

📍 VW Golf II / III
10009 Gear type 020
100093 Gear type 020
5 & 6-speed gearbox



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 which puts a disproportionately high strain on a transmission and in the worst case causes a fatal wrong shift in gear!

Included in delivery

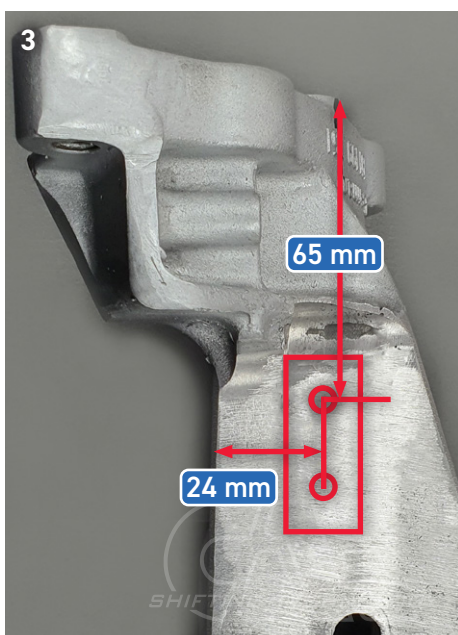
- ▶ 1x shifter completely assembled, design depending on ordered variant (Picture A)
- ▶ 1x Shift knob incl. counter screw M6x20 V2A, design depending on ordered variant (Picture B)
- ▶ Cover plate (Picture C)
- ▶ Accessories package (Picture D)
- ▶ 1x shift cable holder (Picture E)
- ▶ 1x shift cable (S), 1x selector cable (W) (Picture F, G)



- i** The shifter is designed for racing vehicles without interior equipment. If the center console is installed, it must be removed or cut out until there is sufficient clearance for the shift cables.
- i** The base plate of the shifter should be screwed directly onto the sheet metal of the center tunnel, any existing carpet must be cut out.
- i** Generally, fit a sealing collar on each ball and grease the ball cups. After complete assembly of the shifter, secure the ball heads with the cotter pins. Glue all nuts / screws during assembly! Never kink shift cables! To avoid flash rust, rub all steel parts with care oil from time to time. For cleaning the aluminum parts, we recommend commercial spirit.

