WINGET

OPERATING INSTRUCTIONS & SPARE PARTS LIST

FOUR 5000 FORKLIFT

(CAPACITY 2270Kg)

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INTRODUCTION

This Parts & Operators Manual is a re-print of the manual last published in 1979 and contains some amended part numbers.

Health & Safety legislation and working practices applicable to Forklift Trucks, both 2 and 4 wheel Drive, Rigid Chassis and Articulated Chassis have changed considerably in the years since this manual was last published. We would recommend that only trained operators who are in possession of the relevant certification issued by a recognised Training Authority be allowed to operate this equipment.

Reference is made on a number of pages to 'bolt c/w nut and washer', this no longer the case, fixings such as nuts, bolts, screws and washers should be ordered as individual items. A number of Whitworth and B.S.F fixings are now no longer available, in these cases the nearest metric equivalent size will be supplied.

The contents of this manual although correct at the time of publication, may be subject to alteration by the manufacturers without notice and Winget Limited can accept no responsibility for any errors or omissions contained within the following pages. Nor can we accept any liability whatsoever arising from the use of this manual howsoever caused.

Winget Limited operate a policy of continuous product development. Therefore, some illustrations or text within this publication may differ from your machine.

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SPECIFICATION

With 12ft.(3.6M) Free Lift Mast.

A	Overall length (Minus Forks)		179"	(4547mm)
B	Wheelbase		84"	(2134mm)
C	Length from front axle to rear of forks		33"	(845mm)
D	Load centre		24"	(610mm)
E	Fork length		48"	(1219mm)
F	Overall height of cab		111"	(2819mm)
G	Fork centres	MAX....	53"	(1346mm)
		MIN....	4"	(102mm)
H	Wheeltrack		68"	(1727mm)
J	Overall width		82"	(2083mm)
K	Closed height of mast		111½"	(2826mm)
	Maximum load at 2'0" (610mm) Load Centre		5000 lb	(2270Kg)
	Total Lift of forks above ground level		144"	(3658mm)
	Min.Ground clearance		12"	(305mm)
	Turning circle (outside dia.)		342"	(8687mm)
	Unladen weight		13007 lb	(5900Kg)
	Hydraulic relief valve pressure		2000psi	(138 bar)
	Rear axle articulation		8"	(204mm)

Road Speeds at 2500 R.P.M.

Forward or reverse:

1st	2.25 mph	(3.62kph)
2nd	3.66 mph	(5.89kph)
3rd	5.87 mph	(9.44kph)
4th	8.91 mph	(14.34kph)
5th	14.65 mph	(23.57kph)

Load Moment

295,000 lb.in (33,330 Nm)

Capacities

Engine	16 pts.	(9.1 litres)	Hydraulic Oil Tank.....20 gal.(91.litres)
Gearbox	10 pts.	(5.7 litres)	Fuel Tank..... 20 gal.(91.litres)
Axle	16 pts.	(9.1 litres)	Transfer Case ..... 1¾ pts.(.711itres)

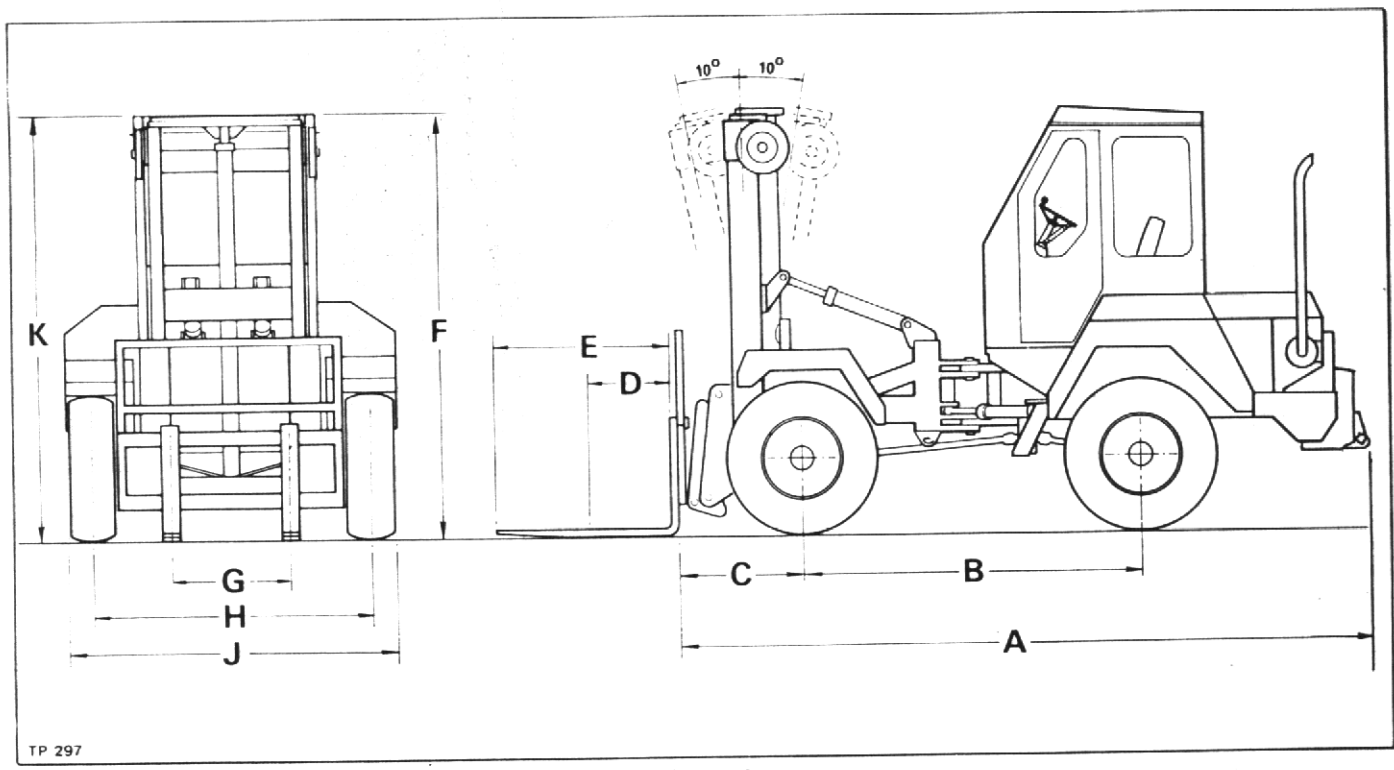


FIG. 1

PREPARATION FOR USE

BEFORE THE FOUR-5000 IS PUT INTO SERVICE, ALWAYS CHECK THE FOLLOWING POINTS:-

Engine
Check oil level on the dipstick, top up, if necessary to the full mark.
Check radiator water level, top up if necessary.

Gearbox
Check the oil level on the dipstick topping up if necessary to the full mark.

Drive Axles
Remove filler/level plugs on front and rear Axles and check that oil is up to bottom of hole, top up if necessary.

Transfer Case
Remove filler/level plug and check oil is up to bottom of hole, top up if necessary.

Fuel Tank
Fill tank with diesel oil until approximately 1" from the top.

NOTE: Never allow fuel level to fall below 2" deep in the bottom of the tank.

Hydraulic Tank
Fill the hydraulic tank. Before removing the cap, clean the surrounding area, to prevent the possible entry of foreign matter. DO NOT MIX OILS.

Brake System
Ensure that both brake master cylinder reservoirs are full of brake fluid. Top up if necessary, to within ¼" of the top of the reservoirs. Use only Brake fluid that conforms to B.S. SAE J 1703.

Clutch
Check that the clutch master cylinder reservoir is full of fluid. Top up if necessary to within ¼" of the top. Use fluid that conforms to B.S.SAE J 1703.

Battery
Check electrolyte levels. Top up if necessary.

Tyres
Check tyre pressure (50lb/in^2).

Miscellaneous
Check all wheel nuts for tightness
Check all nuts and bolts for tightness. Loose nuts and bolts may lead to damage not covered by the Warranty.

For further information on Lubrication See 'Maintenance' section and the 'Recommended Lubricant Chart.'

INSTRUMENTS, CONTROLS AND SWITCHES

Ammeter
Indicates battery charge or discharge.

'No Charge' Warning Light
Glows red when the auxiliary circuits are switched on and at engine idling speed. The light should go out when the engine speed is increased above idling.

Direction Indicator Warning Light
When direction indicators are in use the light in the centre of the switch flashes.

Engine Oil Pressure Gauge
The gauge is marked in lbs/in^2 indicating the engine lubricating oil pressure.

Water Temperature Gauge
The gauge is marked in degrees fahrenheit and centigrade indicating the temperature of the coolant as it leaves the cylinder head.

Fuel Sight Gauge
Gauge situated on rear end of Fuel Tank.

Hydraulic Oil Sight Gauge
Gauge situated on rear end of Hydraulic tank.

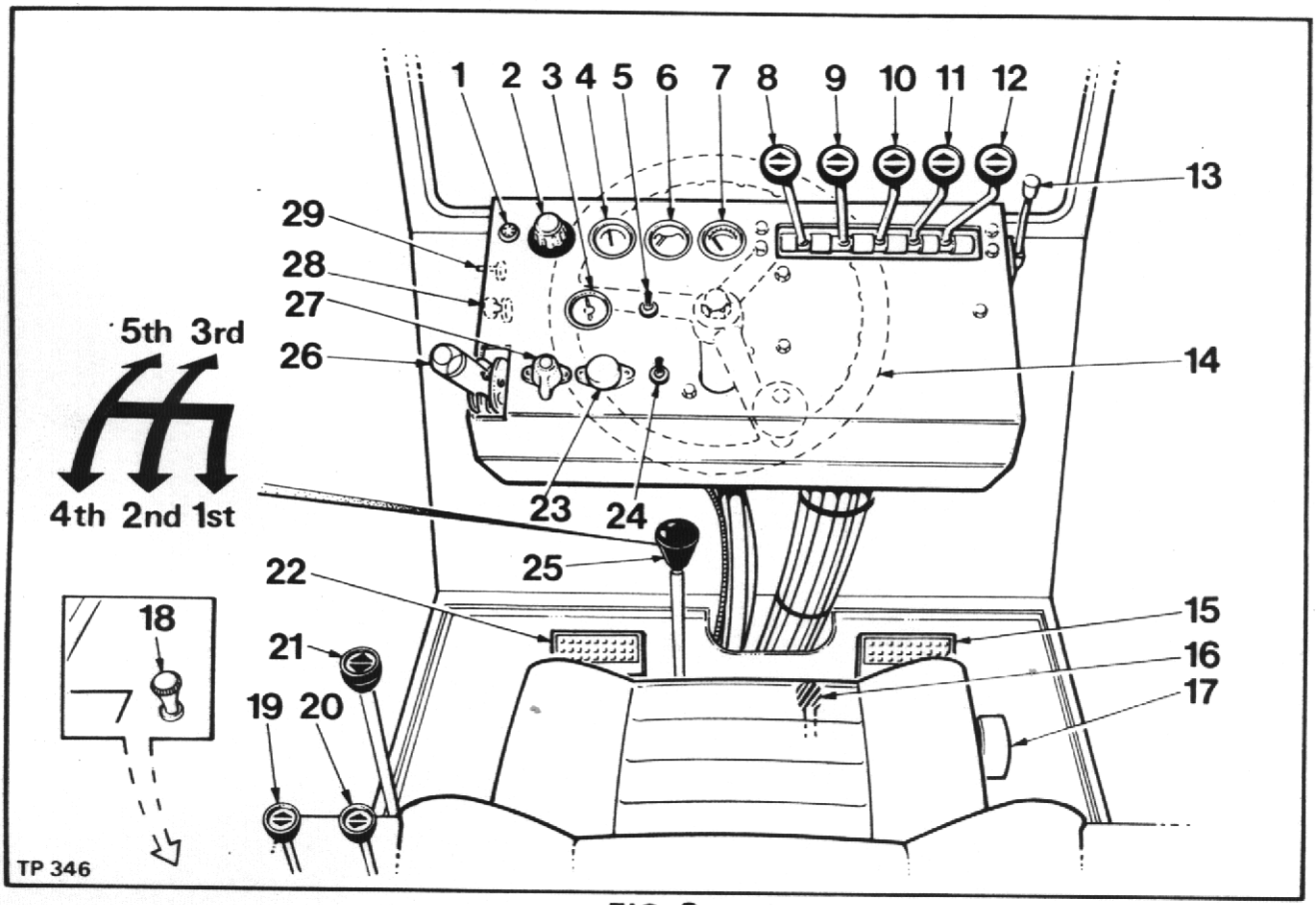


FIG. 2

KEY:

1. No charge warning light
2. Light switch
3. Hour meter
4. Ammeter
5. Windscreen washer switch
6. Engine oil pressure gauge
7. Engine coolant temperature gauge
8. Auxiliary service control lever
9. Auxiliary carriage tilt control lever
10. Main lift control lever
11. Free lift control lever
12. Tilt control lever
13. Manual throttle control
14. Steering wheel
15. Footbrake pedal
16. Seat slide release lever
17. Accelerator pedal
18. Engine stop control knob
19. Rear service control lever
20. Tow hitch control lever
21. Forward/Reverse control lever
22. Clutch pedal
23. Horn push
24. Windscreen wiper switch
25. Gear lever
26. Handbrake lever
27. Direction indicator switch
28. Ignition switch
29. Working light switch

OPERATION

Starting

1. Check that Engine Stop Control knob is pushed fully down.

2. Insert the ignition key in the isolating switch and turn clockwise.

3. Turn key further clockwise against spring load. DO NOT operate starter motor for more than 20 seconds at a time.

4. Where the ambient temperature is $5^{o}F$ ($-15^{o}C$) or below, a cold starting aid should be fitted, after consultation with the Engine Manufacturer or Agent.

Stopping

Pull the engine stop control knob, positioned just behind and to the left of the operator's seat and wait until the engine stops.

Gear Shift and Fwd/Rev Range Levers

1. The Four-5000 is fitted with five gears and a forward/reverse selector, giving a total of 5 forward and 5 reverse gears.

2. When changing gear in either the forward or the reverse range, the clutch pedal is used in the normal manner.
3. When changing from the forward range to the reverse range or vice versa always:
   a) Bring the machine to a stop using the brake.
   b) Depress Clutch Pedal.
   c) Move the Forward/Reverse lever to the required range.
   d) Proceed in the new range.

Hydraulic Controls (See Fig.2)

There are a total of seven control levers on the standard machine. Five levers which control the front services, are located to the front/right of the steering wheel. The remaining two levers which control the rear services are located to the rear/left of the drivers seat.

Each lever is spring biased to the centre (neutral position) and can be moved either forward or back of this position.

Each control lever may be used to vary the speed of the function by operating to allow partial opening of the valve; further control is available by varying the engine speed.

Travelling with Load

The machine should NOT be driven with the load elevated, it should normally be moved with the load at a height of approximately 400 mm (16") and with the mast tilted fully backwards. If site or load conditions make this operation impossible and the load must be carried higher, the machine should be moved only with extreme caution.

Manual Accelerator Control

Manual Control is provided to increase the engine speed up to approximately half the maximum. This control is not spring loaded and may be used to increase the speed of certain front end attachments. The normal accelerator pedal function is still available in this condition to increase the speed to maximum.

Trailer Tipping

Always lower trailer before de-coupling this service. Failure to observe this instruction may result in a shortage of oil in the hydraulic system.

Periodic Maintenance

DAILY (OR EVERY 10 HRS.)
Check engine oil level and fill to full mark on dipstick, if necessary.
Fill fuel tank, or as often as proves necessary to approximately 1" of top. Never allow there to be a depth of less than 2" of fuel in tank.
Check radiator water level,top up if necessary.

WEEKLY (OR EVERY 50 HRS.)
Check oil level in the gearbox and fill to full mark on the dipstick if necessary.
Check oil level in the hydraulic tank. Check level only when forks are lowered. Always clean the surrounding area before removing the cap to prevent the possible entry of foreign matter. Fill tank if necessary.
Check fluid level in the brake master cylinder reservoirs and top up if necessary, to within ¼" of the top.
Check fluid level in the clutch master cylinder reservoir and top up if necessary to within ¼" of the top.
Remove oil level/filler plugs from drive axles and transfer case. Oil levels should be to bottom of holes. Top up if necessary.
Liberally apply grease between the outer and inner frames of the mast assembly and to the free lift cross head guide. Use Mobilgrease Special or Shell Alvania 2 with MoS_2 . (Duplex mast only).
Apply grease to all grease nipples.
Check tyre pressure 50lb/in^2 .
Check electrolyte levels in the Battery.
Check all wheel nuts and tighten, if necessary.
Lubricate lift chains with suitable lubricant-Acheson 'HI LOAD forklift chain lubricant,' Shell 'Cardium Fluid D' or equivalent.

FREQUENTLY
Check all nuts and bolts and tighten if necessary.

HYDRAULIC SYSTEM RETURN LINE FILTER (See Fig. 3). First change after 10 hrs., then after 100 hrs., subsequently every 500 hrs.

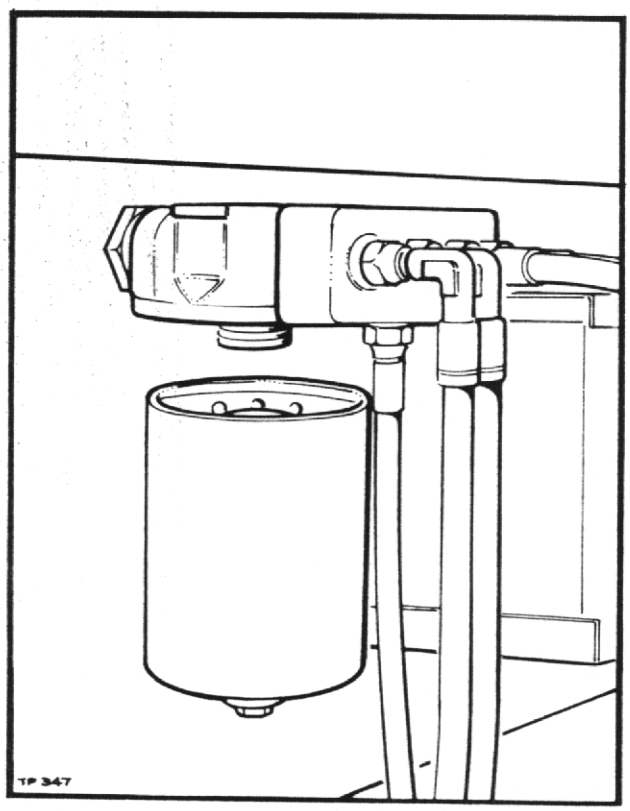


Fig.3

Brake and Clutch Systems

The brake system is designed to require the minimum of maintenance and providing hydraulic fluid in the reservoirs is not allowed to fall below the recommended level, no defects should normally occur. Fluid loss must be supplemented by topping up the reservoirs with fluid that conforms to B.S.SAE J 1703. Rapid or excessive fluid loss should be investigated before the machine continues in service. If air is present in the system, it will be indicated by sluggish response of the brakes or clutch and by spongy action of the pedals. This may be due to air being introduced at a loose joint or by the reservoir fluid not being maintained at the correct level. These defects must be remedied immediately and the complete system bled.

To bleed the brake system proceed as follows:
(See Fig.4)

1. Check that all connections are tight and both bleed screws are closed.
2. Fill the reservoirs with fluid.
3. Attach bleeder tube (A) to one of the bleed screws (B) and immerse the other end in a small quantity of brake fluid contained in a glass jar (C). Slacken the bleed screw and operate the brake pedal up and down through its full stroke until the fluid pumped into the jar contains no air bubbles. Hold down the pedal and close the bleed screw. Remove bleeder tube and release the pedal.
4. Repeat on the other bleed screw for the other axle.
5. Continue until all air has been bled from the system.
6. Lock both bleed screws and top up the reservoirs to the correct level.
7. Apply normal working load on the brake pedal for two or three minutes and examine the entire system for leaks.

To bleed the clutch system:
A similar procedure should be followed. The bleed screw is located on the clutch slave cylinder which is attached to the clutch operating lever and is visible after removing the floor plate.

NOTE: During the entire operation it is essential that the reservoir levels are kept topped up to prevent further air from being drawn into the system. Only use new fluid for topping up.

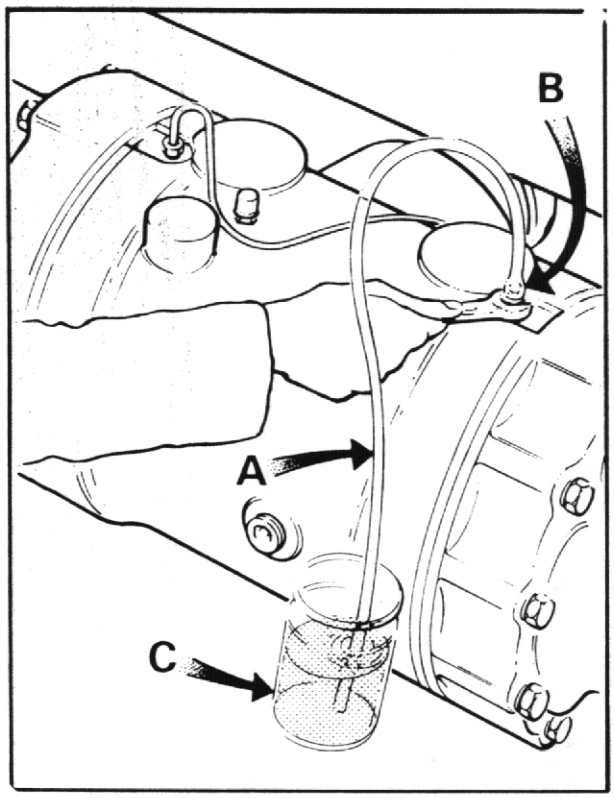


Fig.4

Main Hydraulic System

The main hydraulic system includes two high output pumps in a tandem configuration driven on a common shaft.
The flow from the smaller pump section provides a priority flow to the steer valve and, from the non priority port, flow to the rear services i.e. trailer tip and pick up tow hitch. Due to the priority circuit,flow to the steer valve is never cut off, however, if one of the rear services is operated at maximum rate then the steering flow will be reduced. This will be most noticeable at low engine speed and the condition should be avoided if possible. If any of the systems fail to operate, then carry out the following procedure:

1. Check that the hydraulic tank is full of oil.

2. Check that neither filter is blocked (See Fig.5).
   a) Remove the four setscrews (A) that secure the filler cap assembly (B) and remove assembly.
   b) Unscrew suction filters (C) from inside tank (D) and wash in white spirit. Dry with moisture free compressed air.
   c) Replace suction filters and filler cap assembly.

NOTE: If either suction filter cannot be thoroughly cleaned, fit a new one.

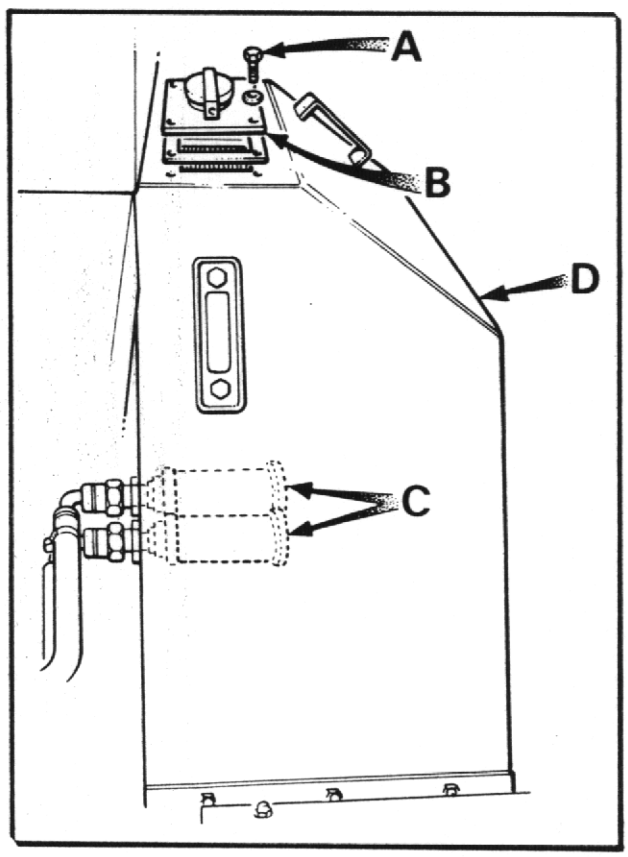


Fig.5

3. Identify whether the fault is on front end services or on rear end services and steering. If the fault is present on the front end services then check the relief cartridge in the main valve block by following procedure:

   a) Fit a pressure gauge into a "Tee" at the base of the main lift cylinder (minimum range 3000 lb/in^2).
   b) Operate the control lever to take main lift to full height. Check that the reading on the pressure gauge is 2000 lb/in^2 ($\pm$ 100) when the ram is fully extended and the relief valve is "blowing."

   c) If the correct pressure is not obtained remove relief cartridge (A) Fig.6 from the control valve and replace with a new one.

4. If the fault appears in the steer system or rear services then check the relief cartridge in the rear services valve by following procedure:

   a) Fit a pressure gauge in either the trailer tip or pick up tow hitch line (minimum range 2000 lb/in^2).
   b) Operate the appropriate control lever to supply pressure to the line in which the gauge is fitted. Check that the maximum reading on the pressure gauge is 1750 lb/in^2 ($\pm$ 100) when the relief valve is "blowing."
   c) If the correct pressure is not obtained remove the relief valve cartridge(Fig.7)from the control valve and replace with a new one.

If none of these procedures corrects the fault or if the fault appears to be in the steer system, contact your agent for service. Periodically check the hose between the pump and the tank to ensure it is not deformed. Any deformation in the hose may result in a restricted flow of fluid and damage the pump.

IMPORTANT: ON NO ACCOUNT SHOULD THE STEERING VALVE BE DISMANTLED, SHOULD IT REQUIRE ATTENTION REMOVE IT COMPLETE AND RETURN TO THE FACTORY.

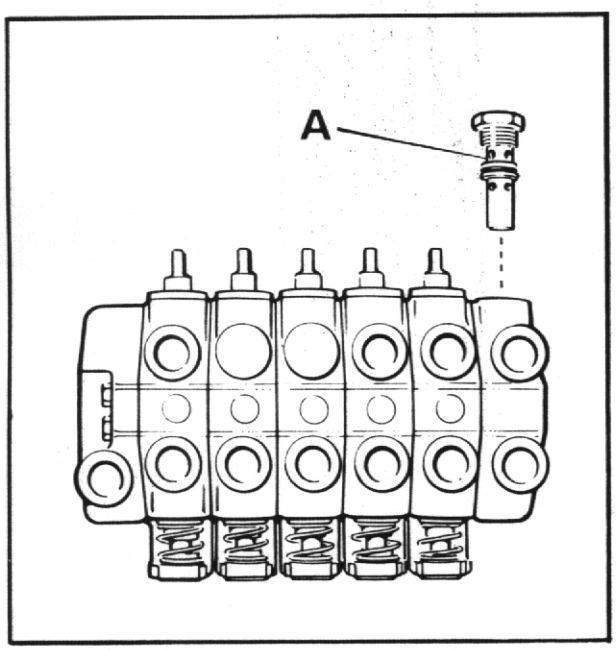


Fig.6

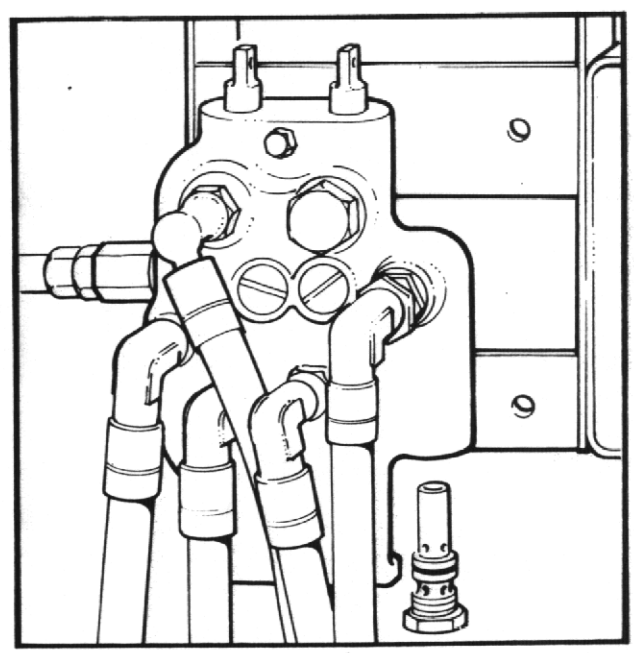


Fig.7

Mast Maintenance (For 'Sliding' duplex masts only)

(See Fig.8)

1. PERIODICALLY adjust fork lift chains to keep fork mounting frame level.

2. PERIODICALLY check shims between bottom wear strip (C) and inner frame assembly (B). When wear has occured fit additional shims (D) as necessary to maintain about 1/16" clearance, at gap (E), when the mast is lowered check the gap through the full extension of the mast.

NOTE:- With mast fully lowered the bottom wear strip is accessible beneath the machine frame.

3. PERIODICALLY fully raise the inner mast and check the wear strip and block on the channel at the top of the outer frame (A). If wear has occured, fit additional shims (F) as necessary behind the wearstrip mounting block assembly (G) to maintain 1/16" clearance at gap (H) when mast is lowered, check gap through full extension of mast.

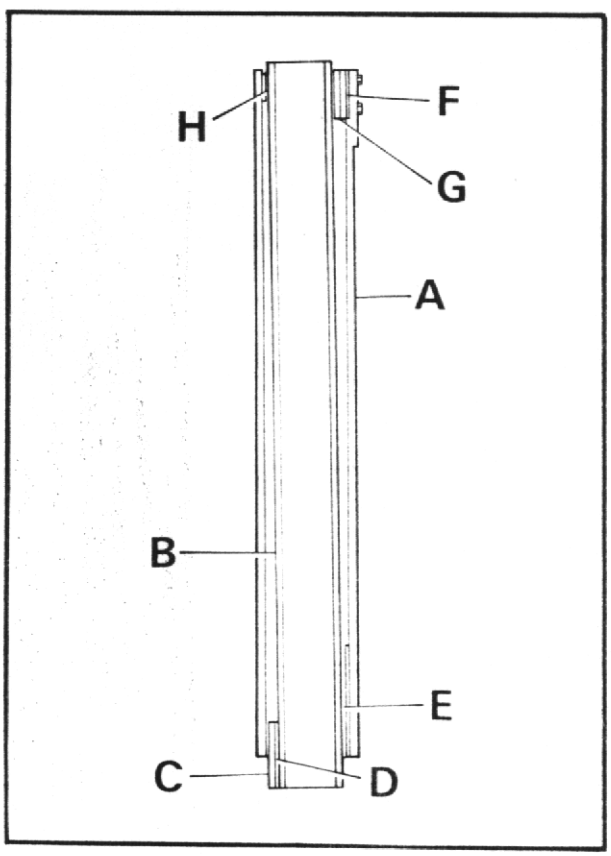


Fig.8

RECOMMENDED LUBRICATING OILS

COMPANY		ENGINE	DRIVE AXLE	TRANSFER BOX	GEARBOX	WHEEL BEARINGS & OTHER GREASE POINTS	HYDRAULIC SYSTEM
(U.K.)	SUMMER	ESSOLUBE HDX 20W		GEAR OIL GP 90/140	ESSOLUBE HDX 30	BEACON 2	NUTO H44
	WINTER						
ESSO	ABOVE 32°C	ESSOLUBE HDX 30	TORQUE FLUID 62	GEAR OIL GP 140			NUTO H54
	0°C – 32°C	ESSOLUBE HDX 20W		GEAR OIL GP 90/140	ESSOLUBE HDX 30	BEACON 2	NUTO H44
(Overseas)	BELOW 0°C	ESSOLUBE HDX 10W		GEAR OIL GP 80			NUTO H40
(U.K.)	SUMMER	DEUSOL CRI 20	AGRICASTROL AS	DEUSOL EP 90	DEUSOL CRI 30	CASTROL SPHEEROL APT 2	CASTROL HYSPIN AWS 32
	WINTER						
CASTROL	ABOVE 32°C	DEUSOL CRI 30		DEUSOL GEAR EP 140			
	0°C – 32°C	DEUSOL CRI 20	AGRICASTROL AS SPECIAL	DEUSOL GEAR EP 90	DEUSOL CRI 30	CASTROL SPHEEROL APT 2	
(Overseas)	BELOW 0°C	DEUSOL CRI 10		DEUSOL GEAR EP 80			
(U.K.)	SUMMER	ROTELLA TX20/20W		SPIRAX 90 EP	ROTELLA SX OIL 30	RETINAX A	TELLUS OIL 37
	WINTER						
SHELL	ABOVE 32°C	ROTELLA TX 30		SPIRAX 140 EP			
	0°C – 32°C	ROTELLA TX 20/20W		SPIRAX 90 EP	ROTELLA SX OIL 30	RETINAX A	
(Overseas)	BELOW 0°C	ROTELLA TX 10W		SPIRAX 80 EP			
(U.K.)	SUMMER	VANELLUS SAE 20W		GEAR OIL SAE 90 EP	VANELLUS 30	ENERGREASE L2	ENERGOL HLP 65
	WINTER						
BP	ABOVE 32°C	VANELLUS SAE 30		GEAR OIL SAE 140 EP			
	0°C – 32°C	VANELLUS SAE 20W		GEAR OIL SAE 90 EP	VANELLUS 30	ENERGREASE L2	
(Overseas)	BELOW 0°C	VANELLUS SAE 10W		GEAR OIL SAE 80 EP			
(U.K.)	SUMMER	DELVAC 1320	MOBILFLUID 422	MOBILUBE HD 90	DELVAC 1230	MOBILGREASE MP	DTE 24
	WINTER			MOBILUBE GX 90			
MOBIL	ABOVE 32°	DELVAC 1330		MOBILUBE HD 140			
	0°C – 32°C	DELVAC 1320		MOBILUBE GX 140		MOBILGREASE SUPER	
(Overseas)	BELOW 0°C	DELVAC 1310		MOBILUBE HD 90			
ALL TEMPERATURES		DELVAC SPECIAL 10W-30		MOBILUBE GX 90			
				MOBILUBE HD 80			
				MOBILUBE GX 80	DELVAC 1230		
(U.K.)	SUMMER	CENTURYROIL 20W20		CENTURY EP 90	CENTURYROIL 30	REGULUS A2	CENTURY PWL A HYD. OIL
	WINTER						
WALKERS CENTURY	ABOVE 32°C	CENTURYROIL 30		CENTURY EP 140			
	0°C – 32°C	CENTURYROIL 20W20		CENTURY EP 90	CENTURYROIL 30	REGULUS A2	CENTURY PWL A HYD. OIL
(Overseas)	BELOW 0°C	CENTURYROIL 10W		CENTURY EP 80			

IN THE UNLIKELY EVENT OF THE ABOVE OILS NOT BEING AVAILABLE

EQUIVALENT OILS SUPPLIED BY A REPUTABLE MANUFACTURER MAY BE USED.

FORKLIFT SAFETY

1. This machine should be operated only by drivers who have been suitably trained.

2. Drivers should be aware of the load and stability limitations of the machine.

3. Drivers should be aware of the weight of the loads they are carrying and also of variations in those loads (e.g. wet or dry weight).

