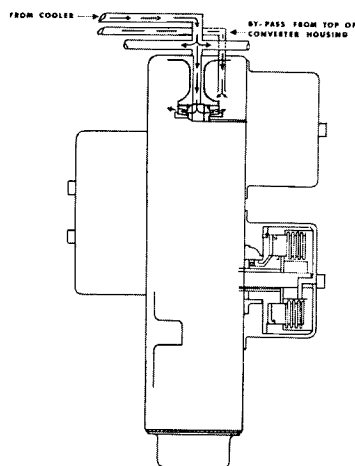
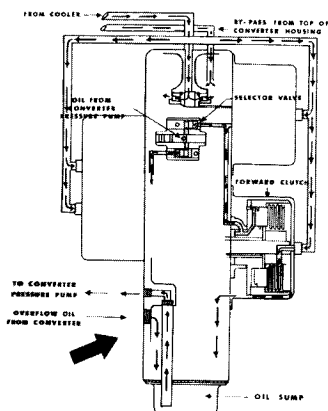


- 1 No. 6 is the high pressure line leading directly from the pump in the converter to the transmission control cover. The high pressure line operates and controls the power shift.

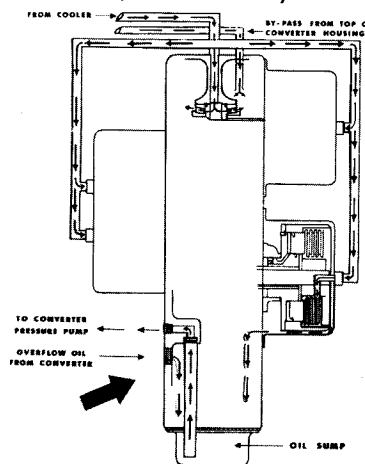


- 3 Line from the cooler, and the by-pass from the top of the converter housing, leading into the top of the transmission. Line leads down through drilled ports to lubricate the gear bearings. The other line feeds oil down through the constant mesh gear train.



- 5 High pressure oil from the converter pump enters the transmission control cover at a point shown by the arrow. When the selector valves are in this position the high pressure oil is directed to the forward clutch as shown at the right. High pressure oil is also directed to the first and third clutch.
HIGH PRESSURE OIL OPERATES CLUTCHES AND LOW PRESSURE OIL LUBRICATES AND COOLS.

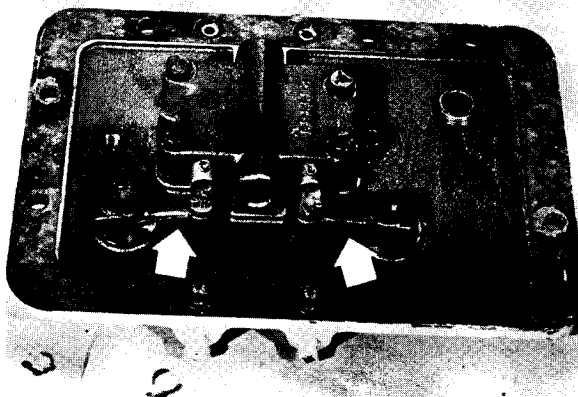
- 2 The low pressure lines cool and lubricate moving parts in the transmission. The high pressure line operates the power shift transmission mechanism. When working on either torque converter, or transmission, drain the entire system.



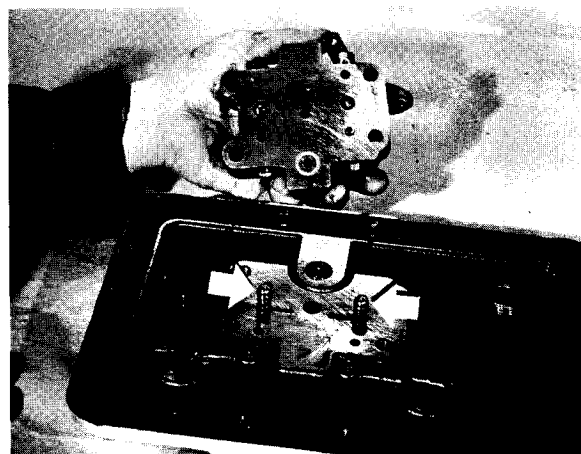
- 4 Hoses carry oil to fittings on the outside of the clutch covers, lubricating clutch discs. Oil then drains back to oil sump.



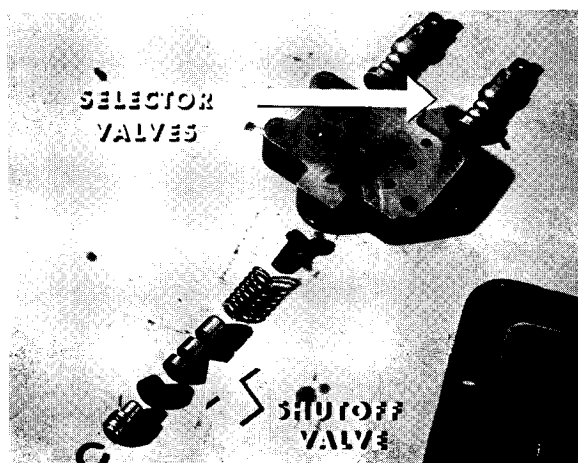
- 6 Removing transmission cover, containing the selector valve mechanism.



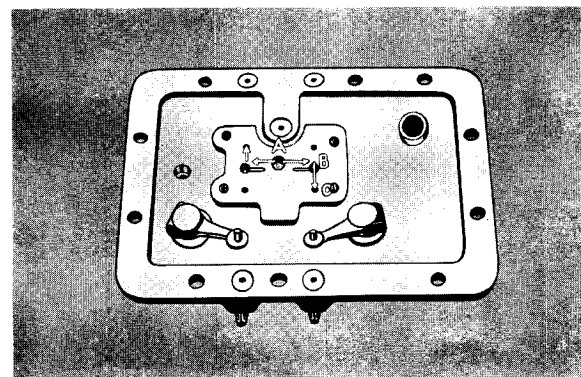
7 Arms, indicated by arrows, control position of selector valve.



