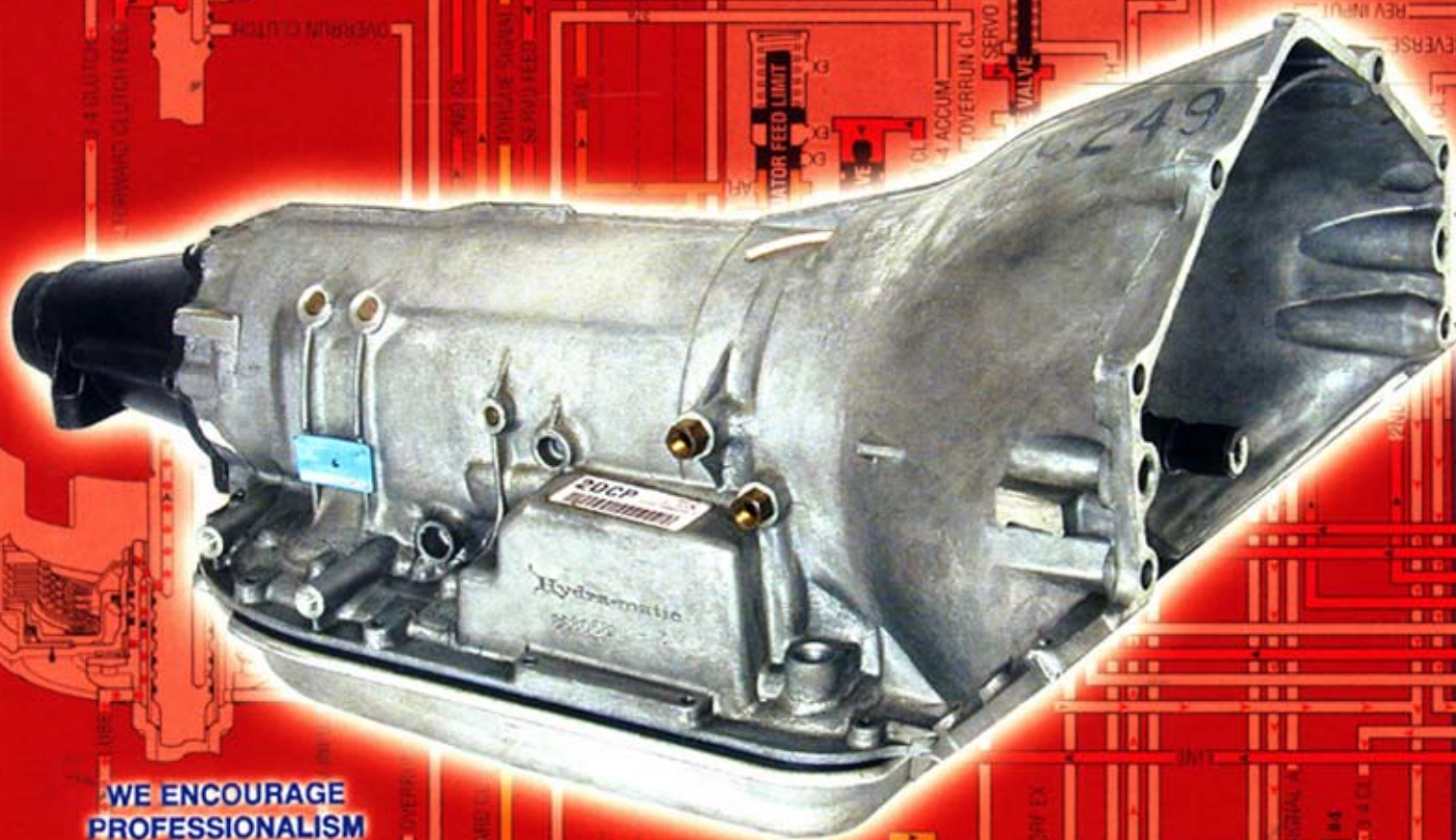


GM 4L80E Rebuild Procedures

By Cliff McCormick



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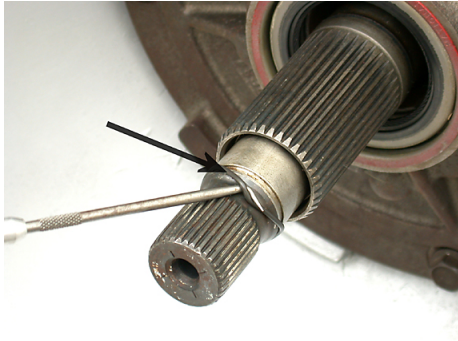


