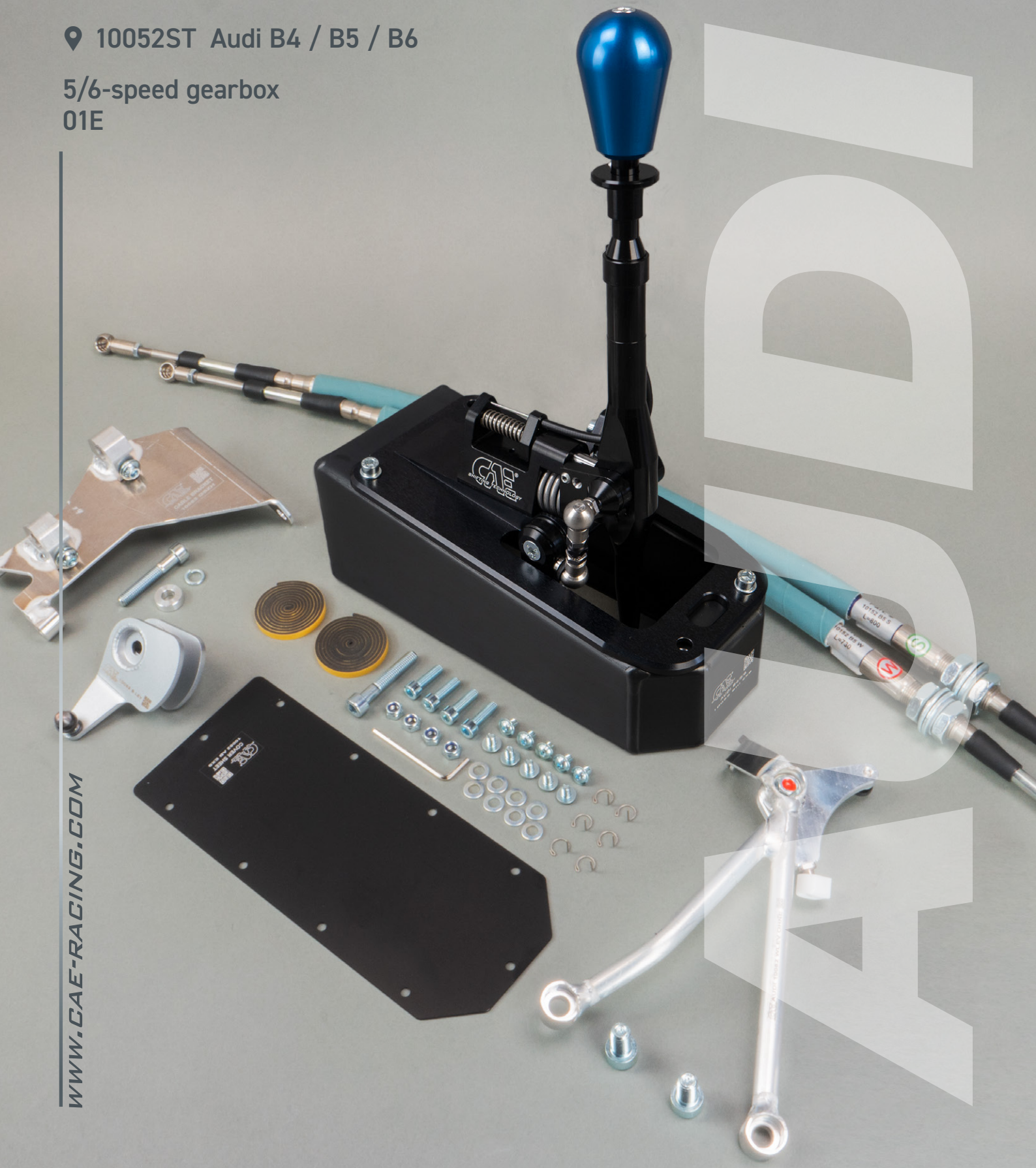
SHIFTING TECHNOLOGY

RACE THE ORIGINAL

Installation Manual

10052ST Audi B4 / B5 / B6

5/6-speed gearbox
01E



AUDI

WWW.CAE-RACING.COM

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)
- Generally attach a sealing sleeve to all ball heads (if available on the model). Lift sealing sleeve very slightly to lubricate.
- All screws and nuts that are not self-locking or are fitted with tooth lock washers glue in during assembly!
- After installing the shifter, secure all ball heads (if available on the model) with the cotter pins provided!
- If CAE shift cables are included in the scope of delivery, please never kink them!

