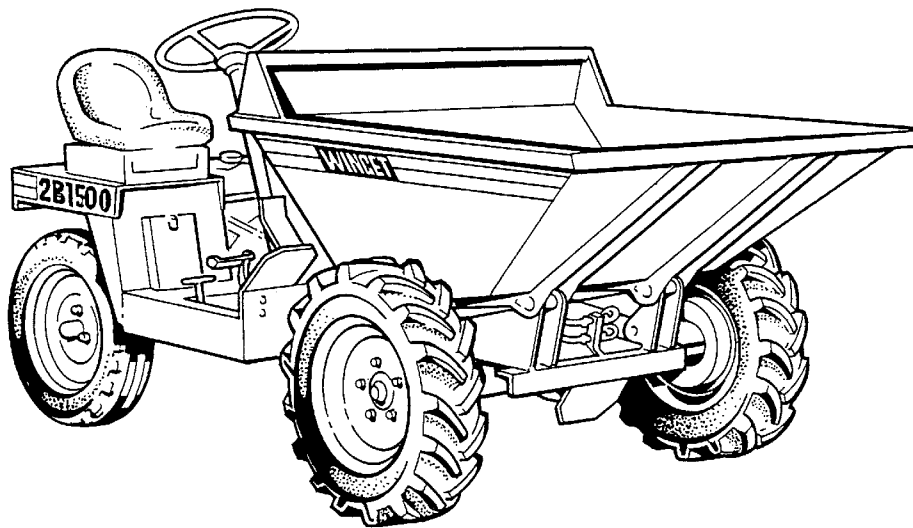


DUMPER

2B1500

HYDRAULIC STEERING



OPERATORS HANDBOOK & PARTS

From Serial No: 1214

Issued April 2019

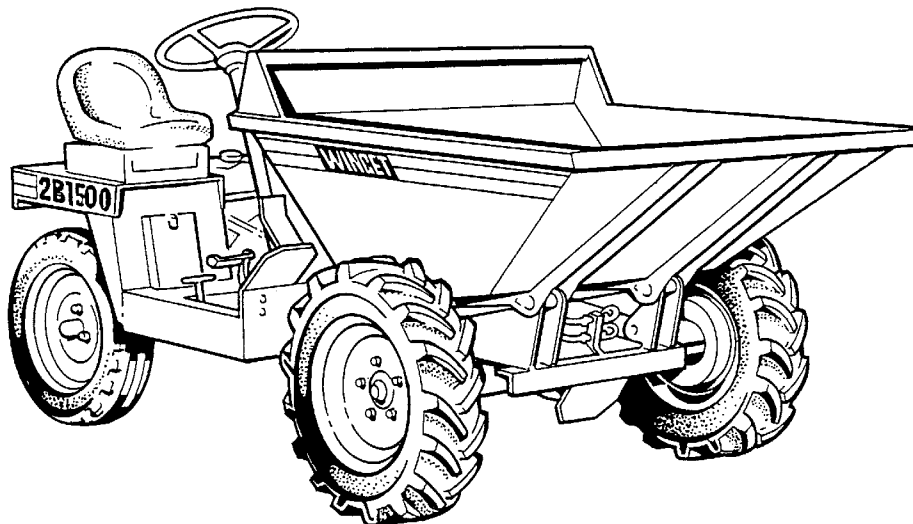
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DUMPER

2B1500

HYDRAULIC STEERING



The contents of this Handbook, although correct at the time of publication, may be subject to alteration by the Manufacturers without prior notice.

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

CONTENTS

| Section | Page | Section | Page |
|-------------------------------|------|--|------|
| INTRODUCTION | | SERVICE | |
| Contents | II | Service Safe Working | 3.1 |
| Introduction to the Handbook | III | Service schedule chart | 3.2 |
| Machine identification | III | Engine TR1 | 3.4 |
| Warranty Terms and Conditions | IV | Lubrication oil and filter | 3.4 |
| | | Fuel system | 3.6 |
| | | Air cleaner | 3.7 |
| | | Gearbox | 3.8 |
| | | Front axle | 3.9 |
| | | Wheels and tyres | 3.10 |
| | | Battery | 3.11 |
| | | Steering Valve | 3.12 |
| | | Greasing | 3.13 |
| | | Hydraulic system | 3.14 |
| | | Braking system | 3.18 |
| SAFE WORKING | | TECHNICAL INFORMATION | |
| Machine modification | 1.1 | Dimensions | 4.1 |
| Training | 1.1 | Specifications | 4.2 |
| Running-in | 1.1 | <i>Road speeds</i> | |
| Driving | 1.1 | <i>Lubricants and fluids</i> | |
| Skips and loading | 1.3 | <i>General Dumper specifications</i> | |
| Towing | 1.3 | <i>Capacities – fluids</i> | |
| Gradients | 1.3 | <i>Adjustments</i> | |
| Hydraulics | 1.4 | <i>Pressures</i> | |
| Servicing | 1.4 | <i>Noise levels</i> | |
| Decal identification | 1.6 | <i>Drawbar loads</i> | |
| | | <i>Load capacities</i> | |
| | | <i>Vibration declaration</i> | |
| | | Main electrical circuit | 4.4 |
| | | Road lights electrical circuit | 4.5 |
| OPERATION | | PARTS | |
| Dumper controls | 2.1 | This section, at the rear of the book, is a pictorial parts catalogue. | |
| Running-in a new engine | 2.3 | | |
| Pre-start checks | 2.3 | | |
| Lister-Petter TR 1 engine | 2.4 | | |
| Engaging the gear lever | 2.7 | | |
| Gradients | 2.7 | | |
| Braking | 2.7 | | |
| Stopping the Dumper | 2.7 | | |
| Leaving the Dumper | 2.7 | | |
| Skip operation | 2.8 | | |
| Skip operation & Steering | 2.8 | | |
| Towing with the Dumper | 2.9 | | |
| Towing the Dumper | 2.9 | | |

THE HANDBOOK

The contents of this Handbook, although correct at the time of publication may be subject to alteration by the Manufactures without notice. Winget Limited operate a policy of continuous product development. Therefore, some illustrations or text within this publication may differ from your machine.

WARNING



The operator must read all the Handbook and fully understand its contents before attempting to operate the machine.

THE HANDBOOK MUST NOT BE REMOVED FROM THE MACHINE.

The Handbook must be kept clean and in good condition. Additional copies of the Handbook can be obtained from your Distributor.

The contents of this Operator's Handbook are designed as a guide to the machine's controls, operation, working capacities and maintenance. It is **not** a training manual.

Only trained operators should use this machine. Consult your Distributor for details of authorised training courses..

WARNING



In this Handbook are **WARNING** notes. They are preceded by this symbol:

WARNING



These notes are used to indicate the procedure being described in the Handbook must be followed to avoid serious injury or death to yourself or to others; or damage to the machine. The warnings are also used to protect the machine from unsafe servicing practices.

Pay particular attention to the warnings given in the Handbook.

If you have any doubts about any aspect of the machine's capability or servicing procedures, you must consult the manufacturer.

MACHINE IDENTIFICATION

Please record the model and serial numbers of your dumper in the spaces provided and quote them when ordering parts.

| | |
|-------------------------|----------------------------|
| Model – Year | Front axle serial no. |
| Dumper serial no. | Front tyre size |
| Key, start | Rear tyre size |
| Engine serial no. | |
| Gearbox serial no. | |

WARRANTY TERMS & CONDITIONS

The Manufacturer assures you that if any part of the machine becomes defective due to faulty manufacture or materials within 12 months from the date of purchase, the part will be repaired or replaced under warranty free of charge by any authorised Winget Distributor. Warranty repairs **must** be carried out by Winget Distributors.

This Warranty is given to the first owner and may be transferred to subsequent owners for the balance of the Warranty period.

The Manufacturer's liability only extends to the costs of repair or replacement of the faulty parts and necessary labour charges involved in the repairs. The Company accepts no liability for any consequential loss, damage or injury, resulting directly or indirectly from any defect in the goods.

Items not covered by Warranty and considered to be the customer's responsibility include normal maintenance services; replacement of service items and consumables; replacement required due to abuse, accident, misuse or improper operation; replacement of wearable items e.g. pins, bushes, brake linings, clutch linings etc.

The Warranty will not apply where the equipment is modified, converted, or used for purposes other than those for which it was designed, unless clearance for the modifications etc. have been granted by the Manufacturer, in writing.

The Pre-Delivery Inspection and Warranty Registration Document must be completed correctly and returned to the Manufacturer within 7 days of sale date. Failure to do so may result in the claim being subsequently rejected.

Tyres and tubes are not covered by Warranty, but are covered by the tyre manufacturer's own warranty system which provides against defects in material or workmanship. Engines are covered separately by the engine manufacturers, and engine warranty repairs must be handled by the relevant engine manufacturers' distributors.

No claim will be considered if other than genuine Winget Limited parts, which must be obtained from Winget Limited via an authorised Distributor, are used to effect a repair, or if lubricants other than those recommended by Winget Limited are used.

The equipment must be serviced in accordance with the service schedules laid down by Winget Limited. Evidence that these have been complied with may be required before Warranty Claims are reimbursed.

The Manufacturer's policy is one of continuous improvement. Winget Limited reserve the right to change specifications without notice. No responsibility will be accepted for discrepancies which may occur between specification of machines and the descriptions contained in publications.

Safety is the responsibility of the persons working with this machine. Think “safety” at all times. ***Read and remember the contents of this Handbook.***

The safe working recommendations for specific tasks are found with the instructions for the relevant operation in this Handbook.

MACHINE MODIFICATION

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 operator training course for Site Dumpers run by a relevant training organisation.

It is strongly recommended that operators read the publication "Safe Working with Small Dumpers" which is available from bookshops to order 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.

RUNNING-IN

WARNING While a gradual 'running-in' of a new engine is not necessary, it is extremely important that the instructions given in *Section 2 "Operation"* on "Running-in a new engine" should be followed very closely during the first fifty hours of operation



DRIVING

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

Ensure that the seat is securely fixed to the machine. Where seat belt restraints are fitted as part of Rops/Fops protection they must be worn. 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.

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

Where 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 the excavation to prevent the weight of the load causing a collapse.

NEVER adjust the tyre pressure 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.

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.

NEVER try to operate the hydraulic tipping skip whilst steering on hydraulic power steering models, there is no priority flow to the steering

TOWING**WARNING**

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

Dumpers are not designed as towing vehicles. However, trailers may be towed provided that:

- 1 The combined weight of the trailer and its load does not exceed the dumper "drawbar pull of 250kg (2500N)" and dumper "drawbar load of 50kg (500N)".
- 2 Trailers may be towed in first gear on level dry ground, provided a purpose made towing pin is used.
- 3 The dumper skip must be loaded with half the rated payload to ensure tyre adhesion when braking.

NEVER tow loads up, down or across gradients.

GRADIENTS**WARNING**

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.

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. Then operate the steering lock to lock.

ALWAYS practise the greatest cleanliness when maintaining hydraulic components.

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, if fitted, 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 Service - Hydraulic system**).

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.

ALWAYS dispose of unserviceable batteries safely. Comply with local byelaws and national regulations on the disposal of hazardous waste. Consult your local authority for addresses of local designated disposal points.

Equipment that 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.

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

ALWAYS ensure that when using a starting handle that it 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*).

DECALS

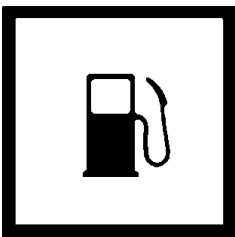
Attached to the dumper are several pictorial warning decals

Ensure that all warning decals fitted to the mixer are legible. If any should become detached, they must be replaced immediately.

For detailed information on how to safely use the items described by the decals, see the "Safe working, Operation and Servicing" sections of this Handbook.

Brief descriptions of the pictorial decals are as follows:

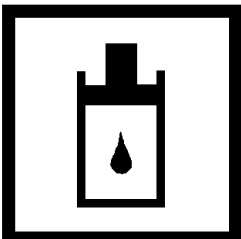
Fuel tank filling point



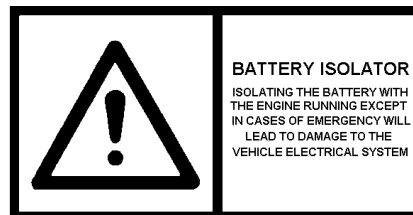
Wear ear protection



Hydraulic oil filling point



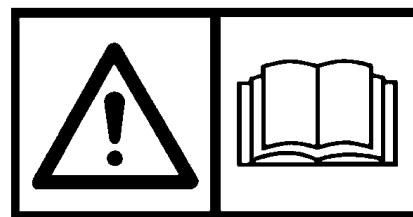
The battery isolator is situated close to this decal



Remove starting handle



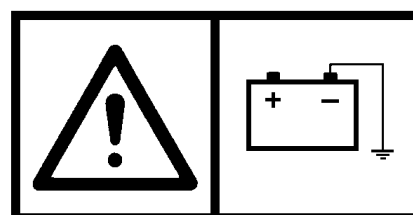
Read Operators Handbook, or Operators Handbook storage place.



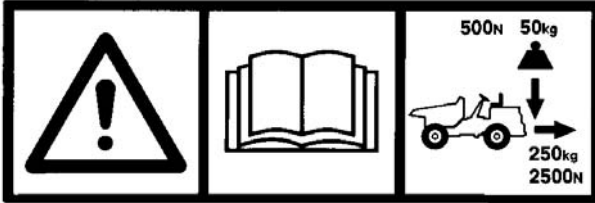
Attach lifting hooks to this eye.



The battery negative terminal is connected to earth.



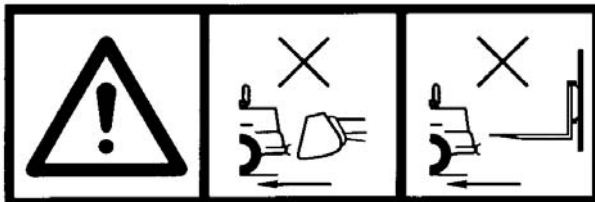
This decal indicates the maximum loads that the dumper towbar can carry and pull.