4. Drivers should take account of ground conditions which may affect stability.

5. Drivers must ensure that the intended load is in a safe condition to lift.

6. Do not allow anyone to stand or pass under the elevated part of any machine, whether loaded or empty.

7. Do not carry passengers.

8. Always set parking brake when loading or unloading.

9. Maintain specified tyre pressure at all times. Do not alter tyre pressures to suit ground conditions.

10. Be sure of sufficient headroom under overhead installations; lights, pipes, wiring etc.

11. Travel with load or load engaging forks low and where possible, tilted back. Do not Elevate the load except during stacking. If load and/or site conditions make this impossible (e.g. wide load and ground level obstructions) the machine should be moved only with extreme caution.

12. Modifications and additions which affect capacity and safe operation shall not be performed by the customer or user without the manufacturer's prior written approval.

13. Front end attachments other than those supplied as original equipment shall only be used with the manufacturer's prior written approval.

14. Never dismount while the machine is in motion.

15. Never start the engine from any position other than sitting on the driving seat.

16. Never drive the machine too close to the edge of any excavation, especially if the ground is loose or wet.

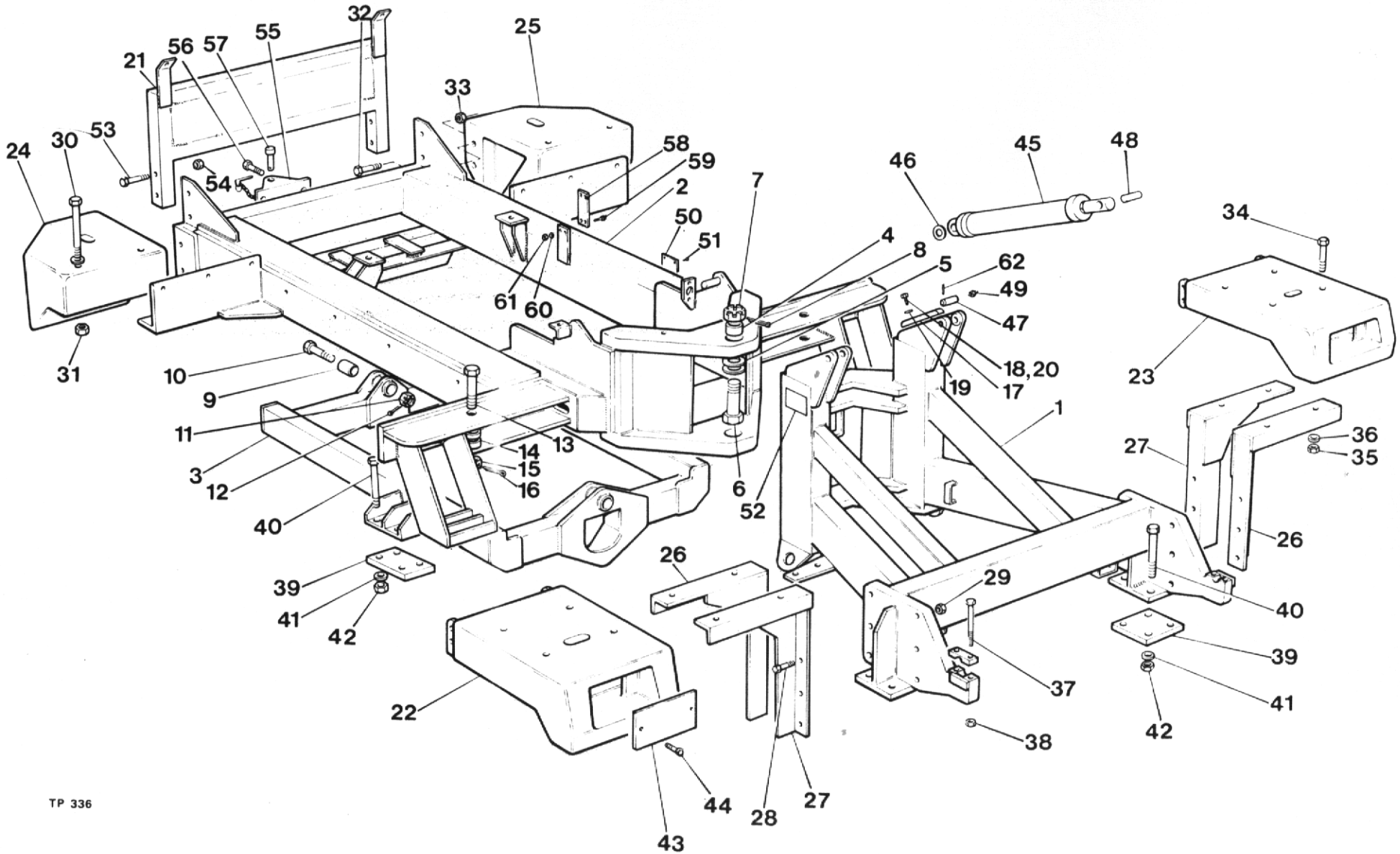
17. Never make any adjustments to the machine while it is in motion.

18. Never run the engine in a closed building or allow the exhaust pipe near to inflammable material.

19. Never fill the fuel tank with the engine running. Exercise caution when the engine is hot.

20. Always keep the floor plates clean.

SPARE PARTS SECTION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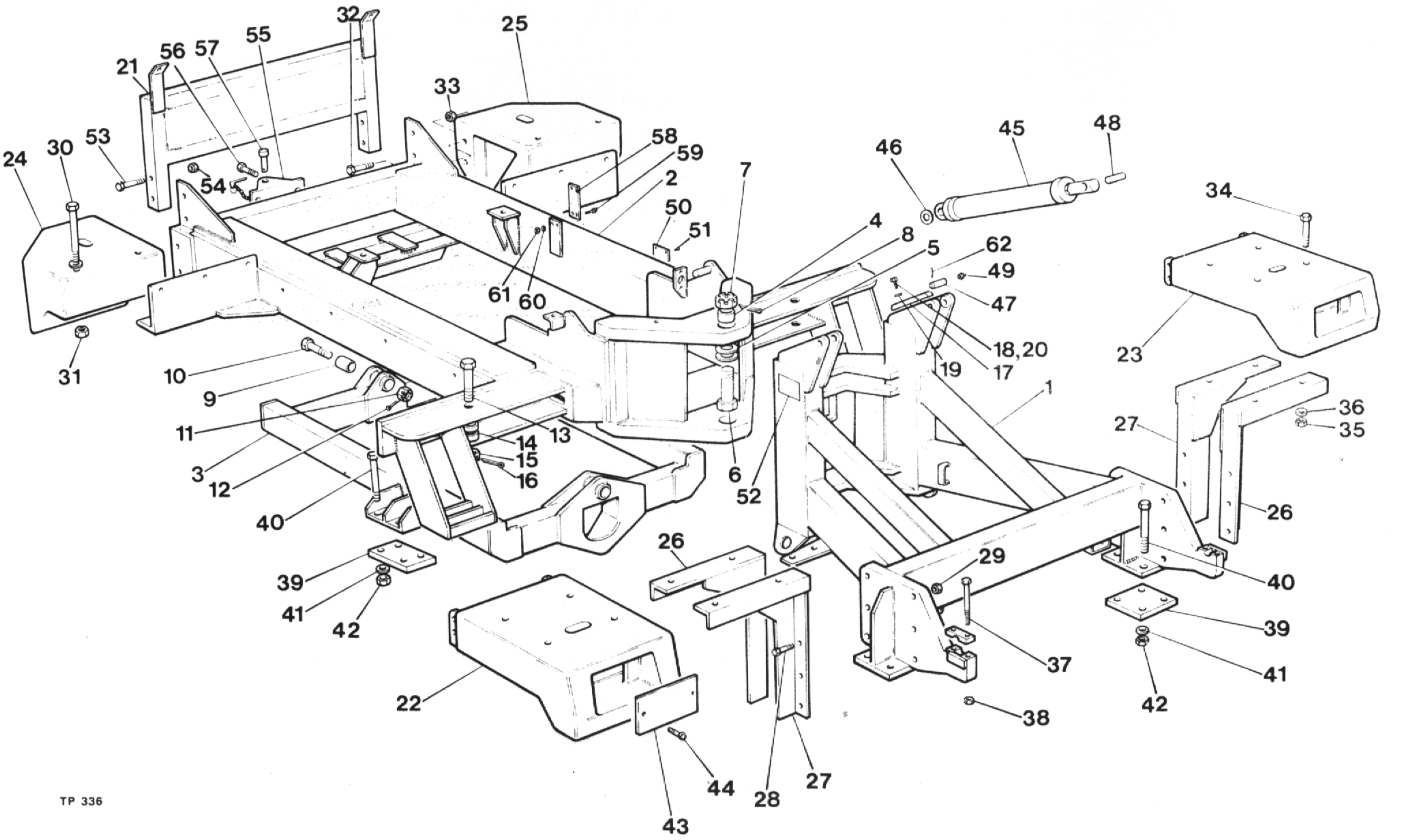
CHASSIS

Item No.	Part No.	Description	Qty.
1	40036.A02	Front Chassis	1
2	40001.A02	Rear Chassis	1
3	40069.A01	Articulating Frame	1
4	4-60-214	Centre Pivot Bearing	2
5	ESE 199	Centre Pivot Spacer	4
6	4-60-103	Centre Pivot Bolt	2
7	4-60-171	Centre Pivot Nut	2
8	44S.05L	Split Pin 3/16" dia. x 3" long	2
9	MH 5236	Silentbloc Bush	2
10	6S.8R	Bolt 7/8" UNF x 5" long	2
11	102S.9	Nut 7/8" UNF	2
12	44S.05J	Split Pin 3/16" dia. x 2½" long	2
13	4-60-104	Steering Ram Bolt	4
14	4-60-112	Steering Ram Bolt Spacer	6
15	4-60-172	Steering Ram Bolt Nut	4
16	44S.05J	Split Pin 3/16" dia. x 2½" long	4
17	10100.A01	Buffer	2
18	64S.3D	Screw Hex.Hd. M8 x 25mm long	4
19	12S.4	Plain Washer M8	4
20	65S.3A	Nut M8	4
21	30006.A01	Rear Frame Assembly	1
22	ESE 169 R.H.	Ballast Weight Front	1
23	ESE 169 L.H.	Ballast Weight Front	1
24	ESE 129 R.H.	Ballast Weight Rear	1
25	ESE 129 L.H.	Ballast Weight Rear	1
26	ESE 139	Front Ballast Weight Support	2
27	ESE 221	Front Ballast Weight Support	2
28	8S.5H	Bolt M12 x 60mm long	12
29	7S.5A	Nut M12	12
30	8S.6U	Bolt M16 x 150mm long	4
31	7S.6A	Nut M16	4
32	8S.5H	Bolt M12 x 60mm long	4
33	7S.5A	Nut M12	4
34	8S.6R	Bolt M16 x 120mm long	8
35	7S.6A	Nut M16	8
36	12S.7	Washer M16	8
37	8S.5T	Bolt M12 x 140mm long	4
38	7S.5A	Nut M12	4
39	ESE 153	Axle Clamp Plate	4
40	8S.7W	Bolt Hex.Hd. M20 x 200mm long	16
41	12S.8A	Plain Washers M20	32
42	7S.7A	Nut M20	16
43	ESE 175-2	Front Lamp Blanking Plate	2
44	11S.2B	Screw M6 x 20mm long	4
45	30074.A01	Tilt Cylinder	2
46	10032.A01	Bush	2
47	ESE 158	Tilt Ram Pin	2
48	C157	Tilt Ram Pin	2
49	TST.	Grease Nipple	4
50	10303.A01	Serial No. Plate	1



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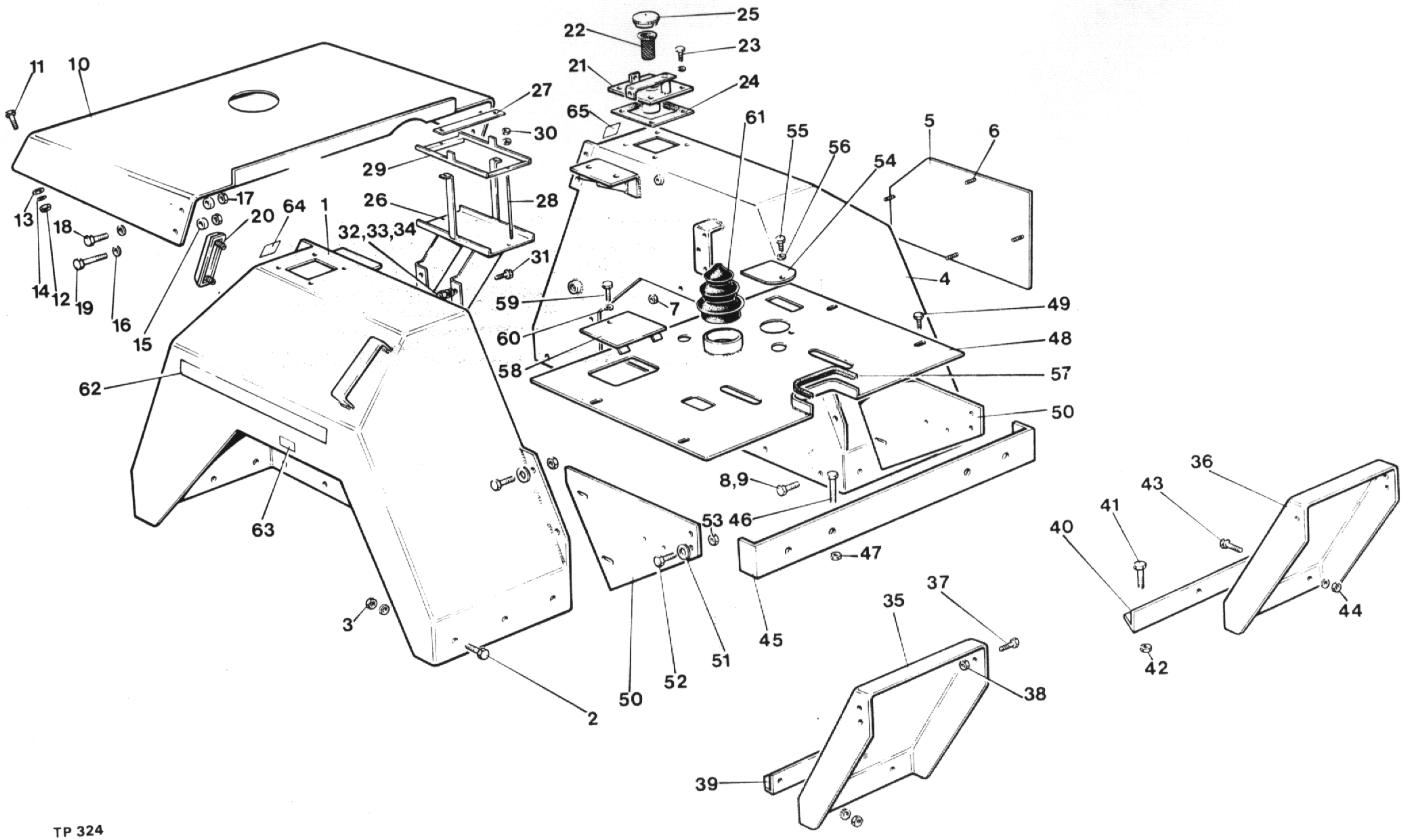
CHASSIS

Item No.	Part No.	Description	Qty.
51	47S.01A	Hammer Drive Rivet	4
52	DM 198	Label - Steering Lock Warning	2
53	8S.4J	Bolt Hex.Hd. M10 x 65mm long	4
54	7S.7	Hex.Nut M10	4
55	ESE 149	Towing Bracket (if fitted)	1
56	28S.10K	Setscrew 1" UNF x 2" long and Nut (if required)	2
57	ESE 222	Towing Pin (if required)	1
58	10155.A01	Filter Mounting Plate	1
59	8S.3A	Setscrew Hex.Hd. M8 x 25mm long	2
60	13S.3	Shakeproof Washer M8	2
61	7S.3A	Nut M8	2
62	54S.07	Tension Pin	4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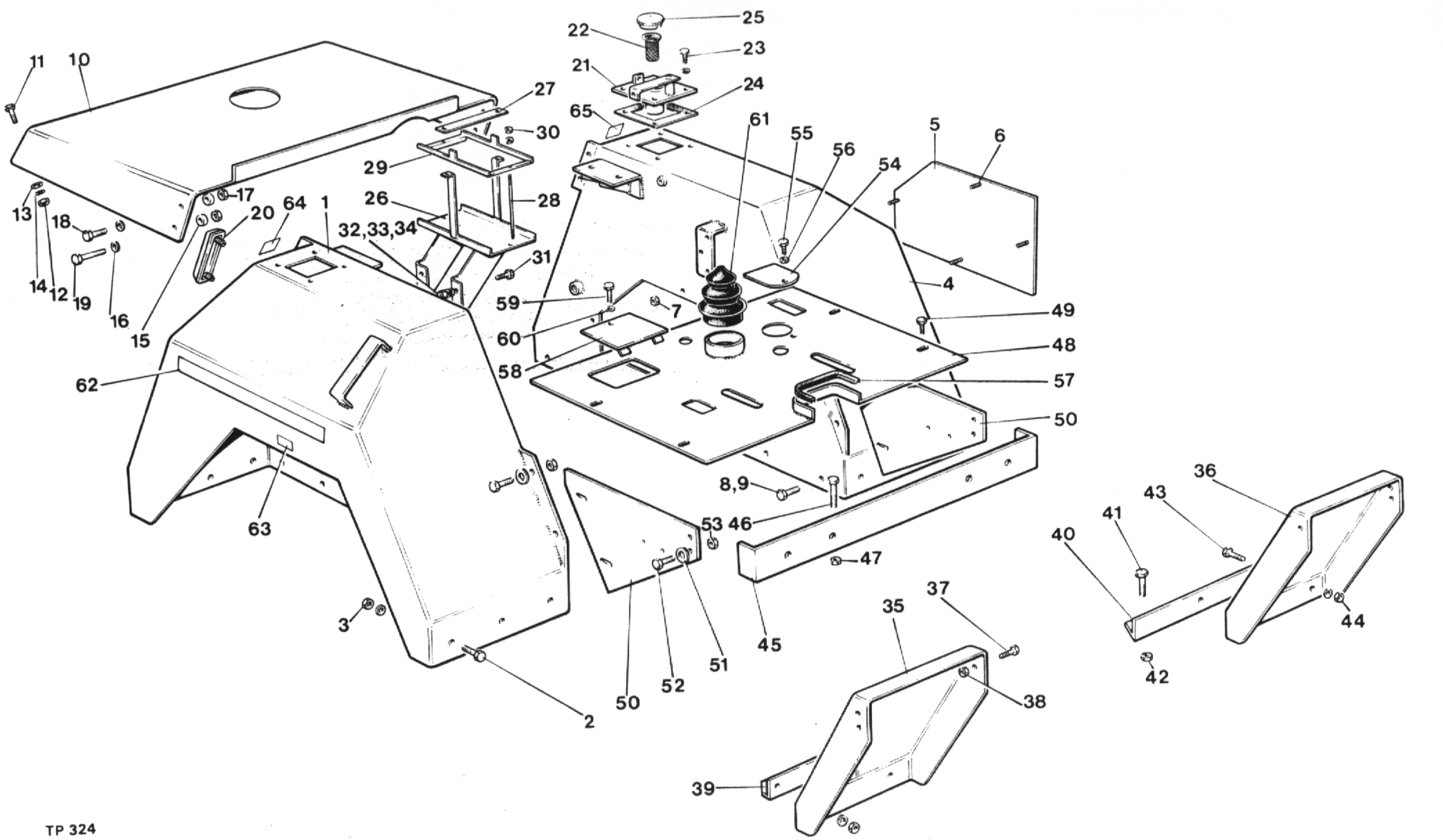
TP 324

MUDWINGS & COVERS

Item No.	Part No.	Description	Qty.
1	40014.A02	R.H. Mudwing	1
2	11S.4D	Setscrew Hex.Hd. M10 x 30mm long	10
3	7S.4A	Nut M10	10
4	ESE 103	L.H. Mudwing	1
5	10067.A01	Access Panel Assembly	1
6	11S.3A	Screw Hex.Hd. M8 x 16mm long	4
7	7S.3A	Nut M8	4
8	11S.4D	Screw Hex.Hd. M10 x 30mm long	10
9	7S.4A	Nut M10	10
10	40002.A01	Rear Engine Cover	1
11	64S.4D	Setscrew Hex.Hd. M10 x 25mm long	2
12	65S.4A	Nut M10	2
13	12S.5A	Plain Washer 10mm dia	2
14	17S.5A	Spring Washer 10mm dia	2
15	4-35-327	Spacer	4
16	12S.5A	Washer 10mm dia	A/R
17	65S.4A	Nut M10	4
18	63S.4A	Bolt Hex.Hd. M10 x 35mm long	2
19	63S.4F	Bolt Hex.Hd. M10 x 40mm long	2
20	FSE 269	Sight Gauge	2
21	10196.A01	Tank Filler Assembly	2
22	P1263-3	Filter	2
23	28S.2E	Setscrew Hex.Hd. 5/16" UNF x 20mm long	8
24	5ST 18B	Gasket	2
25	P2792	Tank Cap	2
26	20001.A02	Battery Tray & Mounting Bracket Assembly	1
27	ESE 179-3	Locking Bar	1
28	ESE 179-4	Tie Rod	2
29	ESE 178	Battery Clamp	1
30	7S.2A	Nut M6	8
31	11S.4B	Setscrew Hex.Hd. M10 x 20mm long	4
32	7S.4A	Nut M10	4
33	12S.5	Plain Washer	4
34	17S.5	Spring Washer 10mm	4
35	ESE 128 R.H.	Front Wing	1
36	ESE 128 L.H.	Front Wing	1
37	8S.4C	Bolt M10 x 35mm long	6
38	7S.4A	Nut M10	6
39	ESE 172 R.H.	Front Mudwing Support Angle	1
40	ESE 172 L.H.	Front Mudwing Support Angle	1
41	11S.5E	Screw Hex.Hd. M12 x 35mm long	4
42	7S.5A	Nut M12	4
43	11S.4C	Screw Hex.Hd. M10 x 25mm long	4
44	7S.4A	Nut M10	4
45	ESE 181	Floorplate Support Angle	1
46	8S.7H	Bolt M12 x 60mm long	2
47	7S.6A	Nut M12	2
48	30005.A03	Floorplate Assembly	1
49	11S.3B	Screw Hex.Hd. M8 x 20mm long	4
50	10005.A01	Side Panel	2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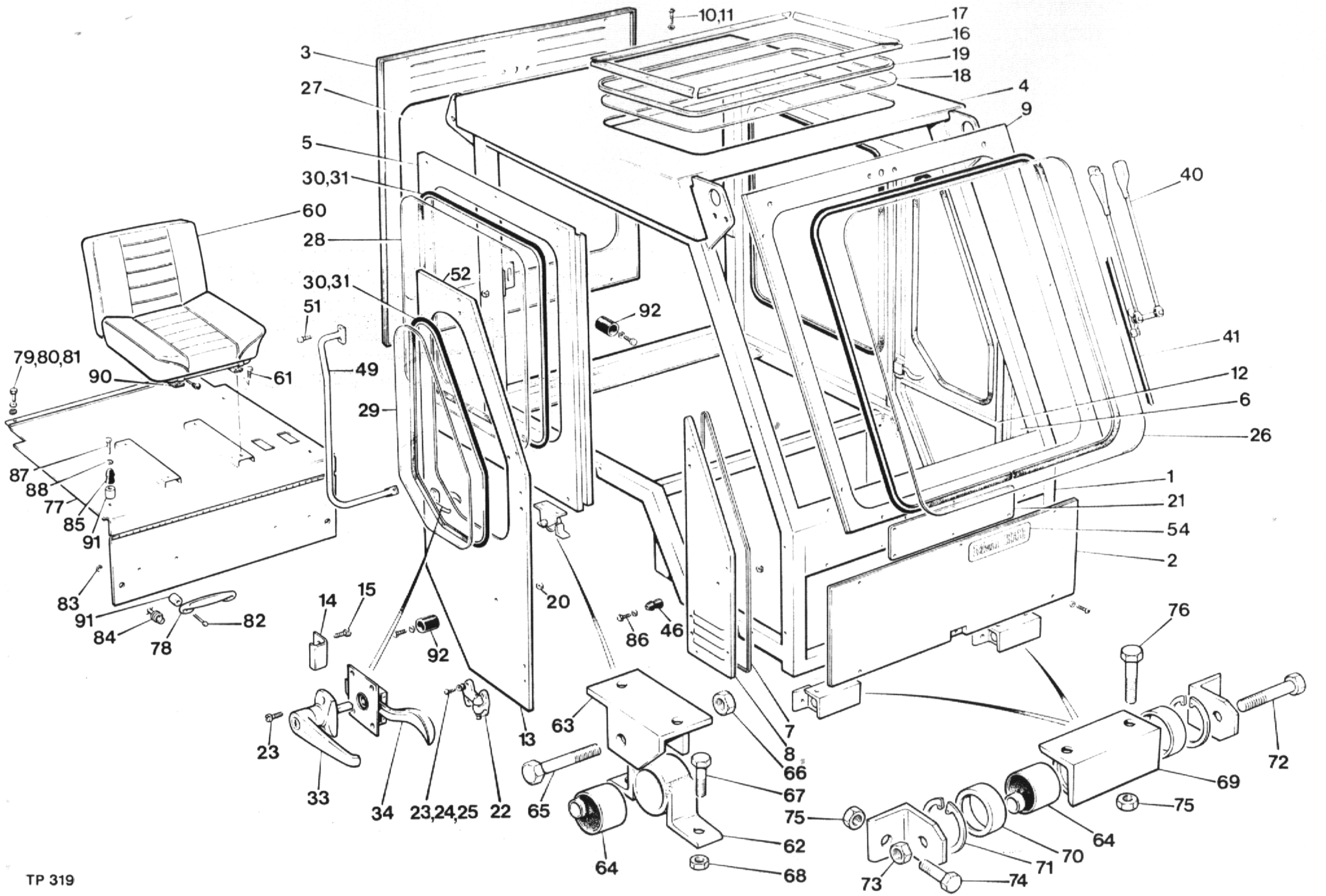
MUDWINGS & COVERS

Item No.	Part No.	Description	Qty.
51		Penny Washer 8mm I.D. x 21mm O.D.	16
52	11S.3B	Screw Hex.Hd. M8 x 20mm long	8
53	7S.3A	Nut M8	8
54	10004.A01	Cover Plate	1
55	11S.4B	Screw Hex.Hd. M10 x 20mm long	1
56	17S.5A	Spring Washer M10	1
57		Grommet Strip	1
58	ESE 191	Cover Plate Assembly	1
59	11S.4B	Screw Hex.Hd. M10 x 20mm long	1
60	17S.5A	Spring Washer M10	1
61	10031.A02	Gear Lever Gaiter	1
62	DM 206	Label - FOUR 5000	2
63	10166.A01	Label - Tyre Pressure 50 p.s.i.	4
64	FSE 355	Label - Hydraulic Oil	1
65	FSE 356	Label - Diesel Oil	1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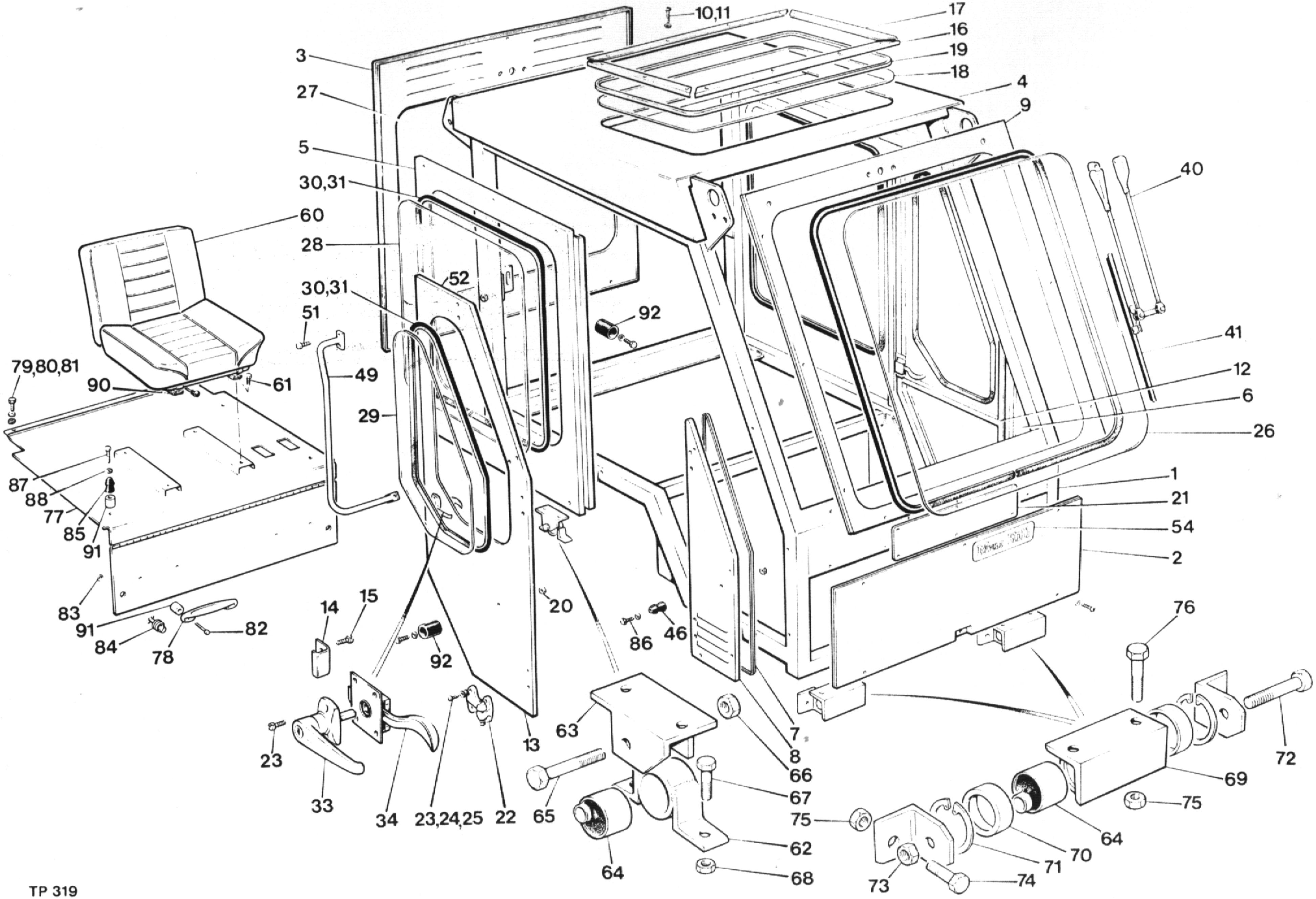
CAB

Item No.	Part No.	Description	Qty.
	40013.A01	Cab Assembly complete	1
1	40008.A01	Protective Frame Assembly	1
2	30018.A01	Front Panel	1
3	30016.A01	Rear Panel	1
4	30012.A01	Side Panel Assembly L.H.	1
5	30013.A01	Side Panel Assembly R.H.	1
6	30014.A01	Side Panel Assembly L.H.	1
7	10112.A01	Panel Edge Trim	A/R
8	30015.A01	Side Panel Assembly R.H.	1
9	30017.A01	Windscreen Panel	1
10	16S.7D	Screw Pan Hd. Slot M6 x 25mm long	77
11	42S.2	Nylon Washers	77
12	40010.A01	Door Assembly L.H.	1
13	40011.A01	Door Assembly R.H.	1
14	10056.A01	Striker Plate	2
15	16S.6	Screw Pan Hd. M5 x 10mm long	4
16	10036.A01	Roof Window Angle	2
17	10036.A02	Roof Window Angle	2
18	10114.A01	Roof Window	1
19	10111.A01	Sealing Channel	A/R
20	7S.2	Nut M6	16
21	10046.A01	Access Panel	1
22	40013.A0107	Hinge (Pair)	2
23	63S.2	Screw Hex.Hd. M6 x 20mm long	16
24	12S.2	Plain Washer M6	16
25	17S.3	Spring Washer M6	16
26	40013.A0114	Windscreen	1
27	40013.A0115	Rear Window	1
28	40013.A0116	Side Window	2
29	40013.A0117	Door Window	2
30	40013.A0118	Glazing Section	A/R
31	40013.A0119	Filler Strip	A/R
32	10198.A01	Door Seal Section (not illustrated)	A/R
33	10118.A01	Door Handle (Cabs 1-30)	2
34	10119.A01	Door Lock (Cabs 1-30)	2
35	10118.A02	Door Handle (Cab 31 on not illustrated)	2
36	10181.A01	Inside Handle (Cab 31 on not illustrated)	2
37	10182.A01	Escutcheon (Cab 31 on not illustrated)	2
38	10183.A01	Square Shim (Cab 31 on not illustrated)	2
39	10115.A02	Windscreen Wiper Motor (not illustrated)	2
40	10117.A01	Windscreen Wiper Arms	2
41	10116.A01	Windscreen Wiper Blades	2
42	10128.A01	Wiper Motor Cover (not illustrated)	2
43	10123.A01	Rubber Grommets (not illustrated)	4
44	10124.A01	Rubber Grommets (not illustrated)	2
45	10125.A01	Rubber Grommets (not illustrated)	6
46	10120.A01	Door Retaining Latch (male part)	2
47	10187.A01	Internal Rear View Mirror (not illustrated)	1
48	10203.A01	External Rear View Mirror (not illustrated)	2
49	30051.A01	Mirror Arm Assembly R.H.	1
50	30051.A02	Mirror Arm Assembly L.H. (not illustrated)	1
51	64S.2C	Screw Hex.Hd. M6 x 20mm long	8
52	65S.2	Nut M6	8
53	210565	Label - Muir Hill (not illustrated)	2
54	214260	Label - Muir Hill	1
55	10094.A01	Label - Roof Window (not illustrated)	1
56	DM 201	Label - Forklift Safety (not illustrated)	1
57	10169.A01	Label - Engine Stop (not illustrated)	1
58	10215.A01	Label - Filter Instruction (not illustrated)	1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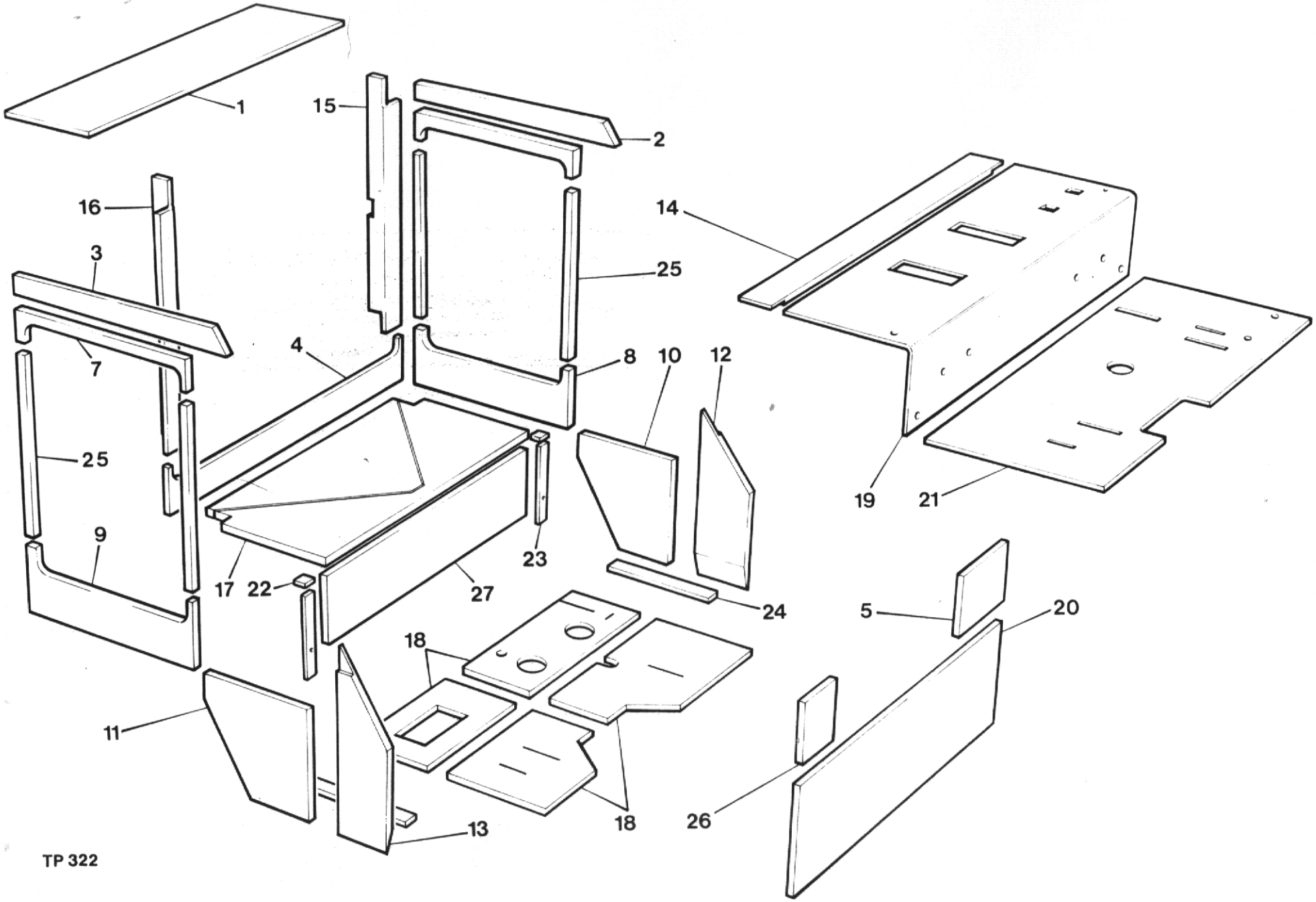
Item No.	Part No.	Description	Qty.
59	DM 195	Label - Alternator Fitted (not illustrated)	1
60	FSE 145	Seat	1
61	64S.4D	Screw Hex.Hd. M10 x 25mm long	4
62	ESE 165	Rear Flexible Mounting	2
63	ESE 210	Top Bracket Assembly	2
64	ESE 164-4	Anti-Vibration Bush	4
65	63S.6P	Bolt Hex.Hd. M16 x 90mm long	2
66	65S.6A	Nut M16	2
67	64S.5D	Screw Hex.Hd. M12 x 25mm long	4
68	61S.5A	Locknut M12	4
69	ESE 164	Pivoted Cab Mounting	2
70	ESE 164-5	Bush	4
71	1300-54 M	Circlip	4
72	63S.6P	Bolt Hex.Hd. M16 x 90mm long	2
73	65S.6A	Nut M16	2
74	64S.5D	Screw Hex.Hd. M12 x 25mm long	4
75	65S.5A	Nut M12	8
76	63S.5A	Bolt Hex.Hd. M12 x 70mm long	4
77	40015.A01	Seat Panel Assembly	1
78	40015.A0103	Handle	2
79	11S.2A	Bolt Hex.Hd. M6 x 16mm long	5
80	7S.2A	Nut M6	5
81	13S.2	Shakeproof Washer M6	5
82	14S.3G	Screw Csk.Slot Hd. M5 x 35mm long	4
83	7S.1A	Nut M5	4
84	18S.01	Quarter Turn Fasteners	2
85	10120.A01	Rubber Catch (male part only)	2
86	14S.4E	Screw Csk.Slot Hd. M6 x 25mm long	2
87	68S.3J	Screw Skt.Hd. Cap M6 x 50mm long	2
88		Stud Retainer Washer	2
89	7S.2A	Nut M6	4
90	10074.A01	Seat Fixing Sub-Assembly	2
91	10188.A01	Spacer	6
92	10120.A01	Rubber Catch (female part only)	4

WINDSCREENS, SIDE AND REAR WINDOWS

Replacements can be supplied, but to avoid damage in transit, it is recommended these are purchased from a local windscreen supplier.