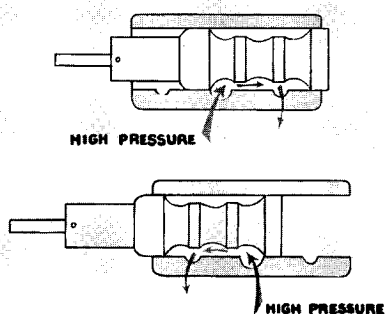
8 Lift the valve housing straight up, so springs and balls remain in place.



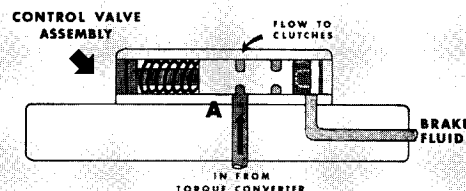
9 Selector valves and shutoff valve.



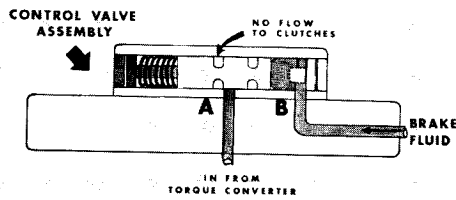
10 High pressure oil from the torque converter pump enters at A, flows through ports drilled in the housing to B, around the small diameter of the selector valve and to opening C. From C the oil is directed through lines in the side of the transmission case to the clutch. At the same time high pressure oil also flows to the other selector valve and out the uncovered opening to the first and third clutch.



11 Oil is directed, in top illustration, to reverse clutch. Bottom illustration is directed to forward clutch.



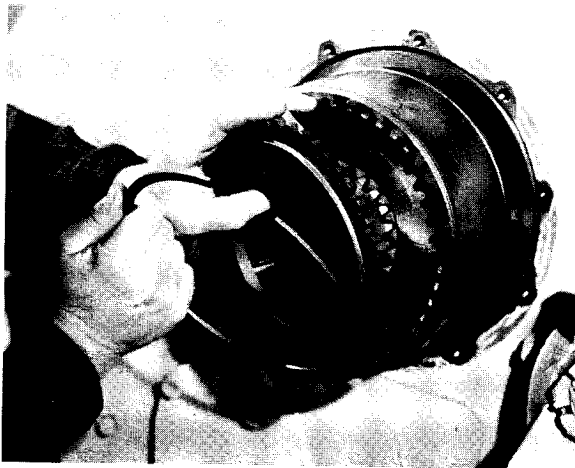
12 Shutoff valve, neutral position.



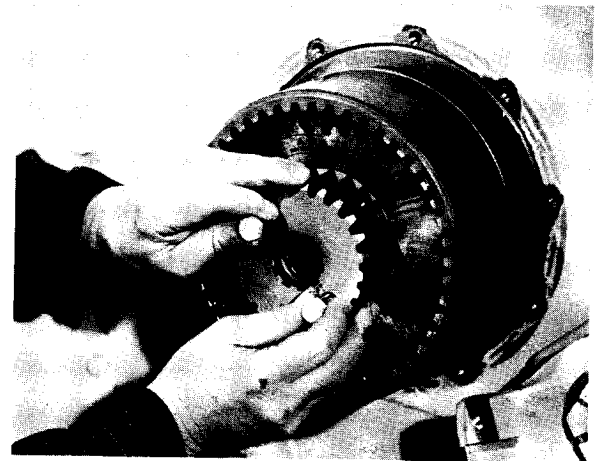
13 Shutoff valve, applied position.



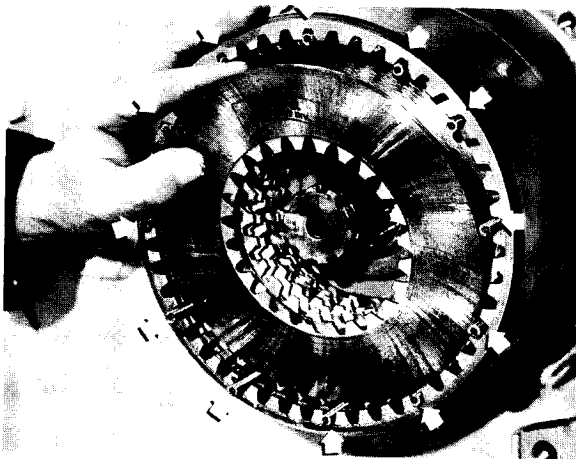
14 Remove clutch housing.



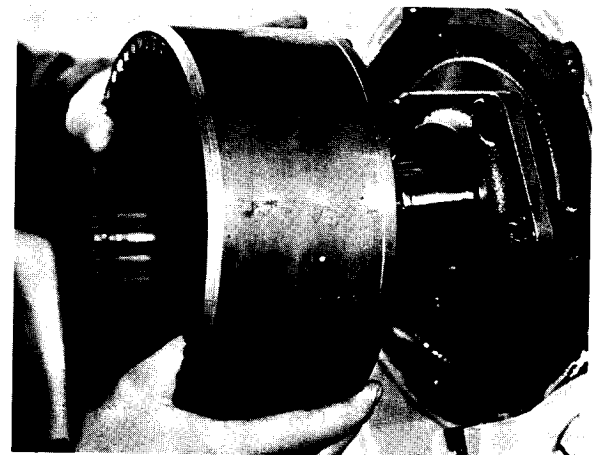
15 Remove the large retaining ring from its groove. Then large disc end plate may be slipped out.



16 Remove small snap ring holding the disc hub to the shaft. Place two of the cap screws that held the clutch cover in place, in the holes provided in the hub, for hub removal.



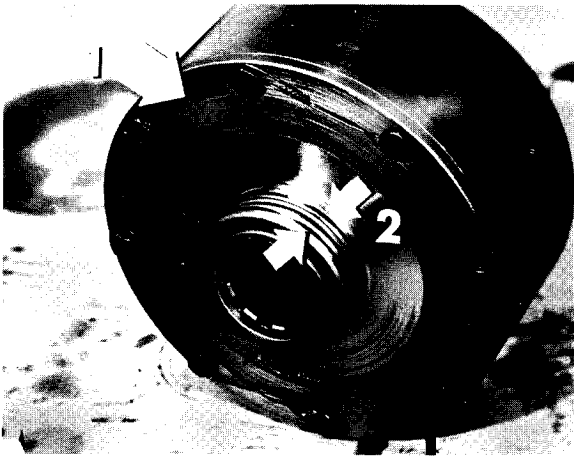
17 Remove springs and clutch discs. Replace any broken springs.



