SHIFTING TECHNOLOGY

RACE THE ORIGINAL

Installation Manual

10025 AS

Opel Kadett D/E,
Astra F, Calibra,
Vectra

F13, F16, F17, F18, F20
5-speed gearbox



10025 AS

KADETT D+E / ASTRA F / CALIBRA / VECTRA A+B

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)
- 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 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)
- 1x Cable Bracket (Picture D)
- 1x shift cable (S), 1x selector cable (W) (Picture E, F)

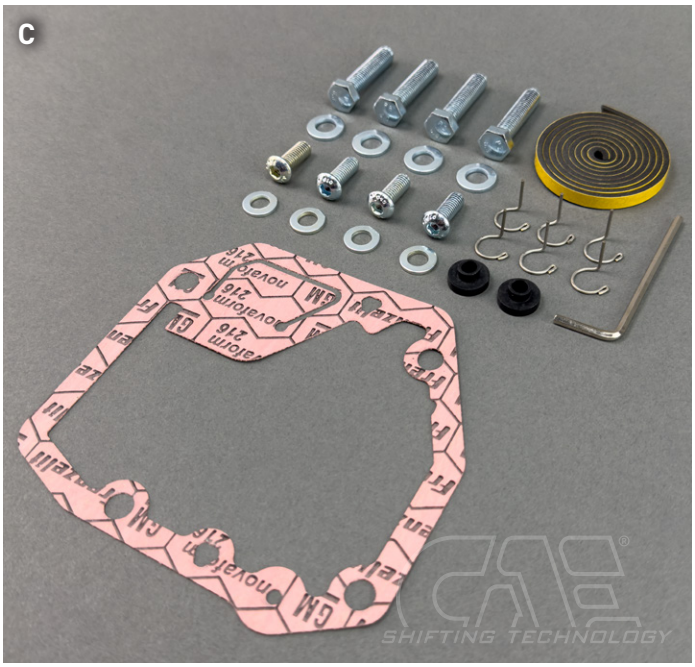
A



B



C



D



E



F



The shifter is intended for vehicles without interior equipment. The center console must be removed or cut out until a corresponding clearance is ensured.

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

Before starting work, familiarize yourself with the function and assignment of the individual parts.

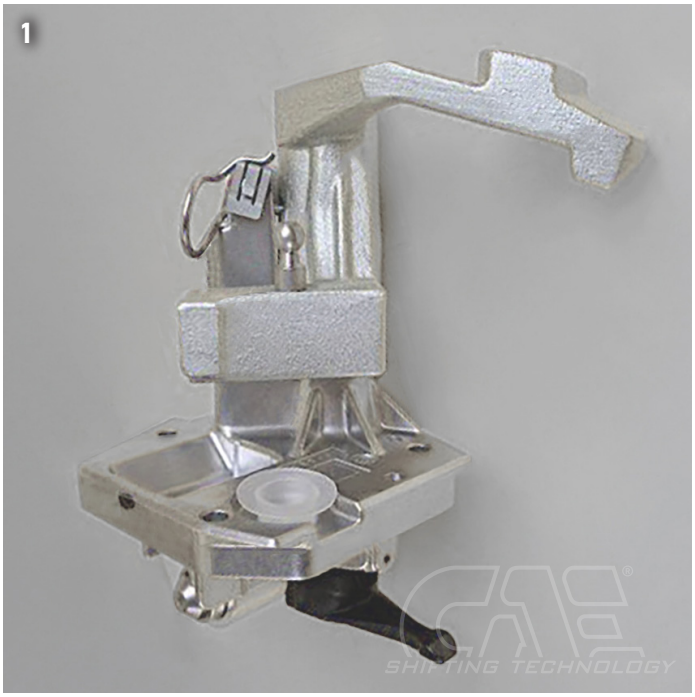
Generally mount a sealing sleeve on each ball and grease ball cups.
After complete assembly of the shifter, secure the ball heads with the cotter pins.
Glue all nuts / screws during assembly! Never kink shift cables!
Lubricate all moving parts occasionally with good spray grease.
For cleaning the aluminum parts we recommend commercial spirit.

