



# Fitting Instructions and Parts List

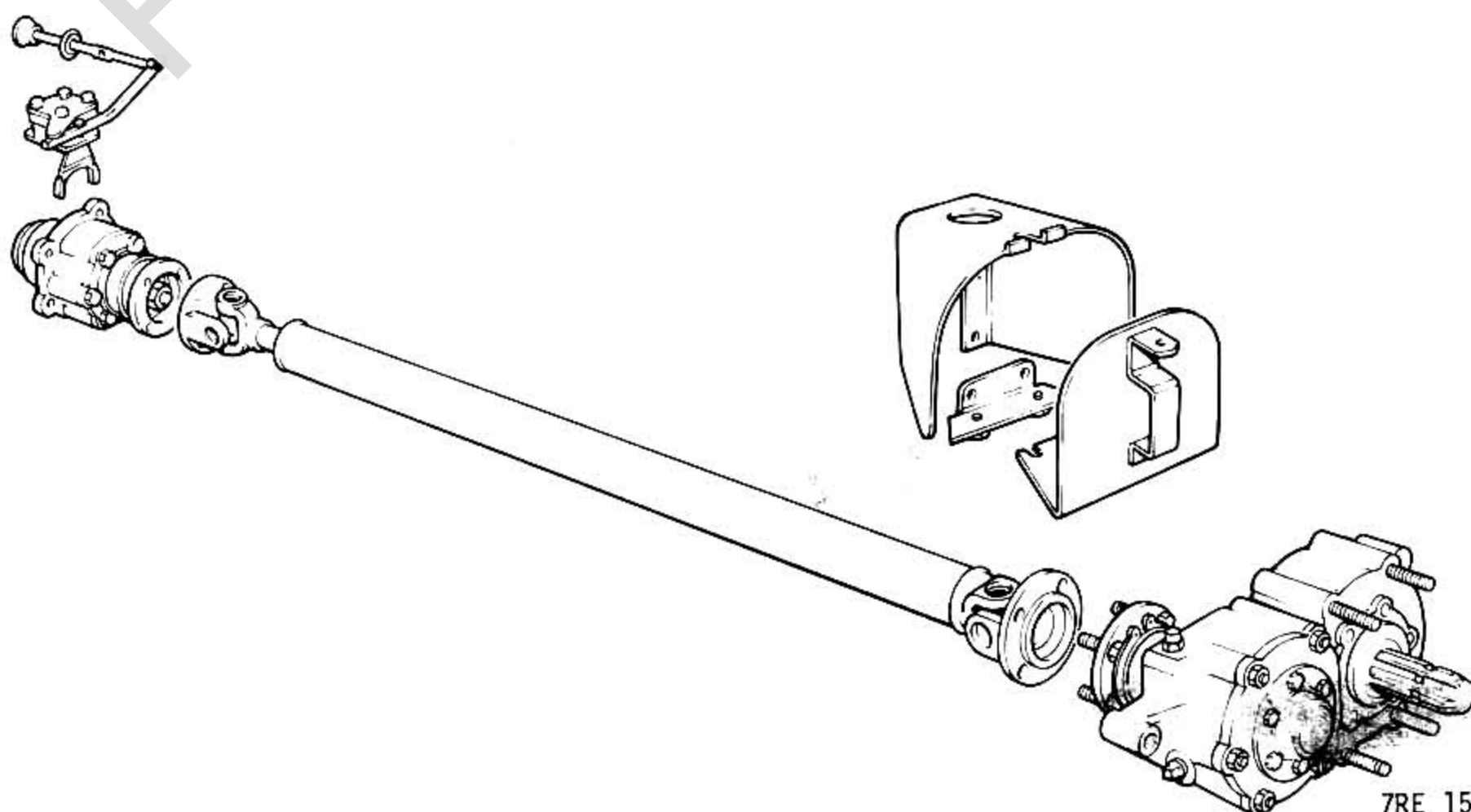
**Part No.**  
**RTC 7035**  
**Issue 2**  
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**Leyland Cars**  
Service and Parts Division

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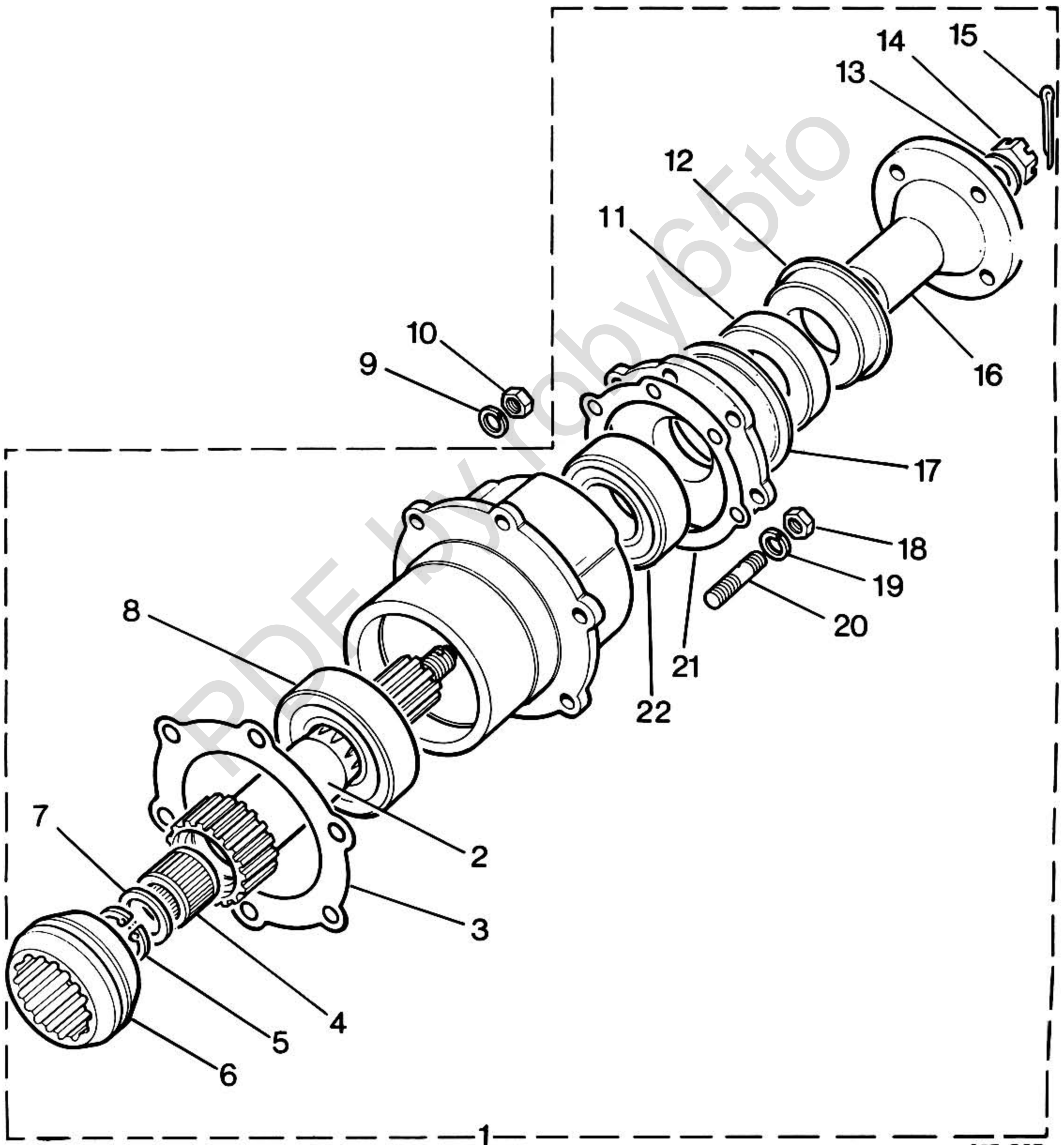
## **REAR POWER TAKE OFF** **Kit Part No. RTC 8007** **for the** **LAND ROVER SERIES III 88"**

**MUST BE FITTED IN CONJUNCTION**  
**WITH "Z" TOWING PLATE KIT.**  
**PART NO. RTC 8019**





GEARBOX POWER TAKE OFF DRIVE ASSEMBLY



1RE 235

THE REAR POWER TAKE OFF KIT RTC 8007 COMPRISES ALL PARTS ILLUSTRATED ABOVE AND THOSE ON PAGE 4,6,8, AND 10.



