



RACE THE ORIGINAL

Installation Manual

📍 10043
Ford Mustang VI
LAE
6-speed gearbox



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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)
- ▶ Cover plate, rubber bellows + accessories (Picture C)
- ▶ Shifter lower section (BOX) with 2 shift rod halves + accessories (Picture D)

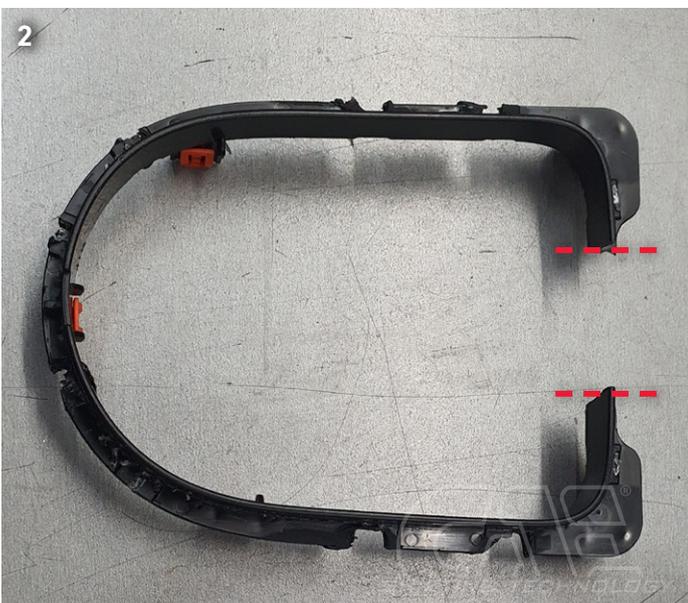


- i** The Shifter is intended for use with the original center console. It must be cut out in accordance with these instructions until the shifter can be moved freely.



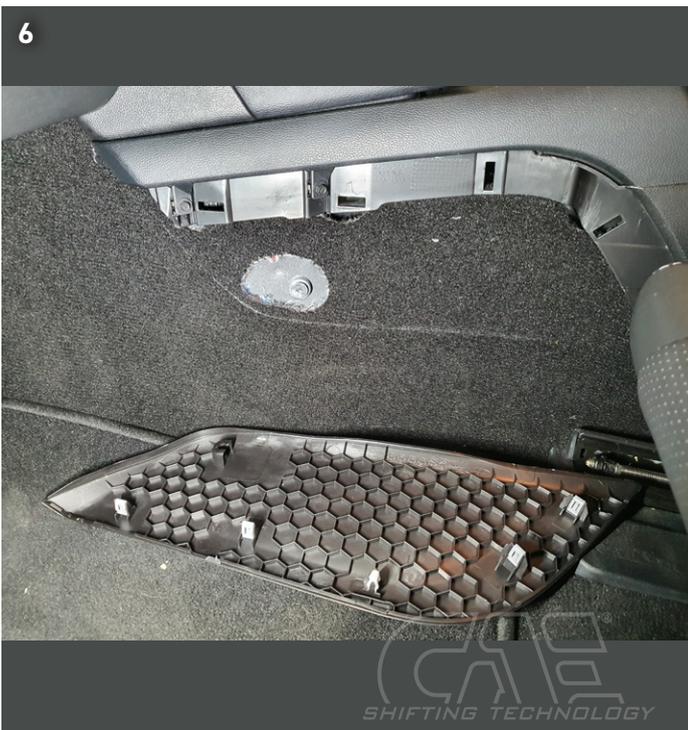
Editing the center console (cupholder)

- ▶ Edit center console according to Picture 1-3. An air saw, for example, is suitable for this.
- ▶ Make sure that all moving parts of the shifter (reverse gear mechanism) have sufficient space when assembled.



