CAE SHIFTING TECHNOLOGY

ULTRA SHIFTER

Installation instructions

10028

Citroen AX,
CItroen Saxo,
Peugeot 106

5-speed gearbox

AXXO SAXO

Peugeot 106

WWW.CAE-RACING.DE

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!
- Never kink shift cables, please!

ⓘ 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.

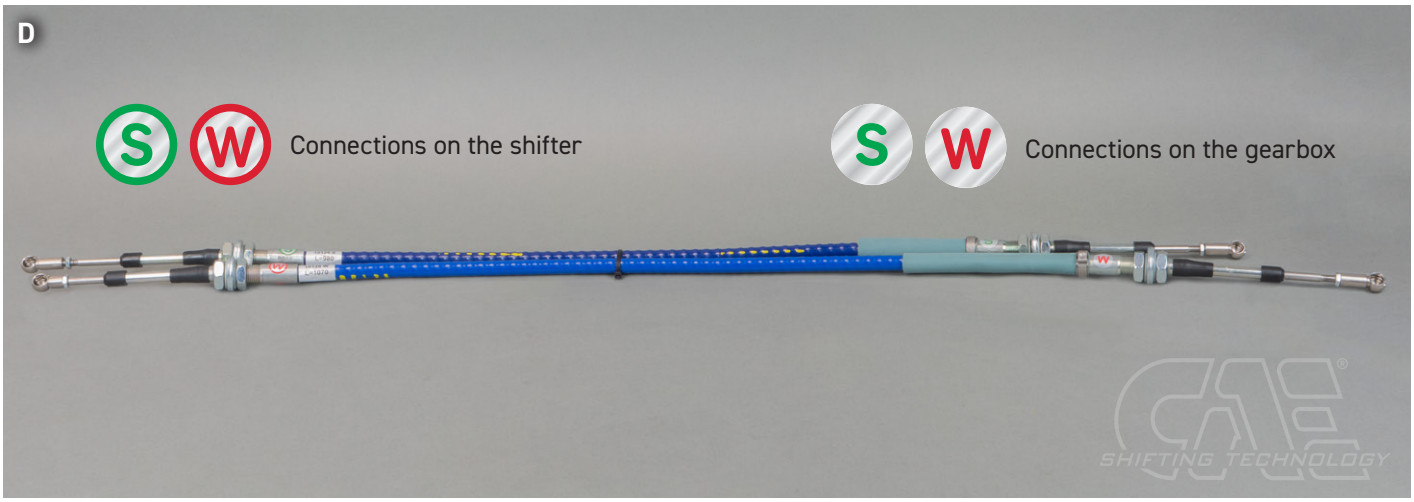
TIPS FOR GEAR SHIFTING

ⓘ 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 which 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)
  ⓘ **The coupling rod on the side of the shifter is removed for transport and is in the accessories bag.**
- 1x Shift knob incl. counter screw M6x20 V2A, design depending on ordered variant (Picture B)
- Accessories package (Picture C)
- 1x shift cable (S), 1x selector cable (W) (Picture D)



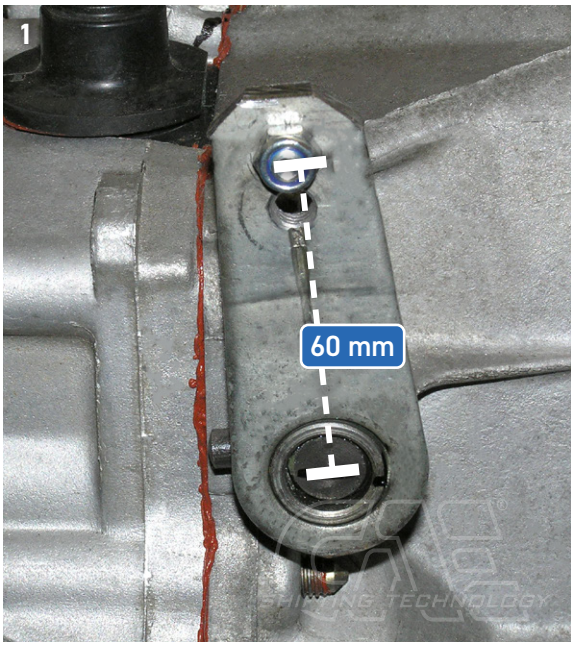
The shifter is intended for vehicles without interior equipment. If the center console is installed, it must be removed or cut out until appropriate clearance is ensured.

