CAE Ultra Shifter

SHIFTING TECHNOLOGY

10014 / 10013ST

Porsche
996, 997

with original
Porsche shift cables

Installation instructions

WWW.CAE-RACING.DE

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!

ⓘ 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!

ⓘ The shifter is intended for use with the original center console. No modifications need to be made to the center console itself. The shifter bag cannot be mounted, the cover frames and the storage compartment must be slightly modified for mounting.

ⓘ **PLEASE NOTE: Due to the motorsports design and therefore missing rubber damping element, engine and transmission noise & vibrations can be transmitted to the interior.**

The scope of delivery

- 1 x Switching unit completely pre-assembled
- 1 x Ball socket for selector cable (long)
- 1 x ball socket for shift cable (short)
- 2 x cotter pin clamps to secure the ball cups

The removal

- Remove the center tunnel trim parts. (Picture 1)
- Remove lower storage tray from instrument panel
- Remove lower switch panel from instrument panel
- Unscrew side parts of center console
- Detach switch cables from switch bracket
- Remove the original switch bracket completely
- Completely remove the adjustable plastic ends of the original shift cables,
  only the barrel-shaped, ribbed plastic ends of the shift cables remain.


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The installation

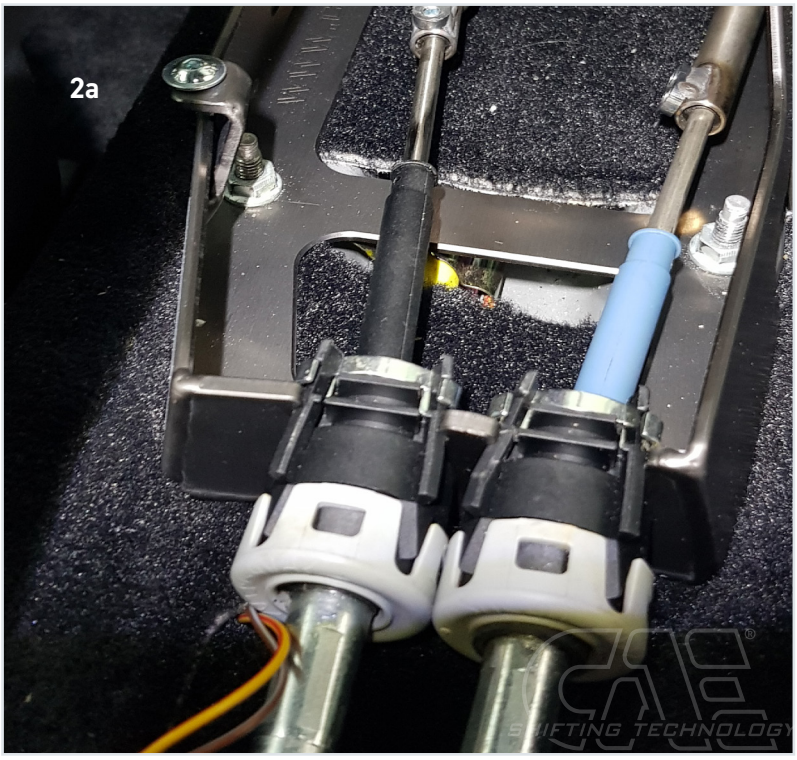
ⓘ **Never kink switching cables!**

Laying the shift cables

- The shift cables must be crossed or swapped before installing the CAE shifter.
  The selector cable must then run on the right, the shift cable on the left.
  This can be done easily in the interior.

Install the CAE cable ends (ball cups):

- Insert the plastic barrels of the original shift cables into the holes of the CAE ball cups and secure with the grub screws use 2.5 mm Allen key (Picture 2) The long ball socket goes on the selector cable (right) the short ball socket onto the shift cable. ⓘ **Both openings of the ball cups point upwards.**

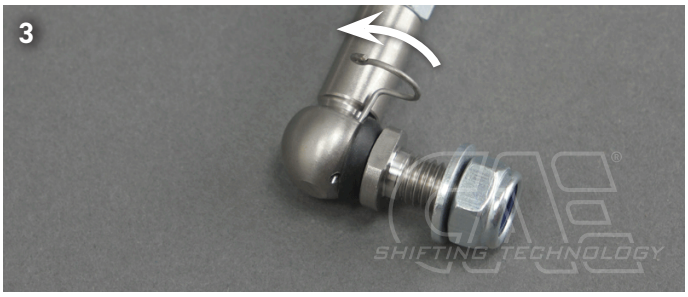


Assembly of the CAE Shifter

- Screw the CAE shifter onto the center tunnel using the original nuts.
  When mounting the gearshift bracket, insert the cables into the interior of the shifter.

