

# **WINGET**

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

### **FOUR A 30 DIESEL DUMPER (CAPACITY 30 CWT)**

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## **INTRODUCTION**

This Parts & Operators Manual is a re-print of the manual last published in 1980 and contains some amended part numbers.

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 A 30 Four Wheel Drive Dumpers.

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

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**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

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*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

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## 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

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## 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

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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 Dumper 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

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

### DRIVE AXLES AND TRANSFER CASE

Remove filler/level plugs from drive axles and filler/level plug from transfer case and check that oil is up to bottom of holes. Top up if necessary, through filler/level plugs.

### FUEL TANK

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

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

### HYDRAULIC TANK

Fill the hydraulic tank, Before removing the cap, clean the surrounding area to prevent the possible entry of foreign matter.

### BRAKE SYSTEM

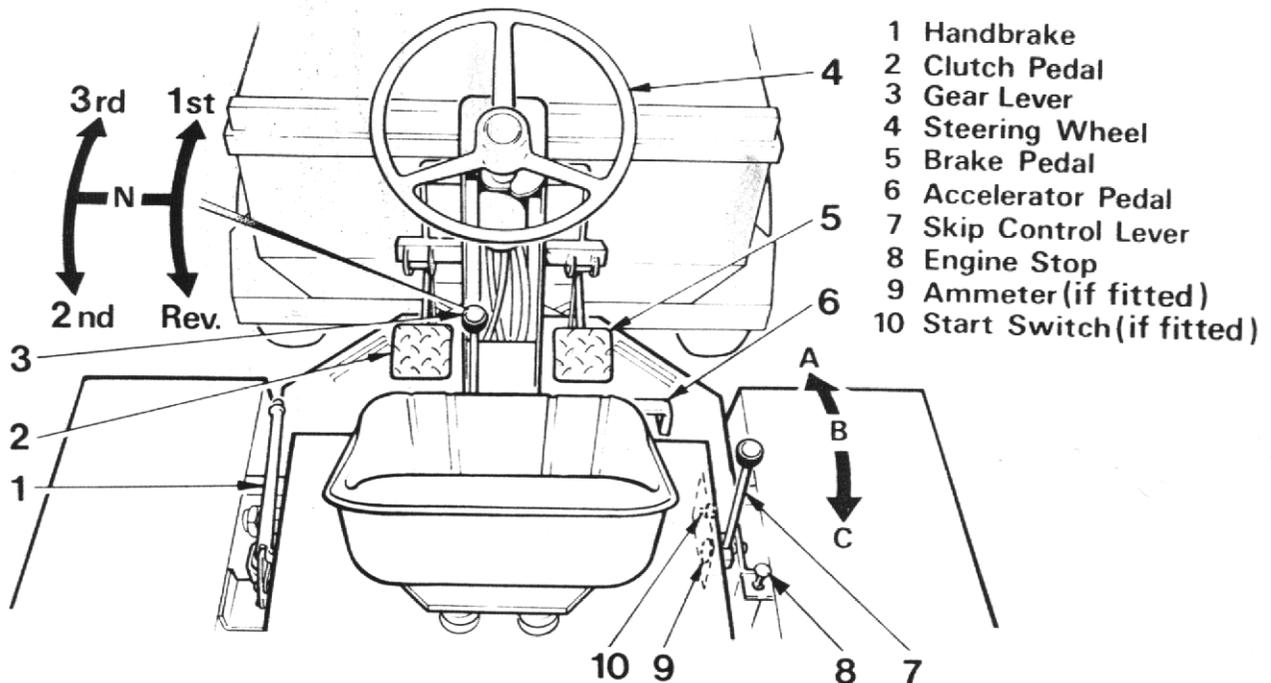
Ensure that the fittings are tight on both hoses supplying the brake master cylinder from the main hydraulic tank.

### 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 RECOMMENDED LUBRICANT CHART & GENERAL MAINTENANCE SECTION.



## SPECIFICATION FOR MACHINES WITH FORWARD TIP SKIP

|   |                                   |        |             |
|---|-----------------------------------|--------|-------------|
| A | Overall Height                    | 1925mm | ( 6' 3¾")   |
| B | Skip Loading Height               | 1215mm | ( 3' 11¾")  |
| C | Wheelbase                         | 1790mm | ( 5' 10½")  |
| D | Overall Length                    | 3410mm | (11' 2¾")   |
| E | Ground Clearance                  | 280mm  | ( 0' 11" )  |
| F | Overall Width                     | 1680mm | ( 5' 6¾")   |
| G | Skip Ground Clearance when Tipped | 560mm  | ( 1' 10" )  |
| H | Overall Height Tipped             | 2140mm | ( 7' 0½")   |
| J | Discharge Forward of Tyre         | 463mm  | ( 1' 6¾")   |
| K | Overhang                          | 785mm  | ( 2' 7" )   |
| L | Wheeltrack                        | 1390mm | ( 4' 6¾")   |
| M | Prow Width                        | 1310mm | ( 4'3,5/8") |

|                 |                     |             |                        |                         |             |
|-----------------|---------------------|-------------|------------------------|-------------------------|-------------|
| Skip            |                     |             | Turning Circle         | 7450 mm                 | (24'5½")    |
| Water Level     | 0.76 m <sup>3</sup> | (27 cu.ft.) | Unladen Weight         | 1880 Kgs.               | (4144 lbs.) |
| Sturck Level    | 0.99 m <sup>3</sup> | (35 cu.ft.) | Hydraulic Relief Valve | 123 Kg/cm. <sup>2</sup> | (1750 psi)  |
| Heaped Level    | 1.22 m <sup>3</sup> | (43 cu.ft.) | Rear Axle Articulation | 300mm                   | (0.11¾")    |
| Maximum Payload | 1525 Kgs.           | (3360 lbs.) |                        |                         |             |

|                     |           |             |                 |            |             |
|---------------------|-----------|-------------|-----------------|------------|-------------|
| Oil Capacities      |           |             | Tank Capacities |            |             |
| Transfer Box        | .85 Ltrs. | (1½ pts.)   | Hydraulic       | 45.5 Ltrs. | (10 galls.) |
| Gearbox             | .85 Ltrs. | (1½ Pts.)   | Diesel          | 45.5 Ltrs. | (10 galls.) |
| Drive Axle (Newage) | 4.6 Ltrs. | (8 pts.)    | Tyre Pressure   | 35 p.s.i.  |             |
| Engine Lister       | 7.5 Ltrs. | (13.2 pts.) |                 |            |             |
| Engine Petter       | 6.8 Ltrs. | (12 pts.)   |                 |            |             |

Road Speeds

Petter

|          |        |        |
|----------|--------|--------|
|          | m.p.h. | k.p.h. |
| 1st .... | 2.4    | ( 3.9) |
| 2nd .... | 5.5    | ( 8.9) |
| 3rd .... | 10.1   | (16.3) |
| Rev .... | 2.6    | ( 4.2) |

Lister at

|          |        |        |
|----------|--------|--------|
|          | m.p.h. | k.p.h. |
| 1st .... | 2.7    | ( 4.3) |
| 2nd .... | 6.2    | (10.0) |
| 3rd .... | 11.5   | (18.5) |
| Rev .... | 3.0    | ( 4.8) |

Engine Specification

Petter PH2 S & E Specification Schedule 1079  
(Hand Start)

Petter PH2 S & E Specification Schedule 1083  
(Elect. Start)

Lister ST2 S & E Specification Schedule 1081  
(Hand Start)

Lister ST2 S & E Specification Schedule 1082  
(Elect. Start)

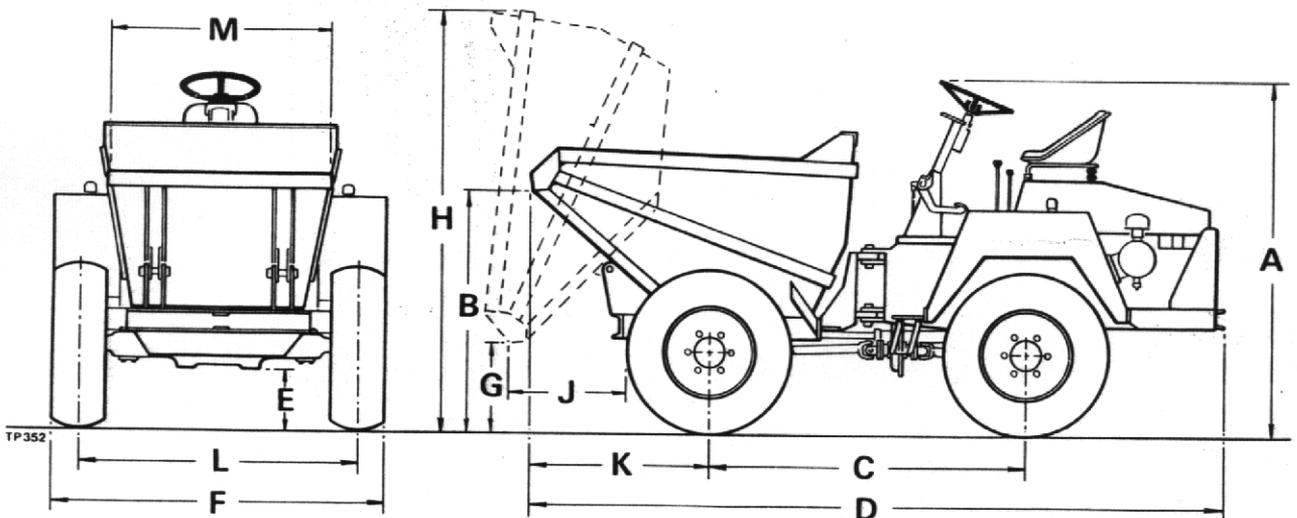


FIG. 2

## RECOMMENDED LUBRICATING OILS

| COMPANY   | ENGINE  | NEWAGE DRIVE AXLE                            | HAMWORTHY DRIVE AXLE  | TRANSFER BOX   | GEARBOX                                    | WHEEL BEARINGS & OTHER GREASE POINTS                       | HYDRAULIC SYSTEM   |
|---|---|--|---|--|--|--|--|
| (U.K.)<br>ESSO<br>SUMMER<br>WINTER<br>ABOVE 32°C<br>0°C - 32°C<br>(Overseas) BELOW 0°C                      | ESSOLUBE HDX 20W<br>ESSOLUBE HDX 30<br>ESSOLUBE HDX 20W<br>ESSOLUBE HDX 10W                   | TORQUE FLUID 62                              | IL 2082<br><br>IL 2082<br>IL 2082   | GEAR OIL GP 85W/140<br><br>GEAR OIL GP 85W/140<br>GEAR OIL GP 85W/140<br>GEAR OIL GP 80W   | ESSOLUBE HDX 30<br><br>ESSOLUBE HDX 30     | BEACON 2<br><br>BEACON 2                                   | NUTO H32<br><br>NUTO H68<br>NUTO H32<br>NUTO H22           |
| (U.K.)<br>CASTROL<br>SUMMER<br>WINTER<br>ABOVE 32°C<br>0°C - 32°C<br>(Overseas) BELOW 0°C                   | DEUSOL CRI 20<br><br>DEUSOL CRI 30<br>DEUSOL CRI 20<br>DEUSOL CRI 10                          | AGRICASTROL AS<br><br>AGRICASTROL AS SPECIAL | AGRICASTROL AS<br><br>AGRICASTROL AS<br>AGRICASTROL MD  | DEUSOL EP 90<br><br>DEUSOL GEAR EP 140<br>DEUSOL GEAR EP 90<br>DEUSOL GEAR EP 80   | DEUSOL CRI 30<br><br>DEUSOL CRI 30         | CASTROL<br>SPHEEROL APT 2<br><br>CASTROL<br>SPHEEROL APT 2 | CASTROL<br>HYPSPIN AWS 32                                  |
| (U.K.)<br>SHELL<br>SUMMER<br>WINTER<br>ABOVE 32°C<br>0°C - 32°C<br>(Overseas) BELOW 0°C                     | ROTELLA SX OIL 20/20W<br><br>ROTELLA SX OIL 30<br>ROTELLA SX OIL 20/20W<br>ROTELLA SX OIL 10W |  | DONAX T12 (INITIAL FILL)<br>SPIRAX EP 80 (Top up only)<br><br>DONAX T12 (INITIAL FILL)<br>SPIRAX EP 80 (Top up only)<br>S.7224 (INITIAL FILL)<br>SPIRAX HD 75 (Top up only) | SPIRAX 90 EP<br><br>SPIRAX 140 EP<br>SPIRAX 90 EP<br>SPIRAX 80 EP  | ROTELLA SX OIL 30<br><br>ROTELLA SX OIL 30 | RETINAX A<br><br>RETINAX A                                 | TELLUS OIL 37  |
| (U.K.)<br>BP<br>SUMMER<br>WINTER<br>ABOVE 32°C<br>0°C - 32°C<br>(Overseas) BELOW 0°C                        | VANELLUS M20W<br><br>VANELLUS M30<br>VANELLUS M20W<br>VANELLUS M10W                           |  | B.P. HYDRAULIC TF-8<br><br>B.P. HYDRAULIC TF-8<br>B.P. TRACTRAN (Top up only)   | GEAR OIL SAE 90 EP<br><br>GEAR OIL SAE 140 EP<br>GEAR OIL SAE 90 EP<br>GEAR OIL SAE 80 EP  | VANELLUS M30<br><br>VANELLUS M30           | ENERGREASE L2<br><br>ENERGREASE L2                         | ENERGOL HLP 65   |
| (U.K.)<br>MOBIL<br>SUMMER<br>WINTER<br>ABOVE 32°C<br>0°C - 32°C<br>(Overseas) BELOW 0°C<br>ALL TEMPERATURES | DELVAC 1220<br><br>DELVAC 1230<br><br>DELVAC 1220<br><br>DELVAC 1210<br>DELVAC SPECIAL 10W-30 | MOBILFLUID 422                               | MOBIL FLUID 422<br><br>MOBIL FLUID 422<br><br>MOBIL FLUID 427   | MOBILUBE HD 90<br>MOBILUBE GX 90<br>MOBILUBE HD 140<br>MOBILUBE GX 140<br>MOBILUBE HD 90<br>MOBILUBE GX 90<br>MOBILUBE HD 80<br>MOBILUBE GX 80 | DELVAC 1230<br><br>DELVAC 1230             | MOBILGREASE MP<br><br>MOBILGREASE<br>SUPER                 | DTE 24   |
| (U.K.)<br>WALKERS<br>CENTURY<br>SUMMER<br>WINTER<br>ABOVE 32°C<br>0°C - 32°C<br>(Overseas) BELOW 0°C        | CENTURY ROIL 20W 20<br><br>CENTURY ROIL 30<br>CENTURY ROIL 20W 20<br>CENTURY ROIL 10W         |  | CENTLUBE F.76 COMPOUND<br><br>CENTLUBE F.76 COMPOUND<br>CENTLUBE E.76 COMPOUND  | CENTURY EP 90<br><br>CENTURY EP 140<br>CENTURY EP 90<br>CENTURY EP 80  | CENTURY ROIL 30<br><br>CENTURY ROIL 30     | REGULUS A2<br><br>REGULUS A2                               | CENTURY PWL A<br>HYD. OIL<br><br>CENTURY PWL A<br>HYD. OIL |

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

## OPERATING INSTRUCTIONS

### ELECTRIC STARTING MACHINES

#### STARTING

1. Check that the Engine Stop Control knob is fully down.
2. Insert the ignition key in the isolating switch and turn clockwise.
3. Turn key further clockwise against spring load. DO NOT operate starter motor for more than 20 seconds at a time.
4. 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.

##### (PETTER)

1. Lift red-painted overload stop situated on the fuel pump rack above and to the rear of the priming levers and move fuel pump rack into fully open position. Operate priming levers six times. NOTE: This is unnecessary if engine is already warm.
2. Lift decompression lever(s) (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 levers and engine should fire.
3. If engine does not fire, lift decompression levers and slowly crank engine a few times before attempting to start again. Where ambient temperature is - 15°C (5°F) or below, a cold starting aid should be fitted.
4. Set overload lever horizontal when engine starts. (LISTER)

#### STOPPING

Pull out stop control knob and hold fully out 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 CHANGING - (FOUR A 50 & FOUR A 60)

The Dumper is fitted with a four speed gearbox with a Forward and Reverse Selector. Ensure the machine is brought to a standstill before changing direction of drive.

#### GEAR CHANGING - (FOUR A 30, FOUR A 30E, FOUR A 40, FOUR A 40E, FOUR A 50E & FOUR A 80)

The Dumper is fitted with three Forward and one Reverse gear. When changing gear, the clutch pedal is used in the normal way.

#### SKIP CONTROL LEVER (See Fig.1)

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 the 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.

#### ROTATING SKIP (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.

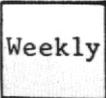
## GENERAL MAINTENANCE

### 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. DAILY check tyre pressures and condition of tyres (refer to specification page).
4. WEEKLY check oil level in gearbox and fill to full mark on dipstick if necessary.
5. WEEKLY remove filler/level plugs from drive axles and transfer case. Oil level should be to bottom of holes. Top up, if necessary through filler/level plugs.
6. 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.
7. WEEKLY check that fittings are tight on feed pipe from hydraulic tank to master cylinder. Check for leaks.
8. WEEKLY apply grease to all grease nipples.
9. WEEKLY check all wheel nuts and tighten if necessary.
10. WEEKLY check all nuts and bolts and tighten if necessary.
11. EVERY SIX MONTHS repack steering column with water repellent grease.

**IMPORTANT: CHANGE HYDRAULIC OIL FILTER ELEMENT AFTER FIRST 100 HOURS AND THEREAFTER EVERY 300 HOURS.**

Lubrication  
(See Fig.6)

| Period   | Key | Description                    | Lubrication            | No. of Points |
|--|-----|--------------------------------|------------------------|---------------|
|  | 1   | Engine                         | Engine Oil             | 1             |
|  | 2   | Fuel Tank                      | Diesel Fuel            | 1             |
|  | 3   | Gearbox                        | Gearbox Oil            | 1             |
|  | 4   | Drive Axles                    | Axle Oil               | 2             |
|  | 5   | Hydraulic Tank                 | Hydraulic Oil          | 1             |
|  | 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  | Skip 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  | Rear Axle Pivot                | Grease Gun             | 1             |
|  | 16  | Steering Column                | Water Repellent Grease | 1             |

- NOTES: 1. Rear Axle articulation points consist of bearings that require no lubrication. (M/c's up to and including Four A 30 - 1051)
2. For full details of the lubrication and maintenance of the engine, refer to Manufacturers Manual.

# LUBRICATION POINTS

REFER TO KEY AND RECOMMENDED LUBRICANTS

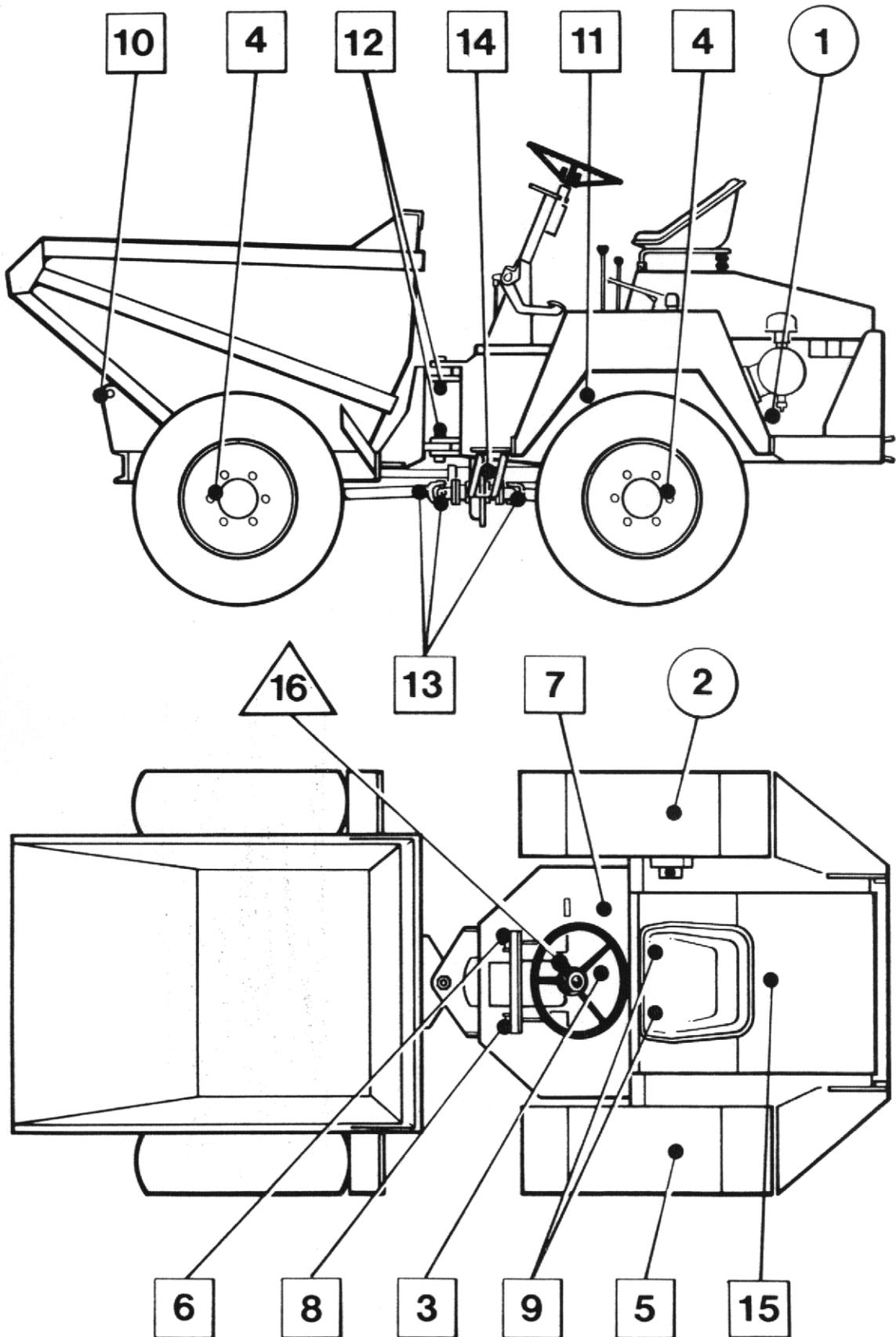


FIG. 6

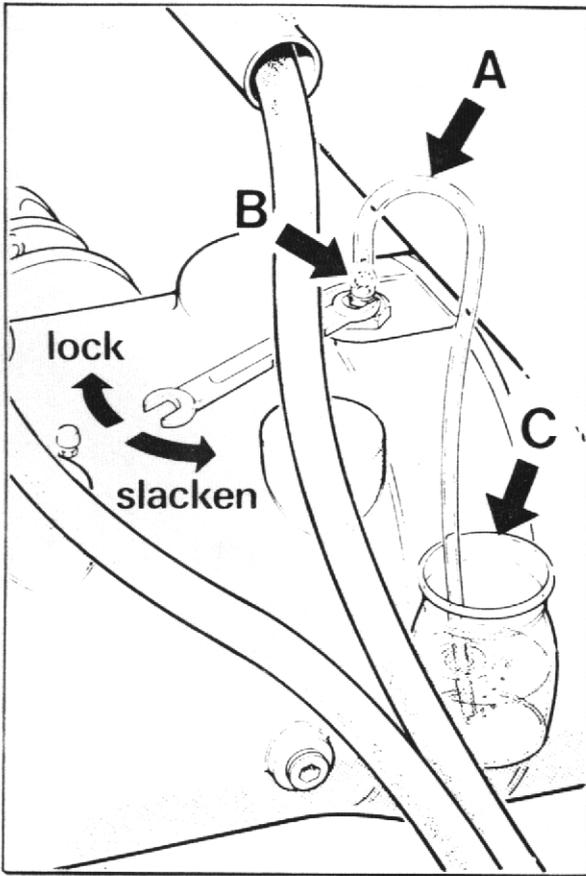


FIG. 7

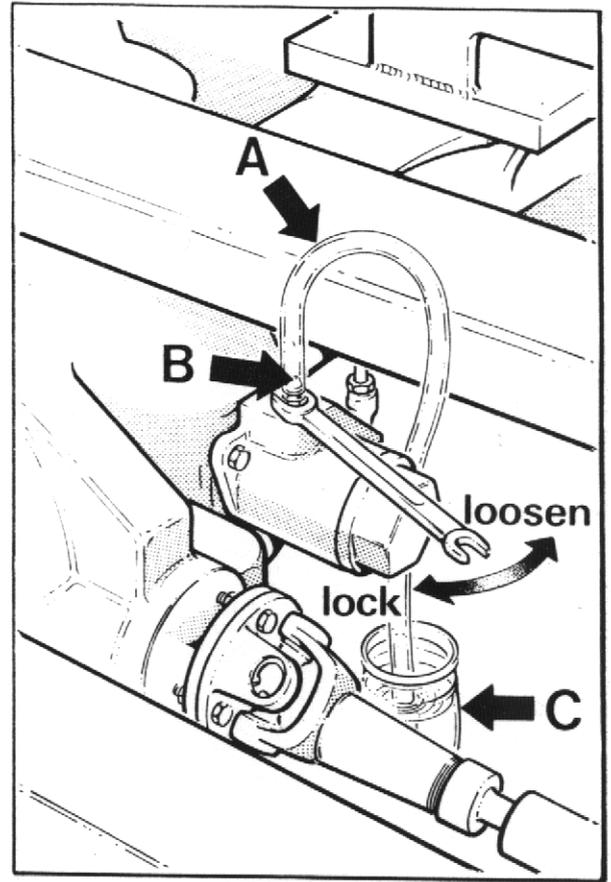


FIG. 8

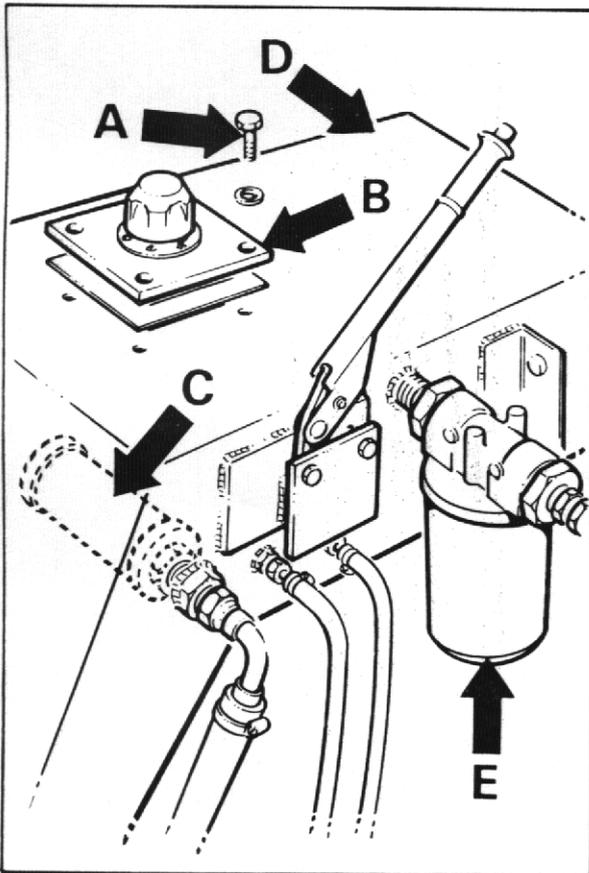


FIG. 9

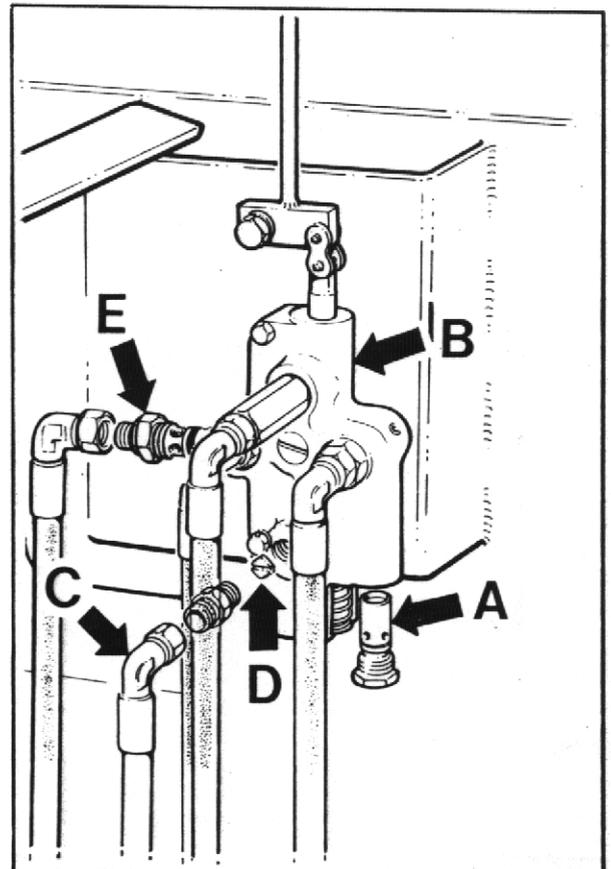


FIG. 10

TP 360

## 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 oil in main hydraulic tank.
3. Attach bleeder tube (A) (See figs. 7 & 8) 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 all the bleed screws.
6. Apply normal working load on brake pedal for two or three minutes and examine the entire system for leaks.

