



TKX sequential shifter fitment

Lets first familiarise yourself with the operation of the shifter. The main shift lever is pulled back to change up gears and is pushed forwards to change down gears, neutral can be found between all gears but you can only select reverse from between gears one and two. To select reverse shift to neutral (between 1 & 2) and rotate the lock out lever backwards then engage reverse by pulling the shift lever backwards. Reverse the process to get back to first.

Before we start the installation we will first fit the shift lever and reverse lock out lever.

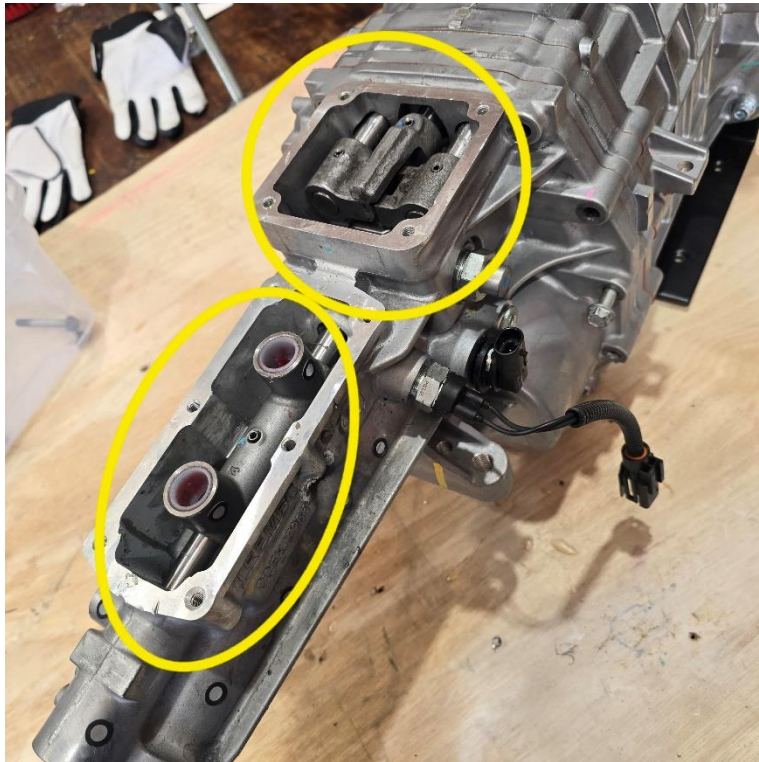
The shift lever is held on with an M8x30 button head screw and the lock out lever a M6x20 button head screw.

The shift knob is held with the M12x 1.75mm x 40 grub screw and the 12mm shims between the shift lever and knob to align the shift pattern. There is a silver spacer that can be used with a second M12 grub screw to make the lever a little longer and provide more leverage.

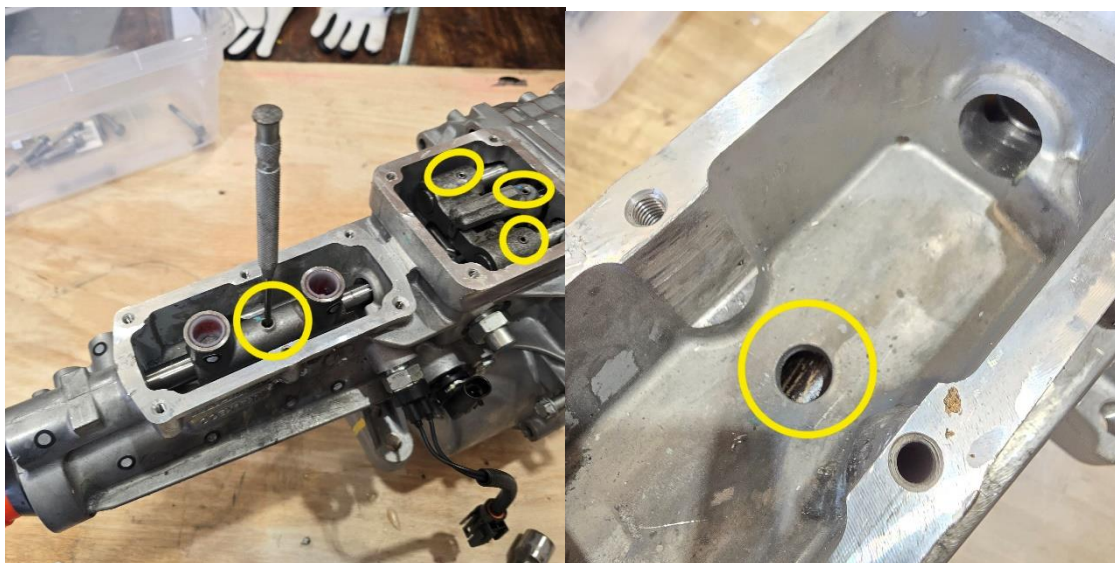


Make sure you play with the shifter a bit before fitting so you understand how it works and keep in mind that the shifts will feel quite stiff when the shifter is not fitted to the box do to the indexing mechanism. I would recommend placing the front of rear edge of the shifter on a bench when trying to shift it so you can apply enough force, you will not be able to change gears just holding the shifter in your hands.

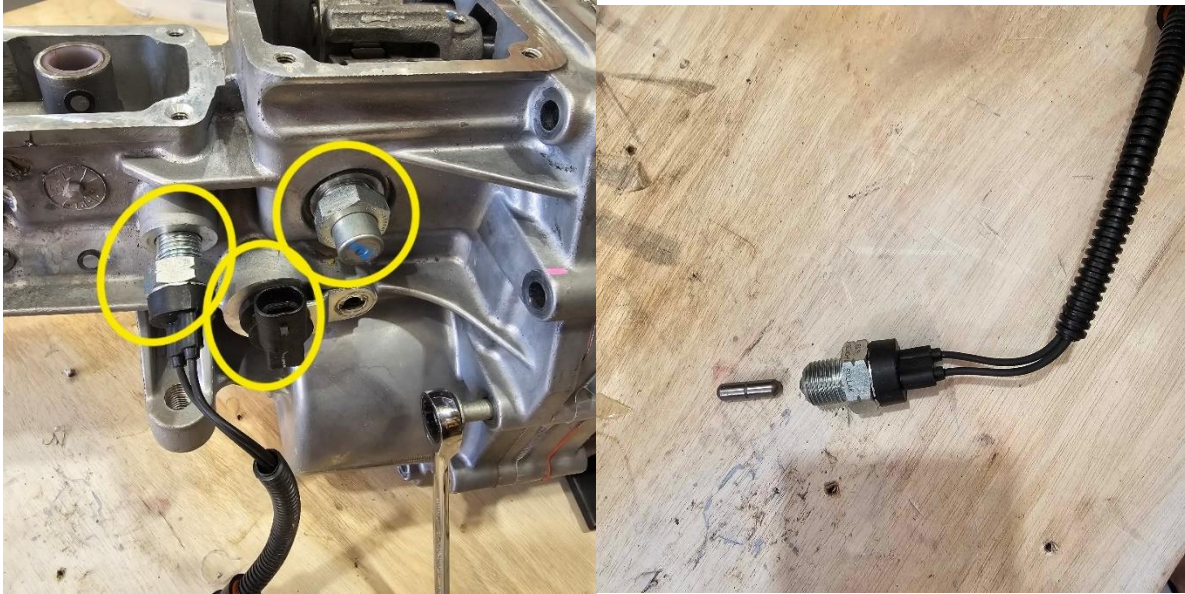
1. Remove factory shifter and front cover plate