ⓘ 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

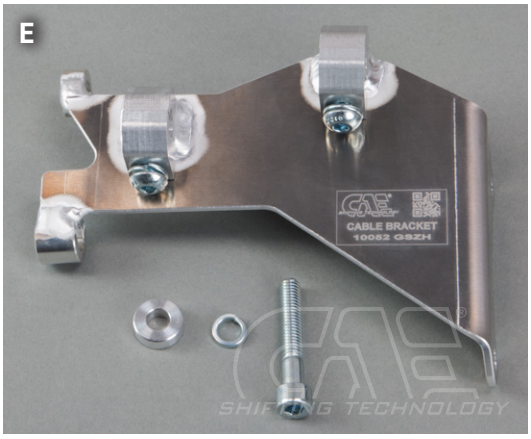
- 1x shifter completely mounted, design depending on ordered variant (Picture A)
- 1x gear knob incl. counter screw M6x20 V2A, design depending on ordered variant (Picture B)
- Accessories package (Picture C)
- 1x gearshift lever (Picture D)
- 1x gearshift cable holder (Picture E)
- 1x gear selector lever Design depending on ordered variant "Flat, High, Without" (Picture F1, F2, F3)
- 1x shift cable (S), 1x selector cable (W) (version B4: Picture G; version B5/6: Picture H) Switching cables B4 and B5/6 differ only in length. (B5/6 +4cm)







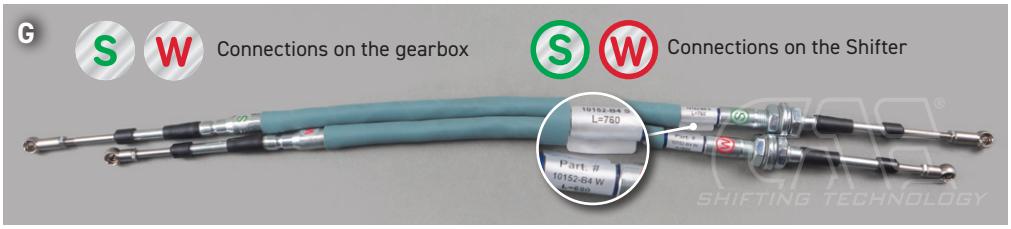


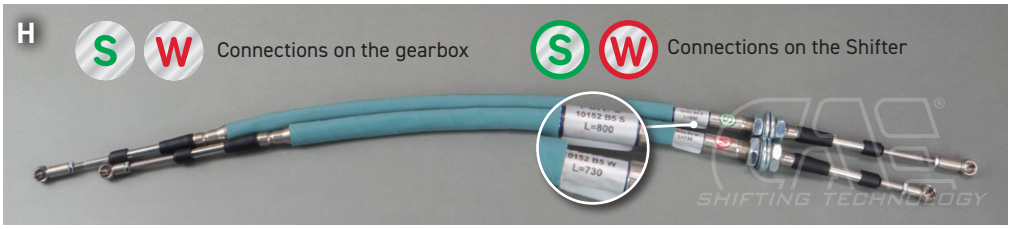












The shifter is designed for vehicles with interior equipment. The center console must be machined only until a corresponding clearance for the moving parts of the shifter is ensured.

The shifter must be screwed directly onto the sheet metal of the center tunnel, any existing carpet must be cut out.

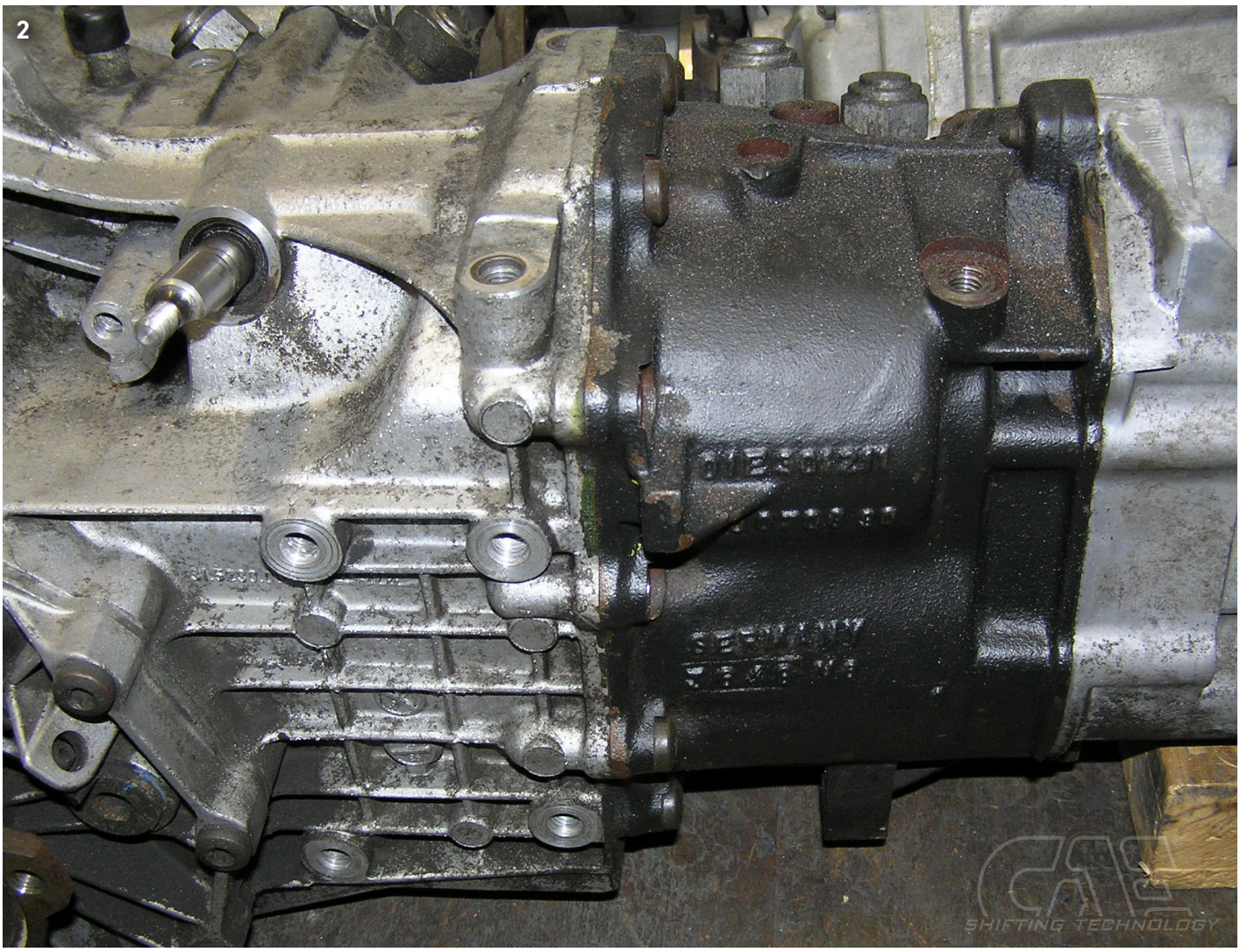
Lubricate all moving parts occasionally with good spray grease, e.g. by touching the rubber caps on the ball heads.

