

# **WINGET**

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

### **4B4000 DUMPER (CAPACITY 4000KG)**

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**WINGET LIMITED  
PO BOX 41  
EDGEFOLD INDUSTRIAL ESTATE  
PLODDER LANE  
BOLTON  
LANCS  
BL4 OLS  
TEL: ++ 44 (0) 1204 854650  
FAX: ++ 44 (0) 1204 854663  
service@winget.co.uk  
parts@winget.co.uk  
www.winget.co.uk**

## **INTRODUCTION**

This Parts & Operators Manual is a re-print of the manual last published in 1984 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 4B4000 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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**BOLTON**  
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**TEL ++ 44 (0) 1204 854650**  
**FAX ++ 44 (0) 1204 854663**  
**E mail [service@winget.co.uk](mailto:service@winget.co.uk)**  
**[parts@winget.co.uk](mailto:parts@winget.co.uk)**  
**[www.winget.co.uk](http://www.winget.co.uk)**



# 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 to within 2" of the top. 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 hoses supplying the brake master cylinder from the main hydraulic tank.

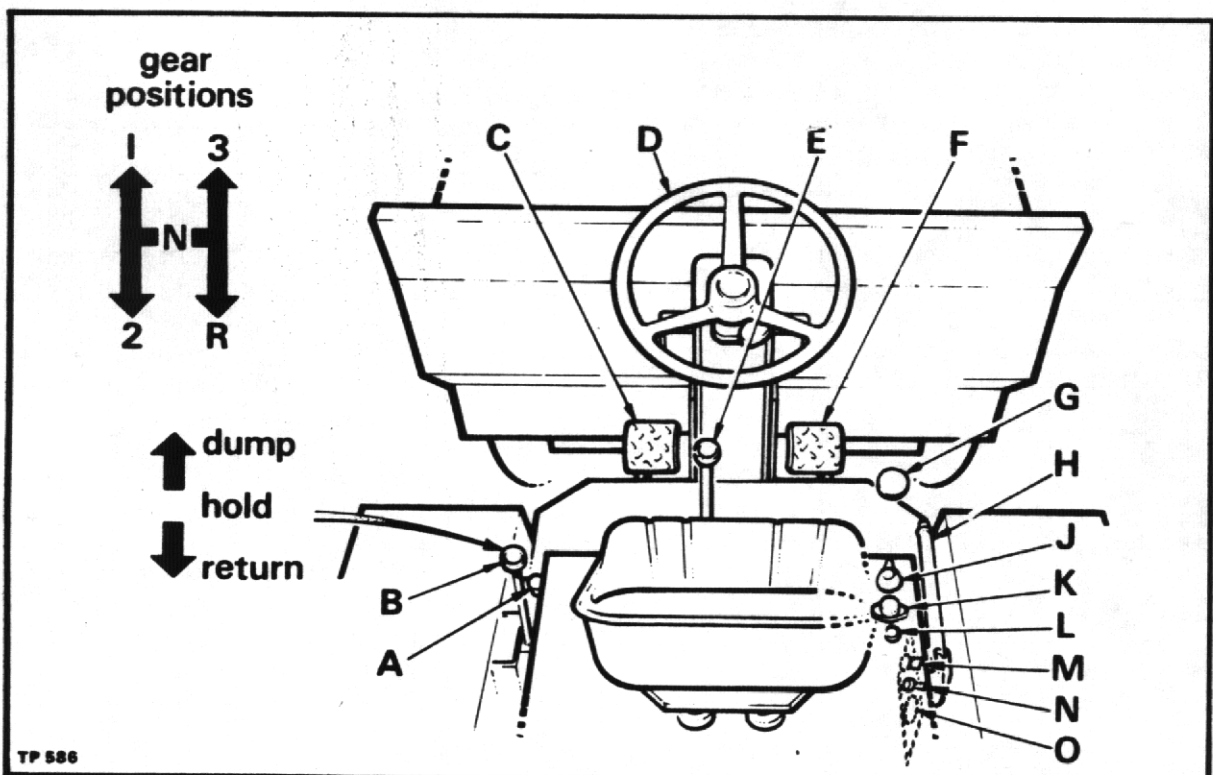
### MISCELLANEOUS

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 AND GENERAL MAINTENANCE SECTION.

- |                       |                          |                      |
|-----------------------|--------------------------|----------------------|
| A. ENGINE STOP        | F. BRAKE PEDAL           | L. NO CHARGE WARNING |
| B. DUMP CONTROL LEVER | G. ACCELERATOR PEDAL     | M. KEY SWITCH        |
| C. CLUTCH PEDAL       | H. HANDBRAKE             | N. LIGHT SWITCH *    |
| D. STEERING WHEEL     | J. DIRECTION INDICATOR * | O. AMMETER           |
| E. GEAR LEVER         | K. HORN PUSH *           | * IF FITTED.         |





SPECIFICATION

4B4000

|    |                                |                   |
|----|--------------------------------|-------------------|
| A. | Overall Height                 | 2100 mm (6' 11")  |
|    | Overall Height with Cab option | 2860 mm (9' 5")   |
| B. | Loading Height                 | 1453 mm (4' 8")   |
| C. | Wheelbase                      | 2134 mm (7' 0")   |
| D. | Overall Length                 | 3970 mm (13' 0")  |
| E. | Ground Clearance               | 330 mm (1' 1")    |
| F. | Overall Width                  | 2150 mm (7' 0")   |
| G. | Discharge Height               | 355 mm (1' 2")    |
| H. | Overall Height Tipped          | 2280 mm (7' 6") * |
| J. | Discharge Forward of Tyre      | 400 mm (1' 4") *  |
| K. | Overhand                       | 958 mm (3' 2") *  |
| L. | Wheeltrack                     | 1680 mm (5' 6") * |
| M. | Prow Width                     | 1930 mm (6' 4") * |

Approximate \*

|                   |                    |
|-------------------|--------------------|
| Axle Articulation | 355 mm (1' 2")     |
| Turning Circle    | 8380 mm (27' 6")   |
| Unladen Weight    | 3240 Kg (7144 lb.) |

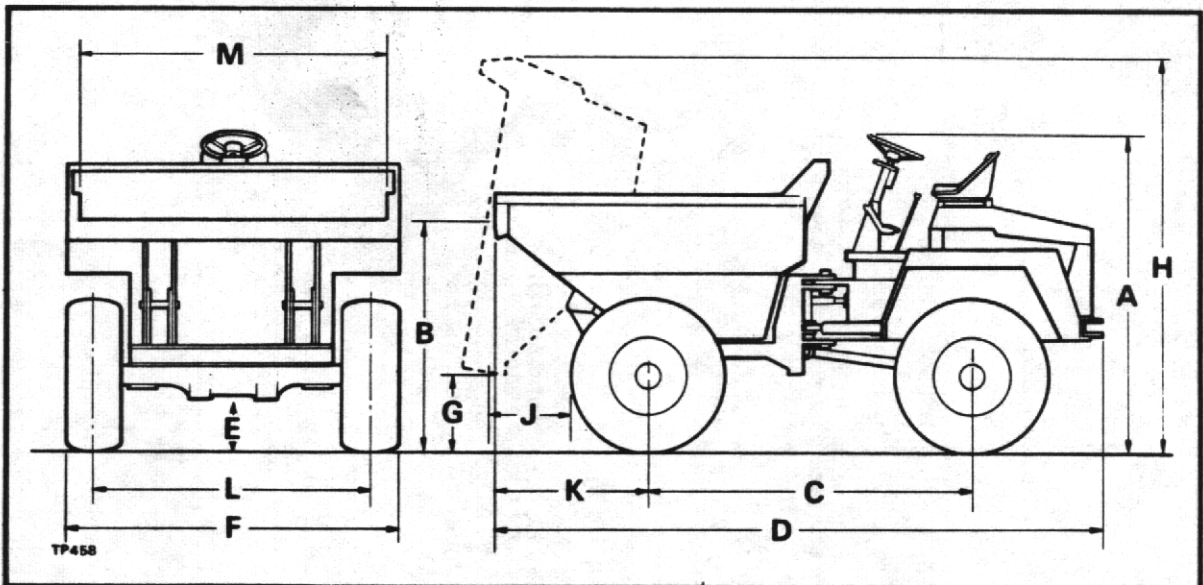
|                 |                        |              |                      |
|-----------------|------------------------|--------------|----------------------|
| FUEL TANK       | 46.5 Ltr. (10.25 gall) | TRANSFER BOX | .85 Ltrs. (1½ pts.)  |
| HYDRAULIC TANK  | 46.5 Ltr. (10.25 gall) | GEARBOX      | 1.28 Ltrs. (2½ pts.) |
| ENGINE - LISTER | 12.5 Ltr. (22 pints. ) | AXLE         | 9.1 Ltrs. (16 pts.)  |
|                 |                        | TYRES        | 12.5 x 18 x 10 ply.  |

SKIP

|                 |                      |                 |                        |
|-----------------|----------------------|-----------------|------------------------|
| Payload         | 4000 Kg. (8820 lb.)  | Full & Levelled | 2.12 cu.m. (75 cu.ft.) |
| Liquid Capacity | 1.5 cu.m. (53 cu.ft) | Heaped          | 2.80 cu.m. (99 cu.ft.) |

ROAD SPEEDS - LISTER ENGINE HR3 48.67 hp (36.4 KW) @ 2200 rpm

| Gear | K.P.H. | M.P.H. |
|------|--------|--------|
| 1st  | 4.2    | 2.6    |
| 2nd  | 8.4    | 5.2    |
| 3rd  | 16.4   | 10.2   |
| Rev. | 4.7    | 2.9    |



RECOMMENDED LUBRICATING OILS - NEWAGE AXLES

| COMPANY   | ENGINE  | NEWAGE 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 GDX 20W<br>ESSOLUBE HDX 30<br>ESSOLUBE HDX 20W<br>ESSOLUBE HDX 10W                           | TORQUE FLUID 62                             | GEAR OIL 85W/140<br>GEAR OIL GP 85W/140<br>GEAR OIL GP 85W/140<br>GEAR OIL GP 80W   | ESSOLUBE HDX 30<br>ESSOLUBE HDX 30           | BEACON 2<br>BEACON 2                           | NUTO H32<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 CR1 20<br>DEUSOL CR1 30<br>DEUSOL CR1 20<br>DEUSOL CR1 10                                      | AGRICASTROL AS<br>AGRICASTROL AS<br>SPECIAL | DEUSOL EP 90<br>DEUSOL GEAR EP 140<br>DEUSOL GEAR EP 90<br>DEUSOL GEAR EP 80  | DEUSOL CR1 30<br>DEUSOL CR1 30               | CASTROL SPHEROL APT 2<br>CASTROL SPHEROL APT 2 | CASTROL<br>HYSPIN AMS 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>ROTELLA SX OIL 30<br>ROTELLA SX OIL 20/20W<br>ROTELLA SX OIL 10W             |   | SPIRAX 90 EP<br>SPIRAX 140 EP<br>SPIRAX 90 EP<br>SPIRAX 80 EP   | ROTELLA SX OIL 30<br>ROTELLA SX OIL 30       | RETINAX A<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>VANELLUS M30<br>VANELLUS M20W<br>VANELLUS M10W                                       |   | GEAR OIL SAE 90EP<br>GEAR OIL SAE 140EP<br>GEAR OIL SAE 90EP<br>GEAR OIL SAE 80EP   | VANELLUS M30<br>VANELLUS M30                 | ENERGREASE L2<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 1320<br>DELVAC 1330<br>DELVAC 1220<br>DELVAC 1210<br>DELVAC SPECIAL 10W-30                     | MOBILFLUID 422                              | MOBILUBE HD 90<br>MOBILUBE GX 90<br>MOBILUBE HD140<br>MOBILUBE GX 140<br>MOBILUBE HD 90<br>MOBILUBE GX 90<br>MOBILUBE HD 80<br>MOBILUBE GX 80 | DELVAC 1230<br>DELVAC 1230                   | MOBILGREASE MP<br>MOBILGREASE SUPER            | DTE 24  |
| (U.K.)<br>WALKERS CENTURY<br>SUMMER<br>WINTER<br>ABOVE 32°C<br>0°C - 32°C<br>(OVERSEAS) BELOW 0°C           | CENTILUBE SUPREME 20W-20<br>CENTILUBE SUPREME 30<br>CENTILUBE SUPREME 20W-20<br>CENTILUBE SUPREME 10W |   | EP 90<br>UNIVERSAL 80W-140<br>GEAR OIL  | CENTILUBE SUPREME 30<br>CENTILUBE SUPREME 30 | REGULUS A2<br>REGULUS A2                       | CENTURY PWL A<br>HYD. OIL<br>PWL<br>PWL<br>P313 |

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



RECOMMENDED TORQUE FIGURES FOR FASTENERS

4B4000

| DESCRIPTION                               | TIGHTENING TORQUE |          |
|---|-------------------|----------|
|   | lb.ft.            | Kg.m.    |
| Bolt & Nut M6 .....                       | 8                 | ( 1.1 )  |
| Bolt & Nut M8 .....                       | 21                | ( 3.0 )  |
| Bolt & Nut M10 .....                      | 42                | ( 5.9 )  |
| Prop Shaft Bolts 3/8" UNF .....           | 29                | ( 4.32 ) |
| Prop Shaft Bolts 7/16" UNF .....          | 46                | ( 6.85 ) |
| Engine Bolts/Nuts M12 .....               | 72                | ( 10.7 ) |
| Axle Bolts 1/2" UNF .....                 | 72                | ( 10.7 ) |
| Wheel Nuts 5/8" BSF .....                 | 180               | ( 25 )   |
| Wheel Nuts 7/8" BSF .....                 | 300               | ( 42 )   |
| Wheel Nuts M18 .....                      | 200               | ( 28 )   |
| Axle Bolts/Nuts M16 .....                 | 180               | ( 26.8 ) |
| Steer Ram Nuts/Bolts 1 1/2" UNF/BSF ..... | 1080              | (161.0 ) |

## 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. Where ambient temperature is  $-15^{\circ}\text{C}$  ( $5^{\circ}\text{F}$ ) or below, a cold starting aid should be fitted.

### 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.

### BATTERY CHARGING EQUIPMENT

The following points must be strictly observed when an alternator is fitted otherwise serious damage can be done:-

1. Never disconnect the battery while the alternator is running.
2. Never disconnect a lead unless the alternator is stopped and all switches are in the off position.
3. Always ensure that these are fitted to their correct terminal. A short circuit or reversal of polarity will ruin the diodes or transistor.
4. Never connect a battery into the system without checking that the voltage and polarity are correct.
5. Never flash the connection to check the current flow. Never experiment with adjustment or repairs to the system.

### 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

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 Controls Layout)

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.

**PERIODIC MAINTENANCE**

DAILY check engine oil level and fill to full mark on dipstick, if necessary.

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.

DAILY check tyre pressures and condition of tyres (refer to specification page).

DAILY check all wheel nuts and tighten if necessary.

WEEKLY check oil level in gearbox and fill to full mark on dipstick if necessary.

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.

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.

WEEKLY check that fittings are tight on feed pipe from hydraulic tank to master cylinder. Check for leaks.

WEEKLY apply grease to all grease nipples.

WEEKLY check all nuts and bolts and tighten if necessary.

EVERY SIX MONTHS repack steering column with water repellent grease.

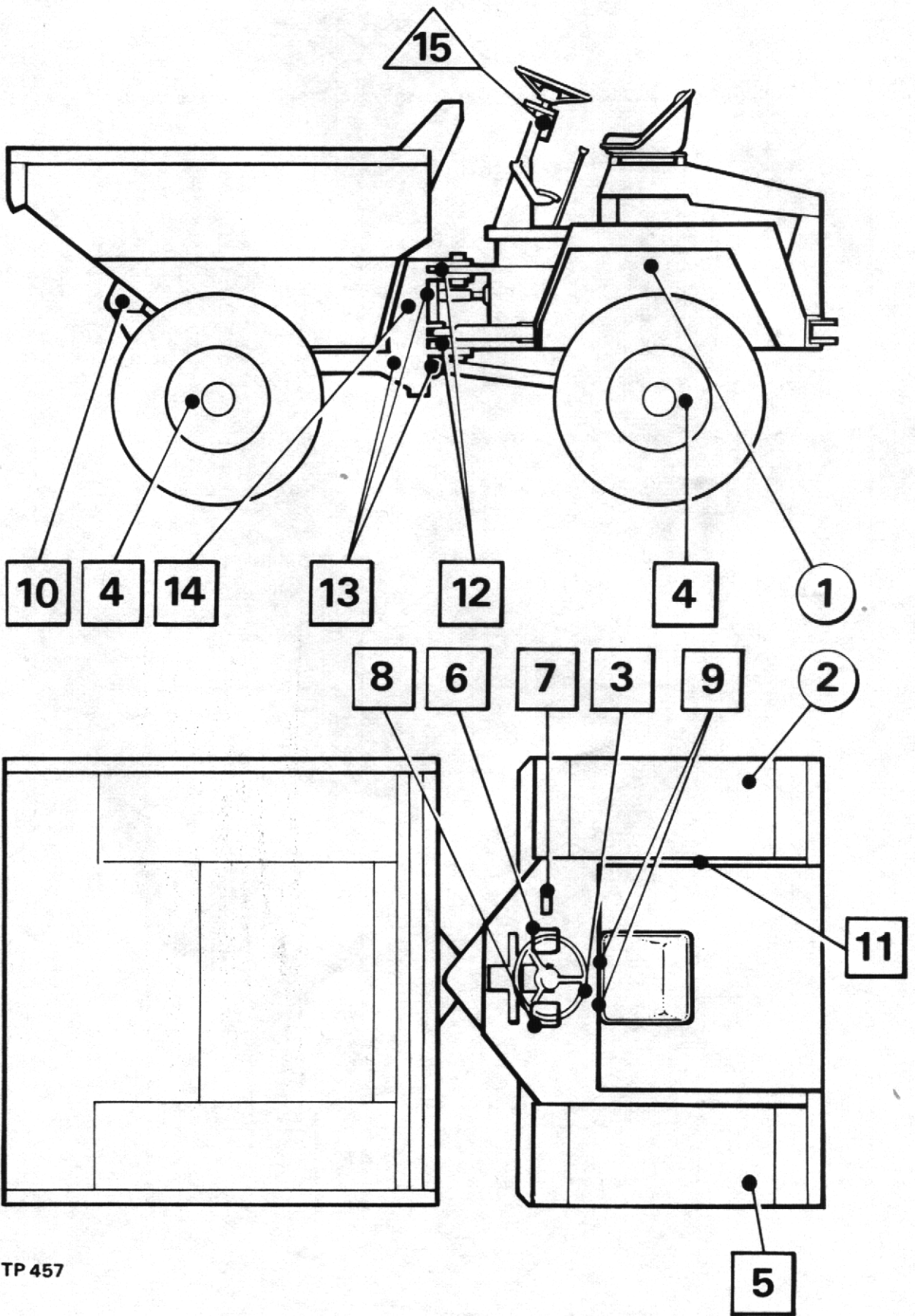
**IMPORTANT: CHANGE HYDRAULIC OIL FILTER ELEMENT IN ACCORDANCE WITH INSTRUCTIONS ON THE MACHINE.**

**LUBRICATION**

| Period      | Key           | Description                    | Lubrication            | No. of Points |
|-------------|---------------|--------------------------------|------------------------|---------------|
| Daily       | 1             | Engine                         | Engine Oil             | 1             |
|             | 2             | Fuel Tank                      | Diesel Fuel            | 1             |
| Weekly      | 3             | Gearbox                        | Gearbox Oil            | 1             |
|             | 4             | Drive Axles                    | Axle Oil               | 2             |
|             | 5             | Hydraulic Tank                 | Hydraulic Oil          | 1             |
|             | 6             | Footbrake Pedal & Linkage      | Grease Gun             | 2             |
|             | 7             | Accelerator Pedal              | Grease Gun             | 1             |
|             | 8             | Clutch Pedal & Linkage         | Grease Gun             | 2             |
|             | 9             | Clutch Cross Shaft             | Grease Gun             | 2             |
|             | 10            | Skip Pivot                     | Grease Gun             | 2             |
|             | 11            | Handbrake Cable                | Grease Gun             | 2             |
|             | 12            | Chassis Centre Pivot           | Grease Gun             | 2             |
|             | 13            | Prop Shafts & Universal Joints | Grease Gun             | 9             |
| 14          | Transfer Case | Axle Oil                       | 1                      |               |
| Six Monthly | 15            | Steering Column                | Water Repellent Grease | 1             |

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





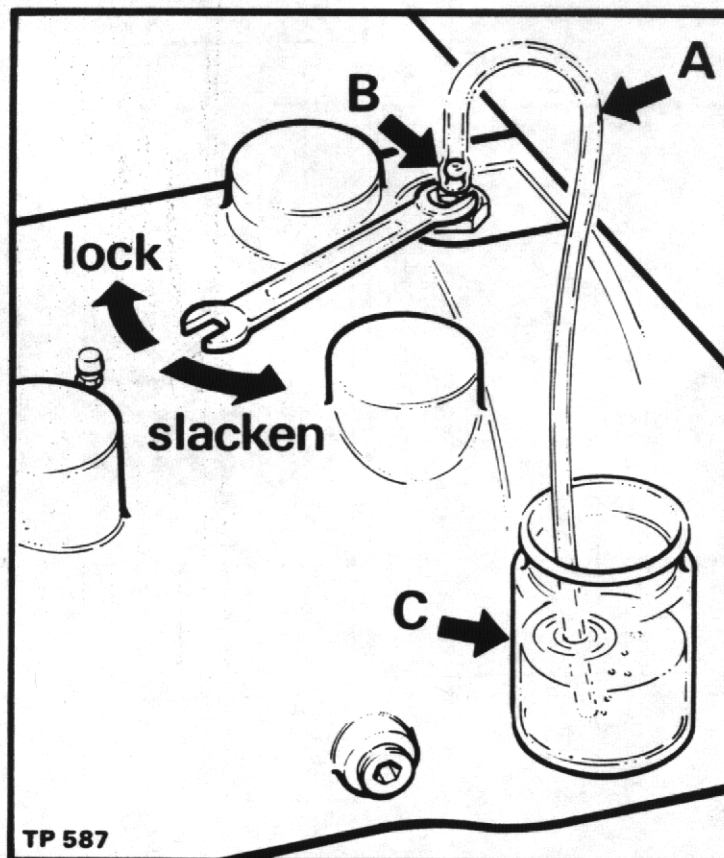
### BRAKE SYSTEM (OIL IMMERSED BRAKES)

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 the bleed screws are closed.
2. Check that there is sufficient oil in main hydraulic tank.
3. Attach bleeder tube (A) to the bleed screw (B) on the L.H. side of the 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. Lock the bleed screw.
5. Repeat procedure for rear axle.
6. Apply normal working load on brake pedal for two or three minutes and examine the entire system for leaks.

