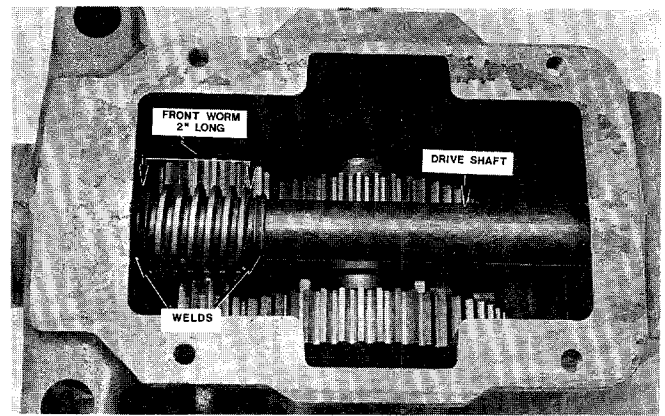


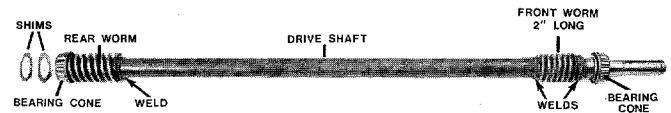
## HOW TO IDENTIFY YOUR DRIVE SHAFT STYLE

Your tiller is equipped with either the single piece welded drive shaft shown in Photo 8/31, or with the assembled drive shaft shown in Photo 8/33. Both style drive shafts are equal in performance and dependability. You can easily identify which style you have by comparing your drive shaft with the photos.

View of welded drive shaft (Photo 8/31) with transmission cover removed and gear oil drained. If your drive shaft has a weld bead as shown, or if the worm measures 2" in length, you have a welded drive shaft. Photo 8/32 shows that the front worm (2 inches long) of the welded drive shaft is between the two welds. The shims and two bearing cones shown in the photo must be ordered separately when purchasing parts.

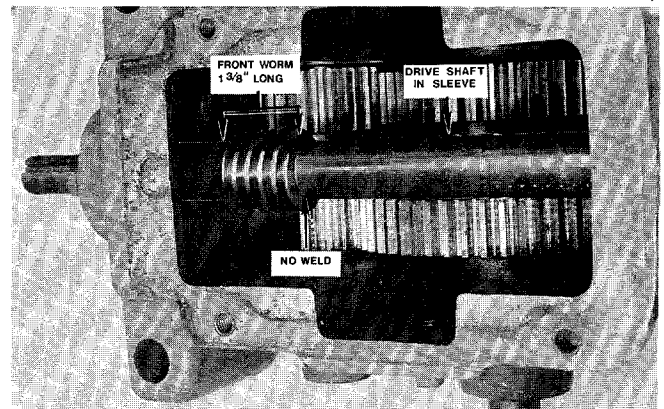


(Photo 8/31) Weld behind worm.

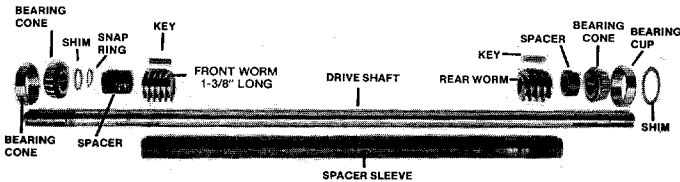


(Photo 8/32) Welded drive shaft.

(Photo 8/33) Assembled drive shaft with cover removed and gear oil drained. If there is no weld joint between the sleeve and worm as shown, or if the worm measures 1 3/8" in length, then you have an assembled drive shaft. Photo 8/34 below is an assembled drive shaft removed from the transmission case and disassembled.



(Photo 8/33) No weld behind worm.



(Photo 8/34) Assembled drive shaft parts.

The following shims can be obtained from our Parts Department:

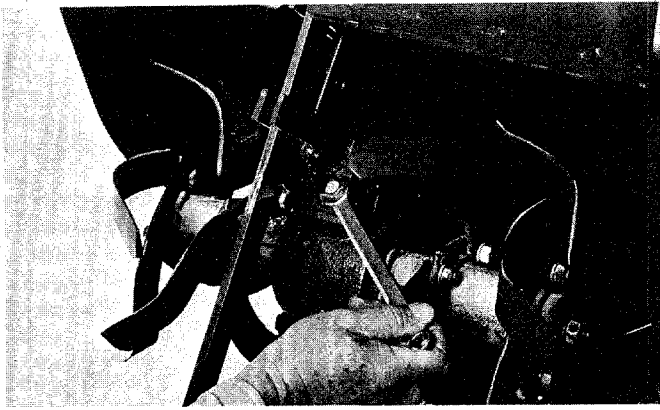
Part No.

