MORE THAN 20 YEARS EXPERIENCE

CAE SHIFTING TECHNOLOGY

Installation instructions

10022

Peugeot 205 / 206 / 309

5 & 6-speed gearbox

PEUGEOT 205 / 206 / 309

WWW.CAE-RACING.DE

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!
- 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)
- Adapter bracket with associated screws (Picture D)
- 1x shift cable (S), 1x selector cable (W) (Picture E, F)

A

B

C

D

F

G

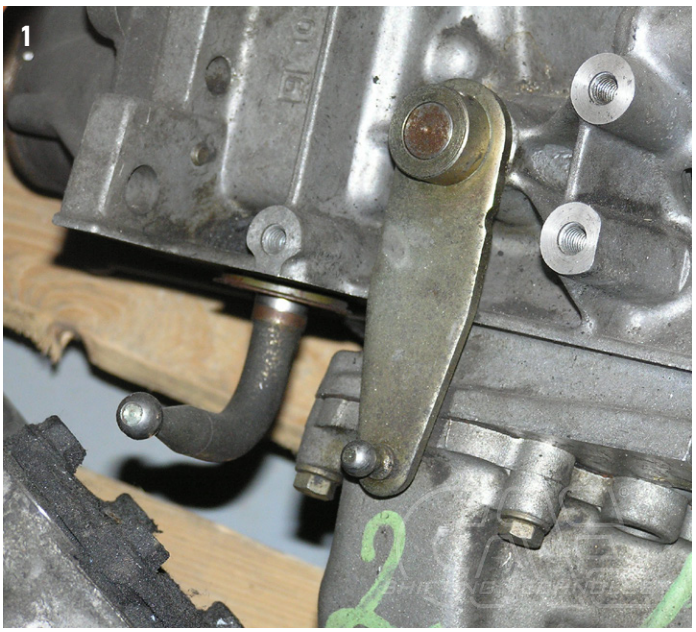
ⓘ The shifter is intended for vehicles without interior equipment. If the center console is installed, it must be removed or cut out until appropriate clearance is ensured.
The shifter should be screwed directly onto the sheet metal of the center tunnel, any existing carpet must be cut out.

The removal

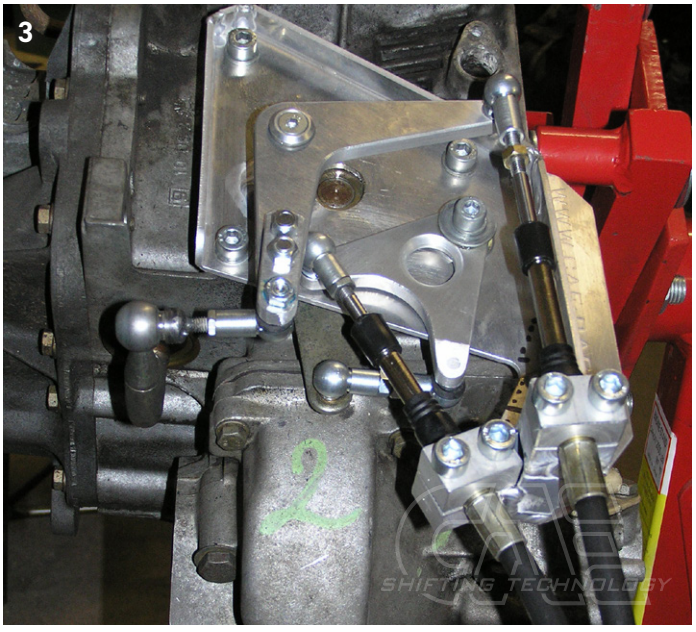
- Completely remove original shift lever incl. shift cables and deflection.

