

# **WINGET**

## **OPERATING INSTRUCTIONS & SPARE PARTS LIST**

### **F15 FORKLIFT (CAPACITY 1.5 TONNE)**

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## **INTRODUCTION**

This Parts & Operators Manual is a re-print of the manual last published in 1981 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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## FOREWORD

This Handbook provides an introduction to your Dumper together with information on the care and periodic maintenance required. Please note that references to right or left-hand in this Handbook are made when viewing the machine from the rear.

### SAFETY PRECAUTIONS

To try and minimise the number of accidents that occur in connection with the construction industry, we have listed a number of safety precautions in the "Dumper Safety" section, that relate to the safe use of Dumpers. Before using your machine please read these precautions and adhere to them at all times.

### SPECIFICATION

The policy of the manufacturers is one of constant product improvement and they reserve the right to vary their specifications with or without notice and at such times and in such manner as they think fit.

Whilst every effort is made to ensure the accuracy of the particulars contained in this handbook, neither the Manufacturer nor the Distributor by whom this Handbook, is supplied, shall in any circumstances be held liable for any inaccuracy or the consequences thereof.

### WARRANTY

Claims for the replacement of parts under warranty must be submitted to the supplying Distributor, informing them of the customer's name and address. Except in cases of emergency, warranty work should always be carried out by an appointed Distributor.

### REPAIRS AND SERVICE

Your Distributor is provided with the latest information concerning special tools and workshop techniques. This enables him to undertake your service and repair in the most efficient and economic manner.

### PARTS

Recommended parts are designed for your Dumper and have the full backing of the Warranty. Only when recommended parts are used can responsibility be considered under the terms of the Warranty.

### WHEN ORDERING PARTS PLEASE STATE:

- (a) MACHINE AND (IF APPLICABLE) MAJOR ASSEMBLY SERIAL NUMBER.
- (b) PART NUMBER, DESCRIPTION AND QUANTITY OF PARTS REQUIRED.
- (c) IF YOU REQUIRE THE NUTS, BOLTS AND WASHERS ETC., NECESSARY TO FIT PARTS TO MACHINE.
- (d) FULL ADDRESS WHERE PARTS ARE TO BE SENT.

Parts may be obtained from ~~WINGET~~ Parts & Service Limited. If you telephone or telegraph, an official confirmation order must be sent by post immediately.

ENGINE PARTS MAY BE OBTAINED FROM THE ENGINE MANUFACTURERS, APPROVED AGENT OR ~~WINGET~~ PARTS & SERVICE LIMITED.

### IDENTIFICATION

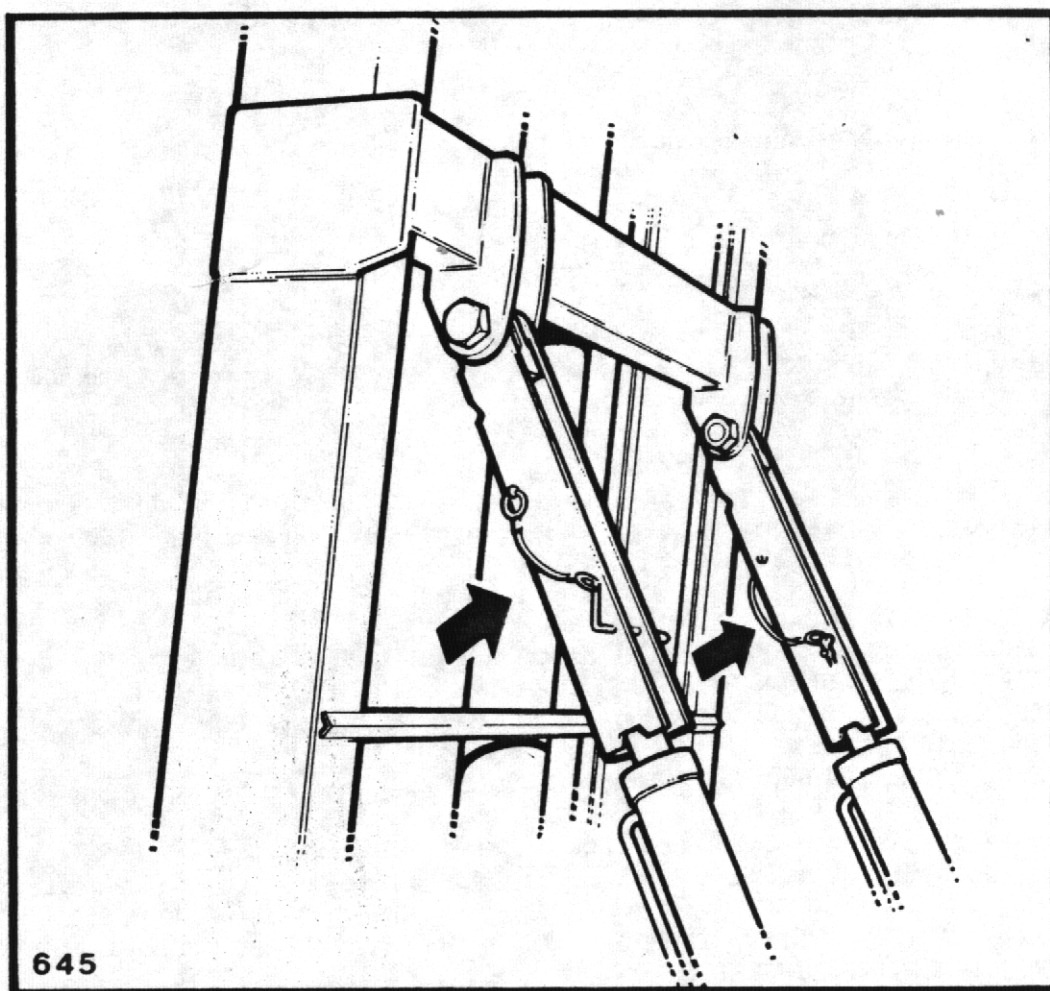
All major assemblies of the Dumper carry a serial number, which should be quoted, together with the total number of hours worked by the Dumper.

IMPORTANT

F15

BEFORE THE MACHINE IS PUT INTO SERVICE, ENSURE THAT THE MAST TILT RAM STOPS ARE IN POSITION, AS SHOWN BELOW.

THE TILT RAM STOPS SHOULD ONLY BE MOVED FOR TRANSPORTATION PURPOSES.



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## PREPARATION FOR USE

Before the F. 15 is put into service, always check the following points:-

### ENGINE.

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

### GEARBOX (FITTED AT AN ANGLE TO IMPROVE GEAR CHANGE)

To establish correct oil level, remove both level plugs, fill through upper hole to level of bottom hole. Replace plugs.

### DRIVE AXLES AND TRANSFER CASE.

Remove filler/level plugs, check oil level, top up if necessary.

### FUEL TANK

Fill tank with diesel oil until approximately 1½" from the top of the filler.

NOTE: Never allow fuel level to fall below 3" deep in the bottom of the tank.

### HYDRAULIC TANK

Fill the hydraulic tank to within 1½" of the filler top. Before removing the cap, clean the surrounding area to prevent the possible entry of foreign matter.

### BRAKE SYSTEM

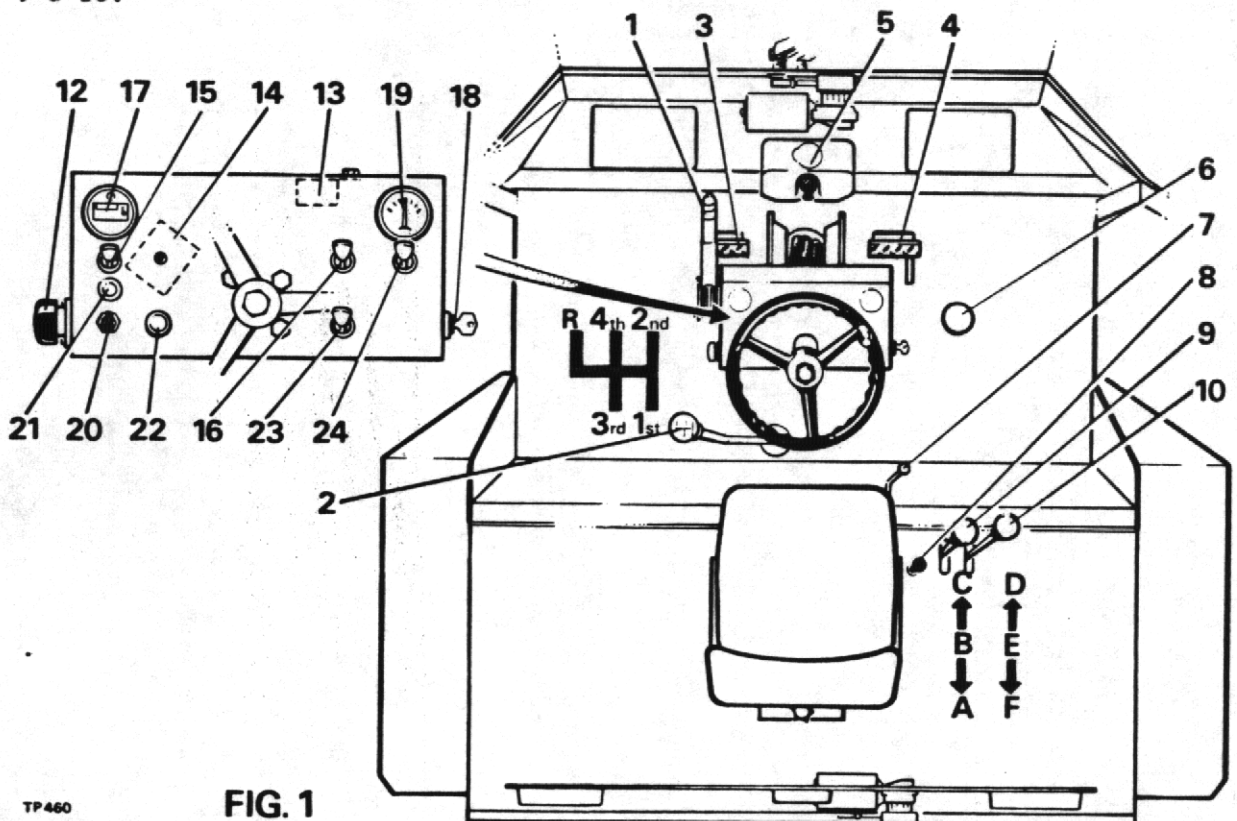
Ensure that both brake cylinder reservoirs are full of fluid. Top up if necessary to within 1/4" of the top of the reservoirs. NOTE only use 'hydraulic fluid'. (Do not use brake fluid).

### 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 Warranty.

N.B. FOR FURTHER INFORMATION ABOUT LUBRICATION AND RECOMMENDED OILS SEE PAGES 8, 9 & 13.



**FIG. 1**

TP460

#### KEY

- |                                |                              |
|--------------------------------|------------------------------|
| 1. Handbrake                   | 12. Horn Push                |
| 2. Gear Lever                  | 13. Flasher Unit             |
| 3. Clutch Pedal                | 14. Fuse Box                 |
| 4. Footbrake Pedal             | 15. Windscreen Washer Switch |
| 5. Windscreen Washer Reservoir | 16. Windscreen Wiper Switch  |
| 6. Accelerator Pedal           | 17. Hourmeter                |
| 7. Seat Adjusting Lever        | 18. Start Switch             |
| 8. Engine Stop Control         | 19. Ammeter                  |
| 9. Lift Control Lever          | 20. Indicator Switch         |
| 10. Tilt Control Lever         | 21. Indicator Function Light |
|                                | 22. Ignition Warning Light   |
|                                | 23. Working Lights Switch    |
|                                | 24. Side & Head Light Switch |

## SPECIFICATION

A Overall height (Transportation position) .....	10'- 7½"	( 3240mm)
B Overall length (minus forks) .....	10'- 7½"	( 3245mm)
C Wheelbase .....	6'- 1½"	( 1865mm)
D Length from front axle to front of carriage .....	1'- 6½"	( 475mm)
E Load centre .....	1'- 7½"	( 500mm)
F Fork length .....	4'- 0 "	( 1220mm)
G Overall height (forks lowered) .....	11'-11 "	( 3630mm)
H Fork centres .....	Max... 3'- 3 "	( 991mm)
	Min... 5 "	( 130mm)
J Wheeltrack .....	5'- 8½"	( 1733mm)
K Overall Width .....	6'- 7½"	( 2025mm)
L Cab height .....	8'-6,3/8"	(2600mm)
M Ground Clearance .....	1'- 0 "	( 305mm)
Maximum load at 20" (500mm) load centre - up to 12 ft.(3.6' ..	3308 lbs.	(1500 Kg.)
Maximum load at 20" (500mm) load centre - up to 18 ft.(5.5M)..	2535 lbs.	(1150 Kg.)
Total lift of forks .....	18'- 0 "	( 5486mm)
Turning Circle .....	26'- 0 "	( 7925mm)
Unladen Weight (approx.) .....	8004 lbs.	(3630Kg)
Hydraulic Relief Valve Pressure .....	2000 lb/in <sup>2</sup>	(141Kg/cm <sup>2</sup> )
Rear Axle Articulation .....	22°	
Lifting Time, loaded .....	30 sec. (36 ft/min.)	(.182 m/sec.)
Tyre Pressure .....	40 lb/in <sup>2</sup>	(2.76 bar)

### Capacities:-

Transfer Box .....	1 pt.(.57 litres)	Drive Axle .....	8 pts.	(4.6 litres)
Gear Box .....	5 pts.(2.4 litres)	Engine .....	13.2 pts.	(7.5 litres)
Hydraulic Tank .....	10 gals.(45 litres)	Fuel Tank .....	10 gals.	(45 litres)
Load Moment .....	11111 lb.ft.(15065 Nm)			

### Road Speeds (Max.)

	m.p.h.	k.p.h.
1st .....	2.3	( 3.70)
2nd .....	3.6	( 5.80)
3rd .....	6.1	( 9.80)
4th .....	10.0	(16.00)
Rev .....	2.4	( 3.90)

### Engine Specification

Lister ST3 S. & E. schedule No. 1637  
33 BHP @ 2600 R.P.M.

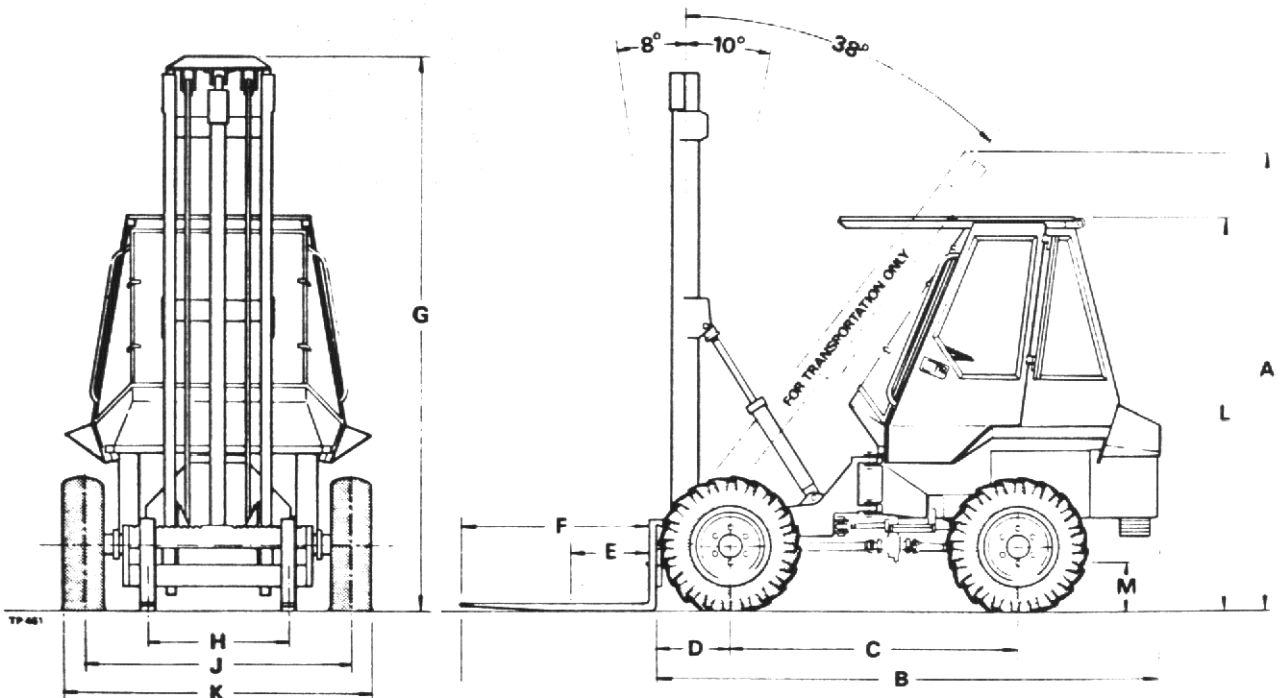


FIG 2

## OPERATING INSTRUCTIONS

### ELECTRIC STARTING MACHINES

#### STARTING

1. Check that the Engine Stop Control knob is fully in.
2. Insert the starting 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. When engine is cold, 'overload' may be required to facilitate starting and is set and returned to normal position as described in 'Manual Starting' - see below.

#### STOPPING

Pull out stop control knob and hold fully out until engine stops. Release stop control knob when engine has ceased to turn. Turn key switch to OFF position.

### MANUAL STARTING MACHINES

#### STARTING

##### (LISTER)

1. Pull out overload lever (situated on R.H. side of engine, above speed control arm) and lift to its highest position.

#### IMPORTANT

1. DO NOT stop engine by means of decompression levers, this will lead to damaged valve seats and cylinder head joints.
2. DO NOT stop engine by allowing fuel tank to run dry, this will allow air into fuel lines and necessitate bleeding and priming system.
3. Overload lever must be returned to the RUN position, abutting against the middle catch, when the engine starts. The machine must not be operated with lever in the START position.

#### GEAR CHANGING

The F15 is fitted with forward gears (1),(2),(3),(4) and one reverse gear (R),(See 'Layout of Controls'). When changing gear the clutch pedal is used in the normal manner.

#### HYDRAULIC CONTROLS

There are two functions on the standard machine; to raise and lower the fork carriage and to tilt the mast backward and forward.

Each lever is spring biased to the centre (hold position) and can be moved either side of this position (See Fig.1) the lift control lever (9) positions are UP (A), HOLD (B) and DOWN (C). The tilt control lever(10) positions are FORWARD (D), HOLD (E) and BACKWARD (F), when either lever is released it will automatically return to the HOLD 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 carried with the forks at a height of approximately 400mm (16") and with the mast tilted back at 10°. 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.



## MAINTENANCE

### PERIODIC MAINTENANCE

#### DAILY (OR EVERY 10 HRS.)

Check engine oil level and fill to full mark on dipstick, if necessary.  
Fill fuel tank (more often if necessary), to approximately 1½" from top.

#### WEEKLY (OR EVERY 50 HRS.)

Remove oil level plugs from drive axles, gearbox and transfer case. Oil level should be to bottom of holes. Top up, if necessary through filler/level plugs  
Check oil level in 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, to within 1½" of the top.

Apply grease to all grease nipples.

Liberal apply grease between the outer and inner frames of the mast assembly. (For clarification see items A and B in Fig.6). Use Mobilgrease Special or Shell Alvania 2 with MoS.

Lubricate lift chains with aerosol lubricant-Acheson 'HI LOAD forklift chain lubricant' or equivalent.

Check tyre pressures - 40lb./sq.in.

Check all wheel nuts and tighten, if necessary.

#### FREQUENTLY

Check all nuts and bolts and tighten if necessary.

NOTE: Rear Axle articulation points consist of bearings that require no lubrication.

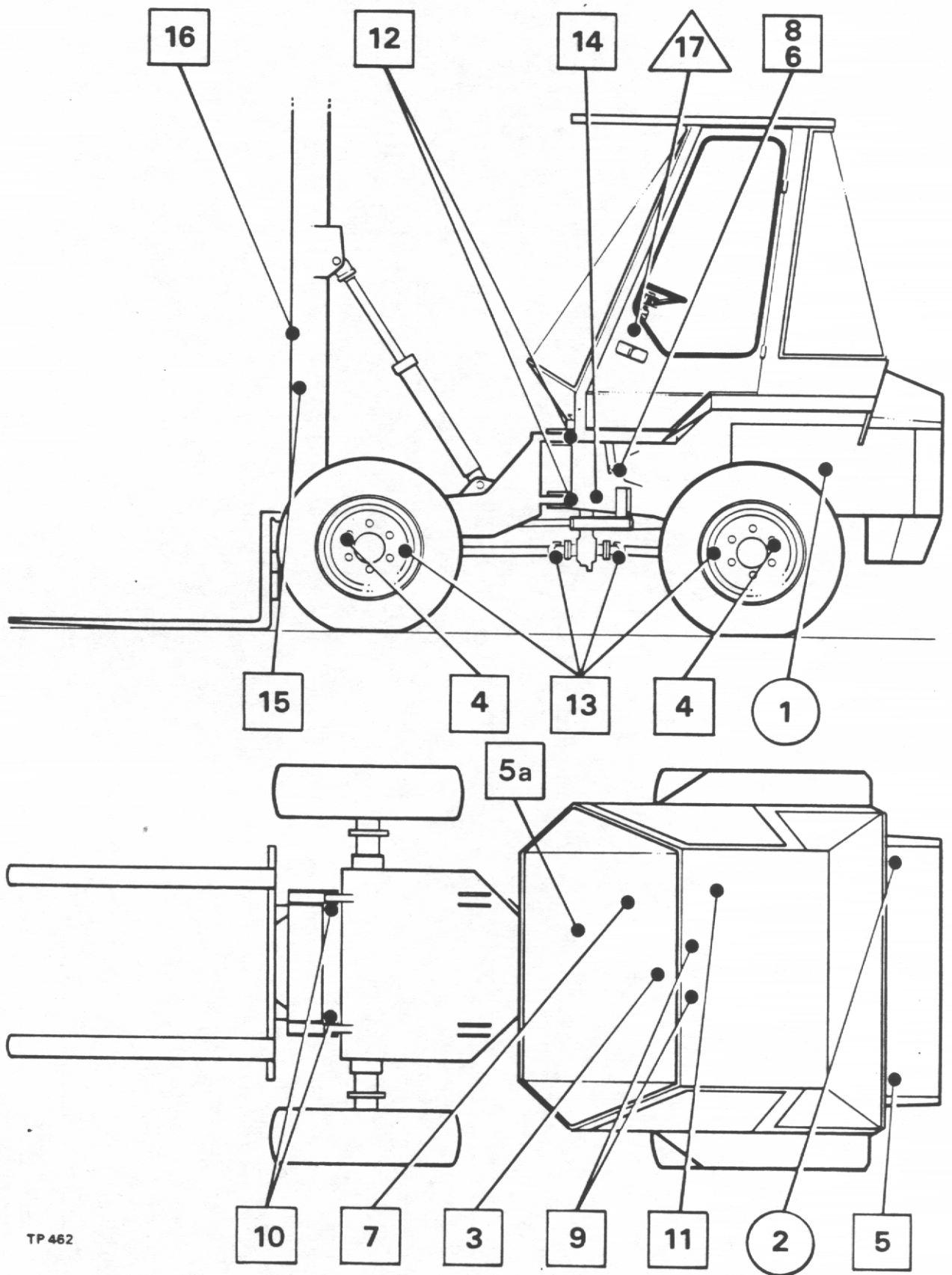
FOR COMPLETE ENGINE MAINTENANCE INSTRUCTIONS REFER TO ENGINE MANUFACTURERS HANDBOOK.

#### LUBRICATION

(See Fig.3)

Period	Key	Description	Lubrication	No. of Points
DAILY ○	1	Engine	Engine Oil	1
	2	Fuel Tank	Diesel Fuel	1
WEEKLY □	3	Gearbox	Gearbox Oil	1
	4	Drive Axles	Axle Oil	2
	5	Hydraulic Tank	Hydraulic Fluid	1
	5a	Brake Reservoirs	Hydraulic Fluid	2
	6	Footbrake Pedal	Grease Gun	1
	7	Accelerator Pedal	Grease Gun	1
	8	Clutch Pedal	Grease Gun	1
	9	Clutch Cross Shaft	Grease Gun	2
	10	Mast Pivot	Grease Gun	2
	11	Handbrake Cable	Grease Gun	1
	12	Chassis Centre Pivot	Grease Gun	2
	13	Prop Shafts & Universal Joints	Grease Gun	10
	14	Transfer Case	Axle Oil	1
	15	Mast Frame	Grease	
16	Fork Carriage Chains	Chain Oil		
6 MONTHLY △	17	Steering Column	Water Repellent Grease	1

N.B. FOR RECOMMENDED LUBRICATING OILS SEE CHART ON PAGE 13.



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FIG. 3

## BRAKE SYSTEM

The brake system is designed to require the minimum of maintenance and no defects should normally occur. If air is present in the system, it will be indicated by sluggish response of the brakes and by spongy action of the brake pedal. This may be due to air being introduced at a loose joint. Any defects must be remedied immediately and the complete system bled.

To bleed the system proceed as follows:-

1. Check that all connections are tight and all bleed screws are closed.
2. Check that there is sufficient hydraulic fluid in the brake reservoirs.
3. Attach bleeder tube (A) (See Fig. 4) to the bleed screw (B) on front axle and immerse other end in a small quantity of hydraulic oil contained in a glass jar (C). Slacken bleed screw and operate brake pedal up and down to its full stroke, until oil pumped into the jar contains no air bubbles. Hold down pedal and close bleed screw. Remove bleeder tube and release pedal.
4. Carry out the procedure on the bleedscrew on the rear axle and continue until all air has been bled from the system.
5. Lock both the bleed screws.
6. Apply normal working load on brake pedal for two or three minutes and examine the entire system for leaks.

NOTE: ALWAYS ENSURE THAT FREE PLAY EXISTS BETWEEN BRAKE PEDAL AND MASTER CYLINDERS. UNLESS THE PISTONS IN BOTH MASTER CYLINDERS ARE ALLOWED TO FULLY RETURN, BRAKE PRESSURE WILL BUILD UP AND THE BRAKES WILL REMAIN ON.

DURING THE OPERATION IT IS ESSENTIAL THAT THE RESERVOIR LEVELS ARE KEPT TOPPED UP TO PREVENT FURTHER AIR BEING DRAWN INTO THE SYSTEM. USE ONLY HYDRAULIC FLUID IN THE BRAKE RESERVOIRS. DO NOT USE BRAKE FLUID.

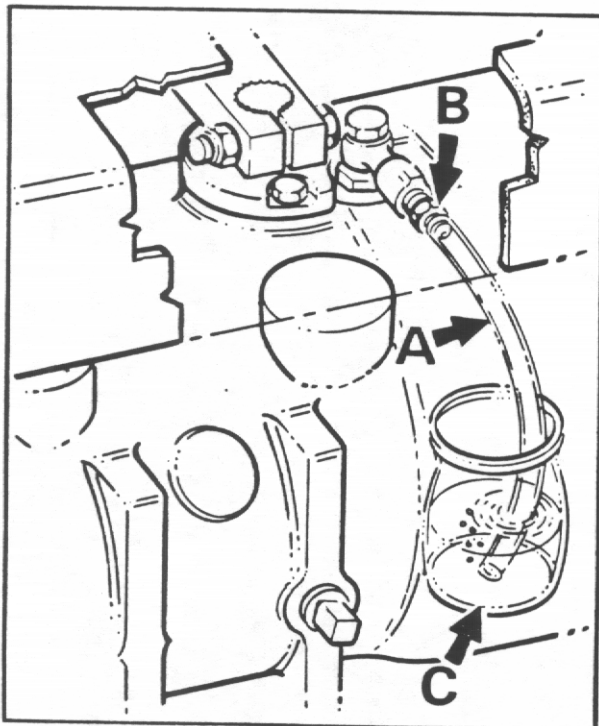
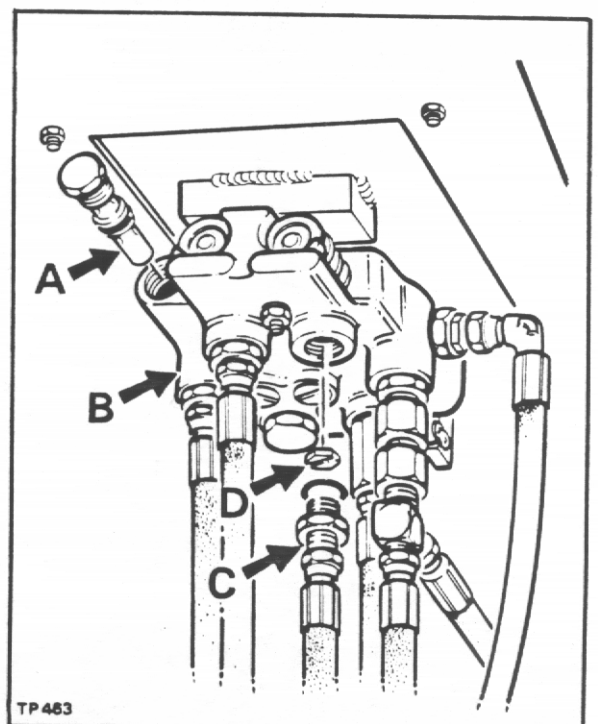


FIG. 4



TP463

FIG. 5

## HYDRAULIC SYSTEM

The system operates at a pressure of up to 2000 lbs./in.<sup>2</sup> and provides power for raising and lowering the load, tilting the mast and operating the steering. The steering circuit has priority flow, by splitting the pump output at the main hydraulic valve.

If the hydraulic system is generally sluggish or fails to operate:-

### CHECK

#### 1. HYDRAULIC OIL TANK

Remove filler cap and check that oil strainer is in place and that oil is visible within the strainer but not higher than 1½" from the filler neck. If necessary top up to 1½" from neck and check operation of system. If problem still exists check pressure.

#### 2. PRESSURE

To check that maximum pressure can be developed fit a 2500 lbs/in<sup>2</sup> gauge at the base of the lift ram. Operate control lever and check pressure developed at full lift with relief valve 'blowing'. If pressure is substantially below 2000 lbs/in.<sup>2</sup> remove the relief valve cartridge (A) (hexagon head) from the bottom of the control valve (B). (See fig.5) and replace with a new cartridge. If problem still exists:-

Remove hose adaptor (C) from control valve (see fig.5) remove hexagonal orifice plate (D) and wash in white spirit. Dry using moisture free compressed air. DO NOT poke wire etc., into the orifice. Refit with slot of orifice plate outwards.

If problem persists, contact Winget Agent. Periodically check the hose between the pump and the tank to ensure there is no deformation which could result in a restricted flow and damage to the pump.

MAST MAINTENANCE

(See Fig.6)

1. PERIODICALLY adjust forklift chains to keep fork mounting frame level.
2. PERIODICALLY check shims between bottom wear strip (C) and inner frame assembly (B). When wear has occurred 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 occurred, 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.

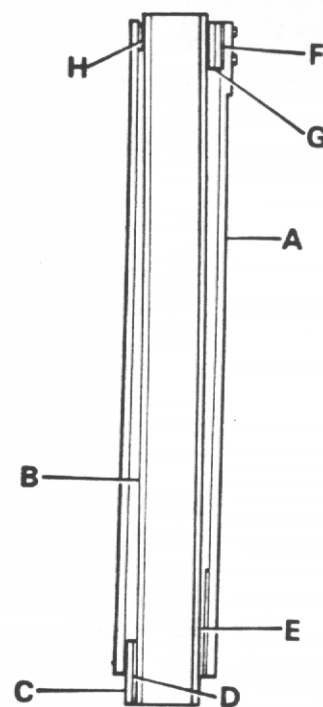


FIG. 6

RECOMMENDED TORQUE FIGURES FOR FASTENERS

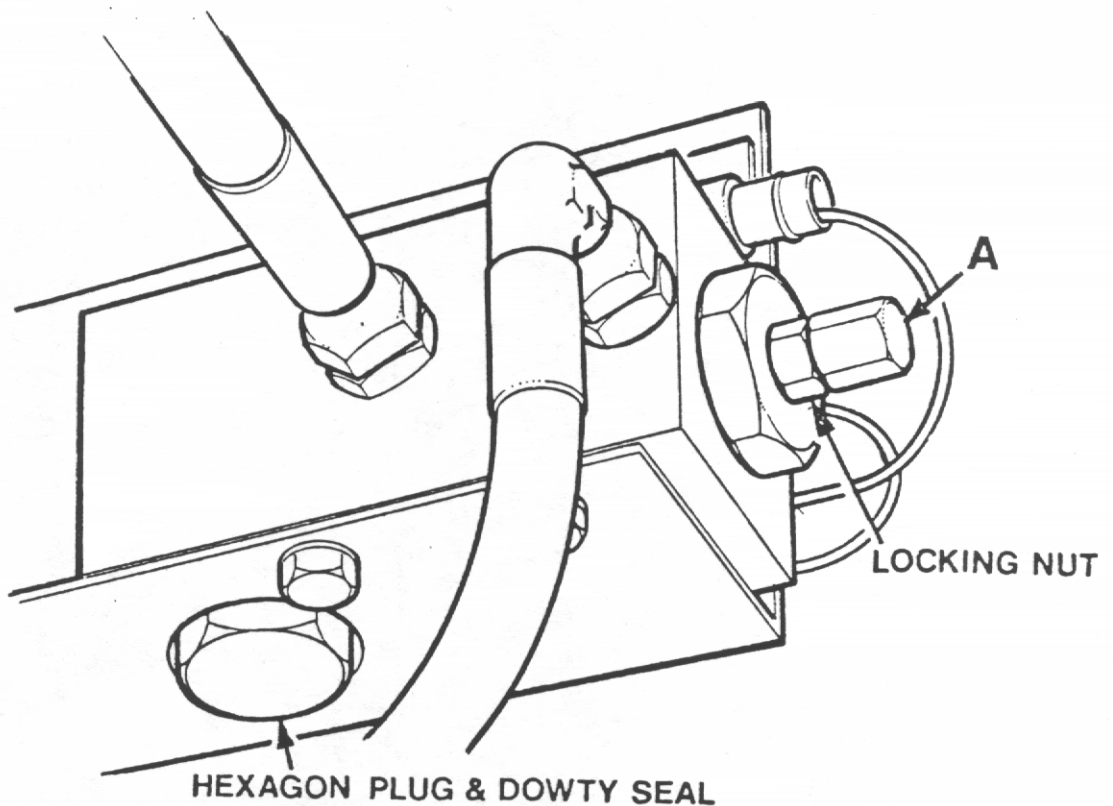
DESCRIPTION	TIGHTENING TORQUE	
	lb/ft.	Kg/m.
Prop-Shaft Bolts 3/8" UNF .....	29	( 4.32 )
Prop-Shaft Bolts 7/16" UNF .....	46	( 6.85 )
Engine Bolts/Nuts M12 .....	72	( 10.7 )
Wheel Nuts 5/8" BSF .....	180	( 25 )
Wheel Nuts 7/8" BSF .....	300	( 42 )
Wheel Nuts M18 .....	200	( 28 )
Axle Bolts/Nuts M16 .....	180	( 26.8 )
Steer Ram Nuts/Bolts 1½" UNF/BSF .....	1080	( 161.0 )

LOAD LIMITING DEVICE  
(DE-RATE SYSTEM)

PERIODICALLY OR AFTER ANY REPAIRS OR MAST RE-SHIMMING THE SETTING OF THE AUTOMATIC DERATE SYSTEM SHOULD BE CHECKED IN ACCORDANCE WITH THE FOLLOWING INSTRUCTIONS. DURING PART OF THE FOLLOWING PROCEDURE THE MACHINE WILL BE IN A SLIGHTLY OVERLOADED CONDITION THEREFORE THE PRECAUTION SHOULD BE TAKEN OF CHAINING THE REAR OF THE MACHINE (ON THE TOW HITCH) TO A FIXED POINT ON THE GROUND.

REMOVE THE HEXAGON PLUG AND DOWTY SEAL FROM THE PRESSURE REGULATOR AND FIT AT THAT POINT A PRESSURE GAUGE WITH A RANGE UP TO 2500 LB/IN<sup>2</sup> (170 BAR). PLACE THE 'DE-RATED' LOAD (1150 KG.  $\pm$  10%) ON THE FORKS AND RAISE IT TO 5.5 M. CHECK THAT THERE ARE NO ABNORMALLY HIGH PRESSURE POINTS DURING THIS LIFT AND NOTE THE MAXIMUM READING. THE PRESSURE MAY RISE TOWARDS THE TOP OF THE LIFT BUT IT SHOULD BE AN EVEN PROGRESSION. IF HIGH PRESSURE POINTS INDICATE TIGHT SPOTS ON THE MAST THEN THESE MUST BE CORRECTED BEFORE PROCEEDING FURTHER.

IDENTIFY THE ADJUSTING SCREW A. ON THE REGULATING VALVE AND SLACKEN THE LOCKING NUT. LADEN WITH MAXIMUM RATED LOAD (1500 KG.  $\pm$  10%), RAISE THE FORKS TO JUST ABOVE THE CUT OFF POINT (SAY 3.8 M.) BY EITHER "DEFEATING" THE LIMIT SWITCH OR INCREASING THE SETTING OF THE ADJUSTING SCREW A. NOW ADJUST SCREW A. UNTIL THE MAXIMUM PRESSURE DURING LIFT IS THE MAXIMUM FOUND WITH THE DE-RATED LOAD DURING THE FIRST CHECK AND LOCK IT IN THAT POSITION. LOWER THE 1500 KG. LOAD AND CHECK THAT IT WILL THEN LIFT TO 3.6 M. MAXIMUM.



## RECOMMENDED LUBRICATING OILS

COMPANY	ENGINE	NEWAGE DRIVE AXLE	HAMMORTHY DRIVE AXLE	TRANSFER BOX	GEARBOX	WHEEL BEARINGS & OTHER GREASE POINTS	HYDRAULIC SYSTEM
(U.K.) ESSO (Overseas)	ESSOLUBE HDX 20W ESSOLUBE HDX 30 ESSOLUBE HDX 20W ESSOLUBE HDX 10W	TORQUE FLUID 62	IL 2082 IL 2082 IL 2082	GEAR OIL GP 85W/140 GEAR OIL GP 85W/140 GEAR OIL GP 85W/140 GEAR OIL GP 80W	ESSOLUBE HDX 30 ESSOLUBE HDX 30	BEACON 2 BEACON 2	NUTO H32 NUTO H68 NUTO H32 NUTO H22
(U.K.) CASTROL (Overseas)	DEUSOL CRI 20 DEUSOL CRI 30 DEUSOL CRI 20 DEUSOL CRI 10	AGRICASTROL AS AGRICASTROL AS SPECIAL	AGRICASTROL AS AGRICASTROL MD	DEUSOL EP 90 DEUSOL GEAR EP 140 DEUSOL GEAR EP 90 DEUSOL GEAR EP 80	DEUSOL CRI 30 DEUSOL CRI 30	CASTROL SPHEEROL APT 2 CASTROL SPHEEROL APT 2	CASTROL HYPSPIN AWS 32
(U.K.) SHELL (Overseas)	ROTELLA SX OIL 20/20W ROTELLA SX OIL 30 ROTELLA SX OIL 20/20W ROTELLA SX OIL 10W		DONAX T12 (INITIAL FILL) SPIRAX EP 80 (Top up only) DONAX T12 (INITIAL FILL) SPIRAX EP 80 (Top up only) S.7224 (INITIAL FILL) SPIRAX HD 75 (Top up only)	SPIRAX 90 EP SPIRAX 140 EP SPIRAX 90 EP SPIRAX 80 EP	ROTELLA SX OIL 30 ROTELLA SX OIL 30	RETINAX A RETINAX A	TELLUS OIL 37
(U.K.) BP (Overseas)	VANELLUS M20W VANELLUS M30 VANELLUS M20W VANELLUS M10W		B.P. HYDRAULIC TF-8 B.P. HYDRAULIC TF-8 B.P. TRACTRAN (Top up only)	GEAR OIL SAE 90 EP GEAR OIL SAE 140 EP GEAR OIL SAE 90 EP GEAR OIL SAE 80 EP	VANELLUS M30 VANELLUS M30	ENERGREASE L2 ENERGREASE L2	ENERGOL HLP 65
(U.K.) MOBIL (Overseas) ALL TEMPERATURES	DELVAC 1220 DELVAC 1230 DELVAC 1220 DELVAC 1210 DELVAC SPECIAL 10W-30	MOBILFLUID 422	MOBIL FLUID 422 MOBIL FLUID 427	MOBILUBE HD 90 MOBILUBE GX 90 MOBILUBE HD 140 MOBILUBE GX 140 MOBILUBE HD 90 MOBILUBE GX 90 MOBILUBE HD 80 MOBILUBE GX 80	DELVAC 1230 DELVAC 1230	MOBILGREASE MP MOBILGREASE SUPER	DTE 24
(U.K.) WALKERS CENTURY (Overseas)	CENTURY ROIL 20W 20 CENTURY ROIL 30 CENTURY ROIL 20W 20 CENTURY ROIL 10W		CENTLUBE F.76 COMPOUND CENTLUBE F.76 COMPOUND CENTLUBE E.76 COMPOUND	CENTURY EP 90 CENTURY EP 140 CENTURY EP 90 CENTURY EP 80	CENTURY ROIL 30 CENTURY ROIL 30	REGULUS A2 REGULUS A2	CENTURY PWL A HYD. OIL CENTURY PWL A HYD. OIL

IN THE UNLIKELY EVENT OF THE ABOVE OILS NOT BEING AVAILABLE  
EQUIVALENT OILS SUPPLIED BY A REPUTABLE MANUFACTURER MAY BE USED

## FORKLIFT SAFETY

1. Drivers should be aware of the load and stability limitations of the machine.
2. 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).
3. Drivers should take account of ground conditions which may affect stability.
4. Drivers must ensure that the intended load is in a safe condition to lift e.g., loose bricks, banded pallets etc.
5. Do not allow anyone to stand or pass under the elevated part of any machine, whether loaded or empty.
6. Do not carry passengers.
7. Always set parking brake when loading or unloading.
8. Maintain specified tyre pressure at all times. Do not alter tyre pressure to suit ground conditions.
9. Be sure of sufficient headroom under overhead installations; lights, pipes, wiring etc.
10. 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.
11. 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.
12. Front end attachments other than those supplied as original equipment shall only be used with the manufacturer's prior written approval.
13. Never dismount while the machine is in motion.
14. Never start the engine from any position other than sitting in the driving seat. (Electric start only).
15. Never drive the machine too close to the edge of any excavation, especially if the ground is loose or wet.
16. Never make any adjustments to the machine while it is in motion.
17. Never run the engine in a closed building or allow the exhaust pipe near to inflammable material.
18. Never fill the fuel tank with the engine running. Exercise caution when the engine is hot.
19. Always keep the floor plates clean.

## HEALTH & SAFETY

### ASBESTOS BASED MATERIALS

Equipment which includes friction materials will invariably contain asbestos, when removing friction material dust from components e.g., when servicing brakes or clutches, do not blow out with an air line, it could be harmful to inhale the dust. Remove dust with a vacuum cleaner or wipe clean with a damp rag.

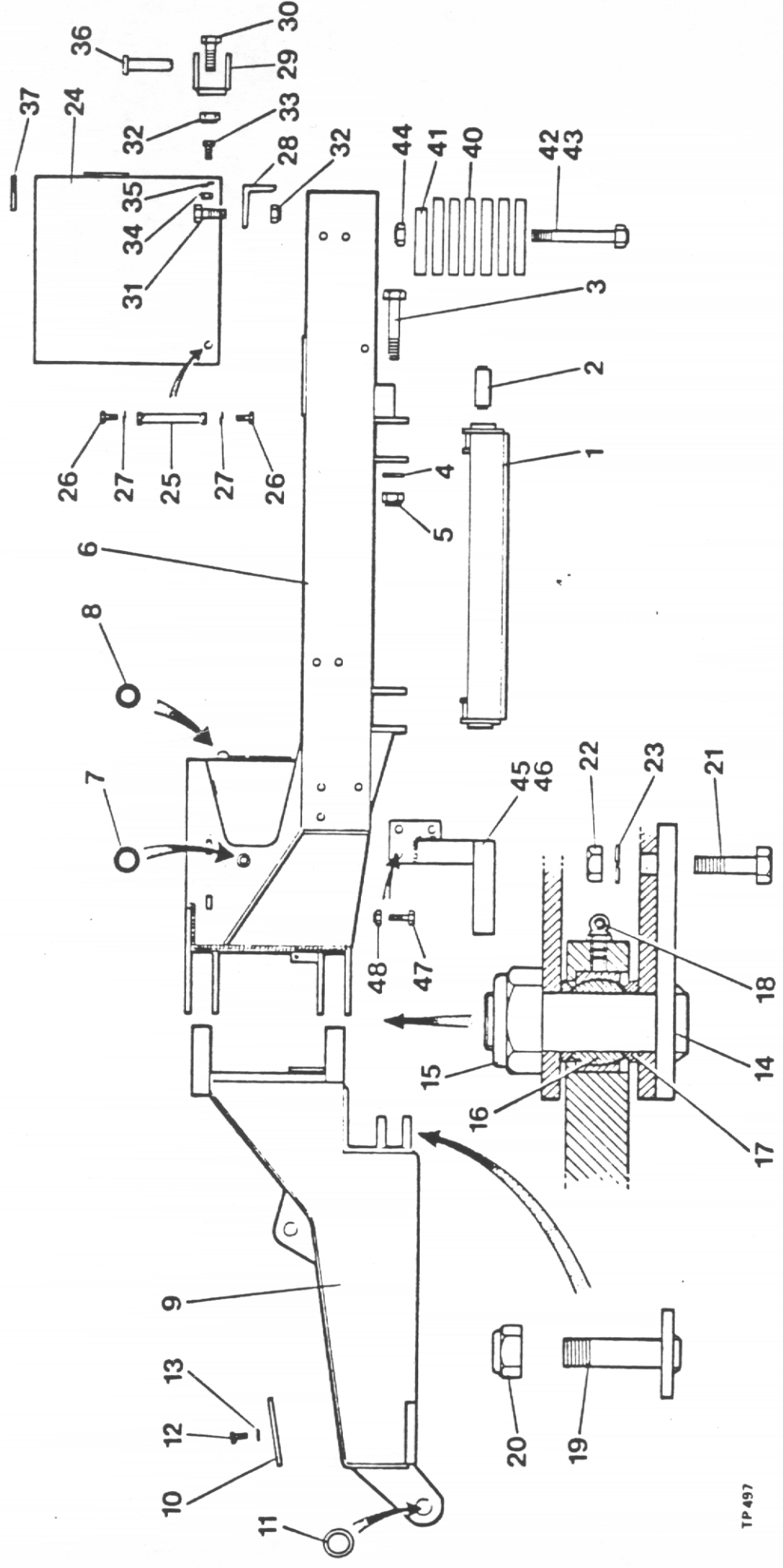
### CLUTCH HOUSINGS

The accumulated dust found in clutch housings may contain lead/antimony. No food should be eaten at a work plate contaminated by this dust. Hands must be washed before eating. Do not blow out dust with an airline.



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## 1623 ..... ARTICULATING FRAME ..... 1623

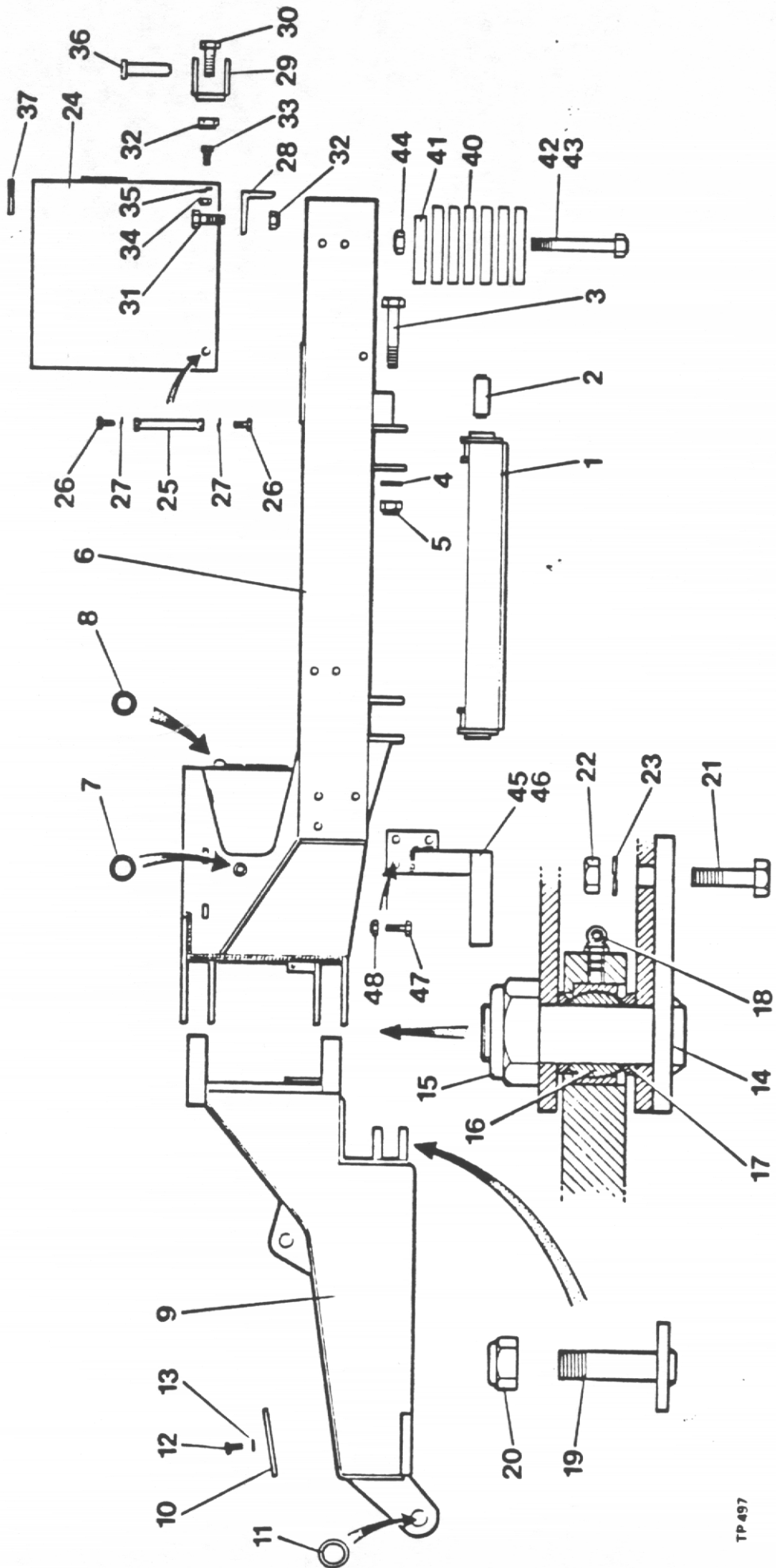
Item No.	Part No.	Description	Qty.
1	30127.A02	Articulating Frame .....	1
2	10588.A01	Pivot Bush .....	2
3	8S.08S	Bolt - Hex. Hd. M24 x 130 Long .....	2
4	12S.10	Washer - M24 .....	2
5	61S.08	Nut - M24 Binx .....	2

## 1633 ..... FRONT &amp; REAR CHASSIS ..... 1633

Item No.	Part No.	Description	Qty.
6	40216.A03	Rear Chassis .....	1
7	43S.02	Bush (Clutch Pedal) .....	2
8	43S.03	Bush (Accelerator Pedal) .....	2
9	40205.A02	Front Chassis .....	1
10	40205.A0115	Cover Plate .....	1
11	4-35-29B	Bush - Mast Pivot .....	2
12	11S.03C	Screw - Hex. Hd. M8 x 25 .....	3
13	17S.04	Washer - Spring M8 .....	3
	40054.A08	Transfer Case - Duplex (See separate section) ...	1
	11S.05D	Screw - Hex. Hd. M12 x 30 (T/Case Fixing) .....	4
	61S.05	Nut - M12 Binx (T/Case Fixing) .....	4
	12S.06	Washer - Flat M12 (T/Case Fixing) .....	4

## 1635 ..... CENTRE PIVOT ASSY. &amp; STEER RAM BOLT ..... 1635

Item No.	Part No.	Description	Qty.
14	10375.A08	Bolt - Centre Pivot .....	2
15	107S.11	Nut - 1½" UNF 'Nyloc' .....	2
16	4-60-214	Bearing .....	2
17	10609.A02	Spacer .....	4
18	131S.02	Grease Nipple c/w Cap .....	2
19	10599.A03	Bolt - Steer Ram 1½" Dia. x 140mm .....	2
20	107S.10	Nut - Nyloc 1½" UNF .....	2
21	11S.06G	Screw - Hex. Hd. M16 x 45 .....	2
22	7S.06	Nut - Hex. M16 .....	2
23	17S.08	Washer - Spring M16 .....	2



1723 ..... BACK FRAME & TOW HITCH ..... 1723

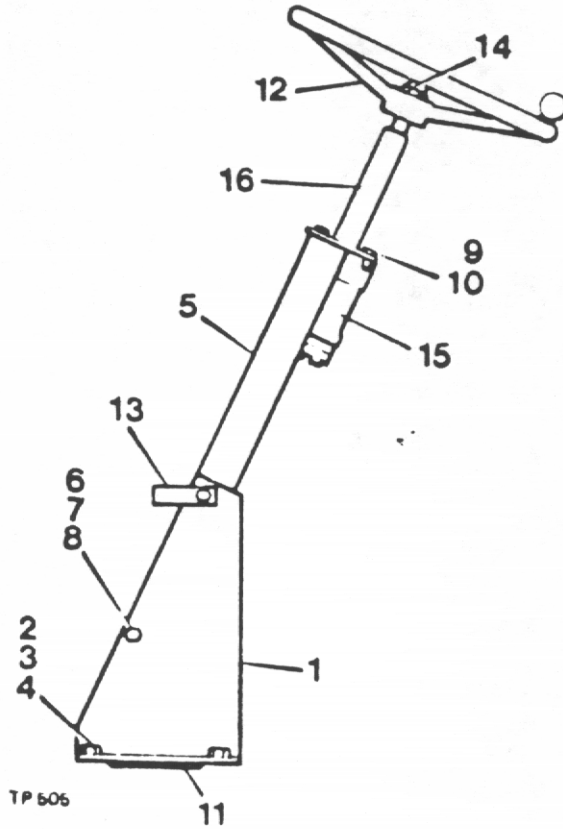
Item No.	Part No.	Description	Qty.
24	20266.A04	Back Frame Assy.....	
25	10836.A01	Spacer - Frame to Chassis .....	2
26	11S.05C	Screws M12 x 25 - (Spacer Fixing) .....	4
27	17S.06	Washers M.12 .....(Spacer Fixing) .....	4
28	20283.A01	Rear Frame Mounting Bracket .....	1
29	10839.A01	Tow Hitch Assy.....	1
30	11S.07H	Screw Hex. Hd. M20 x 50 - Tow Hitch to Angle ....	2
31	11S.07H	Screw Hex. Hd. M20 x 50 - Angle to Chassis .....	2
32	61S.07	Nut M.20 .....	4
33	11S.05C	Screw Hex. Hd. M12 x 25 - Frame to Angle .....	2
34	61S.05	Nut M.12 .....	2
35	17S.06	Washer M.12 .....	2
36	ESE.222	Towing Pin .....	1
37	10852.A01	Pad (Eng. Cover to Frame) .....	2

1730 ..... BALLAST - FRONT & REAR ..... 1730

Item No.	Part No.	Description	Qty.
38	10808.A01	Front Ballast .....	2
39	10815.A01	Ballast Support .....	2
40	20255.A01	Rear Ballast weight .....	6
41	20255.A03	Rear Ballast weight .....	1
42	10799.A04	Bolt .....	4
43			
44	107S.20	Nut Hex 1" UNF Nyloc .....	4

1731 ..... STEP ASSEMBLY ..... 1731

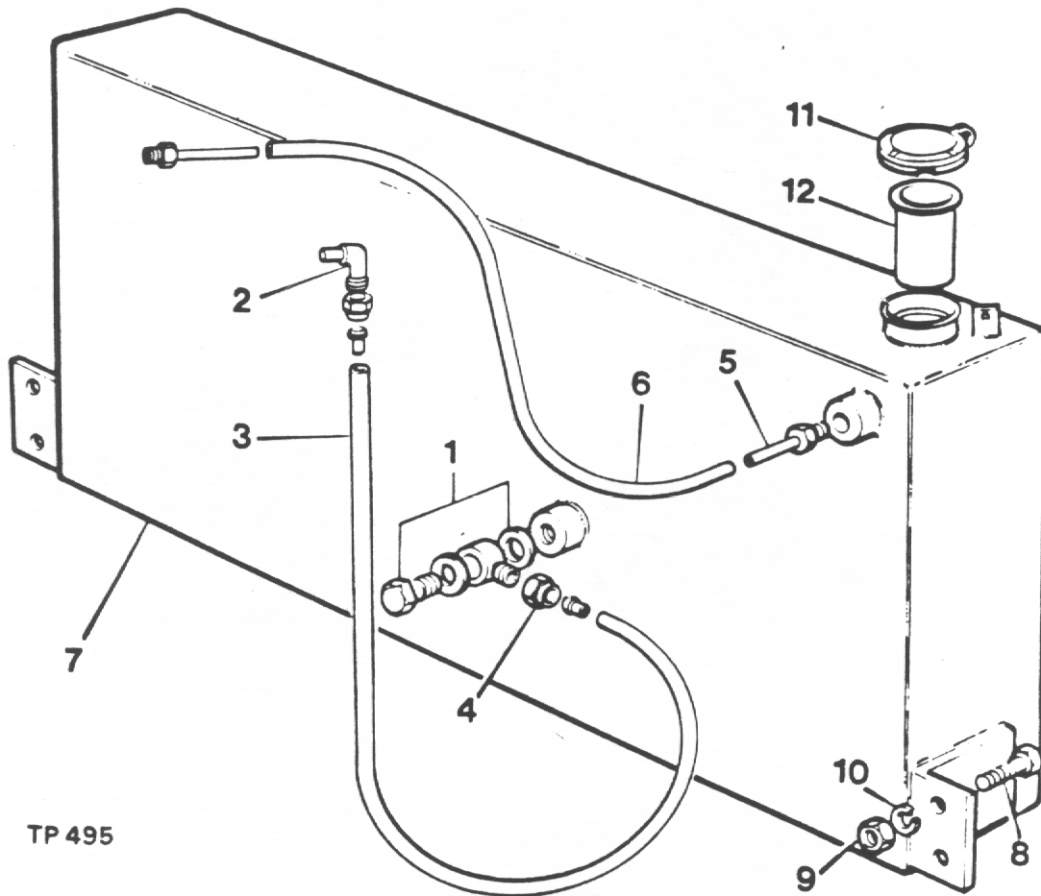
Item No.	Part No.	Description	Qty.
45	30285.A01	Step Assembly R.H.....	1
46	30285.A02	Step Assembly L.H.....	1
47	11S.05D	Screw Hex. Hd. M12 x 30 (Step Fixing) .....	6
48	61S.05	Nut M12 Binx .....	6



Item No.	Part No.	Description	Qty.
1	30184.A03	Mounting Plate Assembly .....	1
2	11S.04E	Screw - Hex.Hd. M10 x 35 (Mtg. Plate Fixing) ....	2
	11S.04C	Screw - Hex.Hd. M10 x 25 (Mtg. Plate Fixing) ....	2
3	7S.04	Nuts - M10 (Mtg. Plate Fixing) .....	4
4	17S.05	Washer - Spring M10 (Mtg. Plate Fixing) .....	4
5	30125.A04	Steering Column Assembly .....	1
6	11S.04C	Screw - Hex. Hd. M10 x 25 (Stg. Col. Fixing) ....	4
7	7S.04	Nuts - M10 (Stg. Col. Fixing) .....	4
8	17S.05	Washer - Spring M10 .....	4
9	CSE 182	Spacer ) Steer Valve ...	2
10	66S.03C	Bolt - Hex. Hd. 3/8" UNC x 1 1/2" ) Fixing ...	2
11	4-35-375	Grommet .....	1
12	FSE 279	Steering Wheel .....	1
13	20272.A01	Bracket - Brake Reservoir .....	1
14	FSE 377	Dome Nut .....	1
15		Steering Valve ) See Hydraulic .....	1
16		Steering Column) Section .....	1

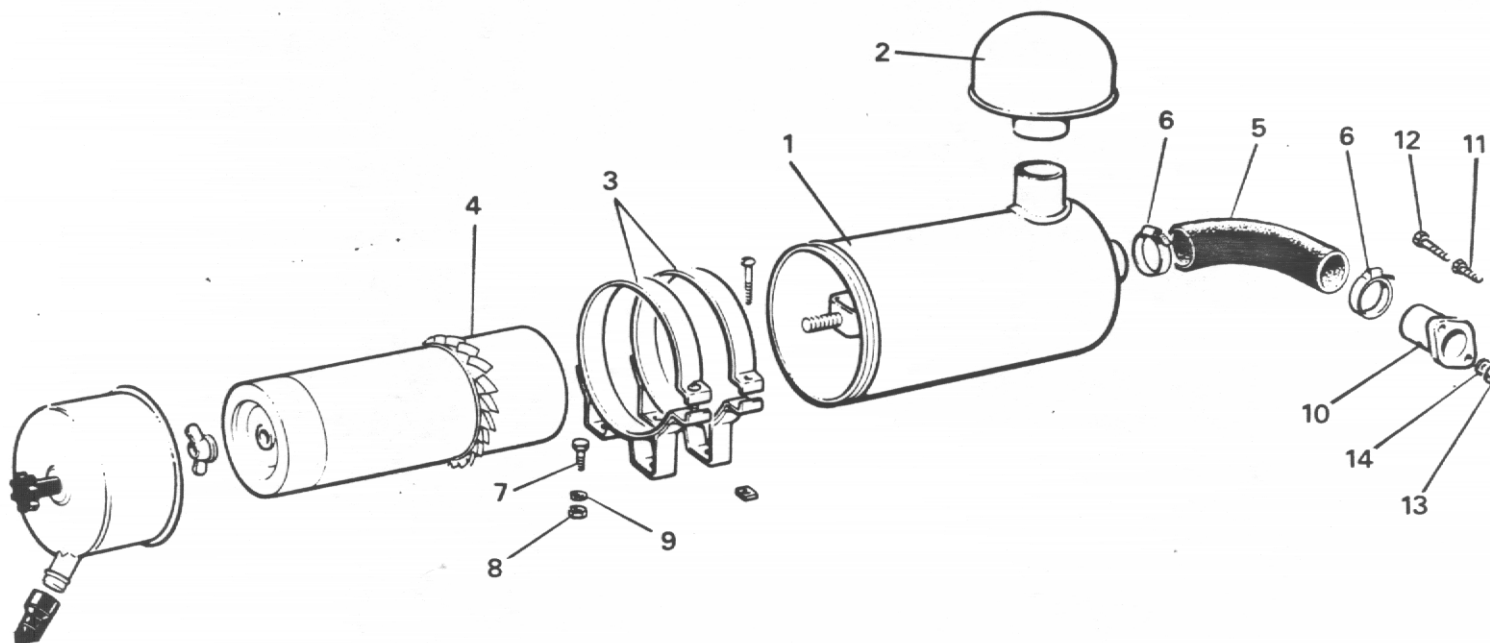
1717	.....	FUEL PIPES & FITTINGS	.....	1717
1718	.....	DIESEL TANK ASSEMBLY	.....	1718

Item No.	Part No.	Description	Qty.
1	117S.02	Banjo Coupling (Fuel Pipe Con.)c/w Bolt & Washer.	1
2	118S.1A	Standpipe Elbow	1
3	29S.18	Fuel Pipe (590 Long)	1
4	173S.01	Union	1
5	10576.A0102	Pipe 3/16" Bundy x 80mm	2
6	29S.08	Bleed off Tube	1
7	40209.A01	Tank - Fuel	1
8	11S.05D	Bolt - Hex. Hd. M12 x 30 ) Tank	4
9	61S.05	Nut - Binx M12 ) to	4
10	17S.06	Washer - Spring M12 ) Chassis	4
11	10378.A03	Cap - Filler	1
12	10379.A04	Strainer	1



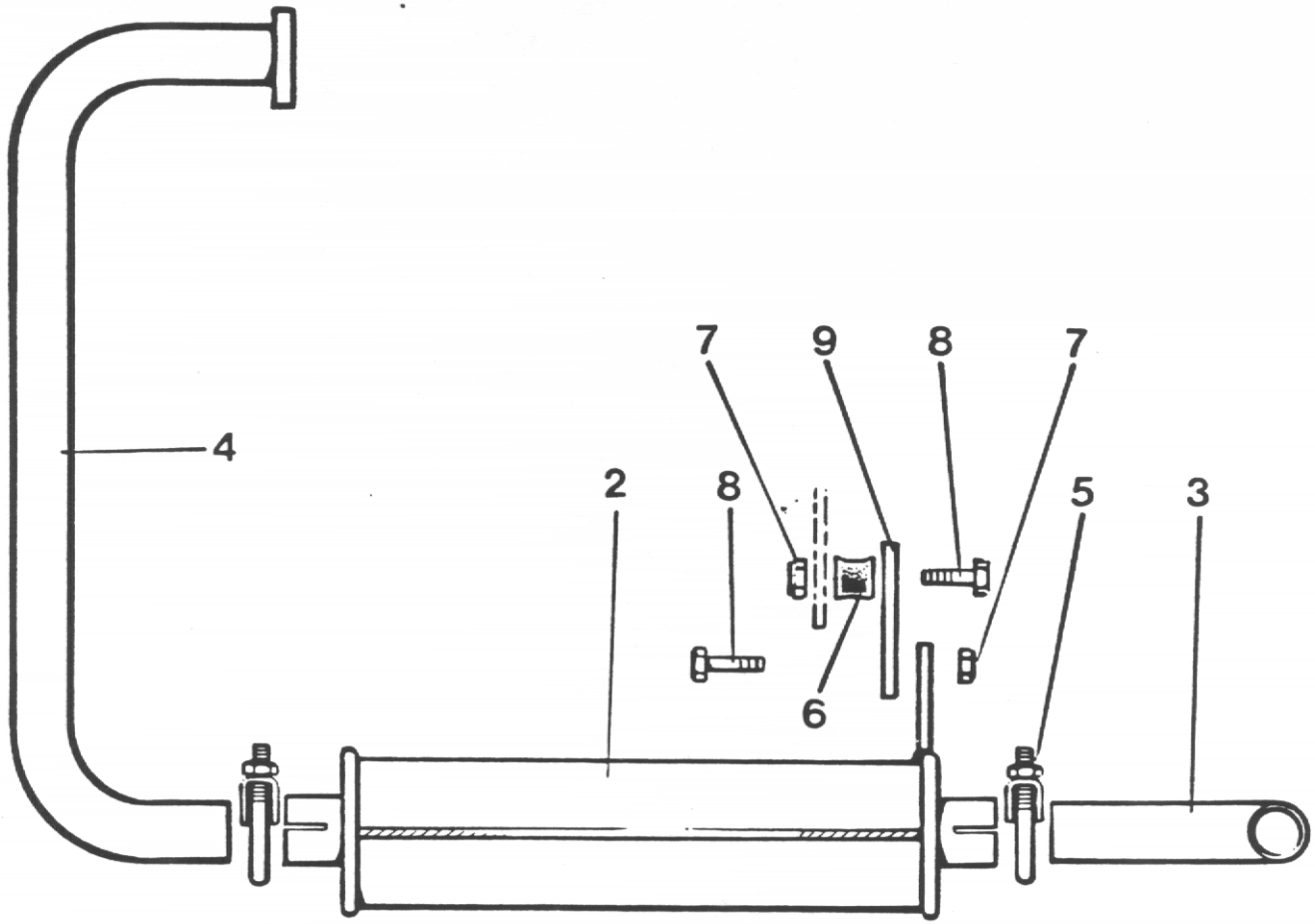
1719	.....	HYD. OIL TANK ASSEMBLY	.....	1719
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Item No.	Part No.	Description	Qty.
1	40211.A01	Tank - Hyd. Oil	1
2	11S.05D	Bolt - Hex. Hd. M12 x 30 ) Tank	4
3	61S.05	Nut - Binx M12 ) to	4
4	17S.06	Washer - Spring M12 ) Chassis	4
5	10378.A03	Cap - Filler	1
6	10379.A04	Strainer	1



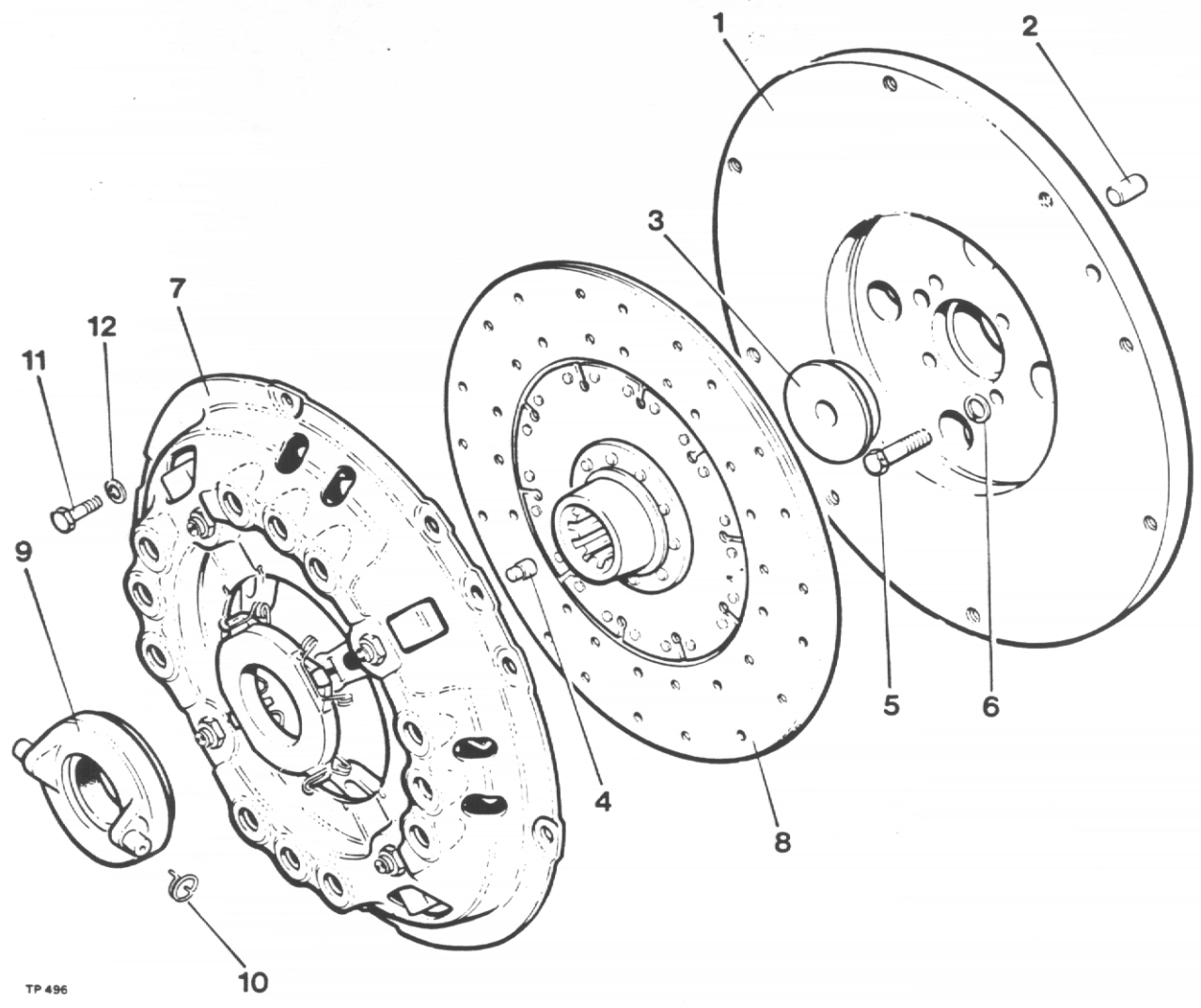
Item No.	Part No.	Description	Qty.
1	10532.A03	Air Cleaner .....	1
2	10534.A04	Stack Cap .....	1
3	10533.A03	Mounting Bands .....	2
4	10532.A0301	Replacement Filter .....	1
5	10485.A01	Connecting Elbow .....	1
6	97S.15	Hose Clips .....	2
7	11S.03B	Screw - Hex. Hd. M8 x 20 Long .....	4
8	61S.03	Nut - M8 Binx .....	4
9	12S.03	Washer - Plain M8 .....	4
10	10457.A02	Adaptor - Air Inlet .....	1
11	6S.03E	Bolt - Hex. Hd. 3/8" UNF x 1 1/2" (Adaptor to Manifold)	1
12	6S.03H	Bolt - Hex. Hd. 3/8" UNF x 2 1/2" (Adaptor to Manifold)	1
13	9S.03	Nuts - Hex. 3/8" UNF (Adaptor to Manifold) .....	2
14	41S.05	Washers - Spring 3/8" (Adaptor to Manifold) .....	2





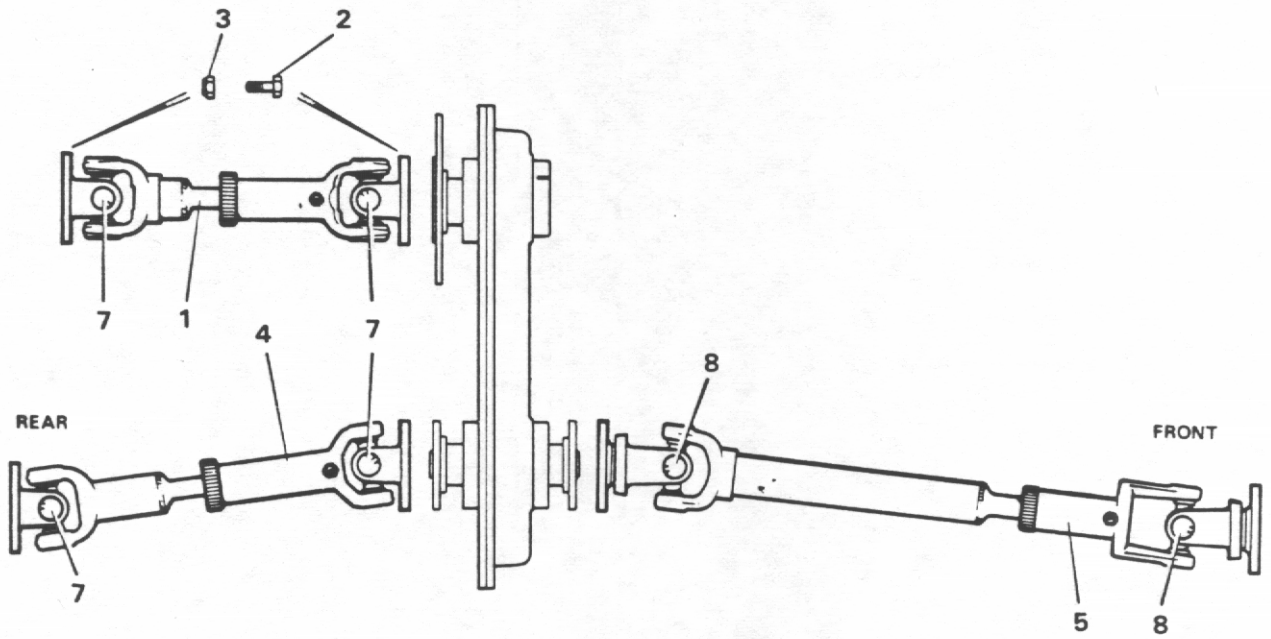
TP 504

Item No.	Part No.	Description	Qty.
1	30154.A07	Silencer Assembly (including items 2,3,4 & 5).....	1
2	30154.A0301	Silencer .....	1
3	10811.A02	Tail Pipe .....	1
4	10811.A01	Inlet Pipe .....	1
5	153S.09	Exhaust Clamp (2") .....	2
6	CSE 158	Rubber Bush .....	1
7	61S.03	Nut - M8 Binx .....	2
8	8S.03B	Bolt - M8 x 30 Long .....	2
9	10913.A01	Link-Silencer/Chassis .....	1

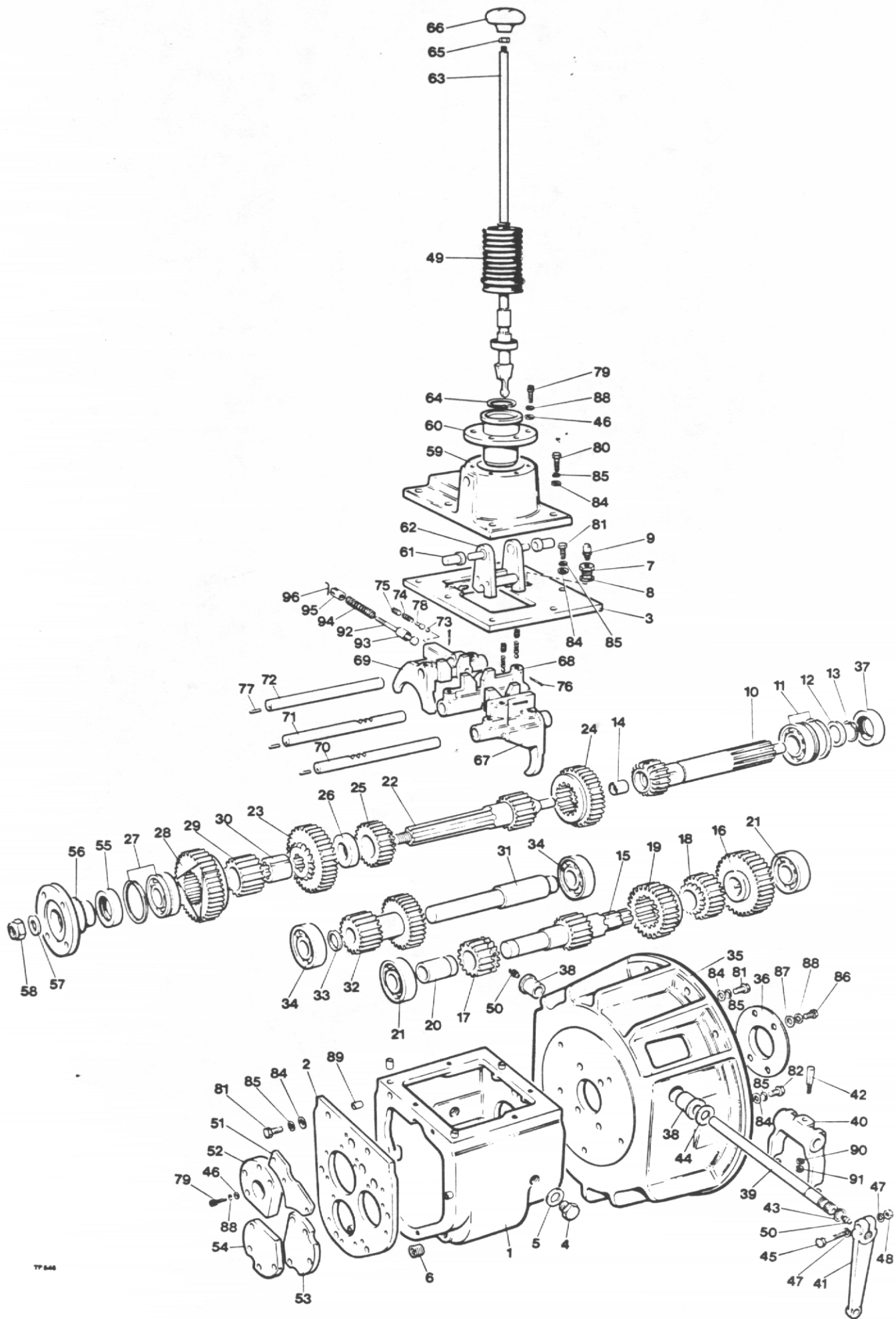


TP 496

Item No.	Part No.	Description	Qty.
1	30259.A01	Friction Plate 11" .....	1
2	30259.A0103	Dowel. Friction Plate to crankshaft .....	1
3	10841.A01	Bush - Pilot - (Input shaft) .....	1
4	30259.A0102	Dowel - Friction Plate to clutch cover .....	2
5	6S.02B	Bolt Hex Hds. 5/16" UNF x 1 1/2" (Drilled for wire locking) .....	4
6	41S.04	Washer - Spring 5/16".....	4
7	10597.A04	Clutch Cover Assy. 11" .....	1
8	10598.A05	Clutch Driven Plate 11" .....	1
9	10579.A03	Carbon Thrust bearing .....	1
10	10579.A0101	Retainer Spring .....	2
11	6S.03A	Screw Hex. Hd. 3/8" UNF x 1.1/8" long.....	8
12.	41S.05	Washer - Spring 3/8" .....	8
13	30253.A02	G/Box Assy. (N.I.) .....	1
14	30253.A0254	G/Lever c/w knob (N.I.) .....	1
15	69S.03E	Screw Hex. Hd. 3/8" UNC x 1" (G/Box to Engine)(NI)	12
16	41S.05	Washer - Spring .....	12
17	6S.05L	Bolt Hex. Hd. 1/2" UNFx3 1/2" (Eng. Fixing - Rear N.I).	2
18	6S.05J	Bolt Hex. Hd. 1/2" UNFx2 3/4" (Eng. Fixing - Front N.I)	2
19	47S.21	Washer - Spring 1/2" dia. (N.I) .....	4
20	107S. 6	Nut - Lock 1/2" Nyloc (N.I) .....	4



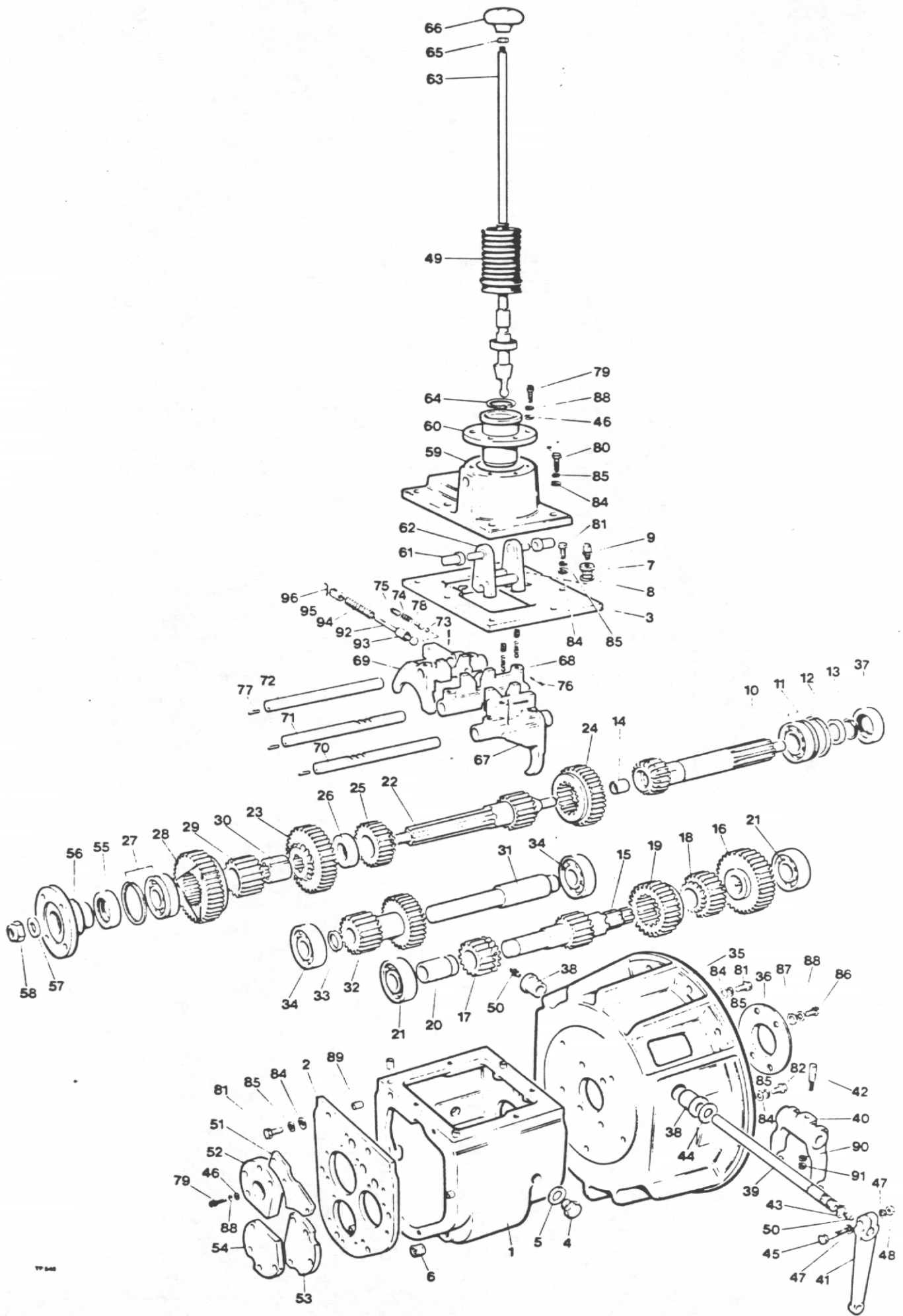
Item No.	Part No.	Description	Qty.
1	40297.A01	Propshaft - G/Box to T. Box .....	1
2	ESE 214	Bolt - 7/16" UNF x 1½" .....	24
3	107S.15	Nut - 7/16" UNF Nyloc .....	24
4	40114.A04	Propshaft - T. Box to Rear Axle .....	1
5	40077.A03	Propshaft - T. Box to Front Axle .....	1
6	41S.06	Washer - 7/16" I.D. (Propshaft to Axles) .....	8
7	10207.A01	Repair Kit (Std. Angle) .....	A/R
8	10307.A01	Repair Kit (Wide Angle) .....	A/R



## GEARBOX - 30253.A02

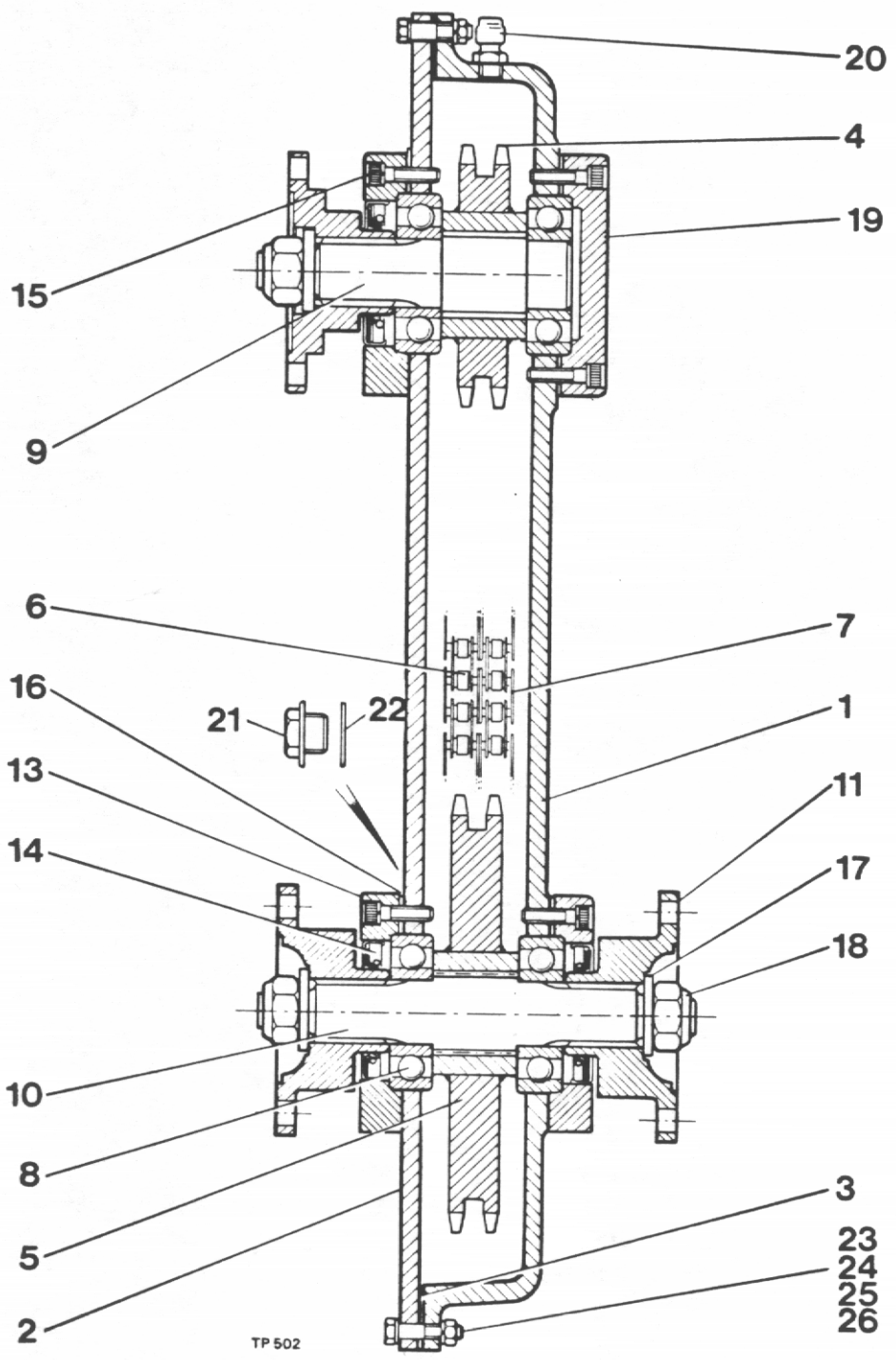
601 Type

Item No.	Part No.	Description	Qty.
	30253.A02	Gearbox Assembly complete .....	1
1	30253.A0201	Gear Case .....	1
2	30253.A0202	End Plate - Gear case .....	1
3	30253.A0203	Top Plate - Gear case .....	1
4	30253.A0204	Oil level Plug .....	2
5	42S.05	Washer - Oil level Plug .....	2
6	30253.A0205	Drain Plug .....	1
7	30253.A0206	Filler Plug .....	1
8	42S.05	Washer - Filler Plug .....	1
9	10305.A01	Breather - Filler Plug .....	1
10	30253.A0207	Input shaft 15T - 10SP .....	1
11	30253.A0208	Bearing c/w circlip .....	1
12	30253.A0209	Spacer - Input shaft .....	1
13	30253.A0210	Circlip - Input shaft .....	1
14	30253.A0211	Bearing - needle roller .....	1
15	30253.A0212	Layshaft - 15SP - 6SP .....	1
16	30253.A0213	Primary Reduction Gear - 31T - 6SP lay shaft ...	1
17	30253.A0214	First Reduction Gear - 15T - 15T - layshaft .....	1
18	30253.A0215	Second Reduction Gear - 20T - 15T - layshaft .....	1
19	30253.A0216	Third Reduction Gear - 26T - 15SP - layshaft .....	1
20	30253.A0217	Spacer - layshaft .....	1
21	30253.A0218	Bearing .....	2
22	30253.A0219	Mainshaft - 15SP - 6SP .....	1
23	30253.A0220	First Reduction Gear - 31T - 17T - 6SP - Mainshaft	1
24	30253.A0221	Second Reduction Gear - 27T - 15SP - Mainshaft ...	1
25	30253.A0222	Third Reduction Gear - 21T - 15T .....	1
26	30253.A0223	Spacer - Mainshaft .....	1
27	30253.A0224	Bearing c/w circlip .....	1
28	30253.A0225	Reverse Gear 33T - 17SP .....	1
29	30253.A0226	Spacer - 17SP - Reverse Gear - Mainshaft .....	1
30	30253.A0227	Spacer - 6SP - Reverse Gear - Mainshaft .....	1
31	30253.A0228	Reverse Intermediate shaft .....	1
32	30253.A0229	Reverse Intermediate Gear - 25T - 16T .....	1
33	30253.A0230	Spacer - Reverse Intermediate shaft .....	1
34	30253.A0218	Bearing .....	2
35	30253.A0231	Bell Housing .....	1
36	30253.A0232	Cover - oil seal - Bell Housing .....	1
37	30253.A0233	Oil Seal - Input shaft .....	1
38	30253.A0234	Bush - Bell Housing .....	2
39	30253.A0236	Clutch Operating shaft .....	1
40	30253.A0237	Operating Fork - clutch .....	1
41	30253.A0238	Lever - clutch operating shaft .....	1
42	30253.A0239	Cotter - Taper shank .....	1
43	30253.A0240	Circlip - Clutch Operating shaft .....	1
44	30253.A0241	Washer - Clutch Operating shaft .....	1
45	6S.01E	Bolt - ½" UNF x 1½" long .....	1
46	10S.34	Washer ½" dia. ....	21
47	41S.03	Spring washer ½" dia. ....	2
48	9S.01	Nut ½" UNF .....	1
49	30253.A0242	Turret Gaiter .....	1
50	131S.07	Grease Nipple .....	2
51	30253.A0243	Retaining Plate - (Selector Rods) .....	1
52	30253.A0244	Cover - oil seal - (Mainshaft) .....	1
53	30253.A0245	Cover - Blank - (layshaft) .....	1
54	30253.A0246	Cover - Blank - (Reverse Intermediate shaft) .....	1
55	30253.A0247	Oil Seal - (Mainshaft) .....	1
56	30253.A0235	Flange - (Mainshaft) .....	1
57	30253.A0241	Washer .....	1
58	107S.07	Nut .....	1
59	30253.A0248	Turret - Gear change .....	1
60	30253.A0249	Top Cover - Turret .....	1



Cont'd GEARBOX - 30253.A02  
601 Type

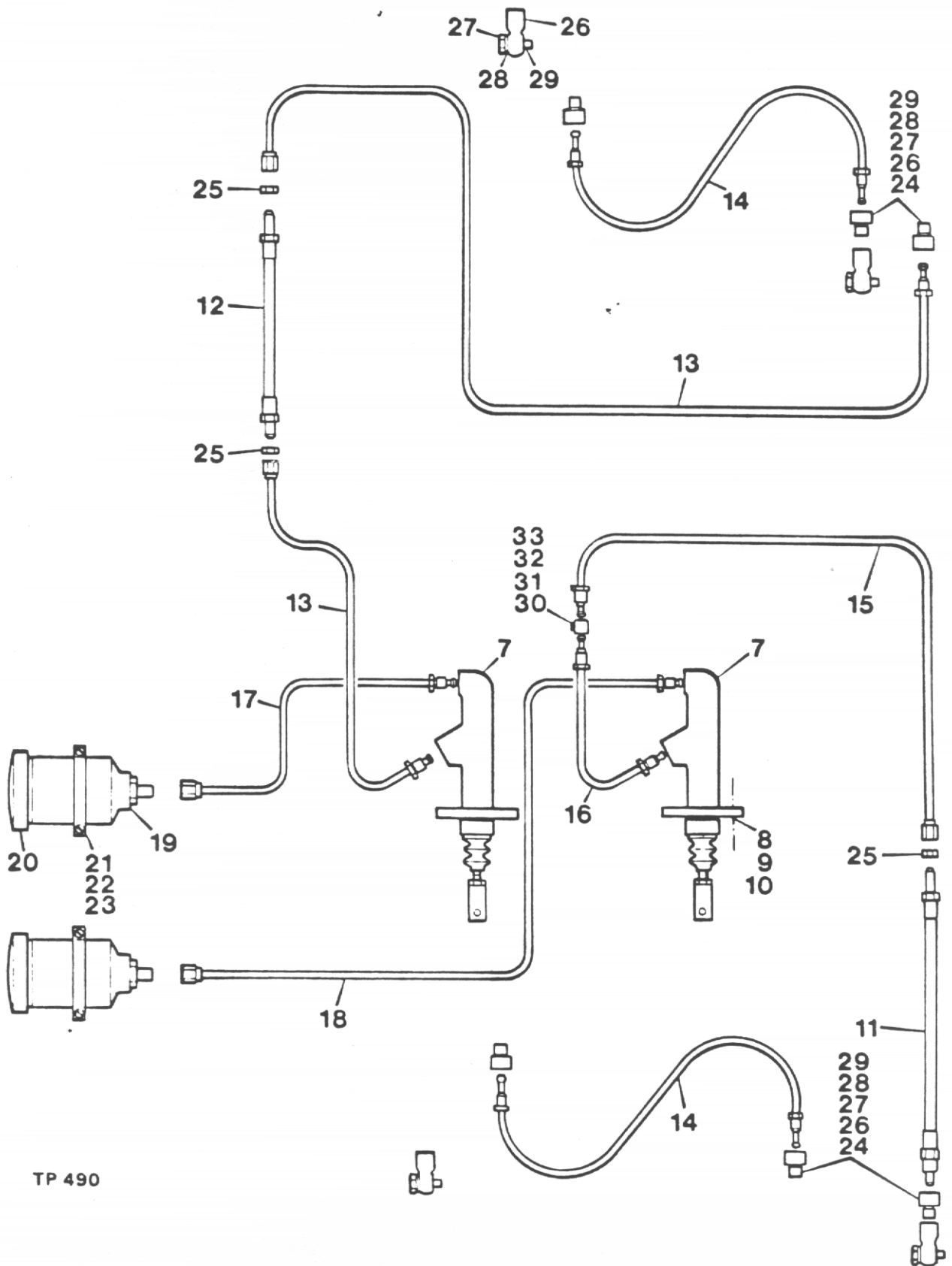
Item No.	Part No.	Description	Qty.
61	30253.A0250	Bush .....	2
62	30253.A0251	Gear change Gate .....	1
63	30253.A0254	Gear lever c/w bearing .....	1
64	30253.A0252	Circlip .....	1
65	104S.03	Nut .....	1
66	30253.A0253	Knob - gear lever .....	1
67	30253.A0255	Selector fork - 1st/2nd Gears .....	1
68	30253.A0256	Selector fork - 3rd/4th Gears .....	1
69	30253.A0257	Selector fork - Reverse Gear .....	1
70	30253.A0258	Rod - Selector fork - 1st/2nd Gears .....	1
71	30253.A0259	Rod - Selector fork - 3rd/4th Gears .....	1
72	30253.A0260	Rod - Reverse Gear .....	1
73	30253.A0261	Ball - 3/8" dia. ....	3
74	30253.A0262	Spring .....	3
75	30253.A0263	Slotted Grub Screw .....	3
76	44S.02C	Split pin .....	3
77	30253.A0264	Dowel selector forks .....	3
78	30253.A0265	Pressure Pad .....	3
79	90S.02H	Capscrew - socket Head 1/2" UNF x 1" long .....	21
80	69S.03J	Bolt - Hex. Head 3/8" UNC x 2" long .....	5
81	69S.03G	Bolt - Hex. Head 3/8" UNC x 1 1/2" long .....	13
82	69S.03F	Bolt - Hex. Head 3/8" UNC x 1 1/2" long .....	1
83	69S.03E	Bolt - Hex. Head 3/8" UNC x 1" long .....	1
84	10S.36	Washer - flat 3/8" dia. ....	20
85	41S.05	Spring washer 3/8" dia. ....	20
86	6S.01	Bolt - Hex. Head 1/2" UNF x 1.3/8" long .....	4
87	10S.34	Washer - flat 1/2" dia. ....	4
88	41S.03	Spring washer 1/2" dia. ....	4
89	30253.A0266	Dowel - Hollow - (case plates) .....	6
90	10S.34	Washer - flat 1/2" dia. ....	1
91	30253.A0267	Nut .....	1
92	30253.A0268	Plunger .....	1
93	30253.A0269	Guide Bush .....	1
94	30253.A0270	Spring .....	1
95	30253.A0271	Slotted Nut .....	1
96	30253.A0272	Retaining wire .....	1



TP 502



Item No.	Part No.	Description	Qty.
	40054.A08	Transfer Case Assy. - Complete .....	1
1	40061.A02	Case Casting ) Only supplied .....	1
2	40062.A04	Cover Plate ) together .....	1
3	30072.A01	Gasket .....	1
4	10508.A01	Sprocket Assembly 24T (Duplex) .....	1
5	10505.A01	Sprocket Assembly 14T (Duplex) .....	1
6	168S.01	Chain 5/8" Pitch 77 Rollers (Duplex) .....	1
7	169S.01	Connecting Link .....	1
8	88S.06	Ball Bearing .....	4
9	10299.A01	Input Shaft .....	1
10	10300.A01	Output Shaft .....	1
11	10297.A01	Input/Output Flange ..... .....	3
12			
13	10562.A01	Oil Seal Housing .....	3
14	89S.02	Oil Seal .....	3
15	90S.02H	Cap Screw 1/2" x 1" Long .....	16
16	10293.A01	Gasket .....	4
17	10S.06	Washer - Plain 3/4" I.D.....	3
18	107S.07	Nut - 3/4" Nyloc .....	3
19	10298.A01	End Cover .....	1
20	10305.A01	Breather .....	1
21	10301.A01	Level/Filler Plug .....	1
22	42S.05	Washer - Fibre .....	1
23	8S.02B	Bolt - Hex. Hd. M6 x 30 .....	24
24	7S.02	Nut - Hex. M6 .....	24
25	17S.03	Washer - Spring M6 .....	24
26	12S.02	Washer - Plain M6 .....	24
	11S.05D	Screw - Hex. Hd. M12 x 30 ) Transfer Case .....	4
	61S.05	Nut - M12 Binx ) Fixing .....	4
	12S.06	Washer - Flat M12 ) to Chassis .....	4



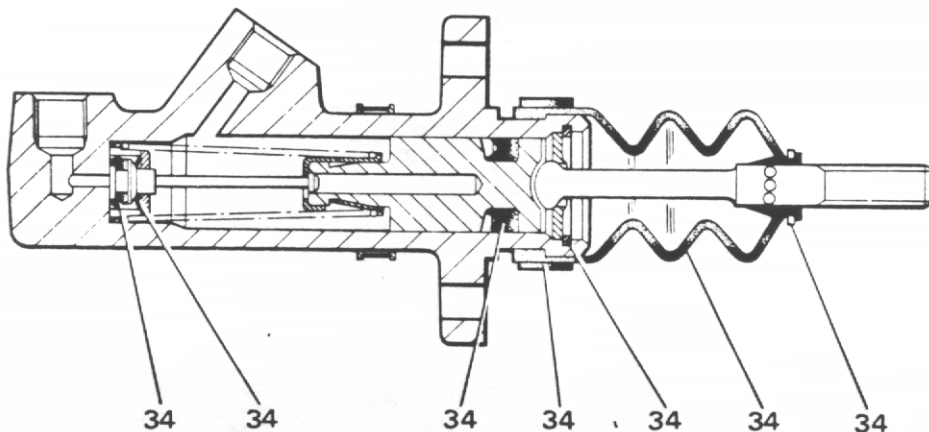
TP 490

1636

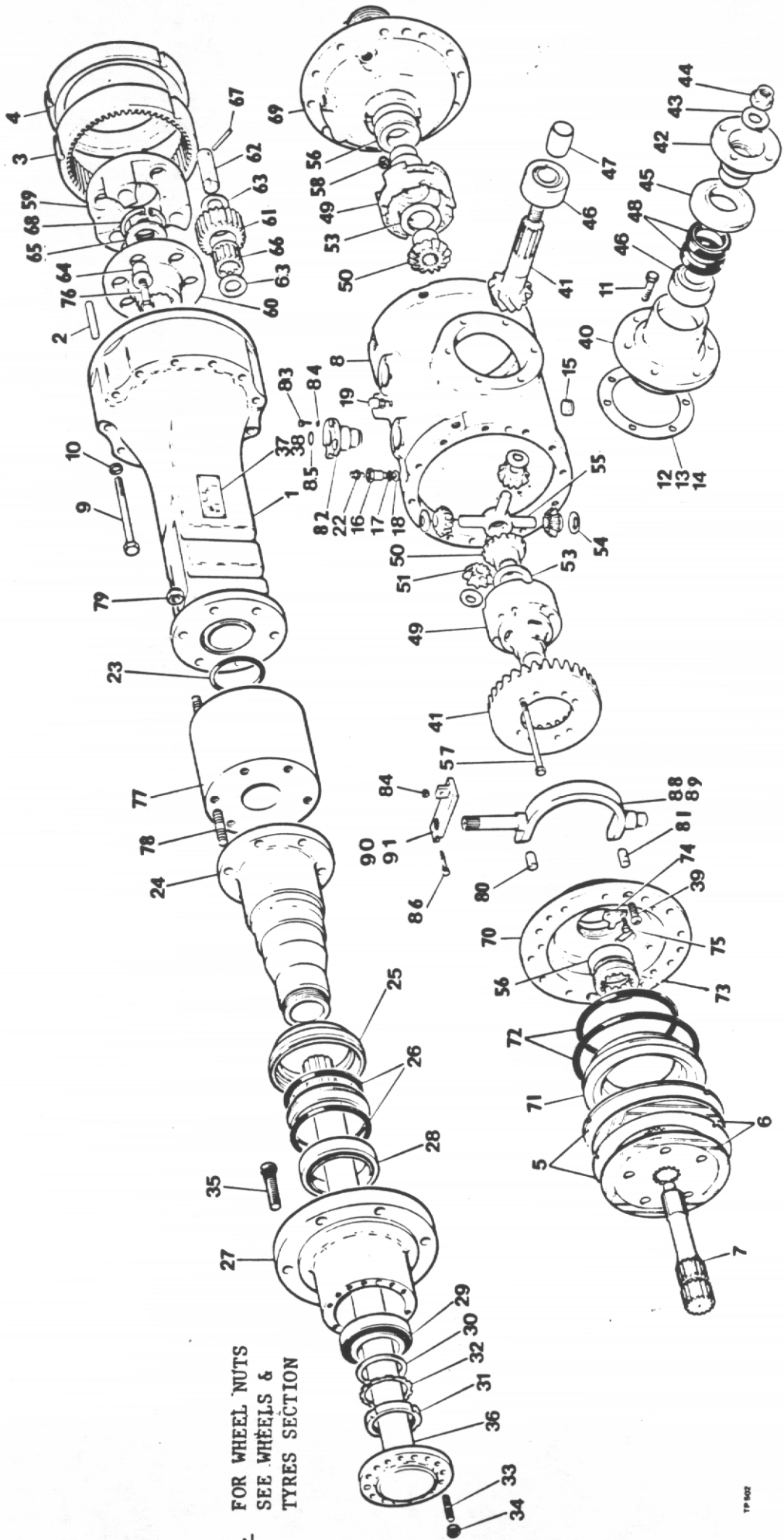
AXLES & BRAKE FITTINGS

1636

Item No.	Part No.	Description	Qty.
1	30099.A02	Axle - Front (358M) .....	1
2	30100.A02	Axle - Rear (359M) .....	1
3	CSE 193	Plate - Clamp Axle .....	8
4	6S.06V	Bolt - Hex. Hd. 5/8"UNF x 8" (Axle - Rear) ....	8
5	6S.06W	Bolt - Hex. Hd. 5/8"UNF x 8½" (Axle - Front)...	8
6	107S.17	Nut - 5/8" UNF Nyloc (to 180 ft.lbs.) .....	16
7	20102.A02	Master Cylinder .....	2
8	8S.03B	Bolt - Hex. Hd. M8 x 30 .....	4
9	7S.03	Nut - M8 .....	4
10	17S.04	Washer - Spring M8 .....	4
11	10516.A02	Hose - Flexible (to Rear Axle) .....	1
12	10517.A02	Hose - Flexible (to Front Axle) .....	1
13	10967.A16	Pipe - Brake (M/c to Flex. to Front Axle) ....	2
14	10968.A02	Pipe - Brake (Axle Bridge) .....	2
15	10967.A19	Pipe - Brake (Tee to Rear Flexible) .....	1
16	10968.A07	Pipe - Brake (M/c to Tee) .....	1
17	10967.A20	Pipe - Brake .....	1
18	10967.A21	Pipe - Brake .....	1
19	10659.A02	Reservoir .....	2
20	10659.A0201	Cap - Reservoir .....	2
21	10659.A0102	Clip - Reservoir .....	2
22	82S.03C	Screw - Slot Rd. Hd. 2BA x ½" .....	4
23	85S.01	Nut - 2BA Nyloc .....	4
24	10354.A02	Adaptor - Brake Pipe .....	6
25	10582.A01	Nut - Hex. Half M12 .....	3
26	114S.01	Coupling - Banjo 3/8" UNF .....	8
27	115S.01A	Bolt - Banjo 3/8" UNF .....	8
28	116S.02	Washer - Copper 7/16" I.D.....	8
29	116S.01	Washer - Copper 3/8" I.D.....	8
30	10387.A01	Adaptor - Brake Switch .....	1
31	11S.02B	Screw - Hex. Hd. M6 x 20 .....	2
32	7S.02	Nut - Hex. M6 .....	2
33	17S.03	Washer - Spring M6 .....	2
34	10510.A01	Master Cylinder Service Kit.....	A/R



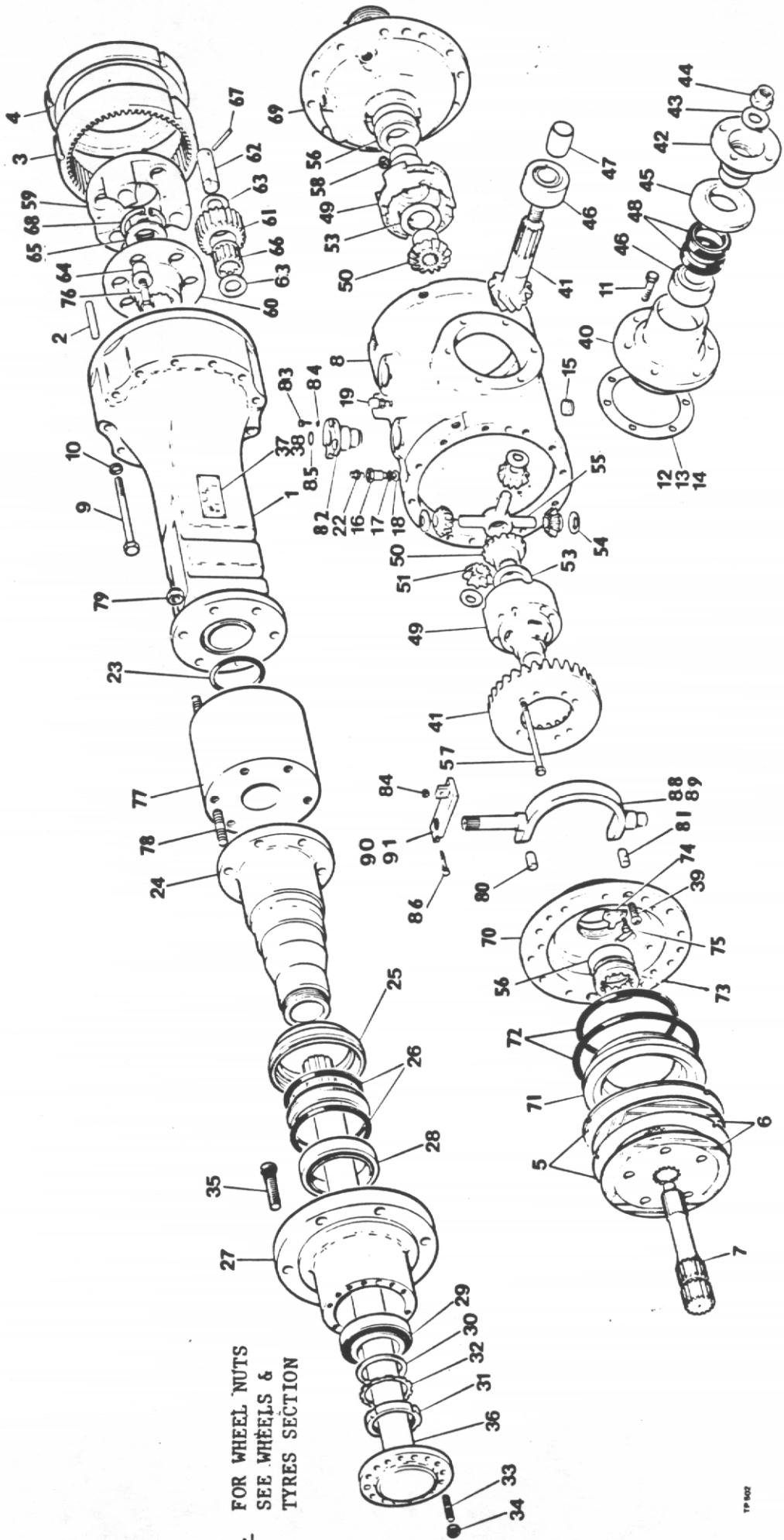
The following alterations occur if machine is fitted with Safety Frame  
 item 24 is deleted and items 15 & 16 are replaced by a single pipe  
 Part No.10967.A18



NB. FOR WHEEL NUTS  
SEE WHEELS &  
TYRES SECTION

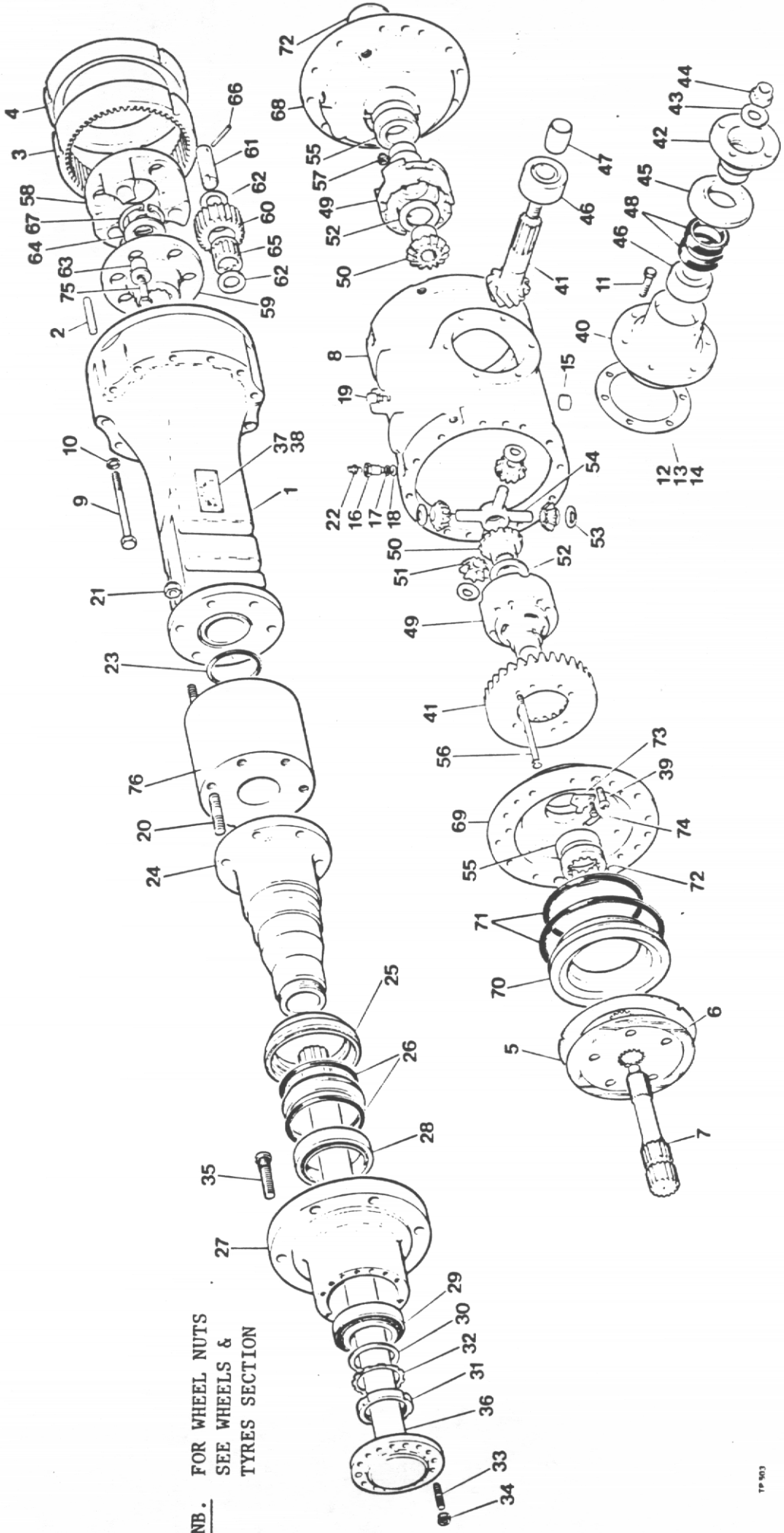
DRIVE AXLE - 30099.A02

Item No.	S. & E. Pt. No.	Description	Qty.
1	30099.A02	Axle complete .....	1
2	30082.A0201	Axle Arm .....	2
3	30100.A0201	Pin .....	6
4	30082.A0203	Annulus .....	2
5	30099.A0206	Brake Spacer Plate .....	2
6	30082.A0205	Brake Fixed Plate .....	4
7	30082.A0206	Oil Immersed Brake Disc .....	4
8	30082.A0207	Sun Gear .....	2
9	30099.A0201	Main Axle Casing .....	1
10	8S.4Q	Bolt .....	24
11	17S.4	Spring Washer .....	24
12	11S.4C	Hex. Hd. Screw .....	6
13	30082.A0209	Pinion Adjusting Shim .....	A/R
14	30082.A0210	Pinion Adjusting Shim .....	A/R
15	30082.A0211	Pinion Adjusting Shim .....	A/R
16	30082.A0212	Hex. Socket BSP TR Plug .....	2
17	30082.A0213	Brake Pipe Adaptor .....	4
18	49S.2	'O' Ring .....	4
19	30082.A0269	Dowty Washer .....	4
20	30082.A0214	Relief Valve .....	1
21			
22	30082.A0215	Brake Bleed Valve .....	2
23	30082.A0268	'O' Ring .....	2
24	30082.A0216	Stub Axle .....	2
25	30082.A0217	Oil Seal Housing .....	2
26	30082.A0218	Hub Oil Seal .....	2
27	30082.A0219	Hub .....	2
28	30082.A0220	Hub Inner Bearing .....	2
29	30082.A0221	Hub Outer Bearing .....	2
30	30082.A0222	Hub Bearing Spacer .....	2
31	30082.A0223	Bearing Lock Nut .....	2
32	30082.A0224	Tab Washer .....	2
33	30082.A0267	Stud .....	16
34	59S.04	Nyloc Nut .....	16
35	30082.A0225	Wheel Stud .....	16
36	30100.A0223	Axle Shaft .....	2
37	30082.A0227	Label .....	1
38	15S.1A	Hammer Drive Screw .....	4
39	30082.A0266	Hex. Socket Button Hd. Screw .....	4
40	30082.A0228	Input Pinion Cartridge .....	1
41	30082.A0270	Spiral Bevel Pinion and wheel.....	1
42	30082.A0230	Drive Flange .....	1
43	30082.A0231	Drive Flange Washer .....	1
44	30082.A0232	Drive Flange Nut .....	1
45	30082.A0233	Oil Seal Cover .....	1
46	30082.A0234	Pinion Bearing .....	2
47	30082.A0235	Pinion Bearing Spacer .....	1
48	30082.A0236	Pinion Oil Seal .....	2
49	30100.A0212	Diff. Case Process Assembly .....	1
50			
51	30082.A0239	Diff. Wheel .....	2
52	30082.A0240	Diff. Pinion.....	4
53	30082.A0241	Diff. Wheel Thrust Washer .....	2
54	30082.A0242	Diff. Pinion Thrust Washer .....	4
55	30082.A0243	Diff. Spider .....	1
56	30082.A0244	Diff. Bearing .....	2
57	8S.4Q	Bolts .....	8
58	59S.03	Nyloc Nuts .....	8



NB. FOR WHEEL NUTS  
SEE WHEELS &  
TYRES SECTION

Item No.	S. & E. Pt. No.	Description	Qty.
59	30082.A0245	Planet Carrier .....	1
60	30100.A0207	Carrier Drive Flange .....	1
61	30082.A0247	Planet Gear .....	3
62	30082.A0248	Planet Pin .....	3
63	30082.A0249	Planet Thrust Washer .....	6
64	30048.A0107	Planet Carrier Bush .....	3
65	30082.A0251	Axle Shaft Thrust Spacer .....	1
66	30082.A0252	Planet Cage Roller .....	3
67	30082.A0253	Spring Dowel .....	3
68	30082.A0265	Circlip .....	2
69	30100.A0208	Brake Cylinder R.H.....	1
70	30100.A0209	Brake Cylinder L.H.....	1
71	30100.A0210	Brake Piston .....	2
72	30100.A0211	Piston Oil Seals .....	2
73	30082.A0259	Piston Oil Seals .....	2
74	30082.A0260	Bearing Adjusting Nut .....	2
75	30082.A0261	Adjusting Nut Lock Plate .....	2
76	30082.A0262	Screw - Lock Plate .....	4
77	30100.A0213	Planet Carrier Bolt .....	3
78	30082.A0267	Axle Case Extender .....	2
79	59S.04	Studs .....	24
80	30099.A0202	Nuts - Nyloc M12 .....	24
81	30099.A0203	Roller .....	2
82	30044.A0201	Roller .....	2
83	30044.A0202	Brake Lever Support Bush .....	2
84	17S.04	Setscrew .....	6
85	30044.A0203	Spring Washer .....	6
86	30044.A0204	'O' Ring .....	2
87	59S.03	Setscrew Handbrake Lever .....	2
88	30099.A0204	Nyloc Nut .....	2
89	30099.A0205	Brake Lever (L.H.) .....	2
90	10049.A02	Brake Lever (R.H.) .....	1
91	10048.A02	Handbrake Lever (L.H.) .....	1
		Handbrake Lever (R.H.) .....	1

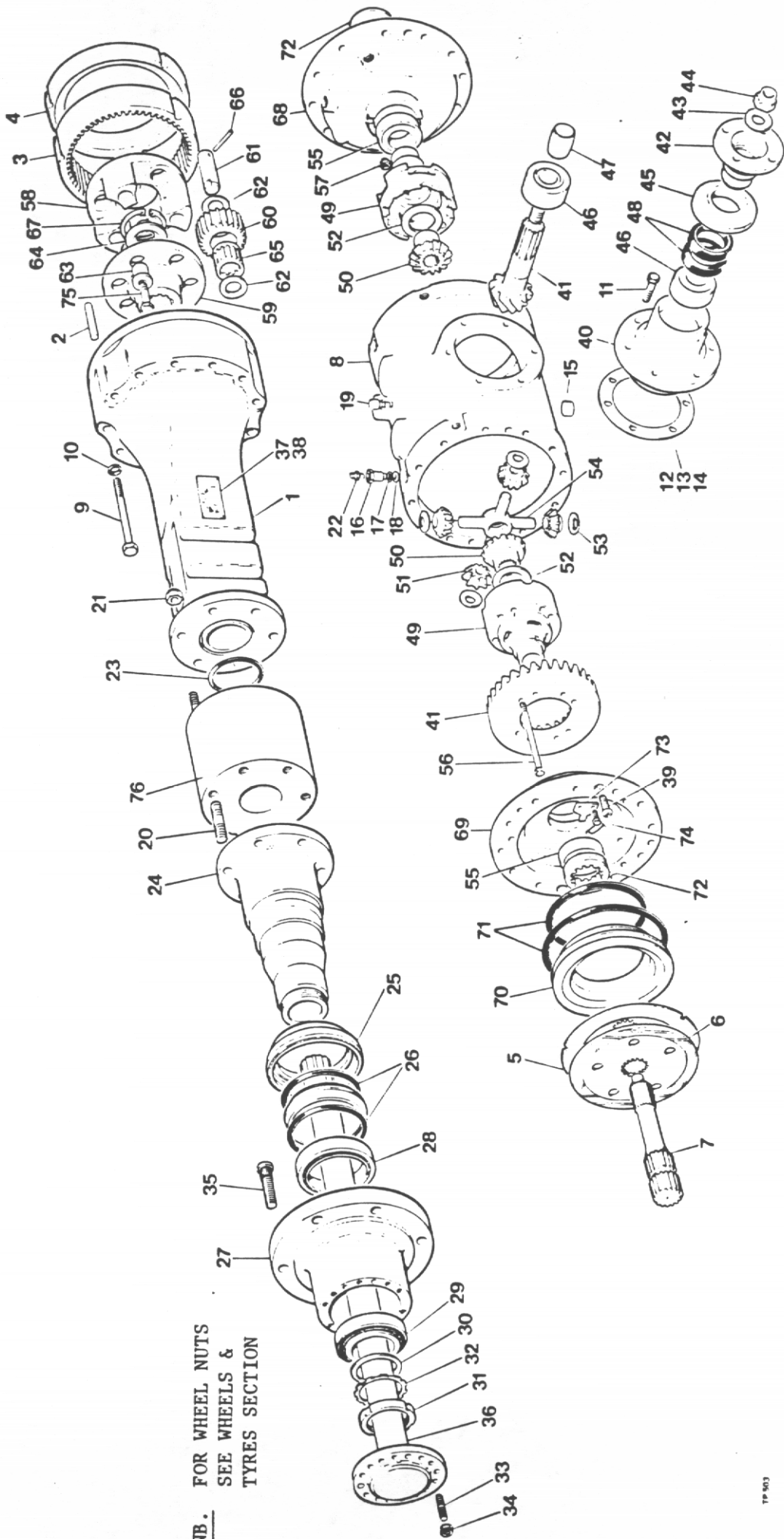


NB. FOR WHEEL NUTS  
SEE WHEELS &  
TYRES SECTION



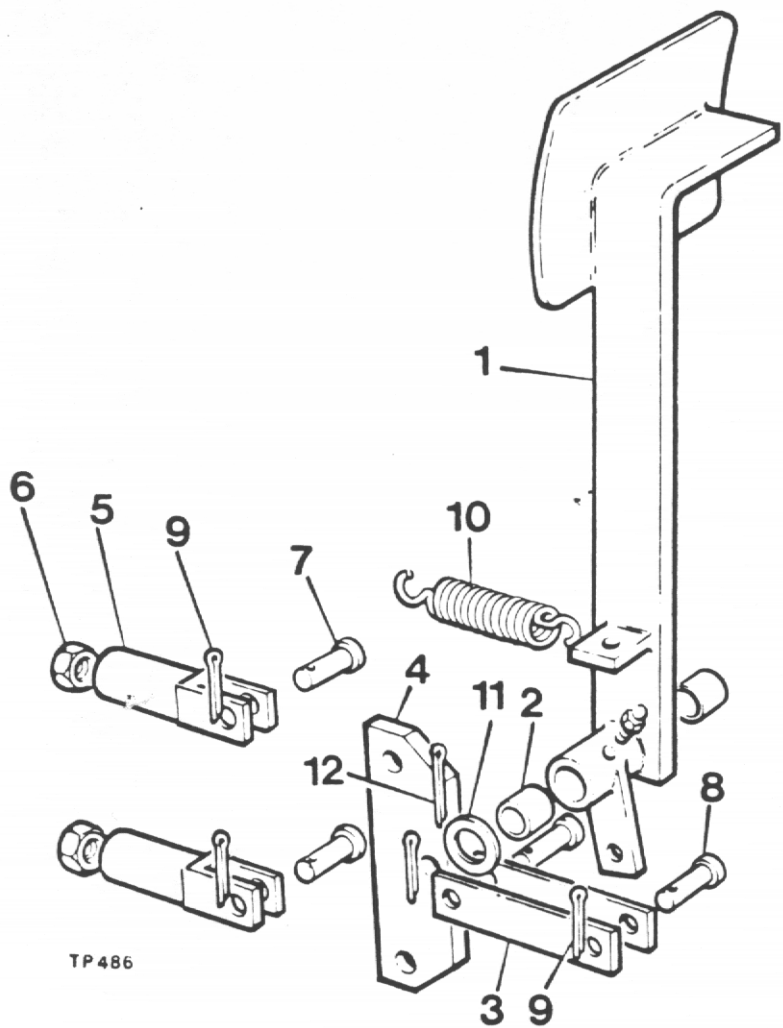
## DRIVE AXLE - 30100.A02

Item No.	S. & E. Pt. No.	Description	Qty.
	30100.A02	Axle complete .....	1
1	30082.A0201	Axle Arm .....	2
2	30100.A0201	Pin .....	6
3	30082.A0203	Annulus .....	2
4	30082.A0204	Brake Spacer Plate .....	2
5	30082.A0205	Brake Fixed Plate .....	2
6	30082.A0206	Oil Immersed Brake Disc .....	2
7	30082.A0207	Sun Gear .....	2
8	30082.A0208	Main Axle Casing .....	1
9	8S.4Q	Bolt .....	24
10	17S.4	Spring Washer .....	24
11	11S.4C	Hex. Hd. Screw .....	6
12	30082.A0209	Pinion Adjusting Shim .....	A/R
13	30082.A0210	Pinion Adjusting Shim .....	A/R
14	30082.A0211	Pinion Adjusting Shim .....	A/R
15	30082.A0212	Hex. Socket BSP TR Plug .....	2
16	30082.A0213	Brake Pipe Adaptor .....	4
17	49S.2	'O' Ring .....	4
18	30082.A0269	Dowty Washer .....	4
19	30082.A0214	Relief Valve .....	1
20			
21			
22	30082.A0215	Brake Bleed Valve .....	2
23	30082.A0268	'O' Ring .....	2
24	30100.A0203	Stub Axle .....	2
25	30082.A0217	Oil Seal Housing .....	2
26	30082.A0218	Hub Oil Seal .....	2
27	30100.A0204	Hub .....	2
28	30082.A0220	Hub Inner Bearing .....	2
29	30082.A0221	Hub Outer Bearing .....	2
30	30082.A0222	Hub Bearing Spacer .....	2
31	30082.A0223	Bearing Lock Nut .....	2
32	30082.A0224	Tab Washer .....	2
33	30082.A0267	Stud .....	16
34	59S.04	Nyloc Nut .....	16
35	30082.A0225	Wheel Stud .....	16
36	30100.A0223	Axle Shaft .....	2
37	30082.A0227	Label .....	1
38	15S.1A	Hammer Drive Screw .....	4
39	30082.A0266	Hex. Socket Button Hd. Screw .....	4
40	30082.A0228	Input Pinion Cartridge .....	1
41	30082.A0270	Spiral Bevel Pinion and wheel.....	1
42	30082.A0230	Drive Flange .....	1
43	30082.A0231	Drive Flange Washer .....	1
44	30082.A0232	Drive Flange Nut .....	1
45	30082.A0233	Oil Seal Cover .....	1
46	30082.A0234	Pinion Bearing .....	2
47	30082.A0235	Pinion Bearing Spacer .....	1
48	30082.A0236	Pinion Oil Seal .....	2
49	30100.A0212	Diff. Case Process Assembly .....	1
50			
51	30082.A0239	Diff. Wheel .....	2
52	30082.A0240	Diff. Pinion.....	4
53	30082.A0241	Diff. Wheel Thrust Washer .....	2
54	30082.A0242	Diff. Pinion Thrust Washer .....	4
55	30082.A0243	Diff. Spider .....	1
56	30082.A0244	Diff. Bearing .....	2
57	8S.4Q	Bolts .....	8
58	59S.03	Nyloc Nuts .....	8



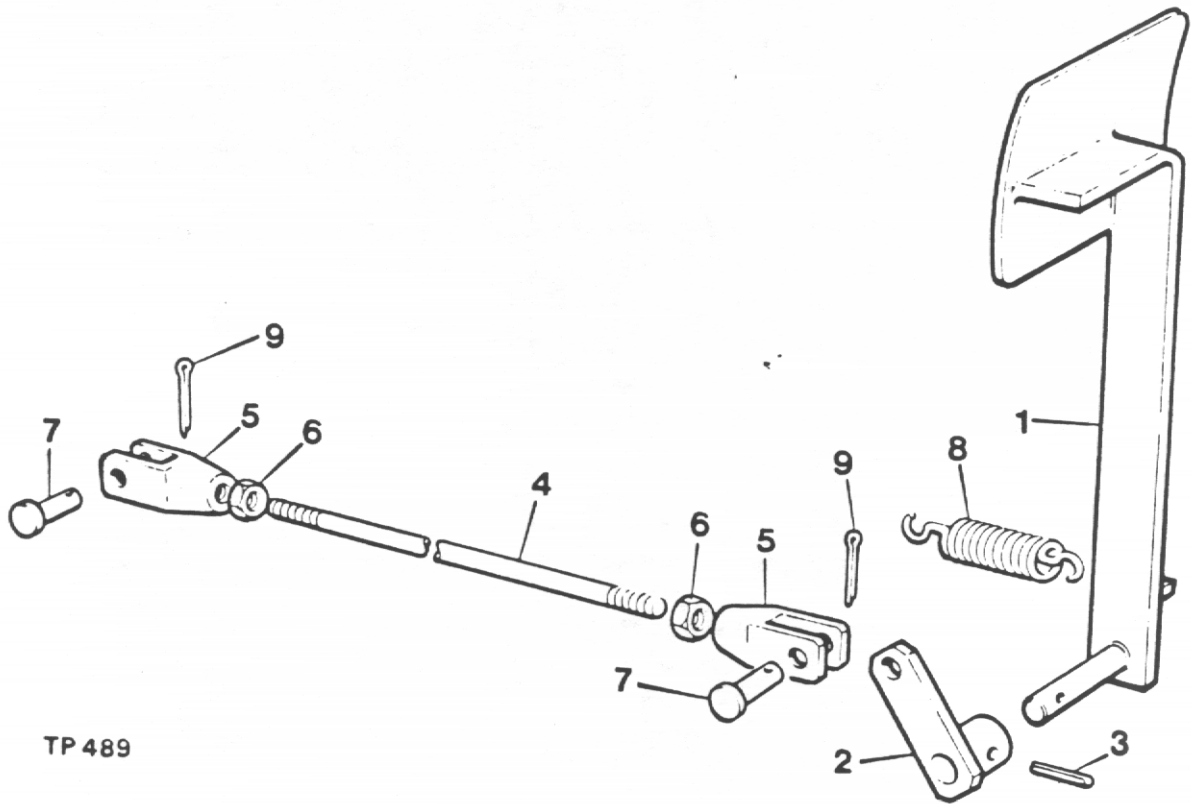
NB. FOR WHEEL NUTS  
SEE WHEELS &  
TYRES SECTION

Item No.	S. & E. Pt. No.	Description	Qty.
59	30082.A0245	Planet Carrier .....	1
60	30100.A0207	Carrier Drive Flange .....	1
61	30082.A0247	Planet Gear .....	3
62	30082.A0248	Planet Pin .....	3
63	30082.A0249	Planet Thrust Washer .....	6
64	30048.A0107	Planet Carrier Bush .....	3
65	30082.A0251	Axle Shaft Thrust Spacer .....	1
66	30082.A0252	Planet Cage Roller .....	3
67	30082.A0253	Spring Dowel .....	3
68	30082.A0265	Circlip .....	2
69	30082.A0271	Brake Cylinder R.H.....	1
70	30082.A0272	Brake Cylinder L.H.....	1
71	30100.A0210	Brake Piston .....	2
72	30100.A0211	Piston Oil Seals .....	2
		Piston Oil Seals .....	2
73	30082.A0259	Bearing Adjusting Nut .....	2
74	30082.A0260	Adjusting Nut Lock Plate .....	2
75	30082.A0261	Screw - Lock Plate .....	4
76	30082.A0262	Planet Carrier Bolt .....	3
77	30100.A0213	Axle Case Extender .....	2
78	30082.A0267	Studs .....	24
79	59S.04	Nuts - Nyloc M12 .....	24



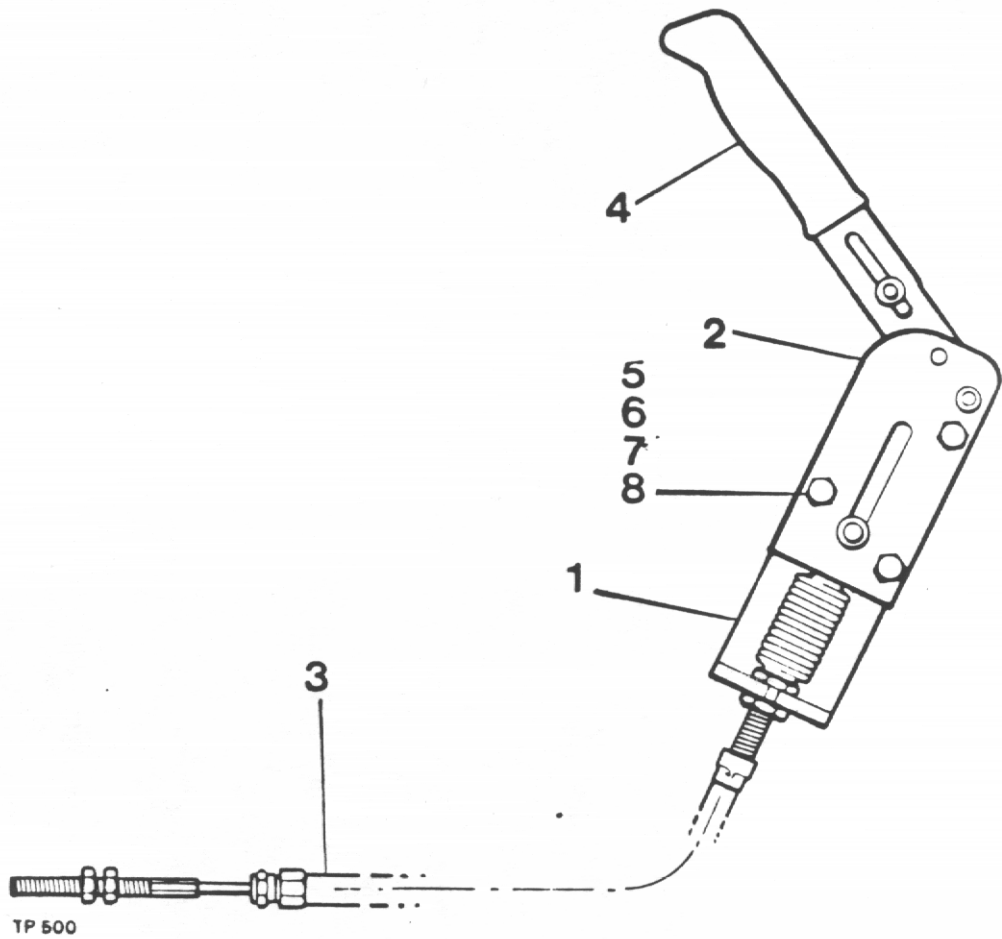
TP486

Item No.	Part No.	Description	Qty.
1	20232.A01	Brake Pedal Assembly .....	1
2	43S.02	Bush .....	2
3	10436.A02	Pedal Links .....	2
4	20117.A07	Compensator Beam .....	1
5	10454.A02	Special Clevis .....	2
6	95S.03	Nut - Hex. Half (M/Cyl.) 3/8" UNF .....	2
7	10650.A17	Clevis Pins (C.174X) .....	2
8	10650.A18	Clevis Pins (C.174XL) .....	2
9	44S.02C	Split Pins 3/32" Dia. x 1" Long .....	4
10	C173B	Return Spring .....	1
11	10S.17	Washer - Plain 3/4" )	2
12	44S.04	Split Pin ) Brake Pedal .....	1

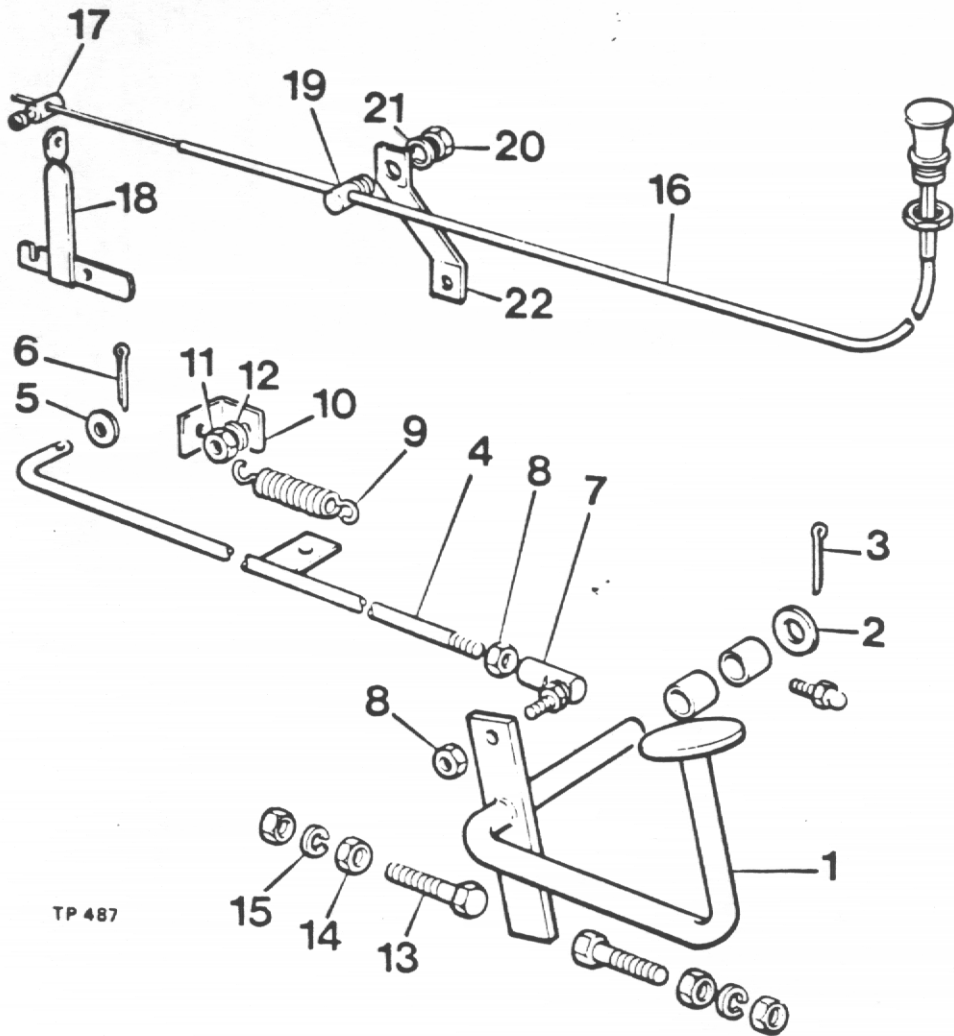


TP489

Item No.	Part No.	Description	Qty.
1	20096.A05	Clutch Pedal Assembly .....	1
2	10563.A03	Clutch Lever Assembly .....	1
3	54S.07M	Tension Pin .....	1
4	38S.C65	Clutch Rod 3/8" BSF x 435 Long .....	1
5	C174A	Clevis 3/8" BSF .....	2
6	74S.04	Half Nut 3/8" BSF .....	2
7	10650.A17	Clevis Pin 3/8" Dia.....	2
8	C173B	Return Spring .....	1
9	44S.02C	Split Pin 3/32" x 1" Long .....	2

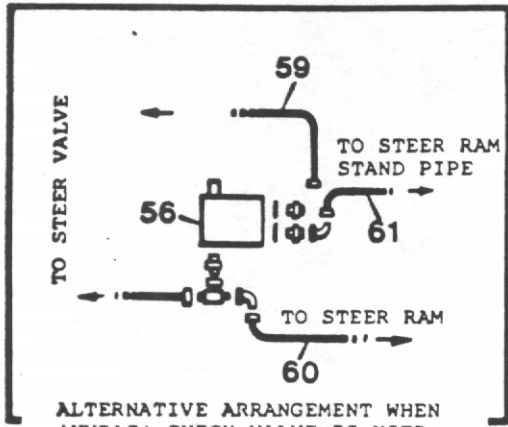


Item No.	Part No.	Description	Qty.
1	20267.A01	Bracket - Handbrake .....	1
2	715-C-11605	Handbrake Assembly .....	1
3	20273.A01	Cable Assembly .....	1
4	10837.A01	Handbrake Lever Sleeve .....	1
5	8S.04J	Bolt - Hex. Hd. M10 x 65 (H/Brake to Bracket) ...	3
6	17S.05	Washer - Spring M10 (H/Brake to Bracket) .....	3
7	61S.04	Nut - M10 Binx (H/Brake to Bracket) .....	3
8	12S.19	Washer - Flat M10 (H/Brake to Bracket) .....	6

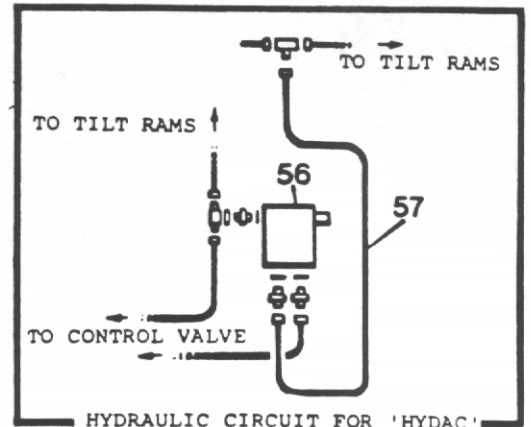


TP 487

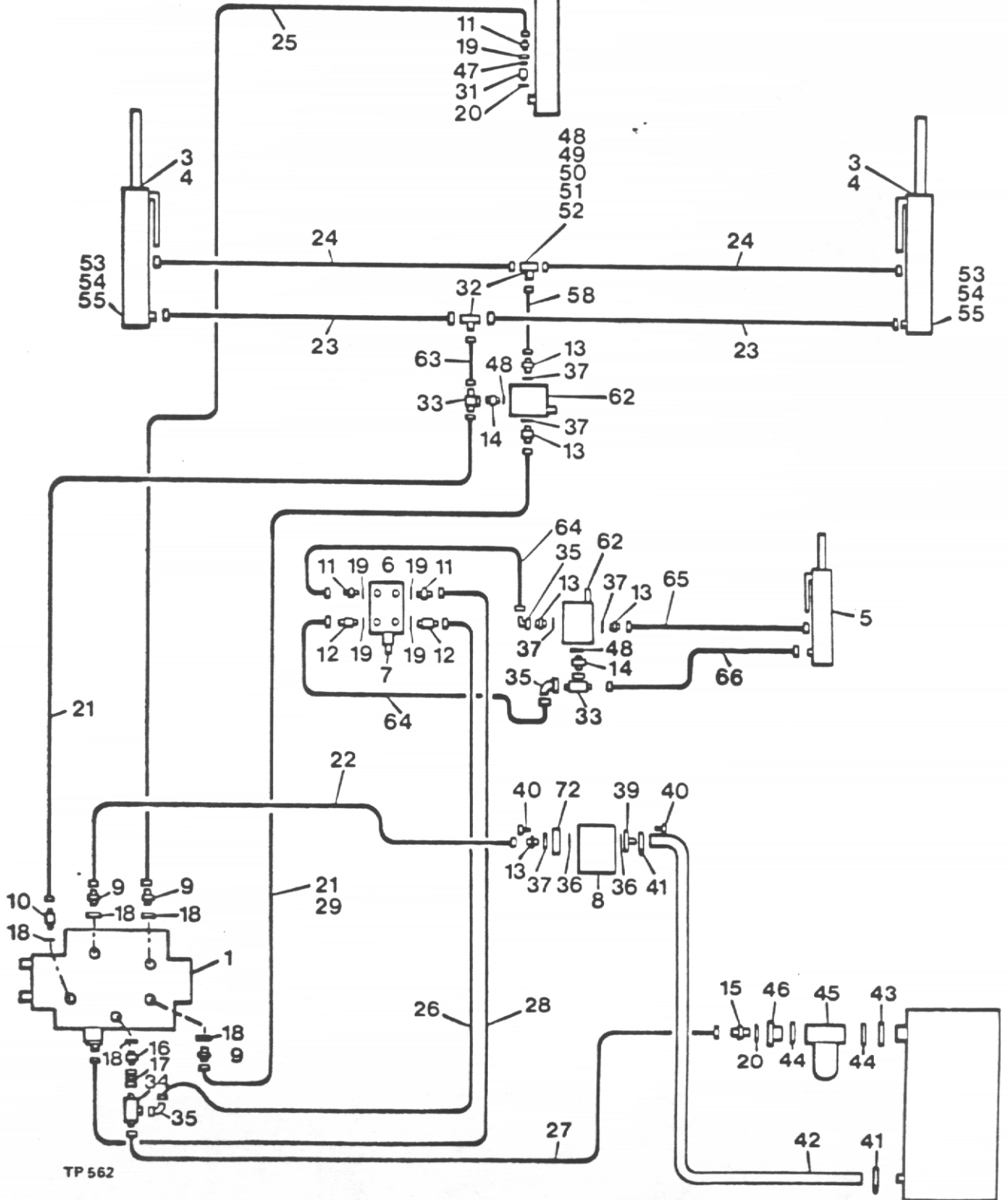
Item No.	Part No.	Description	Qty.
1	20231.A02	Pedal - Accelerator	1
2	10S.04	Washer 1/2" I.D.	1
3	44S.02	Pin - Split 3/32" x 1"	1
4	10362.A03	Rod - Accelerator	1
5	10S.12	Washer 1/2" I.D.	1
6	44S.1C	Pin - Split 1/16" x 1"	1
7	C160B	Ball End	1
8	74S.02	Nut 1/2" BSF	2
9	C173D	Spring	1
10	10360.A02	Bracket	1
11	9S.02	Nut 5/16" UNF	1
12	41S.04	Washer - Spring 5/16"	1
13	11S.03C	Screw - Hex. Hd. M8 x 35	2
14	7S.03	Nut - Hex. M8	4
15	17S.04	Washer - Spring M8	2
16	4-60-239	Cable - Engine Stop	1
17	4-35-196	Nipple & Screw	1
18	10346.A02	Lever - Stop Control	1
19	4-60-242	Clamp - Screw	1
20	9S.03	Nut 3/8" UNF	1
21	67S.04	Washer - Shakeproof 3/8" I.D.	1
22	10209.A03	Bracket	1



ALTERNATIVE ARRANGEMENT WHEN 'HYDAC' CHECK VALVE IS USED BETWEEN STEER VALVE AND STEER RAM.

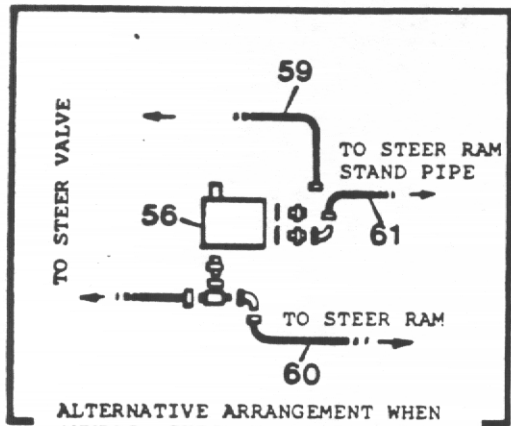


HYDRAULIC CIRCUIT FOR 'HYDAC' TILT CHECK VALVE.

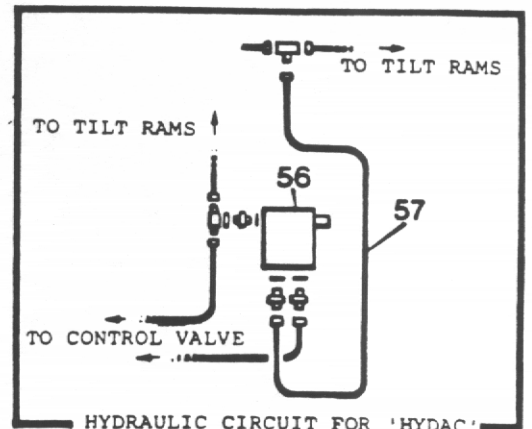




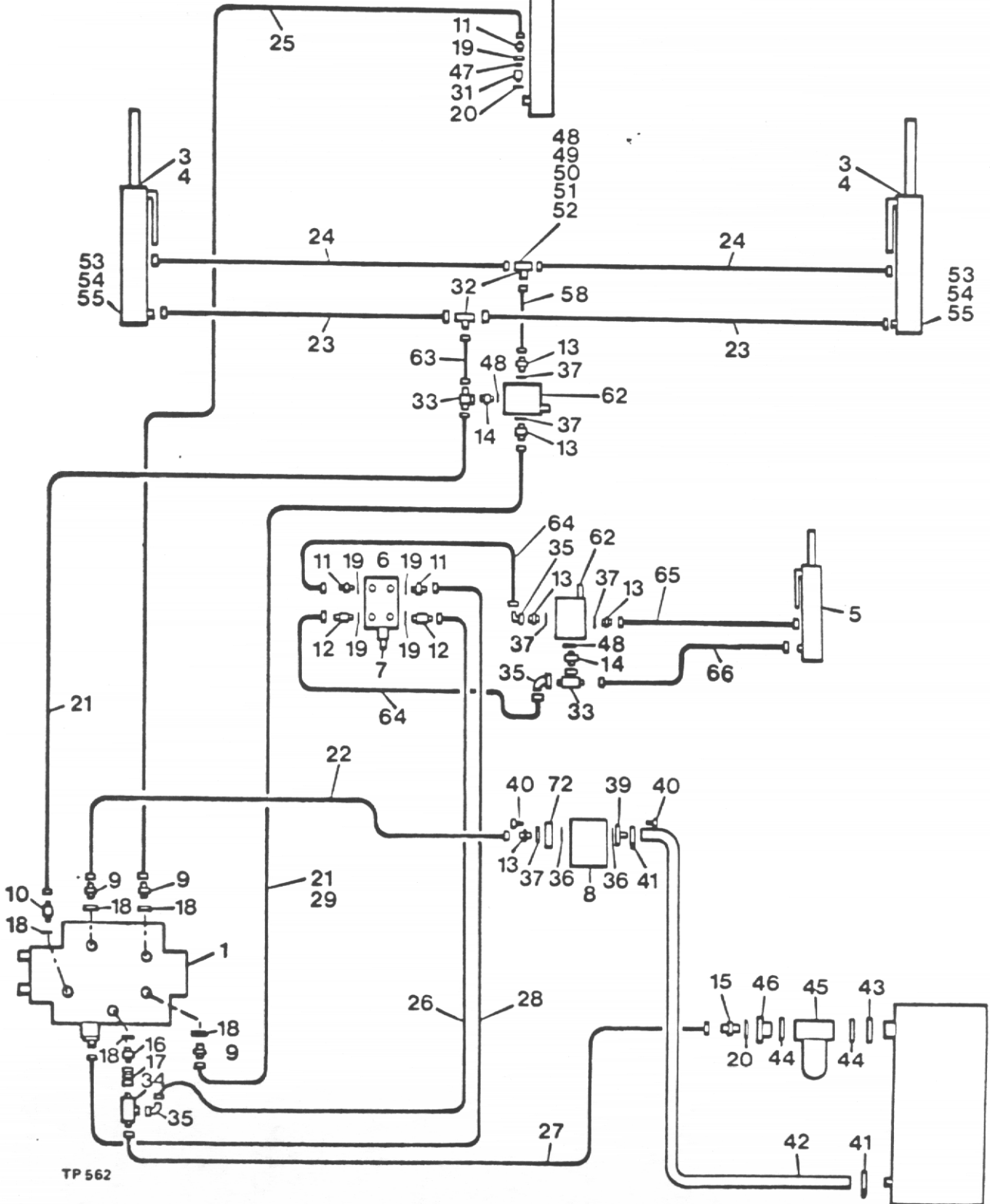
Item No.	Part No.	Description	Qty.
1		Valve - Control (2000 p.s.i.)-(See sep.illus.)....	1
2		Cylinder - Lift (See sep. illus.) .....	1
3		Cylinder - Tilt " " " .....	2
4	10695.A04	Spacer - Tilt Cylinder .....	2
5		Ram - Steer (See sep. illus.) .....	1
6	CSE.178	Valve - Steer .....	1
7	FSE.289	Column - Steer .....	1
8	10589.A01	Pump .....	1
9	CSE.186	Adaptor .....	3
10	4-60-158	Adaptor .....	1
11	126S.04	Adaptor .....	3
12	4-60-115	Adaptor .....	2
13	122S.03	Adaptor .....	5
14	119S.03	Adaptor .....	2
15	122S.04	Adaptor .....	1
16	DSE.115	Adaptor .....	1
17	164S.05	Adaptor .....	1
18	49S.01	'O' Ring .....	5
19	49S.02	'O' Ring .....	5
20	100S.04	Seal - Bonded .....	2
21	35S.02H	Hose ST-ST (M/C with Cab) .....	2
22	31S.02N	Hose ST-90° .....	1
23	31S.02EE	Hose ST-90° .....	2
24	31S.02AA	Hose ST-90° .....	2
25	31S.02HH	Hose ST-90° .....	1
26	31S.02E	Hose ST-90° .....	1
27	31S.03K	Hose ST-90° .....	1
28	36S.02II	Hose 90°-90° at 270° .....	1
29	35S.02E	Hose ST-ST (M/C with S. Frame).....	2
30	179S.01	Tie - Cable .....	1
31	FSE.121	Adaptor - Restrictor .....	1
32	121S.04	Tee .....	2
33	154S.09	Tee .....	1
34	113S.01	Tee .....	1
35	96S.09	Elbow .....	3
36	49S.11	'O' Ring .....	2
37	100S.03	Seal - Bonded .....	5
38	100S.02	Seal - Bonded .....	2
39	10475.A02	Plate - Adaptor .....	1
40	103S.03C	Capscrew 5/16" UNC x 1" .....	4
41	97S.10	Clip - Hose .....	2
42	10965.A01	Hose .....	1
43	72S.07	Nut - Back .....	2
44	100S.09	Seal - Bonded .....	2
45	10363.A01	Filter .....	1
46	111S.01A	Bush - Reducing .....	1
47	16097.375	Plate - Orifice .....	1
48	10759.A01	Bracket .....	1
49	121S.04	Tee .....	2
50	11S.04H	Screw Hex. Hd. M10 x 50 .....	1
51	7S.04	Nut Hex. M10 .....	1
52	17S.05	Washer - Spring M10 .....	1



ALTERNATIVE ARRANGEMENT WHEN 'HYDAC' CHECK VALVE IS USED BETWEEN STEER VALVE AND STEER RAM.

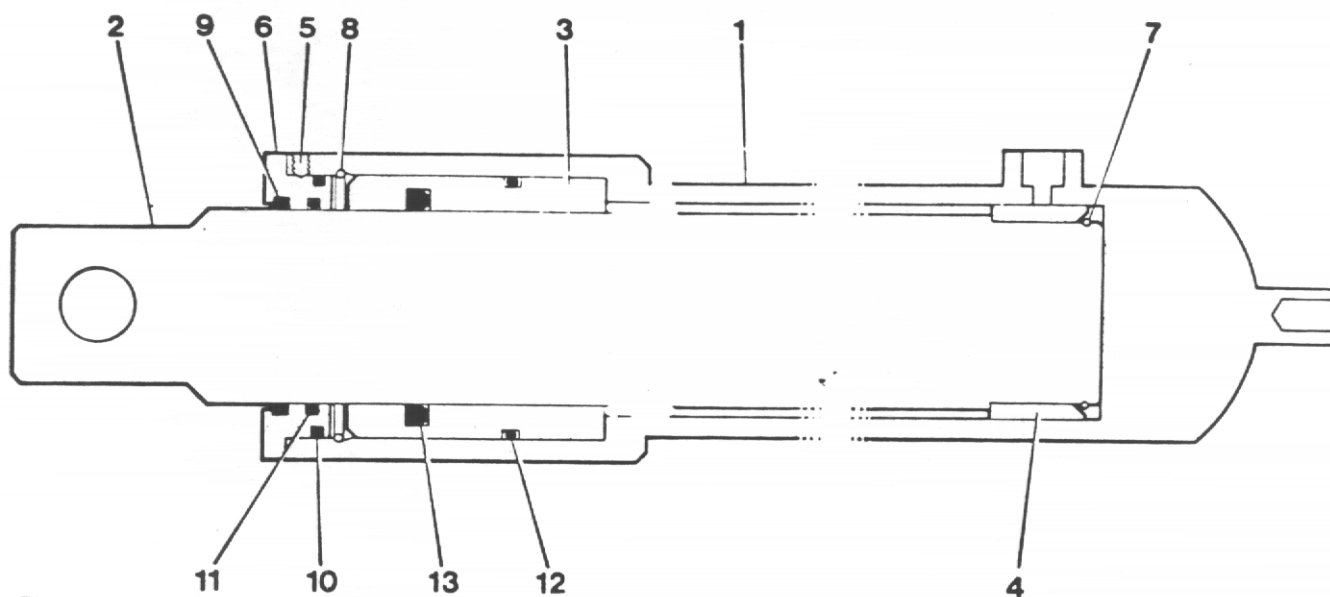


HYDRAULIC CIRCUIT FOR 'HYDAC' TILT CHECK VALVE.



Item No.	Part No.	Description	Qty
53	4-35-110A	Bolt - Pivot 1½" BSF x 3½" (Tilt Ram to Chassis)..	2
54	4-35-110B	Nut Hex. Half 1½" BSF (Tilt Ram to Chassis) .....	2
55	67S.13	Washer - Shakeproof 1½" I.D. (Tilt Ram to Chassis)	2
56	10881.A01	Valve - Tilt Check .....	2
57	31S.02M	Hose ST-90° .....	1
58	35S.02D	Hose ST-ST .....	1
59	31S.02Q	Hose ST-90° .....	2
60	31S.02V	Hose ST-90° .....	1
61	31S.02EE	Hose ST-90° .....	1
62	ESE 130-6	Valve - Tilt Check .....	2
63	35S.02D	Hose ST-ST .....	2
64	31S.02R	Hose ST-90° .....	2
65	31S.02EE	Hose ST-90° .....	1
66	31S.02AA	Hose ST-90° .....	1
67	8S.03F	Bolt Hex. Hd. M8 x 50 (Check Valve to Chassis) ...	2
68	7S.03	Nut Hex. M8 (Check Valve to Chassis) .....	2
69	17S.04	Washer - Spring M8 (Check Valve to Chassis) .....	2
70	12S.17	Washer - Flat (Check Valve to Chassis) .....	2
71	10959.A01	Coupling - Hose, Test Point Plug .....	1
72	4-35-261	Plate - Adaptor .....	1

# MAST LIFT CYLINDER

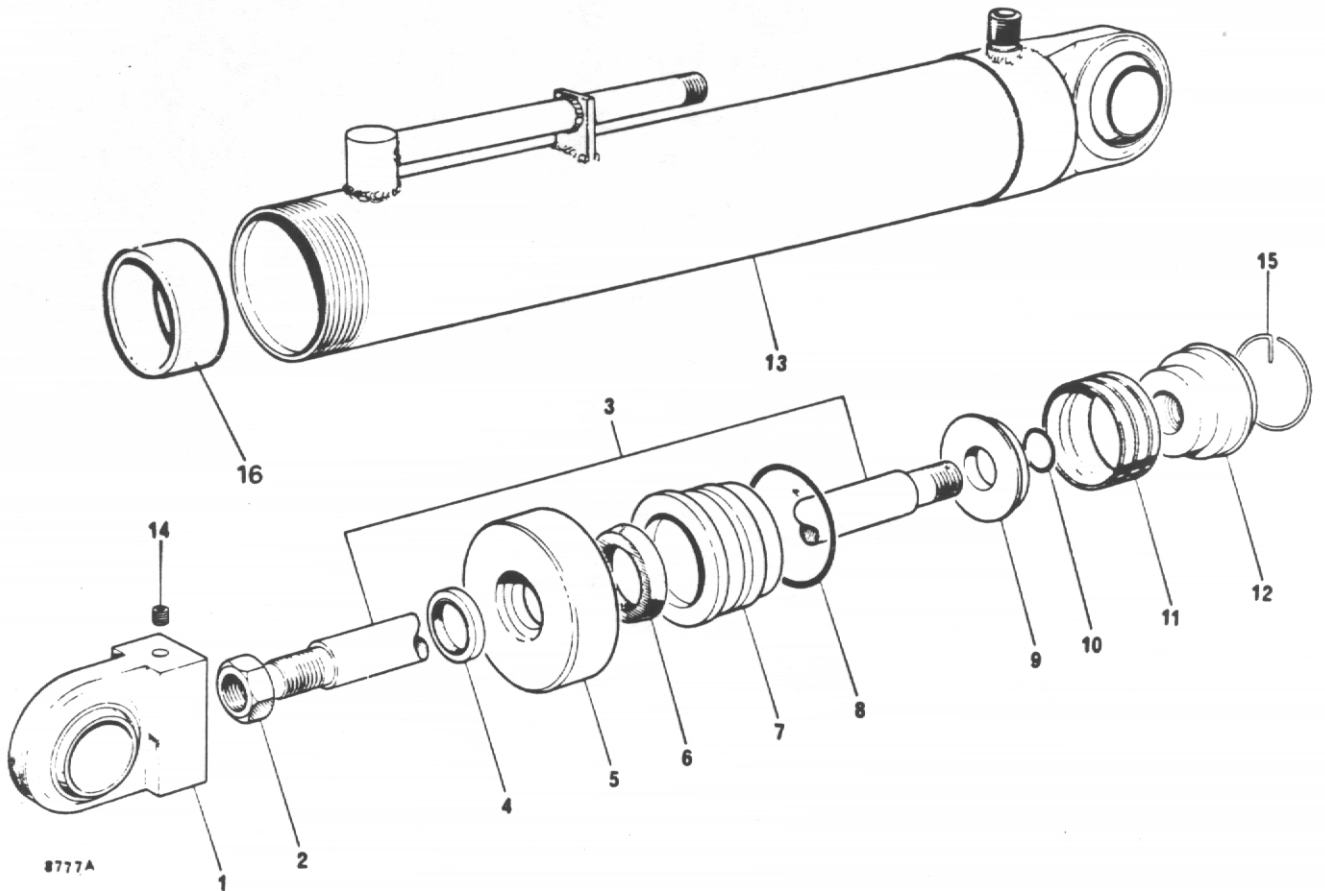


TP 345

Item No.	Part No.	Description	Qty.
	30115.A01	Lift Cylinder (complete) .....	1
1	30115.A0101	Body Assembly .....	1
2	30115.A0102	Piston Assembly .....	1
3	30115.A0103	Gland .....	1
4	30115.A0104	Bearing Ring (Phosphor Bronze) .....	1
5	30115.A0105	Socket Screw $\frac{1}{2}$ " BSF x $\frac{1}{2}$ " Long .....	1
6	30115.A0106	Wiper Ring .....	1
7	30115.A0107	Retaining Ring .....	1
8	30115.A0108	Retaining Ring .....	1
9	30115.A0109	Wiper Seal .....	1
10	30115.A0110	'O' Ring .....	1
11	30115.A0111	'O' Ring .....	1
12	30115.A0112	'O' Ring .....	1
13	30115.A0113	Gland Seal .....	1
14	30115.A0114	Seal Kit (comprising items 9-13 incl.) .....	1

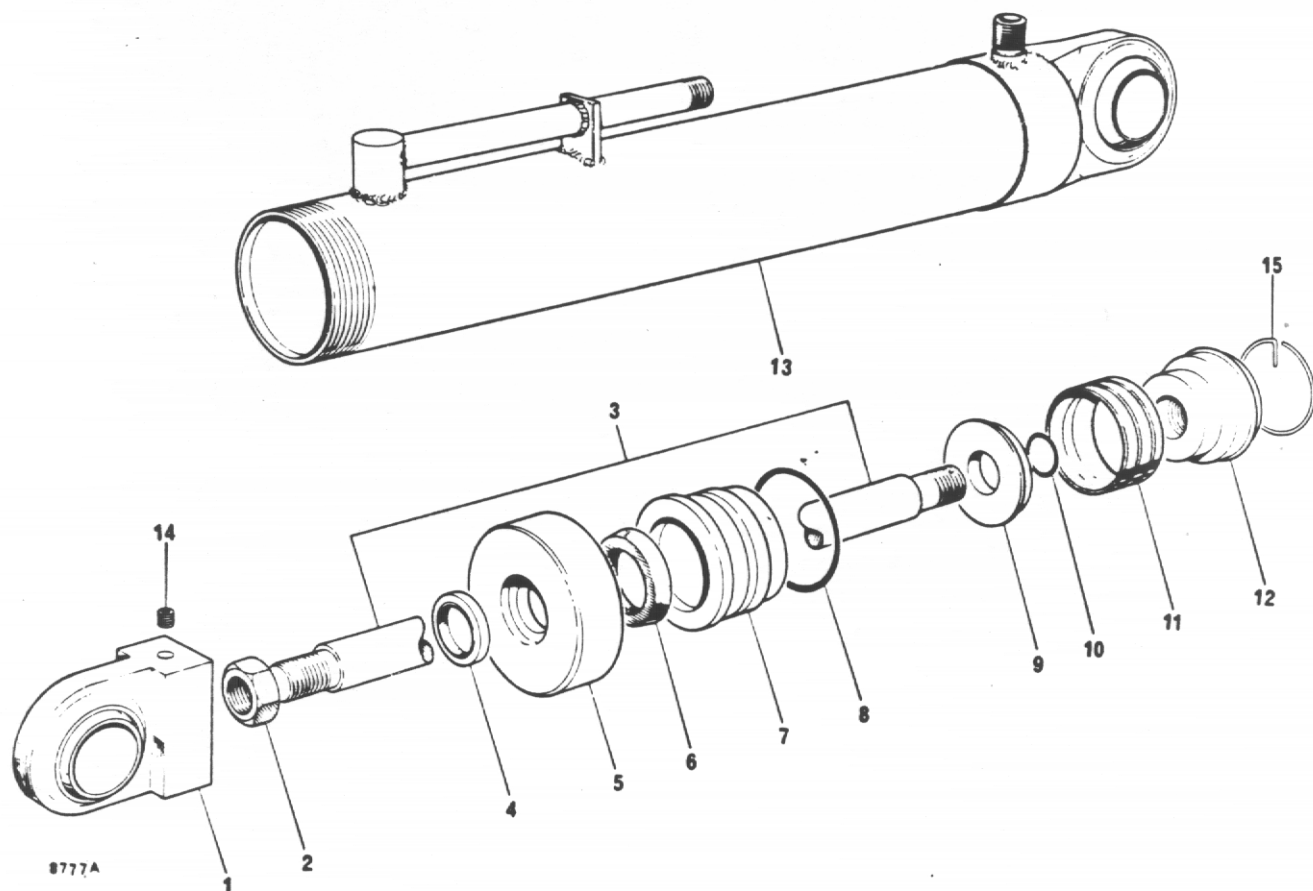
A/R

# MAST TILT CYLINDER

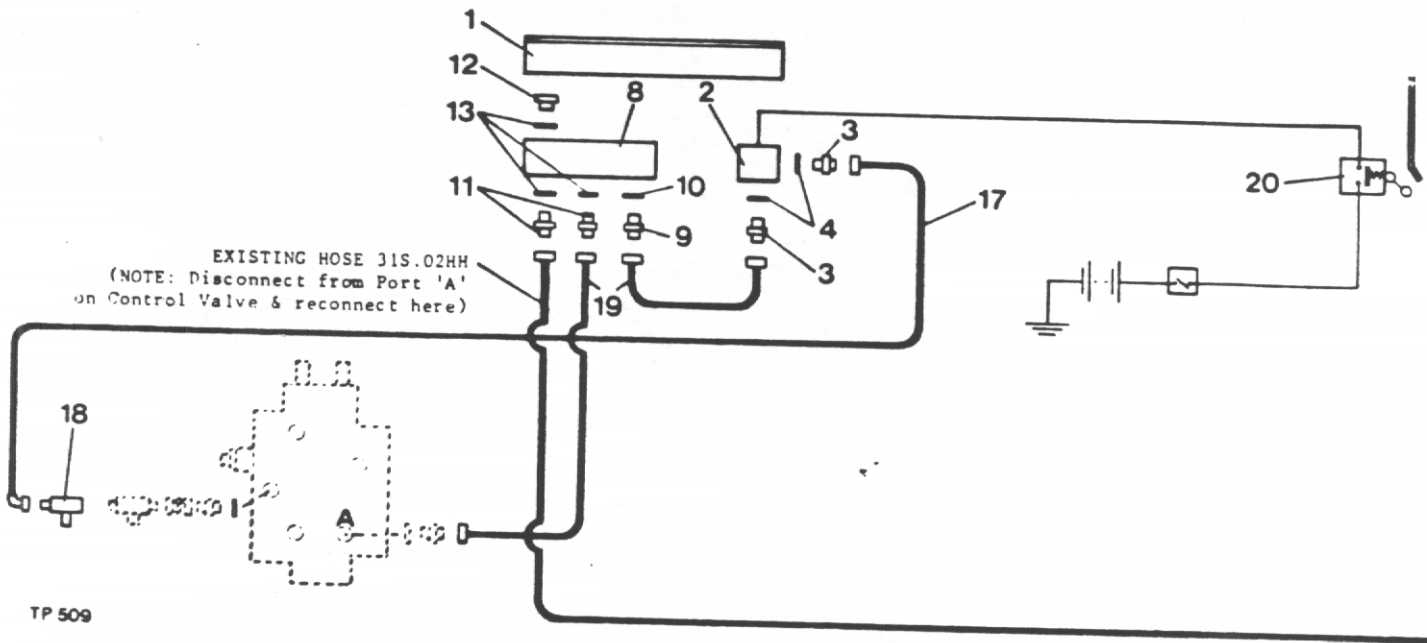


Item No.	Part No.	Description	Qty.
	30161.A05	Cylinder complete (2 per machine)	
1	30121.A0101	Piston Rod Fitting .....	1
2	30121.A0102	Locknut .....	1
3	30161.A0101	Piston Rod .....	1
4	30121.A0104	Wiper .....	1
5	30121.A0105	Tube Cap .....	1
6	30121.A0106	Sleeve Seal .....	1
7	30121.A0107	Sleeve .....	1
8	30121.A0108	Sleeve 'O' Ring .....	1
9	30121.A0109	Backing Washer .....	1
10	30121.A0110	Piston 'O' Ring .....	1
11	30121.A0111	Piston Seal .....	1
12	30121.A0112	Piston Head .....	1
13	30161.A0102	Cylinder, Bosses & End Cap .....	1
14	30121.A0114	Grub Screw .....	1
15	30121.A0115	Spring Ring .....	1
16	10695.A04	Spacer .....	1
	CSE 189	Seal Kit (Comprising items 4,6,8,10 & 11) ..	A/R

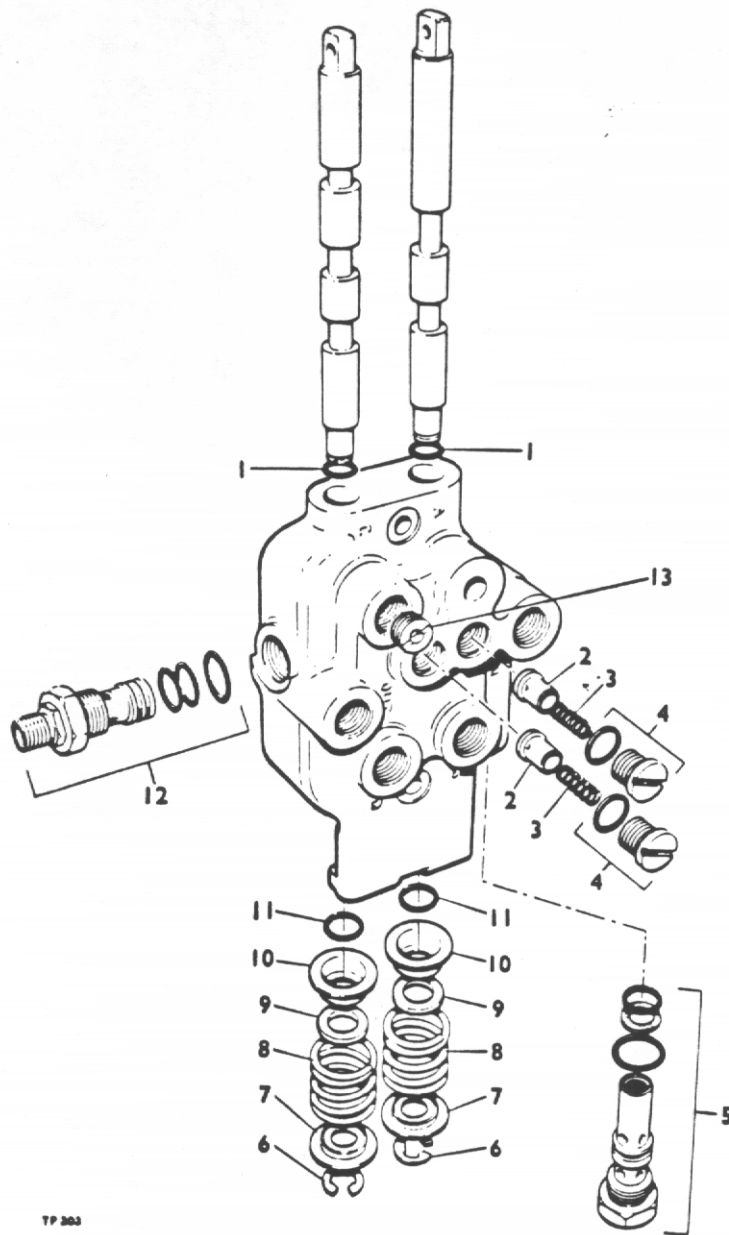
## STEERING CYLINDER



Item No.	Part No.	Description	Qty.
	30121.A03	Cylinder complete (1 per machine)	
1	20100.A02	Piston Rod Fitting .....	1
2	95S.09	Locknut .....	1
3	30121.A0302	Piston Rod .....	1
4	30121.A0104	Wiper .....	1
5	30121.A0105	Tube Cap .....	1
6	30121.A0106	Sleeve Seal .....	1
7	30121.A0303	Sleeve .....	1
8	30121.A0108	Sleeve 'O' Ring .....	1
9	30121.A0109	Backing Washer .....	1
10	30121.A0110	Piston 'O' Ring .....	1
11	30121.A0111	Piston Seal .....	1
12	30121.A0112	Piston Head .....	1
13	30121.A0113	Cylinder, Bosses & End Cap .....	1
14	30121.A0114	Grub Screw .....	1
15	30121.A0115	Spring Ring .....	1
	CSE 189	Seal Kit (comprising items 4,6,8,10 & 11) ..	A/R



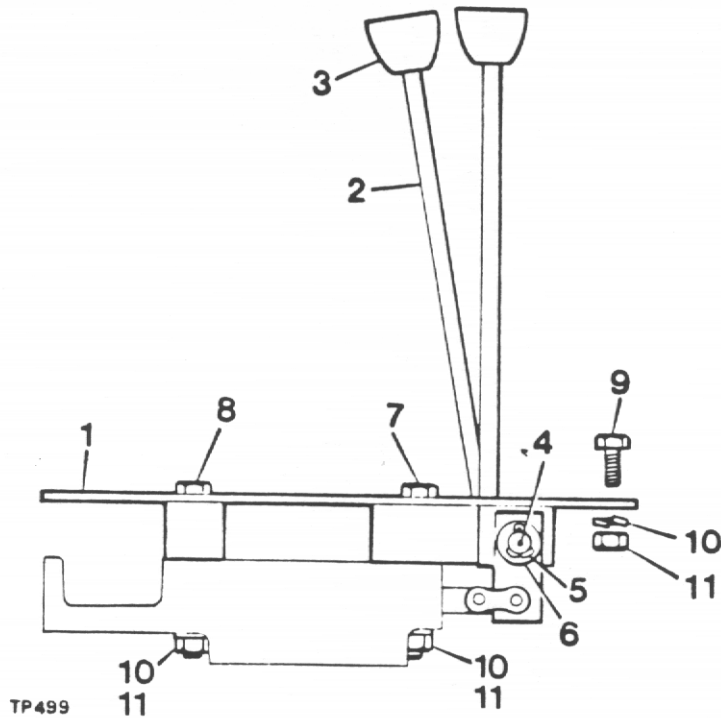
Item No.	Part No.	Description	Qty.
1	10895.A03	Plate - Mounting	1
2	10785.A01	Valve - Solenoid	1
3	122S.03	Adaptor	2
4	100S.03	Seal - Dowty	2
5	8S.02F	Bolt	2
6	61S.02	Nut	2
7	12S.14	Washer - Plain	2
8	10784.A01	Regulator - Pressure	2
9	119S.03	Adaptor	1
10	100S.02	Seal - Dowty	1
11	119S.08	Adaptor	1
12	127S.04	Plug - Hex. Hd.	2
13	100S.04	Seal - Dowty	1
14	8S.03K	Bolt - Hex. Hd.	3
15	61S.03	Nut - Hex.	2
16	12S.20	Washer - Flat	2
17	4-35-365	Hose	2
18	154S.02	Tee	1
19	3S.HD.66	Hose	1
20	10797.A02	Switch - Limit	2
21	8S.02A	Screw	1
22	12S.14	Washer	2
23	10895.A02	Plate Limit Switch Mounting (Not Illustrated)	2
24	8S.03B	Bolt - Hex. Hd.	1
25	61S.03	Nut - Hex.	2
26	12S.17	Washer - Plain	2
27	10795.A03	Conduit (Not Illustrated)	2
28	10796.A01	Elbow - Connector (Not Illustrated)	A/R
29	10896.A01	Clip (Not Illustrated)	1



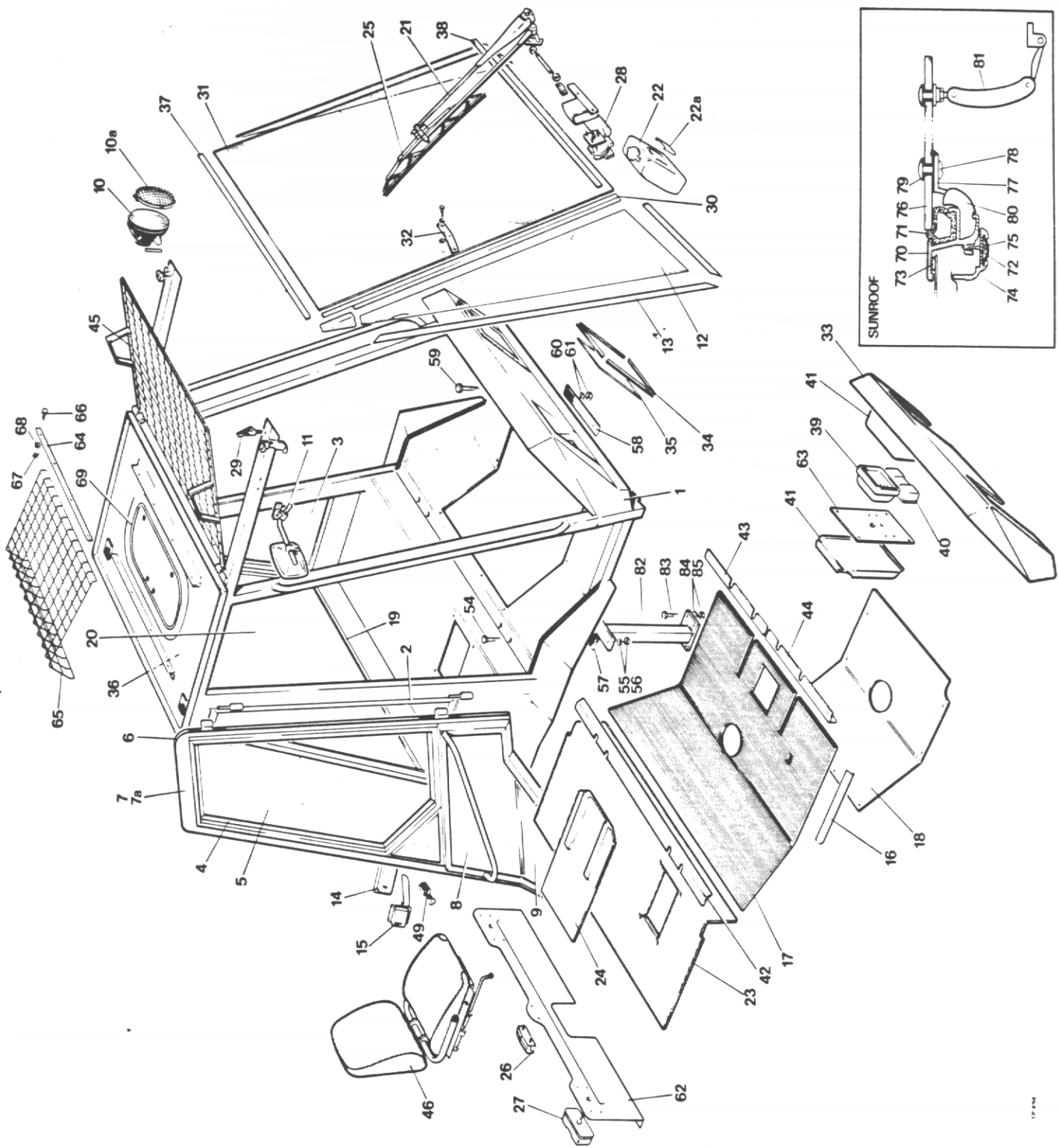
HYDRAULIC CONTROL VALVE

Item No.	Part No.	Description	Qty.
	30036.A02	Control Valve	
1	30057 A0104	'O' Ring .....	2
2	30131 A0110	Lift Check Plunger.....	2
3	30131 A0109	Lift Check Spring .....	2
4	30057 A0103	Lift Check Plug Assy. ....	2
5	30131 A0107	Relief Valve Assy. ....	1
6	30131 A0101	Clip Ring (½" Shaft) .....	2
7	30131 A0102	Shallow Washer .....	2
8	30131 A0103	Spool Spring .....	2
9	30131 A0104	Spacer Washer .....	2
10	30131 A0105	Deep Washer .....	2
11	30057 A0101	'O' Ring .....	2
12	30131 A0113	Flow Control Valve .....	1
13	30036 A0201	Orifice Plate .....	1

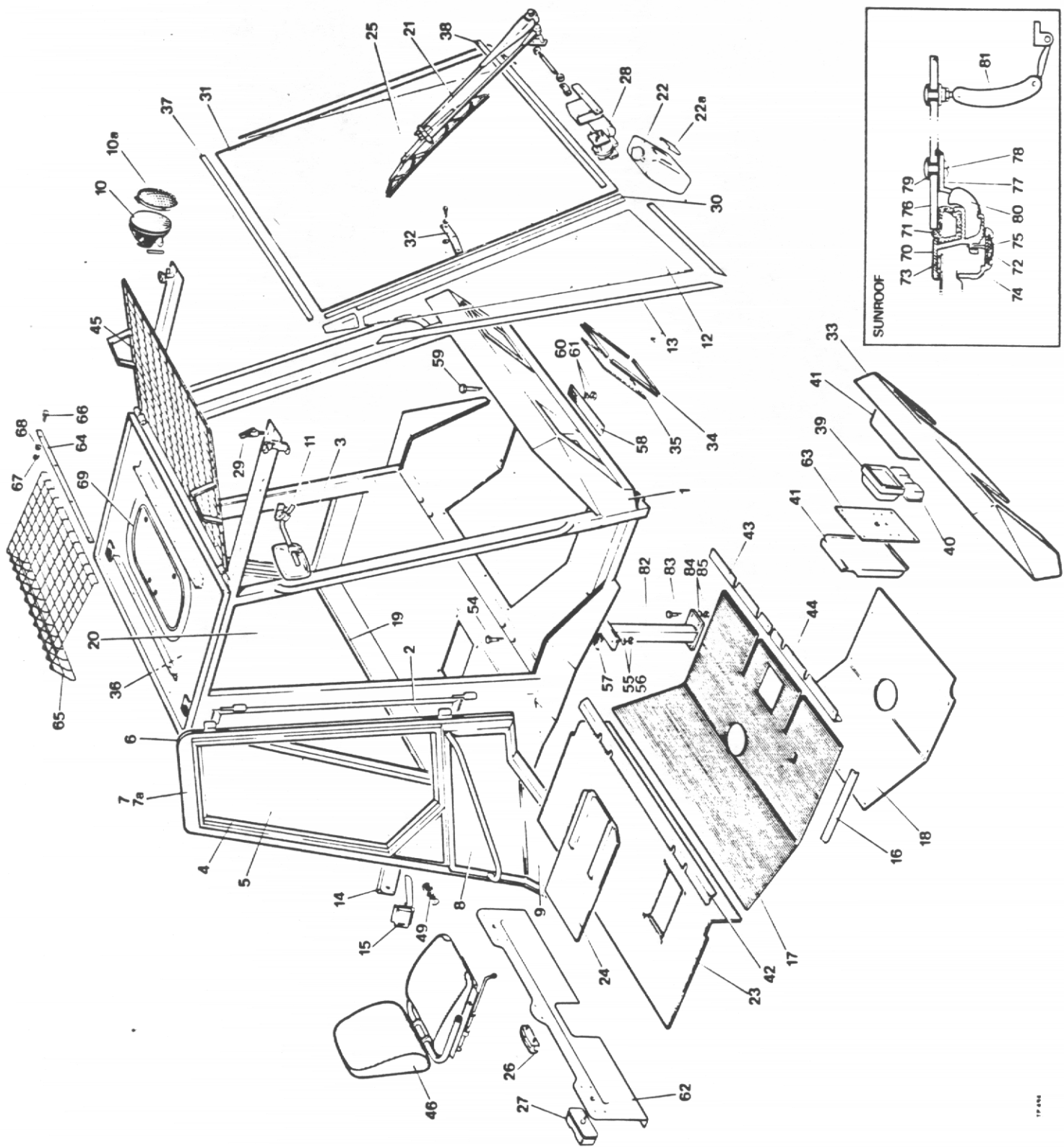




Item No.	Part No.	Description	Qty.
1	20253.A01	Bracket .....	1
2	10520.A08	Lever Assembly .....	2
3	10211.A01	Knob .....	2
4	10411.A01	Pivot Pin .....	1
5	44S.01C	Split Pin 1/16" Dia. x 1" .....	2
6	10S.14	Washer - Flat 3/8" .....	2
7	8S.03N	Bolt Hex. Hd. M8 x 90 (Valve Fixing) .....	1
8	8S.03P	Bolt Hex. Hd. M8 x 100 (Valve Fixing) .....	1
9	11S.03C	Screw Hex. Hd. M8 x 25 (Bracket to Cab) .....	4
10	17S.04	Washer - Spring M8 .....	6
11	61S.03	Nut M8 Binx .....	6



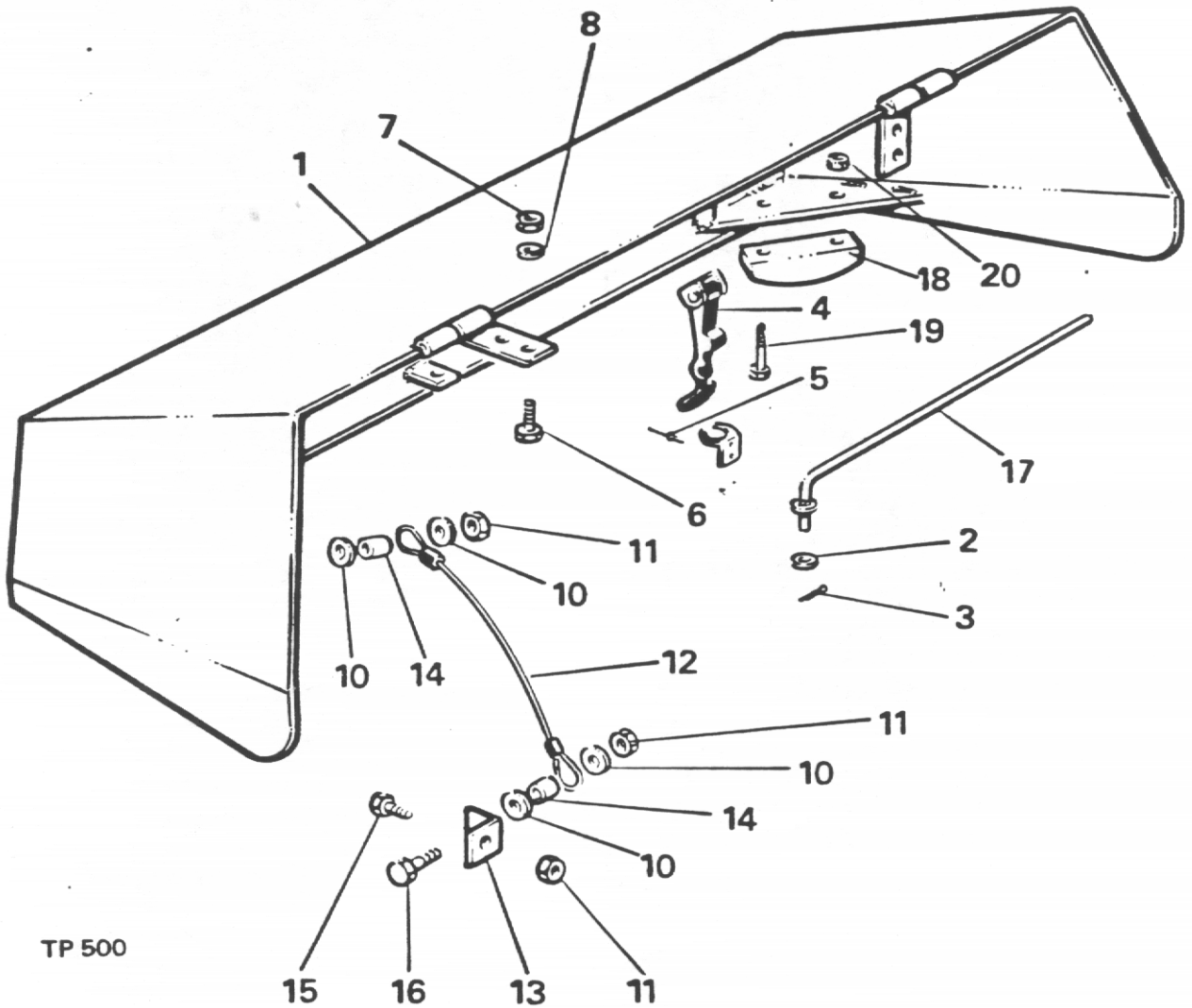
Item No.	Part No.	Description	Qty.
1	40176.A01	Cab Assy. complete .....	1
2	40176.A0101	Aluminium Frame (Rear Quarter)..	2
3	40176.A0102	Glass (Rear Quarter) .....	2
4	40176.A0103	Aluminium Frame (Door) .....	2
5	40176.A0104	Glass (Door) .....	2
6	40176.A0105	Door Seal .....	2
7	40284.A01	Complete Door L.H. ....	1
7a	40284.A02	Complete Door R.H. ....	1
8	40176.A0106	Insulation - Top - Door .....	2
9	40176.A0107	Insulation - Bottom - Door .....	2
10	40176.A0108	Working Lights .....	2
10a	40176.A0109	Stone guard .....	2
11	40176.A0110	External Mirrors.....	2
12	40176.A0111	Glass (Front side Quarter) .....	2
13	40176.A0112	Aluminium Frame R/H & L/H .....	2
14	40176.A0113	Handle - Outside .....	2
15	40176.A0114	Handle - Inside .....	2
16	40176.A0115	Angle tread plate .....	2
17	40176.A0116	Floor Mat .....	1
18	40176.A0117	Plate - Service Cover .....	1
19	40176.A0118	Aluminium Frame (Rear) .....	1
20	40176.A0119	Glass (Rear) .....	1
21	40176.A0120	Wiper Arm (Rear) .....	1
21a	40176.A0143	Wiper Arm (Front)	1
22	40176.A0121	Washer Assy. ....	1
22a	40176.A0122	Washer Assy. Bracket .....	1
23	40176.A0123	Insulation - Seat Panel .....	1
24	40176.A0124	Seat Plate .....	1
25	40176.A0125	Wiper Blade (Front & Rear) ...	2
26	40176.A0126	Light - Rear number plate .....	1
27	40176.A0127	Light - Rear indicator & stop ..	2
28	40176.A0128	Wiper Motor .....	2
29	86S.B	Antiluce Fastener .....	2
30	40176.A0130	Plastic sealer Section .....	2
31	40176.A0131	Glass (Front windscreen) .....	1
32	40176.A0132	Retainer - glass .....	4
33	40176.A0133	Front Insulation .....	1
34	40176.A0134	Aluminium Frame (Front Lt.cover)	2
35	40176.A0135	Glass ( Front light cover) .....	2
36	40176.A0136	Roof insulation .....	1
37	40176.A0137	Top Aluminium support .....	1
38	40176.A0138	Bottom Aluminium support .....	1
39	40176.A0139	Spotlights .....	2
40	40176.A0140	Front Indicator lights .....	2
41	40176.A0141	Insulation - Light Box cover ...	2
42	20277.A01	Cab Floor Trim Retainer (Rear)..	1
43	20278.A01	Cab Floor Trim Retainer Front LH	1
44	20279.A01	Cab Floor Trim Retainer Front RH	1
45	40124.A02	Safety Guard comp:	
46	40226.A02	Seat .....	1
47	178S.P505F	Self Tapping Screw (Pan Head Slotted) - Cab Trim .....	A/R
48	20192.A01	Floor Trim .....	1
49	10120.A01	Rubber door Holder .....	2
50	11S.02B	Hex. Hd. Screw (Holder to Cab) - M6 x 20 - (N.I.) .....	2
51	61S.02	Lock Nut Binx (M6) - (N.I.) ....	2
52	11S.02C	Hex. Hd. Screw (Holder to Door) - (M6 x 25) - (N.I.) .....	2
53	61S.02	Lock Nut Binx (Holder to Door) - (M6) - (N.I.) .....	2



Item No.	Part No.	Description	Qty.
54	8S.05M	Bolt - Hex. Hd. M12 x 80 ) Support .....	4
55	17S.06	Washer - Spring M12 ) to .....	4
56	61S.05	Nut - M12 Binx ) Cab .....	4
57	10623.A03	Packer (Cab - Support Pillar) .....	2
58	10623.A04	Packer (Cab - Support Pillar - Front) .....	1
59	8S.06M	Bolt - Hex. Hd. M16 x 90 (Cab Fixing) .....	2
60	7S.06	Nut - M16 (Cab Fixing) .....	2
61	17S.08	Washer - Spring M16 .....	2
62	40176.A0129	Bracket - Rear Light & Number Plate .....	1
63	40176.A0142	Cover - Front Light Box .....	2
64	10895.A04	Clamp strip .....	2
65	20294.A01	Sunroof guard .....	1
66	8S.02A	Bolt M6 x 25 .....	8
67	7S.02	Nut M6 .....	8
68	17S.03	Spring Washer .....	8
69	10911.A01	Sunroof .....	1
70	10911.A0101	Frame - Sunroof .....	1
71	10911.A0102	Rubber seal insert - Sunroof .....	1
72	10911.A0103	Screw - Self tapping No.8 - Sunroof .....	A/R
73	10911.A0104	Sealant - Sunroof .....	A/R
74	10911.A0105	Clamp ring - Sunroof .....	1
75	10911.A0106	Screw cover insert - rubber - Sunroof .....	1
76	10911.A0107	Glass - 30" x 15" - Sunroof .....	1
77	10911.A0108	'C' Clamp - Sunroof .....	2
78	10911.A0109	Screw & stud assembly - 'C' Clamp - Sunroof .....	2
79	10911.A0110	Seal - stud assembly (rubber) - Sunroof .....	1
80	10911.A0111	'C' slot - Sunroof .....	2
81	10911.A0112	Catch assembly - Sunroof .....	1

1732 ..... CAB & SAFETY FRAME SUPPORT ..... 1732

82	10805.A01	Support Cab .....	2
83	11S.05E	Screw - Hex. Hd. M12 x 35 ) Support .....	8
84	17S.06	Washer - Spring M12 ) to .....	8
85	61S.05	Nut - M12 Binx ) Chassis .....	8



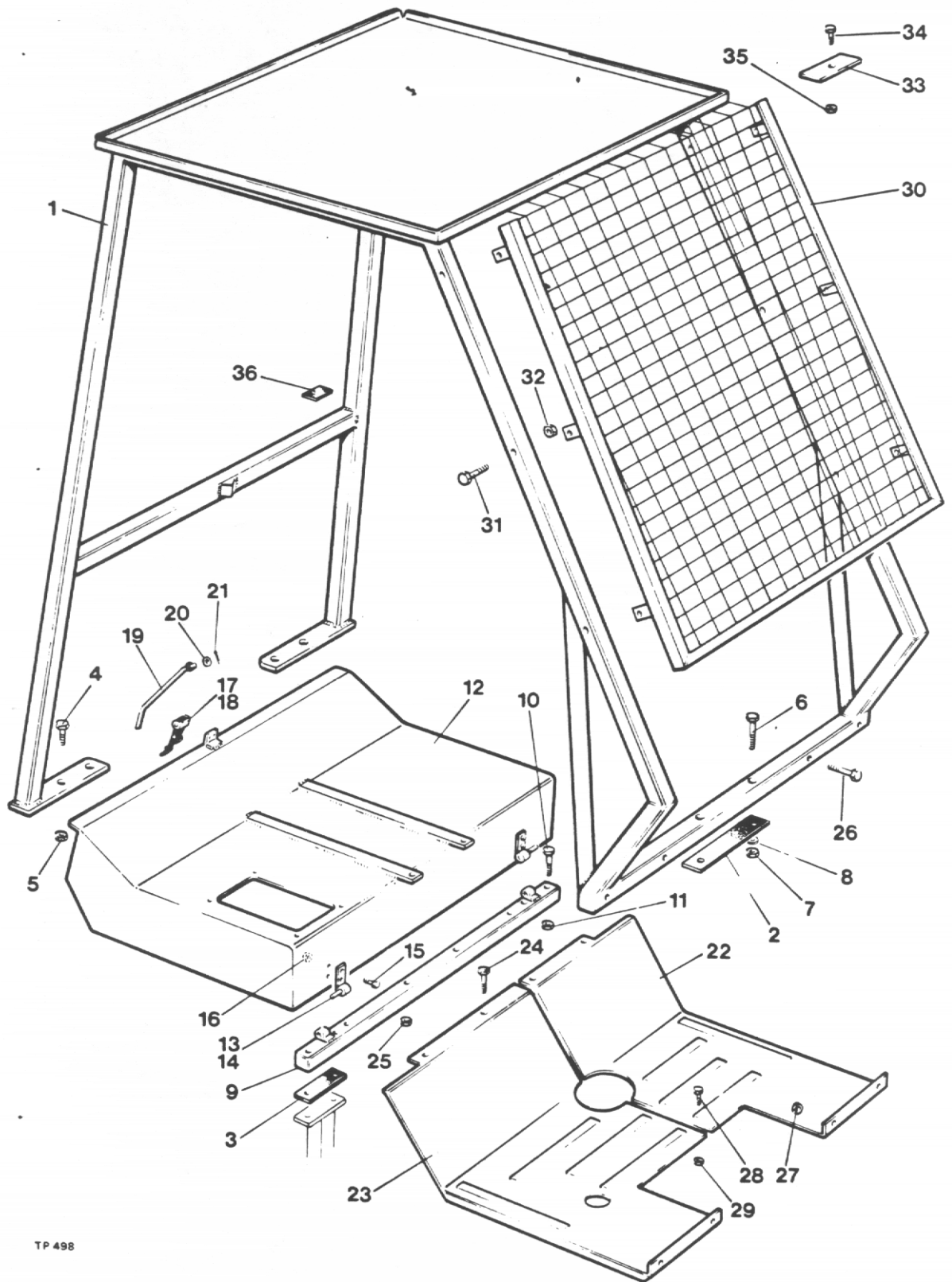
TP 500

Item No.	Part No.	Description	Qty.
1	40219.A01	Engine Cover Assembly	1
2	10S.14	Flat Washer 3/8" I.D.	1
3	44S.01C	Split Pin 1/16" x 1"	1
4	FSE.267	Catch Assembly - Rubber	2
5	101S.075	Rivet	10
6	11S.04C	Screw Hex. Hd. M10 x 25	4
7	61S.04	Nut M10 Binx	4
8	12S.05	Washer - Flat M10	4
9	11S.03A	Screw Hex. Hd. M8 x 16	1
10	12S.17	Washer - Flat M8	4
11	61S.03	Nut M8 Binx	3
12	10846.A01	Check Strap	1
13	40219.A0128	Bracket (Check Strap)	1
14	40219.A0126	Spacer (Check Strap)	2
15	11S.03B	Bolt M8 x 20 (Check Strap)	1
16	11S.03C	Bolt M8 x 25 (Check Strap)	1
17	40219.A0108	Stay	1
18	10917.A01	Rubber Buffer	2
19	8S.03B	Bolt Hex Hd. M8 x 30 (Buffer Fixing)	4
20	61S.03	Nut Binx M8 " "	4

Item No.	Part No.	Description	Qty.
1	20235.A07	M/C Identification Label (Cab)	2
2	20235.A08	M/C Identification Label (Mast)	2
3	DM.198	Steering Lock Warning Label	2
4	10540.A01	Tyre Pressure Label 40 p.s.i.	4
5	DM.201	Forklift Safety Label	1
6	10546.A03	Diesel Fuel Label	1
7	10546.A04	Hydraulic Oil Label	1
8	10317.A01	Chassis Label	1
9	DM.196	Lubrication Label	1
10	ESE.236	Engine Stop Label	1
11	4-60-233-1	Negative Earth Label	1
12	10215.A02	Filter Instruction Label	1
13	101S.01E	Pop Rivets	4
14	15S.01A	Hammer Drive Screws	4
15	10807.A01	Operator Handbook & Parts List	1
16	10822.A01	Mast Pointer Label	1
17	10810.A01	Overhead Guard Warning Label	1
18	10730.A06	Mast Rating Plate	1
19	10037.A01	Check Tyre Condition Label	1
20	10281.A01	Tilt Label (Fwd. Back)	1
21	10287.A01	Lift Label (Up-Down)	1
22	DM.108	Mast Position in Transport Label	1
23	10536.A01	Unpropped Cover Warning	1
24	10827.A01	Tilt Ram Stops Warning	1
25	10826.A01	Wipers - Label	1
26	10164.A01	Washers Label	1
27	10165.A01	Engine Hour Meter Label	1
28	10823.A01	Working Lights Label	1
29	10824.A01	Side & Headlights Label	1
30	10825.A01	Indicators L. & R.	1
31	FSE 350	Winget Label	2
32	10848.A01	Brake Reservoir Top Up Label Warning	1
33	10850.A01	Battery Label	1

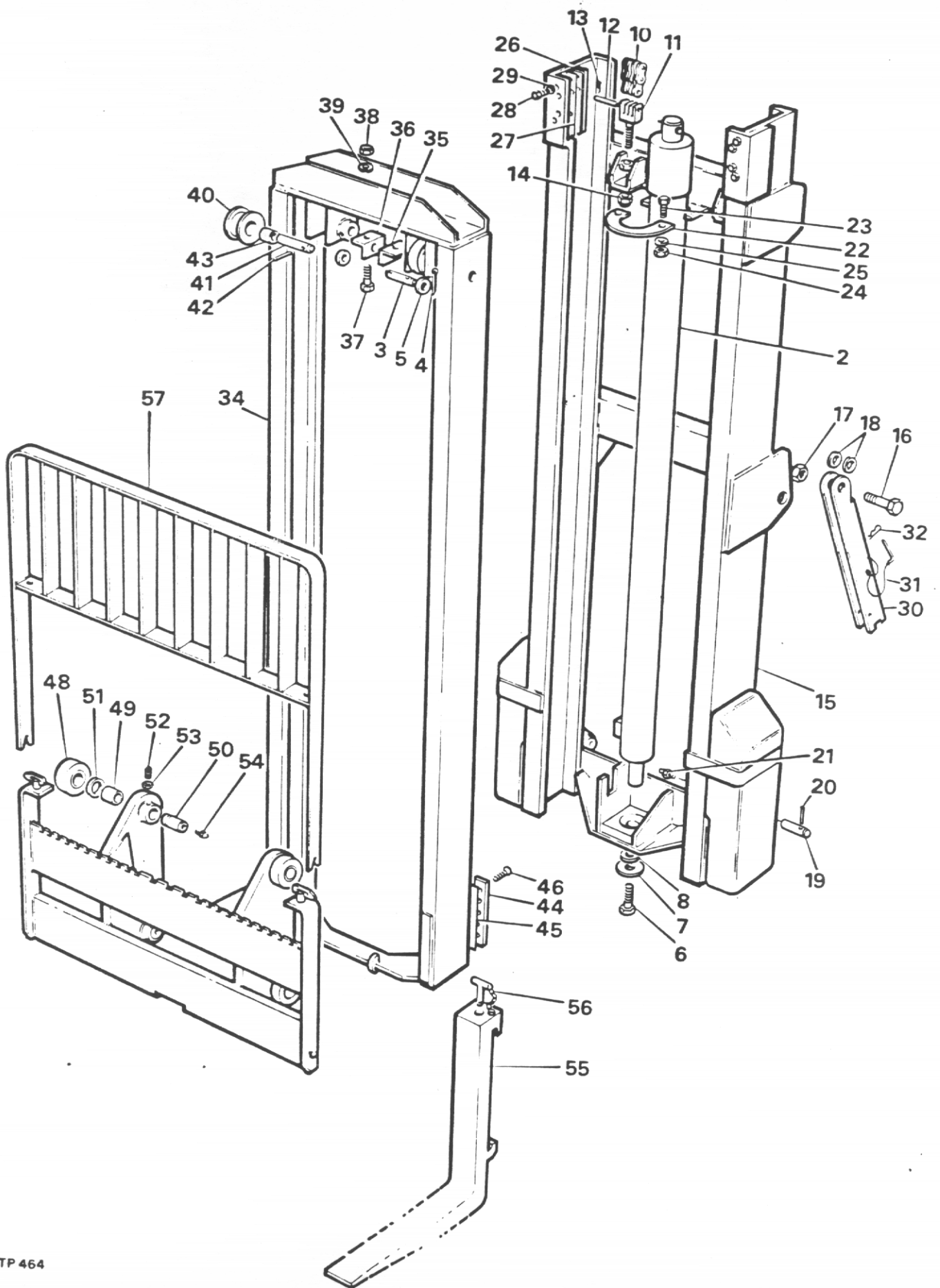
1776 ..... LABELS (M/c fitted with Safety Frame & no lighting) ..... 1776

1	20235.A07	Machine Identification (Cab) Label	2
2	20235.A08	Machine Identification (Mast) Label	2
3	DM.198	Steering Lock Warning Label	2
4	10540.A01	Tyre Pressure Label	4
5	DM.201	Forklift Safety Label	1
6	10546.A03	Diesel Fuel Label	1
7	10546.A04	Hydraulic Oil Label	1
8	10317.A01	Chassis Label	1
9	DM.196	Lubrication Label (Newage Axles)	1
10	ESE 236	Engine Stop Label	1
11	4-60-233-1	Negative Earth Label	1
12	10215.A02	Filter Instruction Label	1
13	101S.05D	Pop Rivets Label	4
14	15S.01A	Hammer Drive Screws Label	8
15	10822.A01	Mast Pointer Label	1
16	10730.A06	Mast Rating Plate	1
17	10037.A01	Check Tyre Condition Label	1
18	10281.A01	Tilt Label (Fwd.-Back) Label	1
19	10287.A01	Lift Label (Up-Down) Label	1
20	DM.108	Mast Position in Transport Label	1
21	10536.A01	Unpropped Cover Warning Label	1
22	10827.A01	Tilt Ram Stops Warning Label	1
23	10165.A01	Engine Hour Meter Label	1
24	FSE 350	Winget Label	2
25	10848.A01	Brake Reservoir Top-up Label	2
26	10850.A01	Battery Label	1

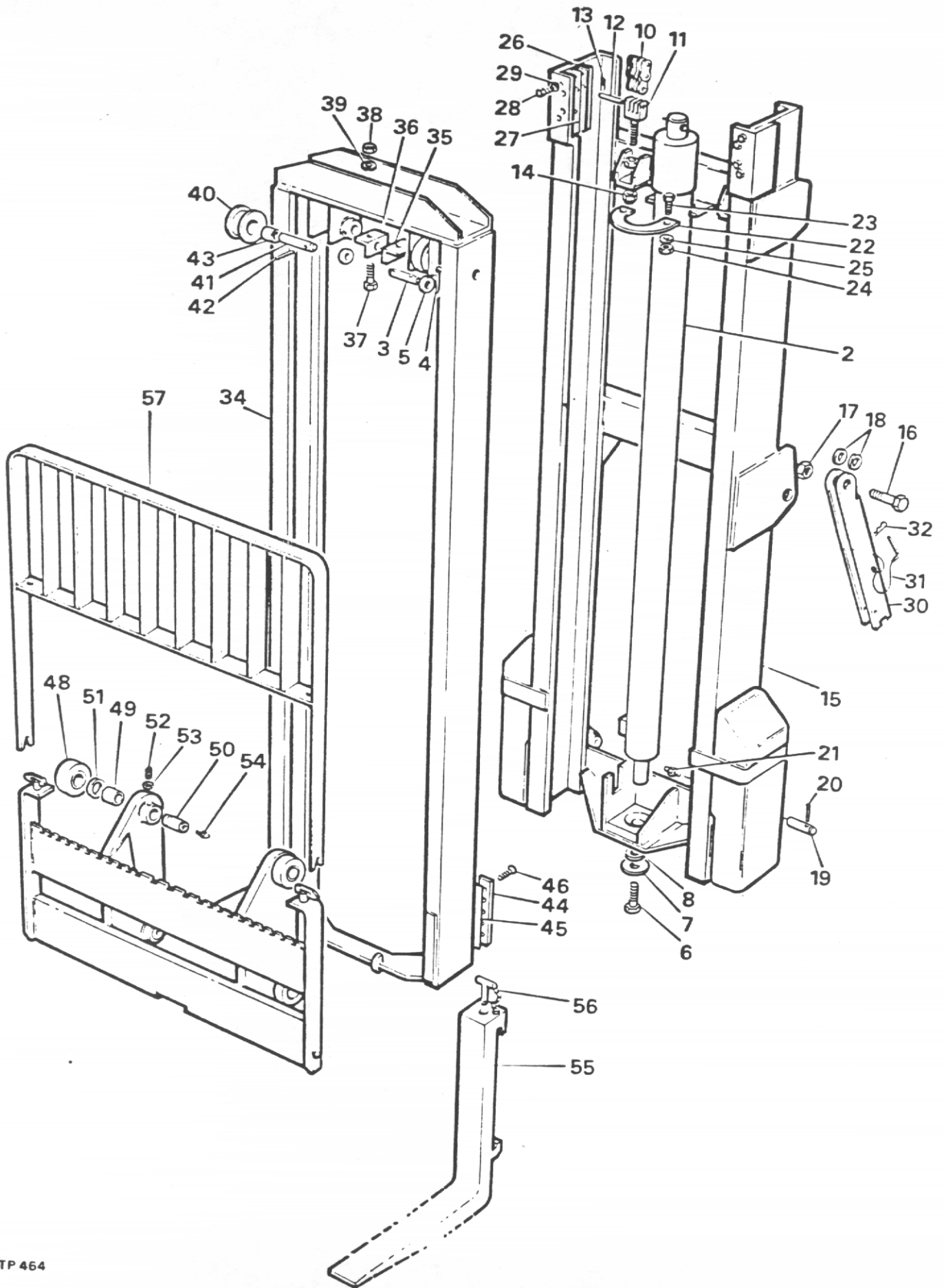




Item No.	Part No.	Description	Qty.
1	40287.A01	Safety Frame .....	1
2	10623.A04	Mounting Rubber - Front .....	1
3	10623.A03	Mounting Rubber - Panel Mounting Support .....	2
4	11S.06G	Screw - Hex. Hd. M16 x 45 (Rear Frame to Chassis)	4
5	61S.06	Nut - M16 Binx (Rear Frame to Chassis) .....	4
6	8S.06N	Bolt - M16 x 90 (Frame to Front Member) .....	2
7	7S.06	Nut - M16 (Frame to Front Member) .....	2
8	17S.08	Washer - Spring M16 (Frame to Front Member) .....	2
9	20283.A01	Panel Mounting Support .....	1
10	8S.05M	Bolt - Hex. Hd. M12 x 90 (Support to Pillar) ....	4
11	61S.05	Nut - M12 .....	4
12	30295.A01	Panel - Seat Support .....	1
13	10867.A01	Hinge - Seat Support Panel L.H.....	1
14	10867.A02	Hinge - Seat Support Panel R.H.....	1
15	11S.04B	Screw - Hex. Hd. M10 x 20 (Hinge - Seat Panel) ..	4
16	61S.04	Nut - M10 Binx (Hinge - Seat Panel) .....	4
17	FSE 267	Catch Assembly (Rubber) .....	1
18	101S.075	Rivets .....	A/R
19	10861.A01	Stay .....	1
20	10S.14	Washer - Flat 3/8" I.D.....	1
21	44S.01C	Pins - Split 1/16" x 1" .....	1
22	30293.A0101	Floor Plate (L.H.) .....	1
23	30293.A0102	Floor Plate (R.H.) .....	1
24	8S.05J	Bolt - Hex. Hd. M12 x 65 (Floor Panel to Support)	4
25	61S.05	Nut - M12 (Floor Panel to Support) .....	4
26	8S.04K	Bolt - Hex. Hd. M10 x 70 (Floor Panel to Front Panel)..	4
27	61S.04	Nut - M10 (Floor Panel to Front Panel) .....	4
28	11S.04B	Screw - Hex. Hd. M10 x 20 .....	2
29	61S.04	Nut - M10 Binx .....	2
30	30297.A01	Guard - Frame Front .....	1
31	8S.05K	Bolt - Hex. Hd. M12 x 70 (Guard to Frame) .....	6
32	61S.05	Nut - M12 Binx (Guard to Frame) .....	6
33	30297.A0105	Clamp Plate - Guard .....	2
34	11S.04C	Screw - Hex. Hd. M10 x 25 (Guard to Roof) .....	2
35	61S.04	Nut - M10 Binx .....	2
36	40287.A0114	Rubber Pad - Seat Panel to Frame .....	2

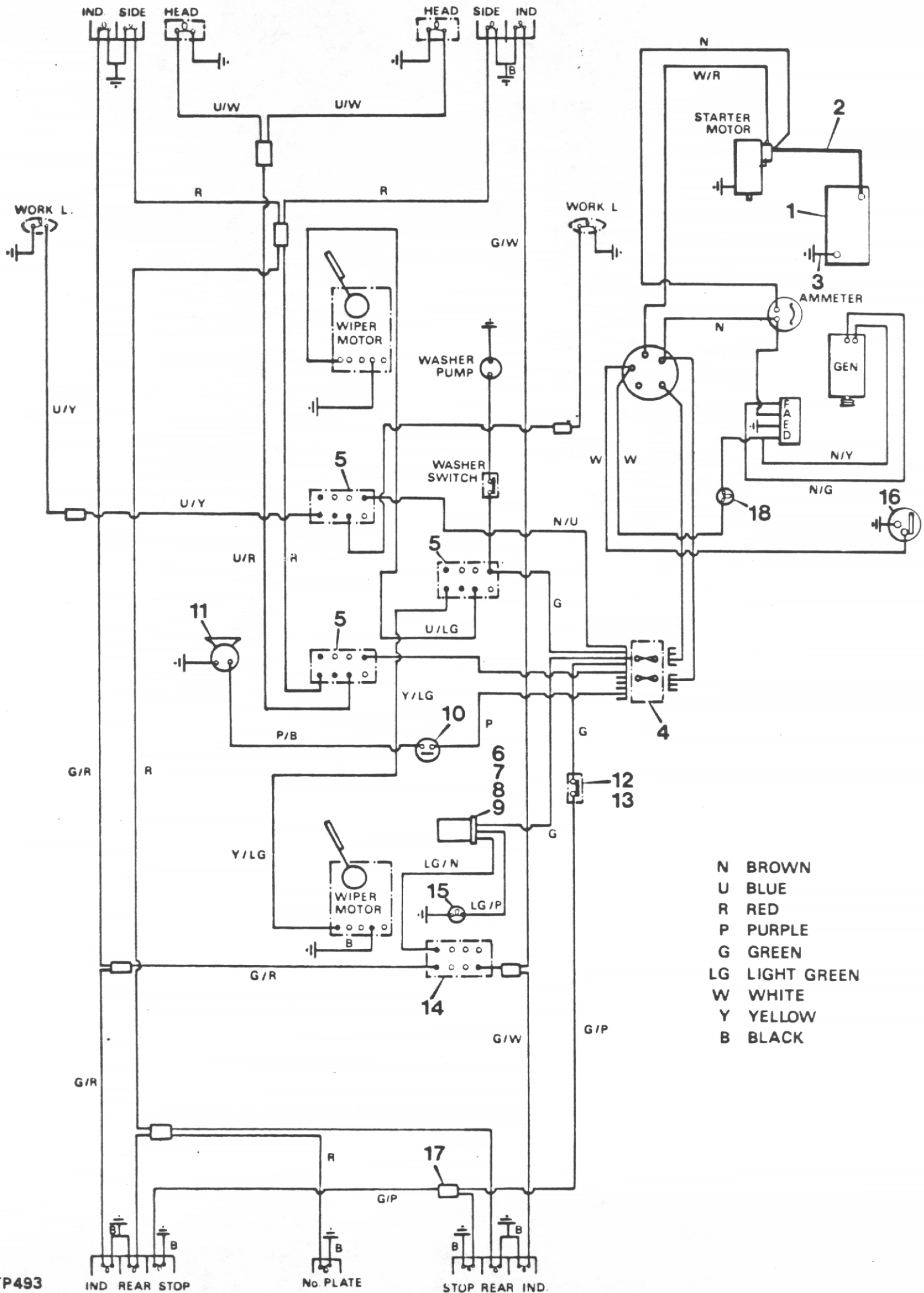


Item No.	Part No.	Description	Qty.
1		Mast Assembly (See sep.illus.)	
2	30115.A01	Ram - Lift .....	1
3	10149.A01	Pin - Ram .....	1
4	44S.05H	Pin - Split Cotter .....	2
5	10S.08	Washer - Plain 1" I.D.....	2
6	11S.05C	Screw M12 x 35 .....	1
7	10204.A01	Washer .....	1
8	C180 A	Washer - Felt .....	2
9	FSE 187	Chain Assembly (items 10-13) .....	2
10	FSE 187-1	Chain .....	2
11	FSE 187-2	Tensioner c/w Nut .....	4
12	FSE 187-3	Pin .....	4
13	44S.01C	Pin - Split 1/16" Dia. x 1" .....	8
14	163S.06	Nut - Hex. 5/8" BSF .....	4
15	40026.A02	Outer Mast (c/w Lateral Stability Ballast Weight)	
16	F4-45-57	Bolt - Tilt Ram .....	2
17	F4-35-110B	Nut 1½" BSF .....	2
18	F4-45-50	Spacer .....	4
19	20249.A01	Pin - Pivot .....	2
20	54S.07U	Pin - Tension .....	2
21	131S.01	Nipple - Grease .....	2
22	10210.A01	Clamp .....	1
23	11S.04D	Setscrew - Hex. Hd. M10 x 30 .....	2
24	7S.04	Nut - Hex. Hd. M10 .....	2
25	12S.05	Washer M10 .....	4
26	20023.A01	Strip - Rubbing .....	2
27	10153.A01	Shim - Packing .....	A/R
28	11S.03B	Screw - Hex. Hd. M8 x 20 .....	8
29	17S.04	Washer - Spring .....	8
30	30289.A01	Stop - Tilt Ram .....	2
31	10846.A02	Strop - Securing .....	2
32	F4-45-77	Cotter - Spring .....	2
34	40025.A02	Inner Mast	
35	10147.A0101	Bracket L.H.....	1
36	10147.A0102	Bracket R.H.....	1
37	8S.05D	Bolt - Hex. Hd. M12 x 40 .....	2
38	7S.05	Nut - Hex. M12 .....	2
39	17S.06	Washer - Spring M12 .....	2
40	10195.A01	Pulley - Chain .....	2
41	F4-45-134	Pin .....	2
42	55S.02E	Pin - Tension .....	2
43	43S.01	Bush .....	2
44	10052.A01	Strip - Rubbing .....	2
45	10054.A01	Shim - Packing .....	A/R
46	53S.03D	Screw - Csk. Hd. M8 x 20 .....	8



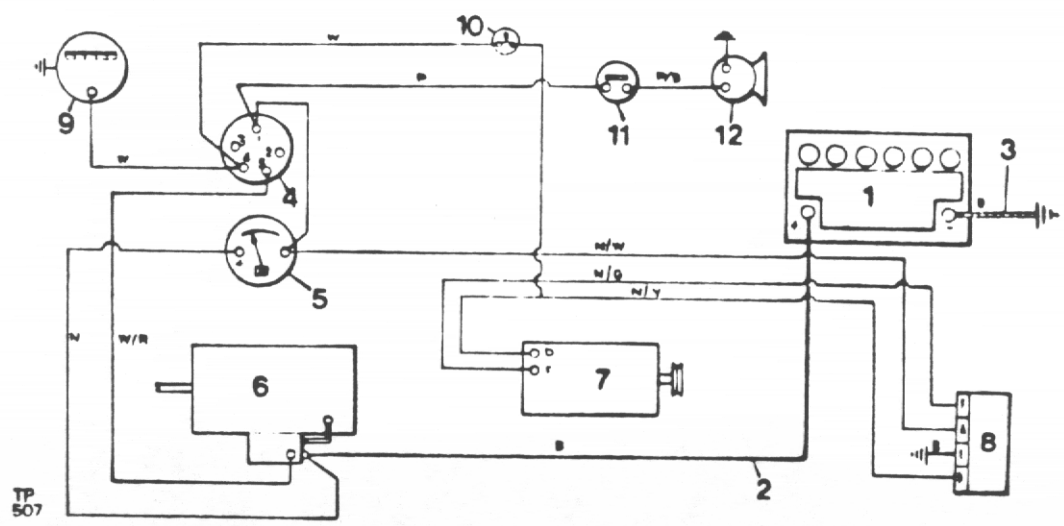
1727 ..... CARRIAGE AND LOAD GUARD ASSEMBLY .....1727

Item No.	Part No.	Description	Qty.
47	40265.A02	Carriage complete	
48	10192.A01	Roller .....	4
49	10150.A04	Bush .....	4
50	10113.A02	Pin .....	4
51	FSE 396	Shim .....	A/R
52	57S.06G.1	Setscrew Skt. Cup.Pt. M10 x 20 .....	4
53	56S.04	Nut - Half M10 .....	4
54	131S.03	Nipple - Grease .....	4
55	F4-45-199	Fork .....	2
56	E288-15	Peg & Chain .....	2
57	40127.A03	Guard - Carriage .....	1

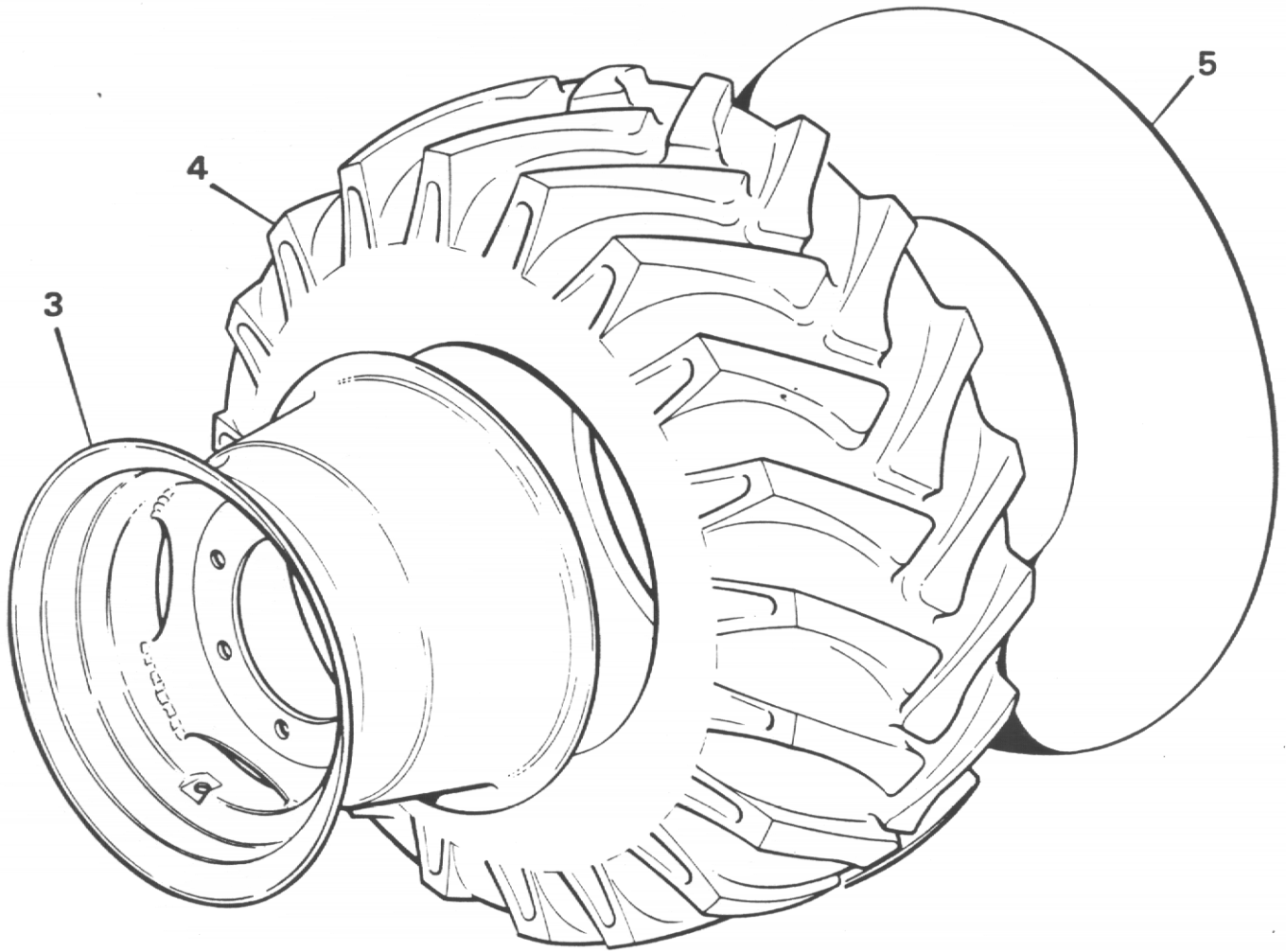


Item No.	Part No.	Description	Qty.
1	109S.05	Battery .....	1
2	10227.A02	Cable - Positive .....	1
3	10228.A02	Cable - Negative .....	1
4	10644.A01	Box - Fuse .....	1
5	10620.A01	Switch - Toggle .....	3
6	10616.A01	Flasher Unit .....	1
7	82S.03C	Screw - Slot Rd. Hd. 2BA x ½" .....	2
8	12S.01	Washer - Plain M5 .....	2
9	85S.01	Nut - Self Lock .....	2
10	10619.A01	Button - Horn .....	1
11	10618.A01	Horn .....	1
12	10744.A01	Switch - Brake .....	1
13	116S.02	Washer .....	1
14	10620.A02	Switch - Direction Indicator .....	1
15	10593.A01	Light - Warning .....	1
16	10514.A01	Hourmeter .....	1
17	SS.2	Connector - Double .....	A/R
18	10593.A03	Light - Warning .....	1
19	10559.A01	Clamp - Battery .....	1
20	40S.A17	Rod - Tie .....	2
21	9S.01	Nut - Hex. Full ½" UNF .....	8
22	30080.A04	Tray - Battery .....	1
23	30080.A0303	Bar - Locking .....	1
24	11S.04C	Screw - Hex. Hd. M10 x 25 .....	2
25	61S.04	Nut - Self Lock M10 .....	2
26	30080.A0206	Plate - End .....	2
27	11S.02B	Screw - Hex. Hd. M6 x 20 .....	2
28	30080.A0408	Spacer .....	2
29	30267.A01	Console .....	1
30	10835.A01	Cover - Cable .....	1
31	11S.02B	Screw - Hex. Hd. M6 x 20 .....	4
32	7S.02	Nut - M6 .....	4
33	17S.03	Washer - Spring M6 .....	4

Item No.	Part No.	Description	Qty.
1	109S.05	Battery .....	1
2	100227.A02	Cable - Battery - Positive .....	1
3	100228.A02	Cable - Battery - Negative .....	1
4	39243A	Start Switch c/w Keys )	1
5	291-37050	Ammeter ) Supplied .....	1
6	204-13273	Starter Motor ) with .....	1
7	291-36951	Generator ) Engine .....	1
8	064-19099	Regulator ) .....	1
9	10514.A01	Hour Meter .....	1
10	10593.A03	Ignition Warning Light .....	1
11	10619.A01	Horn Button .....	1
12	10618.A01	Horn .....	1
13	11S.02B	Screw - Hex. Hd. M6 x 20 (Horn Fixing) .....	2
14	61S.02	Nut - M6 (Horn Fixing) .....	2
<u>Not Illustrated</u>			
15	30267.A01	Console .....	1
16	180S.01	Cable Ties .....	A/R
17	30080.A05	Battery Tray .....	1
18	10559.A03	Battery Clamp .....	1
19	40S.A17	Tie Rods - 1/2" UNF x 8 1/2" .....	2
20	9S.01	Nuts - 1/2" UNF .....	8
21	20113.A06	Dynamo Belt Guard .....	1
22	11S.02B	Screw - Hex. Hd. M6 x 20 .....	2
23	61S.02	Nuts - M10 Binx .....	2
24	12S.02	Washer - Plain M6 .....	2
25	10835.A02	Cable Cover .....	1
26	11S.02B	Screw - Hex. Hd. M6 x 20 .....	4
27	7S.02	Nut - Hex. M6 .....	4
28	17S.03	Washer - Spring M6 .....	4
29	10859.A01	Mounting Bracket - Regulator .....	1
30	69S.03C	Screw - Hex. Hd. 3/8" UNC x 1/2" (Bkt. to Engine) .....	2
31	41S.05	Washer - Spring 3/8" I.D. ....	2
32	SS.2	Double Connector .....	A/R





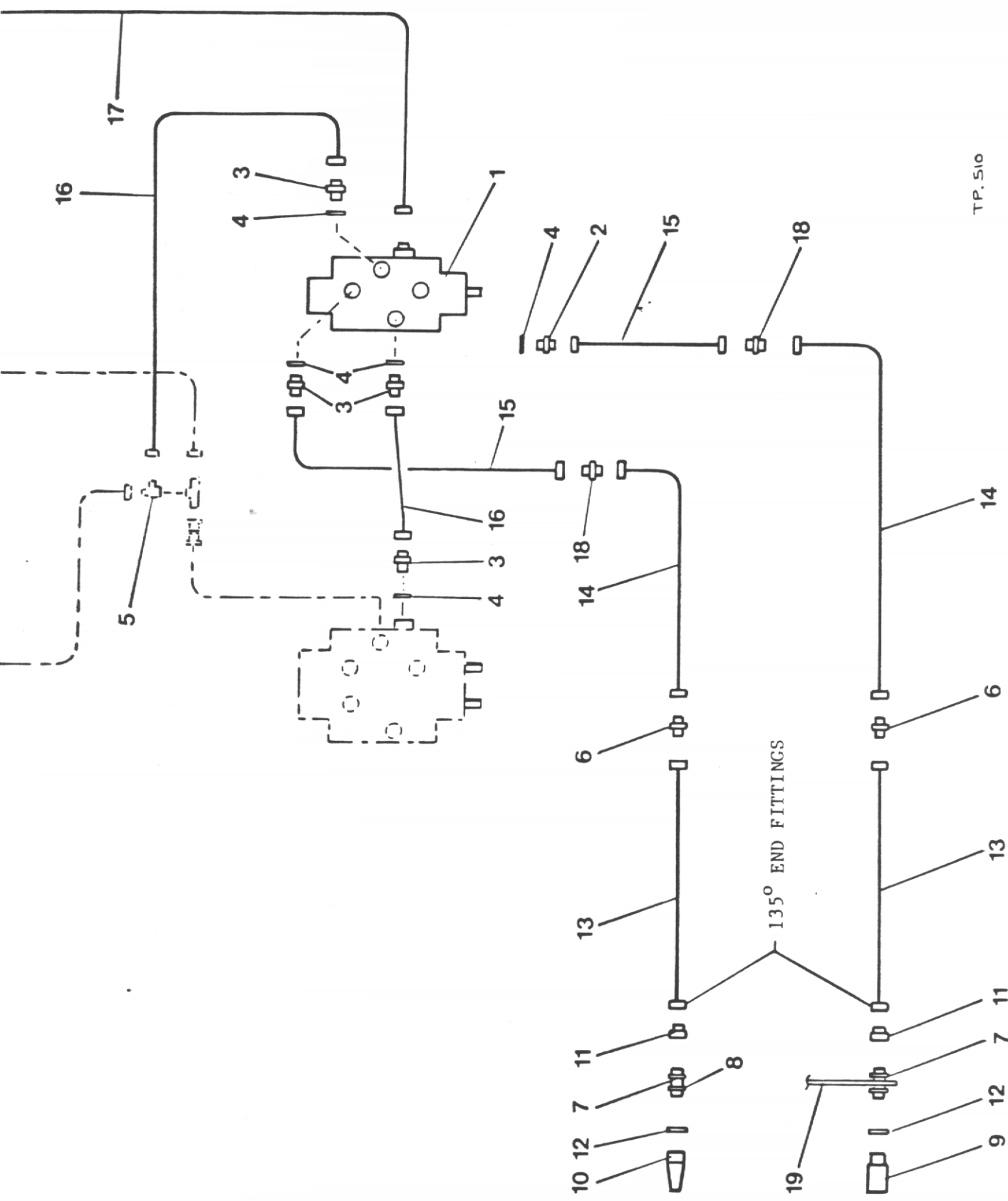


Item No.	Part No.	Description	Qty.
1	24S.07	Wheel Assembly - L.H. Complete .....	2
2	24S.08	Wheel Assembly - R.H. Complete .....	2
3	30138.A02	Wheel .....	4
4	20S.02	Tyre 10.5 x 18 x 8 Ply .....	4
5	23S.04	Tube 10.5 x 18 .....	4
6	10668.A02	Nuts - Wheel .....	24

TO STEER VALVE

RETURN TO TANK

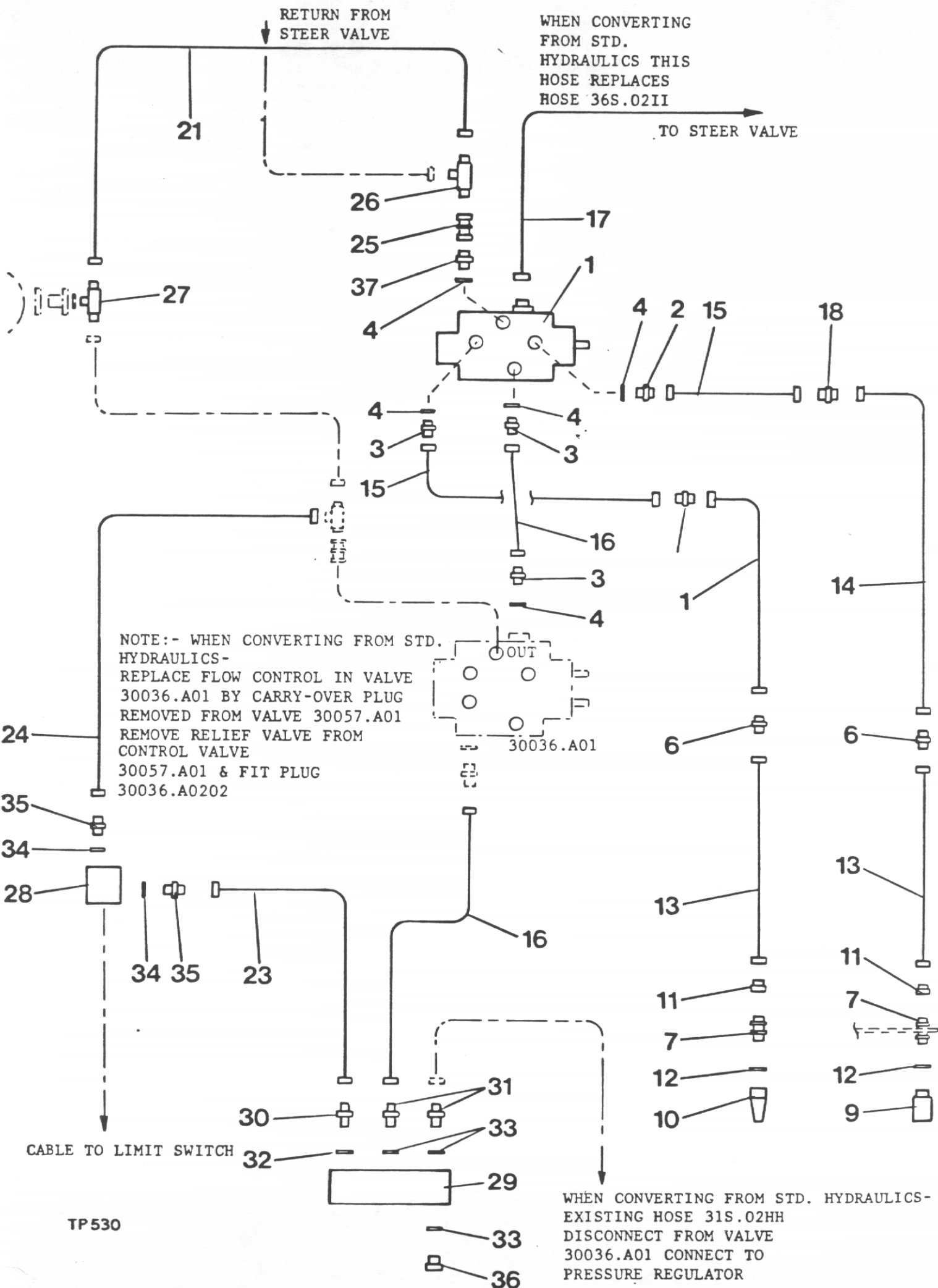
STEER VALVE RETURN



TP. 510

1811 ..... AUXILLIARY SERVICE (OPTION) ..... 1811

Item No.	Part No.	Description	Qty.
1	30057.A01	Control Valve .....	1
2	4/60-158	Adaptor 7/8" JIC x 3/8" BSP (Long) .....	1
3	4/60-159	Adaptor 7/8" JIC x 3/8" BSP (Short) .....	4
4	49S.01	'O' Ring .....	5
5	154S.02	Tee 3/8" BSP M x M .....	1
6	4/60-189	Adaptor 3/8" x 1/4" BSP M x M .....	2
7	93S.01	Bulkhead Fitting 3/8" BSP M x M .....	2
8	72S.01	Locknut 3/8" BSP .....	2
9	10151.A01	Pull Break Carrier Coupling 3/8" BSP .....	1
10	10152.A01	Pull Break Probe Coupling 3/8" BSP .....	1
11	112S.05	Adaptor 1/4" x 3/8" BSP M x F .....	2
12	100S.03	Dowty Seal 3/8" BSP .....	2
13	33S.01C	Hose ST x 135° x 6655mm Long .....	2
14	35S.02B	Hose ST x ST x 1803mm Long .....	2
15	35S.02D	Hose ST x ST x 1295mm Long .....	2
16	31S.02AA	Hose ST x 90° x 508mm Long .....	2
17	36S.02A	Hose 90° x 90° @ 315° x 2489 Long .....	1
18	122S.03	Adaptor M x M 3/8" BSP .....	2
19	10900.A01	Coupling - Mounting Plate .....	1
20	30036.A0202	Blanking Plug .....	1

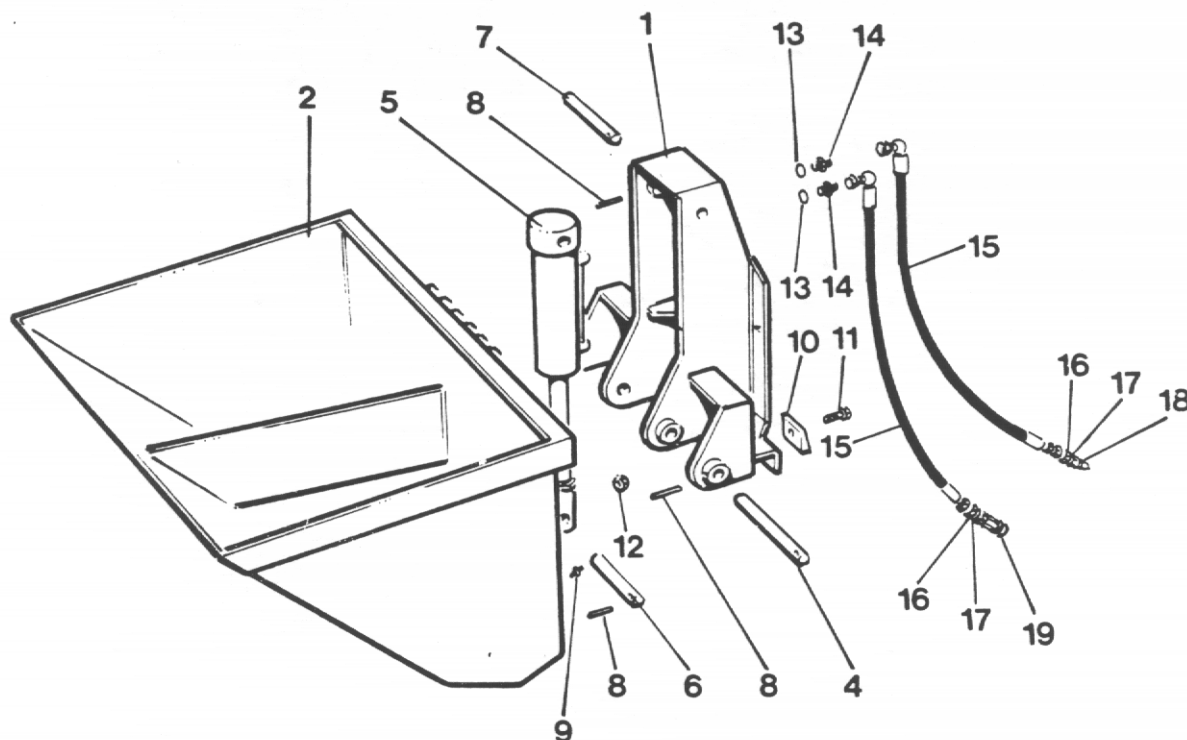


AUXILLIARY SERVICE & DE. RATE

Item	Part No.	Description	Qty.
1	30057.A01	Control Valve .....	1
2	4-60-158	Adaptor 7/8" JIC x 3/8" B.S.P. (Long) .....	1
3	4-60-159	Adaptor 7/8" JIC x 3/8" B.S.P. (Short) .....	3
4	49S.01	'O' Ring .....	5
5	154S.02	Tee 3/8" B.S.P. F x M x M .....	1
6	4.60.189	Adaptor 3/8" x 1/4" B.S.P. MxM .....	2
7	93S.01	Bulkhead Fitting 3/8" B.S.P. M x M .....	2
8	72S.01	Locknut 3/8" B.S.P. ....	2
9	10151.A01	Pull Break Carrier Coupling 3/8" B.S.P. ....	1
10	10152.A01	Pull Break Carrier Coupling 3/8" B.S.P. ....	1
11	112S.05	Adaptor MXF 1/4" x 3/8" B.S.P. ....	2
12	100S.03	Dowty Seal 3/8" B.S.P. ....	2
13	33S.01C	Hose St. - 135° x 6655 Long .....	2
14	35S.02B	Hose St. x St. x 1803 Long .....	2
15	35S.02D	Hose St. x St. x 1295 Long .....	2
16	31S.02AA	Hose St. 90° x 508 Long .....	2
17	36S.02A	Hose 90° x 90° @ 315° x 2489 Long .....	1
18	122S.03	Adaptor M x M 3/8" B.S.P. ....	2
19			
20	30036.A0202	Blanking Plug .....	1
21	31S.03K	Hose St. - 90° x 1702 Long .....	1
22			
23	36S.02U	Hose 90° - 90° @ 90° x 432 Long .....	1
24	35S.02K	Hose St. - St. x 457 .....	1
25	164S.05	Adaptor F x F 1/2" B.S.P. ....	1
26	113S.01	Tee 1/2" x 1/2" x 3/8" B.S.P. ....	1
27	121S.05	Tee 1/2" x 1/2" x 1/2" B.S.P. ....	1
28	10785.A01	Solenoid Valve .....	1
29	10784.A01	Pressure Regulator .....	1
30	119S.03	Adaptor 3/8" x 1/4" B.S.P. M x M .....	1
31	119S.08	Adaptor 1/2" x 3/8" B.S.P. M x M .....	1
32	100S.02	Dowty Seal 1/4" B.S.P. ....	1
33	100S.04	Dowty Seal 1/2" B.S.P. ....	3
34	100S.03	Dowty Seal 3/8" B.S.P. ....	2
35	122S.03	Adaptor 3/8" x 3/8" x B.S.P. M x M .....	2
36	127S.04	Plug Hex. Hd. 1/2" B.S.P. ....	1
37	DSE.115	Adaptor 7/8" JIC x 1/2" B.S.P. ....	1

Machine F15 110 supplied with Auxilliary  
Service and Hydraulic Bucket.

1001 ..... HYDRAULIC BUCKET ASSEMBLY 0.4M<sup>3</sup> ..... 1001



Item No.	Part No.	Description	Qty.
	GSE 143	Hydraulic Bucket Assembly .....	1
1	GSE 141	Back Frame .....	1
2	GSE 142	Bucket .....	1
3	20DU.20	Glacier Bush (Not Illustrated) .....	4
4	GSE 135-6	Pivot Pin .....	2
5	30169.A01	Hydraulic Ram .....	1
6	GSE 135-1	Ram Pin .....	1
7	GSE 135-5	Crosshead Pin .....	1
8	F4-45-216	Tension Pin 8mm .....	4
9	5ST-100	Grease Nipple .....	2
10	GSE 147	Lower Clamp .....	2
11	8S.05F	Bolt - M12 x 50 .....	2
12	7S.05	Nut - M12 .....	2
13	T14H	Sealing Washer .....	2
14	T63K	Adaptor ½" BSP x 2/8" BSP .....	2
15	4-60-139	Hose .....	2
16	T14J	Adaptor 3/8" BSP x 3/8" BSP .....	2
17	T14I	Sealing Washer 3/8" BSP .....	2
18	10151.A01	Snap Coupling Probe .....	1
19	10152.A01	Snap Coupling Carrier .....	1

## 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	1676.40	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".

$$84'' = 2133.60 \text{ mm.}$$

$$5/8'' = 15.875 \text{ mm.}$$

$$84 \frac{5}{8}'' = 2149.475 \text{ mm.}$$

# **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**