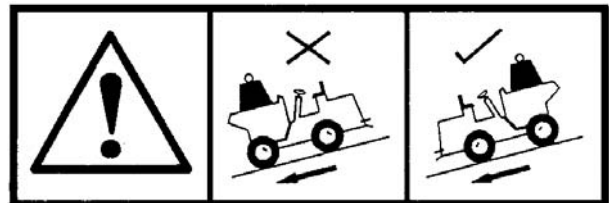
These surfaces may be hot.



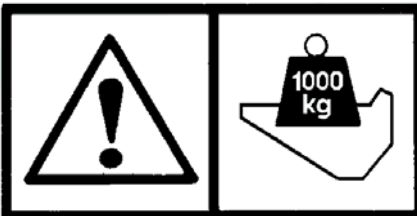
Forks and buckets are not to be used to push or lift the dumper.



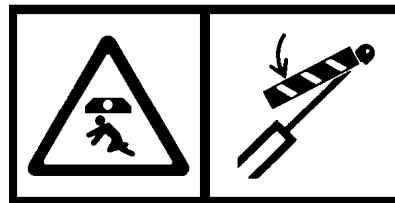
When loaded, always REVERSE down gradients.



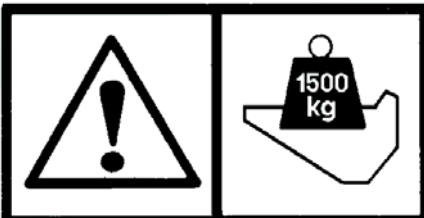
The figure shown is the maximum load for the skip onto which this decal is fastened



ISO Skip Support, when used, is pinned around the tipping ram rod to prevent the ram from closing.



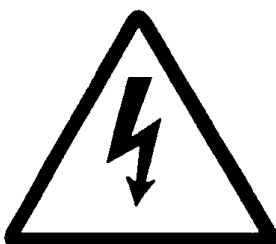
The figure shown is the maximum load for the skip onto which this decal is fastened



Wear eye protection



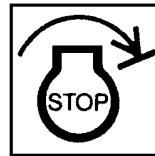
Beware of electrical hazards.



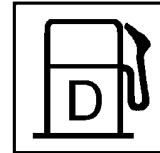
ISO 8999 safety symbols used with Lister/Petter engines



Read the handbook



Stop control (on engine)



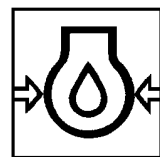
Diesel fuel fill



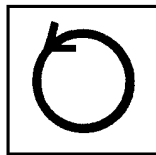
Engine oil fill



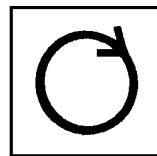
Engine oil level



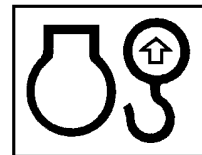
Engine oil pressure



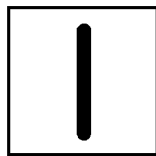
Anti-clockwise rotation



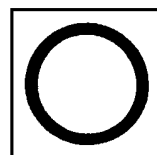
Clockwise rotation



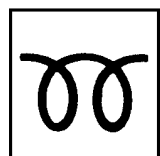
Lifting eye - engine only



On



Off



Pre-heat



Rotational speed control



Linear speed control



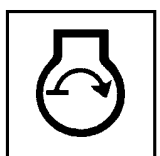
Tachometer



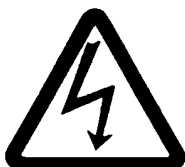
Elapsed hours



Battery charging



Engine cranking

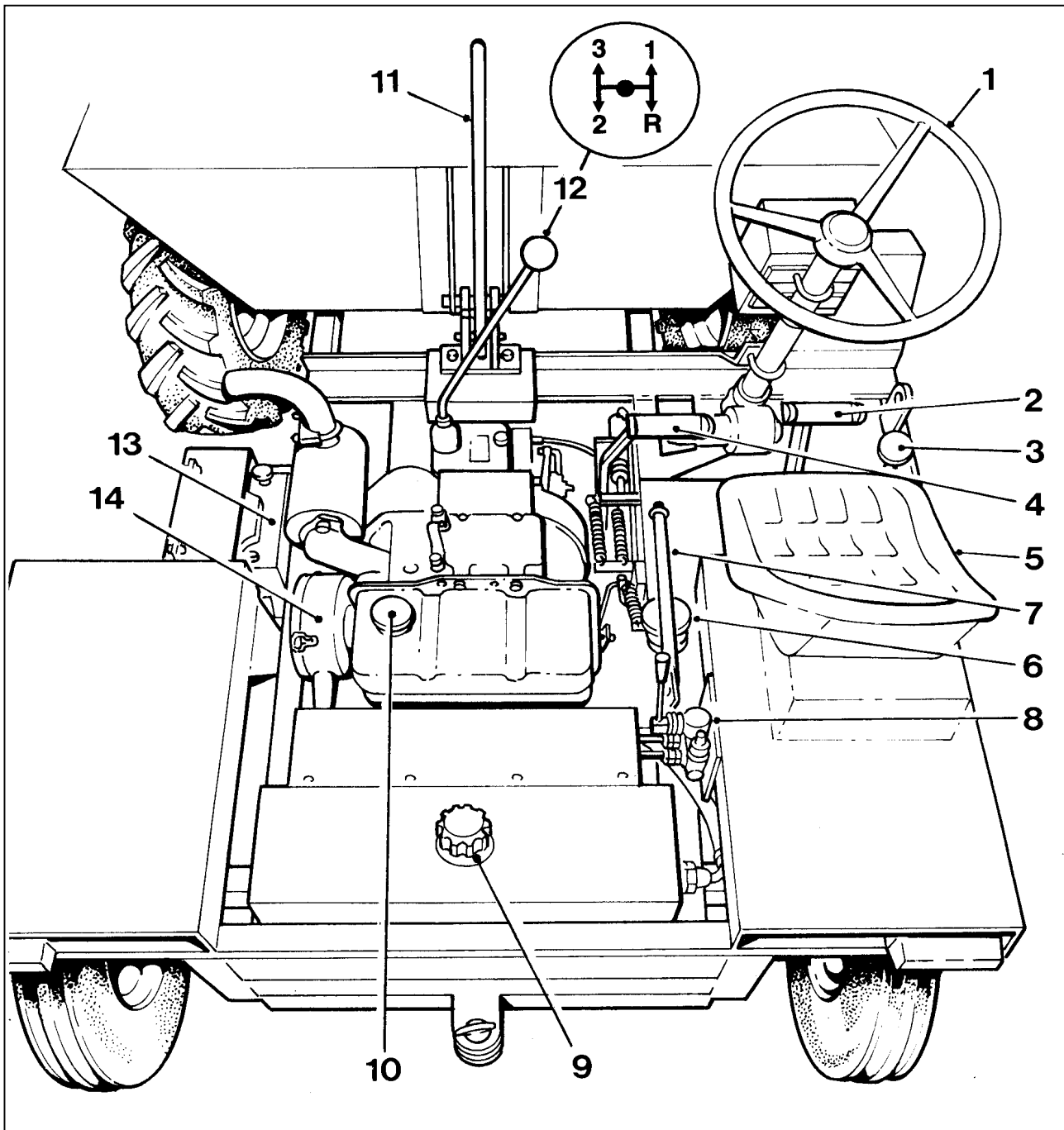


Electrical hazards



General hot surface warning

CONTROLS AND SERVICE POINTS



1 Steering wheel

2 Brake

3 Accelerator

4 Clutch

5 Seat

6 Brake oil reservoir

7 Parking brake

8 Skip control, tip/return
(Hydraulic tipping)

9 Hydraulic oil filler cap

10 Fuel filler cap

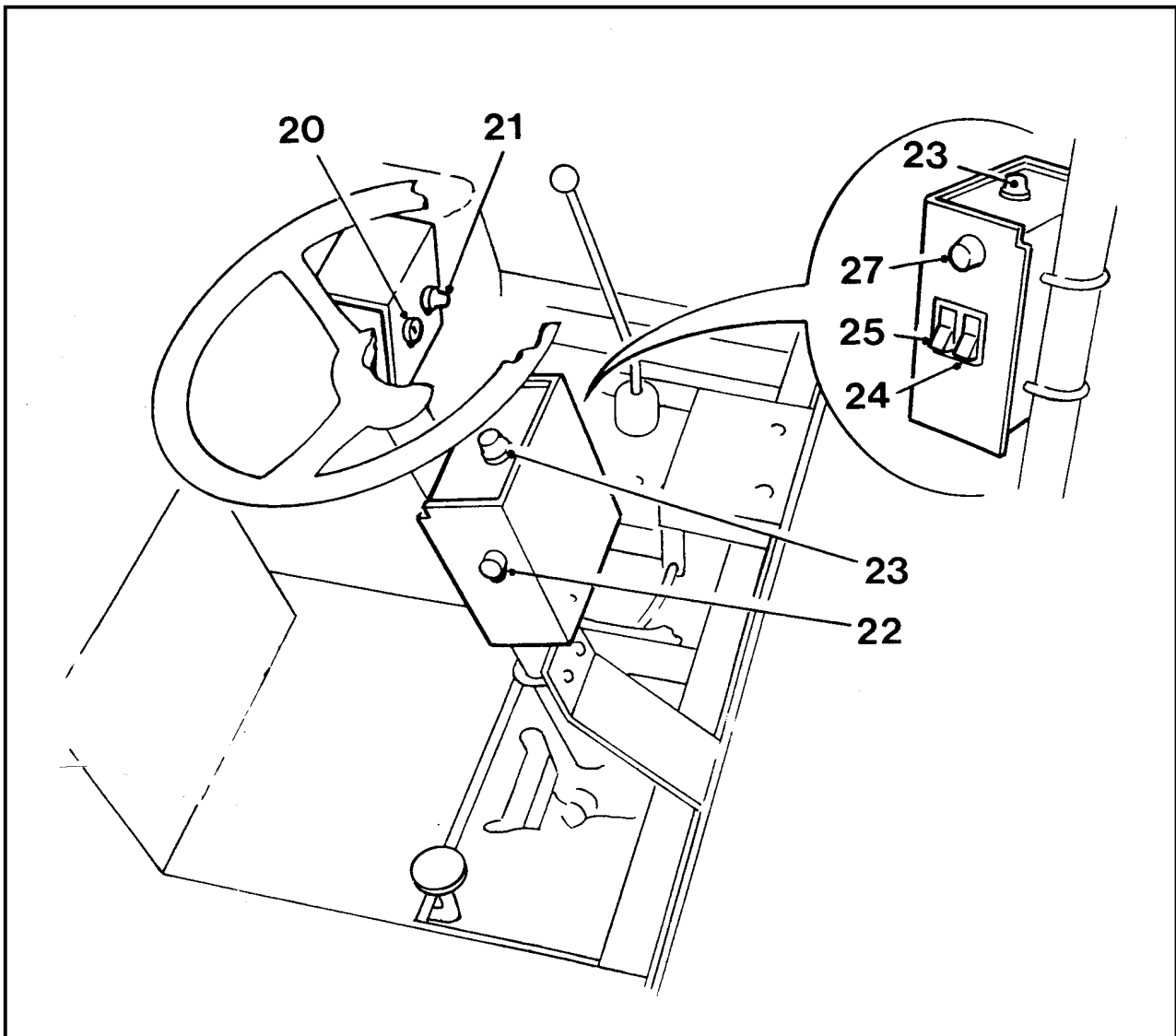
11 Skip release lever (Manual tipping)

12 Gear lever

13 Battery

14 Engine air cleaner

ELECTRICAL CONTROLS




- 20 Key start switch, (electric starting only)
- 21 Warning light: battery charging (electric starting only)
- 22 Switch: direction indicators
- 23 Warning light: direction indicators
- 24 Switch: hazard warning lights
- 25 Switch: side and head lights
- 27 Horn

DRIVING THE DUMPER

Safety warnings

Read also the "**Safe Working**" Section before operating the dumper.

WARNING  ALWAYS wear correctly fitting protective clothing. Loose or baggy clothing can be extremely dangerous when operating or servicing machinery.

Only skilled personnel are permitted to work with this machine.

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

Starting the engine

WARNING  NEVER use ether type starting aids.

ALWAYS stop the engine if the battery charge warning light (where fitted) fails to cancel.

ALWAYS stop the engine if warning lights illuminate. Detect the fault before continuing.

DO NOT PROCEED IF A FAULT IS EVIDENT

NEVER attempt to start the dumper by pushing or towing.

NEVER operate controls unless you are seated on the machine, and ALWAYS remain in the driving seat whenever the engine is running.

Running-in a new engine

While a gradual 'running-in' of a new engine is not necessary, it is **EXTREMELY IMPORTANT** that the following instructions should be followed very closely during the first fifty hours of operation.

- 1 Avoid overloading the engine.
- 2 Use the lower gears when operating with heavy loads, and avoid continuous operation at constant engine speeds.
- 3 Check the instruments frequently, and keep the oil compartments and the hydraulic reservoirs filled to their recommended levels.
- 4 Do not operate the engine at high speeds without a load.
- 5 Do not allow the engine to run at idle speeds for long periods; this may cause bore glazing and an increase in oil consumption.

Operating in this way throughout the machine's life will prove beneficial to its overall performance and efficiency.

Pre-start Checks

NEVER commence work with the machine until the checks detailed in "Every 10 operating hours, or daily" have been carried out. (See Service Schedule).

WARNING



Check that all controls are clean and not slippery, and that they all function correctly.

Check that the areas around pivot points, rams and linkages are all free from mud, ice and debris.

Check that all grab handles, steps and platforms are clean and dry.

Check the machine for any obvious damage or faults.

Check that all decals can be clearly read.

DRIVING THE DUMPER

Lister Petter TR1 engines

Description

- A Dipstick
- B Lubricating oil filler
- C Engine control
- D Decompressor levers
- E Fuel tank
- F Cold start oil cups

Automatic Excess Fuel Device

The engine is fitted with an automatic excess fuel device which becomes operative, ready for the next start, when the engine is stopped.

If the engine stops other than by the operation of the engine control, the control (**G**) must be turned anti-clockwise to the 'STOP' position and released before the device can operate.

As the engine runs up to speed the excess fuel device will automatically reset to the normal running position.

Cold Start Below -10 deg.C (14 degF)

A cup and plunger is normally fitted to the combustion air intake port on TR engines.

With the fuel turned on, turn the engine for up to 20 revolutions to prime the fuel and lubrication systems.

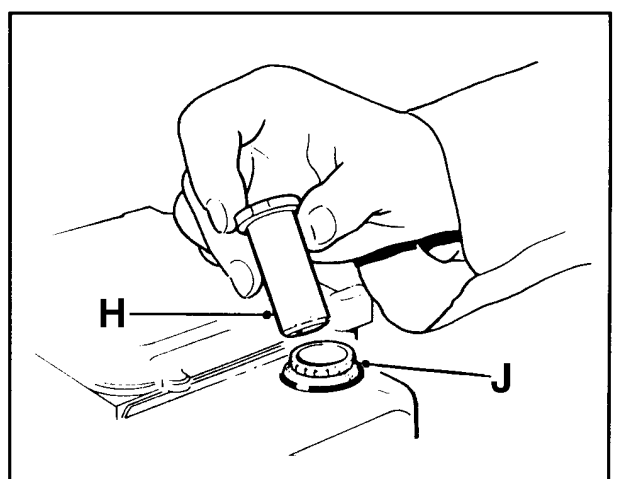
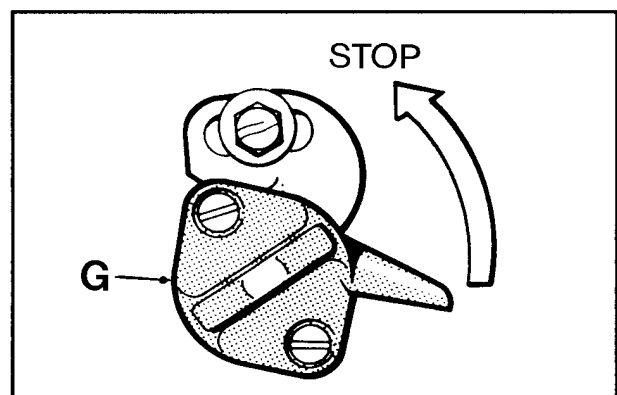
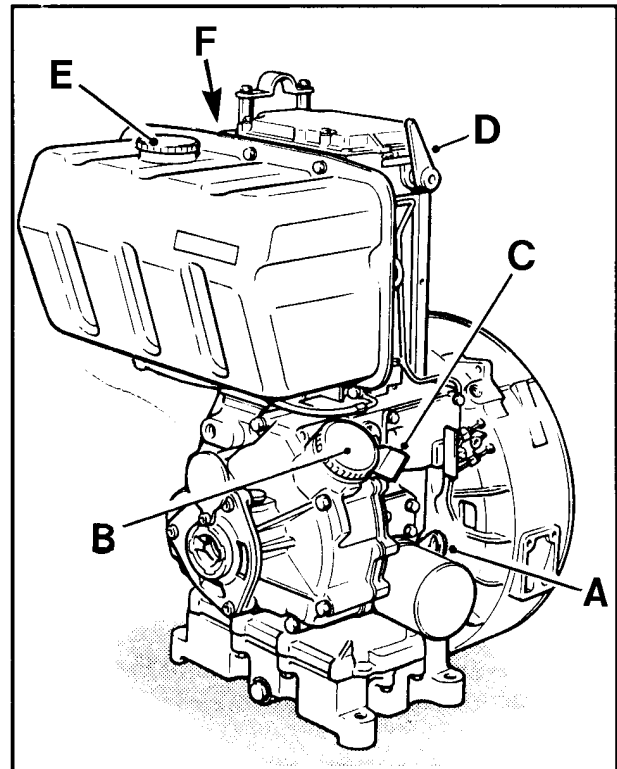
Withdraw the plunger (**H**) and fill one third of the cup (**J**) with the same type of lubricating oil as used in the engine.

Replace the plunger and inject the oil just before starting the engine.

WARNING



The device must not be used more than three times in succession during the same attempt to start the engine.



DRIVING THE DUMPER

Hand starting TR1 engines

Ensure the parking brake is in the raised "ON" position.

Ensure gear lever is in the neutral position.

Always use the correct starting handle which has been designed for the engine.

Ensure there are no burrs on the handle.

Before attempting to use the handle, clean and lightly oil that part of it which fits onto the engine.

WARNING *Do not attempt to use a handle if it is damaged in any way.*



Turn the engine control lever anti-clockwise to the "STOP" position (**L**) and release it.

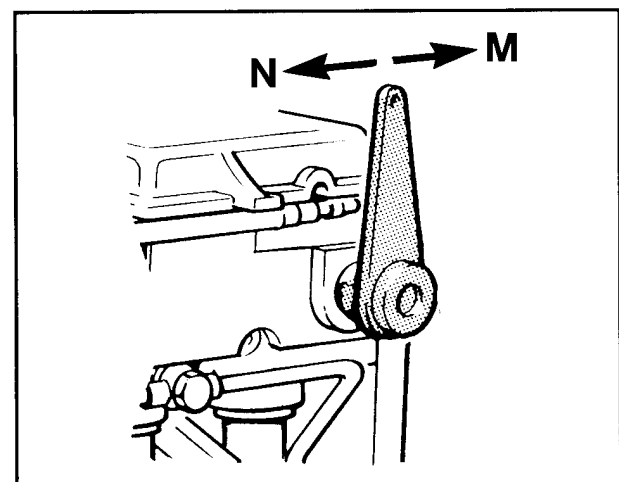
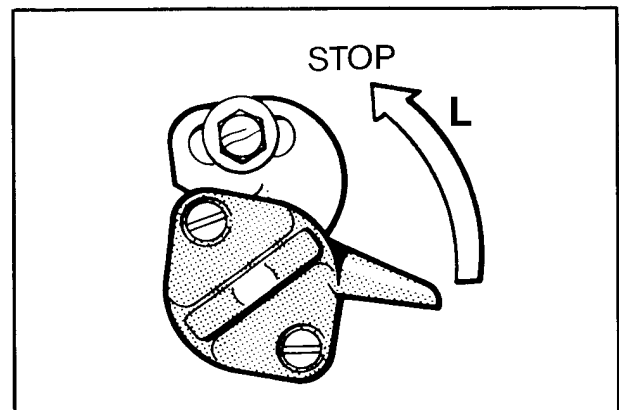
Move the decompressor lever towards the flywheel (**M**).

Insert the correct handle into the starting housing.

Turn the engine slowly for up to 20 turns to prime the combustion chamber and lubricating oil system.

Maintaining a firm grip on the starting handle, crank the engine really fast and when sufficient speed is obtained move the decompressor lever away from the fly wheel (**N**) and continue to crank until the engine fires.

Retain a firm grip on the handle and remove it from the engine.



DRIVING THE DUMPER

Key Starting TR1 engines

Ensure the parking brake is in the raised "ON" position.

Ensure the gear lever is in the neutral position.

Fully depress and hold down both clutch and accelerator pedals.

Check that the decompressor lever, (if fitted) is away (**N**) from the flywheel.

Turn the engine control lever anti-clockwise to the "STOP" position (**L**) and release it.

Turn the start key clockwise to position (**1**), the battery charging light (**P**) will illuminate.

Turn the key and hold at the "START" position (**2**) until the engine fires and then release it immediately.

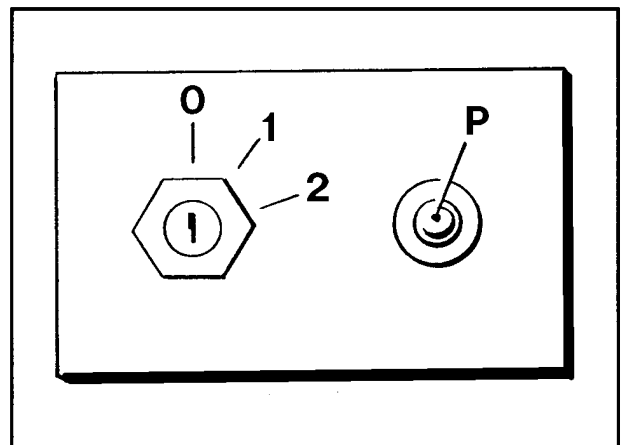
If the engine fails to start within 20 seconds, release the key and attempt to restart after allowing sufficient time for all moving parts to stop.

Stopping the engine

WARNING *Never stop the engine by operating the decompressor lever or valve damage may occur*



Key start engines: *Turning the starter key to the "OFF" (0) position will not stop the engine unless an optional fuel control solenoid is fitted.*



It is advisable to run on light load for a few minutes before stopping

Turn the engine control anti-clockwise to the "STOP" position (**L**) and hold it there until the engine comes to rest.

Key start engines: After the engine has stopped, turn the starter key to the "OFF" (**0**) position.

DRIVING THE DUMPER

Gradients

IMPORTANT: Read the notes in "Safe Working" and also remember the following:

Slippery or loose surface conditions can adversely affect safe machine operation, particularly on gradients.

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

NEVER park the machine on a gradient.

NEVER attempt to turn on, or drive across, a gradient.

ALWAYS drive forwards up gradients when loaded.

ALWAYS reverse down gradients when loaded.

NEVER tow up or down gradients.

NEVER operate on a gradient which exceeds 10% (1 in 10), or across gradients which exceed 10% (1 in 10). This should be reduced where surfaces are wet or unstable.

Braking

The brake pedal operates a hydraulic master cylinder that supplies oil to brakes within the front axle. There are no brakes on the rear axle.

The handbrake operates a caliper that acts upon a disc mounted on the transmission.

Engaging gear lever

The gearbox incorporates a self centering safety device on the gear lever which may make the gear lever stiff to operate. When changing gear, always depress the clutch pedal before moving the gear lever from one gear to another. The gearbox is not a synchromesh type gearbox.

Stopping the dumper

IMPORTANT: Never make unnecessary 'crash' stops when travelling at speed, especially in forward direction.

Release accelerator and brake to a halt progressively.

Select neutral gear.

Apply parking brake when stationary.

Stop the engine. Turn the starter key to the 'OFF' position, and remove the key.

Leaving the dumper

Ensure the machine is parked on firm, level ground. Do not park on a gradient.

Check that the parking brake is applied. Ensure that the skip is fully lowered.

With the engine stopped, operate the hydraulic lever (where fitted) fully in each direction several times to 'dump' hydraulic pressure from the system.

Remove starter key (where fitted) from switch.

Electric start dumpers: If unattended for some time, remove earth cable from battery, or activate the Battery Isolator, (where fitted).

DRIVING THE DUMPER

Skip operation

Loading

Never remain on the dumper when using excavators or loaders to load the skip. Stop the engine, apply the parking brake, dismount, and stand well clear.

Ensure that the load is evenly distributed in the skip. Never carry loads in such a manner as to affect the forward vision.

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

Tipping

Only discharge on level ground.

It is recommended that only free flowing materials be tipped. *Take extra care when tipping non free running loads.*

Release lever (Gravity tipping)

To tip the skip:

Pull back the Release Lever. The skip will tilt forwards under its own weight.

To return the skip:

Pull the skip back manually into the carrying position. Ensure that it is locked into the skip catch.

Skip control lever (Hydraulic tipping)

The control lever has three positions; they are, Tip(or Dump), Hold and Return

To tip the skip:

Move the lever to DUMP.

To return the skip:

Move the lever to RETURN.

If the tipping lever is released when in the DUMP or RETURN position, it will automatically return to the central HOLD position and movement of the skip will stop. In this way, the speed at which the skip is tipped can be finely controlled.

Skip Operation & Steering

Do not attempt to steer the dumper at the same time as operating the skip.

The hydraulic system does not provide priority flow to the steering system, therefore the steering will fail to work whilst the skip is being operated.

DRIVING THE DUMPER

Towing with the dumper

Dumpers are not designed as towing vehicles, however, trailers may be towed providing that:

- 1 The combined weight of the trailer and its load does not exceed the specified maximum dumper drawbar pull and dumper drawbar load (*see specifications*).
- 2 Trailers may be towed in first gear on level dry ground, provided a purpose made towing pin is used.
- 3 The dumper skip must be loaded with half the rated payload to ensure tyre adhesion when braking.

Never tow loads up, down or across gradients.

Towing the Dumper

The dumper should only be towed if recovery is needed of a broken-down unit, or to free a "bogged down" machine.

Always ensure that ropes, chains, etc.. used to tow the dumper have sufficient safe working load capability.

When towing the dumper, always ensure that the speed is kept to an absolute minimum.

Always tow the dumper with the gear lever in neutral.

Never attempt to start the dumper by pushing or towing.

WARNING *Read the safety notes in "Safe Working", Section 1 of this book.*



Also note the following:

Safe handling of oils, filters and filter elements

WARNING *Do not allow oils to come into regular contact with skin. This can lead to serious skin diseases. Medical evidence suggests they may include skin cancer.*



Always wear protective gloves when handling oils for topping up, draining, or refilling.

Dispose of waste oil 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.

The materials used in the manufacture and treatment of some filters and elements may cause irritation or discomfort if they come into contact with the eyes or mouth and they may give off toxic gases if they are burnt.


After handling any filters or oils the users hands should be thoroughly washed, particularly before eating.

Used filter elements contain some of the filtered oil and should be handled and disposed of with care

SERVICE SCHEDULE

IMPORTANT: The engine will require additional services or adjustments in addition to those listed below (See the appropriate Engine Operator's handbook or Workshop Manual).

WARNING *Warning lights and indicators REQUIRE IMMEDIATE ACTION*



| SERVICE OPERATION | REFERENCE | PAGE |
|--------------------------|------------------|-------------|
|--------------------------|------------------|-------------|

Every 10 operating hours, or daily, the above and the following

| | | |
|---------------------------------------|------------------|------|
| Engine oil level | Engine | 3.4 |
| Fuel tank level | Engine | 3.7 |
| Air cleaner | Engine | 3.7 |
| Wheel nut tightness | Wheels & tyres | 3.10 |
| Axle oil seals | Front axle | 3.19 |
| Brake oil reservoir | Brake system | 3.18 |
| Hydraulic oil level & hose connection | Hydraulic system | 3.14 |

Every 50 operating hours, or weekly, the above and the following

| | | |
|---|----------------|------|
| Axle nuts | Front axle | 3.9 |
| Front axle oil level | Front axle | 3.9 |
| Tyre pressure & condition | Wheels & tyres | 3.10 |
| Battery electrolyte level | Battery | 3.11 |
| Grease nipples | Greasing | 3.13 |
| Gearbox oil levels | Gearbox | 3.8 |
| Steering Valve Retention | Steering Valve | 3.12 |
| Parking brake Check function of the parking brake and adjust if necessary | | |
| Propeller shaft Tighten securing nuts | | |
| Brake pedal travel Check the action of the brake pedal; it should have a short travel and firm action. If travel is excessive, or action spongy, have the brakes serviced by your distributor. | | |

First 100 operating hours

| | | |
|----------------------|------------------|------|
| Hydraulic oil filter | Hydraulic system | 3.17 |
|----------------------|------------------|------|

SERVICE SCHEDULE

| SERVICE OPERATION | REFERENCE | PAGE |
|--------------------------|------------------|-------------|
|--------------------------|------------------|-------------|

Every 125 operating hours, the above and the following

| | | |
|---------------------|--------|-----|
| Air cleaner element | Engine | 3.7 |
|---------------------|--------|-----|

Every 250 operating hours, the above and the following

| | | |
|---------------------|--------|-----|
| Engine oil & filter | Engine | 3.5 |
| Fuel filter | Engine | 3.6 |

Every 500 operating hours, the above and the following

| | | |
|----------------------|---|-----|
| Air cleaner element | Engine | 3.7 |
| Fuel filter | Engine | 3.6 |
| Frame assembly bolts | Check all structural nuts & bolts for tightness | |

Every 1000 operating hours, the above and the following

| | | |
|------------------------|------------------|------|
| Hydraulic oil & filter | Hydraulic system | 3.17 |
| Gearbox oil change | Gearbox | 3.8 |
| Front axle oil change | Front axle | 3.9 |

Every 2000 operating hours, or 2 years, the above and the following

| | | |
|-----------------------|----------------|------|
| Brake system overhaul | Braking system | 3.18 |
|-----------------------|----------------|------|

Extra services**Dirty working conditions**

Increase the frequency of all services during extremes of dirt, heat and cold, especially those relating to clean air, cooling efficiency, lubrication and machine cleanliness.

Laying-up protection

When a machine is to remain idle, remove the battery to the workshop. Seal all openings: air intake, exhaust breathers. Grease bright parts and protect rubber components from direct sunlight. Fill the fuel tank, check the tyre pressures and exhaust any pressure from the hydraulic system.

ENGINE

Lister-Petter TR1

The engine will require additional services and adjustments in addition to those quoted in this handbook. Please refer also to the relevant Engine Operator's Handbook or Workshop Manual.

Engine lubrication oil

For engine oil grades and oil change periods when operating in temperatures above 30°C, see "Engine Handbook".

WARNING

Lubrication oil cleanliness is vital for the successful operation of your engine. The oil should be stored under the cleanest possible conditions. When changing or topping-up oil, use only clean receptacles.

Always wear protective gloves when handling oils for topping up, draining, or refilling.

Oils and fuels can cause skin irritation. Wear suitable protective clothing to prevent skin contact.

After handling oils the users hands should be thoroughly washed, particularly before eating.

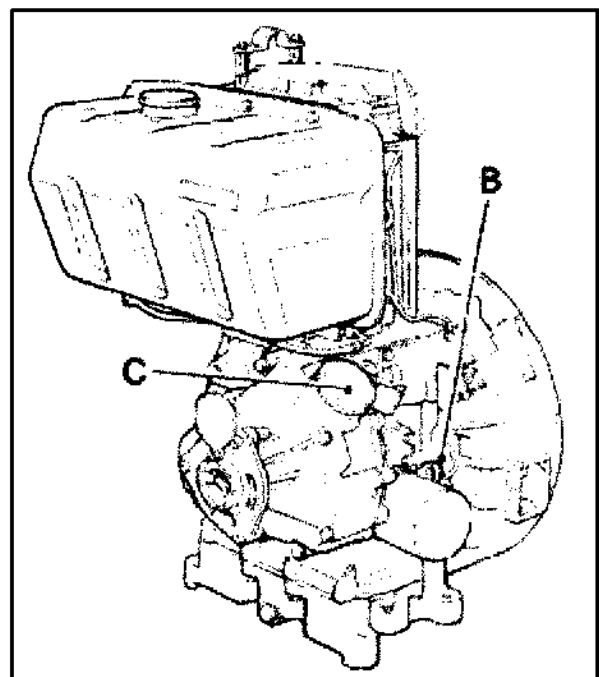
Every 10 operating hours, or daily

Check lubrication oil level as follows:

Stop the engine and allow the oil to settle.

Remove and clean dipstick **(B)**, then check that the oil is at the full mark. If level is low, top up through the filler **(C)** to the full mark with clean oil of the correct grade. DO NOT OVERFILL.

For correct grade of engine oil, see "Specifications"



ENGINE

Every 250 hours

Oil filter

Change oil filter element as follows:

Using a suitable strap wrench, unscrew and remove the old filter (A).

Do not attempt to clean the old filter! Dispose of it safely.

Thoroughly clean the crankcase filter housing face.

Apply a small amount of clean engine oil to the filter sealing joint.

Do not use a strap wrench to fit the new element.

Screw on the new filter by hand, until the sealing joint is just touching the crankcase and then tighten a further half turn.

Drain and refill the oil sump

Change the sump oil as follows:

If possible run the engine immediately before draining the oil.

Place a suitable container under the drain plug. Remove the drain plug (D) and drain oil.

Clean and coat the threads of the drain plug with an appropriate sealant.

Replace the drain plug (D) taking care not to over tighten it.

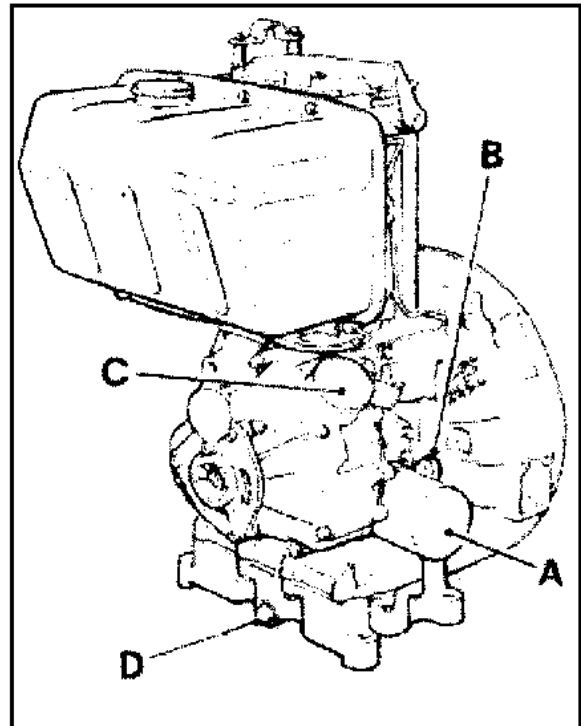
Fill the sump through the oil filler (C) to the top mark on the dipstick (B).

Start the engine, run it for a few minutes and check the drain plug, and the oil filter do not leak.

Stop the engine, allow the oil to settle for 2 minutes. then check the level on the dipstick (B).

Add more oil if necessary.

For correct grade of engine oil, see "Specifications".



ENGINE**Every 250 Hours****Fuel filter**

Change the fuel filter element if the fuel being used is not perfectly clean (see below)

Every 500 Hours**Fuel filter**

Change fuel filter element as follows:-

Disconnect the fuel pipe from below the tank.

Remove retaining plug (R).

Remove the old element (S) and joint (T).

Replace and tighten the retaining plug (R).

Refit the fuel pipe.

Prime the system.

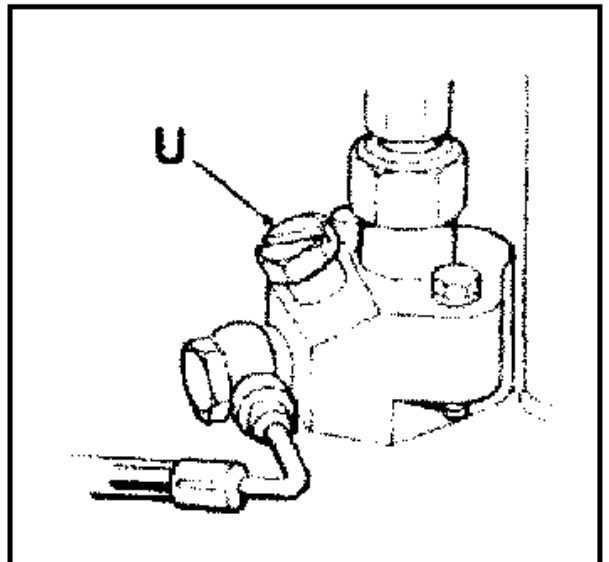
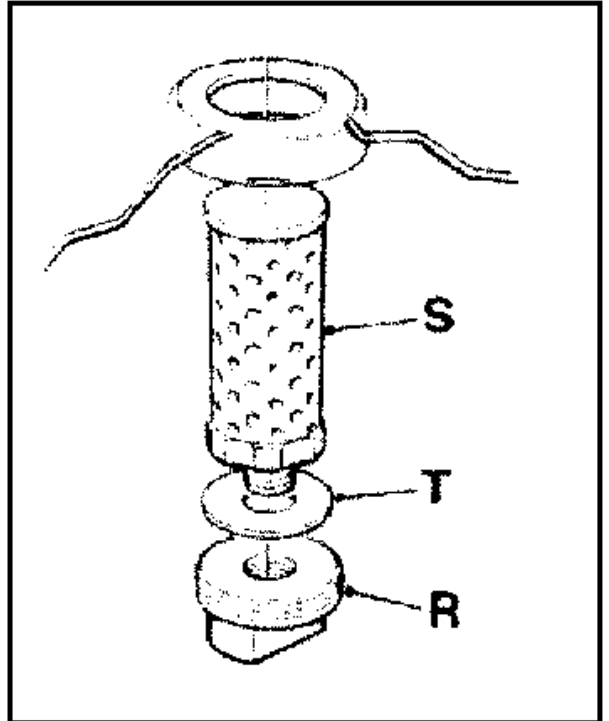
Priming the fuel system

Prime the system as follows:

Fill the fuel tank

Move the engine control lever to the RUN position.

Vent fuel at each pump in turn through the bleed screw (U) until a full air free flow of fuel is obtained. Tighten the bleed screw replacing the sealing washer if necessary.



ENGINE

Every 10 operating hours, or daily**Fuel tank**

Fill the fuel tank at the end of each day to reduce overnight condensation within the tank.



WARNING Never mix gasoline or any other fuel mixes with diesel fuel because of increased fire or explosion risks.

Never remove the filler cap, or refuel, with the engine running.

Never smoke when refilling the tank.

To fill the tank:

Stop the engine.

Clean the area around the filler cap. Remove the cap.

Fill the tank. *Do not fill the tank to capacity. Allow room for expansion, and wipe up spilt fuel immediately, otherwise paintwork will be damaged.*

Replace cap.

Every 10 operating hours, or daily**Air cleaner: check/clean/replace**

Check and clean or replace the element **(X)** under very dusty conditions.

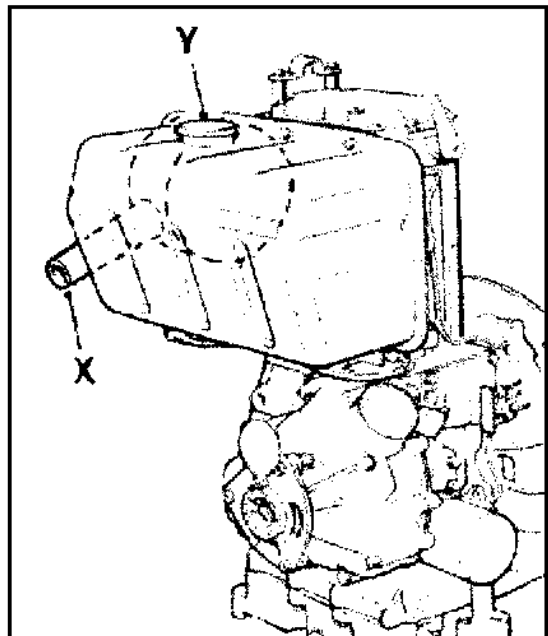
Access the element by unclipping the metal cover.

Every 125 operating hours**Air cleaner: check/clean/replace**

Check the air cleaner element, clean or replace if necessary

Every 500 operating hours**Air Cleaner: replace**

Fit new air cleaner element



ENGINE

Safe handling of oils

WARNING



Do not allow oils to come into regular contact with skin. This can lead to serious skin diseases. Medical evidence suggests they may include skin cancer.

Always wear protective gloves when handling oils for topping up, draining, or refilling.

Dispose of waste oil 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.

Every 50 operating hours, or weekly

Check gearbox oil level

Check the gearbox oil level when the machine has stood for 2 minutes.

Clean the area around the dipstick/filler (V) before removing.

Remove the dipstick and check the oil level. Top-up between the two marks (W). *It is most important not to overfill.*

For the correct type and grade of oil, see "Specifications".

Every 1000 operating hours

Change gearbox oil

Clean the areas surrounding the dipstick (V) and drain plugs (X).

Place a suitable container beneath the drain plug.

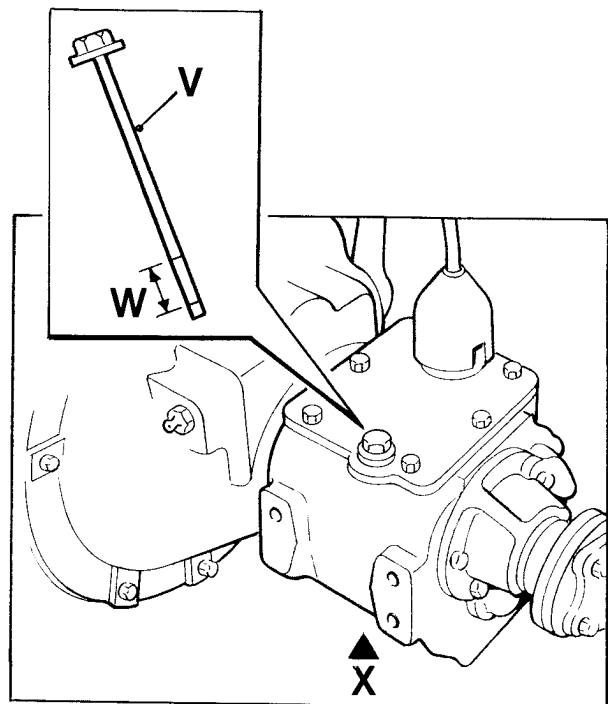
CAUTION: Before removing the drain plug be sure to stand to one side to avoid the oil that will spill from the hole.

Remove the drain plug (X) and drain the gearbox. *(Do not lose its sealing washer)*

Replace drain plug with its sealing washer. Remove the dipstick (V) from the filler hole.

Fill with oil. Check that the final level is between the two marks on the dipstick. *It is most important not to overfill.*

For the correct type and grade of oil, see "Specifications".



FRONT AXLE

Every 10 operating hours, or daily**Check for leaks**

Check for oil leaks around joints and seals.

Every 50 operating hours, or weekly**Tighten securing nuts**

Tighten axle arm/main case joint securing nuts and half shaft nuts.

Axle oil level

Do not check the oil level until the machine has stood for 2 minutes.

Clean the area surrounding level/filler plug **(D)** before removing it.

The oil is correct when level with the bottom of the level/filler plug hole.

If the level is low, top-up with clean oil of the correct grade through the hole.

Replace plug **(D)**.

For the correct type and grade of oil, see "Specifications".

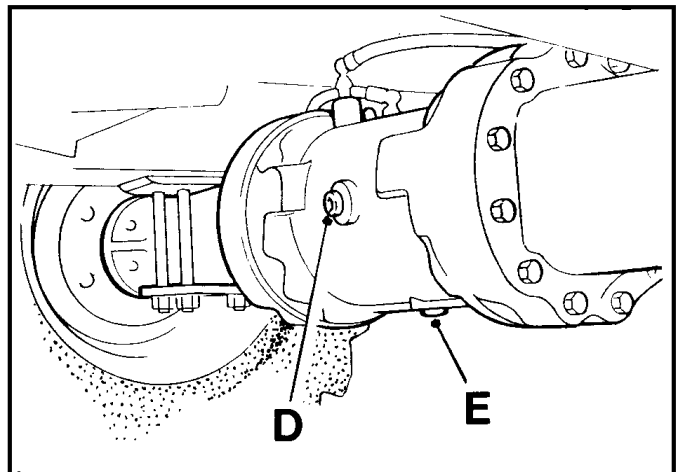
Every 1000 operating hours**Axle oil change**

Change the lubrication oil in the front axle as follows:

Clean the areas surrounding the level/filler plug **(D)**, and drain plug **(E)**.

Place a suitable container beneath the drain plug.

CAUTION: Before removing the plugs be sure to stand to one side to avoid the oil that will spill from the drain hole.



Remove drain plug **(E)** and drain oil from the casing. Replace drain plug.

Refill at the level/filler hole **(D)** with clean oil of the correct grade.

The level is correct when oil reaches the bottom of the hole.

Replace plug **(D)**.

For the correct type and grade of oil, see "Specifications".

WHEELS & TYRES

Every 10 operating hours, or daily

Wheel nuts

Tighten wheel nuts whenever necessary, every ten hours or daily.

After a wheel change, the nuts should be checked several times a day until they maintain their correct setting.

For wheel nut tightening torque, see "Specifications".

Every 50 operating hours, or weekly

Tyre pressures

WARNING

ALWAYS ensure that when adding air to a tyre the area is clear of personnel.

NEVER over-inflate a tyre beyond its specified pressure.

NEVER adjust the tyre pressure 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.

Check the tyre pressures only when the tyres are cold.

For correct pressures see "Specifications".

Tyre condition

Check the tyres for damage and deterioration.

BATTERY

Safe handling of batteries

WARNING

The battery contains a sulphuric acid electrolyte which can cause severe burns and produce explosive gases.

Wear protective clothing, gloves and goggles when servicing the battery.

Avoid contact with the skin, eyes or clothing. If spilled onto the skin, flush immediately with cold water. If splashed into the eyes, flush immediately with cold water for 15 minutes and get prompt medical attention.

Do not take internally. If accidentally swallowed, call a doctor immediately.

Do not use a naked flame or smoke near the battery. Do not produce sparks with cable clamps when charging the battery or starting the engine with a slave battery.

Always disconnect battery leads, or activate battery isolator where fitted, before carrying out any maintenance to the electrical system.

ALWAYS dispose of unserviceable batteries safely. Comply with local byelaws and national regulations on the disposal of hazardous waste. Consult your local authority for addresses of local designated disposal points.

Every 50 hours

Check battery electrolyte level

The battery is situated beneath a cover on the left-hand side of the dumper.

Ensure that the electrical connections are clean and tight, and coat the terminals with petroleum jelly to protect them from corrosion.

Remove battery filler plugs and check that the electrolyte level is between 6 - 9 mm (0.25 - 0.37 in) above the tops of the separators.

If necessary, top-up with distilled water. Replace battery filler plugs and tighten securely.

Battery removal**WARNING**

if the battery is to be removed from the machine, ensure the following procedure is used.

Switch the engine off.

Remove the starter key from the machine.

Ensure all electrical circuits are switched off. Activate the battery isolator, where fitted.

Remove the battery cover and clamp.

Disconnect the earth (-) load from the battery before removing the positive(+) load.

Lift the battery from the machine.

WARNING

When installing the battery, the positive (+) lead MUST be connected first.


STEERING VALVE

Every 50 operating hours, or weekly

Steering Valve Retention

Check the screws retaining the steering valve and bracket, ensuring they are tight. Check the valve for signs of leaks or damaged hoses.

Every 50 operating hours, or weekly

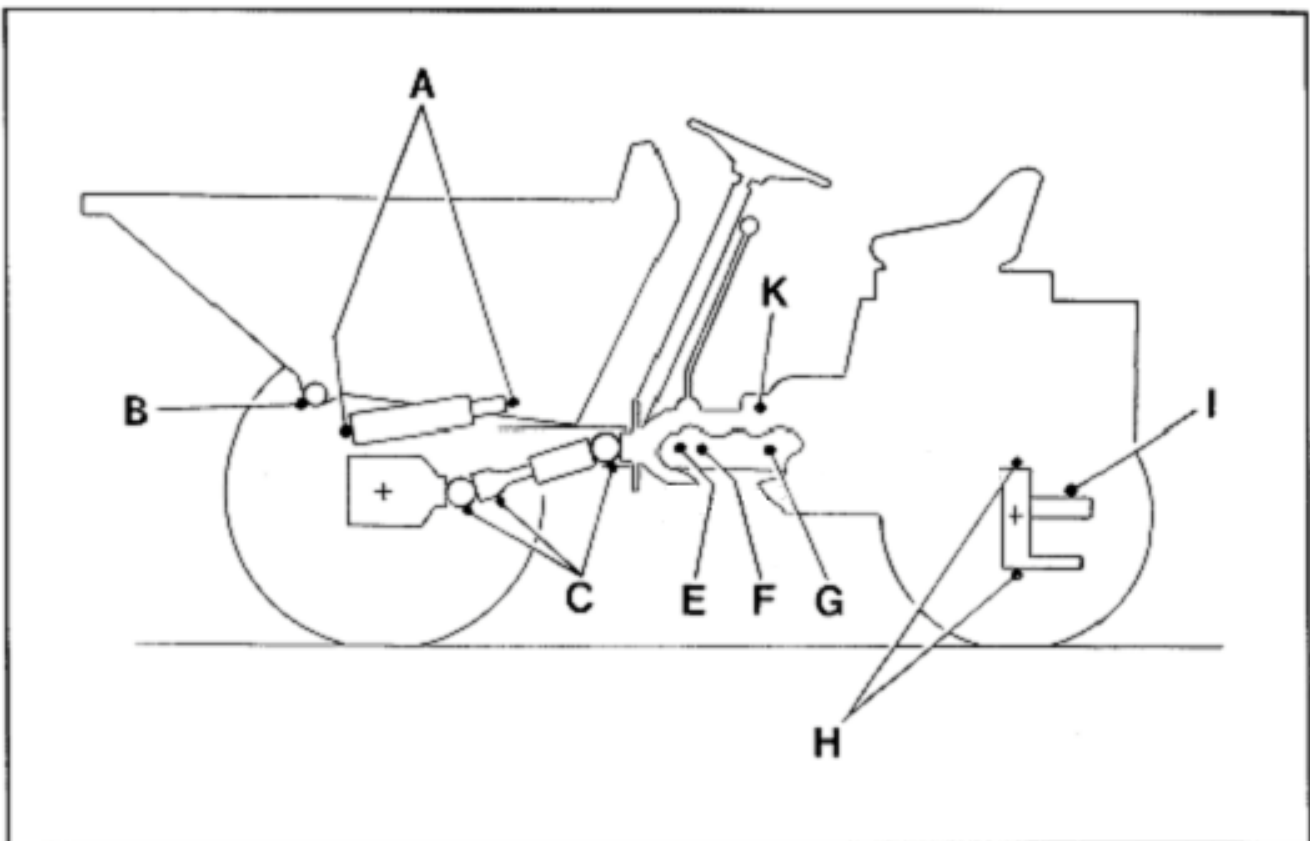
WARNING *Always use lubricants of the grade specified.*
 *Always lubricate and service BEFORE work commences, and WITHIN the periods specified.*

Grease points

Clean nipples BEFORE and AFTER greasing. Apply the grease gun until clean grease appears.

Location of grease points

- A Tipping rams (2 on each ram)
- B Skip pivots (2)
- C Propeller shaft (3)
- E Brake pedal pivot shaft (2)
- F Clutch pedal pivot shaft (2)
- G Accelerator pivot shaft (2)
- H King pins (2 on each pin)
- I Axle centre pin (1)
- K Gearbox lever pivot (1 each side of gearbox)
- # Clean and lubricate all linkages not fitted with a grease nipple.



HYDRAULIC SYSTEM

Hydraulic System Safety

(see also "Safe Working" section)

WARNING



Do not allow oils to come into regular contact with skin. This can lead to serious skin diseases. Medical evidence suggests they may include skin cancer.

Always wear protective gloves when handling oils for topping up, draining, or refilling.

Always practice the greatest cleanliness when servicing hydraulic components.

Always clean the areas surround filler points, filters etc., before and after servicing.

Dispose of waste oil 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.

Dumping hydraulic pressure

WARNING



Always dump all hydraulic pressure from the system before servicing any hydraulic component.

To dump pressure:

Stop the engine.

Move the skip control lever several times in each direction.

Description of hydraulic system

The hydraulic system provides power for skip tipping and the power steering.

The main components consist of:

Tank: The tank is filled through a filler/strainer which incorporates an oil level indicator. The filler cap is fitted with a breather. In the bottom of the tank is a suction filter.

Pump: The pump is driven directly from the engine

Filter: The filter is situated in the bottom of the tank. The oil is drawn from the tank, through the filter to the pump.

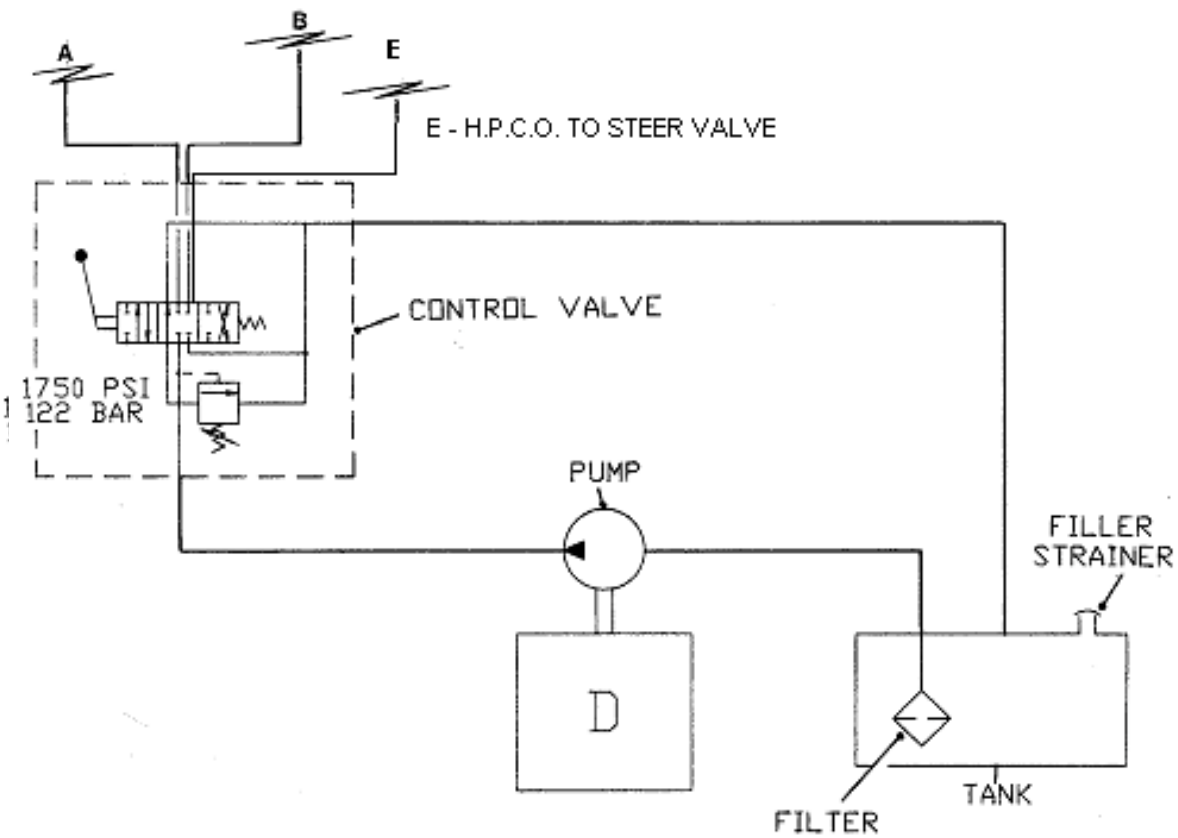
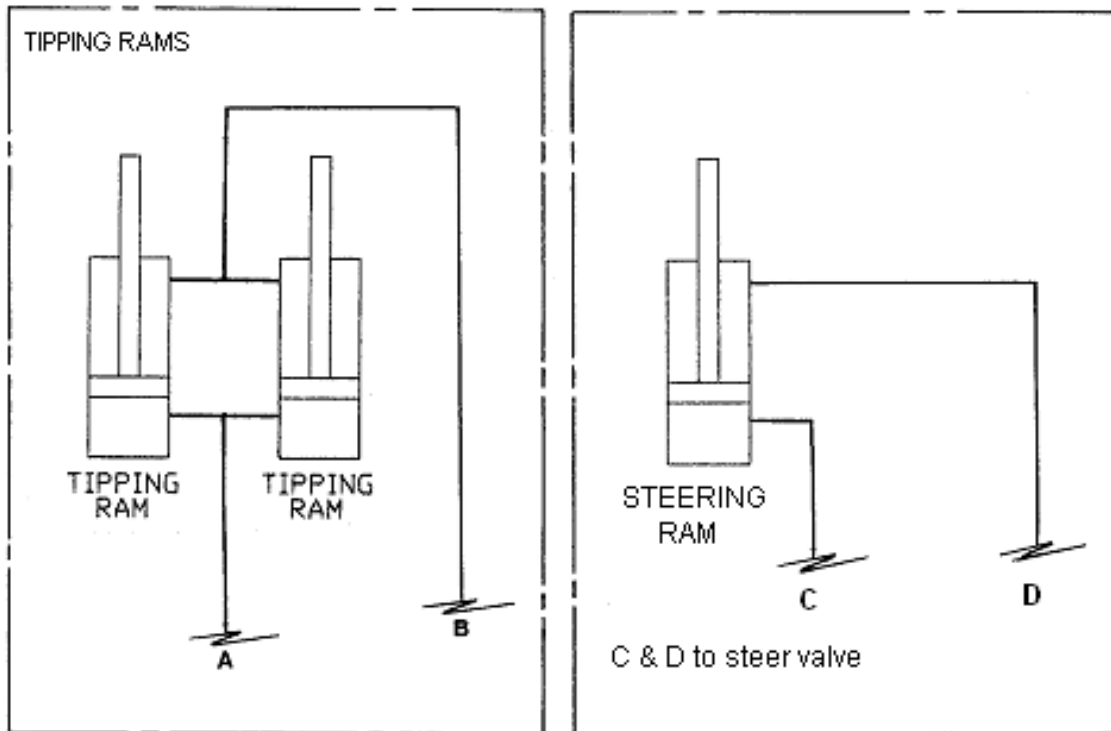
Tipping control valve: The control valve receives oil from the pump and delivers it to the skip tipping rams. The rate of oil flow to the rams is proportional to the distance that the control valve lever is moved.

If the control lever is held either fully to the left or right after the rams have reached their full stroke, a relief valve opens, allowing the oil to return to the tank. A high pressure carryover (H.P.C.O.) supplies oil under pressure to the steering valve.

In Line Relief Valve: The inline relief Valve, mounted on the hydraulic tank, is fitted to gravity tipping machines which do not have a Tipping Control Valve. The relief valve protects the hydraulic system in the event of an over pressure event.

The hydraulic system does not provide priority flow to the steering, therefore the steering should not be operated when the skip is being tipped or lowered.

Hydraulic system



HYDRAULIC SYSTEM

Hydraulic System Checks

If the hydraulic system fails to operate completely, or does so extremely slowly, carry out the following procedure.

Check that the hydraulic tank is full of oil to the correct level. The level is correct when the cone at the base of the filler neck is visible.

Check that the filter has been regularly cleaned in accordance with the maintenance schedule. If not, clean filter.

Check that the hydraulic pressure is correct as follows:

HYDRAULIC TIP

Fit a 3000 lb/in² gauge into the hydraulic system at the base of the skip ram.

Operate control lever to tip skip and check the pressure reading on the gauge when ram is fully extended and relief valve is 'blowing'.

GRAVITY TIP

Fit a 3000 lb/in² gauge into the hydraulic circuit between the relief valve and the steer valve.

Turn the steering wheel to full lock and check the pressure reading on the gauge when full lock is reached and the relief valve is 'blowing'.

See "Specifications" for correct pressure

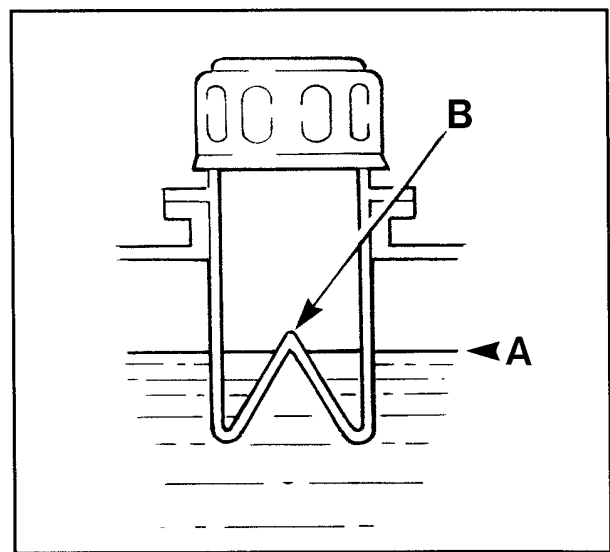
If this procedure does correct the fault, contact your Distributor.

Periodically check the supply hose between the pump and the hydraulic tank to ensure that it is not deformed. Any deformation in the hose may result in a restricted flow and damage to the pump.

Every 10 operating hours, or daily Check hydraulic oil level

Do not check oil level before closing the tipping rams, and the engine has been stopped for 2 minutes.

The oil level **(A)** is correct when the cone **(B)** at the base of the filler neck is visible. Do not overfill; it will cause leakage from the breather!



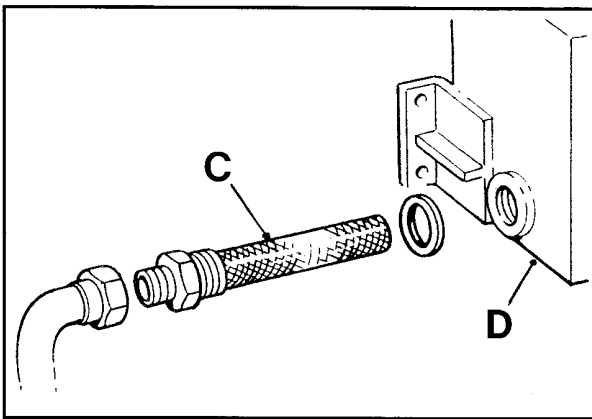
First 100 operating hours**Clean / change hydraulic oil filter**

WARNING *Before cleaning filter, stop the engine and dump hydraulic pressure.*



Place a *clean* suitable container beneath the hydraulic tank filter. Clean the area surrounding the filter.

Carefully unscrew the filter (C) from the tank (D) allowing the oil to drain into the container.



Provided that the oil does not become contaminated it can be used to refill the tank after the filter has been cleaned and replaced

Wash the filter in white spirit and check it for any damage. *If the filter cannot be thoroughly cleaned, fit a new one.*

Screw the filter back into the tank.

Fill tank with oil. (The oil level (A) is correct when the cone (B) at the base of the filler neck is visible.) For the correct type of oil, see "*Specifications*".

Run the engine to circulate the oil.

Operate the hydraulic control to purge any air from the system.

Stop the engine and top up the tank as required. Check the areas around the filter for leaks.

Every 1000 operating hours**Clean / change hydraulic oil filter**

Clean or change the hydraulic oil filter, using the procedure described in the previous "*First 100 operating hours*".

Every 1000 operating hours**Change hydraulic oil**

Run the engine and operate the hydraulics to warm the oil. Fully close the tipping rams.

Switch off the engine and dump hydraulic pressure.

Clean the area surrounding the hydraulic tank filter and filler cap.

Place a suitable container on the ground beneath the filter to catch oil.

CAUTION: Before removing the filter be sure to stand to one side to avoid the oil that will spill from the hole. Carefully remove the filter and drain the oil from the tank.

Flush out the tank with clean hydraulic oil, taking extreme care to remove all dirt and foreign matter.

Refit the filter.

Clean the filler cap breather.

Refill the tank with clean oil of the correct type and grade. For the correct type of oil, see "*Specifications*".

Run the engine to circulate the oil.

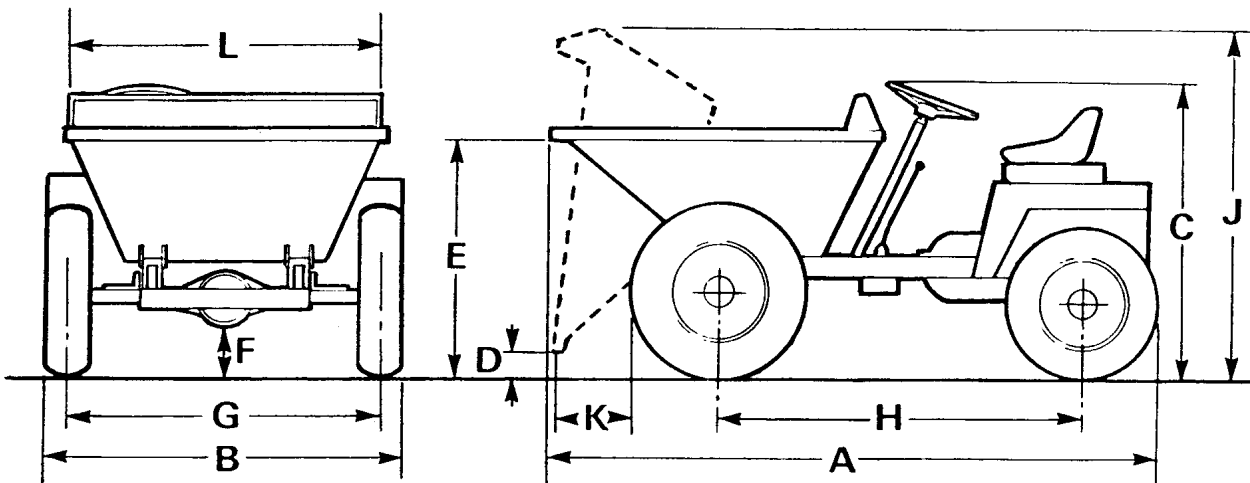
Operate the hydraulic control to purge any air from the system.

Stop the engine and top up the tank as required.

Check the area around the filter for leaks.

DIMENSIONS

| <i>Earth skip</i> | | <i>m</i> | <i>ft in</i> |
|-------------------|---------------------------------|----------|--------------|
| A | Overall length | 2.85 | 9' 4" |
| B | Overall width | 1.64 | 5' 5" |
| C | Overall height | 1.37 | 4' 6" |
| D | Skip discharge height | 0.130 | 0' 5" |
| E | Skip loading height | 1.17 | 3' 10" |
| F | Ground clearance | 0.28 | 0' 11" |
| G | Track | 1.37 | 4' 6" |
| H | Wheel base | 1.66 | 5' 5" |
| J | Maximum skip height when tipped | 1.47 | 4' 10" |
| K | Skip discharge forward of tyres | 0.35 | 1' 2" |
| L | Skip discharge width | 1.42 | 4' 8" |
| Articulation | | 0.29 | 0' 11½" |
| Turning circle | | 7.35 | 24' 1" |



SPECIFICATIONS

| | |
|---------------------|---|
| ENGINE | Lister-Petter TR1: Single cylinder, direct injection, naturally aspirated, flywheel fan air cooled diesel. Rotation: Anti-clockwise when looking on the flywheel. TR1: Power output: 6.7 kW (9.0 bhp) @ 1800 rev/min. |
| ELECTRICS | (Where fitted) 12 volt negative earth. |
| FUEL | System: Single element fuel pumps. Fuel specification: BS2869:1988 Class A2, or BS EN590:1995 Class A1. Fuel tank capacity: 8.25 litres Fuel filter: Strainer within fuel tank. Air cleaner: Renewable element. |
| AXLES | Front: Heavy duty with fully floating half shafts. Rear: Centrally pivoted steer axle (without brakes). |
| BRAKE | Service: Front axle braking. Totally sealed oil immersed multi-plate disc brakes, featuring fully automatic adjustment for wear. Parking: Hand operated, ratchet type, actuating disc brake on transmission. |
| TRANSMISSION | Heavy duty constant mesh gearbox, with 3 forward and 1 reverse gear. |
| HYDRAULICS | Pump: Gear type. Control valve: Monobloc with pressure relief valve. Filter: Suction strainer mounted within the hydraulic tank. |

VIBRATION DECLARATION

Whole body vibration level a_w (m/s²) :- 0.7 - 0.8 Typical*

***Note:** *The absence of a harmonised test code together with the variable conditions under which this equipment may be used allows only representative figures to be quoted.*

Hand/arm vibration level a_{ha} (m/s²) :- Less than 2.5

SPECIFICATIONS

ROAD SPEEDS *with engine at 1800 rev/min*

| 1st Gear | | 2nd Gear | | 3rd Gear | | Reverse | |
|----------|-------|----------|--------|----------|-------|---------|-------|
| km/h | (mph) | km/h | (mph) | km/h | (mph) | km/h | (mph) |
| 4.1 | (2.6) | 9.1 | (5.75) | 15.7 | (9.8) | 4.3 | (2.6) |

LUBRICANTS AND FLUIDS Total oils (factory fill)

Capacities

| | | |
|---|--|---------------------|
| Engine Lub. Oil | Rubia H 10W/40 | 2.7 litres |
| <i>Note: For engine oils used in temperatures above 30 deg. C consult the Engine Handbook</i> | | |
| Gearbox | Rubia B 20W/30 | 2.0 litres (approx) |
| Front axle | Universal plant oil or Transmission MP | 3.5 litres |
| Hydraulic system | Azzola ZS46 | 27.3 litres (tank) |
| Braking system | Azzola ZS22 | 0.3 litres (approx) |
| General grease | Multis EP 2 | as required |
| General lubrication oil | Rubia B 20W/30 | as required |
| | | |

TYRE PRESSURES

| | | |
|-------|----------|--------------------------|
| Front | 2.35 bar | (35 lb in ²) |
| Rear | 2.35 bar | (35 lb in ²) |

ADJUSTMENTS

| | | |
|-------------------|-------------------------------------|----------|
| Wheel nuts torque | 200 lbf ft | (271 Nm) |
| Engine | <i>(see Engine Workshop Manual)</i> | |

TYRES

| | |
|-------|--------------------|
| Front | 7.50 x 16 traction |
| Rear | 6.00 x 16 ribbed |

DRAWBAR LOAD

| | | |
|-------------------|--------|----------|
| Weight on drawbar | 500 N | (50 kg) |
| Drawbar pull | 2500 N | (250 kg) |

NOISE LEVELS

| | | |
|------------|--------|---------|
| TR1 engine | 94 LPA | 107 LWA |
|------------|--------|---------|

HYDRAULIC PRESSURE

| | | |
|--|-----------|------------|
| | 120.7 bar | (1750 psi) |
|--|-----------|------------|

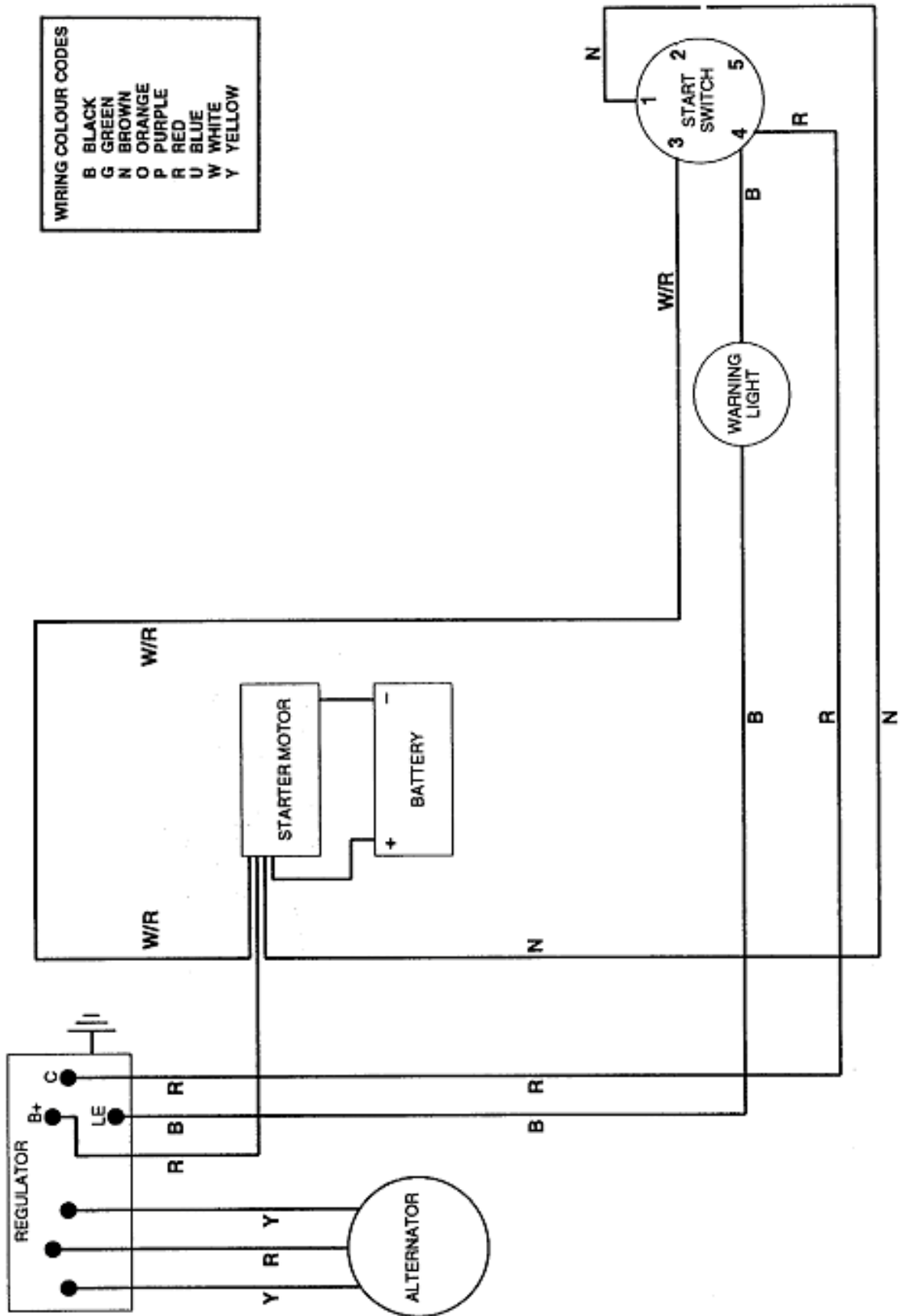
PAYLOAD & CAPACITIES

| | |
|-------------|------------------------------------|
| Payload | 1500 kg (4410 lbs) |
| Water level | 700 litres (24.7 ft ³) |
| Struck | 700 litres (24.7 ft ³) |
| Heaped | 973 litres (34.3 ft ³) |

MACHINE WEIGHTS

| | | |
|------------|--------|------------|
| Unladen GT | 940 kg | (2068 lbs) |
| Unladen HT | 980 kg | (2156 lbs) |

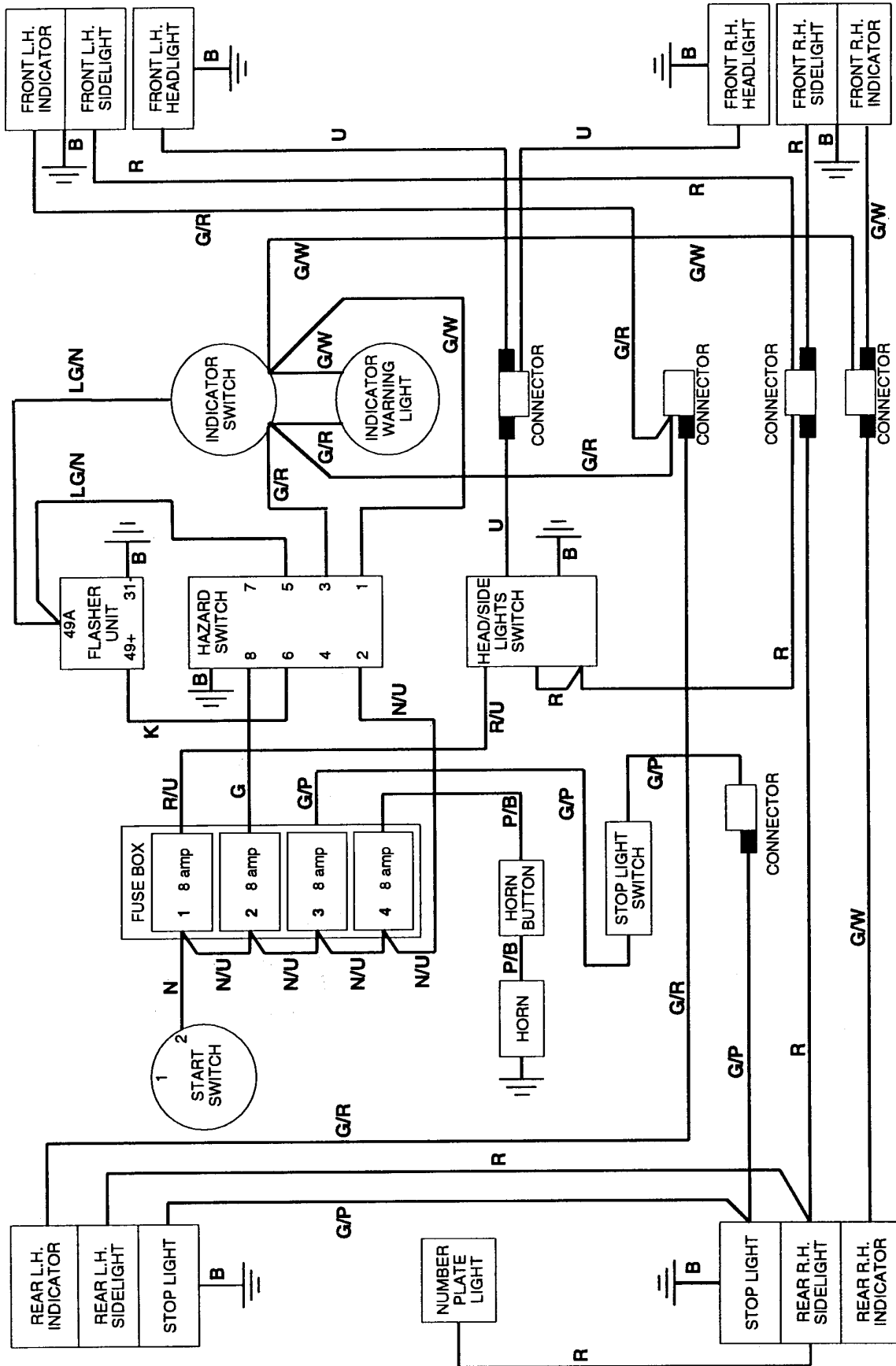
MAIN ELECTRICAL CIRCUIT (without road lights)



WIRING COLOUR CODES

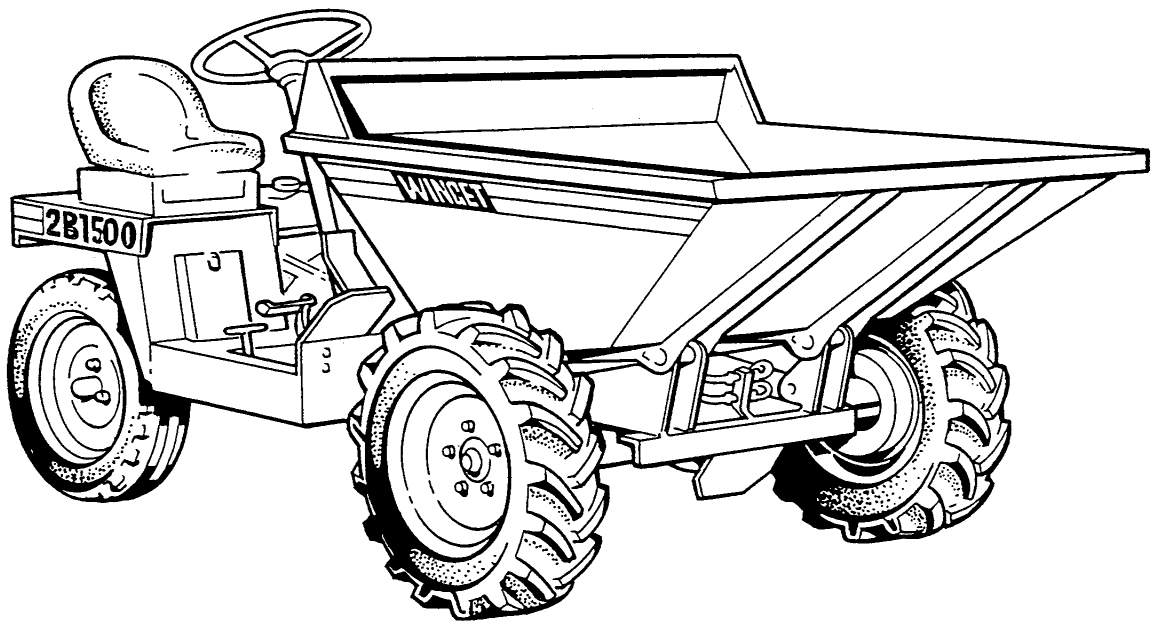
| | |
|---|--------|
| B | BLACK |
| G | GREEN |
| N | BROWN |
| O | ORANGE |
| P | PURPLE |
| R | RED |
| U | BLUE |
| W | WHITE |
| Y | YELLOW |

