



Questions?
Call Toll FREE at:
1-888-648-4923
(Mon-Fri, 9AM-5PM, EST)
or email Mike Meditz
mike@kaiserwillys.com

T90 Top Cover Rebuild and Modification For Improved 2nd Gear Throw

Note: An 11/32 drill bit will be needed

Kit Contents:

2pcs: Zinc-Plated 1050-1095 Steel Slotted Spring Pins

2pcs: Hard Wear-Resistant 52100 Alloy Steel Detent Balls

2pcs: Zinc Plated Springs with closed and ground ends

2pc: End Caps

Step 1: Before removing the shift tower, shift the transmission in neutral and remove the six top cover bolts

Step 2: Place the cover in a vise, with a punch remove the shift fork pins that hold the forks to the rail. Remember the orientation of the fork so they can be installed in the same manner.

Ste 3: Proceed to drive the shift rails out toward the end that has the shift rail metal caps. This end also has a hole which is where the ball and spring detents are located. Place your finger over the hole so the ball doesn't fly out and remove the rail. Do this for the other side as well.



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Step 4: With both rails and shift forks removed, carefully remove the shifter cane spring located in bottom of the cover. This can be done by using a flat blade screw driver to pry the spring inward while rotating it around the spring bosses. Lastly remove the shifter cane.

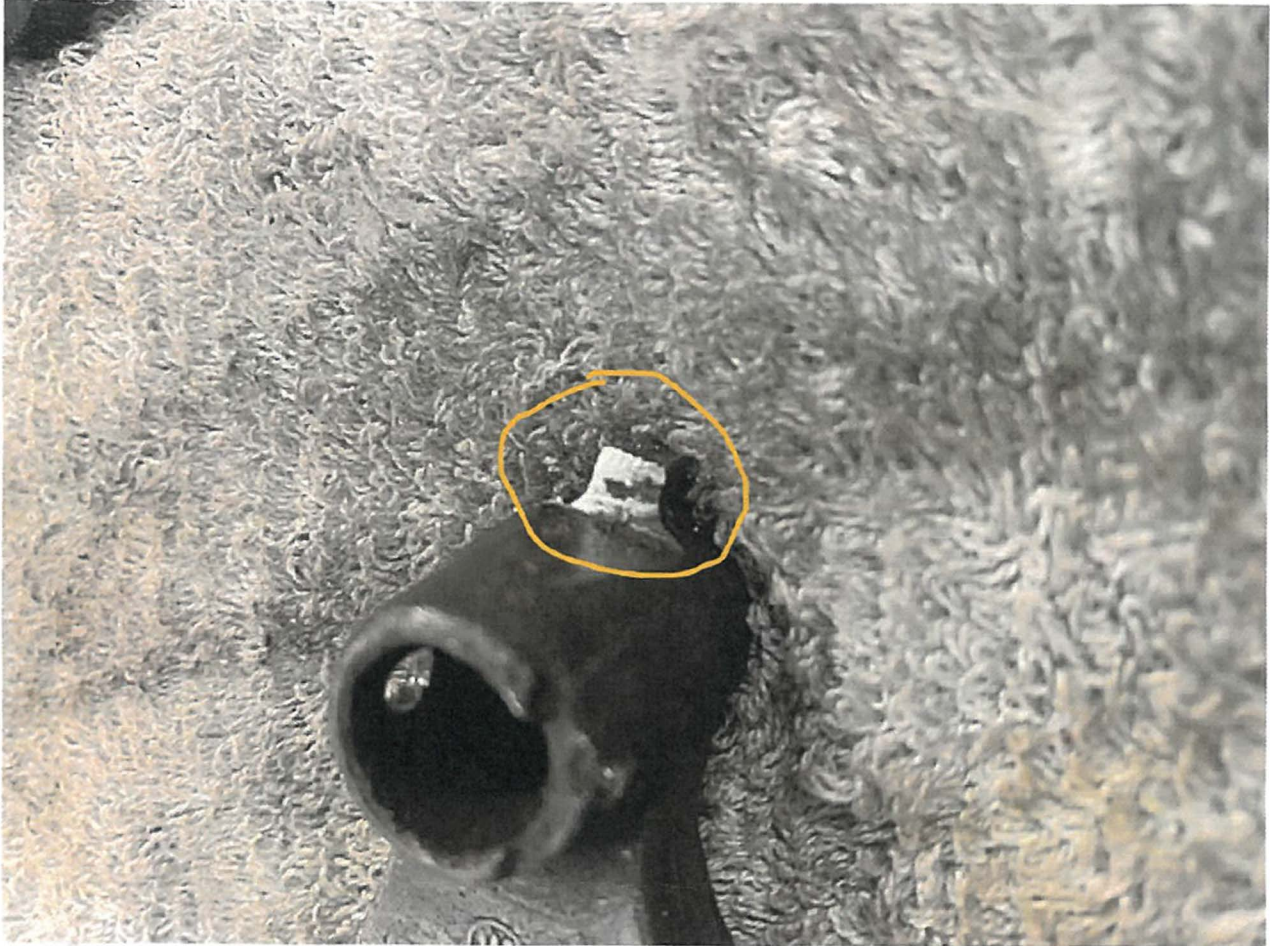
Step 5: Thoroughly clean the cover, forks and rail and remove any gear oil and debris that may be inside.

