

## Warner Gear 4-Speed Manual Transmission Service Procedures

—1966 Mustang w/289-2V  
4V P.F. Engine

Effective Job 1, 1966, a Warner Gear four-speed manual transmission, Model HEK-AD, will be used alternately with the Ford design four-speed transmission to supplement production requirements for the subject cars.

The service procedures for the Warner Gear transmission are basically the same as described in the 1965 Mustang Shop Manual. Disassembly and assembly procedures, however, have been revised as outlined below.

Refer to the disassembly procedures in the 1965 Shop Manual, Page 6-46, and replace items 15 through 21 as follows:

15. To disassemble the output shaft, remove the spacer from the front of the output shaft pilot diameter. Remove the small snap ring at the front of the shaft and slide the third and fourth-speed gear synchronizer assembly, third-gear synchronizer blocking ring, and third-speed gear off the shaft.

16. Remove the output shaft rear oil seal. Remove the snap ring that secures the speedometer drive gear on the output shaft and slide the gear off the shaft. Remove the speedometer gear drive ball.

17. Spread the retaining snap ring and press or tap the adapter plate off the output shaft rear bearing. Remove the snap ring and spacer retaining the output shaft bearing to the shaft. Press the bearing off the shaft.

18. Slide the first-speed gear and first-speed gear synchronizer blocking ring off the rear of the shaft. Remove the snap ring which retains the first and second-speed synchronizer to the shaft.

Slide the synchronizer, second-speed gear synchronizer blocking ring, and second-speed gear off the shaft.

19. To disassemble the extension housing, first remove the oil seal as shown in Figure 1, Page 6-2, of the 1965 Mustang Car Shop Manual. If it is necessary to replace the extension housing bushing, do so after reinstalling the extension housing, so that the tool shown in Figure 2, Page 6-2, will be supported by the output shaft.

20. Pull the reverse shift fork from the reverse shift shaft and cam. Remove the reverse shift lever and carefully tap the shaft and cam into the housing, allowing the detent ball and spring to drop out of the detent bore. Remove the O-ring seal from the shift shaft.

## Transmission Fluid Leaking From Vent Hole Or Speedometer Cable

—1974 Mustang II  
With RAD-B or RAD-C  
4-Speed Manual Transmissions

A condition of lubricant coming out of the vent hole or coming up through the speedometer drive cable and leaking at the speedometer head may be due to the blockage of the two vent holes in the rear face of the transmission case.

This leak condition will not be dependent on temperature or fluid level. If encountered, proceed as follows:

1. Check for correct fluid level. If overfilled, reduce to normal level. If fluid level is normal, proceed to the next step.

2. Remove the transmission from the vehicle following the transmission removal procedure outlined in the 1974 Car Shop Manual, Volume 1, Section 16-28-2.

3. Remove the extension housing following the transmission disassembly procedure steps 1-3.

4. Check for blockage of the two drain holes at the 6 o'clock positions (Figure 28).

21. Remove the reverse idler shaft by driving the retaining pin inward until it bottoms. Pull the shaft from the extension housing. Tap the shaft with a soft-faced hammer to loosen if necessary. Remove the O-ring seal from the shaft.

Refer to the assembly procedures in the 1965 Shop Manual, Pages 6-49 and 6-50, and replace items 5 through 18 as follows:

5. Working from the rear of the output shaft, slide the second-speed gear on the shaft with the clutch teeth and tapered synchronizer end toward the rear. Install a blocking ring with the clutch teeth toward the front of the output shaft.

6. Install the first and second-speed synchronizer, lining up the synchronizer inserts with the notches in the second-speed gear blocking ring. The synchronizer sleeve long taper should face the rear. Install the synchronizer retaining snap ring on the shaft. Position the first-speed gear synchronizer blocking ring on the first and second-speed synchronizer, aligning the notches in the blocking ring with the inserts in the synchronizer. Install the first-speed gear on the shaft with the tapered hub facing forward.

7. Position the output shaft ring bearing on the output shaft with the snap ring groove

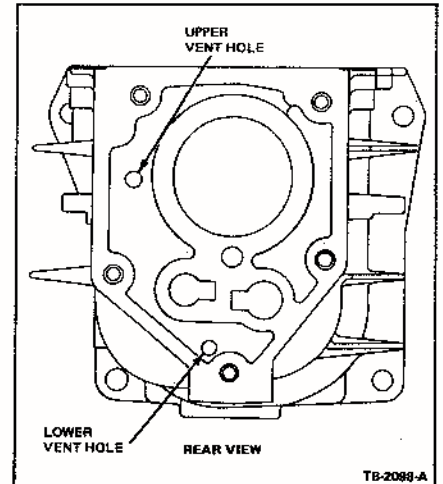


Fig. 28 — Article 865

If the holes are blocked, clear with a round punch.