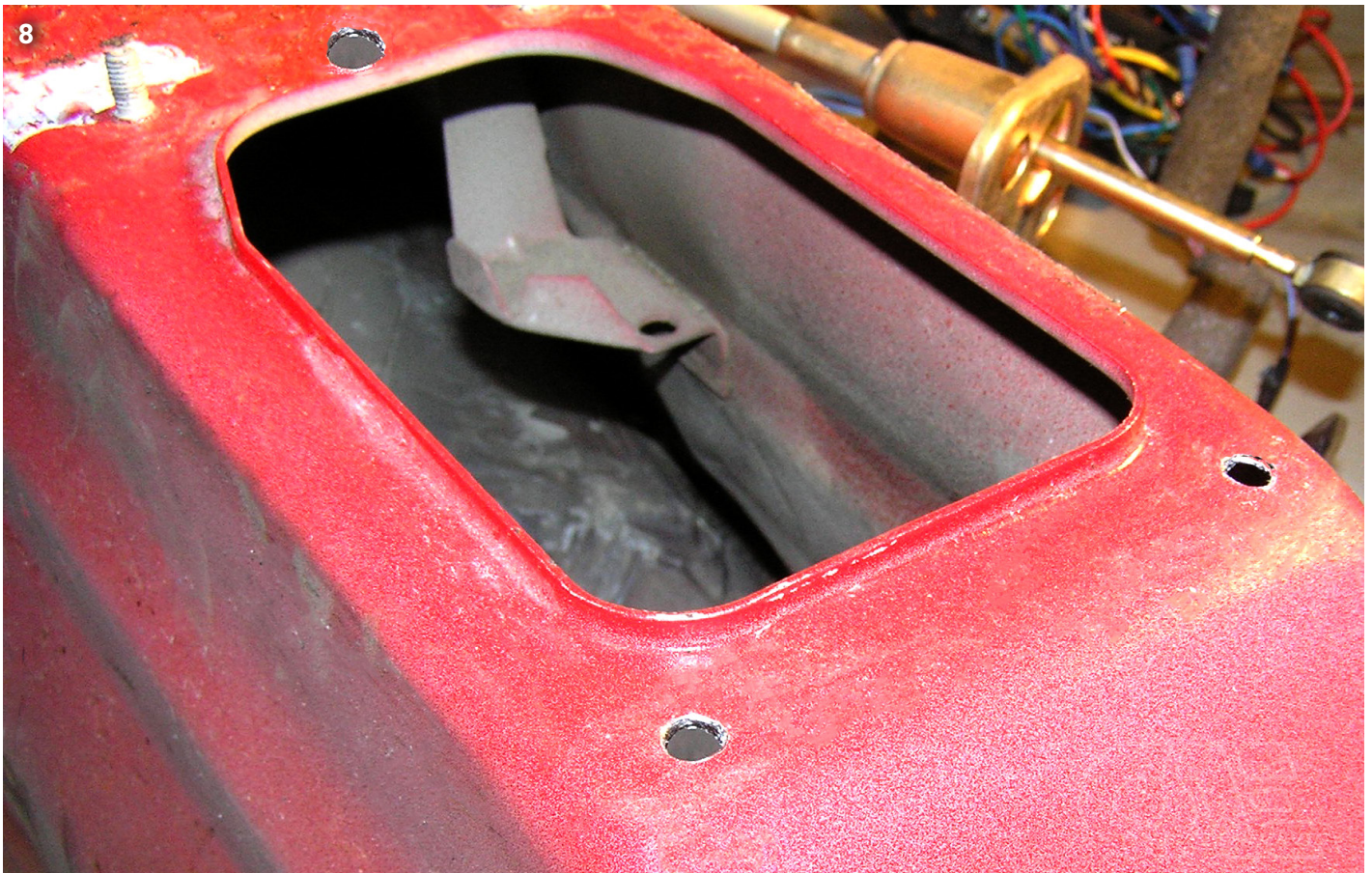
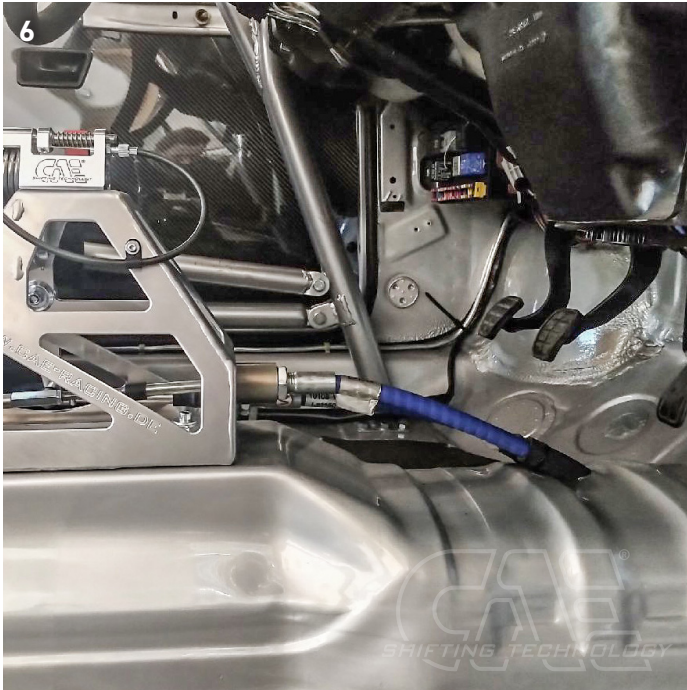
The removal

- ▶ Completely remove original shift lever and shift rods, also remove all linkages on steering gear.
- ▶ Remove transmission input double lever.
- ▶ Support the engine gearbox unit and remove the left engine mount.
This must be reworked as follows: (Picture 1, 2, 3, 4, 5).



Metal sheet work

- ▶ Drill two 18 mm holes in the center tunnel to feed the shift cables through. The position of the holes is shown in the following photo: (Pictures 6, 7, 9) The holes must be drilled in line with the shift cables. Before drilling, check that the shift cables can move freely under the tunnel. If necessary, move the holes forward accordingly.