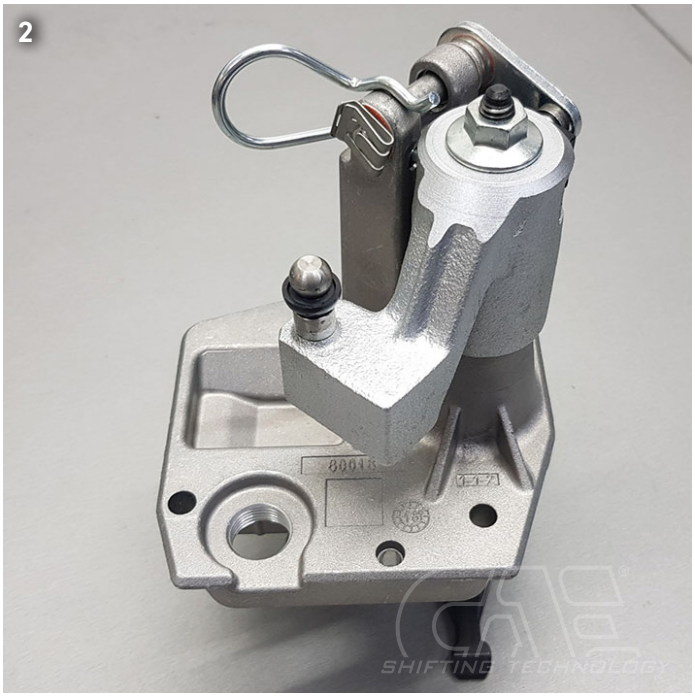
The removal

- Completely remove the original gearshift lever and gearshift cables.
- Unscrew the original gearbox linkage bracket from the gearbox (4 screws SW 11).

Modify the gear shift lever

- Cut off the absorber weight of the gear shift lever. (Picture 1, 2)
- Fit the rubber sleeves on the ball necks.





- Saw off the upper part of the shift rod deflection bracket.
- Modify the rubber bellows of the shift rod.
- Cut off the first 2 cm from the thin side of the bellows.





Schaltseile vorbereiten

- Auf der Shifterseite die Kugelpfannen und jeweils die erste SW24 Mutter und Scheibe / Zahnscheibe von den Seilen entfernen.

Preparing the cables for installation

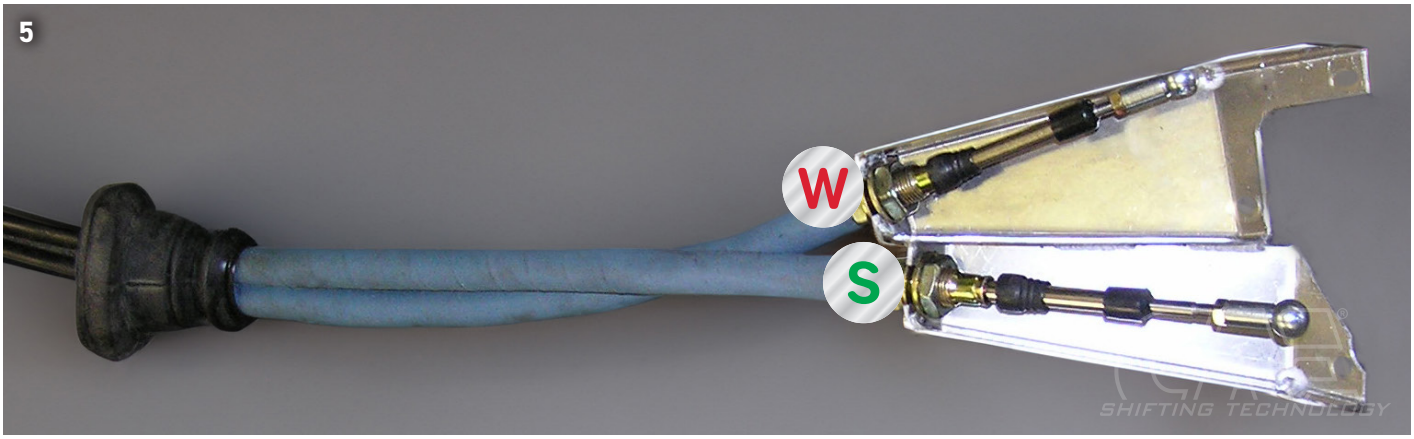
- Assembling switching cables (Picture 1, 2)