Disassembly

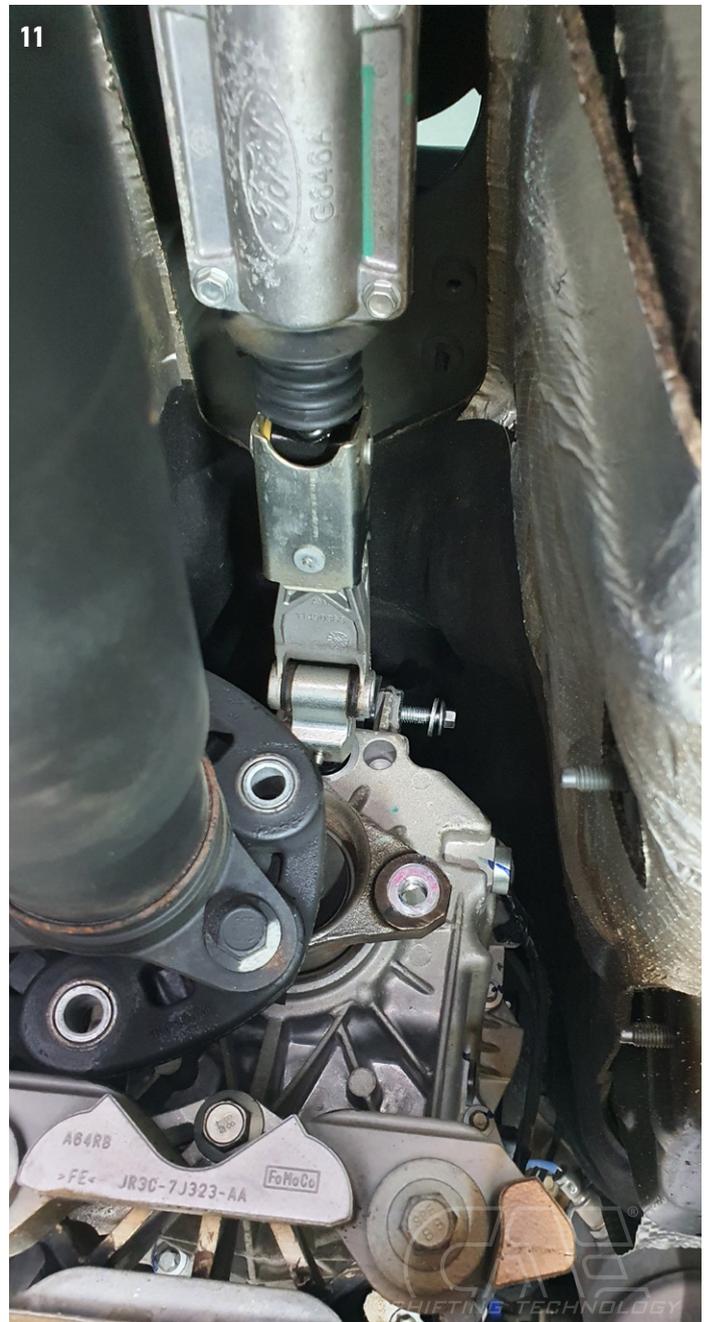
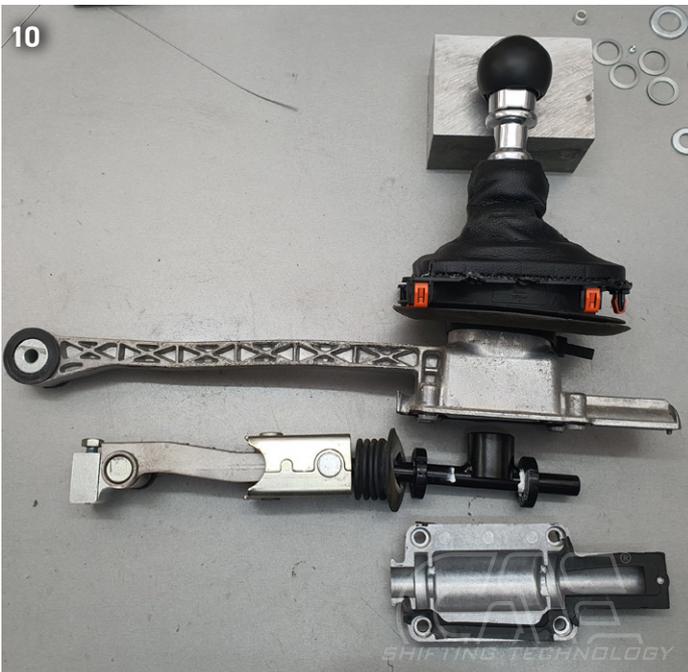
- ▶ Safely raise the vehicle on a vehicle lift. Shift the transmission into neutral.
- ▶ Remove the center console.
- ▶ Pull up the shift boot (Picture 9, 10).
- ▶ Pull up the frame around the shift boot and remove it.
- ▶ Unclip the front panel. The 2+3 screws securing the front center console are accessible.
- ▶ In the storage compartment at the rear of the center console, lift the rubber trays and loosen the screws.
- ▶ Remove/unclip the upper part of the center console.