- ▶ Place the shifter on the center tunnel and mark the 3 additional holes. Drill a 6.5mm hole at each of these points and deburr. (Picture 8)
- ▶ Stick foam rubber strips under the tunnel. Then screw the shifter from above and the cover plate from below and make sure that the tunnel is air-tight.



ORIENTATION FOR INSTALLATION

Our shift cables are marked with different stickers at the ends. The connection to the shifter comes with a circular contour, the connection to the gearbox is made without a circular contour (S = Shift / W = Select).



Connection shifter



Connection gearbox

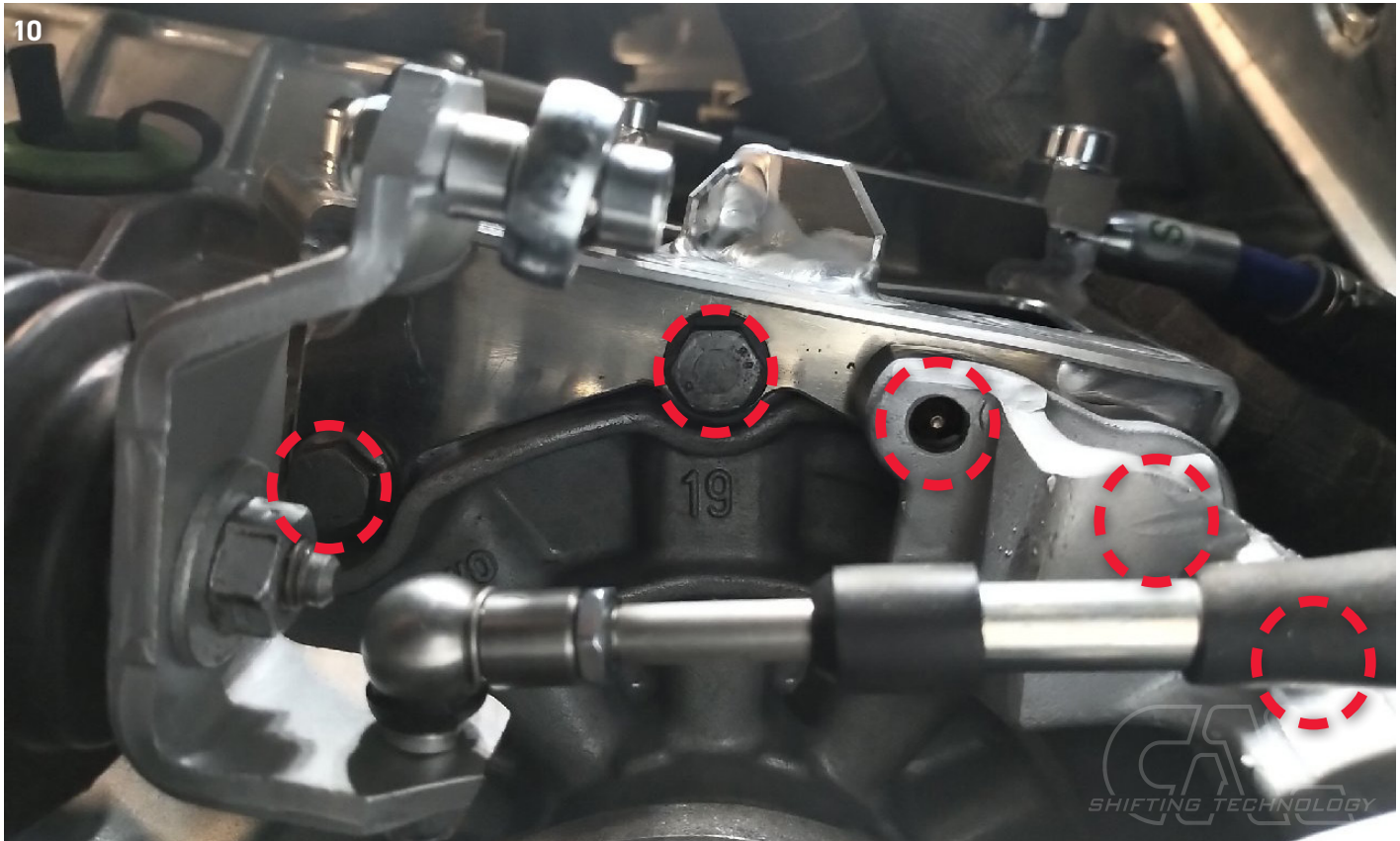
Installation of the shift cables on the shifter