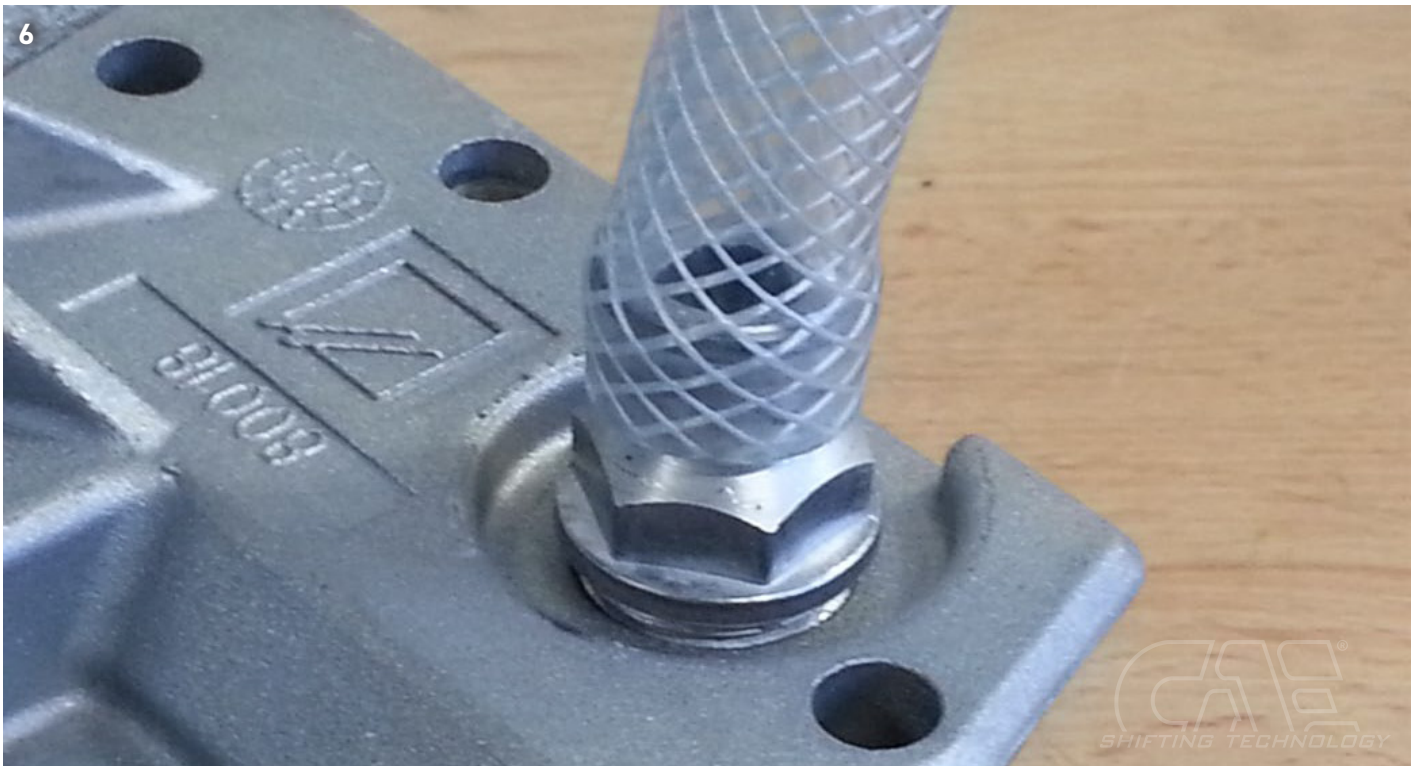


- Pay attention to the assignment of the cables.
  S W the stickers with border belong to the shifter, S W the stickers without border belong to the gearbox.
- Mount the gear holder and shift tower on the gear unit.
- Completely remove the ball cups, nuts and washers from the shift cables on the gear unit side. S W
- On the inside, S W remove the ball socket, 1 nut and washer in each case.

