



Caterpillar

Service Manual

Fifty
S/n 5A-1 & Up

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Service Manual

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To disassemble. Remove nut from front end of fan shaft. A gear puller can be used to remove fan hub, or, if a puller is not available it can be removed by using hammer and pinch bar as illustrated. After hub is off remove Woodruff key from front end of shaft. Next, remove TIMING GEAR HOUSING. Remove two cap screws which hold fan gear housing to inner face of timing gear housing. Slide fan gear housing off shaft and pull fan shaft with gear out of timing gear housing.

A thrust plate and washer is provided to take care of end play. If the bronze thrust plate is worn it can be reversed by taking out the two cap screws that hold it to the timing gear housing. A new steel thrust washer can be installed if necessary. If a new fan shaft or fan gear is installed exercise care to line up the oil hole in the gear with a corresponding hole in shaft. Worn fan shaft bearings can be pressed out and new ones pressed in. Be sure to replace spacer which separates bearings. Inner bearing should project about $\frac{1}{8}$ " from inner face of timing gear housing. If bearing in fan gear housing requires replacement proceed as follows: Drive out core hole plug, press out bearing—press in new bearing. It is advisable to use new core hole plug as this plug must withstand pressure of oil.



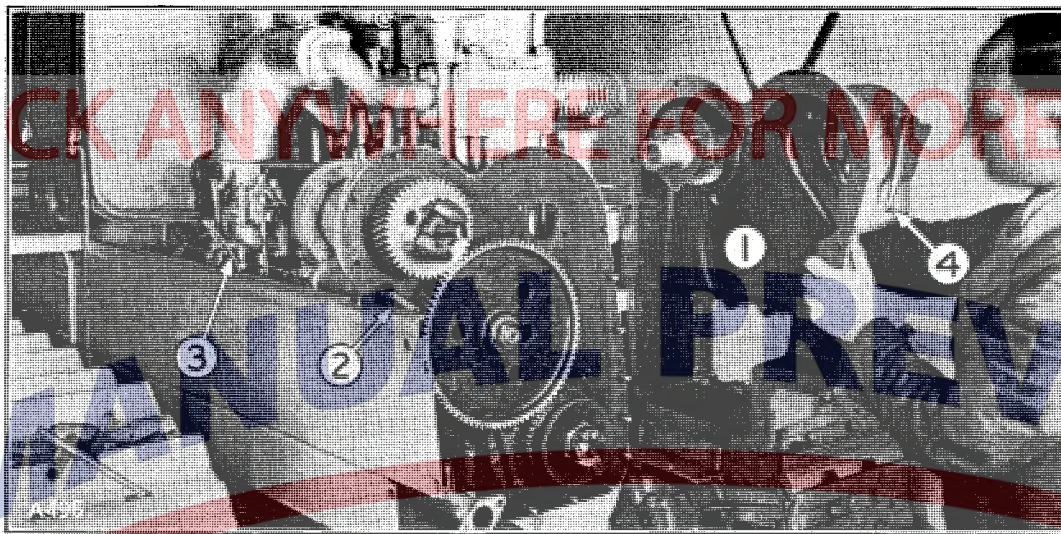
REMOVING FAN THRUST UNIT

1—Thrust plate. 2—Thrust washer. 3—This oil hole must line up with hole in shaft.

TIMING GEAR HOUSING

To remove. Remove RADIATOR. Remove small cover which closes opening of governor compartment in timing gear housing. Disconnect forward end of spring from governor spring lever. Disconnect carburetor control rod from governor lever. Use small end of spark plug wrench to remove screw which secures oil line to fan gear housing. Remove nuts from two studs which extend through rear of timing gear housing plate. These studs support rear end of fan gear housing.

Remove nuts from studs which hold lower edges of hood side plates to crank case and pry plates outward sufficiently to clear flange of timing gear housing. Remove bolts and cap screws which hold timing gear housing to plate. Remove housing and fan assembly complete by pulling forward. This assembly can be handled easily by two men.