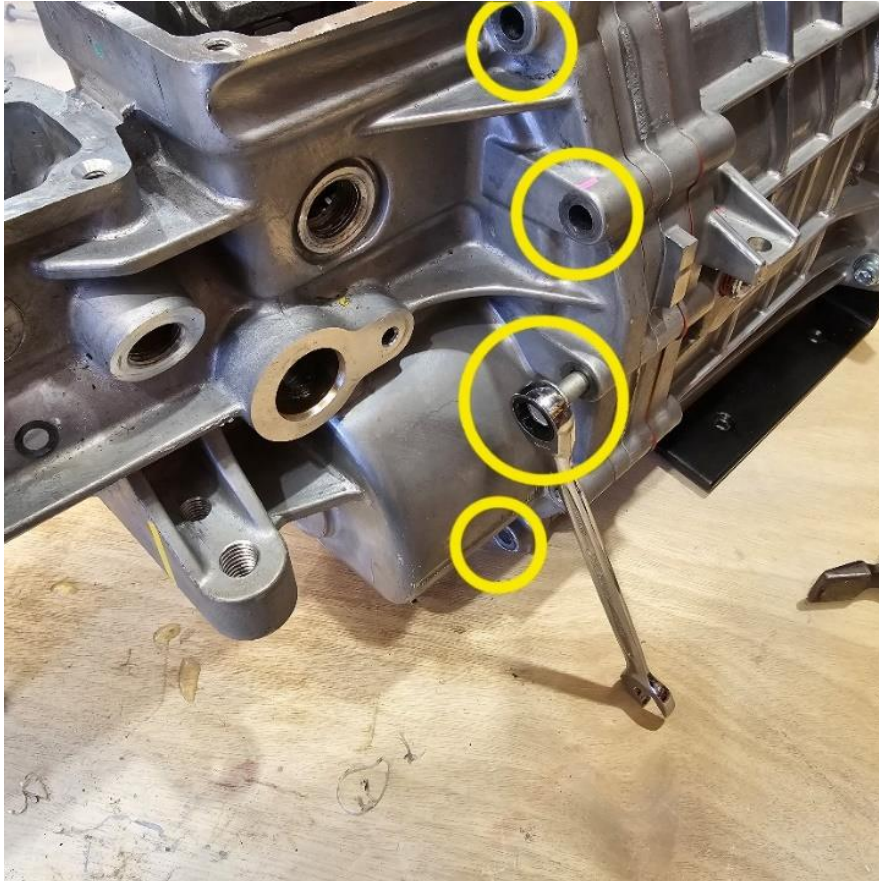
2. Starting with the pin pictured on the left punch this out half way only and make sure it is vertical and in neutral position so it will align with the hole underneath (picture below), If you punch it all the way through it will get stuck on the output shaft so only half way at this stage. Remove the other 3 pins to the right, I usually only punch them 90% of the way so they are retained in the fitting when removed.



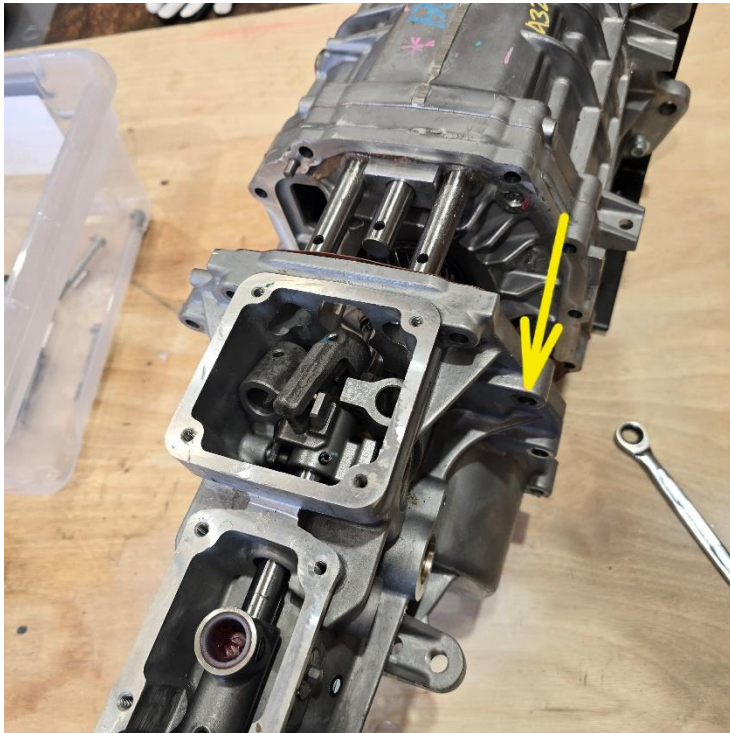
3. Remove parts circled, make sure to remove the neutral switch extender from the housing.



