FORD

SERVICE MANUAL

WOBBLE DRIVE FOR 515 REAR ATTACHED MOWER

40881034

FORD TRACTOR DIVISION
TRACTOR AND IMPLEMENT OPERATIONS (U.S.)
FORD MOTOR COMPANY
BIRMINGHAM, MICHIGAN

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GENERAL INFORMATION

The wobble drive assembly contains a total of eight bearings; wear or maladjustment of any one of which could contribute to faulty operation. As a result, a process of elimination must be used to determine which bearing, or bearings, is defective.

To determine if the wobble drive bearings need servicing, refer to Figure 1 and follow the steps below.

1. Center the knife sections between the knife guards.
2. Secure the knife by placing wooden blocks on each side of a knife blade.
3. Rock the flywheel to check for bearing play.

If there is play at the flywheel, proceed with the inspection and adjustment. In addition to play at the flywheel, excessive noise, rough turning, lockup, and abnormal heating, all indicate a need for servicing the assembly. Refer to Figure 2 for an exploded view of the assembly.

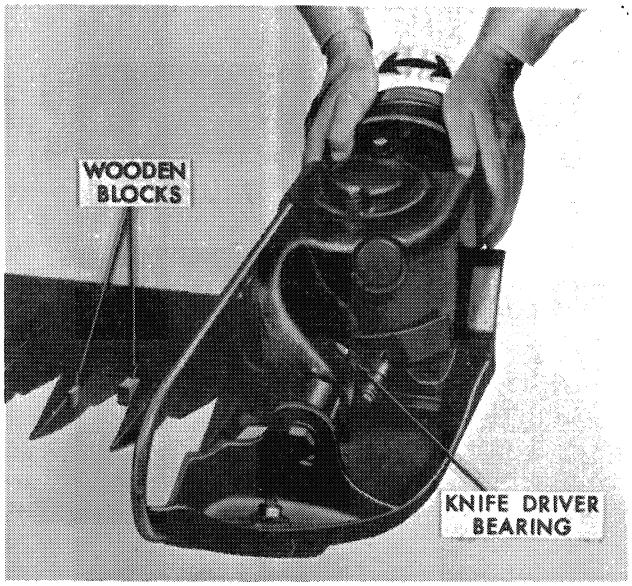

Figure 1
Checking for Bearing Play

SERVICE PROCEDURE

INSPECTION AND ADJUSTMENT

Knife Driver Bearing

Be sure to thoroughly clean the driver arm assembly before starting the service procedure. Before disassembling the wobble drive mechanism, check for play in the knife driver bearing.

1. Remove the knife attaching bolt, flat washer, and dust shield, Figure 3.
2. If the bearing is loose or rotates roughly, loosen the 7/16" x 1-3/4" bolt, Figure 3, and carefully tap the bearing out of the driver arm. Tap a new bearing into place in the driver arm.
3. Reinstall the nylon dust shield, flat washer, and knife-attaching bolt. Be sure the dust shield is positioned with the small diameter up.
4. Position the bearing so the knife will ride slightly above the ledger plates at the inner edge of the cutter bar. Tighten the 7/16" x 1-3/4" bolt to 50 ft. lbs. torque. If the bearing does not remain fixed in position, remove one or more .002" shims.

NOTE: *The shims and spacer are especially fitted to this driver and should* **not** *be removed unless absolutely necessary.*

If play still exists in the wobble drive mechanism, check the upper and lower bearings for end play.

Upper and Lower Bearings

Check for end play in the upper and lower bearings with reference to Figure 4 and as directed below:

1. Mount a dial indicator on the drive housing so the indicator contact rests on a smooth driver arm surface.
2. Insert a screwdriver between the cutter bar and the driver arm. Be careful not to damage lower seal on knife bearing.
3. To test for bearing play, pry up on the driver arm and observe the reading on the indicator dial. If the bearings are properly adjusted, the indicator dial should show no reading.