Specification. Windscreen 6.4mm thick green tinted laminated glass.
Rear Windows 6.4mm thick clear laminated glass.
Side Windows 5.4mm thick clear laminated glass.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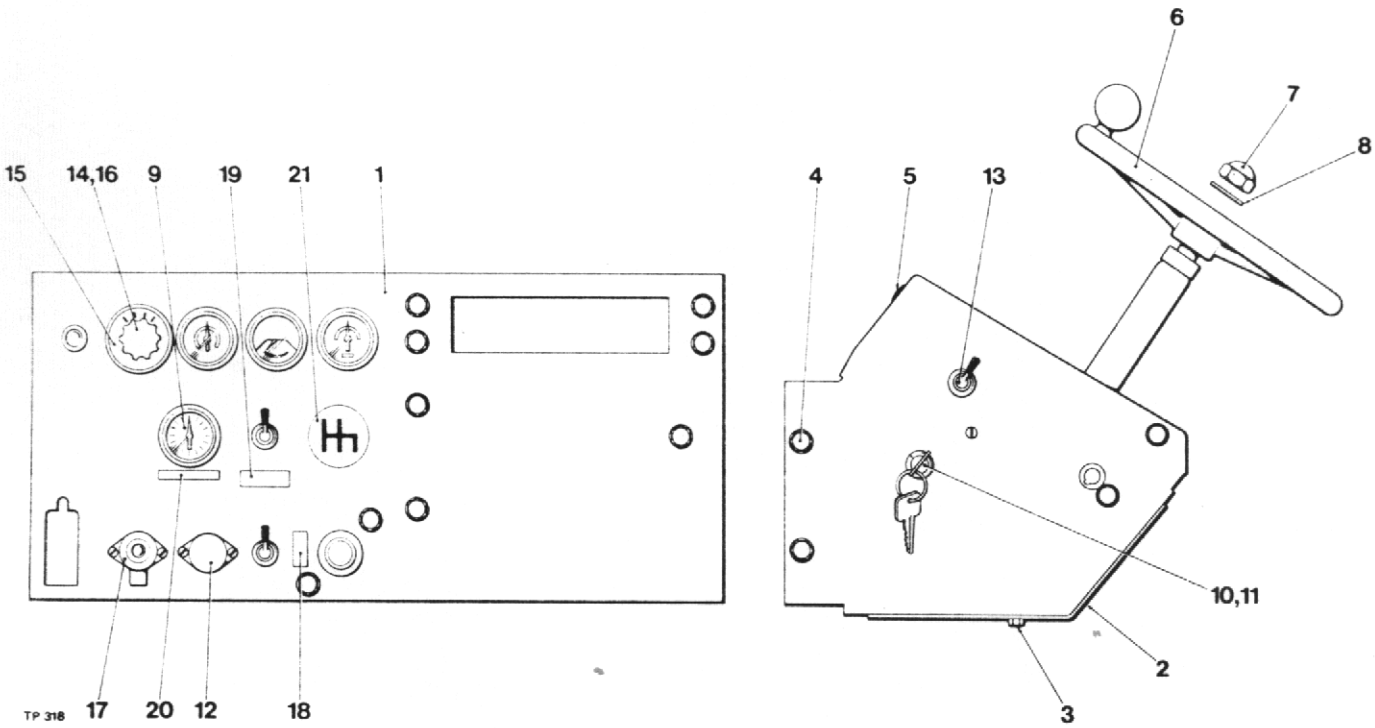
TP 322

NOISE REDUCTION KIT

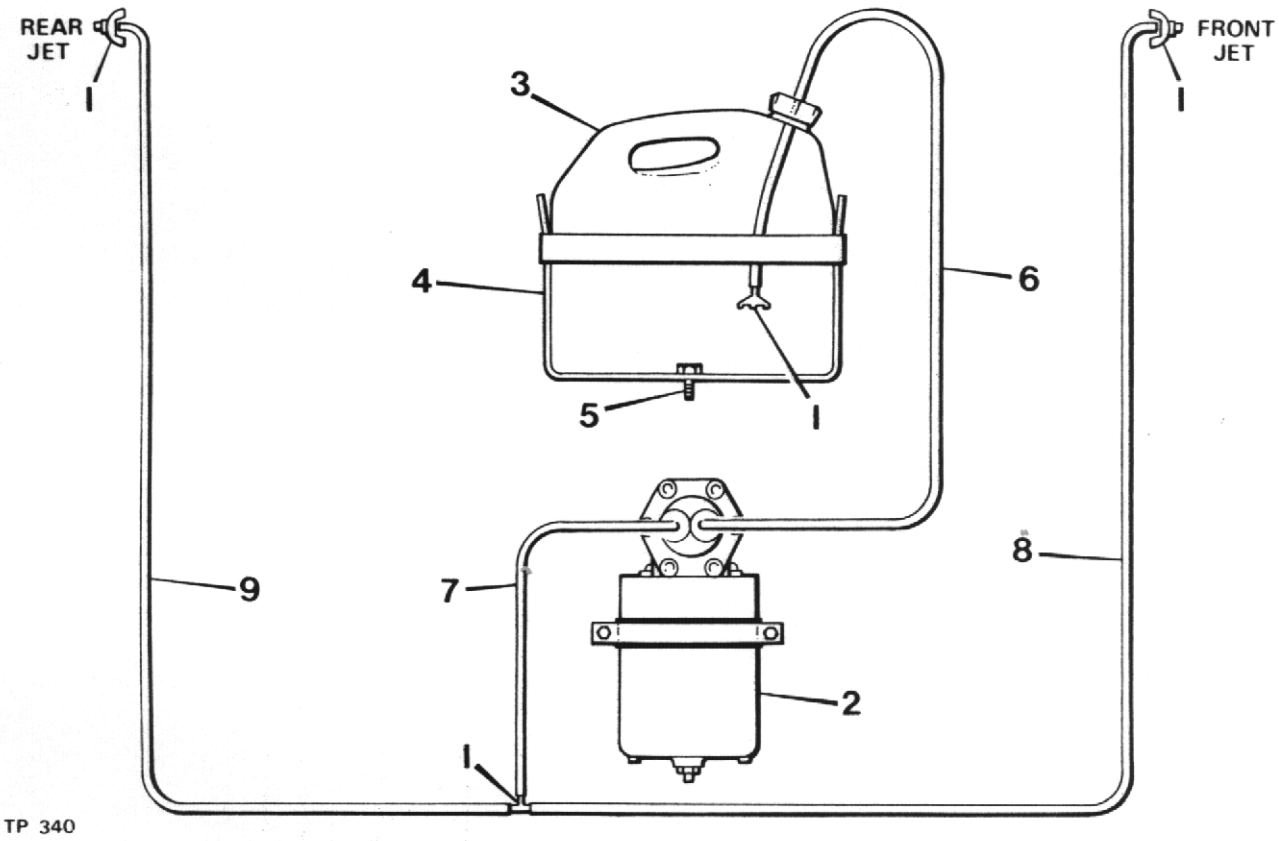
Item No.	Part No.	Description	Qty.
	40029A01	Noise reduction kit	
1	40029A0101	Roof panel	1
2	40029A0102 L.H.	Cantrail L.H.	1
3	40029A0102 R.H.	Cantrail R.H.	1
4	40029A0103	Rear window panel	1
5	40029A0104	Upper front panel L.H.	1
6	40029A0105 L.H.	Side window panel top L.H.	1
7	40029A0105 R.H.	Side window panel top R.H.	1
8	40029A0106 L.H.	Side window panel bottom L.H.	1
9	40029A0106 R.H.	Side window panel bottom R.H.	1
10	40029A0107 L.H.	Door panel L.H.	1
11	40029A0107 R.H.	Door panel R.H.	1
12	40029A0108 L.H.	Front side panel L.H.	1
13	40029A0108 R.H.	Front side panel R.H.	1
14	40029A0109	Rear trim, seat deck	1
15	40029A0110 L.H.	Rear pillar trim L.H.	1
16	40029A0110 R.H.	Rear pillar trim R.H.	1
17	40029A0111	Seat deck underlay	1
18	40029A0112	Floorplate underlay	1
19	40029A0113	Seat decking cover	1
20	40029A0114	Front lower panel	1
21	40029A0115	Floor mat	1
22	40029A0116	Under plate pad	2
23	40029A0117	Under plate pad	2
24	40029A0118	Under plate pad	2
25	40029A0119	Side window trim	4
26	40029A0120	Upper front panel R.H.	1
27	40029A0121	Seat panel underlay	1
	45S.06	Adhesive	A/R

INSTRUMENT HOUSING



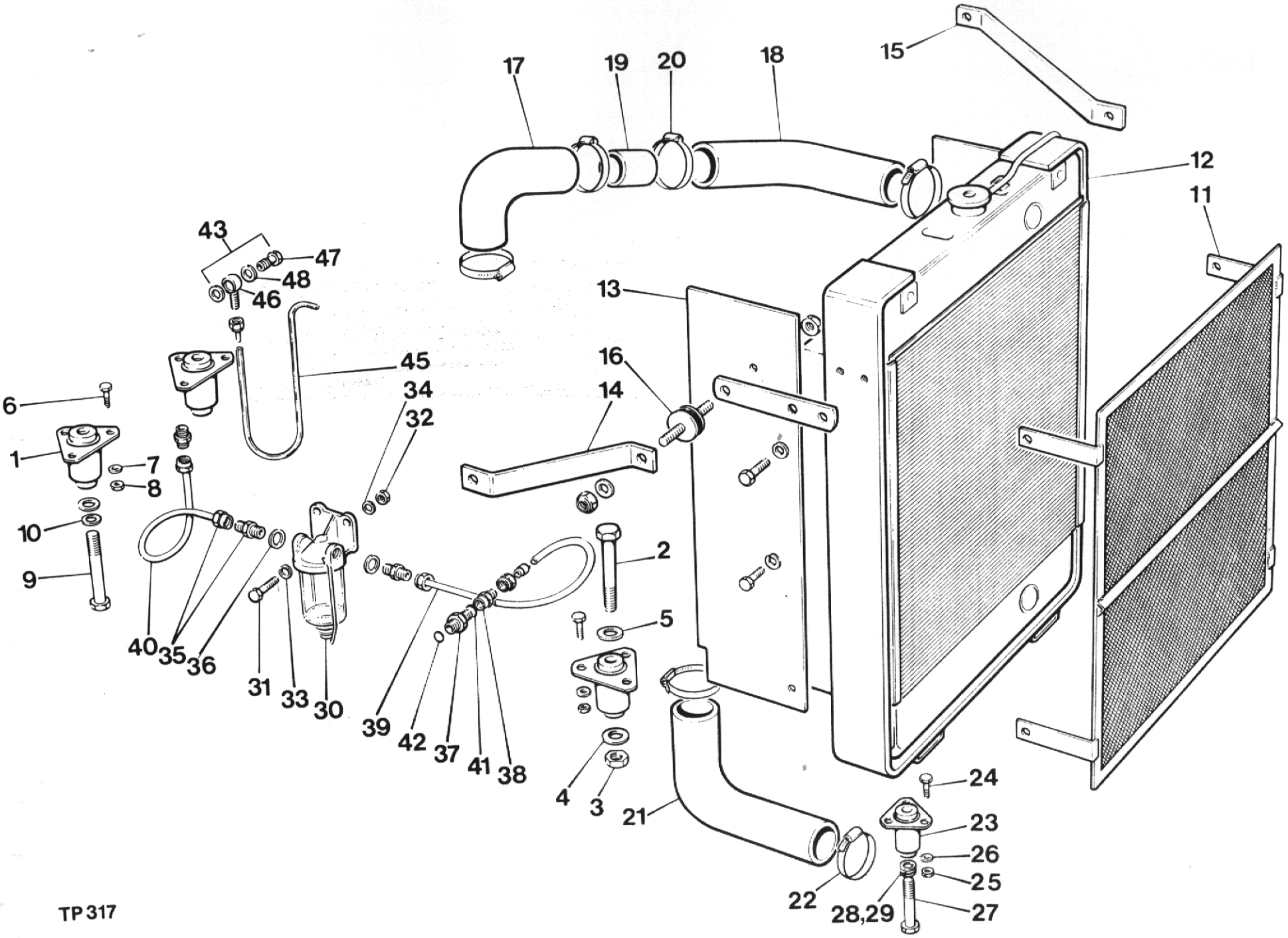
Item No.	Part No.	Description	Qty.
1	30001 A02	Instrument Housing Assembly	1
2	30004 A01	Bottom Cover Plate	1
3	64S.2B	Screw M6 x 15mm long	2
4	64S.4D	Screw M10 x 25mm long	4
5	FSE 413	Grommet	1
6	FSE 279	Steering Wheel	1
7	FSE 377	Dome Nut	1
8	12S.3A	Washer M8	1
9	10098.A01	Sealed Hour Meter	1
10	31973 K	Start Switch Body	1
11	54335169	Keys & Barrel	1
12	76205D	Horn Button	1
13	34514	Working Light Switch	1
14	31495	Light Switch	1
15	WT 201	Light Switch Plate	1
16	54331311	Light Switch Knob	1
17	31190.F	Indicator Switch	1
18	10163.A01	Label - Wipers	1
19	10164.A01	Label - Washers	1
20	10165.A01	Label - Engine Hour Meter	1
21	ESE 238	Label - Gear Positions	1
22	34977	Washer Switch	1

WINDSCREEN WASHERS



TP 340

Item No.	Part No.	Description	Qty.
	10129.A01	Windscreen Washer Kit (comprising items 1-2)	
1	54006505	Accessory Kit	1
2	78485	Motor and Pump	1
3	10130.A01	Water Container	1
4	10070.A01	Water Container Rack	1
5	11S.3B	Screw Hex.Hd. M8 x 20mm long	2
6	29S.01	Pipe 1/4" I/D.....	1
7	29S.02	Pipe 1/4" I/D.....	1
8	29S.03	Pipe 3/16" I/D.....	1
9	29S.04	Pipe 3/16" I/D.....	1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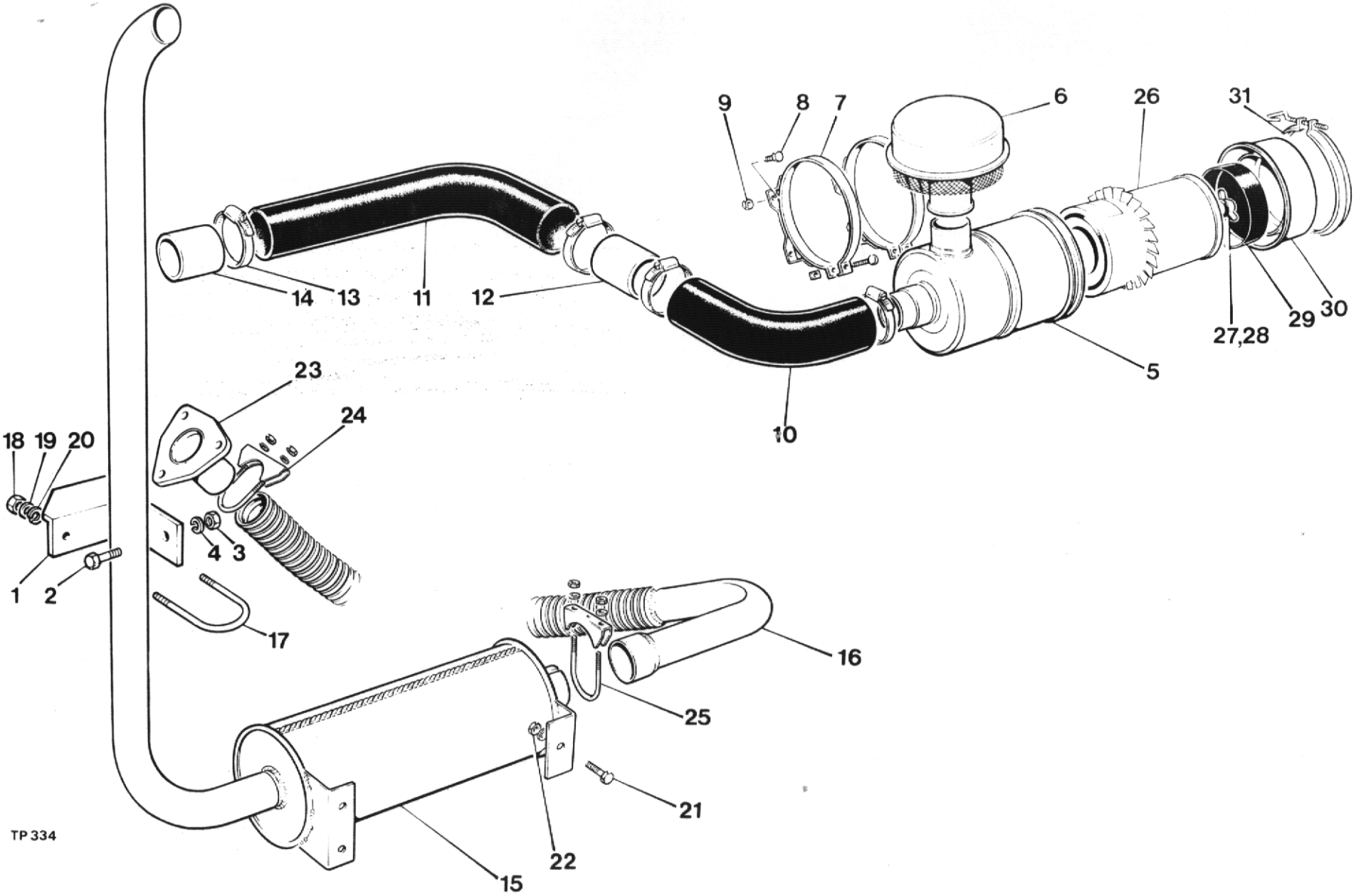
ENGINE RELATED PARTS

Item No.	Part No.	Description	Qty.
	30075.A01	Engine Ford 27 11E 4 Cyl. Diesel	1
1	10157.A01	Flexible Engine Mounting	4
2	8S.5T	Hex.Hd. Bolt M12 x 140mm long	2
3	61S.5	Locknut M12 - Rear Engine Mounting	2
4	17S.6	Spring Washer M12	2
5	12S.6	Washer M12 Plain	2
6	11S.3C	Setscrew Hex.Hd. M8 x 25mm long	12
7	12S.3	Washer M8 Plain	24
8	61S.3	Locknut M8	12
9	69S.6L	Screw Hex.Hd. 5/8" UNC x 3½" long	2
10	41S.9	Spring Washer 5/8"	2
11	20003.A01	Radiator Guard Panel	1
12	20008.A01	Radiator & Cowl Assembly	1
13	20007.A01	Side Panel	2
14	20010.A01	Radiator Stay L.H.	1
15	20011.A01	Radiator Stay R.H.	1
16	30075.A0101	Radiator Side Mounting c/w Nuts & Spring supplied with Engine.	2
	20009.A01	Top Hose Assembly - comprising items 17-20	1
17	10018.A01	Elbow	1
18	10017.A01	Elbow	1
19	10016.A01	Coupling Pipe	1
20	237S	Hose Clip	2
21	30075.A0103	Bottom Hose Supplied with Engine	1
22	30075.A0141	Hose Clip Supplied with Engine	4
23		Radiator Mounting Bottom Supplied with Engine	2
24	69S.1E	Bolt Hex.Hd. 1/4" UNC x 1" long	6
25	10S.1	Nut 1/4" UNC	6
26	41S.3A	Spring Washer 1/4"	6
27	6S.2G	Bolt Hex.Hd. 5/16" UNF x 2½" long	2
28	10S.2A	Plain Washer 5/16"	2
29	41S.4A	Spring Washer 5/16"	2
30	30075.A0112	Fuel Filter (Supplied with Engine)	1
31	11S.3B	Screw Hex.Hd. M8 x 20mm long	2
32	7S.3A	Nut M8	2
33	12S.4A	Plain Washer	2
34	17S.4A	Spring Washer	2
35	SC 1808-161	Male Stud Coupling	3
36	M352	Sealing Washer	3
37	4-60-189	Adaptor	1
38	FSE 301	Female Stud Coupling	1
39		Pipe	1
40		Pipe	1
41	M363	Sealing Washer	1
42	T14 I	Dowty Seal	1
	10019.A01	Bleed Pipe Assembly comprising items 43-48	1
43	10200.A01	Banjo Assembly	1
44		Banjo Bolt (not illustrated supplied with engine)	1
45	10019.A0103	Bleed Pipe	1
46	3501	Banjo	1
47	3501	Banjo Bolt	1
48	M351	Washer	4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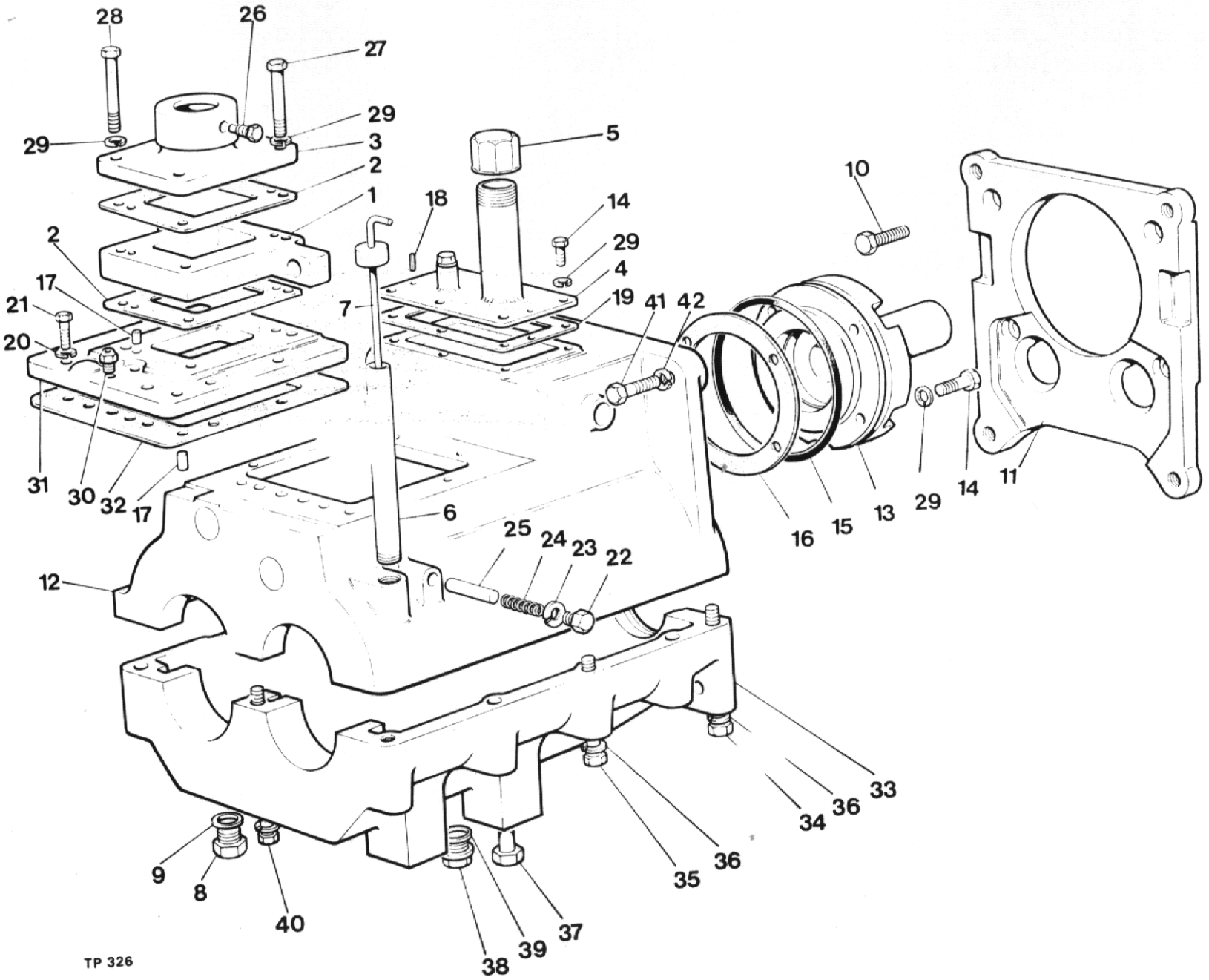
TP 334

AIR CLEANER & EXHAUST

Item No.	Part No.	Description	Qty.
1	20040.A01	Bracket Assembly	1
2	64S.3C	Setscrew Hex.Hd. M8 x 20mm long	2
3	65S.3A	Nut M8	2
4	17S.4A	Spring Washer M8	2
5	DA 123	Air Cleaner 8" Cyclopac includes items 26-31	1
6	DA 124	Stack Cap	1
7	DU 440	Mounting Clamp	2
8	11S.3A	Screw Hex.Hd. M8 x 15mm long	4
9	7S.3A	Nut M8	4
	20004.A01	Air Cleaner Hose comprising items 10:14	1
10	20005.A01	Elbow	1
11	20006.A01	Elbow	1
12	10014.A01	Coupling	1
13	4-35 0S	Hose Clip	4
14	10023.A01	Adaptor Ring	1
15	40004.A01	Exhaust Silencer & Pipe Assembly	1
16	30008.A01	Manifold Pipe Assembly	1
17	10025.A01	U Bolt	1
18	9S.2A	Nut 5/16" U.N.F	2
19	10S.2A	Plain Washer 5/16" I.D	2
20	41S.4A	Spring Washer 5/16" I.D	2
21	11S.3B	Screw M8 x 20mm long	3
22	7S.3A	Nut M8	3
23	10024.A01	Exhaust Flange Connector	1
24	SYC 11	Exhaust Pipe Clamp	1
25	SYC 12	Exhaust Pipe Clamp	1
26	DU 770	Element Assembly	1
27	DU 658	Gasket	1
28	DU 657	Nut	1
29	DU 766	Skirt, Baffle	1
30	DU 769	Cup Assembly	1
31	DU 420	Clamp Assembly	1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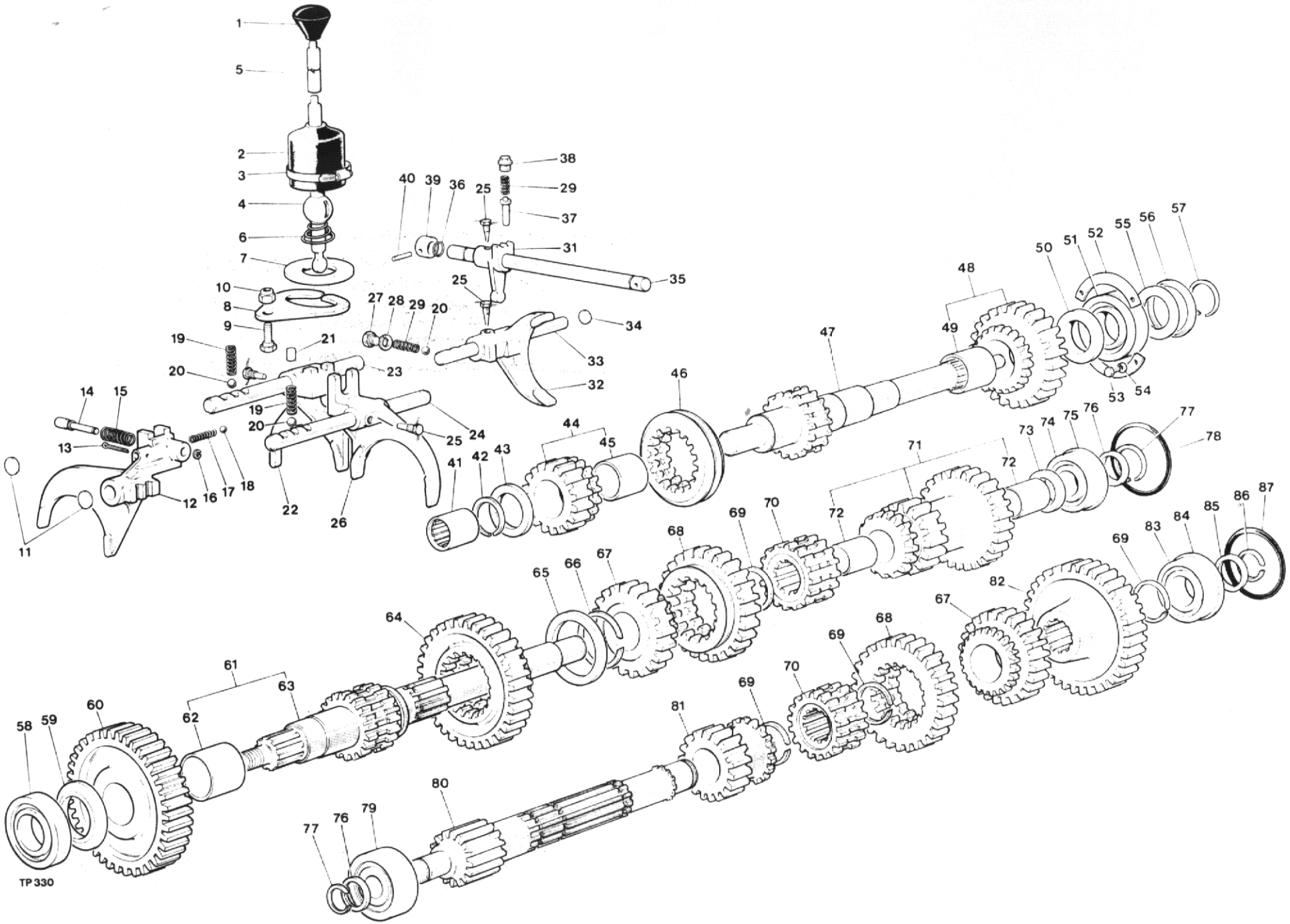
TP 326