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	6	GHF333	) Fixing P.T.O. to gearbox
10	Nut ( $\frac{3}{8}$ " BSF)	6	2827	
11	Oil seal	1	FRC1780	
12	Mud shield for flange	1	236074	
13	Plain washer	1	3300	) Fixing flange to shaft
14	Slotted nut	1	3259	
15	Split pin	1	2428	
16	Flange for drive shaft	1	539993	
17	Mud shield for oil seal	1	236548	
18	Nut (5/16" BSF)	6	2828	) Fixing oil seal housing to P.T.O.
19	Spring washer	6	GHF332	
20	Stud for oil seal housing	6	216986	
21	Shim for bearing, 0.003"	A/R	41050	
	Shim for bearing, 0.005"	A/R	41131	
22	Rear bearing	1	217325	

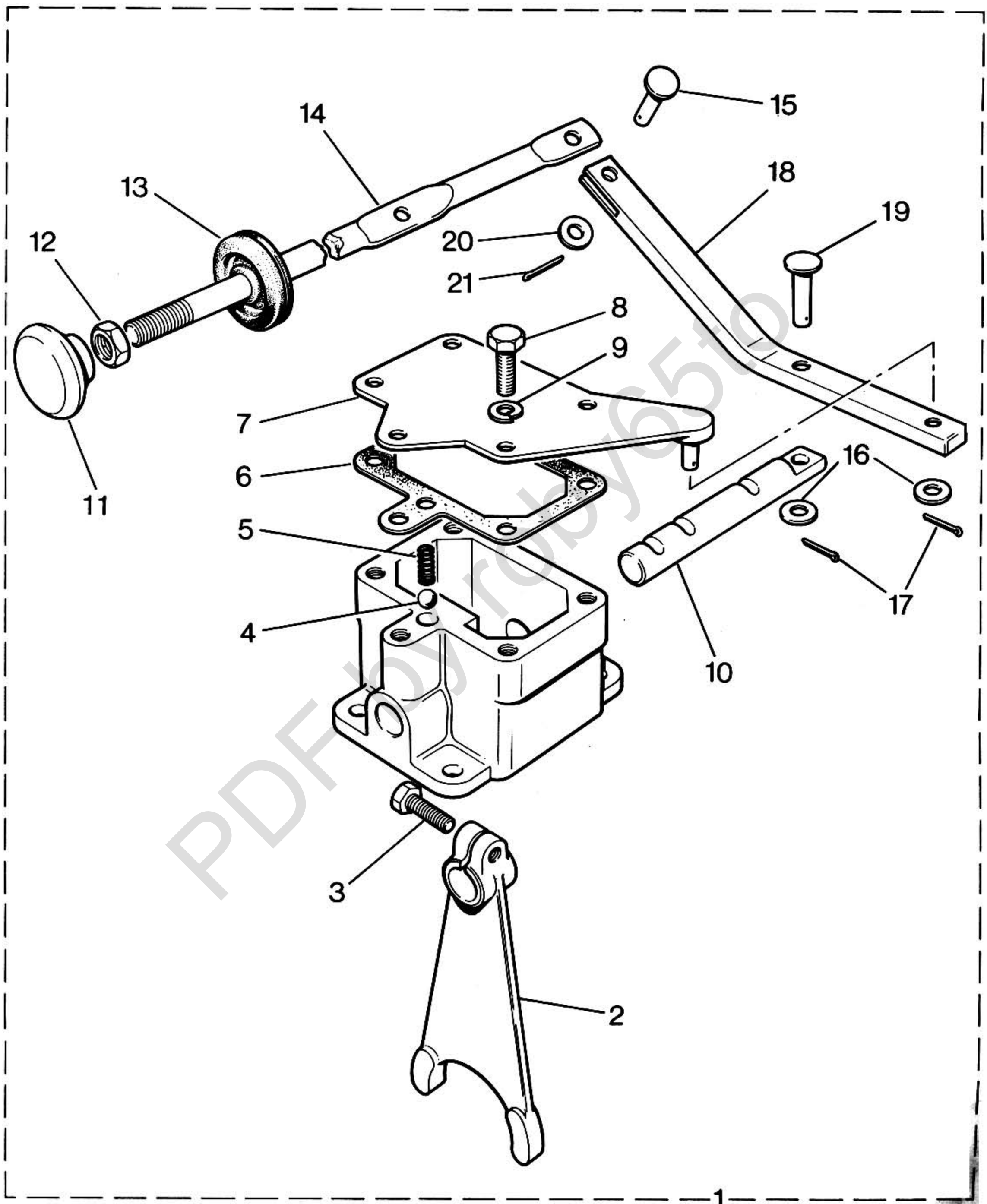
Note: Parts not carrying a plate reference are NSS (Not Supplied Separately).



Encloses parts which form an assembly or kit.



## SELECTOR UNIT ASSEMBLY





# PARTS LIST

Plate Ref.	Description	Qty.	Part No.	Remarks
1	Selector unit assembly	1	RTC7014	
2	Selector fork	1	90217584	
3	Pinch bolt (fork to shaft)	1	237160	
4	Ball	1	1643	
5	Spring	1	NRC255	
6	Gasket (top plate to housing)	1	559600	
7	Top plate	1	RTC7019	
8	Bolt ( $\frac{1}{4}$ " UNC x $\frac{5}{8}$ ") ) Fixing top plate	5	253206	
9	Spring washer ) to housing	5	GHF331	
10	Selector shaft	1	RTC7018	
11	Knob	1	218050	
12	Locknut for knob	1	3764	
13	Grommet	1	508571	
14	Control lever	1	RTC7020	
15	Pin (change to control lever $11/16$ " long)	1	RTC7023	$\frac{1}{4}$ " dia.
16	Plain washer ( $5/16$ "	2	3830	
17	Split pin ( $3/32$ "	2	2392	
18	Change lever	1	RTC7021	
19	Pin (change lever to selector shaft $1.1/16$ " long)	1	RTC7022	$5/16$ " dia.
20	Plain washer, $\frac{1}{4}$ "	1	3831	
21	Split pin, $1/16$ "	1	3958	

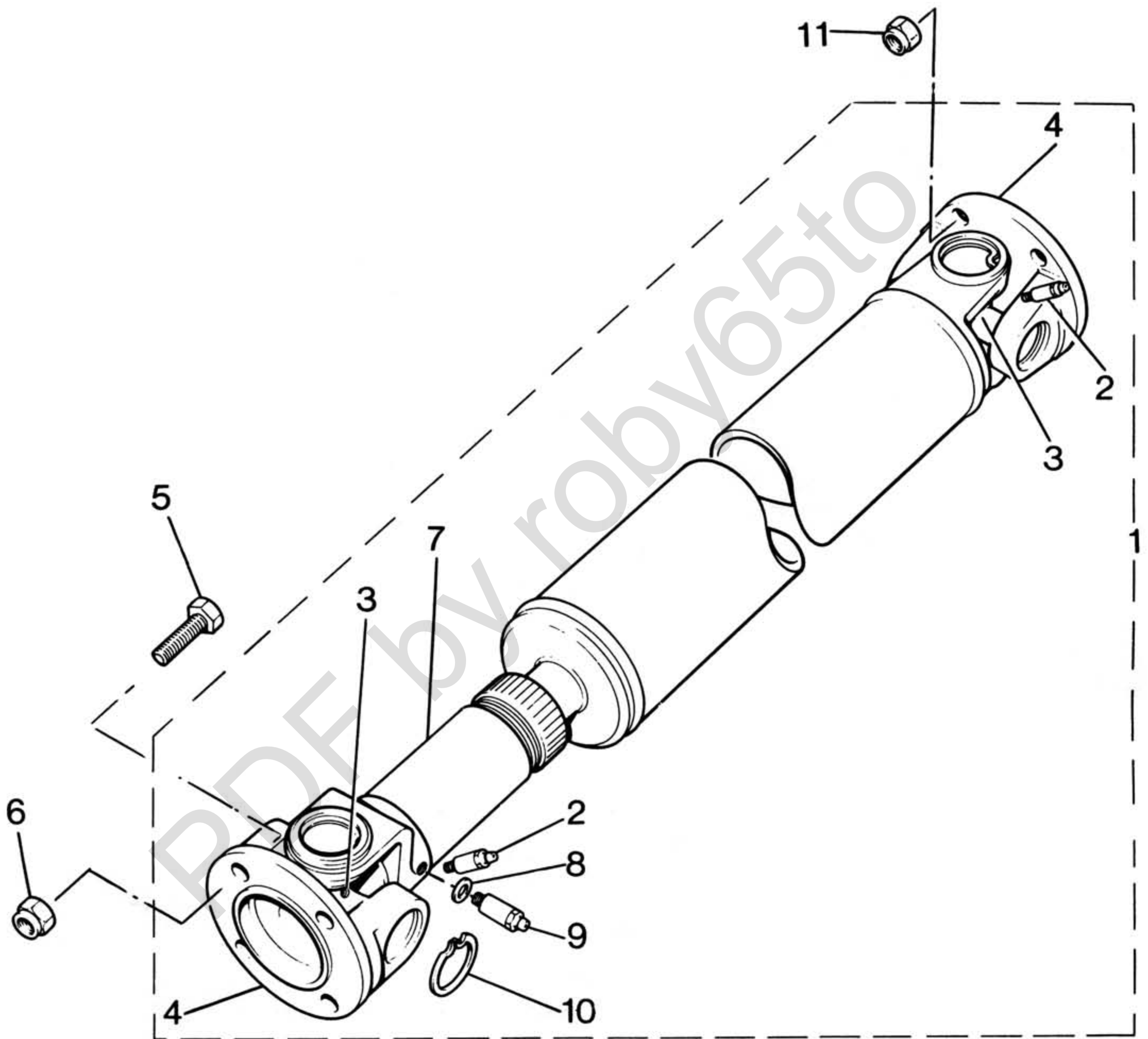
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Encloses parts which form an assembly or kit.



PROPELLOR SHAFT ASSEMBLY





PARTS LIST

Plate Ref.	Description	Qty.	Part No.	Remarks
1	Propellor shaft assembly	1	533728	
2	Grease nipple for universal joints	2	232557	
3	Universal joint pack	2	GUJ117	
4	Flange	2	600656	
5	Bolt, $\frac{3}{8}$ " UNF (flange to C.P.T.O)	4	509045	
6	Locknut, $\frac{3}{8}$ " UNF (flange to C.P.T.O)	4	509751	
7	Splined end	1	8407	
8	Sealing washer	1	NLS	
9	Grease nipple for splined end	1	234532	
10	Circlip for universal joints	8	242522	
11	Locknut, $\frac{3}{8}$ " UNF (flange to R.P.T.O)	4	509751	

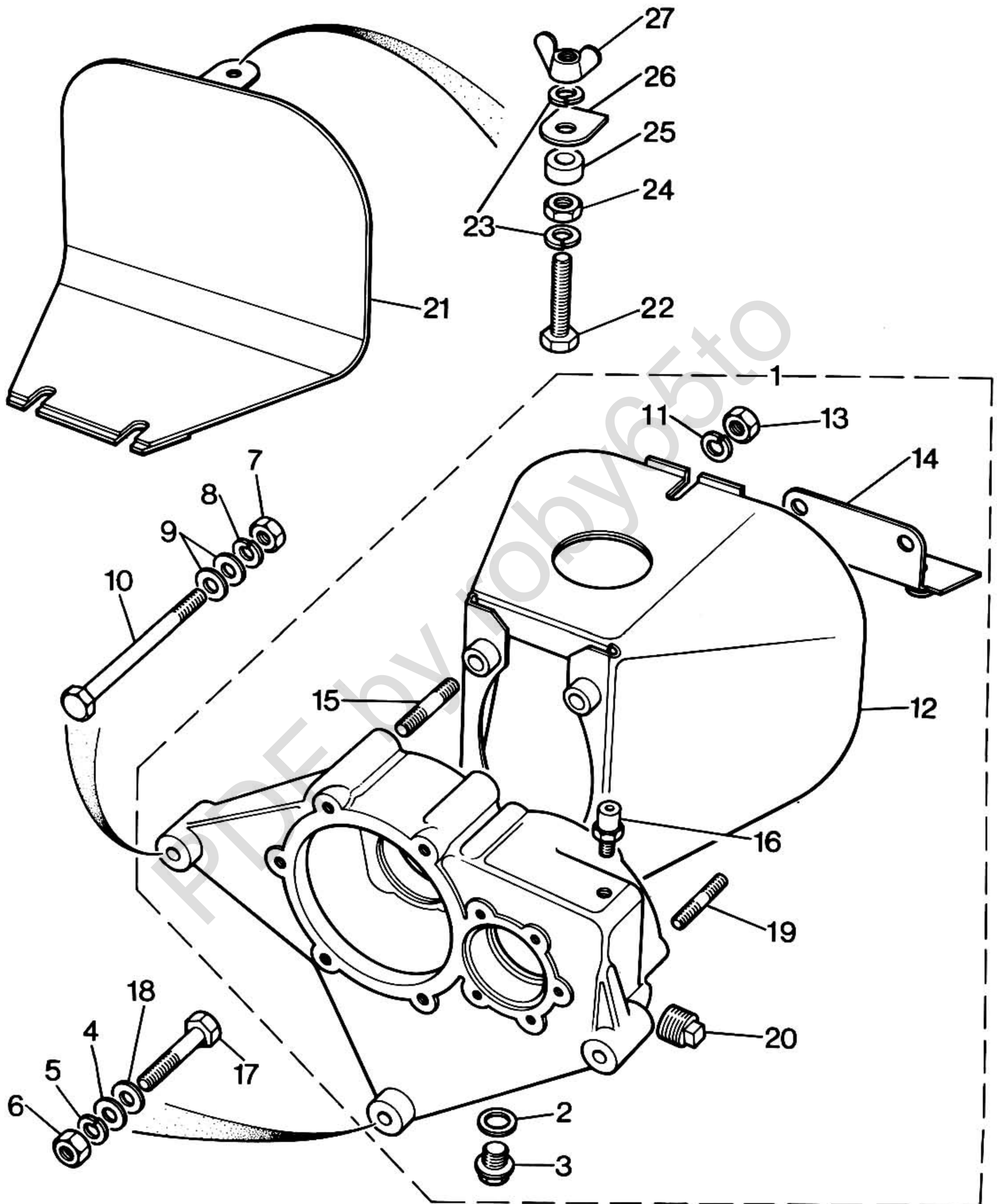
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POWER TAKE OFF DRIVE SECTION (CASINGS)





PARTS LIST

Plate Ref.	Description	Qty.	Part No.	Remarks
1	Power take-off drive section, 1.389:1 ratio	1	571410	For internal breakdown see pages 10 and 11.
2	Sealing washer for drain plug	1	213960	
3	Drain plug, $\frac{3}{8}$ " BSP	1	536577	
4	Plain washer, $\frac{3}{8}$ " ) Fixing casing	1	4067	
5	Spring washer, $\frac{3}{8}$ " ) to	1	GHF333	
6	Nut, $\frac{3}{8}$ " UNF ) 'Z' towing plate	1	254822	
7	Nut, $\frac{3}{8}$ " UNF )	2	254822	
8	Spring washer, $\frac{3}{8}$ " ) Fixing casing to	2	GHF333	
9	Plain washer, $\frac{3}{8}$ " ) chassis member	4	4067	
10	Bolt, $\frac{3}{8}$ " x $5\frac{3}{4}$ " )	2	253824	
11	Spring washer, $\frac{3}{8}$ ", fixing guard to casing	4	GHF333	
12	Guard for splined shaft	1	230122	
13	Nut, $\frac{3}{8}$ ", fixing guard to casing	4	2827	
14	Bracket for securing guard to casing	1	502039	
15	Stud, fixing guard to casing	4	231432	
16	Breather to casing	1	515845	
17	Bolt, $\frac{3}{8}$ " UNF x $2\frac{1}{2}$ " ) Fixing casing to	1	256447	
18	Plain washer, $\frac{3}{8}$ " ) 'Z' towing plate	1	4067	
19	Stud, $5/16$ " x $1.1/16$ ", fixing housings to casing	10	214054	
20	Filler/level plug, $\frac{1}{2}$ " BSP	1	3292	
21	End cover for guard	1	502037	
22	Bolt, $\frac{3}{8}$ " UNC x $1\frac{7}{8}$ " )	1	253254	
23	Spring washer, $\frac{3}{8}$ " ) Fixing end	2	GHF333	
24	Nut, $\frac{3}{8}$ " UNC ) cover to	1	256812	
25	Spacer ) guard	1	551886	
26	Washer, $7/16$ " )	1	502044	
27	Wing nut, $\frac{3}{8}$ " UNC )	1	250046	

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
1	Power take-off drive section, 1.389:1 ratio	1	571410	For breakdown of casings & fixings see pages 8 & 9
2	Flange for input shaft	1	217667	
3	Split pin, $\frac{1}{8}$ " ) Fixing input	1	2428	
4	Slotted nut, $\frac{5}{8}$ " ) flange to	1	3259	
5	Plain washer ) input shaft	1	3300	
6	Bolt, $\frac{3}{8}$ " UNF (RPT0 flange to propellor shaft)	4	90512701	
7	Circlip for input flange	1	217546	
8	Gears (matched pair)	1	571412	
9	Shim for bearing, .005"	A/R	217553	
9	Shim for bearing, .010"	A/R	217554	
9	Shim for bearing, .020"	A/R	217555	
10	Spring washer, 5/16" ) Fixing bearing	5	GHF332	
11	Nut, 5/16" BSF ) housing to casing	5	2828	
12	Joint washer for cover (input)	1	217660	
13	Split pin, $\frac{1}{8}$ "	1	2428	
14	Bolt, $\frac{1}{4}$ " Whit. x $\frac{1}{2}$ " ) Fixing cover to	6	90215758	
15	Spring washer, $\frac{1}{4}$ " ) bearing housing	6	GHF331	
16	Slotted nut, $\frac{5}{8}$ " ) Fixing bearing	1	3259	
17	Plain washer, $\frac{5}{8}$ " ) to shaft	1	3300	
18	Bearing for rear of input shaft	1	217504	
19	Circlip, retaining bearing	1	90217566	
20	Joint washer for bearing housing	1	561884	
21	Circlip, retaining bearing	1	90217566	
22	Joint washer for cover (output)	1	217660	
23	Spring washer, $\frac{1}{4}$ " ) Fixing cover to	6	GHF331	
24	Bolt, $\frac{1}{4}$ " Whit. x $\frac{1}{2}$ " ) bearing housing	6	90215758	
25	Slotted nut, $\frac{5}{8}$ " ) Fixing bearing	1	3259	
26	Split pin, $\frac{1}{8}$ " ) to shaft	1	2428	
27	Nut, 5/16" BSF ) Fixing bearing	5	2828	
28	Spring washer, 5/16" ) housing to casing	5	GHF332	
29	Circlip, retaining bearing	1	90217566	
30	Gears (matched pair)	1	571412	
31	Joint washer for front bearing housing	1	561884	
32	Joint washer for rear bearing housing	1	561885	
33	Oil seal, rear of output shaft	1	217508	
34	Output shaft	1	230098	
35	Bearing, rear of output shaft	1	217504	
36	Circlip, retaining bearing	1	90217566	
37	Shim for bearing, .005	A/R	217553	
37	Shim for bearing, .010"	A/R	217554	
37	Shim for bearing, .020"	A/R	217555	
38	Bearing, front of output shaft	1	217504	
39	Plain washer, $\frac{5}{8}$ ", fixing bearing to shaft	1	3300	
40	Joint washer	1	561885	
41	Bearing for rear of input shaft	1	217504	
42	Input shaft	1	217562	
43	Oil seal for front of input shaft	1	217508	

