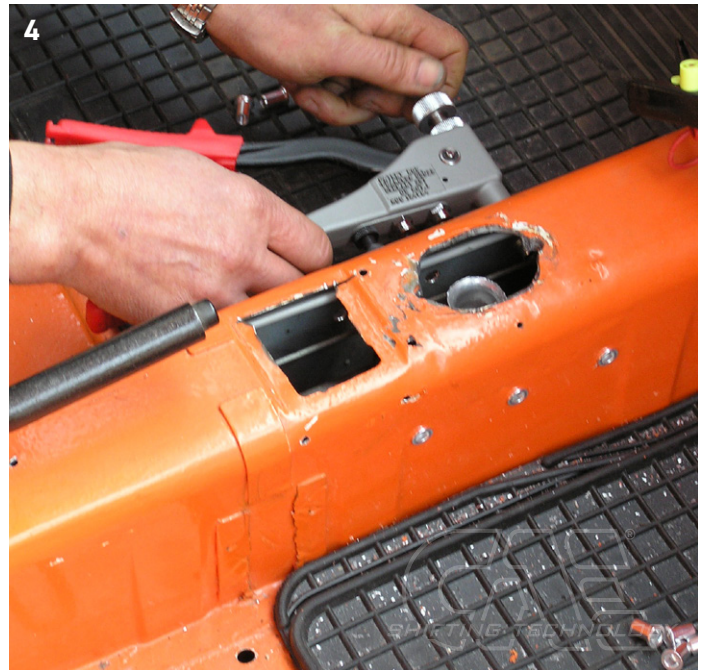


Einbau CAE-Shifter

- Place the shifter on the center tunnel, align it with the hole pattern on the base plate and mark the 6 side mounting holes. (Picture 3)
- Remove the shifter again and drill and deburr the mounting holes in the tunnel. (Picture 4)

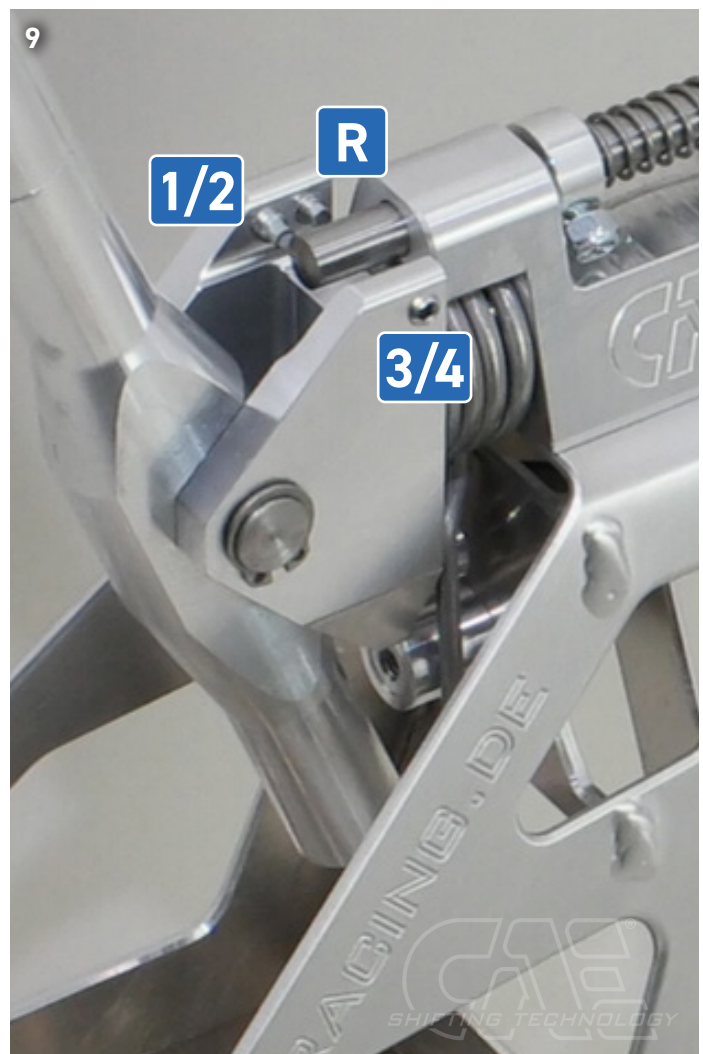
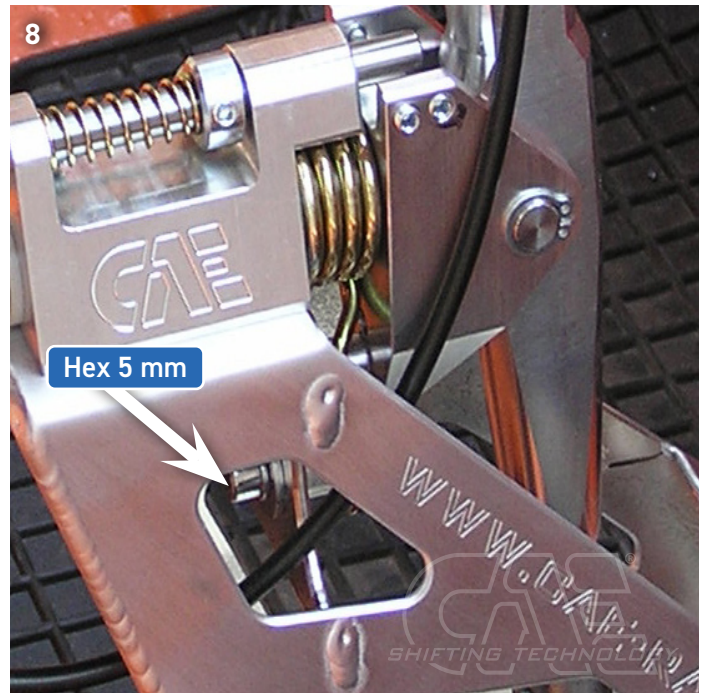
- i On some vehicles, one of the rear screws is omitted because a bar in the tunnel is in the way. In this case, shorten the rear support plate accordingly.**