- 1224-1 SHIM, 0.010" thickness (thin)
- 1224-2 SHIM, 0.030" thickness (thickest)
- 1224-3 SHIM, 0.005" thickness (thinnest) used least.

One "10" is better than two "5's."

## HERE'S HOW TO GO ABOUT SHIMMING FROM THE REAR

You must remove the tiller hood and disconnect the depth regulator from the rear cap. To do so, remove the two bolts on the front hood mounting bracket (part #1077)—see Photo 8/40. Then, remove the screws fastening the depth regulator to the end cap—see Photo 8/35.

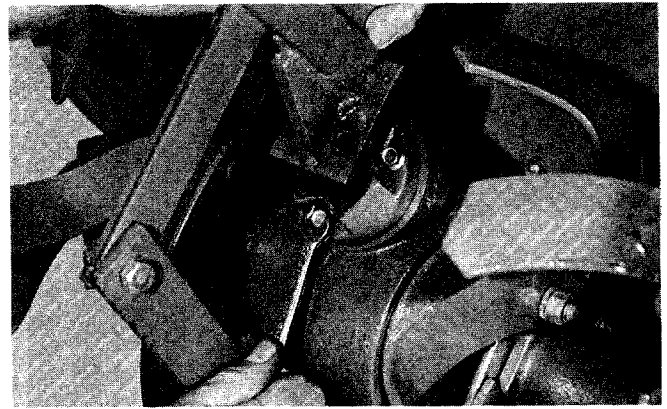


(Photo 8/35) Remove two bolts.

Take a 3/8" open end wrench and remove the three screws from the end cap—see Photo 8/36. Then, tap the cap off the end of the transmission gently with a small hammer if necessary. You should remove and replace the gasket (part #1124) on the rear bearing cap. To shim the play out of the shaft, use the part #1224-1, #1224-2, and #1224-3 shims—see Photo 8/37. These shims have the same inside diameter and come in thicknesses of 0.010", 0.030", and 0.005". You use various combinations of these shims as required to take the play out of the main drive shaft without putting undue pressure on the bearing.

Replace the end cap (see Photo 8/38) and hold it in position with your left hand while you hit the front of the drive shaft with a sharp blow from a rubber mallet—see Photo 8/39. Then try to move the drive shaft back and forth with your right hand.

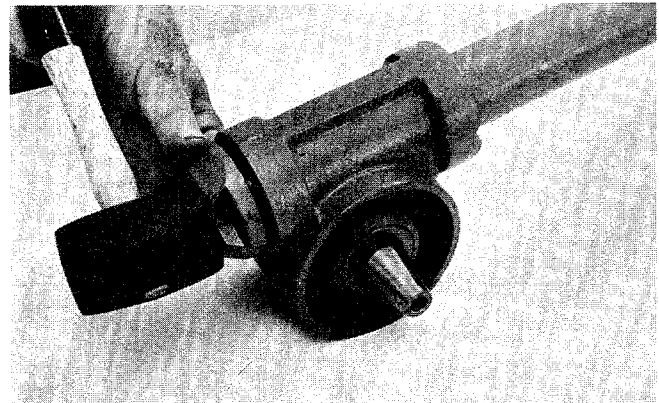
When you have shimmed the bearing from the rear, and replaced the cap, pull the drive shaft back and forth from the front to determine if there is any play. Do this before you have put the lower transmission pulley (see page 136) on the shaft. *Remember*, although there should be almost no play in the shaft, it cannot be so tight as to cause binding on the bearing in the rear. This would heat up the bearing and eventually do much damage. On the other hand, if it is too loose, that is not good either. Being too loose will cause misalignment that will wear out the worm and worm gear. It might also loosen the rear cap during heavy tilting operations. Either case is potential damage to the tiller transmission.



(Photo 8/36) Remove screws from cap.



(Photo 8/37) Shims remove play in shaft.



(Photo 8/38) Line up holes, tap on cap.



(Photo 8/39) Hold cap on, hit front of shaft.

## REPLACE TRANSMISSION DRIVE PULLEY

Once the drive shaft has been shimmed, you can lubricate the front of the drive shaft and make sure any metal burrs are cleaned off of it. Then, put on the inside snap ring and the lower pulley (part #1008-1) and its key, followed by the outside snap ring. Make sure that the lower

pulley is able to float back and forth a fraction of an inch. Lubricating the shaft well will insure that the pulley is able to "float." Now, you are ready to reinstall the engine, in accordance with instructions given on page 148, Section 8 of this manual.