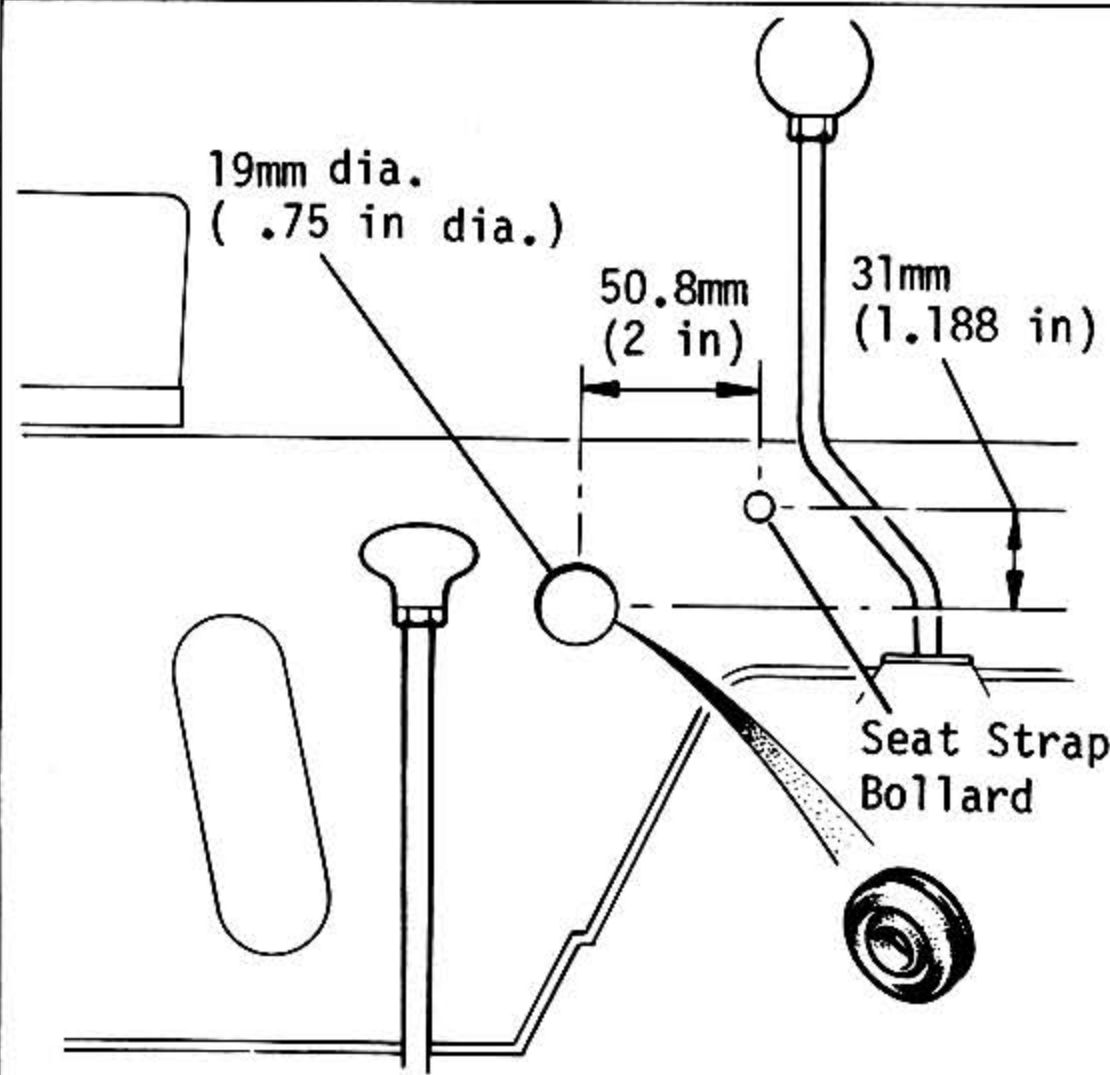
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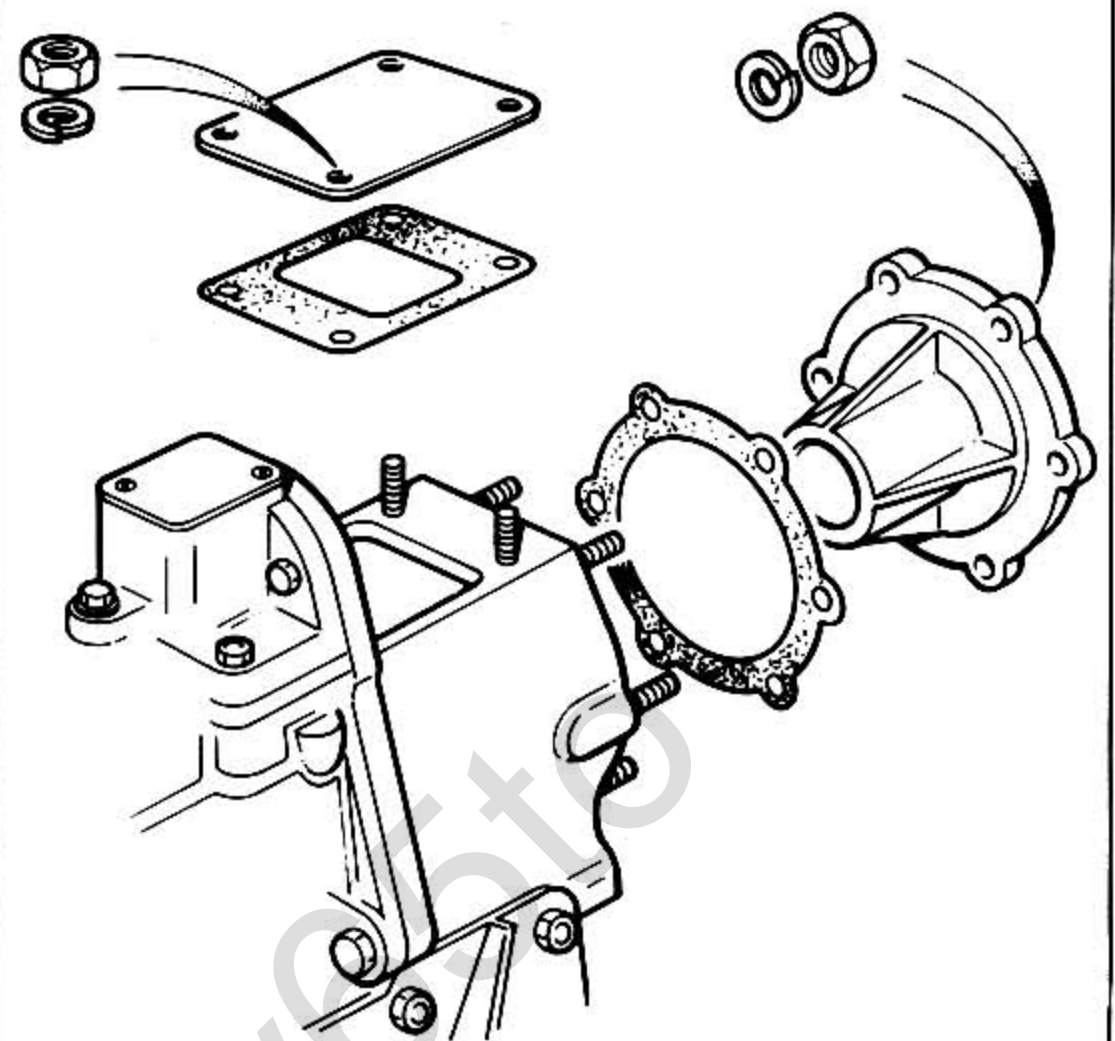
Encloses parts which form an assembly or kit.