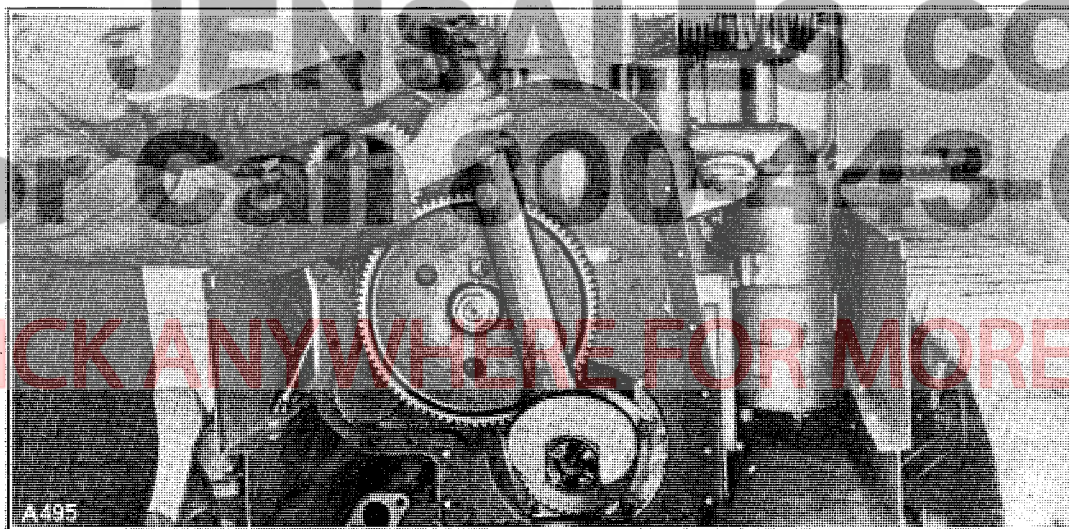
REMOVING TIMING GEAR HOUSING

- 1—Timing gear housing. 2—Governor spring. 3—Carburetor control rod.
4—Governor lever.

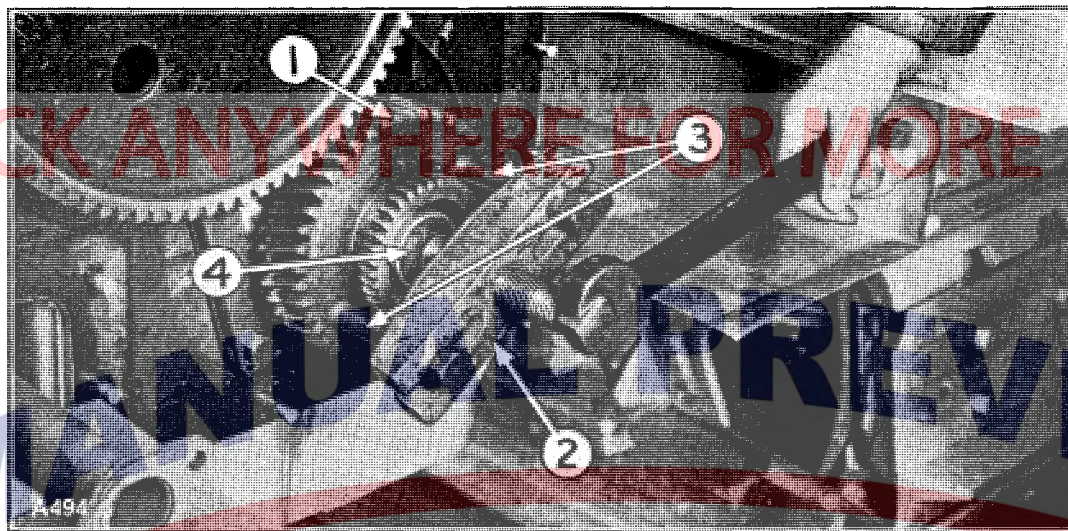
CRANK SHAFT GEAR

To remove. Remove TIMING GEAR HOUSING. Remove cap screw which secures starting crank jaw lock plate to crank shaft gear; remove lock plate. Use large track adjustment wrench to remove starting crank jaw. Insert two $\frac{5}{8}$ " x $4\frac{1}{2}$ " S.A.E. cap screws into tapped holes in gear and install special puller. As front end of crank shaft has a tapped hole, special spacer L-1774 should be used between point of puller screw and end of crank shaft. Gear can then be pulled off.