NOTE: *It is necessary to distinguish between lifting the driver and springing the driver. The difference is readily felt when there are excessive shims under the bearing cap making the bearings loose. Prying too hard will produce a fictitious reading due to springing of the driver.*

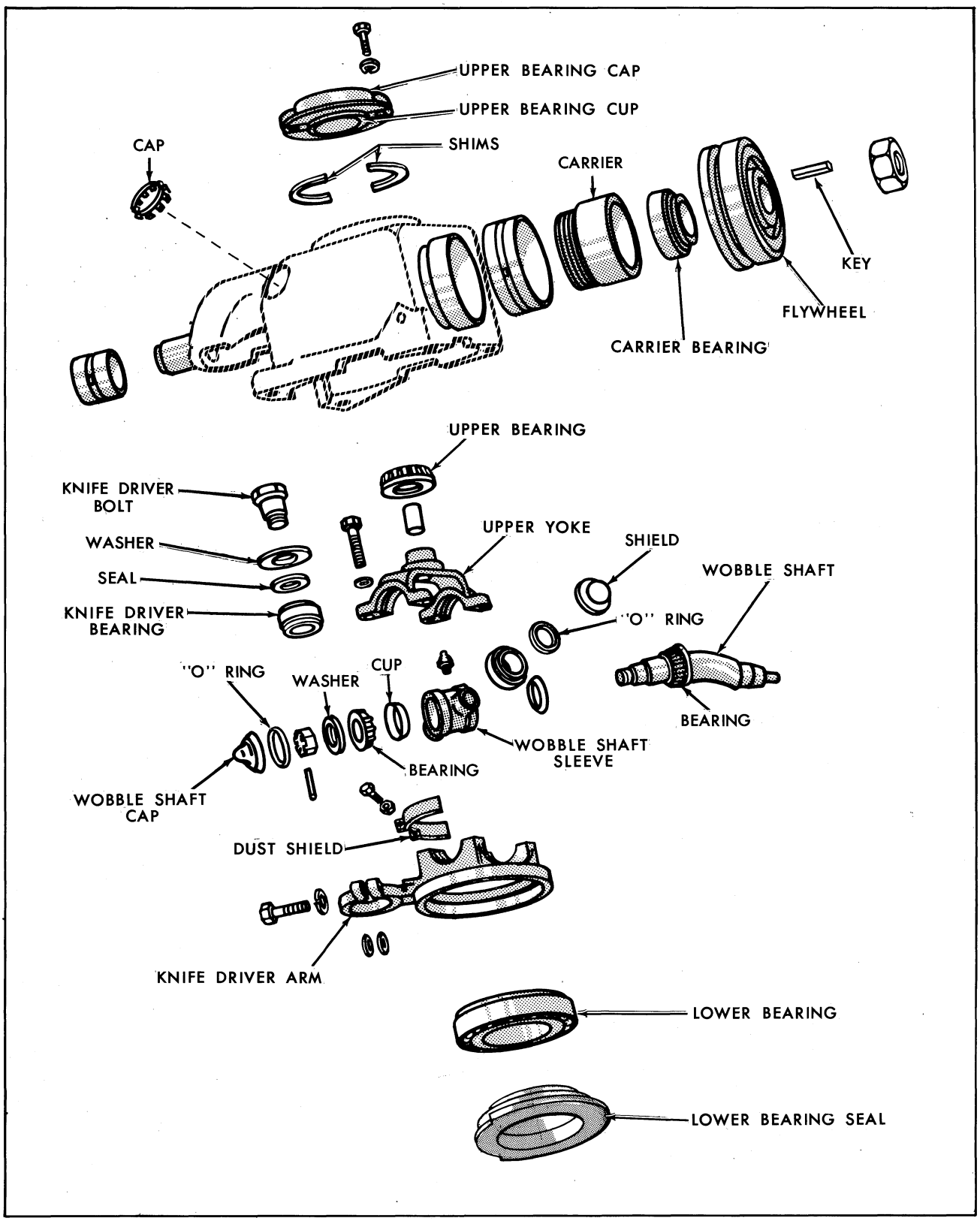

Figure 2
Exploded View – Wobble Drive Assembly

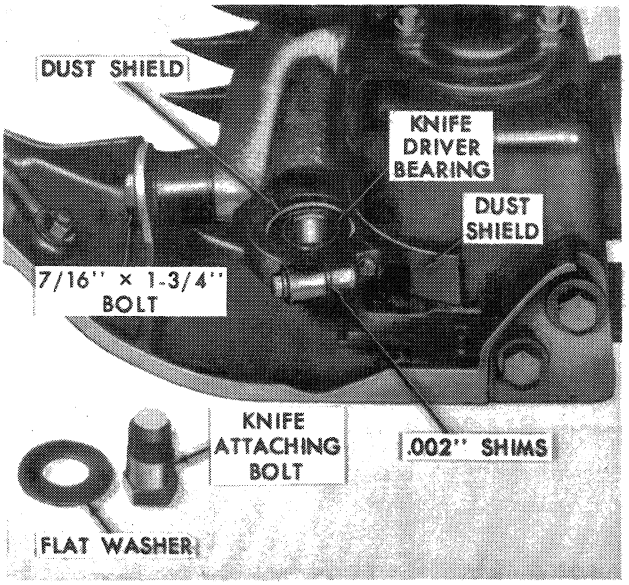

Figure 3
Knife Driver Arm Assembly