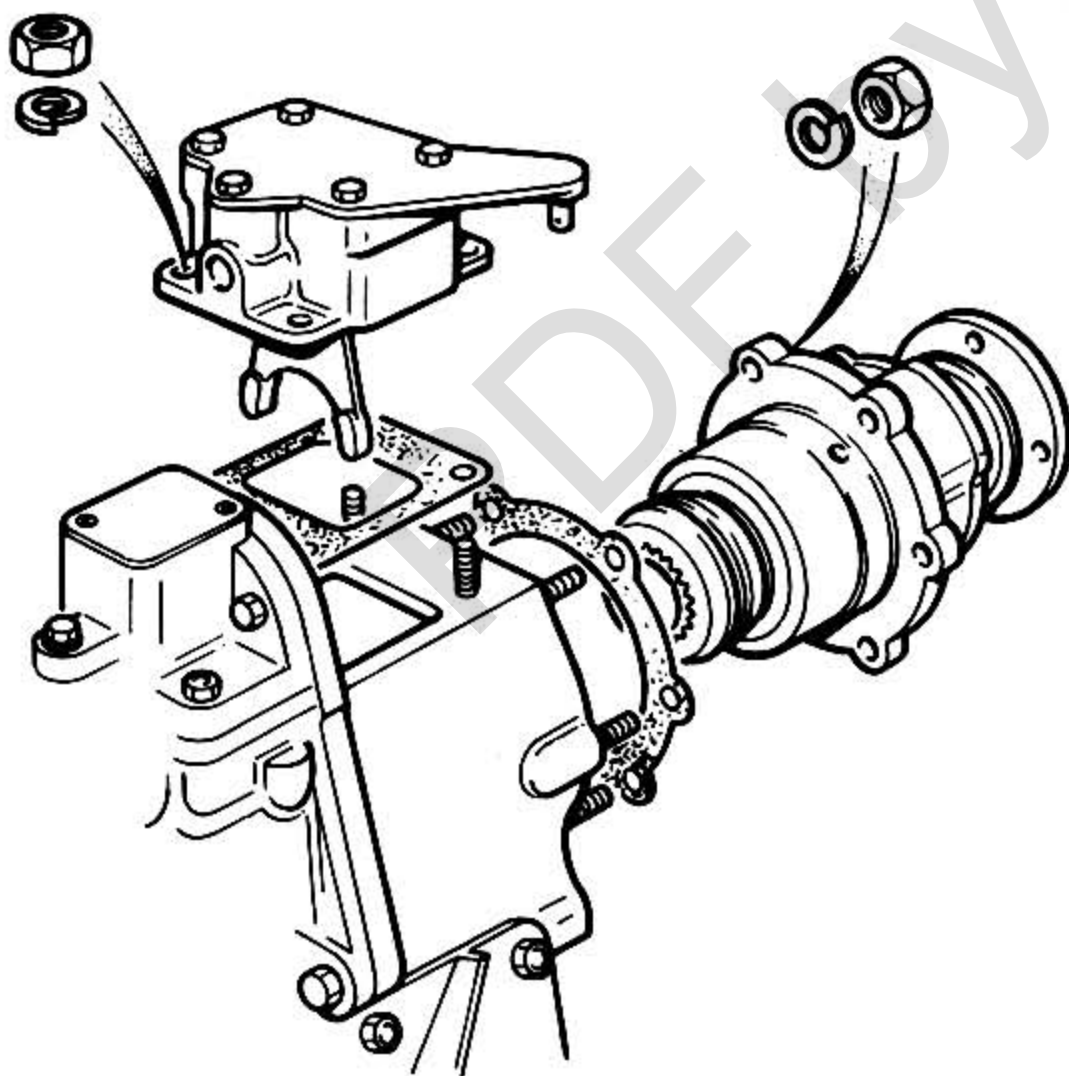
FITTING INSTRUCTIONS



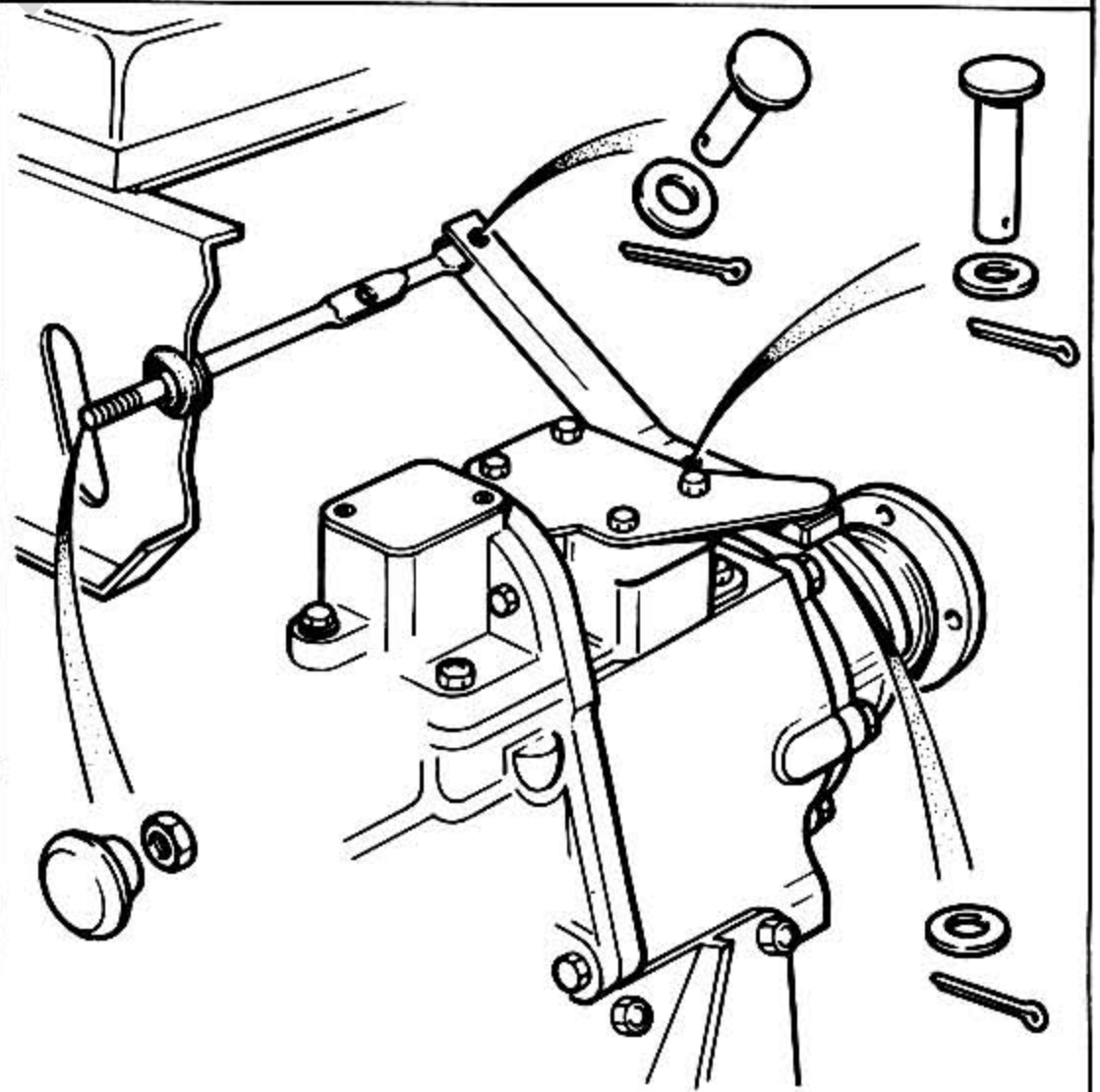
1. Remove centre seat panel. Mark off and drill one hole. Fit grommet to hole.



2. Remove rear bearing housing and top cover plate from transfer box casing.



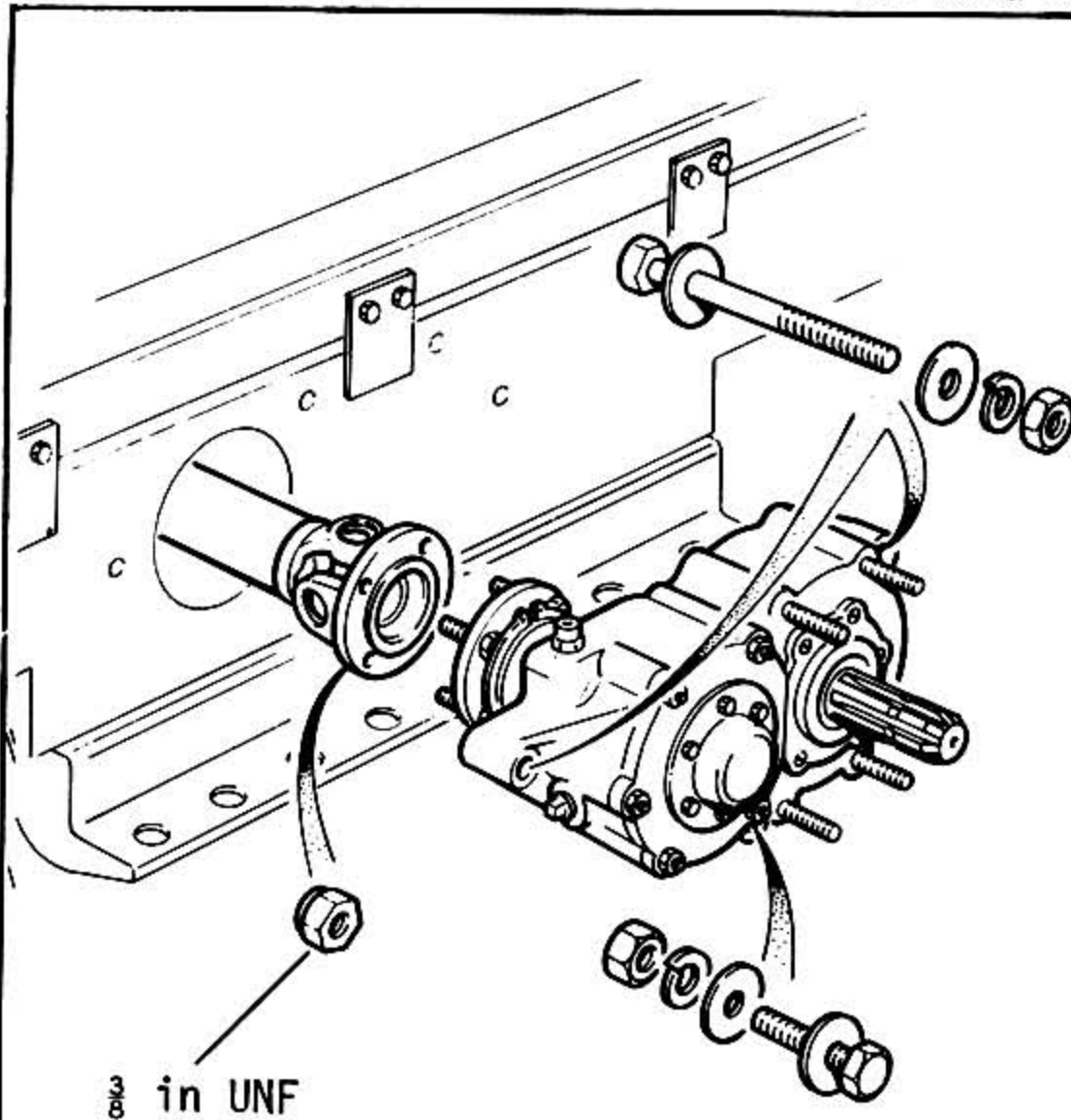
3. Secure PT0 to transfer box using existing fixings and positioning oil drilling to top LH side. Engage fork with dog and secure selector unit to transfer box using existing fixings.