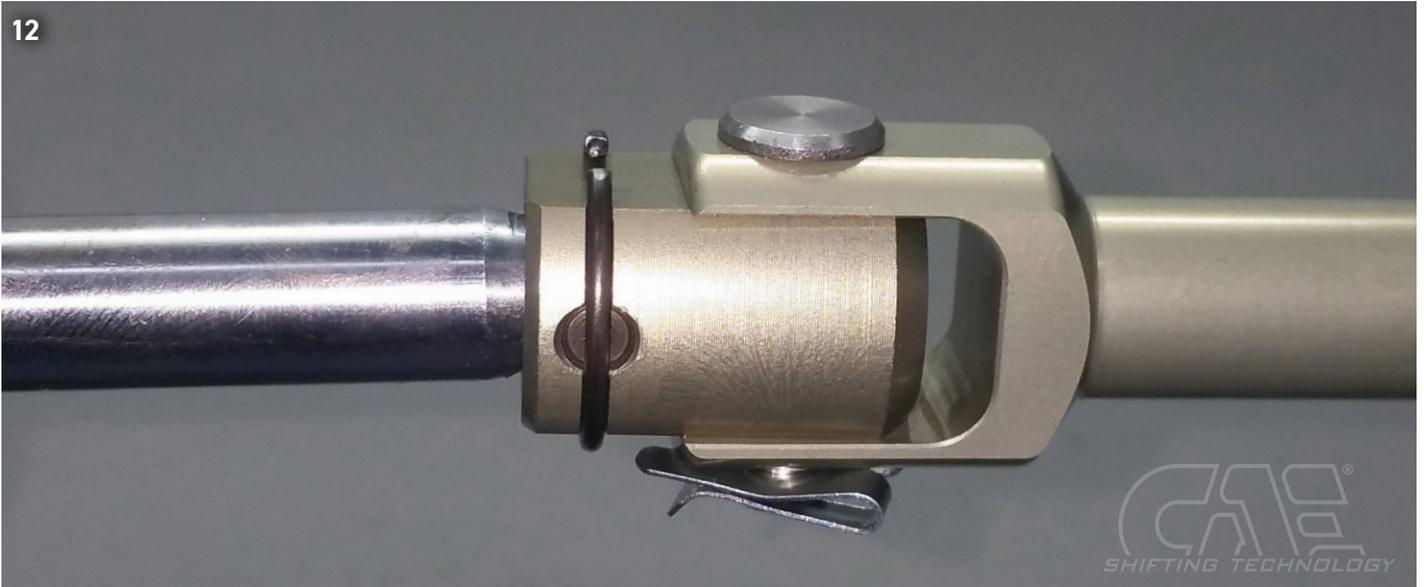
Working under the car

- ▶ Remove the underbody paneling as necessary. Loosen the gearbox bridge (Picture 11) and slightly lower the engine; it does not need to be supported, but work carefully nonetheless. Loosen the front heat shield and slide it back over the exhaust until you have access to the gearshift. The cardan shaft must be loosened for the conversion!
- ▶ Remove the original gearshift completely.
 - Unscrew the 4 housing screws and open the housing.
 - Unscrew the hexagonal fixing screw of the gearbox connection upwards and remove the shift linkage.
 - Unscrew the cross screw in the front rubber bearing of the front support strut; then unscrew the 4 housing screws on the shift lever housing and remove the shift lever housing upwards.
- ▶ The aluminum shift lever bearing is secured on the transmission side with a screw. Loosen and remove the screw and nut.



- ▶ First, mount the front half of the shift rod on the transmission. (see the following example images)
- ▶ Pre-assemble the shift rod with foam grease pad, retaining ring, and dowel pin.
- ▶ Grease all components generously!!!
- ▶ Make sure that the shift rod clamp is free of grease!!!
- ▶ The shift rod is offset upwards to make room for the cardan shaft.