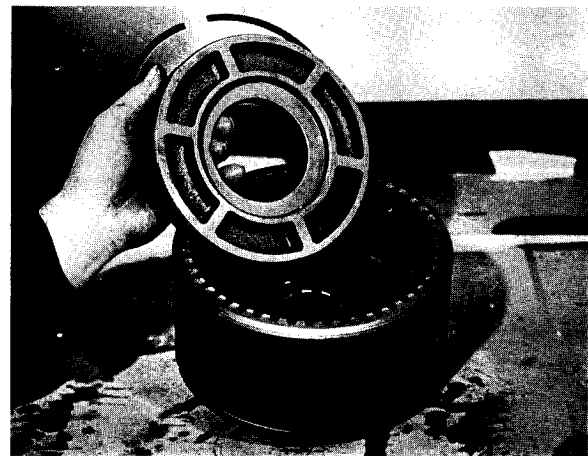
18 Remove snap-ring, on quill shaft (hollow outer shaft). Remove clutch drum.

SERIES: T75A T175A R400FS

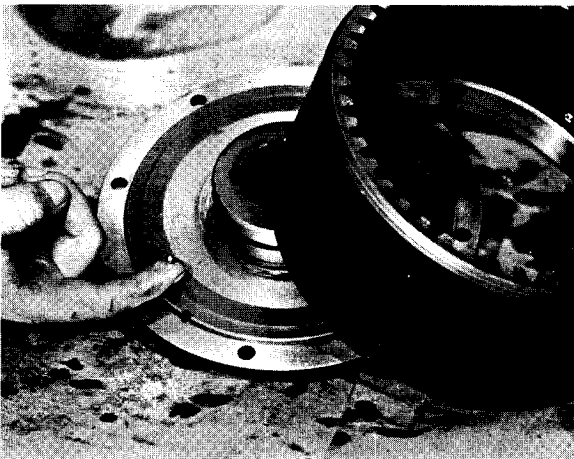
CLARK EQUIPMENT COMPANY • Construction Machinery Division



19 Check relief hole, number 1 in illustration, for proper passage. Replace oil rings, number 2 in illustration.



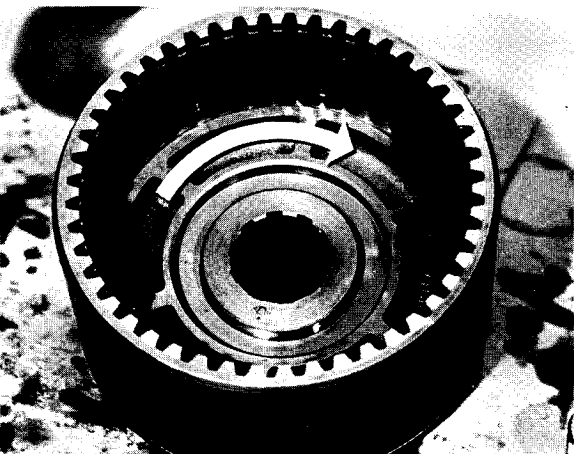
20 Piston and sealing ring. Install new ring.



21 Clutch drum with hub removed. Care must be taken lest relief ball is lost.



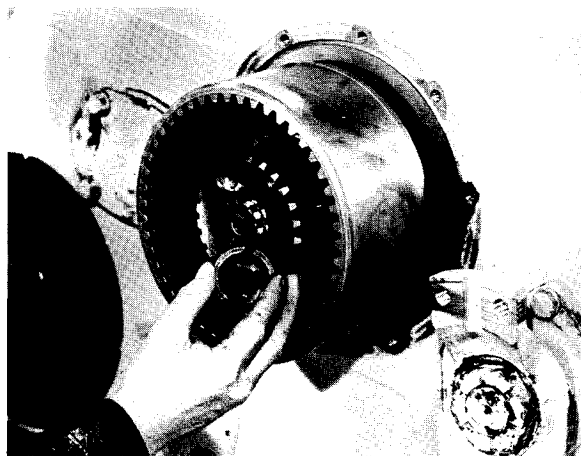
22 Replace hub and drum. Use equal amount of lock wires for proper high speed balance. Install new oil rings, indicated by arrow.



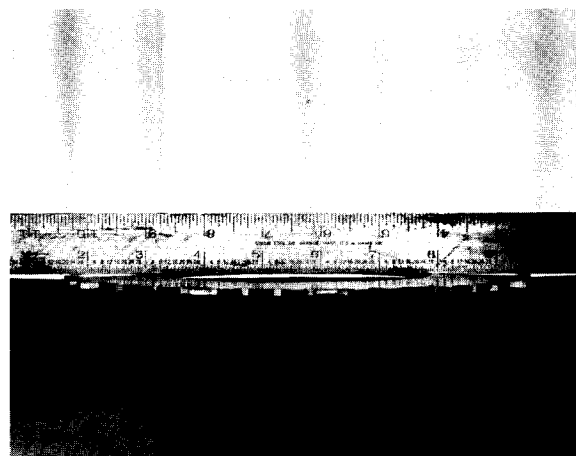
23 Install new sealing ring on piston, with lip of seal down. Lubricate with transmission oil. Rotate piston as it is moved into position.



24 Lubricate seals of drum hub and slide into place. Locate snap ring.



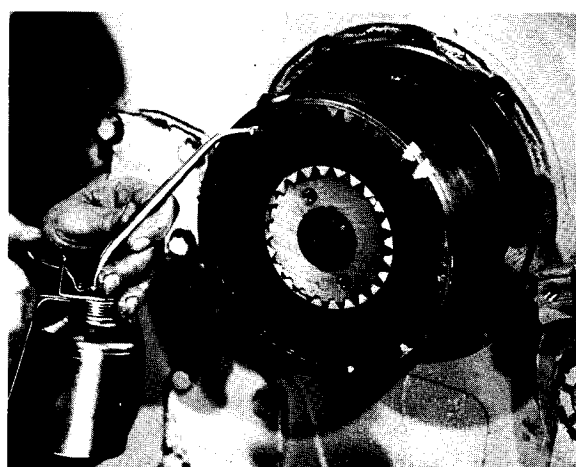
25 Disc hub is held by snap ring shown.