- Check the rear deflection on the gearbox and the guide bush of the shift rod for freedom from play, replace if necessary.
- Replace the front shift rod end with a CAE aluminum clamp.
- Screw the link rod into the clamp and lock it. (Picture 5)
(The shift travel can be adjusted slightly due to the screw-in height).
Also secure this part later with Loctite.
- Grease the hole for the link rod on the lower part of the shift lever.
The link rod must be able to slide smoothly here.
- Mount the gearshift bracket on the center tunnel, inserting the link rod into the gearshift lever. (Picture 6)
- Fasten the shifter using the enclosed M6 screws and backing plates. (Picture 7)
- Adjust the shift travel.



Adjusting the shift travel of the 4-speed gearbox

- ▶ Loosen and adjust the spring stop of the center position spring using a 5 mm Allen key.
- ▶ The spring should center the shift lever in position 3/4. To do this, engage 3rd or 4th gear and retighten the spring stop. (Picture 8)
- ▶ Screw in the stop screw 3/4 until the two gears can be engaged cleanly.
- ▶ The spring may be slightly preloaded in 3/4, loosen the spring stop again and push it 1-2 mm to the LEFT.
- ▶ Shift the gearbox to level 1 / 2 using the gearshift ' and adjust the stop screw until the gears can be engaged cleanly in level 1 / 2.
- ▶ Actuate the spear bolt via the cable and shift the gearbox to reverse gear level. Adjust the stop screw until the reverse gear can be engaged cleanly. (Picture 9)



PLEASE NOTE: For gears 1/2 and 3/4, the grub screw must not touch the locking bolt when the gear is engaged!
Approx. 0.3 mm clearance is okay!