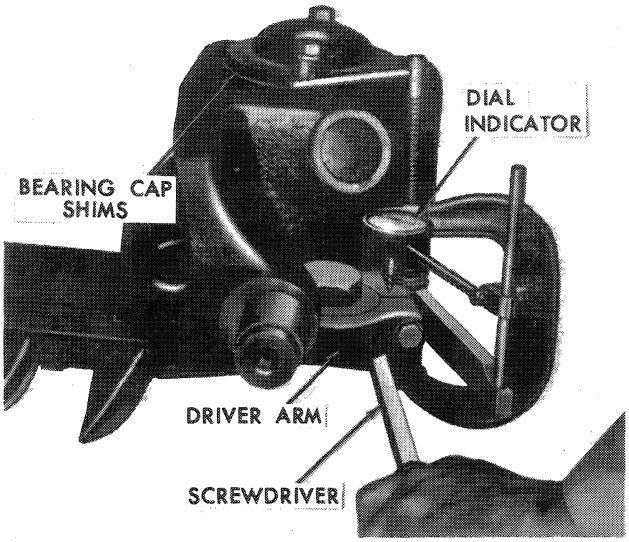

Figure 4
Checking for End Play – Upper and Lower Bearings

If an adjustment is necessary, add or remove bearing cap shims, Figure 5, to obtain a reading of .000" – .005"; then remove one .005" shim from under each side of the bearing cap to establish a .000" to .005" preload. Tighten the bearing cap bolts to 30 ft. lbs. torque. Be sure to clean the area around the cap before removing or installing shims.