NOTES:- 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.

THE NEWAGE AXLE HAS SELF ADJUSTING BRAKES WHICH AUTOMATICALLY MEANS THAT THE DUAL LIFE LINE SAFETY SYSTEM IS ALWAYS READY TO RESPOND IN THE EVENT OF PROBLEMS. IN THE CASE OF VEHICLES FITTED WITH HAMWORTHY AXLES (WHICH DO NOT INCORPORATE AUTOMATIC BRAKE ADJUSTMENT) IT IS ESSENTIAL THAT BRAKE ADJUSTMENT IS WELL MAINTAINED IN ORDER THAT THE DUAL LINE SYSTEM SHOULD WORK CORRECTLY IN THE EVENT OF POSSIBLE FAILURE TO ONE CIRCUIT.

## HYDRAULIC SYSTEM

The single hydraulic pump provides power for both the skip operation and steering. The main hydraulic valve splits the pump output into two circuits with controlled rate priority flow to steering circuit. If the hydraulic system fails to operate completely or does so extremely slowly carry out the following procedure.

1. Check that hydraulic tank is full of oil.
2. Check that hydraulic suction filter is not blocked. (See fig.9).
  - 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.

Check that the return line filter element has been regularly changed in accordance with the maintenance schedule. If not, change filter element (E).

3. Check that the hydraulic pressures are correct.

Tip circuit.

  - 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".

## STEERING CIRCUIT

- a) Fit a 2000 lb/sq.in. gauge into the hydraulic system at the base of the steering ram.
- b) Turn steering wheel with machine on "full lock" and check that the reading on the gauge is 1750 lb/sq.in.

NOTE: - If correct pressure is not attained-

Tip circuit.

4. Remove relief valve cartridge (A) (hexagon head) from the bottom of the control valve (B) (See fig.10) and replace with a new one.
5. Remove hose adaptor (C) from control valve (See fig.10), 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.

STEERING CIRCUIT

6. Remove relief valve cartridge (A) (hexagon head) from the bottom of the control valve (B) (See fig.10) and replace with a new one.
7. Replace flow control valve (E) (See fig.10). (FOUR A50/60/ 80 only)

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.

# SPARE PARTS SECTION

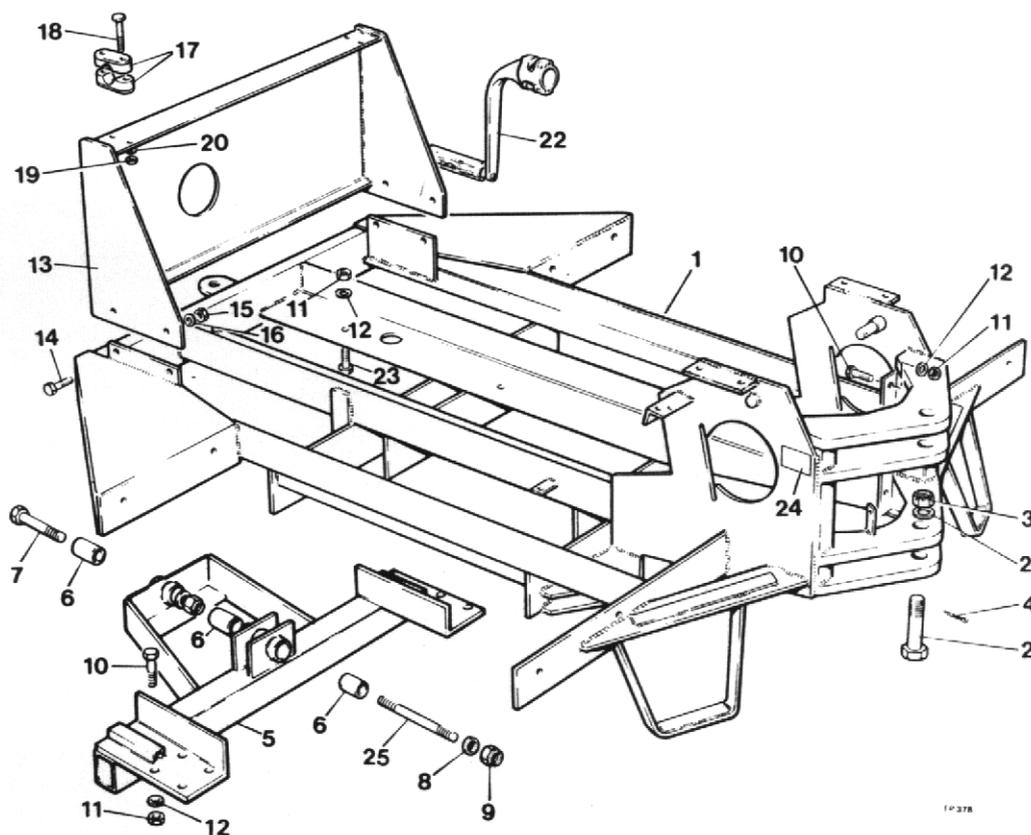
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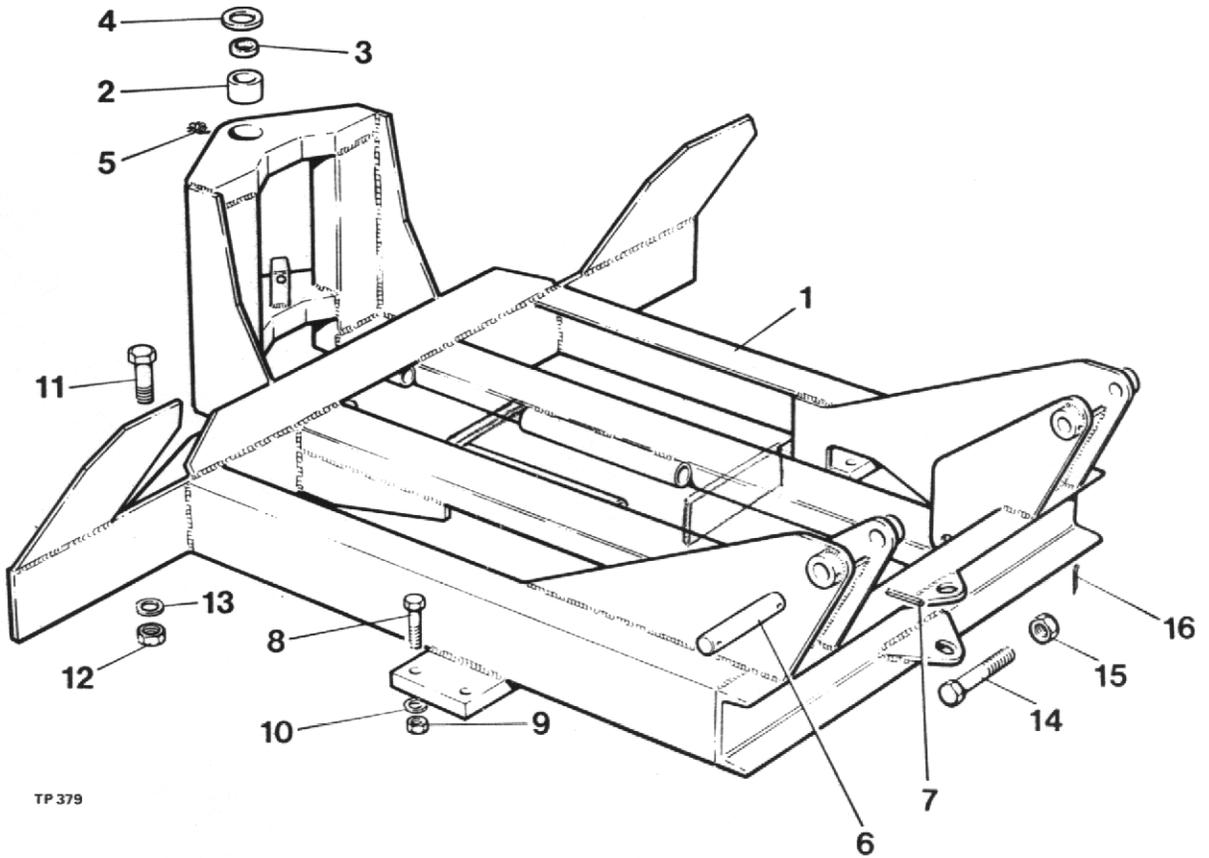
## REAR CHASSIS AND ARTICULATING FRAME

(Applicable to machines up to and including m/c No. Four A 30 - 1051)



| Item No. | Part No.  | Description                          | Qty. |
|----------|-----------|--------------------------------------|------|
| 1        | 40101.A01 | Rear Chassis .....                   | 1    |
| 2        | 10375.A01 | Bolt 1½" UNF x 110mm Long .....      | 2    |
| 3        | 4-60-171  | Nut 1½" UNF Castle .....             | 2    |
| 4        | 44S05L    | Split Pin 3/16" Dia. x 3" Long ..... | 2    |
| 5        | 30149.A03 | Articulating Frame .....             | 1    |
| 6        | 10588.A01 | Pivot Bush .....                     | 3    |
| 7        | 8S.8S     | Bolt Hex. Hd. M24 x 130 Long .....   | 1    |
| 8        | 12S.10    | Washer M24 .....                     | 3    |
| 9        | 59S.07    | Locknut M24 .....                    | 3    |
| 10       | 8S.5D     | Bolt Hex. Hd. M12 x 40 Long .....    | 12   |
| 11       | 61S05     | Nut M12 .....                        | 16   |
| 12       | 12S06     | Washer M12 .....                     | 16   |
| 13       | 40105.A01 | Rear Frame ..... (Petter) .....      | 1    |
|          | 40095.A01 | Rear Frame ..... (Lister) .....      | 1    |
| 14       | 8S.4A     | Bolt Hex. Hd. M10 x 25 Long .....    | 4    |
| 15       | 61S.4     | Nut M10 .....                        | 4    |
| 16       | 12S.5     | Washer M10 .....                     | 4    |
| 17       | 10364.A01 | Pivot Block .....                    | 2    |
| 18       | 8S.2F     | Bolt Hex. Hd. M6 x 50 Long .....     | 4    |
| 19       | 61S02     | Nut M6 .....                         | 4    |
| 20       | 12S02     | Washer M6 .....                      | 4    |
| 21       | 4-60-240  | Washer .....                         | 2    |
| 22       | 100A      | Starting Handle .....                | 1    |
| 23       | 8S05G     | Bolt Hex. Hd. M12 x 55 Long .....    | 4    |
| 24       | DM198     | Label "Steering Lock Warning" .....  | 1    |
| 25       | 10595.A01 | Stud M24 x 245 Long .....            | 1    |

# FRONT CHASSIS

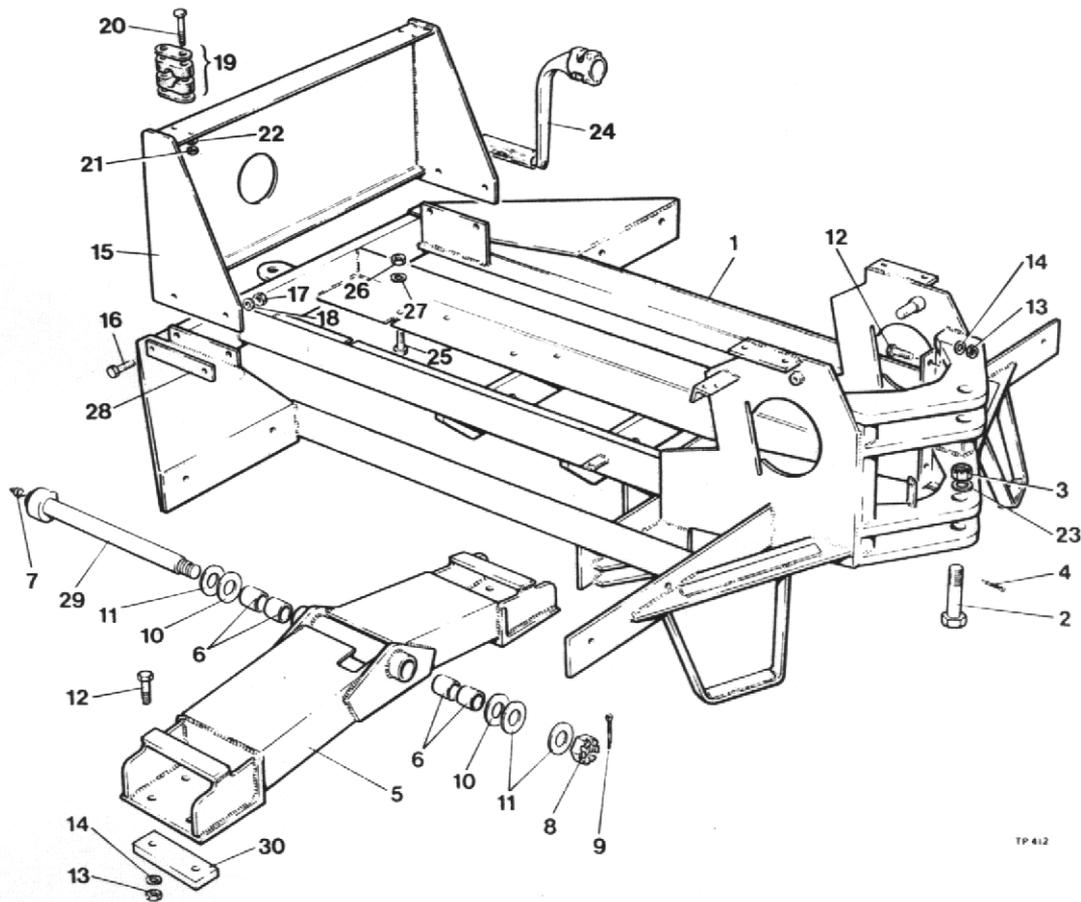


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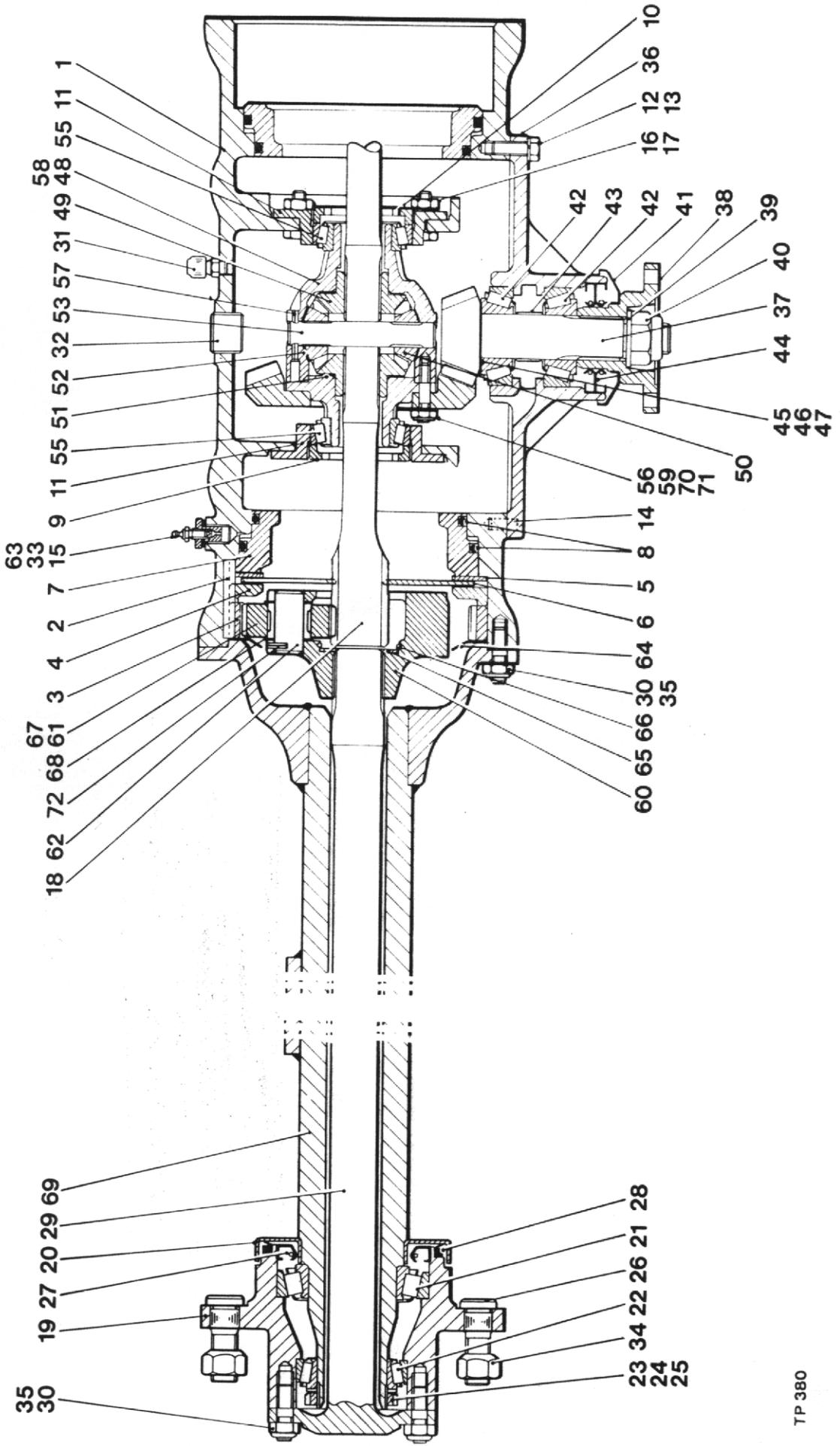
| Item No. | Part No.  | Description                                   | Qty. |
|----------|-----------|---|------|
| 1        | 40100.A02 | Front Chassis .....                           | 1    |
| 401A0A11 | 40100.A11 | Front Chassis - (Rotating Skip) .....         | 1    |
| 401B0A12 | 40100.A12 | Front Chassis - (High Discharge Skip) .....   | 1    |
| 2        | 4-60-214  | Pivot Bush .....                              | 2    |
| 3        | ESE 199   | Pivot Spacer .....                            | 4    |
| 4        | 4-60-240  | Washer .....                                  | 2    |
| 5        | T90       | Grease Nipple .....                           | 2    |
| 6        | 10522.A01 | Skip Pivot .....                              | 2    |
| 7        | 54S.8S    | Tension Pin .....                             | 2    |
| 8        | 6S.5F     | Bolt 1/2" UNF X 2" Long .....                 | 8    |
| 9        | 132S.5    | Nut 1/2" UNF.....                             | 8    |
| 10       | 10S.4     | Washer 1/2" dia.....                          | 8    |
| 11       | 10599.A01 | Steering Ram Bolt 1 1/4" UNF 4.3/8" long..... | 2    |
| 12       | 10600.A01 | Steering Ram Nut 1 1/4" UNF .....             | 2    |
| 13       | 67S.13    | Shakeproof Washer 1 1/4" dia.....             | 2    |
| 14       | 10352.A01 | Skip Ram Pivot Bolt .....                     | 2    |
| 15       | 10600.A01 | Skip Ram Pivot Nut .....                      | 2    |
| 16       | 44S.5H    | Split Pin 3/16" .....                         | 2    |

## REAR CHASSIS & ARTICULATING FRAME

(Applicable to machines from and including m/c No. Four A 30 - 1052)

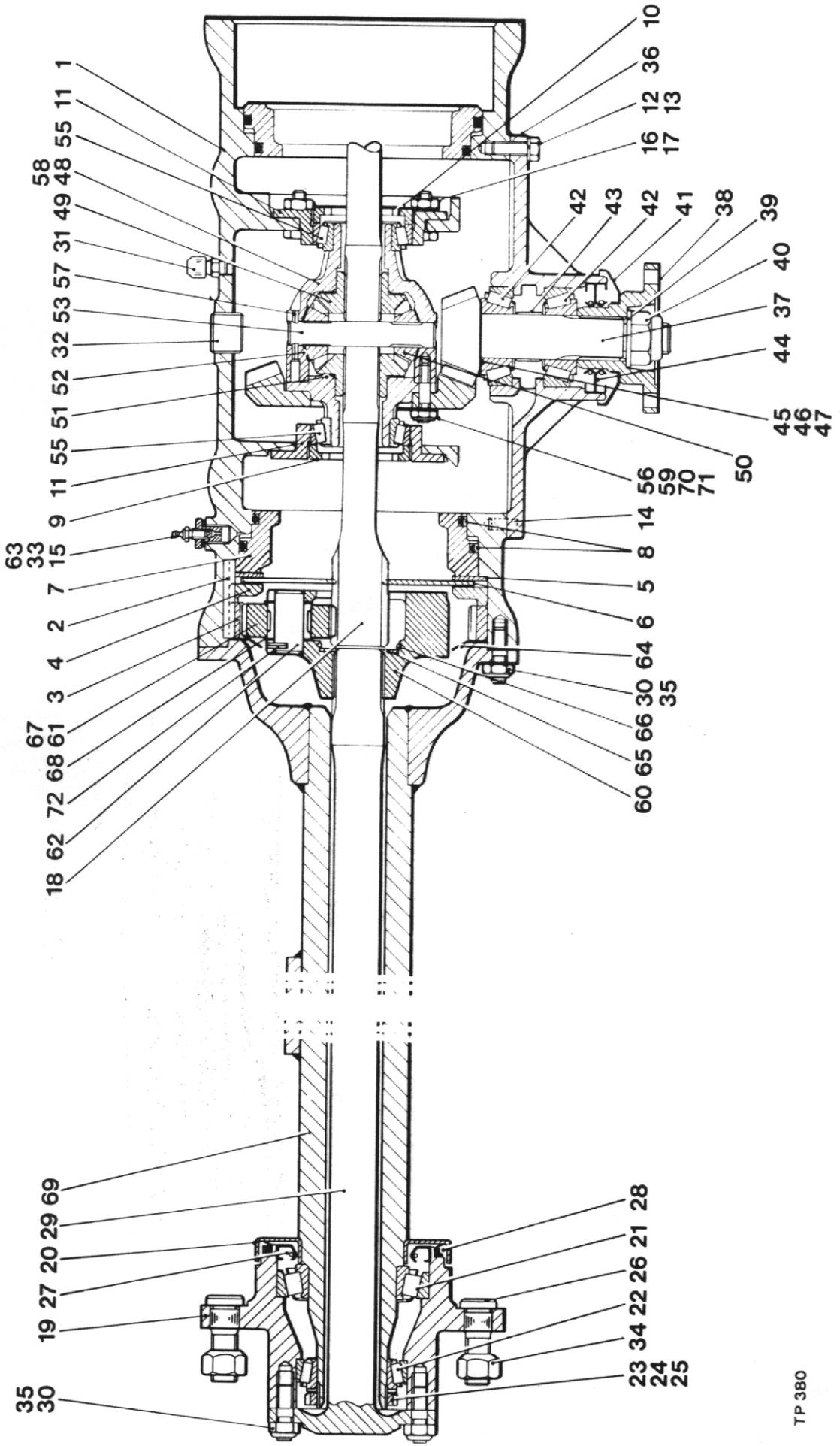


| Item No. | Part No.  | Description                                | Qty. |
|----------|-----------|--|------|
| 1        | 40101.A03 | Rear Chassis .....                         | 1    |
| 2        | 10375.A01 | Bolt 1½" UNF x 110mm Long .....            | 2    |
| 3        | 4-60-171  | Nut 1½" UNF Castle .....                   | 2    |
| 4        | 44S.5L    | Split Pin 3/16" Dia. x 3" Long .....       | 2    |
| 5        | 30188.A02 | Axle Pivot Beam .....                      | 1    |
| 6        | 4-35-29B  | Bush .....                                 | 4    |
| 7        | 131S.8    | Grease Nipple .....                        | 1    |
| 8        | 4-60-171  | Castle Nut .....                           | 1    |
| 9        | 44S.5L    | Split Pin .....                            | 1    |
| 10       | 4-35-29C  | Thrust Washer .....                        | 2    |
| 11       | ASE 178   | Washer .....                               | 3    |
| 12       | 6S.5C     | Bolt Hex. Hd. 1/2" UNF X 1 1/2" Long ..... | 8    |
| 13       | 132S.5    | Nut 1/2" UNF .....                         | 8    |
| 14       | 10S.4     | Washer 1/2" dia .....                      | 8    |
| 15       | 40105.A01 | Rear Frame (Petter) .....                  | 1    |
|          | 40095.A01 | Rear Frame (Lister) .....                  | 1    |
| 16       | 11S.4C    | Setscrew Hex. Hd. M10 x 25 Long .....      | 4    |
| 17       | 61S.4     | Nut M10 .....                              | 4    |
| 18       | 12S.5     | Washer M10 .....                           | 4    |
| 19       | 10364.A01 | Pivot Block .....                          | 2    |
| 20       | 8S.2F     | Bolt Hex. Hd. M6 x 50 Long .....           | 4    |
| 21       | 61S.2     | Nut M6 .....                               | 4    |
| 22       | 12S.2     | Washer M6 .....                            | 4    |
| 23       | 4-60-240  | Washer .....                               | 2    |
| 24       | 100A      | Starting Handle .....                      | 1    |
| 25       | 6S. 5D    | Bolt Hex. Hd. ½" UNF x 1,5/8" Long .....   | 4    |
| 26       | 132S.5    | Locknut ½" UNF .....                       | 4    |
| 27       | 10S.4     | Washer ½" Dia. .....                       | 4    |
| 28       | 10623.A01 | Packer .....                               | 2    |
| 29       | 20161.A01 | Pivot Pin .....                            | 1    |
| 30       | 10632.A02 | Packing Piece (Salisbury Axle) .....       | 2    |