- Fit the shift cables to the transmission mount as shown in the next photo.
- Cover the blue heat protection hoses and secure them against slipping with cable ties.
- Pull over the modified bellows. Pay attention to the length assignment of the cables, the length is stamped on the cables.
- The 1200 selector cable has an M6 thread shortened by 12 mm on the inside!
- Tighten the SW24 fixing nuts securely, the M16x1.5 threads are visible by approx. 8-10mm.
- Remove the ball sockets and the first SW24 nut and washer from the cables on the interior side.
- To remove the nuts, pull off the rubber sleeves, the nuts can then be slipped over them.
- Installing the shift cables on the gear holder:



- Fit the transmission breather; attach the hose and lay it up in the engine compartment into a container if necessary.
- Loosen the speedometer cable
- Fit the shift cables to the gearbox bracket:





- Fasten the shift tower to the center tunnel using the Allen screws provided.
  If necessary, seal any remaining holes.

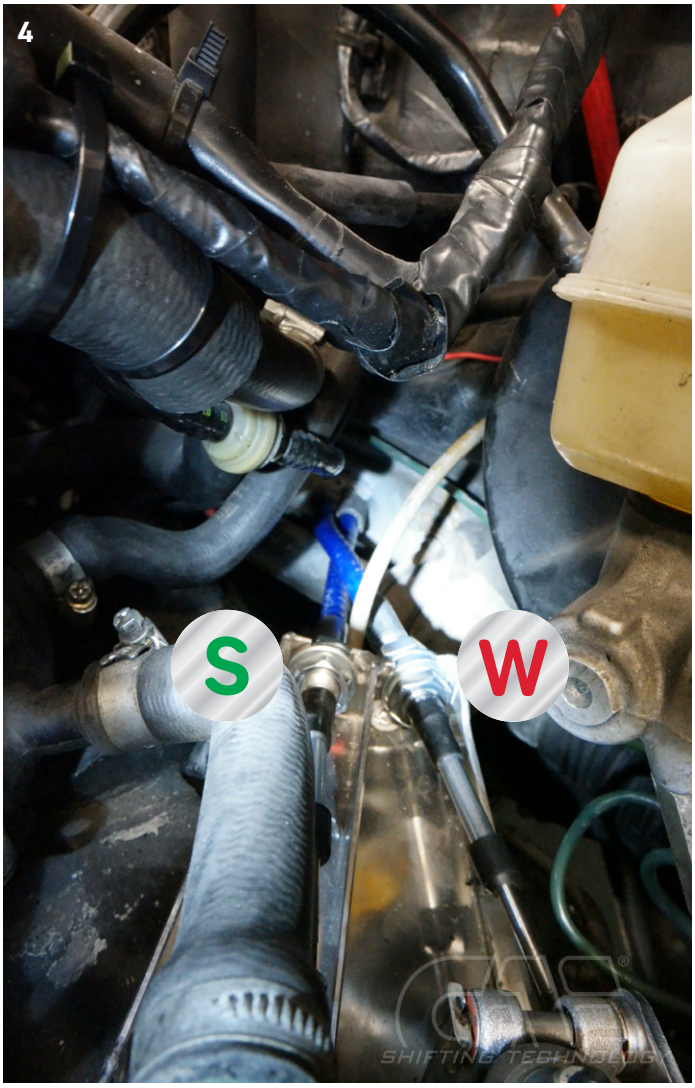
- Thread the cables into the holes in the front plate of the tower. It is essential to ensure the correct assignment of the cables (W) / (S) and the position of the washers and lock washers.

- Insert the shift cable (S) in the middle and the selector cable (W) on the right, (short M6 thread) into the shifter and screw the shifter tight.

- Thread nuts and washers over the cables again and screw tight. Then screw on the ball heads and press them onto the shifter.
  (Will be adjusted later).

- Before attaching the cables to the gearbox, slide the protective hoses onto the cables.

- Cut them at an angle at one end and slide a little brake cleaner over the cables into the holes. (The brake cleaner evaporates and the rubber hoses do not slip).