NOTE: *Two sizes of shims are used, .005" and .015".*

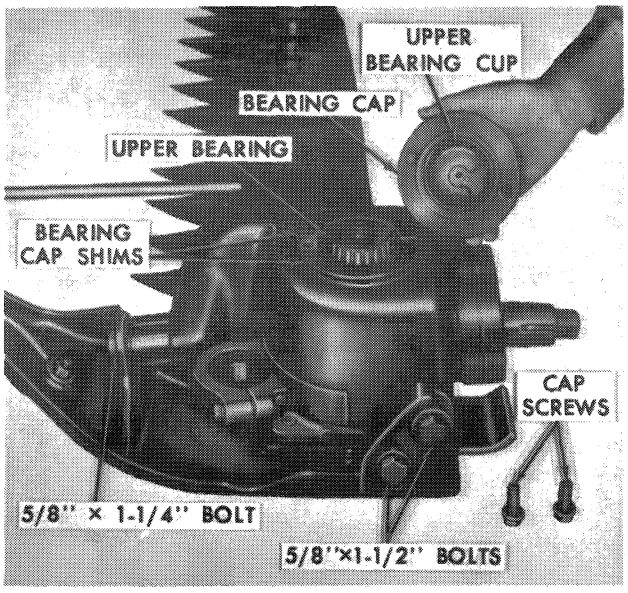

Figure 5
Upper and Lower Bearing Adjustment

If adjusting the upper and lower bearings does not eliminate the excessive play, the drive mechanism must be disassembled.

DISASSEMBLY

Since the wobble drive mechanism is disassembled only as adjustments are required, the disassembly procedure should be followed only as required to permit inspection and repair. Then, refer to the assembly instructions for components being repaired.