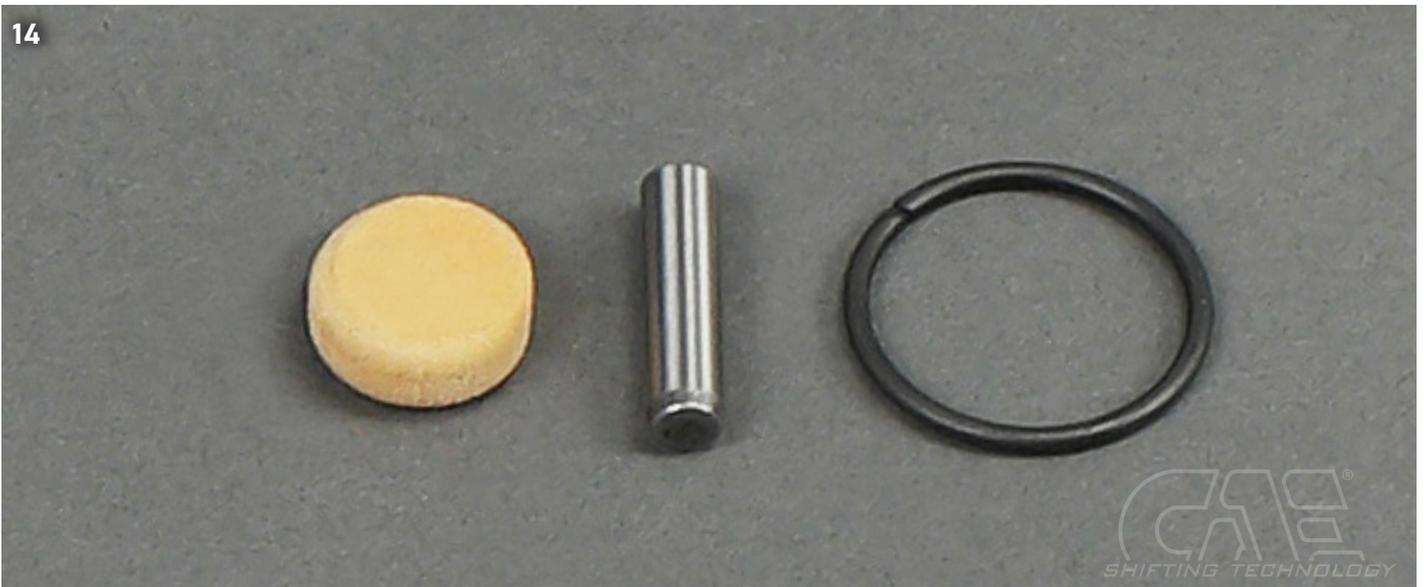
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GENERAL INFORMATION

i CAE Shift Rod

- ⚠ Never use force to assemble our Shift Rods.
- ⚠ Please carry out all work with the greatest care and cleanliness!
- ⚠ Never spray brake cleaner or similar degreaser directly on/in the moving connections/joints. This will remove the grease layer in the joints and leads directly seizing up the components.
- ⚠ Only use a soft cloth and a thin oil spray for cleaning and care. For example Würth Multi or WD-40.
- ⚠ The CAE Rods are designed to fit our shifters, they are 100 % play-free and designed all dimensions are designed as a fit. This makes it difficult to turn the adapter and the lower part of the shift lever by hand when installed. The 10 mm fitting bolts are each firmly seated in the fork and the adapter and the lower part of the gear shift lever only rotate on the bolt.
- ⚠ Absolute cleanliness must be ensured during assembly! Dirt in the bearings leads directly to the seizure of the components.
- ⚠ For a perfect function and a long lifetime, the hinge pins and the contact surfaces have to be greased well. This should be repeated once a year.

i **ATTENTION:** WD-40 or Multi oil are not suitable for the lubrication of the joints!
We recommend Würth HHS 2000 for this.