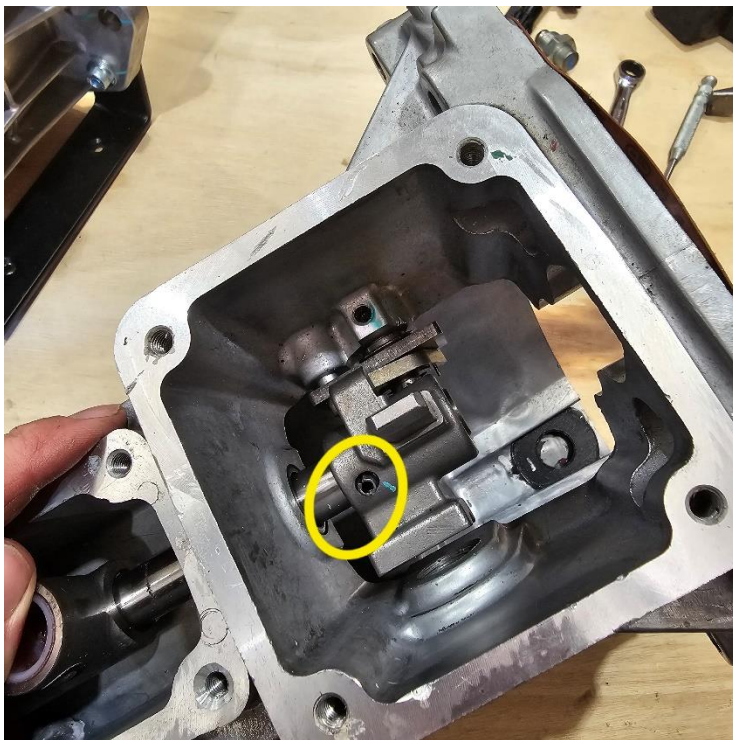
4. Remove rear case bolts



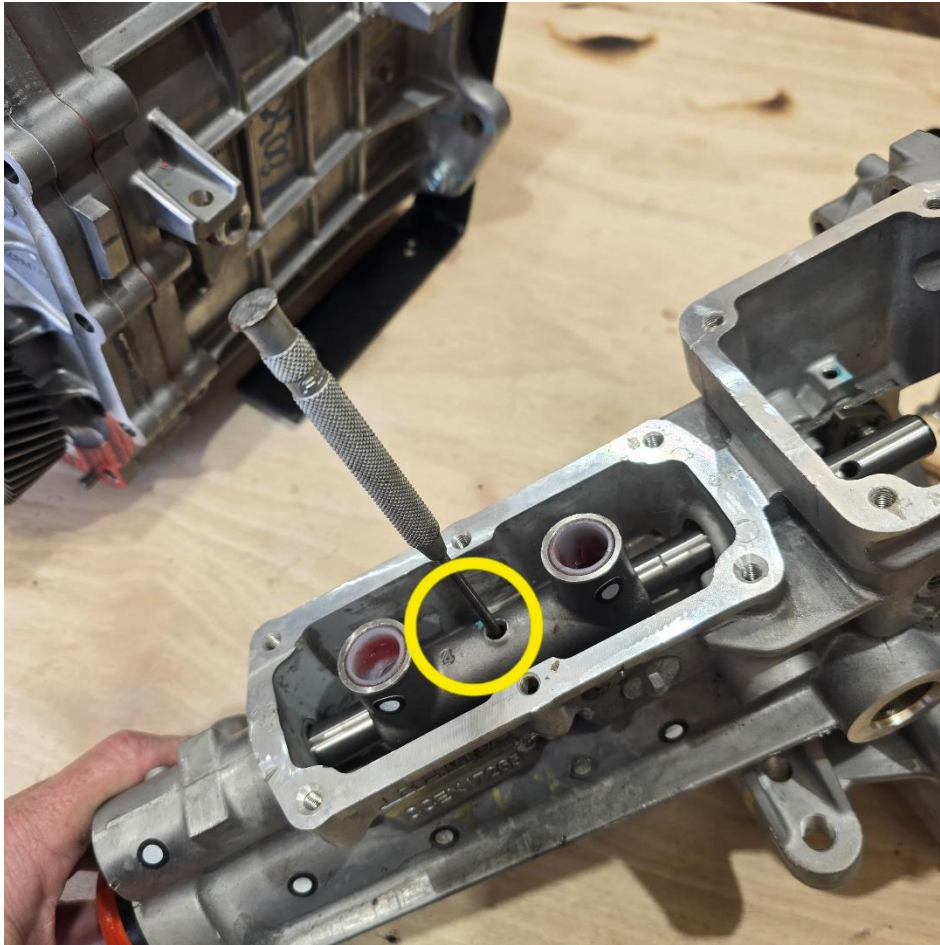
5. Remove rear housing, the 3 fittings should slide off the shaft while doing this.