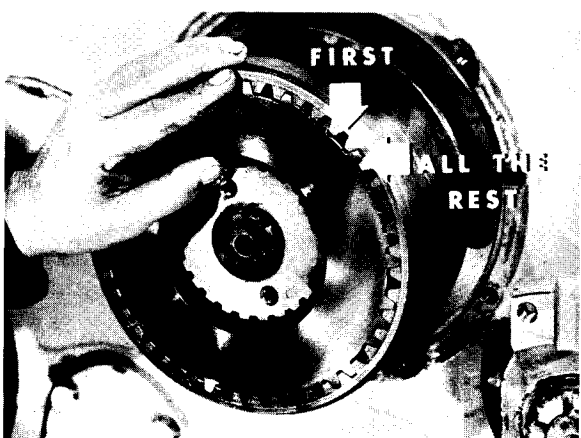
26 Clutch discs have a .020 disc. Discs should be all facing same direction.



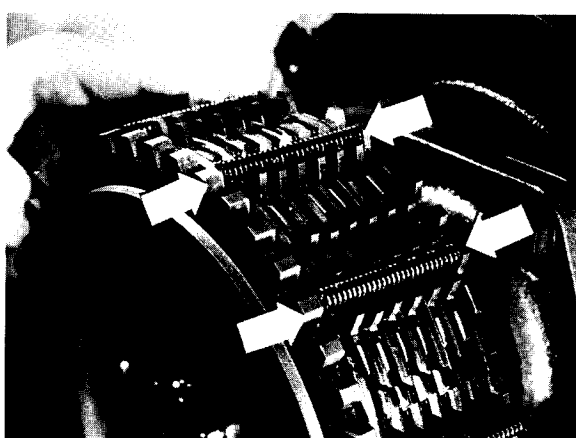
27 The first disc is always a steel one. The teeth are in groups of three, except for one spot. At this one spot, either two or four teeth will be found, depending on the model tractor shovel. Clutch illustrated has only two. As discs are installed, mark drum as illustrated. As you put in the disc, put down two chalk marks as shown.



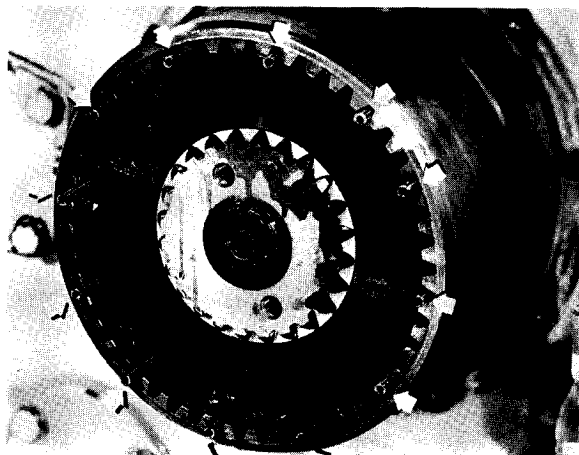
28 After the first steel disc, a bronze disc is next. Since this has teeth on the inside, it can go in any position.
LUBRICATE EACH CLUTCH FACE WITH TRANSMISSION OIL. Oil with type "A" transmission oil.



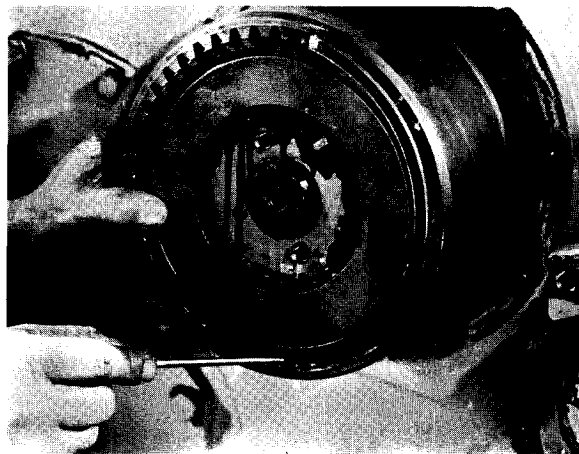
29 The arrow labeled No. 1 shows where the first tooth of the two tooth group went in. All the rest of the steel discs go in one notch to the right. From this point alternate bronze and steel discs until all are in place.



30 This picture shows the relation of the first steel plate with the intermediate and last disc.



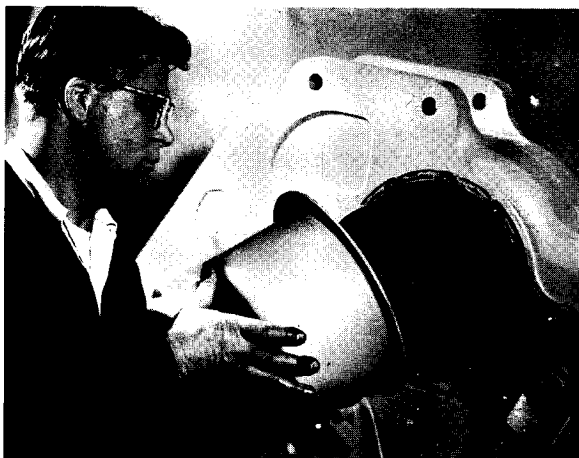
31 Last disc is bronze. Insert springs.



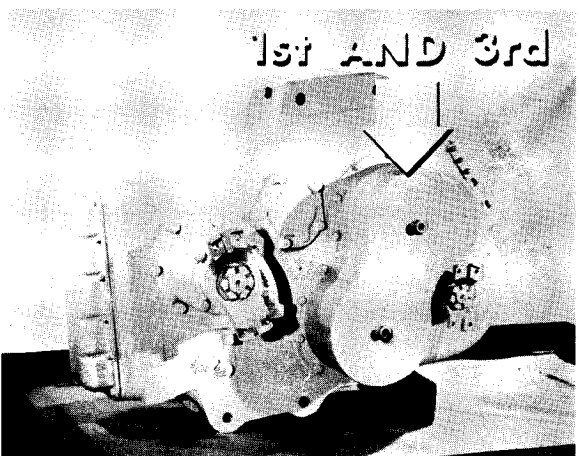
32 Slip the disc end plate into place and locate large snap ring.