- ▶ **Shifter cable (S) L=1020mm** --long ball socket and M6 thread - from shifter center (plus extension bushing) to L-shaped gearbox linkage lever.
- ▶ **Selector Cable(W) L1150mm** --Inside & Outside short ball socket and Short M6 thread - from L lever on shifter to lower ball gearbox linkage lever. (Left remains left)



Der Einbau

- In addition, unscrew the 2 gearbox housing screws located in front of the engine mount and screw on the gearshift cable holder and the modified engine mount: (Picture 10)
- Install the two 5mm washers between the differential housing and the engine mount on the rear 2 bolts.



- Install the CAE double lever at the gearbox input. (Picture 11)



Installation of the shifter and the shift cables

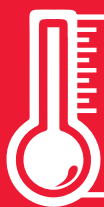
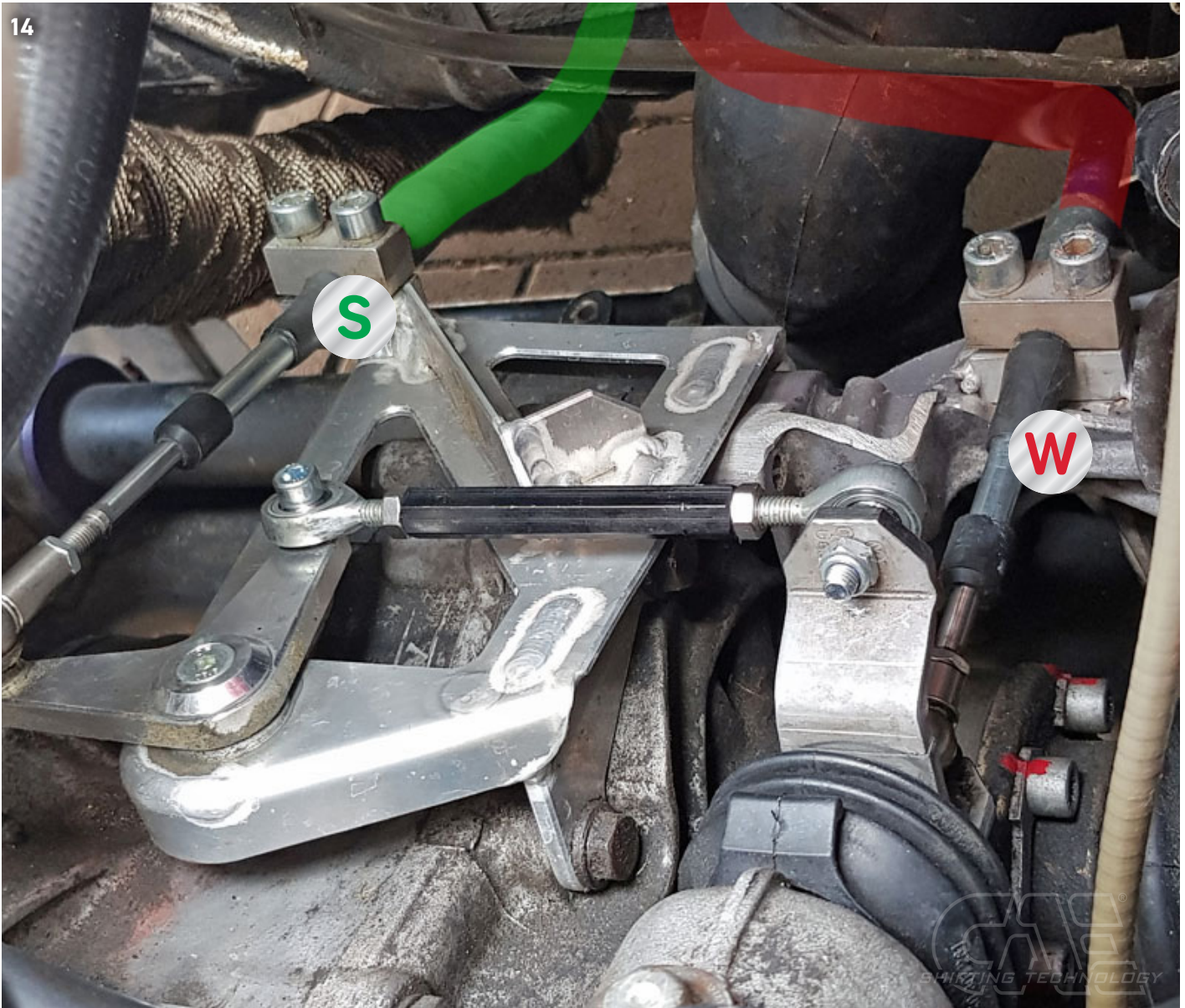
- ▶ **Shifter cable (S) L=1020mm** --long ball socket and M6 thread - from the shifter inside center to the L-shaped transmission linkage bell crank.
- ▶ **Selector cable(W) L1150mm** --Inside& outside short ball socket and short M6 thread - from the L lever on the shifter to the lower ball gearbox linkage lever (Left stays Left).
- ▶ The M16 threaded side of each is attached to the shifter. On the M16 threaded side of the cables, remove the ball cups, M6 nuts, sealing caps, and the first M16 nut and washer from each of the shift (S) and selector (W) cables. Short socket = selector cable
- ▶ Fasten the cables to the shifter with M16 nuts, no thread of the M16 thread is visible in the shifter. (Picture 13)
Install the shift cable with extension bushing on the shifter according to the pictures.
- ▶ The shift cable (S) is mounted on the shifter with the extension sleeve. The dimension of the visible metal sleeve in front of the nut is 42 mm.



