



Fitting Instructions and Parts List

Part No.
RTC7016
Issue 3
November 1977

BL Components Ltd.

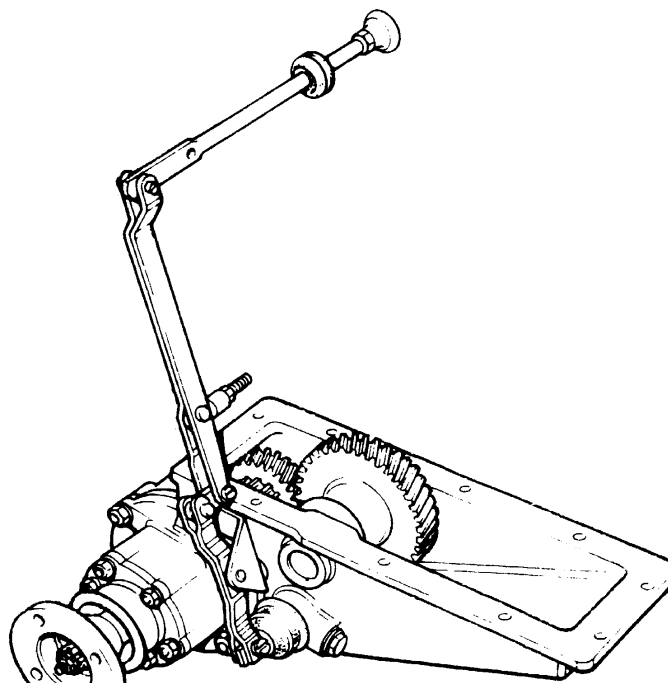
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BOTTOM POWER TAKE OFF WITH MECHANICAL DRIVE

Kit Part No. RTC 8003 & GLR103

for the

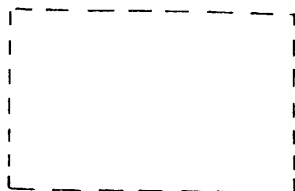
LAND ROVER SERIES III 



PARTS LIST

| Plate Ref. | Description | Qty. | Part No. | Remarks |
|------------|--|------|----------|--------------------------|
| 1 | Bottom power take off with mechanical drive | 1 | RTC8003 | |
| 2 | Joint washer | 6 | 580196 | |
| 3 | Plain washer) Fixing bottom PTO | 10 | RTC609 | |
| 4 | Spring washer) casing to transfer | 10 | GHF331 | |
| 5 | Set bolt (1/4" Whit x 3/4")) box casing | 10 | 90215594 | |
| 6 | Drain plug for bottom PTO casing | 1 | 217763 | |
| 7 | Joint washer for drain plug | 1 | 213960 | |
| 8 | Intermediate gear for bottom PTO | 1 | 580288 | |
| 9 | Shaft for bottom PTO intermediate gear | 1 | 278025 | |
| 10 | Needle roller bearing for bottom PTO intermediate gear shaft | 2 | 219466 | |
| 11 | 'O' ring, small) For intermediate | 1 | 267828 | |
| 12 | 'O' ring, large) gear shaft | 1 | 532322 | |
| 13 | Thrust washer) For bottom PTO | 2 | 219469 | |
| 14 | Shim) intermediate gear | 6 | 234835 | |
| 15 | Retainer) Fixing intermediate | 1 | 217484 | |
| 16 | Spring washer) shaft to bottom | 1 | GHF333 | |
| 17 | Nut (3/8" BSF)) PTO casing | 1 | 2827 | |
| 18 | Drive gear | 1 | 580287 | |
| 19 | Shaft for drive gear | 1 | 580286 | |
| 20 | Ball bearing for drive gear shaft | 1 | 580285 | |
| 21 | Circlip, small, outer) Retaining drive | 1 | 503189 | |
| 22 | Circlip, large, inner) shaft bearing | 1 | RTC1957 | |
| 23 | Spacing ring for drive gear | 1 | RTC1962 | |
| 24 | End cover for drive shaft | 1 | 580293 | |
| 25 | Spacing ring) For drive | 1 | 580297 | |
| 26 | Joint washer) shaft end cover | 1 | 580294 | |
| 27 | Spring washer) Fixing end cover to | 4 | GHF331 | |
| 28 | Set bolt (1/4" Whit x 3/4")) bottom PTO casing | 4 | 90215594 | |
| 29 | Gearbox PTO drive assembly | 1 | 230855 | See page 6 for breakdown |
| 30 | Spring washer) Fixing PTO | 6 | GHF333 | |
| 31 | Nut (3/8" BSF)) drive | 6 | 2827 | |
| 32 | Joint washer for PTO housing | 1 | 622047 | |
| 33 | Selector shaft) For dog clutch | 1 | 506203 | |
| 34 | Selector fork) bottom PTO | 1 | 90217584 | |
| 35 | Set bolt (5/16" BSF x 1") fixing selector fork to shaft | 1 | 237160 | |
| 36 | Oil seal) For | 1 | 515572 | |
| 37 | Dust cover) selector shaft | 1 | 219080 | |
| 38 | Ball) For selector | 1 | 1643 | |
| 39 | Spring) shaft | 1 | 3649 | |
| 40 | Plug, retaining ball and spring for selector shaft | 1 | 217763 | |
| 41 | Joint washer for plug | 1 | 213960 | |
| 42 | Pivot bracket for lower lever | 1 | RTC7027 | |