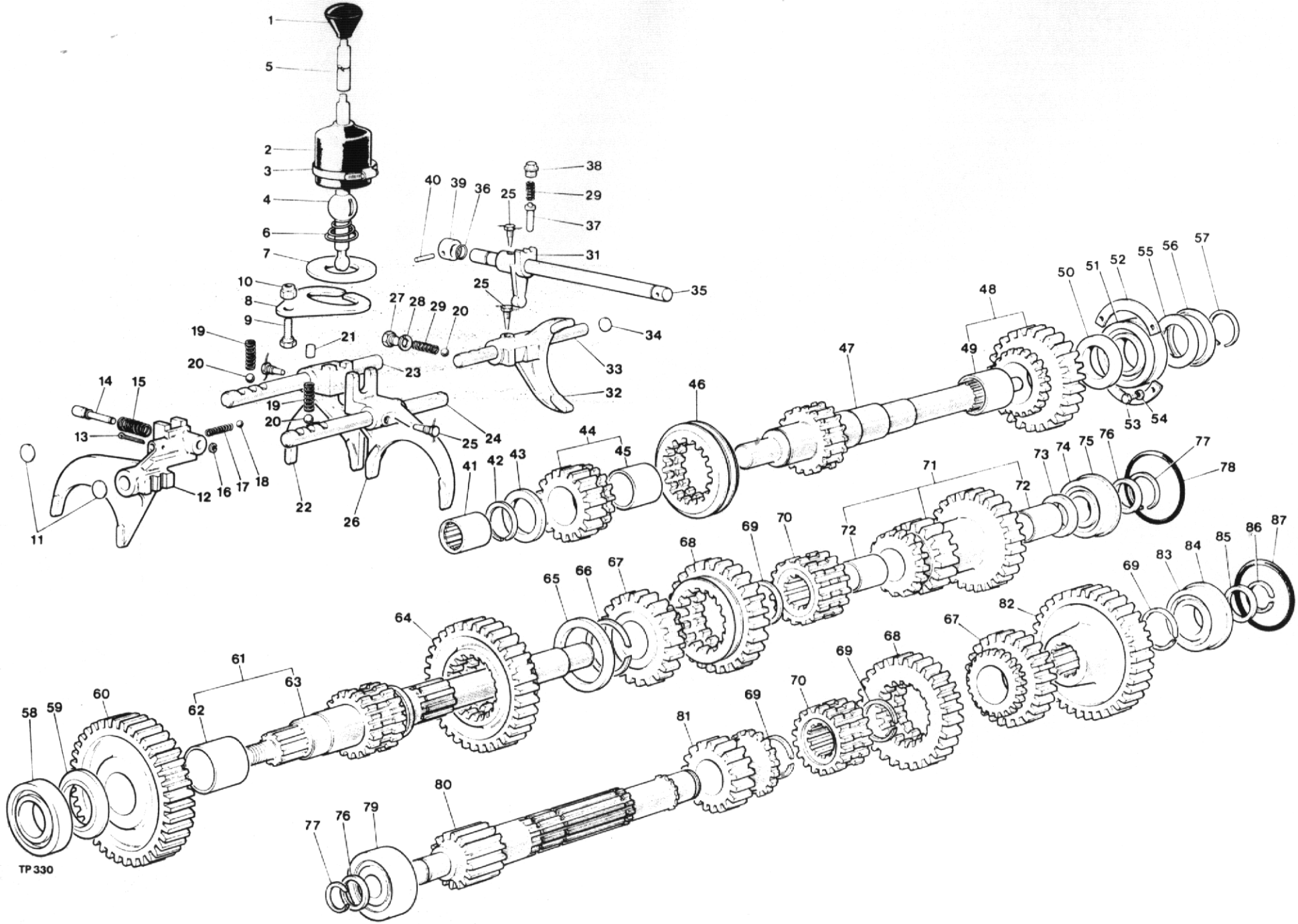
GEARBOX - CASING

Item No.	Part No.	Description	Qty.
	30039.A0101	Gearbox 5FR5 complete	
1	ESE 145	Packing Plate	1
2	5FR 334	Joint	2
3	5FR 246	Housing	1
4	ESE 195	Gearbox Cover Plate & Filler Tube (5FR 348)	1
5	ESE 201-3	Blanking Cap	1
6	ESE 200	Dipstick Tube	1
7	ESE 196	Dipstick & Cap	1
8	ESE 197	Drain Plug	1
9	T141	Drain Seal	1
10	30039.A01-12	Setscrew 9/16" U.N.F. 35mm long	4
11	30039.A01-11	Adaptor Plate (5FR 337 S/A)	1
12	5FR11A	Gear Case - Top Half	1
13	5FR94	Input Bearing Housing	1
14	USF 52	Bolt	10
15	006254	'O' Ring	1
16	5FR 262	Gasket	1
17	CM 2064	Dowel	4
18		Dowel 5mm	2
19	5FR 357	Joint	1
20	W112	Spring Washer	6
21	USF 21	Setscrew	6
22	USF 14	Bolt	1
23	W125	Washer	1
24	CM2103	Spring	1
25	5FR166	Plunger 1st Speed Gear	1
26	5FR248	Gear Lever Pivot Bolt	2
27	UBF 142	Bolt	2
28	UBF 112	Bolt	2
29	W113	Washer	16
30	CM2106	Breather	2
31	5FR 157	Intermediate Plate	1
32	5FR 333	Top Cover Joint	1
33	5FR201A	Gear Case Bottom Half	1
34	USF 204	Bolt	2
35	USF 154	Bolt	7
36	W125	Spring Washer	11
37	69S.6G	Screw 5/8" U.N.C. x 1½" long	3
38	CP1189	Flanged Plug	1
39	CP 1068	Washer	1
40	UBF 244	Bolt	1
41	UBF 117	Bolt	4
42	W 129	Washer	4


TP 330

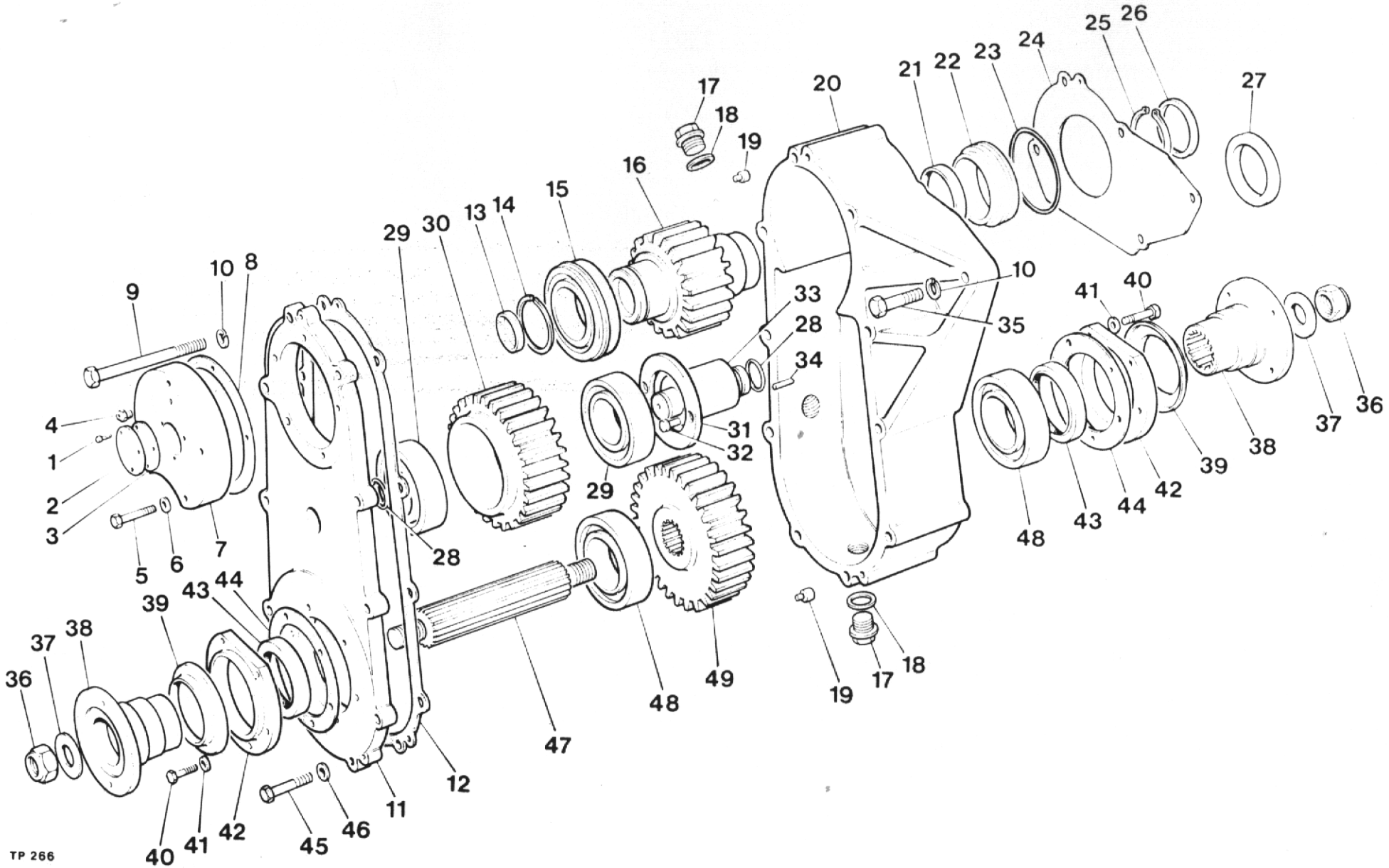
GEARBOX - SELECTOR & GEARS

Item No.	Part No.	Description	Qty.
1	5FR 84	Gear lever knob	1
2	CM 2197	Gear lever rubber cover	1
3	CM 2198	Clip	1
4	ESE 146	Gear lever	1
5	ESE 147	Gear lever extension	1
6	5FR 249	Spring	1
7	5FR 247	Spring retaining plate	1
8	5FR 229	Baulk plate	1
9	5FR 234	Bolt	1
10	UNS 44	Nut	1
11	CP 1188	Sealing disc	2
12	5FR 237	1st speed fork	1
13	CP 1004	Split pin	1
14	5FR 236	Lock out plunger	1
15	5FR 145	Spring	1
16	CP 1061	Retaining clip	1
17	5FR 146	Spring	1
18	CP 1095	Detent ball	1
19	5FR 339	Detent spring	2
20	CP 1077	Detent ball	3
21	5FR 194	Packing	1
22	5FR 238	4th and 5th speed fork	1
23	5FR 243	Selector shaft 4th and 5th speeds	1
24	5FR 242	Selector shaft 1st, 2nd and 3rd speeds	1
25	5FR 207	Taper screw	4
26	5FR 86	2nd and 3rd speed fork	1
27	USF 14	Plug	1
28	W 125	Washer	1
29	CM 2103	Detent spring	2
30			
31	5FR 356	Selector finger forward/reverse	1
32	5FR 349	Forward/reverse selector fork	1
33	5FR 350	Forward/reverse selector shaft	1
34	CP 1306	Sealing disc	1
35	5FR 355	Forward/reverse shaft	1
36	000753	Retaining clip	2
37	5FR 196	Plunger	1
38	MT 603	Plug	1
39	5FR 56	Collar	2
40	CP 1187	Pin	1
41	5FR 62	Roller bearing	1
42	CP 1183	Retaining clip	1
43	5FR 252	Thrust washer	1
44	5FR 254	Gear, including bush 5FR 58	1
45	5FR 58	Bush	1
46	5FR 21	Forward/reverse selector ring with gearlock	1
47	5FR 287	Shaft	1
48	5FR 19	Reverse gear, including 5FR 58	1
49	5FR 58	Bush	1
50	5FR 99	Spacer	1
51	5FR 97	Bearing	1
52	5FR 147	Bearing retaining clip	2
53	USF 11	Bolt	4
54	W112	Washer	4
55	5FR 331	Seal adaptor	1
56	0400551	Seal	1


TP 330

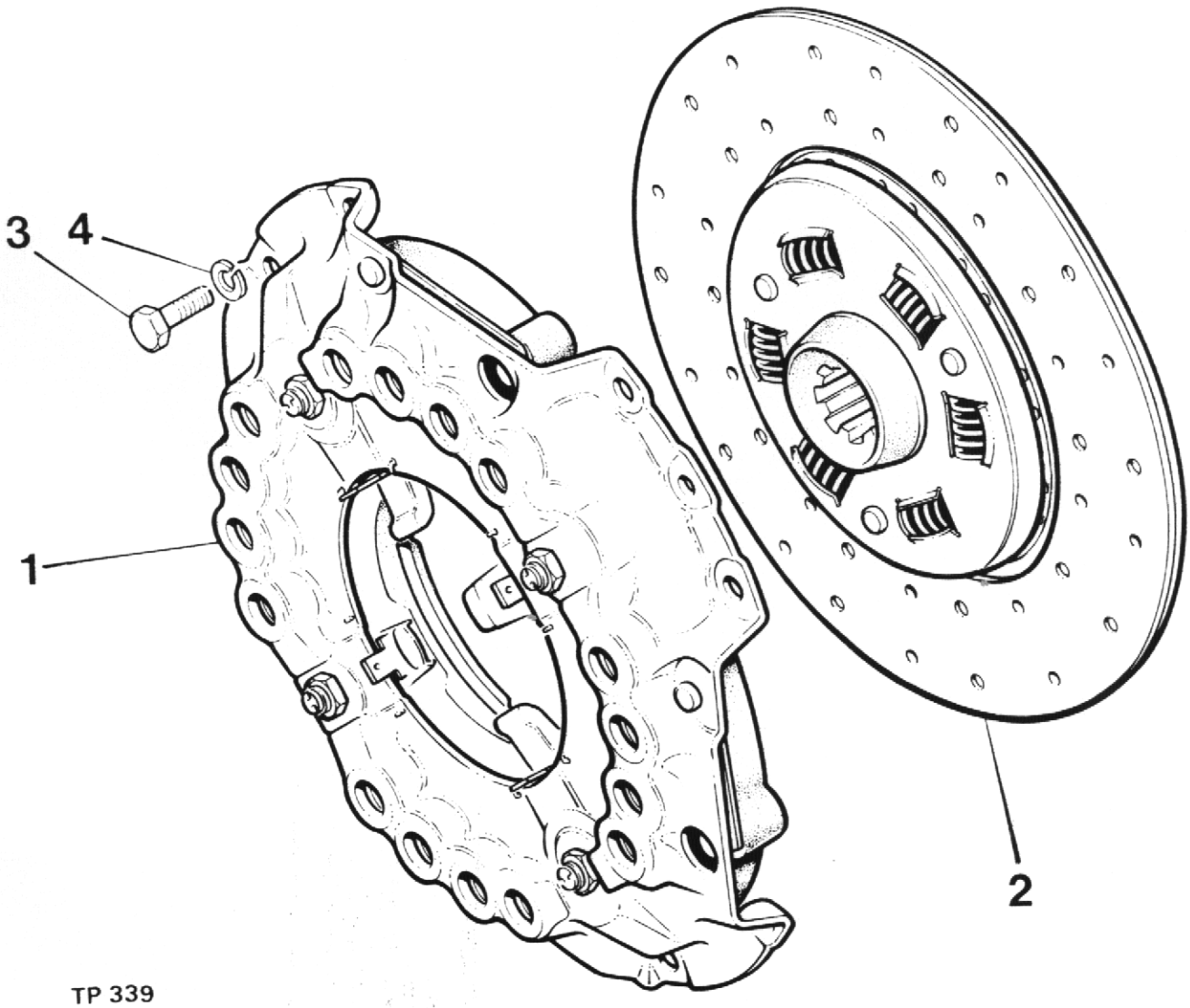
GEARBOX - SELECTOR & GEARS

Item No.	Part No.	Description	Qty.
57	0270400	Retaining clip	1
58	5FR 64	Bearing	1
59	5FR 90	Thrust washer	1
60	5FR 30	1st speed wheel	1
61	5FR 259	Final drive shaft assembly	1
62	5FR 263	Bush	1
63	5FR 257	Shaft	1
64	5FR 29	Gear	1
65	5FR 162	Lock out washer	1
66	CP 1220	Retaining clip	1
67	5FR 28	3rd speed gear	2
68	5FR 27	Selector gear with gear lock	2
69	CM 2359	Circlip	4
70	5FR 241	Selector ring locator	2
71	5FR 25	Gear cluster	1
72	5FR 59	Bush	2
73	5FR 43	Thrust washer	1
74	CM 2052	Bearing	1
75	CM 2060	Snap ring	1
76	5FR 32	Spacer	2
77	CM 2053	Circlip	2
78	003504	'O' ring	2
79	5FR 139	Bearing	1
80	5FR 92	Idler shaft	1
81	5FR 34	Gear	1
82	5FR 33	Idler shaft gear	1
83	5FR 140	Bearing	1
84	CM 2059	Snap ring	1
85	5FR 45	Washer	1
86	CM 2067	Circlip	1
87	003754	'O' ring	1


TP 266

TRANSFER CASE

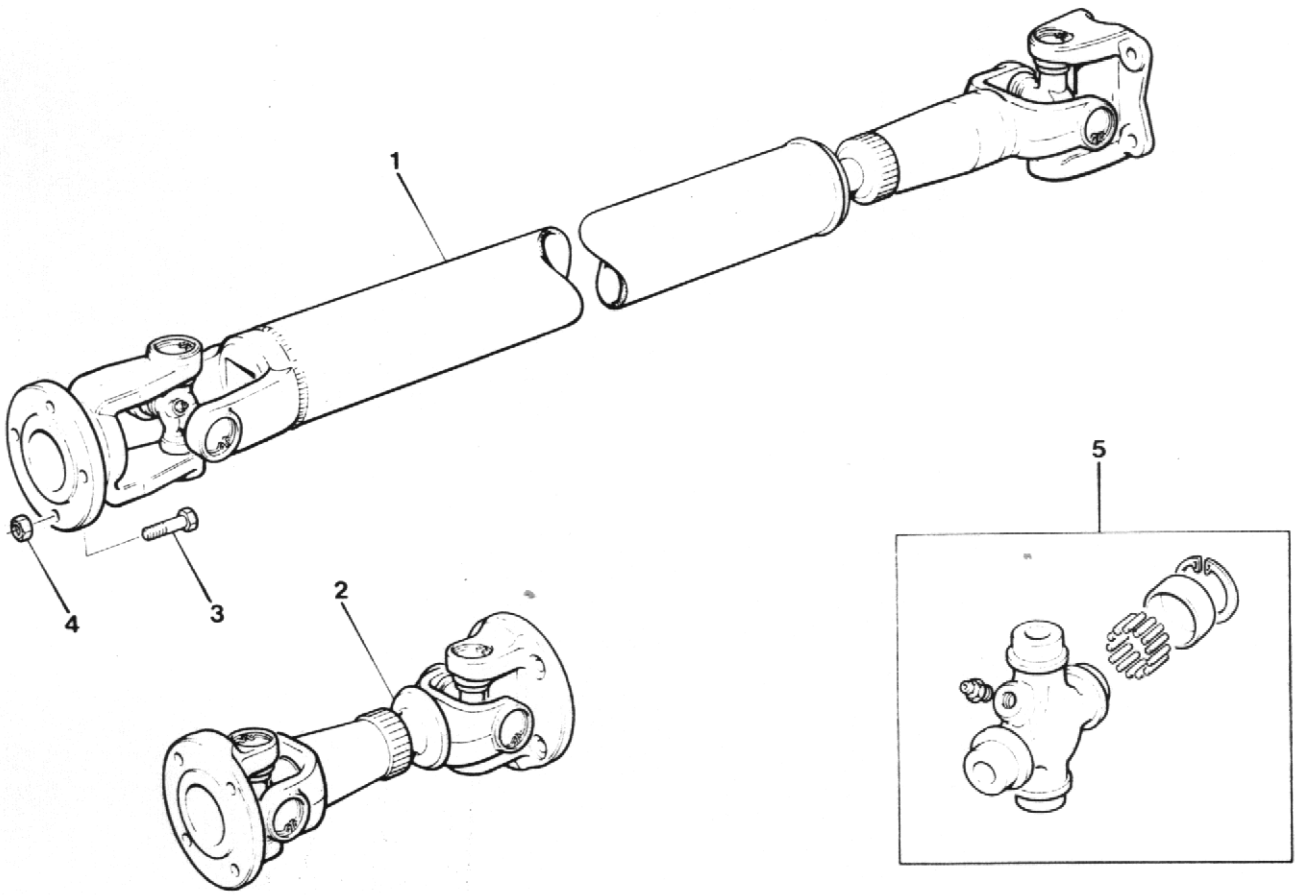
Item No.	Part No.	Description	Qty.
1	BAC 16	Bolt	3
2	5FR 219	Speed drive blanking cover	1
3	5FR 220	Speed drive blanking cover gasket	1
4	CM 2106	Breather	1
5	UBF 91	Bolt	5
6	CP 1305	Washer	5
7	5FR 209	End cover	1
8	5FR 137	Cover gasket	1
9	UBF 214	Bolt	4
10	W 125	Washer	5
11	5FR 101	Top half case	1
12	5FR 133	Case gasket	1
13	5FR 115	Plug	1
14	CP 1100	Snap ring	1
15	5FR 122	Bearing	1
16	5FR 102	Primary gear	1
17	CP 1189	Flanged plug	2
18	CP 1068	Washer	2
19	CP 1247	Stepped dowel	2
20	5FR 100	Bottom half case	1
21	5FR 66	Seal	1
22	5FR 109	Location ring	1
23	003502	'O' ring	1
24	5FR 226	Gasket	1
25	CP 1203	Circlip	1
26	5FR 117	Spacer	1
27	5FR 225	Spigot ring	1
28	001253	'O' ring	2
29	0535521	Bearing	2
30	5FR 342	Idler gear	1
31	5FR 343	Thrust washer	2
32	023S309H	Headed spiral pin	4
33	5FR 279	Idler shaft	1
34	MT 356	Dowel	1
35	UBF 104	Bolt	1
36	UN 587	Nut	2
37	5FR 44	Washer	2
38	5FR 106	Flange	2
39	5FR 111	Dust shield	2
40	USF 51	Bolt	12
41	CP 1230	Washer	12
42	5FR 108	Oil seal housing	2
43	5FR 136	Oil seal	2
44	5FR 132	Gasket	2
45	UBF 103	Bolt	6
46	W 108	Washer	6
47	5FR 105	Output shaft	1
48	5FR 119	Bearing	2
49	5FR 104	Output gear	1



TP 339

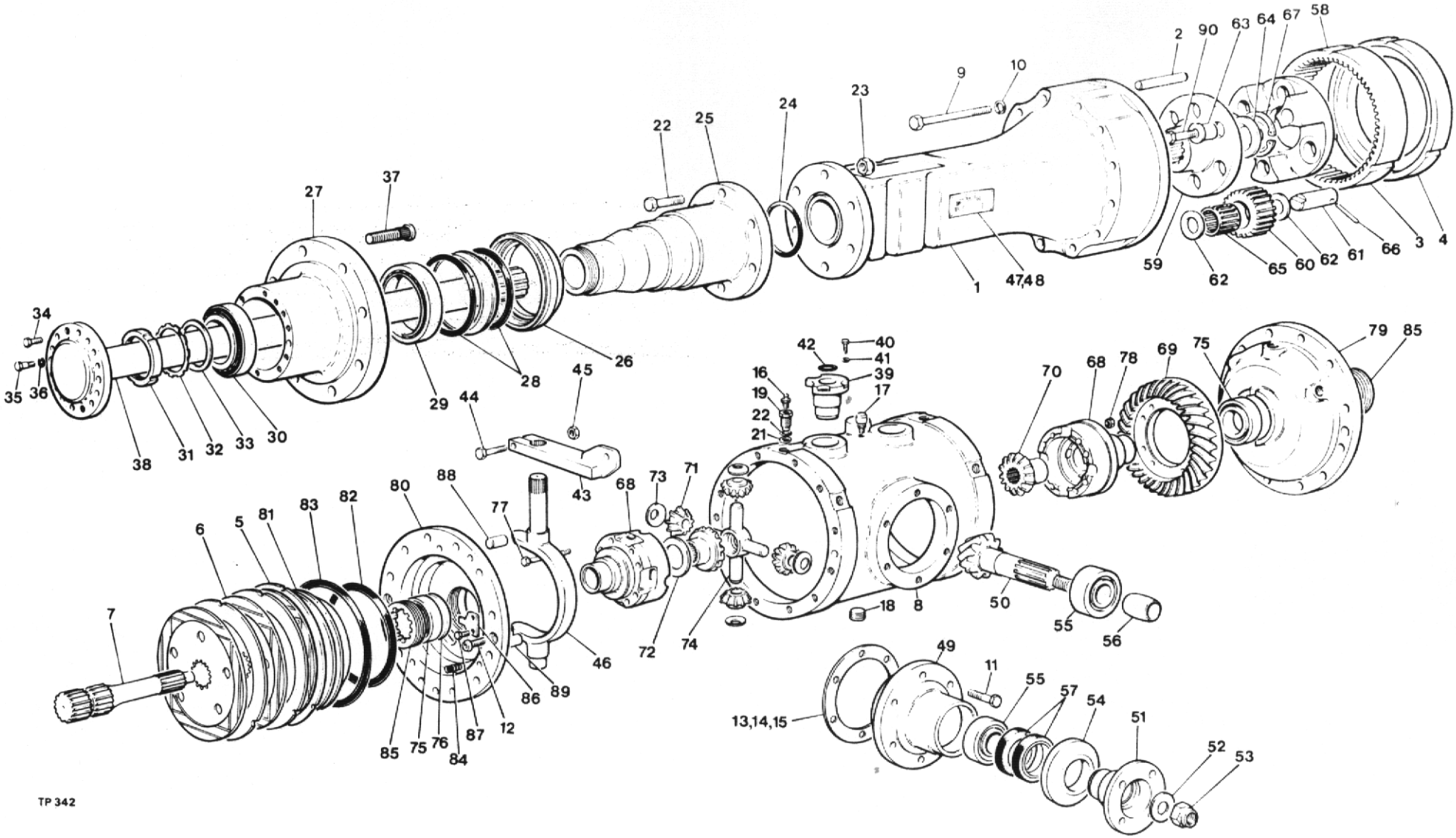
Item No.	Part No.	Description	Qty.
1	10060 A01	Clutch Cover Assembly	1
2	10061 A02	Driven Plate	1
3	69S.3E	Bolt 3/8" U.N.C. x 1" long	8
4	10S.3	Spring Washer 3/8"	8

PROP SHAFTS



TP 332

Item No.	Part No.	Description	Qty.
1	ESE 155	Front Prop Shaft	1
2	1350 YSA	Rear Prop Shaft	1
3	ESE 214	Prop Shaft Bolt	16
4	10S.4	Nut 7/16" U.N.F.....	16
5	10207.A01	Repair Kit (Borecliff 305A) Std. angle	A/R
	10307.A01	Repair Kit (Borecliff 205A) Wide angle	A/R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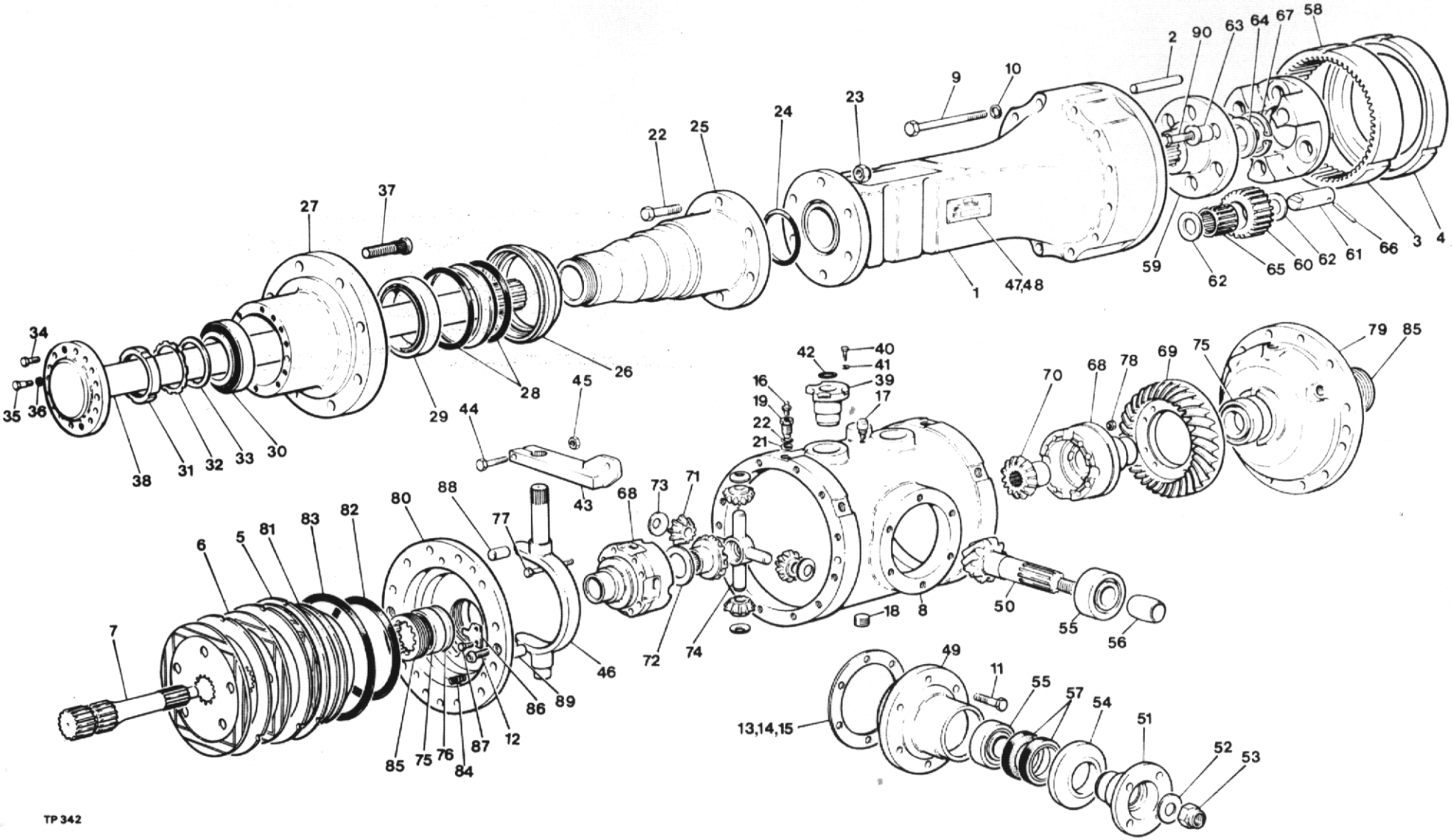
TP 342

DRIVE AXLE

(400 SERIES)

Item No.	Part No.	Description	Qty.
	30044.A01	Front Axle comprising 1-90 less 84	1
	30045.A01	Rear Axle comprising 1-38 and 47-87 & 90	1
1	435-0020	Axle Arm	2
2	010-0180	Pin	6
3	420-0070	Annulus	2
4	420-0880	Brake Spacer Plate	2
5	400-0890	Brake Fixed Plate (Rear Axle - 2 Front Axle -	6)
6	400-0750	Oil Immersed Brake Disc (Rear Axle - 2 Front Axle -	6)
7	420-0090	Sun Gear	2
8	401-0011	Main Axle Casing	1
9	004-0060	Bolts - Main Axle Casing	24
10	009-0060	Spring Washer	24
11	012-0060	Hex.Screw	6
12	006-0270	Hex.Socket Button Head Screw	4
13	400-2350	Pinion Adjuster Shim	A/R
14	400-2290	Pinion Adjuster Shim	A/R
15	400-2210	Pinion Adjuster Shim	A/R
16	008-0090	Brake Bleed Valve	2
17	008-0070	Relief Valve	1
18	008-0020	Hex.Socket B.S.P. TR Plug	2
19	400-1070	Brake Pipe Adaptor	4
20	002-0200	"O" Ring	4
21	009-0100	Dowty Washer	4
22	004-0170	Bolts	12
23	007-0030	Nyloc Nut	12
24	002-0320	"O" Ring	2
25	435-1350	Stub Axle	2
26	435-0140	Oil Seal Housing	2
27	435-0040	Hub	2
28	002-0120	Hub Oil Seal	2
29	001-0210	Hub Inner Bearing	2
30	001-0300	Hub Outer Bearing	2
31	007-0260	Bearing Lock Nut	2
32	009-0230	Tab Washer	2
33	435-1440	Hub Bearing Spacer	2
34	012-0060	Setscrew	24
35	420-1280	Fitted Bolt	4
36	009-0200	Spring Washer	4
37	400-0450	Wheel Stud(18mm)	16
38	435-0101	Axle Shaft	2
39	250-1620	Brake Lever Support Bush	2
40	006-0300	Setscrew	6
41	009-0040	Spring Washer	6
42	002-0190	"O" Ring	2
43	10048.A01	Handbrake Operating Lever L.H.	1
	10049.A01	Handbrake Operating Lever R.H.	1
44	006-0130	Setscrew	2
45	007-0160	Nyloc Nut	2
46	400-0821	Brake Lever L.H.	1
	400-0811	Brake Lever R.H.	1
47	400-1720	Label	1
48	010-0130	Hammer Drive Screw	4
49	400-2300	Input Pinion Cartridge	1
50	400-2000	Spiral. Bevel Pinion	1
51	400-2180	Drive Flange	1
52	400-2190	Drive Flange Washer	1
53	400-2200	Drive Flange Nut	1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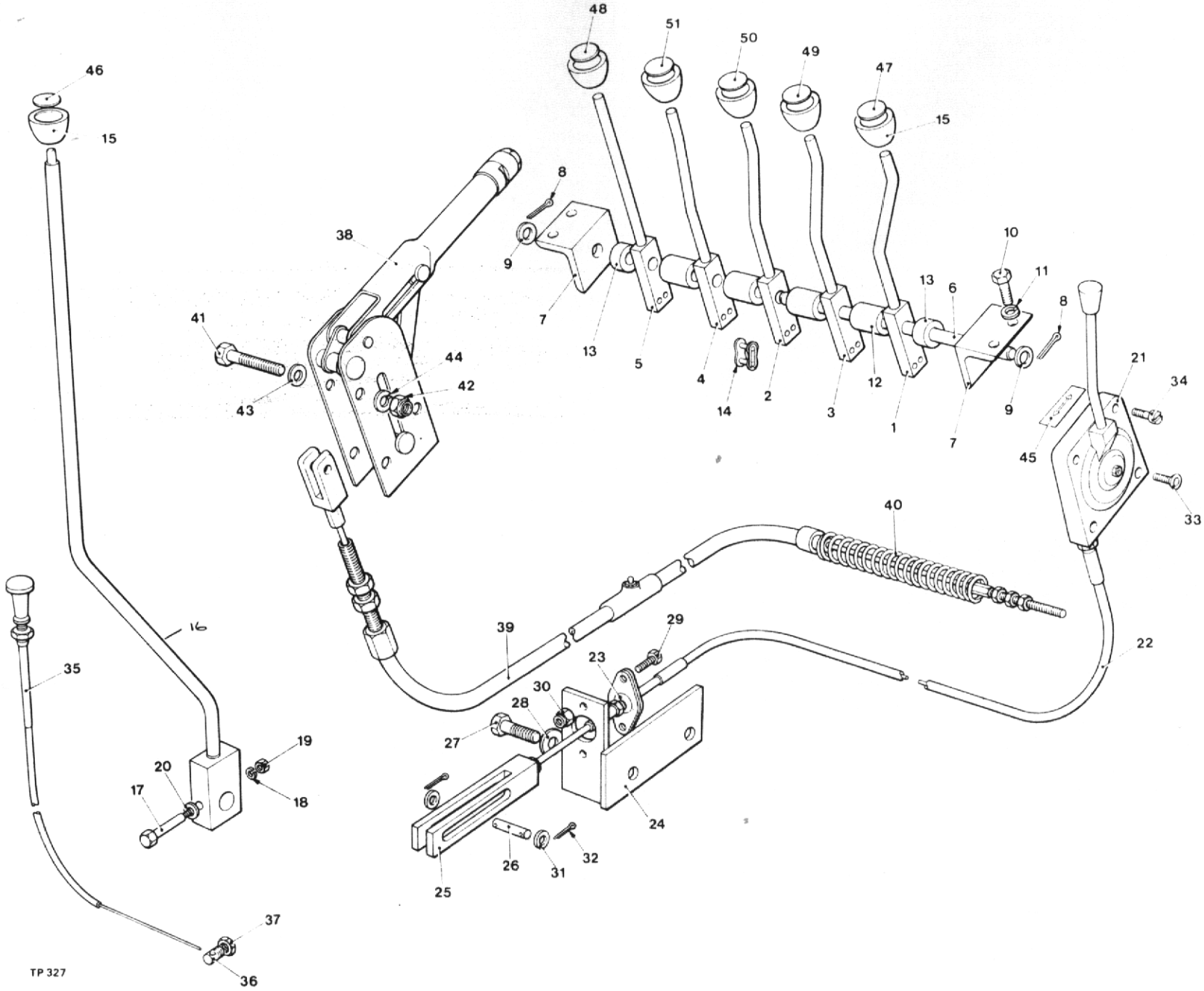
TP 342

