

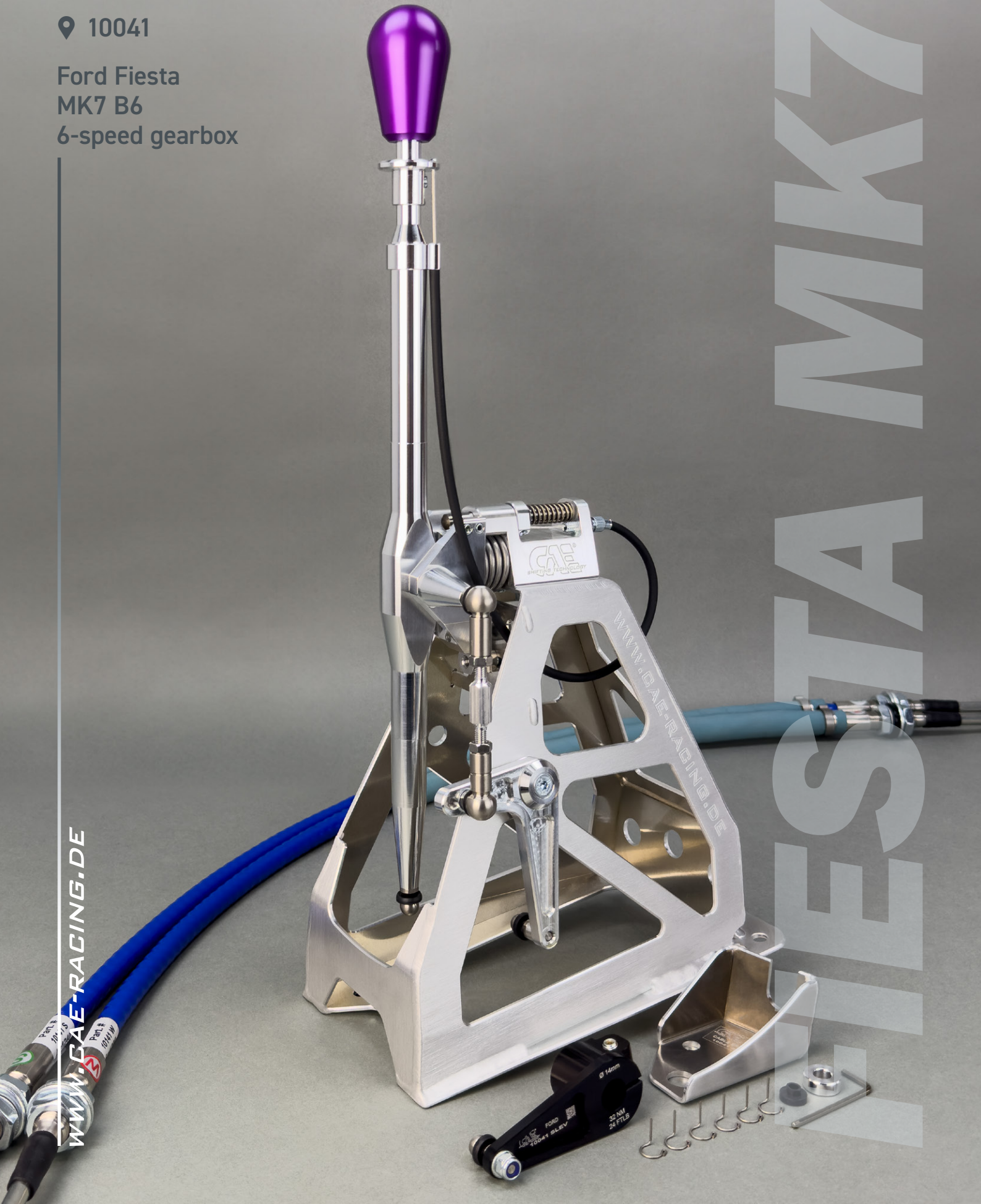
MORE THAN
20
YEARS EXPERIENCE

GAE[®]
SHIFTING TECHNOLOGY

Installation instructions

📍 10041

Ford Fiesta
MK7 B6
6-speed gearbox



WWW.GAE-RACING.DE

FORD FIESTA MK7

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!

i 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.

