

**CAE**  
SHIFTING TECHNOLOGY

**ULTRA  
SHIFTER**

Installation  
instructions

📍 10079

Suzuki Swift MZ  
5-speed gearbox



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!

### **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

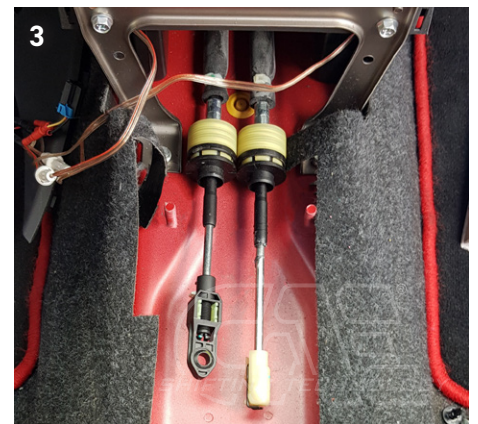
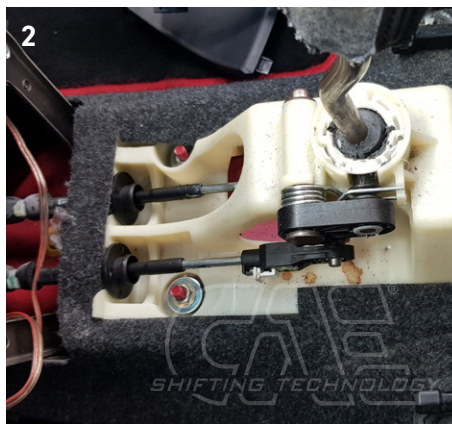
- ▶ 1x shifter completely monted, design depending on ordered variant (Picture A)
- ▶ 1x Shift knob incl. counter screw M6x20 V2A, design depending on ordered variant (Picture B)
- ▶ Accessories package (Bild C)



- i** The shifter is intended for vehicles with interior equipment. The center console itself does not need to be machined, the cover frame must be cut out for the installation until an appropriate corresponding clearance for the shifter is ensured.

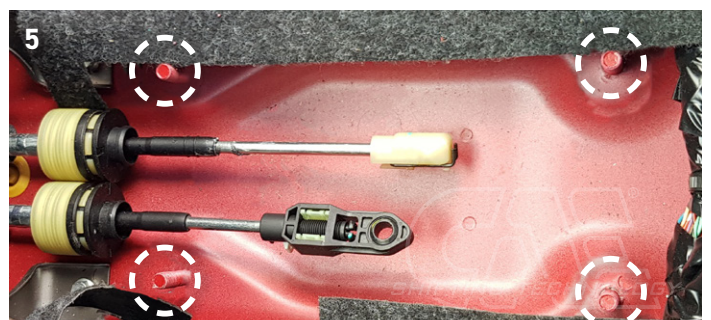
## Deinstallation

- ▶ Grasp the shift bag at the edge and pull up. (Picture 1)
- ▶ Unclip the cover frame upwards.
- ▶ Remove the rear part of the center console.
- ▶ Remove front center console. (Picture 2)
- ▶ Dismantle the shift cables and remove the shift bracket. Unscrew the 4 nuts of the switch bracket.
- ▶ To release the shift cable socket (white) from the shift lever, pull the steel clasp back and press the shift cable down.
- ▶ To release the dialing cable, simply lever off the end of the cable (black) from the L lever, making sure that the rubber grommet remains in the eye, and pull the dialing cable off to the side.
- ▶ The cables are clipped into the housing front panel and are pulled out upwards. The shift cables can remain in the vehicle. (Picture 3)
- ▶ To remove the shift cables, push the white plastic caps forward then pull the cables up and out of the bracket.



## The installation

- ▶ Place the 4 spacer bushes (15mm high) on the threaded bolts. (Picture 4, 5)



- ▶ Place the CAE shifter on the threaded bolts and insert the shift cables into the shifter housing.
- ▶ Screw on the shifter with the original nuts and push the white plastic caps forward to install the shift cables, then press the cables into the bracket. (Picture 6)
- ▶ Press the ball socket onto the shift cable, but not yet the adapter on the selector lever.

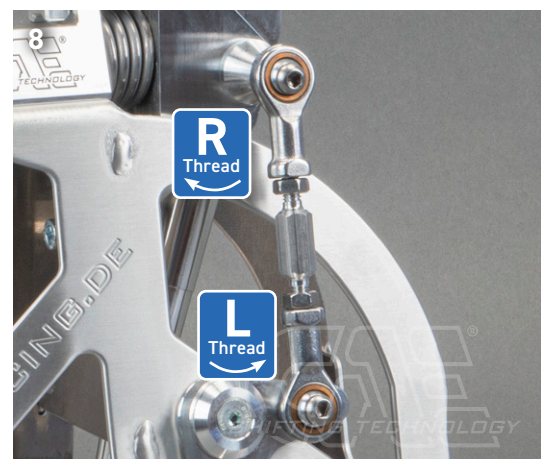


**i** Now first adjust the shifter completely.

### Adjust the shift range 5 speed gearbox

- ▶ Adjust / check the center position of the shift lever, it should be as vertical as possible, this is the (neutral) Pos 3/4.
- ▶ Adjust the setting if necessary / desired by moving the spring stop in the housing of the shifter. (Allen key 5mm) (Picture 7)
- ▶ Now shift the gearbox to 3rd or 4th gear. 3rd and 4th gear is in neutral zero position. To engage them, simply move the gearshift lever forward or backward without lateral movement.