DRIVE AXLE

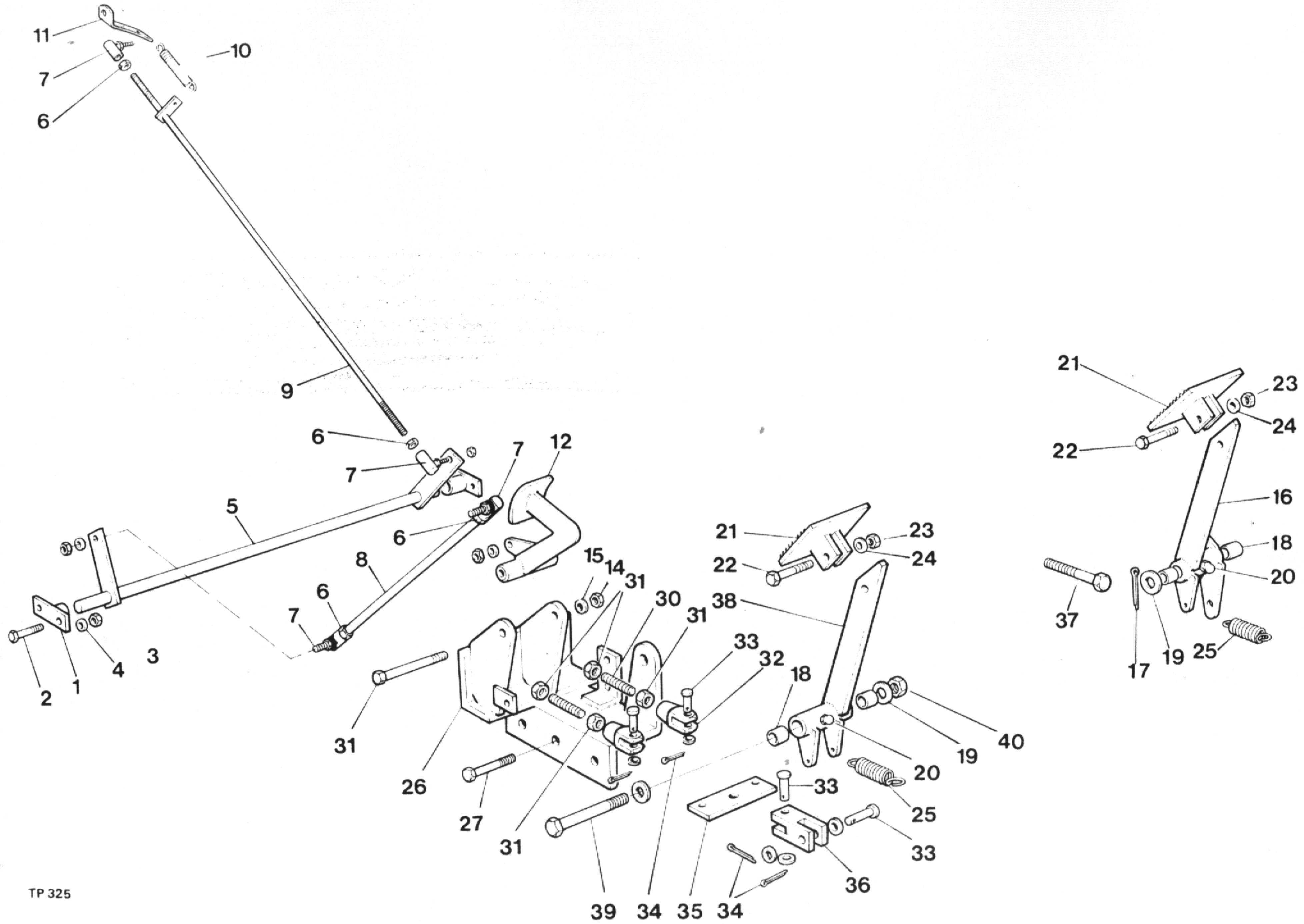
(400 SERIES)

Item No.	Part No.	Description	Qty.
54	400-0910	Oil Seal Cover	1
55	001-0070	Pinion Bearing	2
56	400-1050	Pinion Bearing Spacer	1
57	002-0070	Pinion Oil Seal	2
58	400-0060	Planet Carrier	1
59	400-0260	Carrier Drive Flange	1
60	420-0080	Planet Gear	3
61	400-0250	Planet Pins	3
62	400-0270	Planet Thrust Washer	6
63	400-0371	Planet Carrier Bush	3
64	400-1320	Axle Shaft Thrust Spacer	1
65	001-0150	Planet Cage Roller	3
66	010-0030	Spring Dowel	3
67	003-0120	Circlip	1
68	401-9520	Diff Case Process Assembly	1
69	400-2010	Spiral Bevel Wheel	1
70	400-2090	Diff Wheel	2
71	400-2100	Diff Pinion	4
72	400-2110	Diff Wheel Thrust Washer	2
73	400-2120	Diff Pinion Thrust Washer	4
74	400-2130	Diff Spider	1
75	001-0080	Diff Bearing	2
76	400-0950	Diff Bearing Washer	1
77	004-0080	Bolts	8
78	007-0100	Nyloc Nuts	8
79	400-0761	Brake Cylinder R.H.	1
80	400-0771	Brake Cylinder L.H.	1
81	400-0780	Brake Piston	2
82	002-0080	Piston Oil Seal	2
83	002-0090	Piston Oil Seal	2
84	011-0010	Compression Spring	6
85	400-2150	Bearing Adjusting Nut	2
86	400-2160	Bearing Adjusting Nut Lock Plate	2
87	012-0010	Screw Lock Plate	4
88	400-1060	Roller - Handbrake	1
89	400-1680	Roller - Handbrake	1
90	012-0120	Bolt	3


TP 327

HAND CONTROLS

Item No.	Part No.	Description	Qty.
1	10010.A05	Tilt control lever	1
2	10010.A04	Free lift control lever	1
3	10010.A03	Main lift control lever	1
4	10010.A02	Auxiliary tilt control lever	1
5	10010.A01	Auxiliary service control lever	1
6	10008.A01	Control lever pivot bar	1
7	10007.A01	Control lever bracket assembly	2
8	44S.02B	Split pin 3/32" x 3/4" long	2
9	10S.4A	Washer	2
10	11S.4B	Screw Hex.Hd. M8 x 20mm long	4
11	17S.4A	Spring washer M8	4
12	GSE 134-13	Spacer	4
13	GSE 134-12	Spacer	2
14	4-60-178	Split link	5
15	10211.A01	Control lever knob	6
16	20060.A01	Forward/reverse lever	1
17	62S.2G	Screw.Skt. shoulder. M8 x 40mm long	1
18	17S.3	Spring washer M6	1
19	61S.2	Locknut	1
20	12S.3A	Steel washer M8	1
	30020.A01	Hand throttle complete (comprising items 21-34).	1
21	30020.A0101	Control operator assembly	1
22	30020.A0102	Control cable assembly	1
23	30020.A0114	Bulkhead swivel assembly	1
24	10039.A01	Bracket	1
25	10045.A01	Slotted clevis	1
26	ESE 272	Pivot pin	1
27	69S.4E	Set screw. Hex.Hd. 7/16" U.N.C. x 1" long	2
28	41S.6	Lock washer 7/16" I.D.	2
29	11S.2B	Set screw. Hex.Hd. M6 x 20mm long	2
30	61S.2A	Locknut M6	2
31	12S.2A	Flat washer M6	2
32	44S.OID	Split pin 1/16" dia. x 1½" long	2
33	52S.02E	Set screw Skt. Csk.Hd. M6 x 25mm long	2
34	10053.A01	Stop pin	2
35	ESE 194	Engine stop control cable	1
36	4-60-242	Clamp screw	1
37	95S.3	Half nut 3/8" U.N.F.	1
38	715-C-11605	Handbrake	1
39	ESE 270	Brake cable	1
40	10038.A01	Return spring	1
41	8S.4H	Bolt Hex.Hd. M10 x 60mm long	2
42	7S.4A	Nut M10	2
43	12S.5A	Plain washer M10	2
44	17S.5A	Spring washer M10	2
45	DM 207	Label - "Fast-Slow" Hand throttle	1
46	10290.A01	Label - Foward/reverse	1
47	10281.A01	Label - Tilt control	1
48	10292.A01	Label - Auxiliary Service	1
49	10286.A01	Label - Main lift control	1
50	10289.A01	Label - Free lift control	1
51	10283.A01	Label - Auxiliary tilt	1



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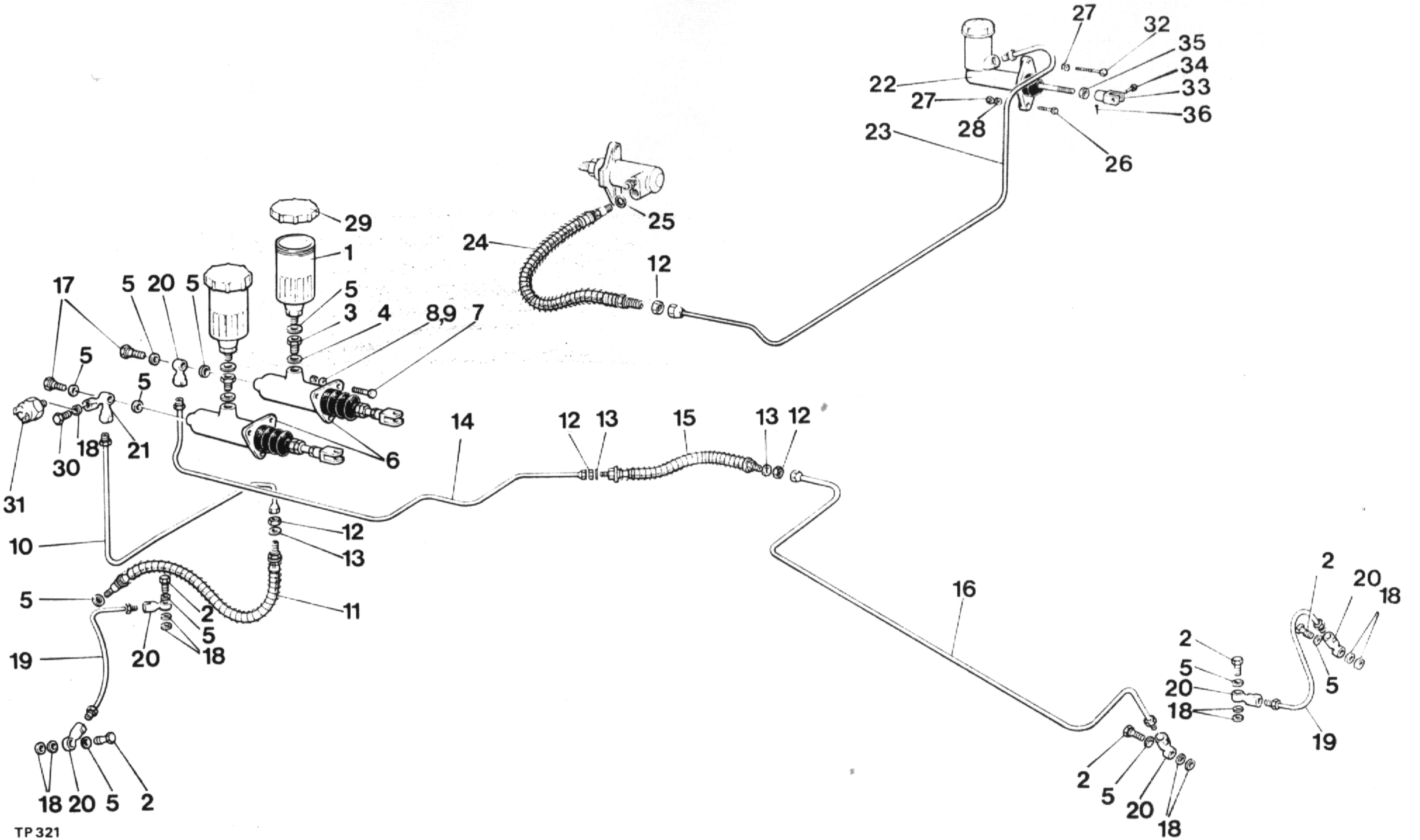
TP 325

FOOT CONTROLS

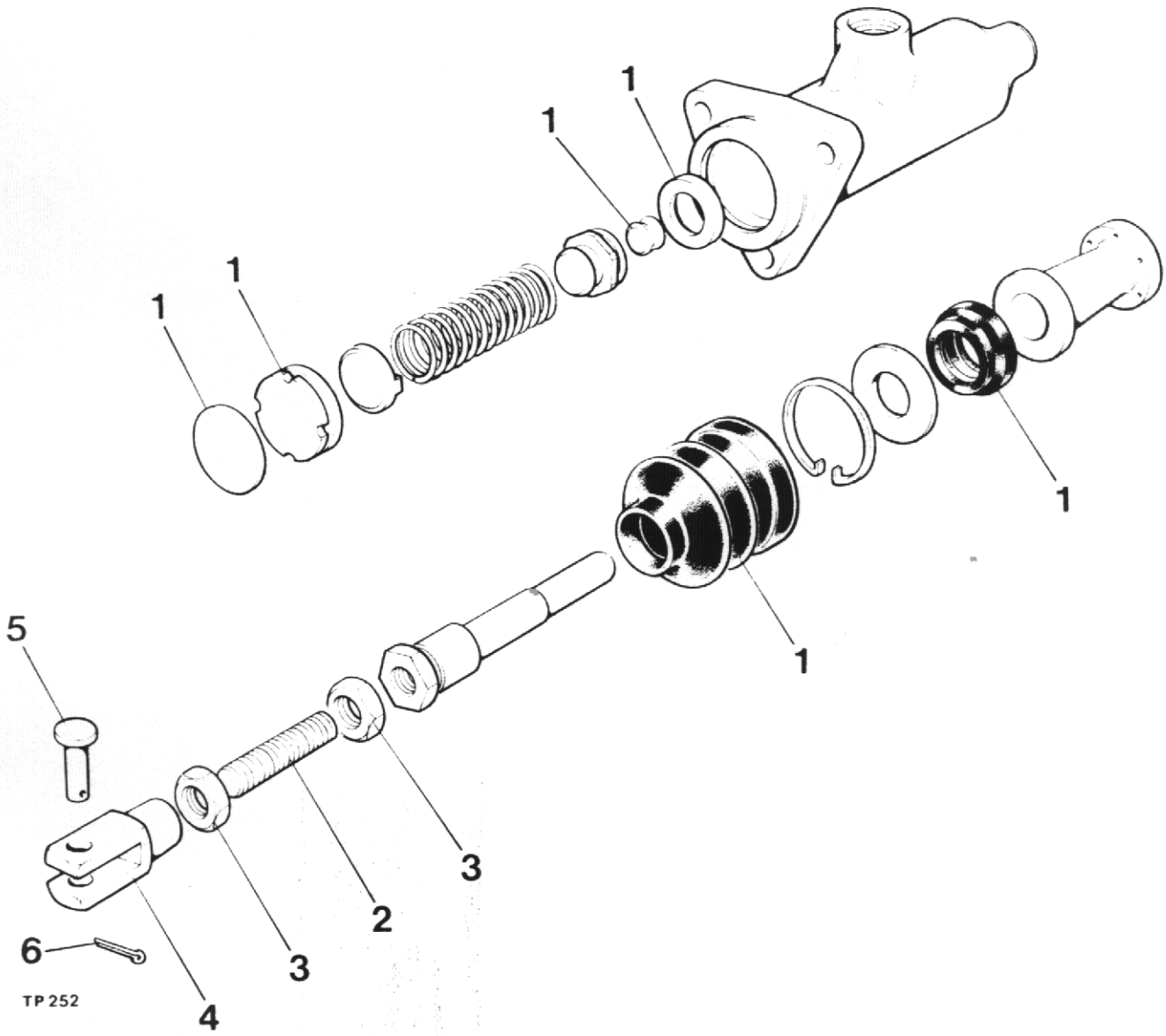
Item No.	Part No.	Description	Qty.
1	ESE 109	Transfer shaft bracket	2
2	11S.2B	Bolt Hex.Hd. M6 x 20mm long	4
3	7S.2A	Nut M6	4
4	12S.2A	Plain washer M6	4
5	10013.A01	Accelerator transfer shaft	1
6	2S.2A	Nut ¼" B.S.F	4
7	C.160B	Rod ball ends	4
8	ESE 174	Accelerator link rod	1
9	20012.A02	Accelerator rod	1
10	C173D	Spring	1
11	10022.A01	Spring anchor & stop control bracket	1
12	20050.A01	Accelerator pedal	1
13	6S.5R	Bolt Hex.Hd. ½" U.N.F. x 5" long	1
14	9S.4	Nut ½" U.N.F	1
15	10S.4	Washer ½" plain	1
16	ESE 111	Clutch pedal	1
17	44S.04C	Split pin 1/8" dia	1
18	WB.1212	Pedal bush	4
19	10S.6A	Plain washer 3/4"	3
20	T.90	Grease nipple 90°	2
21	ESE 151	Pedal footpad	2
22	6S.3C	Bolt 3/8" U.N.F. x 1½" long	2
23	2S.4A	Nut 3/8" U.N.F	2
24	41S.5A	Spring washer 3/8"	2
25	C173B	Return spring	2
26	ESE 114	Pedal bracket	1
27	8S.4B	Bolt M10 x 30mm long	3
28	7S.4A	Nut M10	3
29	17S.5A	Spring washer M10	3
30	ESE 189	Connecting stud	2
31		Nut 7/16" U.N.F	4
32	ESE 188	Clevis	2
33	C174X	Clevis pin	4
34	44S.02B	Split pin	4
35	10208.A01	Brake compensator	1
36	CSE 148	Brake compensator clevis	1
37	10261.A01	Clutch pedal stop	1
38	ESE 117	Brake pedal	1
39	6S.7S	Bolt Hex.Hd. 3/4" U.N.F. x 5½" long	1
40	9S.6A	Nut 3/4" U.N.F	1


TP 321

BRAKE & CLUTCH PIPES & CONNECTIONS

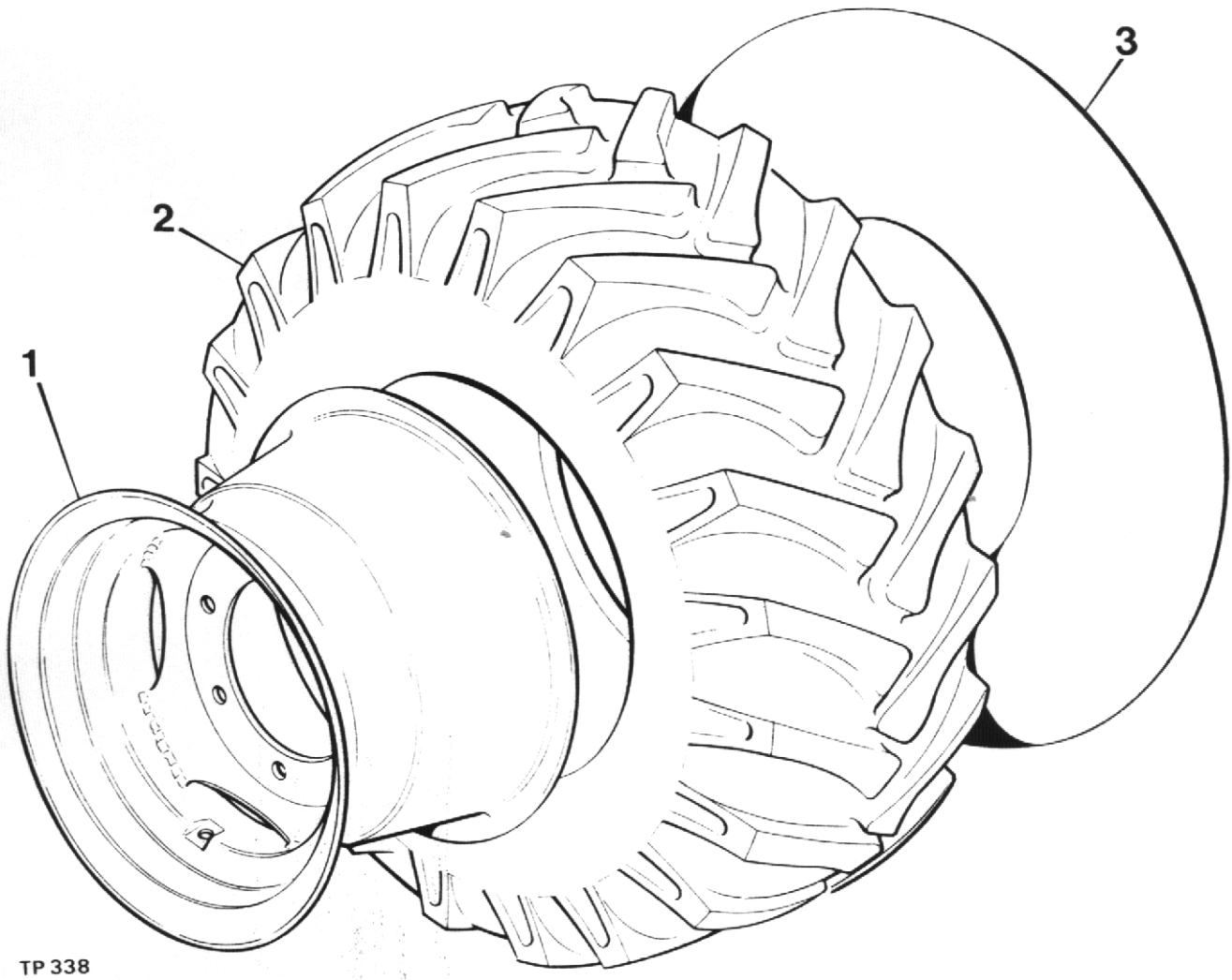
Item No.	Part No.	Description	Qty.
1	64047211	Header tank	2
2	376102.W	Banjo bolt	5
3	ESE 187	Brake tank adaptor	2
4	KL 44532	Copper washer	2
5	378700	Copper washer	10
6	22128	Brake master cylinder	2
7	8S.3B	Bolt Hex. hd. M8 x 30mm long	6
8	7S.3A	Nut M8	6
9	12S.3A	Washer M8	6
10	DM79-9	Pipe	1
11	64047903	Rear flexible pipe	1
12	64100050	Locknut	3
13	64140087	Shakeproof washer	3
14	64473434	Pipe	1
15	64046115	Front flexible pipe	1
16	DM79-10	Pipe	1
17	64473063	Banjo bolt	2
18	378703	Banjo washer	11
19	DM78-16	Bridge pipe	2
20	64474287	Banjo	6
21	64474289	Double banjo	1
22	64068035	Clutch master cylinder	1
23	DM79-3	Pipe	1
24	64047903	Flexible pipe	1
25	378703	Seal	1
26	8S.3C	Bolt Hex. hd. M8 x 35mm long	1
27	7S.3A	Nut M8	3
28	17S.4A	Spring washer	2
29	64474602	Header tank cap	2
30	28S.3B	Screw 3/8" U.N.F. x ½" long	1
31	FSE 337	Brake switch (if fitted)	1
32	10261.A01	Clutch pedal stop (M8 x 100mm long)	1
33	C174E	Clevis	1
34	C174Y	Clevis pin	1
35	95S.2	Locknut 5/16" U.N.F.	1
36	44S.02B	Split pin 3/32" dia. x 3/4" long	1
37	10386.A01	Clutch master cylinder service repair kit	A/R

BRAKE MASTER CYLINDER



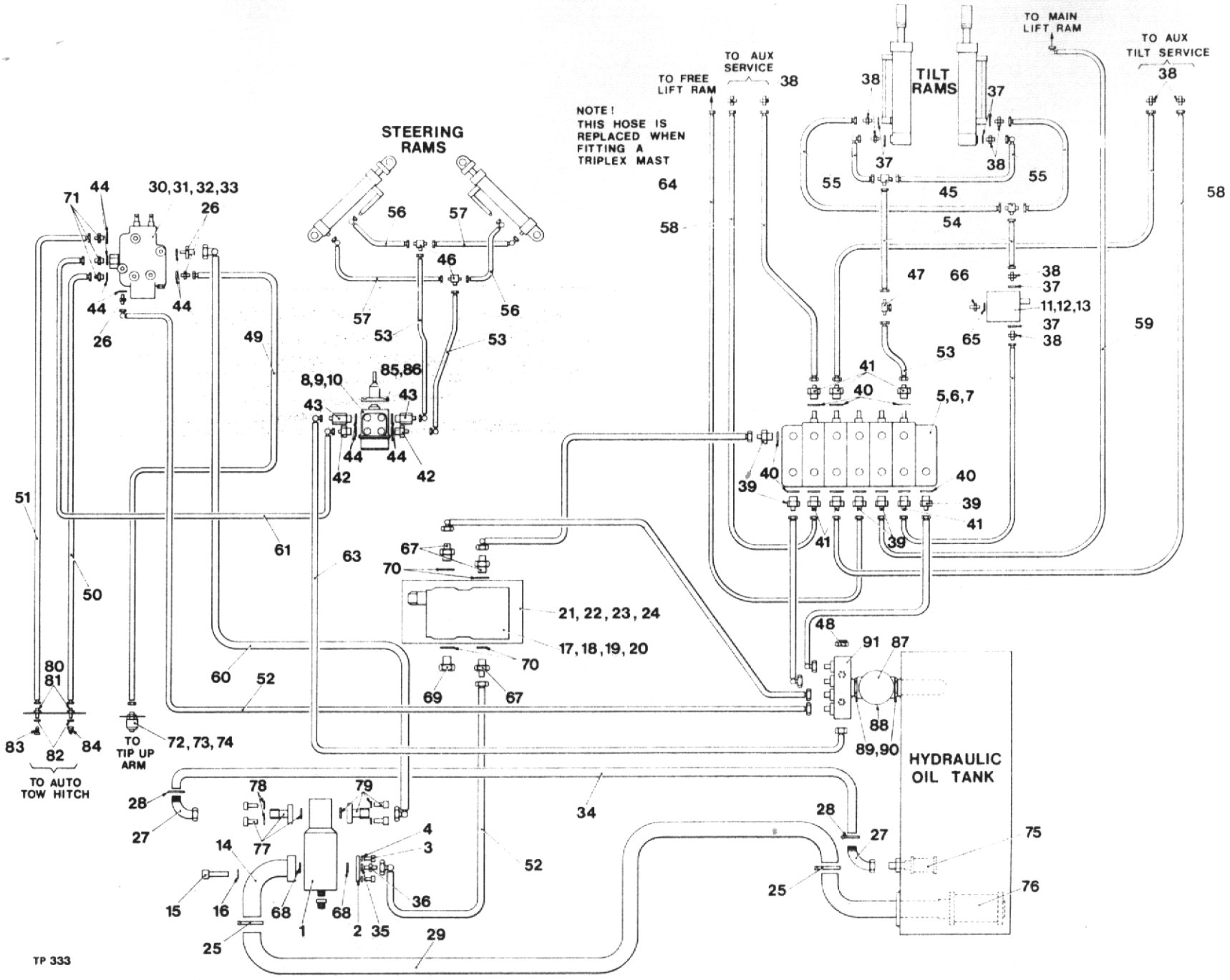
Item No.	Part No.	Description	Qty.
	22128	Master Cylinder Assembly (less items 2 to 6 incl.)	1
1	SSB 793	Seal Kit	A/R
2	ESE 189	Threaded Rod	1
3	9S.9	Nut 7/16" U.N.F.	2
4	ESE 188	Clevis	1
5	C174X	Clevis Pin	1
6	44S.02B	Split Pin 3/32" dia	1

WHEELS & TYRES



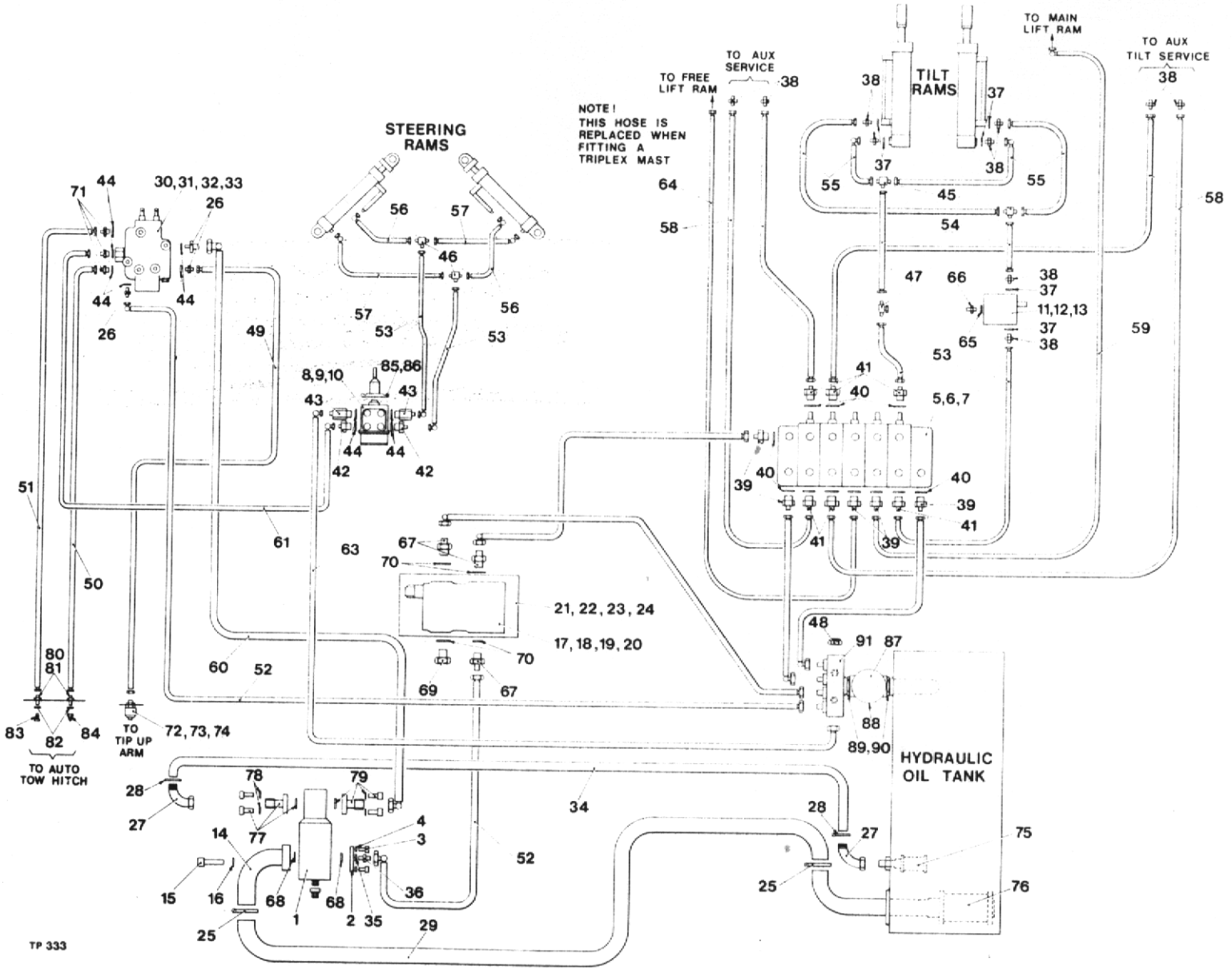
TP 338

Item No.	Part No.	Description	Qty.
	10132.A01	Wheel Assembly R.H.....	2
	10133.A01	Wheel Assembly L.H.....	2
1	24S.08	Wheel	4
2	20S.11	Tyre 12.50 x 20 (10 Ply).....	4
3	23S.07	Tube	4


TO MAIN LIFT RAM
TO AUX TILT SERVICE
TO AUX SERVICE
TO FREE LIFT RAM
TILT RAMS
STEERING RAMS
NOTE! THIS HOSE IS REPLACED WHEN FITTING A TRIPLEX MAST
30,31,32,33
85,86
8,9,10
11,12,13
5,6,7
21, 22, 23, 24
17,18,19,20
72,73,74
TO TIP UP ARM
TO AUTO TOW HITCH
HYDRAULIC OIL TANK
TP 333

HYDRAULICS

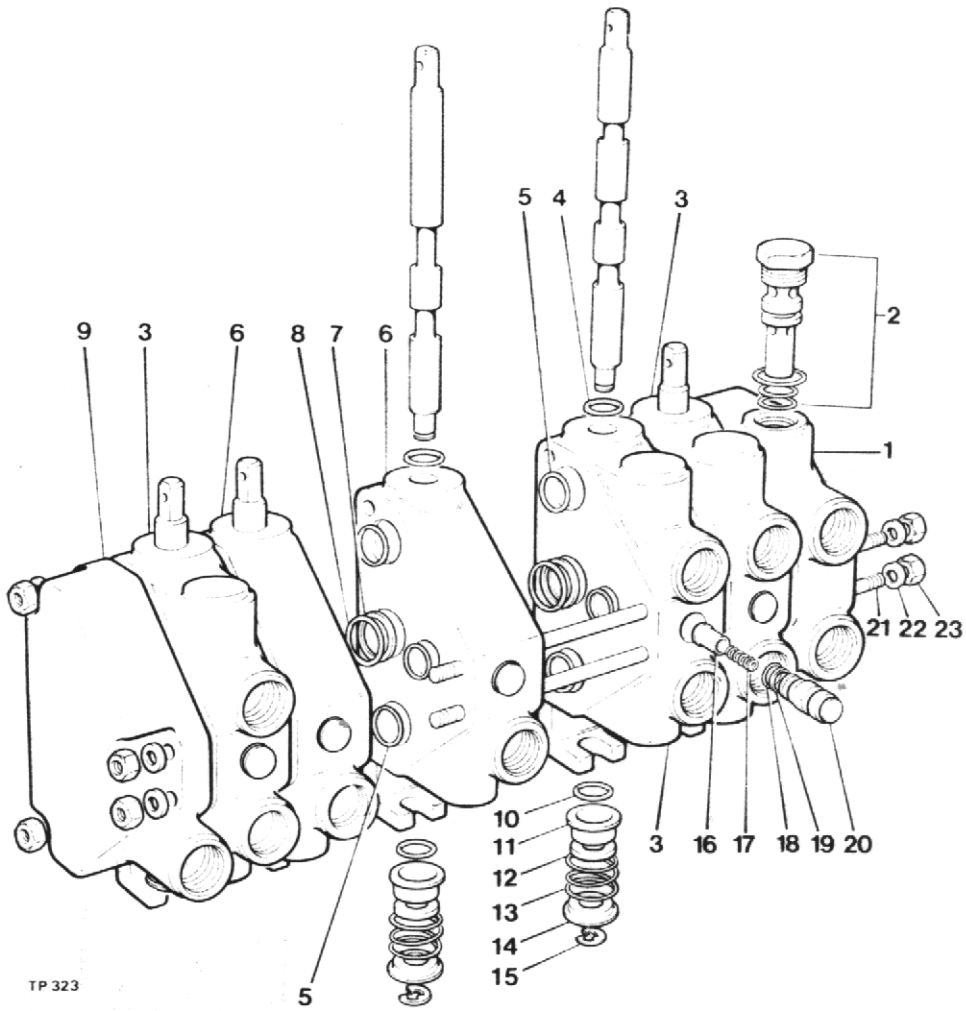
Item No.	Part No.	Description	Qty.
1	10088.A02	Hydraulic Pump c/w Quill	1
2	10101.A01	Pipe Adaptor	1
3	103S.4B	Screw Hex.Skt. Cap Hd. 3/8" UNC x 3/4" long	4
4	41S.5	Spring Washer 3/8"	4
5	30009.A02	Control Valve	1
6	69S.4E	Setscrew Hex.Hd. 7/16" UNC x 1" long	3
7	41S.6	Spring Washer 7/16"	3
8	4-60-293	Steering Valve	1
9	66S.3C	Setscrew Hex.Hd. 3/8" UNC x 1½" long	2
10	42S.3	Flat Washer 3/8" Nylon	2
11	ESE 130-6	Tilt Control Valve	1
12	8S.3D	Setscrew Hex.Hd. M8 x 40mm long	2
13	7S.3A	Nut M8	2
14	20030.A01	Inlet Connector Assembly	1
15	103S.4H	Screw Hex.Skt. Cap Hd. 3/8" UNC x 2" long	4
16	41S.5	Spring Washer 3/8"	4
17	20053.A01	Inline Relief Valve - 2100 p.s.i	1
	20053.A02	Inline Relief Valve - 2600 p.s.i	1
18	8S.3L	Bolt Hex. Hd. M8 x 75mm long	2
19	7S.3A	Nut M8	2
20	17S.4A	Spring Washer M8	2
21	10205.A01	Mounting Plate	1
22	69S.3A	Setscrew Hex.Hd. 3/8" UNC x 1" long	2
23	41S.5	Spring Washer 3/8"	2
24	CSE 182	Spacer	2
25	237S	Hose Clip	2
26	2ST 72F	Adaptor	3
27	BSE 109	Elbow Female Swept 90°	2
28	T63M	Hose Clip	2
29	40003.A0114	Wire Embedded Rubber Hose	1
30	30034.A01	Control Valve	1
31	7S.3A	Nut M8	2
32	8S.3J	Setscrew Hex.Hd. M8 x 65mm long	2
33	17S.4	Spring Washer	2
34	37S.10	Cotton Braided Hose	1
35	T14.H	Dowty Seal	1
36	T14.K	Adaptor	1
37	T14.I	Dowty Seal	8
38	T14.J	Adaptor	10
39	DSE 115	Adaptor	5
40	49S.1	"O" Ring	11
41	CSE 186	Adaptor	6
42	4-35-40K	Adaptor Short	2
43	4-60-115	Adaptor Long	2
44	49S.2	"O" Ring	10
45	ESE 182	Adaptor Bracket	1
46	ESE 183	Adaptor Bracket	2
47	F4-45-99	Tee	1
48	ESE 280	Sealing Cap	1
49	31S.3K	Hose	2
50	31S.2VV	Hose	1
51	31S.2M	Hose	1
52	31S.3RR	Hose	3
53	31S.20	Hose	4
54	35S.2I	Hose	2
55	31S.2V	Hose	4
56	31S.2R	Hose	2