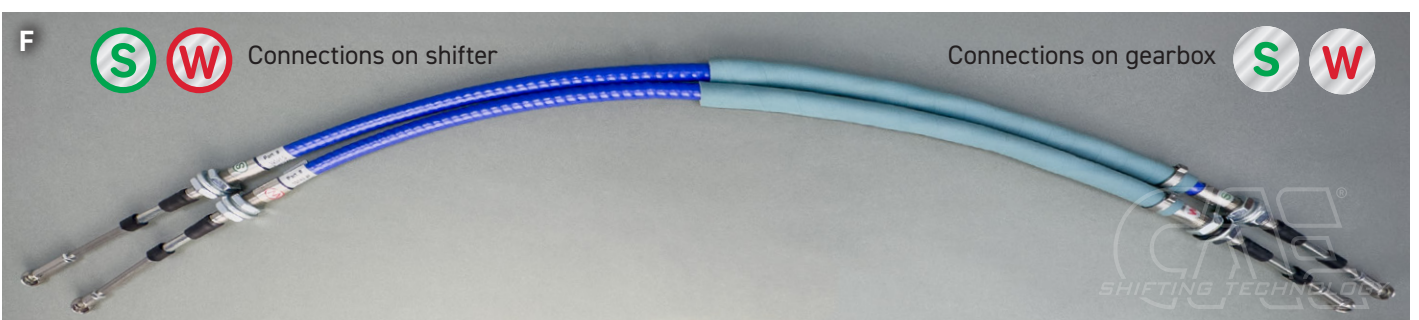
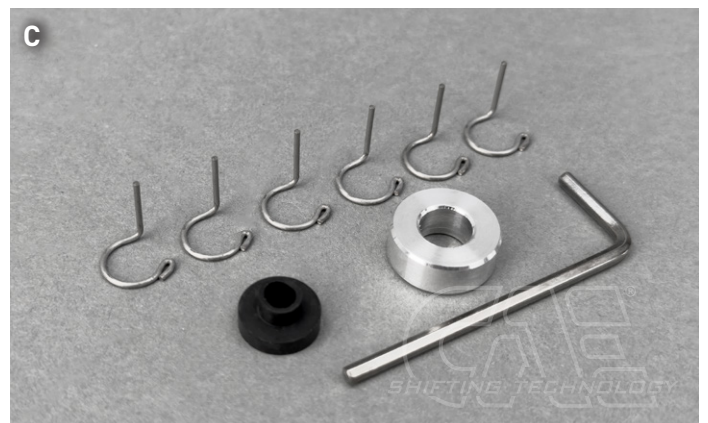
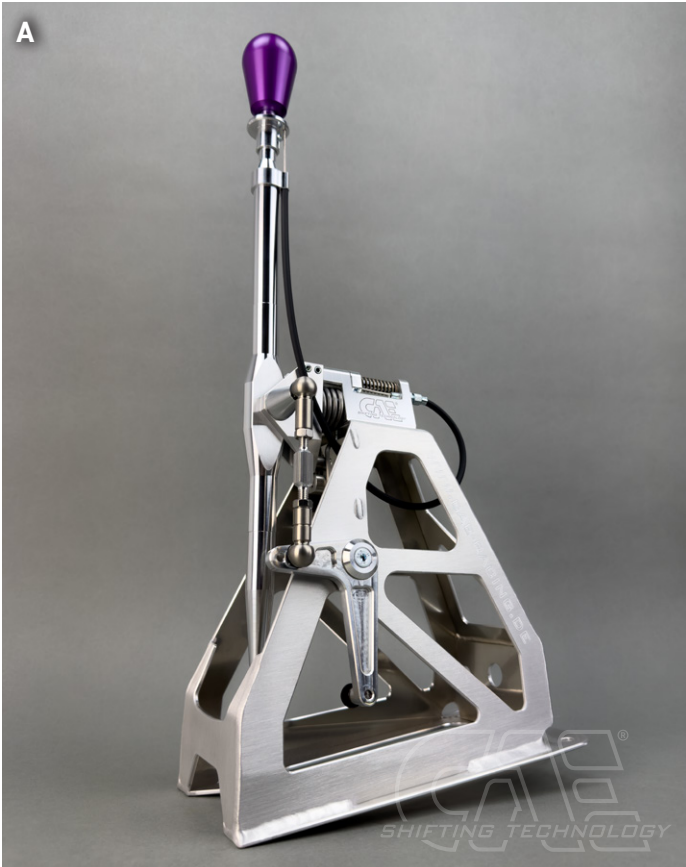
TIPS FOR GEAR SHIFTING

i 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)
- ▶ Accessories package (Picture C)
- ▶ Gear lever (Picture D)
- ▶ 1x shift cable holder (Picture E)
- ▶ 1x shift cable (S), 1x selector cable (W) (Picture F)



- i** The shifter is intended for racing vehicles without interior equipment. If the center console is fitted, it must be removed or cut out until there is sufficient clearance for the shift cables. The shifter should be screwed directly onto the sheet metal of the center tunnel; any existing carpet must be cut out.

