

CAE[®]
SHIFTING TECHNOLOGY

**ULTRA
SHIFTER**

Installation instructions

📍 10074

Mini F56
5 / 6-speed gearbox



WWW.CAE-RACING.DE

MINI F56

PLEASE NOTE

SAFETY FIRST!

- ⚠ 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.
- ⚠ It is essential to leave the ignition switched off when the plugs are disconnected.
Do not leave the car key in the vehicle.
- ⚠ 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.

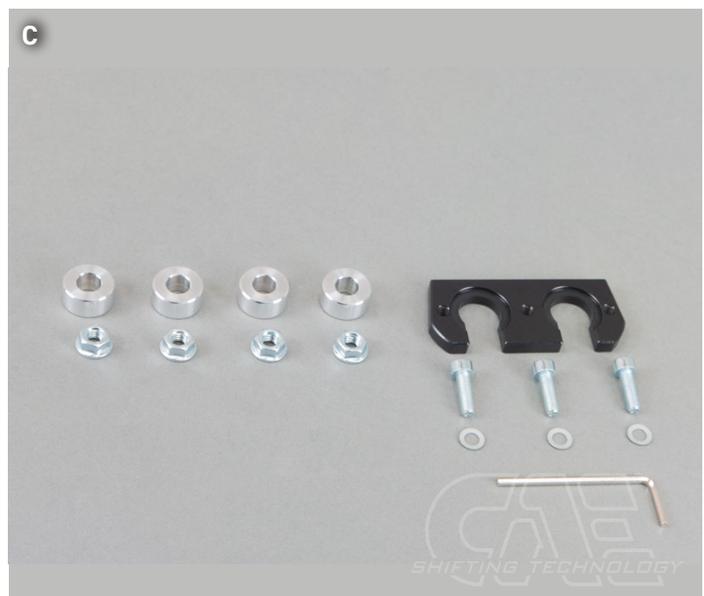
TIPS FOR GEAR SHIFTING

ⓘ 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)
- ▶ 1x Shift knob incl. counter screw M6x20 V2A, design depending on ordered variant (Picture B)
- ▶ Accessories package (Picture C)



- i** The shifter is intended for vehicles without interior equipment. If the center console is to continue to be used, it must be trimmed accordingly for installation until a corresponding clearance for the shifter is ensured.
- i** We recommend to lubricate all moving parts occasionally with good spray grease, our recommendation: Würth HHS 2000. For this purpose, e.g. touch the rubber caps on the ball heads. For cleaning the aluminum parts we recommend brake cleaner.

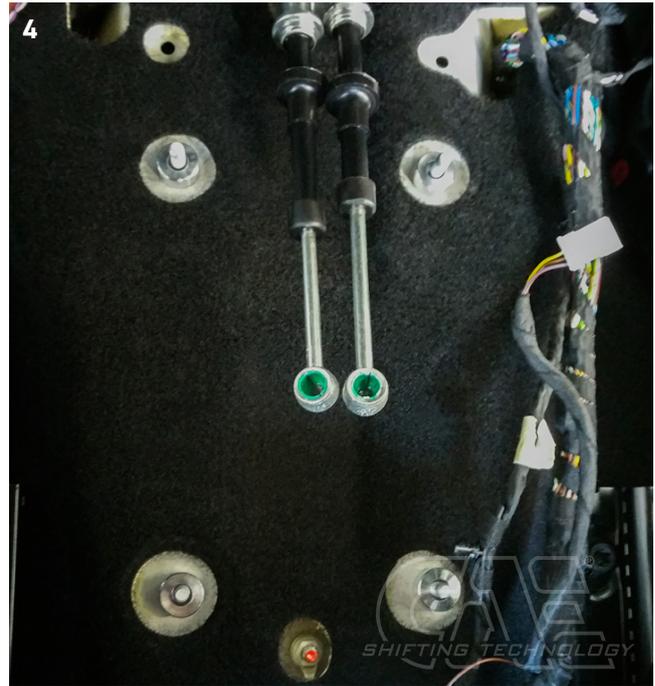
The removal

- ▶ Remove the center console completely. (Picture 1)
- ▶ Remove the ball cups from the ball heads on the shifter: For this purpose, we recommend using needle-nose pliers whose tips are placed around the neck of the ball heads to pry off the ball socket. (Picture 2)
- ▶ Loosen the fastening nuts of the gearshift bracket.
- ▶ Loosen the shift cables from the shifter: lever up the 4 clamps with a small screwdriver and push back the caps, these can remain on the cables like the rubber grommets for a possible refitting. (Picture 3)
- ▶ Then remove the gearshift bracket from the vehicle.