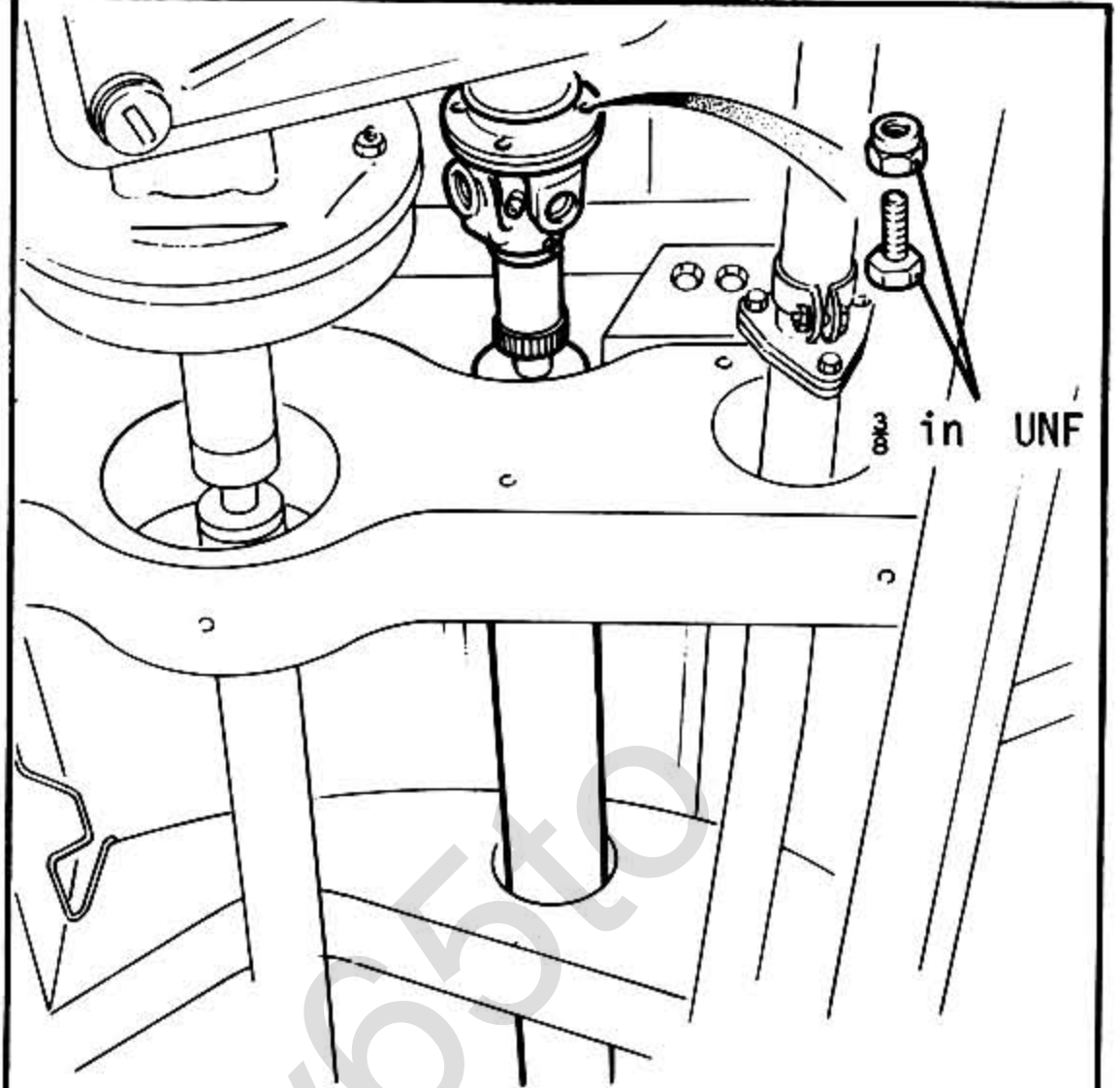
4. Assemble linkage using front hole for four cylinder vehicles or rear hole for six cylinder vehicles. Fit knob and locknut.



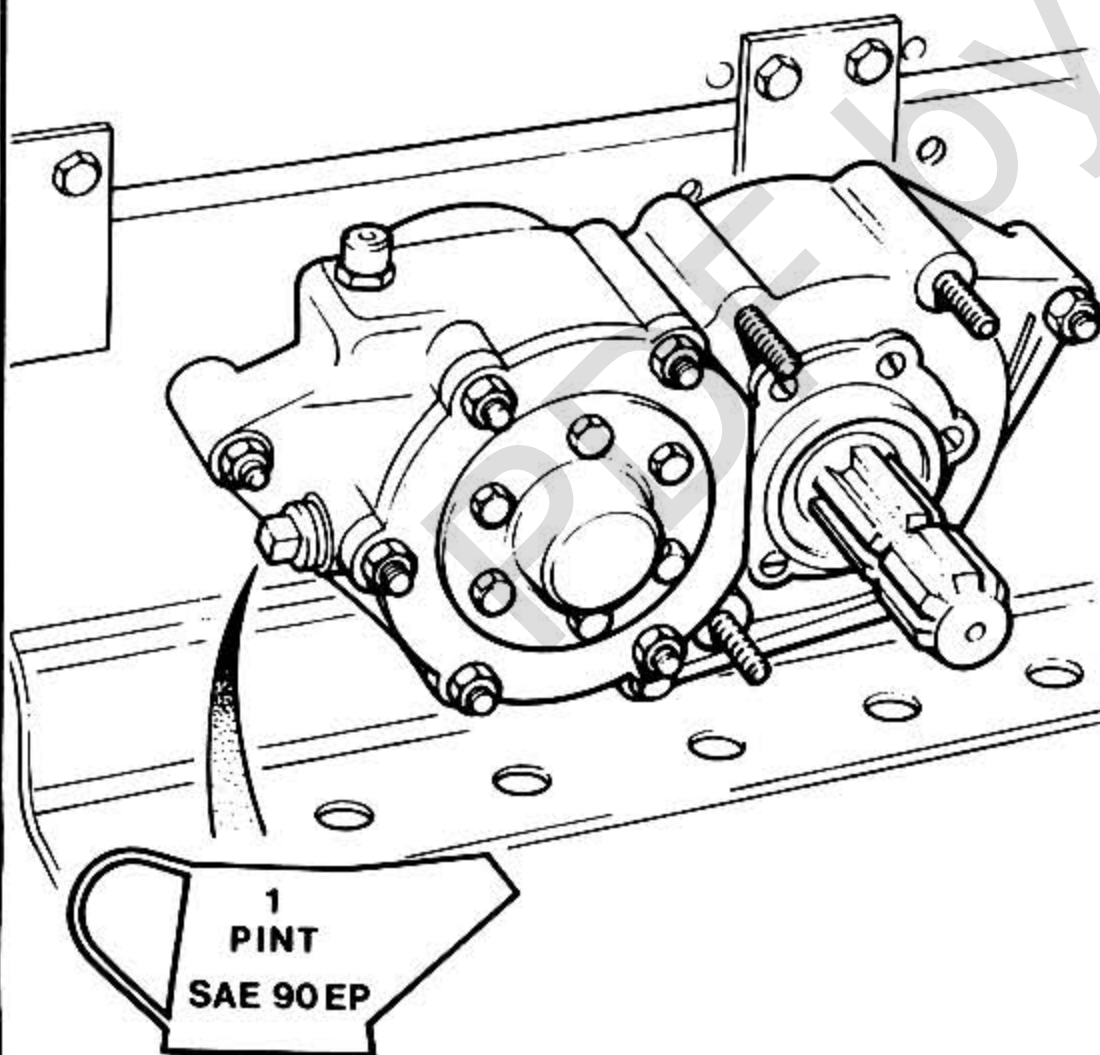
# FITTING INSTRUCTIONS



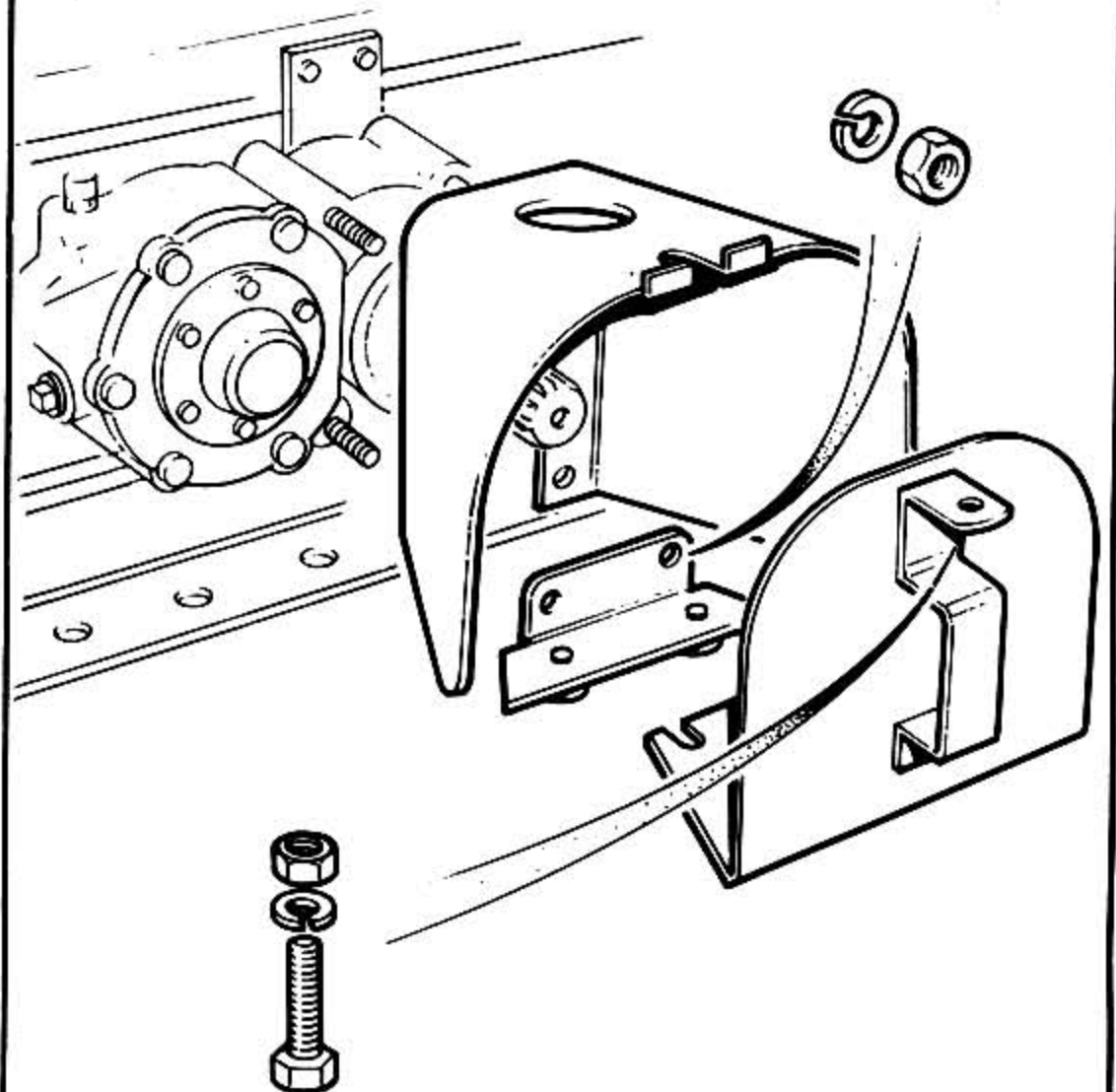
- 1 Slide propeller shaft through crossmember and secure to drive-unit flange. Secure drive unit to crossmember and towing plate.