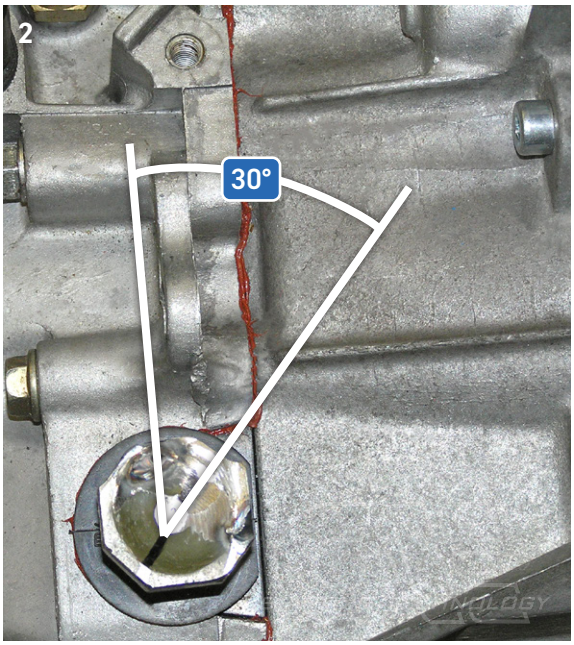
The removal

- Completely remove original shift lever incl. shift rod.

Modification of rear gear lever

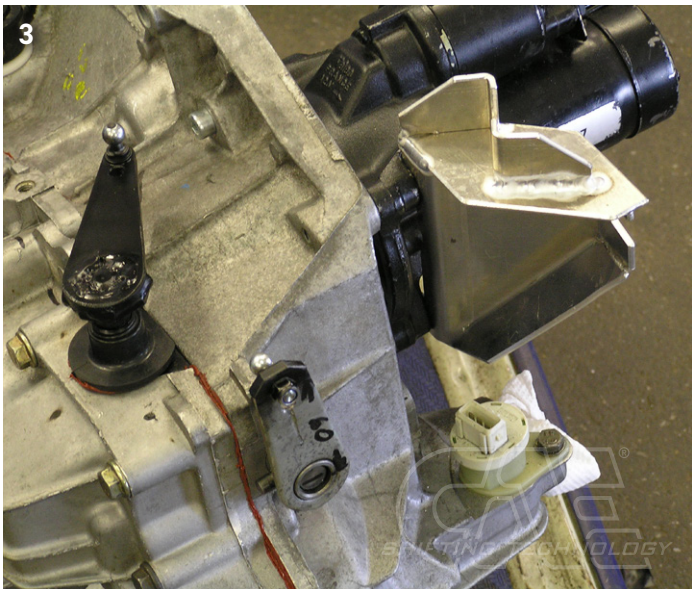
- Straighten the rear gear lever as shown in the picture, cut it off and reinstall it upside down. Drill a 6mm hole beforehand in the dismantled state. (Distance hole center-center 60mm) Mount the supplied ball head. (Picture 1)
- Cut off the upper gear lever as shown in the picture and weld on the supplied lever at the 30° angle shown. (Picture 2)
- When welding, be sure to cool the shaft with compressed air and always weld only short seams to prevent burning of the oil seal. (Picture 3)
- Screw the cable holder to the two rear screws of the starter motor.