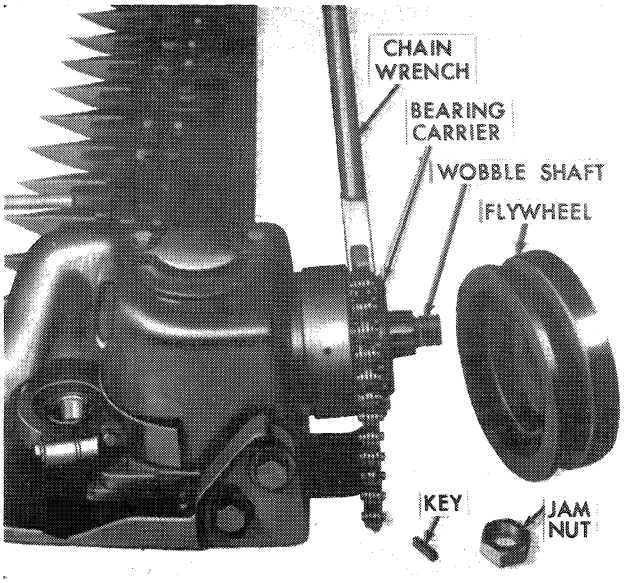

Figure 6
Bearing Carrier Removal

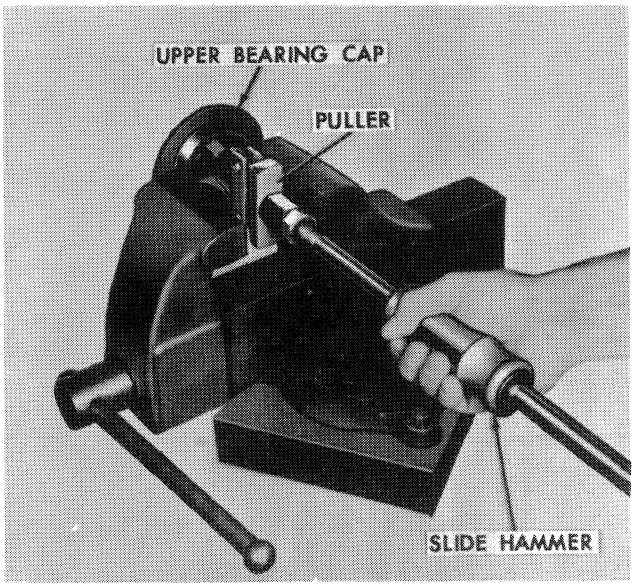

Figure 7
Upper Bearing Cup – Removal

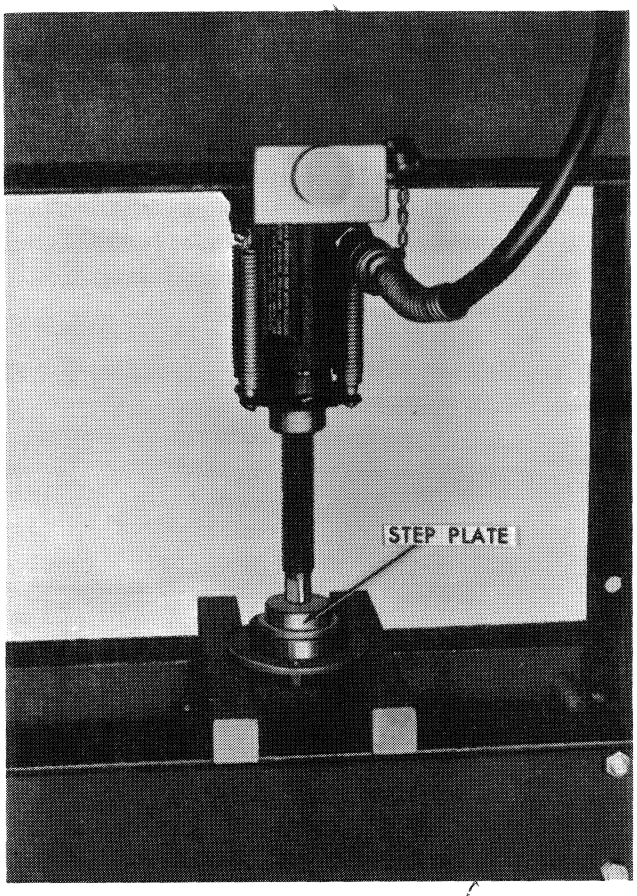

Figure 8
Upper Bearing Cup – Installation

Drive Mechanism

After thoroughly cleaning the entire assembly, service the drive mechanism as follows:

1. Remove the knife from the cutter bar.

2. Unscrew the 1" jam nut and remove the flywheel and 1/4" square key, Figure 6. It may be necessary to strike and rotate the flywheel with a soft hammer to loosen it.

3. Remove the bearing carrier with a chain wrench (or 24" pipe wrench), Figure 6. While turning the bearing carrier, lightly tap the end of the wobble shaft (nut installed flush with the end of the shaft) to relieve pressure on the bearing.

4. Inspect the bearing. If replacement is necessary, install a new bearing after installing the bearing carrier. The bearing can be pulled on with the flywheel nut and spacers, or pressed on.

5. Remove the bearing cap, Figure 5, and inspect the bearing cup for scoring and roughness. If replacement is necessary, use a slide hammer and puller to remove the cup, Figure 7. Use a press to replace the cup, Figure 8.

6. Detach the inner shoe from the drive housing by removing the one 5/8" x 1-1/4" bolt and the two 5/8" x 1-1/2" bolts shown in Figure 5.

7. Remove the drive assembly from the cutter bar by removing the four 5/8" bolts shown in Figure 9. After removing the assembly, remove the lower bearing seal and the dirt shield, Figure 9.

8. Inspect the cutter bar bearing. If the bearing is worn or rotates roughly, remove it by tapping it with a punch through the two bearing access holes located on the underside of the cutter bar, Figure 10. Lightly tap a new bearing into place.