Installation CAE Shifter

- 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!
- **Standard version:** Ball head 13mm is not used. (Picture 1)
- **Sport:** Screw in ball head 13mm as shown and turn ball socket accordingly by 90° degrees. (Picture2)

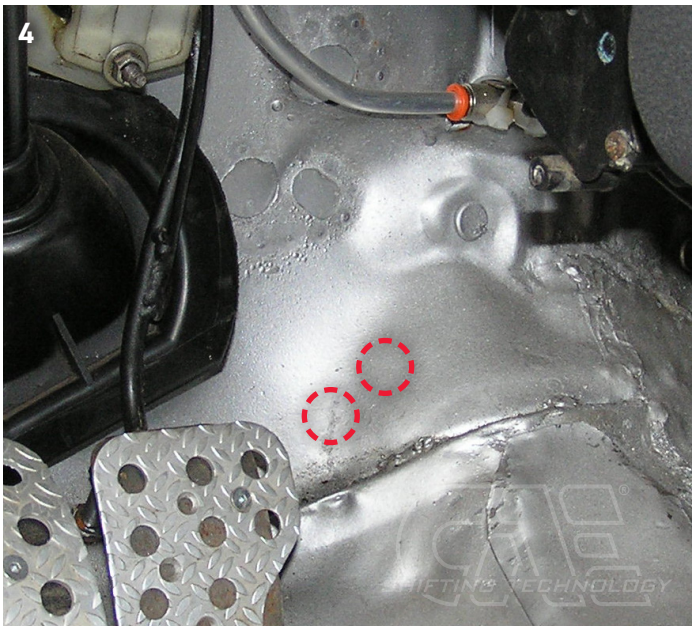


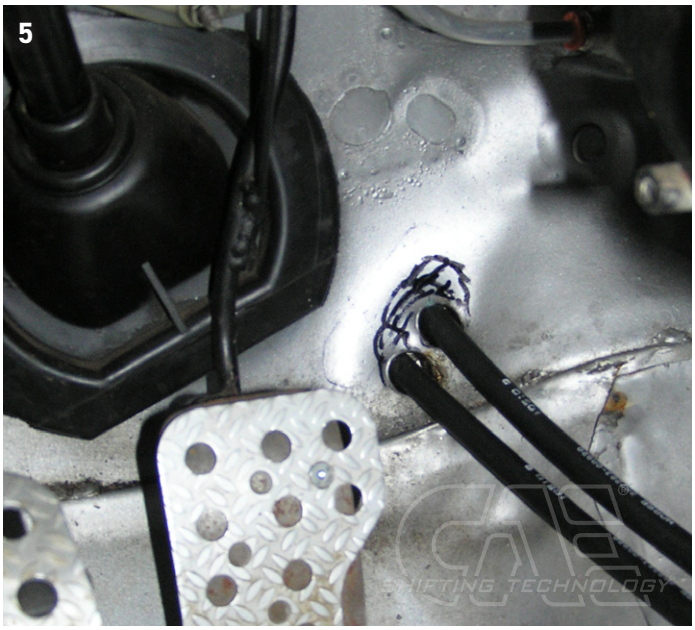
- Screw the cable holder / deflection unit to the gear unit. Clean threaded holes in gear unit, glue screws in place during assembly.
- It is essential to ensure absolute cleanliness when installing the bell crank.
  Grease all bearing bushings and ball heads well.
  Press the ball heads onto the corresponding balls and secure them with cotter pins.
  The picture shows the pulley holder ready mounted on the gearbox. (Picture 3)



Routing the shift cables

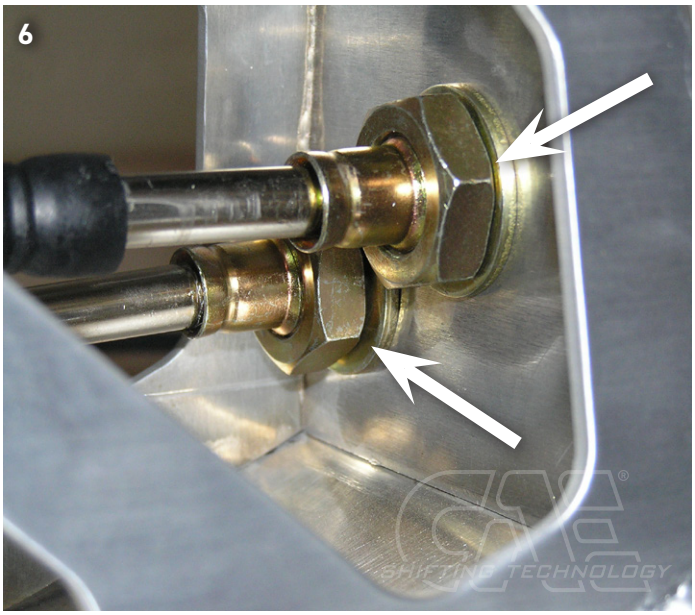
- Drill a hole in the tunnel according to the marking in this illustration for the routing of the shift cables to the engine compartment. (Picture 4, 5)
- The holes must be large enough (approx. 18mm Ø) to ensure that the cables can still move freely when the engine/gearbox unit is fully tilted.