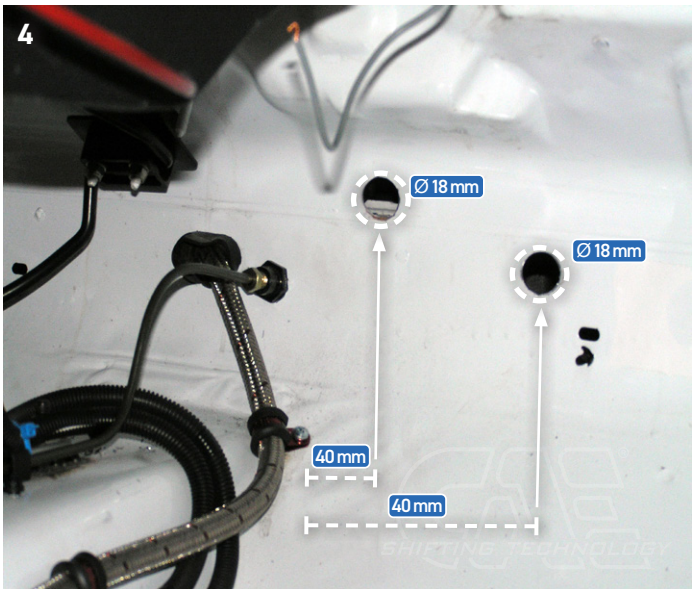




Drill grommet for shift cables

- Drill two 18 mm holes in the bulkhead from the inside: (Picture 4)
- The left hole is directly above the sheet metal seam and approx. 40mm from the right side wall of the center tunnel.
- The right hole is located directly below the sheet metal seam and approx. 130mm from the right side wall of the center tunnel.
- After drilling, insert a suitable round stick into the holes and fold it over once to the right to allow the cables to pass through better.