- Fasten the shift cables to the gearbox holder.
  The shift cables must protrude as far as possible from the shift tower; no thread is visible inside the shifter housing. (Picture 10)



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

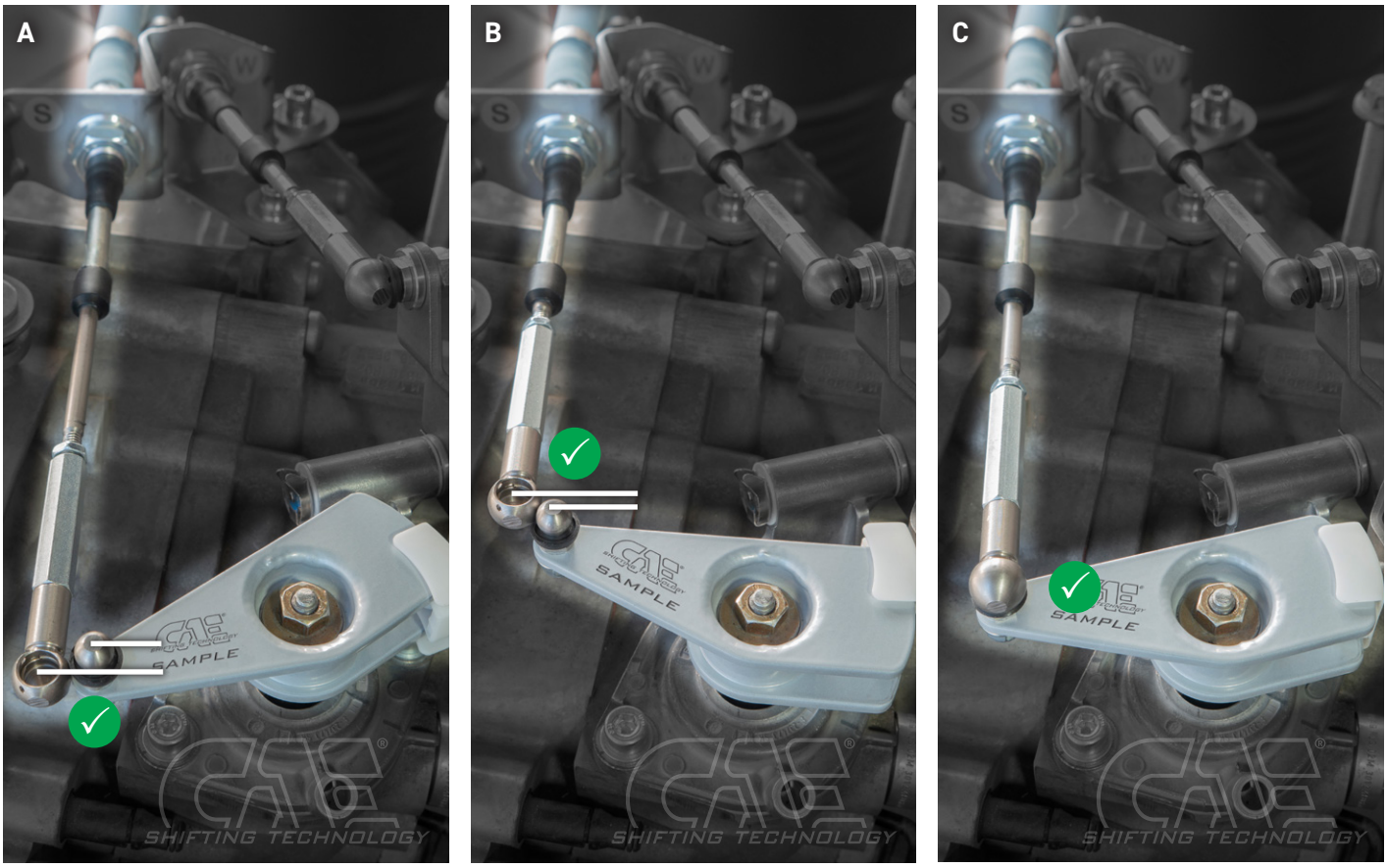
Exhaust systems generate incredible temperatures, which can be several 100 degrees, especially under full load! Therefore, the shift cables must be absolutely protected against the strong heat effect!
Also the protected shift cables must not be in contact with the exhaust. For turbo engines please take 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 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. !!!!!

Adjust the shift range 5 speed gearbox

- Unhook the coupling rod to the L lever on a ball (Picture 6).

- Now adjust the center position (3rd/4th gear) of the shift lever. To do this, adjust the lower spring stop under the gearshift bracket using a 5mm Allen key. (Picture 7)

ⓘ **CHECK: In the center position, the shift lever should be slightly tilted to the right.**

- Shift the gearbox to 3rd gear. To do this, push the shift lever forward.