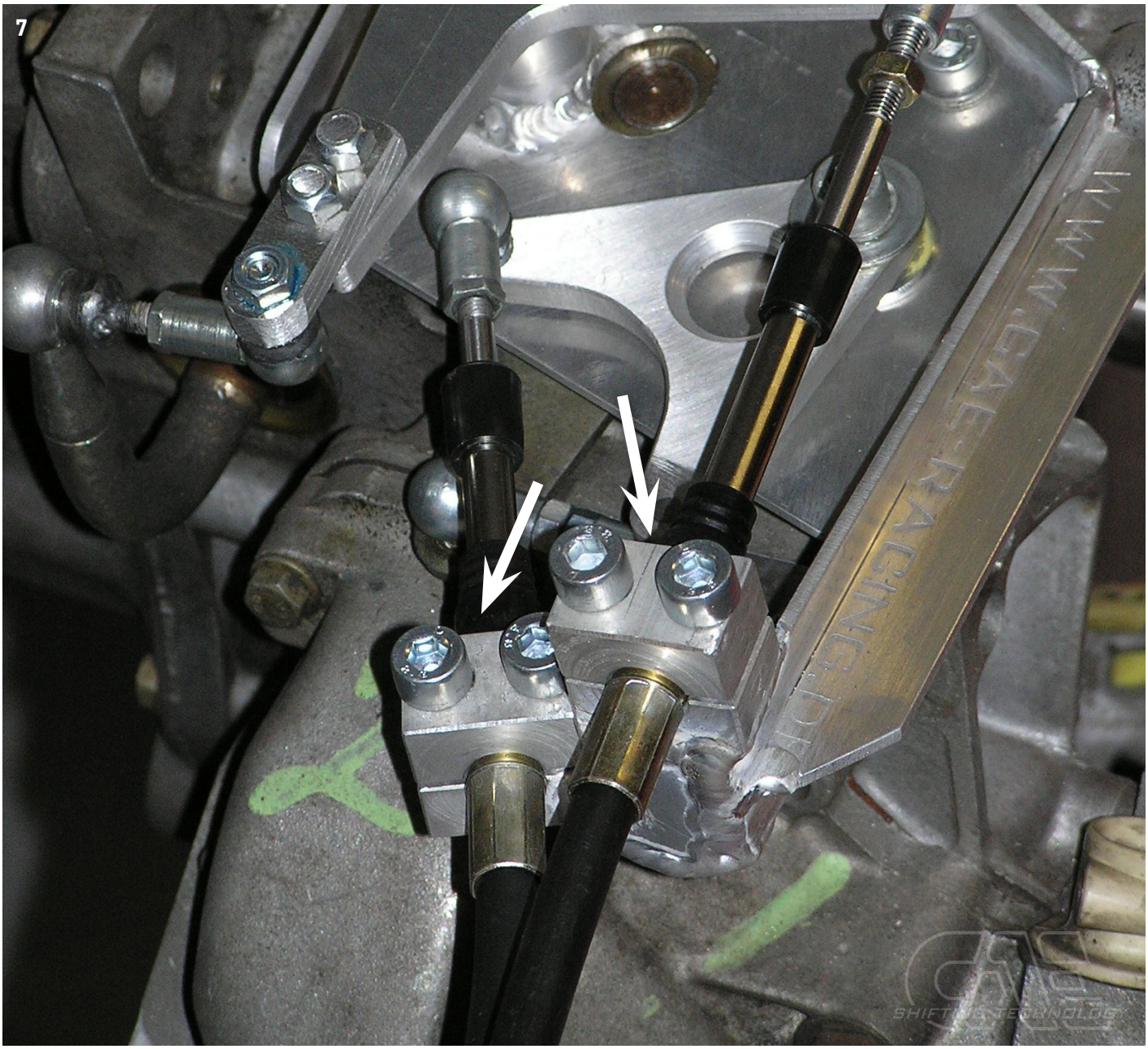
Installation CAE Shifter

- Screw in the shift cables before installing the tower.
- The threads of the shift cables must protrude as far as possible from the shift tower; no thread is visible on the inside. (Picture 6)
- The selector cable is marked accordingly and is installed on the left. Please note the correct position of the flattened washer.
- For disassembly and assembly of the nuts, pull off the rubber sleeves, the nuts can then be slipped over them.
- Then screw on the ball heads and press them onto the shift and L levers (they will be adjusted later).



- Before screwing on the shifter tower, glue the enclosed foam rubber strip onto the tunnel so that it later seals the tunnel opening.
- Now guide the shift cables through the drilled holes and mount the shifter on the center tunnel.
- Optionally, cut two pieces of hose with an inner diameter of 12mm Ø to protect the shift cables and slide them over the shift cables in the area of the sheet metal bushings.

- Screw the switching and selector cables into the clamps on the retaining plate.
- Press the ball cups onto the corresponding balls on the levers and secure them with cotter pin clips.



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

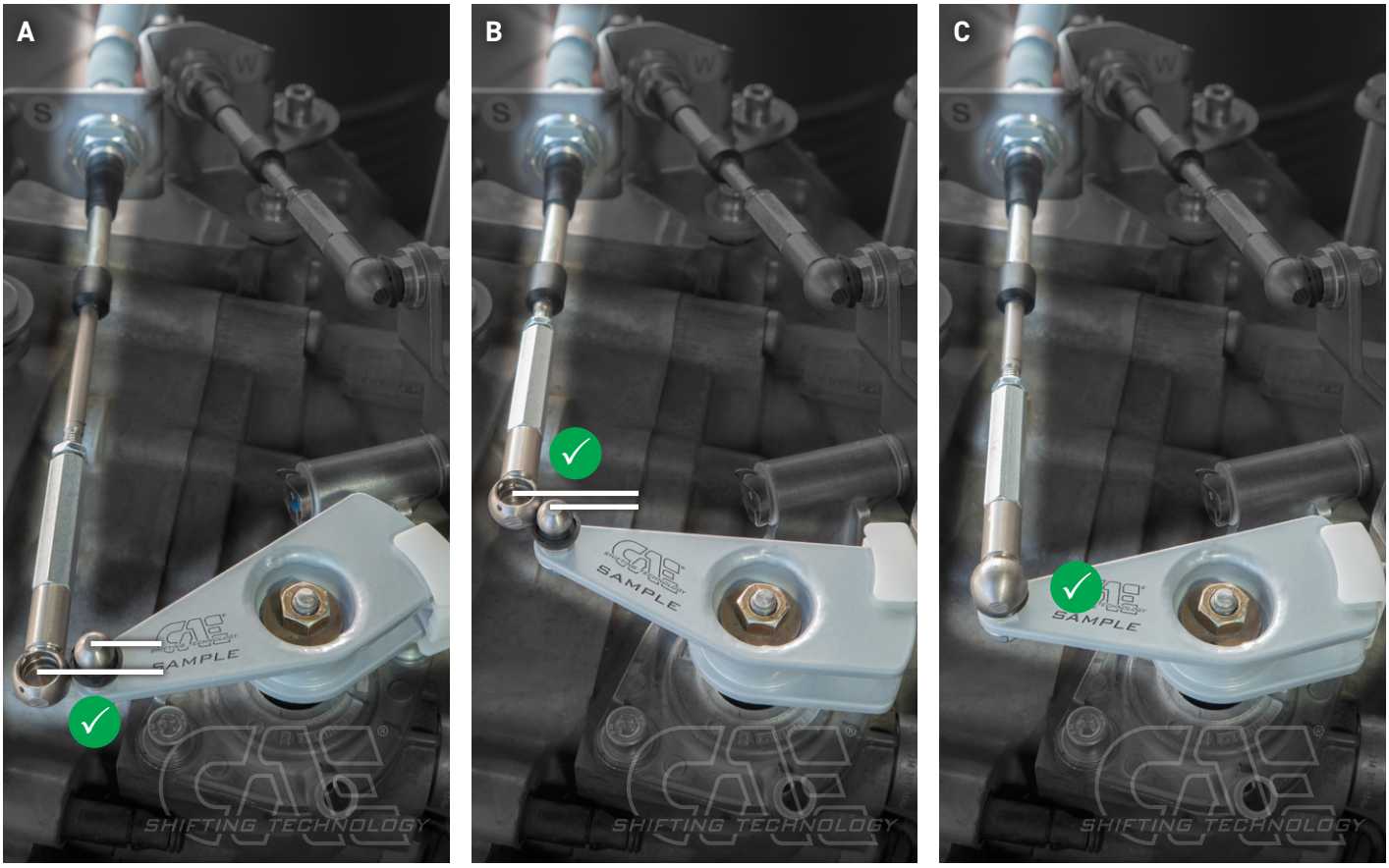
Exhaust systems generate incredible temperatures, which can be several 100 degrees, especially under full load! Therefore, the shift cables must be absolutely protected with the blue-gray protective hoses against the strong heat effect!
Also the protected shift cables must not be in contact with the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