33 Install new "O" ring.



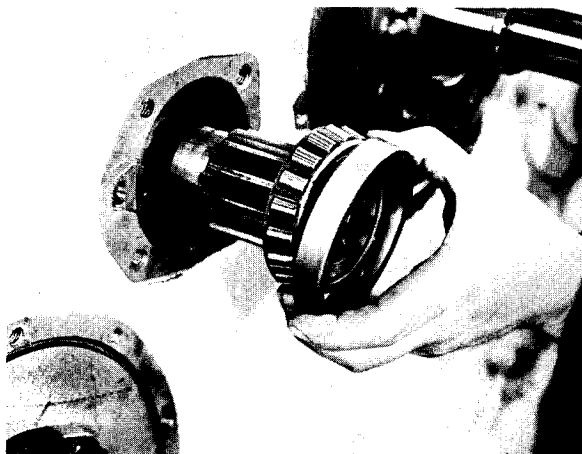
34 Replace cover.



35 First and third speed shafts removed through top of transmission case.



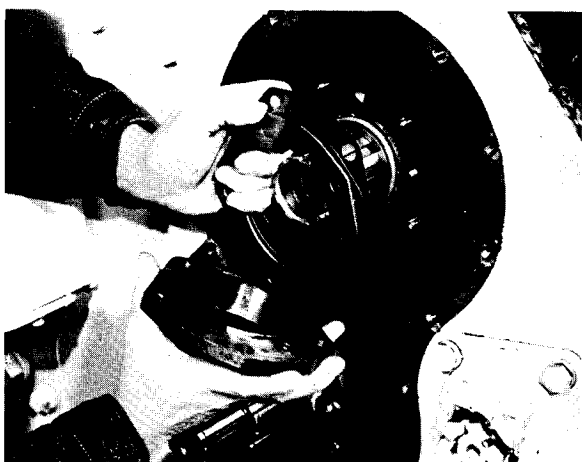
36 Remove bearing cap and shims. IMPORTANT — keep all shims and caps together.



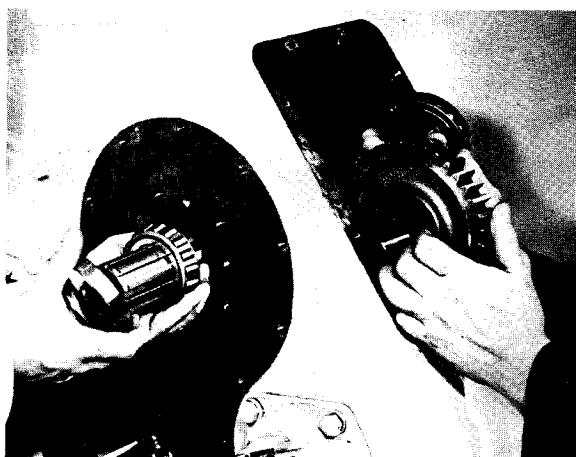
37 Drive the inner shaft, bearing and bearing race from the engine side.



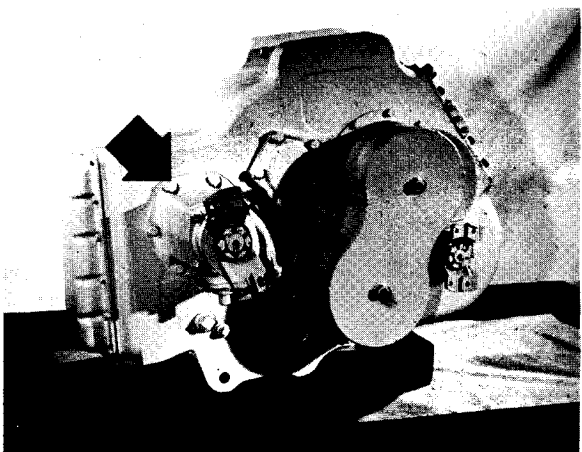
38 Remove high speed gear and bearing.



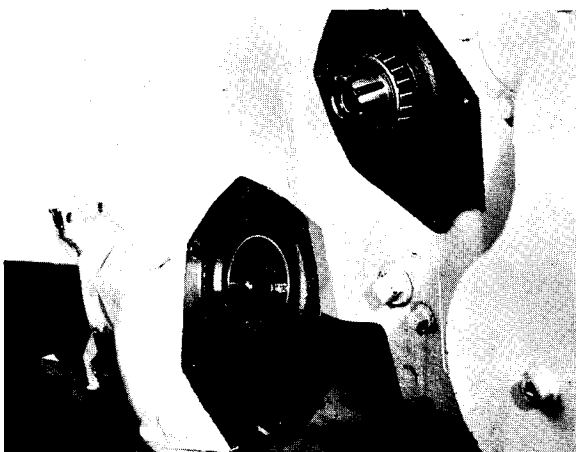
39 Remove bearing end cap and shim from the engine side of the transmission.



40 Left — Quill shaft, bearing and race, removed.
Right — First and third drive gear and bearing, removed.



41 Rear axle output shaft removed, before assemblies are removed from bottom of transmission.



42 Rear axle clutch, removed.

TRANSMISSIONS

Shop Manual

CLARK
EQUIPMENT

**The
MICHIGAN
Line**

SERIES: T75A T175A R400FS

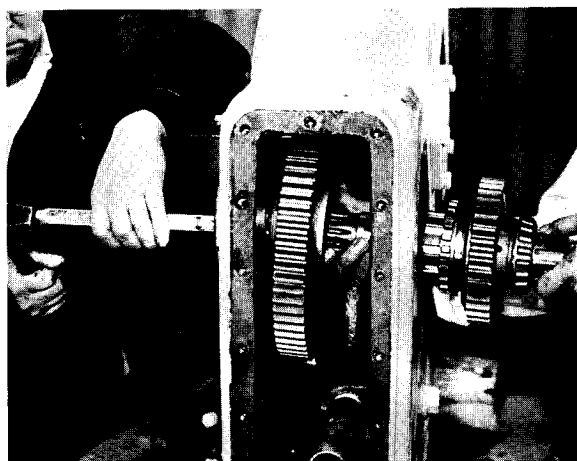
CLARK EQUIPMENT COMPANY • Construction Machinery Division



