

WINGET

OPERATING INSTRUCTIONS & SPARE PARTS LIST

FOUR/45 DUMPER (CAPACITY 45 CWT) WITH G.M.P.D. BRAKES

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INTRODUCTION

This Parts & Operators Manual is a re-print of the manual last published in 1974 and contains some amended part numbers.

Note: this publication is applicable to machines with serial numbers from and including 4/45-4344

Health & Safety legislation and working practices applicable to Site Dumpers, both 2 and 4 wheel Drive, Rigid Chassis and Articulated Chassis have changed considerably in the years since this manual was last published and immediately following this Introduction are notes on the Safe Use of Site Dumpers. These notes supersede and replace all previous 'Dumper Safety' notes issued with Winget FOUR/45 Four Wheel Drive Dumpers fitted with G.M.P.D. Brakes.

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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DUMPER SAFETY

Safety is the responsibility of all persons working with this machine. Think "safety" at all times. Read and remember the contents of this handbook.

MACHINE MODIFICATIONS

WARNING Any modifications to the machine will affect its working parameters and safety factors. Refer to the Manufacturers before fitting any non-standard equipment or parts.



The Manufacturers accept no responsibility for any modifications made after the machine has left the factory, unless previously agreed by the Manufacturers in writing; the Manufacturers will accept no liability for damage to property, personnel or the machine if failure is brought about due to such modifications, or fitment of spurious parts.

TRAINING

WARNING Only trained operators should use this machine.



Operators should hold an appropriate full motor vehicle driving licence and undergo both a safety awareness course and a driver training course for Site dumpers run by the C.ITB or equivalent body leading to the award of a CTA.

It is strongly recommended that operators read the H.S.E. publication "Safe Working with Small Dumpers" which is available from government bookshops (HMSO) or from other bookshops quoting the following number ISBN 011 8836935. Another useful publication is British Standard number BS 6264, "Procedure for Operator Training For Earth Moving Machinery" available from the British Standard Institution.

OPERATION

WARNING NEVER use the machine for purposes other than those for which it was designed. This machine was designed to carry loads such as soil, clay, sand, wet concrete, stone or other similar materials. It was not designed to carry loads which may move around in the skip uncontrollably, nor to carry any loads or materials which overhang the skip in any way. If in any doubt as to the suitability of this machine for a particular task, contact your nearest Distributor or the Manufacturer for advice.



ALWAYS be aware of local and national regulations governing the use of the machine.

NEVER commence work with the machine until the "Daily (or every ten hours)" service checks have been made. (See Service Section for details)

ALWAYS check wheel nut tightness daily.

NEVER carry passengers.

Where seat belt restraints are fitted as part of Rops/Fops Protection they must be worn. Ensure that the seat and seat belt are securely fixed to the machine. Check that the seat belt is in good condition, free from cuts and frayed edges.

ALWAYS remain in the driving seat whenever the engine is running. Never attempt to operate any controls unless seated.

ALWAYS apply the parking brake before leaving the driver's seat.

DUMPER SAFETY

NEVER dismount with the engine running, and never leave the machine unattended with the key in the starter switch.

When Battery Isolators are fitted they must be activated only when the engine is turned off except in cases of emergency.

Activating a Battery Isolator when the engine is running can result in damage to the electrical components and circuits.

NEVER fill the fuel or hydraulic tanks with the engine running.

ALWAYS drive only on surfaces that are known to be stable.

ALWAYS keep the floor plates and walkways clean.

NEVER drive the machine close to the edge of any excavation. Always use effective wheel stops to prevent the machine running close to the edge. Make sure that the stops are in proportion to the size of the wheels and are set sufficiently far enough back from the edge of any excavation to prevent the weight of the load causing a collapse.

NEVER adjust the tyre pressures in an attempt to improve traction on soft ground or obtain a softer ride on hard ground. Incorrectly adjusted tyres can affect the steering and handling characteristics.

NEVER attempt to free a machine which is 'bogged down' by pushing with the bucket of a backhoe loader, tracked excavator or other similar machine.

NEVER make unnecessary "crash stops" when travelling at speed, especially in forward direction.

NEVER work under an unpropped skip. *If the dumper was supplied with a special Skip Support always ensure that it is used.*

Some articulating dumpers are manufactured with an articulation lock. If your machine has this feature proceed as follows:

ALWAYS fit the articulation lock when working within the articulation point crush zone.

NEVER attempt to lift the machine unless the articulation lock is engaged.

SKIPS AND LOADING

WARNING *NEVER* exceed the rated payload. The weights of all loads above skip water level must be checked.



NEVER remain on the machine when loading the skip with excavators or loaders. Stop the engine, apply the parking brake, dismount, and stand well clear.

ALWAYS ensure that the load is evenly distributed in the skip.

NEVER carry loads or heap materials in such a manner as to affect the forward vision.

ALWAYS take extra care when tipping non free running loads.

NEVER use the skip in a tipped position to bulldoze heaped materials level or to backfill material into excavations.

DUMPER SAFETY

TOWING

WARNING NEVER attempt to start the engine of a dumper by towing or pushing.



Dumpers are not designed as towing vehicles, but loads (including weight of trailer) not exceeding the rated payload of the dumper may be towed on dry level ground in first gear, providing the dumper skip is loaded with half the rated payload to ensure tyre adhesion when braking.

ALWAYS use a purpose made towing pin.

NEVER tow loads up, down or across gradients.

GRADIENTS

WARNING NEVER operate **Four Wheel Drive articulated steer dumpers** on any gradients which exceed 25% (1 in 4), or across gradients which exceed 16% (1 in 6).



NEVER operate **Two Wheel Drive rigid chassis dumpers** on any gradients which exceed 10% (1 in 10), or across gradients which exceed 10% (1 in 10).

ALWAYS remember that slippery or loose surface conditions can adversely affect safe machine operation, including braking, particularly on gradients.

ALWAYS choose routes that avoid steep, slippery or loose gradients.

NEVER coast down gradients. Always negotiate gradients in first gear.

ALWAYS drive forwards up gradients when loaded.

ALWAYS reverse down gradients when loaded.

ALWAYS keep the load facing uphill.

NEVER park on a gradient. If this is unavoidable, ALWAYS chock the wheels.

NEVER attempt to turn on a gradient.

NEVER tow up, down or across a gradient.

NEVER operate high discharge or rotating skips on gradients.

HYDRAULICS

WARNING ALWAYS "Dump" residual pressure from the system before leaving the machine or before carrying out any maintenance or adjustments.



If maintenance work requires the skip to be in the raised position, then it must be raised and supported before dumping the pressure.

Dump pressure by switching off the engine, then moving the hydraulic control lever several times in each direction.

NEVER leave the machine unattended with pressure in the system.

ALWAYS purge hydraulic rams before commencing work. With the engine running operate the hydraulic control to fully extend and retract the rams.

ALWAYS practise the greatest cleanliness in maintaining hydraulic components.

DUMPER SAFETY

SERVICING

WARNING ALWAYS report any defect at once, before an accident or consequential damage can occur.



ALWAYS conform to service schedules except where:

- 1 Warning lights or warning indicators call for immediate attention.
- 2 Adverse conditions necessitate more frequent servicing.

ALWAYS wear correctly fitting protective clothing. Loose or baggy clothing can be extremely dangerous when working on running engines or machinery.

ALWAYS, where possible, work on or close to engines or machinery only when they are stopped. If this is not practical, remember to keep tools, test equipment and all parts of your body well away from the moving parts.

ALWAYS dump pressure from the hydraulic system before carrying out any kind of maintenance or adjustment. (*see Hydraulics Warnings*).

ALWAYS avoid contact with exhaust pipes, exhaust manifolds and silencers when the engine is running; these can be very hot.

ALWAYS work out of doors, or in a well-ventilated area.

NEVER run an engine in an enclosed space. Exhaust fumes in enclosed areas can kill.

ALWAYS disconnect battery cables and remove battery before using an external charger, carrying out welding repairs or to prevent unauthorised usage when unattended or during a repair.

NEVER allow unqualified personnel to attempt to repair, remove or replace any part of the machine, or anyone to remove large or heavy components without adequate lifting tackle.

NEVER attempt to modify or repair Rops Frames or Fops Canopies by welding, drilling or any other means. Attempts to do so will invalidate Rops/Fops Certification.

ALWAYS obtain advice before mixing oils; some are incompatible. If in doubt drain and refill.

NEVER allow oils and fuels to come into regular contact with skin. This can lead to serious skin diseases including, medical evidence suggests, skin cancer. ALWAYS wear protective gloves when handling oils and fuels whether topping up, draining or refilling. ALWAYS wash hands if oils or fuels come into contact with the skin.

Many liquids used in this machine are harmful if taken internally or splashed into the eyes. In the event of accidentally swallowing oils, fuels, anti-freeze, battery acid etc, DO NOT encourage vomiting, seek qualified medical assistance immediately.

ALWAYS dispose of waste oils and fuels into waste oil storage tanks. If storage tanks are not available consult your distributor or local authority for addresses of local designated disposal points. It is illegal to dispose of waste oil into drains or water courses or to bury it.

DUMPER SAFETY

Equipment which includes friction materials will sometimes contain asbestos. When removing friction material dust from components, such as when servicing brakes or clutches, do not blow out with an airline; it could be harmful to inhale the dust. Remove the dust with a vacuum cleaner or wipe clean with a damp rag. Waste should be placed in a sealed container, marked, and disposed of in accordance with local or national regulations.

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

ALWAYS ensure that the starting handle is clean and in good condition. Keep the engine starting dog, and the part of the starting handle that mates with it, lightly lubricated (*Refer to the Engine Handbook*).

NEVER work under an unpropped skip. ***If the dumper was supplied with a special Skip Support always ensure that it is used.***

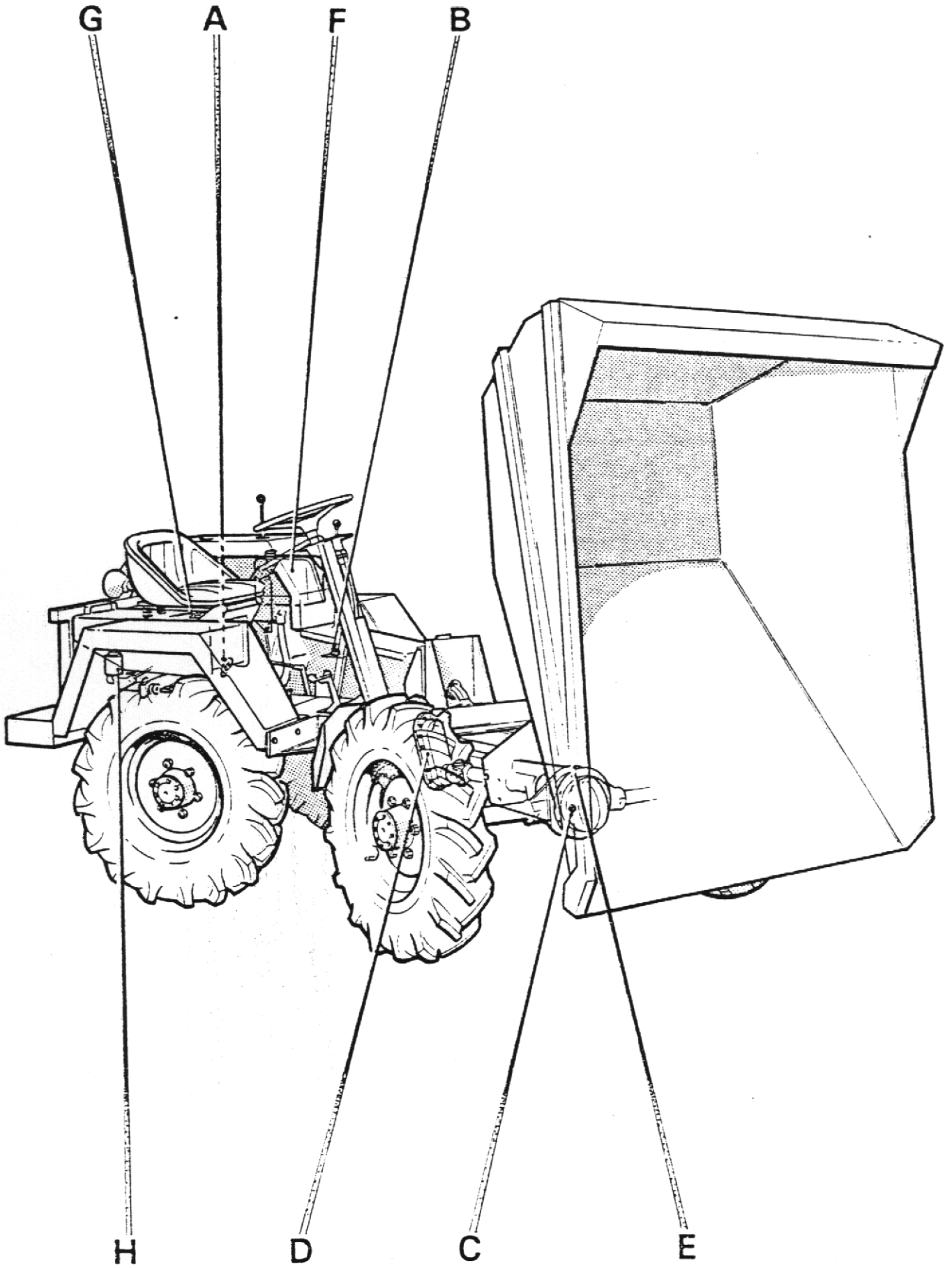
Some articulating dumpers are manufactured with an articulation lock. If your machine has this feature, ALWAYS fit the articulation lock when servicing or working on the machine.

PREPARATION FOR USE

BEFORE THE FOUR/45 DUMPER IS PUT INTO SERVICE ALWAYS CHECK THE FOLLOWING POINTS:—

(See Fig.1)

1. **Engine**
Check the oil level on the dipstick (A), topping up if necessary to the full mark. See also 'Recommended Lubricating Oils', page 16.
 2. **Gearbox**
Check the oil level on the dipstick (B), topping up if necessary to the full mark. See also 'Recommended Lubricating Oils', page 16.
 3. **Drive Axles and Transfer Case**
Remove level plugs (C) from drive axles or filler plug (D) from transfer case and check that oil is up to bottom of level holes. Top up if necessary through filler plug (E) or filler/level plug (D) if necessary. See also 'Recommended Lubricating Oils', page 16.
 4. **Fuel Tank**
Fill tank in (F) with diesel oil until approximately 1" from the top.
- NOTE:— Never allow fuel level to fall to below 2" deep in the bottom of the tank.
5. **Hydraulic Tank**
Fill the hydraulic tank (G). Before removing the cap, clean the surrounding area, to prevent the possible entry of foreign matter. See 'Recommended Lubricating Oils',
 6. **Brake System**
Ensure that both brake master cylinder reservoirs (H) are full of brake fluid. Top up if necessary to within 1/4" of the top of the reservoirs. Use only Girling Crimson Brake Fluid.
 7. **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 Dumper Warranty.



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FIG. 1

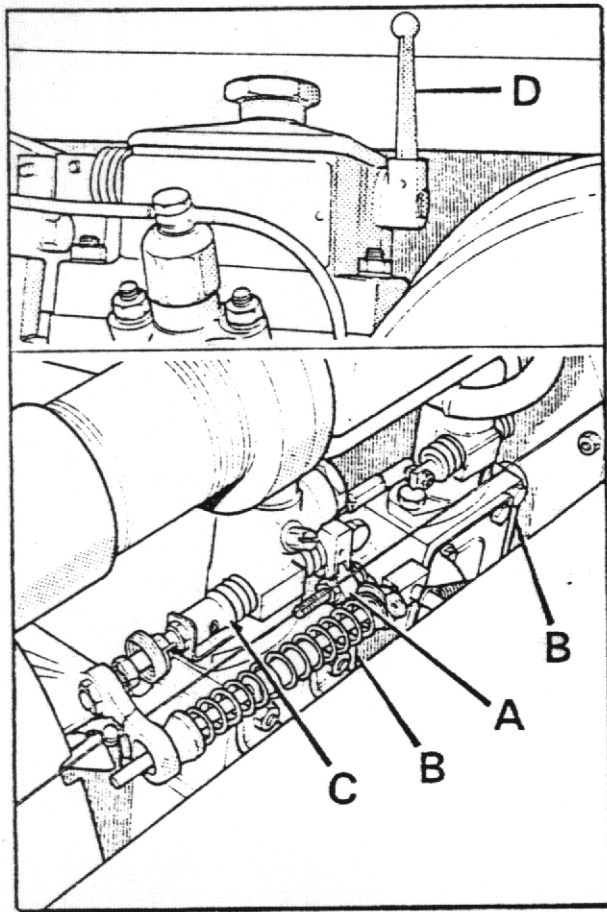


FIG. 2

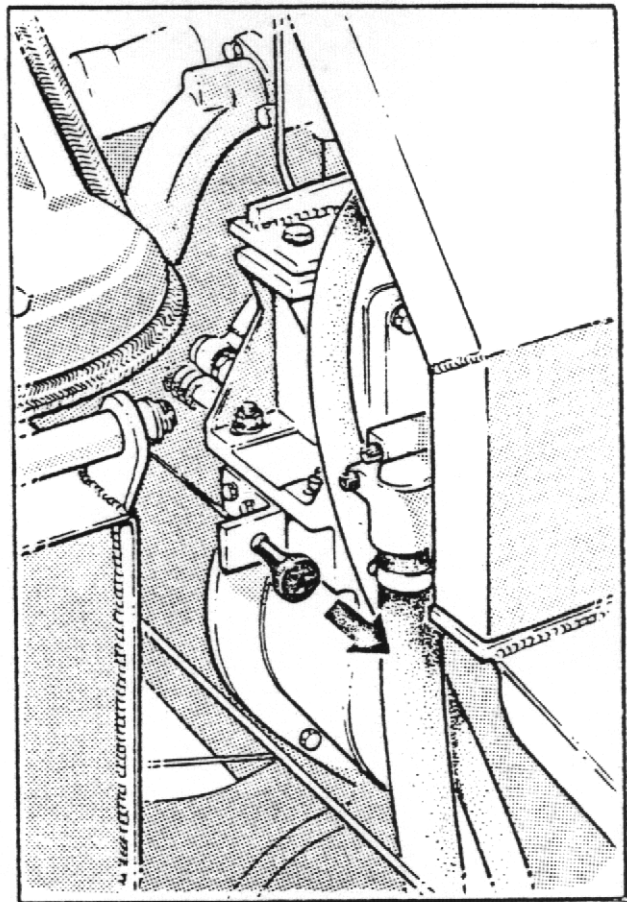


FIG. 3

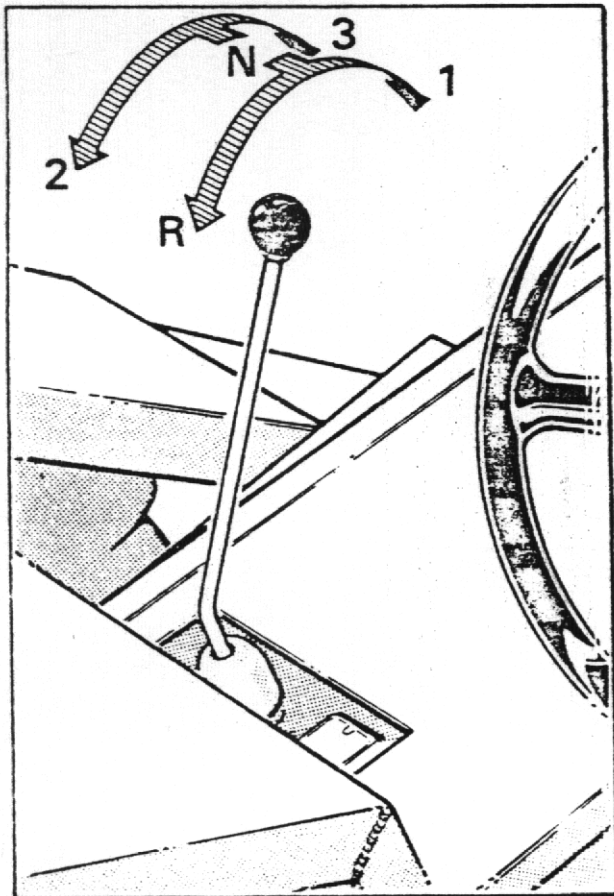


FIG. 4

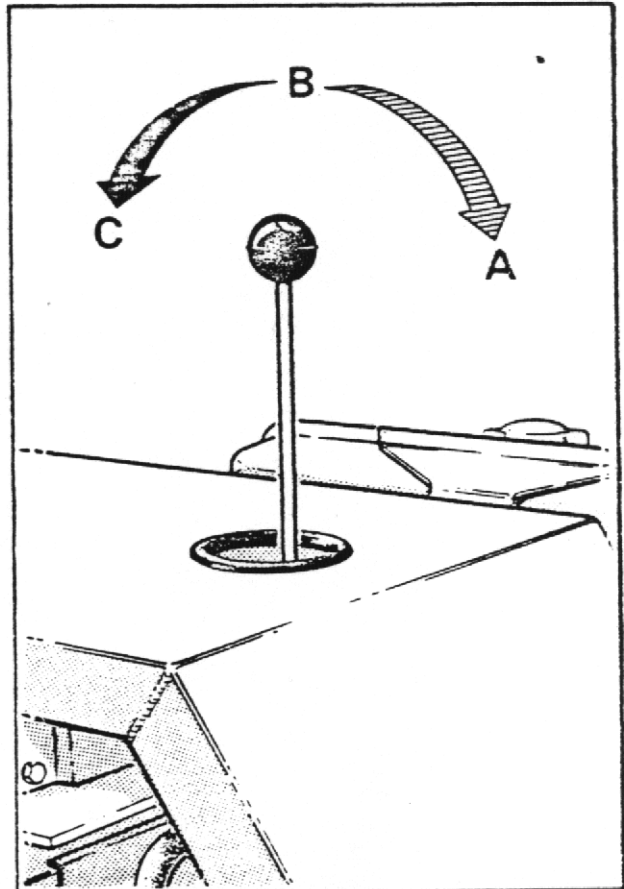


FIG. 5

OPERATION

Starting

(See Fig.2)

1. Lift red-painted overload stop (A) situated on the fuel pump rack above and to the rear of the priming levers (B) and move fuel pump rack (C) into fully-open position.
2. Operate priming levers (B) six times.

NOTE:— This is unnecessary if engine is already warm.

3. Lift decompression lever (D), positioned on top of engine and turn engine as fast as possible using starting handle. When engine is turning at a good speed, knock down decompression lever and engine should fire.
4. If engine does not fire, lift decompression lever and slowly crank engine a few times before attempting to start again. Where ambient temperature is 5° F (–15° C) or below, a cold start aid should be fitted.

Stopping

(See Fig.3)

Pull out stop control knob and hold in its fully forward position until engine stops. Release stop control knob when engine has ceased to turn.

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 closing fuel tap or by allowing fuel tank to run dry, this will allow air into fuel lines and necessitate bleeding and priming system.

Gear Shift Lever

(See Fig.4)

The Four/45 Dumper is fitted with three forward (1), (2), (3), and one reverse (R) gear. When changing gear, the clutch pedal is used in the normal manner.

Skip Control Lever

(See Fig.5)

1. Control lever has three positions DUMP (A), HOLD (B), and RETURN (C).
2. Push lever forward to DUMP (A) to deposit load.
3. Pull lever back to RETURN (C) to return skip to carrying position.

NOTE:— If lever is released when in DUMP or RETURN position, it will automatically return to HOLD (B) position and motion of skip will cease. In this way, speed at which load is deposited can be finely controlled.

Turntable (if fitted)

Pull cranked release lever on turntable catch fully back to release turntable. Revolve skip to required position. To lock in position lift release lock lever and ensure that locking lug locates in turntable locking plate. Cranked release lever will return to its former position.

GENERAL MAINTENANCE

Periodic Maintenance

1. DAILY check engine oil level and fill to full mark on dipstick, if necessary.
2. DAILY 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.
3. WEEKLY check oil level in gearbox and fill to full mark on dipstick, if necessary.
4. WEEKLY remove oil level plugs from drive axles and transfer case. Oil level should be to bottom of holes. Top up, if necessary through filler plugs on drive axles or through filler/level plug in transfer case.
5. WEEKLY check oil level in hydraulic tank. Always clean the surrounding area before removing cap to prevent possible entry of foreign matter. Fill tank, if necessary, to within 1" of top.
6. WEEKLY check brake fluid level in master cylinder reservoir and top up if necessary, to within ¼" of top.
7. WEEKLY apply grease to all grease nipples.
8. WEEKLY check all wheel nuts and tighten, if necessary.
9. WEEKLY check tyre pressures 35 ib/sq.in.
10. OCCASIONALLY check all nuts and bolts, and tighten if necessary.