The removal

- ▶ Completely remove the original gearshift and shift cables.

- i** Generally fit a sealing sleeve to each ball and grease the ball sockets. Once the shifter has been fully assembled, secure the ball heads with the split pins. Glue in all nuts / screws during assembly! Never kink the shift cables! Lubricate all moving parts occasionally with a good spray grease. To clean the aluminum parts, we recommend using commercially available spirit.

Mounting the shift cables

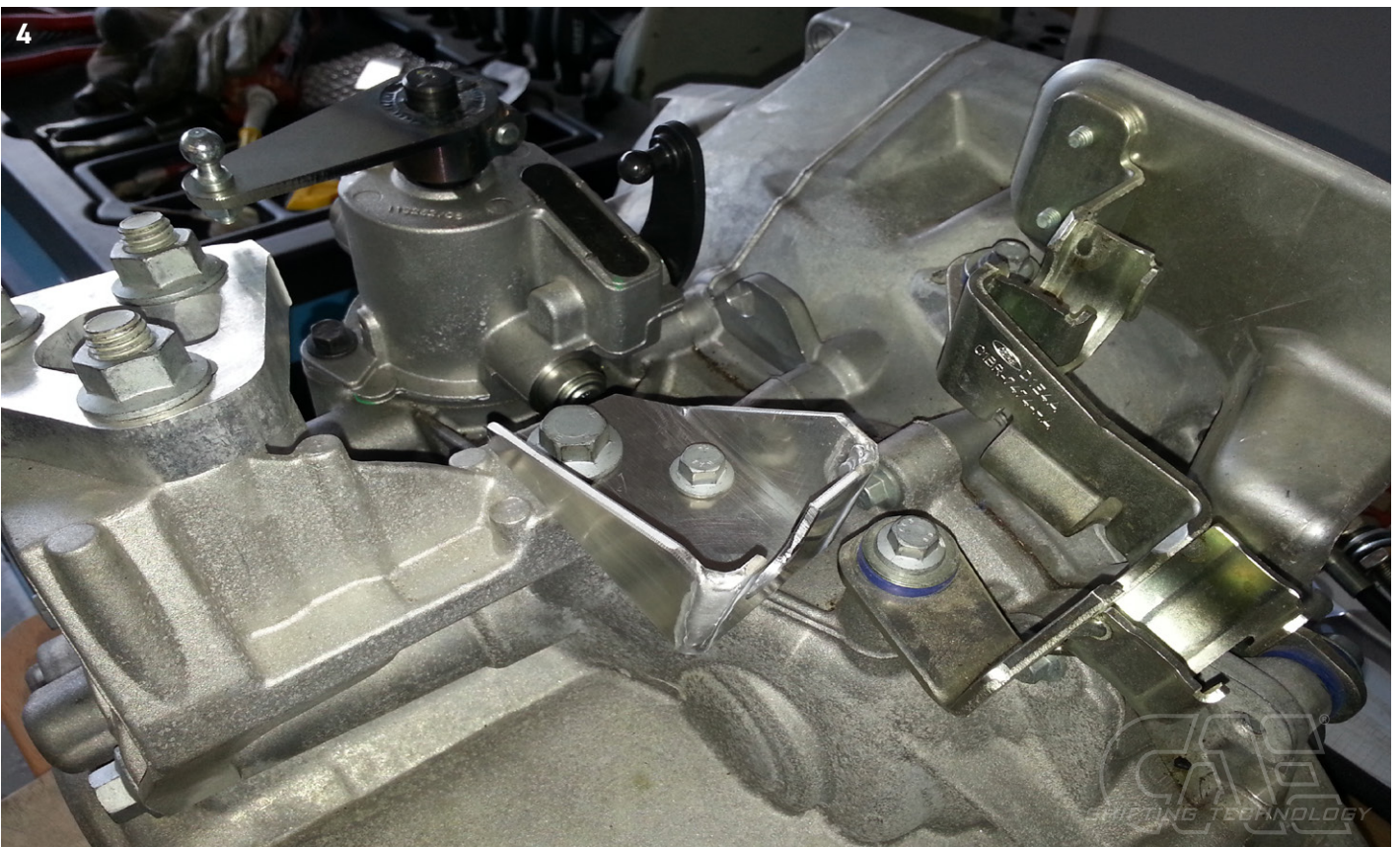
- ▶ **Shift cable (S) L=1240mm** --long ball sockets and M6 thread- from the gearshift inside to the gearshift of the gearbox. (Picture 1)
- ▶ **Selector cable (W) L1200mm** --short ball socket on the inside and short M6 thread-- from the L-lever on the shifter (right) to the selector lever on the gearbox (right remains right) Short socket = selector cable (Picture 1)
- ▶ Fasten the cables to the shifter with M16 nuts, no thread from the M16 thread is visible in the shifter. (Picture 2)



Modifications to the gearbox

❗ Shift the gearbox to neutral.