Step 6: Take the second/third shifter fork which is seen below. Using a set of calipers measure the stop and zero out your calipers. Using a file, remove .020 from the stop.



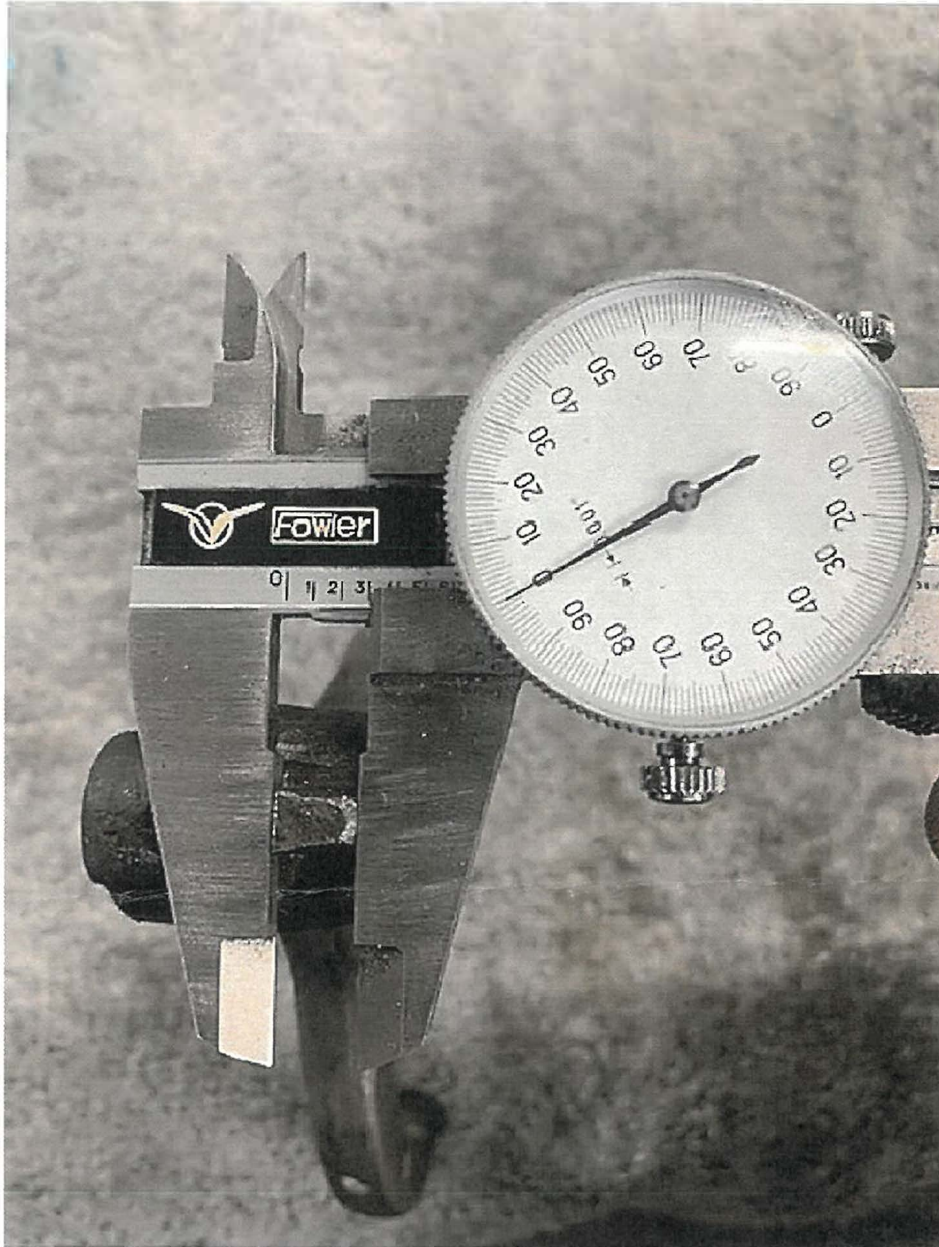