For cleaning the aluminum parts we recommend commercial spirit.

The removal

Lift the vehicle safely on a car lift.

- Installation can be carried out on the installed gearbox, even if it is very tight in the center tunnel.
- It is essential to ensure cleanliness, especially at the bearing point of the selector lever.
- Dismantle the exhaust as far as necessary and loosen the cardan shaft at the gearbox and let it hang.
- Remove original gearshift and linkage completely.
- Remove all linkage parts from gearbox. (Picture 2)



The installation

ⓘ Generally, install a sealing collar on each ball and grease ball cups. After complete assembly of the shifter, secure the ball heads with the cotter pin clamps. Glue in all nuts / screws during assembly! Never kink the shift cables!

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

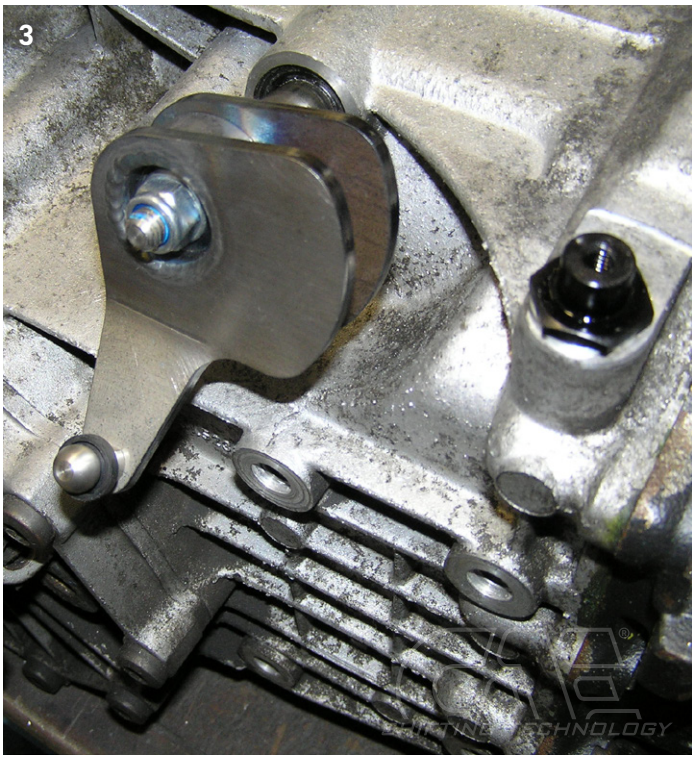
Exhaust systems generate incredible temperatures, which can be several 100 degrees, especially under full load! Therefore, the shift cables must be absolutely protected with the blue-gray protective hoses against the strong heat effect!
Also the protected shift cables must not be in contact with the 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!

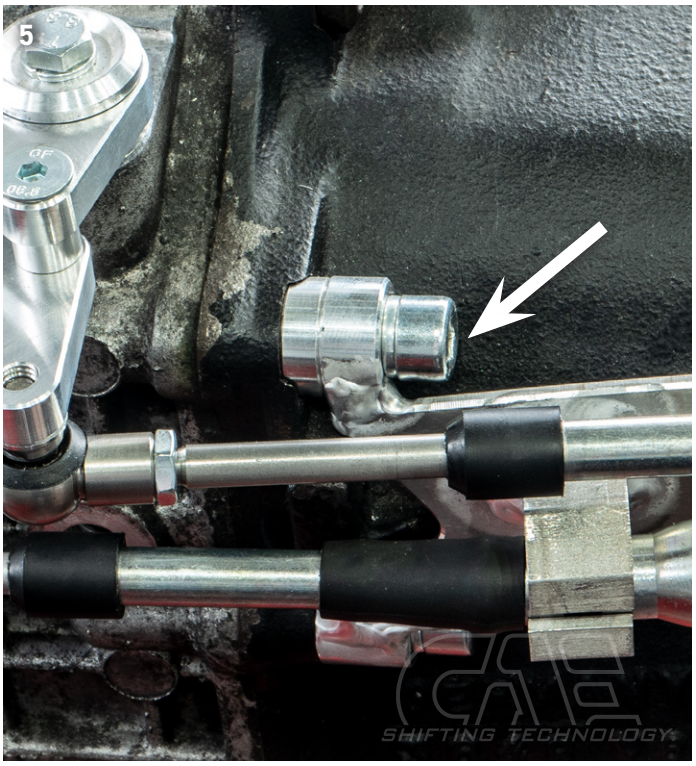
- Mount the gearbox input lever (steel) and grease the inner sliding surfaces of the blades. (Picture 3)
- Mount the aluminum bearing bush for the bell crank with Loctite and tighten with max. 10 NM. (Picture 7 shows high gear cam version)
- Mount bell crank with hex bolt M6, spring washer and M10 washer. Grease the bearing bush well! **The lever must remain smooth-running!**