- ▶ Pull the original gearbox gearshift lever off the gearshift shaft using a suitable puller. (Picture 3)
- ▶ Screw the shift cable bracket to the gearbox.
- ▶ New gearbox shift lever will be fitted later. (Picture 4)



Installing the gearshift / routing the shift cables

- ▶ Cut open the original sealing rubber of the cables and fit it to the CAE cables.



- ▶ Bring the shifter with the shift cables already fitted to its installation location and move the shift cables through the bushing towards the engine compartment; screw the shifter onto the tunnel.



HEAT PROTECTION FOR SHIFT CABLES (FOR ALL VEHICLES WITH CAE SHIFT CABLES)

Exhaust systems generate incredible temperatures, which can be several 100 degrees, especially under full load! Therefore, the shift cables must be absolutely protected with the blue-gray protective hoses against the strong heat effect!

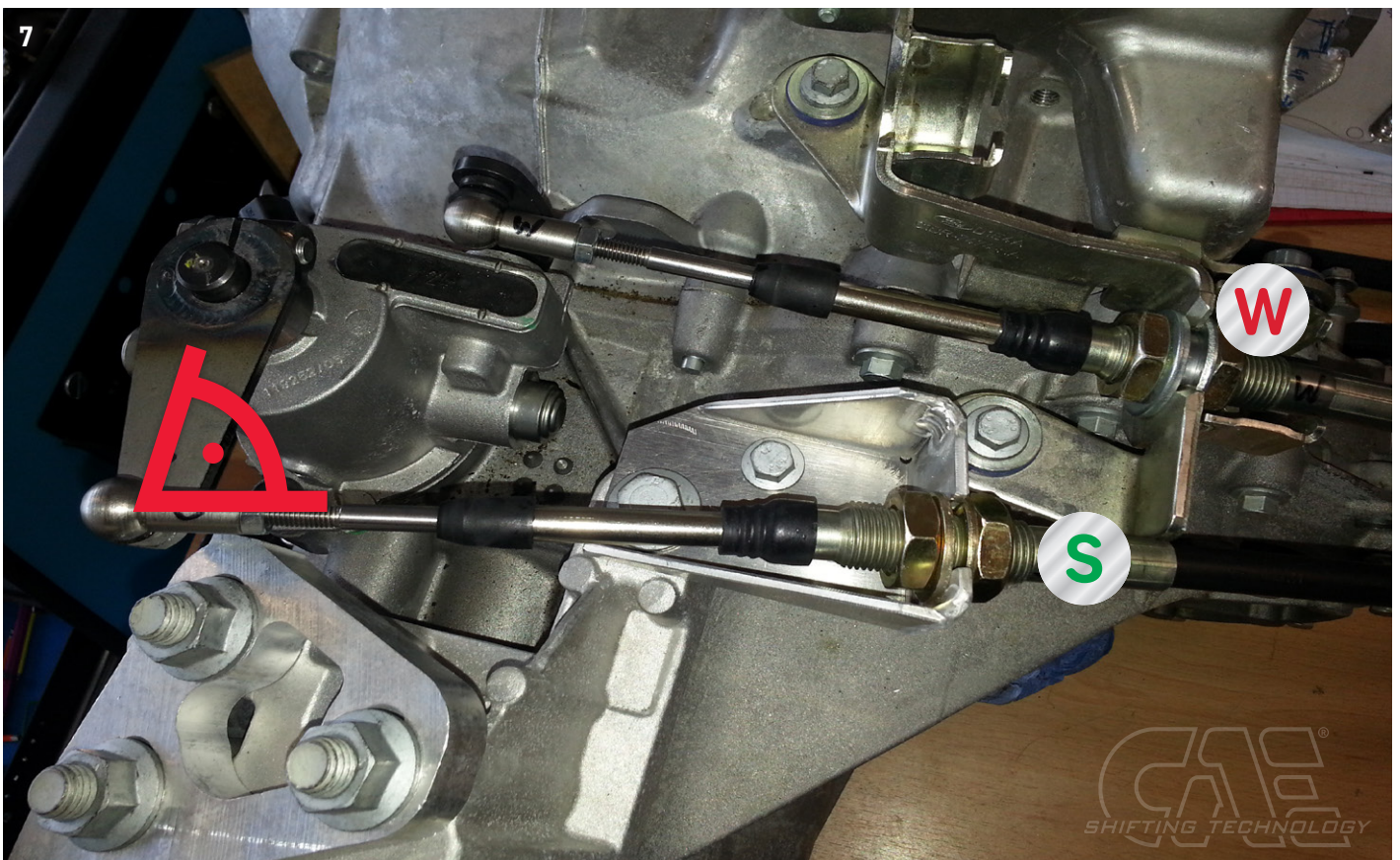
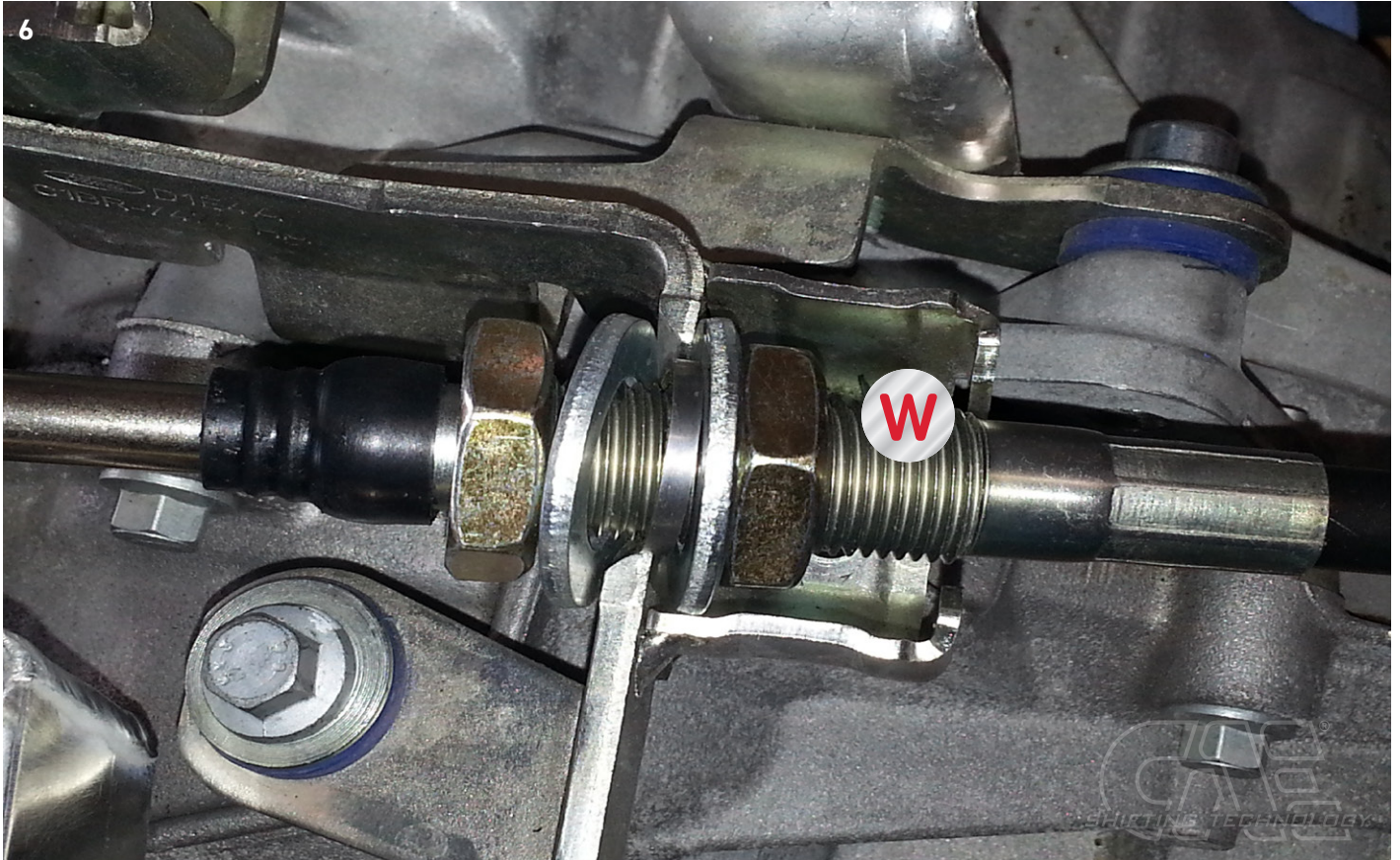
Also the protected shift cables must not be in contact with the exhaust. For turbo engines please take additional measures should be taken, e.g. aluminum honeycomb sheets, heat protection tape or foils.