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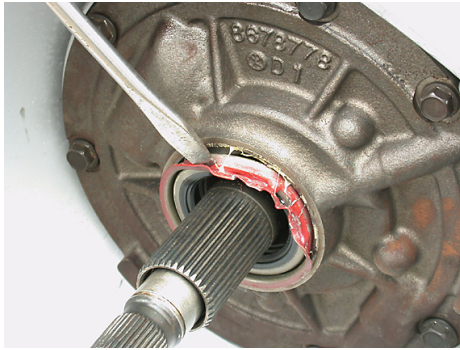
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4L80E Rebuild Procedures

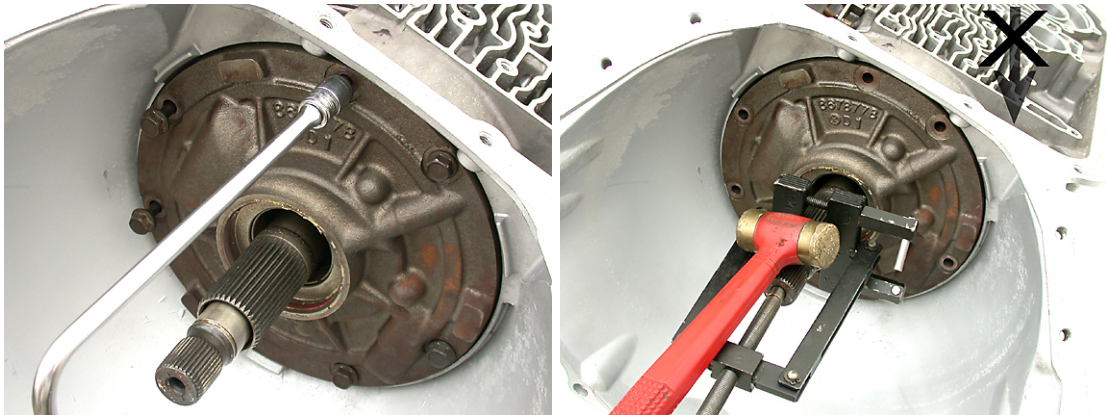
Step 13: Remove the o-ring seal from the groove near the front end of the turbine shaft.



Step 14: While the pump is bolted to a nice heavy transmission, use a screwdriver or chisel and hammer to distort and pry out the front seal. Be careful not to gouge stuff nearby while doing so, particularly the stator splines.

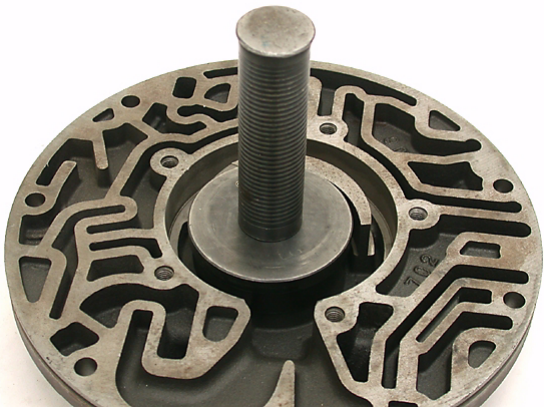
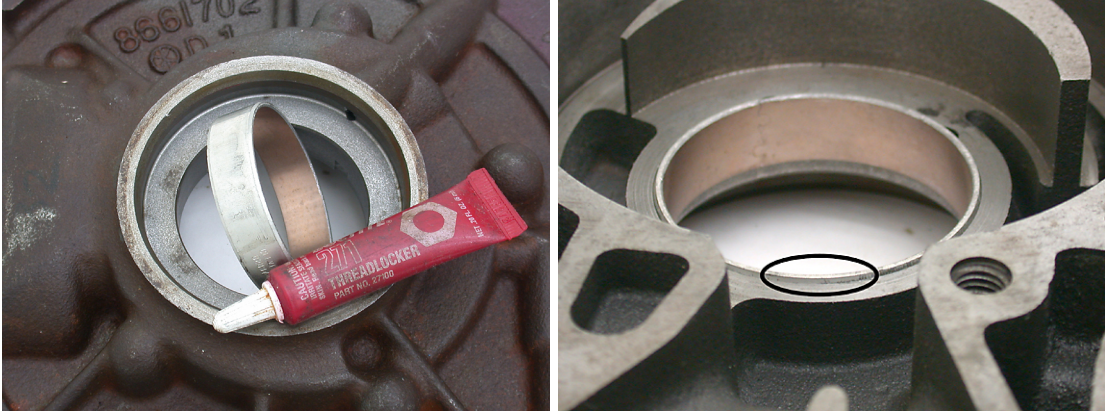