- 2 Secure propeller shaft to Centre Power Take off driving flange.



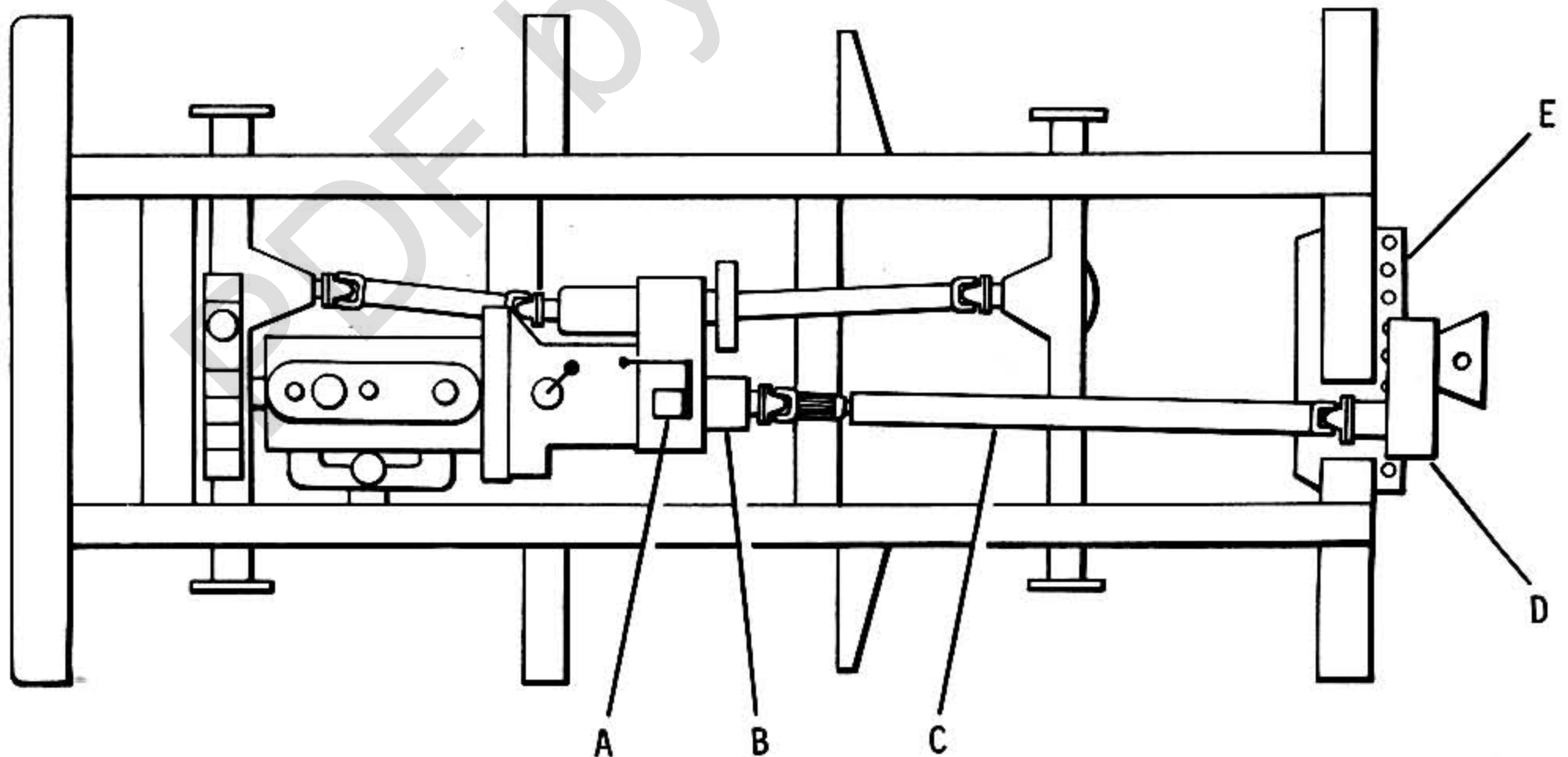
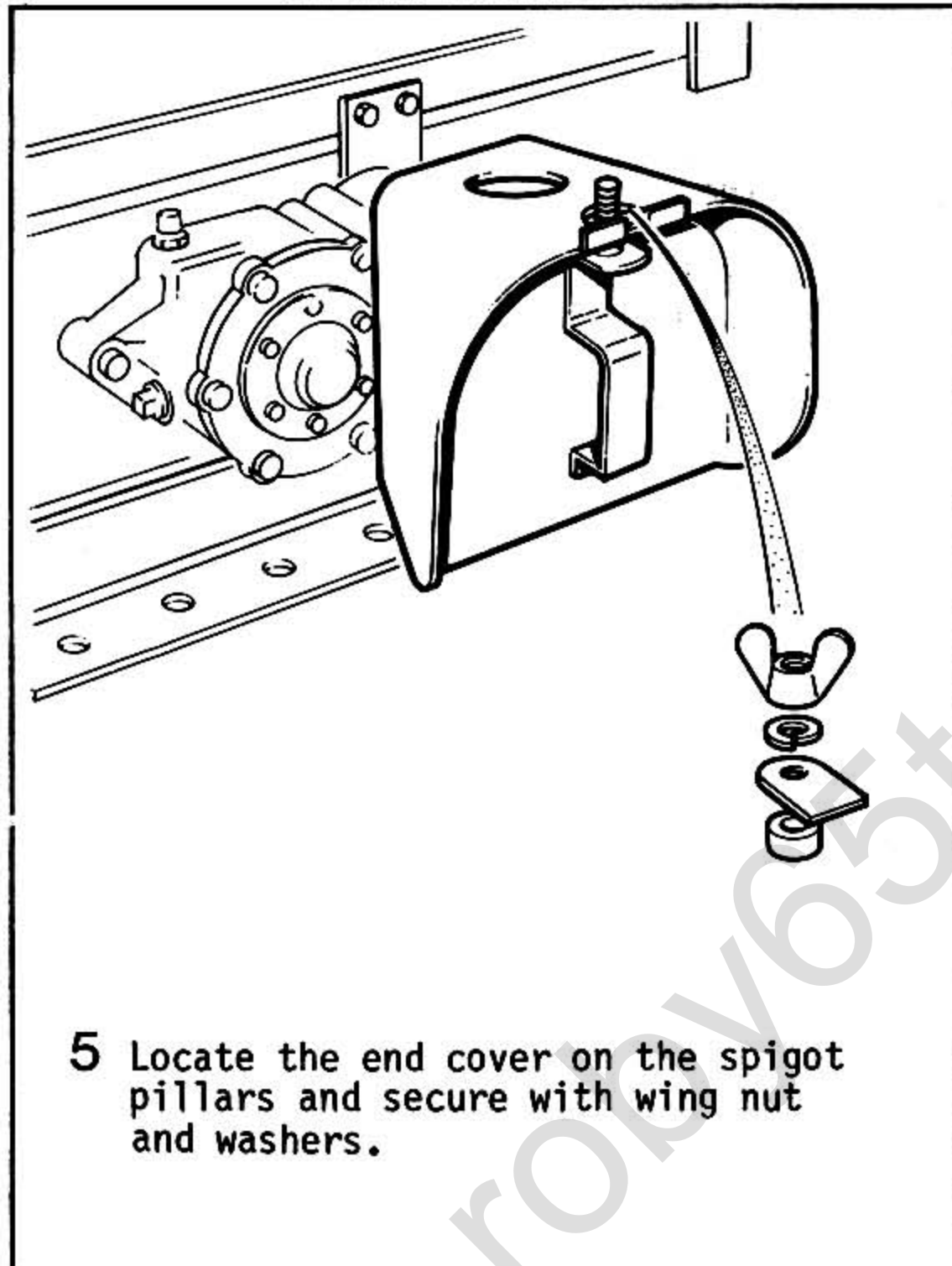
- 3 Remove filler plug and fill the rear drive unit with S.A.E. 90 EP oil. Check operation of installation and clearance for all moving parts



- 4 Locate guard and retaining bracket on studs and secure with four nuts and spring washers. Assemble fixings to end cover.



### FITTING INSTRUCTIONS



- 6 A Selector Unit  
B Centre Power Take Off  
C Propeller Shaft

- D Rear Power Take Off  
E 'Z' Type Towing Plate



### OPERATING INSTRUCTIONS

1. To engage the power take-off, depress the clutch, pull the selector knob forwards from the heelboard then release the clutch.
2. For stationary applications the transfer gear lever (red knob) must be in the neutral position.
3. The power take-off can be operated in any of the four forward gears but reverse gear should never be used for continuous running.
4. For continuous running under stationary conditions it is recommended that 4th gear only is used to reduce the heat generated by the gearbox.
5. Direction of rotation is clockwise when viewed from the rear.
6. For accurate control of engine speeds it will be necessary to fit an engine speed governor to petrol models. Diesel engines are fitted with governors as standard equipment.

### MAINTENANCE INSTRUCTIONS

1. Every 200 operating hours or 12 months, whichever is sooner:
  - (a) Grease propeller shaft universal and sliding joints,
  - (b) change oil in rear power take off gearbox, and,
  - (c) lightly oil selector linkage.

### TECHNICAL DATA

Oil capacity	1 pint (.5 litre)
Oil type	EP 90
Shaft size	1.375" dia x 6 spline
P.T.O. gearbox ratio as supplied	1:1.389 Step-up (18/25)
P.T.O. gearbox ratio - gears transposed	1:0.720 Step-down (25/18)
Horsepower available	See chart.
Weight complete	100 lb



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.