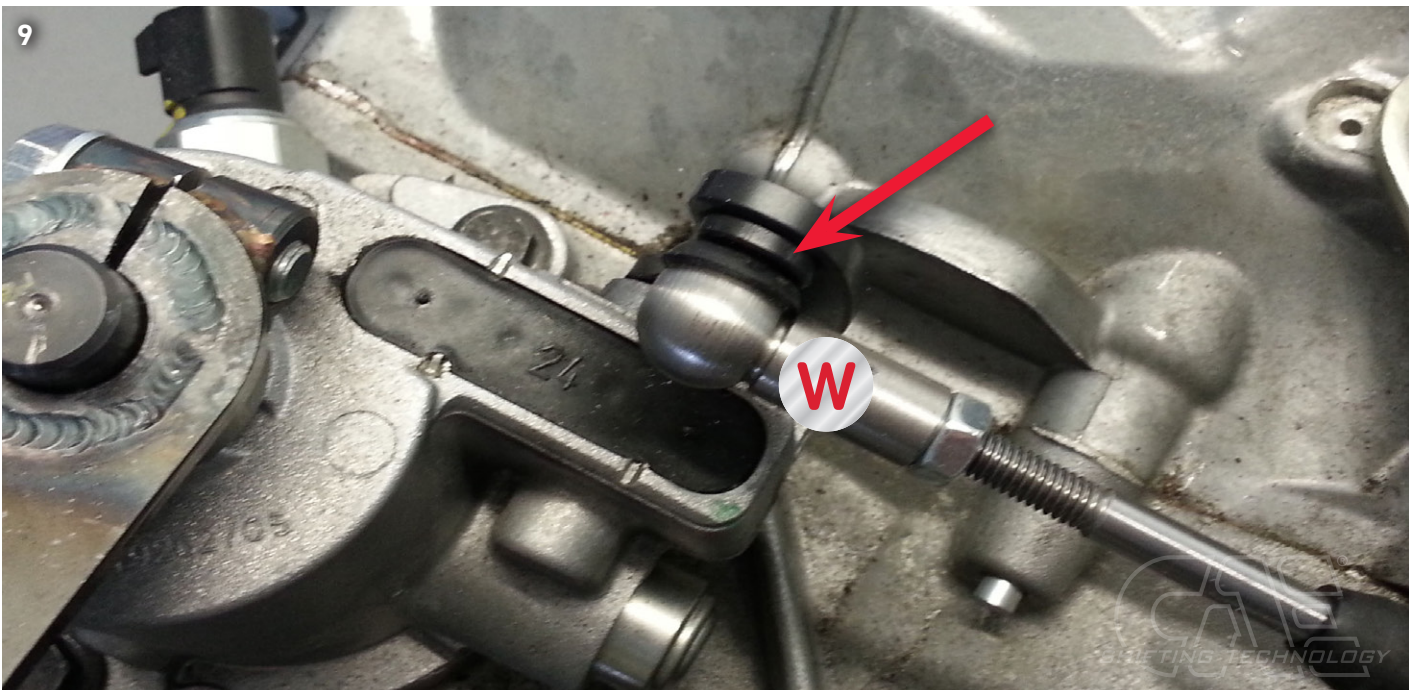
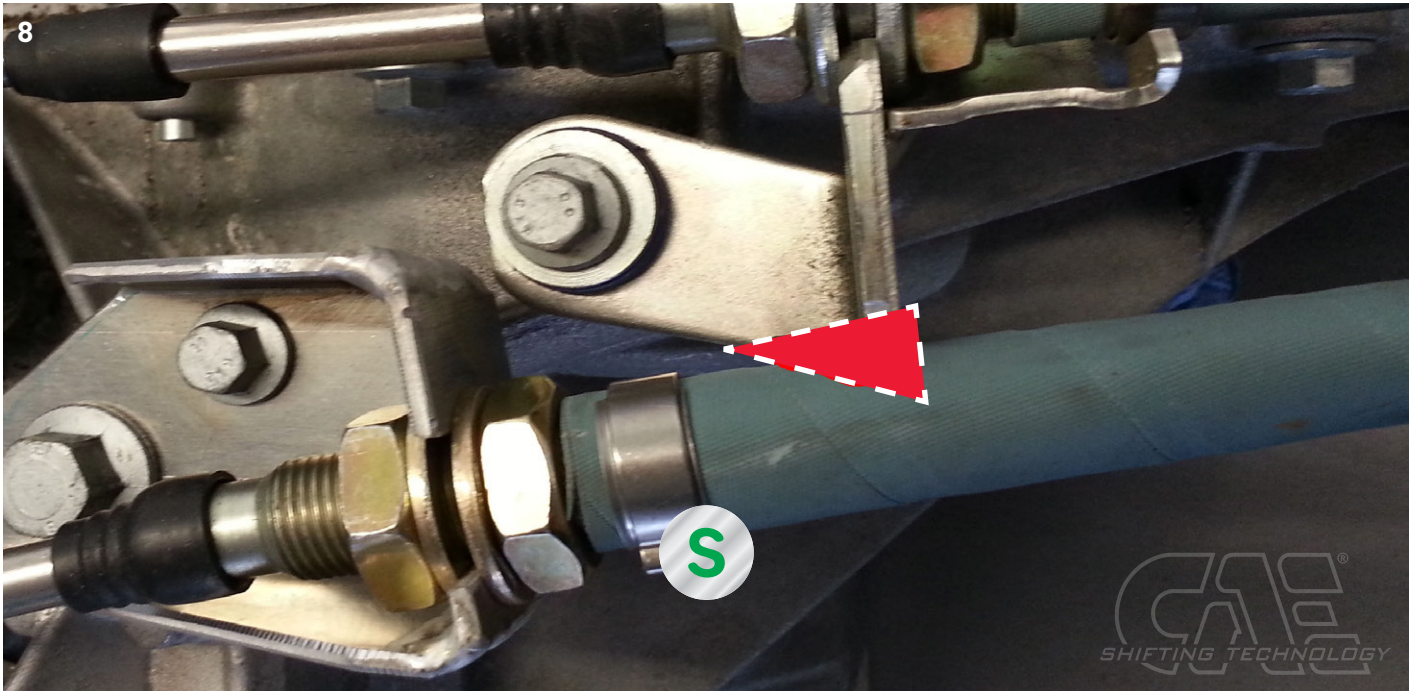