Lubrication

(See Fig.6)

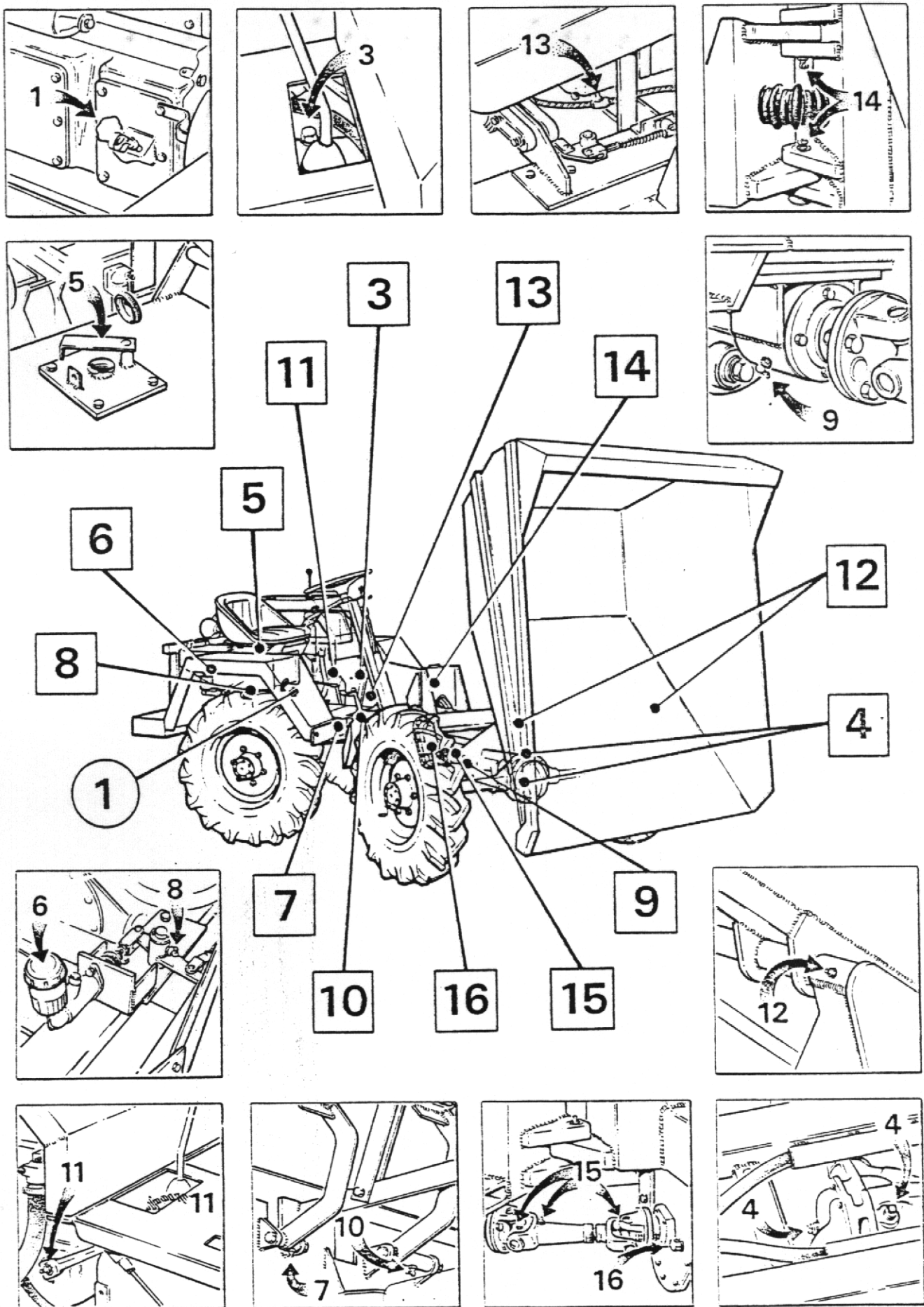
Period	Key	Description	Lubrication	No. of Points
Daily	1	Engine	Engine Oil	1
	2	Fuel Tank	Diesel Fuel	1
Weekly	3	Gearbox	Gearbox Oil	1
	4	Drive Axles	Axle Oil	2
	5	Hydraulic Tank	Hydraulic Fluid	1
	6	Brake Master Cylinder Reservoir	Brake Fluid	1
	7	Footbrake Pedal	Grease Gun	1
	8	Footbrake Master Cylinder Actuating Lever	Grease Gun	1
	9	Trunnion Assembly	Grease Gun	1
	10	Clutch Pedal	Grease Gun	1
	11	Clutch Cross Shaft	Grease Gun	2
	12	Skip Pivot	Grease Gun	2
	13	Handbrake Cable	Grease Gun	1
	14	Chassis Centre Pivot	Grease Gun	2
	15	Front Prop. Shaft & U.J.'s	Grease Gun	3
	16	Transfer Case	Axle Oil	1

N.B. FOR RECOMMENDED LUBRICATING OILS SEE CHART

Oil Capacities

Transfer Box 1 pt. (.6 litres)	Drive Axle 8 pts. (4.57 litres)
Gear Box 1½ pts. (.86 litres)	Engine 12 pts. (6.86 litres)

- NOTES: 1. Rear Axle articulation points consist of bearings that require no lubrication.
 2. For full details of the lubrication and maintenance of the engine refer to Manufacturers Manual.



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FIG. 6

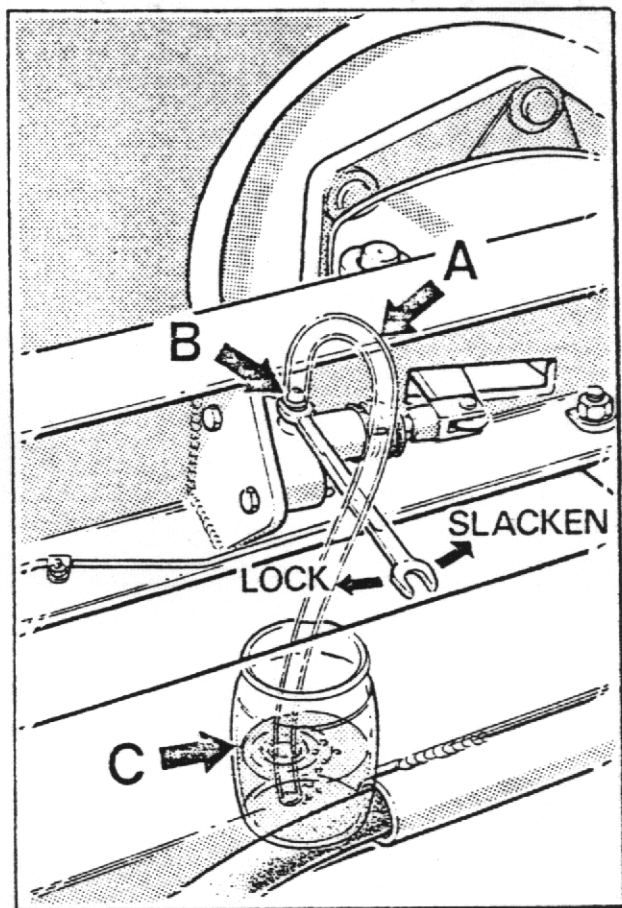


FIG. 7

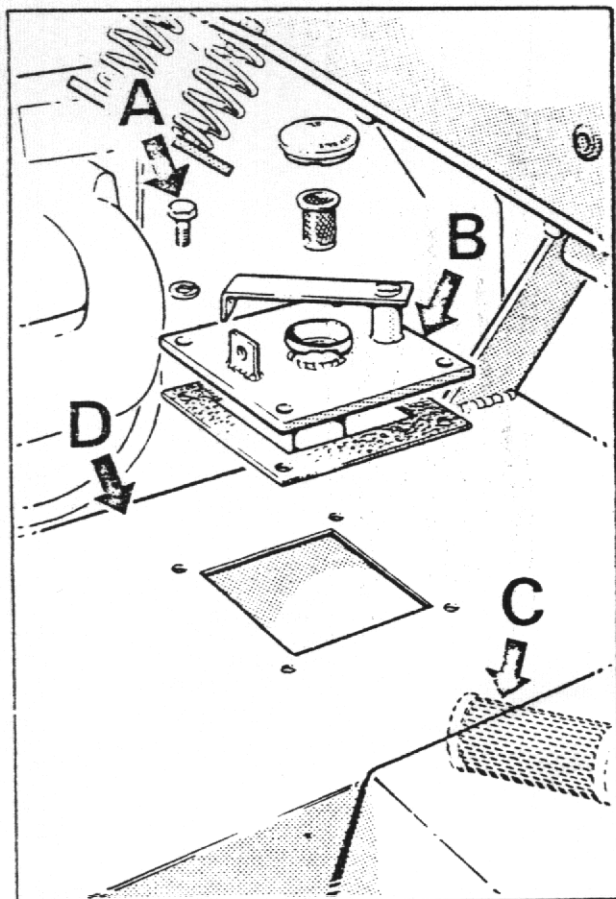


FIG. 8

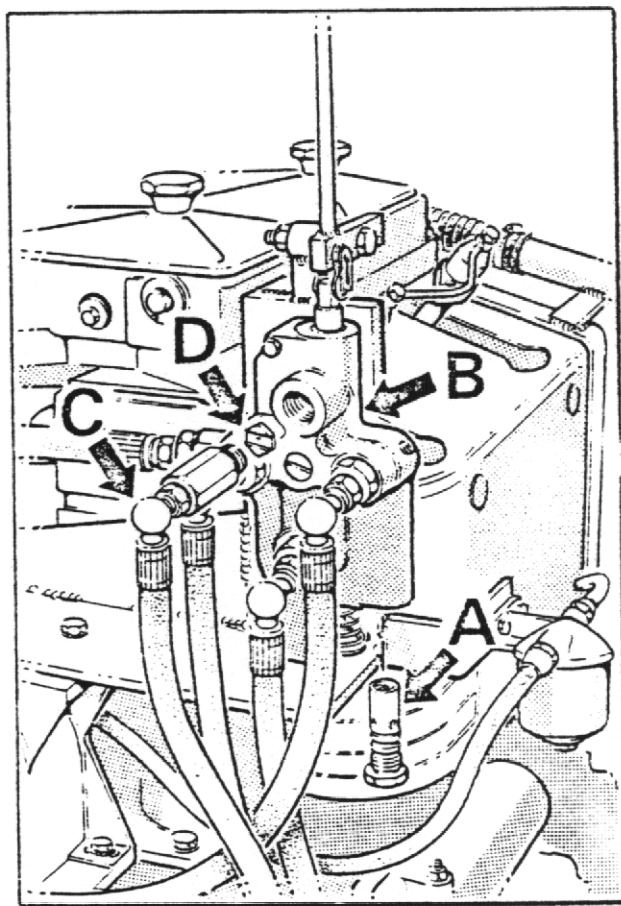


FIG. 9

Brake System

The brake system is designed to require the minimum of maintenance, and, providing the hydraulic fluid in the reservoir is not allowed to fall below the recommended level, no defects should normally occur. Fluid loss must be supplemented by topping up the reservoir with brake fluid that conforms to SAE J 1703. No other fluid may be used. 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 or by the reservoir fluid level being allowed to fall very low. These 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. Fill reservoir with brake fluid
3. Attach bleeder tube (A) (See fig.7) to one of the bleed screws (B) and immerse other end in a small quantity of brake fluid contained in a glass jar (C). Slacken bleed screw and operate brake pedal up and down to its full stroke, until fluid pumped into the jar contains no air bubbles. Hold down pedal and close bleed screw. Remove bleeder tube and release pedal.
4. Repeat on the other bleed screw.
5. Continue until all air has been bled from the system.
6. Lock both the bleed screws and top up the reservoir to the correct level.
7. Apply normal working load on brake pedal for two or three minutes and examine the entire system for leaks.

NOTE: DURING THE OPERATION IT IS ESSENTIAL THAT THE RESERVOIR LEVEL IS KEPT TOPPED UP TO PREVENT FURTHER AIR BEING DRAWN INTO THE SYSTEM. ONLY USE NEW FLUID FOR TOPPING UP

Main Hydraulic System

The main hydraulic system controls the dumping and return of the skip and also provides the power for the dumper steering. If the system fails to operate or does so extremely slowly, carry out the following procedure until the fault is rectified.

1. Check that hydraulic tank is full of oil.
2. Check that hydraulic filter is not blocked (See Fig.8)
 - a) Remove the four setscrews (A) that secure the filler cap assembly (B) and remove assembly.
 - b) Unscrew suction filter (C) from inside tank (D) and wash in white spirit. Dry with moisture-free compressed air.
 - c) Replace suction filter and filler cap assembly.

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

3. Check that hydraulic pressure is correct.
 - a) Fit a 2000 lb/sq.in. gauge into the hydraulic system at the base of the skip ram.
 - b) Operate control lever to dump skip and check that pressure reading on gauge is 1750 lb/sq.in. when ram is fully extended and relief valve is 'blowing'.

NOTE: If correct pressure is not attained—

4. Remove relief valve cartridge (A) (hexagon head) from the bottom of the control valve (B) (See Fig.9) and replace with a new one.
5. Remove hose adaptor (C) from control valve (See Fig.9), remove hexagonal orifice plate (D) and wash in white spirit. Dry using moisture-free compressed air. DO NOT poke wire etc., into the orifice. Re-fit plate and hose adaptor with slot of orifice plate facing outwards.

IF none of these procedures correct the fault contact your Winget agent. 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 to the pump.

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

SPECIFICATION FOR MACHINES WITH STANDARD SKIP

A	Overall height	5'-3"	(160 cm)
B	Skip loading height	4'-2"	(127 cm)
C	Wheelbase	5'-7½"	(170 cm)
D	Overall length	12'-0"	(365 cm)
E	Ground clearance	11½"	(29 cm)
F	Overall width	5'-9½"	(176 cm)
G	Skip ground clearance when tipped	1'-2"	(35 cm)
H	Overall height tipped	7'-2"	(218 cm)
J	Discharge forward to tyre	2'-1"	(63 cm)
K	Overhang	3'-7"	(109 cm)
L	Wheeltrack	5'-0"	(152 cm)
M	Prow width	4'-8½"	(144 cm)

Skip			Turning Circle	24'-6"	746 cm
Water level	32 cu. ft.	906 Litres	Unladen Weight	1 ton 18 cwt	1930 kgms
Struck level	38 cu. ft.	1076 Litres	Hydraulic relief valve	1750 p.s.i.	123 kgs/cm ²
Heaped	48 cu. ft.	1359 Litres	Rear axle articulation	1-2"	35 cm
Maximum payload	2 ton 5 cwt	2286 Kgm	Road Speeds	m.p.h.	km.p.h.
Prow width	4'-8½"	144 cm	1st	2.7	4.3
Tank Capacity			2nd	6.2	9.9
Hydraulic	5 gals	22.7 Litres	3rd	11.4	18.3
			Rev.	2.9	4.6

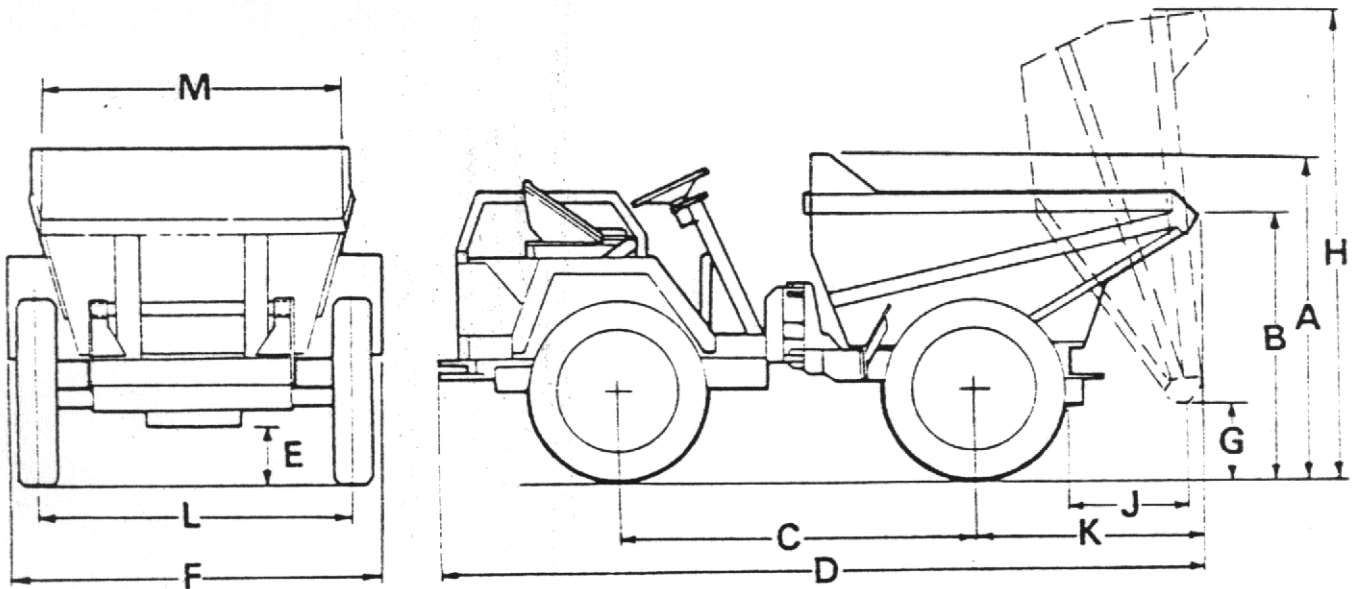


FIG.10

SPECIFICATION FOR MACHINES WITH HIGH DISCHARGE SKIP

A	Overall height	6'-8"	(203 cm)
B	Skip loading height	6'-1"	(185 cm)
C	Wheelbase	5'-7¼"	(171 cm)
D	Overall length	11'-5"	(348 cm)
E	Ground clearance	11½"	(29 cm)
F	Overall width	5'-9½"	(176 cm)
G	Skip ground clearance when tipped	5'-8"	(173 cm)
H	Overall height tipped	10'-11"	(333 cm)
J	Discharge forward to tyre	1'-10"	(50 cm)
K	Overhang	3'-1"	(93 cm)
L	Wheeltrack	5'-0"	(152 cm)
M	Prow width	2'-2½"	(67 cm)

Skip			Rear axle articulation	1'-2"	35 cm
Water level	34 cu.ft	963 Litres	Road Speeds at 2000 r.p.m.	m.p.h.	km.p.h.
Struck level			1st	2.7	4.3
Heaped capacity			2nd	6.2	9.9
Maximum payload	2 tons	2032 kgms	3rd	11.4	18.3
Hydraulic relief valve set at			Rev	2.9	4.6
	1750 p.s.i	123 kgm/cm ²			
Hydraulic tank capacity			Unladen weight		
	5 gals.	22.7 Litres		2 tons 0 cwt. 3 qtrs	
Ground clearance	11½"	29 cm		2069 kgms	
Turning circle	24-6"	746 cm			

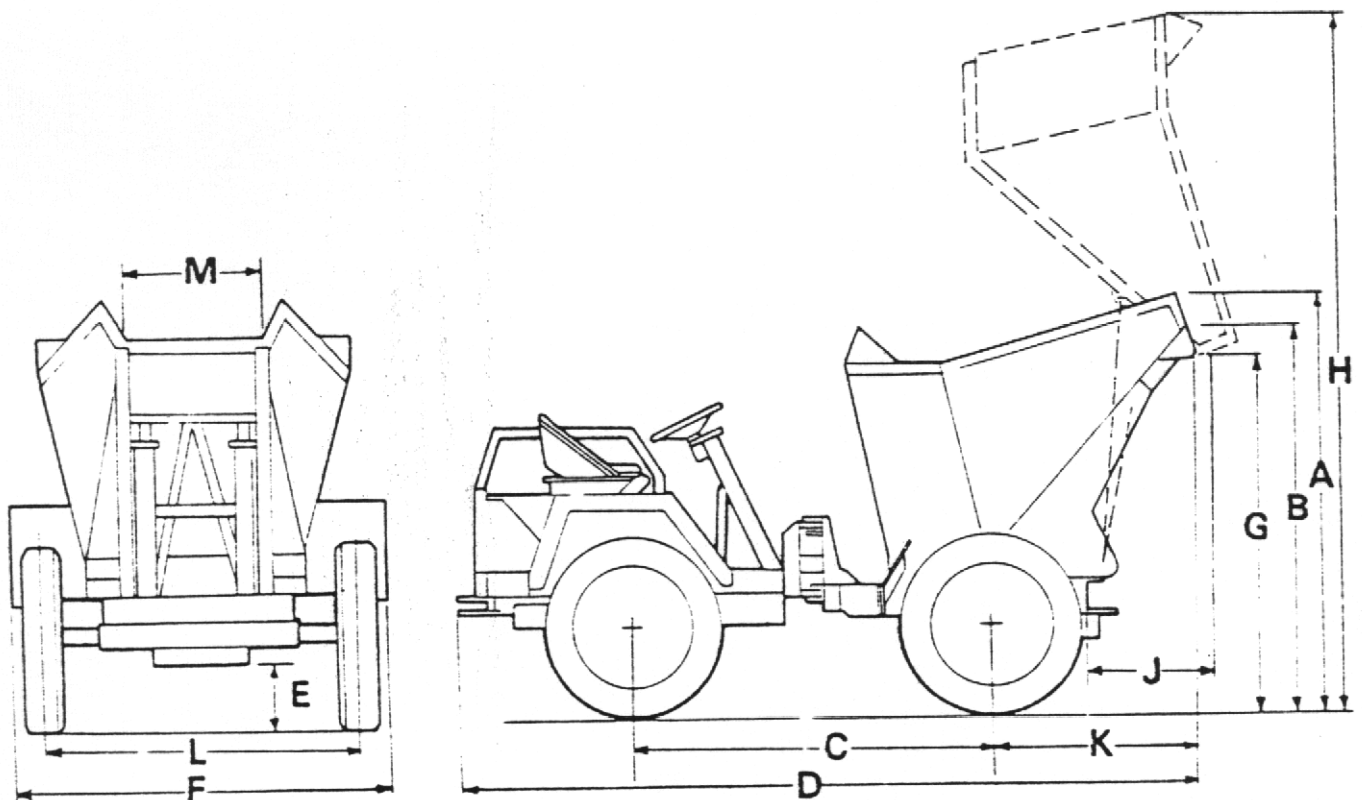


FIG.11

SPECIFICATION FOR MACHINES WITH TURNTABLE NARROW MOUTH SKIP

A	Overall height	5'-4"	(163 cm)
B	Skip loading height	4'-7"	(140 cm)
C	Wheelbase	5'-7¼"	(171 cm)
D	Overall length	12'-4"	(376 cm)
E	Ground clearance	11½"	(29 cm)
F	Overall width	5'-9½"	(176 cm)
G	Skip ground clearance when tipped	2'-8"	(81 cm)
H	Overall height tipped	9'-2"	(279 cm)
J	Discharge forward of tyre	1'-11"	(58 cm)
K	Overhang	3'-5"	(104 cm)
L	Wheeltrack	5'-0"	(152 cm)
M	Prow width	1'-8"	(51 cm)
N	Side discharge distance	1'-0½"	(32 cm)

Skip			Rear axle articulation	1'-2"	35 cm
Water level	30 cu.ft	849 Litres	Road Speeds at 2000 r.p.m.		
Struck level	34 cu.ft	963 Litres		m.p.h.	km.p.h
Heaped level	43 cu. ft.	1217 Litres	1st	2.7	4.3
Maximum payload	2 tons 5 cwt.	2286 kgms	2nd	6.2	9.9
Hydraulic relief valve set at			3rd	11.4	18.3
	1750 p.s.i.	123 kgm/cm ²	Rev	2.9	4.6
Hydraulic tank capacity			Unladen Weight		
	5 gals	227 Litres			
Ground clearance	11½"	29 cm	1 ton 18 cwt 3 qtrs		
Turning Circle	24'-6"	746 cm	1968 kgms		

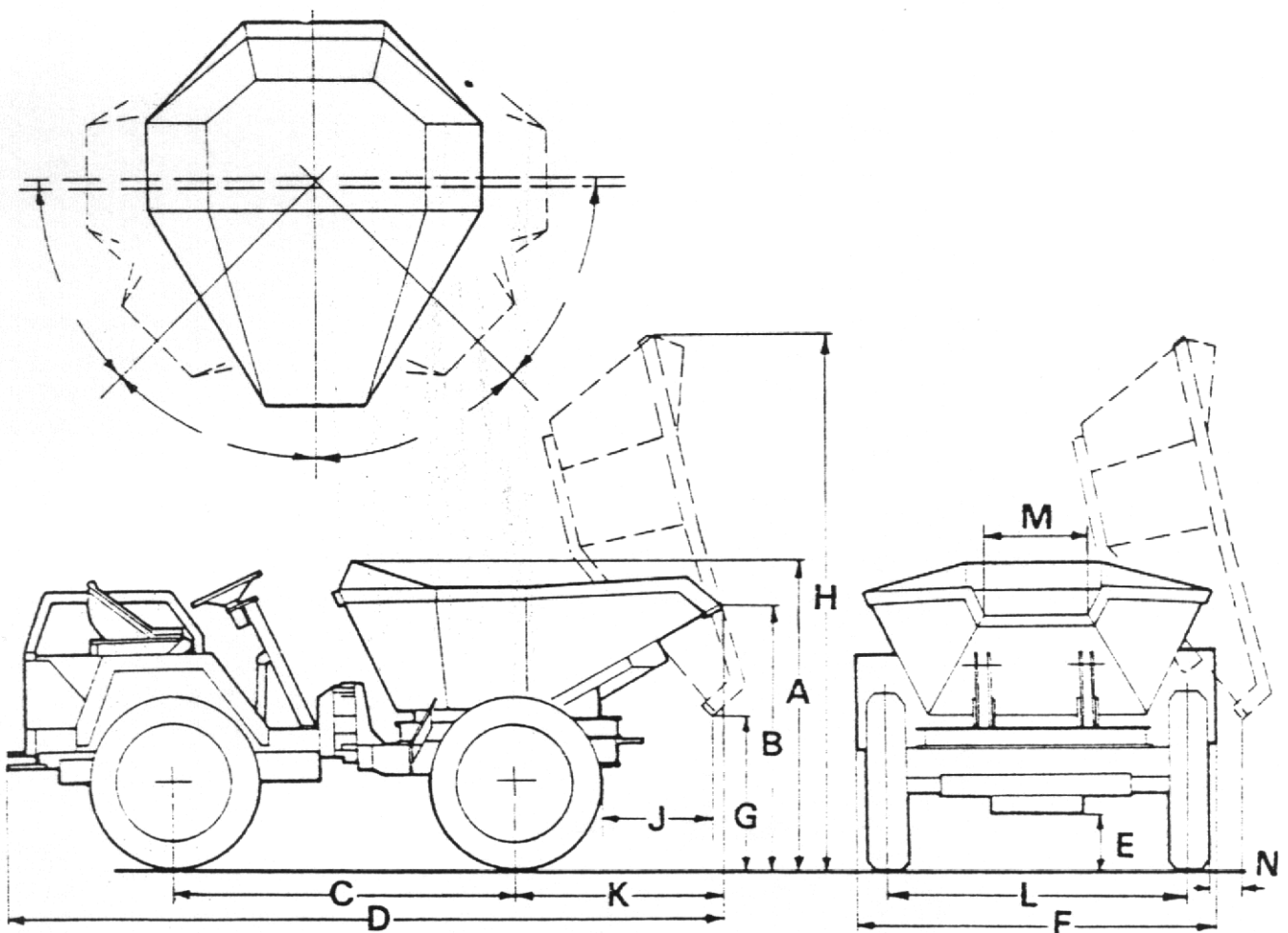


FIG.12

SPECIFICATION FOR MACHINES WITH TURNTABLE WIDE MOUTH SKIP

A	Overall height	5'-4"	(163 cm)
B	Skip loading height	4'-8"	(142 cm)
C	Wheelbase	5'-7¼"	(171 cm)
D	Overall length	12'-6"	(381 cm)
E	Ground clearance	11½"	(29 cm)
F	Overall width	5'-9½"	(176 cm)
G	Skip ground clearance when tipped	2'-6"	(76 cm)
H	Overall height tipped	9'-2"	(279 cm)
J	Discharge forward of tyre	2'-0"	(61 cm)
K	Overhang	3'-7"	(109 cm)
L	Wheeltrack	5'-0"	(152 cm)
M	Prow width	3'-6"	(107 cm)
N	Side discharge distance	1'-1"	(33 cm)

Skip			Rear Axle Articulation	1'-2"	35 cm
Water level	30 cu.ft.	849 Litres	Road Speeds at 2000 r.p.m		
Struck level	34 cu.ft.	963 Litres		m.p.h.	km.p.h
Heaped level	43 cu.ft.	1217 Litres	1st	2.7	4.3
Maximum payload	2 tons 5 cwt	2286 kgms	2nd	6.2	9.9
Hydraulic relief valve set at			3rd	11.4	18.3
	1750 p.s.i.	123 kgm/cm ²	Rev	2.9	4.6
Hydraulic tank capacity			Unladen Weight		
	5 gals.	277 Litres		1 ton 18 cwt. 3 qtrs.	
Ground clearance	11½"	29 cm		1968 kgms.	
Turning circle	24'-6"	746 cm			

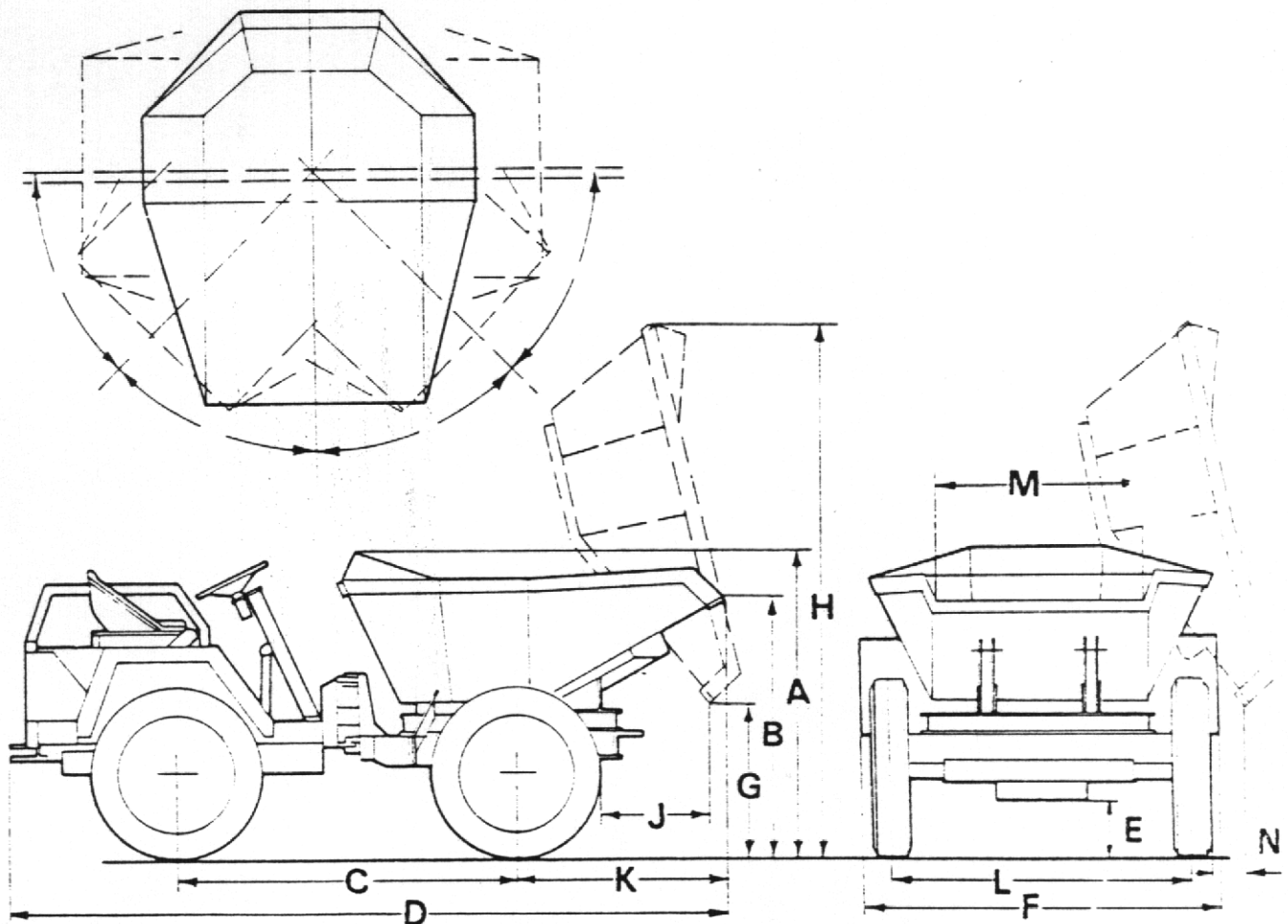


FIG.13

RECOMMENDED LUBRICATING OILS

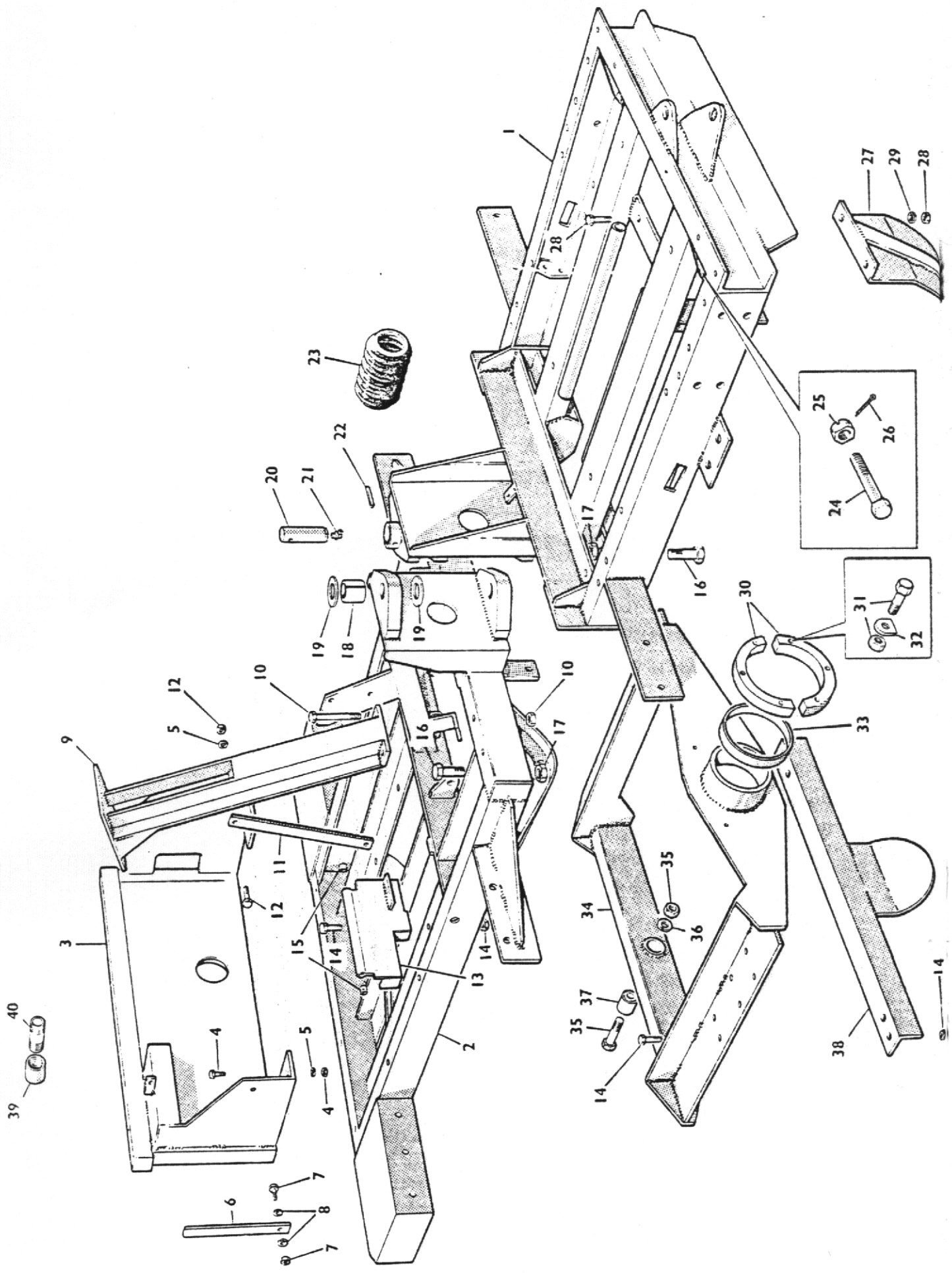
COMPANY	ENGINE	TRANSFER BOX & DRIVE AXLE	GEARBOX	WHEEL BEARINGS & OTHER GREASE POINTS	HYDRAULIC SYSTEM
(U.K.) ESSO (Overseas)	ESSOLUBE HDX 20W ESSOLUBE HDX 30 ESSOLUBE HDX 20W ESSOLUBE HDX 10W	GEAR OIL GP 90/140 GEAR OIL GP 140 GEAR OIL GP 90/140 GEAR OIL GP 80	ESSOLUBE HDX 30 ESSOLUBE HDX 30	BEACON 2 BEACON 2	NUTO H44 NUTO H 54 NUTO H 44 NUTO H 40
(U.K.) CASTROL	DEUSOL CRB 20 DEUSOL CRB 30 DEUSOL CRB 20 DEUSOL CRB 10	DEUSOL GEAR EP 90 DEUSOL GEAR EP 140 DEUSOL GEAR EP 90 DEUSOL GEAR EP 80	DEUSOL CRB 30 DEUSOL CRB 30	CASTROL SPHEEROL APT 2 CASTROL SPHEEROL APT 2	CASTROL HYSPIN AWS 32
(U.K.) SHELL (Overseas)	ROTELLA SX OIL 20/20W ROTELLA SX OIL 30 ROTELLA SX OIL 20/20W ROTELLA SX OIL 10W	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 27
(U.K.) BP (Overseas)	VANELLUS M20W VANELLUS M30 VANELLUS M20W VANELLUS M10W	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 HILP 65
(U.K.) MOBIL (Overseas) ALL TEMPERATURES	DELVAC 1220 DELVAC 1230 DELVAC 1220 DELVAC 1210 DELVAC SPECIAL 10W-30	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	CENTLUBE HD 20 CENTLUBE HD 30 CENTLUBE HD 20 CENTLUBE HD 10	CENTURY EP 90 CENTURY EP 140 CENTURY EP 90 CENTURY EP 80	CENTLUBE HD 30 CENTLUBE HD 30	REGULUS A2 REGULUS A2	CENTURY PWLA HYD OIL CENTURY PWLA HYD OIL

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

SPARE PARTS SECTION

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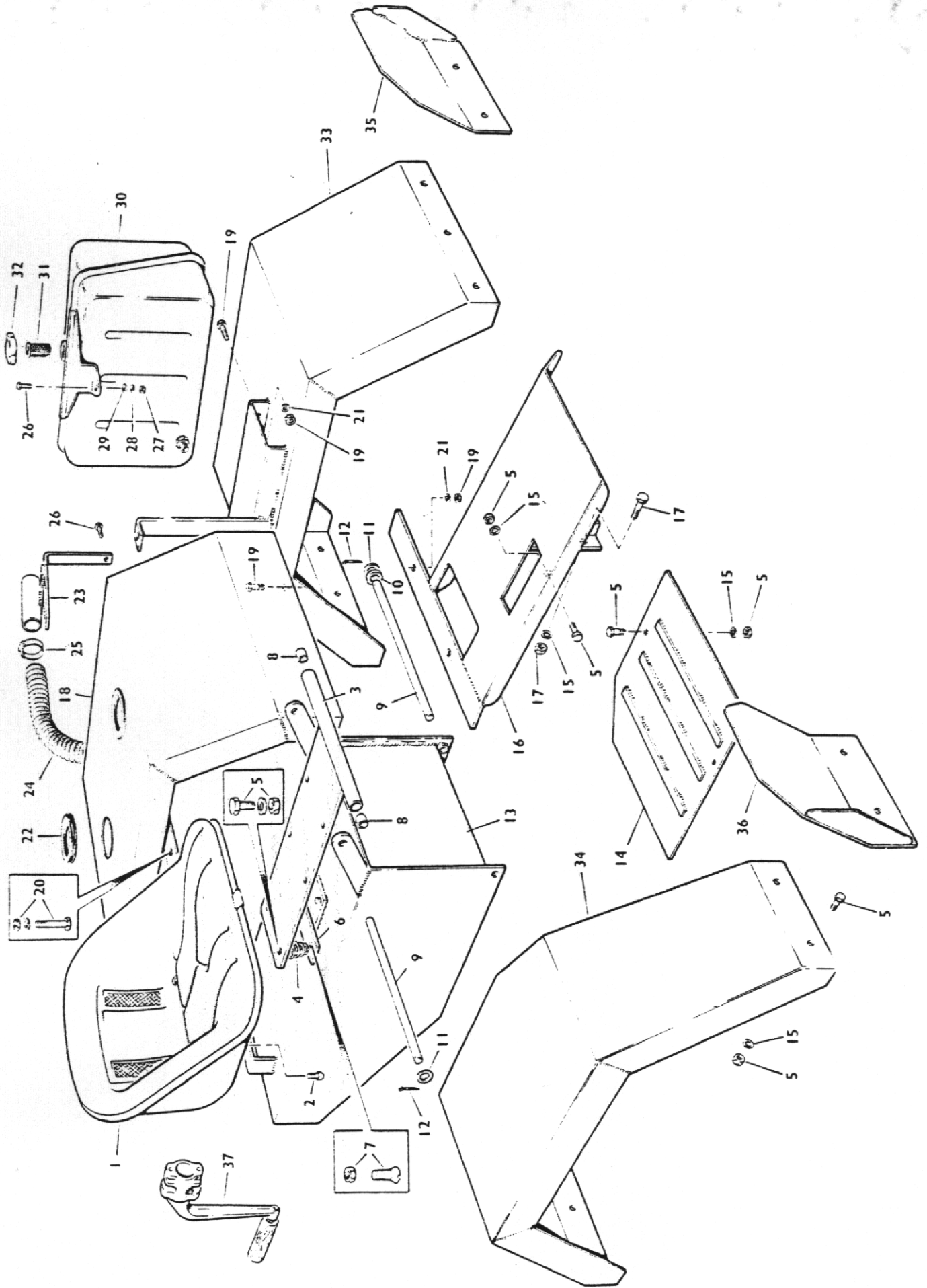
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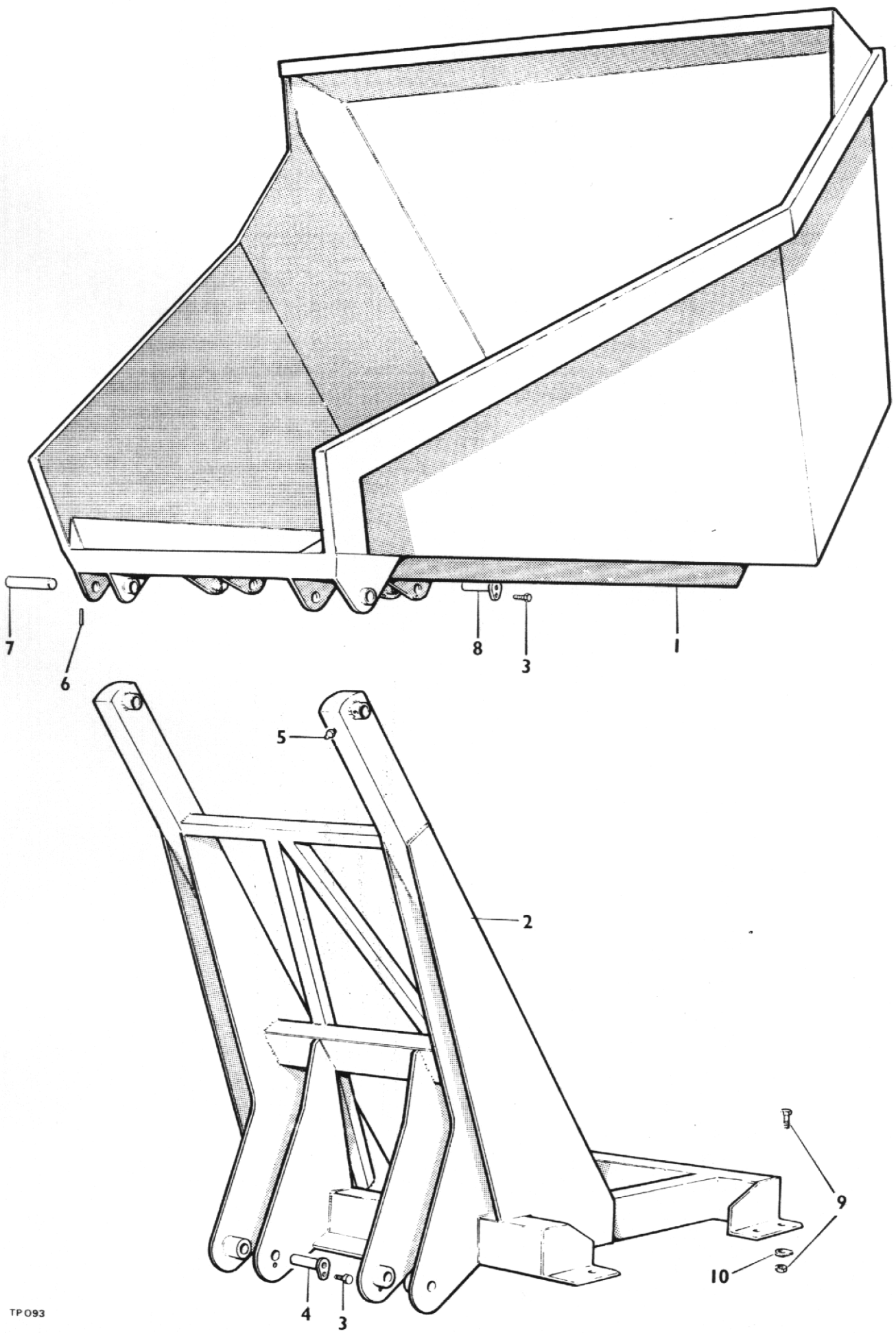
CHASSIS

Item No.	Part No.	Description	Qty.
1	4-35-397	Front Chassis	1
2	4-35-404	Rear Chassis	1
3	4-35-376	Rear Frame	1
4		Bolt 3/8" BSF x 1 1/4" long & Nut	8
5		Shakeproof Washer 3/8" dia.	10
6	4-35-290-13	Tank Prop	1
7		Bolt 3/8" BSF x 1" long & Nut	1
8		Flat Washer 3/8" dia.	2
9	4-35-248	Steering Column	1
10		Bolt 1/2" BSF x 5" long & Nut	2
11	4-35-333	Steering Column Brace	2
12		Bolt 3/8" BSF x 1 1/2" long & Nut	2
13	4-35-325	Hydraulic Tank Support & Pivot	1
14		Bolt 1/2" BSF x 1 1/2" long & Nut	6
15	WB0808	Bush	2
16	4-35-110A	Steering Ram Bolt	2
17	4-35-110B	Steering Ram Nut	2
18	4-35-29B	Centre Pivot Pin Bush	2
19	4-35-29C	Centre Pivot Thrush Washer	4
20	4-35-29	Centre Pivot Pin	2
21	T90	Grease Nipple	2
22	4-35-29A	Tension Pin 5/16" dia. x 2 1/4" long	2
23	4-35-10A	Convuluted Hose 7" long	1
24	4-60-104	Skip Ram Bolt	2
25	4-60-172	Skip Ram Nut	2
26		Split Pin 3/16" dia. x 2 1/4" long	2
27	4-35-345	Front Differential Guard	1
28		Bolt 5/8" BSF x 2" long & Nut	2
29		Shakeproof Washer 5/8" dia.	2
30	4-35-344	Axle Bearing Carrier	1
31		Bolt 1/2" BSF x 2 1/4" long & Nut	6
32	4-35-145	Tab Washer	6
33	4-35-342	Axle Carrier Bearing	1
34	4-35-352	Articulating Frame	1
35		Bolt 7/8" BSF x 4" long & Nut	1
36		Spring Washer 7/8" dia.	1
37	E 2245	Articulating Frame Pivot Bush	1
38	4-35-346	Rear Differential Guard	1
39	5S 111B	Exhaust Socket 1 1/2" BSP	1
40	4-35-288	Exhaust Barrel Nipple 1 1/2" BSP	1



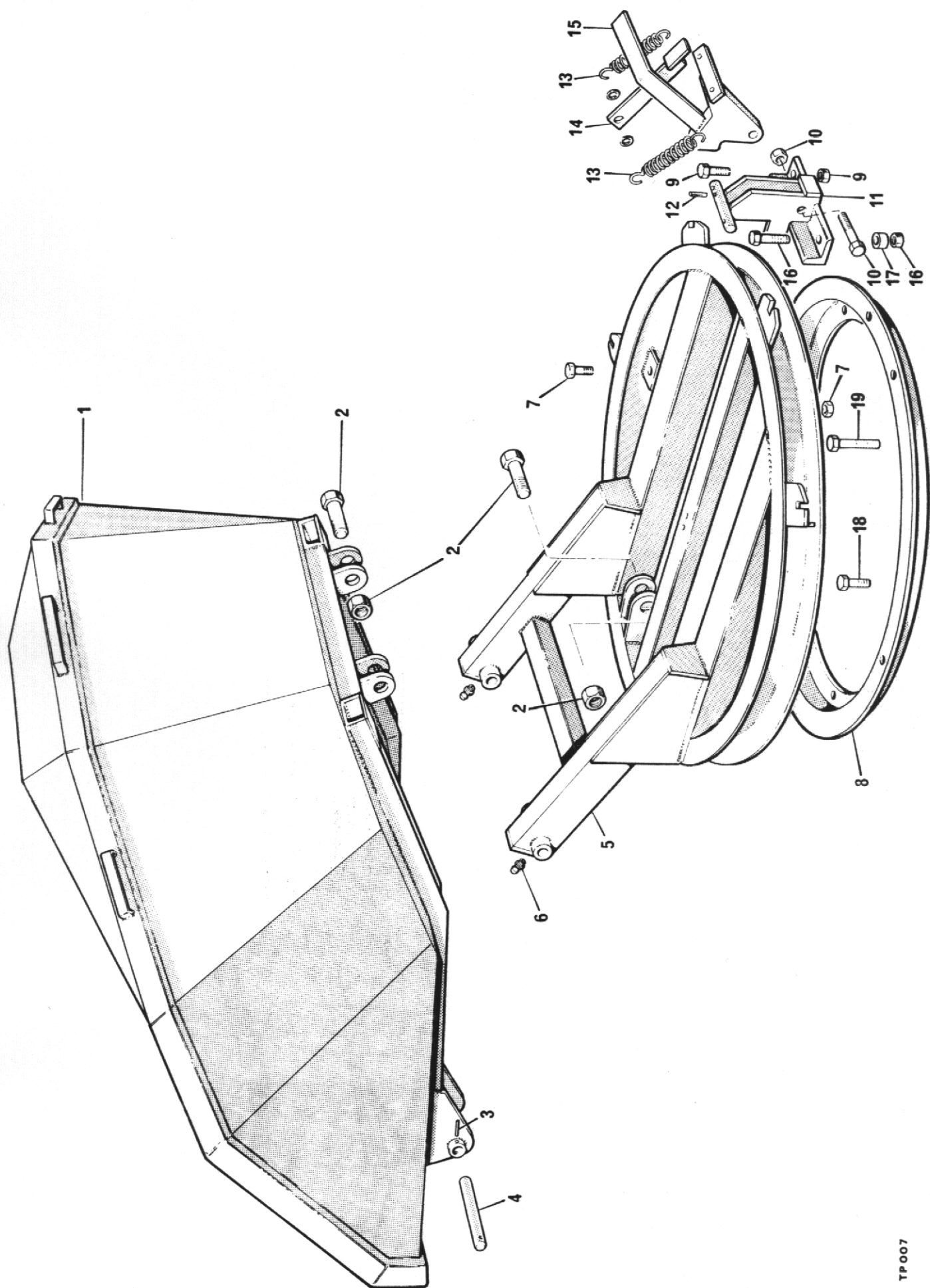
MUDWINGS & COVERS

Item No.	Part No.	Description	Qty.
1	4-35-301	Seat	1
2		Seat Bolts 8 MM x 20 MM long	4
3	4-35-296-12	Seat Frame	1
4	5ST 99	Seat Spring	2
5		Bolt 3/8" BSF x 1" long & Nut	19
6	4-35-331	Seat Spring Plate	1
7		Bolt CSK. 3/8" BSF x 1" long & Nut	2
8	WB0808	Bush	2
9	4-35-307	Seat & Tank Pivot Rod	2
10	C 120-6	Thick Washer 1/2" dia.	A.R.
11		Flat Washer 1/2" dia.	4
12		Split Pin 3/32" dia. x 1" long	4
13	4-35-296	Hydraulic Tank (See Page 51)	1
14	4-35-315	Footplate	1
15		Shakeproof Washer 3/8" dia.	21
16	4-35-369	Gearbox Cover	1
17		Bolt 3/8" BSF x 1 1/2" long & Nut	2
18	4-35-298	Engine Cover	1
19		Bolt 5/16" BSF x 1" long & Nut	4
20		Bolt 5/16" BSF x 2 1/2" long & Nut	2
21		Shakeproof Washer 5/16" dia.	6
22	4-35-375	Grommet	2
23	4-35-241	Air Cleaner Mounting Bracket	1
24	4-35-242	Air Cleaner Hose 13" long	1
25	2A	Hose Clip	2
26		Bolt 1/4" BSF x 3/4" long	3
27		Nut 1/4" BSF	1
28		Shakeproof Washer 1/4" dia.	1
29		Flat Washer 1/4" dia.	1
30	BAE 7E	Fuel Tank	1
31	JE 13	Strainer	1
32	CE 12	Cap	1
33	4-35-387	Left Hand Mudwing Assembly	1
34	4-35-300	Right Hand Mudwing	1
35	4-35-390	Left Hand Mudflap	1
36	4-35-389	Right Hand Mudflap	1
37	C 188	Starting Handle	1



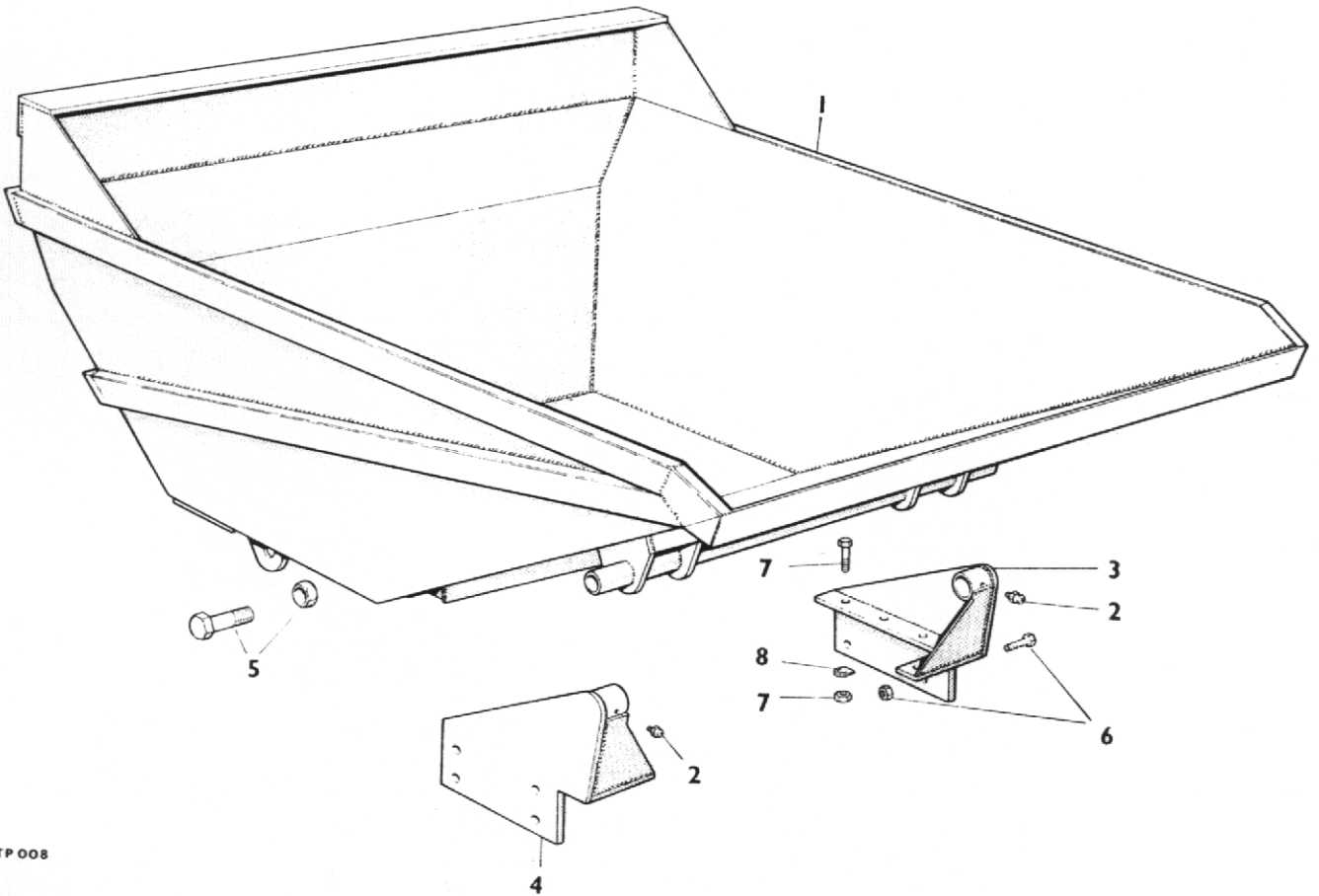
HIGH DISCHARGE SKIP AND FRAME

Item No.	Part No.	Description	Qty.
1	4-35-210	Skip	1
2	4-35-323	Frame	1
3		Bolt M8 x 20mm long & locknut	4
4	4-35-226	Lower Ram Pin	2
5	5ST 100	Grease Nipple	2
6	4-35-29A	Tension Pin 5/16" dia. x 2 1/4" long	2
7	5ST 84	Skip Pivot Pin	2
8	4-35-178	Ram Pin	2



TURNTABLE SKIP, FRAME AND CATCH

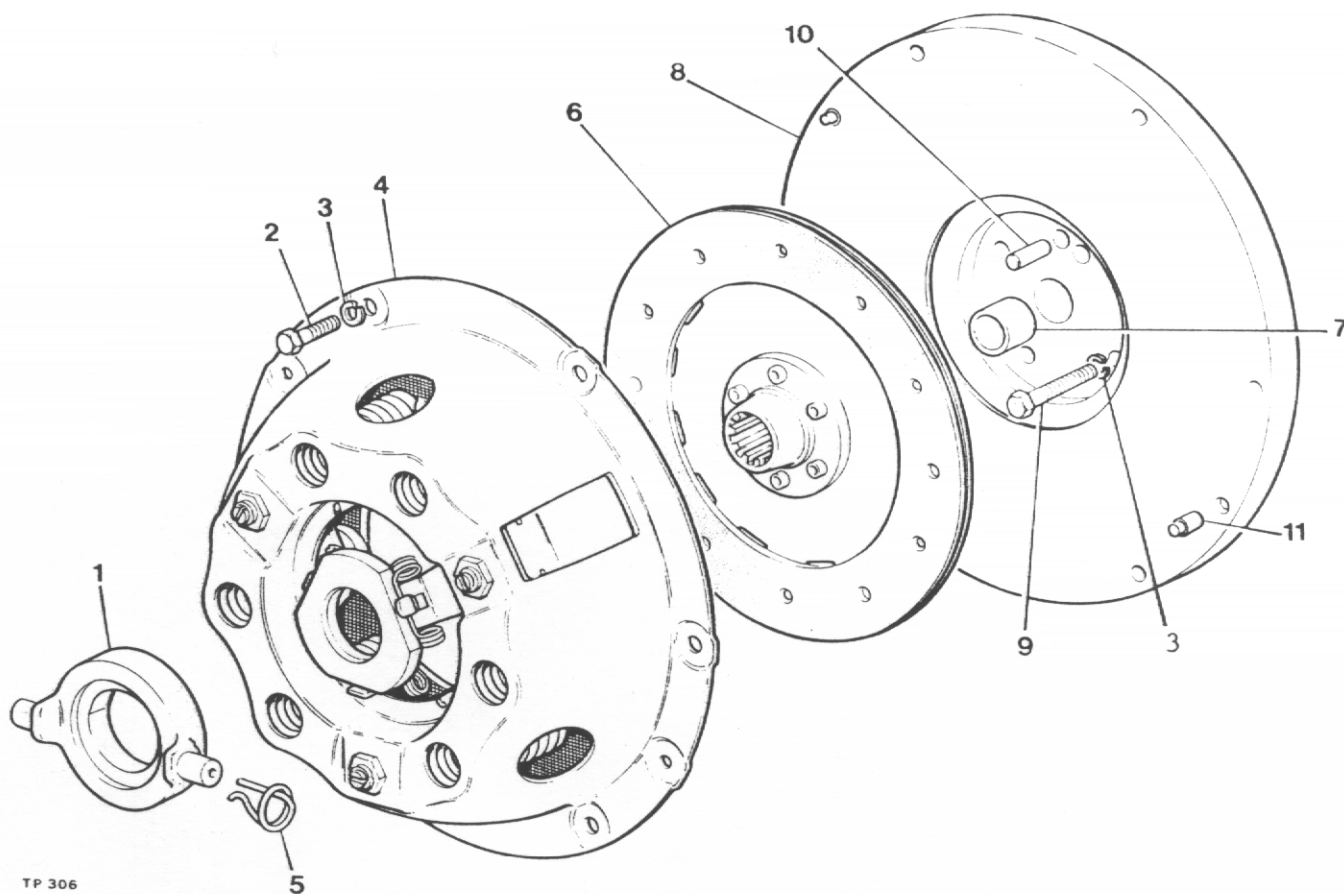
Item No.	Part No.	Description	Qty.
1	5ST 79	Narrow Mouth Skip	1
	5ST 97	Wide Mouth Skip	1
2	4-35-110	Ram Bolt & Nut	4
3	4-35-29A	Tension Pin 5/16" x 2 1/4" long	2
4	5ST 84	Skip Pivot Pin	2
5	5ST 78	Turntable	1
6	5ST 100	Grease Nipple	2
7		Bolt M12 x 35mm long & locknut	4
8	5ST 69	Turntable ring	1
9		Bolt M12 x 40mm long & locknut	1
10		Bolt M16 x 55mm long & locknut	1
11	4-35-319-12	Turntable Catch Body	1
12	C129A	Tension Pin 3/16" dia. x 1 1/4" long	1
13	4-35-320	Spring	2
14	4-35-319-4	Locking Bar	1
15	4-35-319-13	Catch Plate	1
16		Bolt M12 x 55mm long & locknut	1
17	4-35-327	Packing Piece 7/8" dia. 1/2" Bore x 5/8" long	1
18		Bolt M12 x 45mm long & locknut	4
19		Bolt M12 x 105mm long & locknut	4
20	4-35-319	Turntable Catch Assembly (Complete)	1
		(Not Illustd.)	1



FORWARD TIP SKIP

Item No.	Part No.	Description	Qty.
1	4-35-302	Skip	1
2	5ST 100	Grease Nipple	2
3	4-35-309	Skip Mtg. Brkt. L.H.	1
4	4-35-308	Skip Mtg. Brkt. R.H.	1
5	4-35-110	Ram Bolt & Nut	2
6		Bolt M12 x 40mm long & locknut	8
7		Bolt M12 x 45mm long & locknut	10
8		Taper Washer 1/2" dia.	10

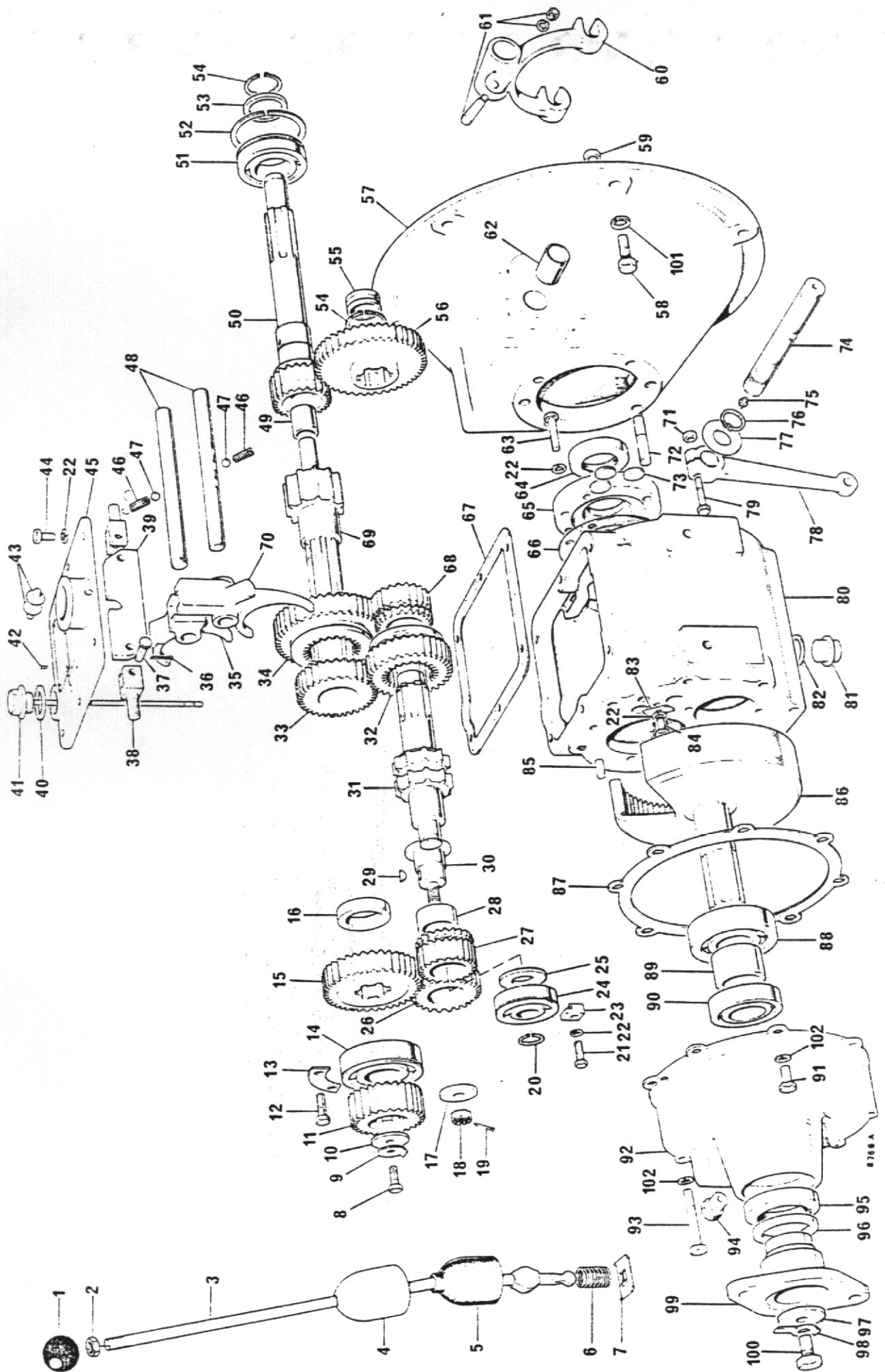
FLYWHEEL AND CLUTCH ASSEMBLY



TP 306

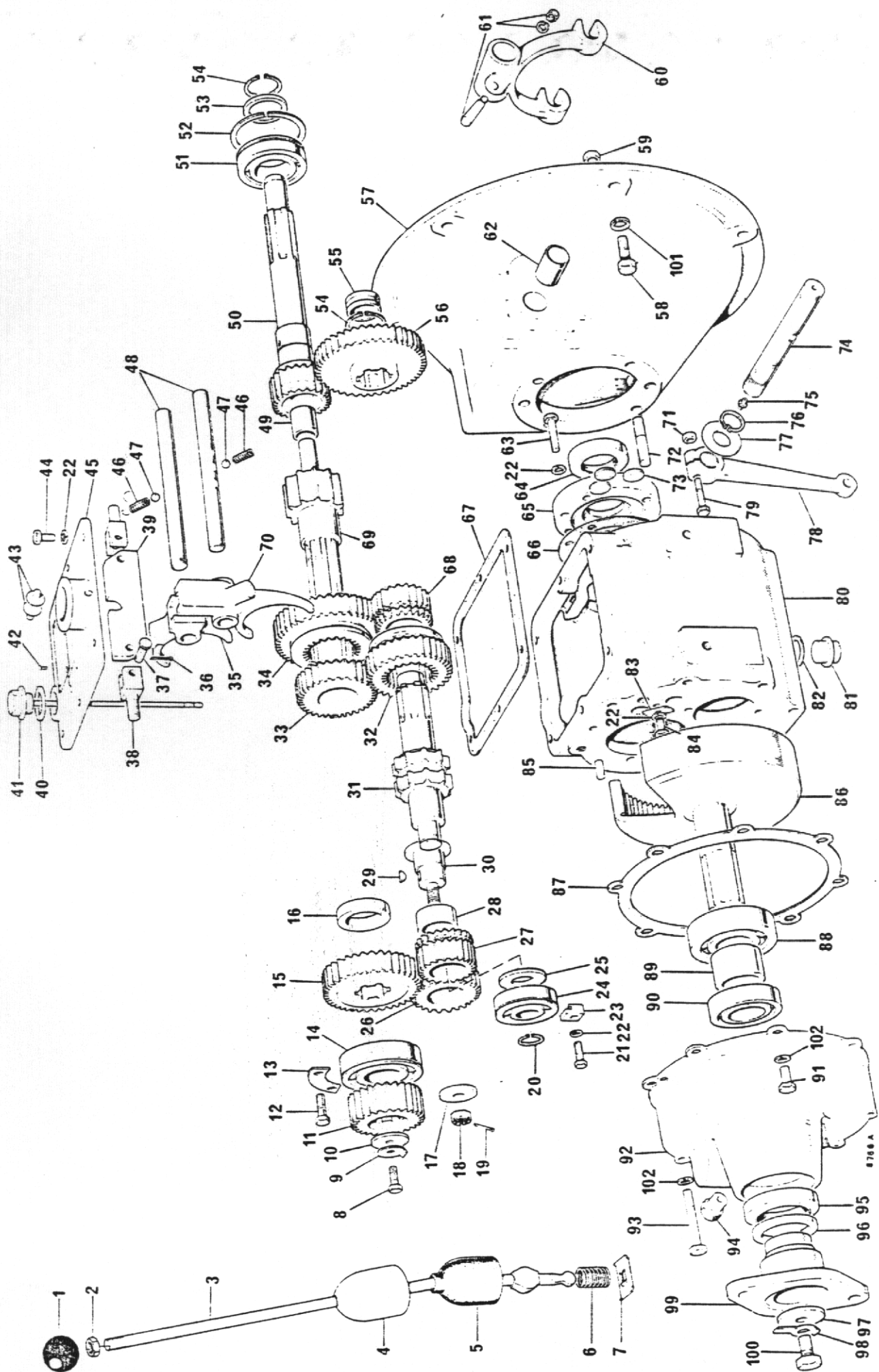
Item No.	Part No.	Description	Qty.
1	10579A01	Clutch Release Bearing	1
2	28S02D	Screw Set	6
3	41S04	Washer Spring	10
4	10597A01	Cover Assembly	1
5	10579A101	Retainer Spring	2
6	10598A02	Drive Plate	1
7	10580A0101	Bush	1
8	10580A02	Flywheel Assembly (comprises of items 7, 8, & 11)	1
9	1S02C	Bolt, Petter PH Engine (drill for locking wire)	4
9A	6S02B	Bolt, Lister Engine (drill for locking wire)	4
10	C321	Dowel	1
11	10580A0102	Dowel	2
	10948A02	Clutch Kit (comprises of items 1, 4, 5 & 6)	1

It is recommended that instead of drilling the head of the bolts (item 9) for locking wire that one of each of tabwashers part no's 10531A02 and 10531A03 are used to prevent the bolts working loose.



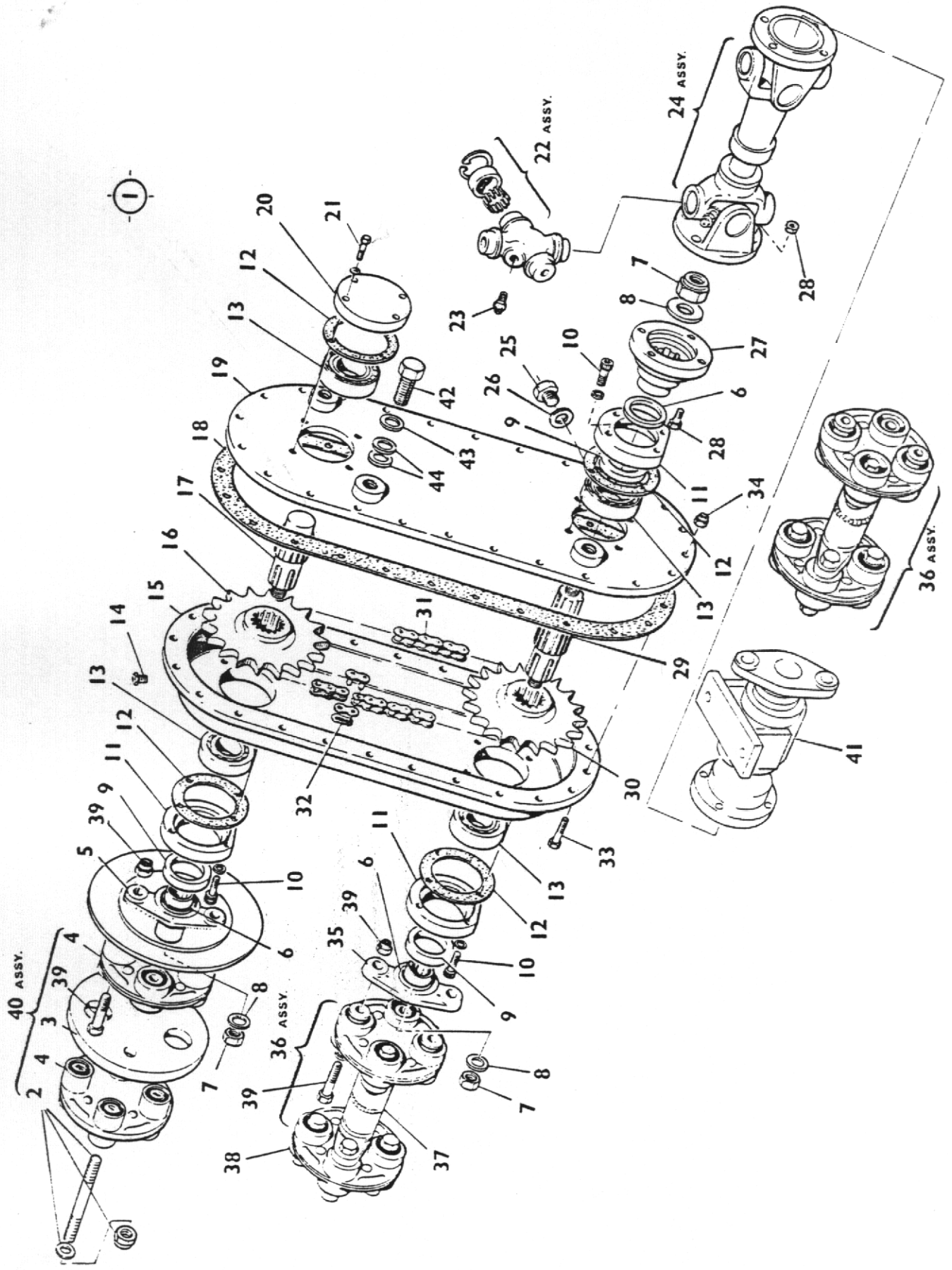
GEARBOX 40M-42-583 INV. 676

Item No.	Part No.	Description	Qty.
1	40M/133	Knob, Gear Lever	1
2	UN 512	Locknut, Gear Lever	1
3	40M/676	Gear Lever	1
4	40M/377	Cap, Gear Lever	1
5	40M/129	Cover, Gear Lever	1
6	40M/367	Spring, Gear Lever	1
7	40M/245	Retaining Plate, Gear Lever	1
8	USF 53	Screw, Mainshaft	1
9	40M/179	Lockwasher — Tab	1
10	40M/178	Washer, Reduction Pinion	1
11	40M/125	Reduction Pinion	1
12	USF 11	Screw, Bearing Retainer	2
13	40M/378	Bearing Retainer, Small	1
14	CM/2052	Bearing, Mainshaft Rear	1
15	40M/110	Output Gear	1
16	40M/128	Spacer, Output Gear	1
17	40M/155	Washer, Reverse Pinion Shaft	1
18	UN 507	Nut, Reverse Spindle	1
19	CP/1004	Split Pin	1
20	40M/148	Circlip	1
21	USF/31	Screw	2
22	W104	Spring Washer	16
23	40M/299	Clip, Layshaft Bearing	2
24	40M/146	Layshaft Bearing	1
25	40M/130	Bearing Spacer	1
26	40M/111	Reverse Pinion	1
27	40M/114	Reverse Speed Gear	2
28	40M/161	Bush, Reverse Pinion	1
29	40M/222	Key, Reverse Pinion Shaft	1
30	40M/119	Shaft, Reverse Pinion	1
31	40M/118	Layshaft	1
32	40M/116	2nd Speed Sliding Gear	1
33	40M/113	Second Speed Gear	1
34	40M/115	1st Speed Gear	1
35	40M/502	Selector Fork, 2nd & 3rd	1
36	40M/244	Split Pin, Interlock	2
37	40M/232	Clevis Pin, Interlock	2
38	40M/231	Stud, Interlock	2
39	40M/505	Interlock Plate	1
40	CP/1068	Seal, Dipstick	1
41	40M/153	Dipstick	1
42	CP/1003	Drive Screw	4
43	40M/254	Pad, Gear Lever	2
44	USF 21	Screw, Top Cover	6
45	40M/220	Top Cover	1
46	CM/2103	Detent Spring	2
47	CM/1077	Detent Ball	2
48	40M/135	Selector Shaft	2
49	40M/513	Bearing, Primary Shaft	1
50	40M/117	Primary Shaft	1
51	40M/143	Input Bearing	1
52	40M/252	Snap Ring	1
53	40M/174	Bearing Spacer	1
54	CM/2053	Circlip	2
55	40M/162	Bush, Layshaft	1



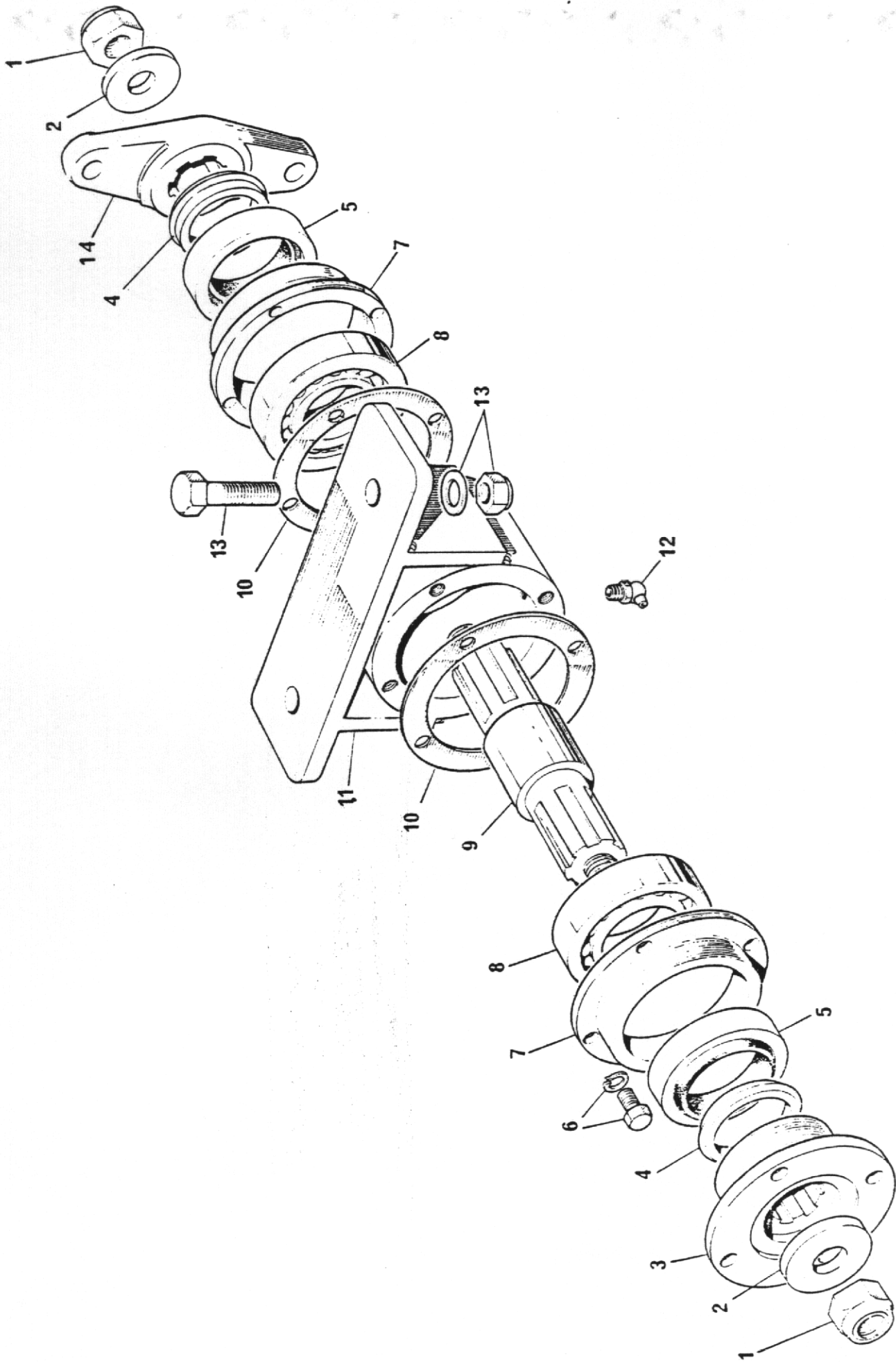
GEARBOX 40M-42-583 INV. 676

Item No.	Part No.	Description	Qty.
56	40M/360	1st Reduction Gear	1
57	40M/392	Clutch Housing	1
58		Bolt, Clutch Housing 3/8" BSF x 1" Long - Petter	6
59	UNL 106	Nut	6
60	CM/2083	Clutch Release Fork	1
61	CM/2084 S/A	Cotter, Nut & Washer S/A	1
62	CM/2179	Bush, Cross Shaft	2
63	UBF 71	Bolt, Front Cover	4
64	40M/150	Oil Seal, Input	1
65	40M/126	Front Cover	1
66	40M/172	Joint, Front Cover	1
67	40M/169	Joint, Top Cover	1
68	40M/114	Reverse Speed Gear	2
69	40M/515	Mainshaft	1
70	40M/501	Selector Fork, 1st & Reverse	1
71	UN 501	Nut, Clutch Lever	1
72	40M/177	Stud, Clutch Housing	6
73	CM/2113	Sealing Disc, Selector Shaft	3
74	40M/394	Clutch Cross Shaft	1
75	CP/1069	Grease Nipple	2
76	CP/1006	Circlip	1
77	40M/398	Washer, Cross Shaft	1
78	CM/2090	Clutch Release Lever	1
79	UBF 91	Bolt, Clutch Lever	1
80	40M/101/M	Casing	1
81	CP/1002	Drain Plug	1
82	CP/1068	Seal, Drain Plug	1
83	40M/136	Selector Locking Strip	1
84	USF 21	Setscrew	2
85	40M/656	Dowel	2
86	40M/120	Internal Gear	1
87	40M/654	Joint, Reduction Housing	1
88	CM/2068	Bearing, Internal Gear Front	1
89	40M/138	Spacer	1
90	40M/149	Bearing, Internal Gear Rear	1
91	USF 32	Hex. Head Screw	4
92	40M/655	Reduction Housing	1
93	UBF/142	Hex. Head Bolt	4
94	CM/2106	Breather	1
95	40M/167	Oil Seal, Rear	1
96	CM/2537	Dust Shield	1
97	CM/2123	Washer, Coupling	1
98	CM/2050	Lock Washer	1
99	40M/583	Coupling	1
100	USF 55	Screw, Coupling	1
101		Spring Washer 3/8"	6
102		Spring Washer 5/16"	8



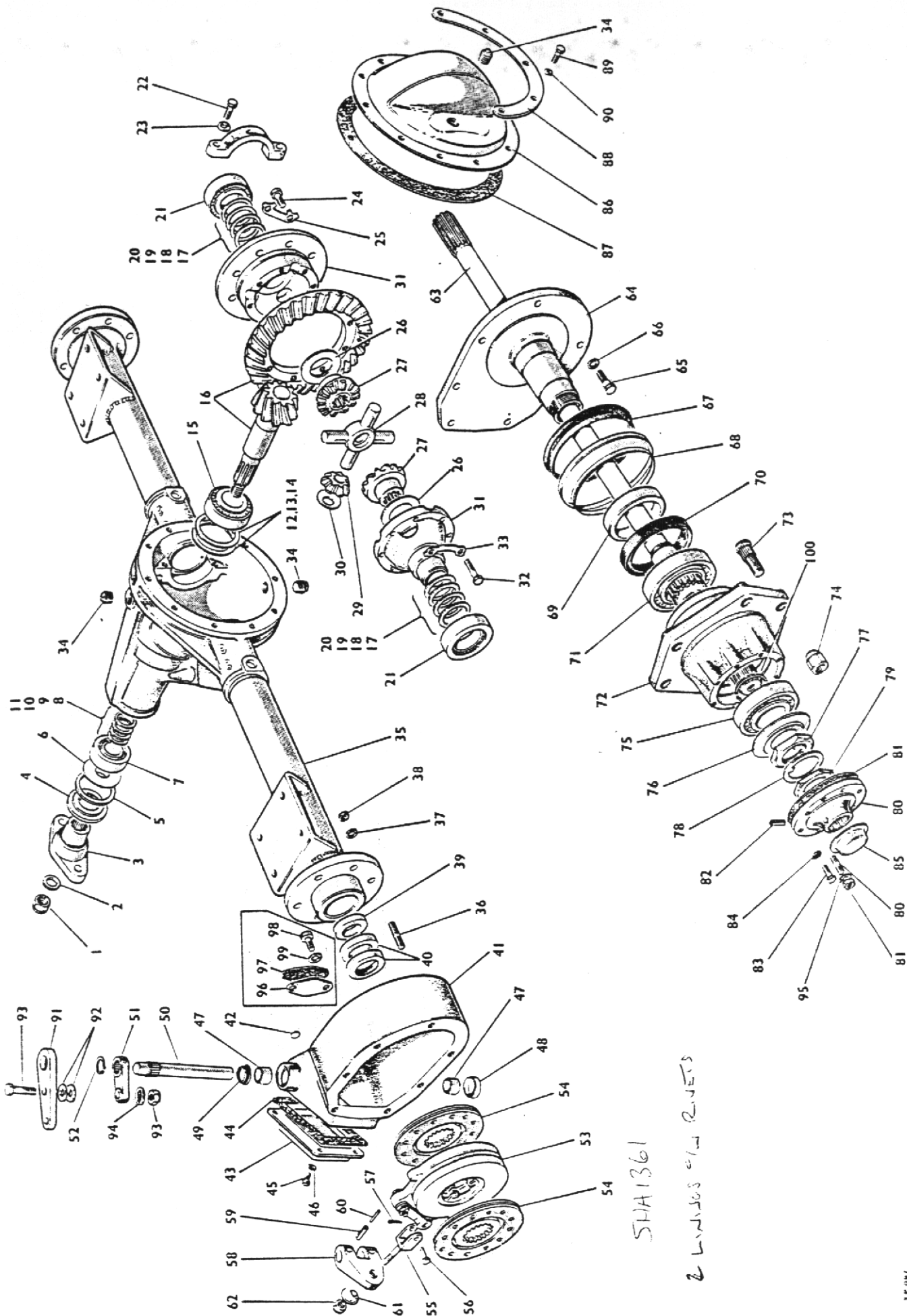
TRANSFER BOX AND PROP SHAFTS

Item No.	Part No.	Description	Qty.
1	4-35-379	Transfer Box Complete (15/19 Teeth)	1
2	4-35-371	Coupling Stud c/w Nuts & Washers	2
3	4-35-368	Coupling Disc	1
4	48408	Basic Coupling	2
5	4-35-254	Brake Disc	1
6	CM 2537	Dust Shield	3
7	UN 580	Self Locking Nut ¾" UNF	3
8	CP 1264	Thick Washer ¾" dia.	3
9	40M-167	Oil Seal	3
10	UFC 416	Cap Screw	12
11	4-35-102	Oil Seal Housing	3
12	CM 2073	Gasket	4
13	CM 2068	Bearing	4
14	CM 2106	Breather	1
15	4-35-96	Main Case	1
16	4-35-380	Chain Wheel (15 Tooth)	1
17	4-60-252	Input Shaft	1
18	4-35-20	Gasket	1
19	4-35-381	Main Case Cover	1
20	CM 2528	End Cover	1
21	UBF 51	End Cover Screws	4
22	K-5-GB-18	Repair Kit	2
23	94-GB-2459	Grease Nipple	2
24	1350 YSA	Prop Shaft Assembly	1
25	CP 1189	Level/Filler Plug	1
26	CP 1068	Fibre Washer	1
27	40M 589	Companion Flange	1
28		Bolt 7/16" BSF x 1¼" long & Nut	8
29	4-60-253	Output Shaft	1
30	4-35-17	Chain Wheel (19 Tooth)	1
31	4-35-353	Drive Chain (15/19 Teeth)	1
32	4-35-18A	Chain Connecting Link	2
33	UBF 71	Housing Screw	24
34	UN 501	Nut	24
35	40M 583	Companion Flange	1
36	81141	Prop Shaft Assembly (Complete)	2
37	81142	Prop Shaft	2
38	10203	Coupling c/w Bolts & Nuts	4
39	10203A	Coupling Bolt, Washer & Nut	20
40	4-35-374	Close Coupled Coupling Assembly (Comprising Items 2,3,4 & 39)	1
41	4-35-316	Trunnion Assembly (See Page 35)	1
42		Bolt ½" BSF x 1¼" long (drilled for Wire Locking)	3
43		Flat Washer ½" dia.	3
44		Flat Washer ½" dia.	A/R



TRUNNION ASSEMBLY

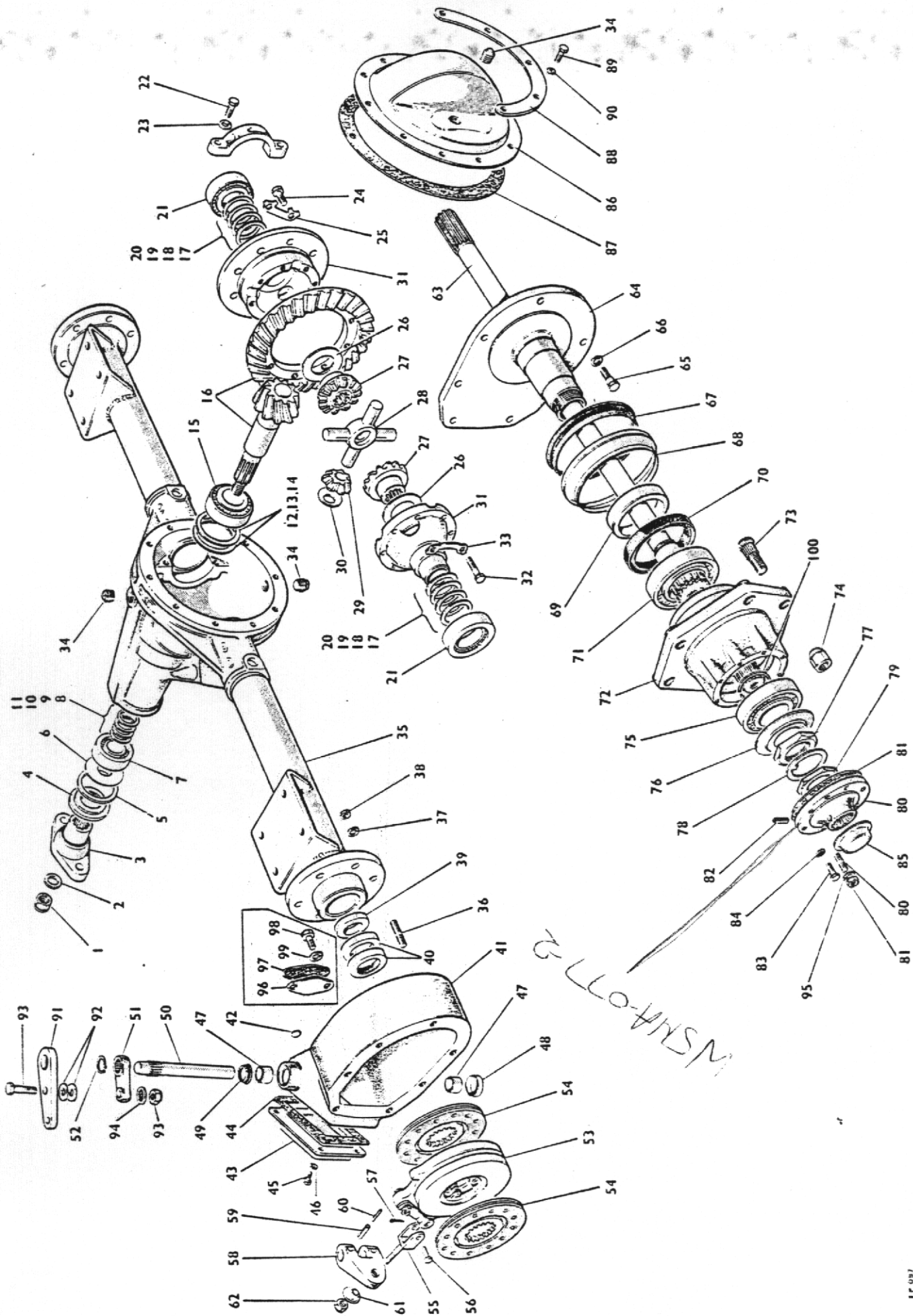
Item No.	Part No.	Description	Qty.
	4-35-316	Trunnion Assembly Complete	1
1	UN580	Self Locking Nut 3/4" UNF	2
2	CP 1264	Thick Washer 3/4" UNF	2
3	40M 589	Companion Flange	1
4	CM 2537	Dust Shield	2
5	40M 167	Oil Seal	2
6		Housing Bolt 1/4" UNF x 3/4" long	8
7	40M 622	Oil Seal Housing	2
8	CM 2068	Bearing	2
9	4-60-251	Shaft	1
10	4-35-20A	Gasket	2
11	4-35-143	Housing	1
12	T 90	Grease Nipple	1
13		Mounting Bolt 5/8" BSF x 2" long & Nut	2
14	40M 583	Companion Flange	1



SHA1361
 2 LINDAS e/2 RIVETS

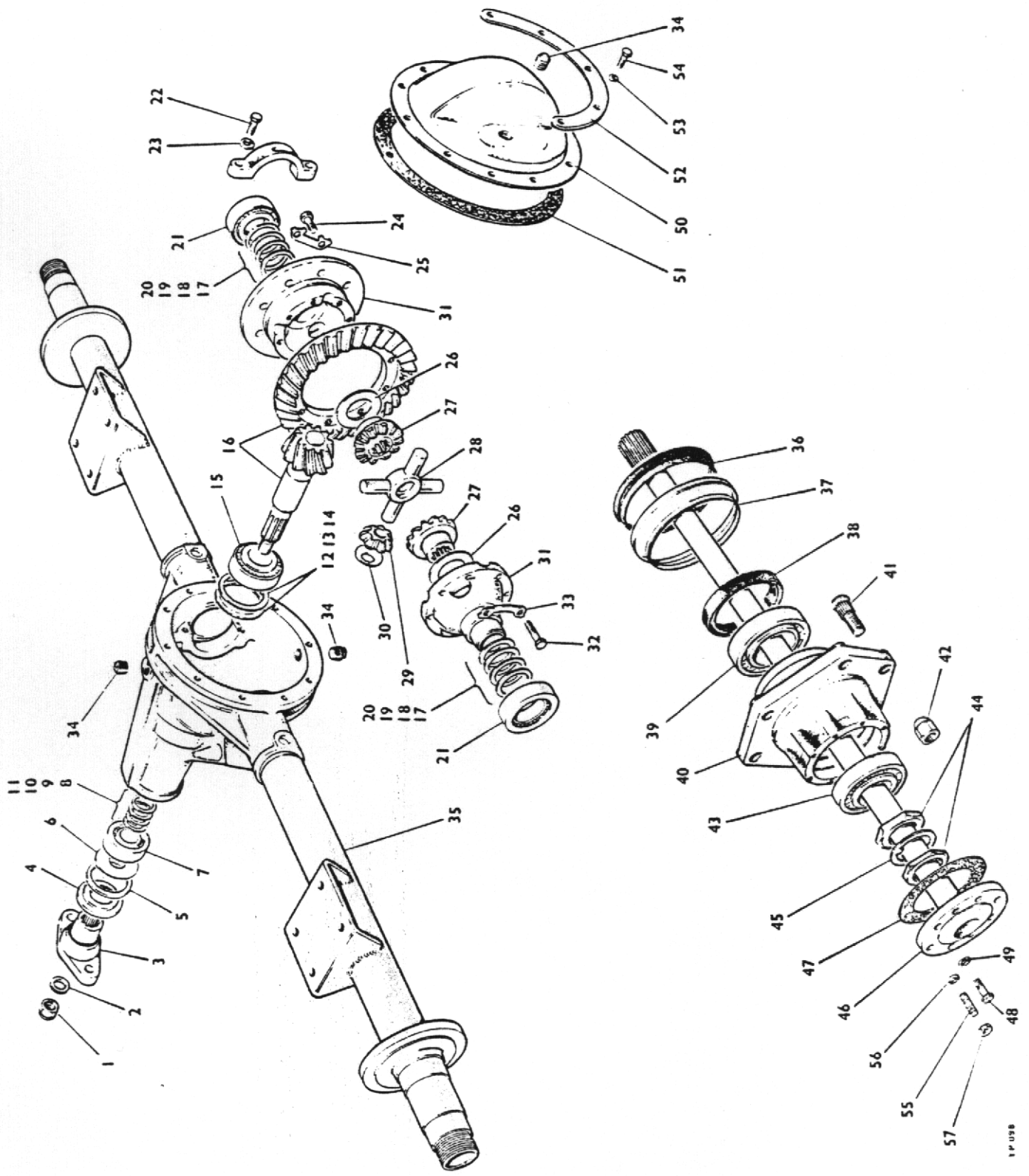
DRIVE AXLE
(with Totally Enclosed Brakes)

Item No.	Part No.	Description	Qty.
	5HA-001-264F	Drive Axle (1 per M/c) 6.38/1	
	5HA-001-305	Drive Axle (1 per M/C) 6.38/1	
1	12-LN-NF9B	Pinion Nut	1
2	12-W-24	Pinion Nut Washer	1
3	5HA-102-13	Companion Flange (with integral dust shield)	1
4	2HA-019	Pinion Oil Seal	1
5	2HA-020	Pinion Oil Seal Gasket	1
6	2HA-036	Pinion Oil Seal Slinger	1
7	5HA-022	Pinion Bearing Outer	1
8	5HA-039	Pinion Bearing Adjusting Shim outer .003"	2
9	5HA-040	Pinion Bearing Adjusting Shim outer .005"	2
10	5HA-041	Pinion Bearing Adjusting Shim outer .010"	2
11	5HA-042	Pinion Bearing Adjusting Shim outer .030"	2
12	5HA-043	Pinion Adjusting Shim inner .003"	2
13	5HA-044	Pinion Adjusting Shim inner .005"	2
14	5HA-045	Pinion Adjusting Shim inner .010"	2
15	5HA-023	Pinion Bearing Inner	1
16	5HA-105-15	Drive Gear & Pinion Assy. 6.38/1	1
17	5HA-046	Differential Bearing Shim .003"	2
18	5HA-047	Differential Bearing Shim .005"	2
19	5HA-048	Differential Bearing Shim .010"	2
20	5HA-049	Differential Bearing Shim .030"	2
21	5HA-024-1	Differential Bearing	2
22	8B NC 36	Differential Bearing Cap Bolt	4
23	8LW-115	Bearing Cap Lockwasher	4
24	5HA-075-2	Drive Gear Bolt	12
25	5HA-074-1	Drive Gear Lockstrap	6
26	5HA-038-1	Differential Side Gear Thrust Washer	2
27	5HA-007-3	Differential Side Gear	2
28	5HA-012-2	Differential Pinion Mate Cross Shaft	1
29	5HA-008-3	Differential Pinion Mate	4
30	5HA-037-1	Differential Pinion Mate Cross Washer	4
31	5HA-006-1	Differential Case Assy	1
32	5B-NC28A	Differential Case Screw	8
33	5HA-097	Differential Lock Strap	4
34	HA-059	Filler & Drain Plug	3
35	5HA-101-123	Service Carrier and Tube Assembly	1
	5HA-101-131	Service Carrier and Tube Assembly (5HA-001-305 Only)	1
36	M10S-C40	Stud (5HA-001-264F Only)	12
	M12S-C40	Stud (5HA-001-305 Only)	12
37	M10LW-15.9	Spring Washer (5HA-001-264F Only)	12
38	M10N-C8	Nut (5HA-001-264F Only)	12
	M12LN-C11A	Nut (5HA-001-305 Only)	12
39	5HA-144	Axle Shaft Guide	2
40	5HA-027-9	Axle Shaft Oil Seal	4
41	5HA-132-3	Brake Housing (5HA-001-264F Only)	2
	5HA-132-5	Brake Housing (5HA-001-305 Only)	2
42	5HA-142	Spring Plug (5HA-001-264F Only)	2
43	5HA-133-2	Brake Housing Cover (5HA-001-264F Only)	2
	5HA-133-3	Brake Housing Cover (5HA-001-305 Only)	2
44	5HA-095	Brake Housing Cover Gasket (5HA-001-264F Only)	2
	5HA-095-1	Brake Housing Cover Gasket (5HA-001-305 Only)	2
45	M6B-C-10/10	Cover Screw (5HA-001-264F Only)	8
	M8B-C-15/15	Cover Screw (5HA-001-305 Only)	8
46	M6LW-9.6	Spring Washer (5HA-001-264F Only)	8
	M8LW-12.75	Spring Washer (5HA-001-305 Only)	8
47	5HA-103-1	Bearing Bush	4
48	5HA-142-1	Pivot Spindle Plug	2



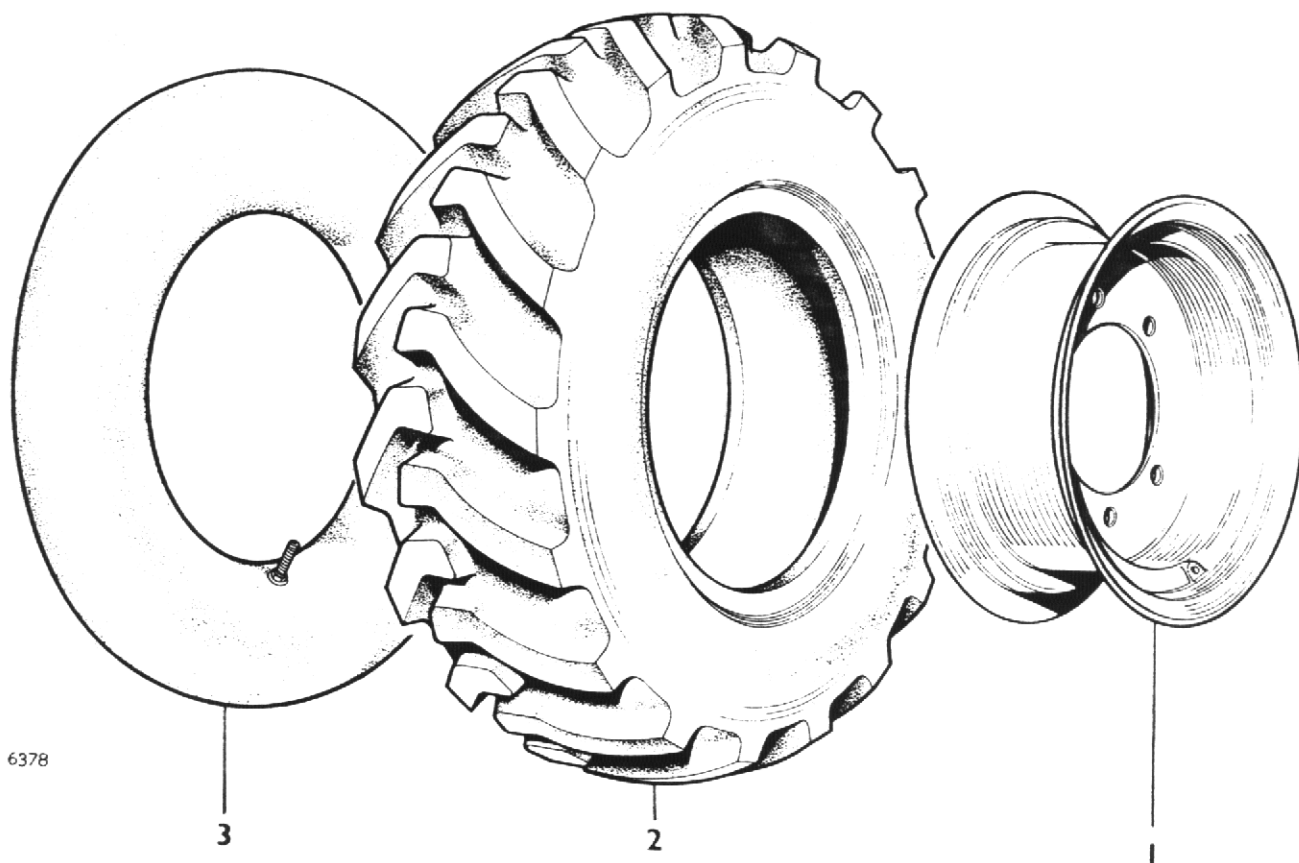
DRIVE AXLE
(with Totally Enclosed Brakes)

Item No.	Part No.	Description	Qty
49	5HA-079-1	Spindle 'V' Ring Seal	2
50	5HA-135-25	Pivot Spindle	2
51	5HA-135-26	Lever Arm	2
52	M25-C.EX	Circlip	2
53	5HA-135-17	Actuating Disc Assembly	2
54	5HA-136-1	Friction Disc	4
55	5HA-135-31	Pull Rod	2
56	5HA-135-29	Clevis Pin	2
57	5HA-135-30	Split Pin	2
58	5HA-135-24	Lever Fork	2
59	12RP-24	Roll Pin	4
60	7RP-24	Roll Pin	4
61	5HA-154-7	Bush	2
62		Locknut 12 mm	2
63	ASK 33703	Axle Shaft and Flange Assembly	2
64	5HA-125-1	Wheel Spindle	2
65	M12B-C-45/30	Wheel Spindle Bolt	14
66	M12LW-17.9	Lockwasher	14
67	5HA-032-12	Hub Oil Seal (outer)	2
68	5HA-030-3-	Hub Flinger	2
69	5HA-018-2	Wear Ring	2
70	5HA-032-13	Hub Oil Seal (inner)	2
71	8HA-025-5	Wheel Bearing (inner)	2
72	5HA-028-78	Wheel Hub Assembly	2
73	10HA-055-5	Wheel Stud	12
74	T-23	Wheel Nut	12
75	8HA-025-6	Wheel Bearing (outer)	2
76	5HA-032-10	Oil Seal	2
77	M50SN-F8	Hub Bearing Locknut	2
78	5HA-091-3	Hub Bearing Lockwasher	2
79	M50N-F7	Hub Bearing Locknut	2
80	DM138	Studs 10mm x 7/16" BSF.	8
81		Nut 7/16" BSF	8
82	5RP-20	Roll Pin (5HA-001-264F Only)	4
	M6RP20	Roll Pin (5HA-001-305 Only)	
83	M10B-C-35/20	Bolt 10mm	8
84		'Square section' spring washer 10mm	8
85	5HA-058-2	Axle Shaft Flange Cover	2
86	5HA-064-1	Gear Carrier Cover Assembly	1
87	5HA-026	Gear Carrier Cover Gasket	1
88	4-35-235	Gear Carrier Cover Support	1
89	6B-NC-10	Gear Carrier Cover Bolt	10
90	6LW-105	Lockwasher	10
91	4-35-396	Brake Arm	2
92		Flat Washer 1/2" (thick)	4
93		Bolt 1/2" BSF x 2 1/4" Long & Nut	2
94		Shakeproof Washer 1/2"	2
95		Square section Spring Washer 7/16" dia	8
96	5HA-133-4	Cover (5HA-001-305 Only)	2
97	5HA-095-2	Gasket (5HA-001-305 Only)	2
98	M8B-C15/15	Bolt (5HA-001-305 Only)	4
99	M8LW-12.75	Spring Washer (5HA-001-305 Only)	2
100	5HA-096-3	Spring Ring	2



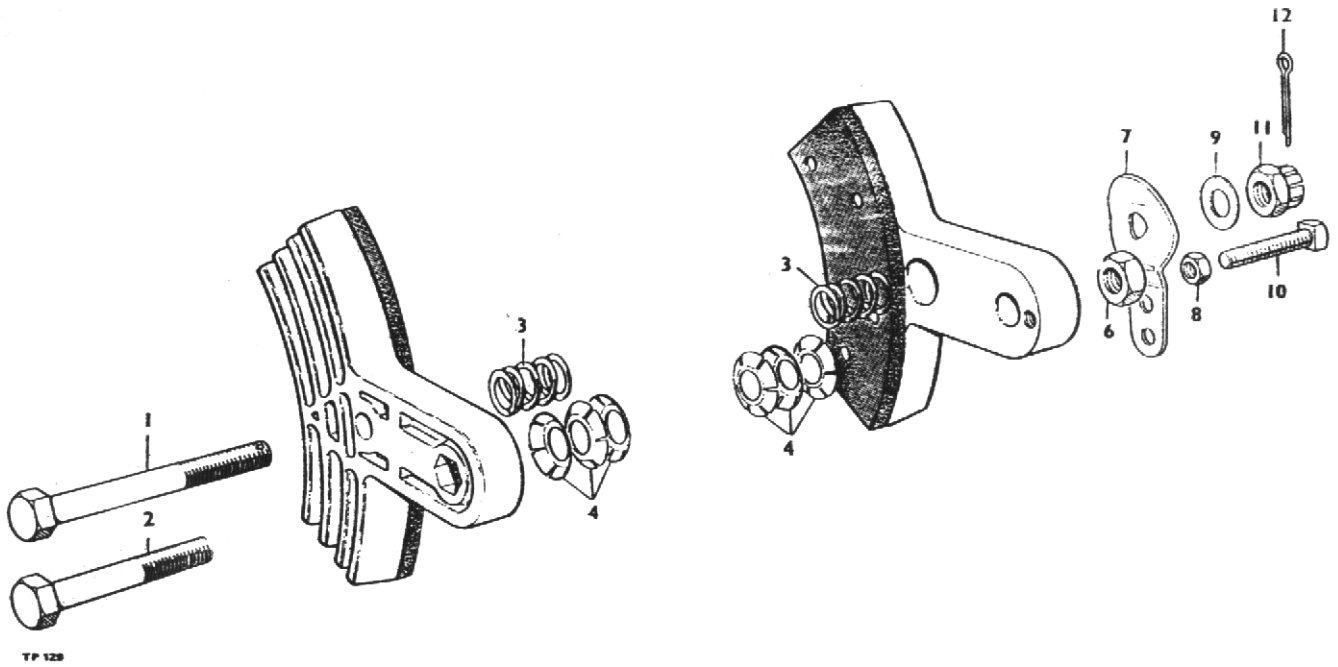
**DRIVE AXLE
(without Brakes)**

Item No.	Part No.	Description	Qty.
	5HA-001-292F	Drive Axle (1 per M/c) 6.38/1	
1	12-LN-NF9B	Pinion Nut	1
2	12-W-24	Pinion Nut Washer	1
3	5HA-102-13	Companion Flange (with integral dust shield)	1
4	2HA-019	Pinion Oil Seal	1
5	2HA-020	Pinion Oil Seal Gasket	1
6	2HA-036	Pinion Oil Seal Slinger	1
7	5HA-022	Pinion Bearing Outer	1
8	5HA-039	Pinion Bearing Adjusting Shim Outer .003"	2
9	5HA-040	Pinion Bearing Adjusting Shim Outer .005"	2
10	5HA-041	Pinion Bearing Adjusting Shim Outer .010"	2
11	5HA-042	Pinion Bearing Adjusting Shim Outer .030"	2
12	5HA-043	Pinion Adjusting Shim Inner .003"	2
13	5HA-044	Pinion Adjusting Shim Inner .005"	2
14	5HA-045	Pinion Adjusting Shim Inner .010"	2
15	5HA-023	Pinion Bearing Inner	1
16	5HA-105-15	Drive Gear & Pinion Assy. 6.38/1	1
17	5HA-046	Differential Bearing Shim .003"	2
18	5HA-047	Differential Bearing Shim .005"	2
19	5HA-048	Differential Bearing Shim .010"	2
20	5HA-049	Differential Bearing Shim .030"	2
21	5HA-024-1	Differential Bearing	2
22	8B NC 36	Differential Bearing Cap Bolt	4
23	8LW-115	Bearing Cap Lockwasher	4
24	5HA-075-2	Drive Gear Bolt	12
25	5HA-074-1	Drive Gear Lockstrap	6
26	5HA-038-1	Differential Side Gear Thrust Washer	2
27	5HA-007-3	Differential Side Gear	2
28	5HA-012-2	Differential Pinion Mate Cross Shaft	1
29	5HA-008-3	Differential Pinion Mate	4
30	5HA-037-1	Differential Pinion Mate Cross Washer	4
31	5HA-006-1	Differential Case Assy.	1
32	5B-NC28A	Differential Case Screw	8
33	5HA-097	Differential Lock Strap	4
34	HA-059	Filler & Drain Plug	3
35	5HA-101-128	Service Carrier and Tube Assembly	1
36	5HA-032-12	Hub Oil Seal (outer)	2
37	5HA-030-3	Hub Flinger	2
38	5HA-032-6	Hub Oil Seal (inner)	2
39	8HA-025-5	Wheel Bearing (inner)	2
40	5HA-028-78	Wheel Hub Assembly	2
41	10HA-055-5	Wheel Stud	12
42	T-23	Wheel Nut	12
43	8HA-025-6	Wheel Bearing (outer)	2
44	32N-NF4	Hub Bearing Locknut	4
45	8HA-091-2	Hub Bearing Lockwasher	2
46	5HA-005-98	Axle Shaft	2
47	10HA-031	Gasket	2
48	M10B-C-35/20	Bolt	8
49		Square section spring washer 10mm	8
50	5HA-064-1	Gear Carrier Cover Assembly	1
51	5HA-026	Gear Carrier Cover Gasket	1
52	4-35-235	Gear Carrier Cover Support	1
53	6LW-105	Lockwasher	10
54	6B-NC-10	Bolt	10
55	DM138	Stud 10mm x 7/16" BSF	8
56		Square section spring washer 7/16"	8
57		Nut 7/16" BSF	8



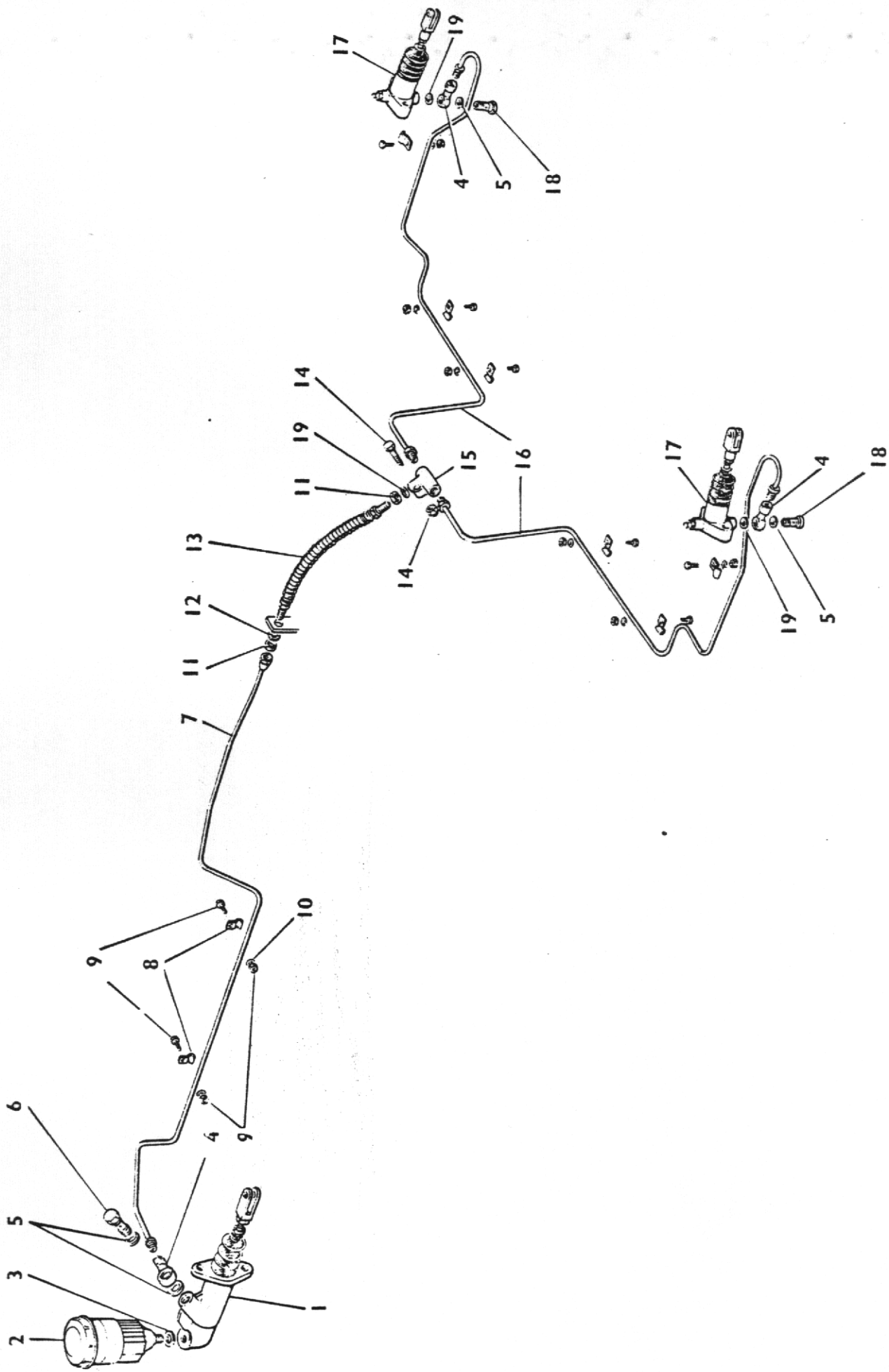
WHEELS AND TYRES

Item No.	Part No.	Description	Qty.
	24S08	R/H Wheel Assembly	2
	24S07	L/H Wheel Assembly	2
1	30183A02	Wheel rim 9 x 18	4
2	20S02	Tyre 10.5 x 18-8 ply	4
3	23S04	Tube 10.05 x 18	4



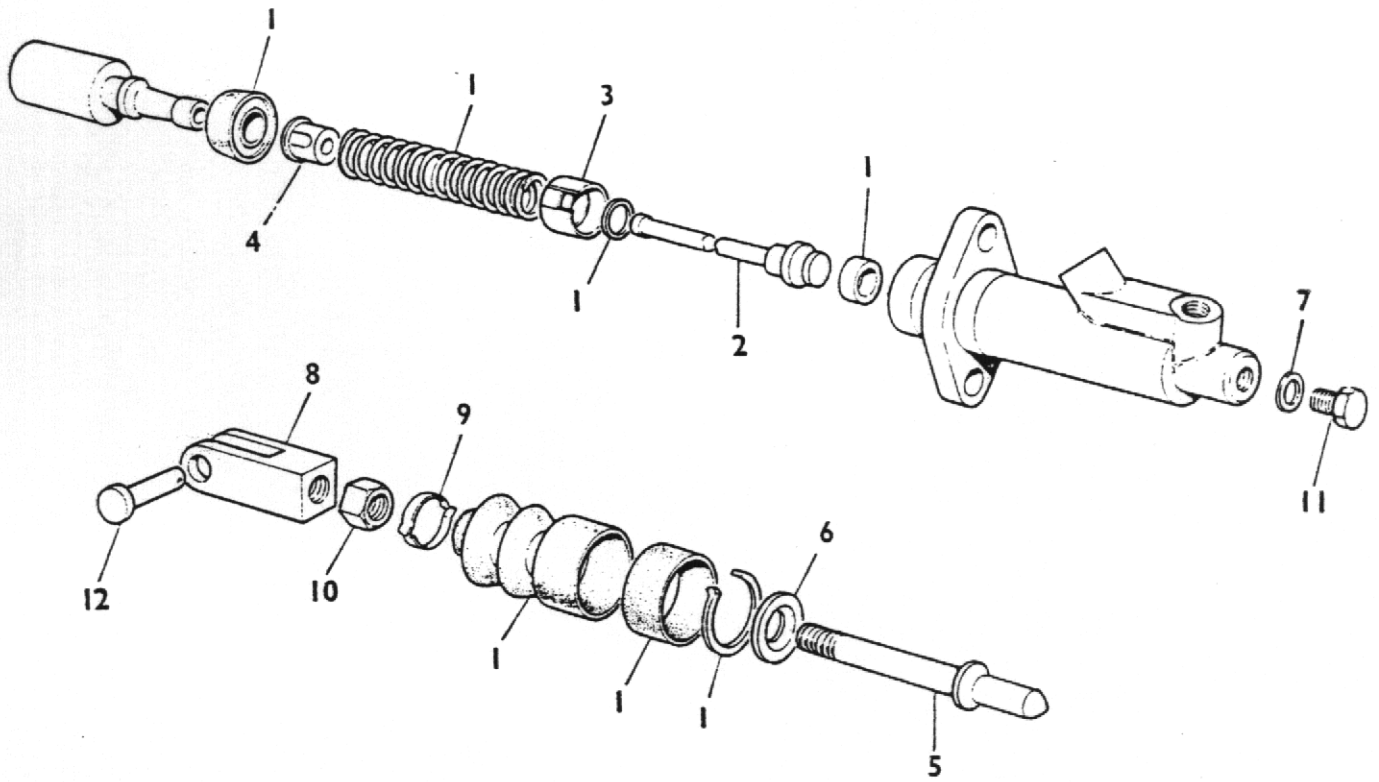
CALIPER, parking brake

Item	Part no	Description	Qty
1A	10578A01	CALIPER, one pair, assembly	1
1	28S02T	SCREW	1
2	28S02P	SCREW	1
3	10578A0101	SPRING, centring	2
4	10578A0102	WASHER, tension	6
6	9S02	NUT	1
7	10578A0104	CAM	1
8	230S01	NUT, locking	1
9	10578A0105	WASHER	1
10	66S01H	SCREW, set	1
11	227S02	NUT, castle	1
12	44S01C	PIN, cotter	1
13	1072A4	PAD c/w rivets	2



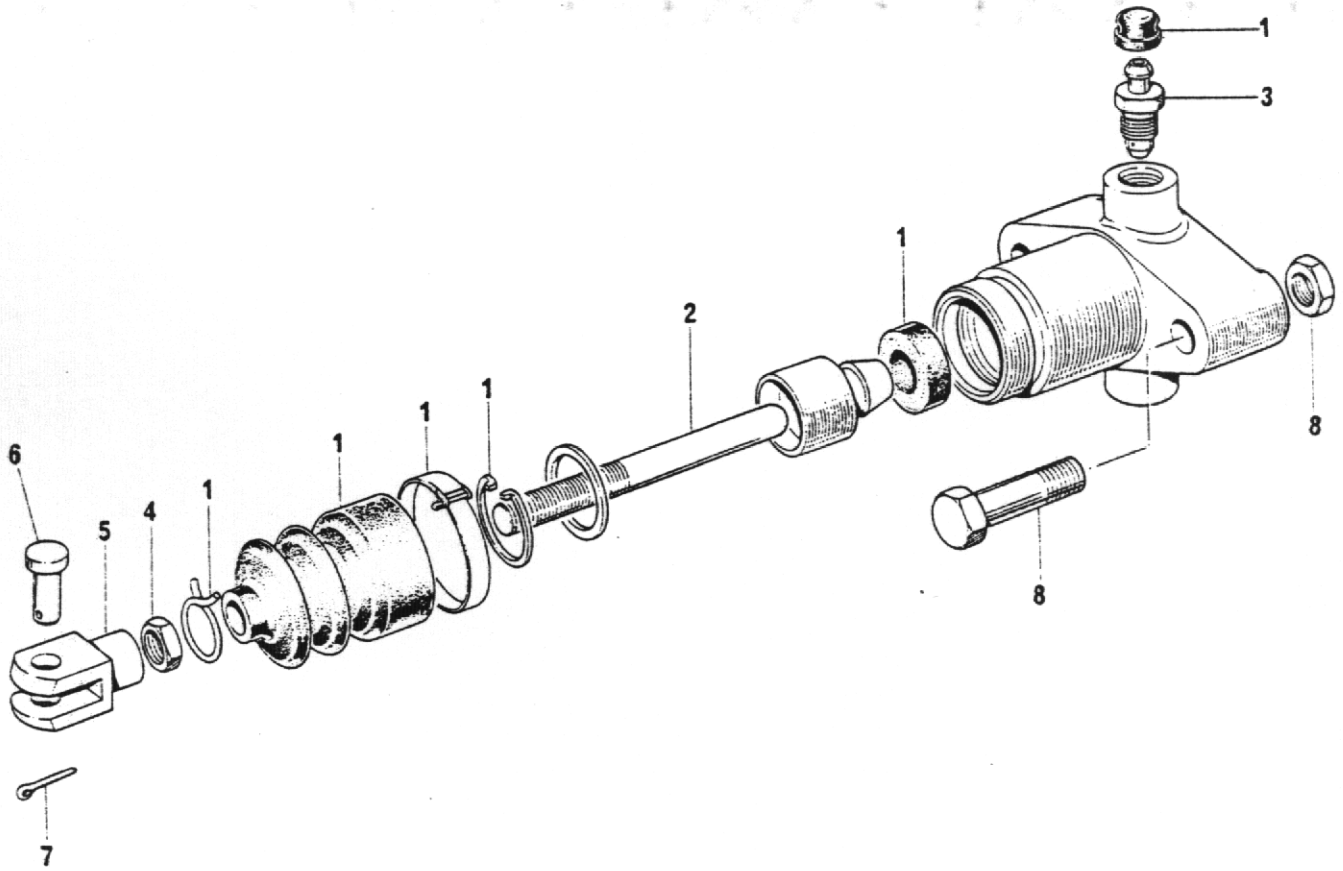
BRAKE PIPES AND CONNECTIONS

Item No.	Part No.	Description	Qty.
1	64066004	Master Cylinder (See Page 46)	1
2	64046158	Header Tank	1
3	4-35-378	Copper Washer ¾" OD. x 7/16" ID. x 1/8" thick	1
4	64474287	Banjo	3
5	378700	Copper Washer 7/16"	4
6	64473063	Banjo Bolt	1
7	DM 79-5	Pipe 62" Master Cylinder to Flex	1
8	4S 133	"P" Clip	8
9		Bolt ¼" BSF x ¾" Long & Nut	8
10		Shakeproof Washer ¼"	8
11	64100050	Thin Nut 3/8" UNF.	2
12		Shakeproof Washer 3/8"	1
13	64046115	Flexible Hose 9½" Long	1
14		Bolt ¼" BSF x 1½" Long & Nut	1
15	64474341	Tee Piece	1
16	DM 78-3	Pipe 43" Tee to Slave Cylinder	2
17	4-35-401	Slave Cylinder (See Page 47)	2
18	376102W	Banjo Bolt	2
19	378703	Copper Washer 3/8"	3



BRAKE MASTER CYLINDER ASSEMBLY

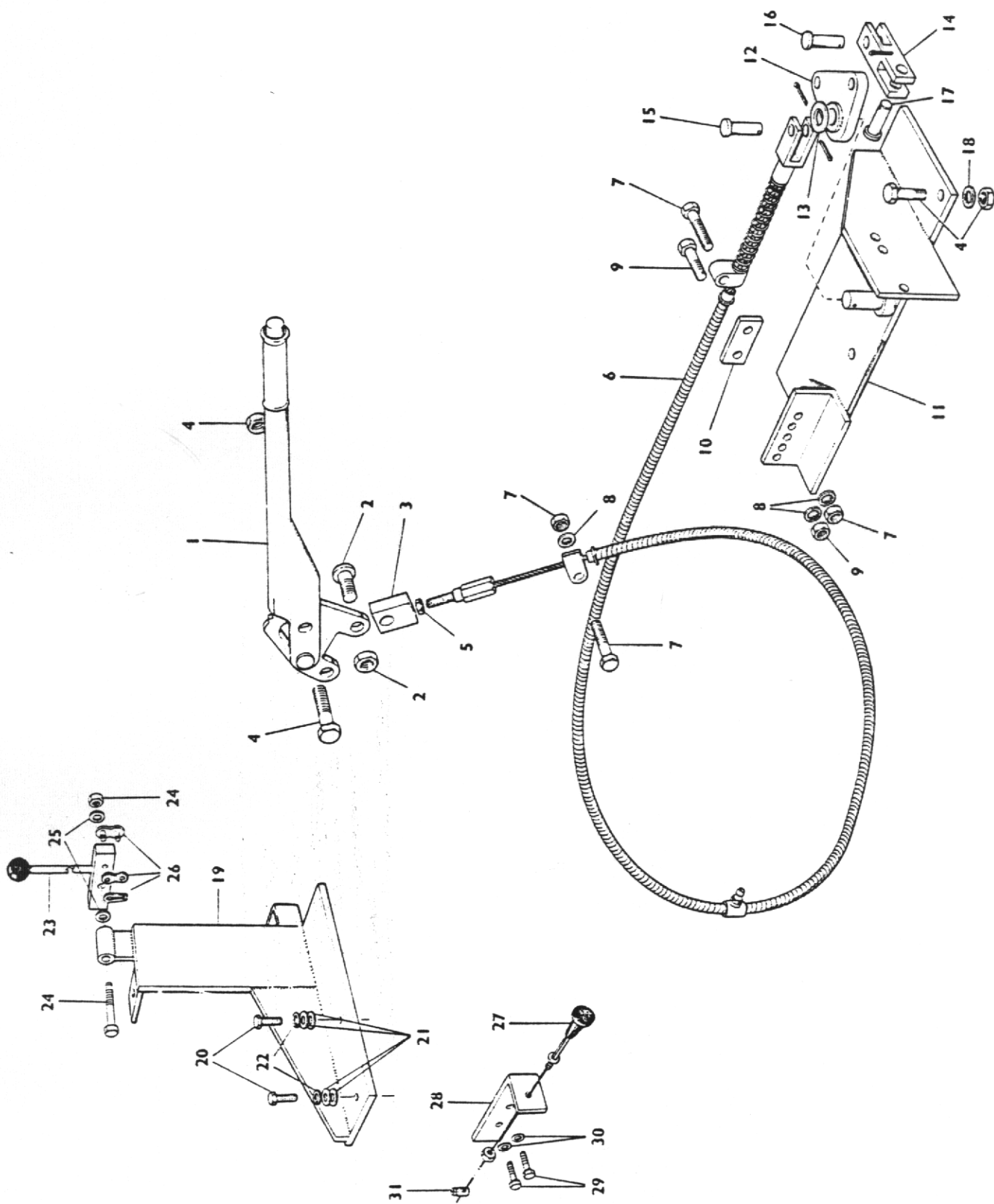
Item No.	Part No.	Description	Qty.
	64067970	Master Cylinder (Complete) 1 per M/C	
1	SP 1996/2	Seal Kit	1
2	378641	Valve Stem	1
3	318001	Valve Spacer	1
4	64673391	Valve Spring Retainer	1
5	351257W	Push Rod	1
6	378242	Retaining Washer	1
7	378700	Washer	1
8	64671286	Clevis	1
9	378312	Dust Cover Retainer	1
10	6410052	Locknut	1
11	64110348	Plug	1
12	C174Y	Clevis Pin	1



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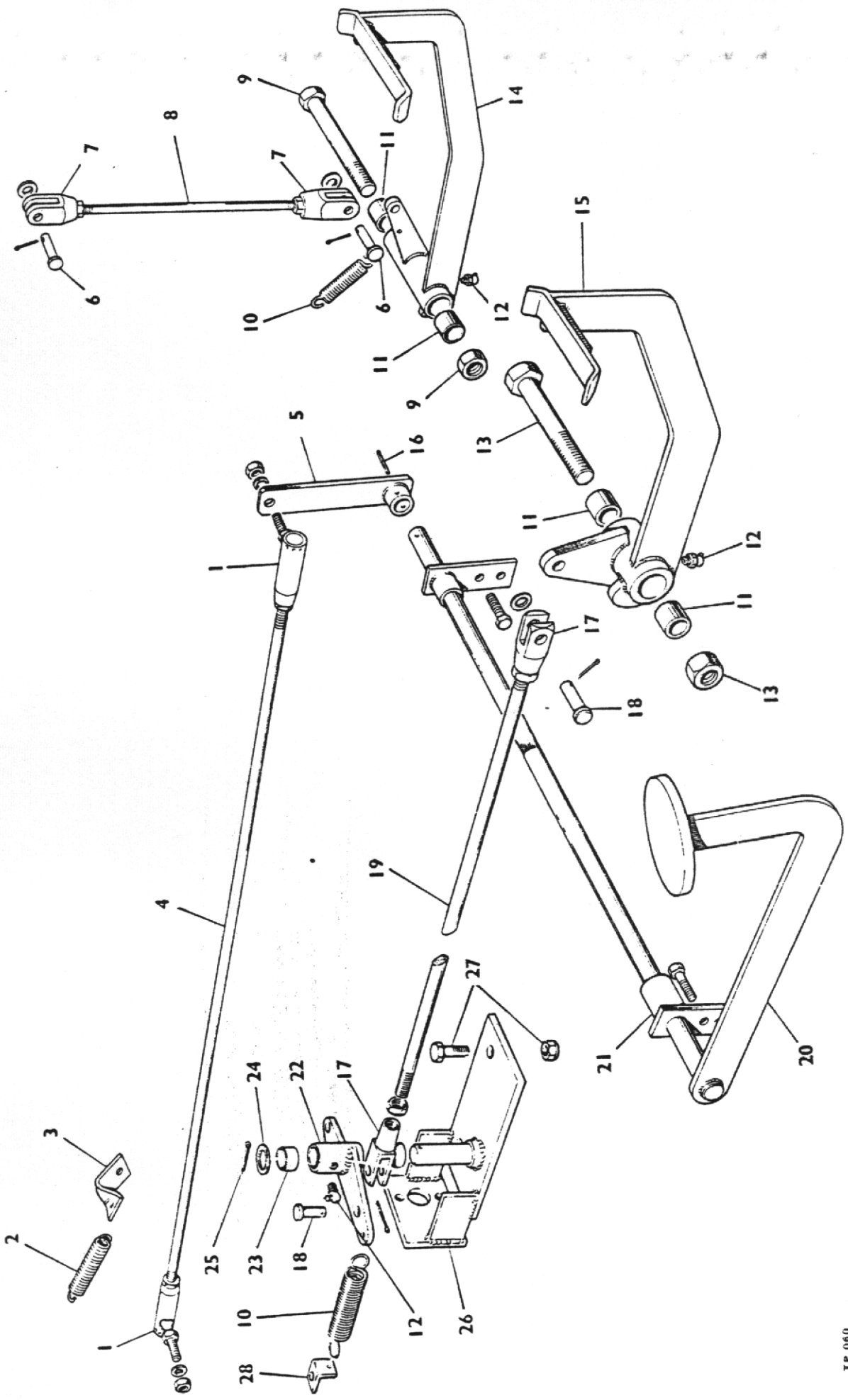
BRAKE SLAVE CYLINDER ASSEMBLY

Item No.	Part No.	Description	Qty.
	4-35-401	Slave Cylinder Complete	1
1	SP 2694	Repair Kit	1
2	4-35-395	Push Rod	1
3	64470444	Bleed Nipple	1
4		Nut 3/8" BSF	1
5	C 174A	Clevis	1
6	C 174X	Clevis Pin	1
7		Split Pin 3/32" Dia.	1
8		Bolt 5/16" BSF x 1 3/4" Long and Nut	2



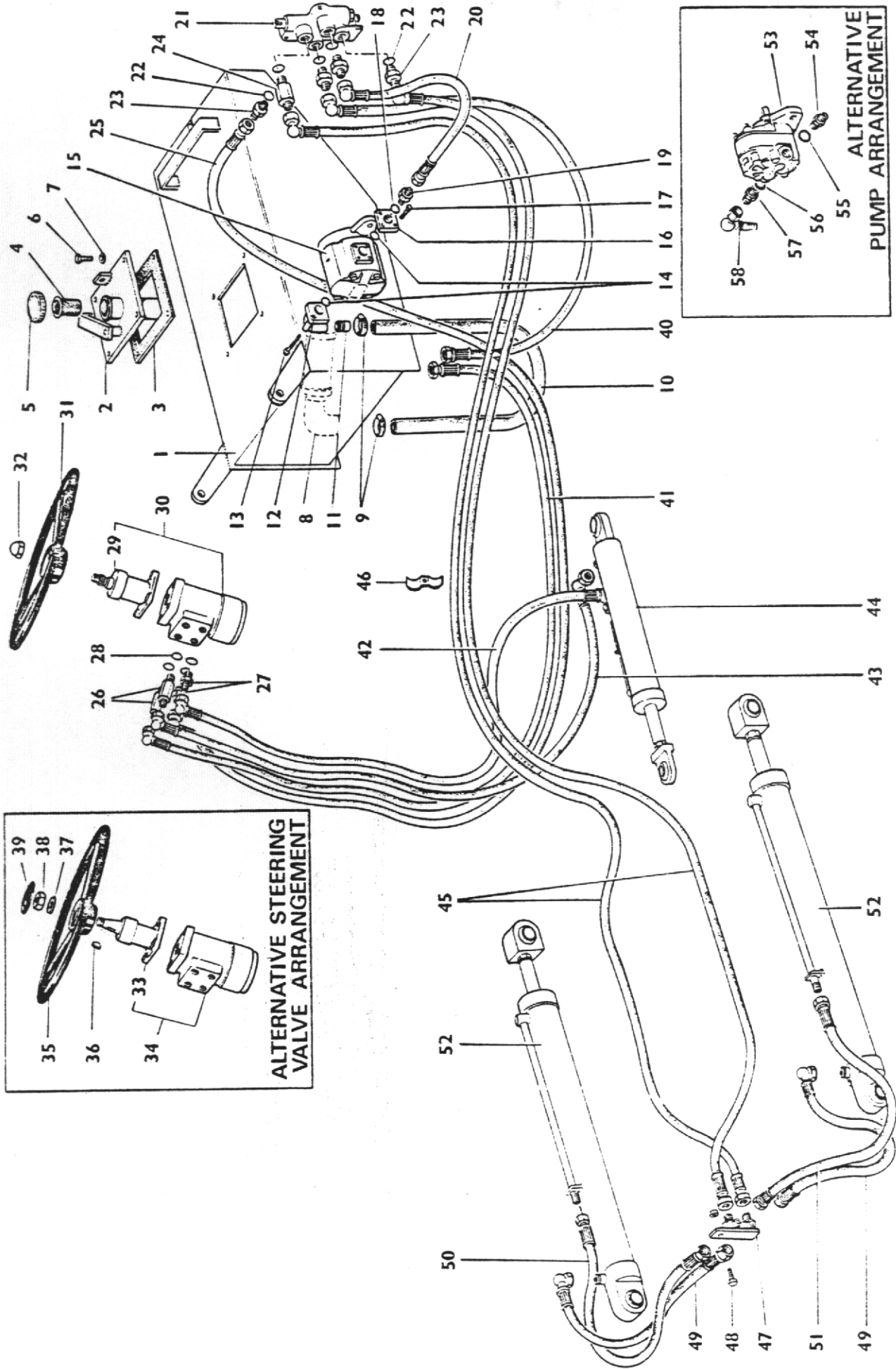
HANDBRAKE, VALVE CONTROL LEVER & ENGINE STOP CONTROL

Item No.	Part No.	Description	Qty.
1	303	Handbrake Lever	1
2		Mushroom Head Bolt 3/8" BSF x 1" long & Nut	2
3	L309	Block	1
4		Bolt 3/8" BSF x 1 1/2" long & Nut	4
5		Nut 3/8" BSF	1
6	4-35-111	Handbrake Cable	1
7		Bolt 5/16" BSF x 1 3/4" long & Nut	2
8		Shakeproof Washer 5/16" dia.	3
9		Bolt 5/16" BSF x 1" long & Nut	1
10	4-35-349	Disc Brake Adjusting Plate	1
11	4-35-382	Transmission Brake Mounting Bracket	1
12	4-35-256	Bell Crank	1
13		Flat Washer 1/2" dia.	1
14	4-35-253	Double Clevis	1
15	C174X	Clevis Pin	1
16	C174Y	Clevis Pin	1
17	4-35-264	Clevis Pin	1
18		Shakeproof Washer 3/8" dia.	4
19	4-35-372	Hydraulic Valve Mounting Bracket	1
20		Bolt 5/16" BSF x 1" long	2
21		Flat Washer 5/16" dia.	4
22		Shakeproof Washer 5/16" dia.	2
23	F4-45-58	Hydraulic Valve Lever	1
24		Bolt 3/8" BSF x 2 1/4" long & Nut	1
25		Flat Washer 3/8" dia.	2
26	4-60-178	Connecting Link	1
27	4-35-82	Engine Stop Control Cable Assembly	1
28	4-35-373	Engine Stop Control Mounting Bracket	1
29		Bolt 1/4" BSF x 5/8" long	2
30		Shakeproof Washer 1/4" dia.	2
31	4-35-196	Solderless Nipple	1



PEDALS & CONTROLS

Item No.	Part No.	Description	Qty.
1	C160B	Accelerator Rod Ball End	2
2	C173D	Spring	1
3	C163	Spring Attachment Brkt.	1
4	4-35-370	Accelerator Rod	1
5	F522	Accelerator Lever	1
6	C174X	Pin	2
7	C174A	Clevis	2
8	L306	Clutch Rod 3/8" BSF x 11 3/8" Long	1
9		Bolt 5/8" BSF x 8 1/2" Long & Nut	1
10	C173B	Spring	2
11	WB1010	Bush	4
12	T90	Grease Nipple	3
13		Bolt 5/8" BSF x 3 1/2" Long & Nut	1
14	F4-45-108	Clutch Pedal	1
15	4-35-125	Footbrake Pedal	1
16	C129A	Tension Pin	1
17	C174E	Clevis	2
18	C174Y	Clevis Pin	2
19	4-35-394	Footbrake Rod 5/16" UNF x 19 1/2" Long	1
20	4-35-322	Accelerator Pedal	1
21	4-35-151	Accelerator Mounting Brkt.	2
22	4-35-399	Transfer Lever	1
23	WB1212	Bush	2
24		Washer 3/4"	1
25		Split Pin 1/8"	1
26	4-35-398	Master Cylinder Bracket	1
27		Bolt 1/2" BSF x 1 1/2" Long & Nut	2
28	4-35-403	Return Spring Bracket	1
29	F4-45-122	Clutch Pedal Return Spring Bracket (not illustrated) ...	1

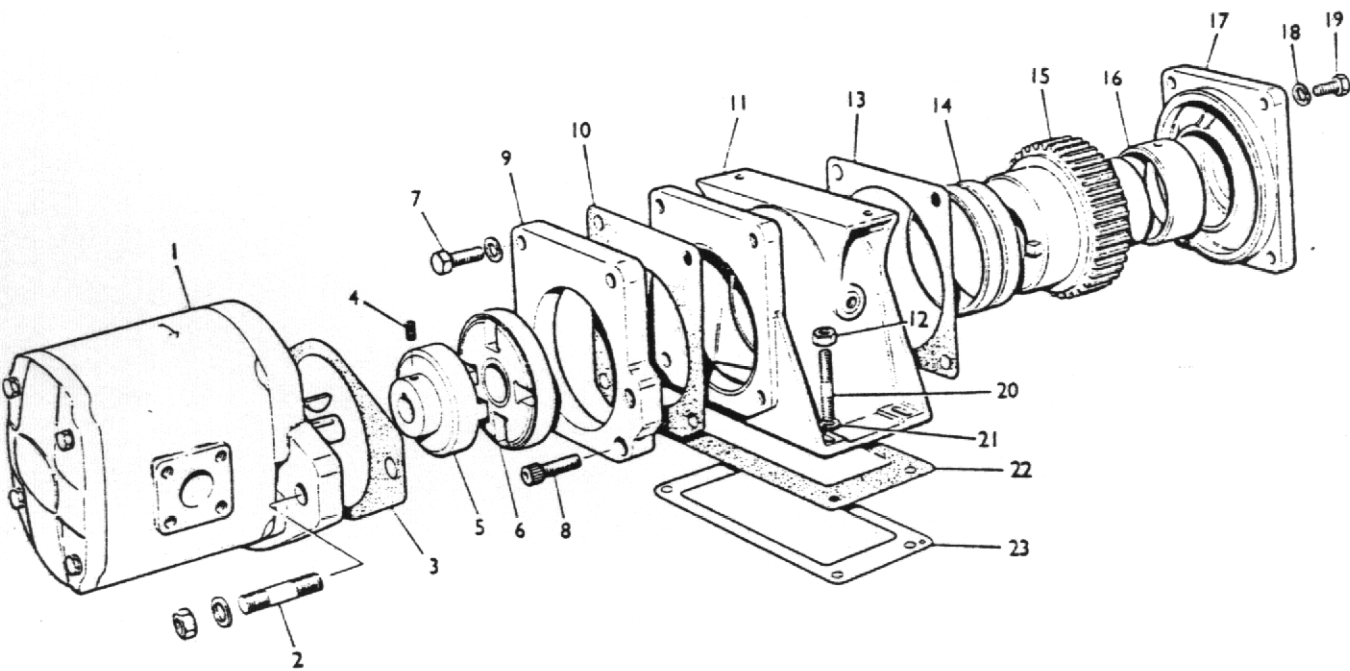


ALTERNATIVE STEERING VALVE ARRANGEMENT

ALTERNATIVE PUMP ARRANGEMENT

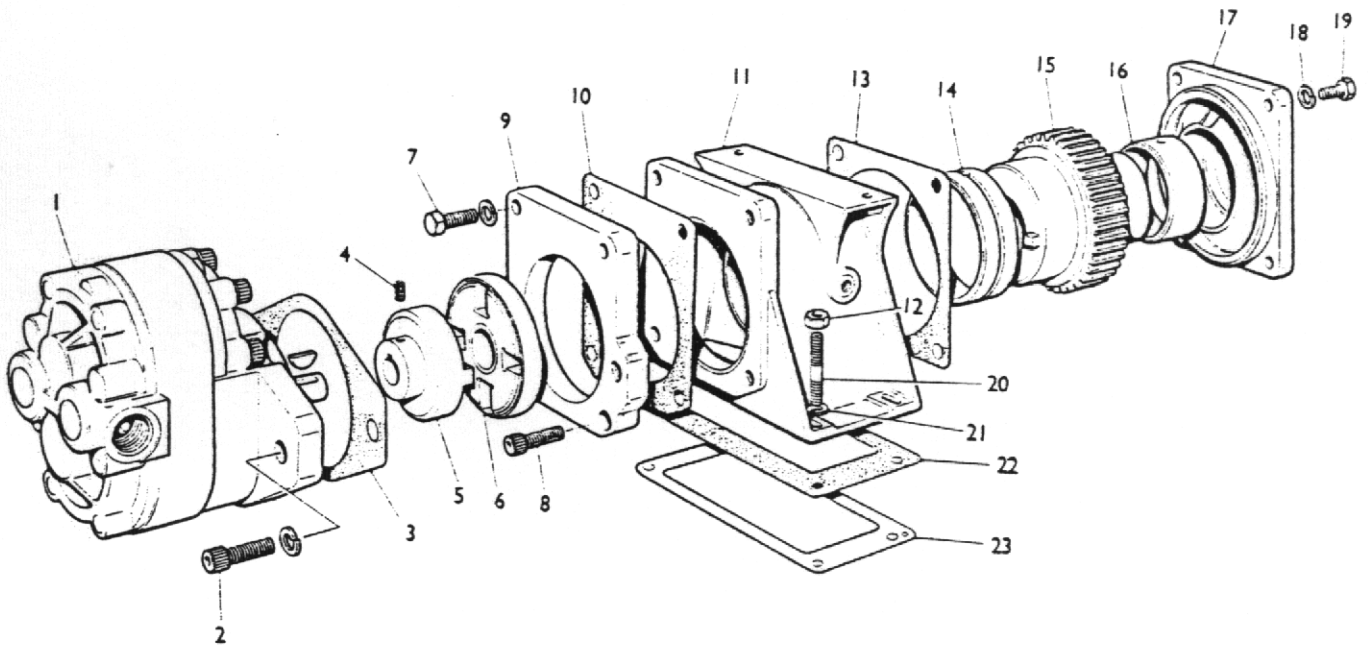
HYDRAULIC PIPES & FITTINGS

Item No.	Part No.	Description	Qty.
1	4-35-296	Hydraulic Tank	1
2	4-35-187	Cover Plate Assembly	1
3	T18B	Gasket	1
4	P1145	Strainer	1
5	P2578-2	Cap	1
6		Bolt 5/16" UNF x 3/4" long	4
7		Shakeproof Washer 5/16"	4
8	UC 1457	Filter	1
9	T63M	Hose Clip	2
10	4-35-312	Hose 3/8" x 36" Cotton Braid	1
11	T48	Pump Inlet Adaptor	1
12	IPE4	Pump Elbow	1
13		Cap Screw 5/16" UNC x 2 1/4" long	2
14	DH69A5	'O' Ring	2
15	IP3072-CPSFB	Pump (See page 54)	1
16	4-35-261	Adaptor	1
17		Capscrew 5/16" UNC x 1" long	2
18	T141	Seal 3/8" BSP	1
19	T14J	Adaptor 3/8" BSP x 3/8" BSP	1
20	2ST72C	Hose 3/8" x 13 1/4" ST-90	1
21	300-024-GAA	Hydraulic Control Valve (See Page 57)	1
22	S9698	'O' Ring	5
23	4-60-159	Adaptor 3/8" BSP x 7/8" JIC (Short)	4
24	4-60-158	Adaptor 3/8" BSP x 7/8" JIC (Long)	1
25	4-60-135	Hose 3/8" x 77" ST-90	1
26	4-60-115	Adaptor 3/8" BSP x 3/4" UNF (Long)	2
27	4-35-40K	Adaptor 3/8" BSP x 3/4" UNF (Short)	2
28	2ST72J	'O' Ring	4
29	D-15-2099	Steering Column (Taper/Serration Type)	1
30	OSP160SMMT	Steering Valve Complete (Taper/Serration Type)	1
31	347K	Steering Wheel	1
32	C304	Domed Nut 5/8" UNF	1
33	SCA 315	Steering Column (Taper/Key Type)	1
34	UE 160	Steering Valve Complete (Taper/Key Type)	1
35	153	Steering Wheel	1
36		Woodruff Key No.11	1
37		Washer 3/4" dia.	1
38	4-60-247	Nut	1
39	153A	Steering Wheel Cap	1
40	4-60-133	Hose 3/8" x 48" ST-90	1
41	4-35-246	Hose 3/8" x 67" ST-90	1
42	4-35-244	Hose 3/8" x 36" 90-90	1
43	4-35-245	Hose 3/8" x 43" 90-90	1
44	TD 3894	Steering Ram (See Page 60)	1
45	4-35-294	Hose 3/8" x 112" ST-90	2
46	X81	Double 'P' Clip	1
47	4-35-388	Tee Assembly	1
48		Bolt 1/4" BSF x 1" long & Nut	1
49	4-35-365	Hose 3/8" x 20" ST-90 (FWD Tip & High Discharge)	2
	5ST 87	Hose 3/8" x 27" 90-90 (Turntable)	2
50	4-35-40E	Hose 3/8" x 25" ST-ST (FWD Tip & High Discharge)	1
	5ST 85	Hose 3/8" x 27" 90-90 (Turntable)	1
51	4-35-40E	Hose 3/8" x 25" ST-ST (FWD Tip & High Discharge)	1
	5ST 86	Hose 3/8" x 27" 90-90 (Turntable)	1
52	4-35-295	Skip Ram (See Page 58)	2
53	200-100-RAD	Pump (See Page 55)	1
54	4-60-159	Adaptor 3/8" BSP x 7/8" SAE	1
55	59698	'O' ring 7/8" dia.	1
56	ASE 138	'O' ring 1-1/16" dia.	1
57	DSE 113	Adaptor 3/4" BSP x 1-1/16" SAE	1
58	BSE 109	90° Hose Fittings 3/4" BSP	1



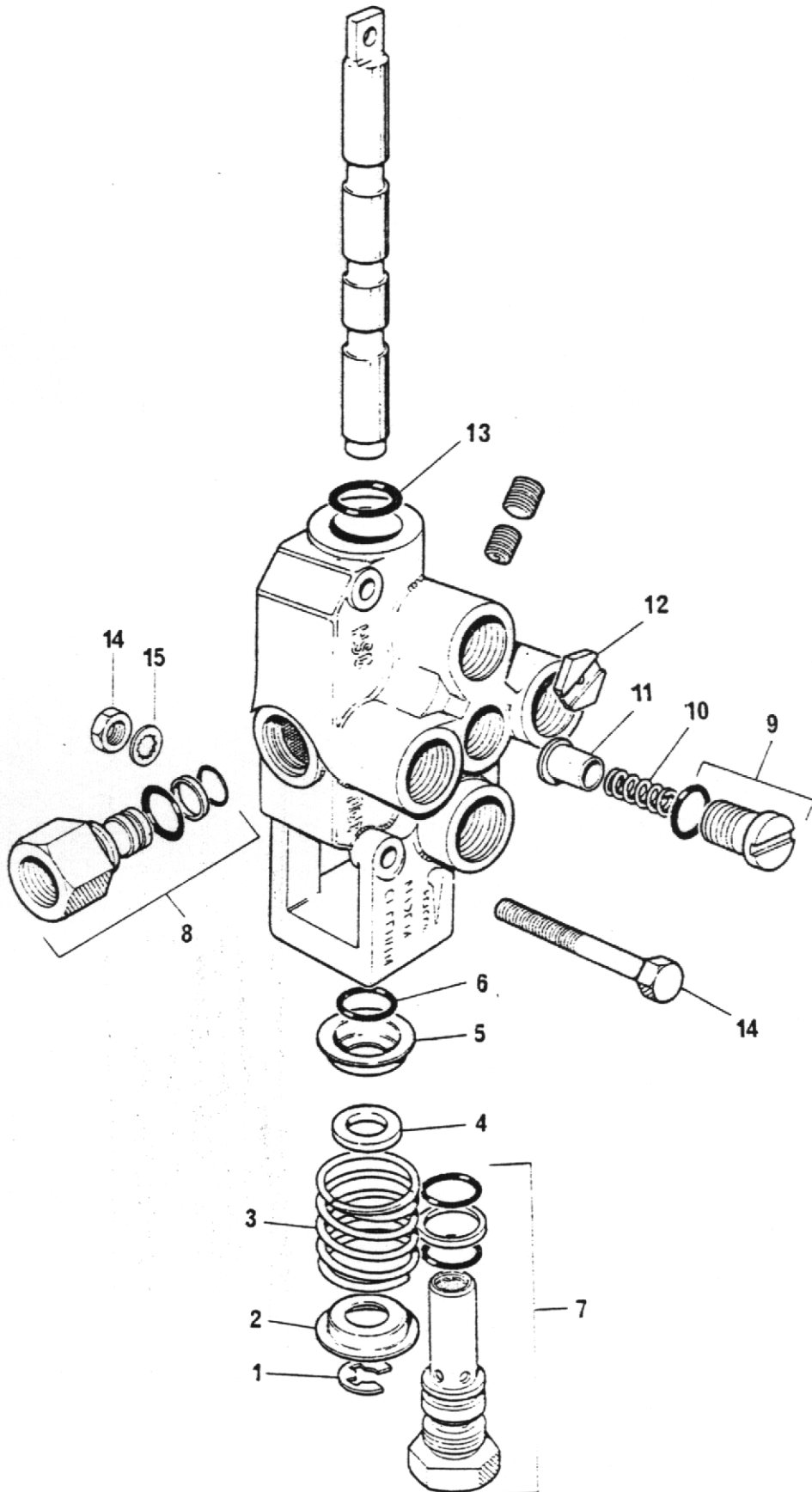
HYDRAULIC PUMP & DRIVE

Item No.	Part No.	Description	Qty.
1	IP3072CPSFB	Pump complete	1
2		Stud, washer & nut	2
3	334932	Joint	1
4	724202	Socket Screw 1/4" BSF x 5/16" long	1
5	334931	Coupling (Pump Half)	1
6	266185	Coupling Assy	1
7	725049	Bolt 3/8" BSF x 1" long	2
8	724056	Cap Screw 3/8" BSF x 3/4" long	2
9	292709	Spigot Plate	1
10	266159	Joint	1
11	2-197597	Pump Housing	1
12	726003	Nut 3/8" BSF	4
13	264702	Joint	1
14	2-264704	Bearing	1
15	334968	Gearwheel	1
16	2-202485	Bearing	1
17	264701	Cover - Pump Housing	1
18	786029	Spring Washer - 5/16"	4
19	722024	Bolt 5/16" BSF x 5/8" long	4
20	760061	Stud 3/8" BSF x 1 3/8" long	4
21	786030	Spring Washer - 3/8"	4
22	264700	Joint	1
23	264706	Shim	A.R.



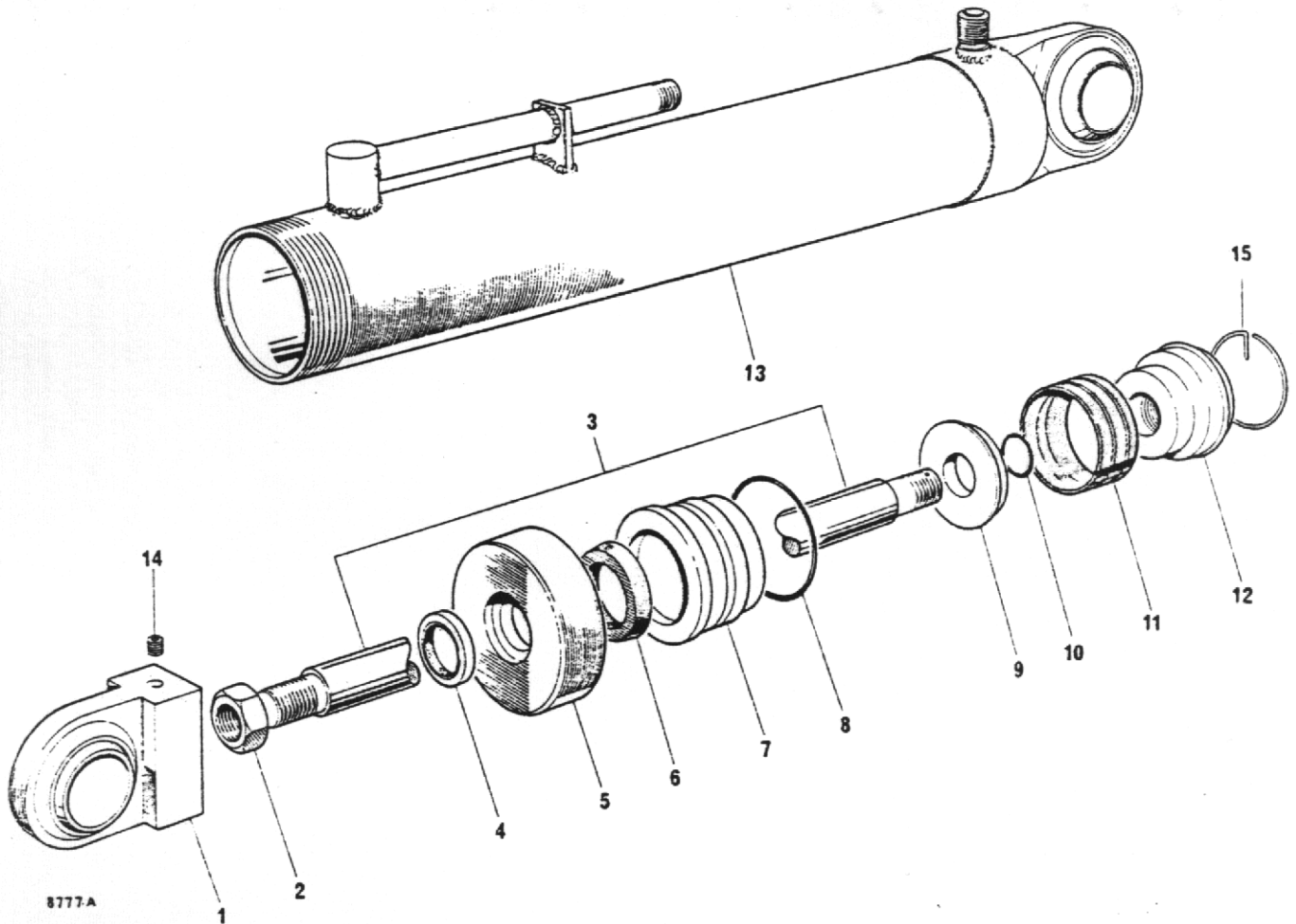
HYDRAULIC PUMP & DRIVE

Item No.	Part No.	Description	Qty
1	200-100-RAD	Pump Complete	1
2		Cap Screw	2
3	334932	Joint	1
4	724202	Socket Screw 1/4" BSF x 5/16" long	1
5	334931	Coupling (Pump Half)	1
6	266185	Coupling Assy	1
7	725049	Bolt 3/8" BSF x 1" long	2
8	724056	Cap Screw 3/8" BSF x 3/4" long	2
9	292709	Spigot Plate	1
10	266159	Joint	1
11	2-197597	Pump Housing	1
12	726003	Nut 3/8" BSF	4
13	264702	Joint	1
14	2-264704	Bearing	1
15	334968	Gearwheel	1
16	2-202485	Bearing	1
17	264701	Cover - Pump Housing	1
18	786029	Spring Washer - 5/16"	4
19	722024	Bolt 5/16" BSF x 5/8" long	4
20	760061	Stud 3/8" BSF x 1 3/8" long	4
21	786030	Spring Washer - 3/8"	4
22	264700	Joint	1
23	264706	Shim	A/R



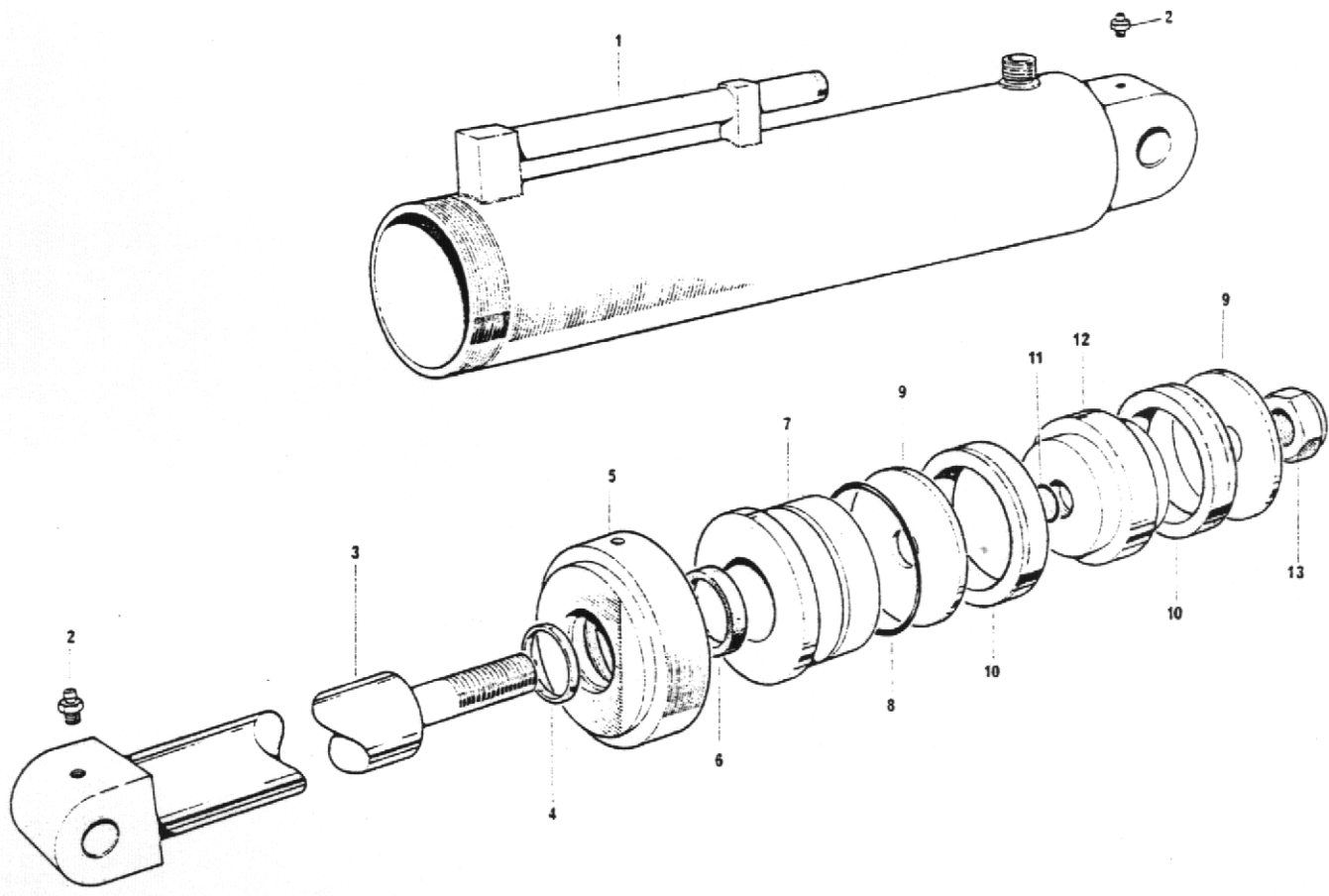
HYDRAULIC CONTROL VALVE

Item No.	Part No.	Description	Qty.
	30051A01. 300-24-GAA	Control Valve Assembly (1 Per M/c)	-
1	16124-50	Clip Ring (1/2" Shaft)	1
2	15546-6	Shallow Washer	1
3	30501-39	Spool Spring	1
4	16048-31	Washer Spacer	1
5	30501-10	Deep Washer	1
6	16003-12	'O' Ring 3/32" x 5/8" I/D	1
7	300-055-J9A	Relief Valve Assembly	1
8	30501-15	Pressure Beyond Plug Assembly	1
9	30501-17	Lift Check Plug Assembly	1
10	30501-13	Lift Check Spring	1
11	30501-12	Lift Check Plunger	1
12	16097-451	Orifice Plate	1
13	16004-63	'O' Ring	1
14		Bolt 5/16" UNF x 2 1/2" long and Nut	2
15		Shakeproof Washer	2



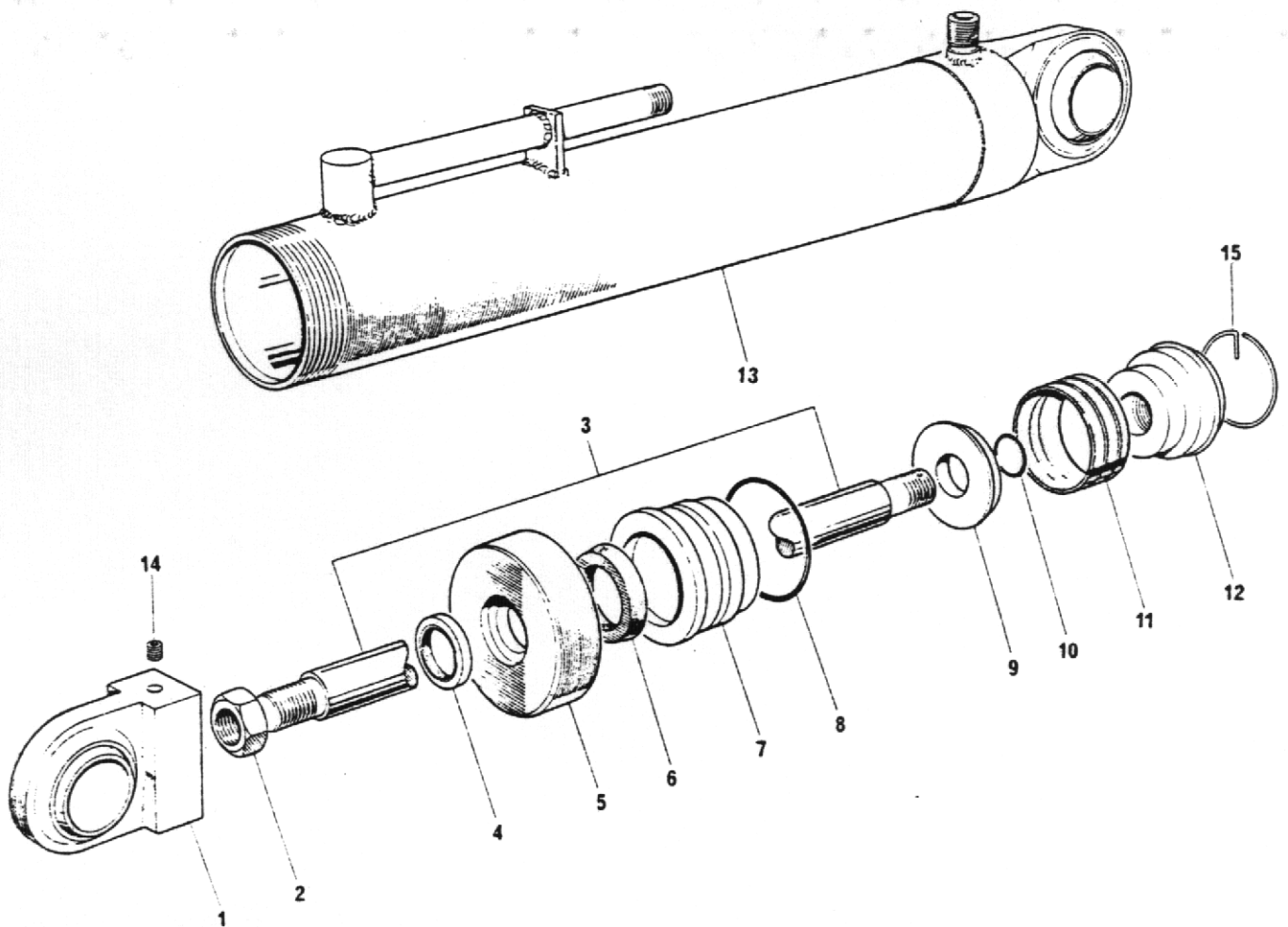
HYDRAULIC RAM (FORWARD TIP & TURNTABLE)

Item No.	Part No.	Description	Qty.
	4-35-295	Ram Complete (2 per M/c except High Discharge M/c's machine)	
1	K1/11	Piston Rod Fitting	1
2	K1/19	Locknut	1
3	TD3890	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	TD 6531	Cylinder, Bosses & End Cap	1
14	K1/21	Grub Screw	1
15	K1/22	Spring Ring	1



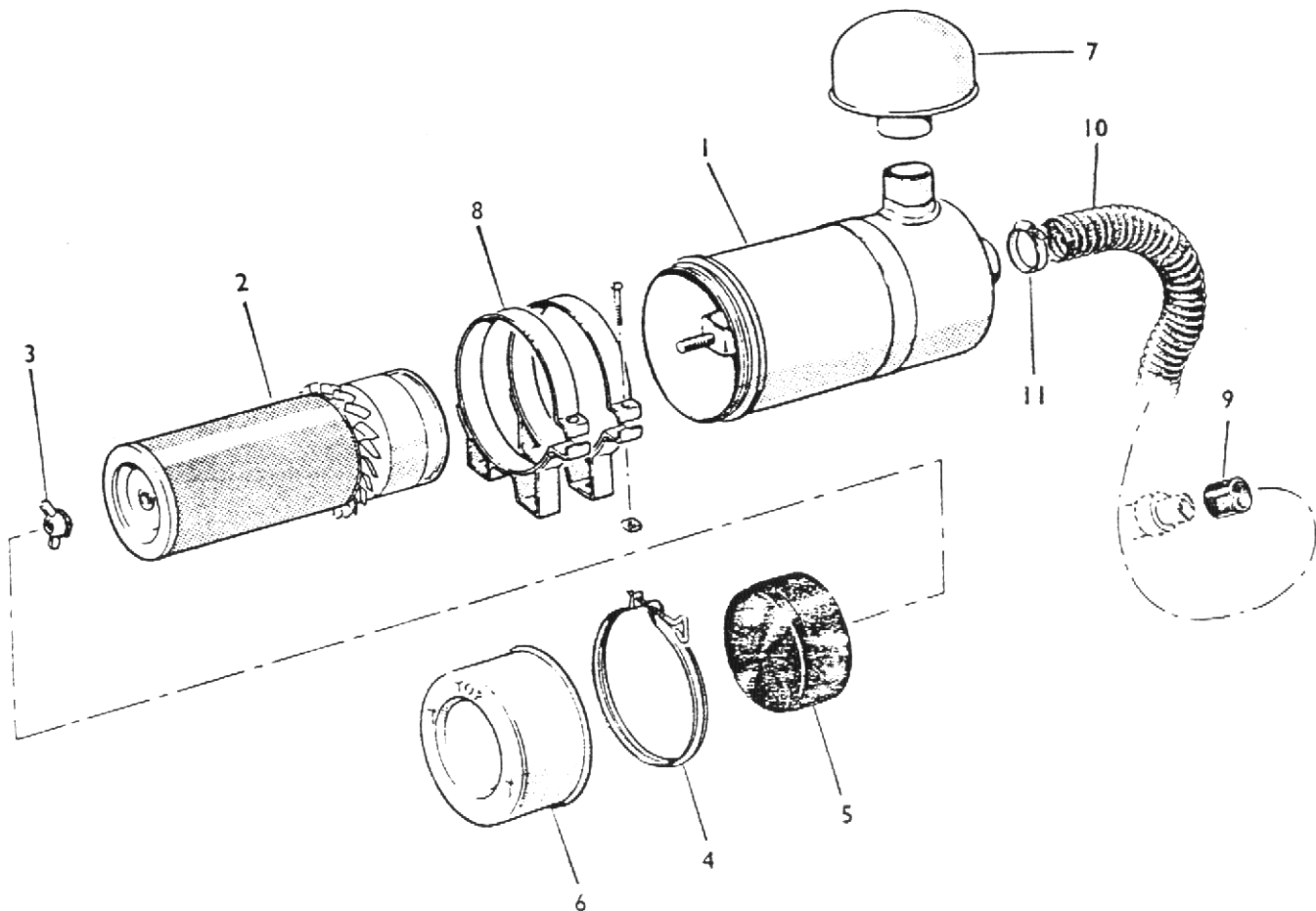
HYDRAULIC RAM (HIGH DISCHARGE)

Item No.	Part No.	Description	Qty.
	BE-3	Ram Assembly Complete (Two per high discharge m/c's only)	
1	BE3-21	Ram Body	1
2	BE3-20	Grease Nipple	2
3	BE3-22	Piston Rod Assembly	1
4	BE3-15	Wiper	1
5	BE3-6	Tube Cap	1
6	BE3-16	Sleeve Seal	1
7	BE3-7	Sleeve	1
8	BE3-13	Sleeve 'O' Ring	1
9	BE3-10	Backing Washer	2
10	BE3-14	Piston Seal	2
11	BE3-12	Piston 'O' Ring	1
12	BE3-9	Piston Head	1
13	BE3-11	Lock Nut	1



STEERING RAM

Item No.	Part No.	Description	Qty.
	TD3894	Ram Complete (1 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



AIR CLEANER

Item No.	Part No.	Description	Qty.
1	10532A02	Air Cleaner Assembly	1
2	10532A0101	Element	1
3	V600487	Nut & Gasket Kit	1
4	220229002	Clamp Body	1
5	220229003	Skirt, baffle	1
6	220229004	Cup	1
7	10534A02	Stack Cap	1
8	10533A02	Bracket	2
9	10320A06	Sleeve Adapter	1
10	166S02	Hose Flexible 2" Bore x 20" Long	1
11	97S12	Hose Clip	2

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	2260.60
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".

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

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

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

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