Step 15: Unbolt the pump, and use an appropriate puller to remove the pump from the unit. If the pump doesn't slide out of the case easily with the puller you can *gently* tap the turbine shaft side to side with the plastic side of your hammer head.

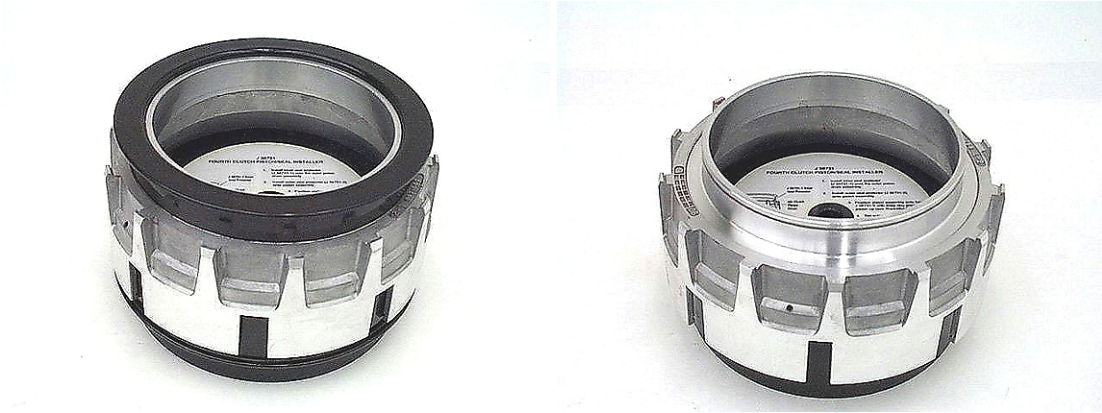


CAUTION: Do not pry between the back side of the pump and the case passages. You may crack a passage without even knowing it, which pretty much guarantees a failed transmission rebuild.

Step 10: Coat a new front pump bushing with thread locking compound, then press the bushing into the pump body. To make sure the bushing is square with the bore, you can press it through until it's a little above flush with the pump pocket. Then use a bushing driver that's larger than the bushing bore to press the bushing down flush with the pump pocket. Stake the bushing into place in the bore stake slots as shown.



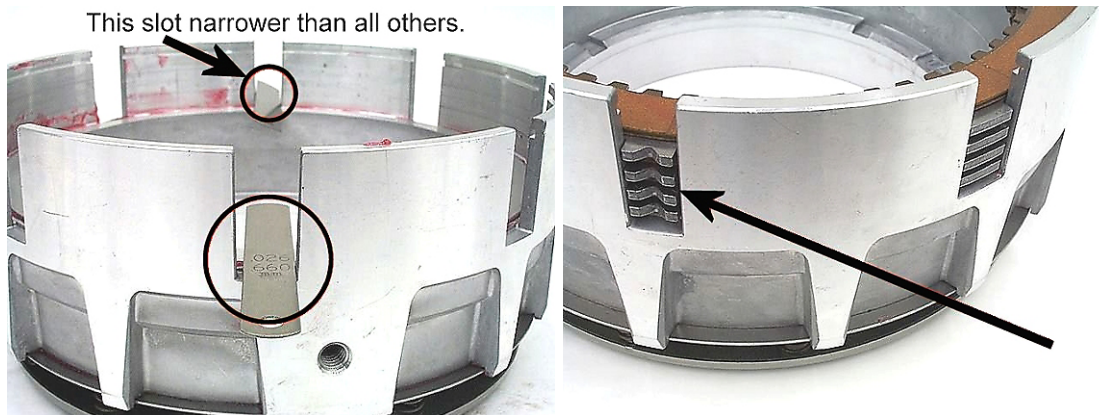
Whichever method you use, be certain that the piston is all the way into the housing bore.



Step 7: Leaving the housing assembly upside down on the installation base, set the return spring onto the apply piston. Use your thumb to compress one side of the return spring and start one of the snap ring ends in the ring groove, installing the snap ring into its groove as you go around the housing.



Step 8: Install the clutch stack in the housing, starting with a steel plate, then alternating friction, steel, etc. Make sure the notched steel lug of the steel plates sits in the one narrower groove in the housing, opposite the retaining bolt hole.



Forward Clutch

Step 1: Remove the clutch snap ring, and remove the direct clutch hub.



Step 2: Slide the forward clutch hub out of the clutches. Make sure you don't lose the thrust washers on either side of the hub.



Step 3: Remove the clutch stack from the drum.



Step 10: Check clutch clearance (I use bent-wire spark plug gauges to get down into the drum and between the plates). The clearance is 0.050" – 0.080" (1.270 – 2.030 mm). Build this clutch to the loose side of the specification to ensure proper *apply timing* between the direct clutch and the low-reverse band during reverse engagement. If this clutch is set up too tight, it may begin to apply *before* the rear band when going into reverse, which will cause a very harsh engagement. To avoid this, you may want to consider .060" - .070" a good *target* clearance to shoot for.

Step 11: To assemble the intermediate sprag:

- Turn the drum over, then place one sprag end plate over the drum inner race.



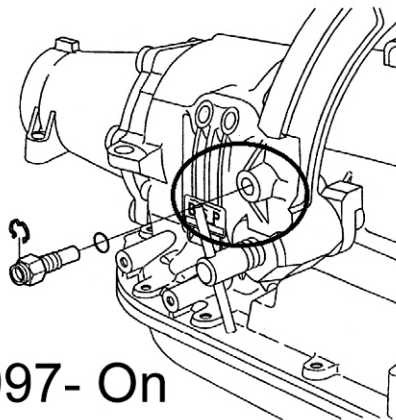
- Slide the intermediate sprag element onto the inner race, cage lip down on most brands of sprag element. Make sure that the sprag teeth are pointing in the same direction and angle, and shaped the same way as the above illustrations show.



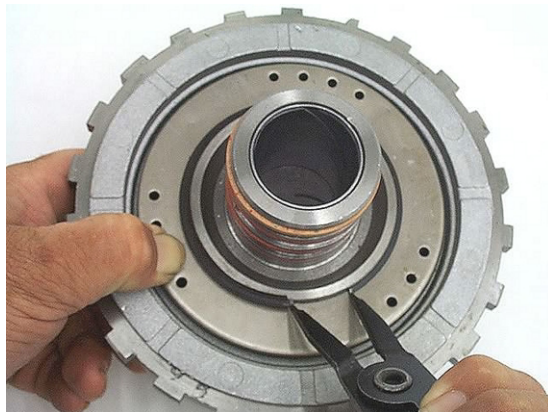
Step 19: Install the roller clutch into the top of the reaction carrier.



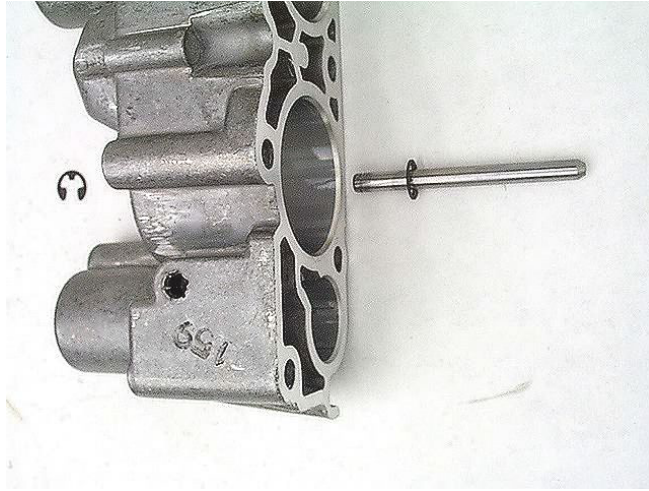
Step 20: On 1997 and later units, remove the oil cooler pipe fitting seal from the center support. ATB466 covers these changes in detail, showing the support and seal discussed here.



Step 21: To avoid damage to the intermediate clutch return spring retainer, use a thumb to compress one side of the retainer nearest one end of the retainer snap ring. Remove the snap ring and the return spring assembly.



Step 4: Remove the E-clip from the 4th accumulator piston, and lift the pin out of the accumulator housing.



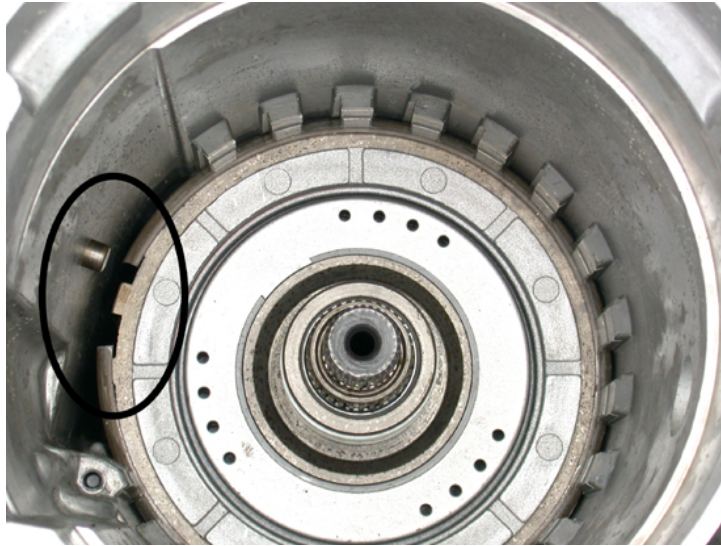
Step 5: Flat stone the accumulator housing surface to remove any nicks or burrs.



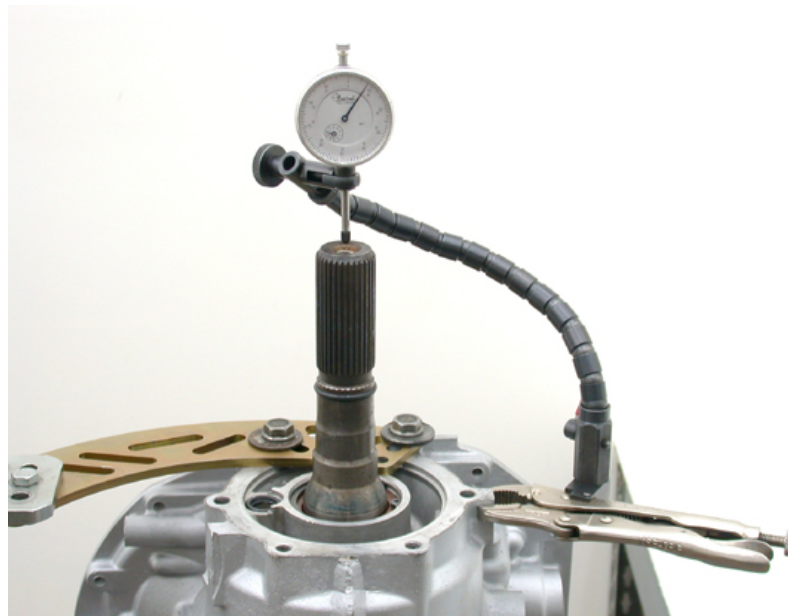
Step 6: Clean all accumulator components, and check for wear or damage:

- Check the accumulator body for cracks in the oil channels or wear in the accumulator bores.
- Check for wear in the 4th accumulator piston pin, or the pin holes in the accumulator or body.
- Check the accumulator pistons for wear, or cracks in the seal grooves.
- Check the springs for cracks, distortion or collapsing.

Step 5: Use a screwdriver or small prybar to rotate the center support counterclockwise against the case lugs. Install the center support snap ring, with the opening facing the 9 o'clock position.

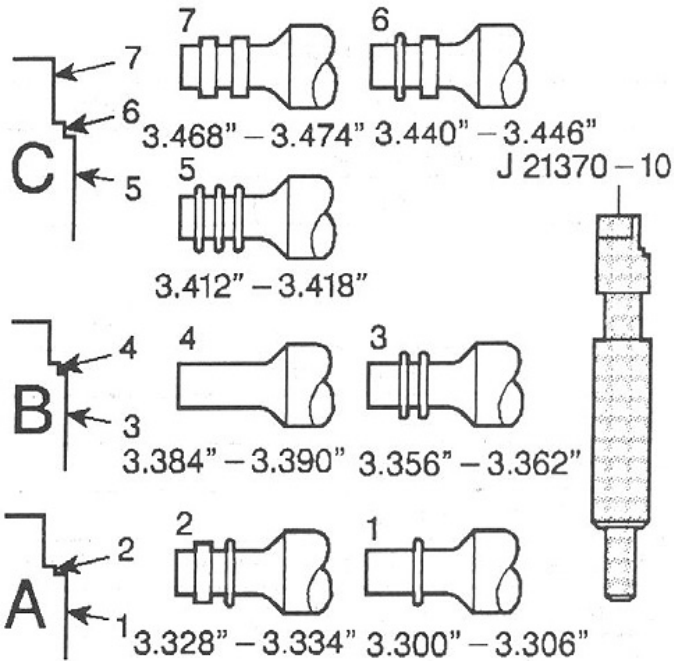
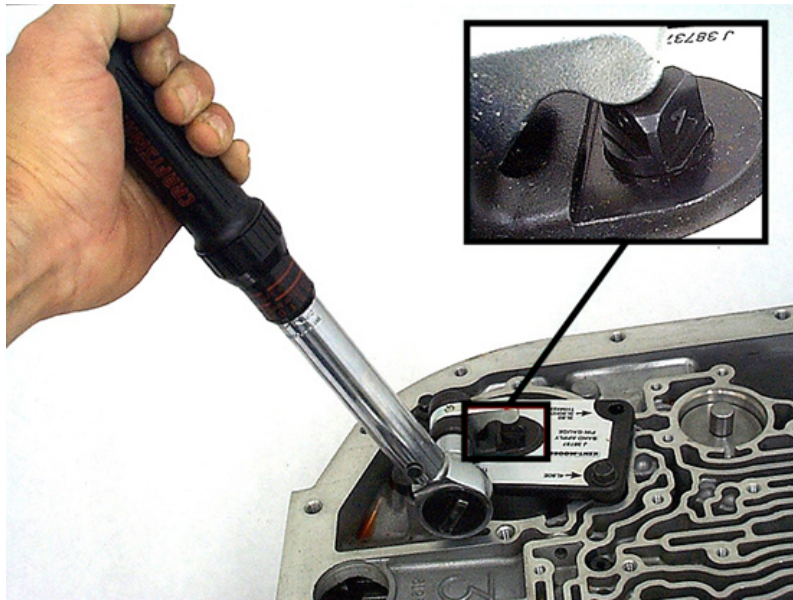


Step 6: Prior to flipping the unit over for this step, you might want to remove the sun gear shaft from the gear train to keep it from banging your toe a good one when you flip the unit over. Use a dial indicator to check the output shaft endplay — it should be between 0.005" – 0.025" (0.130 – 0.635 mm). If the endplay is outside of specs, replace the selective thrust washer with a different thickness washer and recheck the endplay.



Step 24: If the case, rear band or rear planet has been changed, or there are reverse engagement or Manual 1 engine braking problems, check the low/reverse servo pin adjustment as follows:

Mount the adjustment tool onto the case. Use a torque wrench to apply 25 foot-pounds (34 Nm) torque to the hex nut on the side of the tool. Check the lands on the side of the adjustment pin to see which land is flush with the tool base. Compare the land position to the illustrations in the chart to determine which servo pin to use.



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