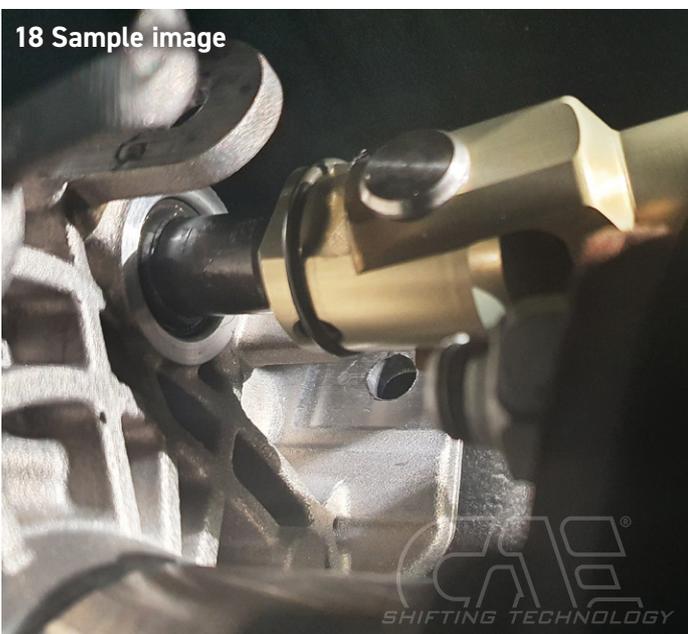
- ⚠ Please carry out all work on the mating surfaces/holes with the utmost care!
The clamp connection of the length adjustment must be kept absolutely dry and free of grease!





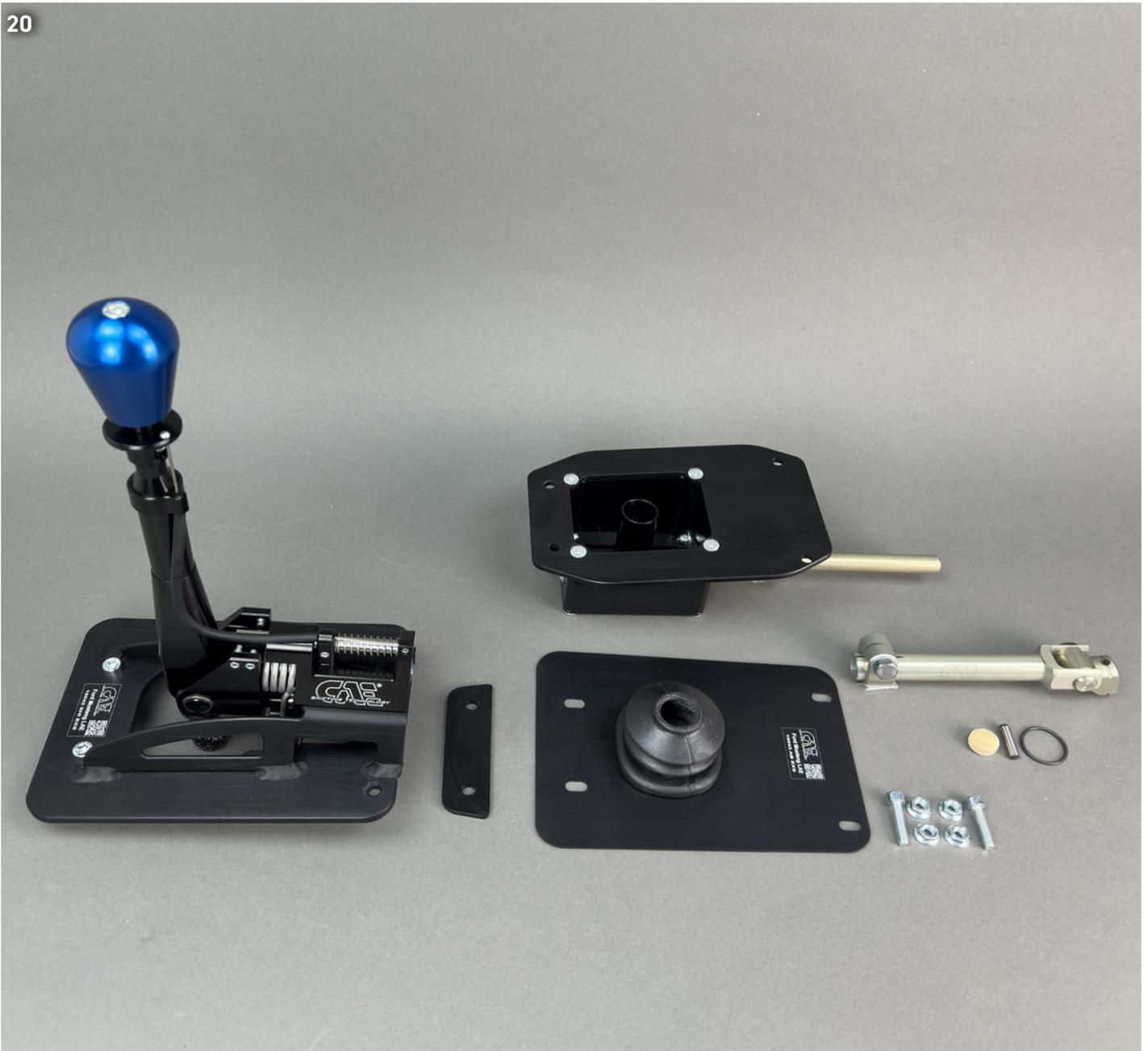
- ▶ Prepare the half of the mounting bracket that is mounted on the gearbox for installation (see example picture 16 on page 10 and pictures 18, 19).
- ▶ Push the original retaining ring over the groove into the “parking position” of the adapter so that it can be pushed back into the groove when installed.
Also transfer the foam insert from the original adapter and grease everything well.
The foam insert serves as a grease reservoir and creates counterpressure so that the bolt does not vibrate.
- ▶ Push the wave retaining ring into the groove of the 10 mm bolt ▶ **“Click!”**
- ▶ Mount the shift rod half prepared in this way with the gearbox adapter on the gearbox.