**EXCESSIVELY HIGH TEMPERATURES PERMANENTLY DAMAGE THE SHIFT CABLES!
ESPECIALLY IN MOTORSPORTS, THE HEAT DEVELOPMENT IS ENORMOUS!**

Installing the shift cables on the gearbox

- ▶ Cables run parallel to the gearbox, the original "shift" cable holder remains empty.
- ▶ Attach the selector cable (W) to the original holder; use large washers and centering washer. (Picture 6)
- ▶ Attach the shift cable (S) to the new aluminum bracket. (Picture 7)
- ▶ cables should not be laid "tightly", the corner of the original bracket must be cut off. (Picture 8)
- ▶ Fit the neoprene sealing sleeve to the selector lever ball head. (Picture 9)





Installing the CAE gearbox shift lever

ⓘ Neutral gear is engaged; original shift lever is already removed, shift cables are attached to the brackets on the gearbox.

- ▶ Now mark the position of the transmission shift lever at a 90° angle to the shift cable on the shift shaft. (Picture 7)
- ▶ Press on shift lever and tighten with 25NM clamping screw.
We recommend removing the gearshift unit from the gearbox after marking the shaft
(no seals necessary)
- ▶ If the lever is too difficult to press on, we recommend smoothing the notches in the shaft slightly.
(do not level completely)

Adjusting the shift travel of the 6-speed gearbox "B6"

- ▶ Pull the lateral coupling rod on the shifter off one of the balls. (Picture 10)
- ▶ Shift the gearbox into 3rd gear. To do this, move the gearshift forwards without moving it sideways.
- ▶ Loosen the center bearing screw under the shift tower and align the shifter. (Picture 11)
It should now be tilted approx. 5 degrees to the right towards the passenger side. (Picture 12)



- ▶ Now tighten the lower spring stop under the shifter using an Allen key. (Picture 11)
- ▶ Adjust the L-lever by turning the lateral coupling rod so that the ball socket can be pressed on without changing the length.



CHECK: With 3rd and 4th gear engaged the lateral clearance on the gearshift must be the same, otherwise correct it on the right-hand coupling rod!

- ▶ Secure all ball sockets on the shift cables in the shift tower with the lock nuts.