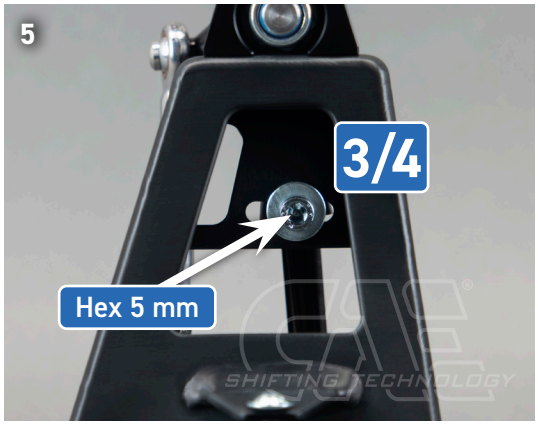
- When the shifter is screwed down, press the cables into the brackets and put the greased ball cups onto the ball heads of the shifter and selector lever. (Picture 2a)

- Then install the cotter pin clip on the selector cable ball socket.
(not yet on the shift cable ball socket) (Picture 3, 4).



- The cotter pin clip from the selector cable goes very close to the shifter plate collar, possibly touching it.

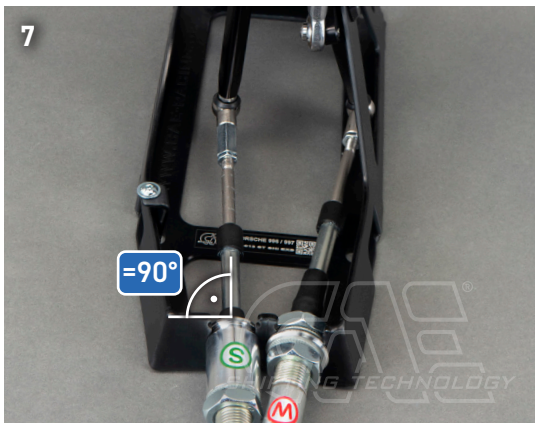
Adjusting the shift travel of the 6-speed gearbox and function test



- Adjust the center position of the shift lever according to these specifications under the shift block using a 5 mm Allen key to set the spring stop. (Picture 5)

- The shift lever must be inclined approx. 10 degrees to the right in the direction of travel in 3rd/4th gear. This is the neutral position. (Picture 6)

ⓘ CHECK: The shift cable must run at right angles to the bracket in the neutral position. (Picture 7)



- Adjust the length of the connection rod of the L-lever by turning the knurled rod in such a way that, with 3rd/4th gear engaged, the play on the shift lever is the same on both sides.

- Slightly tighten the nuts of the connetion rod, the top is right-hand thread, below left-hand thread, the threaded spindle is made of ALU!
- In most cases the threaded connection rod is now adjusted to the shortest length.

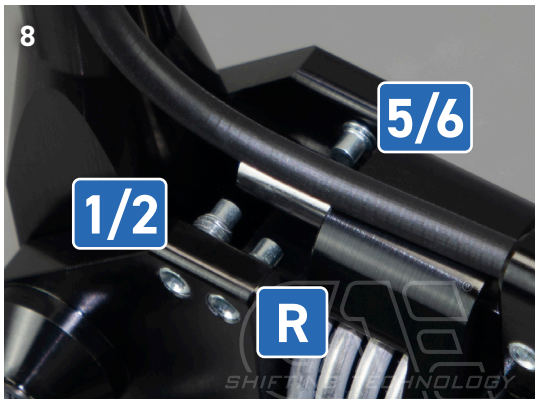
ⓘ CHECK: With 3rd/4th gear engaged, the lateral play on the shift lever must be the same.

- The gear change 3rd / 4th must now already work cleanly, otherwise readjust again.

- Now shift the gearbox to level 1 / 2 using the shift lever and screw in the corresponding stop screw until the gears can be changed cleanly in level **(1/2)**.
  Approx. 0.5mm play between screw and bolt. (Picture 8)

- Then shift gearbox to **(5/6)** gear level using shift lever and screw in stop screw until 5th and 6th gear can be engaged cleanly.
  Approx. 0.5mm play between screw and bolt. (Picture 8)

- Actuate reverse gear locking pin via pull and shift gearbox to reverse gear level. Screw in stop screw until reverse gear can be engaged cleanly.
  Approx. 0.5 mm play between screw and bolt. (Picture 8)



!!!ATTENTION !!! the spring lock in the gearbox must be overcome for the reverse gear!
Increased force required!!!

- If the selection travel to the right or left is too small to reach all gears, (shift lever bumps) the center position of the shift lever must be corrected and the entire adjustment must be repeated.

After installation, check all functions of the gearshift in driving operation before mounting the center console and readjust if necessary.