## DRIVE AXLE

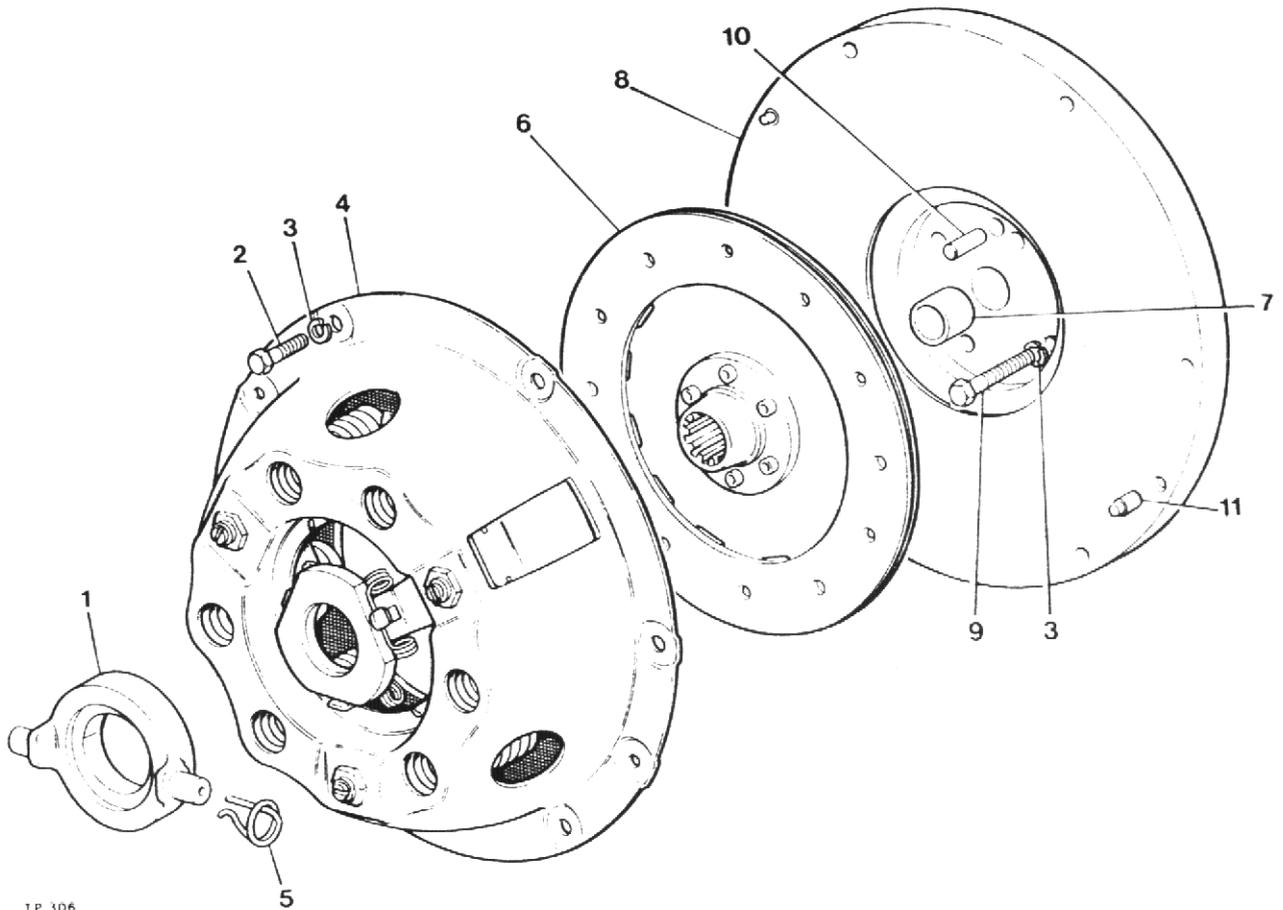
| Item No. | Part. No.   | Description                               | Qty. |
|----------|-------------|---|------|
|          | 30156.A01   | Axle Complete .....                       | 1    |
| 1        | 30156.A0101 | Main Axle Casing .....                    | 1    |
| 2        | 30156.A0102 | Dowel Pin .....                           | 4    |
| 3        | 30156.A0103 | Annulus .....                             | 2    |
| 4        | 30156.A0104 | Brake Spacer Plate .....                  | 2    |
| 5        | 30156.A0105 | Brake Fixed Plate .....                   | 2    |
| 6        | 30156.A0106 | Oil Immersed Brake Disc .....             | 2    |
| 7        | 30156.A0107 | Brake Piston .....                        | 2    |
| 8        | 30156.A0108 | Piston 'O' Ring Set .....                 | 2    |
| 9        | 30156.A0109 | Bearing Adj. Nut .....                    | 2    |
| 10       | 30156.A0110 | Bearing Adj. Nut Lock Plate .....         | 2    |
| 11       | 30156.A0111 | Bearing Housing .....                     | 2    |
| 12       | 11S.3C      | Hex. Hd. Screw .....                      | 12   |
| 13       | 17S.4       | Spring Washer .....                       | 12   |
| 14       | 30156.A0112 | Dowel Pin .....                           | 2    |
| 15       | 30156.A0113 | Brake Pipe Adaptor .....                  | 4    |
| 16       | 11S.4D      | Hex. Hd. Screw .....                      | 6    |
| 17       | 59S.03      | Nyloc Nut .....                           | 6    |
| 18       | 30156.A0114 | Sun Gear .....                            | 2    |
| 19       | 30156.A0115 | Hub .....                                 | 2    |
| 20       | 30156.A0116 | Oil Seal Housing .....                    | 2    |
| 21       | 30082.A0221 | Hub Inner Bearing .....                   | 2    |
| 22       | 30156.A0118 | Hub Outer Bearing .....                   | 2    |
| 23       | 30156.A0119 | Hub Bearing Spacer .....                  | 2    |
| 24       | 30156.A0120 | Bearing Lock Nut .....                    | 2    |
| 25       | 30156.A0121 | Tab Washer .....                          | 2    |
| 26       | 30156.A0122 | Wheel Stud .....                          | 10   |
| 27       | 30156.A0123 | Hub Oil Seal .....                        | 2    |
| 28       | 30156.A0124 | Hub 'V' Ring Seal .....                   | 2    |
| 29       | 30156.A0125 | Axle Shaft .....                          | 2    |
| 30       | 30156.A0126 | Stud .....                                | 44   |
| 31       | 30082.A0214 | Relief Valve .....                        | 1    |
| 32       | 30082.A0212 | Hex. Socket Plug .....                    | 2    |
| 33       | 30082.A0215 | Brake Bleed Valve .....                   | 2    |
| 34       | DM 190      | Wheel Nut .....                           | 10   |
| 35       | 59S.03      | Nyloc Nut .....                           | 44   |
| 36       | 30156.A0129 | Input Pinion Cartridge (Casing only)..... | 1    |
| 37       | 30156.A0163 | Spiral Bevel Wheel & Pinion .....         | 1    |
| 38       | 30156.A0131 | Drive Flange .....                        | 1    |
| 39       | 30081.A0231 | Drive Flange Washer .....                 | 1    |
| 40       | 30082.A0232 | Drive Flange Nut .....                    | 1    |
| 41       | 30156.A0134 | Oil Seal Cover .....                      | 1    |
| 42       | 30156.A0135 | Pinion Bearing .....                      | 2    |
| 43       | 30156.A0136 | Pinion Bearing Spacer .....               | 1    |
| 44       | 30156.A0137 | Pinion Oil Seal .....                     | 1    |
| 45       | 30156.A0138 | Pinion Adj. Shim .....                    | A/R  |
| 46       | 30156.A0139 | Pinion Adj. Shim .....                    | A/R  |
| 47       | 30156.A0140 | Pinion Adj. Shim .....                    | A/R  |
| 48       | 30156.A0142 | Diff. Case (L.H.) .....                   | 1    |
| 49       | 30156.A0143 | Diff. Wheel .....                         | 2    |
| 50       | 30082.A0240 | Diff. Pinion .....                        | 2    |
| 51       | 30156.A0144 | Diff. Wheel Thrust Washer .....           | 2    |



## DRIVE AXLE (Cont'd)

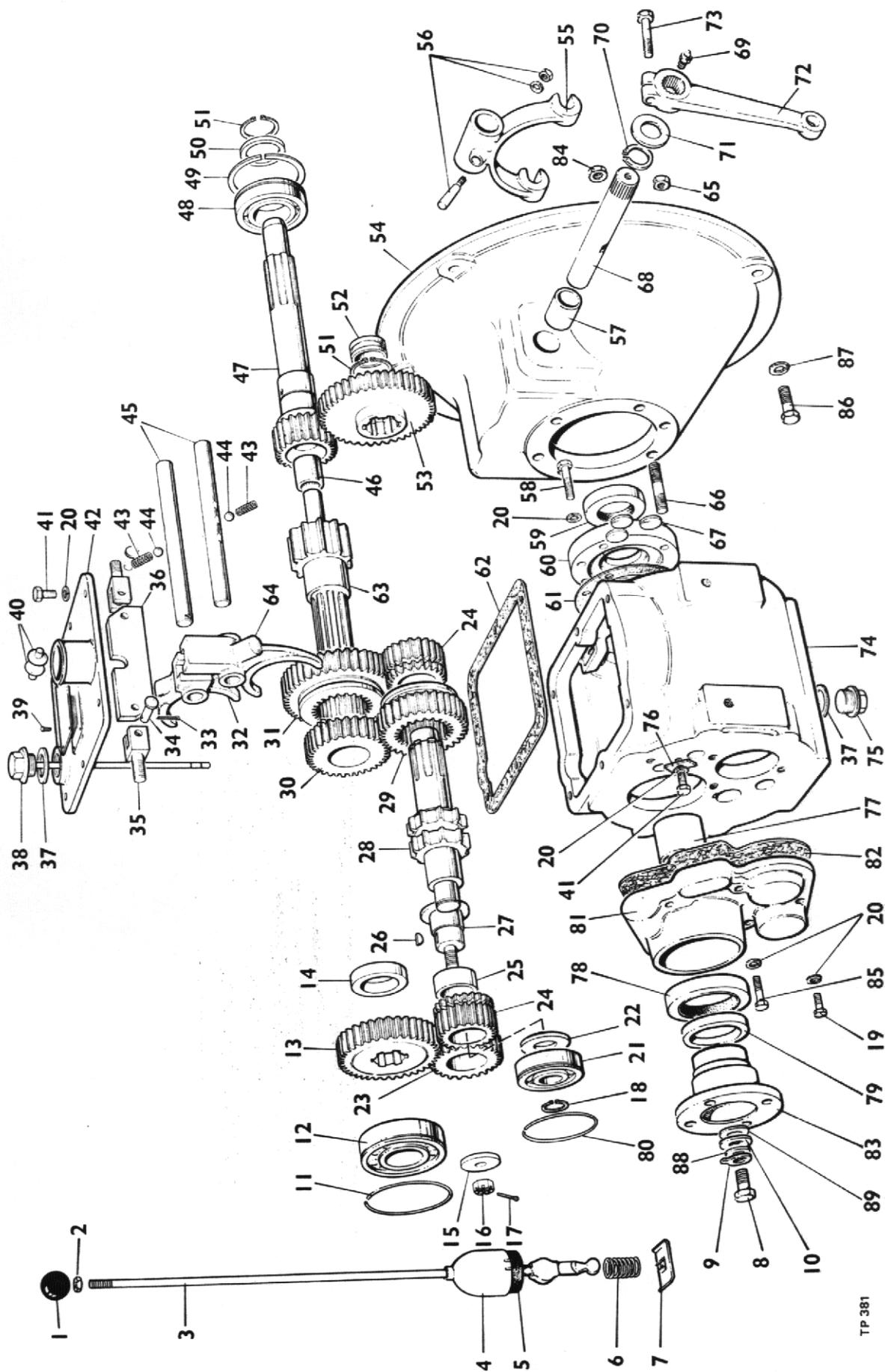
| Item No. | Part No.    | Description                      | Qty. |
|----------|-------------|----------------------------------|------|
| 52       | 30156.A0145 | Diff. Pinion Thrust Washer ..... | 2    |
| 53       | 30156.A0146 | Diff. Spider .....               | 1    |
| 55       | 30082.A0244 | Diff. Bearing .....              | 2    |
| 56       | 30156.A0148 | Stud .....                       | 10   |
| 57       | 30156.A0149 | Spring Dowel .....               | 1    |
| 58       | 30156.A0150 | Diff. Case (R.H.) .....          | 1    |
| 59       | 30156.A0151 | Tab Washer .....                 | 1    |
| 60       | 30156.A0152 | Planet Carrier .....             | 1    |
| 61       | 30156.A0153 | Planet Gear .....                | 3    |
| 62       | 30156.A0154 | Planet Pin .....                 | 3    |
| 63       | 30156.A0155 | Washer .....                     | 4    |
| 64       | 30156.A0156 | Shield .....                     | 2    |
| 65       | 30156.A0157 | Axle Shaft Thrust Spacer .....   | 1    |
| 66       | 30156.A0158 | Circlip .....                    | 1    |
| 67       | 30156.A0159 | Planet Cage Roller .....         | 3    |
| 68       | 30082.A0249 | Planet Thrust Washer .....       | 6    |
| 69       | 30156.A0160 | Axle Arm .....                   | 2    |
| 70       | 30156.A0161 | Tab Washer .....                 | 4    |
| 71       | 7S.4        | Nut .....                        | 10   |
| 72       | 30156.A0162 | Spring Dowel .....               | 3    |

## FLYWHEEL AND CLUTCH



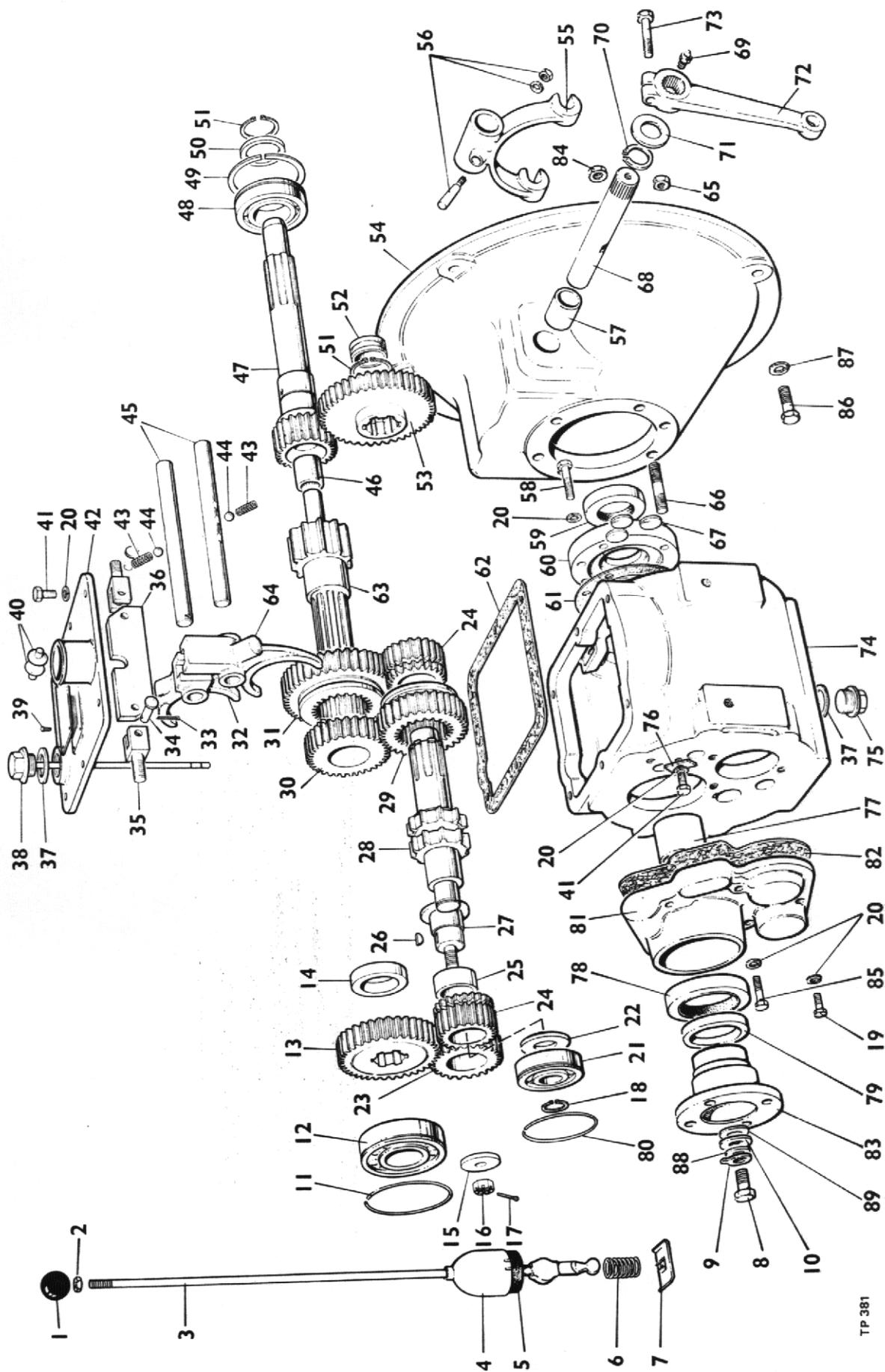
| Item No. | Part No.   | Description  | Qty. |
|----------|------------|--|------|
| 1        | 10579A01   | Clutch Release Bearing                               | 1    |
| 2        | 28S02D     | Screw Set  | 6    |
| 3        | 41S04      | Washer Spring  | 10   |
| 4        | 10597A01   | Cover Assembly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



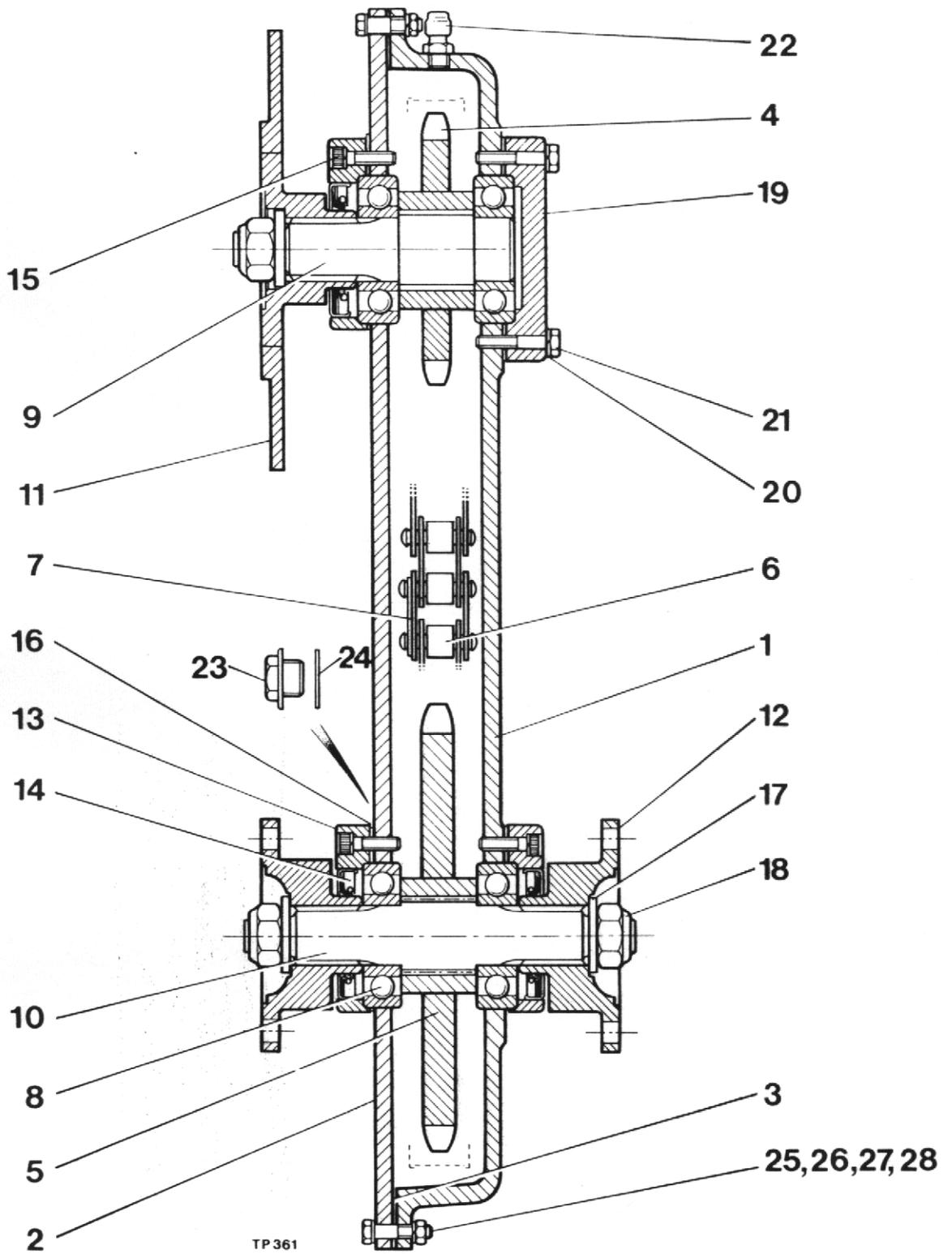
## GEARBOX

| Item No. | Part No.    | Description                       | Qty. |
|----------|-------------|-----------------------------------|------|
|          | 30101.A02   | Gearbox complete .....            | 1    |
| 1        | 30101.A0201 | Gear Lever Knob .....             | 1    |
| 2        | 95S.3       | Gear Lever Locknut .....          | 1    |
| 3        | 30101.A0202 | Gear Lever .....                  | 1    |
| 4        | 30101.A0203 | Gear Lever Cap .....              | 1    |
| 5        | 30101.A0204 | Gear Lever Cover .....            | 1    |
| 6        | 30101.A0205 | Gear Lever Spring .....           | 1    |
| 7        | 30101.A0206 | Gear Lever Retaining Plate .....  | 1    |
| 8        | 28S.5E      | Bolt .....                        | 1    |
| 9        | 30101.A0207 | Tab Washer .....                  | 1    |
| 10       | 30101.A0208 | Washer .....                      | 1    |
| 11       | 30101.A0209 | Snap Ring .....                   | 1    |
| 12       | 30101.A0210 | Bearing, Mainshaft Rear .....     | 1    |
| 13       | 30101.A0211 | Output Gear .....                 | 1    |
| 14       | 30101.A0212 | Output Gear Spacer .....          | 1    |
| 15       | 30101.A0213 | Reverse Pinion Shaft Washer ..... | 1    |
| 16       | 102S.4      | Reverse Spindle Nut .....         | 1    |
| 17       | 44S.2C      | Split Pin .....                   | 1    |
| 18       | 30101.A0215 | Circlip .....                     | 1    |
| 19       | 28S.1D      | Bolt .....                        | 3    |
| 20       | 13S.2       | Spring Washer .....               | 17   |
| 21       | 30101.A0216 | Layshaft Bearing .....            | 1    |
| 22       | 30101.A0217 | Bearing Spacer .....              | 1    |
| 23       | 30101.A0218 | Reverse Pinion .....              | 2    |
| 24       | 30101.A0219 | Reverse Speed Gear .....          | 2    |
| 25       | 30101.A0220 | Reverse Pinion Bush .....         | 1    |
| 26       | 30101.A0221 | Reverse Pinion Shaft Key .....    | 1    |
| 27       | 30101.A0222 | Reverse Pinion Shaft .....        | 1    |
| 28       | 30101.A0223 | Layshaft .....                    | 1    |
| 29       | 30101.A0224 | 2nd. Speed Sliding Gear .....     | 1    |
| 30       | 30101.A0225 | Second Speed Gear .....           | 1    |
| 31       | 30101.A0226 | 1st Speed Gear .....              | 1    |
| 32       | 30101.A0227 | 2nd. and 3rd. Selector Fork ..... | 1    |
| 33       | 44S.1C      | Split Pin, Interlock .....        | 2    |
| 34       | 30101.A0228 | Clevis Pin, Interlock .....       | 2    |
| 35       | 30101.A0229 | Stud, Interlock .....             | 2    |
| 36       | 30101.A0230 | Interlock Plate .....             | 1    |
| 37       | 42S.5       | Sealing Washer .....              | 2    |
| 38       | 30101.A0232 | Dipstick .....                    | 1    |
| 39       | 30101.A0233 | Drive Screw .....                 | 4    |
| 40       | 30101.A0234 | Gear Lever Pad .....              | 2    |
| 41       | 28S.1C      | Bolt .....                        | 7    |
| 42       | 30101.A0235 | Top Cover .....                   | 1    |
| 43       | 30097.A0185 | Detent Spring .....               | 2    |
| 44       | 30101.A0236 | Detent Ball .....                 | 2    |
| 45       | 30101.A0237 | Selector Shaft .....              | 2    |
| 46       | 30101.A0238 | Bearing, Primary Shaft .....      | 1    |
| 47       | 30101.A0239 | Primary Shaft .....               | 1    |
| 48       | 30101.A0240 | Input Bearing .....               | 1    |
| 49       | 30101.A0241 | Snap Ring .....                   | 1    |
| 50       | 30101.A0242 | Bearing Spacer .....              | 1    |
| 51       | 30101.A0243 | Circlip .....                     | 2    |
| 52       | 30101.A0244 | Layshaft Bush .....               | 1    |
| 53       | 30101.A0245 | 1st. Reduction Gear .....         | 1    |