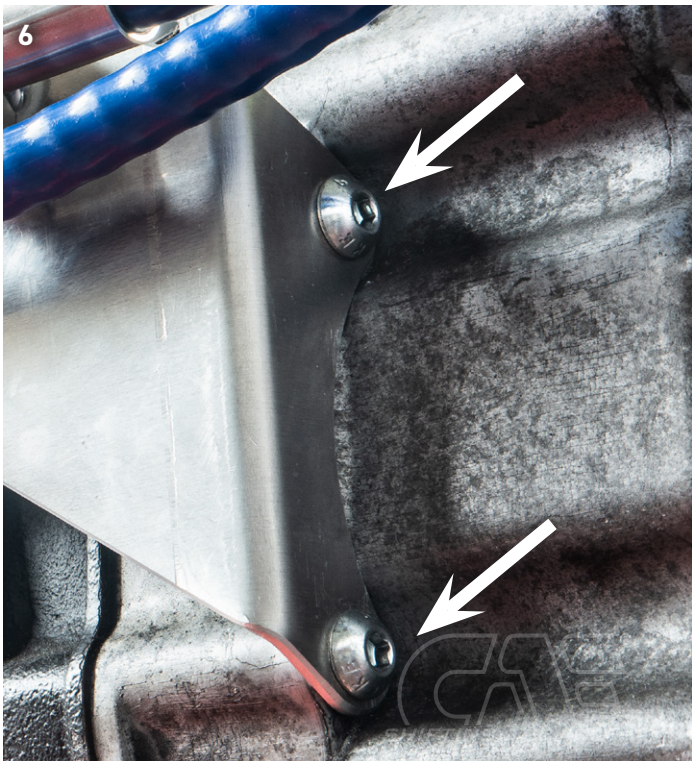
Installation shift cable holder

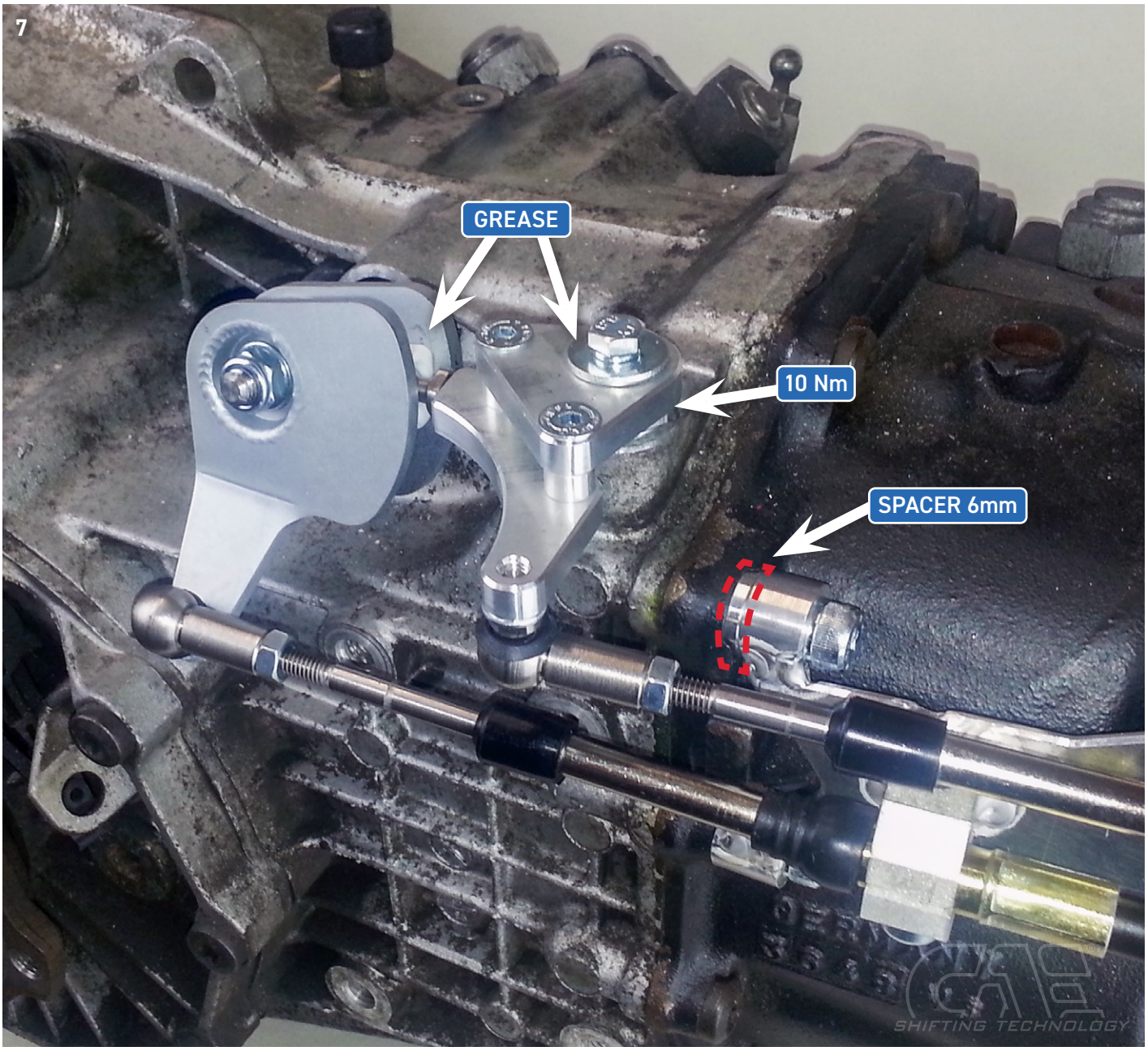
- Replace front screws with the supplied Allen screws, leave the rear ones original. (T45) ' (Picture 5, 6)