Installation CAE Shifter

- ▶ Place the 4 spacer bushes (9 mm high) on the threaded bolts. (Picture 4)
- ▶ Place the CAE Shifter and thread the shift cables into the abutment. Place the counter plate on the shift cables and attach the supplied M5x16 screws with the toothed lock washers, then first screw on the shifter and then the counter plate of the shift cables. (Picture 5)
- ▶ Between the plates remains a small gap of approx. 0.5mm. (Picture 6)
- ▶ First, only press on the ball socket of the shift cable, not yet the one from the selector cable to the L lever on the left.



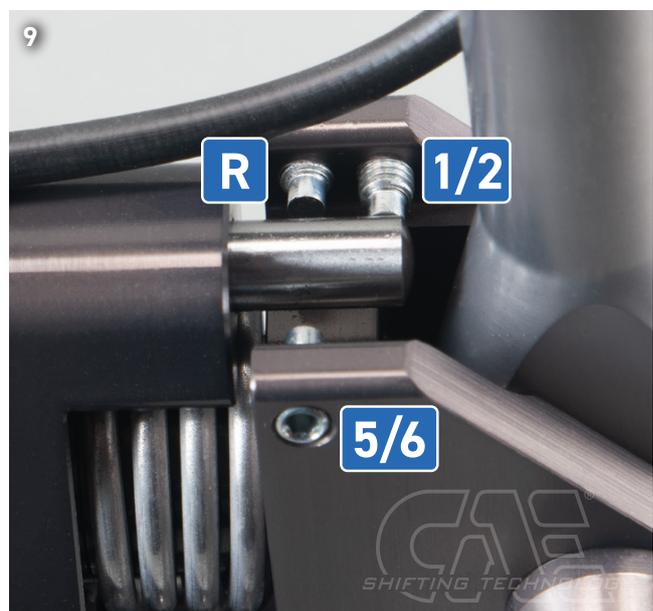
Adjusting the shift range 6 speed gearbox

i Synchronize the center position of the shifter with the gearbox:

- ▶ The shift lever should be slightly tilted to the right in pos 3/4. (Knob is approx. 1.5cm to the right, lower end of the shift lever to the left) This setting can be adjusted in the housing of the shifter.
- ▶ Now adjust the coupling rod (R/L THREAD) so that the selector cable fits EXACTLY on the ball pin and press on the ball socket, hold the lever against it.