NOTE: Parts not carrying a plate reference are NSS (Not Supplied Separately).



Encloses parts which form an assembly or kit.

PARTS LIST

| Plate Ref. | Description | Qty. | Part No. | Remarks |
|------------|--------------------------------------|------|----------|------------------------------|
| 43 | Lever, lower | 1 | 580536 | |
| 44 | Plain washer | 1 | WB110061 |) Fixing lower lever |
| 45 | Split pin | 1 | 2390 |) to pivot bracket |
| 46 | Clevis (5/16") | 1 | 216421 |) Fixing lower lever to |
| 47 | Split pin | 1 | 2390 |) selector shaft, bottom PTO |
| 48 | Pivot for upper lever | 1 | 506205 | |
| 49 | Stud ($\frac{3}{8}$ " BSF) | 1 | 506204 |) Fixing pivot to centre |
| 50 | Lockut ($\frac{3}{8}$ " BSF) | 1 | 2323 |) PTO housing |
| 51 | Lever, upper | 1 | 580535 | |
| 52 | Bolt (5/16" BSF x 1 $\frac{1}{4}$ ") | 1 | 237163 |) Fixing upper |
| 53 | Plain washer | 2 | RTC604 |) lever to |
| 54 | Locknut (5/16" BSF) | 1 | 50525 |) pivot |
| 55 | Connecting link | 1 | 580534 |) Fixing upper and |
| 56 | Clevis (5/16") | 2 | 216421 |) lower levers |
| 57 | Split pin | 2 | 2390 |) together |
| 58 | Grommet for control rod at seat base | 1 | 508571 | |
| 59 | Control rod | 1 | RTC7047 | |
| 60 | Clevis ($\frac{1}{4}$ ") | 1 | 230279 |) Fixing control |
| 61 | Split pin | 1 | 2422 |) rod to upper lever |
| 62 | Knob for control rod | 1 | 218050 | |
| 63 | Locknut (7/16" BSF) for knob | 1 | 3764 | |