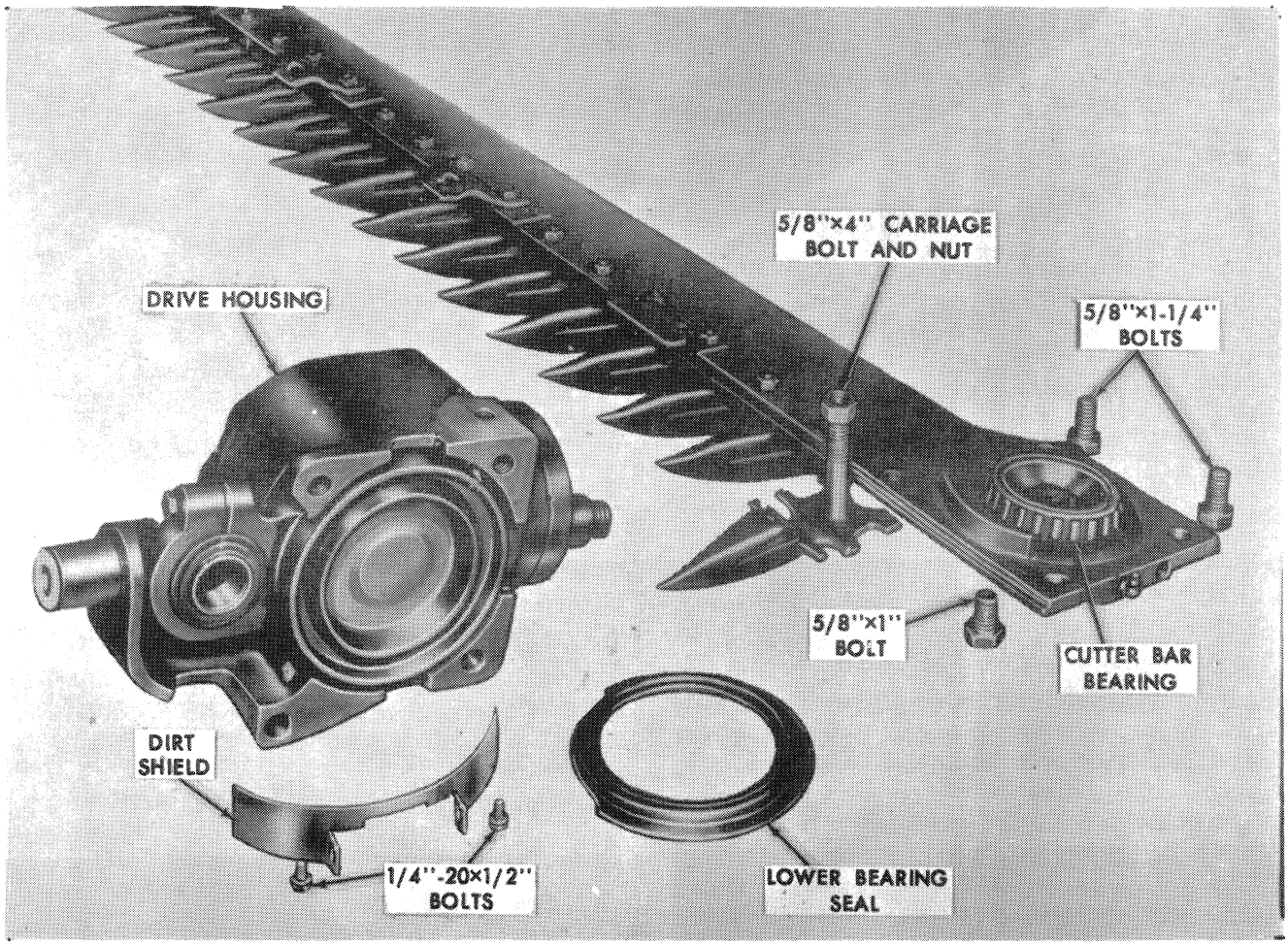

Figure 9
Removal of the Drive Assembly

Wobble Shaft Bearings

1. Turn the drive housing upside down and remove the knife driver assembly from the bottom of the housing. While lifting the driver arm, slowly rotate the wobble shaft until it will clear the drive housing.

2. Disassemble the knife drive assembly as shown in Figure 11, and as outlined below:

   a. Mark the upper and lower halves of the knife driver yokes for proper alignment during re-assembly.

   b. Remove the four 3/8" x 1-3/4" bolts and lock washers. Lightly tap the upper yoke to separate the driver.