STEERING RAMS
TILT RAMS
TO MAIN LIFT RAM
TO AUX TILT SERVICE
TO AUX SERVICE
TO FREE LIFT RAM
NOTE! THIS HOSE IS REPLACED WHEN FITTING A TRIPLEX MAST
HYDRAULIC OIL TANK
TO TIP UP ARM
TO AUTO TOW HITCH
TP 333

HYDRAULICS

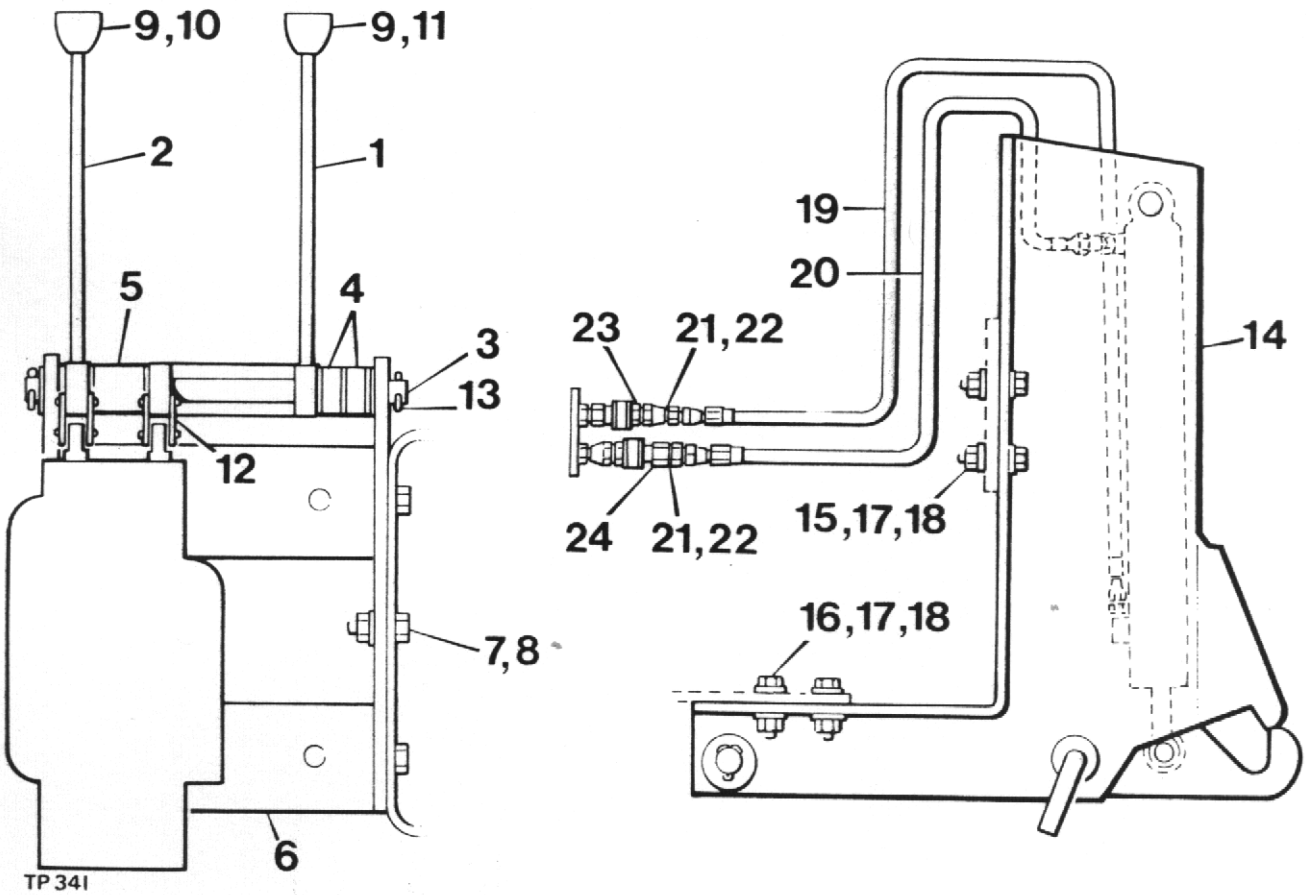
Item No.	Part No.	Description	Qty.
57	33S.2E	Hose	2
58	35S.2V	Hose	4
59	31S.3WW	Hose	1
60	36S.3EE	Hose	1
61	31S.2F	Hose	1
62	31S.3XX	Hose	2
63	31S.2G	Hose	1
64	35S.3W	Hose	1
65	ESE 130-47	Dowty Seal	1
66	4-60-189	Adaptor	1
67	ESE 279	Adaptor	3
68	49S.4	"O" Ring	2
69	ESE 278	Blanking Plug	1
70	DSE 104	Dowty Seal	4
71	4-35-40K	Adaptor	3
72	40003.A0161	Coupling	1
73	40003.A0160	Dust Cap	1
74	40003.A0159	Nut	1
75	UC-SE 1457	Suction Filter	1
76	UC-SE 1324	Suction Filter	1
77	40003.A0164	Adaptor c/w Bolts, Spring Washers & "O" Rings	1
78	13S.3	Star Washer	2
79	40003.A0165	Adaptor c/w Bolts, Spring Washers & "O" Rings	1
80	ESE 192	Bulkhead Adaptor complete	2
81	ESE 192-1	Adaptor	2
82	ESE 192-2	Nut	2
83	10151.A01	Pull Break Carrier Coupling	1
84	10152.A01	Pull Break Carrier Coupling	1
85	FSE 289	Steering Column c/w 2 Hex.Hd. Setscrews	1
86	CSE 182	Spacer	2
87	10521.A01	Replacement Element	1
88	10214.A01	Oil Filter	1
89	72S.5A	Backup Nut	2
90	PP 45-K	Dowty Seal	2
91	20064.A01	Hyd. Hose Return Manifold Assembly	1
92	T.D. 3894	Steering Rams	2
93	20026.A01	Hydraulic Tank Feed Pipe Assembly	1
94	20063.A01	Hydraulic Tank Return Pipe Assembly	1

HYDRAULIC CONTROL VALVE

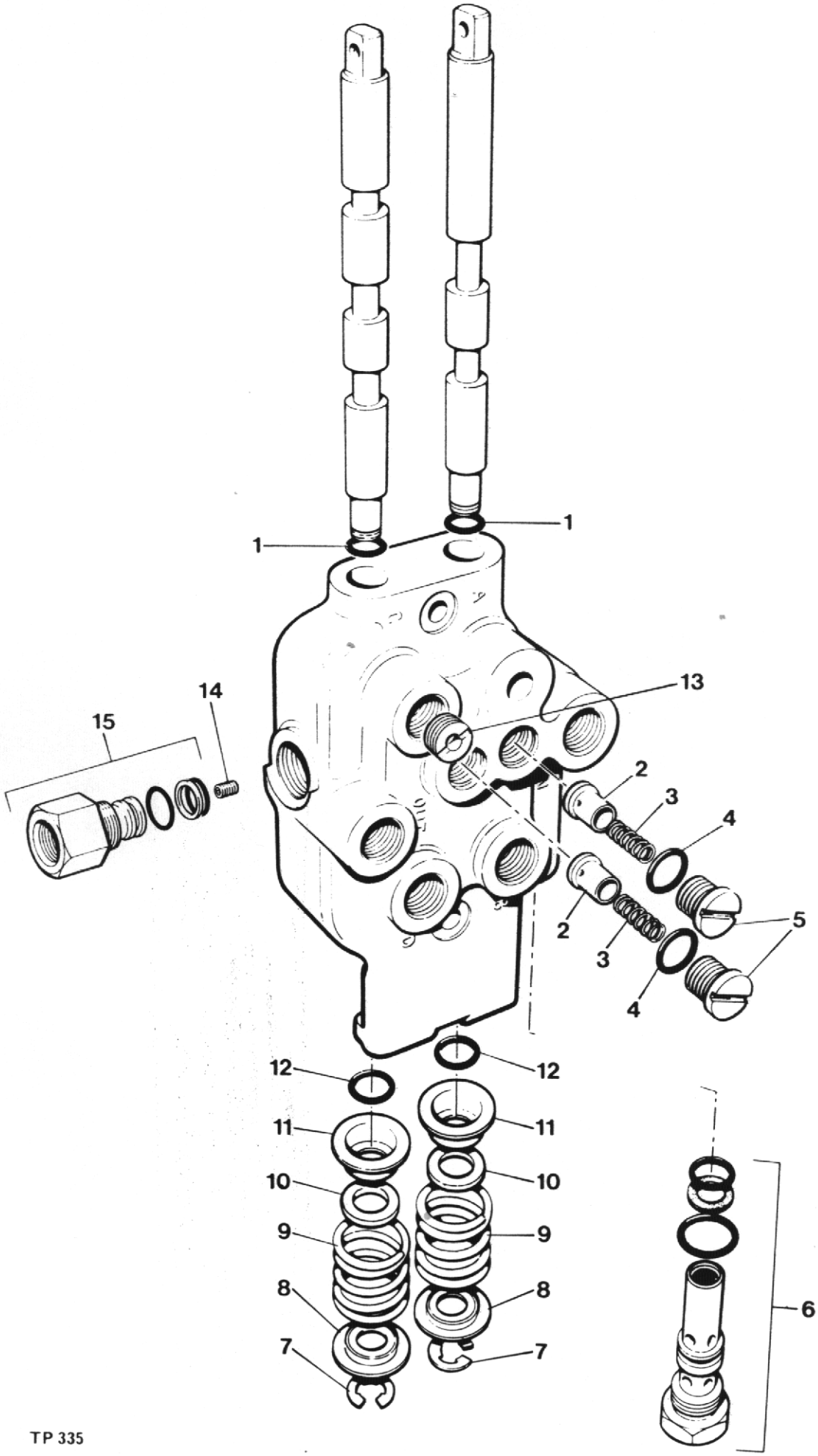


Item No.	Part No.	Description	Qty.
	30009.A02	Hydraulic Control Valve complete	1
1	30009.A0101	Port Plate (R.H.)	1
2	30009.A0114	Relief Valve Assembly (2500 p.s.i.)	1
3	30009.A0102	Four Way Valve Plain	3
4	16004-63	'O' Ring U.K. Std. No. 100-147-063	5
5	30009.A0109	'O' Ring	12
6	30009.A0104	Three Way Valve Plain	2
7	30009.A0108	Washer	6
8	30009.A0110	'O' Ring	6
9	30009.A0205	Port Plate (L.H.)	1
10	16003-12	'O' Ring U.K.Std. No. 100-146-012	5
11	30501-10	Washer, deep	5
12	16048-31	Washer	5
13	15546-8	Spring	5
14	15546-6	Washer, shallow	5
15	16124-50	Circlip	5
16	30501-12	Plunger	5
17	30501-13	Spring	5
18	16015-3	'O' Ring U.K. Std. No. 100-148-003	5
19	16101-203	Washer	5
20	30000-25	Body, Lift Check	5
21	30009.A0212	Stud	4
22	30009.A0107	Washer	8
23	30009.A0106	Nut	8

REAR SERVICE & CONTROLS



Item No.	Part No.	Description	Qty.
1	ESE 180	Control Lever	1
2	ESE 123	Control Lever	1
3	ESE 122	Control Lever Pivot Rod	1
4	ESE 124-1	Spacer	2
5	ESE 124-2	Spacer	1
6	ESE 120	Hydraulic Valve Bracket	1
7	11S.4C	Screw Hex.Hd. M10 x 25mm long	3
8	7S.4	Nut M10	3
9	10211.A01	Control Lever Knob	2
10	10288.A01	Label - Tow Hitch	1
11	10285.A01	Label - Trailer Tip	1
12	4-60-178	Split Link	2
13	44S.02B	Split Pin 3/32" dia	2
14	20056.A01	Tow Hitch Assembly	1
15	8S.7H	Bolt M20 x 60mm long	4
16	8S.7F	Bolt M20 x 50mm long	4
17	12S.8	Washer M20	16
18	7S.7A	Nut M20	8
19	35S.2E	Hose 3/8" BSP x 45" long	1
20	35S.2G	Hose 3/8" BSP x 36" long	1
21	T14J	Union	2
22	T14I	Seal	2
23	10151.A01	Pull Break Carrier Coupling	1
24	10152.A01	Pull Break Probe Coupling	1

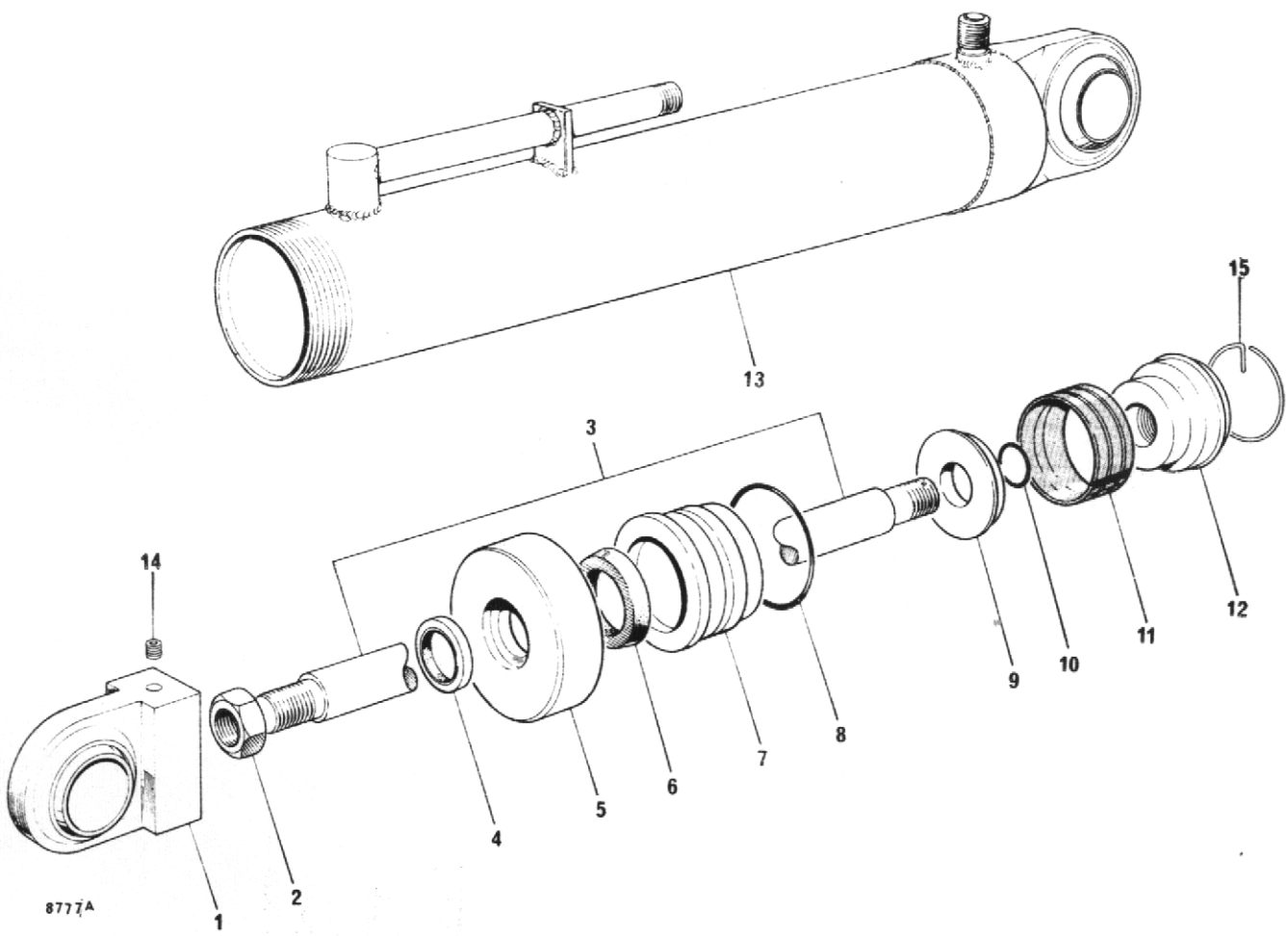


TP 335

HYDRAULIC CONTROL VALVE (Rear Services)

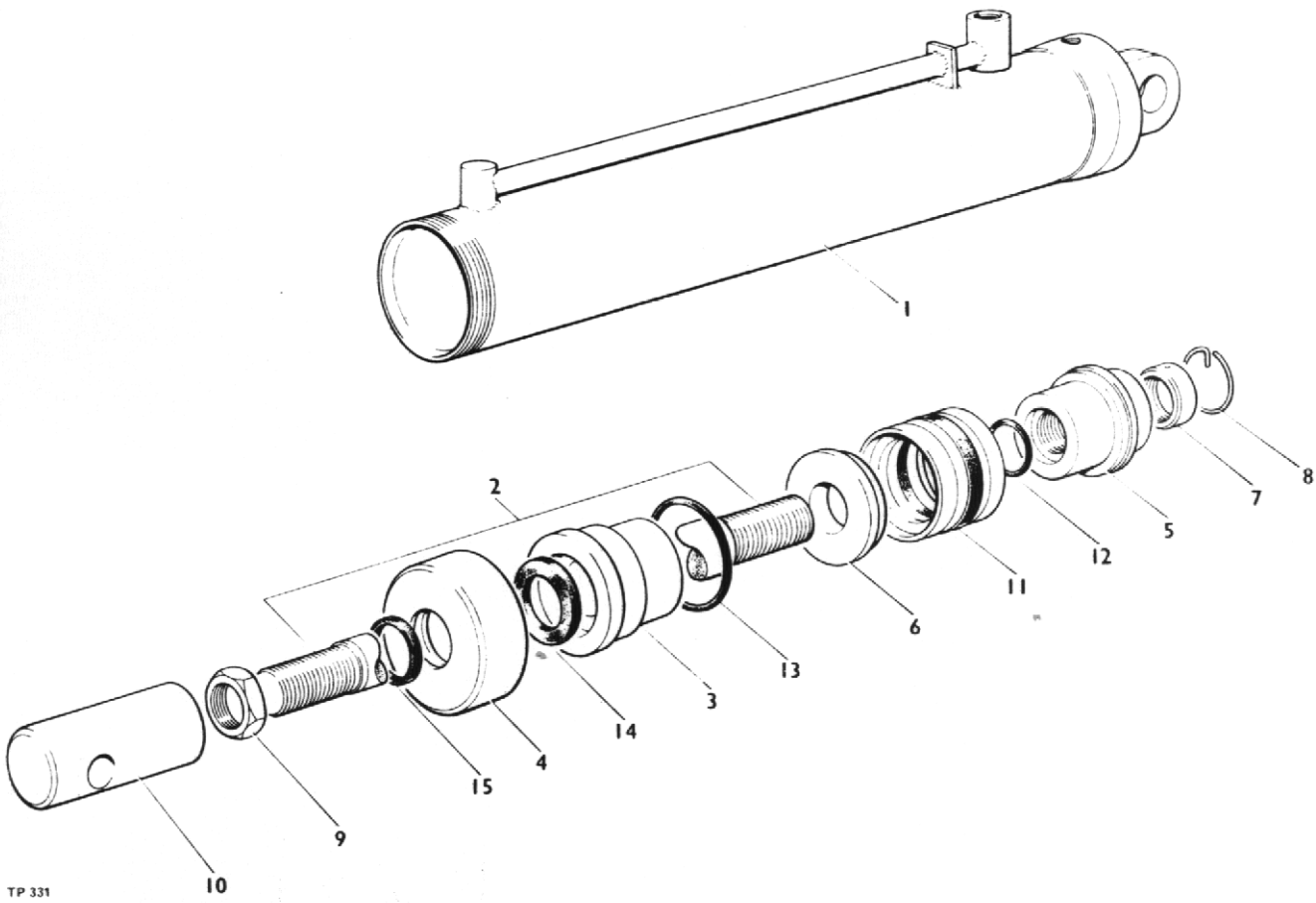
Item No.	Part No.	Description	Qty.
	305-021-AAA	Hydraulic Control Valve complete	1
1	100-147-063	'O' Ring	2
2	30501-12	Plunger	2
3	30501-13	Spring	2
4	100-146-010	'O' Ring	2
5	16227-9	Plug	2
6	320-180-SJA	Relief Valve Assembly (1750 p.s.i.)	1
7	16124-50	Circlip	2
8	15546-6	Washer, shallow	2
9	30501-39	Spring	2
10	16048-31	Washer	2
11	30501-10	Washer, deep	2
12	100-146-012	'O' Ring	2
13	100-138-107	Plug	1
14	300-024-004	1/16-27 NPTT Plug drilled .070D	1
15	30501-74	Pressure beyond plug assembly	1

STEERING RAM

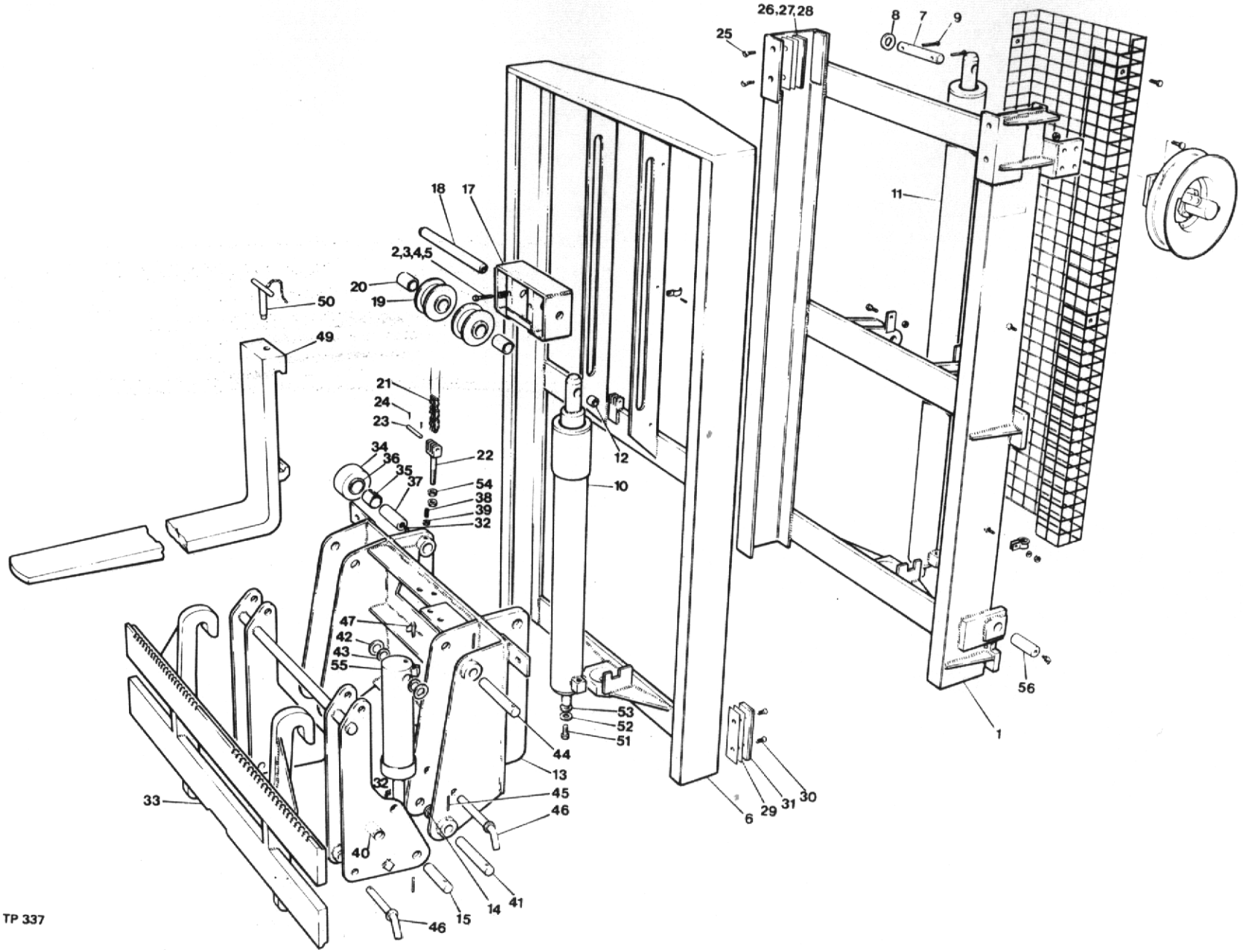


Item No.	Part No.	Description	Qty.
	TD3894	Ram complete (2 per machine)	
1	K1/11	Piston Rod Fitting	1
2	K1/19	Locknut	1
3	K1/2	Piston Rod	1
4	K1/18	Wiper	1
5	K1/4	Tube Cap	1
6	K1/17	Sleeve Seal	1
7	K1/5	Sleeve	1
8	K1/16	Sleeve 'O' Ring	1
9	K1/15	Backing Washer	1
10	K1/13	Piston 'O' Ring	1
11	K1/12	Piston Seal	1
12	K1/14	Piston Head	1
13	K1/20	Cylinder, Bosses & End Cap	1
14	K1/21	Grub Screw	1
15	K1/22	Spring Ring	1
	CSE 189	Seal Kit comprising items 4,6,8,10 & 11	1

MAST TILT CYLINDER



Item No.	Part No.	Description	Qty.
	30074.A01	Cylinder Complete	2
1	TD 8547-1	Cylinder Assembly	1
2	TD 9443	Piston Rod	1
3	TD 4903	Sleeve	1
4	TD 4902	Tube Cap	1
5	TD 6038	Piston Head	1
6	TD 6039	Backing Washer	1
7	TD 1737	Locknut	1
8	TD 7239	Locking Wire	1
9		Locknut 1½" B.S.F.	1
10	TD 9444	Rod End	1
11	R10984 SDW	Piston Seal	1
12	BS218	Piston 'O' Ring	1
13	BS232	Sleeve 'O' Ring	1
14	R5604	Sleeve Seal	1
15	PP 58-17	Wiper Seal	1
	FSE 477	Seal Kit (comprising items 11-15 inclusive)	1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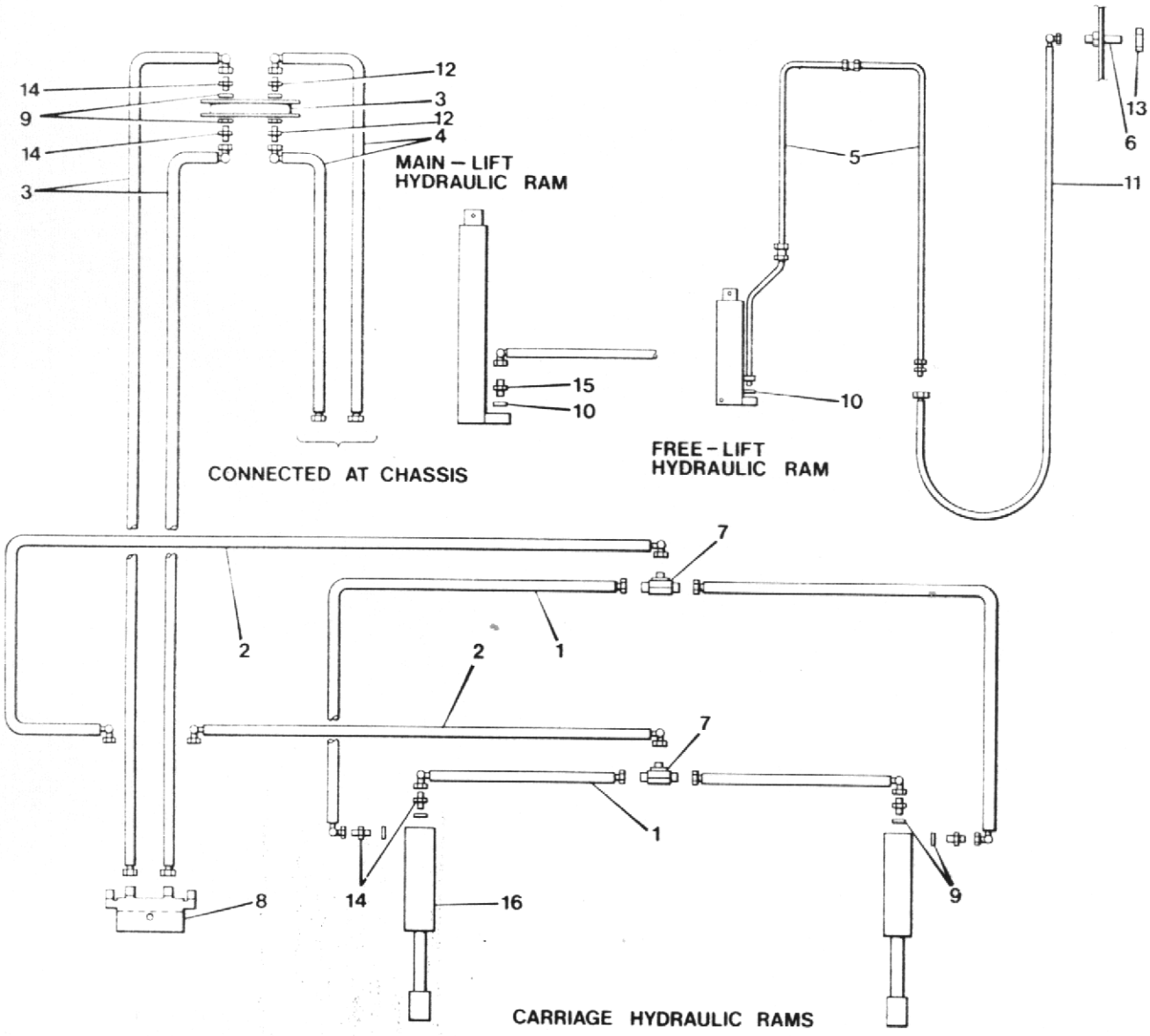
TP 337

12 FT. AGRICULTURAL MAST

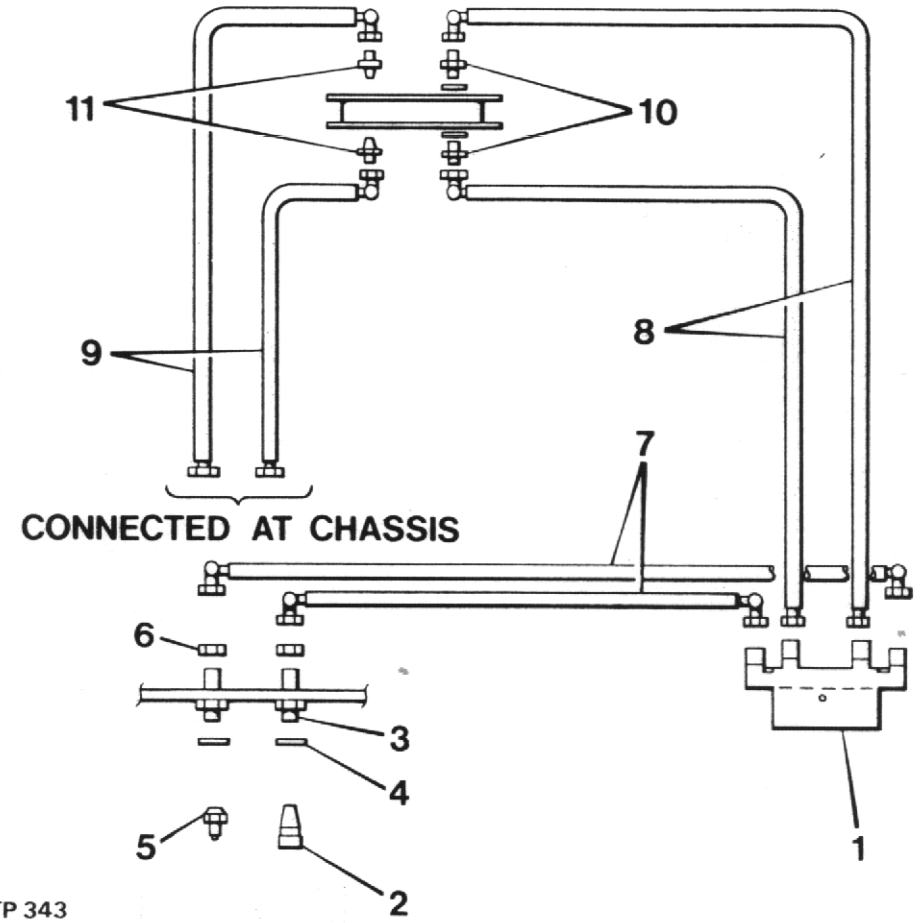
Item No.	Part No.	Description	Qty.
	40018.A01	Free Lift Mast Assembly	
1	40016.A01	Outer Mast Assembly	1
2	11S.4H	Hex.Hd. Setscrew M10 x 50mm long	2
3	13S.4	Shakeproof Washer 10mm dia	2
4	56S.4	Half Nut M10	2
5	10204.A01	Washer	2
6	40017.A01	Inner Mast Assembly	1
7	10217.A01	Pin - Lift Ram	1
8	10S.8	Plain Washer	2
9	44S.5E	Split Pin 3/16" dia. x 1½" long	1
10	30120.A01	Free Lift Ram	1
11	30114.A01	Main Lift Ram	1
12	10218.A01	Ram Mounting Bush (for use when converting rams)	1
13	40040.A01	Carriage Assembly	1
14	10212.A01	Bush	4
15	73S.2N	Spacer Tube	2
16	30023.A01	Work Arm	1
17	30031.A01	Chain Pulley Yoke	1
18	10095.A01	Chain Pulley Pivot Pin	1
19	FSE 196	Chain Pulley	2
20	FSE 348	Chain Pulley Bush	2
	10029.A01	Lift Chain Assembly (comprising items 21-24)	2
21	10029.A0101	Chain	2
22	10029.A0102	End Link	2
23	10029.A0103	Link Pin	4
24	10029.A0104	Split Pin	8
25	11S.3C	Hex.Hd. Setscrew M8 x 25mm long	4
	20023.A01	Rubbing Strip Assembly (comprising items 26-28)	
26	20023.A0101	Brass Bearing Plate	2
27	20023.A0102	Steel Mounting Plate	2
28	58S.1	Rivet	6
29	10054.A01	Packing Shim	A/R
30	52S.03D	Skt.Screw M8 x 20mm long	8
31	10052.A01	Rubbing Strip	2
32	TST	Grease Nipple	8
33	30021.A01	Fork Carriage Assembly	1
34	10192.A01	Roller	4
35	10150.A02	Roller Bush	4
36	10097.A01	Spacer	4
37	10110.A01	Carriage Roller Pin	4
38	57S.6H1	Grub Screw Cup Pt. M10 x 25mm long	4
39	56S.4	Half Nut M10	4
40	4-35-29B	Pivot Bush	4
41	10089.A01	Pivot Pin	4
42	10091.A01	Spacer	4
43	10090.A01	Spacer	4
44	10066.A01	Pivot Pin	2
45	54S.07S	Slotted Tubular Pin	4
46	20041.A01	Location Pin Assembly	2
47	M9B	Lynch Pin & Chain	4
48	ESE 185	Carriage Guard	1
49	FSE 117	Fork	2
50	E288-15	Peg & Chain & Assembly	2
51	11S.5D	Hex.Hd. Setscrew M12 x 20mm long	2
52	10204.A01	Washer	2
53	13S.5	Shakeproof Washer	2
54	2S.6	Nut 5/8" B.S.F	4
55	20043.A0116	Hydraulic Cylinder	2
56	FSE 204	Pivot Pin	2
57	DM 205	Label - Load Plate (not illustrated)	1