- ▶ To install the nuts, pull off the rubber sleeves so that the nuts can be slipped over them.
- ▶ Then screw on the ball heads and press them onto the selector lever and shift lever (they will be adjusted later).
- ▶ Now guide the cables mounted on the gearshift bracket from the interior through the holes and mount the gearshift bracket on the center tunnel.
- ▶ Insert the hose pieces into the 18 holes.
- ▶ Route the shift and selector cables as shown in picture 14 and screw them into the clamps of the retaining plate.

- ▶ Press the ball cups onto the corresponding balls on the deflection or L lever and secure them with cotter pins. (Picture 14)
- ▶ Check clearance of cables to exhaust, attach additional brackets if necessary.

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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.

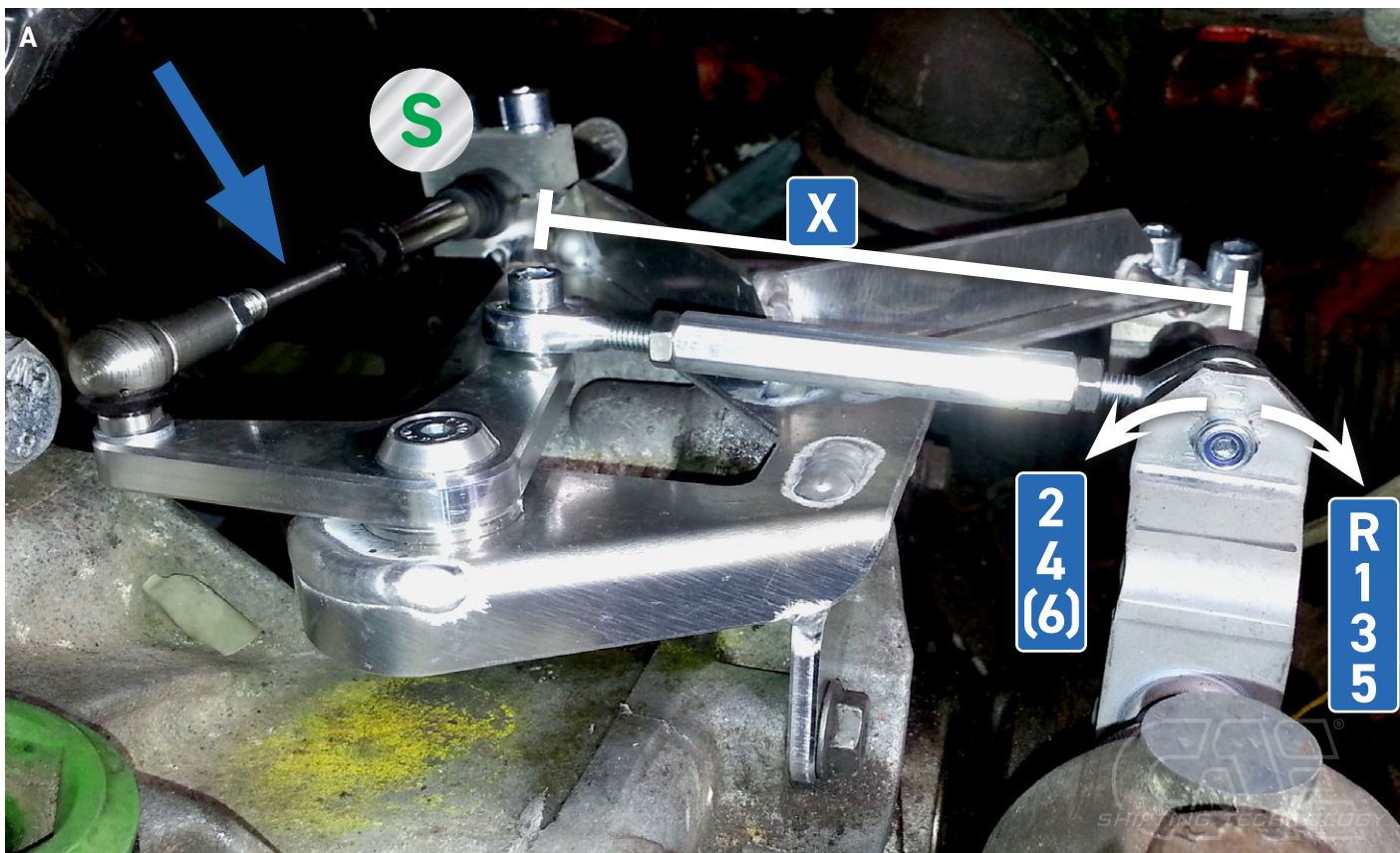


**EXCESSIVELY HIGH TEMPERATURES PERMANENTLY DAMAGE THE SHIFT CABLES!
ESPECIALLY IN MOTORSPORTS, THE HEAT DEVELOPMENT IS ENORMOUS!**

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!

Sample pictures:



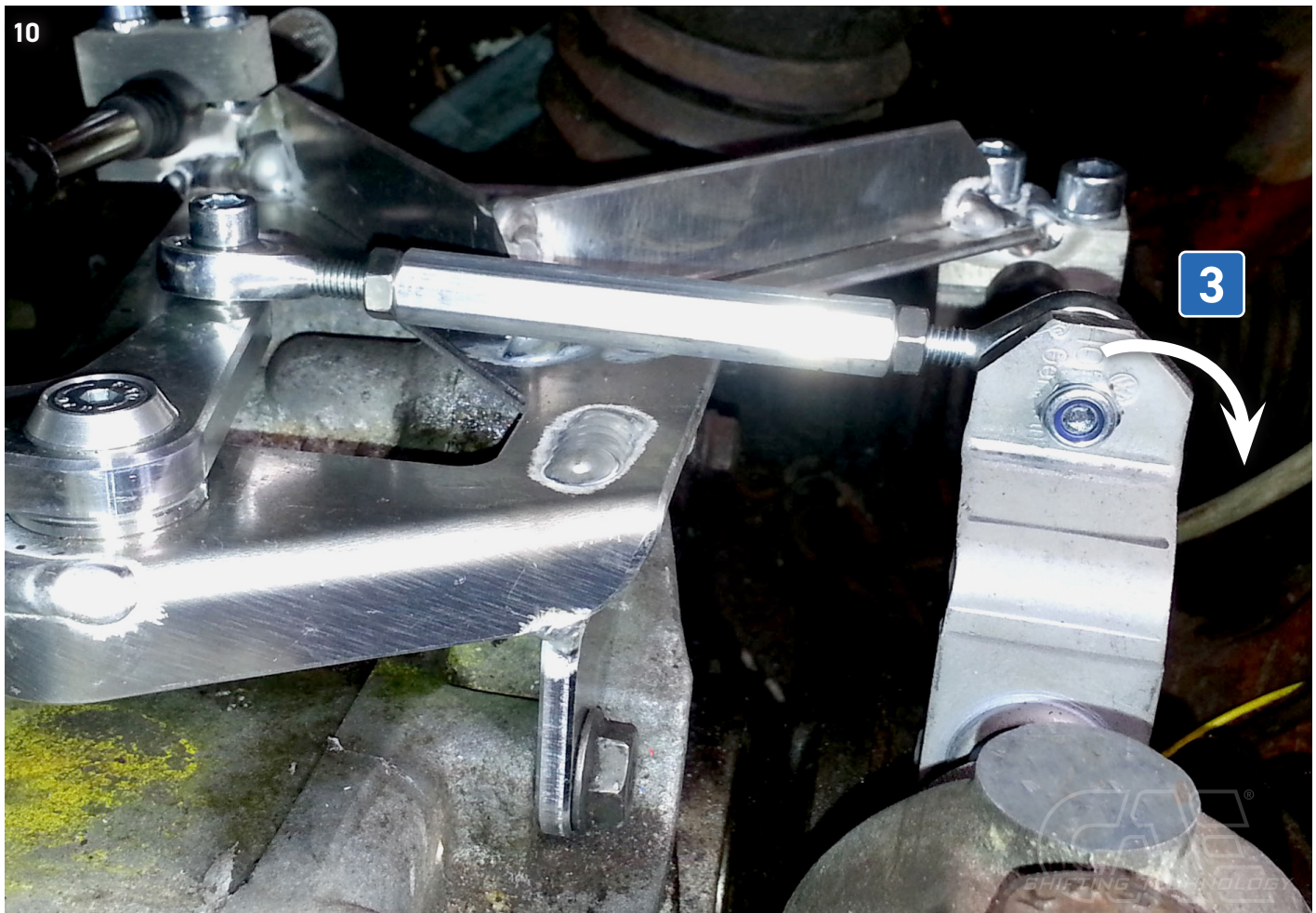
CHECK: With the gear engaged, pull the ball cup off the gearshift lever and check whether the shift cable **S** can still be moved at least 3 mm. This applies to the "front" gears R-1-3-5 (Picture A) with the cable retracted and to the "rear" gears 2-4 (6) (Picture B) with the cable extended.

- ▶ If the shift cable (blue arrow) reaches its inner end position when the gear is engaged, the coupling rod must be extended by turning the hexagon (R/L thread, length X).
The end position can also be corrected by screwing the ball cups in or out on the M6 thread of the cables.
- ▶ After checking and adjusting, reassemble the ball cups from the shift cable.