Installation CAE Shifter

- Attach the shift cables to the shifter. Pay attention to the assignment according to the above pictures, no M16 thread is visible inside the shifter. (Picture 5)
- Glue the supplied foam rubber strip around the original shift lever hole. (Picture 6)
- Put the shifter in place and insert the shift cables including the protective hoses into the holes in the bulkhead. Immediately insert the selector cable into the lower receptacle of the gear cable holder. (Picture 7)
- Attach the cables to the gear cable holder and press on the ball heads on the inside and outside. (Picture 8, 9)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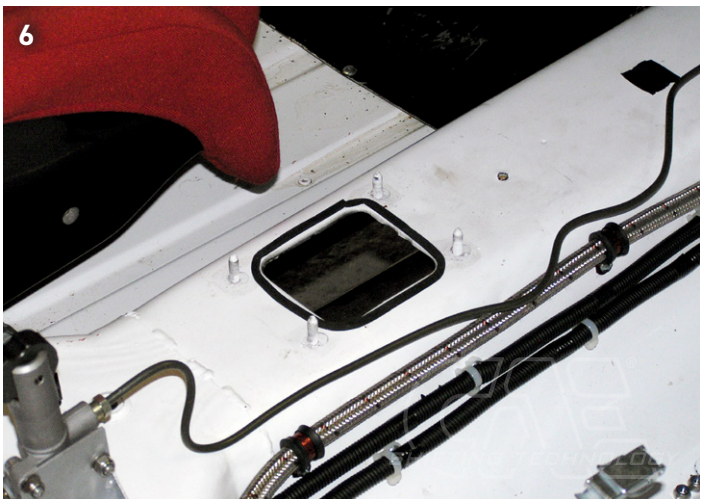
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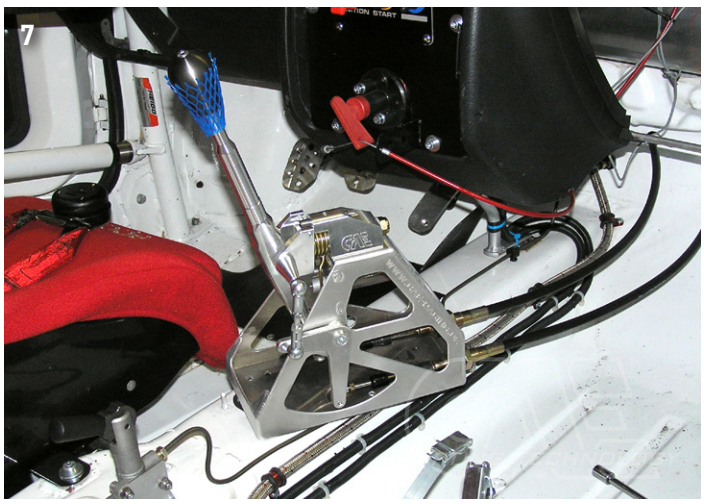
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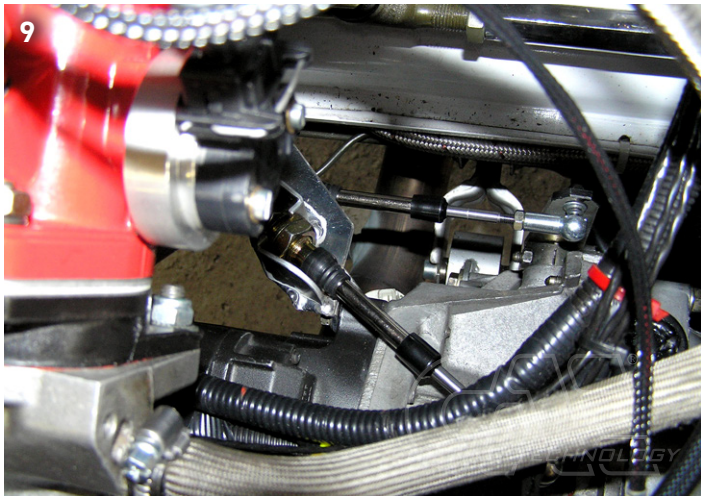
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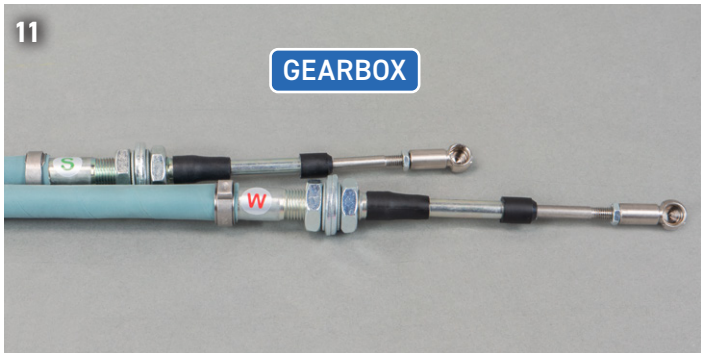
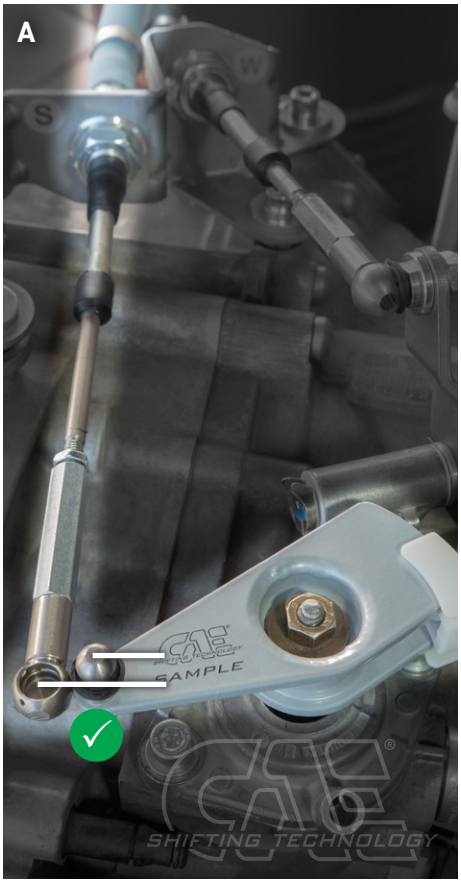
- Fitting of switching cables (Pictures 10, 11)