- Loosen the spring stop under the tower so that the center position spring has no effect.
- Shift the gearbox to 4th gear by hand using the bell crank.
- The 4th gear is on the left as seen in the direction of travel. To engage it, simply swing the shift lever to the left without load.
- Now determine the desired center position of the shift lever by turning the push rod to the lateral L lever.
- In the center position, the gearshift lever should be tilted very slightly to the left
- Tighten the lower spring stop (Picture 8) under the gearshift bracket with an Allen key.
- It should now be possible to change gears 3 & 4 smoothly, otherwise readjust.
- Tighten the nuts of the push rod to the L-lever.
- Now search for level 1 / 2 using the shift lever and screw in the stop screw until the gears in levels 1 & 2 can be changed cleanly. (Picture 9)
- Now shift gearbox to 5th/6th gear level using shift lever and screw in stop screw until 5th gear can be engaged cleanly. (Picture 9)
- Actuate locking pin via cable and shift transmission to reverse gear level. Screw in stop screw until reverse gear can be engaged cleanly.
- If necessary, repeat the entire procedure if the gears still cannot be changed cleanly.

Please note: a "stopped gearbox " can no longer be shifted cleanly after several dry shifting exercises. Therefore, it is best to readjust while driving.

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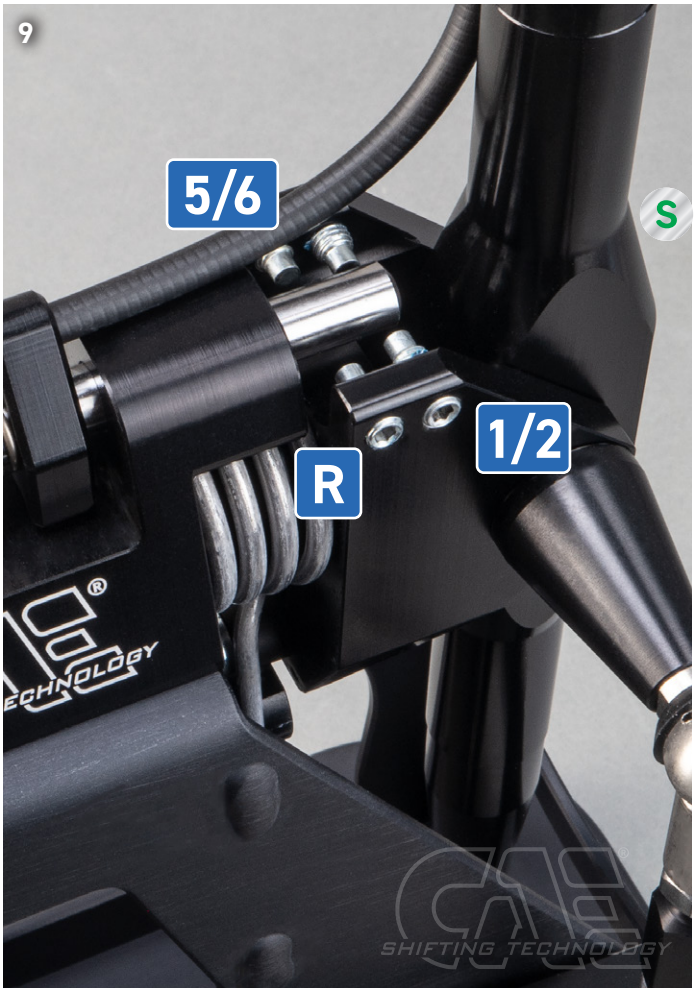