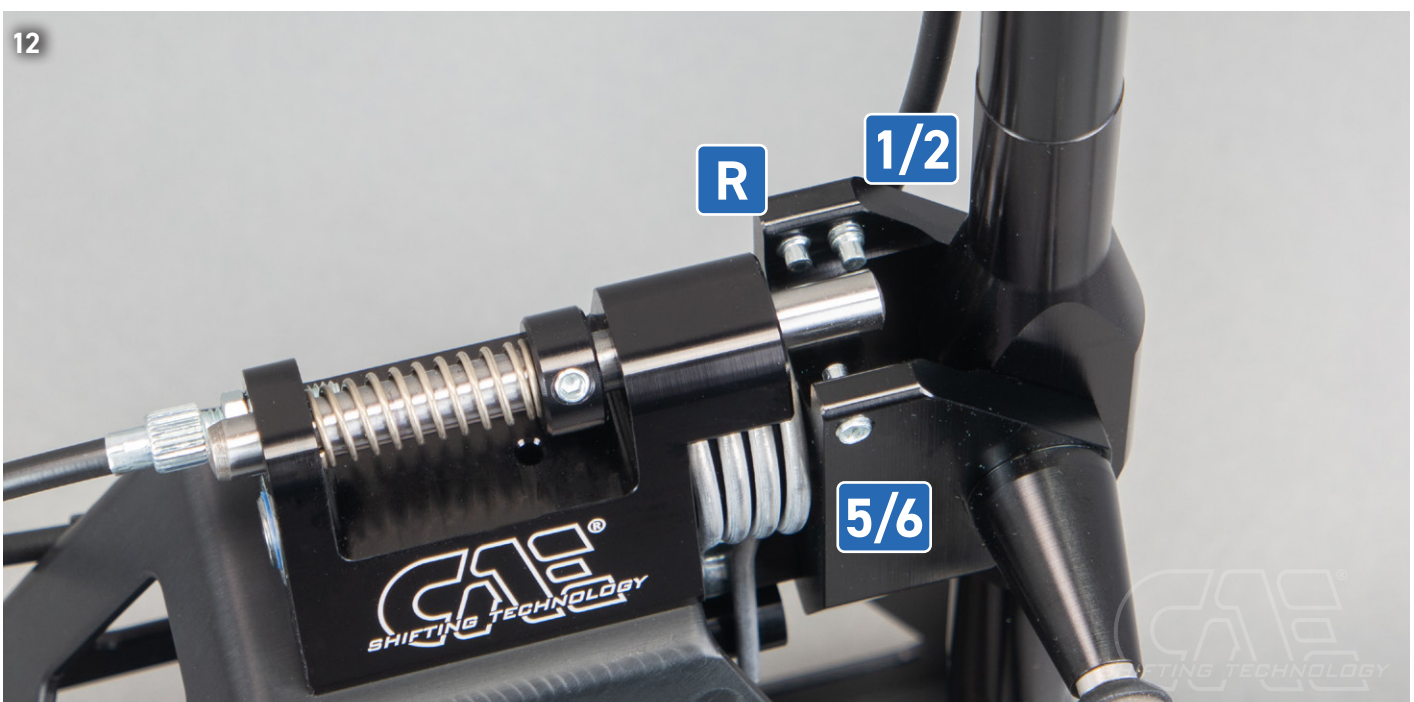
ATTENTION: THIS CONTROL IS VERY IMPORTANT FOR THE FUNCTION OF THE SHIFTER !!!
If the remaining travel on the shift cable is missing, there is an immediate risk of damage to the gearbox. !!!!!

Adjusting the shift travel of the 5-speed gearbox

- ▶ Remove the side coupling rod on the shifter from one of the balls.
- ▶ Shift the gearbox to 3rd gear by hand using the bell crank. The 3rd gear is on the left as seen in the direction of travel. To engage it, simply swing the transmission input lever to the left without load.
- ▶ Now first adjust the length of the coupling rod on the gearbox:
- ▶ Now adjust the center position of the shift lever on the shifter. Tighten the lower spring stop under the gearshift bracket with an Allen key.
- ▶ In the center position, the shift lever should be slightly inclined to the left; however, it is mainly important that all selector gates are reached without the lower part of the shift lever colliding with the ball head of the L lever in the shift unit. (5th gear level)



- ▶ Then adjust the side coupling rod so that it can be pressed onto the ball without changing its length. It must now be possible to change gears 3 / 4 without any problems. When 3rd or 4th gear is engaged, check the lateral clearance on the shift lever; it must be the same to the right and left, otherwise correct it on the coupling rod (Picture 11).
- ▶ Shift gearbox to level 1 / 2 using shift lever and screw in stop screw until gears can be changed cleanly in level 1 / 2. (Picture 12)
- ▶ Now shift gearbox to 5th gear level using shift lever and screw in stop screw until 5th gear can be engaged cleanly.
- ▶ Actuate locking pin via cable and shift transmission to reverse gear level. Screw in stop screw until reverse gear can be engaged cleanly.
- ▶ Lock all ball cups and install retaining clips Check settings during test drive and readjust if necessary; incorrect or inaccurate settings can lead to gearbox damage.



- The position of the shift knob can be varied using the hexagonal extensions supplied. Always make sure that the lever does not touch anything in the end position. **The following applies:** The longer the pan/dkt., the further the knob moves forward. (Picture 13) This change can be made at any time, no further adjustment is necessary.



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



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!**



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ORIGINAL



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