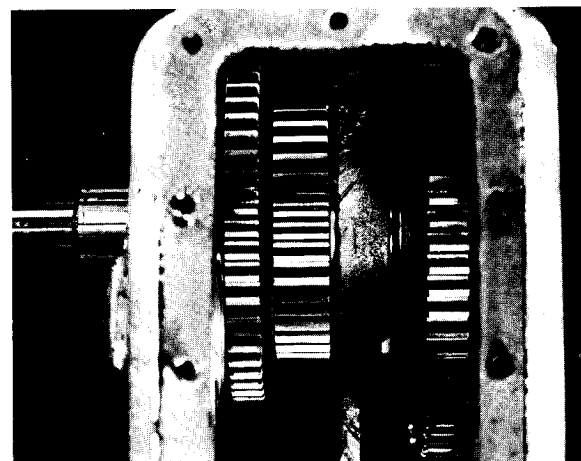
43 Sump cover and oil screen, removed. Clean screen, sump and magnetic plug.



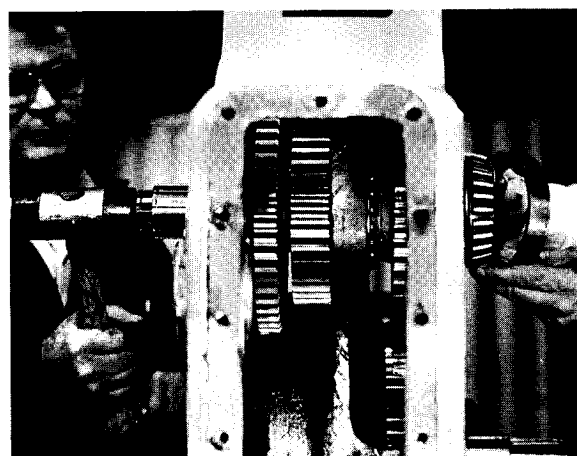
44 Remove shift shaft and fork.



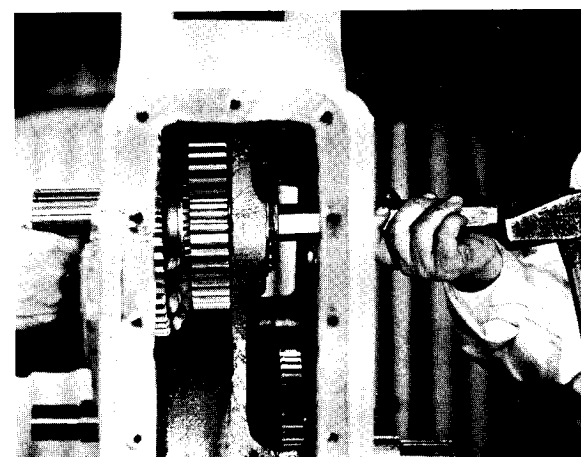
45 Remove output shaft flange from front side. Wedge big gear against side of case and drive; shaft, bearing washer and high gear out as one unit.



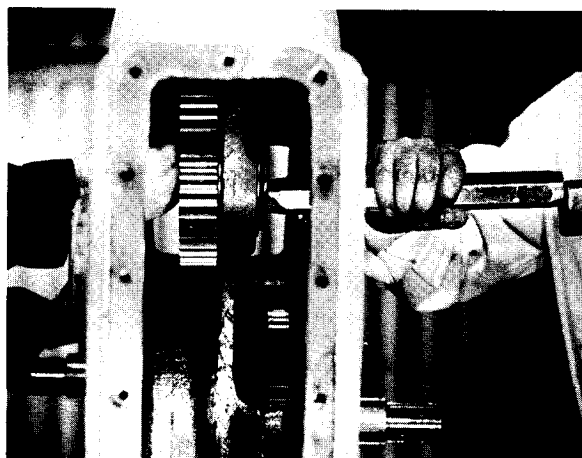
46 Second and fourth speed shaft, in place.



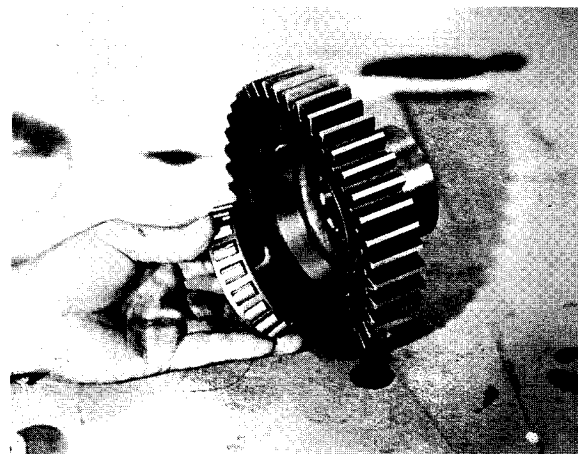
47 Remove bearing end cap. Driving clutch shaft through, will also bring bearings.



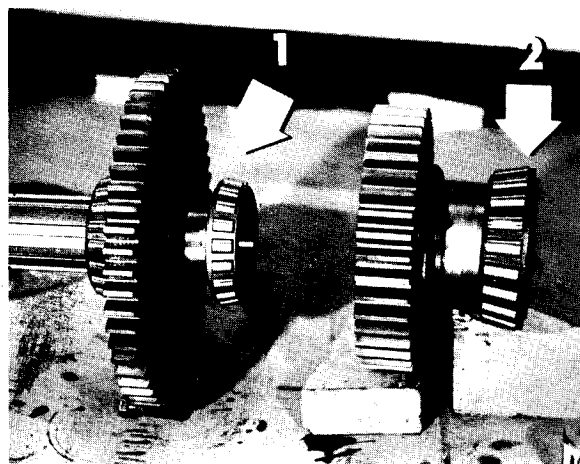
48 Using a brass drift pin, drive the quill shaft out, from the engine side of the transmission. Remove fourth speed gear.