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7
GREASE
10 Nm
SPACER 6mm
SHIFTING TECHNOLOGY

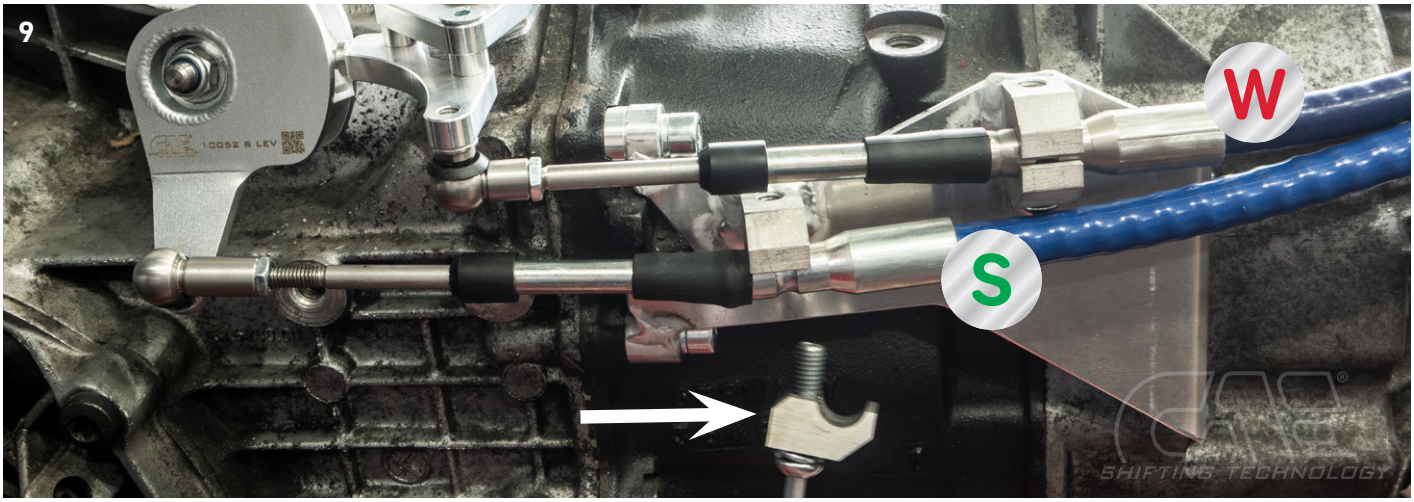
Installation of the shifter in the cabin

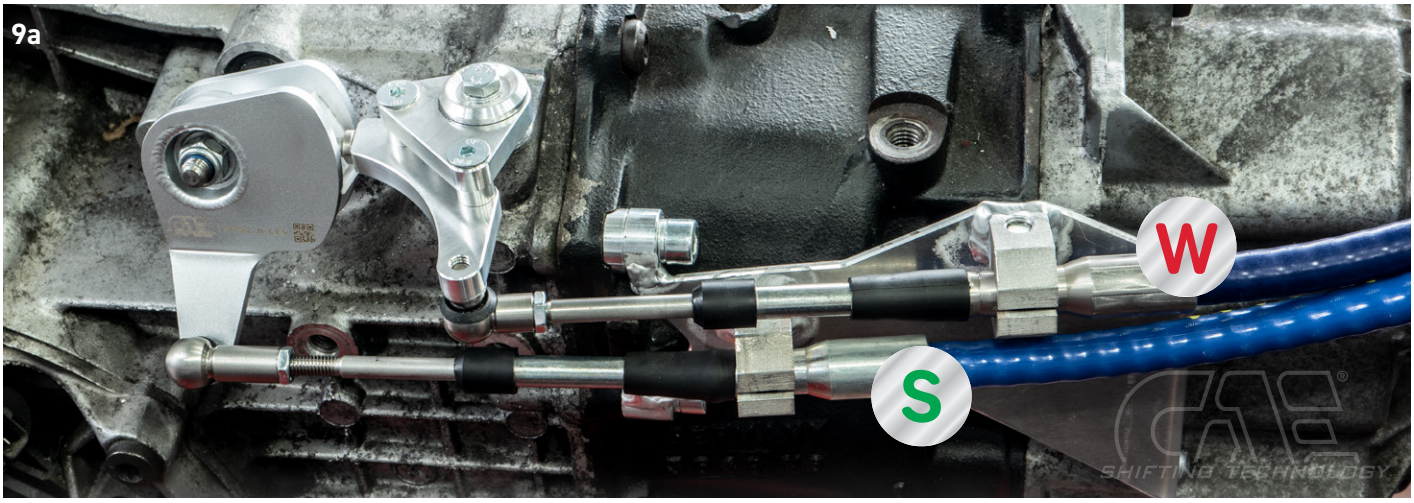
- Place the shifter on the center tunnel and mount it with washers and nuts together with the lower part (from below) using M6x20 screws.
- After screwing the shifter and the box, be sure to secure them additionally with the self-locking nuts.
- The threads in the aluminum sheet of the box serve only for the simpler assembly.
- Apply body sealant or the supplied foam rubber strip as shown to achieve gas tightness. (Picture 8)