HYDRAULICS – 12FT AGRICULTURAL MAST

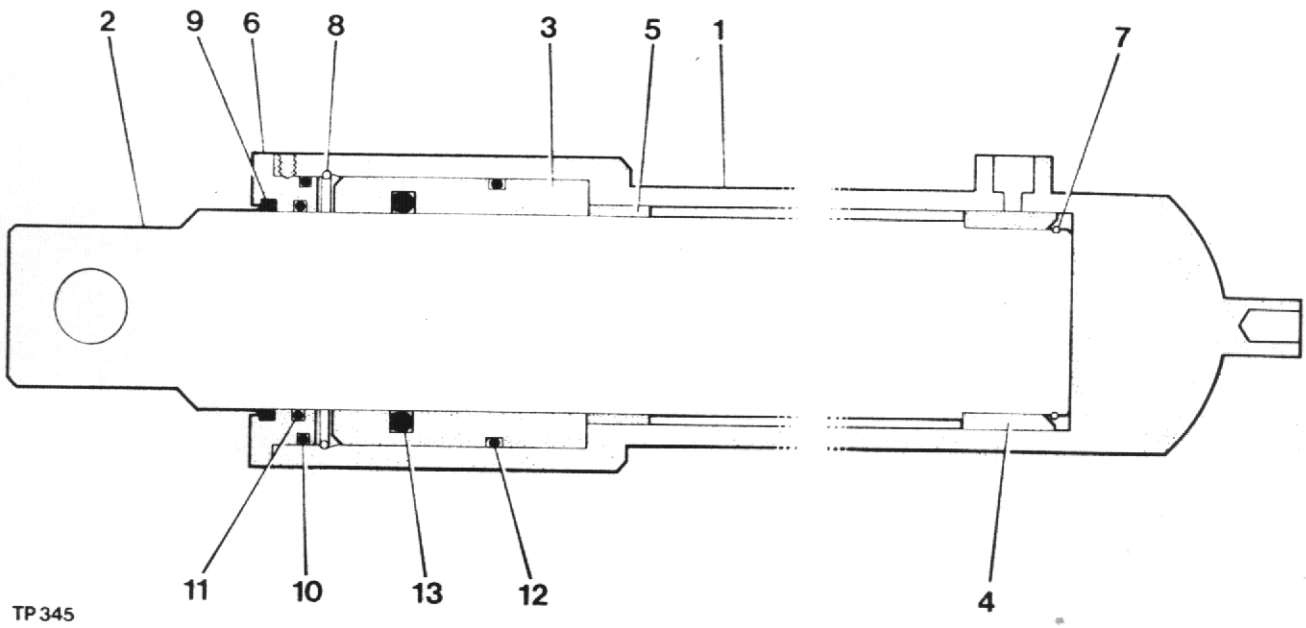
Item No.	Part No.	Description	Qty.
1	31S.2SS	Hose	4
2	36S.2Y	Hose	2
3	10170.A01	Hosereel & Hose	1
4	31S.2F	Hose	2
5	20051.A01	Hydraulic Pipe Assembly	1
6	H10009-8	Bulkhead Adaptor	1
7	2ST 72M	Tee Connector	2
8	10199.A01	Hose Swivel	1
9	T14I	Dowty Seal	8
10	T14H	Dowty Seal	2
11	31S.3UU	Hose	1
12	ESE 275	Male Stud Adaptor	2
13	H10010-8	Nut	1
14	T14J	Male/Male Adaptor	6
15	T14K	Male/Male Adaptor	1
16	20047.A0116	Hydraulic Ram	2

HYDRAULICS - 3RD SERVICE - 12 FT. AGRICULTURAL MAST



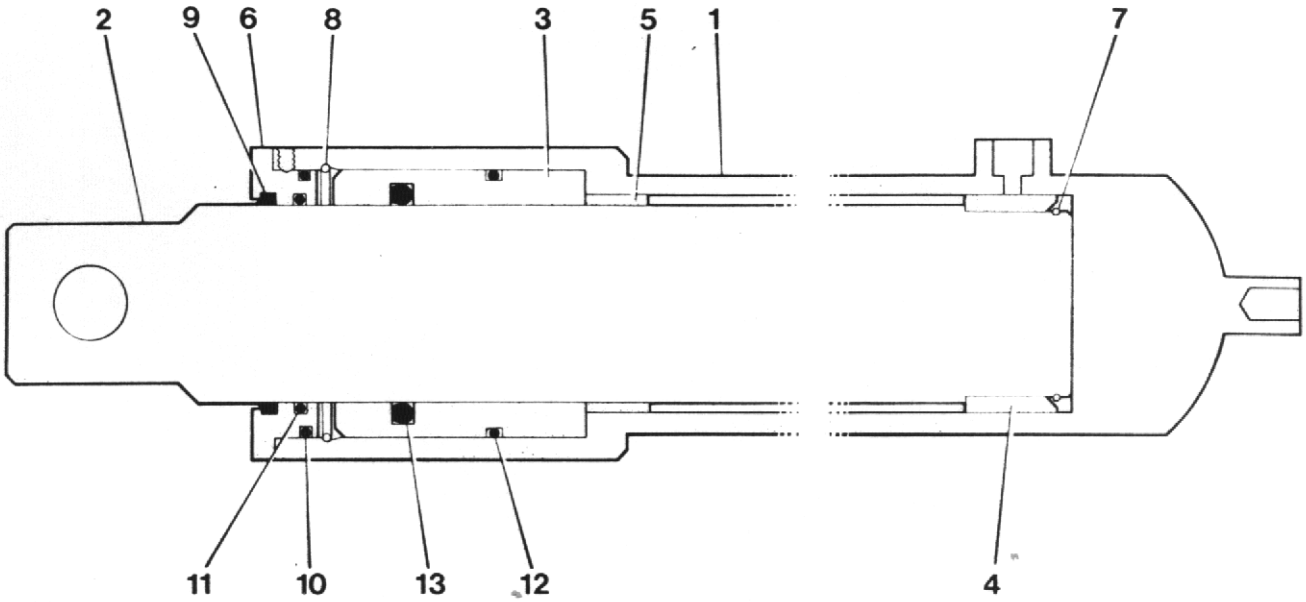
Item No.	Part No.	Description	Qty.
1	10199.A01	Hose Swivel	1
2	10151.A01	Pull Break Carrier Coupling	1
3	ESE 192-1	Bulkhead Adaptor	2
4	T14I	Dowty Seal	2
5	10152.A01	Pull Break Probe Coupling	1
6	ESE 192-2	Nut	2
7	36S.2X	Hose	2
8	10170.A02	Hosereel & Hose	1
9	31S.2F	Hose	2
10	T14J	Male Stud Adaptor (60^{o} Cone)	2
11	ESE 275	Male Stud Adaptor (60^{o} Cone)	2

MAIN LIFT RAM

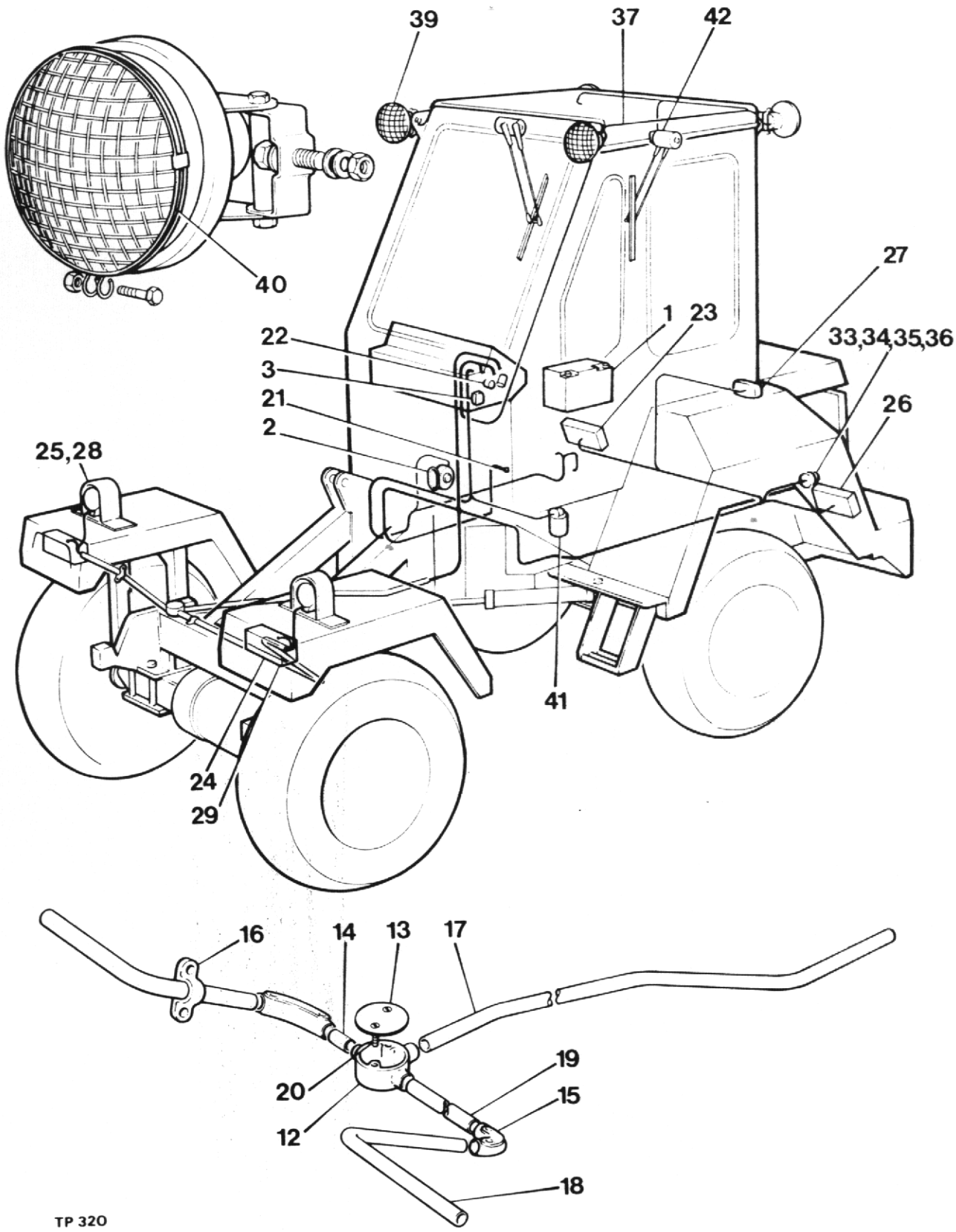


Item No.	Part No.	Description	Qty.
	30114.A01	Ram Complete	
1	EH573001/7/10/11	Cylinder Assembly	1
2	EH573002/8/9	Piston Rod	1
3	EH573003	Gland	1
4	EH573004	Bearing Ring	1
5	EH573005	Piston Spacer (if used)	1
6	EH573006	Wiper Cap	1
7	EH573007	Circlip Piston Rod	1
8	EH573008	Circlip Collar	1
9	WRB 31	Wiper Ring	1
10	BS 242	Wiper Cap Outer "O" Ring	1
11	BS 232	Wiper Cap Inner "O" Ring	1
12	BS 344	Gland "O" Ring	1
13	RI 4224	Gland Seal	1

FREE LIFT RAM



Item No.	Part No.	Description	Qty.
	30120.A01	Ram Complete	
1	EH572001/7/10/11	Cylinder Assembly	1
2	EH572002/8/9	Piston Rod	1
3	EH572003	Gland	1
4	EH572004	Bearing Ring	1
5	EH572005	Piston Spacer (if used)	1
6	EH572006	Wiper Cap	1
7	EH572007	Circlip Piston Rod	1
8	EH572008	Circlip Collar	1
9	WRB 37	Wiper Ring	1
10	BS 246	Wiper Cap Outer "O" Ring	1
11	BS 238	Wiper Cap Inner "O" Ring	1
12	BS 348	Gland "O" Ring	1
13	RI 4258	Gland Seal	1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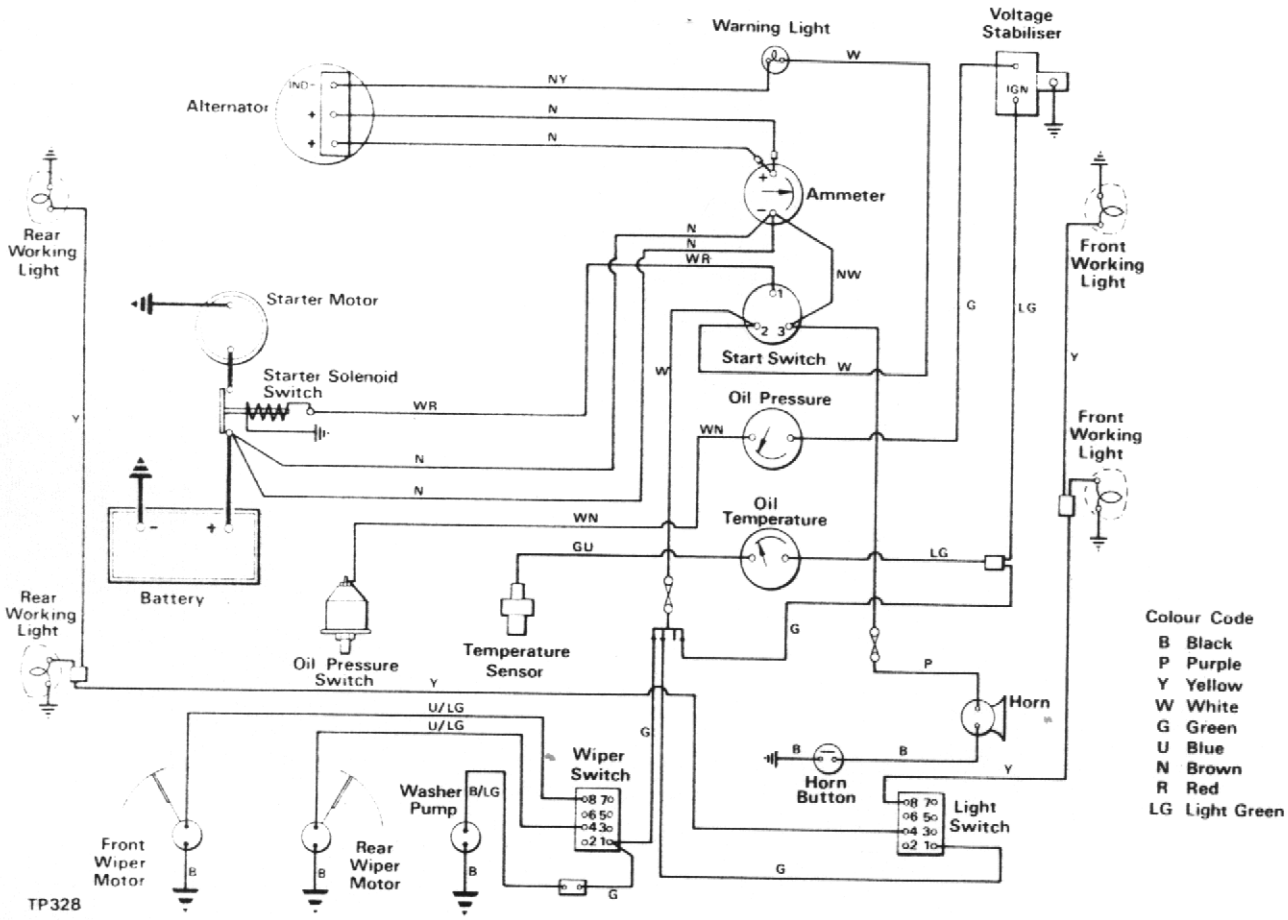
TP 320

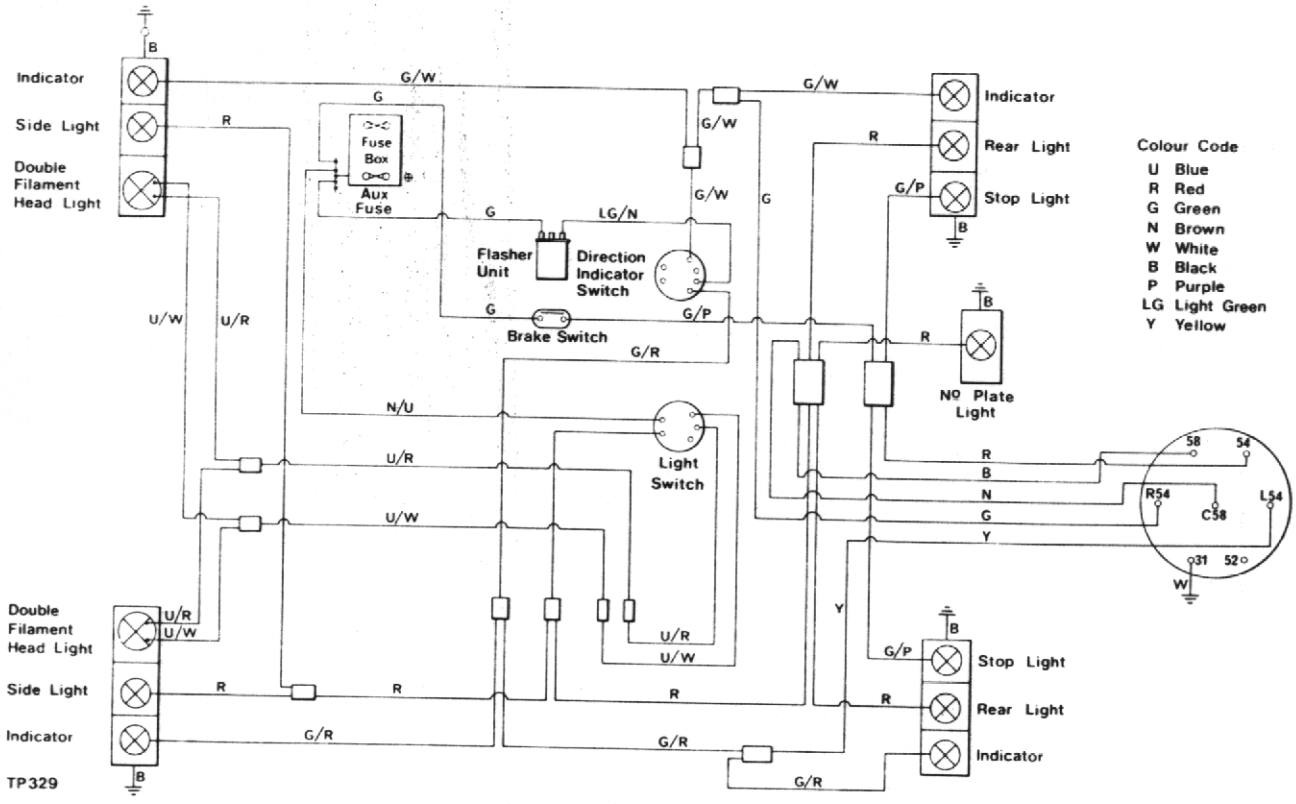
ELECTRICS

Item No.	Part No.	Description	Qty.
1	CP 13/11	Battery	1
2	69219	Horn	1
3	FSE 286	Fuse Box 12V	1
4	10027.A01	Positive Cable (not illustrated)	1
5	10028.A01	Negative Cable (not illustrated)	1
6	10026.A01	Earth Strap (not illustrated)	2
7	11S.3B	Screw Hex.Hd. M8 x 20mm long (not illustrated)	2
8	7S.3A	Nut M8 (not illustrated)	1
9	17S.4A	Spring Washer 8mm. (not illustrated)	1
10	69S.2C	Bolt 5/16" UNC x 3/4" long (not illustrated)	1
11	30075.A0119	Cup for Start Loom to Alternator (not illustrated)	1
	30019.A02	Conduit Assembly comprising items 12-20	1
12	30019.A0201	Circular Junction Box	1
13	30019.A0202	Cover	1
14	30019.A0203	Conduit	1
15	30019.A0204	Inspection Elbow	2
16	30019.A0207	Spacer Bar Saddle	10
17	30019.A0208	Conduit	1
18	30019.A0209	Conduit	2
19	30019.A0210	Conduit	1
20	46S.6D	Plastic Screw	2
21	FSE 337	Brake Switch	1
22	35020	Flasher Unit	1
23	FSE 334	Tail & Flasher Light	2
24	FSE 333	Side & Flasher Light	2
25	172040	Headlight	2
26	ESE 176	Rear Light Cowl Assembly	2
27	53837	Number Plate Light	1
28	ESE 209	Headlight Mounting Plate	2
29	ESE 175-1	Front Lamp Mounting Plate	2
30	FSE 449	Self Adhesive Clip (not illustrated)	A/R
31	FSE 448	Self Adhesive Clip (not illustrated)	A/R
32	SAC 16	Self Adhesive Clip (not illustrated)	A/R
33	S 5018	7-Pin Trailer Socket	1
34	16S.6F	Setscrew Pan Hd. M5 x 35mm long	3
35	7S.1A	Nut M5	3
36	17S.2	Spring Washer M5	3
37	20021.A01	Wiring Harness	1
38	FSE 448	Wiring Harness Clips	A/R
39	20013.A0112	Working Light	4
40	10216.A01	Lamp Guard	4
41	10129.A01	Washer Pump	1
42	20013.A0120	Wiper Motors	2

STARTING CIRCUIT



LIGHTING CIRCUIT



WINGET

NEWAGE 250, 350 & 400 SERIES AXLE SERVICE MANUAL

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Introduction

Winget Limited gratefully acknowledge the assistance given by Newage Transmissions Limited in the preparation of this manual, however neither Winget Limited or Newage Transmissions can be held responsible for any errors or ommissions.

The procedures described within this manual should enable experienced service personel to strip, repair and re-build Newage 250, 350 & 400 series axles fitted to Winget Site Dumpers and Forklifts in a safe and competant manner. The procedures are not intended to be used by personnel who are unfamiliar with the product or mechanically inexperienced.

It is assumed that personnel are aware of the Health and Safety Regulations which should be applied but the following should act as a reminder.

Whenever possible any repairs or service should be carried out in a clean environment. If work must be carried out on site or in the field steps should be taken to ensure that dirt or foreign materials cannot enter the assembly.

Ensure all work tools are in good condition and only use the correct tool for the job in hand.

Always wear safety spectacles when using soft or hard faced hammers, chisels, drifts or when using air tools. Wear safety spectacles when cleaning components or when grinding.

Do not misuse air lines and be aware of the damage compressed air can cause if misused.

Always make sure lifting equipment is in good condition and the Safe Working Load exceeds the weight of the component to be lifted.

Always use suitable supports i.e. axle stands or baulks of timber in conjuction with hydraulic jacks etc. Never rely on hydraulic jacks alone to support a machine.

Be aware of hot surface temperatures and take care when draining hot oils. Always dispose of waste oils in accordance with local and national regulations.

Whenever possible always disconnect the battery or battery isolator when working on the machine to prevent electrical shorts and unauthorised starting.

Refer to the operators handbook for a guide to the correct sequence for assembling components and sub-assemblies.

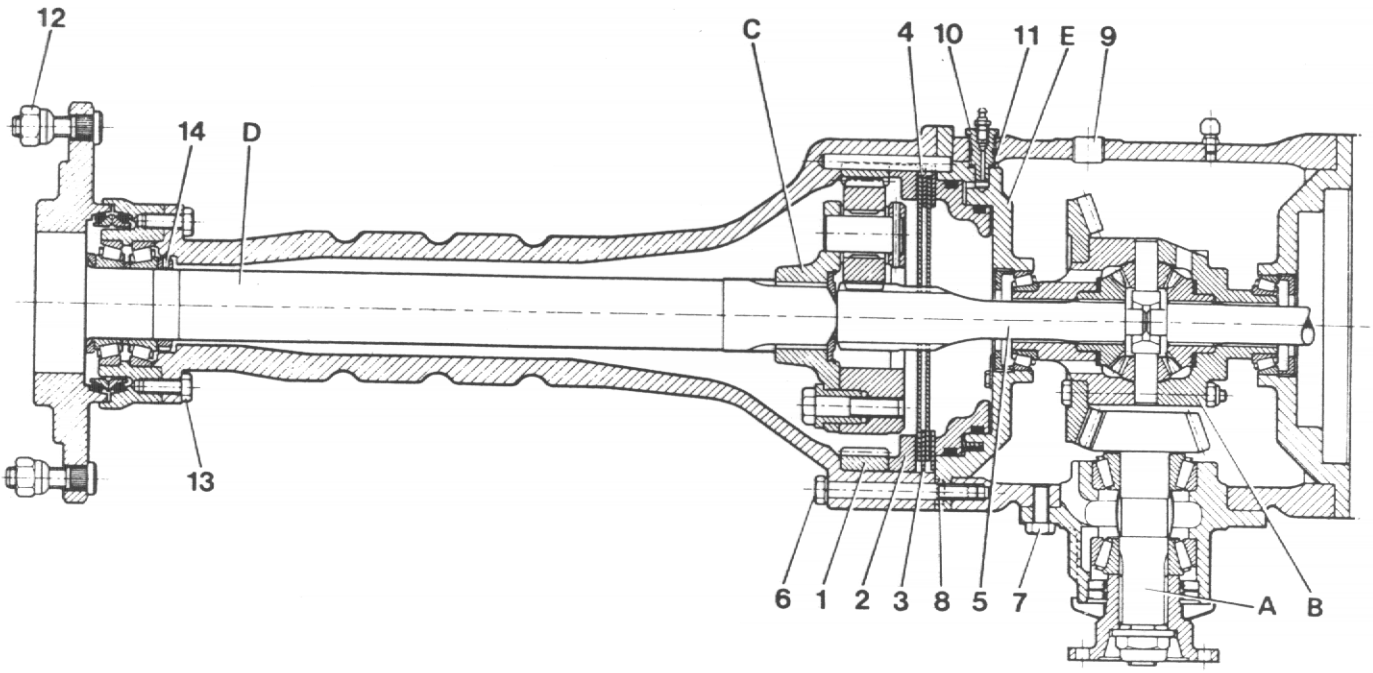
Oils, fuels, silicone sealer etc can cause skin diseases if allowed to contaminate the skin. Always apply barrier creams, wear suitable protective clothing or when contamination is unavoidable clean the area with soap and water as soon as possible. Do not use thinners or other solvents to clean skin.

Health and Safety is a matter of common sense. If common sense is applied correctly the risk of accidents can be reduced.

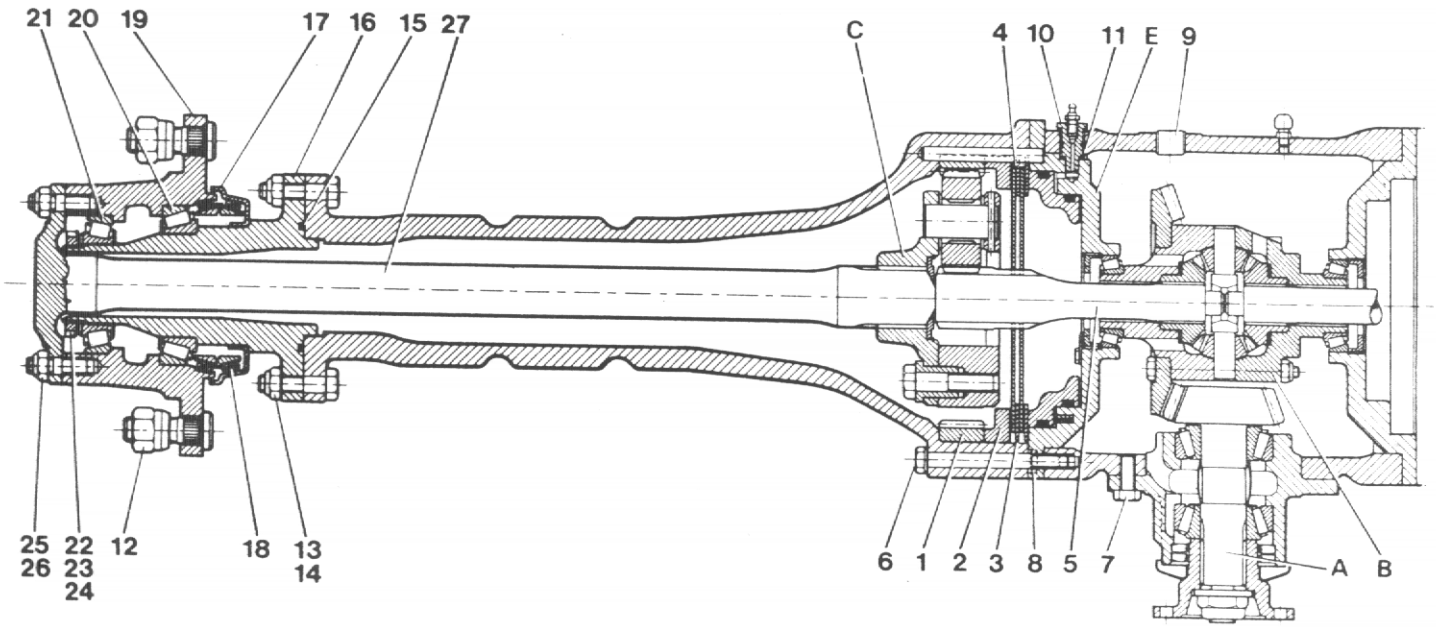
Spares for Newage Axles fitted to Winget Equipment can only be obtained from Winget Limited or one of our authorised distributors and not from Newage Transmissions Limited. Always quote your machines serial number and model together with axle serial number and model when ordering spare parts.

250, 350 & 400 Series axles are designed to operate under arduous conditions and providing they are regularly and correctly maintained they will provide long trouble free service.

Whilst every effort is made to ensure the contents of this manual are accurate Winget Limited and Newage Transmissions reserve the right to alter specification without prior notification and certain sections of this manual may then no longer apply.



TYPICAL AXLE 250 & 400 SERIES



TYPICAL AXLE 350 SERIES

FIG. A

DISMANTLING AND ASSEMBLING AXLE

Pinion Cartridge

(See Fig. A)

1. Remove drain plug (9) and drain axle oil, remove screws (7) and pull out cartridge (A), using easing screws if required.

(See Fig. B)

2. Remove nut (5) in coupling flange, (3) holding flange with special tool (AA). Remove flange and knock out pinion (2).

3. If front bearing is damaged or worn, remove cone and roller assembly by splitting cage and using a bearing puller to remove the cone.

4. If required, bearing cups (7) and oil seals (9) can be drifted out from the pinion cartridge.

   To re-assemble with new pinion, bearings, seals etc., the procedure is as follows:—

5. Press bearing cups and oil seals into cartridge.

6. Press front pinion bearing to pinion shaft.

7. Pack gap between seal lips ¾ way round with grease.

8. Assemble pinion to cartridge, push on spacer (8) and tail bearing drive flange, washer and nut. (Check drive flange, seal wear surface is free from damage.)

NOTE: If new bearings are fitted, a new collapsible spacer (8) must be fitted.

9. Tighten nut (5) holding coupling flange with special tool, until bearing spacer collapses 21 kpm (150 lb. ft. min.) and continue to tighten until all pinion end float is removed.

10. Turn nut until a drag is felt when turning the coupling flange and check the bearing preload using a piece of string wound round the flange and a spring balance (see Fig. C).

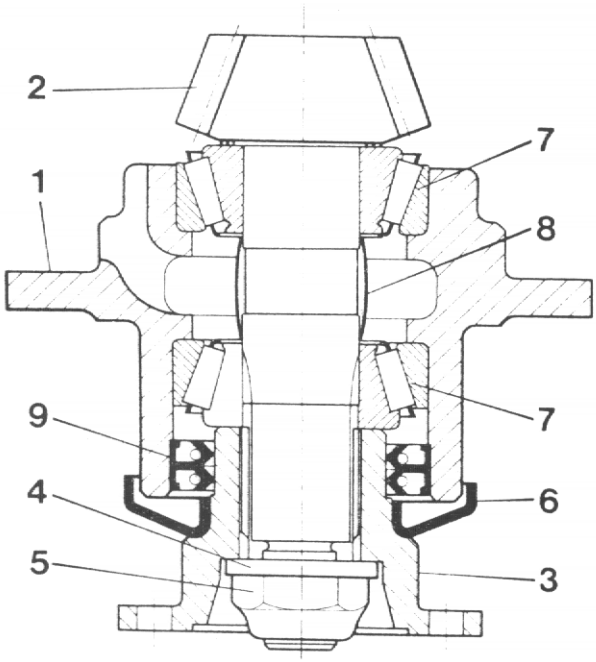


FIG. B

FIG. C

11. Pull the spring balance until the pinion turns smoothly and note the reading (should be 3.5—5.5 kg) for new bearings and (1.75—2.75 kg) for old bearings on the 250 Series and 350 Series axles, and 4.5 — 6.5 kg for old bearings on the 400 Series axle.