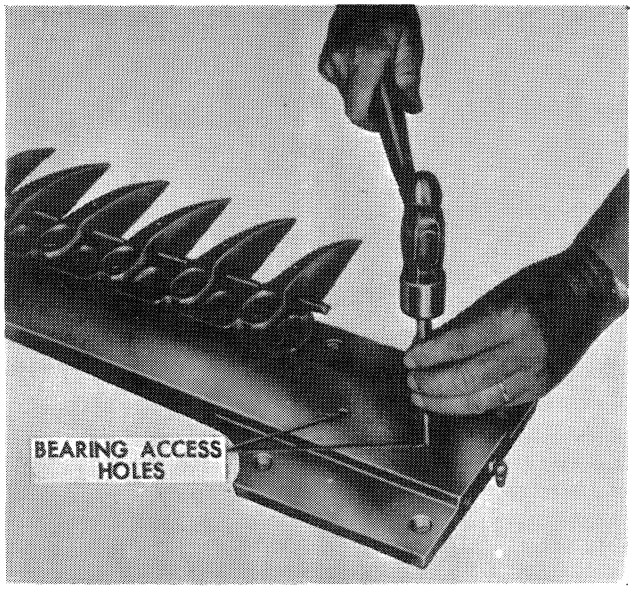

Figure 10
Removing the Cutter Bar Bearing

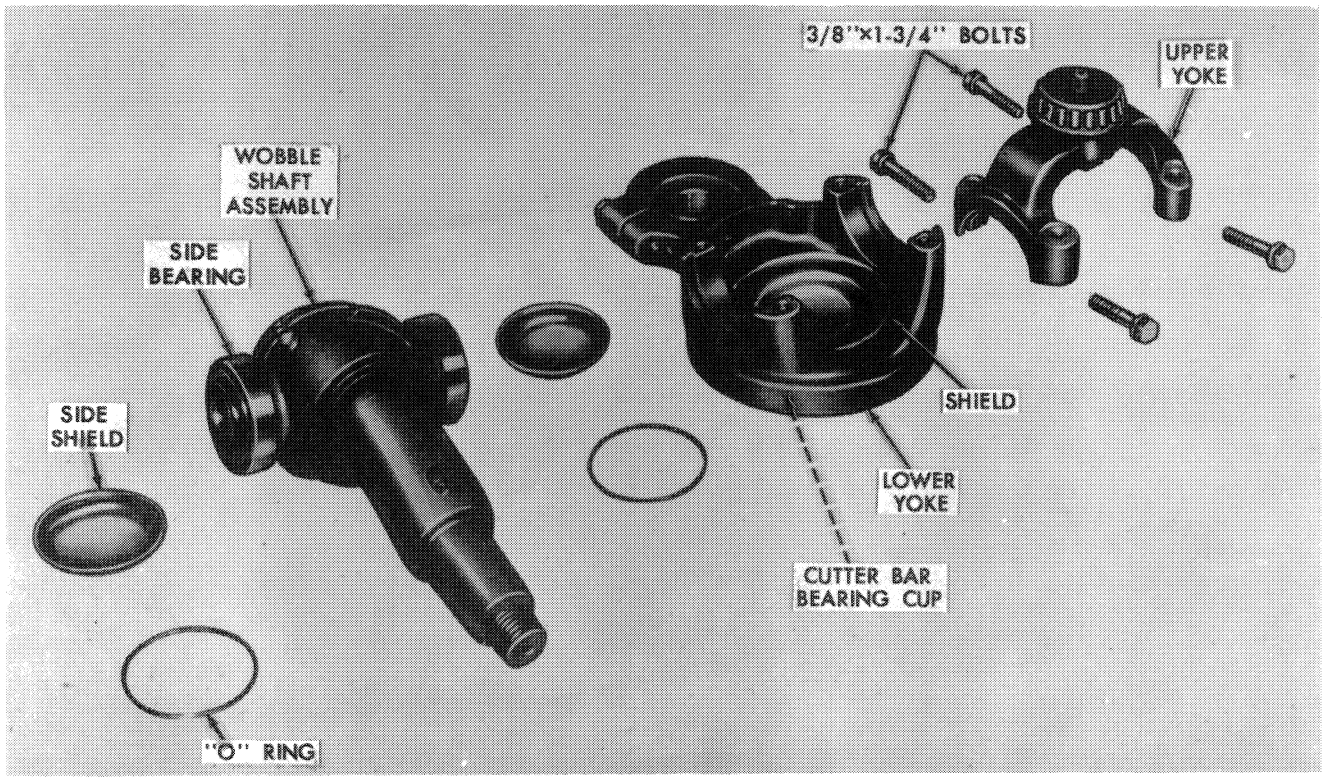

Figure 11
Knife Drive Assembly – Exploded