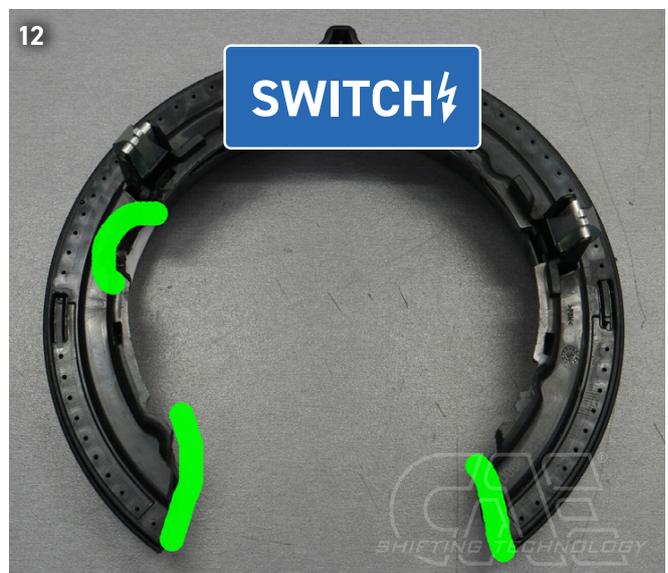
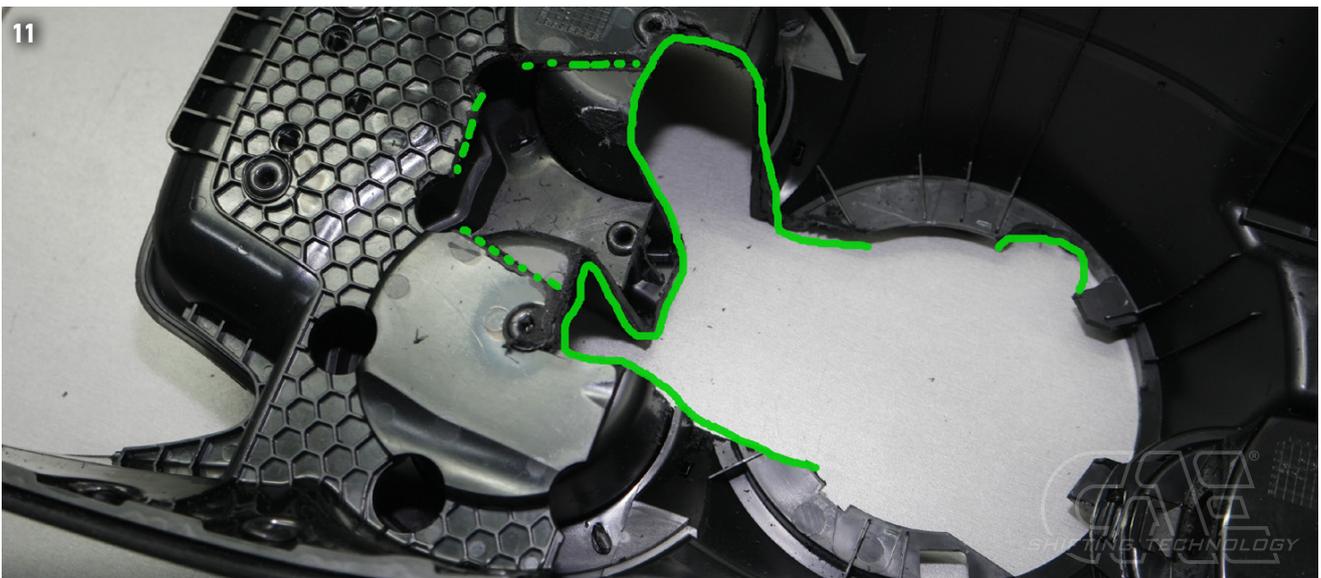
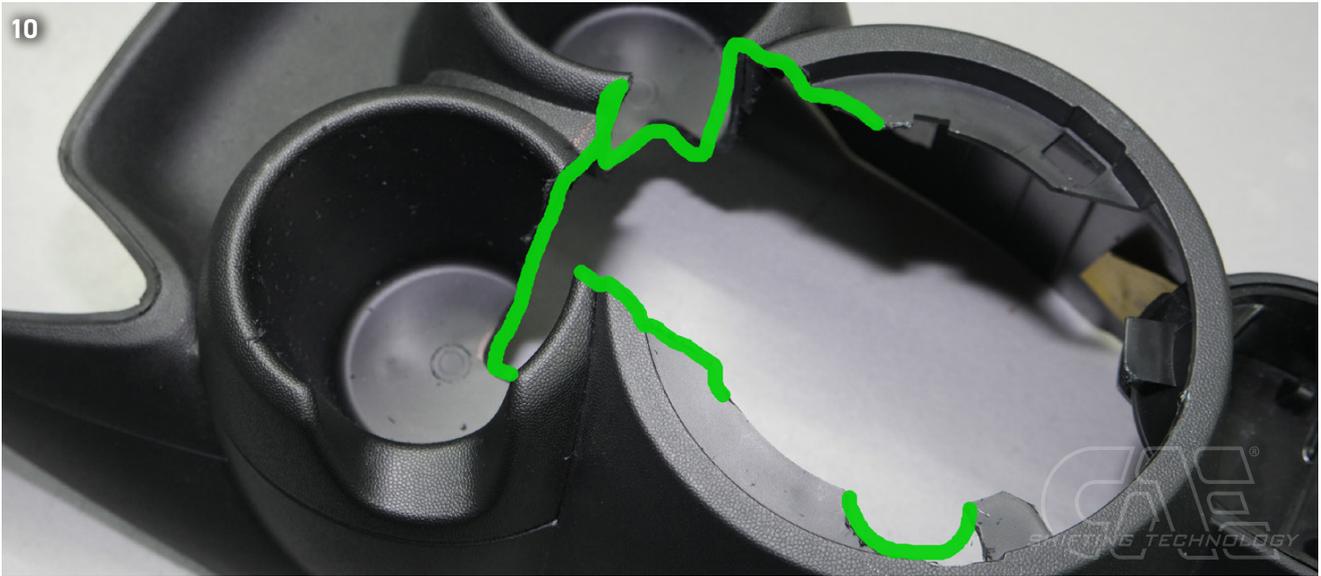
i Check: With 3rd/4th gear engaged, the lateral play on the shift lever must be the same, otherwise readjust with the coupling rod.

- ▶ Now first adjust the reverse gear: Actuate reverse gear locking pin via pull and shift transmission to reverse gear level. Screw in the appropriate stop screw until reverse gear can be engaged cleanly. Check whether the upper unibal of the coupling rod is not in the end position, otherwise the center position must be corrected to the right accordingly.
- ▶ Shift gearbox to level 1 / 2 and adjust stop screw until the gears in level 1 / 2 can be changed cleanly.
- ▶ Shift gearbox to 5th /6th gear level and screw in stop screw until 5th & 6th gear can be engaged cleanly.
- ▶ The following applies to all adjustment screws:
The screw must not touch the bolt when the gear is engaged, 0.5mm of clearance is OK.



Machining the center console and cover

- ▶ Prepare the center console according to the following pictures so that it can be mounted above the shifter, the same applies to the driver experience switch.





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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