Assembly of the center console

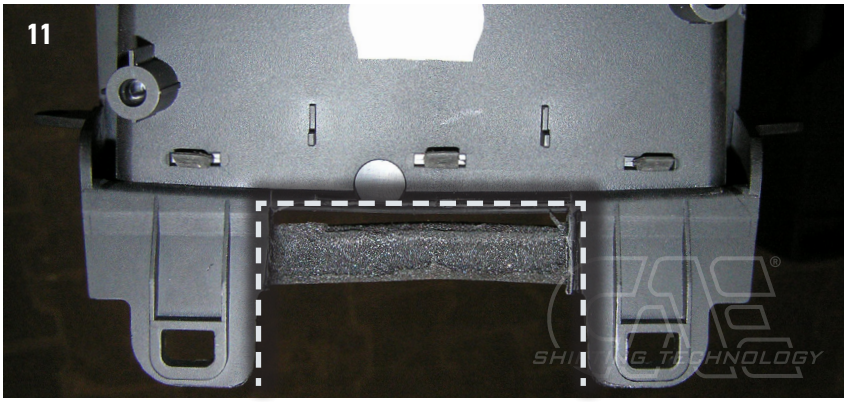
- Remove the ball socket of the shift cable once more from the shift lever to mount the center console.
  To fold over the center console, move the shift lever all the way forward: (Picture 9)

- Then push the ball socket back on and mount the securing bracket. (Picture 10)

- The center console can then be finally positioned and screwed into place.

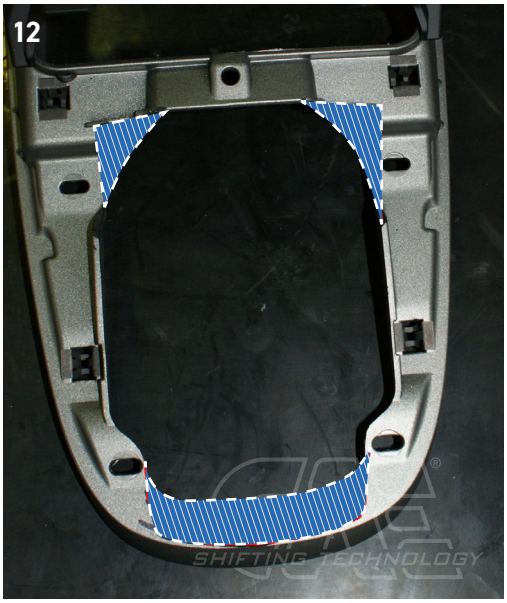
Editing the storage compartment

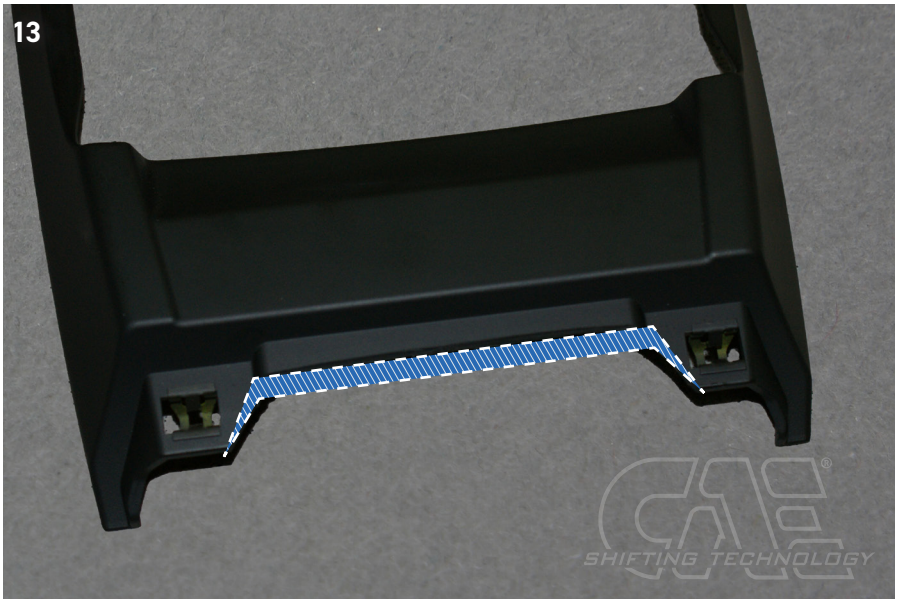
- Trim and install the storage compartment according to the following picture. (Picture 11)



Editing the cover frame

- Trim and install the two cover frames according to the following pictures. (Picture 12, 13)





- Reinstall remaining trim pieces and switch panel and check for proper operation.

We recommend our carbon cover 10013 COVER for a perfect look.

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 any questions or problems please be sure to contact us, we need YOUR feedback to improve our products.

CAE wishes you a good trip.

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