6. Punch out roll pin

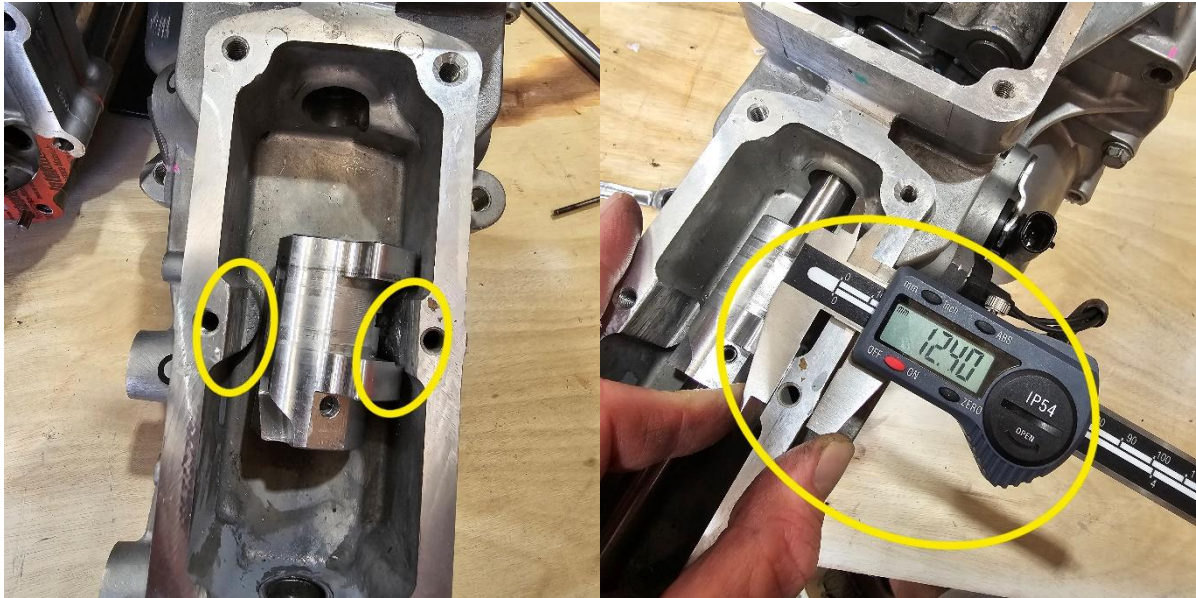


7. Completely remove roll pin and remove shaft from housing.

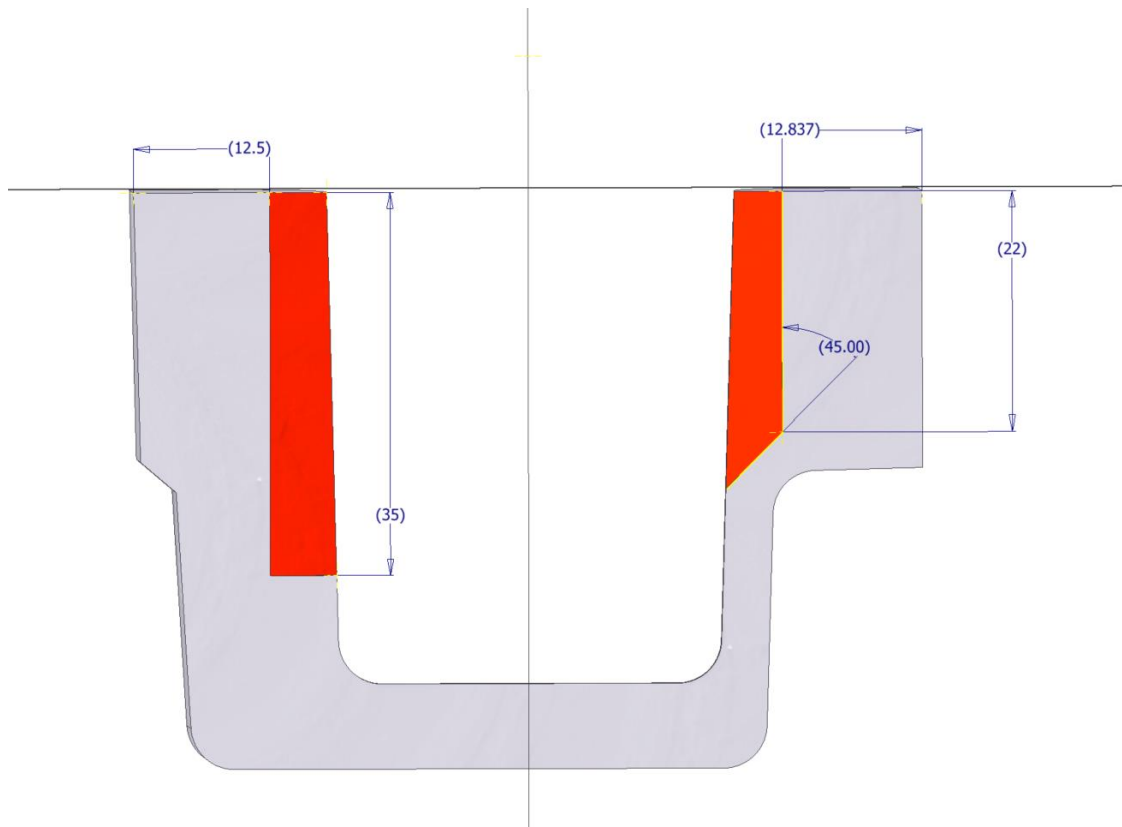


Case modification

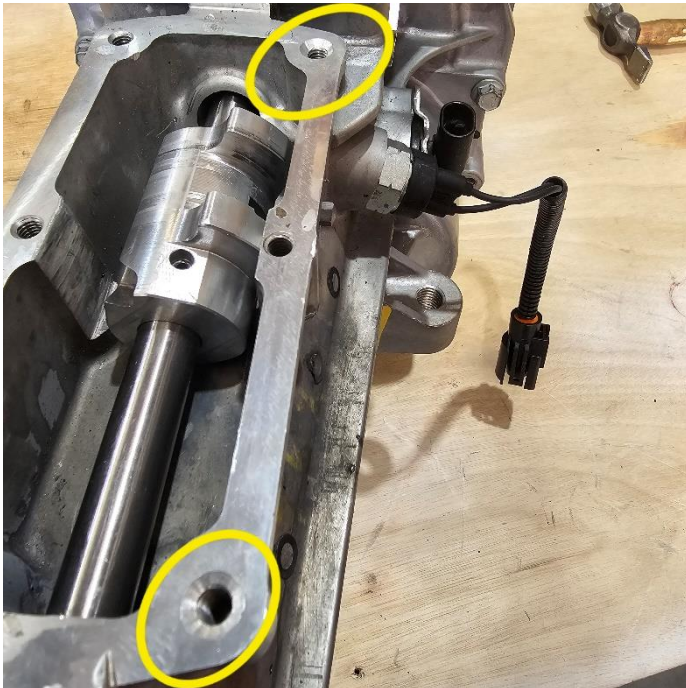
You will need to remove aluminium from the inside of the case, before doing this clean any oil off the case and tape over holes where filings could enter the bearing surfaces. I simply trimmed the metal using a cut off disc on a grinder, this was very fast and effective.



8. A sectional view of what needs removing is below, this is from straight through the two centre bolt holes looking from the rear.



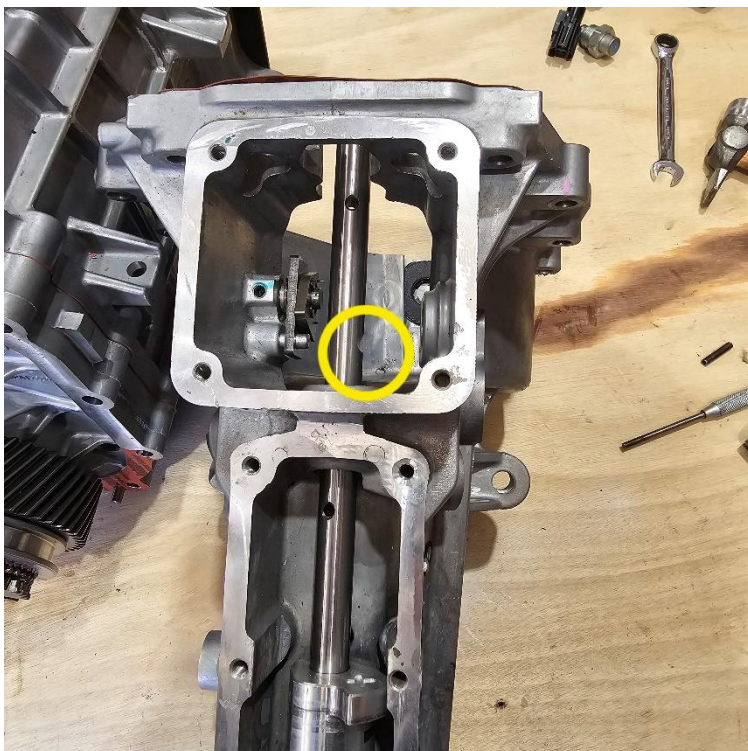
9. A countersunk must be added to the bolt holes on the right side , the diameter of this should be at least 8.5mm



10. Clean all metal filings off parts to get ready for reassembly.

Reassembly

11. place shaft and shaft fitting in case making sure the notch circled is on the right side.



12. Check for clearance when rotating shaft and fitting, on the right side it should be able to turn until the flat of the shaft fitting is parallel with the cut section of the case.

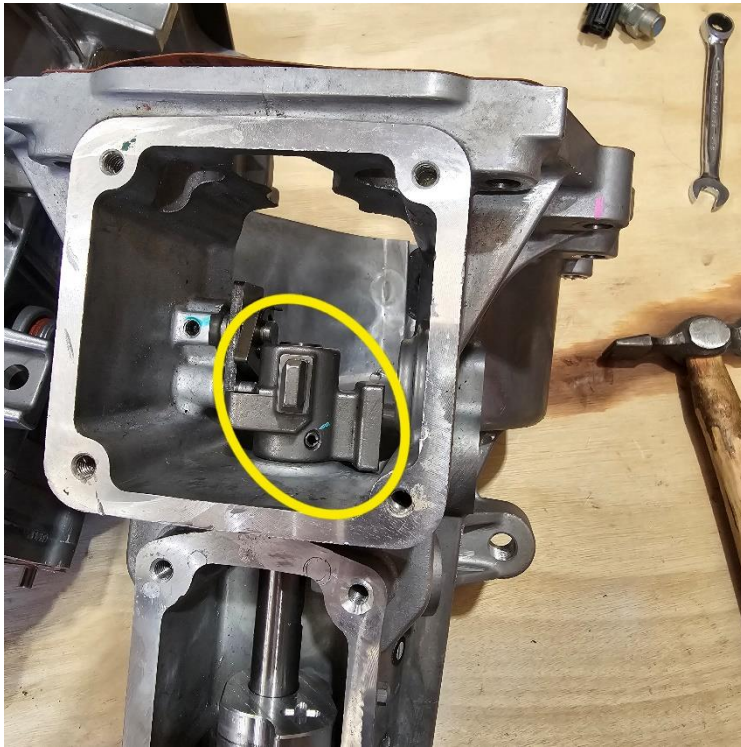
13. hammer in roll pin and use a punch so it is 3mm **under** flush with the upper surface.