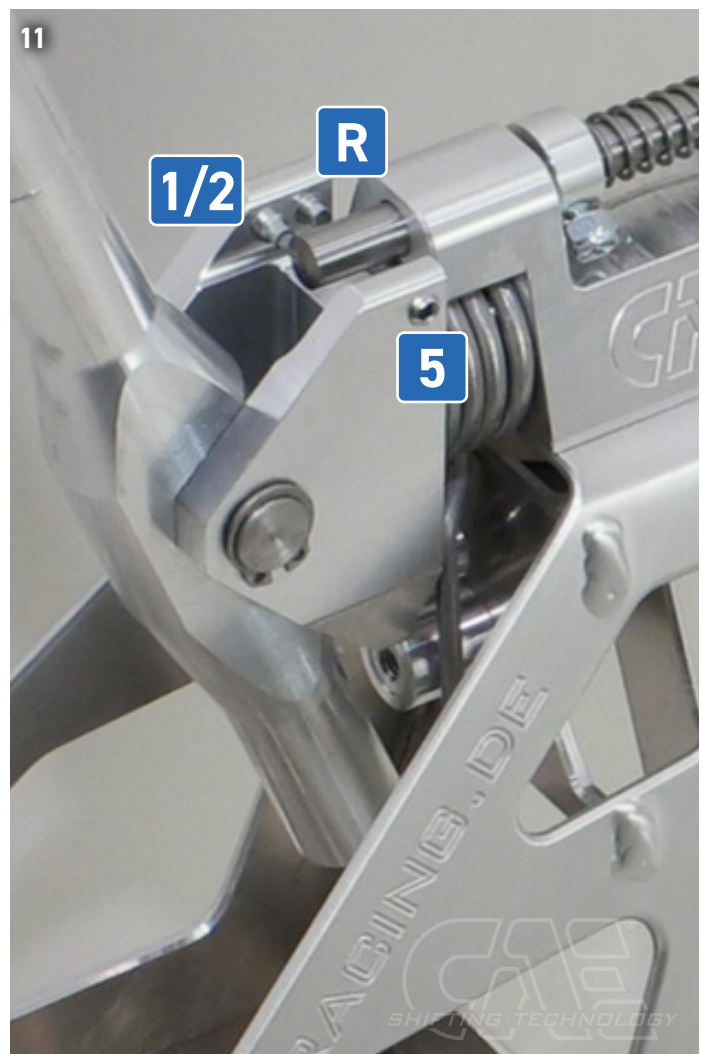
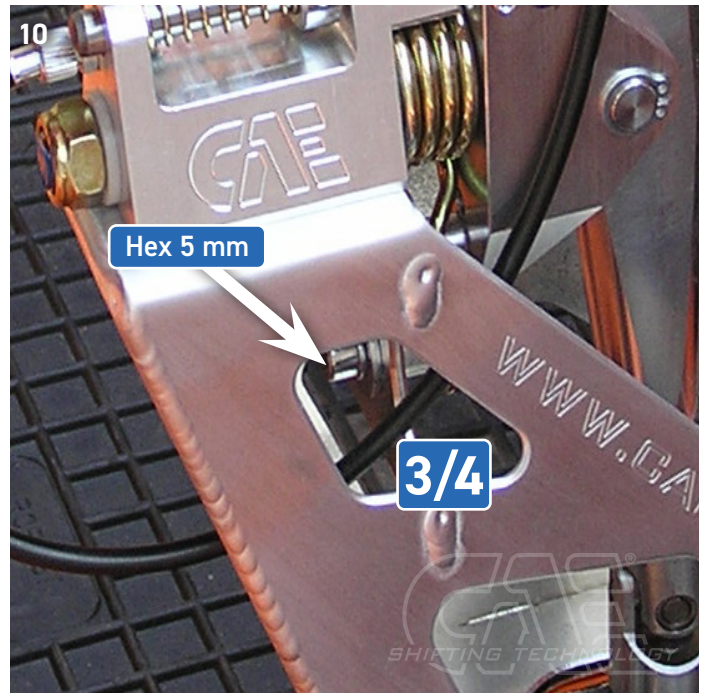
CHECK: When 3rd and 4th gear are engaged, the lateral clearance on the shift lever must be the same. If this is not the case, the spring stop must be readjusted. (0.5 mm is already a lot here).

This is the basic setting of the shifter and should be carried out very precisely.
The shift lever is thereby laterally straight or minimally tilted to the right!

The perfectly adjusted center position is a combination of shift rod and spring stop.

Adjusting the shift travel of the 5-speed gearbox

- ▶ Shift the gearbox into 3rd or 4th gear.
- ▶ Adjust the lower spring stop under the gearshift bracket using a 5 mm Allen key. The gear change 3-4 must now function properly, otherwise readjust again. (Picture 10)
- ▶ Use the gearshift to shift the gearbox to level 1 / 2 (search) and adjust the stop screw until the gears in level 1 / 2 can be changed cleanly. (Picture 11)
- ▶ Now use the shift lever to shift the transmission to 5th gear level and screw in the stop screw until 5th gear can be engaged cleanly.
- ▶ Actuate the locking pin via the cable and shift the transmission into reverse gear. Adjust the stop screw until reverse gear can be engaged cleanly. (Picture 11)



PLEASE NOTE: For gears 1/2 and 3/4, the grub screw must not touch the locking bolt when the gear is engaged!

Approx. 0.3 mm clearance is okay!



CHECK: When 3rd and 4th gear are engaged, the lateral clearance on the shift lever must be the same. If this is not the case, the spring stop must be readjusted. (0.5 mm is already a lot here).

This is the basic setting of the shifter and should be carried out very precisely. The shift lever is thereby laterally straight or minimally tilted to the right!

The perfectly adjusted center position is a combination of shift rod and spring stop.



FINALLY! Check all functions and settings during the test drive and readjust if necessary!

Incorrect or inaccurate settings can cause damage to the gear box and consequential damage!

If you have any questions or problems, please be sure to contact us,
we look forward to your feedback to improve our products.



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