ⓘ CAUTION: The ear of the clamp must point upwards! Otherwise, it may touch the cardan shaft!



- ▶ Disassemble the CAE shifter into upper and lower parts. (It is assembled with only 2 screws for shipping.)

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The retaining plate, including the rubber bellows, is already mounted on the upper part of the shifter at the factory and does not need to be removed.

- ▶ Stick the supplied foam rubber strip onto the top of the tunnel around the opening.
(see sample image 21)

! Please grease the ball at the bottom of the shift lever, the pipe head on the lower part, and the guide rod that slides in the plastic bearings!

- ▶ Then place the shifter on top.



- ▶ Now install the lower part of the shifter (box). To do this, first place the spacer on the two rear screws (position according to the laser marking) (see sample image 22).
- ▶ Then thread the box onto the rear half of the shift rod and screw on the 2 nuts at the rear.
- ▶ Finally, insert the front screws and nuts and tighten all 4 screws/nuts.
- ▶ The shift rod clamp is described in the chapter on **shift travel adjustment**.



THE SPRING STOP

ⓘ NEVER COMPLETELY UNSCREW THIS SCREW!

By loosening (max. 2 turns) the screw on the **spring stop**, you can determine the zero position of the transmission.

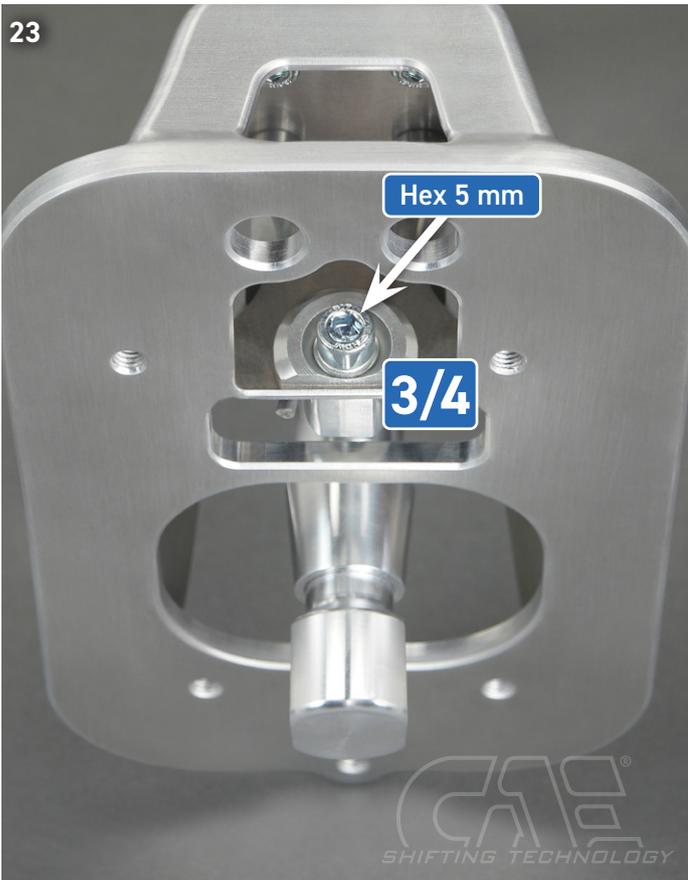
Please **never** completely unscrew this screw, as the mechanism under the car can only be reassembled at the cost of your sanity!

