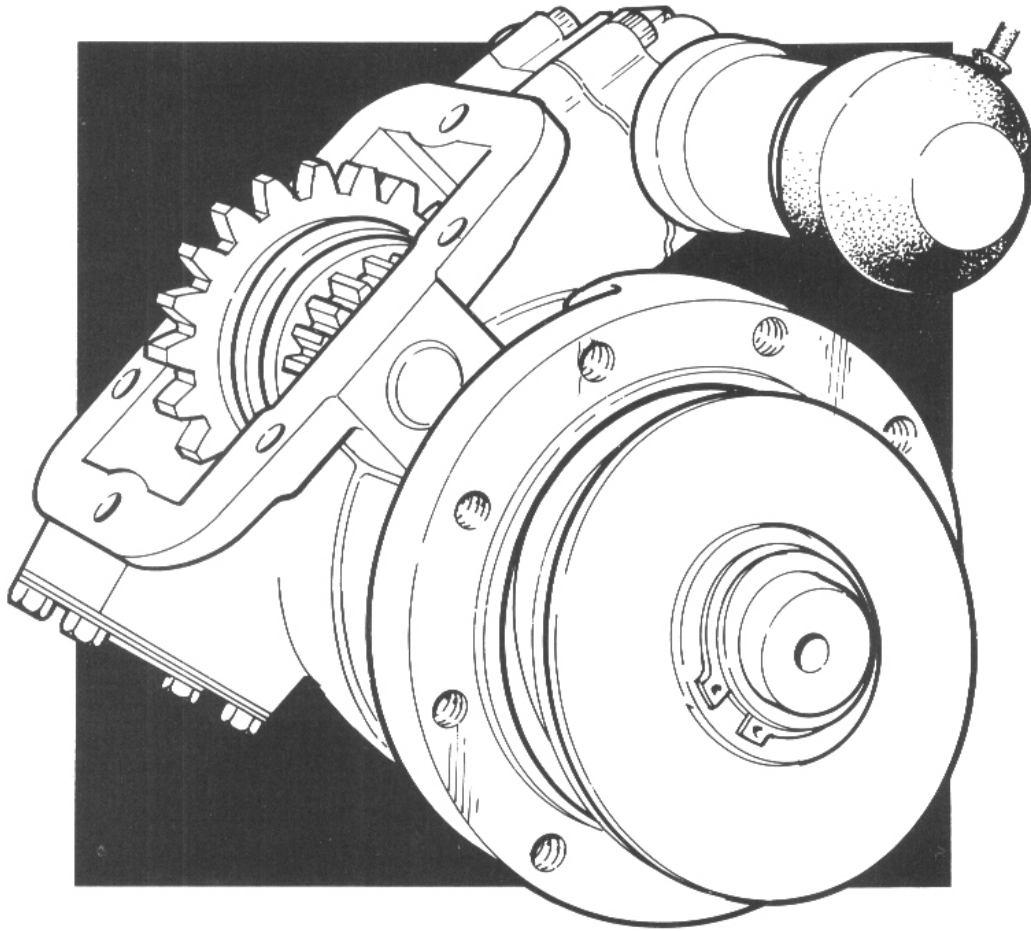


SERVICE INFORMATION



POWER-TAKE-OFF UNIT PTO MODEL 992

Edbro

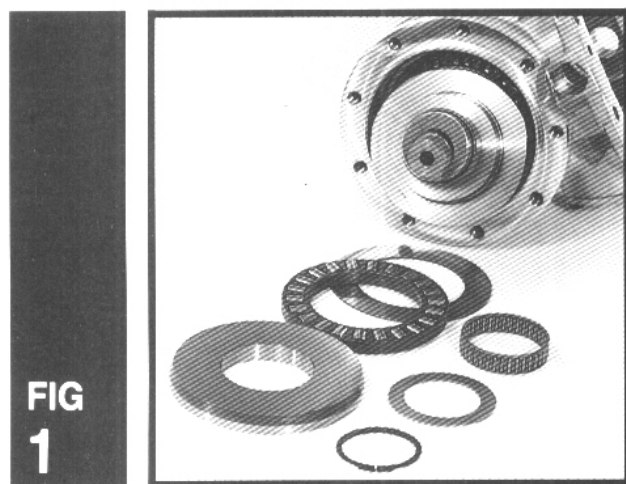
QUALITY, TECHNOLOGY
AND ACHIEVEMENT

POWER-TAKE-OFF ASSEMBLY PTO 992

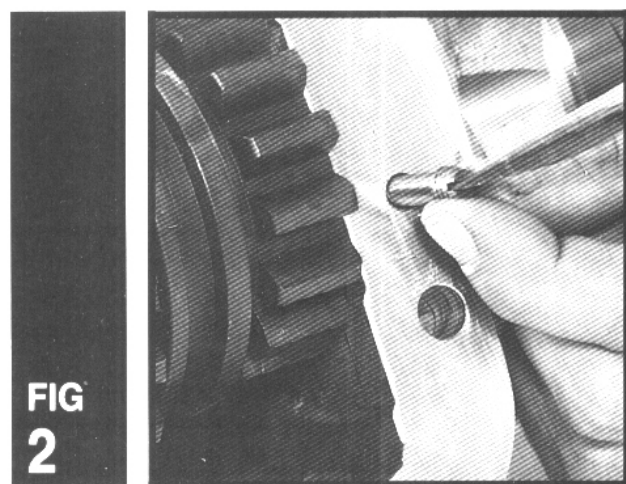
TO DISMANTLE POWER TAKE OFF

- 1 Remove pump from power take off (refer to section 'Pumps').
- 2 Remove circlip (36), washer, small needle bearing, large thrust race and bearing assemblies (1) from end of wobble shaft (2) (Fig 1).

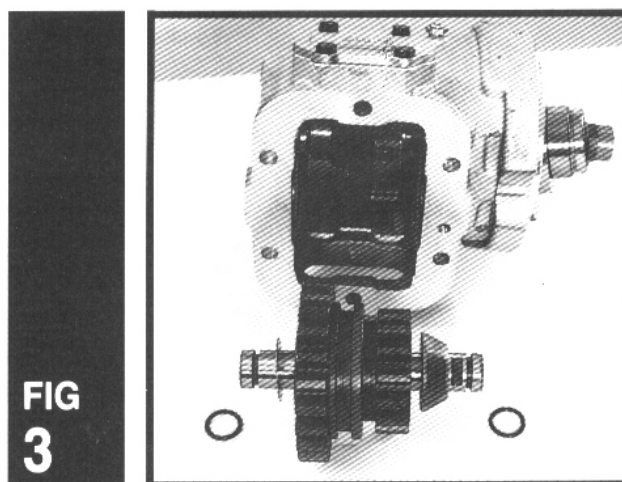
NOTE: The inner needle bearing race (1A) which is a press fit on the end of the wobble shaft, must only be removed if the bearing assemblies are to be renewed.



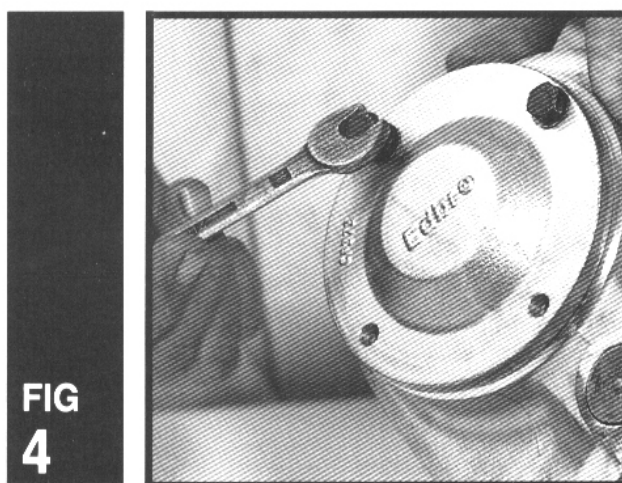
- 3 Unscrew the four socket head cap screws and remove PTO control unit (TLA) and packing seal from PTO casing (refer to section 'PTO Controls').
- 4 Unscrew the four setscrews (3) and spring washers (4). Remove cover plate and gasket (6) from PTO casing (7).
- 5 Using a screwdriver, remove grub screw (8) from mounting face. This secures the countershaft (9) to casing (7) (Fig 2).



- 6 Using a drift, tap out the countershaft (9).
- 7 Collect the front gearwheel assembly from inside PTO casing. This assembly comprises thrust washer (14), gearwheel (10), (11), distance piece (13), (18), roller bearing (14) and needle rollers x 50 (12) (Fig 3).

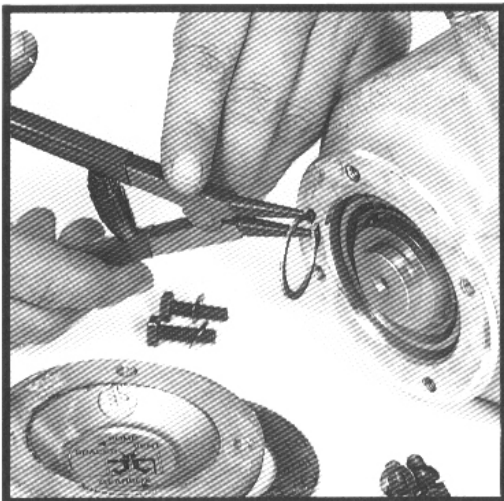


- 8 Examine all these parts for wear and replace if necessary.
- 9 Remove the four screws (24) and washers (25) securing cover plate (23) to PTO casing (7) (Fig 4).



- 10 Remove cover plate (23) and gasket (37).
- 11 Remove circlip (22) on end of wobble shaft (2) (Fig 5).

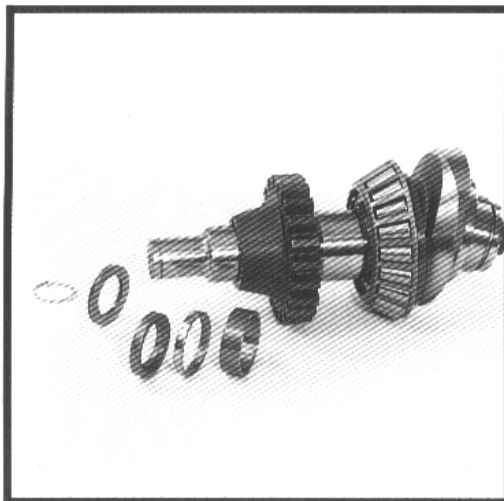
**FIG
5**



- 12 Remove thrust washer (21).
- 13 Using a bench press or a drift, tap out and remove the wobble shaft (2) from PTO casing (7).
- 14 Collect distance pieces (19), (27) & (28) and rear gearwheel (38) from inside PTO casing (7) (Fig 6) (note direction of gearwheel shoulder for re-assembly purposes). Examine gearwheel teeth for sign of wear. Replace if necessary.

NOTE: Inner taper roller bearing case (34), which is retained on shaft, and outer taper roller bearing case (34) which is retained in PTO casing (7), must only be removed if the complete bearing is to be renewed.

**FIG
6**

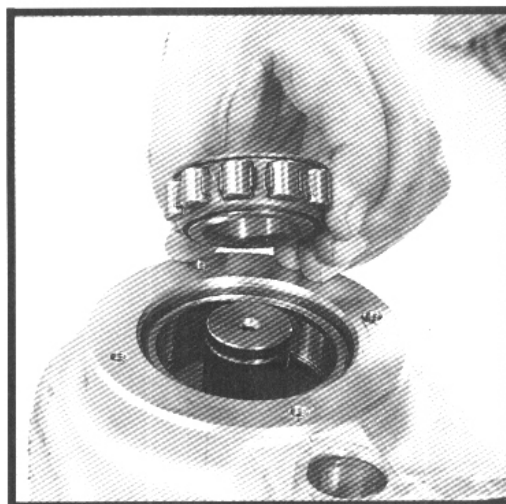


- 15 Remove oil seals (30) & (31) and spacer ring (32) from PTO casing.
- 16 Examine all polished surfaces of the wobble shaft (2) for marks or pitting.

NOTE: If the shaft (2) is marked or shows signs of wear near the oil seal contact areas, the shaft must be replaced.

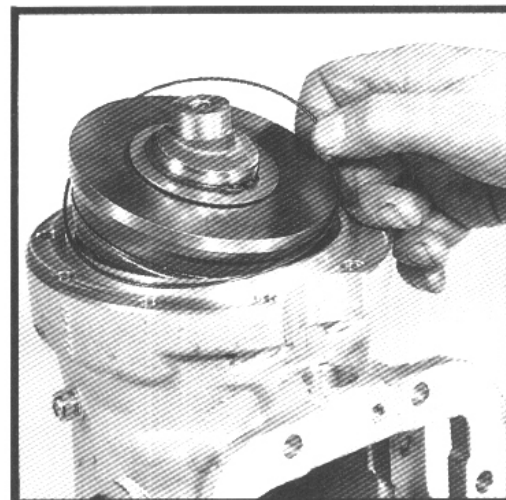
- 17 Tap out roller bearing (26) from PTO casing (7) (Fig 7).

**FIG
7**



- 18 Remove 'O' ring (35) from face of PTO casing (7) (Fig 8).

**FIG
8**



TO ASSEMBLE POWER TAKE OFF

NOTE: Lubricate all moving parts on assembly with a light viscosity oil.

- 1 If wobble shaft bearing (34) has been renewed, press new bearing 'outer race' into PTO casing and new bearing 'inner race' onto wobble shaft.
- 2 Fit spacer ring (32) and three new oil seals (30 & 31) as shown in diagram on inside of end cover (23) (Fig 9).

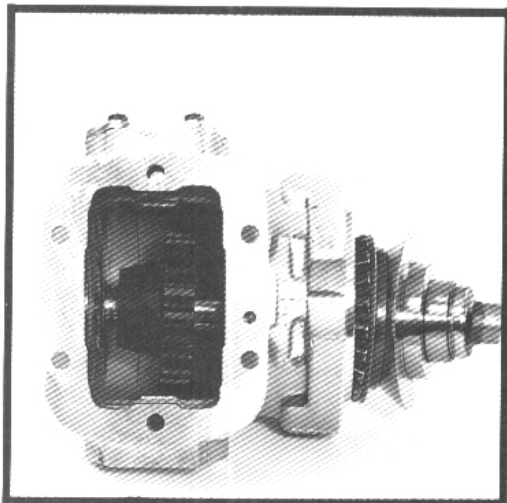
NOTE: The gap in the spacer ring must line up with the breather valve (39) in the bottom of the pump body.

**FIG
9**



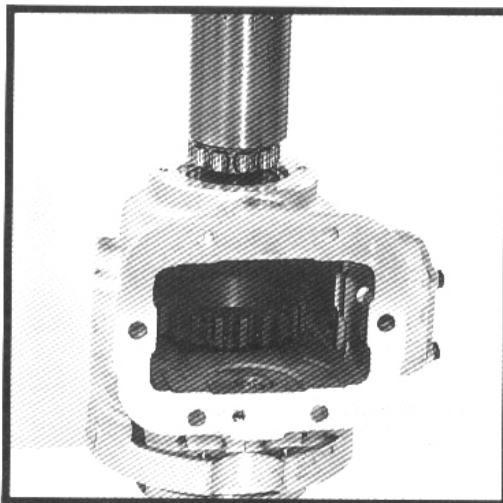
- 3 If needle bearing (part of 1) has been renewed, press bearing inner race (1A) onto end of wobble shaft (2).
- 4 Tap the drive key (33) into wobble shaft (2) and remove all burrs and sharp edges.
- 5 Place the rear fixed gearwheel (38) in position inside PTO casing (7). (in same direction as when removed).
- 6 Install wobble shaft (2) into PTO casing (7) (taking care not to damage the oil seals), positioning the drive key in line with the keyway in bore of gearwheel (38) (Fig 10).

**FIG
10**



- 7 Slide distance pieces (19, 27 & 28) onto wobble shaft (2) in reverse order from when removed.
- 8 With PTO assembly in a vertical position locate back roller bearing (26) against the PTO casing (7) and line up with wobble shaft (2).
- 9 Press the bearing (26) into the PTO casing (7) and at the same time onto the end of wobble shaft (2) (Fig 11).

**FIG
11**



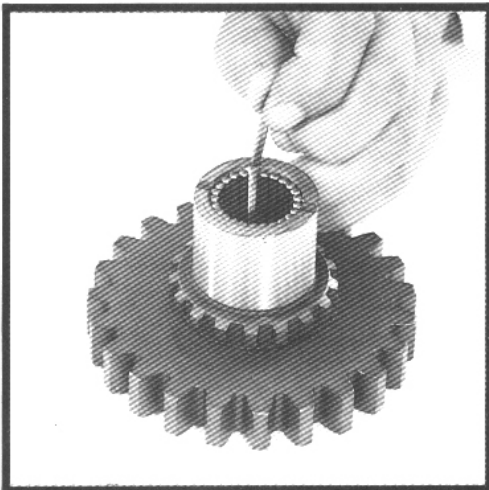
- 10 Position thrust washer (21) and fit the circlip (22) into shaft groove.
- 11 Refit cover plate (5) with new face gasket (6) and secure with the four screws and washers (3 & 4).

12 To assemble the countershaft ⑨, commence by liberally smearing the bores of gearwheels ⑩ & ⑪ with a high melting point grease (Edbro grade EG10).

13 Insert the spacer ⑬ midway along the bore of gearwheel ⑪ and proceed to assemble 25 needle rollers ⑫ either side of the spacer and press firmly into place (Fig 12).

NOTE: A dummy shaft shortened to 72mm overall length, will enable all the sliding gear train components to be quickly pre-assembled and when held in position in PTO casing, the dummy shaft can then be displaced with the permanent one.

**FIG
12**



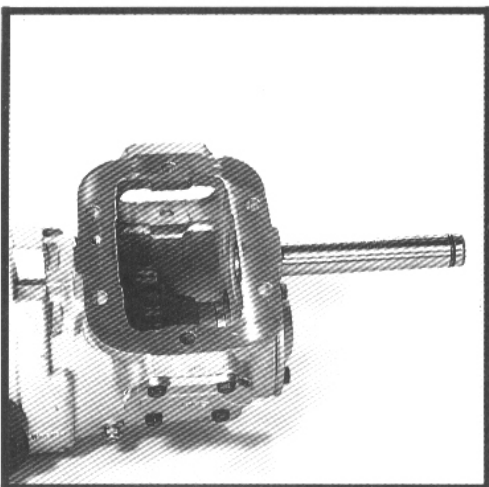
14 When all the rollers ⑫ are assembled, pass countershaft ⑨ through the spacer ⑬ to line up the needle rollers correctly and to bed them into the grease.

15 Assemble bearing ⑮ and sliding gearwheel ⑩ into position on extended shaft of gearwheel ⑪.

16 Position thrust washer ⑭ and spacer ⑮ at each side of assembly.

17 Fit 'O' ring seal ⑯ to plain end of counter shaft ⑨ i.e. end without flat (Fig 13).

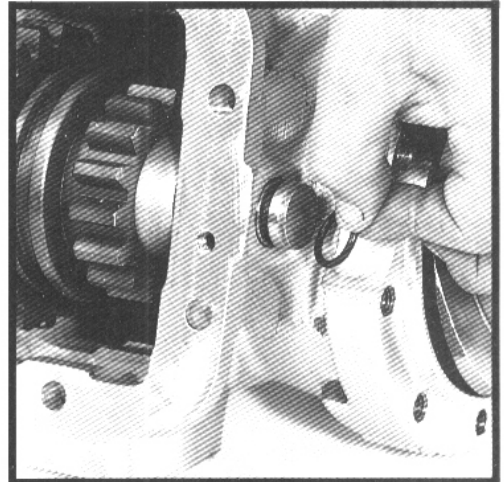
**FIG
13**



18 Support front wheel assembly, including thrust washers, in PTO casing ready to accept countershaft.

19 Enter countershaft (end with flat on side first) into hole in PTO casing, through the gear train and out at the other side, just enough to enable the second 'O' ring ⑯ to be fitted into its groove and to verify the position of the flat (Fig 14).

**FIG
14**



20 Smear the 'O' ring ⑯ with grease and align flat on countershaft with locking screw hole. Then push countershaft ⑨ back into casing and secure with grub screw ⑧.

21 Check that gear wheels rotate smoothly.

22 Refit PTO control unit with new face packing and secure with the four socket head screws. Torque rating 45-50 Nm (28-32 lbs ft) (Refer to section 'PTO controls').

23 Replace cover plate ⑤ with new packing seal ⑥ to casing and secure with setscrews ③ and spring washers ④. Torque rating 45-50 Nm (28-32 lbs ft).

24 Assemble thrust bearings ① and circlip ③⑥ on end of wobble shaft. (Fig 5).

25 Place new 'O' ring seal ③⑤ onto joint face of PTO and pump (Fig 8).

26 Fit pump assembly to power take off. (Refer to section 'Pumps').

POWER-TAKE-OFF

PTO 992

ITEM NO.	DESCRIPTION	ITEM NO.	DESCRIPTION
①	Bearing	②①	Thrust washer
①A	Inner needle bearing race	②②	Circlip
②	Wobble shaft	②③	Cover plate
③	Setscrews	②④	Screws
④	Spring washers	②⑤	Washers
⑤	Cover plate	②⑥	Roller bearing
⑥	Gasket	②⑦	Distance piece
⑦	PTO casing	②⑧	Distance piece
⑧	Grubscrew	②⑨	Grub screw
⑨	Countershaft	③⑩	Oil seal
⑩	Gearwheel	③①	Oil seal
⑪	Gearwheel	③②	Spacer ring
⑫	Needle rollers	③③	Key
⑬	Distance piece	③④	Taper roller bearing
⑭	Thrust washer	③⑤	'O' ring
⑮	Roller bearing	③⑥	Circlip
⑯	'O' ring	③⑦	Gasket
⑰	Needle rollers	③⑧	Gearwheel
⑱	Distance piece	③⑨	Breather valve
⑲	Distance piece		
⑳	Gasket		

IMPORTANT
 Note position of oil seals