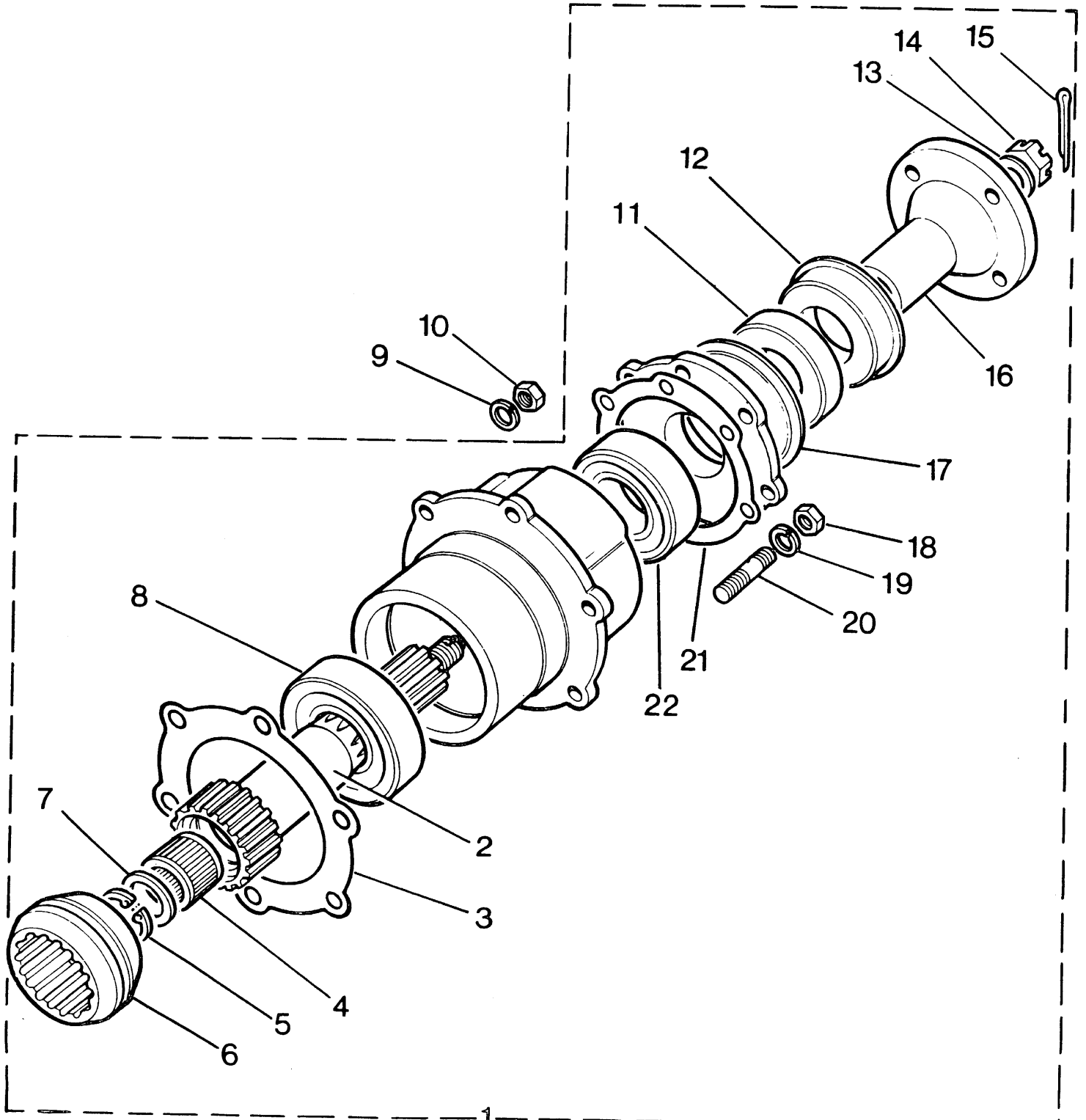
NOTE: Parts not carrying a plate reference are NSS (Not Supplied Separately).



} Encloses parts which form an assembly or kit.

*Asterisk indicates a new part which has not been used on any previous model.