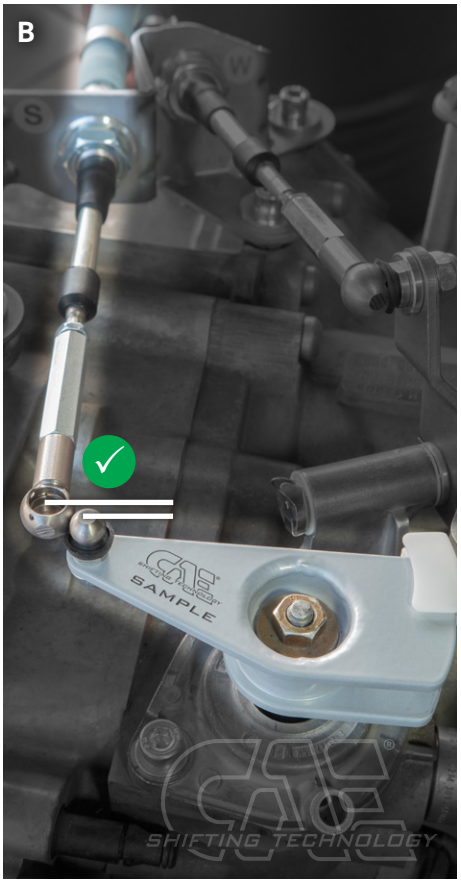


CHECK THE END POSITIONS OF THE SWITCHING CABLES

PLEASE NOTE: ! Check cables for "end position free travel". When a gear is engaged, there must still be a residual travel available on the cable! (Picture A, B, C)

Sample pictures:





CHECK: With the gear engaged, pull the ball cup off the gearshift lever and check whether the shift cable can still be moved at least 3 mm. This applies to the "front" gears R-1-3-5 (Picture A) with the cable retracted and to the "rear" gears 2-4 (6) (Picture B) with the cable extended. The end position can be corrected by screwing the ball cups on the M6 thread of the cables in or out.

- After checking and adjusting, reassemble the ball cups from the shift cable. (Picture C)

ATTENTION: THIS CONTROL IS VERY IMPORTANT FOR THE FUNCTION OF THE SHIFTER !!! If the remaining travel on the shift cable is missing, there is an immediate risk of damage to the gearbox. !!!!!

Adjusting the shifting range 5-speed gearbox

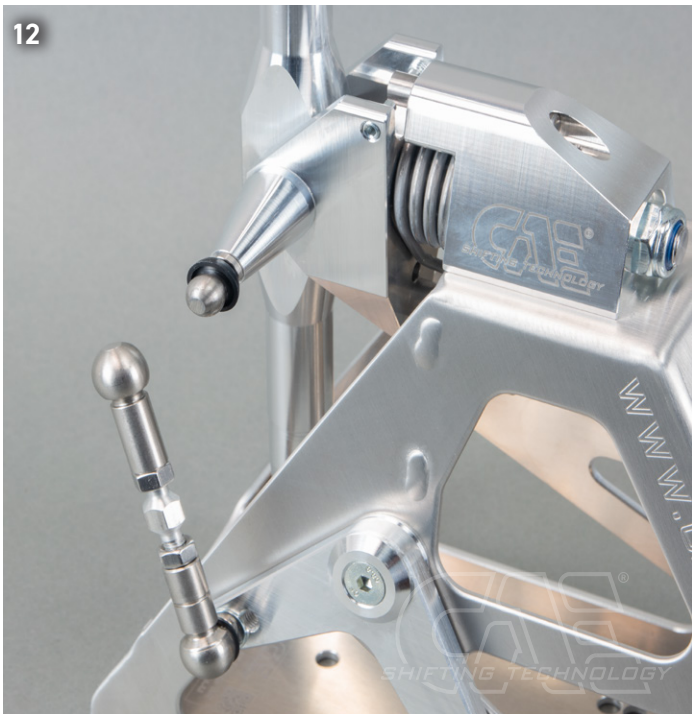
- Unhook coupling rod to L lever on a ball. (Picture 12)
- Now adjust the center position (3rd/4th gear) of the shift lever. To do this, adjust the lower spring stop under the gearshift bracket using a 5 mm Allen key. (Picture 13)