To replace gear, coat end of shaft with white lead or oil, place gear in position against end of shaft, line up keyway in gear with key on shaft, then drive against gear with hammer and short length of pipe. If forward edges of key are beveled slightly, less trouble will be experienced if gear should turn slightly while being driven.



REMOVING STARTING CRANK JAW



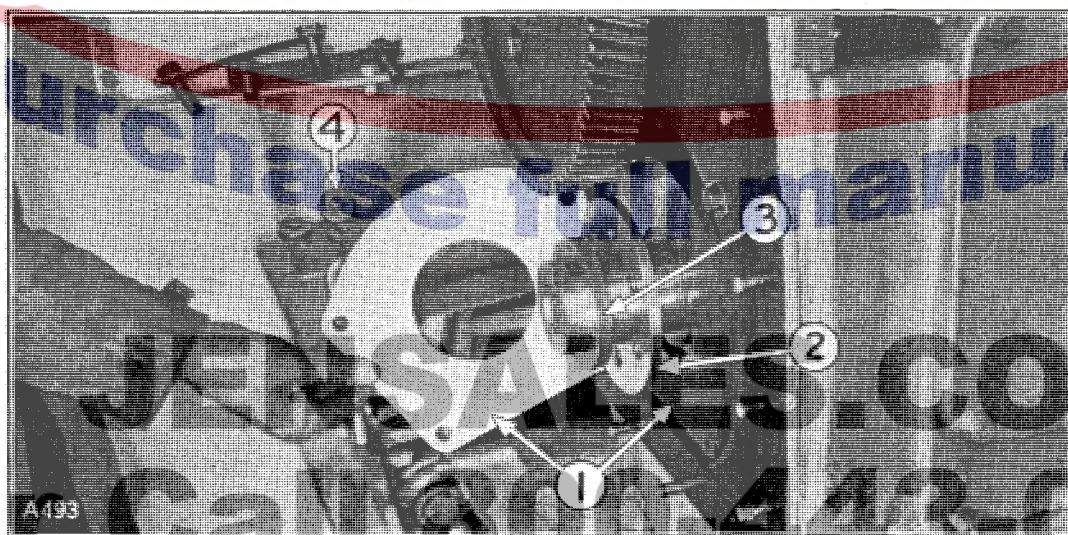
PULLING CRANK SHAFT GEAR

1—Crank shaft gear. 2—Special puller. 3— $\frac{5}{8}$ " x $4\frac{1}{2}$ " S.A.E. bolts. 4—L-1774 spacer.

CRANK SHAFT THRUST UNIT

To remove. Remove CRANK SHAFT GEAR. Straighten locks and remove four cap screws which hold thrust plates in position. Thrust washers and rear thrust plate can then be slipped off end of shaft.

On a new tractor, crank shaft end play varies between .005" and .009". Excessive end play can be corrected by reversing large thrust plates and installing new bronze thrust washer.



REMOVING CRANK SHAFT THRUST UNIT

1—Thrust plates. 2—Thrust washer. 3—Gear spacer. 4—Thrust plate spacer.

CAM SHAFT GEAR

To remove. Remove TIMING GEAR HOUSING. Straighten lock and remove nut which secures gear to cam shaft. Place special puller in position then insert heads of two $\frac{5}{8}$ " x $4\frac{1}{2}$ " bolts through holes in gear so that their heads engage edges of holes. Wedge heads of bolts with two short rods or bolts about $\frac{1}{2}$ " thick. Install nuts on puller bolts and turn puller screw until gear is forced off.

When replacing gear with cam shaft in position, it will be necessary