## GEARBOX (Cont'd)

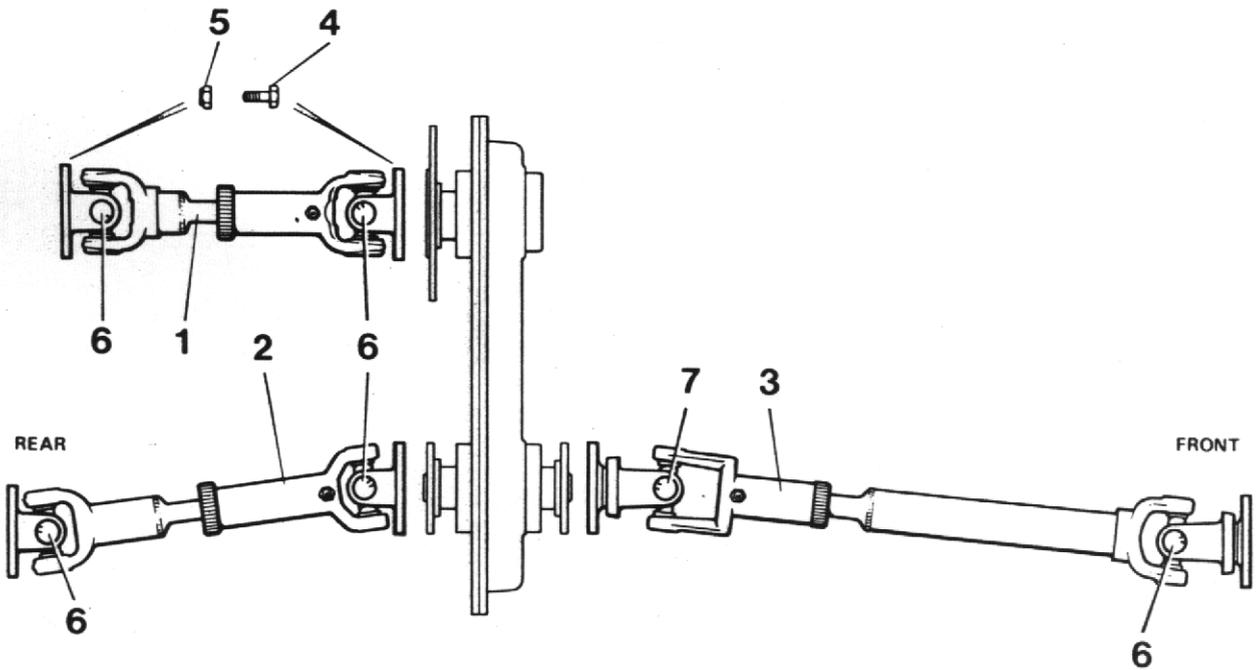
| Item No. | Part No.    | Description                          | Qty. |
|----------|-------------|--------------------------------------|------|
| 54       | 30101.A0246 | Clutch Housing .....                 | 1    |
| 55       | 30097.A0110 | Clutch Release Fork .....            | 1    |
| 56       | 30097.A0111 | Cotter, Nut and Washer S/A .....     | 1    |
| 57       | 30097.A0114 | Cross Shaft Bush .....               | 2    |
| 58       | 6S.1A       | Front Cover Bolt .....               | 4    |
| 59       | 30101.A0247 | Oil Seal, Input .....                | 1    |
| 60       | 30101.A0248 | Front Cover .....                    | 1    |
| 61       | 30101.A0249 | Front Cover Gasket .....             | 1    |
| 62       | 30101.A0250 | Top Cover Gasket .....               | 1    |
| 63       | 30101.A0251 | Mainshaft .....                      | 1    |
| 64       | 30101.A0252 | 1st. and Reverse Selector Fork ..... | 1    |
| 65       | 9S.1        | Clutch Lever Nut .....               | 1    |
| 66       | 30101.A0253 | Clutch Housing Stud .....            | 6    |
| 67       | 30101.A0254 | Welch Plug .....                     | 3    |
| 68       | 30101.A0255 | Clutch Cross Shaft .....             | 1    |
| 69       | 131S.1      | Grease Nipple .....                  | 2    |
| 70       | 30101.A0256 | Circlip .....                        | 1    |
| 71       | 30097.A0133 | Cross Shaft Washer .....             | 1    |
| 72       | 30097.A0109 | Clutch Release Lever .....           | 1    |
| 73       | 6S.1C       | Clutch Lever Bolt.....               | 1    |
| 74       | 30101.A0258 | Gearcase .....                       | 1    |
| 75       | 30097.A0163 | Drain Plug .....                     | 1    |
| 76       | 30101.A0259 | Selector Locking Strip .....         | 1    |
| 77       | 30101.A0260 | Spacer .....                         | 1    |
| 78       | 30097.A0132 | Rear Oil Seal .....                  | 1    |
| 79       | 30101.A0265 | Dust Shield .....                    | 1    |
| 80       | 30101.A0261 | Snap Ring .....                      | 1    |
| 81       | 30101.A0262 | Output Cover .....                   | 1    |
| 82       | 30101.A0263 | Output Cover Gasket .....            | 1    |
| 83       | 30101.A0264 | Coupling .....                       | 1    |
| 84       | 107S.3      | Nut (Clutch Housing) .....           | 6    |
| 85       | 6S.1        | Bolt .....                           | 2    |
| 86       | 1S.3B       | Bolt 3/8" BSF x 1" Long .....        | 6    |
| 87       | 41S.5       | Spring Washer 3/8" dia. ....         | 6    |
| 88       | 30143.A0111 | Fibre Washer .....                   | 1    |
| 89       | 30143.A0101 | Fibre Washer .....                   | 1    |



## TRANSFER BOX

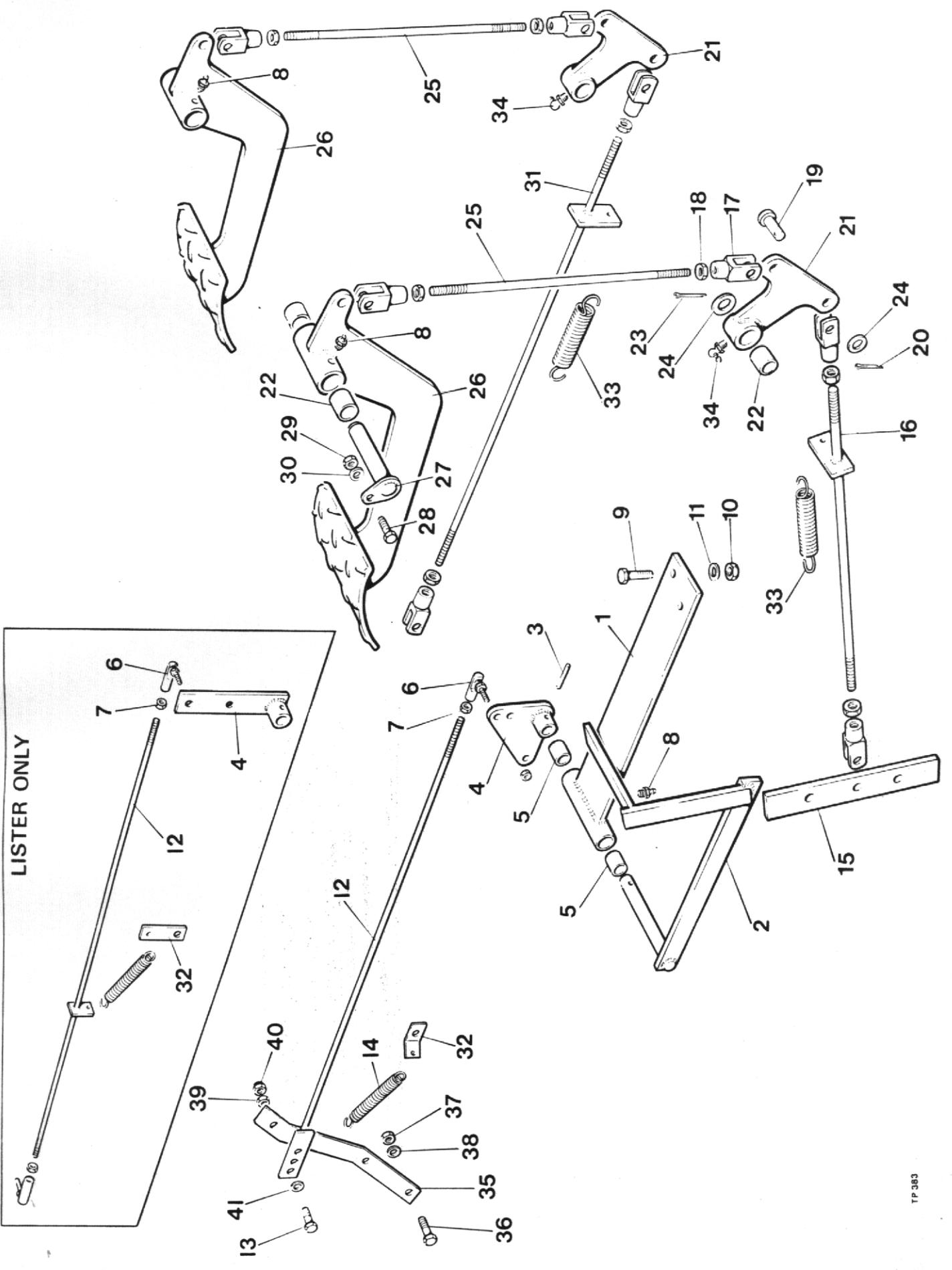
| Item No. | Part No.  | Description                                  | Qty. |
|----------|-----------|--|------|
| 1        | 40098.A01 | Transfer Box complete .....                  | 1    |
| 2        | 4/35-96   | Case .....                                   | 1    |
| 3        | 40097.A01 | Cover .....                                  | 1    |
| 4        | 4/35-20   | Gasket .....                                 | 1    |
| 5        | 10294.A01 | Chain Wheel (15T) .....                      | 1    |
| 6        | 4/35-17   | Chain Wheel (19T) .....                      | 1    |
| 7        | 4/35-353  | Roller Chain .....                           | 1    |
| 8        | 81S.1     | Connecting Link .....                        | 1    |
| 9        | 88S.6     | Ball Bearing .....                           | 4    |
| 10       | 10299.A01 | Input Shaft .....                            | 1    |
| 11       | 10300.A01 | Output Shaft .....                           | 1    |
| 12       | 20109.A01 | Input Flange Assembly (c/w Brake Disc) ..... | 1    |
| 13       | 10384.A01 | Output Flange .....                          | 2    |
| 14       | 4/35-102  | Oil Seal Housing .....                       | 3    |
| 15       | 89S.1     | Oil Seal .....                               | 3    |
| 16       | 90S.2H    | Capscrew .....                               | 12   |
| 17       | 10293.A01 | Gasket .....                                 | 4    |
| 18       | 10S.6     | Washer 3/4" Dia .....                        | 3    |
| 19       | 87S.8     | Locknut 3/4" UNF .....                       | 3    |
| 20       | 10298.A01 | End Cover .....                              | 1    |
| 21       | 10S.1     | Washer 1/4" Dia .....                        | 4    |
| 22       | 6S.1A     | Hex. Hd. Bolt 1/4" UNF x 1,1/8" Long .....   | 1    |
| 23       | 10305.A01 | Breather .....                               | 1    |
| 24       | 10301.A01 | Level/Filter Plug .....                      | 1    |
| 25       | 42S.5     | Fibre Washer .....                           | 1    |
| 26       | 8S.2C     | Hex. Hd. Bolt M6 x 35 Long .....             | 24   |
| 27       | 12S.2A    | Washer M6 .....                              | 24   |
| 28       | 17S.3A    | Spring Washer M6 .....                       | 24   |
|          | 7S.2A     | Nut M6 .....                                 | 24   |

# PROP. SHAFTS



| Item No. | Part No.  | Description                   | Qty. |
|----------|-----------|-------------------------------|------|
| 1        | 20087.A01 | Prop Shaft .....              | 1    |
| 2        | 20088.A01 | Prop Shaft .....              | 1    |
| 3        | 30095.A01 | Prop Shaft .....              | 1    |
| 4        | 10365.A01 | Prop Shaft Bolt .....         | 24   |
| 5        | 87S.3     | Nut 3/8" UNF .....            | 24   |
| 6        | 10568.A01 | Repair Kit (Std. Angle) ..... | A/R  |
| 7        | 10568.A02 | Repair Kit (Wide Angle) ..... | A/R  |

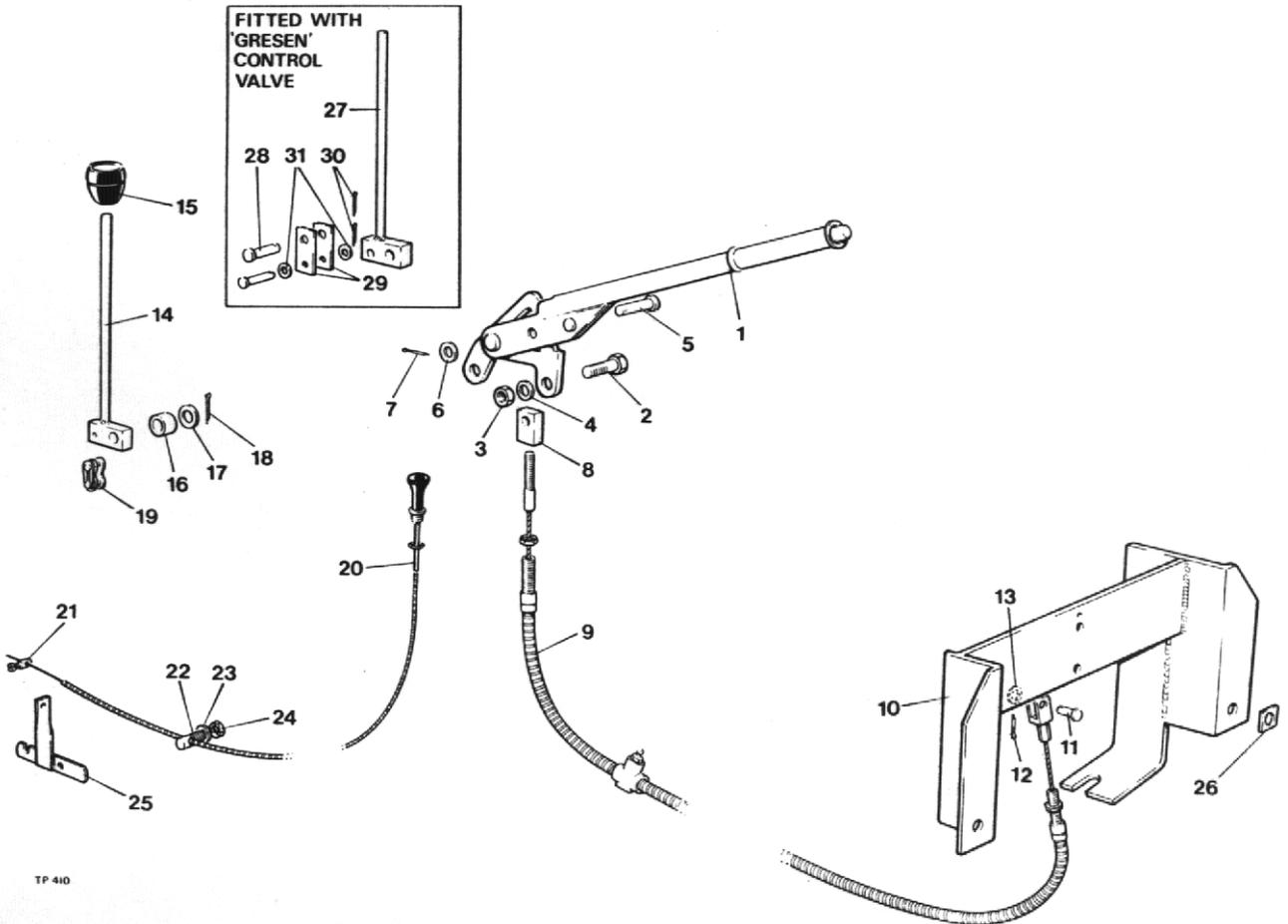
LISTER ONLY



## PEDAL CONTROLS

| Item No. | Part No.  | Description                           | Qty. |
|----------|-----------|---------------------------------------|------|
| 1        | 20118.A01 | Mounting Plate .....                  | 1    |
| 2        | 20104.A01 | Accelerator Pedal Assembly .....      | 1    |
| 3        | 54S.1A    | Tension Pin .....                     | 1    |
| 4        | 10552.A01 | Accelerator Lever (Petter) .....      | 1    |
|          | 10312.A01 | Accelerator Lever (Lister) .....      | 1    |
| 5        | WB 0808   | Bush .....                            | 2    |
| 6        | C160B     | Rod Ball End (Petter).....            | 1    |
|          | C160B     | Rod Ball End (Lister) .....           | 2    |
| 7        | 2S.2      | Nut .....                             | 1    |
| 8        | TS/T      | Grease Nipple .....                   | 1    |
| 9        | 11S.4E    | Bolts Hex. Hd. M10 x 35 Long .....    | 2    |
| 10       | 7S.4      | Nut M10 .....                         | 2    |
| 11       | 17S.5     | Spring Washer M10 .....               | 2    |
| 12       | 10322.A02 | Accelerator Rod (Petter) .....        | 1    |
|          | 20116.A01 | Accelerator Rod (Lister) .....        | 1    |
| 13       | 6S.1B     | Bolt Hex. Hd. ½" UNF x 1½" Long ..... | 1    |
| 14       | C173D     | Spring .....                          | 1    |
| 15       | 20117.A02 | Brake Compensator .....               | 1    |
| 16       | 10518.A01 | Compensator Rod .....                 | 1    |
| 17       | C174A     | Clevis .....                          | 8    |
| 18       | 74S.4     | Nut 3/8" BSP .....                    | 8    |
| 19       | C174X     | Clevis Pin .....                      | 8    |
| 20       | 44S.2C    | Split Pin 3/32" x 1" Long .....       | 8    |
| 21       | 20111.A01 | Bell Crank .....                      | 2    |
| 22       | WB 1212   | Bush .....                            | 6    |
| 23       | 44S.4C    | Split Pin .....                       | 2    |
| 24       | 10S.5     | Washer .....                          | 2    |
| 25       | L359      | Rod 3/8" x 343mm Long .....           | 2    |
| 26       | 20096.A01 | Pedal Assembly .....                  | 2    |
| 27       | 10368.A01 | Pedal Pivot Pin .....                 | 2    |
| 28       | 64S.2B    | Setscrew Hex. Hd. M6 x 15 Long .....  | 2    |
| 29       | 65S.2     | Nut M6 .....                          | 2    |
| 30       | 17S.3     | Spring Washer M6 .....                | 2    |
| 31       | 10481.A01 | Clutch Rod .....                      | 1    |
| 32       | C163      | Bracket .....                         | 1    |
| 33       | C173B     | Spring .....                          | 2    |
| 34       | T90       | Grease Nipple .....                   | 4    |
| 35       | 10311.A01 | Speed Control Arm (Petter).....       | 1    |
| 36       | 11S.2A    | Hex. Hd. Bolt M6 x 16 Long .....      | 2    |
| 37       | 61S.2     | Nut Self Locking M6 .....             | 2    |
| 38       | 12S.2     | Washer .....                          | 2    |
| 39       | 9S.1      | Nut .....                             | 1    |
| 40       | 87S.1     | Nut Self Locking .....                | 1    |
| 41       | 10S.1     | Washer .....                          | 1    |

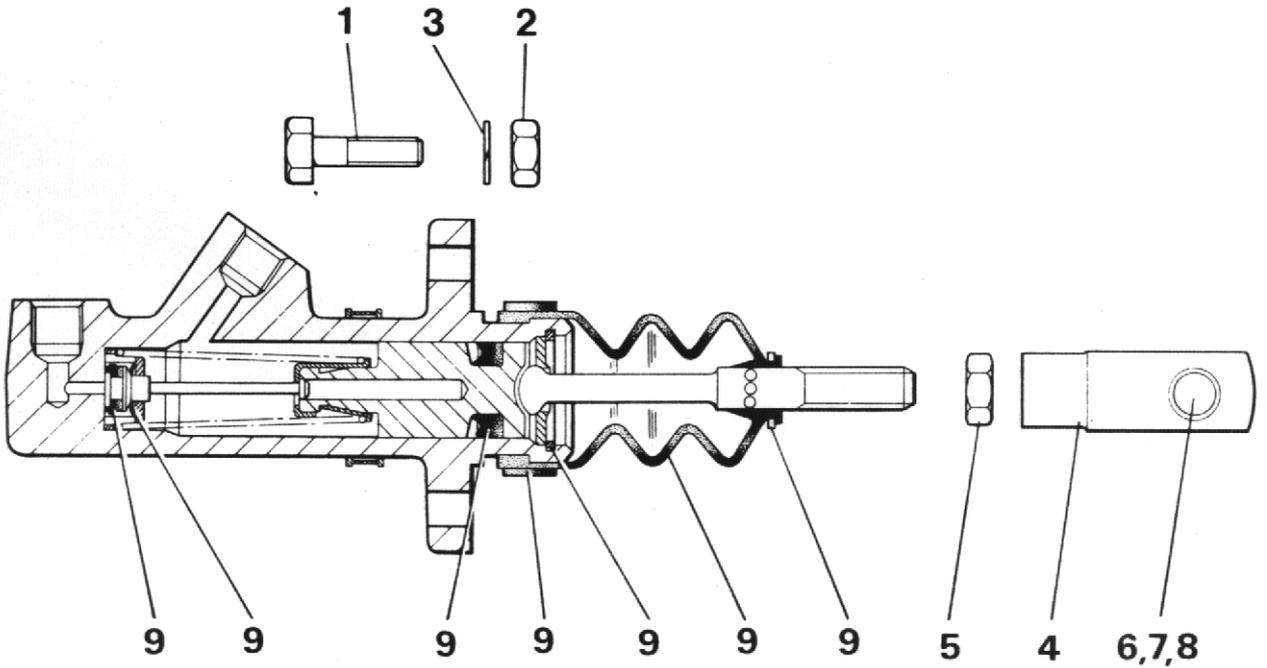
## VALVE CONTROL, HANDBRAKE AND ENGINE STOP



TP 410

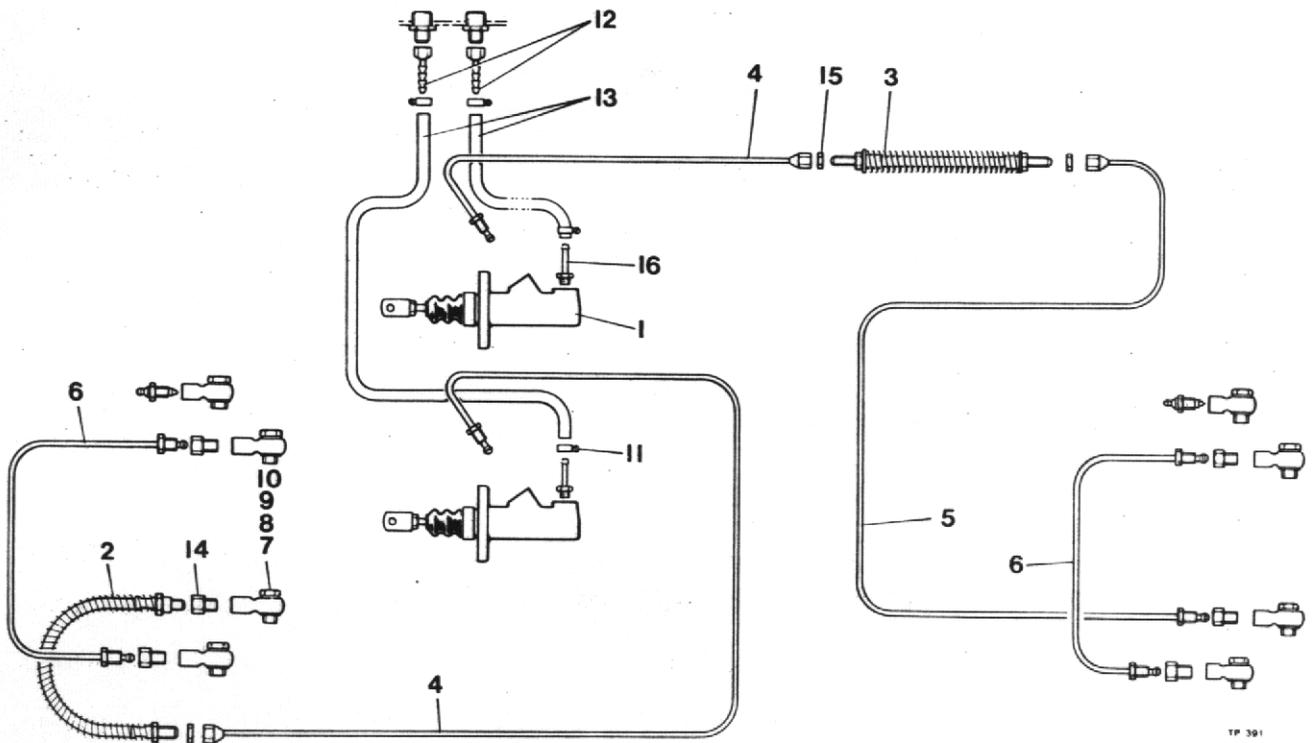
| Item No. | Part No.    | Description  | Qty. |
|----------|-------------|--|------|
| 1        | 10596.A01   | Handbrake Lever.....                               | 1    |
| 2        | 11S.4C      | Setscrew M10 x 25 Long.....                        | 2    |
| 3        | 7S.4        | Nut M10.....                                       | 2    |
| 4        | 17S.5       | Washer-Spring M10.....                             | 2    |
| 5        | 10650.A19   | Pin.....   | 1    |
| 6        | 10S.3       | Washer-Plain 3/8" Dia.....                         | 1    |
| 7        | 44S.2B      | Split Pin 3/32" x 3/4" Long .....                  | 1    |
| 8        | L.309       | Block-Brake Cable .....                            | 1    |
| 9        | 10367.A01   | Handbrake Cable .....                              | 1    |
| 10       | 30124.A01   | Brake Caliper Bracket .....                        | 1    |
| 11       | 10650.A13   | Clevis Pin Brake Cable .....                       | 1    |
| 12       | 44S.1C      | Split Pin .....                                    | 1    |
| 13       | 10S.1       | Washer-Plain - Brake Cable Clevis Pin .....        | 1    |
| 14       | 10520.A01   | Control Valve Lever (Cessna Valve) .....           | 1    |
| 15       | 10211.A01   | Knob - Valve Lever .....                           | 1    |
| 16       | 10647.A01   | Spacer .....                                       | 1    |
| 17       | 10S.3       | Washer Plain 3/8" dia. ....                        | 1    |
| 18       | 44S.2C      | Split Pin 3/32" x 3/4" .....                       | 1    |
| 19       | 4-60-178    | Connecting Link (Cessna Valve) .....               | 1    |
| 20       | 4-60-239    | Engine Stop Control Cable .....                    | 1    |
| 21       | 4-35-196    | Solderless Nipple & Screw .....                    | 1    |
| 22       | 4-60-242    | Clamp Screw .....                                  | 1    |
| 23       | 67S.4       | Washer - Shakeproof Int. ....                      | 1    |
| 24       | 9S.3        | Nut 3/8" UNF .....                                 | 1    |
| 25       | 10346.A01   | Overload/Stop Control Lever (Lister) .....         | 1    |
| 26       | 10604.A01   | Spacer (if fitted).....                            | A/R  |
| 27       | 10520.A02   | Control Valve Lever Assy.(Gresen)(when fitted) ... | 1    |
| 28       | 10650.A18   | Clevis Pin (when fitted) .....                     | 1    |
| 29       | 30180.A0103 | Link (when fitted) .....                           | 2    |
| 30       | 44S.2B      | Split Pin (when fitted) .....                      | 2    |
| 31       | 10S.1       | Washer - Plain (when fitted) .....                 | 2    |

# BRAKE MASTER CYLINDER



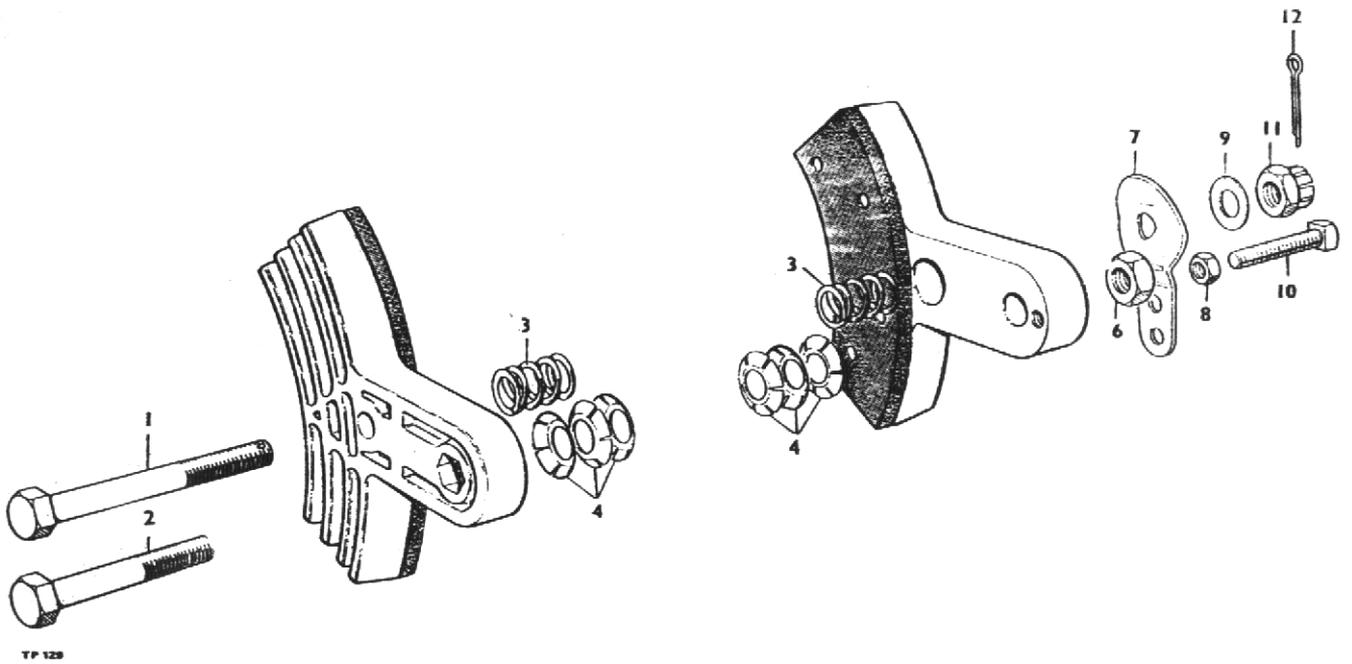
| Item No. | Part No.  | Description                       | Qty. |
|----------|-----------|-----------------------------------|------|
|          | 20102.A02 | Master Cylinder .....             | 2    |
| 1        | 11S.3E    | Bolts Hex. Hd. M8 x 35 Long ..... | 4    |
| 2        | 7S.3      | Nuts M8 .....                     | 4    |
| 3        | 17S.4     | Spring Washer .....               | 4    |
| 4        | C174J     | Clevis .....                      | 2    |
| 5        | 95S.3     | Nut 3/8" UNF Thin Nut .....       | 2    |
| 6        | C174Y     | Clevis Pin .....                  | 2    |
| 7        | 10S.2     | Washer 5/16" .....                | 2    |
| 8        | 44S.2C    | Split Pin 3/32" x 1" Long .....   | 2    |
| 9        | 10570.A01 | Service Kit .....                 | A/R  |

## BRAKE PIPES AND FITTINGS



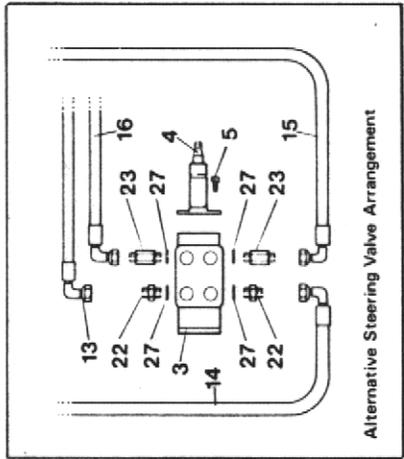
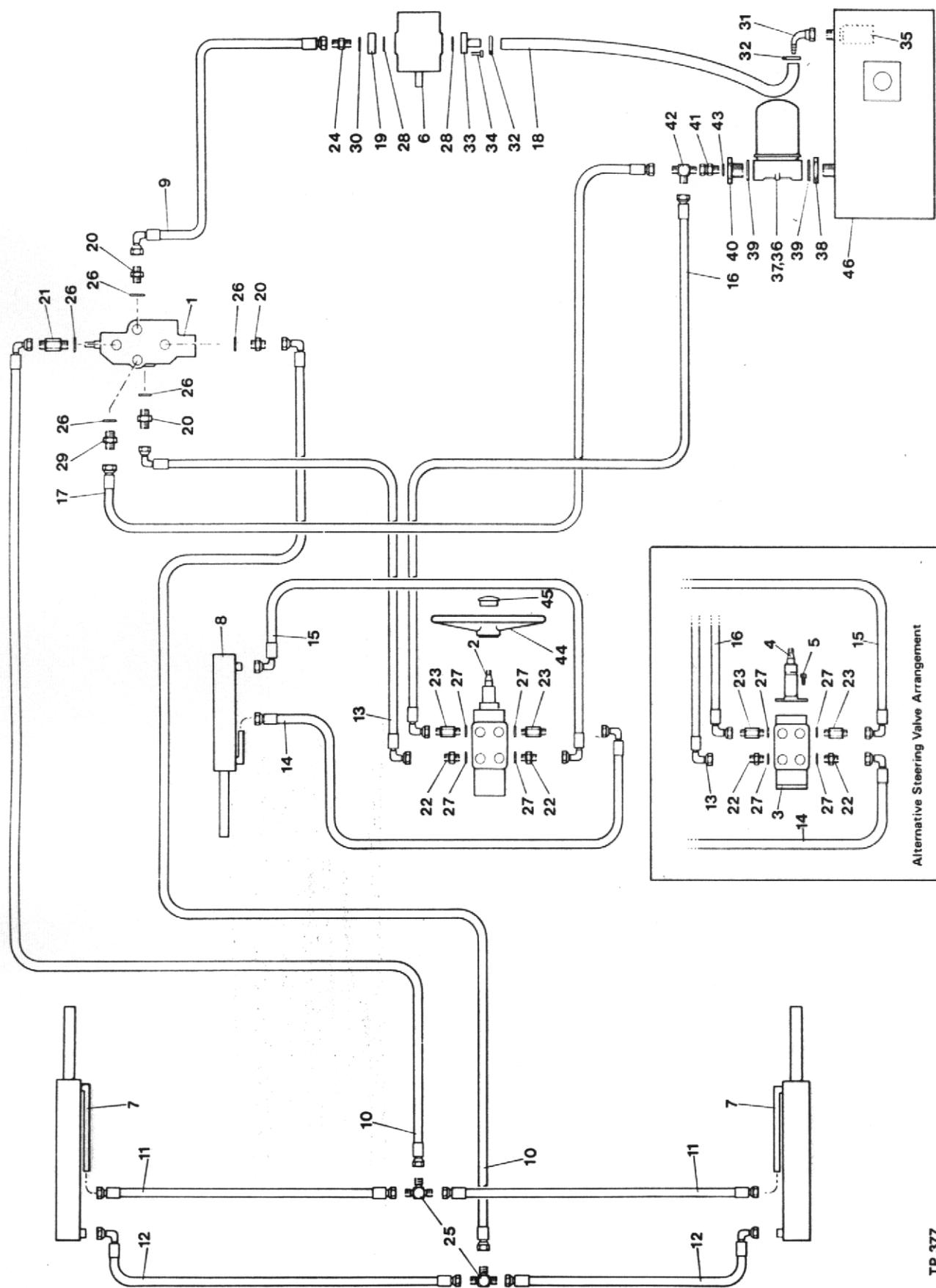
TP 391

| Item No. | Part No.    | Description                                     | Qty. |
|----------|-------------|---|------|
| 1        | 20102.A02   | Master Cylinder .....                           | 2    |
| 2        | 10516.A02   | Flexible Brake Hose .....                       | 1    |
| 3        | 10517.A02   | Flexible Brake Hose .....                       | 1    |
| 4        | 10577.A0101 | Brake Pipe M12 x 770 Long Male/Female .....     | 2    |
| 5        | 10577.A0102 | Brake Pipe M12 x 965 Long Male/Female .....     | 1    |
| 6        | 10577.A0201 | Brake Pipe M12 x 345 Long Male/Female .....     | 2    |
| 7        | 64474287    | Banjo .....                                     | 8    |
| 8        | 376102W     | Banjo Bolt .....                                | 8    |
| 9        | 378700      | Washer .....                                    | 8    |
| 10       | 378703      | Washer .....                                    | 8    |
| 11       | 97S.1       | Pipe Clip .....                                 | 4    |
| 12       | 110S.1A     | Nozzle 1/4" BSP .....                           | 2    |
| 13       | 29S.7       | Hose 1/4" Bore x 1000mm Long .....              | 2    |
| 14       | 10354.A01   | Brake Pipe Adaptor .....                        | 6    |
| 15       | 10582AC1    | Half Nut M12 .....                              | 3    |
| 16       | 10542.A01   | Stub Pipe Assembly .....                        | 2    |
| 17       | 30082.A0215 | Brake Bleed Valve (see also Axle section) ..... | 2    |



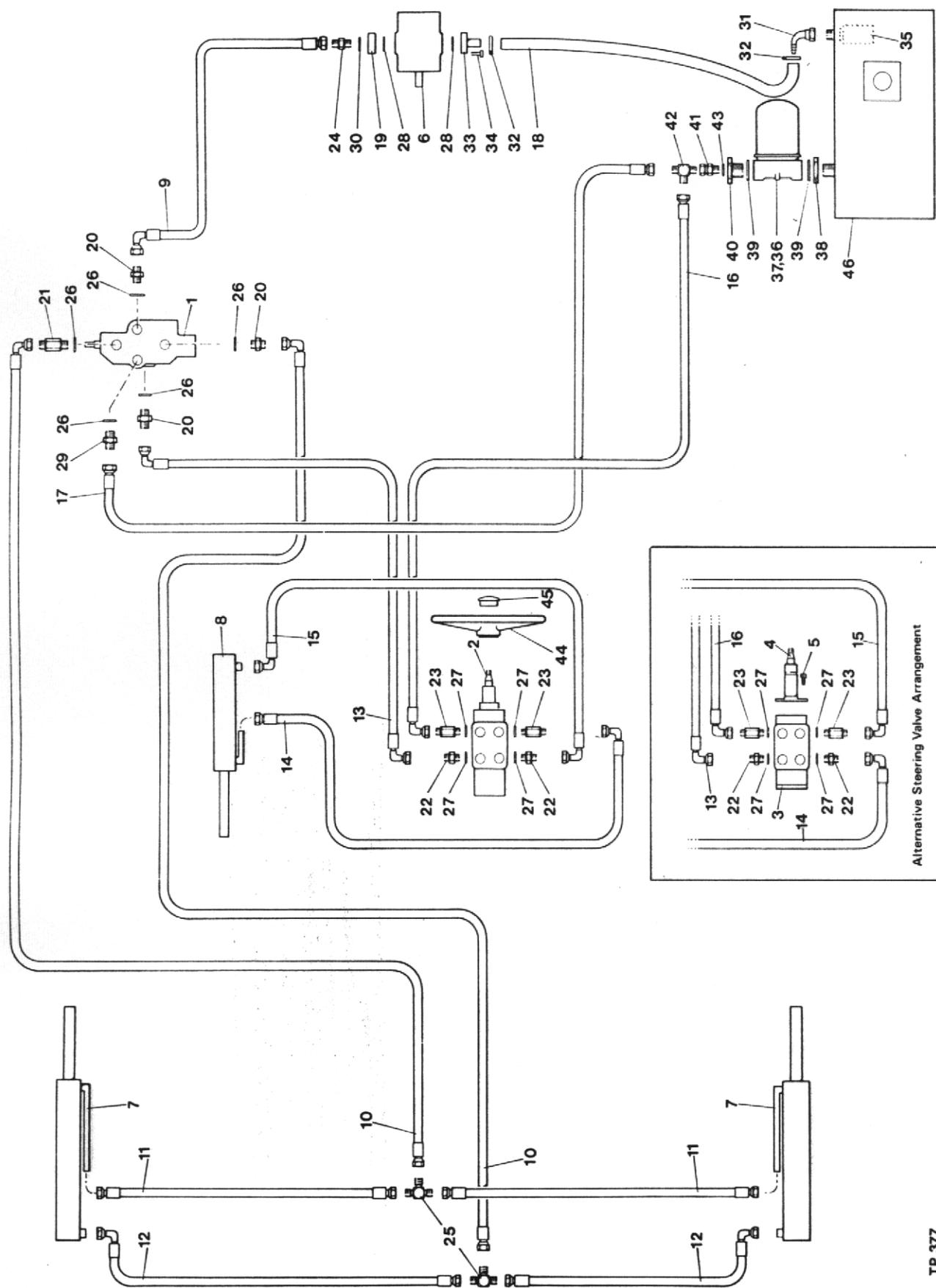
## CALIPER, parking brake

| 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   |



## HYDRAULICS

| Item No. | Part No.  | Description   | Qty. |
|----------|-----------|---|------|
| 1        | 30057.A01 | Control Valve (Cessna)-(When Fitted) .....                      | 1    |
|          | 30180.A01 | Control Valve (Gresen)-(When Fitted) .....                      | 1    |
| 2        | 20110.A01 | Steering Valve (Gemmer) (c/w Steering Wheel Nut).               | 1    |
|          | 8S.4A     | Bolt Hex. Hd. M10 x 25 Lg. (Steering Valve Fixing-<br>Gemmer)   | 3    |
|          | 13S.4     | Shakeproof Washer (Steering valve Fixing - Gemmer)              | 3    |
|          | CSE 182   | Steering Valve Spacer (Steering Valve Fixing -<br>Gemmer)       | 3    |
|          | CSE 178   | Steering Valve complete (Danfoss) .....                         | 1    |
| 3        | CSE 178-2 | Steering Valve (Danfoss) .....                                  | 1    |
| 4        | CSE 178-1 | Steering Column (Danfoss)(c/w Steering Wheel Nut)               | 1    |
| 5        | 103S.4B   | Capscrew 3/8" UNC x 3/4" Long .....                             | 2    |
|          | 69S.3G    | Bolt 3/8" UNC x 1½" Long (Steering Valve Fixing-<br>Danfoss)    | 2    |
|          | 67S.4     | Shakeproof Washer 3/8" dia. (Steering Valve Fixing-<br>Danfoss) | 2    |
|          | CSE 182   | Steering Valve Spacer (Steering Valve Fixing -<br>Danfoss)      | 2    |
| 6        | 10535.A01 | Pump (Petter) .....   | 1    |
|          | 10539.A01 | Pump (Lister) .....   | 1    |
| 7        | 30161.A01 | Hydraulic Cylinder (Skip) .....                                 | 2    |
| 8        | 30121.A01 | Hydraulic Cylinder (Steering) .....                             | 1    |
| 9        | 31S.2EE   | Hose 3/8" x 410 Long ST x 90° .....                             | 1    |
| 10       | 31S.2D    | Hose 3/8" x 112 Long ST x 90° .....                             | 2    |
| 11       | 35S.2I    | Hose 3/8" x 25 Long ST x ST .....                               | 2    |
| 12       | 31S.2AA   | Hose 3/8" x 20 Long ST x 90° .....                              | 2    |
| 13       | 36S.2II   | Hose 3/8" x 89 Long 90°x 90° @ 270° .....                       | 1    |
| 14       | 31S.2G    | Hose 3/8" x 77 Long ST x 90° .....                              | 1    |
| 15       | 36S.2HH   | Hose 3/8" x 77 Long 90°x 90° @ 135° .....                       | 1    |
| 16       | 31S.2E    | Hose 3/8" x 99 Long ST x 90° .....                              | 1    |
| 17       | 35S.3U    | Hose ½" x 790mm Long ST x ST .....                              | 1    |
| 18       | 37S.1G    | Hose 3/4" Cotton Braid x 30" Long .....                         | 1    |
| 19       | 4-35-261  | Adaptor Plate .....   | 1    |
| 20       | CSE 186   | Adaptor, Short 7/8" JIC. x 3/8" BSP .....                       | 3    |
| 21       | 4-60-158  | Adaptor, Long 7/8" JIC. x 3/8" BSP .....                        | 1    |
| 22       | 4-35-40K  | Adaptor, Short 3/4" UNF x 3/8" BSP .....                        | 2    |
| 23       | 4-60-115  | Adaptor, Long 3/4" UNF x 3/8" BSP .....                         | 2    |
| 24       | T.14J     | Adaptor, 3/8" BSP x 3/8" BSP .....                              | 1    |
| 25       | 4-35-388  | Tee and Bracket .....   | 1    |
| 26       | 49S.1     | "O" Ring .....  | 5    |
| 27       | 49S.2     | "O" Ring .....  | 4    |
| 28       | 49S.11    | "O" Ring .....  | 2    |
| 29       | DSE 115   | Adaptor 7/8" JIC. x ½" BSP .....                                | 1    |
| 30       | 100S.3    | Seal 3/8" BSP .....   | 1    |
| 31       | BSE 109   | Elbow 3/4" BSP 90° .....  | 1    |
| 32       | 97S.7     | Hose Clip 1"-1,3/8" .....                                       | 2    |
| 33       | 10475.A01 | Adaptor Plate .....   | 1    |
| 34       | 103S.3C   | Capscrew 5/16" UNC x 1" Long .....                              | 4    |
| 35       | 108S.1    | Suction Strainer .....  | 1    |
| 36       | 10363.A01 | Return Line Filter .....  | 1    |
| 37       | 10363.A02 | Filter Element .....  | 1    |
| 38       | 72S.7     | Back Nut 1,1/4" BSP .....                                       | 1    |



Alternative Steering Valve Arrangement

## HYDRAULICS (Cont'd)

| Item No. | Part No.  | Description                                       | Qty. |
|----------|-----------|---|------|
| 39       | 100S.9    | Seal, 1,1/4" BSP .....                            | 2    |
| 40       | 111S.1    | Reducing Bush 1,1/4" Male x 1/2" Female BSP ..... | 1    |
| 41       | 112S.1    | Adaptor Male/Female 1/2" BSP .....                | 1    |
| 42       | 113S.1    | Unequal Male Tee 1/2" x 3/8" x 1/2" BSP .....     | 1    |
| 43       | 100S.4    | Seal 1/2" BSP .....                               | 1    |
| 44       | 40064.A01 | Steering Wheel .....                              | 1    |
| 45       | 10314.A01 | Steering Wheel Cap .....                          | 1    |
| 46       | 40074.A03 | Hydraulic Tank including Mudwing .....            | 1    |
|          | 177       | Cable Tie (Not illustrated) .....                 | 3    |

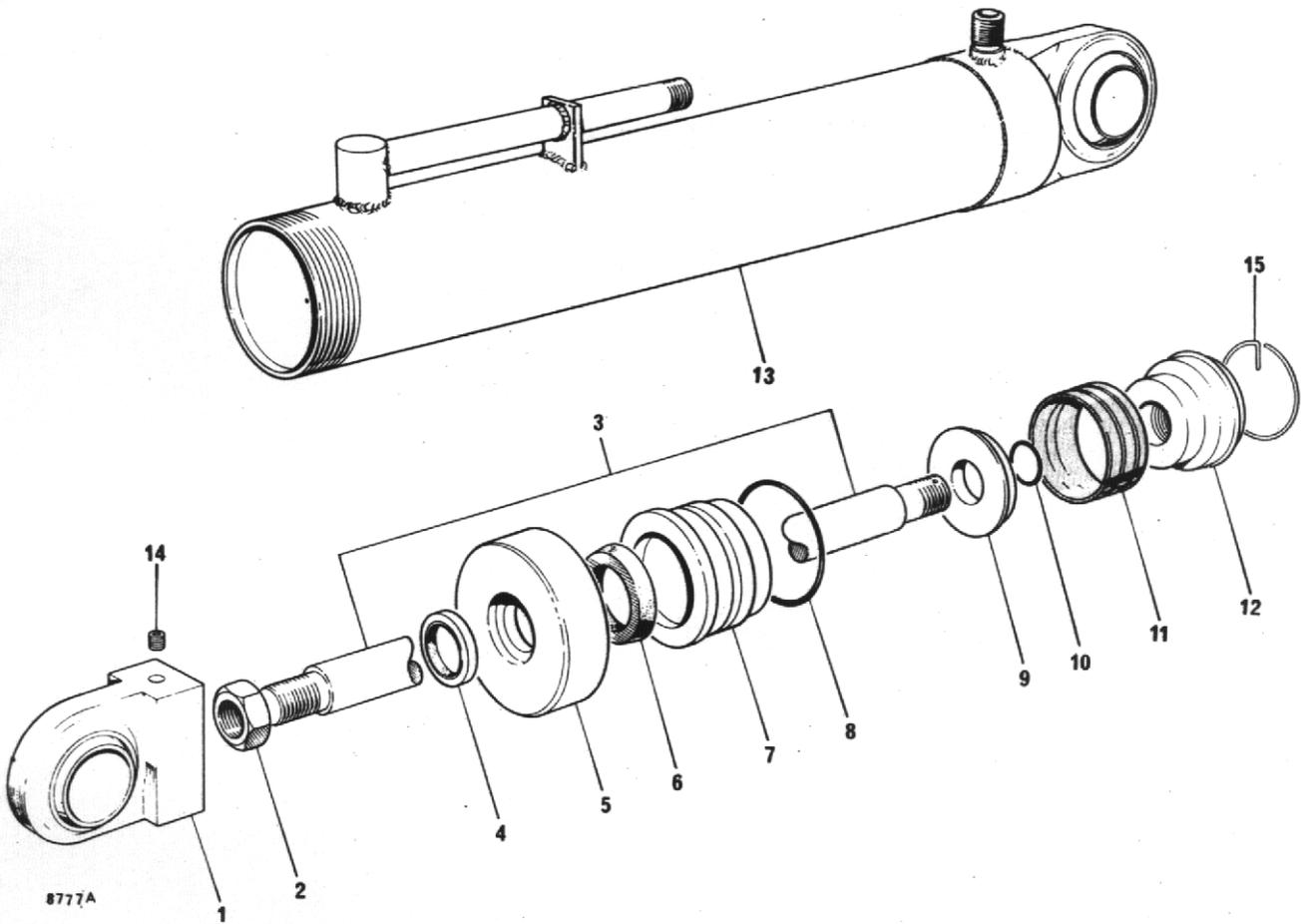
IT IS RECOMMENDED THAT DANFOSS OSPB STEERING UNITS ARE ONLY SERVICED  
IN DANFOSS AUTHORISED SERVICE SHOPS.

FOR U.K. - contact - Danfoss (London) Ltd., Perivale Industrial Estate,  
Horsenden Lane South, Greenford, Middlesex. Tel: 01 998 2041 Telex:24223.

FOR EUROPEAN COUNTRIES - contact - Department OG-SHT(Denmark) Telex:50599

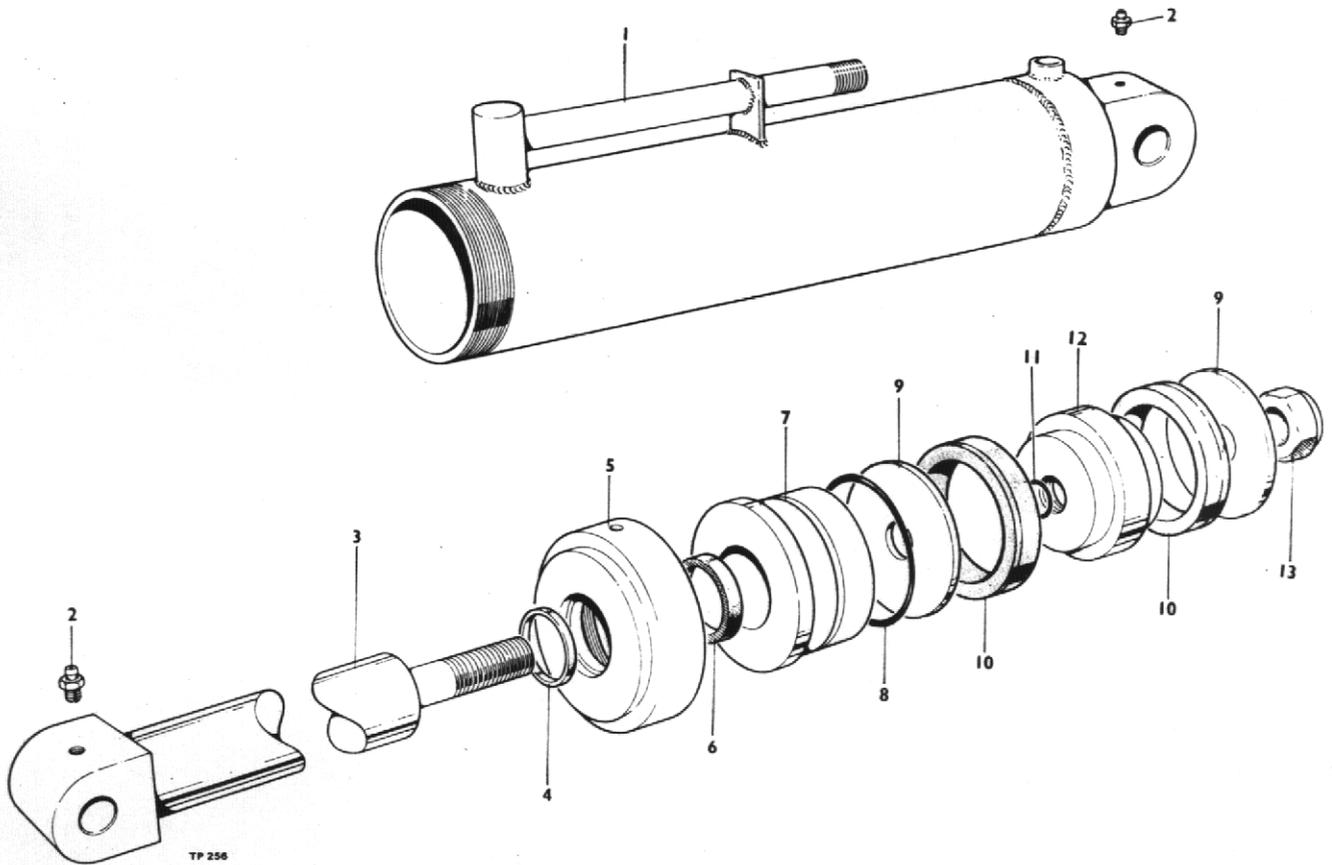
Customers having suitable facilities who wish to service the units  
themselves are advised to contact Winget Service Department, Winget Ltd.,  
Rochester, Kent, England, who can supply service details.

**HYDRAULIC RAM  
(FWD. TIP & ROTATING SKIP)**



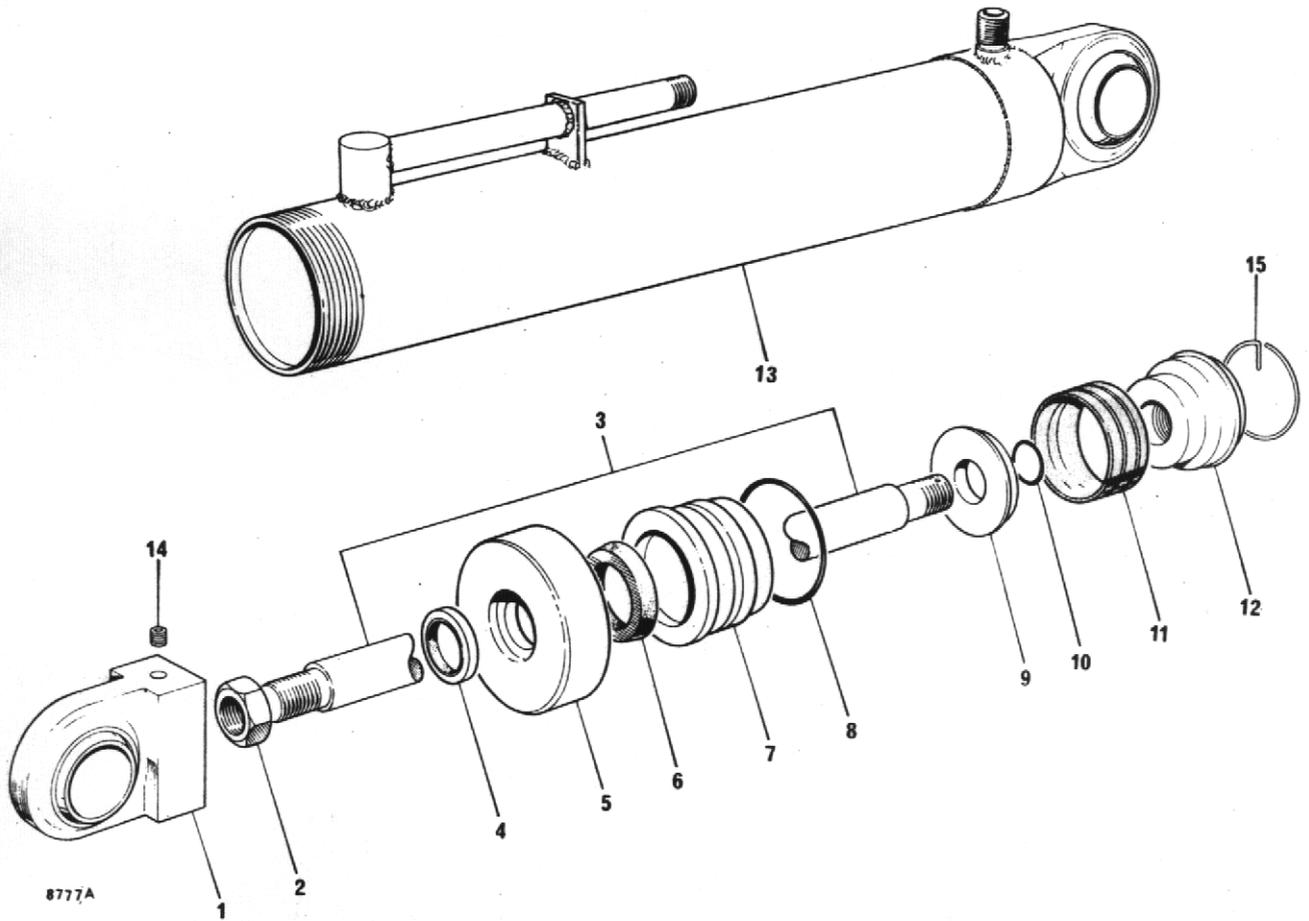
| Item No. | Part No.    | Description  | Qty. |
|----------|-------------|--|------|
|          | 30161.A01   | Ram Complete (2 per M/c except High Discharge M/c's) |      |
| 1        | 30121.A0101 | Piston Rod Fitting .....                             | 1    |
| 2        | 30121.A0102 | Locknut .....  | 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    |
|          | CSE 189     | Seal Kit (Comprising items 4,6,8,10 & 11) ..         | A/R  |

## HYDRAULIC RAM (HIGH DISCHARGE SKIP)



| Item No. | Part No.    | Description  | Qty. |
|----------|-------------|--|------|
|          | 30162.A01   | Ram Assembly Complete<br>(Two per high discharge m/c's only) |      |
| 1        | 30162.A0101 | Ram Body .....   | 1    |
| 2        | 30162.A0102 | Grease Nipple .....  | 2    |
| 3        | 30162.A0103 | Piston Rod Assembly .....                                    | 1    |
| 4        | 30162.A0104 | Wiper .....  | 1    |
| 5        | 30162.A0105 | Tube Cap .....   | 1    |
| 6        | 30162.AC106 | Sleeve Seal .....  | 1    |
| 7        | 30162.A0107 | Sleeve .....   | 1    |
| 8        | 30162.A0108 | Sleeve "O" Ring .....  | 1    |
| 9        | 30162.A0109 | Backing Washer .....   | 2    |
| 10       | 30162.A0110 | Piston Seal .....  | 2    |
| 11       | 30162.A0111 | Piston "O" Ring .....  | 1    |
| 12       | 30162.A0112 | Piston Head .....  | 1    |
| 13       | 30162.A0113 | Lock Nut .....   | 1    |
|          | CSE 190     | Seal Kit (comprising items 4,6,8,10 & 11) .....              | A/R  |

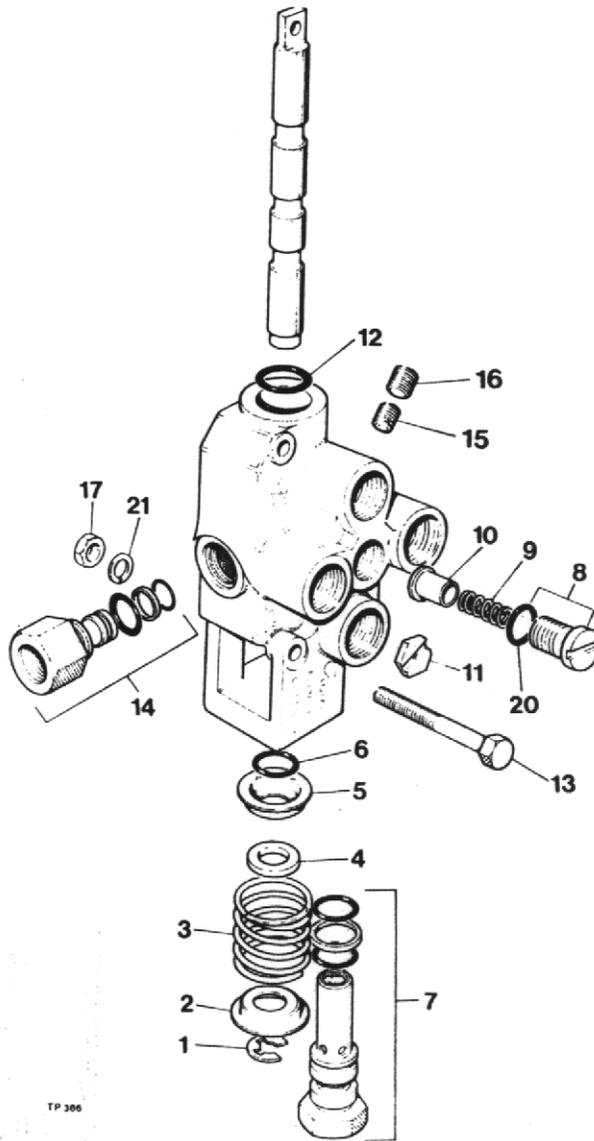
## HYDRAULIC RAM (STEERING)



| Item No. | Part No.    | Description                                  | Qty. |
|----------|-------------|--|------|
|          | 30121.A01   | Ram Complete (1 per Machine)                 |      |
| 1        | 30121.A0101 | Piston Road Fitting .....                    | 1    |
| 2        | 30121.A0102 | Locknut .....                                | 1    |
| 3        | 30121.A0103 | 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       | 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  |

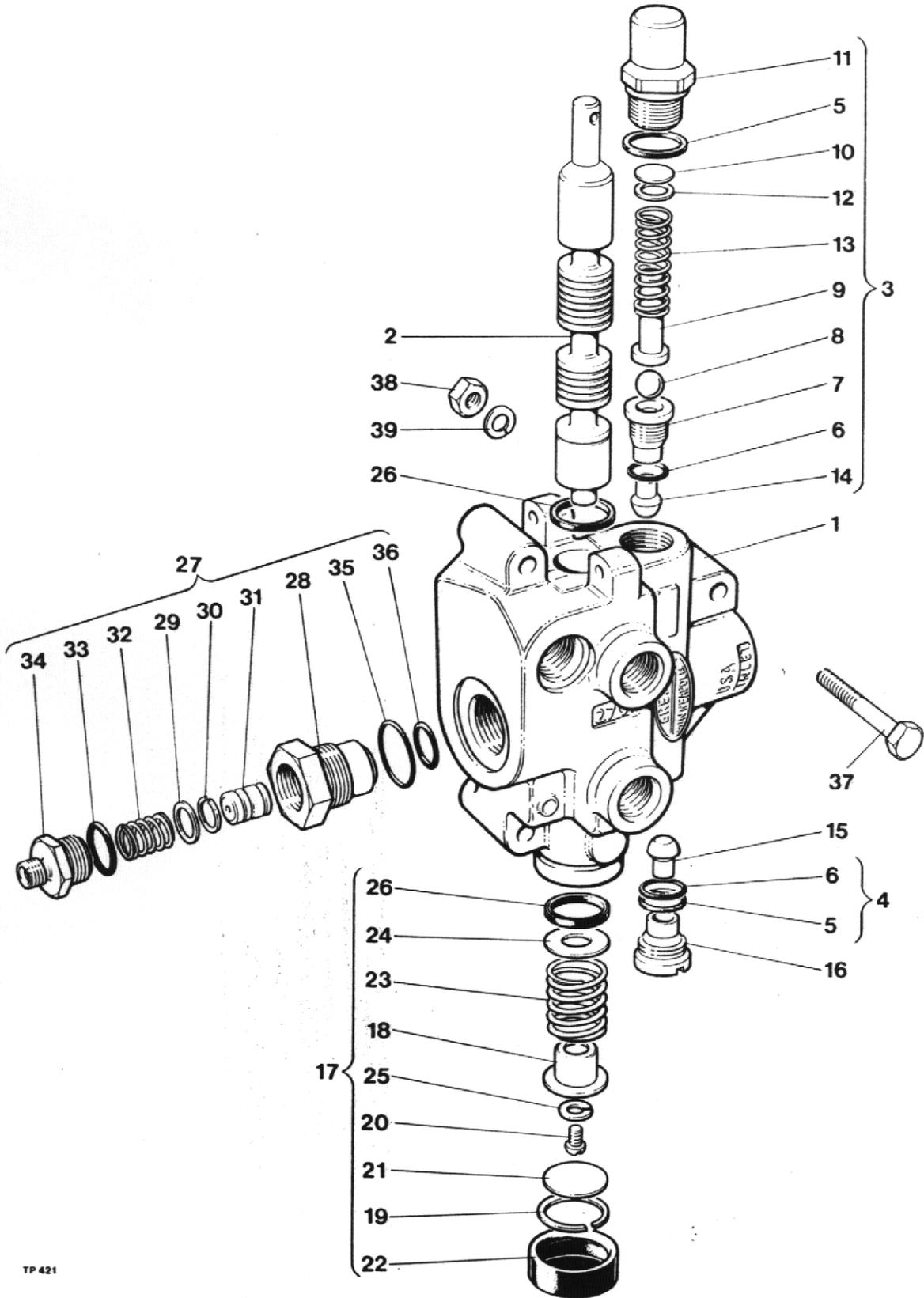
# HYDRAULIC CONTROL VALVE

(CESSNA)



TP 306

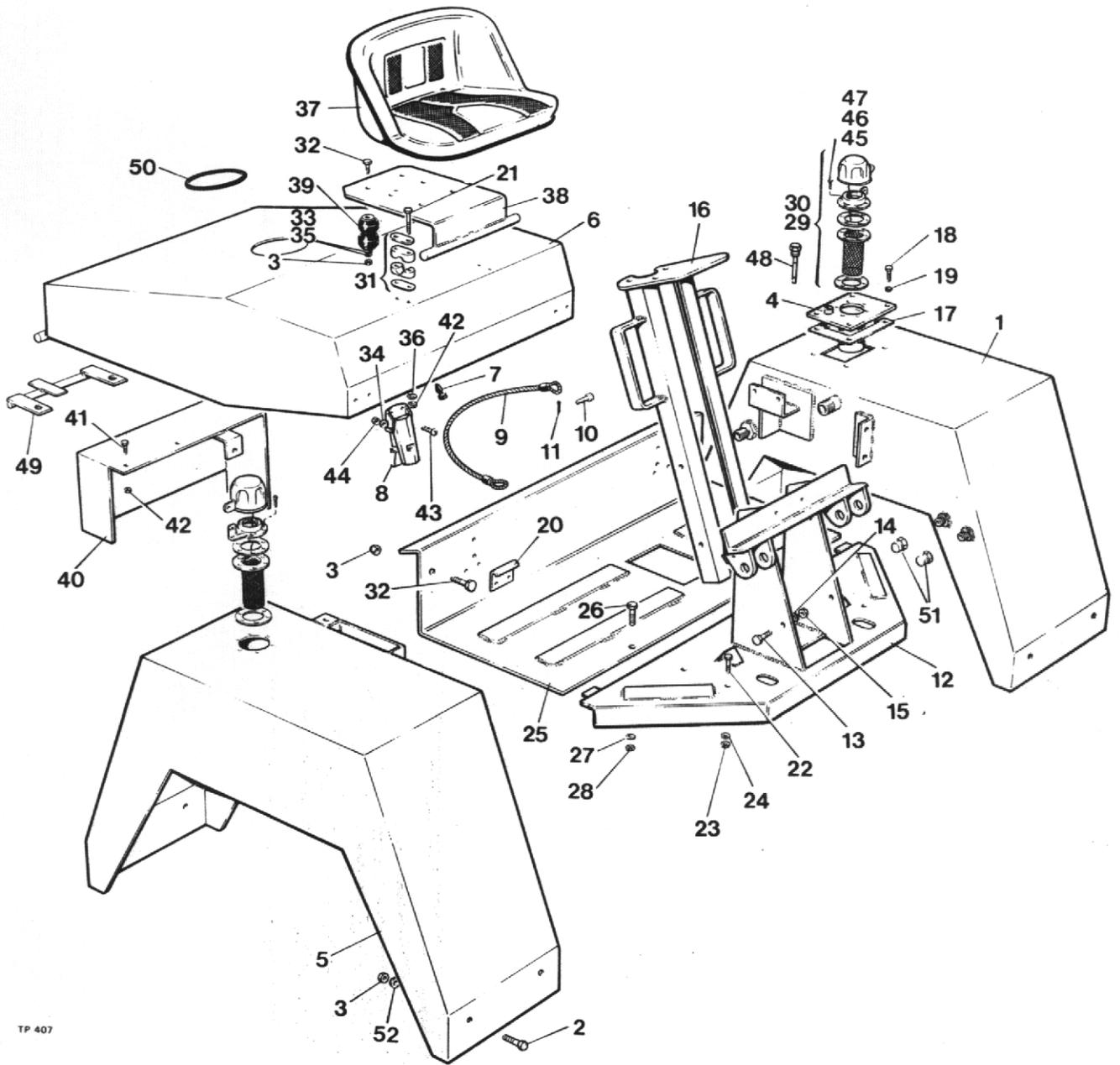
| Item No. | Part No.    | Description                         | Qty. |
|----------|-------------|-------------------------------------|------|
|          | 30057.A01   | Control Valve Complete .....        | 1    |
| 1        | 30131.A0101 | Clip Ring .....                     | 1    |
| 2        | 30131.A0102 | Shallow Washer .....                | 1    |
| 3        | 30131.A0103 | Spool Spring .....                  | 1    |
| 4        | 30131.A0104 | Washer Spacer .....                 | 1    |
| 5        | 30131.A0105 | Deep Washer .....                   | 1    |
| 6        | 30057.A0101 | "O" Ring .....                      | 1    |
| 7        | 30057.A0102 | Relief Valve Assembly .....         | 1    |
| 8        | 30057.A0103 | Lift Check Plug Assembly .....      | 1    |
| 9        | 30131.A0109 | Lift Check Spring .....             | 1    |
| 10       | 30131.A0110 | Lift Check Plunger .....            | 1    |
| 11       | 30131.A0111 | Orifice Plate .....                 | 1    |
| 12       | 30057.A0104 | "O" Ring .....                      | 1    |
| 13       | 6S.3H       | Bolt 5/16" UNF x 2½" Long .....     | 2    |
| 14       | 30057.A0105 | Pressure Beyond Plug .....          | 1    |
| 15       | 30131.A0116 | Plug 1/16" .....                    | 1    |
| 16       | 30131.A0117 | Plug 1/8" .....                     | 1    |
| 17       | 9S.2        | Nut 5/16" UNF .....                 | 1    |
| 18       | 30057.A0106 | Seal Repair Kit (Relief Valve)..... | A/R  |
| 19       | 30057.A0107 | Seal Repair Kit .....               | A/R  |
| 20       | 30131.A0118 | "O" Ring .....                      | 1    |
| 21       | 41S.4       | Spring Washer 5/16" Dia.....        | 2    |



## HYDRAULIC CONTROL VALVE

| Item No. | Part No.    | Description   | Qty. |
|----------|-------------|---|------|
|          | 30180.A01   | Control Valve (Complete) .....  | 1    |
| 1        |             | Housing .....   | 1    |
| 2        |             | Spool - 4 Way - 3 Position } Not supplied as spares-                          | 1    |
| 3        | 30180.A0101 | Relief Valve Assembly (comp. items 5-14 inc.) ...                             | 1    |
| 4        | 30180.A0102 | Seal Kit (comp. items 5 & 6) .....  | A/R  |
| 5        |             | Gasket - Relief Body .....  | 2    |
| 6        |             | "O" Ring - Relief Valve Seat } Order 30180.A0102                              | 2    |
| 7        | 30180.A0112 | Seat - Relief Valve .....   | 1    |
| 8        | 30180.A0138 | Ball .....  | 1    |
| 9        | 30180.A0105 | Guide - Spring .....  | 1    |
| 10       | 30180.A0106 | Shim .....  | A/R  |
| 11       | 30180.A0107 | Body .....  | 1    |
| 12       | 30180.A0108 | Washer - Spacer .....   | 1    |
| 13       | 30180.A0109 | Spring .....  | 1    |
| 14       | 30180.A0110 | Poppet - Check .....  | 1    |
|          | 30180.A0111 | Plug Assembly (comp. Items 5,6,15&16 ).....                                   | 1    |
| 15       | 30180.A0110 | Poppet .....  | 1    |
| 16       | 30180.A0114 | Guide - Poppet .....  | 1    |
| 17       | 30180.A0115 | Positioner Assembly - Spring Return to Neutral<br>(comp. items 18-26 inc.)... | 1    |
| 18       | 30180.A0116 | Collar - Stop .....   | 1    |
| 19       | 30180.A0117 | Ring - Retaining .....  | 1    |
| 20       | 30180.A0118 | Screw .....   | 1    |
| 21       | 30180.A0119 | Disc - Stop .....   | 1    |
| 22       | 30180.A0120 | Bonnet - Rubber .....   | 1    |
| 23       | 30180.A0121 | Spring - Centring, Standard .....   | 1    |
| 24       | 30180.A0122 | Washer - Stop .....   | 1    |
| 25       | 30180.A0123 | Lockwasher .....  | 1    |
| 26       | 30180.A0124 | Seal .....  | 2    |
| 27       | 30180.A0125 | Flow Control Valve Assy. (comp. items 28-36 inc.)                             | 1    |
| 28       | 30180.A0126 | Sleeve .....  | 1    |
| 29       | 30180.A0127 | Washer .....  | 1    |
| 30       | 30180.A0128 | Ring - Retaining .....  | 1    |
| 31       | 30180.A0129 | Piston .....  | 1    |
| 32       | 30180.A0130 | Spring .....  | 1    |
| 33       | 30180.A0131 | Seal - "O" Ring .....   | 1    |
| 34       | 30180.A0132 | Union .....   | 1    |
| 35       | 30180.A0133 | Seal "O" Ring .....   | 1    |
| 36       | 30180.A0134 | Seal "O" Ring .....   | 1    |
| 37       | 8S.4R       | Bolt - Hex. Hd. M10 x 120 Long .....  | 3    |
| 38       | 7S.4        | Nut M10 .....   | 3    |
| 39       | 17S.5       | Washer - Spring M10 .....   | 3    |

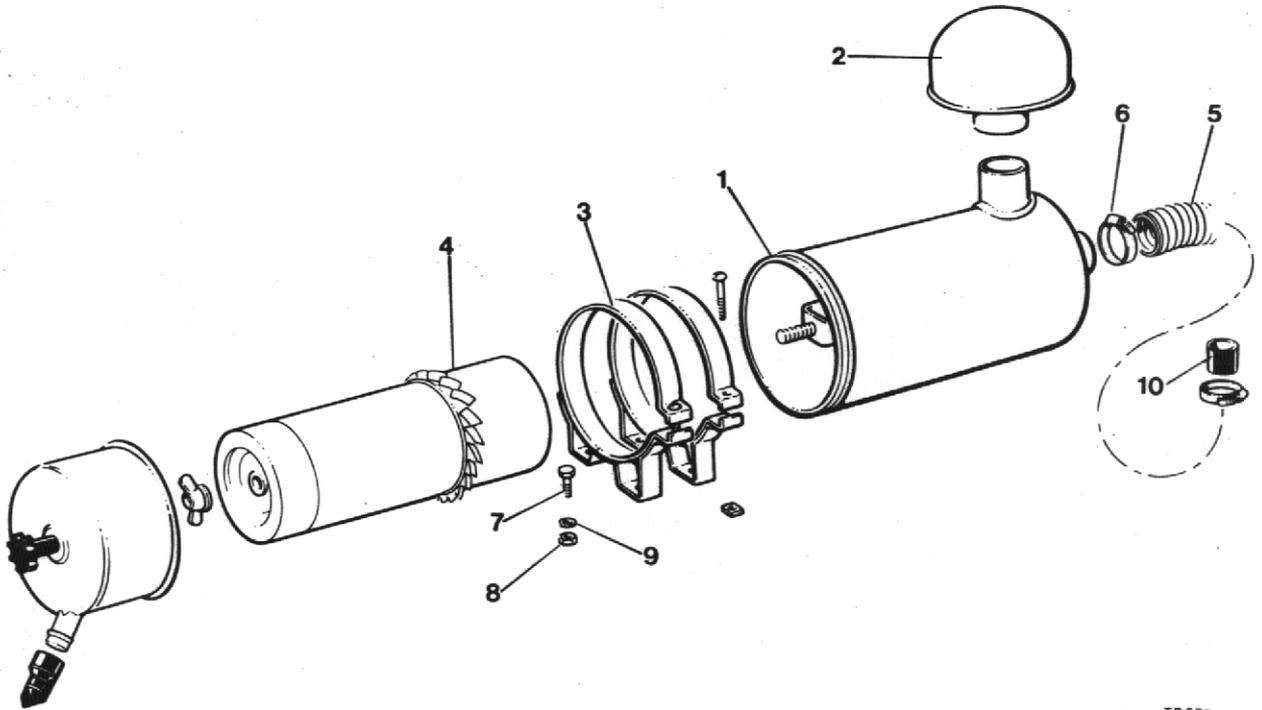




## MUDWINGS AND COVERS

| Item No. | Part No.    | Description                                      | Qty. |
|----------|-------------|--|------|
| 1        | 40074.A0X4  | L.H. Mudwing & Hydraulic Tank .....              | 1    |
| 2        | 11S.4C      | Setscrew Hex. Hd. M10 x 25 Long .....            | 12   |
| 3        | 61S.4       | Selflock Nuts M10 .....                          | 14   |
| 4        | 20098.A03   | Tank Filler Assembly Mounting Plate .....        | 1    |
| 5        | 40073.A03   | R.H. Mudwing & Fuel Tank .....                   | 1    |
| 6        | 40094.A05   | Engine Cover ..... (Non Elec. Start M/c's.)..    | 1    |
|          | 40094.A06   | Engine Cover ..... (Electric Start M/C's.)...    | 1    |
| 7        | 10554.A01   | Rubber Buffers .....                             | 4    |
| 8        | 10537.A02   | Toggle Fasteners .....                           | 2    |
| 9        | 10366.A01   | Engine Cover Strap .....                         | 1    |
| 10       | 10650.A19   | Clevis Pin .....                                 | 1    |
| 11       | 44S.2C      | Split Pin 3/32" x 1" Long .....                  | 1    |
| 12       | 40096.A01   | Foot Pedal Assembly Mounting Bracket .....       | 1    |
| 13       | 8S.4A       | Bolts Hex. Hd. M10 x 25 Long .....               | 4    |
| 14       | 17S.5       | Spring Washer M10 .....                          | 4    |
| 15       | 7S.4        | Nut Hex. M10 .....                               | 4    |
| 16       | 30125.A01   | Steering Column .....                            | 1    |
| 17       | 5ST.18B     | Gasket .....                                     | 1    |
| 18       | 11S.3B      | Setscrew Hex. Hd. M8 x 20 Long .....             | 4    |
| 19       | 17S.4       | Spring Washer M8 .....                           | 4    |
| 20       | 10538.A02   | Catch Plate .....                                | 2    |
| 21       | 8S.2F       | Bolt Hex. Hd. M6 x 50 Long .....                 | 4    |
| 22       | 11S.4D      | Setscrew Hex. Hd. M10 x 30 Long .....            | 4    |
| 23       | 7S.4        | Nut M10 .....                                    | 4    |
| 24       | 17S.5       | Spring Washer M10 .....                          | 4    |
| 25       | 40121.A02   | Floor Panel .....                                | 1    |
| 26       | 8S.3A       | Bolt Hex. Hd. M8 x 25 Long .....                 | 2    |
| 27       | 12S.3       | Plain Washer M8 .....                            | 2    |
| 28       | 61S.3       | Nut Self Locking M8 .....                        | 2    |
| 29       | 10565.A01   | Filler Cap Assembly .....                        | 2    |
|          | 10565.A0101 | Sealing Washer (Not illustrated) .....           | 2    |
| 30       | 10565.A02   | Breather Filler Cap (Alternative) .....          | 2    |
| 31       | 10364.A01 2 | Pivot Block.....                                 | 2    |
| 32       | 8S.4A       | Bolt Hex. Hd. M10 x 25 Long .....                | 6    |
| 33       | 12S.5       | Washer M10 .....                                 | 16   |
| 34       | 12S.1       | Washer 5mm .....                                 | 8    |
| 35       | C180B       | Washer 3/8" .....                                | 2    |
| 36       | 12S.2       | Washer M6 .....                                  | 4    |
| 37       | 4-35-301    | Seat c/w Bolts and Washers .....                 | 1    |
| 38       | 30148.A01   | Seat Frame .....                                 | 1    |
| 39       | 10519.A01   | Rubber Spring .....                              | 2    |
| 40       | 20113.A03   | Dynamo Belt Guard (Lister only) .....            | 1    |
| 41       | 11S.2B      | Setscrew Hex. Hd. M6 x 20 Long (Lister only) ... | 2    |
| 42       | 61S.2       | Selflock Nut M6 (Petter) (Qty. 6 off Lister) ... | 4    |
| 43       | 82S.3C      | Screw Rd. Hd. Slotted 2BA x ½" Long .....        | 8    |
| 44       | 85S.1       | Selflocking Nut 2BA .....                        | 8    |
| 45       | 82S.3E      | Round Hd. Screw 2BA x ¾" Long .....              | 6    |
| 46       | 85S.1       | Self Locking Nut 2BA .....                       | 6    |
| 47       | 12S.1       | Plain Washer M5 .....                            | 6    |
| 48       | 10632.A01   | Dipstick .....                                   | 1    |
| 49       | 10560.A01   | Engine Cover Strap Retainer (Petter only) .....  | 1    |
| 50       | 10566.A01   | Grommet .....                                    | 1    |
| 51       | 120S.1A     | Blanking Cap - Hydraulic Tank .....              | 2    |
| 52       | 12S.20      | Plain Washer 10 mm dia .....                     | 8    |

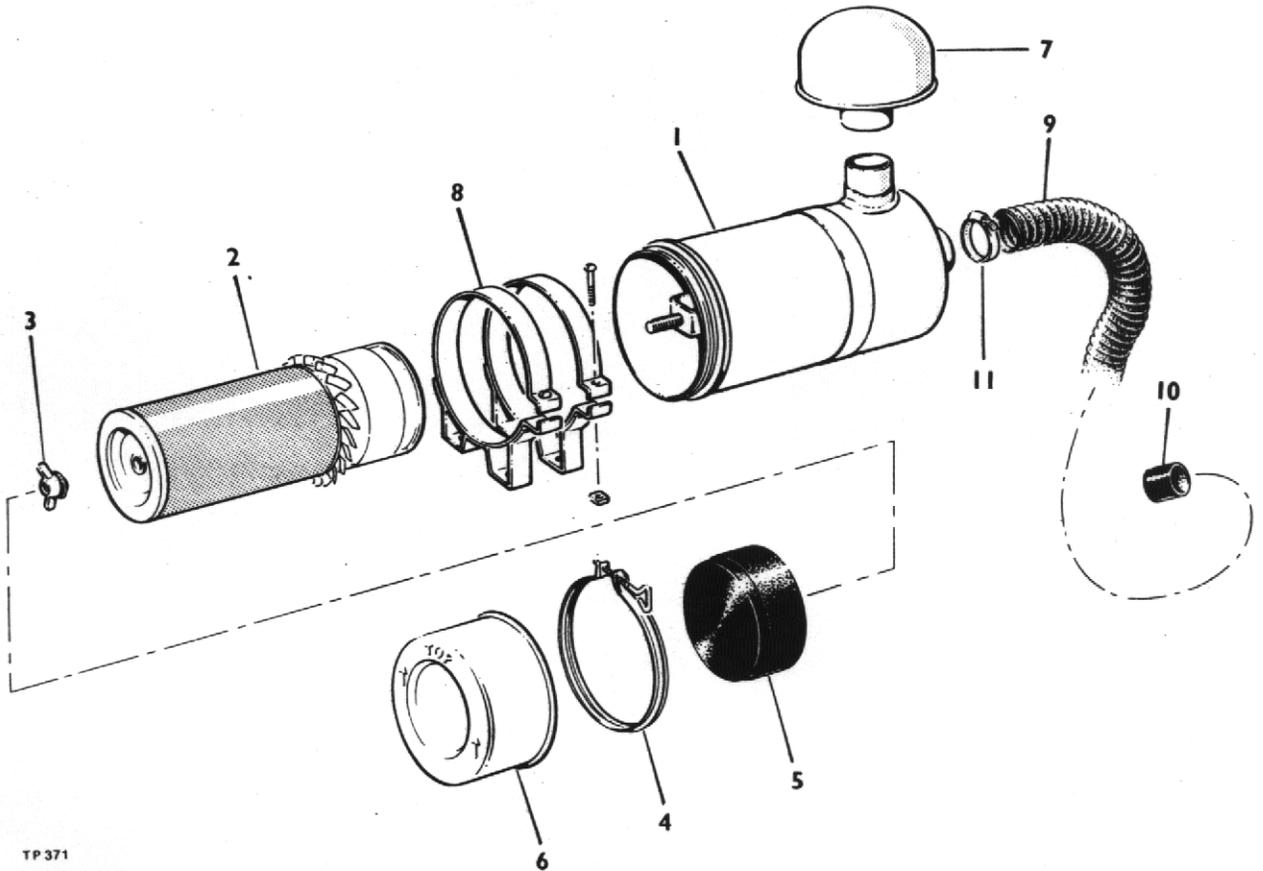
# AIR CLEANER



TP372

| Item No. | Part No.    | Description                          | Qty. |
|----------|-------------|--------------------------------------|------|
| 1        | 10532.A01   | Air Cleaner Assembly complete .....  | 1    |
| 2        | 10534.A01   | Stack Cap .....                      | 1    |
| 3        | 10533.A01   | Mounting Bands .....                 | 2    |
| 4        | 10532.A0101 | Element Assembly .....               | 1    |
| 5        | 10319.A02   | Hose (Petter) .....                  | 1    |
|          | 10319.A03   | Hose (Lister) .....                  | 1    |
| 6        | 97S.15      | Hose Clip (Petter) .....             | 1    |
|          | 97S.12      | Hose Clip (Lister) .....             | 1    |
| 7        | 8S.3A       | Setscrew Hex. Hd. M8 x 25 Long ..... | 4    |
| 8        | 61S.3       | Nut M8 .....                         | 4    |
| 9        | 12S.3       | Washer M8 .....                      | 4    |
| 10       | 10320.A01   | Pipe Adaptor .....                   | 1    |

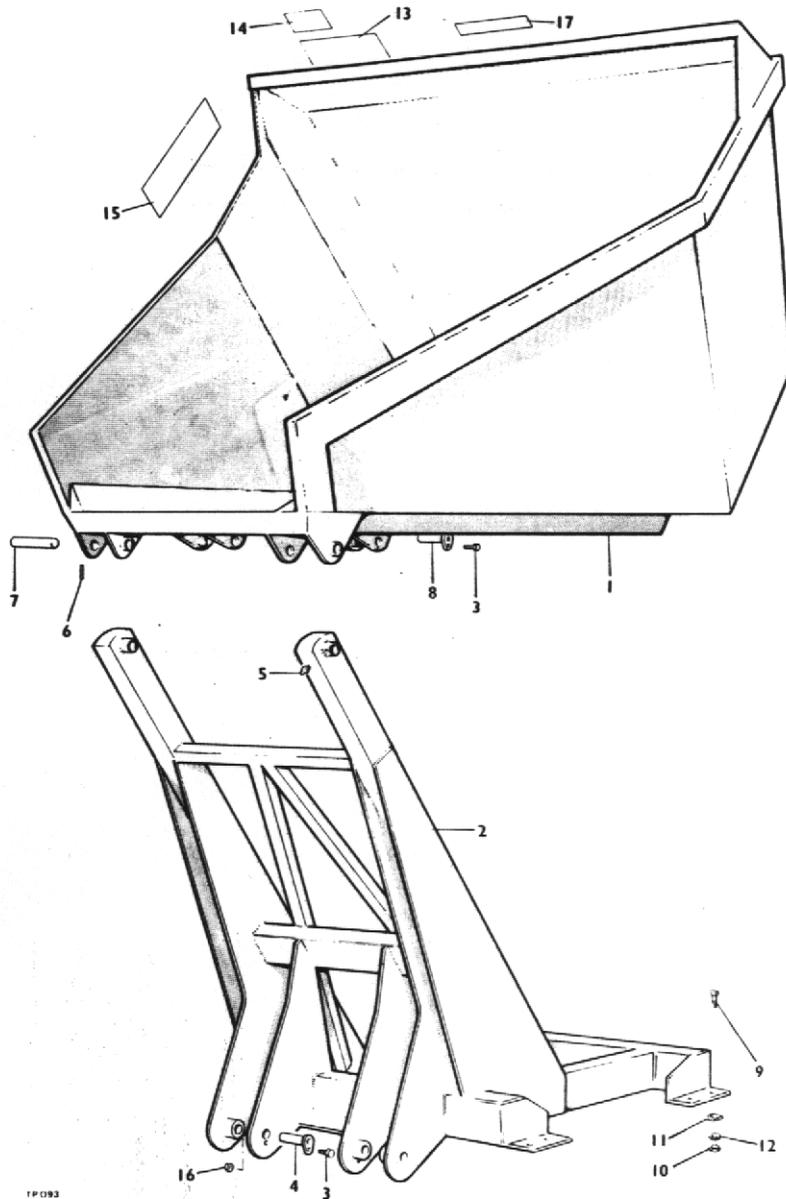
# AIR CLEANER



TP 371

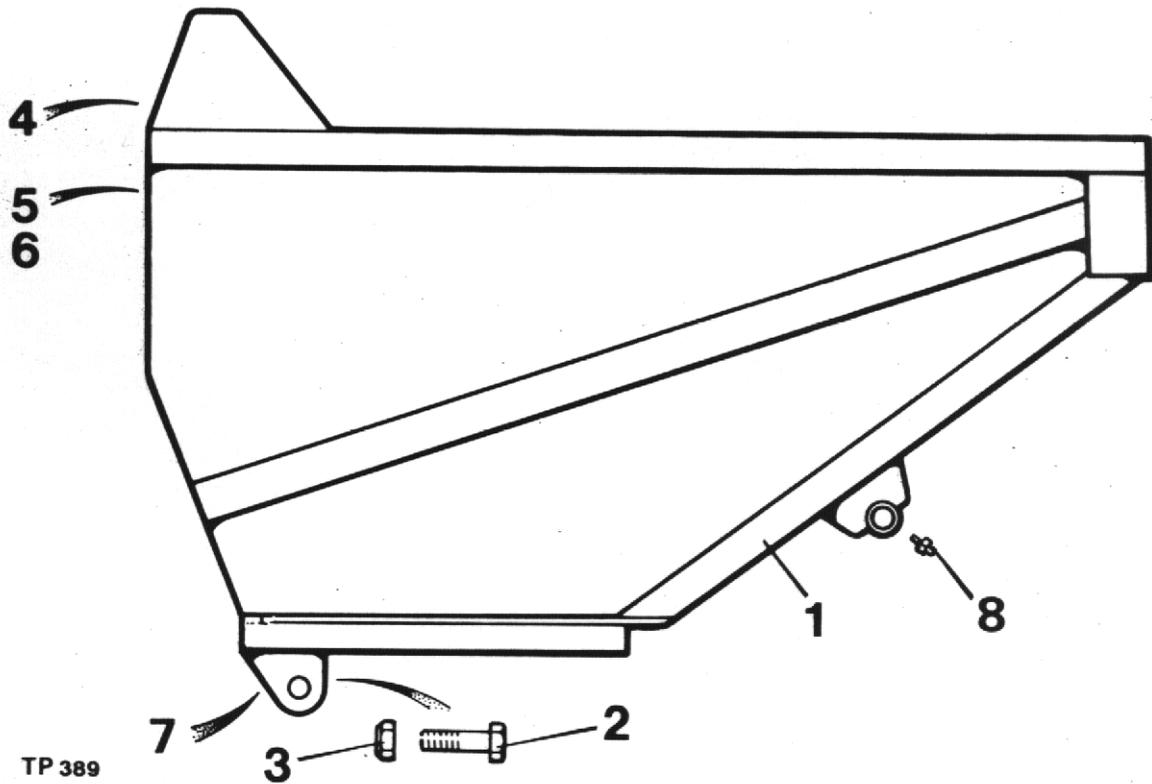
| Item No. | Part No.    | Description                            | Qty. |
|----------|-------------|--|------|
|          | 10532.A02   | Air Cleaner complete (items 1-6) ..... | 1    |
| 1        | 10532.A0201 | Body Assembly .....                    | 1    |
| 2        | 10532.A0101 | Element Assembly .....                 | 1    |
| 3        | 10532.A0202 | Nut and Gasket .....                   | 1    |
| 4        | 10532.A0203 | Clamp Assembly .....                   | 1    |
| 5        | 10532.A0204 | Skirt, Baffle .....                    | 1    |
| 6        | 10532.A0205 | Cup Assembly .....                     | 1    |
| 7        | 10534.A02   | Stick Cap .....                        | 1    |
| 8        | 10533.A02   | Mounting Bracket .....                 | 2    |
| 9        | 10319.A02   | Hose (Petter)                          | 1    |
|          | 10319.A03   | Hose (Lister)                          | 1    |
| 10       | 10320.A01   | Pipe Adaptor .....                     | 1    |
| 11       | 97S.15      | Hose Clip (Petter) .....               | 1    |
|          | 97S.12      | Hose Clip (Lister) .....               | 1    |

# HIGH DISCHARGE SKIP AND FRAME

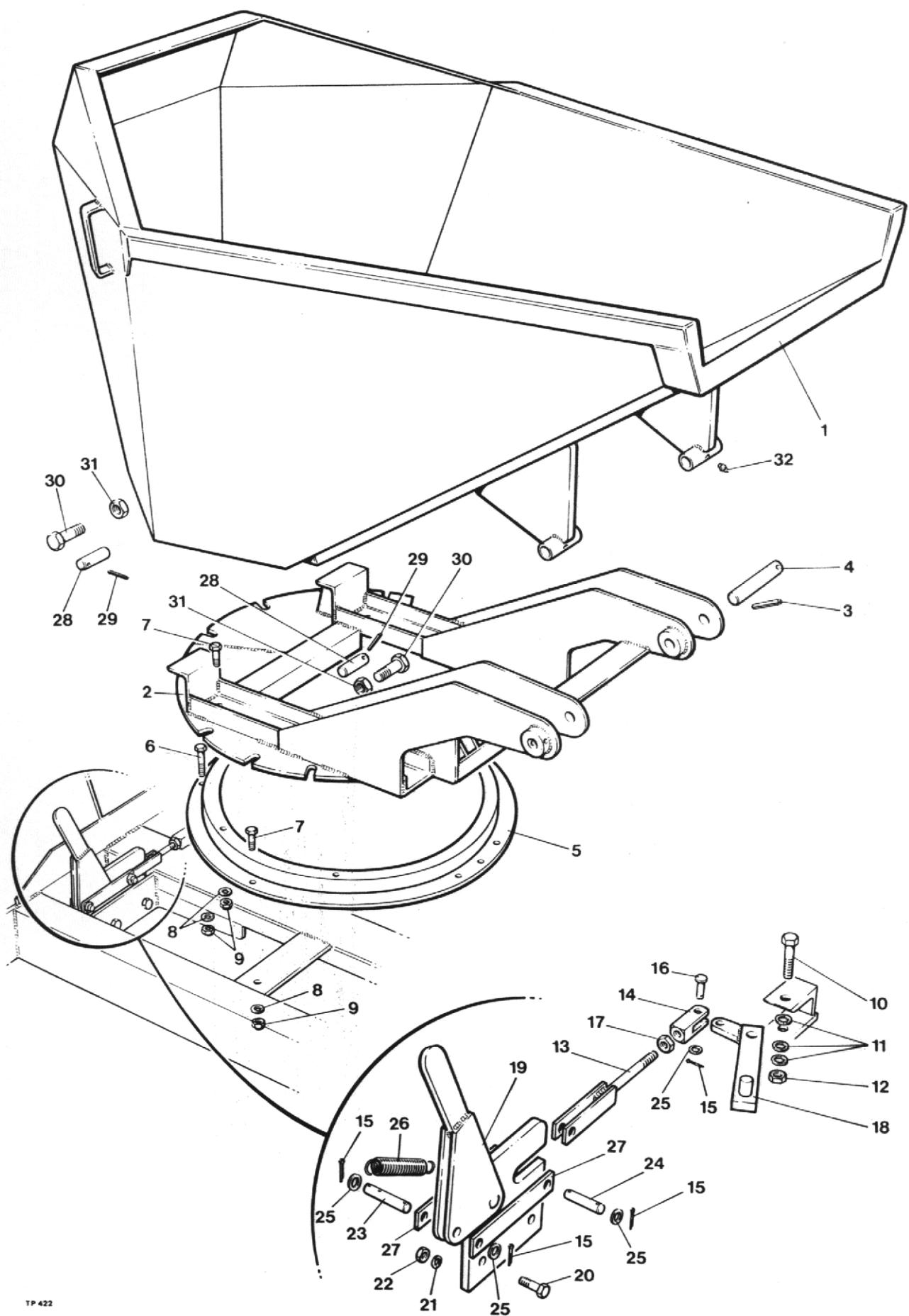


| Item No. | Part No.  | Description                                | Qty. |
|----------|-----------|--|------|
| 1        | 4-35-210  | Skip .....                                 | 1    |
| 2        | 4-35-323  | Frame .....                                | 1    |
| 3        | 8S.3A     | Bolt M8 x 25mm Long .....                  | 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 1/2" Long ..... | 2    |
| 7        | 5ST 84    | Skip Pivot Pin .....                       | 2    |
| 8        | 4-35-178  | Ram Pin .....                              | 2    |
| 9        | 8S.5E     | Bolt Hex.Hd. M12 x 45 Long .....           | 8    |
| 10       | 7S.6      | Locknut M12 .....                          | 8    |
| 11       | 105S.5    | Taper Washer M12 .....                     | 8    |
| 12       | 12S.6     | Plain Washer M12 .....                     | 8    |
| 13       | 20132.A01 | Label "Dumper Safety" .....                | 1    |
| 14       | DM 157    | Label "Unropped Skip" .....                | 1    |
| 15       | DM 154    | Label "Winget" .....                       | 1    |
| 16       | 7S.3      | Nut M8 .....                               | 4    |
| 17       | 10541.A01 | Label "Payload" .....                      | 1    |

# FORWARD TIP SKIP



| Item No. | Part No.  | Description                                 | Qty. |
|----------|-----------|---|------|
| 1        | 40090.A02 | Skip .....                                  | 1    |
| 2        | 10352.A01 | Skip Ram Bolts .....                        | 2    |
| 3        | 4.60-172  | Skip Ram Nuts .....                         | 2    |
| 4        | 10541.A02 | Label - "Payload" .....                     | 1    |
| 5        | 20132.A02 | Label - "Dumper Safety & Instruction" ..... | 1    |
| 6        | DM 196    | Label - "Lubrication" (Newage Axle) .....   | 1    |
| 7        | DM 157    | Label - "Unpropped Skip" .....              | 1    |
| 8        | 131S.3    | Grease Nipple .....                         | 2    |

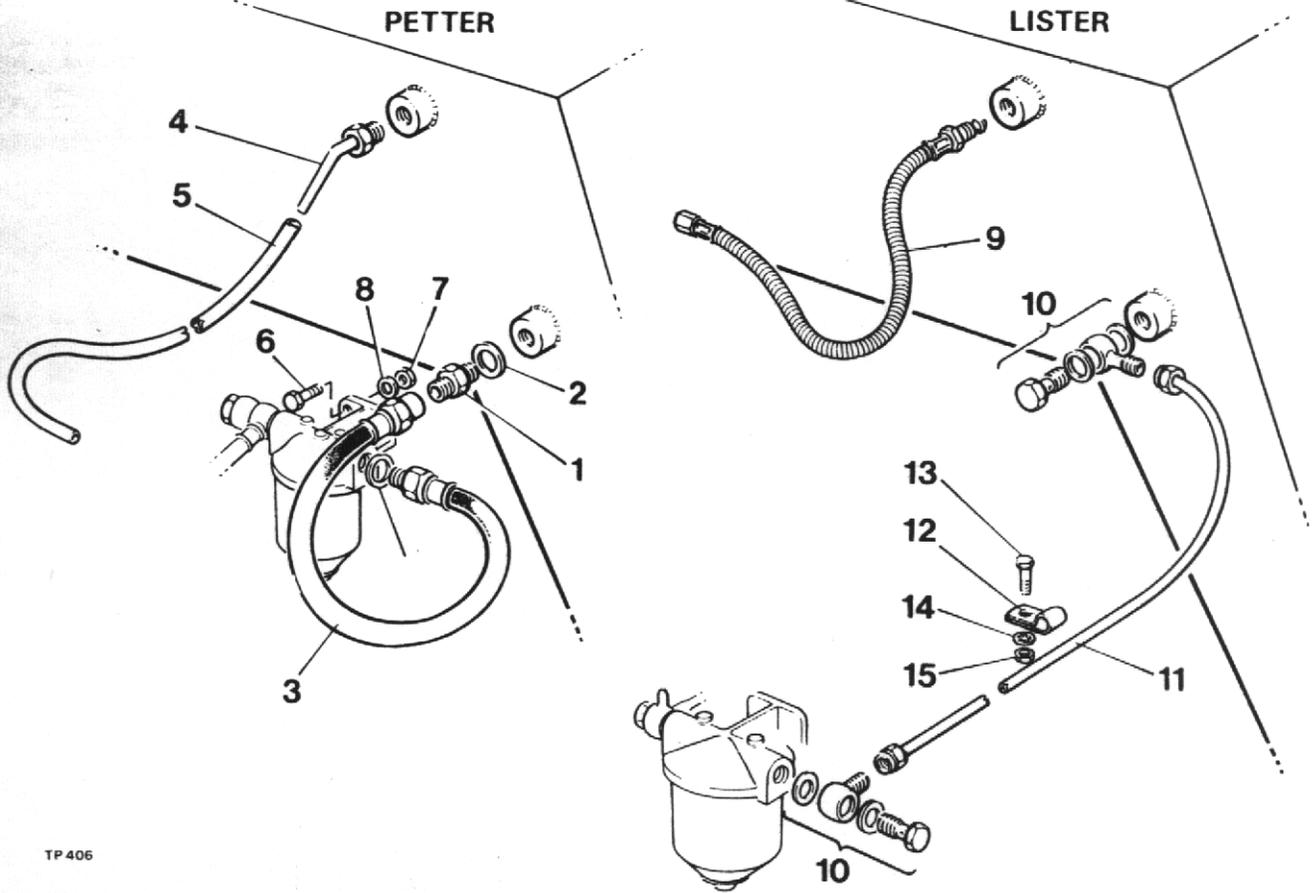


## ROTATING SKIP & FRAME

| Item No. | Part No.                     | Description                                  | Qty. |
|----------|------------------------------|--|------|
| 1        | 40115.A01                    | Rotating Skip .....                          | 1    |
| 2        | 40116.A01                    | Rotating Skip Frame .....                    | 1    |
| 3        | 54S.8S                       | Pin - Slotted Tubular .....                  | 2    |
| 4        | 10522.A01                    | Pin - Pivot .....                            | 2    |
| 5        | ASE 197                      | Ring-Turntable .....                         | 1    |
| 6        | 8S.5M                        | Bolt - Hex. Hd. M12 x 80 Long .....          | 2    |
| 7        | 8S.5D                        | Bolt - Hex. Hd. M12 x 40 Long .....          | 7    |
| 8        | 12S.6                        | Washer - Plain .....                         | 9    |
| 9        | 61S.5                        | Nut - Self Locking - 'Binx' M12 .....        | 9    |
| 10       | 8S.6L                        | Bolt - Hex. Hd. M16 x 75 Long .....          | 1    |
| 11       | 12S.22                       | Washer - Plain .....                         | 3    |
| 12       | 61S.6                        | Nut - Self Locking - 'Binx' M16 .....        | 1    |
| 13       | <del>10651.A01</del> 38S.D47 | Rod .....                                    | 1    |
| 14       | C174-H                       | Clevis End .....                             | 1    |
| 15       | 44S.3C                       | Pin - Split 1/8" dia. x 1" Long .....        | 5    |
| 16       | 10650.A04                    | Pin - Clevis .....                           | 1    |
| 17       | 2S.5                         | Nut - Hex. Full 1/2" BSF .....               | 1    |
| 18       | 10649.A01                    | Catch .....                                  | 1    |
| 19       | 20214.A01                    | Lever & Bracket (complete) .....             | 1    |
| 20       | 8S.5C                        | Bolt - Hex. Hd. M12 x 35 Long .....          | 2    |
| 21       | 12S.6                        | Washer - Plain .....                         | 2    |
| 22       | 61S.5                        | Nut - Self Locking - 'Binx' M12 .....        | 2    |
| 23       | 2ST-114                      | Pin .....                                    | 1    |
| 24       | 2ST-115                      | Pin .....                                    | 1    |
| 25       | 10S.4                        | Washer - Plain .....                         | 5    |
| 26       | C173B                        | Spring .....                                 | 1    |
| 27       | 2ST-112-5                    | Link .....                                   | 2    |
| 28       | 10739.A02                    | Pin - Cylinder Pivot (when fitted) .....     | 4    |
| 29       | 54S.7P                       | Pin - Slotted Tubular (when fitted) .....    | 4    |
| 30       | 4/35-110                     | Bolt-(Skip Ram) Hex. Hd. (when fitted) ..... | 4    |
| 31       | 74S.10                       | Nut - Half (Skip Ram) (when fitted) .....    | 4    |
| 32       | 131S.3                       | Grease Nipple .....                          | 2    |

Note: Separate skip panels can be supplied - Details on application.

# FUEL SYSTEM

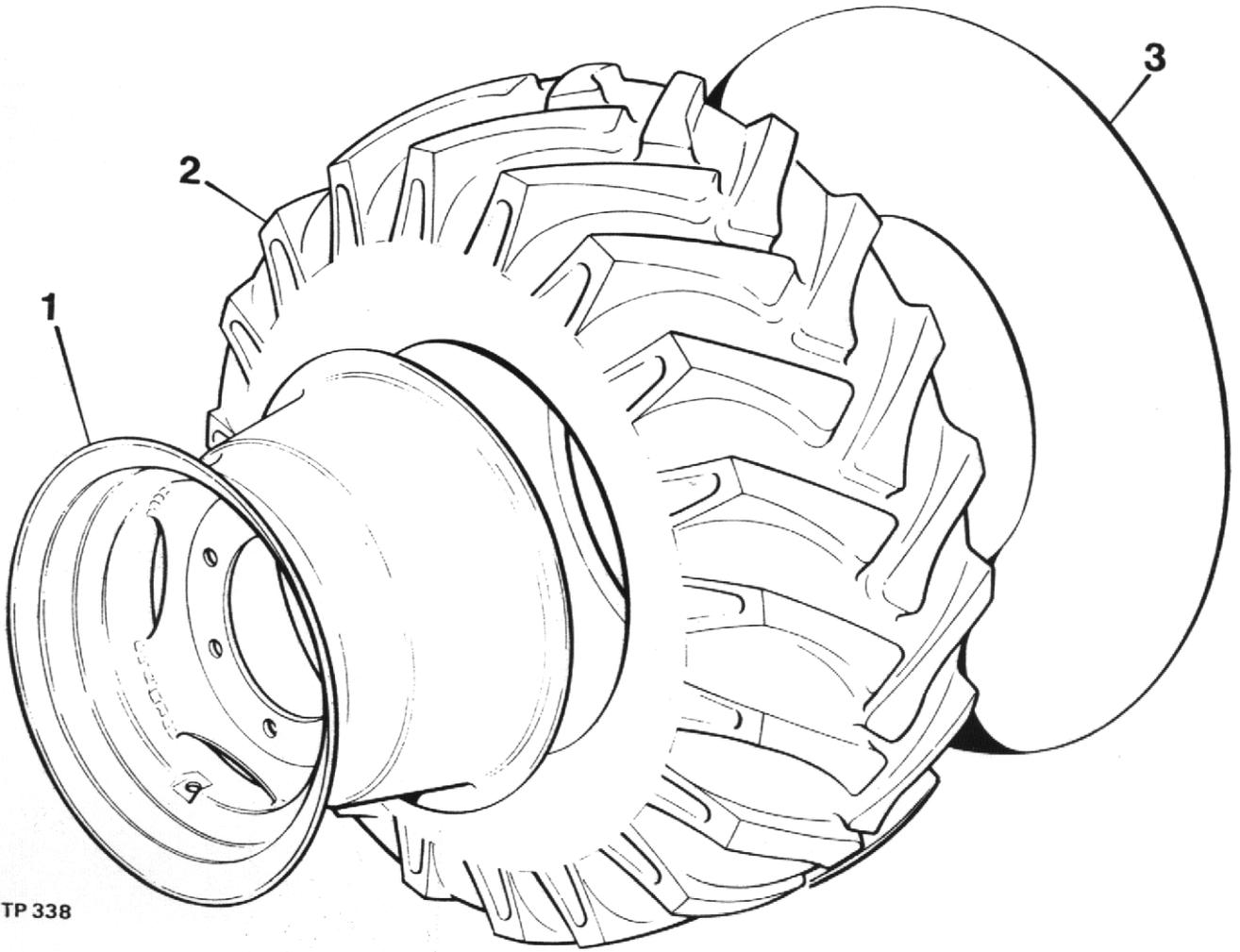


TP 406

| Item No. | Part No.  | Description  | Qty. |
|----------|-----------|--|------|
| 1        | 4-60-189  | * Stud Coupling - Flexible Pipe to Tank.....       | 1    |
| 2        | 4-35-364  | * Washer - Flexible Pipe to Tank .....             | 1    |
| 3        | 10605.A01 | * Flexible Pipe - Tank to Filter .....             | 1    |
| 4        | 10576.A01 | * Union - Bleed off Tube to Tank .....             | 1    |
| 5        | 29S.8     | * Bleed off Tube 30" Long.....                     | 1    |
| 6        | 11S.2B    | * Setscrew Hex. Hd. M6 x 20 Lg., Filter to Tank .. | 2    |
| 7        | 72S.2     | * Nut M6 - Filter to Tank .....                    | 2    |
| 8        | 12S.2     | * Washer - Plain M6 dia., Filter to Tank .....     | 2    |
| 9        | 10357.A04 | + Leak Back Flexible Pipe .....                    | 1    |
| 10       | 117S.2    | + Banjo Coupling Assembly .....                    | 2    |
| 11       | 29S.5     | + Pipe - Tank to Filter .....                      | 1    |
| 12       | 10350.A01 | + Pipe Clip.....                                   | 1    |
| 13       | 64S.3     | + Setscrew Hex. Hd. M6 x 25 Lg.....                | 1    |
| 14       | 13S.2     | + Washer - Shakeproof M6 .....                     | 1    |
| 15       | 65S.2     | + Nut Hex M6 .....                                 | 1    |

\* Petter Engines  
+ Lister Engines

## WHEELS AND TYRES

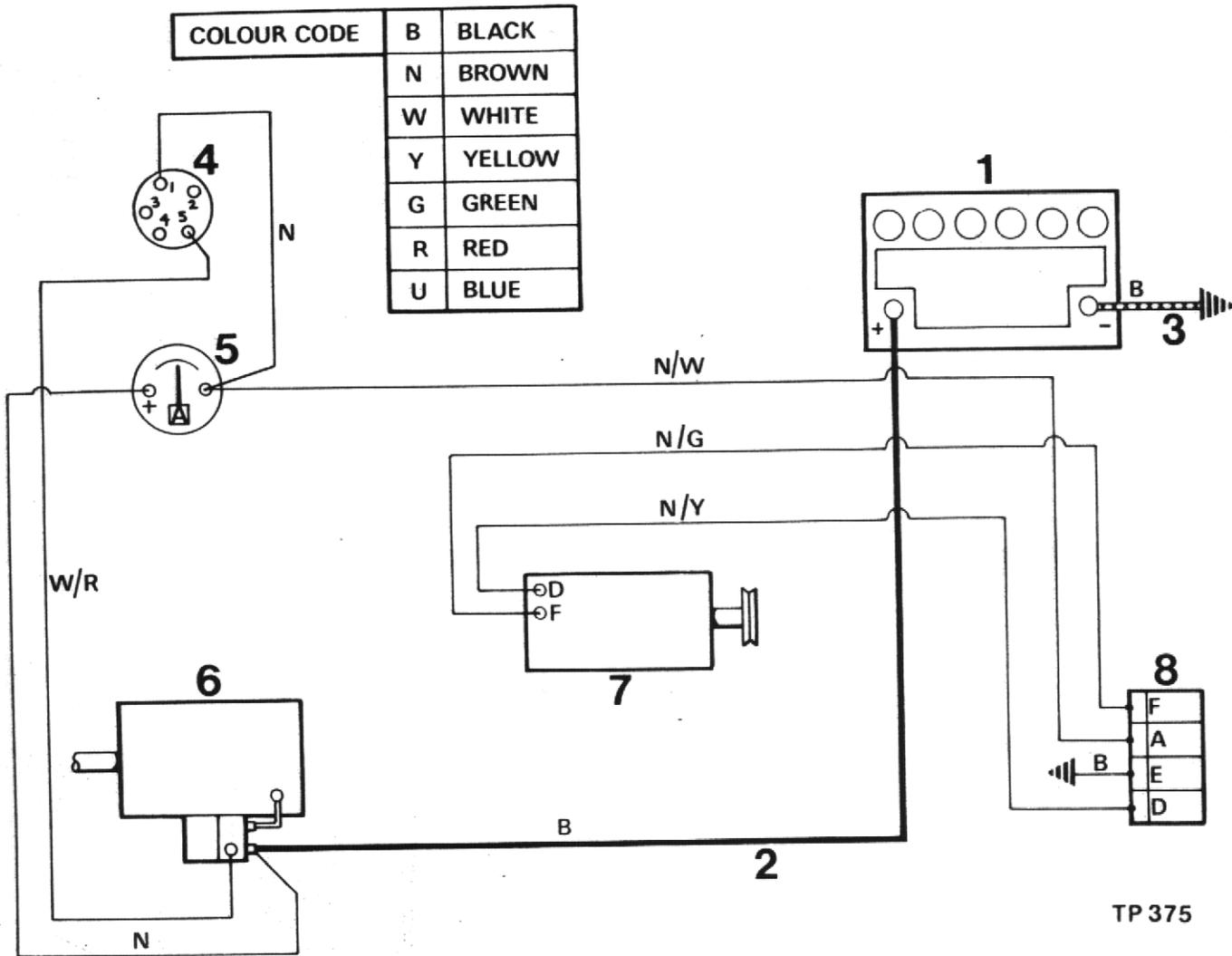


TP 338

| Item No. | Part No.  | Description                  | Qty. |
|----------|-----------|------------------------------|------|
|          | 24SD9     | L.H. Wheel complete .....    | 2    |
|          | 24SD10    | R.H. Wheel complete .....    | 2    |
| 1        | 30192.A01 | Wheel Rim .....              | 4    |
| 2        | 20S008    | Tyre 7.50 x 16 x 6 Ply ..... | 4    |
| 3        | 23S003    | Tube 7.50 x 16 .....         | 4    |
|          | 10668.A01 | Nut (Not illustrated) .....  | 20   |

# WIRING DIAGRAM (ELECTRICAL SYSTEM)

(LISTER)

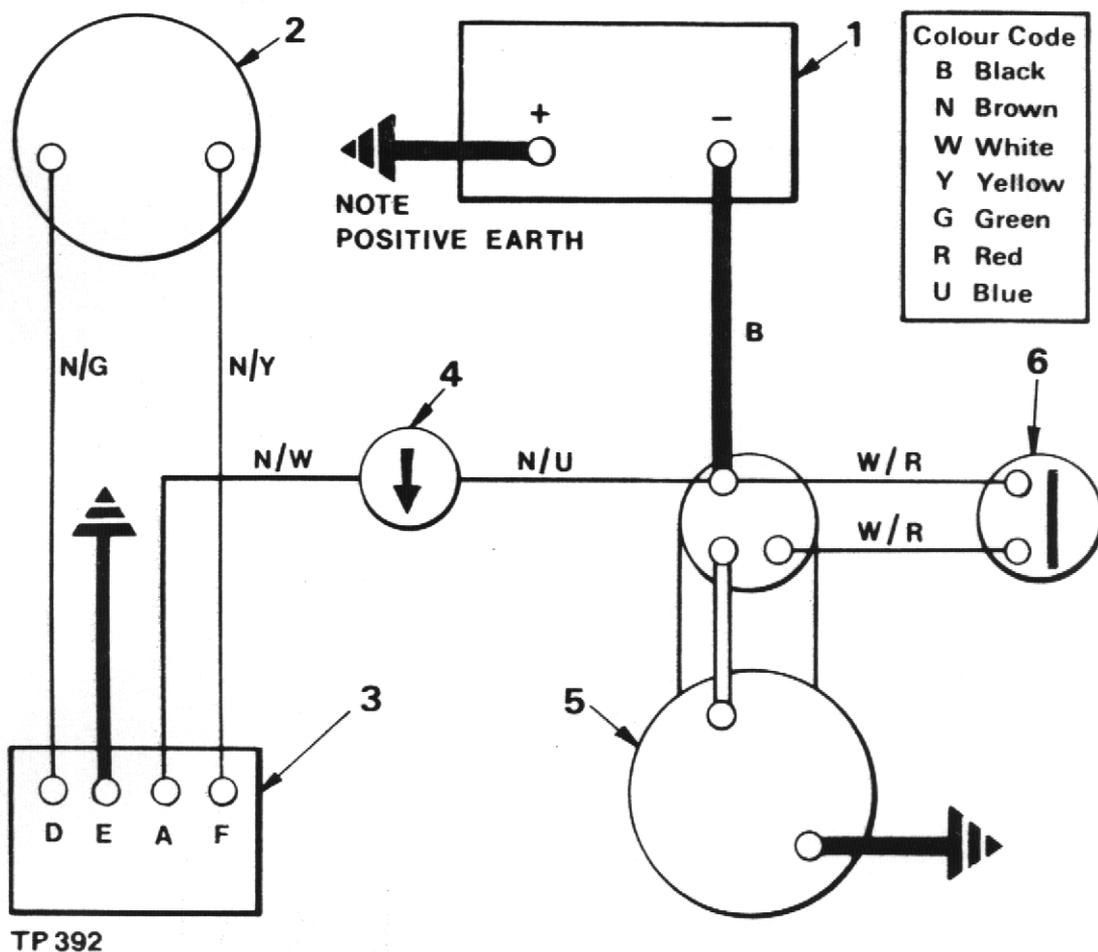


TP 375

| Item No. | Part No.  | Description                                     | Qty. |
|----------|-----------|---|------|
| 1        | 109S.1    | Battery .....                                   | 1    |
|          | 109S.3    | Battery (Alternative) .....                     | 1    |
| 2        | 10227.A01 | Positive Cable c/w End Fittings .....           | 1    |
| 3        | 10228.A01 | Negative Cable c/w End Fittings .....           | 1    |
| 4        | 10614.A02 | Switch c/w Keys .....                           | 1    |
| 5        | 10612.A02 | Ammeter .....                                   | 1    |
| 6        | 10613.A02 | Starter Motor & Solenoid .....                  | 1    |
| 7        | 10610.A02 | Generator .....                                 | 1    |
| 8        | 10611.A02 | Regulator .....                                 | 1    |
| 9        | 20105.A01 | Wiring Harness Complete (Not Illustrated) ..... | 1    |
| 10       | FSE 448   | Adhesive Clip (Large) (Not Illustrated) .....   | A/R  |
| 11       | FSE 449   | Adhesive Clip (Small) (Not Illustrated) .....   | A/R  |

# WIRING DIAGRAM (ELECTRICAL SYSTEM)

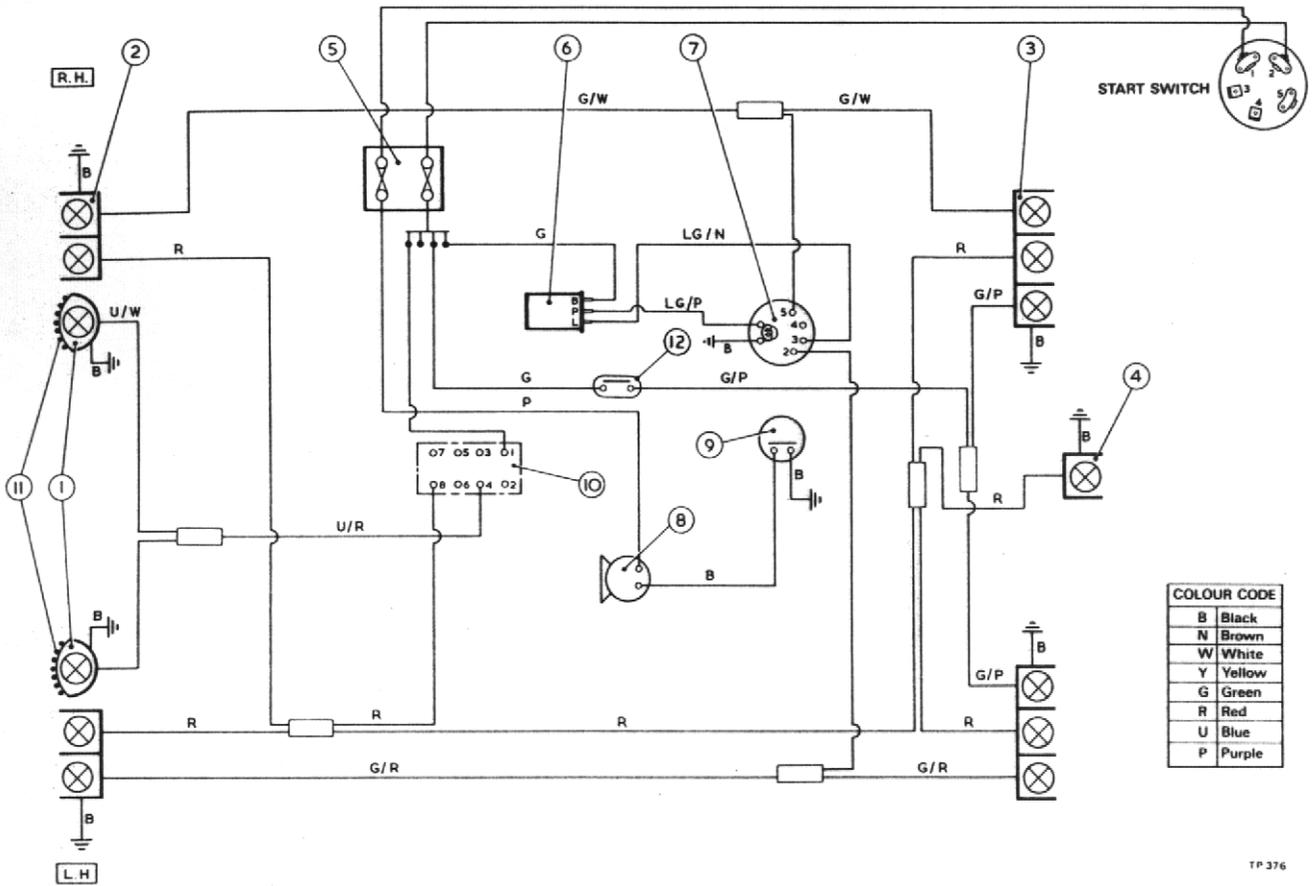
PETTER



| Item No. | Part No.   | Description                            | Qty. |
|----------|------------|--|------|
|          | 109S.1     | Battery .....                          | 1    |
| 1        | 109S.3     | Battery (Alternative) .....            | 1    |
| 2        | 10610.A01  | Dynamo .....                           | 1    |
| 3        | 10611.A02  | Regulator .....                        | 1    |
| 4        | 10612.A02  | Ammeter .....                          | 1    |
| 5        | 10613.A01  | Starter c/w Solenoid .....             | 1    |
| 6        | 10614.A01  | Starter Switch .....                   | 1    |
|          | 201105.A02 | Wiring Harness (Not illustrated) ..... | 1    |

# WIRING DIAGRAM (FULL ROAD LIGHTING KIT)

(PETER & LISTER)



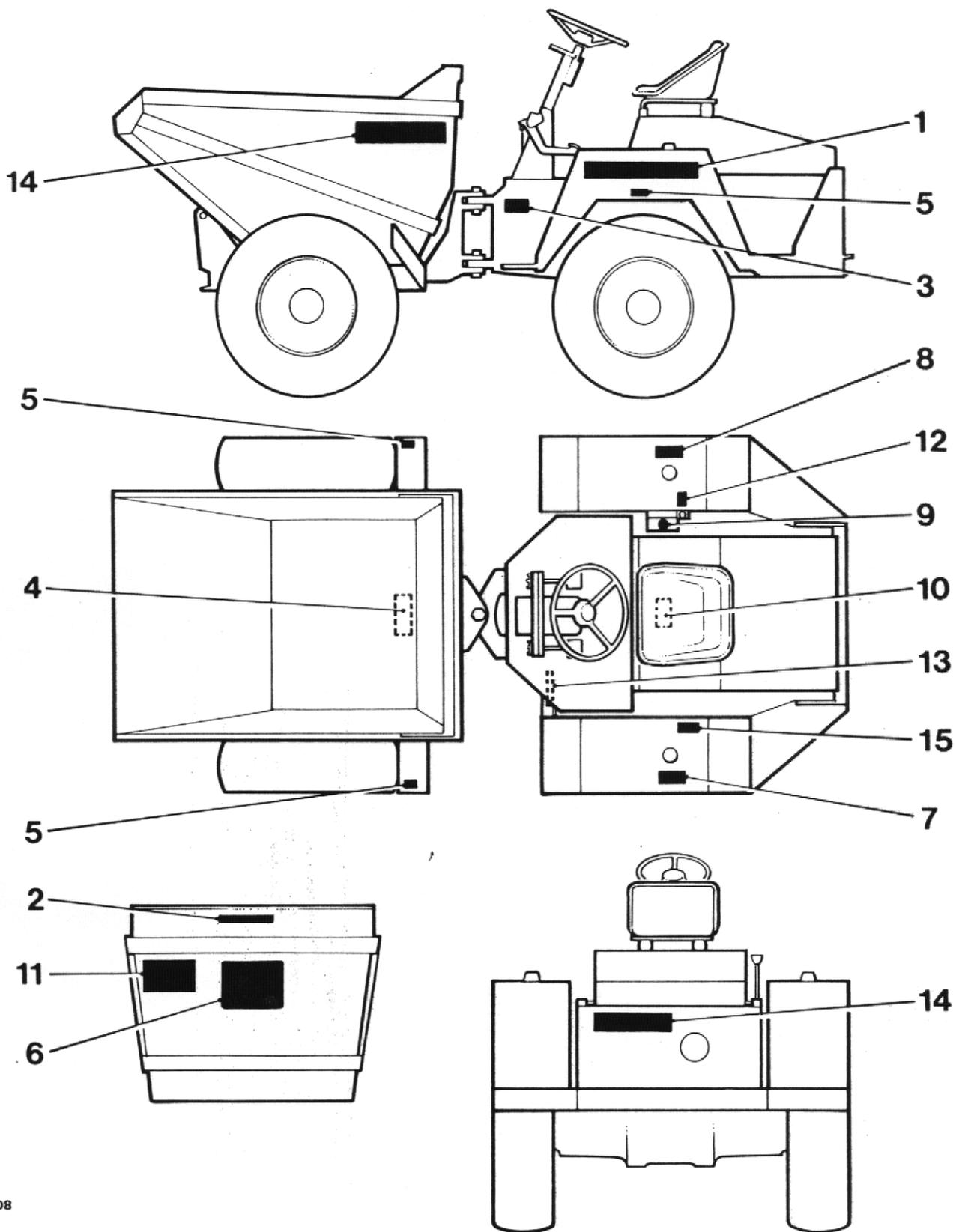
| COLOUR CODE |        |
|-------------|--------|
| B           | Black  |
| N           | Brown  |
| W           | White  |
| Y           | Yellow |
| G           | Green  |
| R           | Red    |
| U           | Blue   |
| P           | Purple |

TP 376

| Item No. | Part No.    | Description                      | Qty. |
|----------|-------------|----------------------------------|------|
| 1        | 20013.A0112 | Headlight .....                  | 2    |
| 2        | FSE 333     | Sidelight/Indicator .....        | 2    |
|          | 82S.3E      | Screw 2BA x 3/4" Long .....      | 8    |
|          | 85S.1       | Nut, Self Locking 2BA .....      | 8    |
|          | 12S.1       | Washer .....                     | 8    |
| 3        | FSE 334     | Rear Light/Indicator .....       | 2    |
|          | ESE 176     | Rear Light Cowl Assembly .....   | 1    |
|          | 82S.3E      | Screw 2BA x 3/4" Long .....      | 8    |
|          | 85S.1       | Nut, Self Locking 2BA .....      | 8    |
|          | 12S.1       | Washer .....                     | 8    |
| 4        | 10615.A01   | Number Plate Light .....         | 1    |
| 5        | 10644.A01   | Fuse Box .....                   | 1    |
| 6        | 10616.A01   | Flasher Unit .....               | 1    |
|          | 82S.3C      | Screw 2BA x 1/2" Long .....      | 1    |
|          | 85S.1       | Nut, Self Locking 2BA .....      | 1    |
|          | 12S.1       | Washer .....                     | 1    |
| 7        | 10617.A01   | Indicator Switch .....           | 1    |
|          | 82S.7C      | Screw 6BA x 1/2" Long .....      | 2    |
|          | 85S.3       | Nut, Self Locking 6BA .....      | 2    |
| 8        | 10618.A01   | Horn complete with Bracket ..... | 1    |
| 9        | 10619.A01   | Horn Button .....                | 1    |
|          | 82S.7E      | Screw 6BA x 3/4" Long .....      | 2    |
|          | 85S.3       | Nut, Self Locking 6BA .....      | 2    |
| 10       | 10620.A01   | Light Switch .....               | 1    |
| 11       | 10216.A01   | Stone Guard .....                | 2    |
| 12       | 10744.A01   | Brake Switch .....               | 1    |

OPTIONAL EXTRAS

| Item No. | Part No.   | Description                    | Qty. |
|----------|------------|--------------------------------|------|
| 1        | ESE.179-4  | Battery Tie Rods .....         | 2    |
| 2        | 7S.2       | Nuts M.6 .....                 | 8    |
| 3        | ESE.178    | Battery Clamp .....            | 1    |
| 4        | 30122.A01  | Engine Cover Assembly .....    | 1    |
| 5        | 10447.A02  | Instrument Panel .....         | 1    |
| 6        | 61.S9      | Nut 'Binx' M.4 .....           | 4    |
| 7        | 10371.A02  | Flexible Mounting .....        | 4    |
| 8        | 20139.A01  | Battery Cover Plate .....      | 1    |
| 9        | 4-60-233-1 | Label 'Negative Earth' .....   | 1    |
| 10       | 109S.1     | Battery .....                  | 1    |
| 11       | 10227.A01  | Battery Cable (Positive) ..... | 1    |
| 12       | 10228.A01  | Battery Cable (Negative) ..... | 1    |
| 13       | 10606.A01  | Wheel Brace .....              | 1    |
| 14       | 10608.A01  | Mirror Support Bracket .....   | 1    |
| 15       | CSE.200    | Horn .....                     | 1    |
| 16       | 10607.A01  | Licence Holder .....           | 1    |
| 17       | 30164.A01  | Reversing Siren .....          | 1    |
| 18       | 10203.A02  | Rear View Mirror .....         | 1    |



## LABELS

| Item No. | Part No.   | Description  | Qty. |
|----------|------------|--|------|
| 1        | 20128.A06  | M/C Identification & Payload Label .....           | 2    |
| 2        | 10541.A03  | Payload Label .....                                | 1    |
| 3        | DM 198     | Steering Lock Warning .....                        | 2    |
| 4        | DM 157     | Warning Label (Unropped Skip) .....                | 1    |
| 5        | 10540.A02  | Tyre Pressure Label (35 p.s.i.) .....              | 4    |
| 6        | 20132.A02  | Dumper Safety & Instruction Label .....            | 1    |
| 7        | 10546.A01  | Diesel Fuel Label .....                            | 1    |
| 8        | 10546.A02  | Hyd. Oil Only Label .....                          | 1    |
| 9        | 10284.A01  | Dumper Return Label .....                          | 1    |
| 10       | 10536.A01  | Warning Label (Unropped Cover) .....               | 1    |
| 11       | DM 196     | Lubrication Label (Newage Axles) .....             | 1    |
| 12       | ESE 236    | Engine 'Stop' Label .....                          | 1    |
| 13       | 4-60-233-2 | Positive Earth Label (Elec. M/c's only)(Petter) .. | 1    |
|          | 4-60-233-1 | Negative Earth Label (Elec. M/c's only)(Lister) .. | 1    |
| 14       | DM 154     | Winget Label .....                                 | 3    |
| 15       | 10215.A02  | Filter Instruction Label .....                     | 1    |

## DECIMAL, FRACTIONAL AND METRIC EQUIVALENTS

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

## INCHES INTO MILLIMETRES

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

Use in conjunction with above table.

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

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

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

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

# **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**