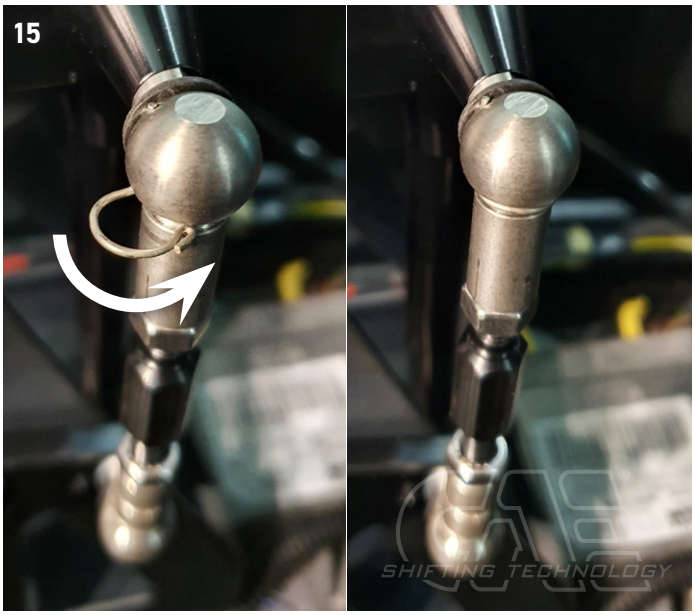
ⓘ **CHECK: The shift lever should be exactly vertical in the center position.**

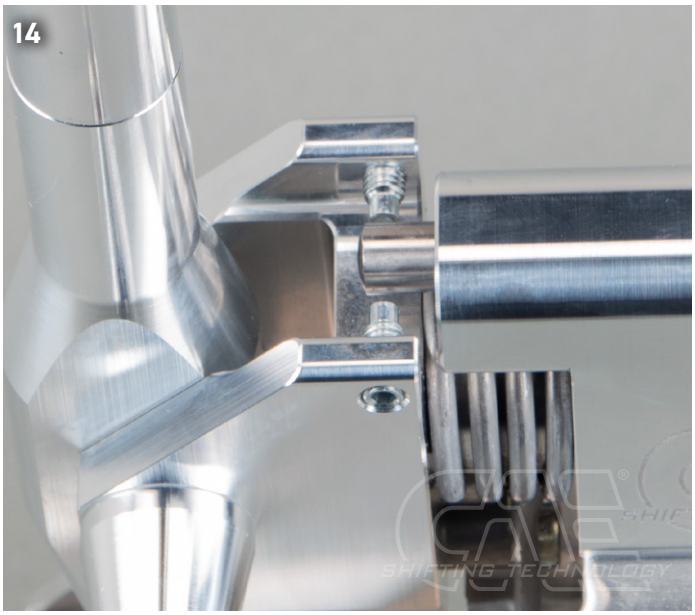
- Shift gearbox to 3rd gear. To do this, push the shift lever forward.
- Adjust the length of the coupling rod so that it can be pushed open without lateral movement of the shift lever.

ⓘ **CHECK:** When 3rd/4th gear is engaged, the lateral play on the shift lever must be the same on both sides, otherwise readjust the spring stop again. (Picture 13)

- Shift the gearbox to level 1 / 2 using the shift lever and screw in the stop screw until the gears in level 1 / 2 can be changed cleanly. (Picture 14)
- Now shift gearbox to 5th gear level using shift lever and screw in stop screw until 5th and reverse gears can be engaged cleanly.
- Note that reverse gear can only be engaged from neutral (internal gearbox lock).
- Mount retaining clip on all ball cups. (Picture 15)







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.

CAE wishes you a good trip.

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