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



## 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 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 2500 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 2000 lb/sq.in. when ram is fully extended and relief valve is "blowing".

## STEERING CIRCUIT

- a) Fit a 2500 lb/sq.in.gauge into the hydraulic system at the base of steering ram.
- b) Turn steering wheel with machine on "full lock" and check that the reading on the gauge is 2000 lb/sq.in.

NOTE: If correct pressure is not attained.

Unscrew suction filter (G) from tank and wash in white spirit.  
Dry with moisture-free compressed air.

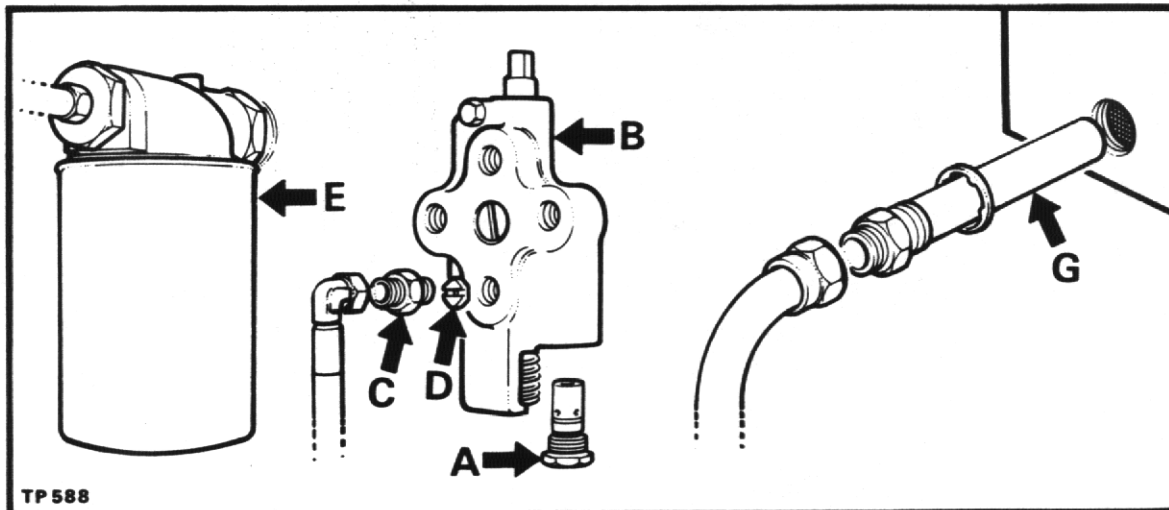
## TIP CIRCUIT

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

If none of these procedures correct the fault contact your 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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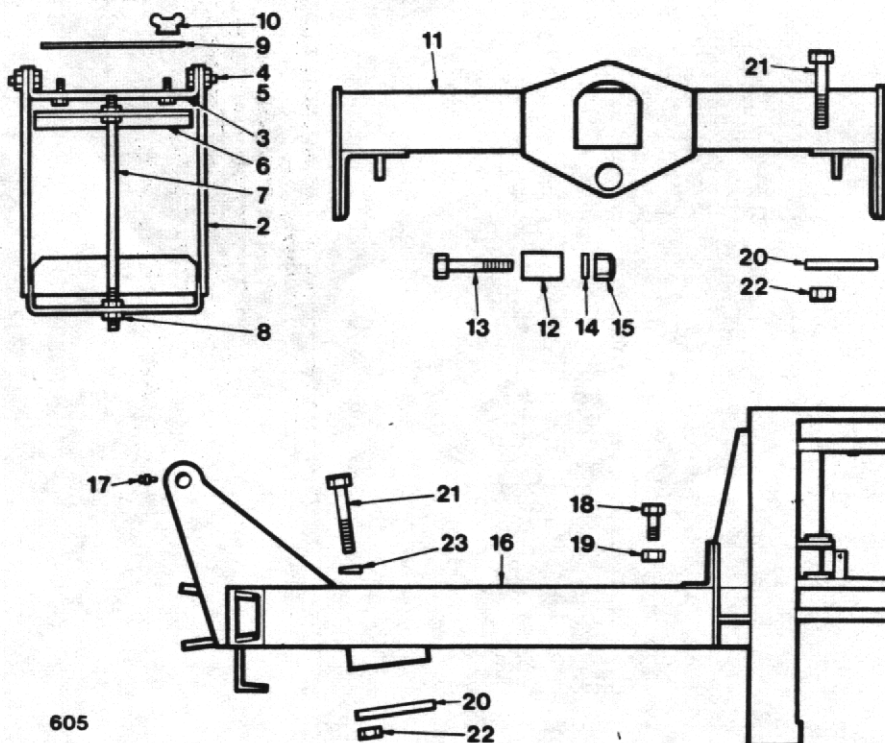
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CHASSIS - (FRONT & REAR) ARTICULATING FRAME

4B4000

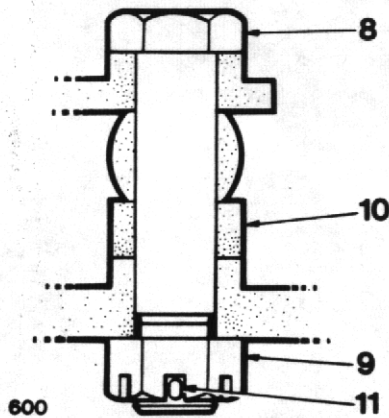
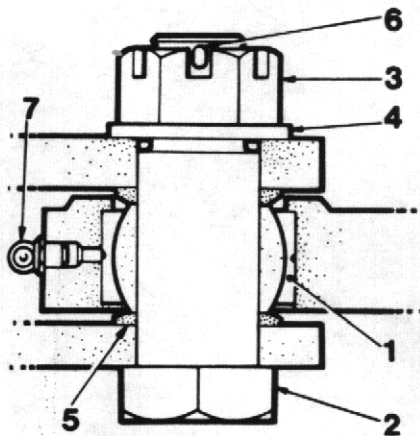
| Item No. | Part No.    | Description                                      | Qty. |
|----------|-------------|--|------|
| 1        | 40071.A06   | Chassis - Rear .....                             | 1    |
| 2        | 30080.A03   | Battery Tray Assy. (Welded to chassis) ....      | 1    |
| 3        | 30080.A0303 | Locking Bar .....                                | 1    |
| 4        | 11S.04C     | Screw (Bar Fixing) .....                         | 2    |
| 5        | 61S.04      | Nut ( " " ) .....                                | 2    |
| 6        | 10559.A01   | Battery Clamp .....                              | 1    |
| 7        | 40S.A17     | Tie Rods (Clamp Fixing) .....                    | 2    |
| 8        | 9S.01       | Nut ( " " ) .....                                | 6    |
| 9        | 10742.A05   | Battery cover .....                              | 1    |
| 10       | 177S.01     | Nut - Wing (Cover fixing) .....                  | 2    |
| 11       | 40075.A01   | Frame - Artic - Rear Axle .....                  | 1    |
| 12       | 10588.A01   | Bush - Frame - Pivot .....                       | 2    |
| 13       | 8S.08S      | Bolt ... (Frame pivot) .....                     | 2    |
| 14       | 12S.10      | Washer . ( " " ) .....                           | 2    |
| 15       | 61S.08      | Locknut ( " " ) .....                            | 2    |
| 16       | 40072.A03   | Chassis - Front .....                            | 1    |
| 17       | 131S.02     | Grease Nipple (Skip Pivot) .....                 | 2    |
| 18       | 10445.A01   | Skip Stop .....                                  | 2    |
| 19       | 56S.07      | Nut (Stop - Locking) .....                       | 2    |
| 20       | ESE.153     | Plates - Axle - Clamp .....                      | 4    |
| 21       | 10449.A01   | Bolt - $\frac{3}{8}$ " UNF (Axle Mounting) ..... | 16   |
| 22       | 87S.08      | Nut - $\frac{3}{8}$ " UNF ( " " ) .....          | 16   |
| 23       | 105S.10     | Washer - Taper (Front Axle Mounting) .....       | 8    |

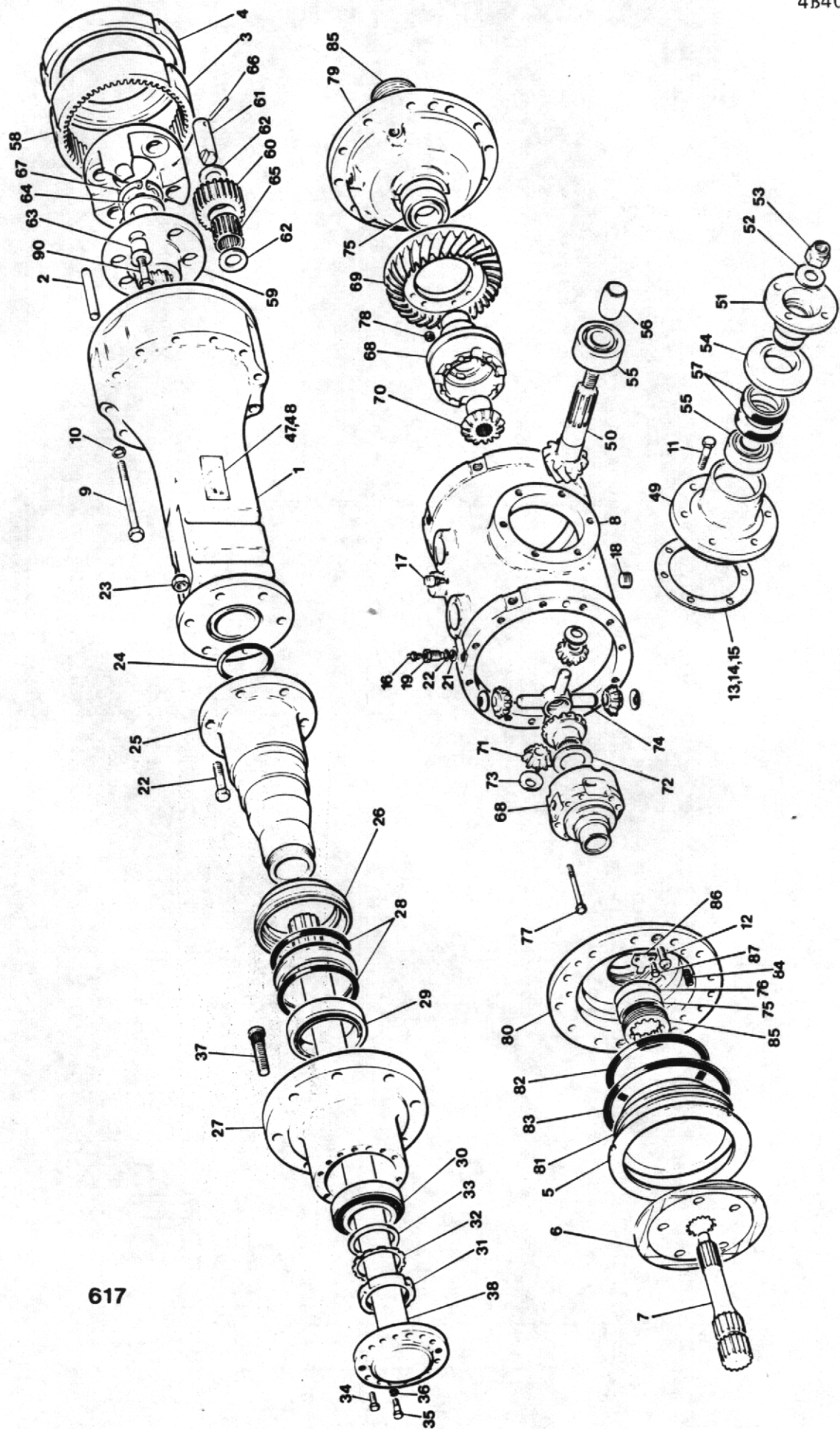


CENTRE PIVOT BEARING ASSY. & STEERING RAM BOLTS

4B4000

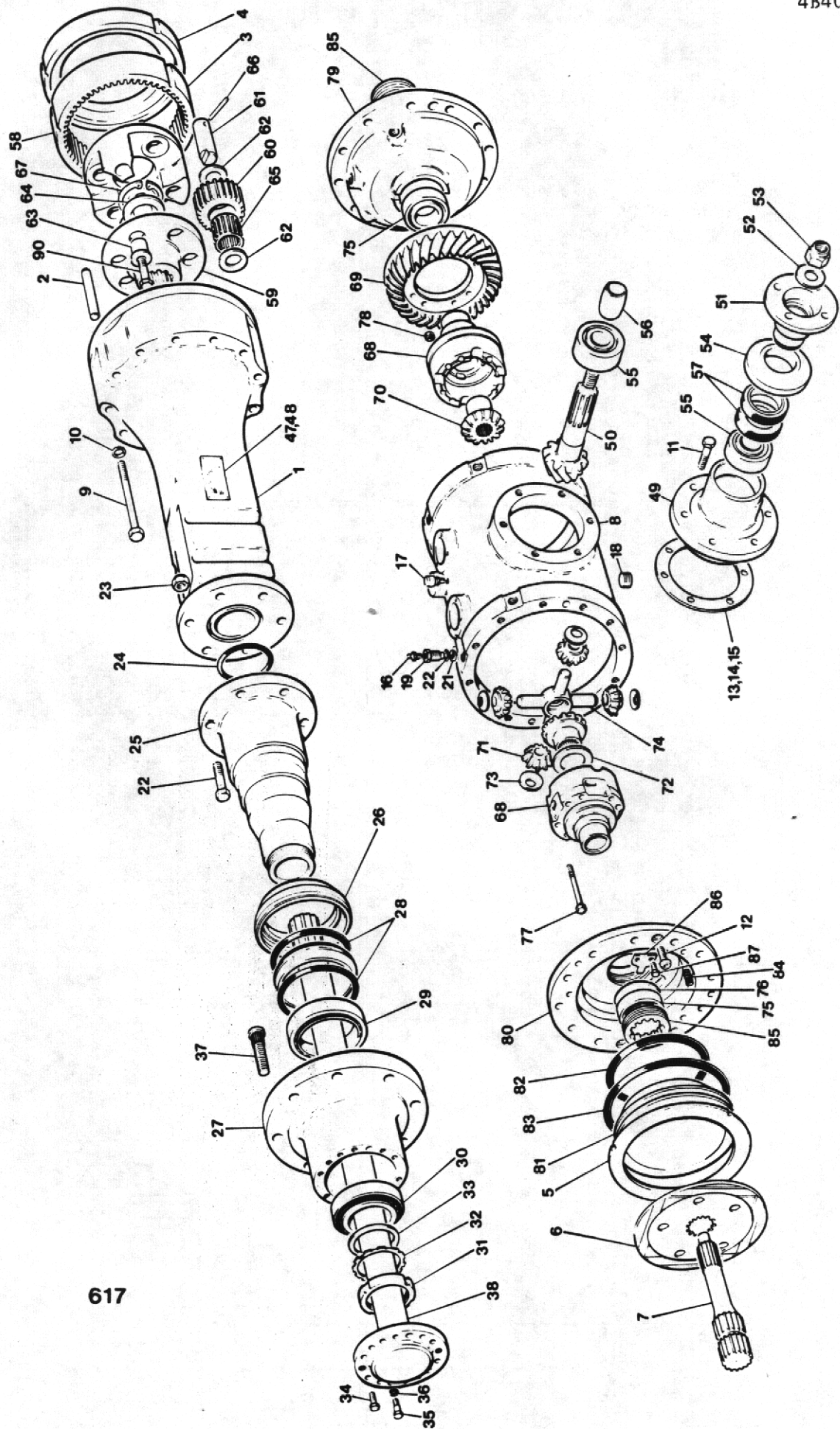
| Item No. | Part No.  | Description                                   | Qty. |
|----------|-----------|---|------|
| 1        | 10421.A01 | Bearing - Centre Pivot .....                  | 2    |
| 2        | 10271.A01 | Bolt - Centre Pivot 1½" UNF .....             | 2    |
| 3        | 4-60-171  | Nut - Centre Pivot 1½" UNF .....              | 2    |
| 4        | 10S.10    | Washer - C Pivot 1.17/32" IDx2.7/8"ODx0.192TH | 2    |
| 5        | 10609.A03 | Spacer - C Pivot 51.2mm I/Dx68mm O/D x 6mm TH | 2    |
| 6        | 44S.05L   | Pin - Split 3/16" .....                       | 2    |
| 7        | 131S.02   | Nipple - Grease .....                         | 2    |
| 8        | 10622.A01 | Bolt - Steering Ram .....                     | 4    |
| 9        | 4-60-172  | Nut - Steering Ram .....                      | 4    |
| 10       | 10601.A02 | Spacer - Steering Ram .....                   | 4    |
| 11       | 44S.05J   | Pin - Split .....                             | 4    |







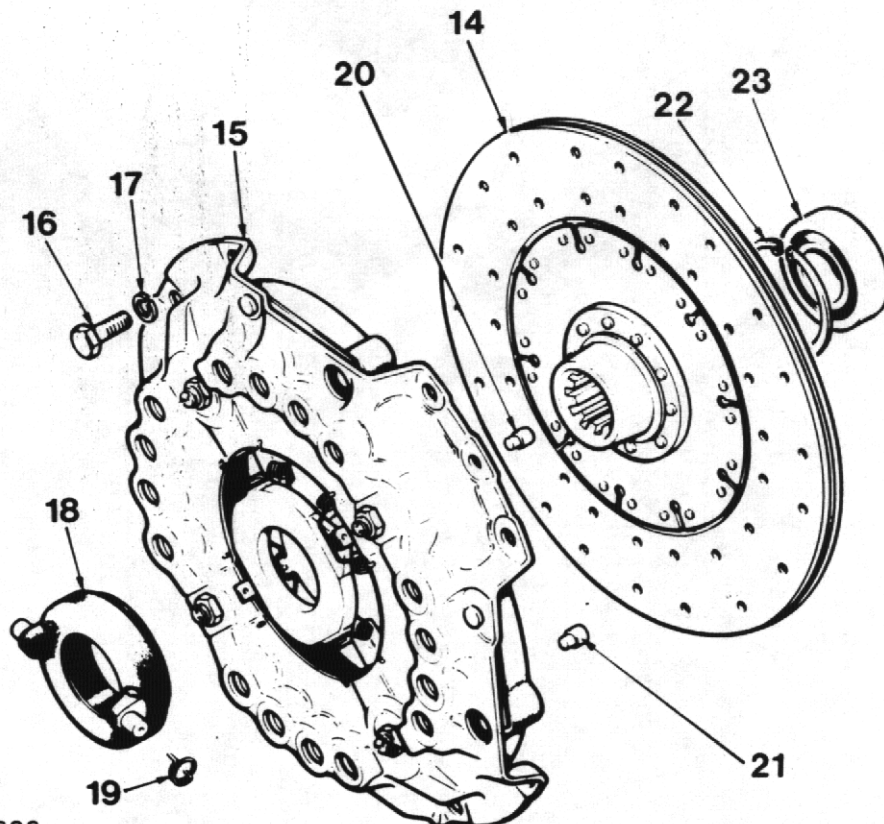
| Item No. | Part No.    | Description                    | Qty. |
|----------|-------------|--------------------------------|------|
| 1        | 30045.A0237 | Axle Arm .....                 | 2    |
| 2        | 30045.A0238 | Pin .....                      | 6    |
| 3        | 30045.A0239 | Annulus .....                  | 2    |
| 4        | 30045.A0240 | Plate - Brake Spear .....      | 2    |
| 5        | 30045.A0241 | Fixed plate - Brake .....      | 2    |
| 6        | 30045.A0242 | Disc - Brake .....             | 2    |
| 7        | 30045.A0243 | Gear - Sun .....               | 2    |
| 8        | 30045.A0244 | Casing - Main Axle .....       | 1    |
| 9        | 30045.A0245 | Bolts - Main axle casing ..... | 24   |
| 10       | 30045.A0246 | Washer - Spring .....          | 24   |
| 11       | 30045.A0247 | Screw - Hex. ....              | 6    |
| 12       | 30045.A0248 | Screw - Socket .....           | 4    |
| 13       | 30045.A0249 | Shim - Pinion adjusting .....  | A/R  |
| 14       | 30045.A0250 | Shim - Pinion adjusting .....  | A/R  |
| 15       | 30045.A0251 | Shim - Pinion adjusting .....  | A/R  |
| 16       | 30082.A0215 | Valve - Brake Bleed .....      | 2    |
| 17       | 30082.A0214 | Valve - Relief .....           | 1    |
| 18       | 30082.A0212 | Plug - Hex. socket .....       | 2    |
| 19       | 30082.A0213 | Adaptor - Brake pipe .....     | 4    |
| 20       | 49S.02      | 'O' Ring .....                 | 4    |
| 21       | 30082.A0269 | Washer - Sealing .....         | 4    |
| 22       | 30045.A0252 | Bolt .....                     | 12   |
| 23       | 30045.A0253 | Nut .....                      | 12   |
| 24       | 30045.A0254 | 'O' Ring .....                 | 2    |
| 25       | 30045.A0255 | Stub Axle .....                | 2    |
| 26       | 30045.A0256 | Housing Oil Seal .....         | 2    |
| 27       | 30045.A0265 | Hub .....                      | 2    |
| 28       | 30045.A0257 | Oil Seal - Hub .....           | 2    |
| 29       | 30045.A0258 | Bearing - Hub inner .....      | 2    |
| 30       | 30082.A0220 | Bearing - Hub outer .....      | 2    |
| 31       | 30045.A0259 | Locknut - Bearing .....        | 2    |
| 32       | 30045.A0260 | Washer - Tab .....             | 2    |
| 33       | 30045.A0261 | Spacer - Hub bearing .....     | 2    |
| 34       | 30045.A0247 | Setscrew .....                 | 24   |
| 35       | 30045.A0263 | Bolt .....                     | 4    |
| 36       | 30045.A0264 | Washer - Spring .....          | 4    |
| 37       | 30082.A0225 | Wheel studs .....              | 16   |
| 38       | 30045.A0262 | Axle shaft .....               | 2    |
| 47       | 30082.A0227 | Label .....                    | 1    |
| 48       | 15S.01A     | Screw - Hammer Drive .....     | 4    |
| 49       | 30045.A0201 | Cartridge - input pinion ..... | 1    |
| 50       | 30045.A0202 | Spiral - Bevel pinion .....    | 1    |
| 51       | 30045.A0203 | Drive Flange .....             | 1    |
| 52       | 30045.A0204 | Washer - Drive Flange .....    | 1    |
| 53       | 30045.A0205 | Nut - Drive Flange .....       | 1    |
| 54       | 30045.A0206 | Cover - oil seal .....         | 1    |
| 55       | 30045.A0207 | Bearing .....                  | 2    |
| 56       | 30045.A0208 | Spacer - pinion bearing .....  | 1    |
| 57       | 30045.A0209 | Seal - Pinion .....            | 2    |
| 58       | 30045.A0220 | Planet carrier .....           | 1    |
| 59       | 30045.A0221 | Drive Flange - carrier .....   | 1    |
| 60       | 30045.A0222 | Planet gear .....              | 3    |
| 61       | 30045.A0223 | Planet pin .....               | 3    |
| 62       | 30045.A0224 | Washer - Thrust .....          | 6    |
| 63       | 30045.A0225 | Bush - planet carrier .....    | 3    |
| 64       | 30045.A0227 | Spacer - Thrust .....          | 1    |

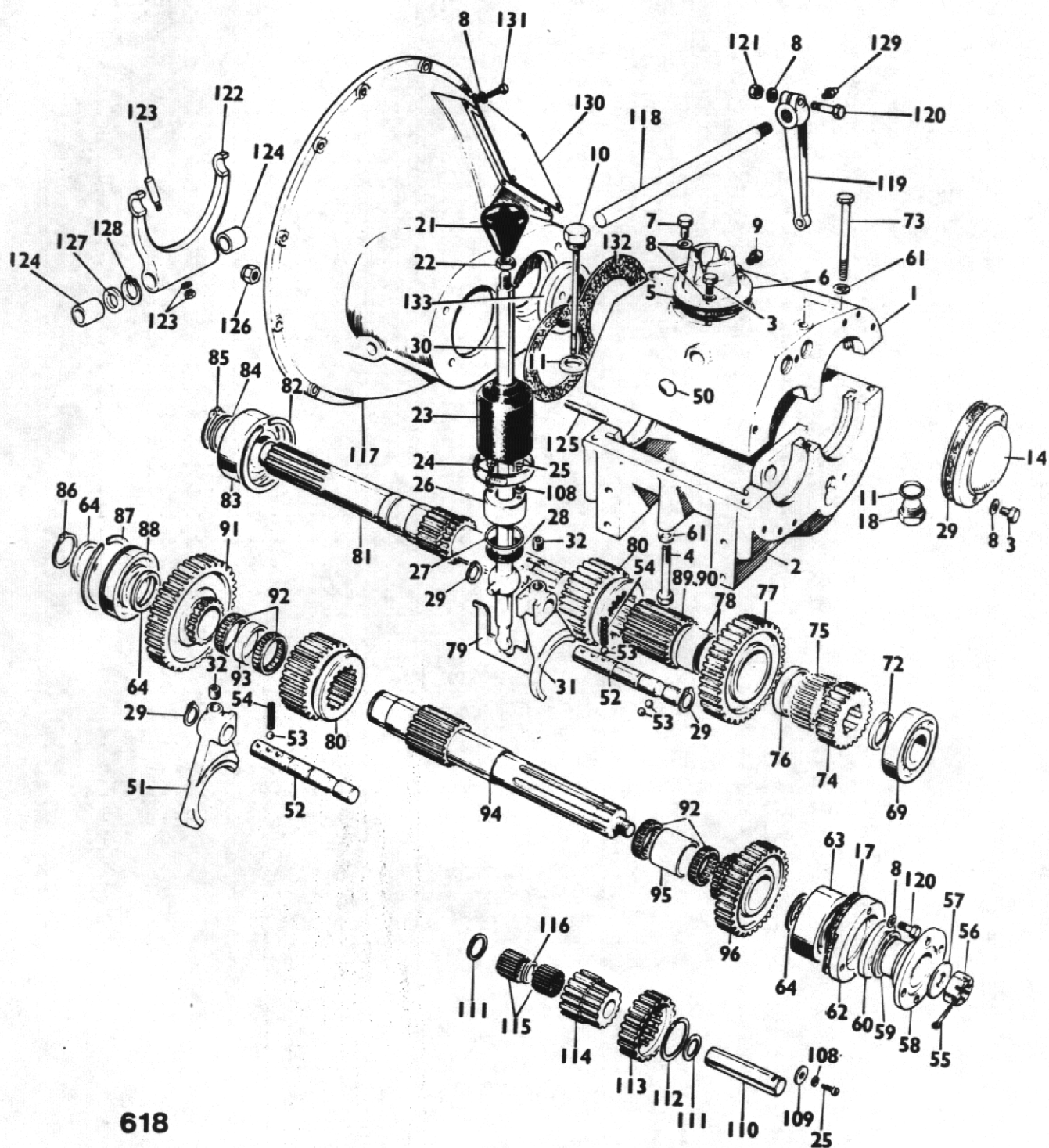


| Item No. | Part No.    | Description                               | Qty. |
|----------|-------------|---|------|
| 65       | 30045.A0228 | Roller - planet cage .....                | 3    |
| 66       | 30045.A0229 | Dowel - Spring .....                      | 3    |
| 67       | 30045.A0230 | Circlip .....                             | 1    |
| 68       | 30045.A0210 | Diff. case process assy. ....             | 1    |
| 69       | 30045.A0211 | Spiral Bevel wheel .....                  | 1    |
| 70       | 30045.A0212 | Diff. wheel .....                         | 2    |
| 71       | 30045.A0213 | Diff. pinion .....                        | 4    |
| 72       | 30045.A0214 | Thrust washer - Diff. wheel .....         | 2    |
| 73       | 30045.A0215 | Thrust washer - Diff. pinion .....        | 4    |
| 74       | 30045.A0216 | Spider - Diff. ....                       | 1    |
| 75       | 30045.A0217 | Bearing - Diff. ....                      | 2    |
| 76       | 30044.A0208 | Washer - Diff. Bearing .....              | 1    |
| 77       | 30045.A0218 | Bolts .....                               | 8    |
| 78       | 30045.A0219 | Nuts .....                                | 8    |
| 79       | 30045.A0236 | Brake Cylinder - R.H. ....                | 1    |
| 80       | 30045.A0231 | Brake Cylinder - L.H. ....                | 1    |
| 81       | 30045.A0232 | Brake Piston .....                        | 2    |
| 82       | 30045.A0233 | Oil Seal ... Only supplied in pairs ..... | 2    |
| 83       | 30045.A0234 | Oil Seal ... ..                           | 2    |
| 84       | 30048.A0110 | Spring .....                              | 6    |
| 85       | 30045.A0235 | Nut - Brg. adjusting .....                | 2    |
| 86       | 30082.A0260 | Lock plate .....                          | 2    |
| 87       | 30082.A0261 | Screw .....                               | 4    |
| 88       |             |   |      |
| 89       |             |   |      |
| 90       | 30045.A0226 | Bolt .....                                | 3    |



| Item No. | Part No.    | Description                                  | Qty. |
|----------|-------------|--|------|
| 1        | 6S.60K      | Bolt 5/8" UNF (Eng. to Chassis) .....        | 2    |
| 2        | 87S.07      | Nut 5/8" UNF ( " " " ) .....                 | 2    |
| 3        | 10S.16      | Washer 5/8" ( " " " ) .....                  | 2    |
| 4        | 69S.03F     | Setscrew 3/8" UNC (G/Box to Eng.) .....      | 12   |
| 5        | 41S.05      | Washer 3/8" .....                            | 12   |
| 6        | 20114.A03   | Bracket - Gearbox Mounting .....             | 2    |
| 7        | 6S.03A      | Bolt 3/8" UNF (Bracket to G/Box) .....       | 4    |
| 8        | 41S.05      | Washer - Spring 3/8" (Bracket to G/Box) .... | 4    |
| 9        | 8S.05D      | Bolt M12 (Bracket to Chassis) .....          | 8    |
| 10       | 61S.05      | Nut M12 ( " " " ) .....                      | 8    |
| 11       | 10845.A01   | Drain Assy - Eng. Oil Compr: 12,13 & 13a ... | 1    |
| 12       | 10758.A01   | Drain Elbow .....                            | 1    |
| 13       | 10750.A01   | Drain Tube .....                             | 1    |
| 13a      | 122S.03     | Adaptor .....                                | 2    |
| 14       | 10598.A04   | Drive plate .....                            | 1    |
| 15       | 10597.A03   | Cover Assy. ....                             | 1    |
| 16       | 28S.03D     | Setscrew 3/8" UNF (Cover Fixing) .....       | 8    |
| 17       | 41S.05      | Washer - Spring ( " " ) .....                | 8    |
| 18       | 10579.A02   | Bearing - Clutch Release .....               | 1    |
| 19       | 10579.A0101 | Retainer Spring (Clutch Release bearing) ... | 2    |
| 20       | 10424.A01   | Pin - Dowel .....                            | 1    |
| 21       | 10425.A01   | Pin - Dowel .....                            | 1    |
| 22       | 133S.02     | Circlip .....                                | 1    |
| 23       | 88S.15D     | Bearing .....                                | 1    |
| 24       | 30107.A01   | Gearbox Assembly (See separate illus.) ..... | 1    |



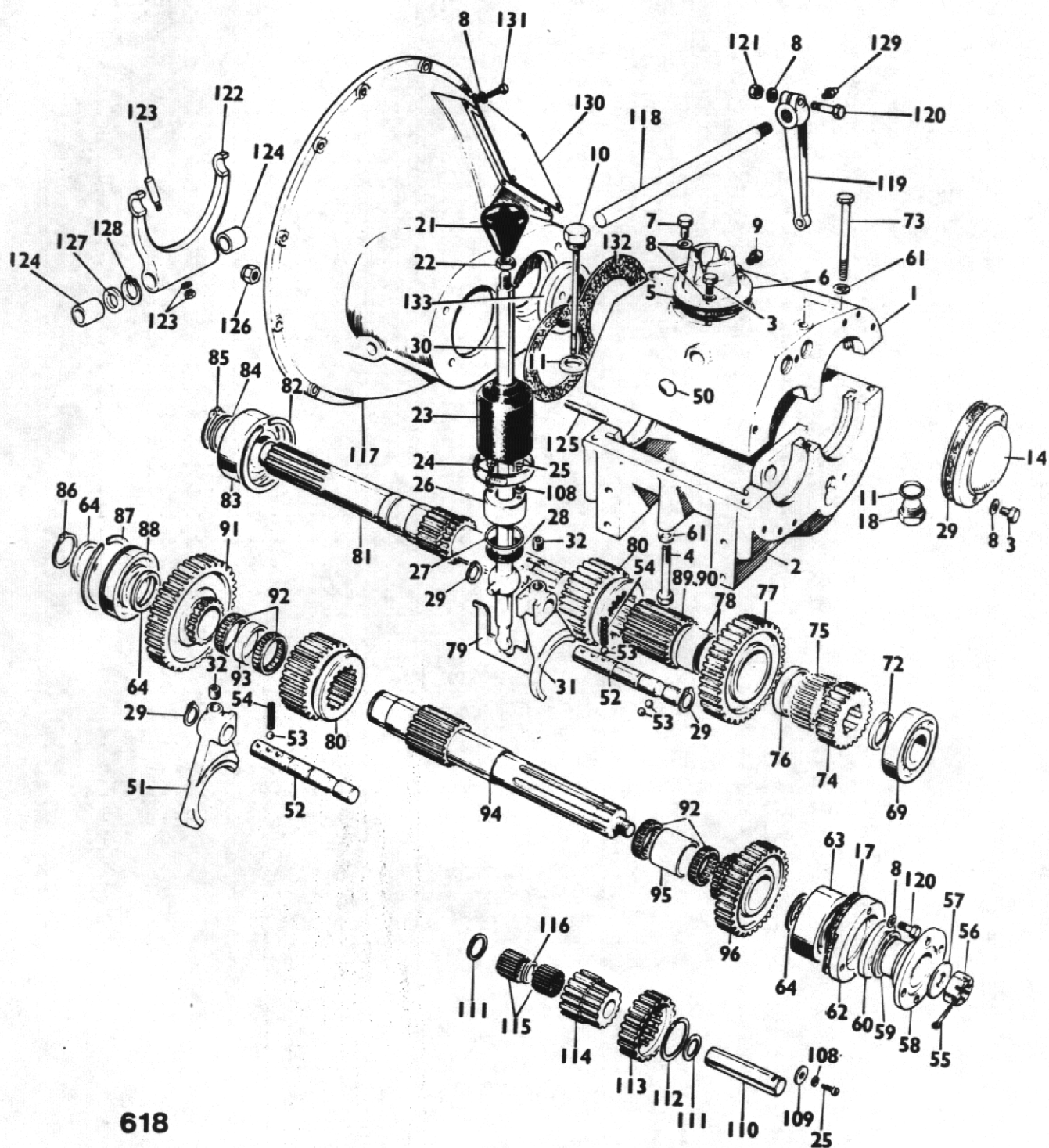




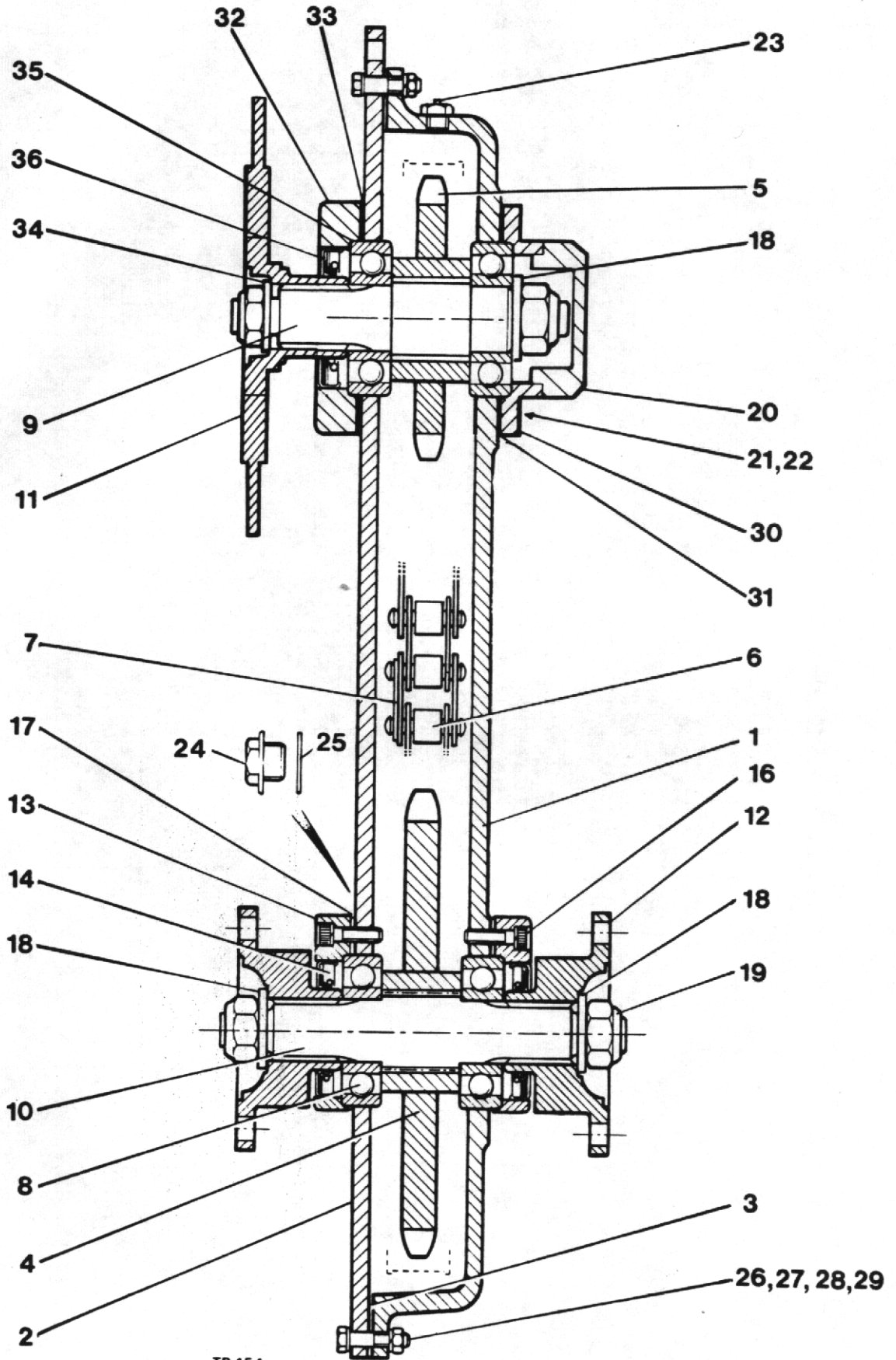
## GEARBOX CM15.5 - 30107.A01

4B4000

| Item No. | Part No.    | Description                         | Qty. |
|----------|-------------|-------------------------------------|------|
| 1        | 30107.A0101 | Gear case .....                     | 1    |
| 2        |             |                                     |      |
| 3        | 28S.01D     | Bolt - Turret .....                 | 6    |
| 4        | 30102.A0102 | Bolt - Gear Case .....              | 6    |
| 5        | 30102.A0103 | Joint - Top Cover .....             | 1    |
| 6        | 30102.A0104 | Top - Cover .....                   | 1    |
| 7        | 6S.01C      | Dowel Bolt - Top Cover .....        | 1    |
| 8        | 30102.A0105 | Washer - Spring .....               | 16   |
| 9        | 30097.A0171 | Breather .....                      | 1    |
| 10       | 30107.A0103 | Dipstick .....                      | 1    |
| 11       | 30101.A0231 | Washer .....                        | 2    |
| 14       | 30107.A0104 | End Cover .....                     | 1    |
| 15       | 30107.A0131 | Gasket .....                        | 1    |
| 16       | 30107.A0105 | Knob .....                          | 1    |
| 17       | 30102.A0112 | Gasket .....                        | 1    |
| 18       | 30097.A0163 | Drain plug .....                    | 1    |
| 19       | 97S.12      | Clip .....                          | 1    |
| 22       | 95S.03      | Locknut .....                       | 1    |
| 23       | 30097.A0157 | Rubber Cover - Gear lever .....     | 1    |
| 25       | 30102.A0116 | Screw - Cheesehead .....            | 3    |
| 26       | 30102.A0117 | Retainer - Felt washer .....        | 1    |
| 27       | 30102.A0118 | Spring .....                        | 1    |
| 28       | 30097.A0179 | Washer - Felt .....                 | 1    |
| 30       | 10585.A01   | Gear lever .....                    | 1    |
| 31       | 30107.A0106 | Selector Fork (1st & 2nd) .....     | 1    |
| 32       | 30107.A0107 | Grubscrew .....                     | 2    |
| 33       | 30102.A0137 | Selector Shaft (1st & 2nd) .....    | 1    |
| 50       | 30101.A0254 | Sealing Disc .....                  | 3    |
| 51       | 30107.A0108 | Selector Fork (3rd & Rev.) .....    | 1    |
| 52       | 30107.A0132 | Selector Shaft (3rd & Rev.) .....   | 1    |
| 53       | 30101.A0236 | Detent Ball .....                   | 4    |
| 54       | 30097.A0185 | Detent Spring .....                 | 3    |
| 56       | 30107.A0109 | Nut .....                           | 1    |
| 57       | 30102.A0139 | Washer - Coupling .....             | 1    |
| 58       | 30102.A0140 | Coupling .....                      | 1    |
| 60       | 30097.A0132 | Oil Seal .....                      | 1    |
| 61       | 30102.A0141 | Washer .....                        | 8    |
| 62       | 30107.A0110 | Bearing Cap .....                   | 1    |
| 63       | 30190.A0111 | Bearing - Layshaft Output .....     | 1    |
| 64       | 30107.A0111 | Spacer - Bearing .....              | 2    |
| 69       | 30107.A0133 | Bearing - Mainshaft .....           | 1    |
| 72       | 30107.A0134 | Spacer - Bearing - Mainshaft .....  | 1    |
| 73       | 30102.A0152 | Bolt .....                          | 2    |
| 74       | 30107.A0112 | 2nd Speed wheel Mainshaft 19T ..... | 1    |
| 75       | 30102.A0154 | Bearing - 2nd speed wheel .....     | 1    |
| 76       | 30102.A0155 | Spacer .....                        | 1    |
| 77       | 30102.A0156 | Rev. Wheel - Main Shaft .....       | 1    |
| 78       | 30102.A0157 | Bearing .....                       | 2    |
| 79       | 30102.A0158 | Baulk plate .....                   | 1    |
| 80       | 30102.A0159 | Sliding Gear .....                  | 1    |
| 81       | 30107.A0113 | Primary shaft .....                 | 1    |
| 82       | 30102.A0161 | Circlip .....                       | 1    |
| 83       | 30102.A0162 | Input Bearing .....                 | 1    |
| 84       | 30107.A0114 | Spacer - Input .....                | 1    |
| 85       | 30107.A0115 | Circlip .....                       | 2    |
| 86       | 30101.A0243 | Circlip - Layshaft .....            | 1    |
| 87       | 30101.A0209 | Snap ring .....                     | 1    |
| 88       | 30101.A0210 | Bearing - Layshaft .....            | 1    |



| Item No. | Part No.    | Description                        | Qty. |
|----------|-------------|------------------------------------|------|
| 89       | 30102.A0144 | Spacer - Bearing - Layshaft .....  | 2    |
| 90       | 30102.A0166 | Sliding Gear .....                 | 1    |
| 91       | 30107.A0116 | 1st Speed Wheel (43T) .....        | 1    |
| 92       | 30102.A0168 | Bearing .....                      | 4    |
| 93       | 30102.A0169 | Spacer - 1st Speed wheel .....     | 1    |
| 94       | 30107.A0119 | Layshaft .....                     | 1    |
| 95       | 30102.A0171 | Spacer - 2nd Speed wheel .....     | 1    |
| 96       | 30107.A0135 | 2nd Speed wheel - Layshaft .....   | 1    |
| 108      | 30107.A0136 | Washer .....                       | 1    |
| 109      | 30102.A0182 | Washer - Rev. spindle .....        | 1    |
| 110      | 30107.A0121 | Reverse pinion shaft .....         | 1    |
| 111      | 30107.A0184 | Thrust washer .....                | 2    |
| 112      | 30102.A0185 | Circlip .....                      | 1    |
| 113      | 30107.A0124 | Reverse cluster wheel (22T) .....  | 1    |
| 114      | 30107.A0187 | Reverse cluster pinion (11T) ..... | 1    |
| 115      | 30102.A0188 | Roller - Reverse cluster .....     | 2    |
| 116      | 30102.A0189 | Spacer - Reverse cluster .....     | 1    |
| 117      | 30102.A0190 | Clutch Housing .....               | 1    |
| 118      | 30102.A0191 | Clutch - Cross shaft .....         | 1    |
| 119      | 30097.A0109 | Clutch - Op. Lever .....           | 1    |
| 120      | 6S.01A      | Bolt .....                         | 1    |
| 121      | 9S.01       | Nut .....                          | 1    |
| 122      | 30102.A0192 | Clutch Op. Fork .....              | 1    |
| 123      | 30097.A0111 | Cotter, Nut & Washer S.A. ....     | 1    |
| 124      | 30102.A0193 | Bush - Cross shaft .....           | 2    |
| 125      | 30102.A0194 | Stud - Clutch Housing .....        | 4    |
| 126      | 30107.A0129 | Nut - Nyloc .....                  | 4    |
| 127      | 30102.A0196 | Washer - Cross shaft .....         | 1    |
| 128      | 30102.A0197 | Circlip .....                      | 1    |
| 129      | 30101.A0102 | Nipples - grease .....             | 2    |
| 130      | 30102.A0198 | Inspection cover .....             | 1    |
| 131      | 28S.01B     | Setscrew - Inspection cover .....  | 4    |
| 132      | 30102.A0199 | Gasket .....                       | 1    |
| 133      | 30107.A0130 | Input Shaft seal .....             | 1    |





## TRANSFER CASE

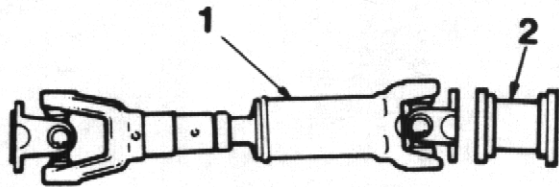
4B4000

| Item No. | Part No.            | Description  | Qty. |
|----------|---------------------|--|------|
|          | 40054.A02           | Transfer Case .....                                | 1    |
| 1        | 40061.A01           | Case - Casting )                                   | 1    |
| 2        | 40062.A02           | Plate - Cover ) Supplied together only ...         | 1    |
| 3        | 30072.A01           | Gasket - Main .....                                | 1    |
| 4        | 20076.A01           | Wheel - Output (26 teeth) .....                    | 1    |
| 5        | 10294.A01           | Wheel - Input (15 teeth) .....                     | 1    |
| 6        | 80S.01              | Roller Chain - 1" Pitch .....                      | 1    |
| 7        | 81S.01              | Conn. Link - 1" Pitch .....                        | 1    |
| 8        | 88S.06              | Bearing .....                                      | 3    |
| 9        | 4/60-262            | Shaft - Input .....                                | 1    |
| 10       | 4/60-253            | Shaft - Output .....                               | 1    |
| 11       | 20162.A01           | Flange - Input .....                               | 1    |
| 12       | 10297.A01           | Flange - Output .....                              | 2    |
| 13       | 4/35-102            | Housing - Oil Seal .....                           | 2    |
| 14       | 89S.01              | Oil Seal .....                                     | 2    |
| 15       |                     |  |      |
| 16       | 90S.02H             | Capscrew .....                                     | 12   |
| 17       | 10293.A01           | Gasket .....                                       | 2    |
| 18       | 10S.06              | Washer - $\frac{3}{4}$ " I/D (Flange fixing) ..... | 3    |
| 19       | 87S.08              | Nut - $\frac{3}{4}$ " UNF ( " " ) .....            | 4    |
| 20       | 4/60-263            | Cap - Bearing Housing .....                        | 1    |
| 21       | 41S.03              | Washer - Spring .....                              | 4    |
| 22       | 28S.01D             | Setscrew .....                                     | 4    |
| 23       | 10305.A01           | Breather .....                                     | 1    |
| 24       | 10301.A01           | Level/Filler plug .....                            | 1    |
| 25       | 42S.05              | Washer - (Fibre) .....                             | 1    |
| 26       | 8S.02C              | Bolt ..... (Cover to Case) .....                   | 24   |
| 27       | 7S.02A              | Nut ..... ( " " " ) .....                          | 24   |
| 28       | 17S.03A             | Washer - Spring ( " " " ) .....                    | 24   |
| 29       | 12S.02A             | Washer - Plain ( " " " ) .....                     | 24   |
| 30       | 40M.622             | Housing - Bearing .....                            | 1    |
| 31       | 4/35-20A            | Gasket .....                                       | 1    |
| 32       | 4/60-264            | Housing - Seal .....                               | 1    |
| 33       | 40M-712             | Gasket .....                                       | 1    |
| 34       | 6/60-265            | Washer .....                                       | 1    |
| 35       | BRL.1 $\frac{1}{2}$ | Bearing .....                                      | 1    |
| 36       | SP.193              | Oil Seal .....                                     | 1    |
|          | 8S.05D              | Bolt (Trans. case to chassis) .....                | 4    |
|          | 61S.05              | Nut ( " " " " ) .....                              | 4    |
|          | 12S.05              | Washer( " " " " ) .....                            | 4    |

PROPSHAFTS

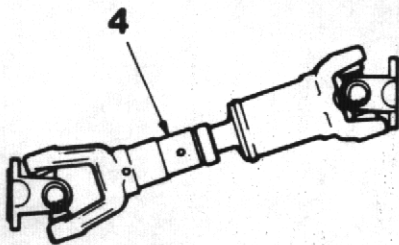
4B4000

| Item No. | Part No.  | Description                             | Qty. |
|----------|-----------|---|------|
| 1        | 30165.A04 | Propshaft (G/Box to Transfer Box) ..... | 1    |
| 2        | 20284.A01 | Spacer (G/Box to T/Box propshaft) ..... | 1    |
| 3        | 40114.A06 | Prop Shaft (T/Box to Rear Axle) .....   | 1    |
| 4        | 40114.A02 | Prop Shaft (T/Box to Front Axle) .....  | 1    |
| 5        | ESE.214   | Bolt - Propshaft 7/16" UNF .....        | 28   |
| 6        | 87S.04    | Nuts - Propshaft 7/16" UNF .....        | 28   |
|          | 30165.A04 | Repair Kits - Propshaft U.J.S. ....     | A/R  |

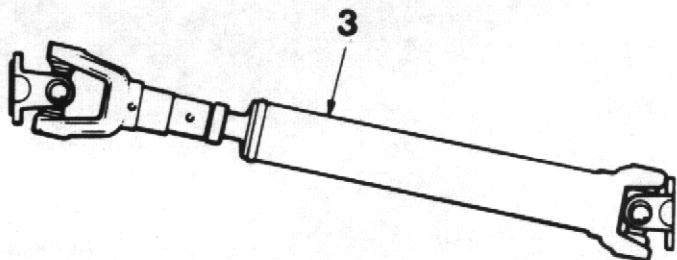


GEARBOX

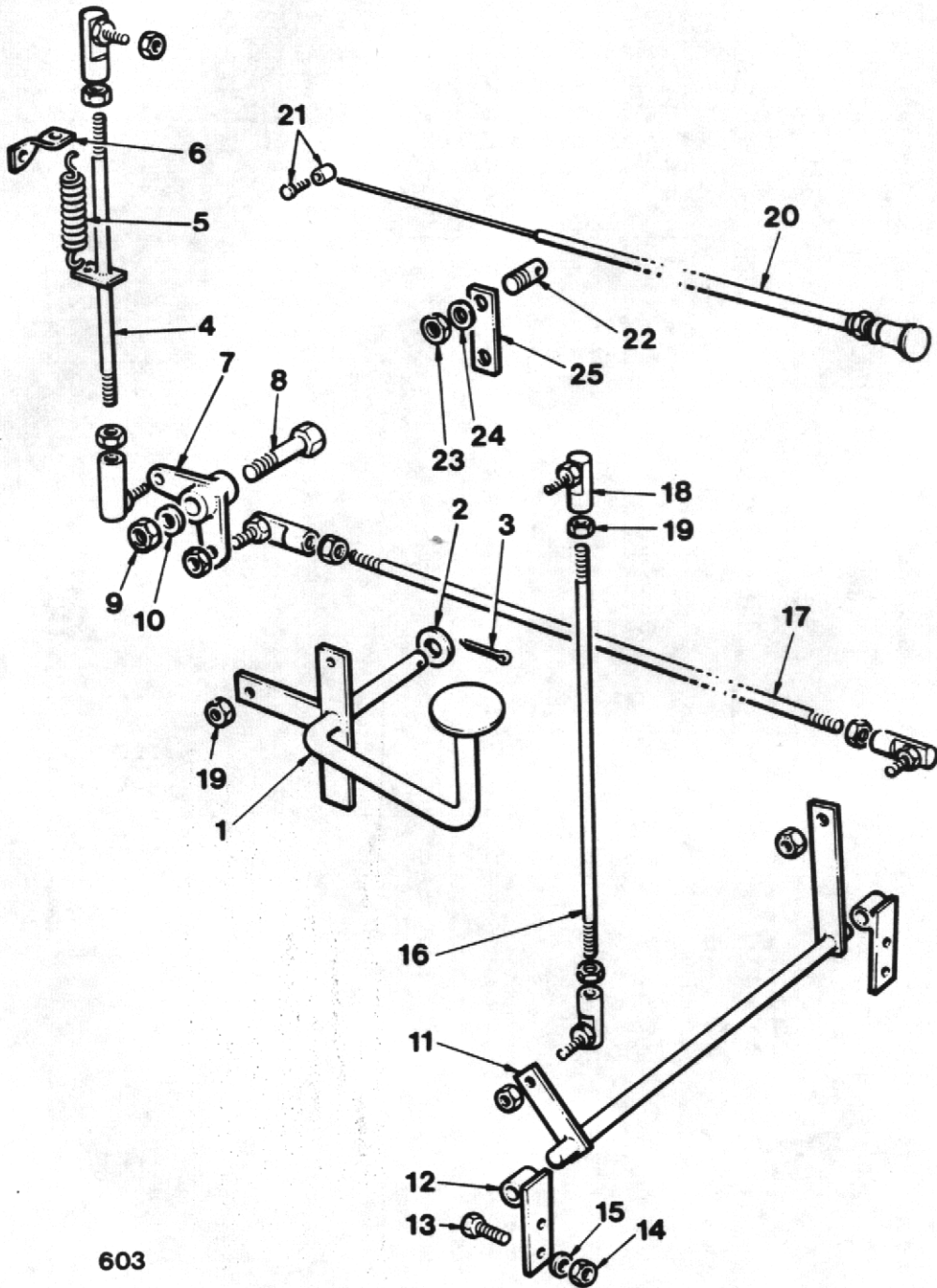
TRANSFER CASE



FRONT AXLE



REAR AXLE



## ACCELERATOR, PEDAL &amp; ENGINE STOP CONTROLS

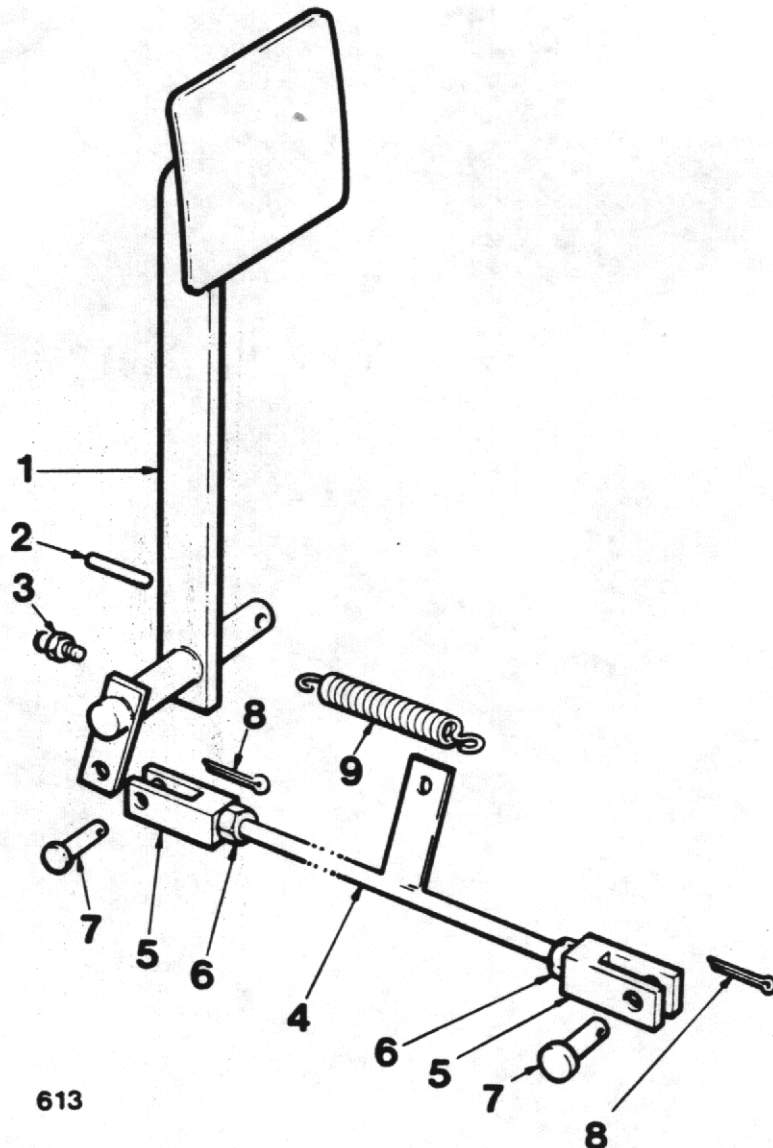
4B4000

| Item No. | Part No.  | Description                                      | Qty. |
|----------|-----------|--|------|
| 1        | 20231.A04 | Pedal - Accelerator .....                        | 1    |
| 2        | 10S.04    | Washer $\frac{1}{2}$ " I/D .....                 | 1    |
| 3        | 44S.02    | Pin - Split 3/32" .....                          | 1    |
| 4        | C.240     | Rod - Accelerator .....                          | 1    |
| 5        | C.173D    | Spring - Return .....                            | 1    |
| 6        | C.163     | Bracket - Return Spring (fix to engine) ....     | 1    |
| 7        | 4/60-164  | Bell Crank .....                                 | 1    |
| 8        | 8S.05M    | Bolt M12 - Bell crank .....                      | 1    |
| 9        | 7S.05     | Nut M12 - Bell crank .....                       | 1    |
| 10       | 17S.06    | Washer - Spring M12 - Ball crank .....           | 1    |
| 11       | 20130.A01 | Shaft - Transfer .....                           | 1    |
| 12       | 4/60-162  | Bracket - Transfer shaft .....                   | 2    |
| 13       | 8S.02A    | Bolt M6 ..... (Bracket fixing) .....             | 4    |
| 14       | 7S.02     | Nut M6 ..... ( " " ) .....                       | 4    |
| 15       | 17S.03    | Washer - Spring M6 ( " " ) .....                 | 4    |
| 16       | 4/60-167  | Rod (Pedal - T/Shaft) .....                      | 1    |
| 17       | 4/60-165  | Rod (T/Shaft - Bell crank) .....                 | 1    |
| 18       | C.160B    | Bell end .....                                   | 6    |
| 19       | 2S.02     | Nuts $\frac{1}{2}$ " BSF (Bell end fixing) ..... | 12   |
| 20       | ESE.194   | Cable - Engine Stop .....                        | 1    |
| 21       | ESE.242   | Nipple - Solderless c/w screw .....              | 1    |
| 22       | 4/60-242  | Clamp Screw .....                                | 1    |
| 23       | 9S.04     | Nut 3/8" UNF .....                               | 1    |
| 24       | 67S.04    | Washer .....                                     | 1    |
| 25       | 10209.A04 | Bracket - Clamp .....                            | 1    |



CLUTCH PEDAL ASSEMBLY

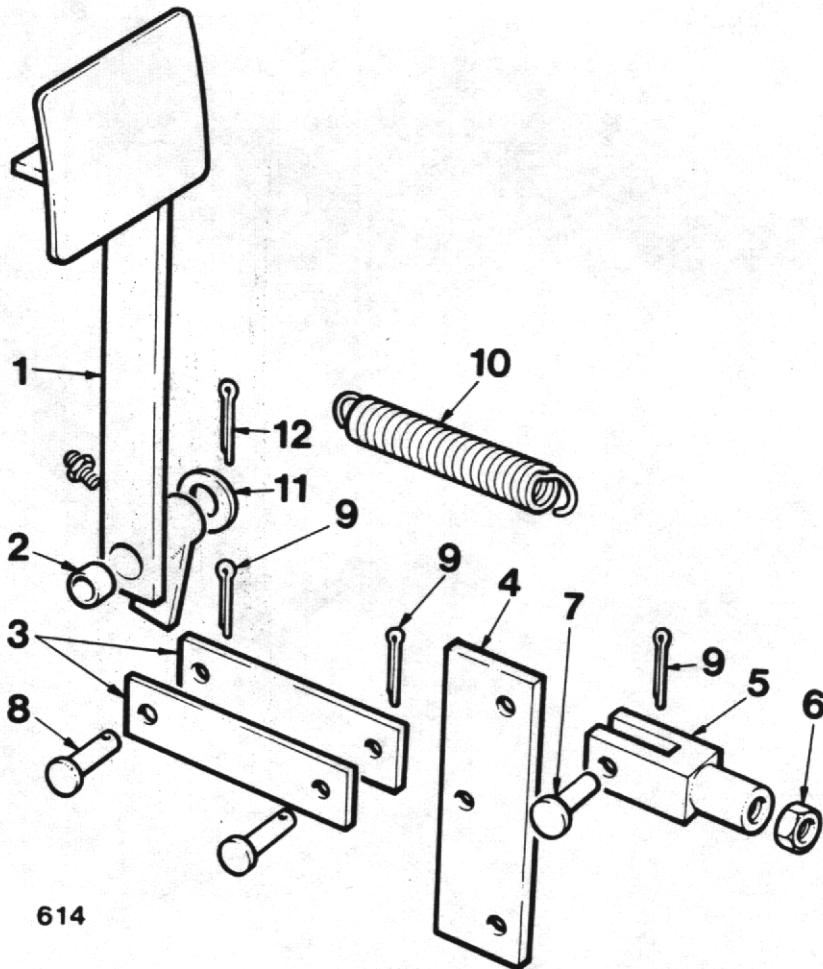
|   |           |  |   |
|---|-----------|--|---|
| 1 | 20096.A08 | Pedal - Clutch .....                     | 1 |
| 2 | 54S.07M   | Pin - Tension .....                      | 1 |
| 3 | 131S.01   | Nipples - Grease (c/w cap 176S.01) ..... | 1 |
| 4 | 10573.A02 | Rod - Clutch 3/8" BSF .....              | 1 |
| 5 | C.174A    | Clevis 3/8" BSF .....                    | 2 |
| 6 | 74S.05    | Nuts - Half 3/8" BSF .....               | 2 |
| 7 | 10560.A17 | Pins - Clevis 3/8" .....                 | 2 |
| 8 | 44S.02C   | Pins - Split .....                       | 2 |
| 9 | C173B     | Spring - Return .....                    | 1 |



FOOTBRAKE ASSEMBLY

4B4000

| Item No. | Part No.  | Description               | Qty. |
|----------|-----------|---------------------------|------|
| 1        | 20232.A01 | Pedal - Brake .....       | 1    |
| 2        | 43S.02    | Pedal - Bush .....        | 2    |
| 3        | 10436.A02 | Links - Pedal .....       | 2    |
| 4        | 20117.A06 | Beam - Compensator .....  | 1    |
| 5        | 10454.A02 | Clevis - Special .....    | 2    |
| 6        | 95S.03    | Nut - half 3/8" UNF ..... | 2    |
| 7        | 10650.A17 | Pin - Clevis (S) .....    | 2    |
| 8        | 10650.A18 | Pin - Clevis (L) .....    | 2    |
| 9        | 44S.02C   | Pin - Split .....         | 4    |
| 10       | C173B     | Spring .....              | 1    |
| 11       | 10S.o7    | Washer - Plain 3/4" ..... | 2    |
| 12       | 44S.04    | Pin - Split .....         | 1    |



FUEL PIPES AND FITTINGS (NOT ILLUSTRATED)

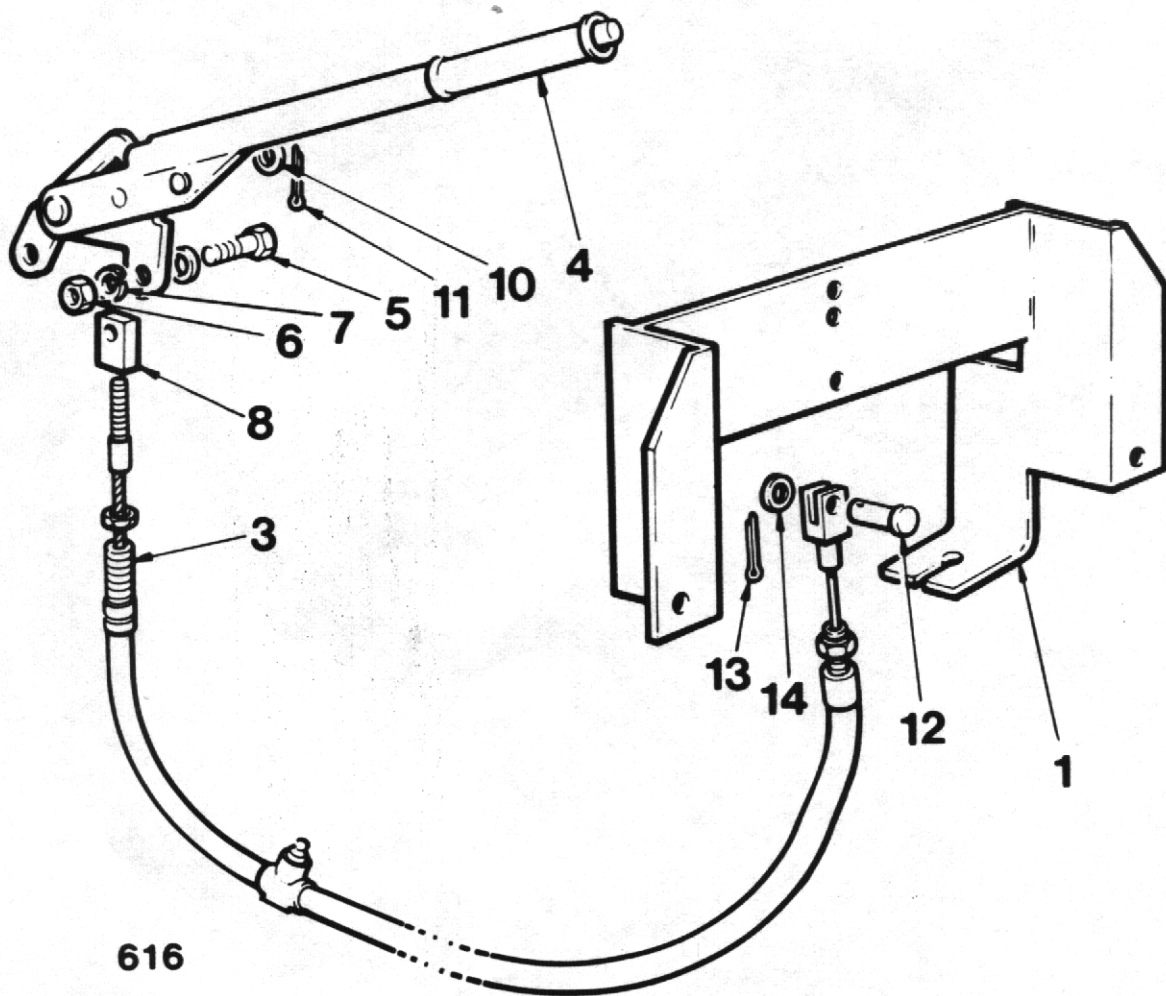
4B4000

| Item No. | Part No.  | Description                            | Qty. |
|----------|-----------|--|------|
| 1        | 10357.A03 | Hose - Fuel Leak Back (complete) ..... | 1    |
| 2        | 122S.01   | Adaptor 1/8" BSP .....                 | 1    |
| 3        | 10605.A04 | Pipe - Fuel Supply (complete) .....    | 1    |
| 4        | 122S.02   | Adaptor 1/4" BSP .....                 | 1    |
| 5        | 4/35-364  | Washer - Fibre .....                   | 1    |

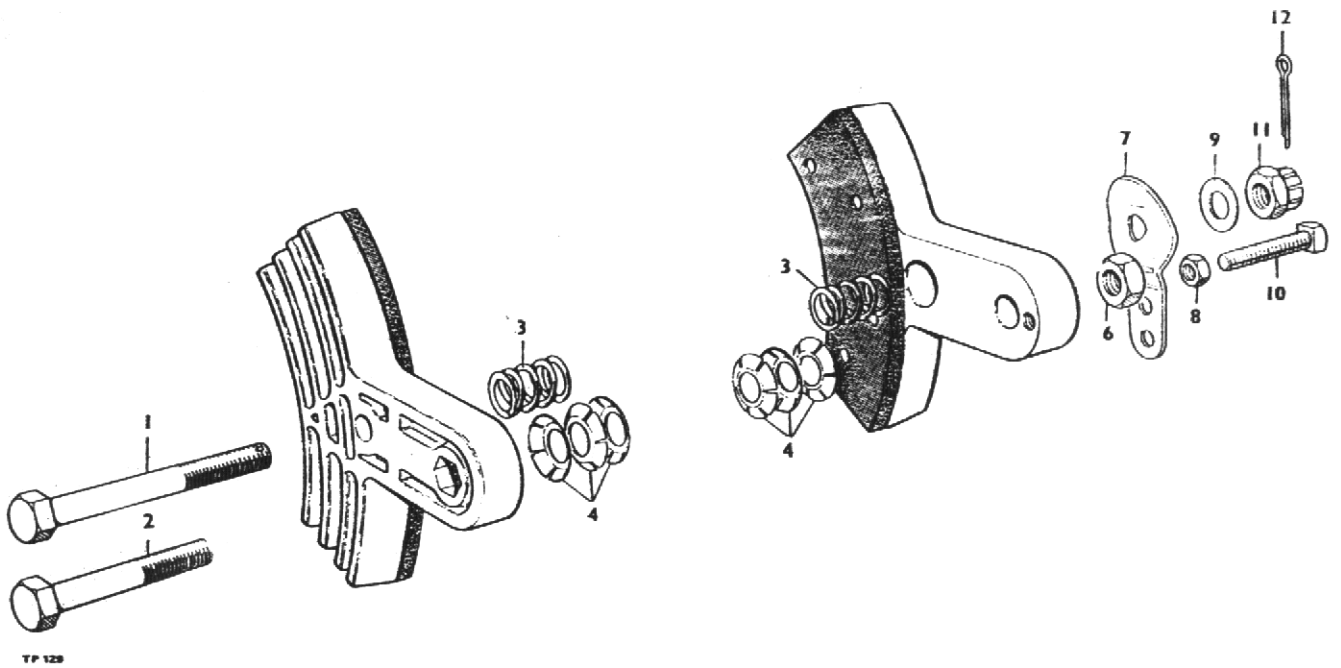
HANDBRAKE ASSEMBLY

4B4000

| Item No. | Part No.  | Description                                 | Qty. |
|----------|-----------|---|------|
| 1        | 30124.A02 | Bracket - Handbrake .....                   | 1    |
| 2        | 10578.A01 | Caliper - Brake (See separate illus.) ..... | 1    |
| 3        | 10543.A01 | Cable - Handbrake .....                     | 1    |
| 4        | 20208.A01 | Lever - Handbrake .....                     | 1    |
| 5        | 11S.04C   | Screw (Lever fixing) .....                  | 2    |
| 6        | 7S.04     | Nut ( " " ) .....                           | 2    |
| 7        | 17S.05    | Washer - Spring (Lever fixing) .....        | 2    |
| 8        | L.309     | Block - Cable (Lever end) .....             | 1    |
| 10       | 10S.03    | Washer - Plain .....                        | 1    |
| 11       | 44S.02B   | Pin - Split 3/32" .....                     | 1    |
| 12       | 10650.A13 | Pin Clevis - Cable (Caliper end) .....      | 1    |
| 13       | 44S.01C   | Pin - Split 1/16" .....                     | 1    |
| 14       | 10S.01    | Washer - Plain .....                        | 1    |



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## CALIPER, parking brake

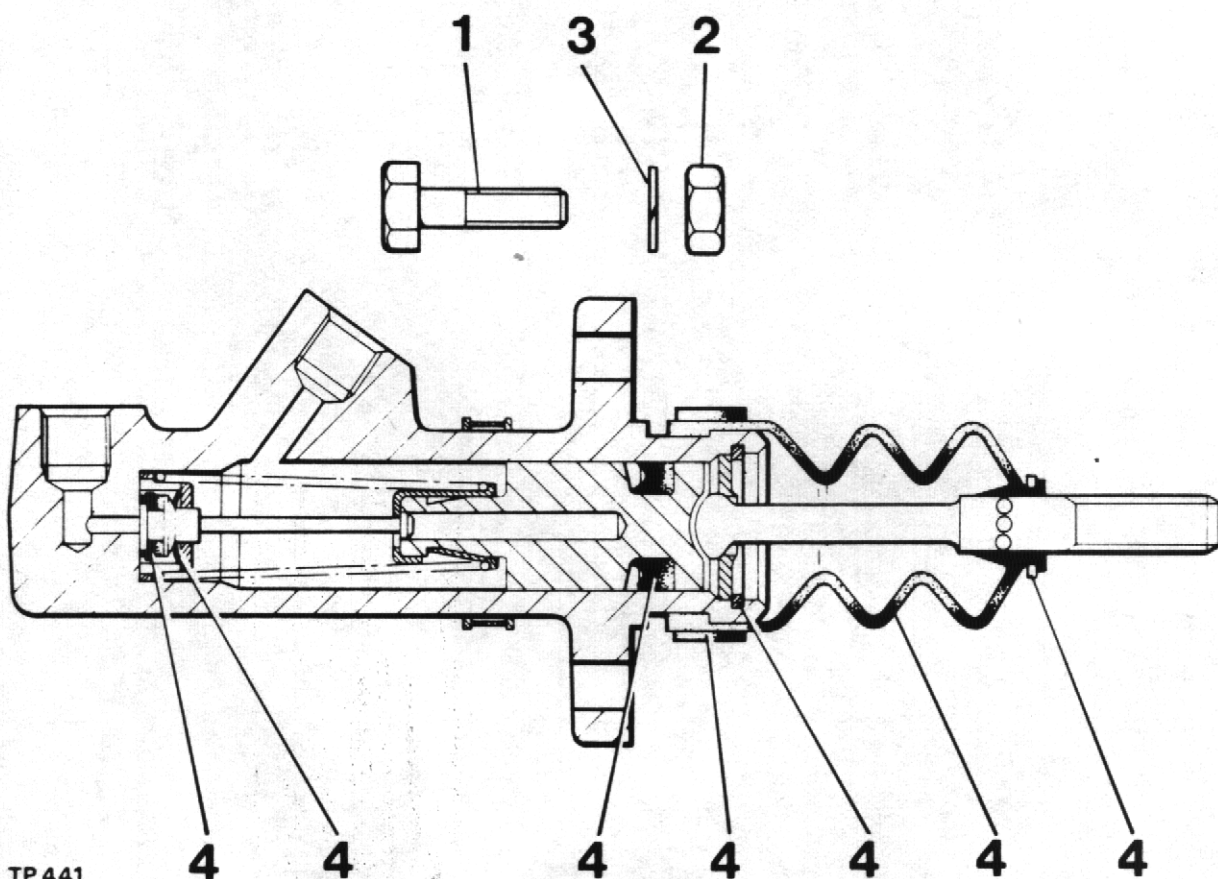
| Item | Part no    | Description                 | Qty |
|------|------------|-----------------------------|-----|
| 1A   | 10578A01   | CALIPER, one pair, assembly | 1   |
| 1    | 28S02T     | SCREW                       | 1   |
| 2    | 28S02P     | SCREW                       | 1   |
| 3    | 10578A0101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



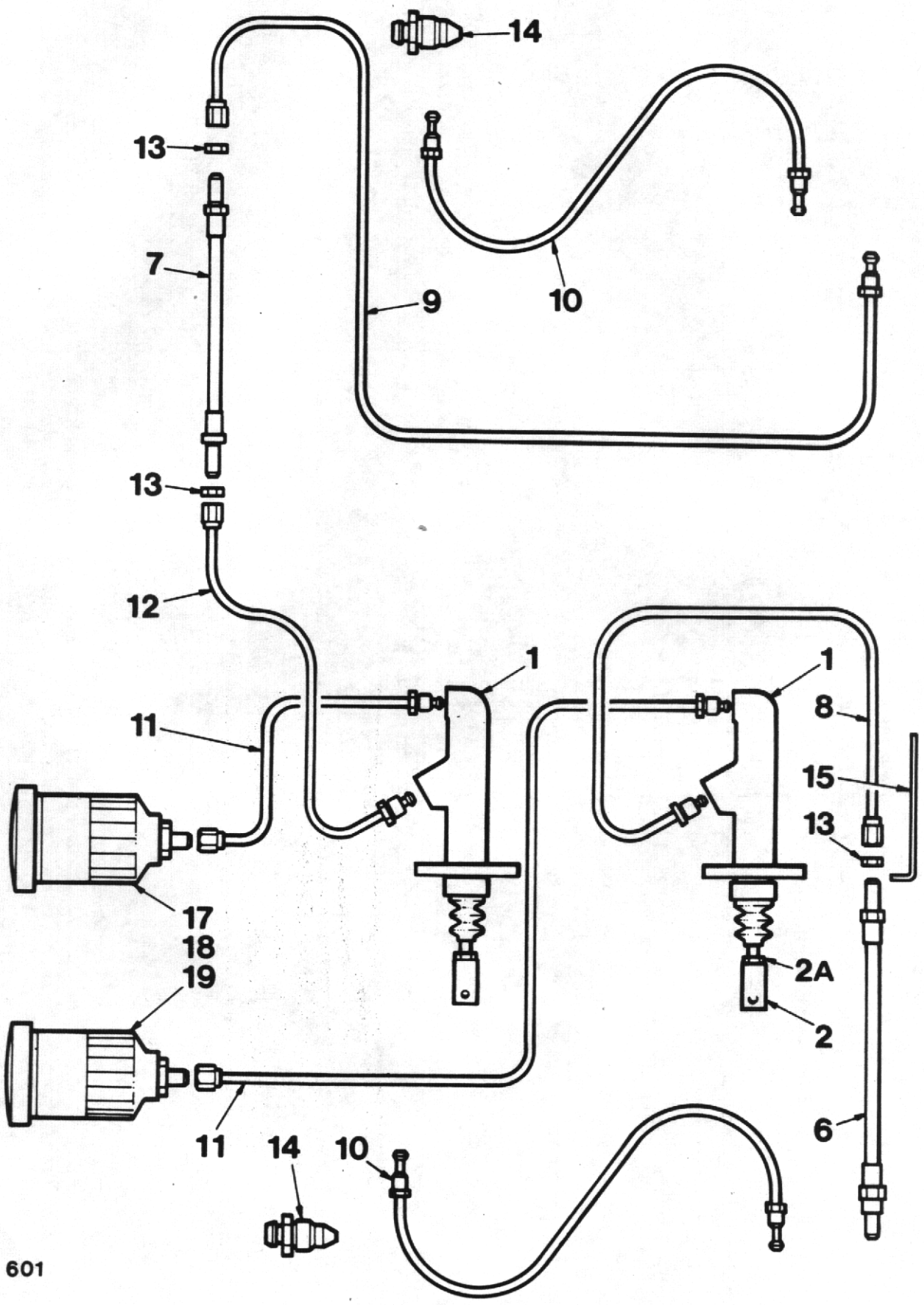
**BRAKE MASTER CYLINDER**  
(Mineral Oil)

4B4000

| Item No. | Part No.  | Description                       | Qty. |
|----------|-----------|-----------------------------------|------|
|          | 20102.A02 | Master Cylinder .....             | 1    |
| 1        | 8S.03B    | Bolts ..... (M/Cyl. fixing) ..... | 4    |
| 2        | 61S.03    | Nuts ..... ( " " ) .....          | 4    |
| 3        | 12S.03    | Washer - Plain ( " " ) .....      | 4    |
| 4        | 10510.A01 | Service Kit .....                 | A/R  |



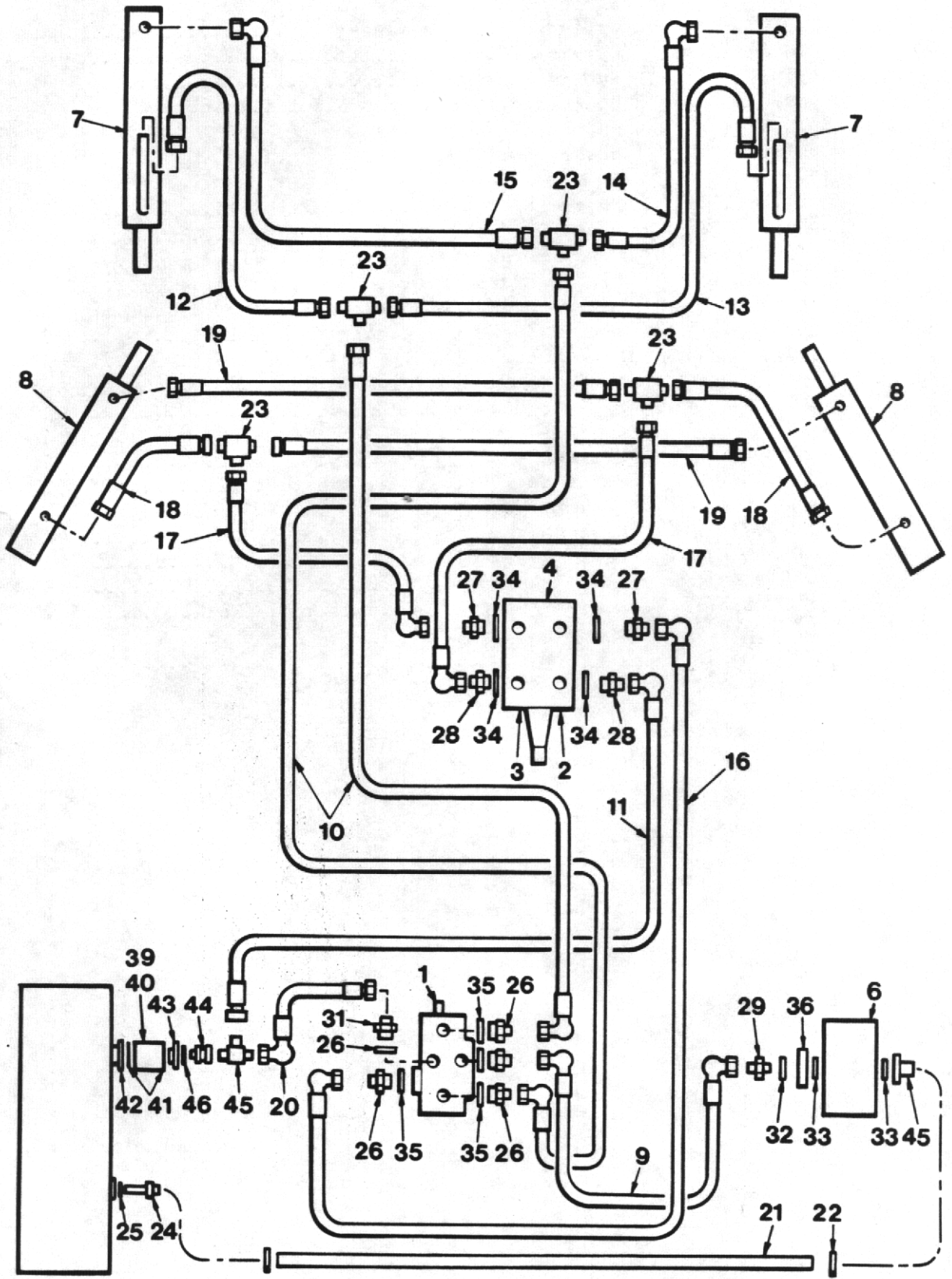
TP 441



## HYDRAULIC BRAKE LAYOUT

4B4000

| Item No. | Part No.    | Description                                  | Qty. |
|----------|-------------|--|------|
| 1        | 20102.A02   | Cylinder - Brake Master .....                | 2    |
| 2        | 10454.A02   | Clevis (M/Cyl.) .....                        | 2    |
| 2a       | 95S.03      | Nut - (Locking) .....                        | 2    |
| 3        | 8S.03B      | Bolt (M/Cyl. Fixing) - (Not illustrated) ... | 4    |
| 4        | 7S.03       | Nut ( " " ) - ( " " " ) ...                  | 4    |
| 5        | 17S.04      | Washer Spring " ( " " " ) ...                | 4    |
| 6        | 10516.A02   | Hose - Flexible (To Rear Axle) .....         | 1    |
| 7        | 10517.A02   | Hose - Flexible (Centre Pivot) .....         | 1    |
| 8        | 10967.A12   | Pipe - Brake (M/Cyl. to Rear Flex) .....     | 1    |
| 9        | 10967.A13   | Pipe - Brake (Flex to Front Axle) .....      | 1    |
| 10       | 10968.A06   | Pipe - Brake (Axle Bridge) .....             | 2    |
| 11       | 10967.A14   | Pipe - Brake (Reservoir to M/Cyl.) .....     | 2    |
| 12       | 10967.A15   | Pipe - Brake (M/Cyl. to Front Flex) .....    | 2    |
| 13       | 10582.A01   | Nut - Half (Flex Pipe Fixing) .....          | 3    |
| 14       | 182S.20     | Screw - Brake Bleed .....                    | 2    |
| 15       | 10666.A01   | Bracket - Rear Flex. Pipe .....              | 1    |
| 16       | 69S.05E     | Setscrew - Bracket fixing (Not illustrated). | 2    |
| 17       | 10659.A02   | Reservoir .....                              | 2    |
| 18       | 10659.A0201 | Cap - Reservoir .....                        | 2    |
| 19       | 10569.A0102 | Clip - Reservoir .....                       | 2    |
| 20       | 82S.03E     | Screw - Slotted (Clip fixing)-(Not illus.).. | 4    |
| 21       | 85S.01      | Locknut ..... ( " " )-( " " )..              | 4    |
| 22       | 10570.A01   | Repair Kit - Master cylinder .....           | A/R  |

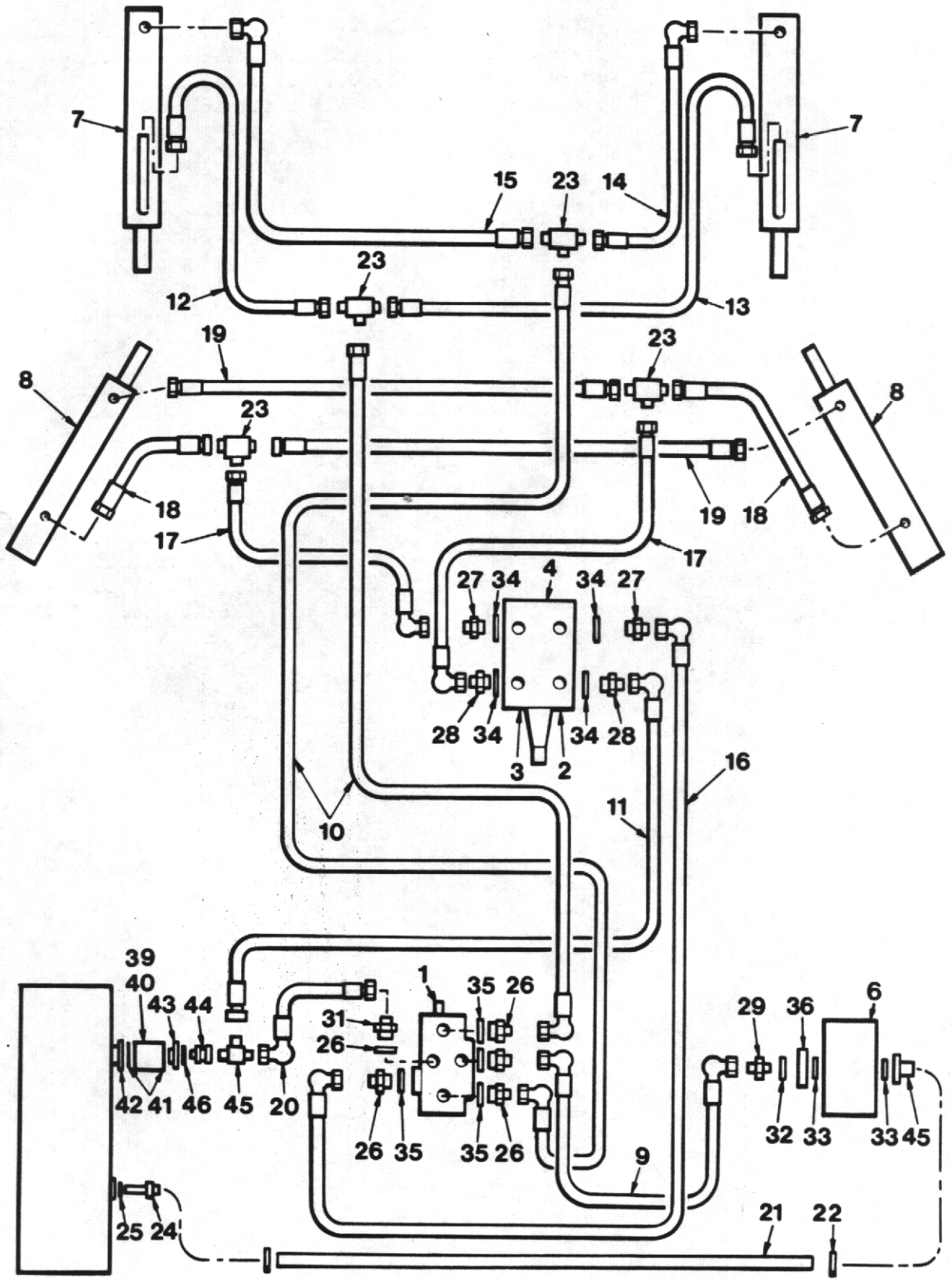




## HYDRAULICS

4B4000

| Item No. | Part No.   | Description                                  | Qty. |
|----------|------------|--|------|
| 1        | 30057.A02  | Control Valve .....                          | 1    |
| 2        | 4/60-293   | Valve Assy. - Steering (compr.) .....        | 1    |
| 3        | 4/60-293/1 | Steering Valve .....                         | 1    |
| 4        | 4/60-293/2 | Steering Column .....                        | 1    |
| 5        | 103S.04    | Cap screws (Socket head).....                | 2    |
| 6        | 10589.A01  | Hyd. Pump .....                              | 1    |
| 7        | 30162.A01  | Ram - Skip .....                             | 2    |
| 8        | 30111.A01  | Ram - Steering .....                         | 2    |
| 9        | 36S.02FF   | Hose - (Pump - Control Valve) .....          | 1    |
| 10       | 31S.02I    | Hose - (Control Valve - Tee) .....           | 2    |
| 11       | 31S.02D    | Hose - (Steer Valve - Filter) .....          | 1    |
| 12       | 35S.02C    | Hose - (Tee - Skip Ram) .....                | 1    |
| 13       | 35S.02B    | Hose - (Tee - Skip Ram) .....                | 1    |
| 14       | 31S.02P    | Hose - (Tee - Skip Ram) .....                | 1    |
| 15       | 31S.02M    | Hose - (Tee - Skip Ram) .....                | 1    |
| 16       | 36S.02II   | Hose - (Control Valve - Steer Valve) .....   | 1    |
| 17       | 31S.02N    | Hose - (Steer Valve - Tee) .....             | 2    |
| 18       | 35S.02R    | Hose - (Tee - Steer Ram) .....               | 2    |
| 19       | 35S.02K    | Hose - (Tee - Steer Ram) .....               | 2    |
| 20       | 31S.030    | Hose - (Control Valve - Filter).....         | 1    |
| 21       | 37S.03BF   | Hose - (Tank - Pump) .....                   | 1    |
| 22       | 97S.10     | Clips - Hose .....                           | 2    |
| 23       | 121S.04    | Tee .....                                    | 4    |
| 24       | 901S.001   | Strainer .....                               | 1    |
| 25       | 186S.14    | Seal .....                                   | 1    |
| 26       | CSE.186    | Adaptor (Control Valve) .....                | 4    |
| 27       | 126S.04    | Adaptor - (Steer Valve) - (Short) .....      | 2    |
| 28       | 4/60-115   | Adaptor - (Steer Valve) - (Long) .....       | 2    |
| 29       | 122S.03    | Adaptor - (Pump) .....                       | 1    |
| 30       | 4/35-261   | Adaptor Plate - Outlet - (Pump) .....        | 1    |
| 31       | 125S.09    | Adaptor - (Control Valve) .....              | 1    |
| 32       | 100S.03    | Bonded Seal .....                            | 1    |
| 33       | 49S.11     | 'O' Ring - (Pump) .....                      | 2    |
| 34       | 49S.02     | 'O' Ring - (Steer Valve) .....               | 4    |
| 35       | 49S.01     | 'O' Ring - (Control Valve) .....             | 5    |
| 36       | 6S.03H     | Bolt - (Control Valve fixing)-(Not illus)... | 2    |
| 37       | 9S.02      | Nut - ( " " " " " ...                        | 2    |
| 38       | 41S.04     | Washer - Spring " " " " ...                  | 2    |
| 39       | 10363.A03  | Filter .....                                 | 1    |
| 40       | 10363.A02  | Element - Filter .....                       | 2    |
| 41       | 100S.09    | Bonded Seal .....                            | 2    |
| 42       | 72S.07     | Back Nut .....                               | 1    |
| 43       | 111S.01    | Reducing Bush .....                          | 1    |
| 44       | 112S.01    | Adaptor .....                                | 1    |
| 45       | 113S.01    | Tee .....                                    | 1    |
| 46       | 100S.04    | Bonded Seal .....                            | 1    |
| 47       | 10475.A01  | Adaptor Plate .....                          | 1    |
| 48       | 103S.03H   | Canscrew - (Inlet Plate to pump)-(Not ill )  | 2    |



## HYDRAULICS

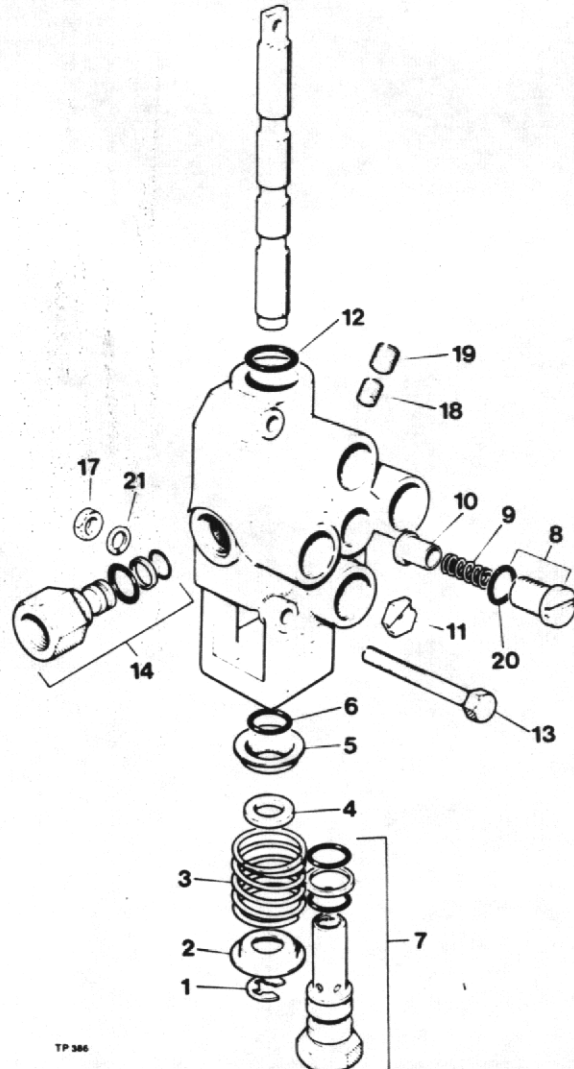
4B4000

| Item No. | Part No.  | Description                                  | Qty. |
|----------|-----------|--|------|
| 49       | 103S.03C  | Capscrew - (Outlet plate to pump) Not ill... | 2    |
| 50       | 10520.A11 | Lever Assy. - Control Valve (Not illus.) ... | 1    |
| 51       | 4/60-178  | Connecting Link .....                        | 1    |
| 52       | 10647.A01 | Spacer .....                                 | 1    |
| 53       | 44S.02    | Pin - Split .....                            | 1    |
| 54       | 10S.03    | Washer - Plain .....                         | 1    |
| 55       | 10211.A01 | Knob .....                                   | 1    |

HYDRAULIC CONTROL VALVE

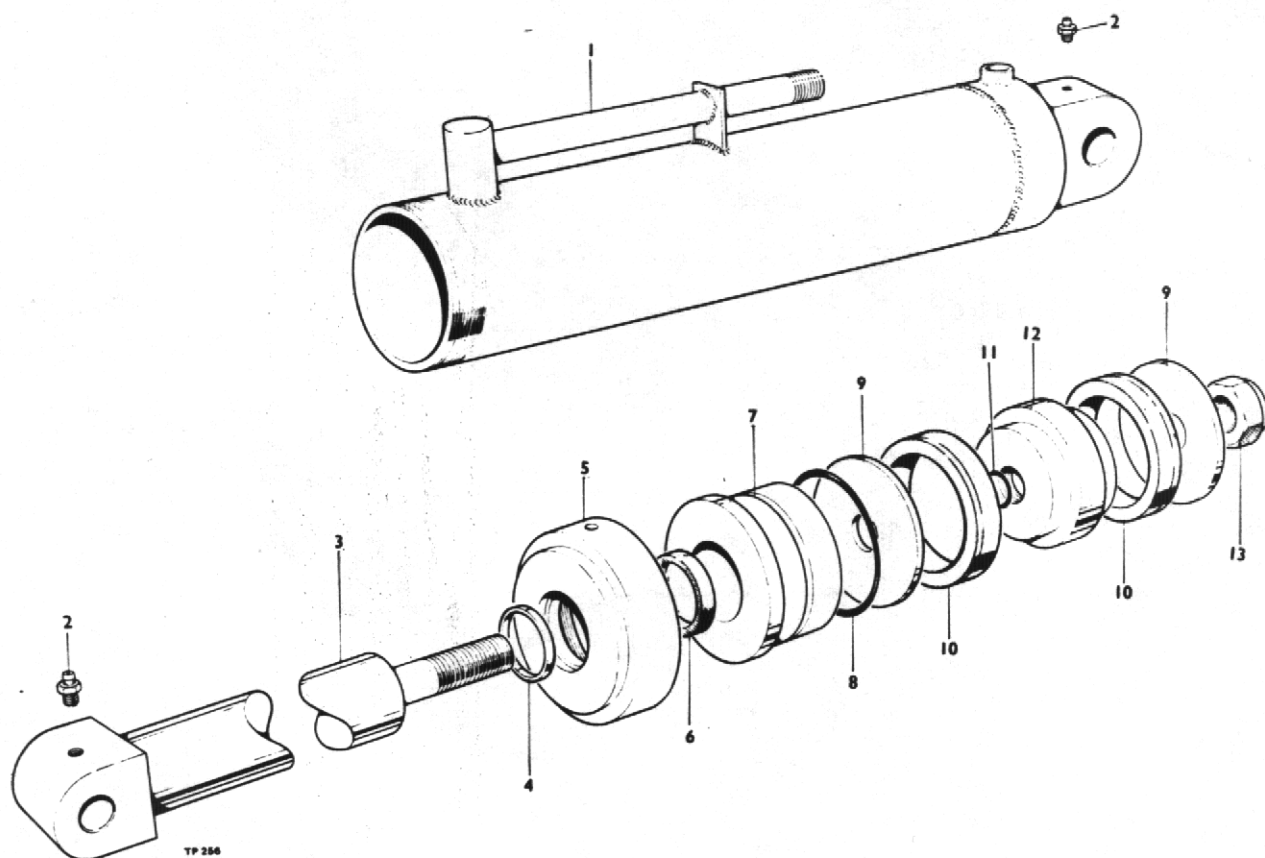
4B4000

| Item No. | Part No.    | Description                             | Qty. |
|----------|-------------|---|------|
|          | 30057.A02   | 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        | 30131.A0107 | Relief Valve Assy. (2000 p.s.i.) .....  | 1    |
| 8        | 30057.A0103 | Lift check plug assy. ....              | 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.03H      | Bolt - (Valve fixing) .....             | 2    |
| 14       | 30057.A0105 | Pressure beyond plug .....              | 1    |
| 15       | 30131.A0116 | Plug 1/16" .....                        | 1    |
| 16       | 30131.A0117 | Plug 1/8" .....                         | 1    |
| 17       | 9S.02       | Nut - (with item 13) .....              | 2    |
| 18       | 30057.A0106 | Seal Repair kit - (Relief valve) .....  | A/R  |
| 19       | 30057.A0107 | Seal Repair kit - (Control valve) ..... | A/R  |
| 20       | 30131.A0118 | 'O' Ring .....                          | 1    |
| 21       | 41S.04      | Spring washer 5/16" Dia. ....           | 2    |





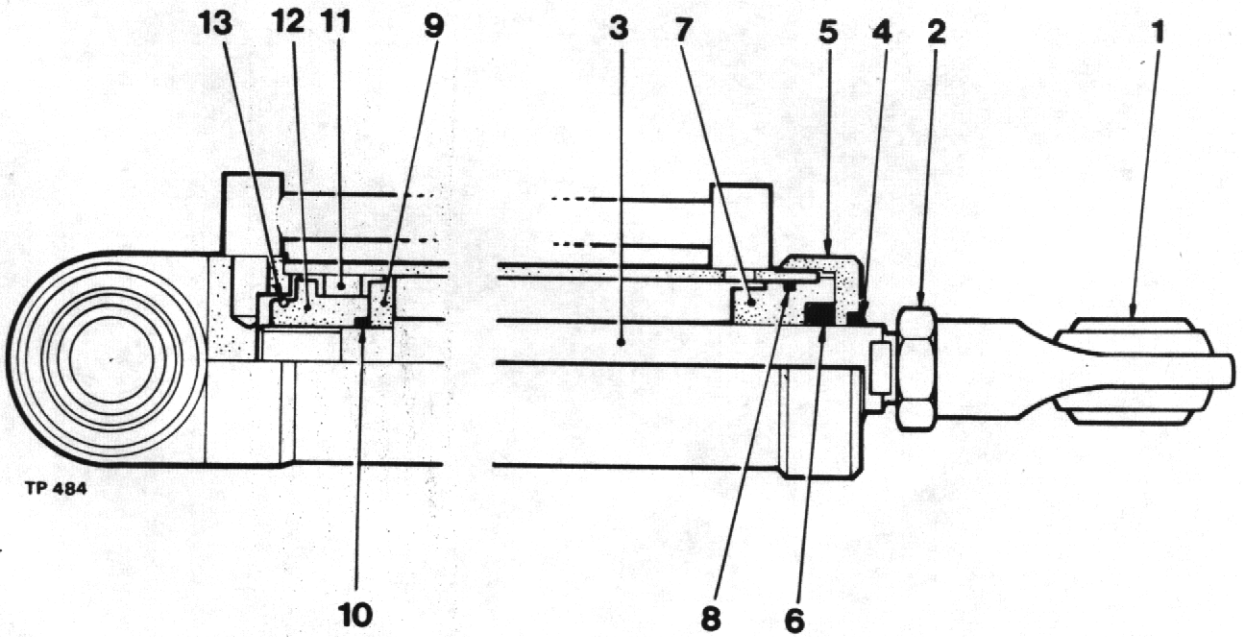
| Item No. | Part No.    | Description                                 | Qty. |
|----------|-------------|---|------|
|          | 30162.A01   | Ram Assy complete                           |      |
| 1        | 30162.A0101 | Body - Ram .....                            | 1    |
| 2        | 30162.A0102 | Nipple - Grease .....                       | 2    |
| 3        | 30162.A0103 | Piston Rod .....                            | 1    |
| 4        | 30162.A0104 | Wiper .....                                 | 1    |
| 5        | 30162.A0105 | Tube cap .....                              | 1    |
| 6        | 30162.A0106 | Sleeve seal .....                           | 1    |
| 7        | 30162.A0107 | Sleeve .....                                | 1    |
| 8        | 30162.A0108 | 'O' Ring - Sleeve .....                     | 1    |
| 9        | 30162.A0109 | Washer - Backing .....                      | 2    |
| 10       | 30162.A0110 | Piston Seal .....                           | 2    |
| 11       | 30162.A0111 | 'O' Ring - Piston .....                     | 1    |
| 12       | 30162.A0112 | Head - Piston .....                         | 1    |
| 13       | 30162.A0113 | Locknut .....                               | 1    |
|          | CSE.190     | Seal kit (Compr. items 4,6,8,10 & 11) ..... | A/R  |



STEERING RAM

4B4000

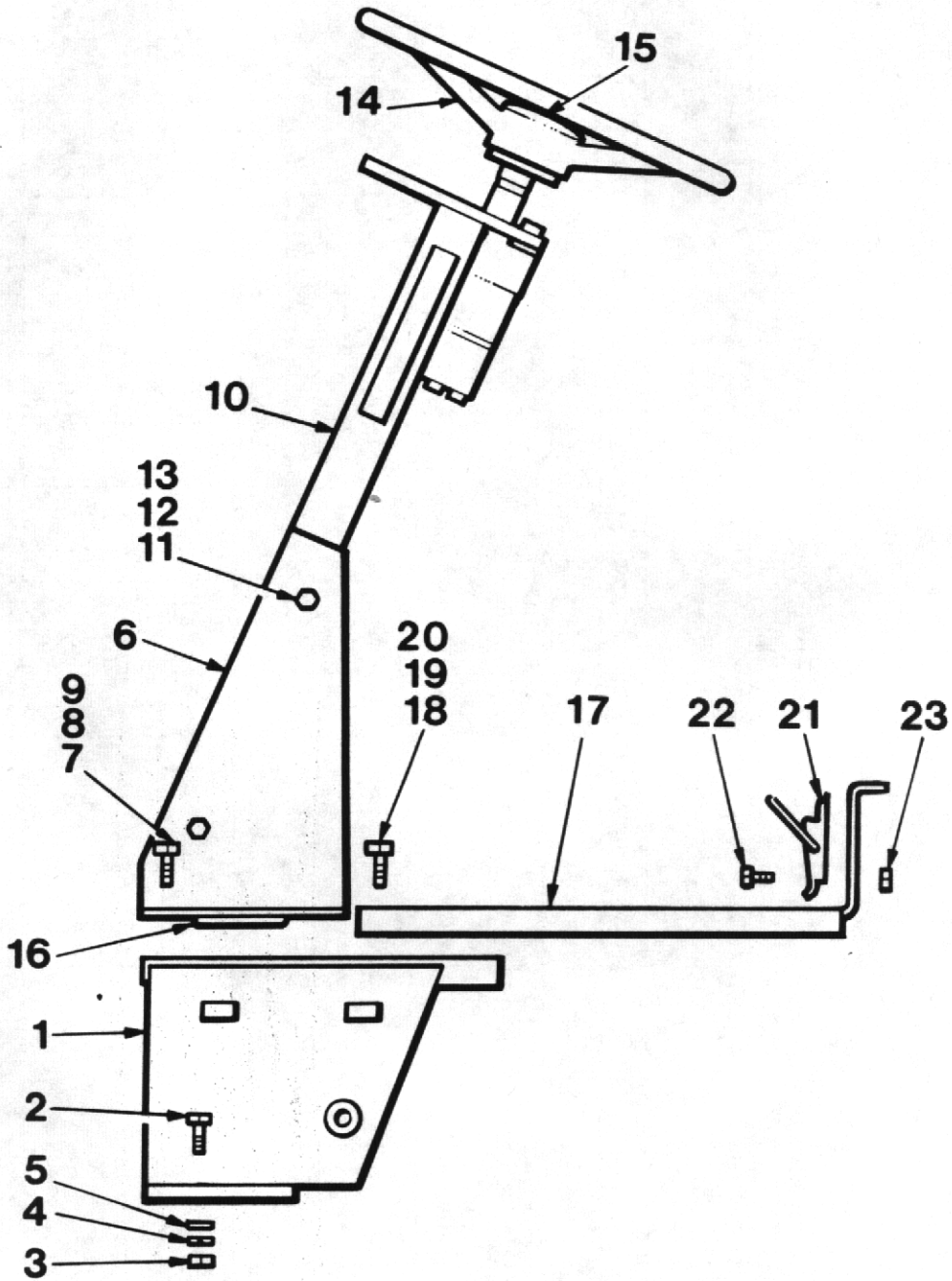
| Item No. | Part No.    | Description                                 | Qty. |
|----------|-------------|---|------|
|          | 30111.A01   | Ram Assembly complete                       |      |
| 1        | 20100.A02   | Rod end .....                               | 1    |
| 2        | 95S.09      | Locknut .....                               | 1    |
| 3        | 30121.A0302 | Rod - Piston .....                          | 1    |
| 4        | 30121.A0104 | Wiper .....                                 | 1    |
| 5        | 30121.A0105 | Cap - Tube .....                            | 1    |
| 6        | 30121.A0106 | Seal - Sleeve .....                         | 1    |
| 7        | 30121.A0303 | Sleeve .....                                | 1    |
| 8        | 30121.A0108 | 'O' Ring - Sleeve .....                     | 1    |
| 9        | 30121.A0109 | Washer - Backing .....                      | 1    |
| 10       | 30121.A0110 | 'O' Ring - Piston .....                     | 1    |
| 11       | 30121.A0111 | Seal - Piston .....                         | 1    |
| 12       | 30121.A0112 | Piston Head .....                           | 1    |
| 13       | 30121.A0115 | Ring - Spring .....                         | 1    |
|          | CSE.189     | Seal Kit (Compr. items 4,6,8,10 & 11) ..... | A/R  |



## AIR CLEANER &amp; EXHAUST

4B4000

| Item No. | Part No.    | Description                                     | Qty. |
|----------|-------------|---|------|
| 1        | 10532.A05   | Air Cleaner .....                               | 1    |
| 2        | 10534.A05   | Stack Cap .....                                 | 1    |
| 3        | 10533.A05   | Mounting Bends .....                            | 1    |
| 4        | 10840.A01   | Hose Assembly compr:- .....                     | 1    |
| 5        | 10840.A0101 | Hose 2½" Bore x 25" .....                       | 1    |
| 6        | 10320.A02   | Adaptor Sleeve 2½" I/D x 2½" O/D x 1½" Lg... .. | 2    |
| 7        | 97S.14      | Clips - Hose .....                              | 2    |
| 8        | 1S.01A      | Bolt ¼" BSF .... (Air Cleaner fixing) .....     | 4    |
| 9        | 2S.02       | Nuts ¼" BSF .... ( " " " ) .....                | 4    |
| 10       | 41S.03      | Washer - Spring. ( " " " ) .....                | 4    |
| 11       | 40106.A06   | Exhaust Assy. ....                              | 1    |
| 12       | 153S.12     | Clamp - Exhaust .....                           | 1    |
| 13       | 8S.04C      | Bolt M.10 .... (Exhaust fixing) .....           | 1    |
| 14       | 59S.03      | Nut M.10 .... ( " " ) .....                     | 1    |
| 15       | 12S.05      | Washer - Flat M.10 ( " " ) .....                | 2    |

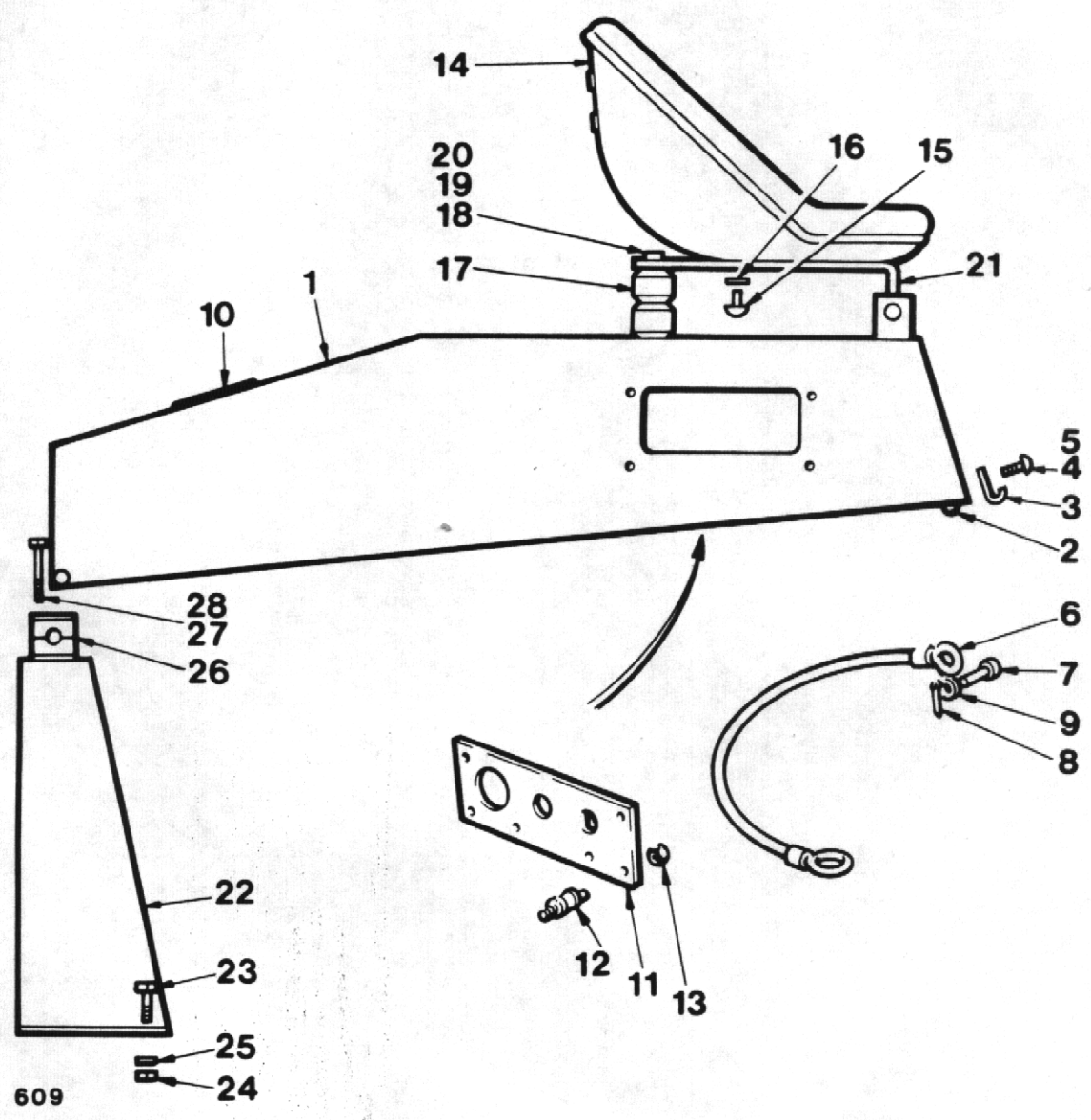




## STEERING COLUMN &amp; PEDAL BRACKET

4B4000

| Item No. | Part No.  | Description                                   | Qty. |
|----------|-----------|---|------|
| 1        | 40164.A01 | Support - Pedal controls & Steering column... | 1    |
| 2        | 8S.04K    | Bolt M10 x 70 ...(Support fixing) .....       | 4    |
| 3        | 7S.04     | Nut M10 .....( " " ) .....                    | 4    |
| 4        | 17S.05    | Washer - Spring .( " " ) .....                | 4    |
| 5        | 12S.05    | Washer - Flat....( " " ) .....                | 4    |
| 6        | 30184.A02 | Mounting Plate .....                          | 1    |
| 7        | 11S.04C   | Screw M10 ..... (Plate fixing) .....          | 4    |
| 8        | 7S.04     | Nut M10 ..... ( " " ) .....                   | 4    |
| 9        | 17S.05    | Washer - Spring M10 ( " " ) .....             | 4    |
| 10       | 30125.A02 | Steering Column .....                         | 1    |
| 11       | 11S.04C   | Screw M10 .....(Column fixing) .....          | 4    |
| 12       | 7S.04     | Nut M10.....( " " ) .....                     | 4    |
| 13       | 17S.05    | Washer - Spring M10 ( " " ) .....             | 4    |
| 14       | 40064.A01 | Wheel - Steering .....                        | 1    |
| 15       | 10314.A01 | Cap - Steering Wheel .....                    | 1    |
| 16       | 4/35-375  | Grommet .... .....                            | 1    |
| 17       | 30163.A07 | Floor plate .....                             | 1    |
| 18       | 11S.04D   | Screw M10 .....(Floor Plate fixing).....      | 2    |
| 19       | 7S.04     | Nut M10 .....( " " " ).....                   | 2    |
| 20       | 17S.05    | Washer - Spring .( " " " ).....               | 2    |
| 21       | 10537.A01 | Toggle fastener .....                         | 2    |
| 22       | 82S.03E   | Screw 2BA (Toggle fixing) .....               | 4    |
| 23       | 85S.01    | Nut 2BA .. ( " " ) .....                      | 4    |



## ENGINE COVER, SEAT ASSY. &amp; REAR FRAME

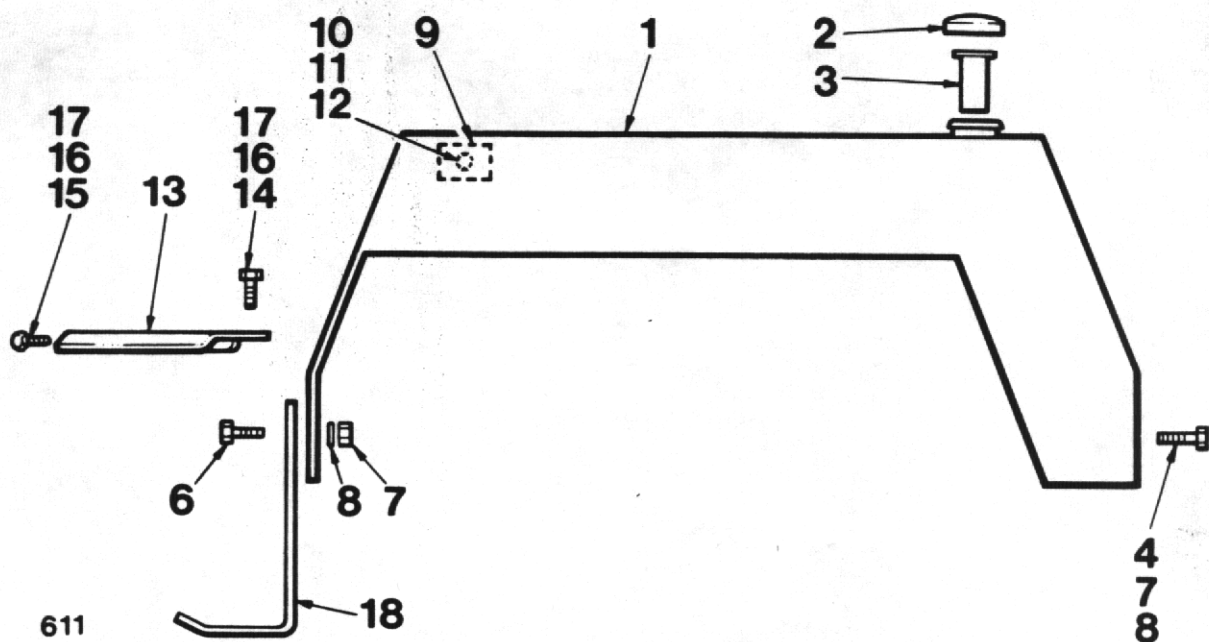
4B4000

| Item No. | Part No.  | Description                                      | Qty. |
|----------|-----------|--|------|
| 1        | 40112.A07 | Cover - Engine .....                             | 1    |
| 2        | 10554.A01 | Buffers - Rubber .....                           | 4    |
| 3        | 10538.A01 | Catch Plate .....                                | 2    |
| 4        | 82S.03C   | Screw 2BA .....                                  | 4    |
| 5        | 85S.01    | Nut 2BA .....                                    | 4    |
| 6        | 10366.A02 | Strap - Engine cover .....                       | 1    |
| 7        | 10650.A19 | Pin - Clevis .....                               | 1    |
| 8        | 44S.02A   | Pin - Split .....                                | 1    |
| 9        | 12S.05    | Washer .....                                     | 1    |
| 10       | 10566.A01 | Grommet .....                                    | 1    |
| 11       | 10447.A02 | Panel - Instrument .....                         | 1    |
| 12       | 10371.A02 | Mountings - Flexible - Panel .....               | 4    |
| 13       | 61S.09    | Nuts M4 .....                                    | 8    |
| 14       | 20072.A02 | Seat .....                                       | 1    |
| 15       | 69S.03C   | Screw 3/8" UNC (Seat fixing) .....               | 4    |
| 16       | 41S.05    | Washer - Spring 3/8" (Seat fixing) .....         | 4    |
| 17       | 10519.A01 | Spring - Rubber .....                            | 1    |
| 18       | 11S.04C   | Screw M10 (Spring fixing) .....                  | 1    |
| 19       | 61S.04    | Nut M10 (Spring fixing) .....                    | 1    |
| 20       | C180B     | Washer - Flat M10 (Spring fixing) .....          | 1    |
| 21       | 30148.A04 | Frame - Seat .....                               | 1    |
| 22       | 10914.A01 | Frame - Rear .....                               | 1    |
| 23       | 8S.04D    | Bolt M10 (Frame fixing) .....                    | 4    |
| 24       | 61S.04    | Nut M10 ( " " ) .....                            | 4    |
| 25       | 105S.03   | Washer 5 <sup>o</sup> Taper (Frame fixing) ..... | 4    |
| 26       | 10364.A01 | Block - Pivot .....                              | 2    |
| 27       | 8S.02F    | Bolt M6 .....                                    | 4    |
| 28       | 61S.02    | Nut M6 .....                                     | 4    |

MUDWINGS incl. TANKS & STEPS

4B4000

| Item No. | Part No.  | Description   | Qty. |
|----------|-----------|---|------|
| 1        | 30311.A05 | Mudwing + Hyd. Tank L.H. ....                                 | 1    |
|          | 30301.A05 | Mudwing + Fuel Tank R.H. ....                                 | 1    |
| 2        | 10378.A03 | Cap - Filler ..... (per wing)..                               | 1    |
| 3        | 10379.A03 | Strainer ..... ( " " )..                                      | 1    |
| 4        | 11S.04C   | Screw - (Wing to Rear channel) ( " " )..                      | 3    |
| 5        | 11S.04D   | Screw - (Wing to Front Member) ( " " )..                      | 2    |
| 6        | 11S.04F   | Screw - ( " " " " ) ( " " )..                                 | 1    |
| 7        | 7S.04     | Nut ..... ( " " )..   | 6    |
| 8        | 17S.05    | Washer - Spring ..... ( " " )..                               | 6    |
| 9        | 10975.A01 | Bracket - (Floor plate support)( " " )..<br>(Not illustrated) | 1    |
| 10       | 11S.04D   | Screw - (Bracket fixing) ..... ( " " )..                      | 1    |
| 11       | 59S.03    | Nut - ( " " ) ..... ( " " )..                                 | 1    |
| 12       | 12S.19    | Washer ( " " ) ..... ( " " )..                                | 1    |
| 13       | 20143.A01 | Step L.H. ....  | 1    |
|          | 20143.A02 | Step R.H. ....  | 1    |
| 14       | 8S.04D    | Bolt (Step fixing) ..... (per step)..                         | 1    |
| 15       | 8S.04C    | Bolt ( " " ) ..... ( " " )..                                  | 1    |
| 16       | 61S.04    | Nut ( " " ) ..... ( " " )..                                   | 2    |
| 17       | 12S.05    | Washer " " ..... ( " " )..                                    | 4    |
| 18       | 20145.A01 | Stepbar (Fixed by item 6) .....                               | 2    |

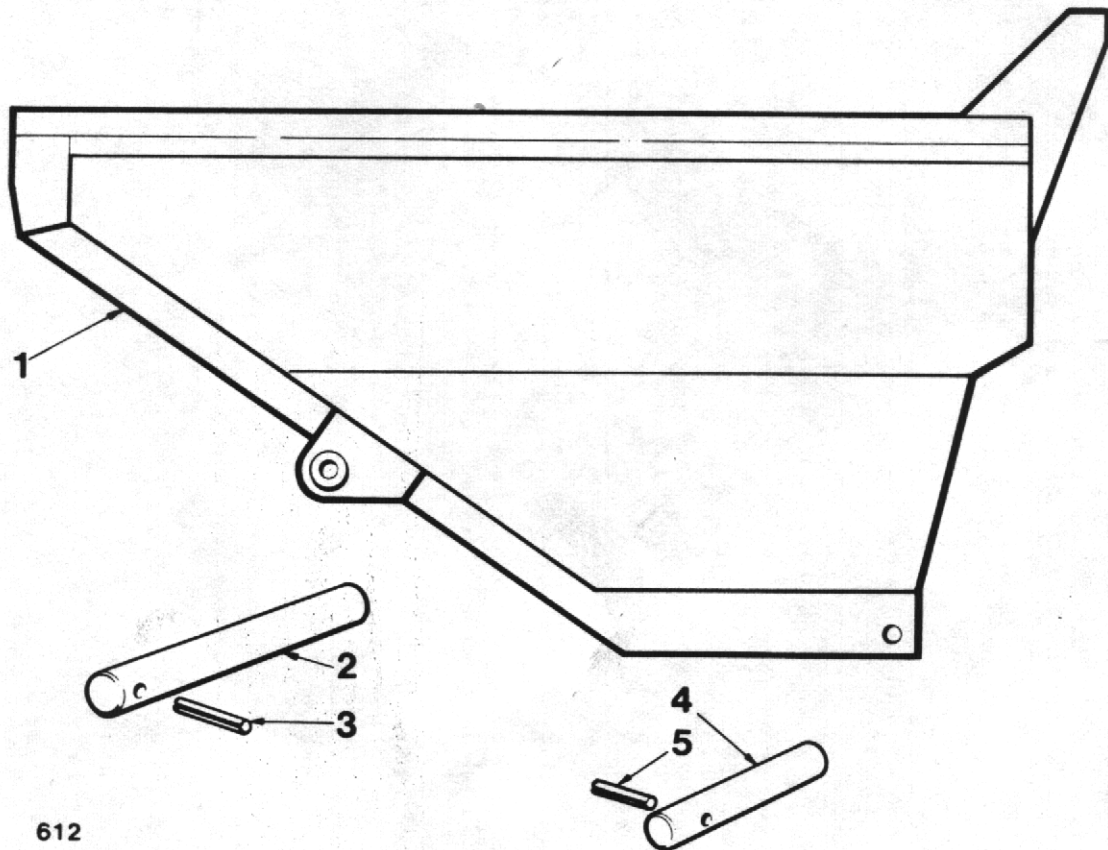




SKIP

4B4000

| Item No. | Part No.  | Description                | Qty. |
|----------|-----------|----------------------------|------|
| 1        | 40068.A03 | Skip .....                 | 1    |
| 2        | 10522.A02 | Pin - Skip pivot .....     | 2    |
| 3        | 54S.08S   | Pin - Tension .....        | 2    |
| 4        | 10720.A01 | Pin - Skip Ram pivot ..... | 4    |
| 5        | 54S.07P   | Pin - Tension .....        | 4    |



## WHEELS &amp; TYRES

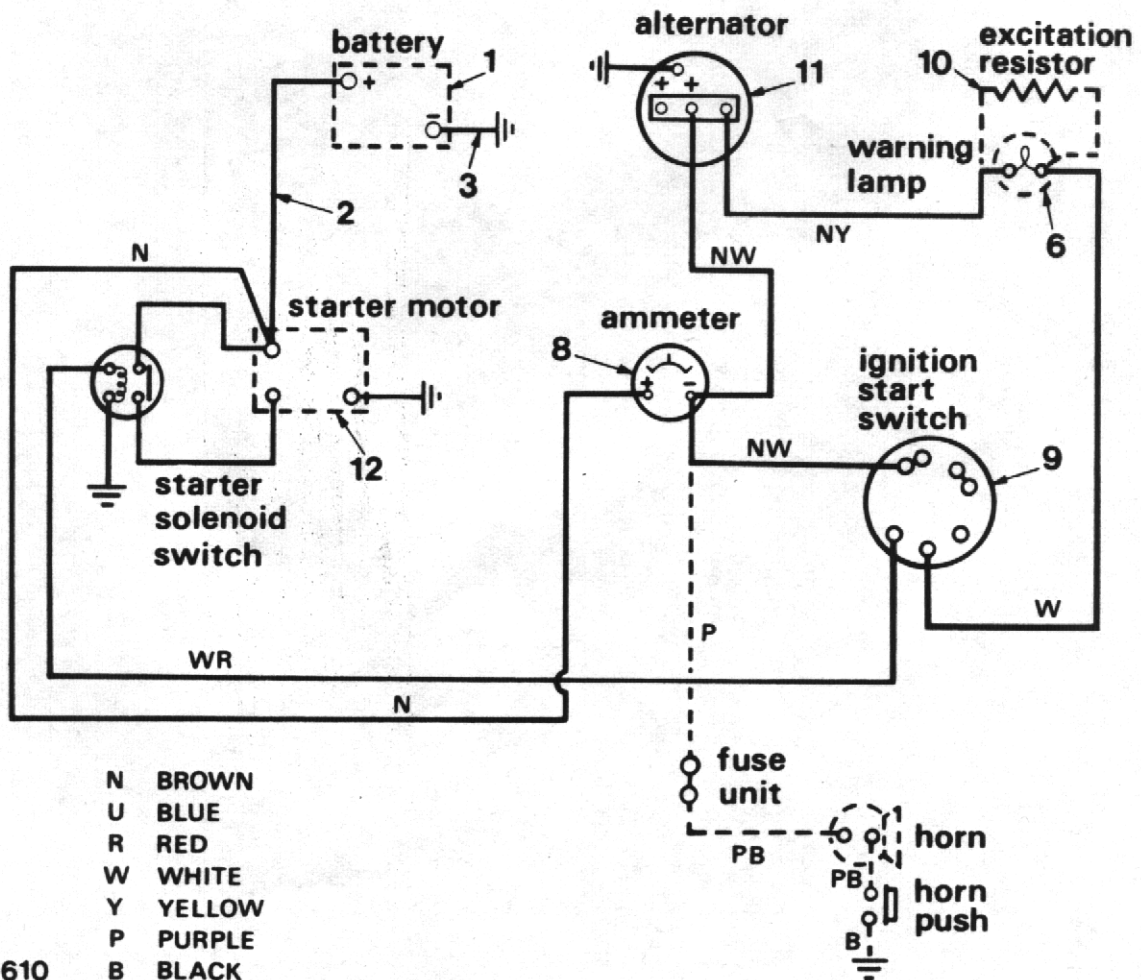
4B4000

| Item No. | Part No.  | Description                    | Qty. |
|----------|-----------|--------------------------------|------|
| 1        | 24S.09    | Wheel Assy. L.H. ....          | 2    |
| 2        | 24S.10    | Wheel Assy. R.H. ....          | 2    |
| 3        | 30181.A01 | Wheel .....                    | 1    |
| 4        | 20S.12    | Tyre 12.50 x 18 x 10 Ply ..... | 1    |
| 5        | 23S.05    | Tube 12.50 x 18 .....          | 1    |
| 6        | ESE.260   | Nuts - Wheel .....             | 32   |

ELECTRICS

4B4000

| Item No. | Part No.   | Description                              | Qty. |
|----------|------------|--|------|
| 1        | 109S.01    | Battery - (Lucas) .....                  | 1    |
|          | 109S.03    | Battery - (Fulmen) - (Alternative) ..... | 1    |
|          | 109S.05    | Battery - (Steco) .....                  | 1    |
| 2        | 10227.A06  | Cable - Positive .....                   | 1    |
| 3        | 10228.A04  | Cable - Negative .....                   | 1    |
| 4        | 20105.A03  | Wiring Harness .....                     | 1    |
| 5        | 30178.A03  | Guard - Alternator Belt .....            | 1    |
| 6        | 10434.A01  | Light Assy. - Warning .....              | 1    |
| 7        | 180S.01    | Ties - Cable - Rivet fixing .....        | A/R  |
| 8        | (Supplied) | Ammeter .....                            | 1    |
| 9        | ( )        | Switch - Start .....                     | 1    |
| 10       | ( with )   | Resistance - Excitation .....            | 1    |
| 11       | ( )        | Alternator .....                         | 1    |
| 12       | ( Engine ) | Starter .....                            | 1    |



## FULL ROAD LIGHTING

4B4000

| Item No. | Part No.    | Description                              | Qty. |
|----------|-------------|--|------|
| 1        | 20013.A0112 | Headlamps .....                          | 2    |
| 2        | 10216.A01   | Stoneguard .....                         | 2    |
| 3        | FSE.333     | Sidelights/Indicator - Front .....       | 2    |
| 4        | 82S.03E     | Screw (Sidelight fixing) .....           | 8    |
| 5        | 85S.01      | Nut ( " " " ) .....                      | 8    |
| 6        | 12S.01      | Washer( " " " ) .....                    | 8    |
| 7        | FSE.334     | Stop/Rear/Indicator - Light - Rear ..... | 2    |
| 8        | 82S.03E     | Screw (Rear light fixing) .....          | 8    |
| 9        | 85S.01      | Nut ( " " " ) .....                      | 8    |
| 10       | 12S.01      | Washer ( " " " ) .....                   | 8    |
| 11       | 10615.A01   | Light - No. plate .....                  | 1    |
| 12       | 10620.A01   | Switch - Light .....                     | 1    |
| 13       | 10617.A01   | Switch - Indicator .....                 | 1    |
| 14       | 82S.07C     | Screw (Switch fixing) .....              | 2    |
| 15       | 85S.03      | Nut ( " " ) .....                        | 2    |
| 16       | 10744.A01   | Switch - Stop Light .....                | 1    |
| 17       | 10616.A01   | Flasher Unit .....                       | 1    |
| 18       | 82S.03C     | Screw (Fixing) .....                     | 1    |
| 19       | 85S.01      | Nut ( " ) .....                          | 1    |
| 20       | 12S.01      | Washer ( " ) .....                       | 1    |
| 21       | 10644.A01   | Fuse Box .....                           | 1    |
| 22       | 82S.03E     | Screw (Fixing) .....                     | 1    |
| 23       | 85S.01      | Nut ( " ) .....                          | 1    |
| 24       | 10619.A01   | Button - Horn .....                      | 1    |
| 25       | 82S.07E     | Screw (Fixing) .....                     | 2    |
| 26       | 85S.03      | Nut ( " ) .....                          | 2    |
| 28       | 10618.A01   | Horn c/w Bracket .....                   | 1    |
| 29       | 11S.01A     | Screw (Fixing) .....                     | 2    |
| 30       | 17S.02      | Washer - Spring .....                    | 2    |
| 31       | 7S.01       | Nut .....                                | 2    |
| 32       | 20105.A04   | Wiring Horness .....                     | 1    |



OPTIONS

4B4000

ROAD EQUIPMENT (DAY USE)

| Item No. | Part No.  | Description                | Qty. |
|----------|-----------|----------------------------|------|
| 1        | 10203.A04 | Mirror - Rear View .....   | 1    |
| 2        | 10608.A01 | Arm - Mirror Support ..... | 1    |
| 3        | 10471.A01 | Ferrule - Rubber .....     | 2    |
| 4        | 10364.A01 | Clamp Assy. ....           | 1    |
| 5        | 8S.02F    | Bolt (Clamp fixing) .....  | 2    |
| 6        | 61E.02    | Nuts ( " " ) .....         | 2    |
| 8        | 10607.A01 | Licence Holder .....       | 1    |
| 9        | 10606.A03 | Wheel Brace .....          | 1    |

## LABELS

4B4000

| Item No. | Part No.   | Description                                  | Qty. |
|----------|------------|--|------|
| 1        | 20235.A14  | M/C Identification - White .....             | 2    |
|          | 20235.A13  | M/C Identification - Black (Alternative) ... | 2    |
| 2        | 10541.A26  | Payload - White .....                        | 1    |
|          | 10541.A27  | Payload - Black (Alternative) .....          | 1    |
| 3        | DM.198     | Steering Lock .....                          | 2    |
| 4        | DM.157     | Warning (Skip) .....                         | 1    |
| 5        | 10166.A02  | Tyre Pressure - Red .....                    | 4    |
| 6        | 20132.A03  | Dumper Safety Instructions .....             | 1    |
| 7        | 10546.A03  | Fuel .....                                   | 1    |
| 8        | 10546.A04  | Hydraulic Oil .....                          | 1    |
| 9        | 10284.A01  | Dump/Return .....                            | 1    |
| 10       | 10317.A03  | Chassis .....                                | 1    |
| 11       | 10536.A01  | Warning (Engine Cover) .....                 | 1    |
| 12       | DM.196     | Lubrication .....                            | 1    |
| 13       | 10976.A03  | 'WIBAU' Label - White .....                  | 3    |
| 14       | ESE.236    | 'STOP' Engine - White .....                  | 1    |
|          | FSE.357    | 'STOP' Engine - Black (Alternative) .....    | 1    |
| 15       | 10215.A02  | Filter Instruction - White .....             | 1    |
|          | 10215.A03  | Filter Instruction - Black (Alternative) ... | 1    |
| 16       | 4/60-233/1 | 'Negative' Earth .....                       | 1    |
| 17       | DM.195     | Alternator Warning .....                     | 1    |
| 18       | 10876.A01  | Gear Selector .....                          | 1    |
| 19       | 10848.A01  | Warning (Brake Reservoir 'Top-up') .....     | 1    |
| 20       | 101S.05D   | 'Pop' Rivets (used with items 6 & 10) .....  | 10   |

## SUPPLEMENT CAB

4B4000

| Item No. | Part No.    | Description                                     | Qty. |
|----------|-------------|---|------|
| 1        | 40306.A02   | Cab Assy. complete .....                        | 1    |
| 2        | 40306.A0101 | Catch - Door (Not illustrated) .....            | 2    |
| 3        | 40306.A0102 | Catch - Roof .....                              | 1    |
| 4        | 40306.A0103 | Mirror - Exterior .....                         | 1    |
| 5        | 40306.A0104 | Mirror - Interior .....                         | 1    |
| 6        | 40306.A0105 | Motor - Wiper (Front) .....                     | 1    |
| 7        | 40306.A0106 | Motor - Wiper (Rear) .....                      | 1    |
| 8        | 40306.A0107 | Arm - Wiper (Front) .....                       | 1    |
| 9        | 40306.A0108 | Arm - Wiper (Rear) .....                        | 1    |
| 10       | 40306.A0109 | Blade - Wiper (Front) .....                     | 1    |
| 11       | 40306.A0110 | Blade - Wiper (Rear) .....                      | 1    |
| 12       | 40306.A0111 | Washer - Windscreen .....                       | 1    |
| 13       | 20192.A02   | Floor Trim .....                                | 1    |
| 14       | 20270.A01   | Bracket (Rear Mounting) .....                   | 2    |
|          | ESE.165-2   | Sleeve .....                                    | 2    |
|          | ESE.164-4   | Bush Anti-vibration .....                       | 2    |
| 15       | 20312.A02   | Bracket (Front Mounting) .....                  | 1    |
|          | ESE.165-2   | Sleeve .....                                    | 1    |
|          | ESE.164-4   | Bush Anti-vibration .....                       | 1    |
| 16       | 11S.05E     | Screw M12 (Mounting Bracket to wing) .....      | 4    |
| 17       | 61S.05      | Nut M12 ( " " " " ) .....                       | 4    |
| 18       | 12S.22      | Washer M12( " " " " ) .....                     | 4    |
| 19       | 11S.06F     | Screw M16 (Front Mtg. Bracket to chassis) ..    | 1    |
| 20       | 61S.06      | Nut M16 ( " " " " " " ) ..                      | 1    |
| 21       | 8S.06P      | Bolt M16 (Cab to Mounting Bracket) .....        | 3    |
| 22       | 61S.06      | Nut M16 ( " " " " ) .....                       | 3    |
| 23       | 10100.A01   | Buffer - Rubber (Fixed to Rear Frame) .....     | 2    |
| 24       | 10935.A01   | Packer .....                                    | 2    |
| 25       | 11S.03C     | Screw M8 (Buffer fixing) .....                  | 4    |
| 26       | 61S.03      | Nut M8 ( " " ) .....                            | 4    |
| 27       | 10538.A01   | Catchplate - (Seat supp. panel to floor plate)2 |      |
| 28       | 82S.03C     | Screw 2BA (Plate fixing) .....                  | 4    |
| 29       | 85S.01      | Nut 2BA ( " " ) .....                           | 4    |
| 30       | 10537.A01   | Fastener (Eng. Cover) .....                     | 2    |
| 31       | 10538.A01   | Catchplate (Eng. Cover) .....                   | 2    |
| 32       | 82S.03C     | Screw 2BA (Plate fixing) .....                  | 8    |
| 33       | 85S.01      | Nut 2BA ( " " ) .....                           | 8    |

## CAB SUPPLEMENT

4B4000

(Alterations from Standard Machine when cab is fitted)

| Item No. | Part No.  | Description                                  | Qty. |
|----------|-----------|--|------|
| 1        | 30311.A06 | Mudwing - Hyd. Tank L.H. ....                | 1    |
|          | 30301.A06 | Mudwing - Fuel Tank R.H. ....                | 1    |
| 2        | 30163.A08 | Floor plate .....                            | 1    |
| 3        | 11S.04D   | Screw M10 (Floorplate fixing) .....          | 2    |
| 4        | 7S.04     | Nut M10 ( " " " ) .....                      | 2    |
| 5        | 17S.05    | Washer - Spring M10 (Floorplate fixing) .... | 2    |
| 6        | 10537.A01 | Toggle fastener (seat panel fixing) .....    | 2    |
| 7        | 101S.07E  | Rivets - Toggle fixing .....                 | 4    |
| 8        | 30148.A08 | Seat Frame .....                             | 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**