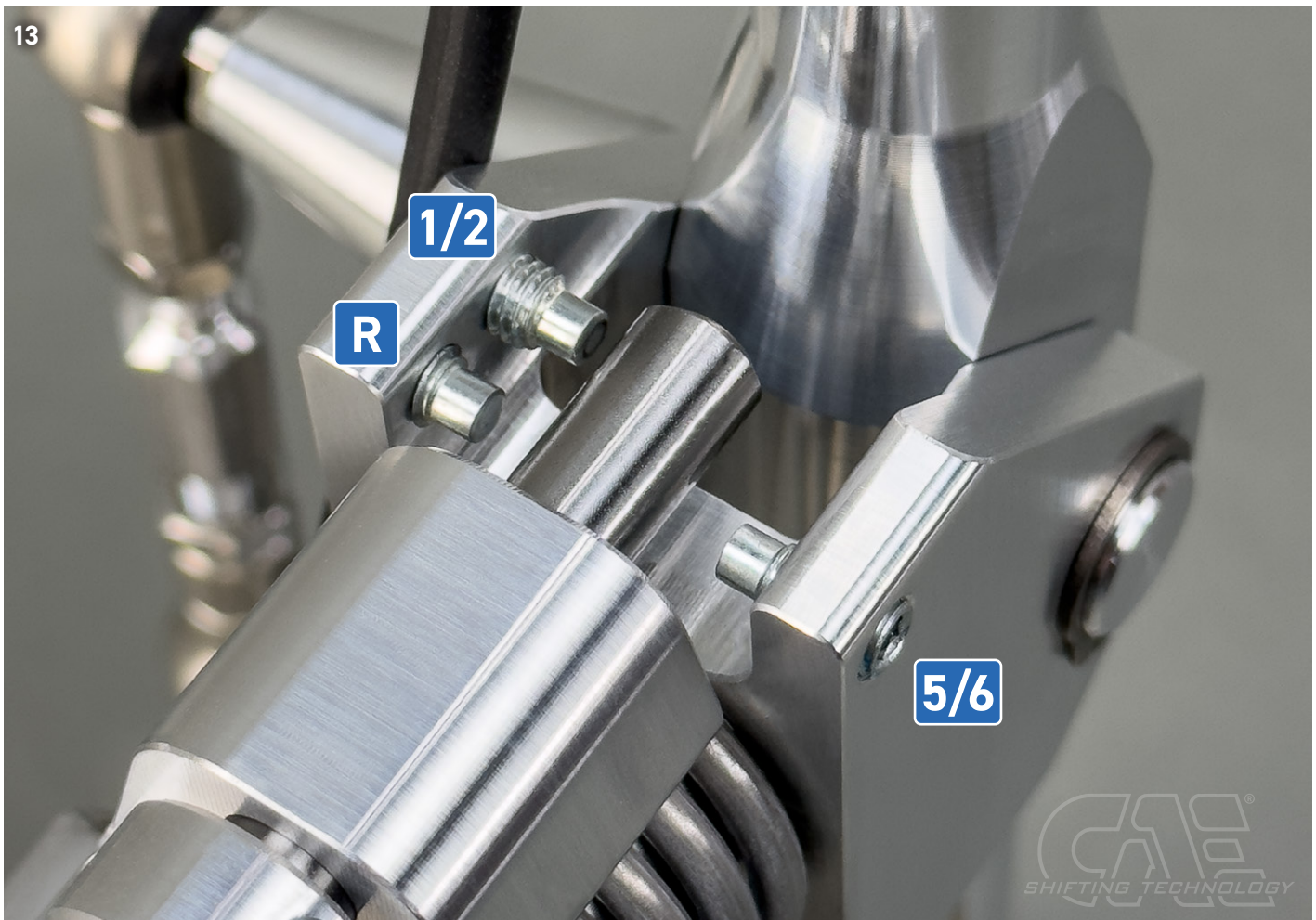


- ▶ Secure all ball sockets of the coupling rods with the lock nuts.

ⓘ ATTENTION: The coupling rods have in each case 1x right-hand thread and 1x left-hand thread!

- ▶ Use the gearshift to shift the gearbox to level 1/2 and screw in the stop screw until the gears can be changed cleanly. (Picture 13)
- ▶ Now use the gearshift to shift the gearbox to gear level 5/6 and screw in the stop screw until the gears can be engaged cleanly. (Picture 13)
- ▶ Actuate the locking pin via the cable and shift the gearbox to reverse gear level. Screw in the stop screw until the reverse gear can be engaged cleanly.
- ▶ Proceed in exactly the same way with the reverse gear and the corresponding adjusting screw.
- ▶ Press on all cotter pin clips and retighten all screws.

ⓘ PLEASE NOTE: The stop screws must never be in contact with the bolt when the gear is engaged. Approx. 0.5 mm distance is okay.



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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