12. Gradually tighten nut and re-check until correct reading is obtained.

NOTE: Above preload figures should not be exceeded.

13. Assemble pinion cartridge to centre casing, applying sealer between shims, centre case flange and cartridge flange.

NOTE: Ensure cartridge oil slot is in correct position (see Fig. D).

14. Tighten screws holding cartridge to main case.

Crownwheel and Differential (Ref. B)
(See Fig.A)

1. Drain axle oil, remove screws (6) and pull off left hand axle arm assembly.
2. Remove brake feed and bleed adaptors (10).
3. Slacken screws (8) and remove brake cylinder (E) using easing screws if required.
4. Lift out crownwheel and differential assembly (B).
5. Slacken nuts (11) (See Fig. E), remove crownwheel and split differential unit.
6. Thrust washers (5) and (6) should be replaced if they show signs of damage or excessive wear.
7. Check all internal rubbing surfaces of diff. cases (1) for signs of wear.
8. Diff. bearing cone and roller assys. (9) can be pulled or drifted off diff. case halves.

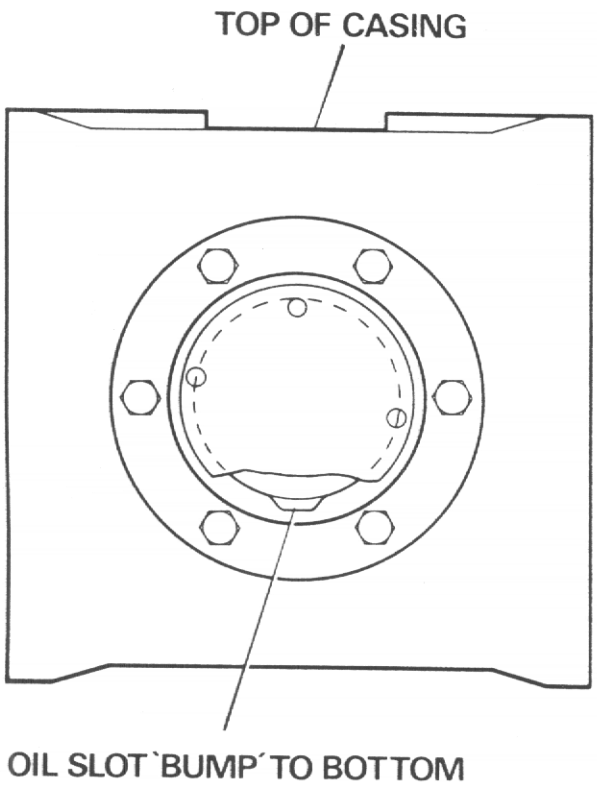


FIG. D

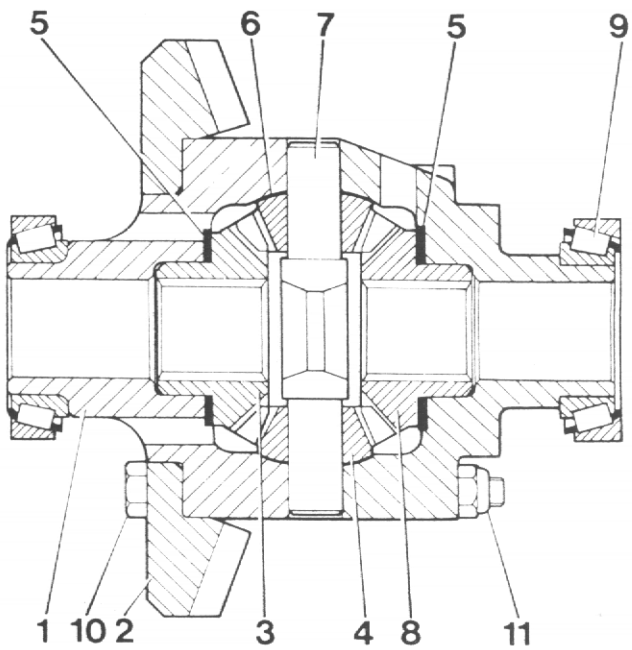


FIG. E

9. Re-assemble differential unit, ensuring that typed marks on diff. halves are aligned.
10. Assemble crownwheel, bolts (10) and torque up nuts (11).
11. Engage a sun gear (7) in a diff. gear and ensure that differential gears turn freely.
12. Press on new diff. bearings if required.
13. If diff. bearings are not replaced, then the diff. can be put back in the centre case and the brake cylinder replaced, without adjusting the bearing nuts (6). (See Fig. F)

14. If the diff. bearings are replaced, then it will be necessary to reset the crownwheel backlash and the bearing preload. (See Crownwheel and Pinion Set Up.)

15. Brake cylinder, centre case and axle arm flange faces should be cleaned, oil sealer scraped off and new sealer applied prior to re-assembly.

16. Replace brake cylinder and axle arm assembly, all screws and bolts being tightened to the correct torque.

Setting up Crownwheel and Pinion

1. Assemble pinion cartridge as described previously.

2. Assemble crownwheel and diff. assembly as described.

3. Assemble and seal one cylinder to main casing using screw (8) (See Fig.A). Push in diff. bearing cup and screw in lock ring (6) (See Fig. F).

4. Stand centre case on cylinder end and lower in diff. assembly, locating the diff. bearing halves together and ensuring that crownwheel and pinion are in mesh.

5. Seal and fit other brake cylinder and assemble bearing cup and lock ring.

6. Tighten lock ring until bearing end float is removed.

7. On pinion cartridge use a depth gauge to measure dimension 'X' from front face of pinion to cartridge flange (see Fig.G).

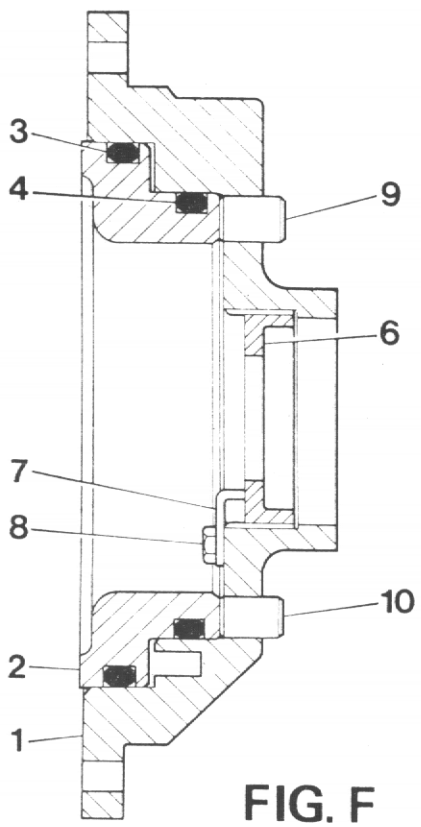


FIG. F

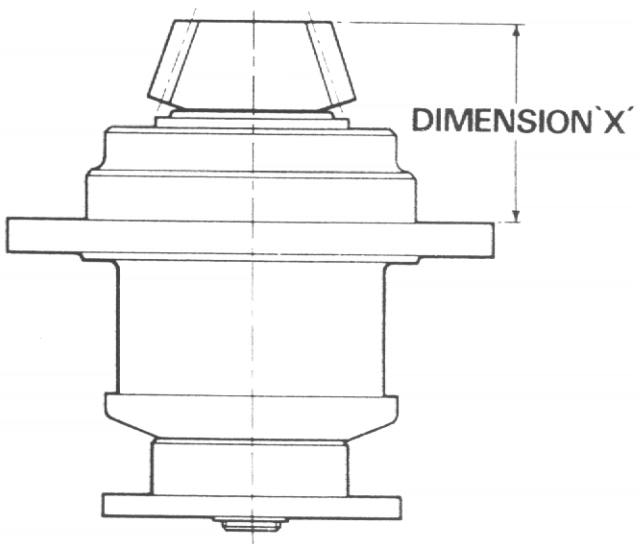


FIG. G

8. On centre case use a depth gauge to measure dimension 'Y' from pinion cartridge flange surface to ground diameter on differential casing (see Fig. H).

9. Read pinion mounting distance (M.D.) from front face of pinion. Pinion head thickness = (see front face of pinion), diff. case ground diameter = 129.50 mm.on the 400 series and 108.76 mm. on the 250 series and 108.76mm on the 350 Series. Calculate as follows:

$$\left(\text{M.D.} - \text{Head thickness} - \frac{\text{Diff. case dia.}}{2}\right) = \text{'A'}$$

('Y' – 'X') = 'B'

('A' – 'B') = Shim thickness to be placed between pinion cartridge flange and centre case flange.

10. Select shims, place on pinion cartridge and assemble cartridge to centre casing.

NOTE: It is required to know the spring balance reading required to turn pinion in its bearings, as described previously.

11. Adjust diff. bearing lock rings to give correct backlash between crownwheel and pinion. (See Page 12)

This can be measured by using a dial gauge with its pointer in a coupling flange hole (see Fig. J).

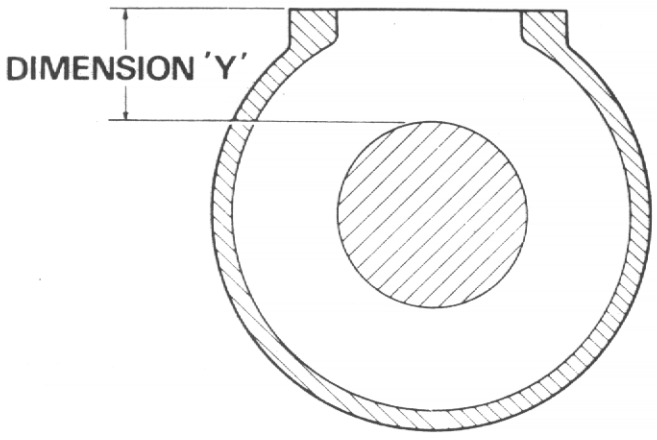


FIG. H

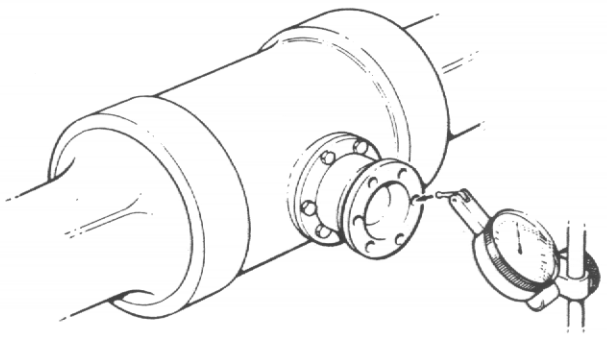


FIG. J

12. Tighten lock rings equally at each end of the differential to preload the bearings. The preload can be checked by turning the pinion coupling flange by means of string and spring balance as previously described. (Check that backlash is maintained.)

13. The additional spring balance load for the diff. bearings is shown.

14. Slacken and remove screws holding pinion cartridge in place and pull out cartridge. Brush on some paint, Engineers Blue etc. to a few crownwheel teeth and replace the pinion cartridge.

15. Turn the coupling flange a few turns in both directions then slacken screws and lift out.

16. Examine the contact on both sides of the crownwheel teeth and check that it is similar to that shown in fig. S and is similar to original factory marking shown on teeth.

17. If marking is satisfactory, replace pinion cartridge with sealer on flange surfaces and torque up screws.

(See Fig. F)

18. Put lock tabs (7) in place in cylinders and tighten screws (8). (Ensure that screws have locking compound applied.)

19. Bend over locking tabs into slots in lock rings (6).

Planetary Gears (Ref. C)

1. Drain axle oil and remove axle arm as explained previously.

(See Fig. A)

2. Lift out sun shaft (5), brake plates (2, 3 & 4) and planetary assembly.

(See Fig. K)

3. Check planet gear (3) end float using feelers. (Should not be greater than 2mm.)

4. Remove lock wire where used, slacken bolts (7) and tap bolt heads to split planetary assembly.

5. Lift off planet gears (3), thrust washers (5) and needle bearings (9).

6. Inspect all parts for wear or damage and replace if required.

7. If planet pins (4) are worn, remove by drifting out spring pin (10), and push planet pin from hole in planet carrier (1).

NOTE: On re-assembly, tap in spring pin until flush with outside of planet carrier and peen over edge of hole.

8. To assemble, place gears, washers, bearings etc. on planet pins and locate carrier drive flange (2) on planet pins and push both halves together.

9. Push dowels (6) home, tighten bolts and fit lock wire if required.

(See Fig. A)

10. If annulus (1) shows signs of wear, remove using puller (BB) and fit new part. (Ensure that new annulus is fully home in its location bore.)

11. Check axle shaft (1) (see Figs. L & N), splines for wear or damage and if satisfactory, locate planetary on splines.

12. Re-assemble sun shaft, brake plates, etc. clean axle arm and brake cylinder flange faces, re-seal and assemble axle arm as previously described.

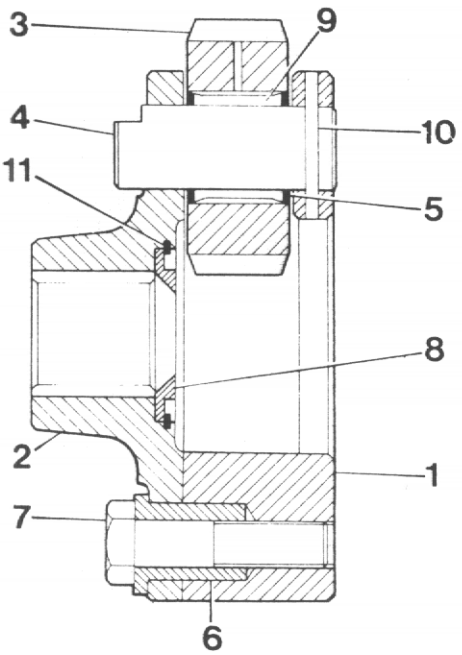


FIG. K

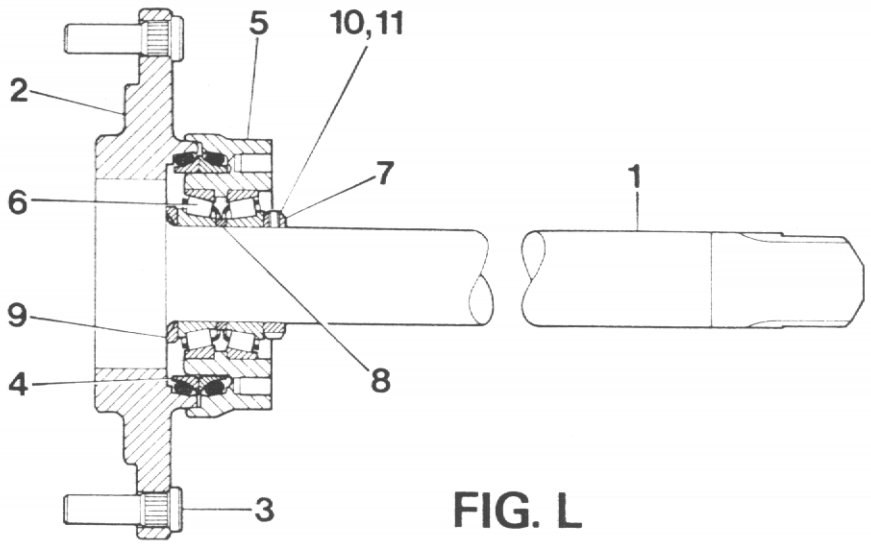


FIG. L

Brakes

1. The dismantling procedure is the same as for the planetary gears.

2. When the sintered plates and the fixed plates are removed from the axle arm, examine both for excess wear. The thickness of the sintered plate should not be less than 4mm. The thickness of the fixed plate should not be less than 2mm.

3. To check the piston/cylinder assembly it is not essential to remove the cylinder from the centre case, but if required, remove brake feed and bleed fittings (10), screws, (8) (see Fig. A) and lift out cylinder from centre case using easing screws if required.

(See Fig. F)

4. Pull the piston (2) from the cylinder and examine the seals (3 & 4) and cylinder walls for signs of damage.

5. When refitting the piston to the cylinder ensure that the 3 springs (5) are in place in their holes in the rear of the cylinder.

6. Clean and seal cylinder and centre case flange surfaces and bolt cylinder in place with screws (8). (See Fig. A)

7. Examine brake plate splines for damage before assembling to sun shaft.

NOTE: When plates are assembled to sun shaft, ensure that holes line up to ensure an oil passage through the plates.

8. Assemble all brake plates and axle arm as previously described.

9. Re-fit, brake bleed and feed adaptors (10) if removed, ensuring that sealing washer (11) is properly located. (See Fig. A)

IMPORTANT NOTE

The axle utilises a hydraulic braking system and 2 different types of hydraulic fluid are used.

1. A conventional synthetic brake fluid system; (fluid to SAE J1703) the fluid is contained in a conventional master cylinder reservoir.
(Note: Piston/cylinder seals 3 & 4 (See Fig. F) will be blue in colour).
2. A mineral brake fluid system; the fluid is contained in the vehicle hydraulic tank.
(Note: Piston/cylinder seals 3 & 4 (See Fig. F) will be black in colour).

For the conventional brake fluid system, the following note applies;

IMPORTANT
It is essential that all cylinder bores, pistons, and seals, are kept clean and free from all lubricating oils. The seals can be lightly coated with brake fluid to SAE J1703 prior to assembly.

For the mineral fluid system, the following note applies;

IMPORTANT
It is essential that all cylinder bores, pistons, and seals are kept clean prior to assembly. They may be coated with one of the MINERAL hydraulic oils listed. They MUST NOT be coated with standard "vegetable" based fluid (SAE J1703).

Axle Shaft Assembly (400 series axle)
(See Fig. A)
1. Slacken and remove screws (13) holding assembly to axle arm.

2. Tap rear of wheel flange to remove shaft assembly from axle arm.

(See Fig. L)
3. Slacken screw (11) in shaft locking ring (7) and unscrew locking ring using special tool (CC).

4. Tap seal housing (5) to remove from axle shaft.

5. Inspect bearings, oil seals and shaft for signs of wear or damage.

6. If a new oil seal is required, it is advisable to fit using the special tool (DD). (See Fig. M)

7. If new shaft bearings are required, they are supplied complete with the shaft spacer and are preset to give the correct running adjustment. Remove the old bearing cups (6) from the oil seal housing and fit new parts. Assemble the oil seal halves to the wheel flange and the oil seal housing.

8. Assemble the bearing/seal housing assembly to the axle shaft and tighten the locking ring behind the bearings.

9. Tighten the screw (11), compressing the nylon insert (10) onto the threaded part of the shaft.

10. Clean the rear surface of the oil seal housing and the axle arm flange surface. Reseal, fit the shaft assembly to the axle arm and tighten screws (13). (See Fig. A)

Axle Shaft Assembly (250 series axle)
(See Fig. A)
1. Slacken and remove screws (13) holding assembly to axle arm.

2 Tap rear of wheel flange to remove shaft assembly from axle arm.

(See Fig. N)

3. Slacken screw (15) in shaft locking ring (7) and unscrew locking ring using special tool CC.

4. Tap seal housing (5) to remove from axle shaft.

5. Inspect bearings, oil seals and shaft for signs of wear or damage.

6. If a new oil seal is required, it is advisable to fit using the special tool DD (see Fig. M).

7. A single unitised taper roller bearing is used and if a new unit is required, then it is necessary to adjust shims (10 to 13) to provide the correct clamping load on the bearing. The procedure is as follows:—

   a) Remove old bearing from oil seal housing and fit new unit.
   b) On small end of axle arm, use a vernier depth gauge to measure from the end of the spigot location on the flange (see Fig. P). Let this dimension be 'X'.
   c) Measure the depth inside the oil seal housing, from the mating face with the axle arm to the end of the bearing outer race. Let this dimension be 'Y'. (See Fig. R)
   d) The amount of shims to go adjacent to the bearing = ('Y' – 'X') + 0.075 mm (0.003").
   e) Insert the necessary shims in the oil seal housing.

(See Fig. N)

8. Assemble the oil seal housing to the shaft (1) and tighten the locking ring (7).

9. Tighten the screw (15), compressing the nylon insert (14) onto the threaded part of the shaft.

10. Clean the rear surface of the oil seal housing and the axle arm flange surface. Reseal, fit the shaft assembly to the axle arm and tighten screws (13). (See Fig. A)

Stub Axle and Wheel Hub

1. To remove the complete assembly from the axle arm, remove nuts and bolts (13, 14) and pull out straight until the axle shaft disengages on its splines (27).

2. The assembly is the reverse of the above, the axle shaft splines being engaged first. Care should be taken to ensure that the 'O' ring (15) does not fall from its groove in the stub axle.

3. If it is only required to remove the hub (19) from the stub axle, first slacken nuts (26) and remove axle shaft using easing screws if required.

4. Release tab washer (24) slacken lock ring (23) using special tool (EE). Remove the lock ring, tab washer and tongued washer (22).
   Note: A new tab washer (24) must be fitted each time the assembly is dismantled.

5. Pull the hub assembly from the stub axle, tapping the rear of the wheel flange with a mallet if required.

6. The hub bearing cone and roller assemblies and cups can now be examined for wear or damage (20, 21). So also can 2 halves of the oil seal (18).
   Note: If the rubbing faces of the metal oil seal halves are damaged or scored, then the seal must be replaced.

7. The hub bearing can be drifted out if required.

8. Inspect the bearing journals on the stub axle (16) for signs of wear or damage.

9. To fit new oil seal halves to the hub and oil seal housing (17) the use of special tool (DD). is recommended (See illustration). Coat the rubbing faces of the seal with axle oil prior to assembly.

10. To reassemble the hub, to the stub axle, push the hub, bearings and seal assembly along the stub axle, against the bearing shoulders.

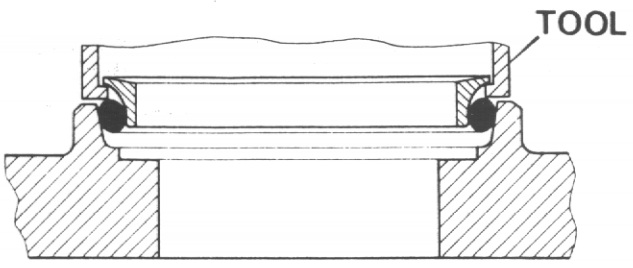
11. Assemble lock ring, tab washer and tongued washer and tighten lock ring to a torque of 14 kpm (100 lbf). Back the nut off an amount equal to the width of 2 tabs on the washer, and bend over a tab into a slot in the lock ring. Ensure that the hub will turn freely on its bearings.

12. Examine the axle shaft splines for damage, clean the flange face of old sealer and also the mating hub face, and then assemble the shaft to the hub.

13. Tighten nuts (26).

14. If the oil seal housing (17) becomes damaged, it is necessary to first remove the wheel hub. The unit can then be drifted from its seating on the stub axle.

15. To fit a new unit, the seating on the stub axle should first be cleaned and new "Loctite" grade 275 applied to the stub axle and seal housing surfaces. The housing can then be pressed or drifted into place.



TOOL DD

FIG. M

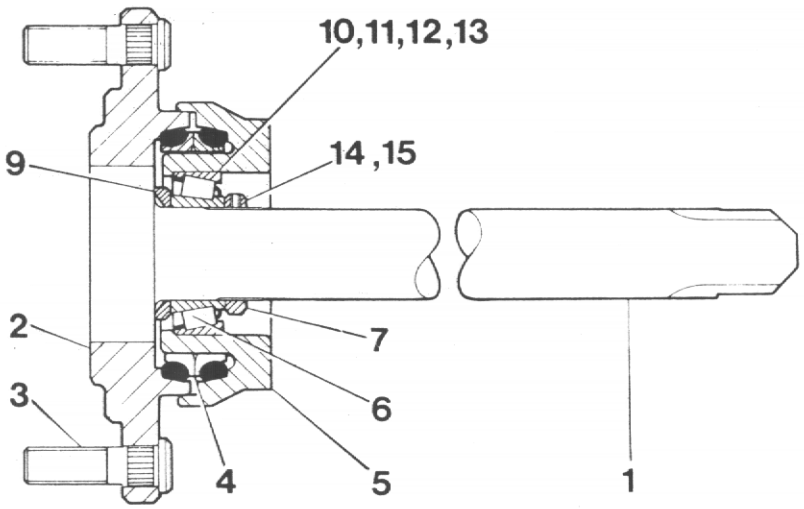


FIG. N

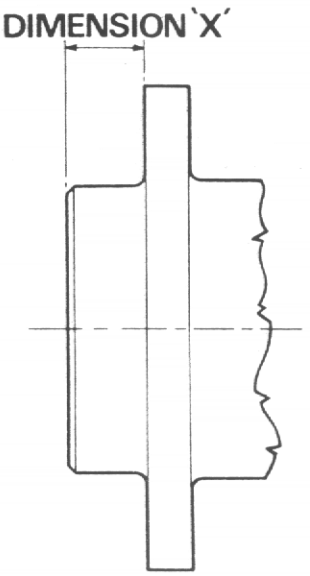


FIG. P

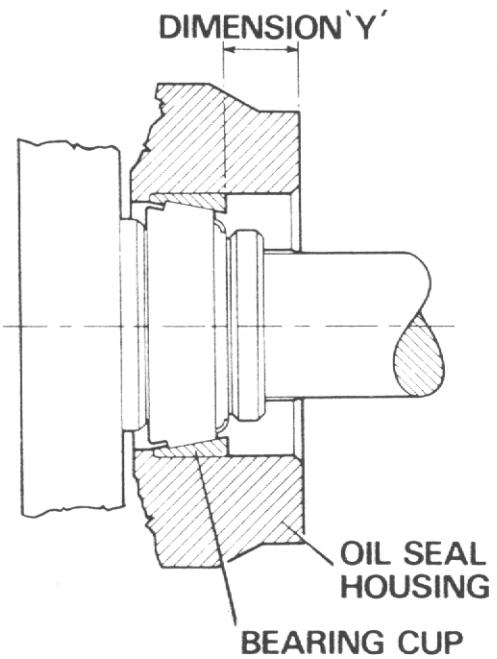


FIG. R

Surfaces to be Sealed with Liquid Sealant
Use "Loctite Plastic Gasket" Grade 275
"Avdelbond" Grade 120/121 OR Similar

1. Pinion cartridge flange to main casing.
2. Brake cylinder flanges to main casing.
3. Axle arm to brake cylinder.
4. Oil seal housing to axle arm flange.
5. Cover plate to top of main casing.

Apply a thin film of sealant to one of the surfaces, having first cleaned the surfaces concerned. Assemble the parts and tighten fasteners.
Having dismantled an assembly, scrape old sealant off the surfaces, clean and apply fresh solution.

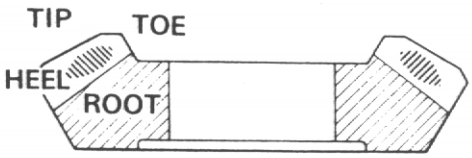
SPIRAL BEVEL GEAR TOOTH CONTACTS

CROWN WHEEL

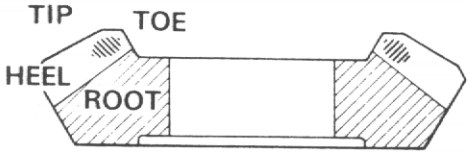
CONVEX FLANK & CONCAVE FLANK

Contact may vary, but generally is approx, in the tooth centre, equispaced between root and tip. The marking may be towards toe on some gears on both flanks, or marking crossed slightly i.e. towards toe on convex flank and heel on concave flank or vice versa.

If, compared to the factory tooth contact, the contact appears as shown below, then corrective action should be taken as follows:

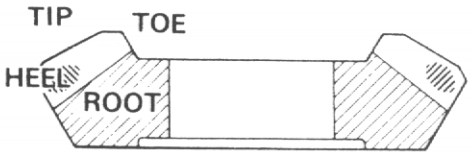


1 **CONVEX FLANK**
Contact further to toe and tip than factory marking.

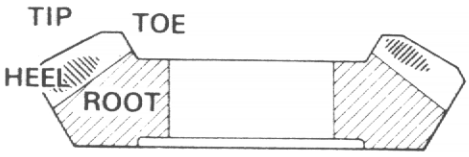


CONCAVE FLANK
Contact further to heel and tip than factory marking.

ERROR: Pinion too far out of mesh, recheck and decrease shims below pinion cartridge flange.



2 **CONVEX FLANK**
Contact further to heel and root than factory marking.



CONCAVE FLANK
Contact further to toe and root than factory marking.

ERROR: Pinion too far into mesh, recheck and increase shims below pinion cartridge flange.

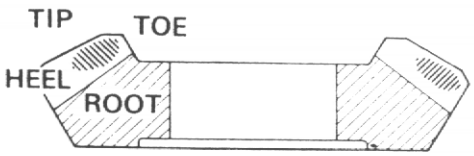


FIG.S

ADDITIONAL LOAD ON SPRING BALANCE FOR DIFFERENTIAL BEARING PRELOAD WHEN CROWN WHEEL & PINION ARE IN MESH.

400 Series.

No. Teeth Pinion	No. Teeth Wheel	Additional Spring Balance Pull (Kg)	
		New Brgs.	Used Brgs.
11	31	2.75–3.25	1.4–1.8
11	29	3.0 –3.4	1.4–1.8
18	33	4.0 –5.0	2.0–2.5

250 and 350 Series

No. Teeth Pinion	No. Teeth Wheel	Bolt Circle Dia. Coupling Flange (mm)	Additional Spring Balance Pull (Kg) New Brgs.	Used Brgs.
11	29	95	3.8–5.2	2.0–2.7
17	29	95	5.9–8.0	3.0–4.1
11	29	80	4.1–5.7	2.0–3.0
17	29	80	6.6–8.8	3.2–4.3

TORQUE SETTINGS FOR ALL FASTENERS (SERIES 250 & 350

Fastener Ref. No. Fig. A.	*Description*	*Tightening Torque* Kpm. (lb. ft.)	
(Diff. Assy.)	M10 Bolt + Nut	5.6	(40)
(Planetary Assy.)	M12 Bolt	10	(72)
(Brake Cyl. Assy.)	M12 Cap Screw	10	(72)
6	Axle Arm—Main Case Bolts	5.6	(40)
7	Pinion Cart.—Main Casing Screws	5.6	(40)
8	Brake Cyl.—Main Case Screws	5.6	(40)
10	Brake Pipe Adaptor—Brake Cyl.	2.7	(20)
12	Wheel Nut (18 mm)	28	(200)
	Wheel Nut ($\frac{7}{8}$" BSF)	42	(300)
13	Axle Arm—Oil Seal Housing (250 only)	5.6	(40)
14	Axle Shaft Locking Ring (250 only)		(350)

TORQUE SETTINGS FOR ALL FASTENERS (SERIES 400)

Fastener Ref. No. Fig. A.	*Description*	*Tightening Torque* Kpm. (lb. ft.)	
(Diff. Assy.)	M10 Bolt + Nut	5.6	(40)
(Planetary Assy.)	M16 Bolt	25	(180)
(Brake Cyl. Assy.)	M12 Cap Screw	10	(72)
6	Axle Arm—Main Case Bolts	10	(72)
7	Pinion Cart.—Main Casing Screws	10	(72)
8	Brake Cyl.—Main Case Screws	10	(72)
10	Brake Pipe Adaptor—Brake Cyl.	2.7	(20)
12	Wheel Nut (18 mm)	28	(200)
	Wheel Nut ($\frac{7}{8}$" BSF)	42	(300)
13	Axle Arm—Oil Seal Housing	10	(72)
14	Axle Shaft Locking Ring	62	(450)

LIST OF BACKLASH FIGURES FOR DIFFERENT RATIOS ETC.

400 Series

No. Teeth Pinion	Backlash Measured via Hole in Flange (mm)
11	0.31–0.39
18	0.21–0.26

250 and 350 Series

No. Teeth Pinion	Bolt Circle Dia. on Flange	Backlash Measured via Hole in Flange (mm)
11	95	0.27–0.36
17	95	0.17–0.23
11	80	0.22–0.30
17	80	0.14–0.19

DECIMAL, FRACTIONAL AND METRIC EQUIVALENTS

Inches		Milli-metres	Inches		Milli-metres
Fractions	Decimals		Fractions	Decimals	
1/64	0.015625	0.397	33/64	0.515625	13.097
1/32	0.03125	0.794	17/32	0.53125	13.494
3/64	0.046875	1.191	35/64	0.546875	13.891
1/16	0.0625	1.588	9/16	0.5625	14.288
5/64	0.078125	1.984	37/64	0.578125	14.684
3/32	0.09375	2.381	19/32	0.59375	15.081
7/64	0.109375	2.778	39/64	0.609375	15.478
1/8	0.125	3.175	5/8	0.625	15.875
9/64	0.140625	3.572	41/64	0.640625	16.272
5/32	0.15625	3.969	21/32	0.65625	16.669
11/64	0.171875	4.366	43/64	0.671875	17.066
3/16	0.1875	4.763	11/16	0.6875	17.463
13/64	0.203125	5.159	45/64	0.703125	17.859
7/32	0.21875	5.556	23/32	0.71875	18.256
15/64	0.234375	5.953	47/64	0.734375	18.653
1/4	0.250	6.350	3/4	0.750	19.050
17/64	0.265625	6.747	49/64	0.765625	19.447
9/32	0.28125	7.144	25/32	0.78125	19.844
19/64	0.296875	7.541	51/64	0.796875	20.241
5/16	0.3125	7.938	13/16	0.8125	20.638
21/64	0.328125	8.334	53/64	0.828125	21.034
11/32	0.34375	8.731	27/32	0.84375	21.431
23/64	0.359375	9.128	55/64	0.859375	21.828
3/8	0.375	9.525	7/8	0.875	22.225
25/64	0.390625	9.922	57/64	0.890625	22.622
13/32	0.40625	10.319	29/32	0.90625	23.019
27/64	0.421875	10.716	59/64	0.921875	23.416
7/16	0.4375	11.113	15/16	0.9375	23.813
29/64	0.453125	11.509	61/64	0.953125	24.209
15/32	0.46875	11.906	31/32	0.96875	24.606
31/64	0.484375	12.303	63/64	0.984375	25.003
1/2	0.500	12.700	1	1.000	25.400

INCHES INTO MILLIMETRES

Inches	0	1	2	3	4	5	6	7	8	9
0	0	25.40	50.80	76.20	101.60	127.00	152.40	177.80	203.20	228.60
10	254.00	279.40	304.80	330.20	355.60	381.00	406.40	431.80	457.20	482.60
20	508.00	533.40	558.80	584.20	609.60	635.00	660.40	685.80	711.20	736.60
30	762.00	787.40	812.80	838.20	863.60	889.00	914.40	939.80	965.20	990.60
40	1016.00	1041.40	1066.80	1092.20	1117.60	1143.00	1168.40	1193.80	1219.20	1244.60
50	1270.00	1295.40	1320.80	1346.20	1371.60	1397.00	1422.40	1447.80	1473.20	1498.60
60	1524.00	1549.40	1574.80	1600.20	1625.60	1651.00	1678.40	1701.80	1727.20	1752.60
70	1778.00	1803.40	1828.80	1854.20	1879.60	1905.00	1930.40	1955.80	1981.20	2006.60
80	2032.00	2057.40	2082.80	2108.20	2133.60	2159.00	2184.40	2209.80	2235.20	2260.00
90	2286.00	2311.40	2336.80	2362.20	2387.60	2413.00	2438.40	2463.80	2489.20	2514.61

Use in conjunction with above table.

Example: Find equivalent mm. for 84 5/8".

84" = 2133.60 mm.

5/8" = 15.875 mm.

84 5/8" = 2149.475 mm.

CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm