

# Transmission Overhaul Procedures - Bench Service

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## How to Remove the Mainshaft Assembly

### Special Instructions

If transmission service will be limited to removal of the mainshaft, the input shaft does not need to be removed, but it must be moved forward to provide enough clearance to remove the mainshaft.

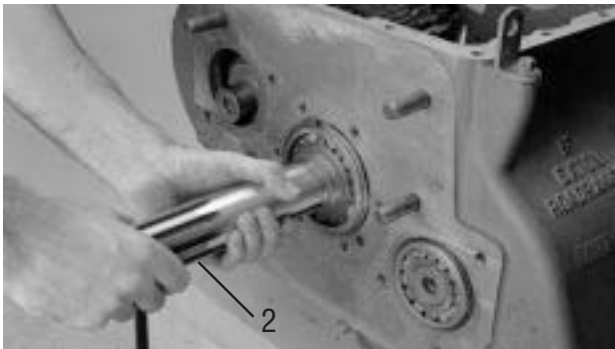
The Upper Countershaft Bearings must be removed and the Countershaft Assembly supported before the Mainshaft can be removed. Reference previous section before proceeding with Mainshaft removal.

### Special Tools

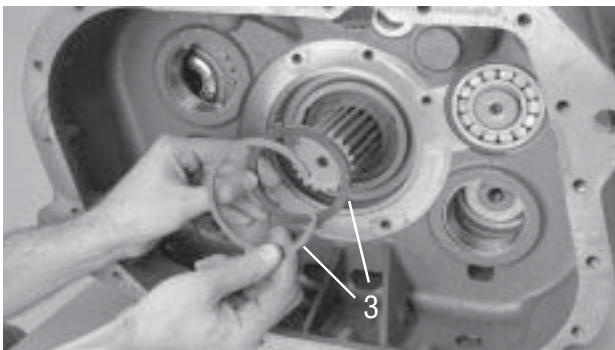
- RR1004TR Mainshaft Hook
- RR1022TR Countershaft Support Tool

### Procedure -

1. Remove the six (6) capscrews from the Input Shaft Cover, then remove the Input Bearing Cover and Gasket.
2. Pull the Input Shaft forward until the Main Drive Gear contacts the Main Case front wall.

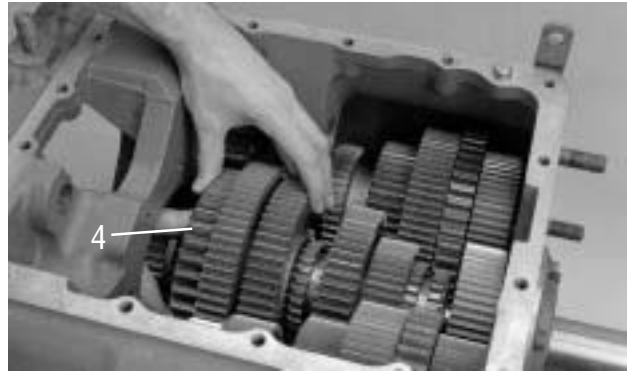


3. Remove Snap Ring and Spacer from the Reverse Gear.



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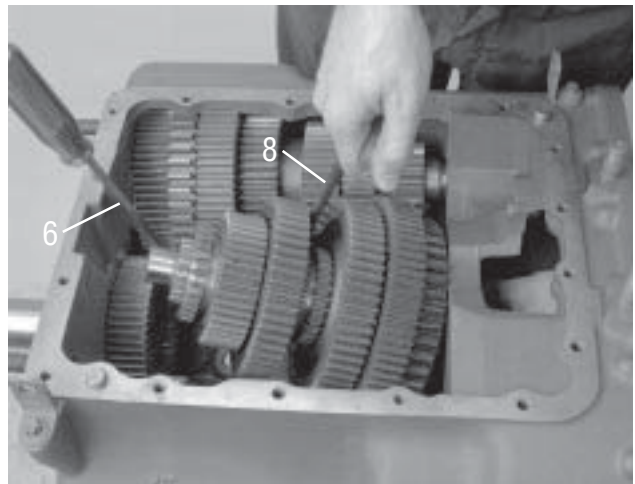
4. Rotate the Mainshaft Reverse Gear to engage the Sliding Clutch, and then move the gear forward over the Sliding Clutch to a position flush with the next gear on the Mainshaft.
5. Lift out and remove the Upper Reverse Idler Gear.



6. Use RR1022TR Countershaft Support Tool or a large screwdriver inserted between the Main Drive Gear and Upper Drive Gear to hold Countershaft out of the way.
7. Make sure the Mainshaft Reverse Gear is moved forward and held against the next gear (1st Speed Gear).
8. Position RR1004TR Mainshaft Hook around the Mainshaft Assembly at the Center Sliding Clutch.

**Note:** Keep the Upper Countershaft forward against the Case front wall.

9. Pull the Mainshaft to the rear to free the Pilot from the Input Shaft pocket.



**⚠ WARNING**

**Be careful when removing the Mainshaft Assembly. The Sliding Clutch on the Front and the Reverse Gear on the back can slip off the shaft.**

10. Tilt the Mainshaft front up and lift the Assembly from the Case.