- Loosen the spring stop under the turret so that the center position spring has no effect.
- Shift the gearbox to 4th gear by hand using the bell crank.
- The 4th gear is on the left as seen in the direction of travel. To engage it, simply swing the transmission input lever to the left without load.
- Now determine the desired center position of the shift lever by turning the push rod to the lateral L lever.
- In the center position, the gearshift lever should be tilted very slightly to the left
- Tighten the lower spring stop (Picture 10) under the gearshift bracket using an Allen key.
- It should now be possible to change gears 3 & 4 smoothly, otherwise readjust.
- Tighten the nuts of the push rod to the L-lever.
- Now search for level 1 / 2 using the shift lever and screw in the stop screw until the gears in level 1 & 2 can be changed cleanly. (Picture 11)

ⓘ The stop screw is screwed in differently than shown here on the left side of the BE3 gearbox!

- Now shift gearbox to 5th/6th gear level using shift lever and screw in stop screw until 5th gear can be engaged cleanly. (Picture 11)
- Operate locking pin via cable and shift gearbox to reverse gear level. Screw in stop screw until reverse gear can be engaged cleanly.
- If necessary, repeat the entire procedure if the gears still cannot be changed cleanly.

ⓘ Please note: a "stationary gearbox" can no longer be shifted cleanly after several dry shifting exercises. Therefore, it is best to readjust while driving.

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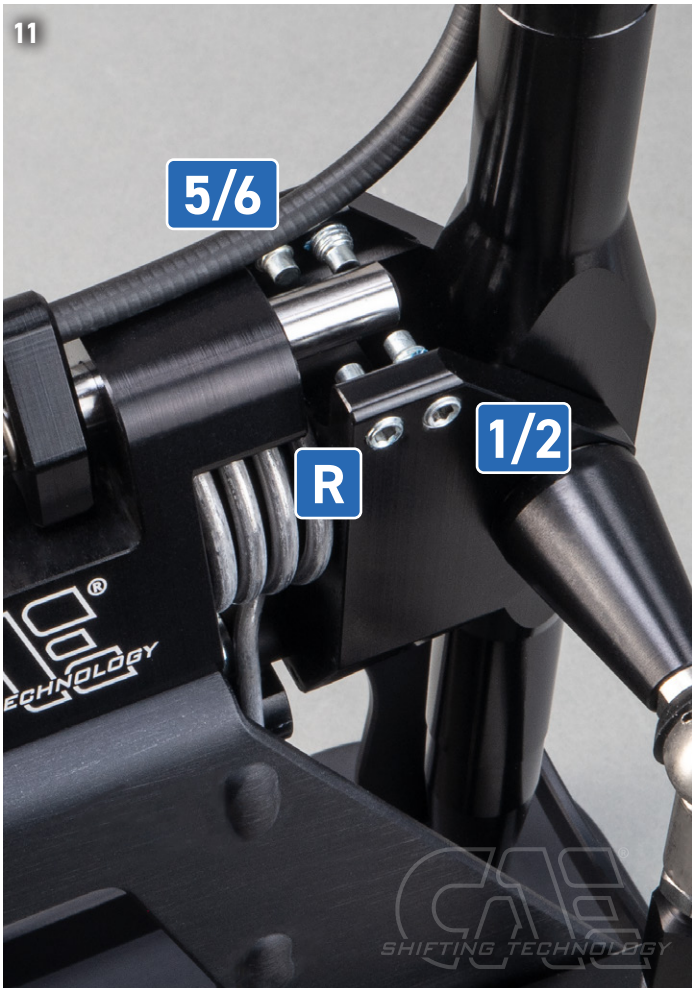

FINALLY! Check all functions and settings during the test drive and readjust if necessary!

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.

RACE THE ORIGINAL

SHIFTING TECHNOLOGY

Alte Bottroper Strasse 103
D-45356 Essen
0049. 201. 8 777 802
service@cae-racing.de

WWW.CAE-RACING.DE

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