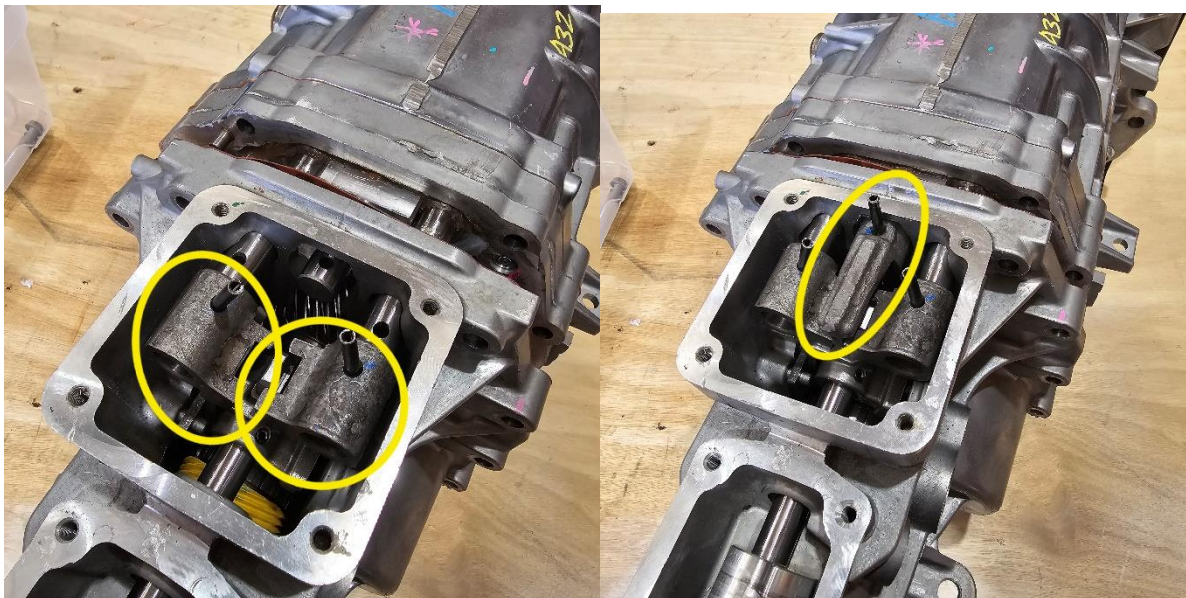
14. It's a good idea to prestart the pin in the fitting but make sure it doesn't go through too far.



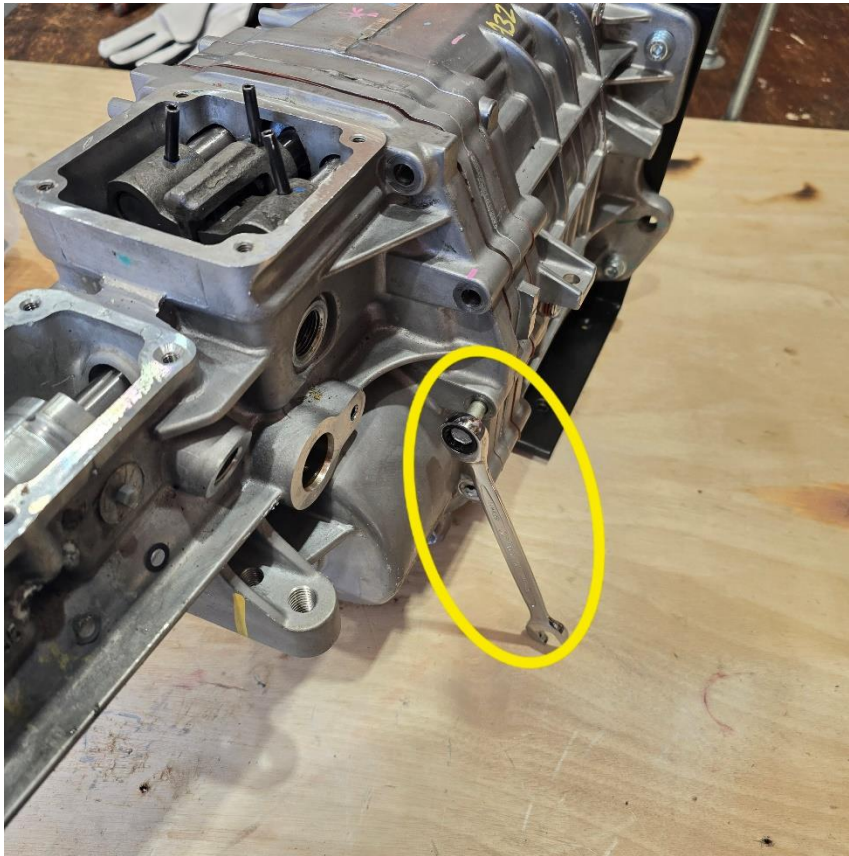
15. Fit the fitting to the front of the shaft.



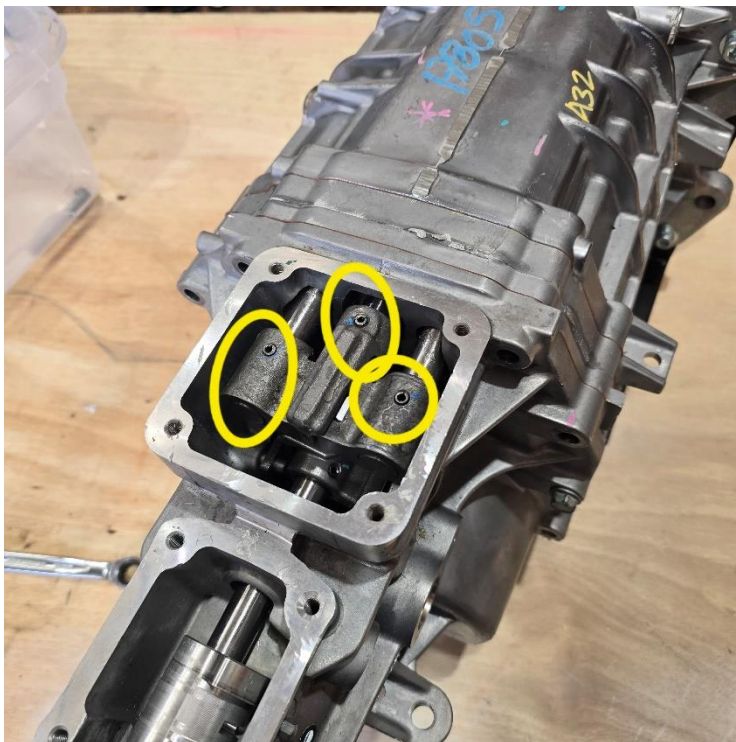
16. slider the outer 2 fittings on before the centre.



17. Slider rear housing into place and tighten all bolts.



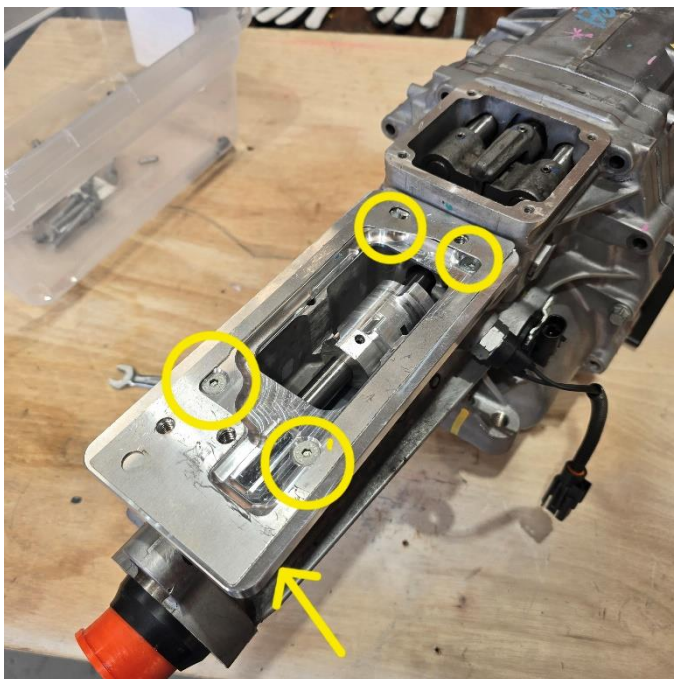
18. Hammer roll pins in on fittings



19. Re-fit speed sensor and neutral switch but replace the centering detent with the supplied bung. Remember to insert the neutral switch extender.



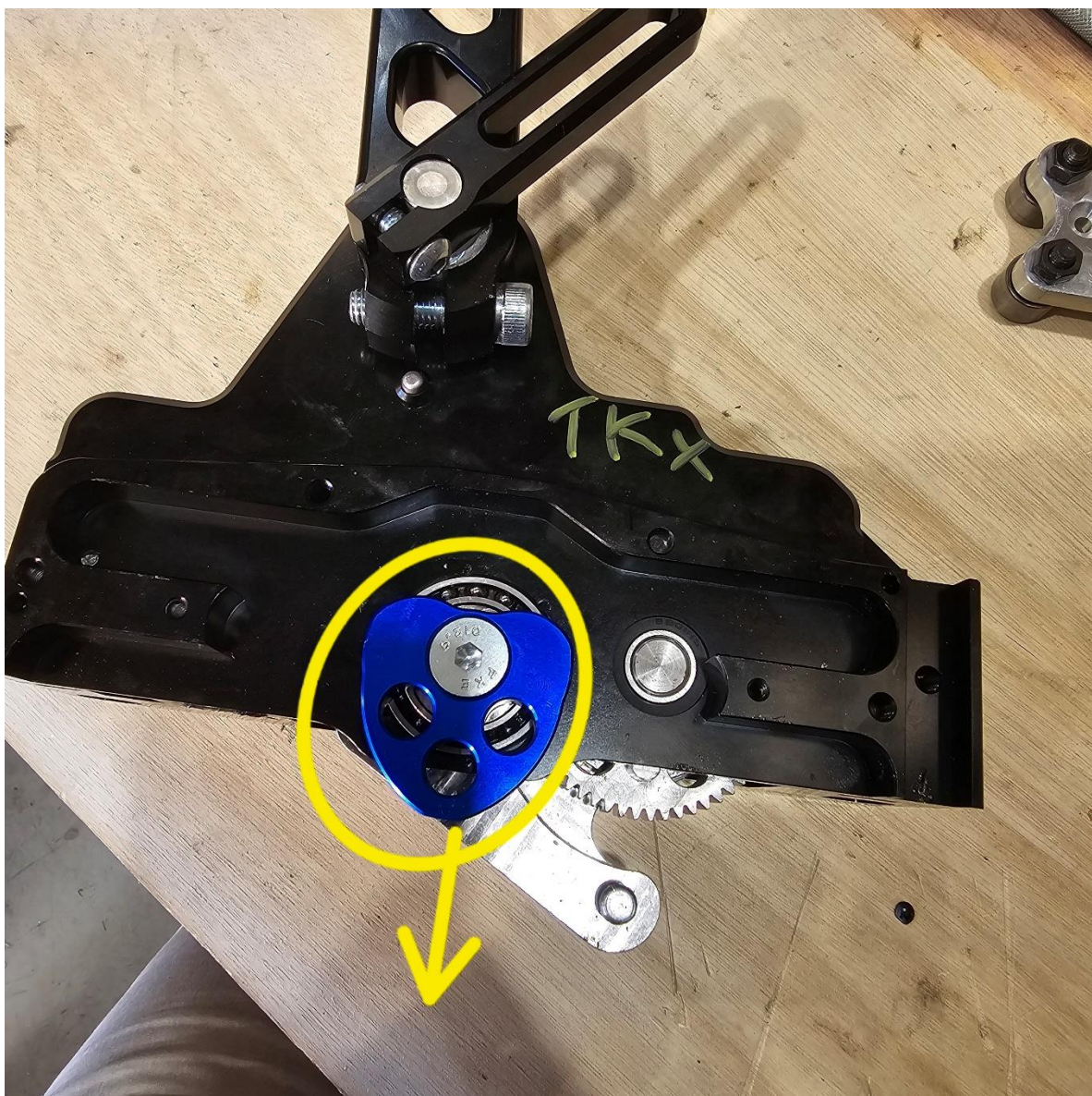
20. Apply sealant to the flange surface and bolt down the base plate with the M6x20 countersunk bolts.



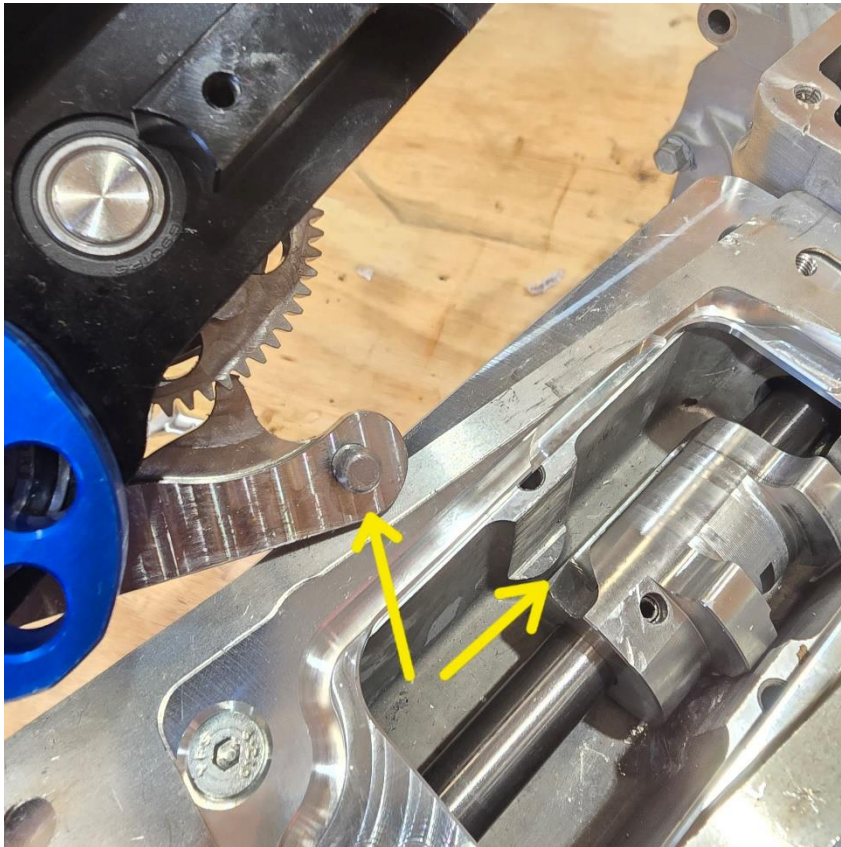
21. Start with the 1mm shim (arrow in above picture), changing to the 2mm shim of removing all shims may be required if you cannot get smooth cross gate shifts, this is a method we have used on all our direct mount shifters but I think its very unlikely you will need to use anything but the 1mm shim on the TKX.

22. Remove the right side cover and remove the slider plate so the shifter will look like the picture below. Fit the reverse lock out lever as pictured with the M6x20 bolt, Make sure to take up any free play in the shaft to prevent rattles.

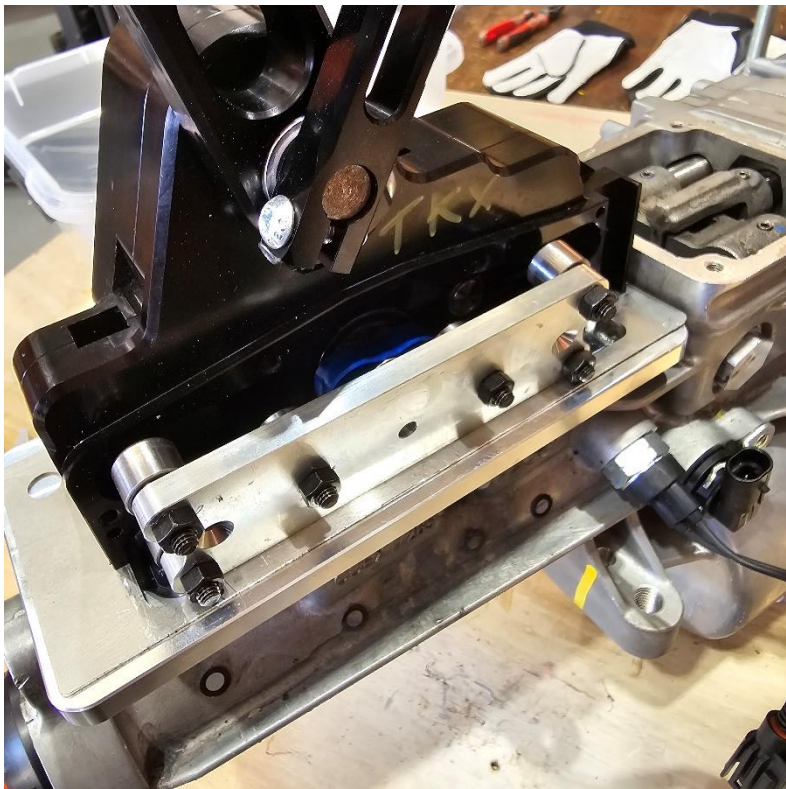
Check the shifter in in neutral, Down shift all the way to first which is pushing the lever forwards then do a half up shift to neutral at this point the main shift cam should be pointing straight down as pictured.



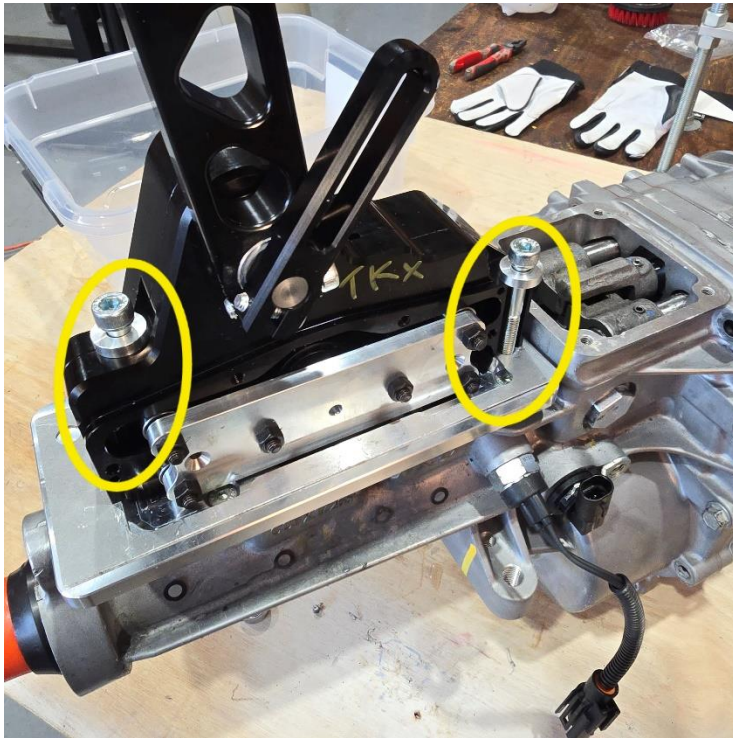
23. Fit the shifter sliding the ball part into the groove.



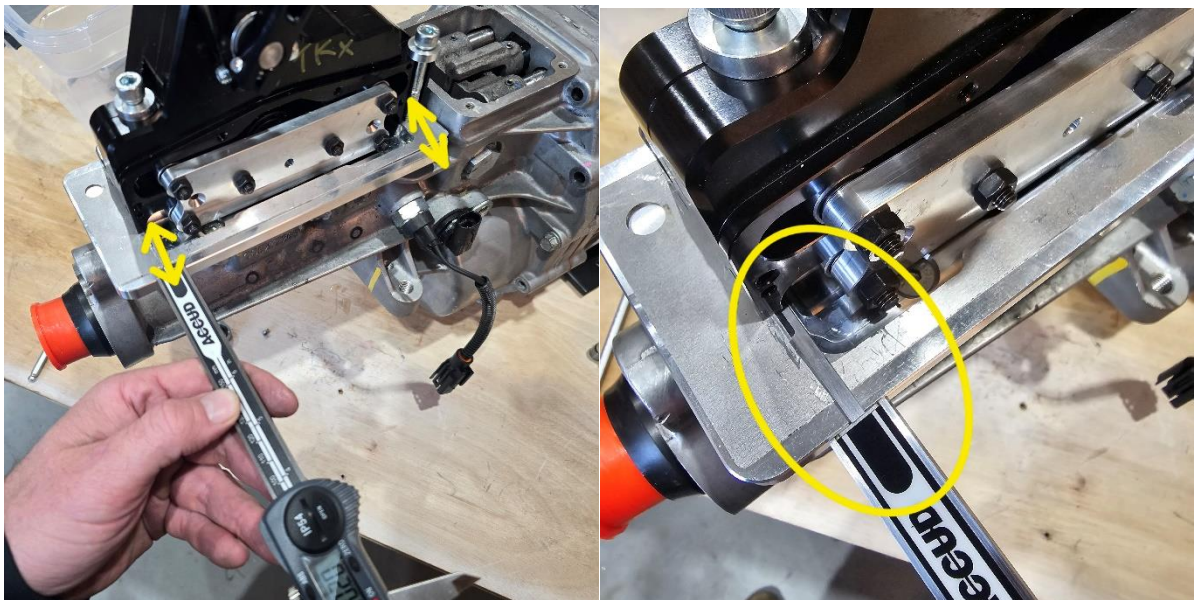
24. As you drop the shifter into plate slider the slider plate back on making sure it is captive in the shaft fitting. Make sure the slider plate is flat against the shifter body.



25. Fit the front (M8x60) and rear (M8x80) bolts.



26. The shifter should be positioned so that from the right side of the plate to the shifter case is 30.7mm

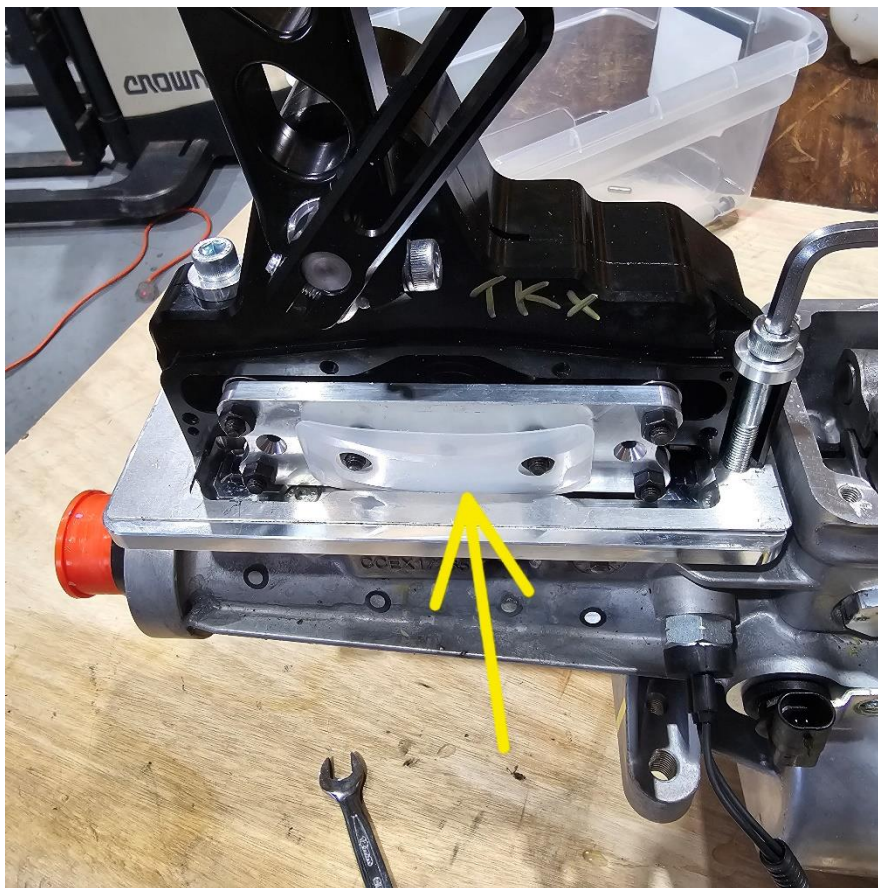


27. Tighten the 2 mounting bolts that are fitted so we can soon test shift.

Push the reverse lock out lever forwards, when you do this you should be able to see the selector in the front gearbox opening move to the right ready to engage the 1-2 gears.

You can now try push the main shift lever forwards to engage first gear then continue to shift through all gears buy pulling back. If you feel the shift get tight at the end of a shift this can mean the shifter is to close to that end of the gearbox, (the cam will be having trouble doing its full rotation and will be binding) if this is the case loosen the M8 bolts so the shifter can slide into position a little and try again. At all times make sure the slider plate stays flush against the shifter case. If everything is working fine and sealant has not yet been applied under shim and shifter (disclaimer to stop infinite loop) go back to step 21 but put sealant under the shim and under the shifter and follow through again.

28. Fit shims to the side of the slider plate if you have more than one shim to fit make sure the plastic one is on the outside so it will reduce friction in operation.



29. Fit right side cover with sealant between it and the shifter and base plate. (M5x 30 button head screws. Tighten front M8 bolt.

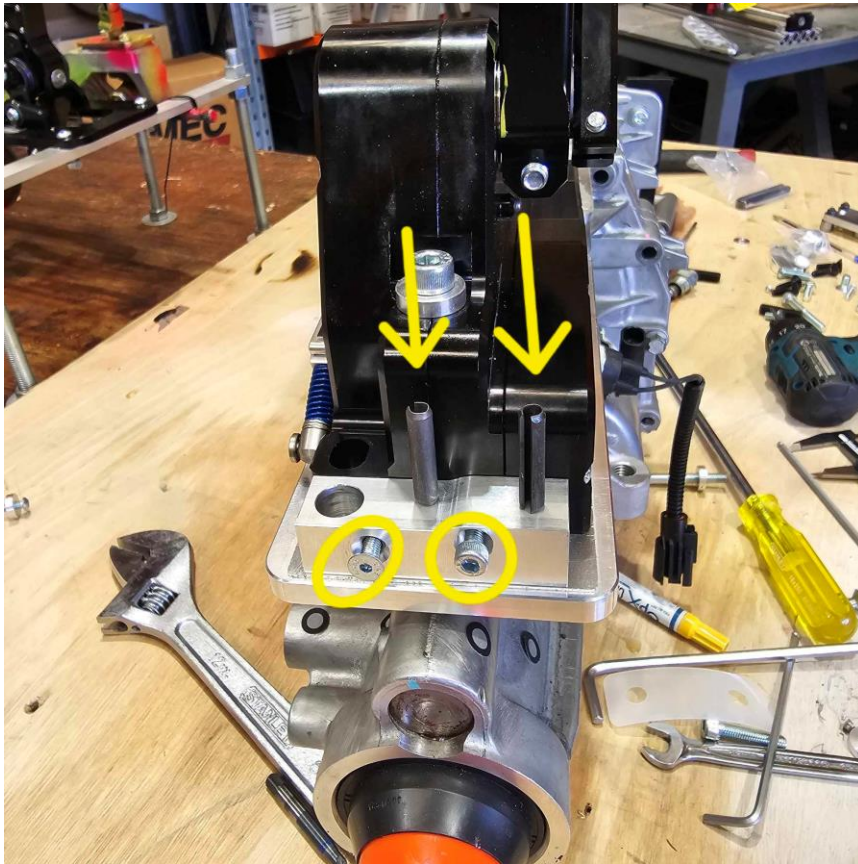


30. Fit front left bolt M6x20 (the washer for this only has a 6mm hole not an 8 like the others) and also fit rear left bolt (M8x35 socket cap head bolt).



31. Give it all one final test and everything is good fit the drill square part to the rear of the shifter using the M5x30 countersunk and the M5x25 socket head cap screw making

sure you drill 6mm holes to fit the roll pins, this is necessary or everything will moving during driving causing the shifter/gearbox to jam. **Please do not skip this step**



For gear indicator and sensor fitment please see separate instructions.