P.T.O. SPEEDS AND M.P.H. RELATIONSHIP FOR SERIES III LAND ROVER

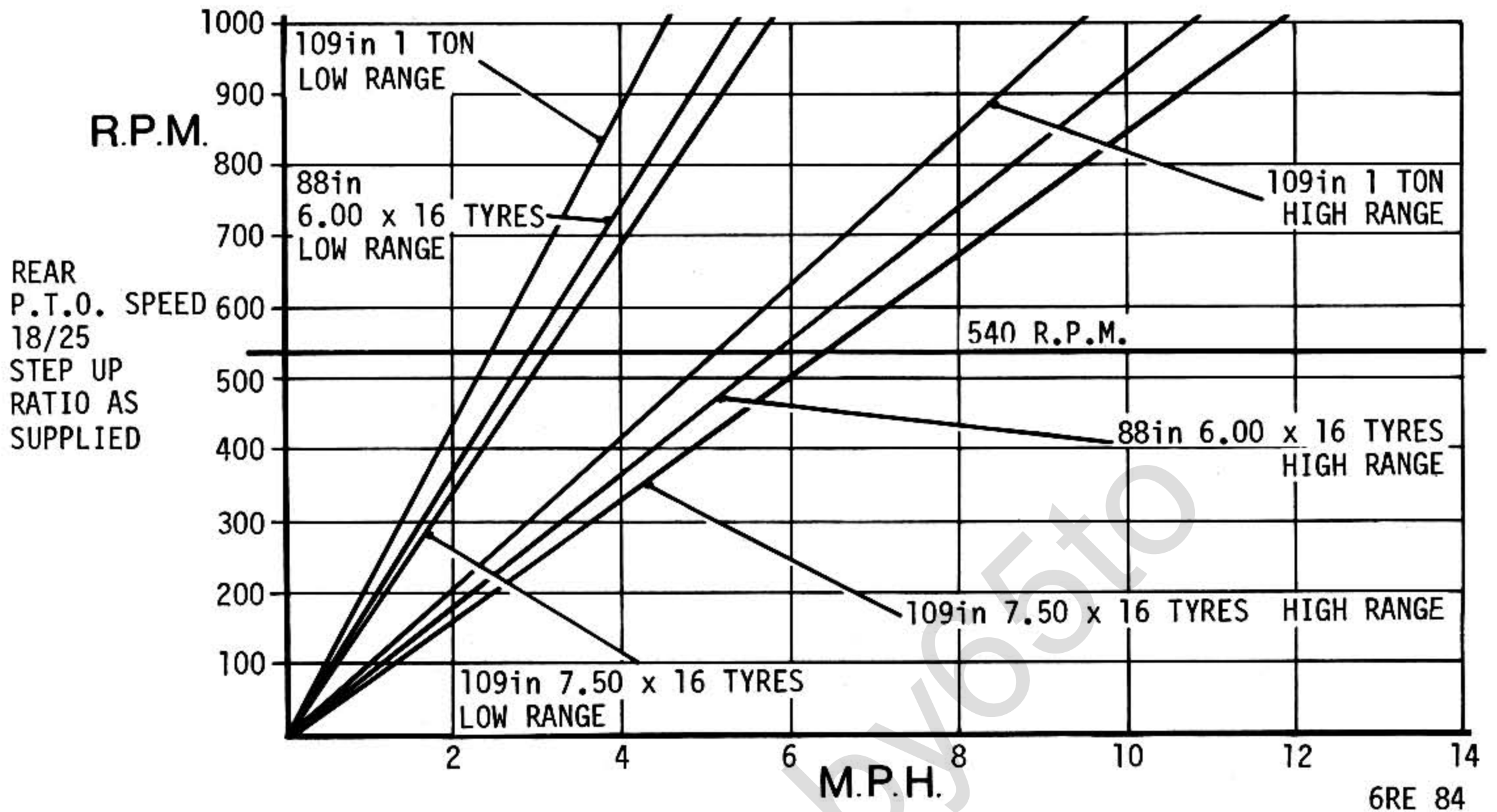
N.B. The speeds given in the chart relative to the rear P.T.O. are with gear ratios as supplied by Rover. Gears may be transposed to change the ratios.

The ratios are: Series III Standard .720:1 (18/25)  
Transposed 1.378:1 (25/18)

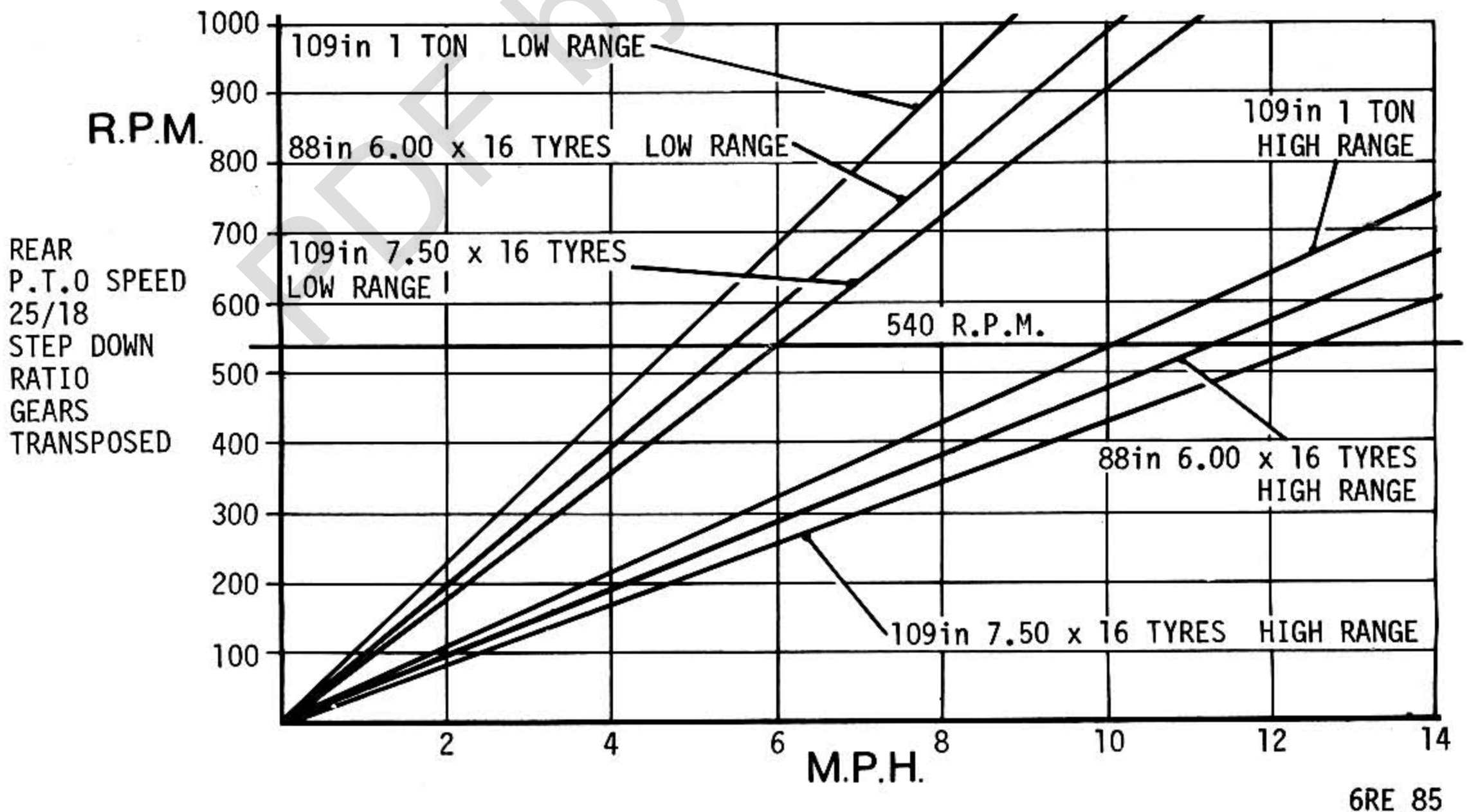
CONDITION	MODEL	SERIES III					
1000 R.P.M. ENGINE SPEED	MAIN GEAR	ALL	1ST	2ND	3RD	4TH	REV
	GEAR RATIO	ALL	3.68	2.22	1.50	1.00	4.02
	CENTRE PTO RPM	ALL	272	450	666	1000	249
	REAR PTO RPM	ALL	377	630	934	1389	345
	M.P.H. HIGH	88	4.10	6.75	10.00	15.0	3.75
	RANGE	109	4.48	7.3	11.0	16.50	4.10
		109 1 TON	3.61	6.0	8.90	13.3	3.30
	M.P.H. LOW	88	1.98	3.30	4.90	7.30	1.80
	RANGE	109	2.18	3.60	5.30	8.00	2.00
		109 1 TON	1.70	2.80	4.37	6.25	1.56
540 R.P.M. REAR P.T.O. OUTPUT SPEED	R.P.M. ENGINE	ALL	1430	864	584	389	1565
	M.P.H.	88	5.84	5.84	5.84	5.84	5.84
	HIGH RANGE	109	6.42	6.42	6.42	6.42	6.42
		109 1 TON	5.17	5.17	5.17	5.17	5.17
	LOW RANGE	88	2.80	2.80	2.80	2.80	2.80
		109	3.11	3.11	3.11	3.11	3.11
		109 1 TON	2.43	2.43	2.43	2.43	2.43



P.T.O. SPEEDS AND M.P.H. RELATIONSHIP FOR SERIES III LAND ROVER



GRAPH 1  
WITH GEARS AS SUPPLIED



GRAPH 2  
WITH GEARS TRANSPOSED



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