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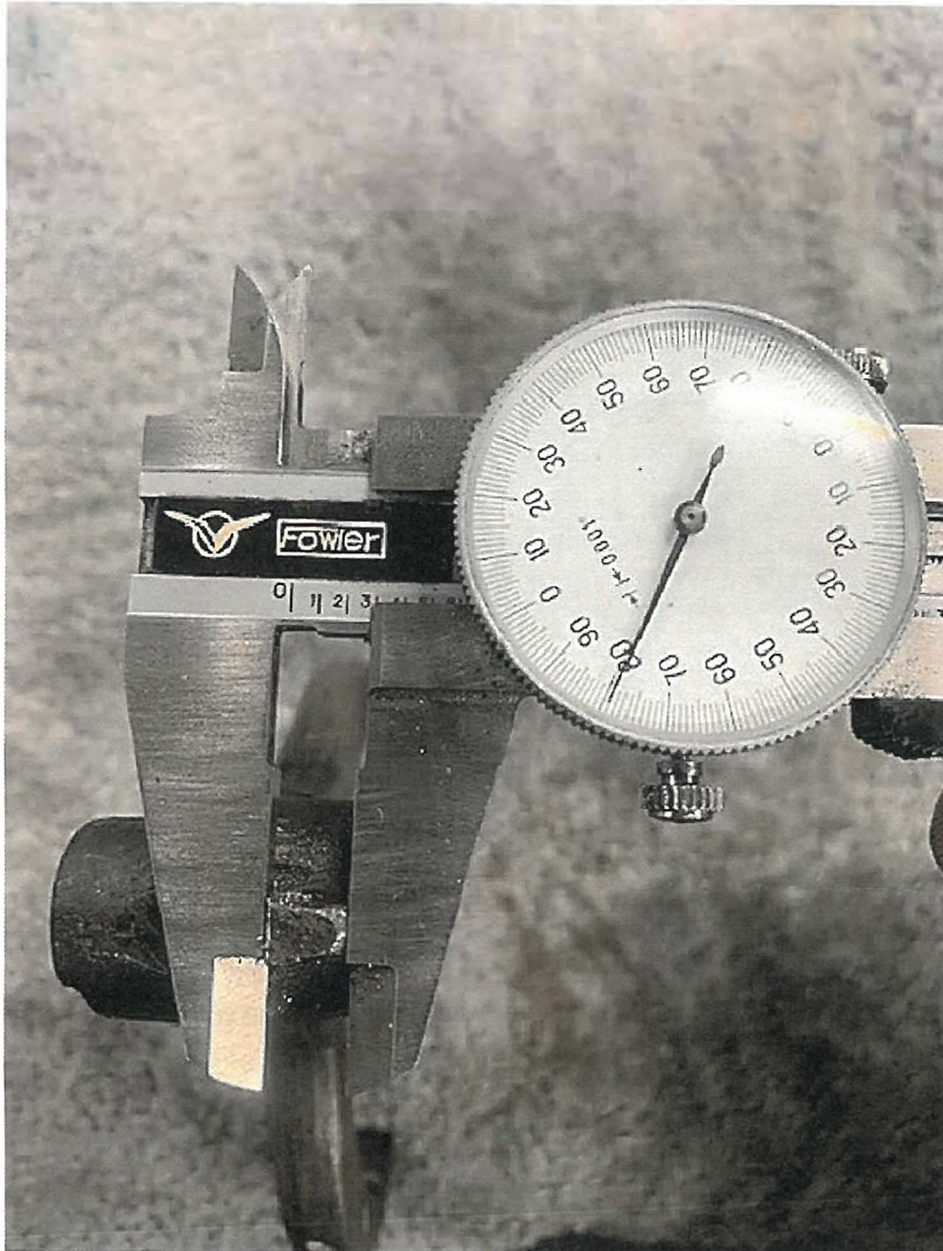
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*Zero out your set of calipers



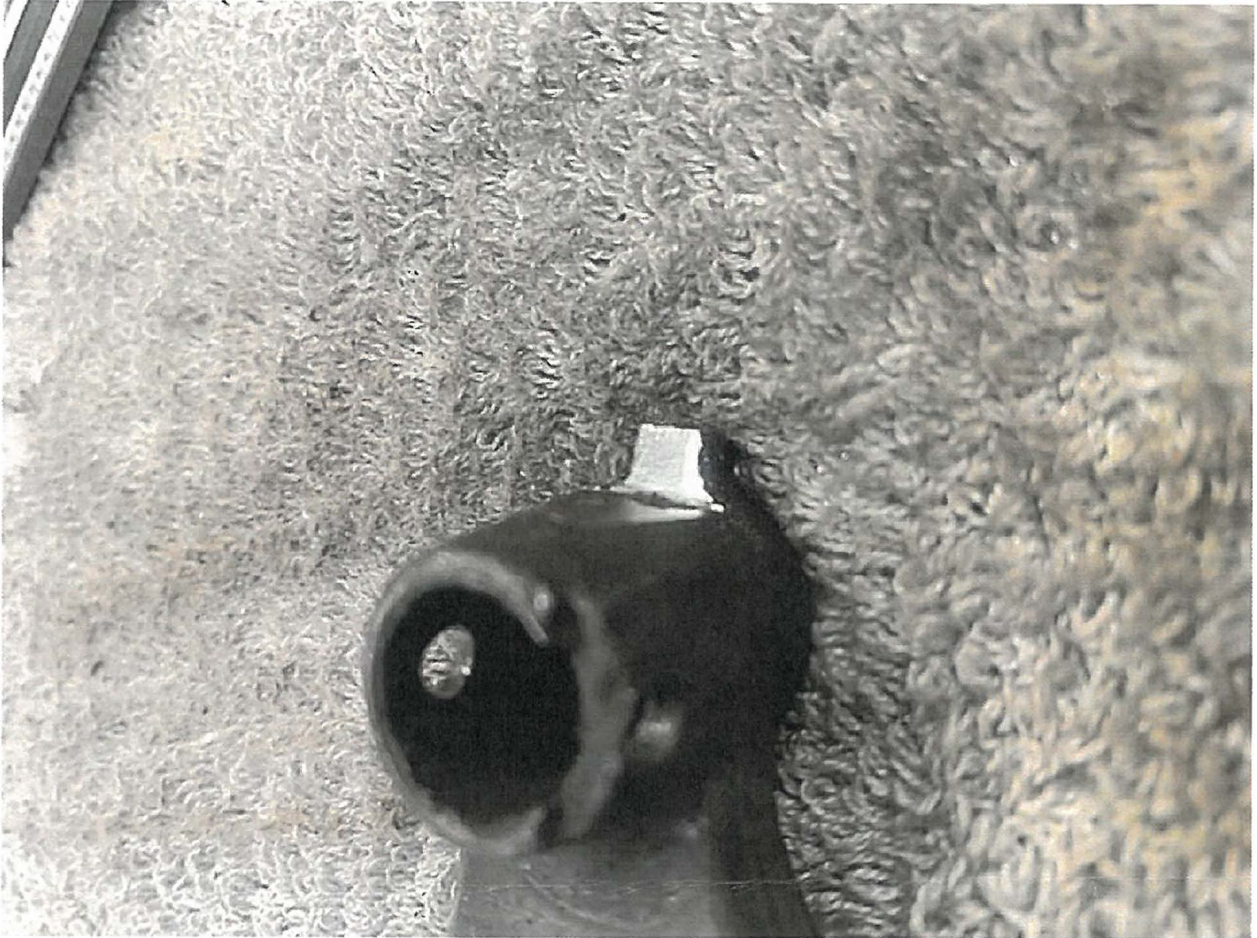
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*File down the stop till you have removed .020



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*The stop is now .020 smaller. This will allow more throw out of second gear so that the synchro hub will make better contact over the second gear chevrons.



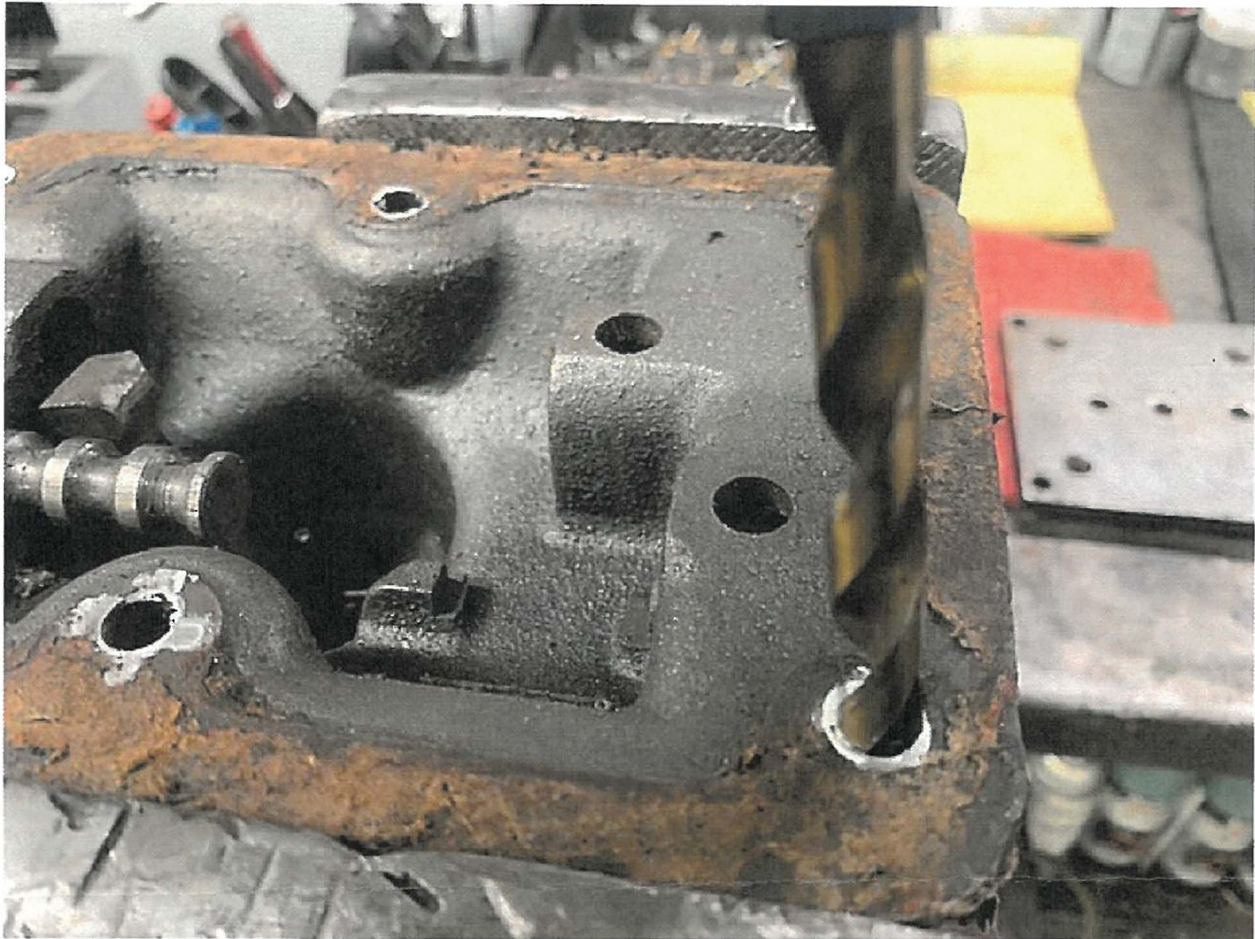
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Step 7: Using a 11/32 drill bit drill out the six top cover mounting holes.





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***Drill out each hole to 11/32.**

Step 8: Start to assemble the shift tower by installing the shifter cane and spring. Next using some transmission assembly grease or similar, install the shift form on the shift rail. Using some grease coat the detent spring and place it in the hole along with the new detent ball. Carefully compress the detent ball into the spring all while sliding the shift rail past the first detent notch. Line up the hole in the shift rail and fork and install the new roll pin. For the second gear fork, make sure the fork stop is on the side of the cover stop (flat to flat). You will see the stop in the above picture. Install the detent spring and ball in the same fashion. Install you shift rail caps and shift the top cover to ensure proper operation. You should feel more positive engagement with the new spring and ball detents.

Step 9: After the correct operation is verified and the shift tower in neutral, install the cover on the transmission and shift it into 3rd. Once in third, loosen the top cover bolts and slide the cover toward the rear of the vehicle. There should be very slight movement.



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Step 10: Tighten the cover bolts after you have slid the cover back and shift into second gear. Remove the top cover. The synchronizer hub assembly should be up against second gear completely covering the chevrons. Congrats you now improved the throw out of second gear further limiting it to pop out of second.