## REMOVING THE TILLER HOOD

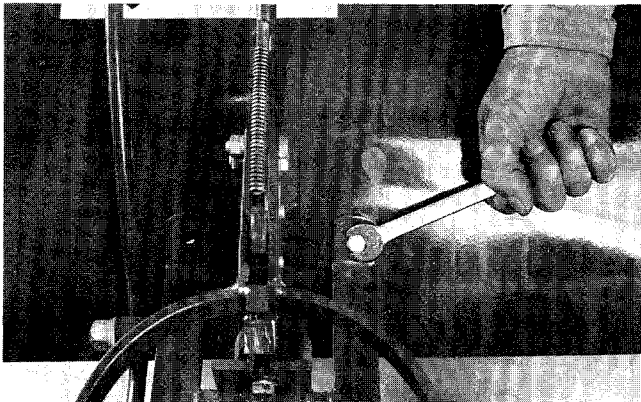
**Step 1.** Tilt your tiller up on its engine, taking care to place something underneath the engine cover to protect it from damage. Then, remove the two  $\frac{3}{8}$ "-16 x 1 $\frac{1}{2}$ " bolts attaching the hood to the front hood bracket—see Photo 8/40.

**Step 2.** Remove the four small bolts and nuts that fasten the hood to the top of the rear bracket—see Photo 8/41.

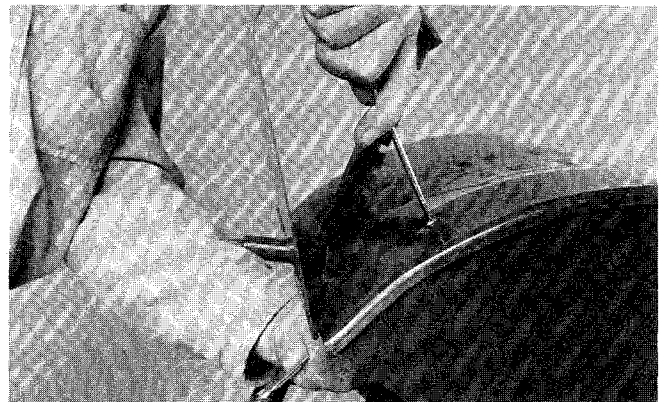
**Step 3.** Take a small board and drive the knob off the handle of the depth regulator—see Photo 8/42.

**Step 4.** Lift the hood off the tiller, as shown in Photo 8/43.

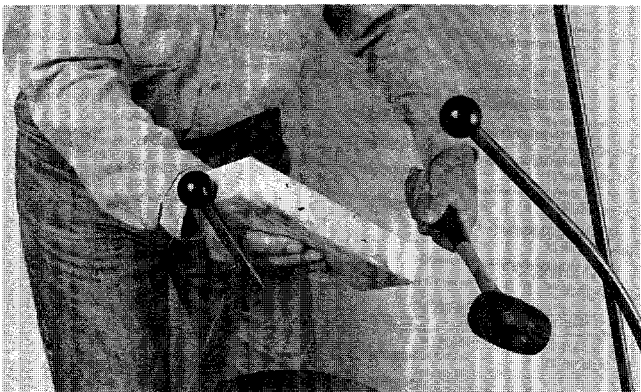
8



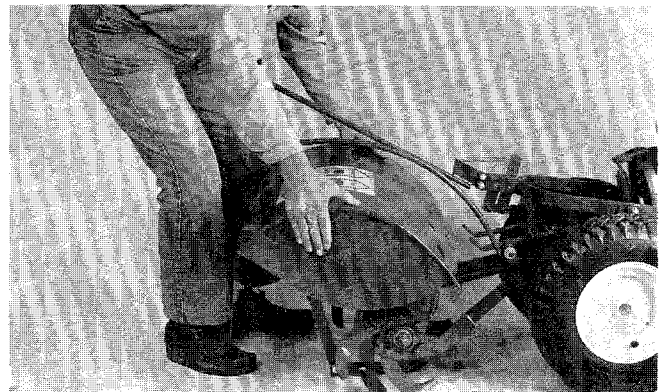
(Photo 8/40) Two front hood bracket bolts.



(Photo 8/41) Four rear hood bracket bolts.



(Photo 8/42) Tap knob off, save tolerance ring.



(Photo 8/43) Lift hood off.