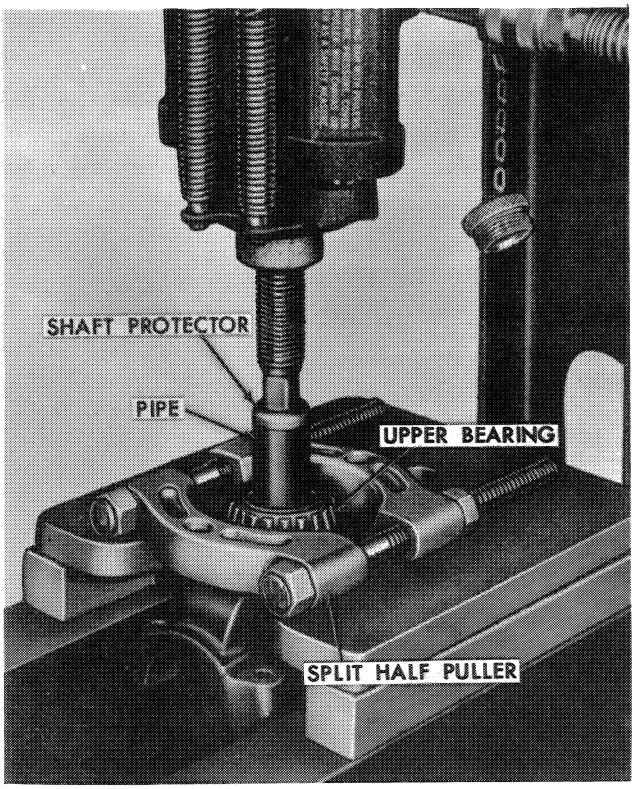

Figure 12
Upper Bearing – Removal

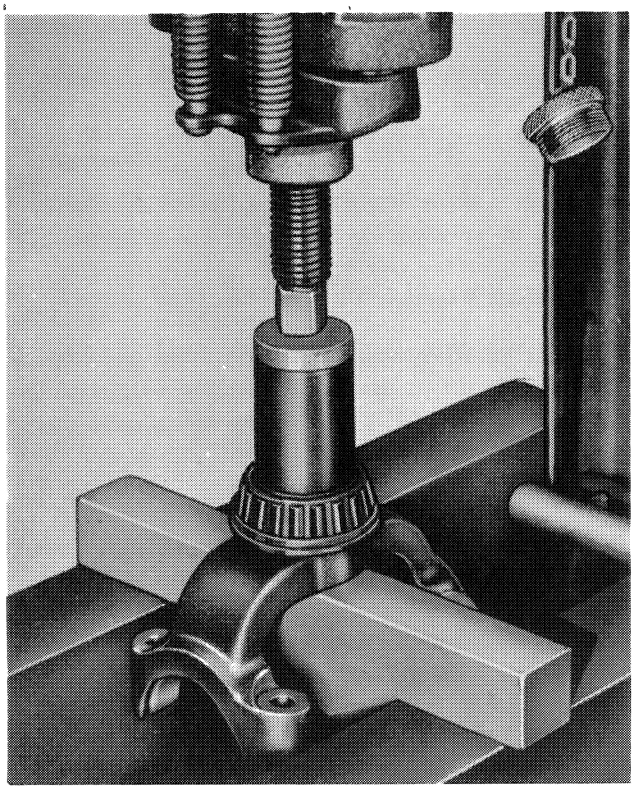

Figure 13
Upper Bearing – Replacement