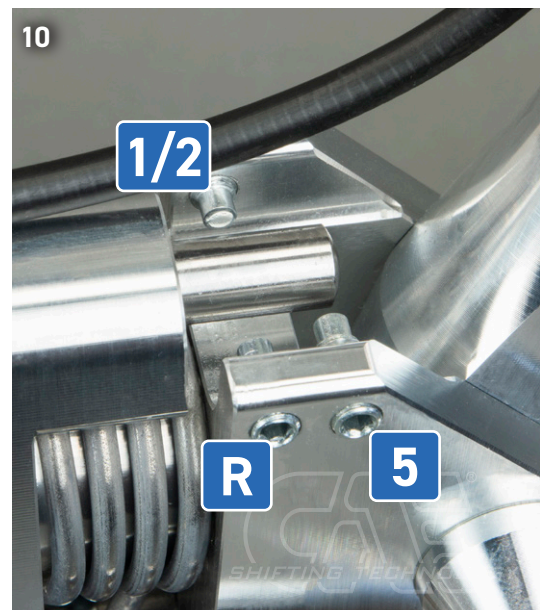
**i** **CHECK:** When 3rd/4th gear is engaged, lateral play on shift lever must be equal, otherwise readjust coupling rod. Tighten the lock nuts of the coupling rod only slightly!!! The coupling rod is made of aluminum!!!! (Picture 8)



- ▶ Now adjust the side coupling rod (R/L THREAD) so that the eye of the selector cable fits EXACTLY on the pin on the L-lever. Press the eye onto the L-lever (lightly grease) making sure that the grommet is properly seated. (Picture 9)
- ▶ Shift the gearbox to level 1/2 using the shift lever and adjust the stop screw until the gears can be changed cleanly. (min. 0.5 mm play from screw tip to stop bolt). (Picture 10)
- ▶ Shift gearbox via shift lever to 5th gear and adjust stop screw until gear Adjust the stop screw until the gears can be changed cleanly. (approx. 0.5 mm play from screw tip to stop bolt) (Picture 10)
- ▶ Actuate reverse gear lock via pull and shift transmission to reverse gear level. Screw in the stop bolt until reverse gear can be engaged cleanly. (Picture 10)



**i** **ATTENTION:** The difference of the two screws for 5th and R gear is now minimal. Very fine adjustment is required here!



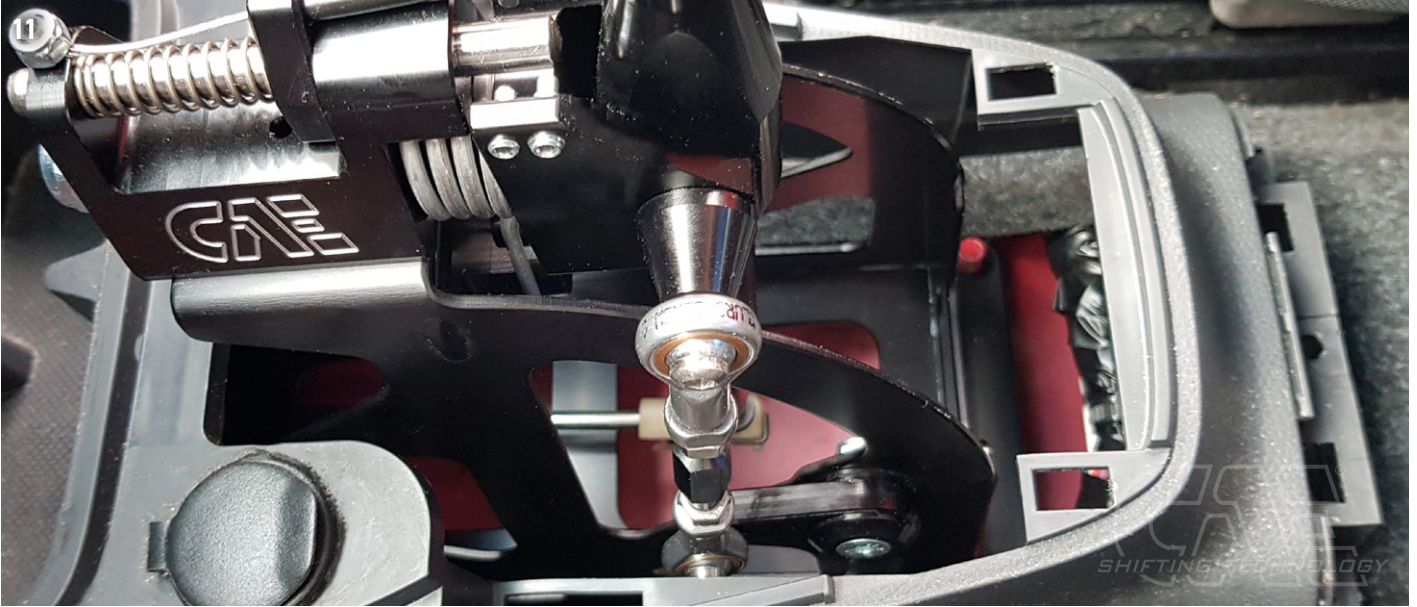
**i** After complete assembly of the shifter, lubricate all moving parts, we recommend Würth HHS 2000 (does not apply to plastic pans) Glue in all nuts / screws during assembly! Never kink shift cables!

**!** **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!**

## Machining the center console

**i** After the adjustment and test drive, the center console can be refitted

- ▶ To do this, loosen the shifter and shift cables again, push them backwards and put the center console over them. (Screw vL is under the selector cable) Now first tighten the shifter again, fasten the shift cables and then finally install the center console. (Picture 11)



- ▶ Process center console frame according to the following pictures so that it can be mounted above the shifter (Picture. 12, 13):



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

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