- Adjust the length of the coupling rod so that it moves can be pressed open without lateral movement of the shift lever.

- Shift gearbox to level 1 / 2 by shift lever and screw in the stop screw until the gears in level 1 / 2 can be changed cleanly.

- Now shift gearbox to 5th gear level using shift lever and screw in stop screw until 5th and reverse gears can be engaged cleanly. (Picture 8)

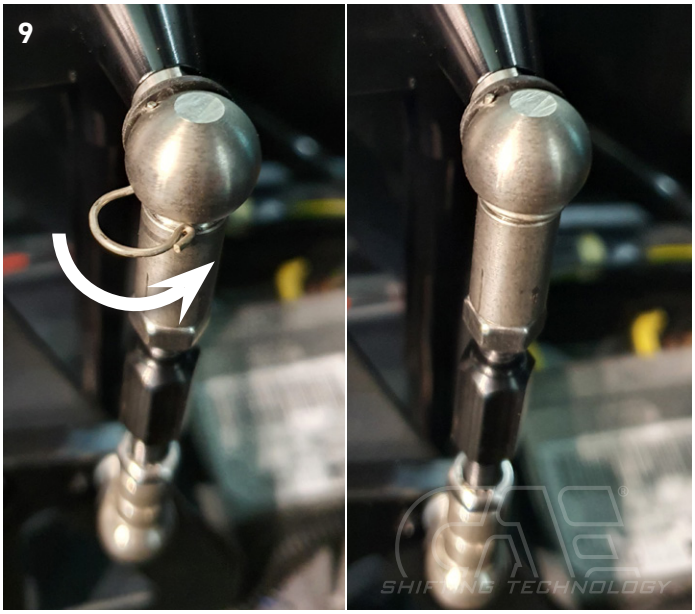
- Actuate locking pin via cable and shift transmission to reverse gear level. Screw in stop screw "R" until reverse gear can be engaged cleanly. (Picture 8)

- Install retaining clip on all ball cups. (Picture 9)









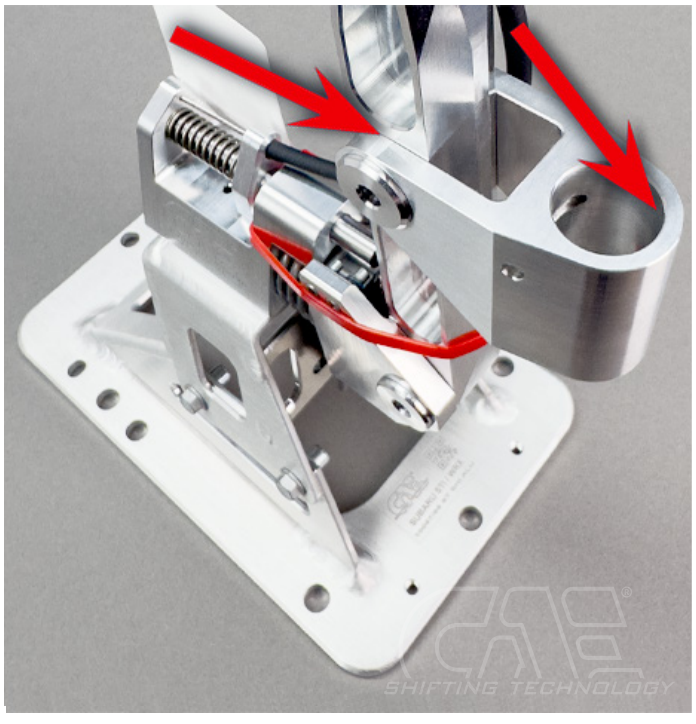
MAINTENANCE INSTRUCTIONS

- You can clean the shifter preferably with brake cleaner or IPA (isopropanol alcohol) and a soft cloth. Do not spray the cleaner directly onto the shifter (so as not to degrease the moving parts), but moisten the cloth well and then wipe it off..
- The moving parts of the shifter should be lubricated with adhesive lubricant two to three times a year. We recommend the adhesive lubricant HHS 2000 from Würth.
- Below you can see which areas should be lubricated with a spray (HHS 2000). (Depending on the model, some parts may look different or may not be present).

SCAN ME









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.



SHIFTING TECHNOLOGY

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

WWW.CAE-RACING.COM