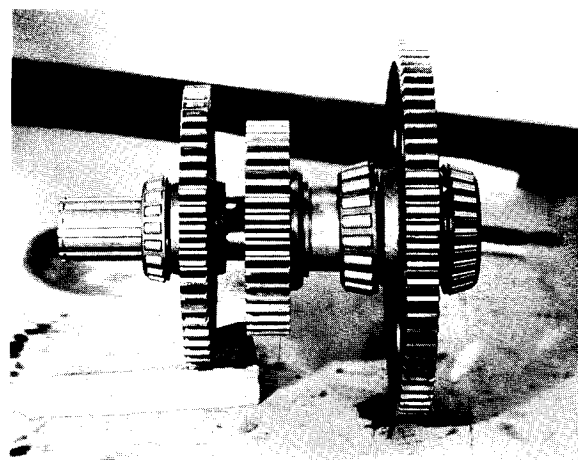
49 Low speed gear being removed.



50 Low speed gear and bearing.



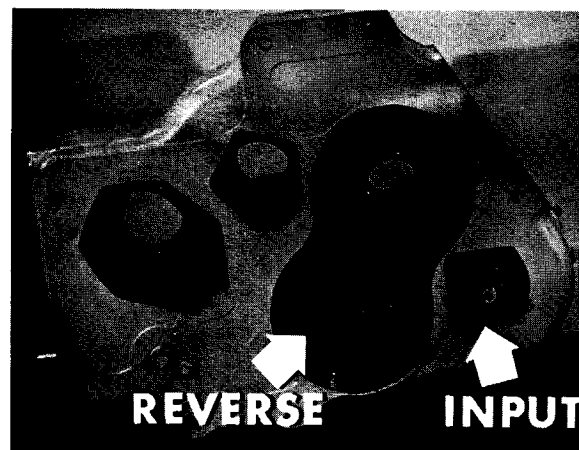
51 Second and fourth drive gear with bearings.



52 Second and fourth assembly, complete with low speed gear.



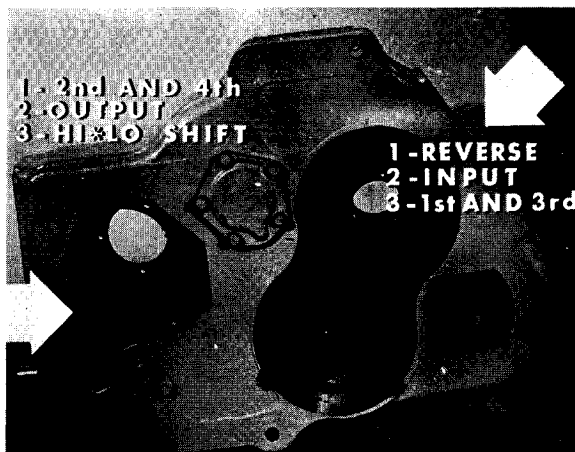
53 Clean carefully with clean solvent. Blow off parts with dry compressed air.



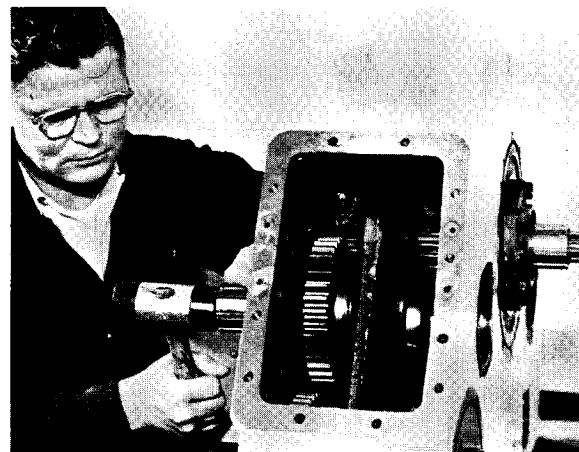
54 Transmission case with reverse and input shafts in position.

SERIES: T75A T175A R400FS

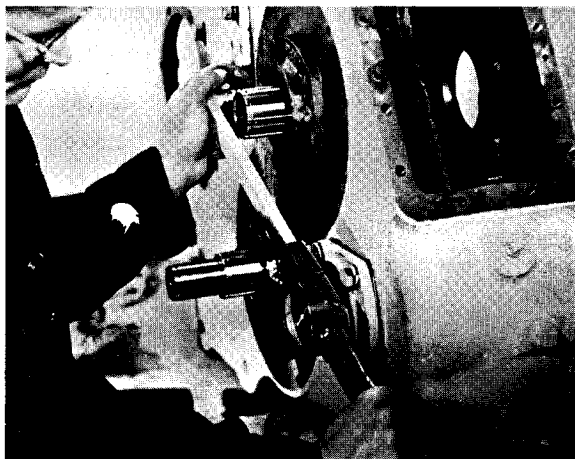
CLARK EQUIPMENT COMPANY • Construction Machinery Division



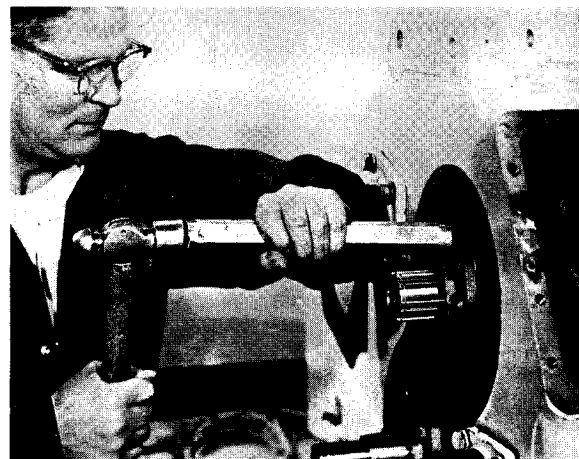
55 Order of shaft replacement.



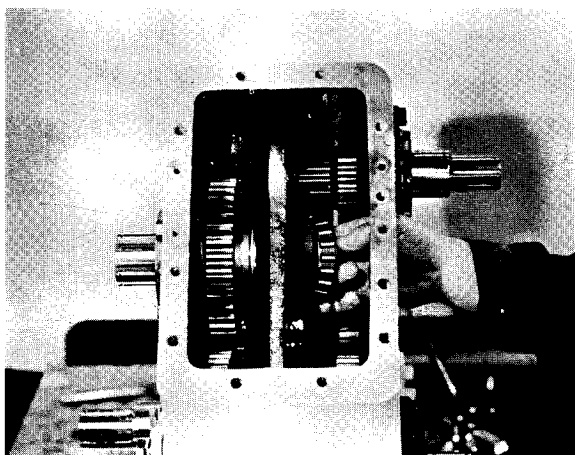
56 First and third drive gear. Place bearing and race on rear side of center web. Place third drive gear in place with offset toward center.