The Allen key supplied in the shifter package is used to loosen the screw.



► Now the zero position of the gearbox must be determined (see also “Adjusting the shift travel”). To do this, loosen the spring stop (Picture 23-25) under the shift block with the supplied Allen key so that it can be moved sideways (max. 2 turns). The spring is now out of action.

ⓘ Never completely unscrew the spring stop screw! (see information “The spring stop”)



Adjustment of gear shift paths 6-speed gearbox

- ▶ Align the shift rod to the shifter very precisely in terms of length and angle, and tighten the screw on the clamp with 47 Nm. It will probably take several attempts to find the perfect position.
- ▶ Perform a collision check on the lower part of the shift lever in all gears! There must always be sufficient clearance to the shifter components and the cardan shaft!
- ▶ The lower part of the shift lever must be centered in the opening of the cover plate.
- ▶ The spring in the shifter must now be synchronized with the spring in the transmission. To do this, shift the transmission into gear level 3/4. This is the zero position of the transmission; simply move the shift lever forward or backward to achieve this.

TEST: With 3rd and 4th gear engaged, the lateral play at the shift lever must be equal.
If this is not the case, the spring stop must be re-adjusted. (0.5 mm is already a lot here)

**This is the basic setting of the shifter and should be done very accurately.
The shift lever should be positioned laterally straight or slightly tilted to the right!**

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

- ▶ Use the shift lever to shift the transmission into gear level 1/2 and screw in the stop screw until the 1st and 2nd gears can be shifted smoothly. (Picture 26)
- ▶ Now use the shift lever to shift the transmission into gear levels 5/6 and screw in the stop screw until these gears can also be shifted smoothly. (Picture 26)
- ▶ Activate the reverse gear locking pin using the cable and shift the transmission into reverse gear. Screw in the stop screw until reverse gear can be engaged. To do this, the spring pressure lock in the transmission must also be overcome. (Picture 26)

PLEASE NOTE: In gears 1/2 and 5/6 the grub screw must not touch the locking pin when the gear is engaged! **Approx. 0.3 mm clearance is okay!**

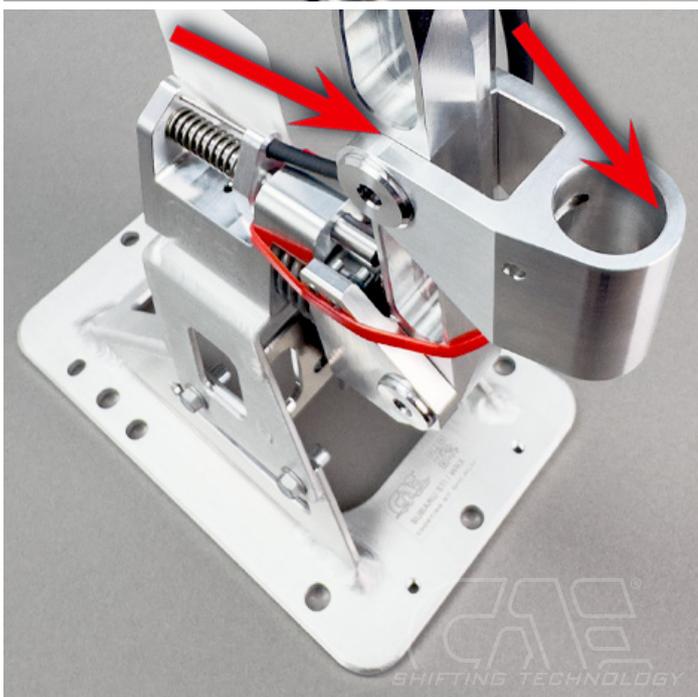


Maintenance instructions

- ▶ The shifter should preferably be cleaned with brake cleaner or IPA (isopropanol alcohol) and a soft cloth. Do not spray the cleaner directly onto the shifter (to avoid degreasing the moving parts), but moisten the cloth well and then wipe it down.
- ▶ The moving parts of the shifter should be lubricated two to three times a year with adhesive lubricant. We recommend HHS 2000 adhesive lubricant from Würth.
- ▶ Below you can see which areas should be lubricated with a spray (HHS 2000). (Depending on the model, some parts may look different or may not be present.)



SCAN ME





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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