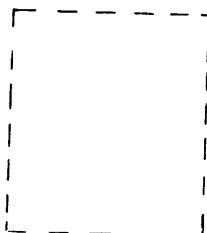
GEARBOX POWER TAKE OFF DRIVE ASSEMBLY



PARTS LIST

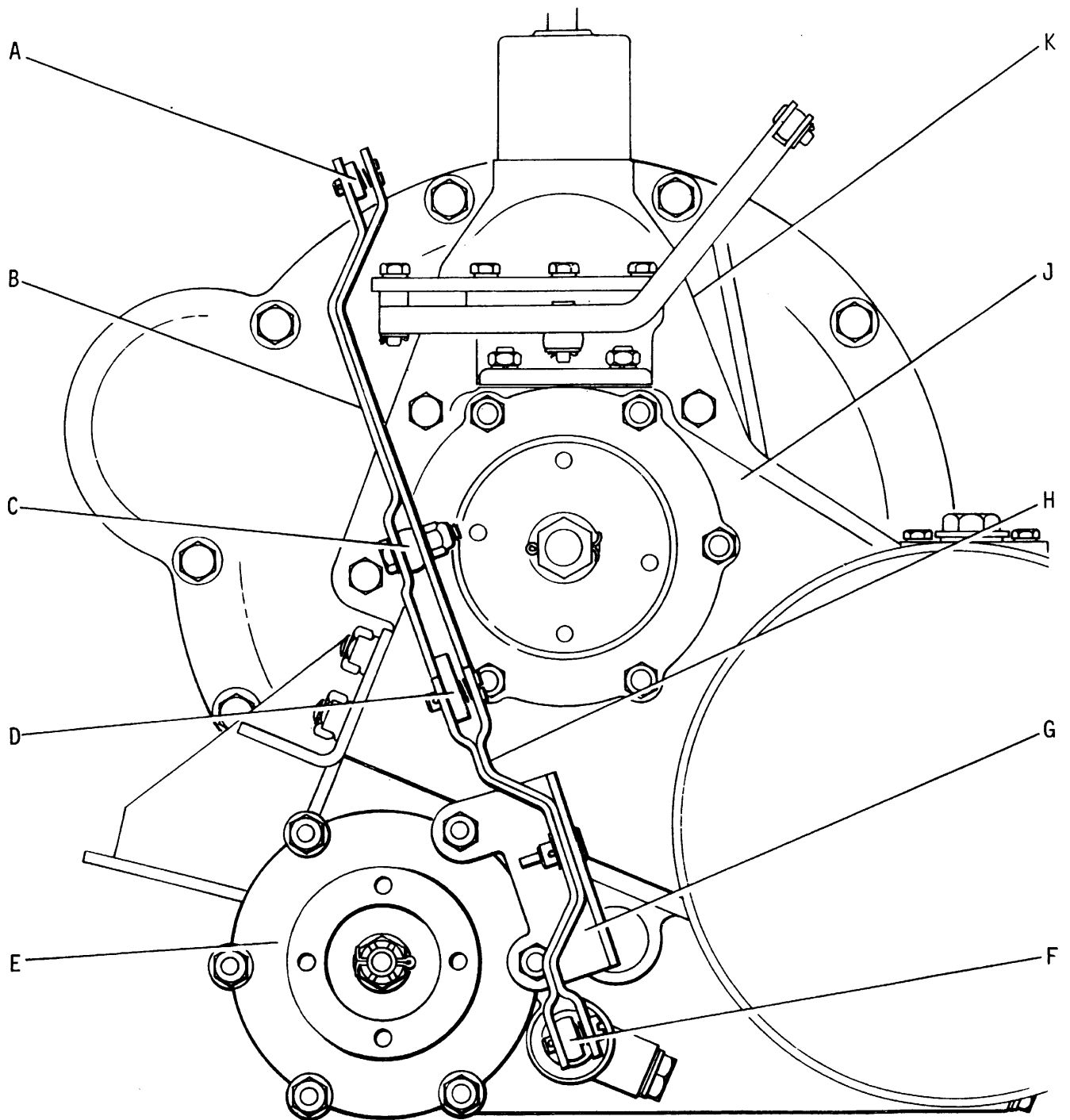
| Plate Ref. | Description | Qty. | Part No. | Remarks |
|------------|---------------------------------|------|---------------|----------|
| 1 | Gearbox P.T.O. drive assembly | 1 | 230855 | |
| 2 | Shaft for P.T.O. drive | 1 | 219744 | |
| 3 | Joint washer for housing | 1 | 622047 | |
| 4 | Bearing for gearbox mainshaft | 1 | 217478 | |
| 5 | Circlip, fixing retaining plate | 1 | 217525 | |
| 6 | Dog clutch for P.T.O. shaft | 1 | 217522 | |
| 7 | Retaining plate for bearing | 1 | 217523 | |
| 8 | Front bearing | 1 | 55714 | |
| 9 | Spring washer |) | Fixing P.T.O. | 6 GHF333 |
| 10 | Nut ($\frac{3}{8}$ " BSF) |) | to gearbox | 6 2827 |
| 11 | Oil seal | 1 | FRC1780 | |
| 12 | Mud shield for flange | 1 | 236074 | |
| 13 | Plain washer |) | Fixing | 1 3300 |
| 14 | Slotted nut |) | flange | 1 3259 |
| 15 | Split pin |) | to shaft | 1 2428 |
| 16 | Flange for drive shaft | 1 | 539993 | |
| 17 | Mud shield for oil seal | 1 | 236548 | |
| 18 | Nut (5/16" BSF) |) | Fixing oil | 6 2828 |
| 19 | Spring washer |) | seal housing | 6 GHF332 |
| 20 | Stud for oil seal housing |) | to P.T.O. | 6 216986 |
| 21 | Shim for bearing, 0.003" | A/R | 41050 | |
| | Shim for bearing, 0.005" | A/R | 41131 | |
| 22 | Rear bearing | 1 | 217325 | |

Note: Parts not carrying a plate reference are NSS (Not Supplied Separately).



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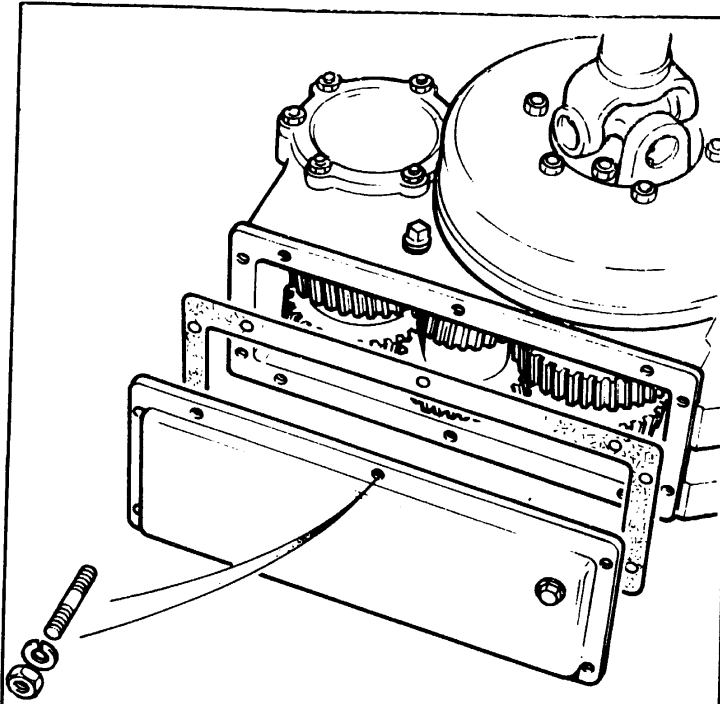
GENERAL ARRANGEMENT



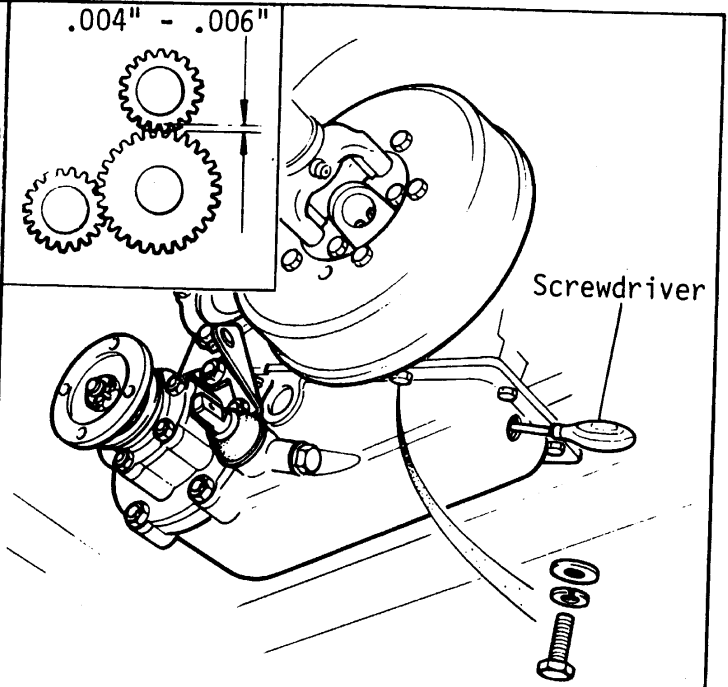
- A - Control Rod Connection
- B - Upper Lever
- C - Pivot Piece
- D - Connecting Link
- E - Power Take Off Housing

- F - Selector Shaft
- G - Pivot Bracket
- H - Lower Lever
- J - Transfer Gearbox
- K - Main Gearbox

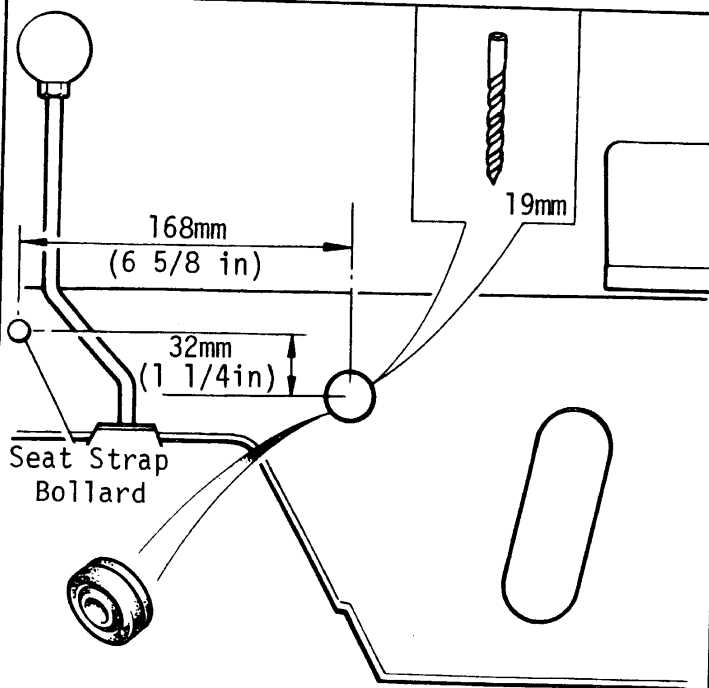
FITTING INSTRUCTIONS



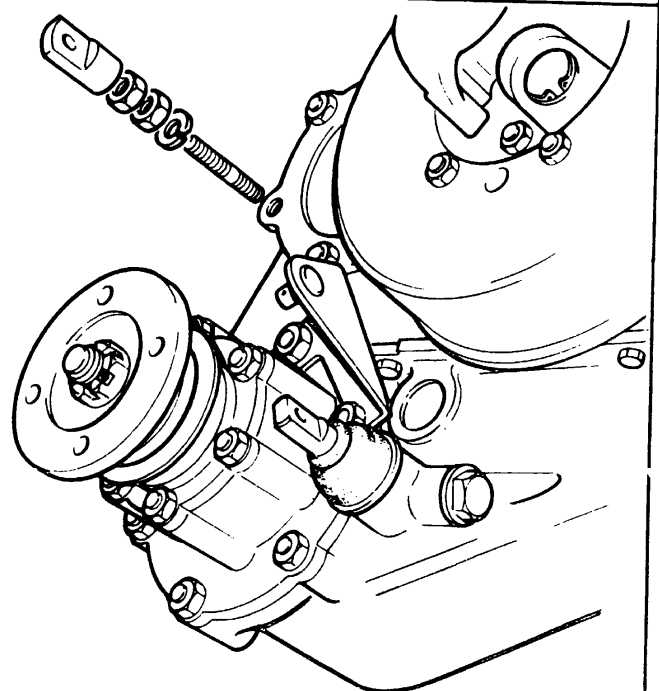
1 Drain oil from transfer box. Remove the bottom cover plate, joint washer, ten studs, and discard. Ensure the face is clean and smooth.



2 Temporarily fit the unit with new joint washer and fixings. With a long screwdriver engage the driving gear with the driven gear and ensure, by adding joint washers there is backlash between the two gears. Fully tighten unit to transfer box.

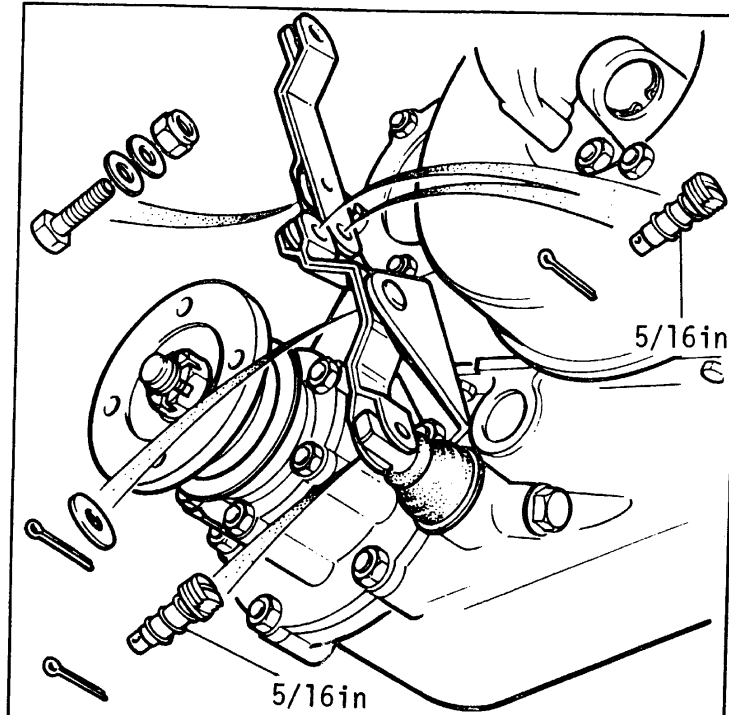


3 Remove centre seat panel. Mark off left hand headboard and drill one hole. Fit grommet to hole.

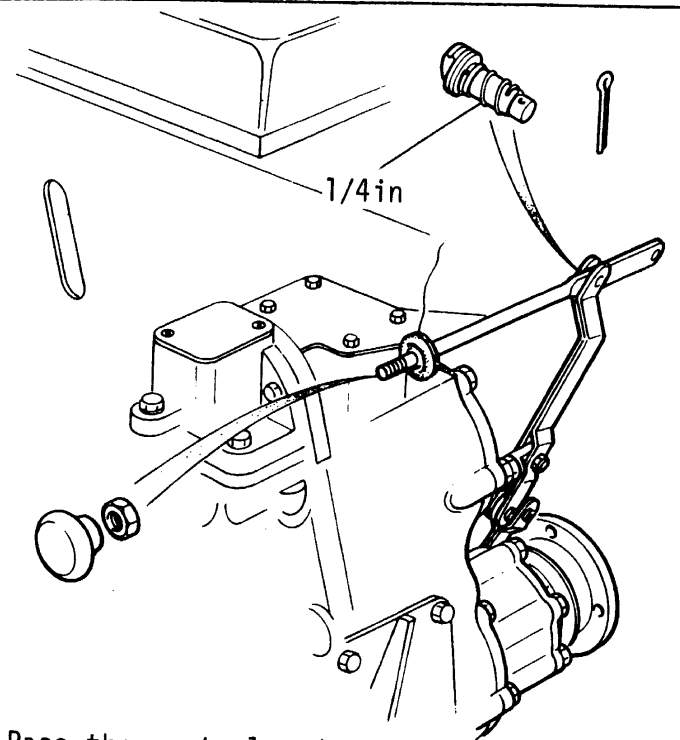


4 Fit longer stud, pivot piece and locknut to bearing housing.

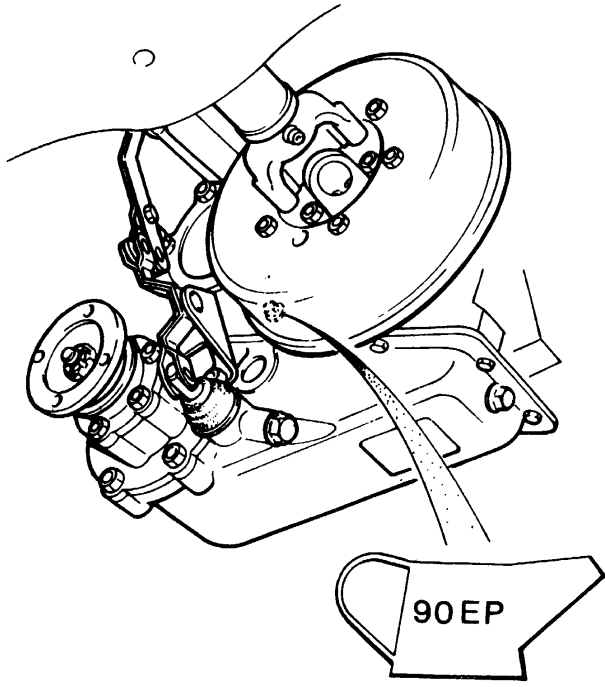
FITTING INSTRUCTIONS



5 Secure lower lever to pivot bracket. Connect the lower lever to the selector shaft. Secure the upper lever to the pivot piece. Connect the upper and lower levers together with the link and clevis pins.



6 Pass the control rod through the grommet and connect to the upper lever, using the front hole for 4 cylinder or the rear hole for six cylinder vehicles. Fit knob and locknut. Check operation of linkage.



7 Fill the transfer box to the level plug with 90EP oil. Engage BPT0, operate equipment, check for oil leaks. Replace centre seat panel

OPERATING INSTRUCTIONS

1. To engage the power take-off, depress the clutch, pull the selector knob forward, then release the clutch.
2. The power take-off may be driven in any gear.
3. For stationary applications the transfer gear lever (red knob) must be in the neutral position.
4. Do not exceed 15 horsepower when using belt drives in order to prevent overloading of the engine mounting rubbers.
5. Direction of rotation is clockwise when viewed from the rear.
6. For continuous running it is recommended that 4th gear only is used to reduce the heat generated by the gearbox.
7. At 1000 r.p.m. engine speed the power take-off speed is:-

| | |
|----------|-------------|
| 1st gear | 272 r.p.m. |
| 2nd gear | 451 r.p.m. |
| 3rd gear | 667 r.p.m. |
| 4th gear | 1000 r.p.m. |
| Reverse | 249 r.p.m. |
8. The flange is designed to accept Hardy Spicer, 1310 series, propellor shafts.
9. For horsepower available see chart.
10. For accurate control of engine speeds it will be necessary to fit engine speed governors to petrol engines. Diesel engines are fitted with governors as standard equipment.

MAINTENANCE

No maintenance is required except for occasional light oiling of the selector linkage.

P.T.O. HORSEPOWER CHART STATIONARY USE

| ENGINE R.P.M. | °C AMBIENT | 2½ PETROL 8:1 COMP STANDARD | 2½ PETROL 8:1 COMP OIL COOLER + 8-BLADED FAN | 2½ DIESEL STANDARD | 2½ DIESEL OIL COOLER + 8-BLADED FAN | 2.6 PETROL WITH OIL COOLER |
|---------------|------------|-----------------------------|--|--------------------|-------------------------------------|----------------------------|
| 1500 | MAX | 31 | 31 | 29 | 29 | 37 |
| | 25 | 24 | 27 | 24 | 22 | 35 |
| | 30 | 19 | 25 | 21 | 20 | 35 |
| | 35 | 16 | 22 | 18 | 18 | 34 |
| | 40 | 12 | 13 | 16 | 16 | 27 |
| | 45 | 8 | 13 | 12 | 13 | 18 |
| | 50 | 0 | 8 | 6 | 11 | 13 |
| 2000 | MAX | 41 | 41 | 35 | 35 | 49 |
| | 25 | 28 | 35 | 24 | 27 | 43 |
| | 30 | 25 | 31 | 19 | 25 | 42 |
| | 35 | 19 | 27 | 14 | 22 | 41 |
| | 40 | 13 | 22 | 8 | 19 | 29 |
| | 45 | 8 | 19 | 2 | 14 | 22 |
| | 50 | 0 | 14 | 0 | 11 | 16 |
| 2500 | MAX | 50 | 50 | 42 | 42 | 63 |
| | 25 | 29 | 43 | 25 | 31 | 51 |
| | 30 | 25 | 37 | 18 | 28 | 50 |
| | 35 | 20 | 32 | 11 | 24 | 47 |
| | 40 | 13 | 26 | 2 | 19 | 32 |
| | 45 | 8 | 21 | 0 | 13 | 25 |
| | 50 | 0 | 14 | 0 | 7 | 18 |
| 3000 | MAX | 57 | 57 | 48 | 48 | 71 |
| | 25 | 32 | 44 | 0 | 32 | 60 |
| | 30 | 24 | 40 | 0 | 29 | 59 |
| | 35 | 16 | 32 | 0 | 24 | 50 |
| | 40 | 8 | 27 | 0 | 19 | 37 |
| | 45 | 5 | 22 | 0 | 10 | 28 |
| | 50 | 0 | 12 | 0 | 0 | 19 |

All figures quoted are continuous horsepower ratings based on maximum temperature limits of 100°C for coolant and 105°C for oil.

The maximum figures quoted show the maximum horsepower available for intermittent use subject to the engine temperature limits being observed.

RTC704Z
580535
52L