5. Remove the top cover from the transmission case and flush the transmission with a cleaning solvent.

6. Assemble the transmission and install in the vehicle. Fill the transmission to the correct level with the specified lubricant (ESW-M2C83-B or ESP-M2C83-C), and road test.

in the bearing race facing forward. Press the bearing on the shaft and install the spacer and the thickest snap ring that can be assembled with all parts stacked tight against the end.

8. Install the adapter plate on the output shaft rear bearing by spreading the snap ring in the adapter plate and tapping or pressing the plate over the bearing. Release the snap ring.

9. Position the reverse sliding gear on the output shaft with the shift collar toward the rear. Install the speedometer gear drive ball and drive gear. Secure the gear with a snap ring.

10. Install the output shaft rear oil seal.

11. Working from the front of the output shaft, position the third speed gear on the shaft with the tapered end of the hub facing forward. Position the third-speed gear synchronizer blocking ring on the taper of the third-speed gear with the notches in the blocking ring facing forward.

12. Position the third and fourth-speed gear synchronizer assembly on the output shaft, lining up the synchronizer inserts with the notches in the third-speed gear blocking ring. Install the third and fourth-speed synchronizer retaining snap ring, selecting

the thickest snap ring that will assemble with all parts stacked endwise.

13. Install the spacer on the pilot diameter at the front of the output shaft.

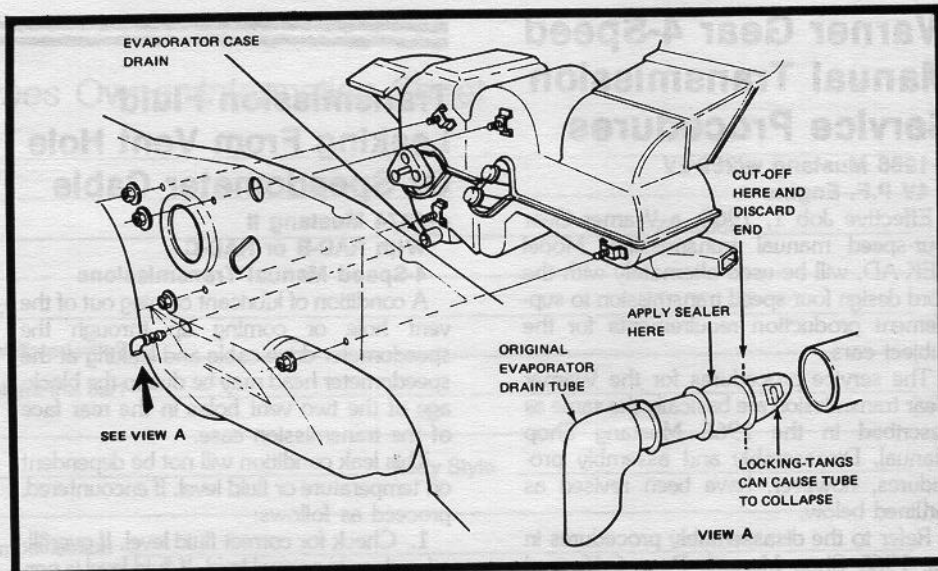
14. Position the output shaft seal on the output shaft.

15. Working through the output shaft opening, install the reverse gear front idler and thrust washer in the case.

16. Make sure that the fourth-speed synchronizer blocking ring is in place on the input shaft gear and that the input shaft pilot rollers are installed. Apply a gasket to the rear of the case. Position the output shaft in the transmission case and move it forward, lining up the notches in the fourth-speed blocking ring with the inserts in the third and fourth-speed synchronizer. Line up the dowel pin in the adapter with the locating hole in the main case and push or tap the output shaft and adapter into position. Install the self-locking bolt retaining the adapter plate to the transmission case and torque it to specifications.

17. Install the reverse gear rear idler gear.

18. Install a new O-ring seal on the reverse idler shaft and lubricate the seal and reverse idler bore in the extension. Line up the retianing pin holes in the idler shaft and extension housing and tap the shaft into the housing with a soft hammer. Coat the retaining pin with oil resistant sealer and install the pin flush with the outside of the housing.



Wet carpet and/or odor conditions in 1974 Mustangs can be caused by a collapsed rubber drain tube in the A/C evaporator case, resulting in excess condensate water overflowing and stagnating. The condition can be corrected by removing the drain tube and if it is collapsed, modifying the tube by cutting off the end as shown above. Use a long, pointed object inserted into the evaporator drain to remove any debris and ensure the drain is open. Before installing the modified drain tube, apply a coating of sealer between the flanges of the tube.

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