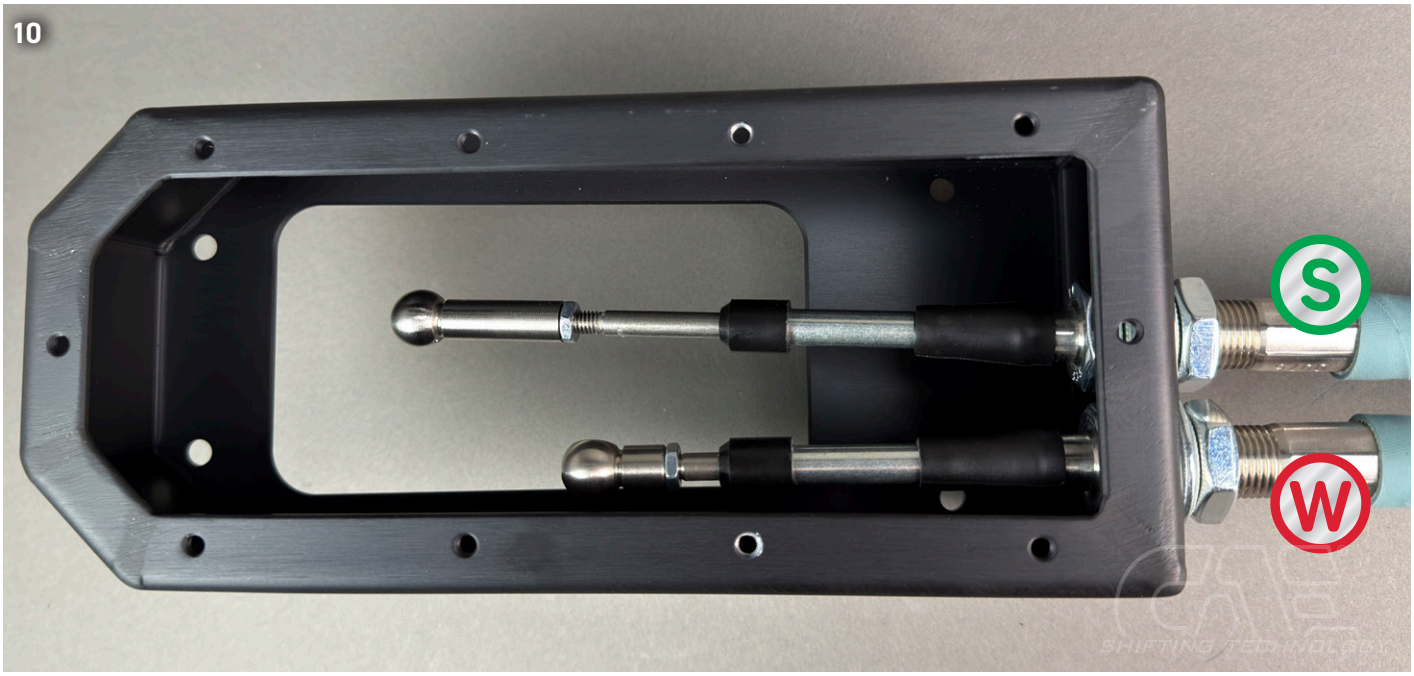


Installation of the shift cables

- Remove the ball cups, M6 nuts, rubber sleeves and 1 large nut and washer each from the shift cables on the threaded side. Slide on the heat protection hose.
- First insert the shorter (select) cable into the rear upper gear cable clamp and the left hole on the box, clamp with clamping screw. (Picture 9, 9a, 10)
- Immediately press ball socket onto ball on transmission selector lever. Mount washer, nut and sealing collars as well as flat M6 nut and short ball socket in the box. Proceed in the same way with the longer (shift) cable. Lay the cables so that they are not under tension.







ⓘ 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).

S W **Connection shifter**

S W **Connection gearbox**





Adjusting the center position

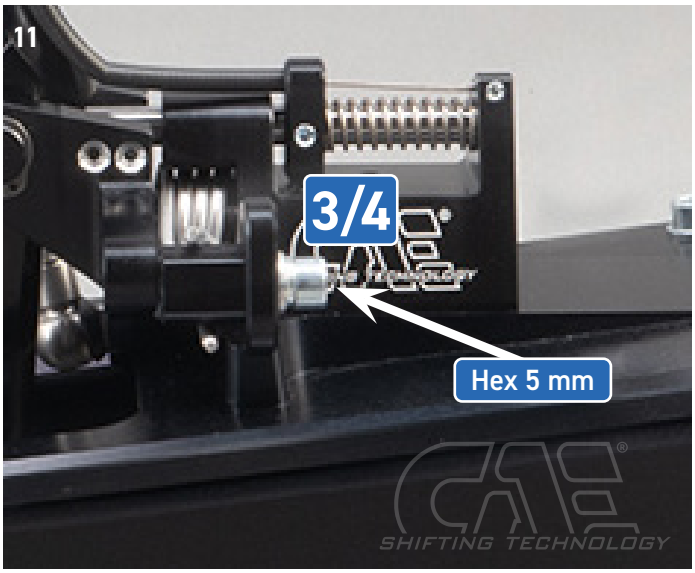
- First pull off the side coupling rod on the shifter. (Picture 10)
- Adjust the spring stop (Picture 11) under the gearshift bracket so that the shift lever is slightly tilted to the right (approx. 5 degrees).
- Now shift the gearbox to 3rd or 4th gear. To do this, move the shift lever forwards or backwards without moving it sideways.
- Adjust the "Select" ball socket on the gearbox so that it can be pressed onto the ball without changing the length of the cable.

CHECK: When 3rd and 4th gear are engaged, the lateral clearance at the shift lever must be the same, otherwise adjust at the coupling rod! (Picture 12)

Tighten the M6 nuts on the ball socket(s) and coupling rod.

PLEASE NOTE:
The small double spindle has R/L thread.
At the bottom of the Unibal joint is the left-hand thread. The spindle is made of aluminum!
Tightening torque of the nuts max. 3Nm!