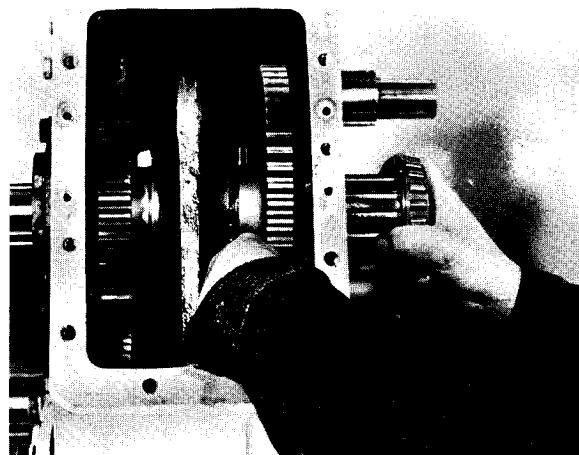
57 Install new "O" rings. Torque capscrews to 50 lbs.



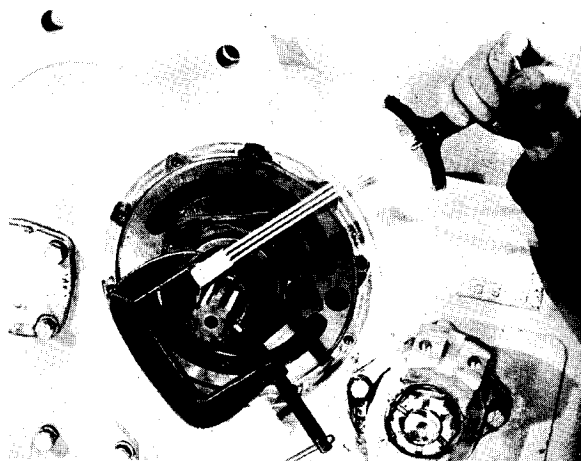
58 Seat bearing.



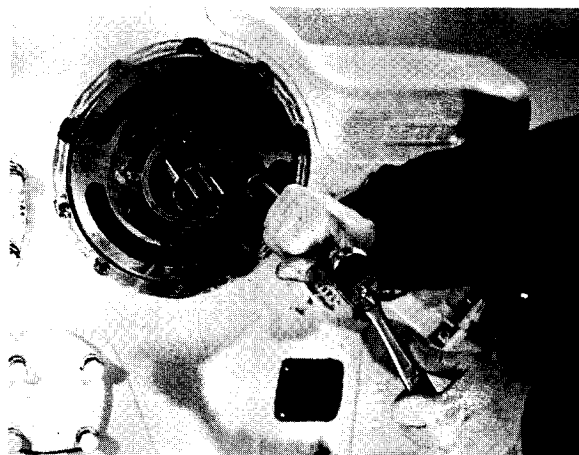
59 Install race and bearing on the engine side of the web.



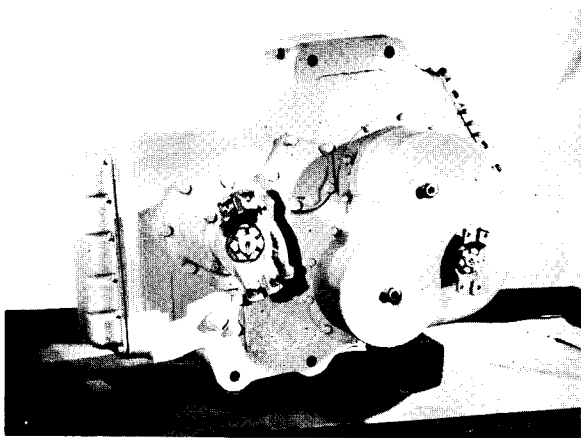
60 Locating first and third gear, install shaft and bearing from rear of transmission.



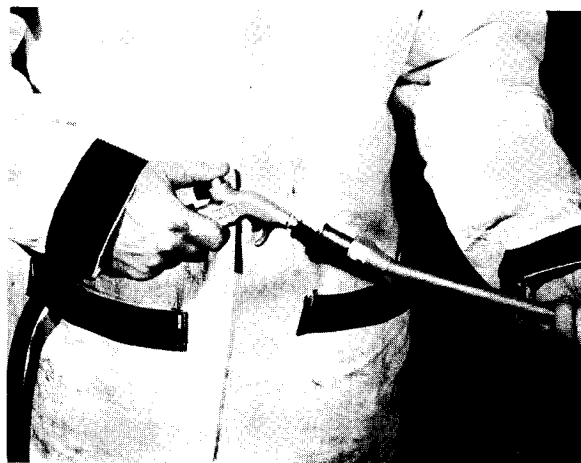
- 61** Tighten all caps, then check preload on each shaft. Preload should read 13 inch lbs. If more than 13 inch lbs. add a shim. Less than 8 inch lbs. take out a shim.



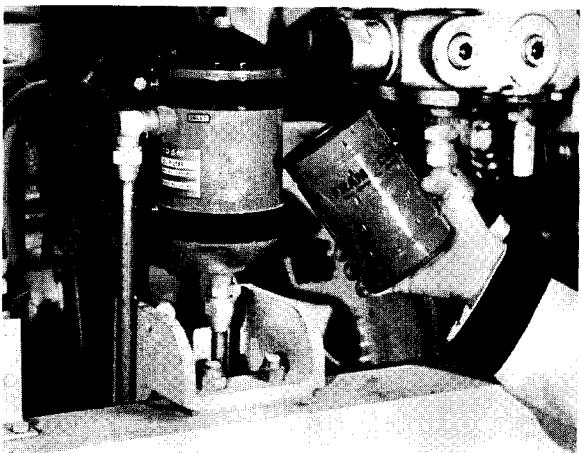
- 62** After shaft preload checks within 8 and 13 inch lbs. back off capscrews and check other shafts one at a time.



- 63** When all shafts are checked assemble clutches.



- 64** Blow out all lines, clean all connections thoroughly.



- 65** Replace filter cartridge. Add 24 quarts of transmission fluid.