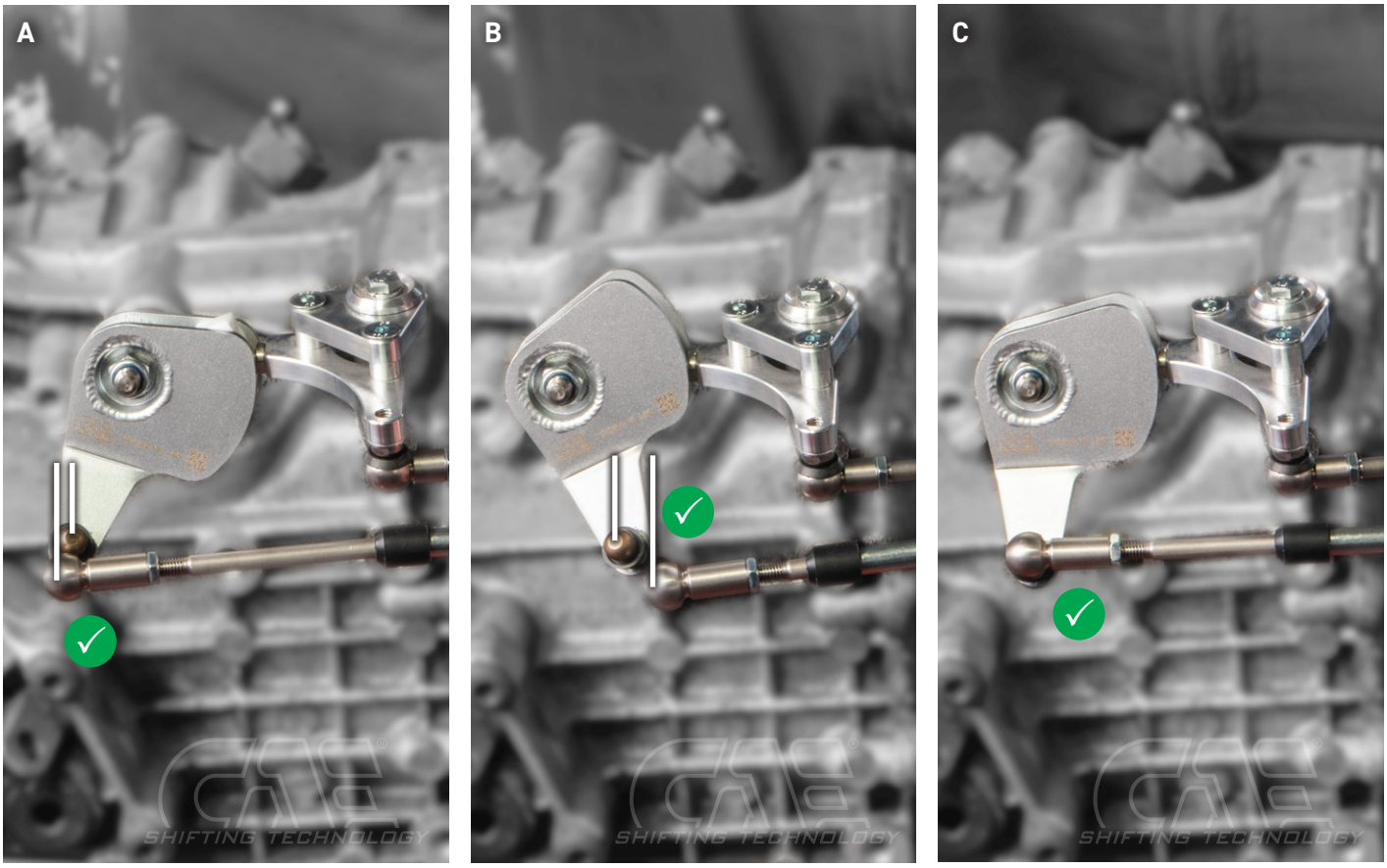




CHECK THE END POSITIONS OF THE SWITCHING CABLES

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

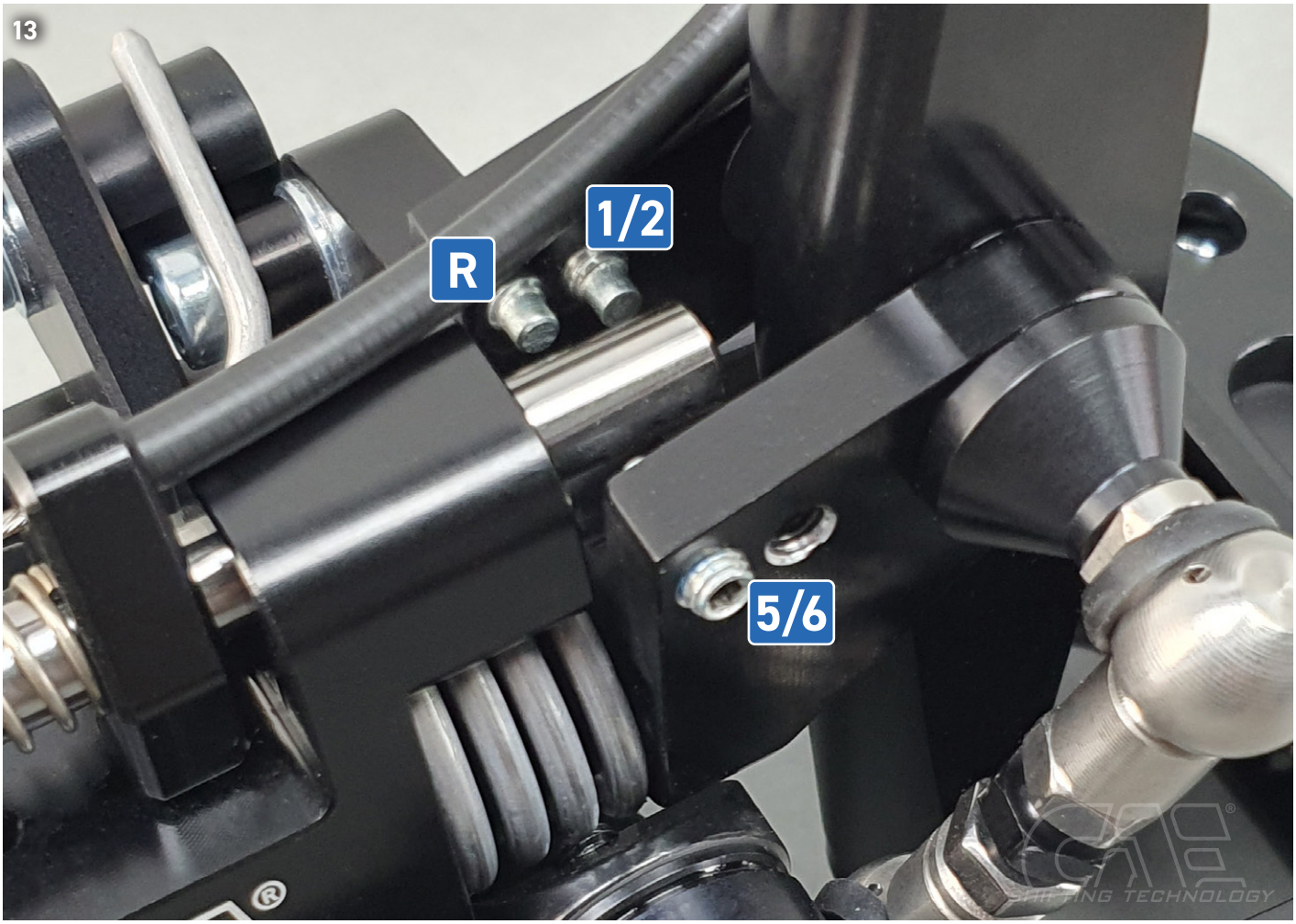
- After checking and adjusting, reassemble the ball cups from the shift cable. (Picture C)

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 travel of the 5 & 6 gear gearbox

- Shift gearbox via shift lever to level 1/2 and adjust stop screw until gears can be changed cleanly. (Picture 13)
- Shift gearbox via shift lever to 5th / 6th gear and adjust stop screw until gears can be changed cleanly. (Picture 13)
- Actuate reverse gear lock via cable and shift gearbox into reverse gear.
  Screw in stop screw until reverse gear can be engaged cleanly. (Picture 13)

13



- Replace cover plate of shifter box with sealant and screw together, reinstall exhaust and cardan shaft. (Picture 14)

14



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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