ROAD LIGHTS ELECTRICAL CIRCUIT



2B1500 DUMPERS

PARTS



Contents

A CHASSIS & SKIPS

B AXLES & STEERING

C TRANSMISSIONS

D BRAKES

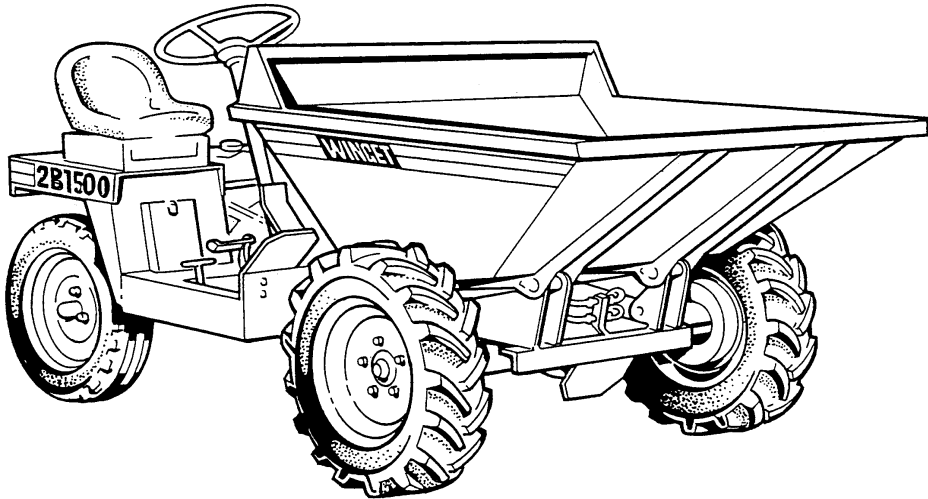
E ENGINES

F ELECTRICS

H HYDRAULICS

J DECALS

2B1500 DUMPER



Chassis, Panels & Skips

CHASSIS

A - 1

BATTERY TRAY

A - 1B

SEAT "KAB" (*To ISO 6683*)

A - 1D

R.O.P.S. FRAME

A - 1E

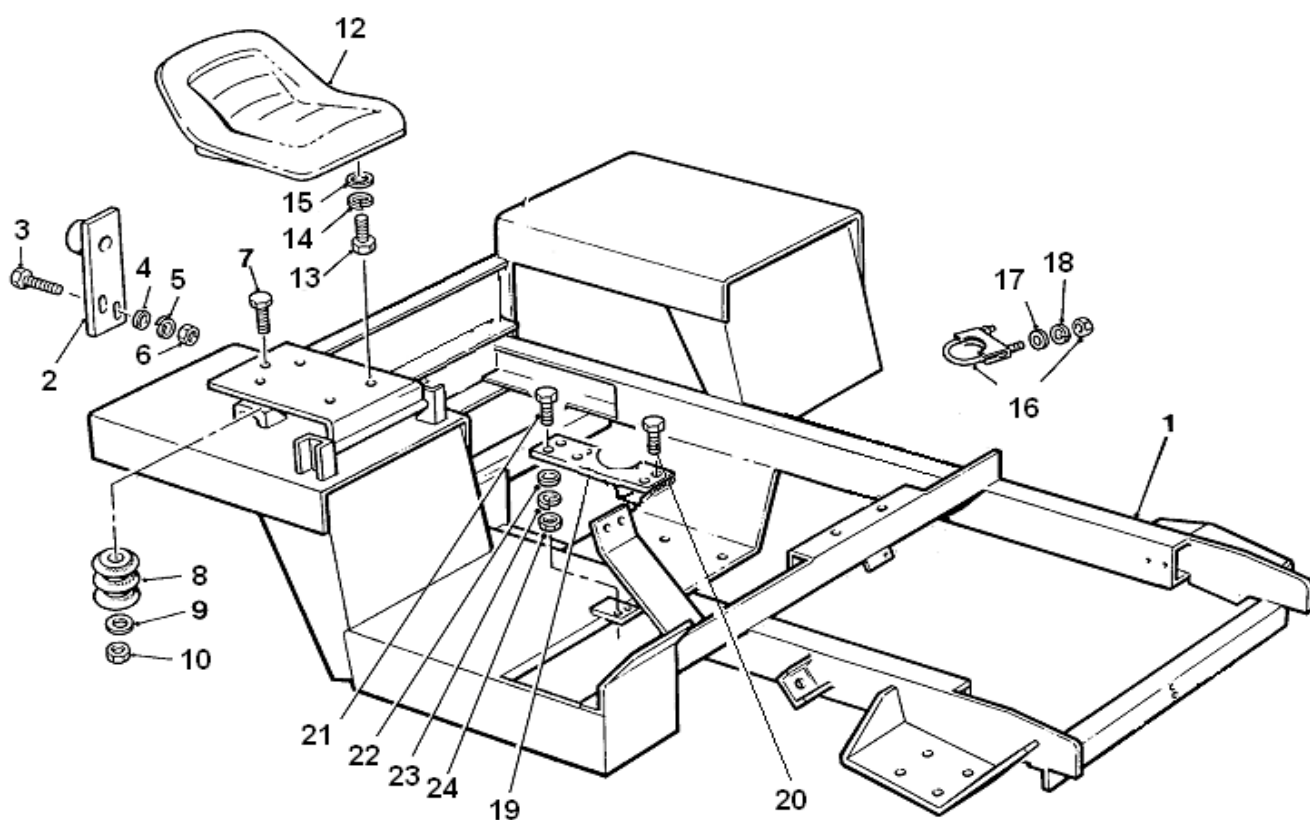
SKIPS

Gravity tip

A - 2

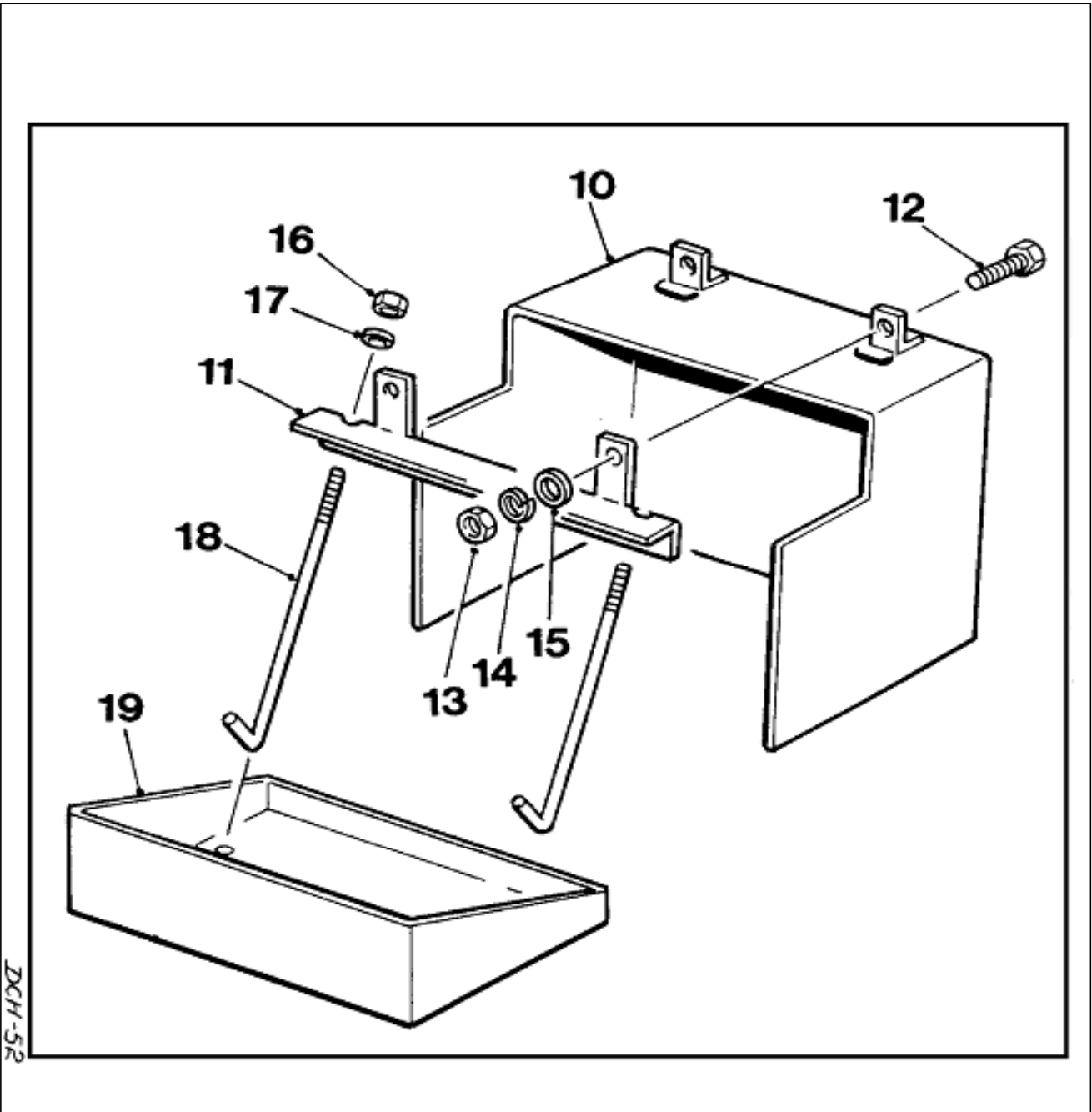
Hydraulic tip

A - 3



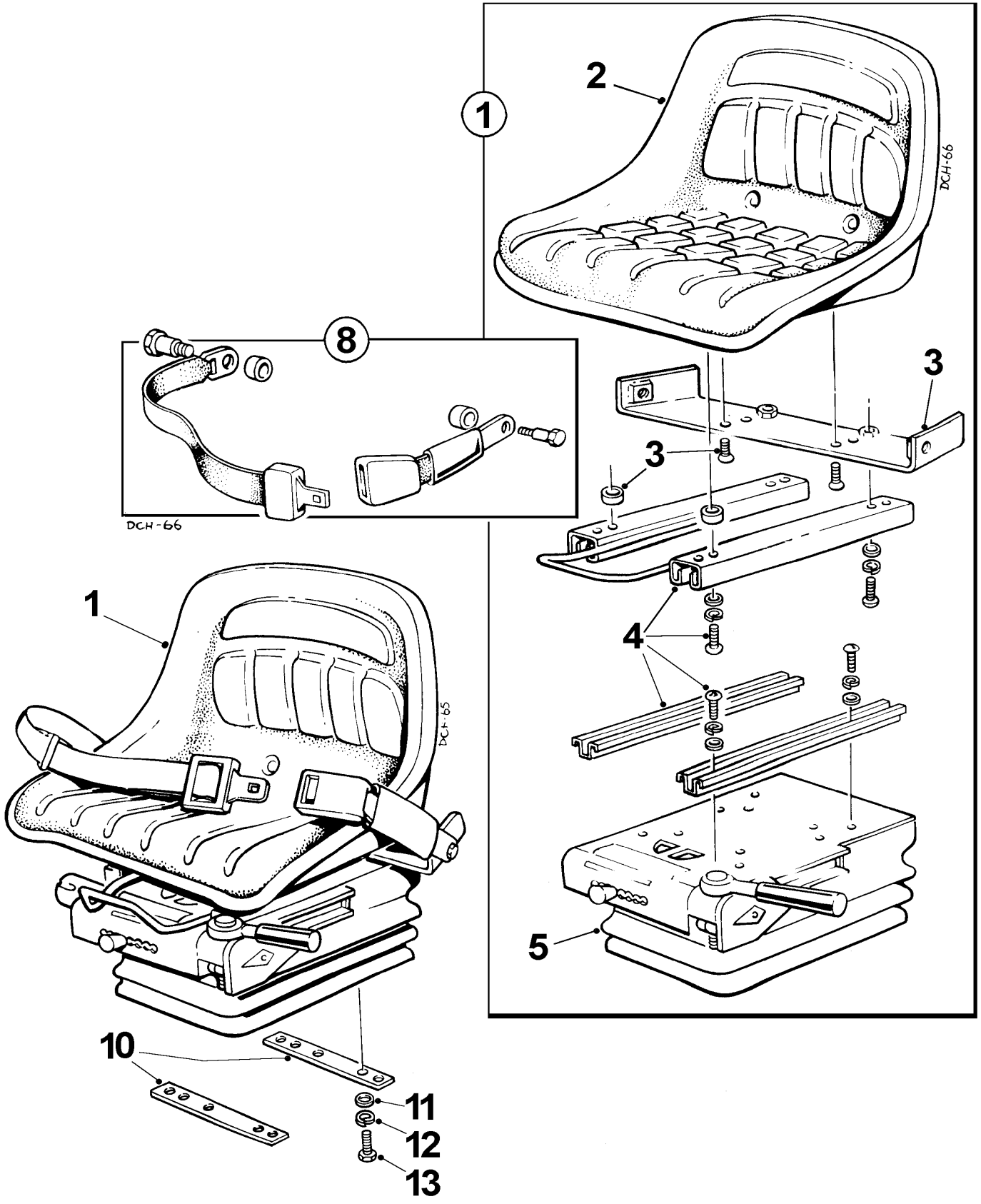
CHASSIS & FITTINGS**A - 1**

| Item | Part no | Serial no | Description | Qty |
|-------------|----------------|------------------|--|------------|
| 1 | 40286A01 | | CHASSIS | 1 |
| 2 | 20355A04 | | BRACKET, starting handle support | 1 |
| 3 | 11S04E | | SCREW | 2 |
| 4 | 267S06 | | WASHER, flat | 4 |
| 5 | 17S05 | | WASHER, spring | 2 |
| 6 | 7S04 | | NUT | 2 |
| 7 | 11S04E | | SCREW, set | 1 |
| 8 | 10519A01 | | SPRING, seat mounting | 1 |
| 9 | V2004220 | | WASHER, special | 1 |
| 10 | 59S03 | | NUT, nyloc | 1 |
| 12 | V2000954 | | SEAT, cushioned | 1 |
| 13 | 11S03B | | SCREW, set | 4 |
| 14 | 17S04 | | WASHER, spring | 4 |
| 15 | 267S05 | | WASHER, flat | 4 |
| 16 | 153S05 | | "U" BOLT, c/w nuts <i>discard clamp</i> | 1 |
| 17 | 267S05 | | WASHER, flat | 2 |
| 18 | 17S04 | | WASHER, spring | 2 |
| 19 | V2006339 | | BRACKET, steer valve mounting | 1 |
| 20 | 8S04K | | BOLT | 2 |
| 21 | 11S04D | | SCREW, set | 2 |
| 22 | 17S05 | | WASHER, spring | 4 |
| 23 | 267S06 | | WASHER, flat | 4 |
| 24 | 7S04 | | NUT | 4 |

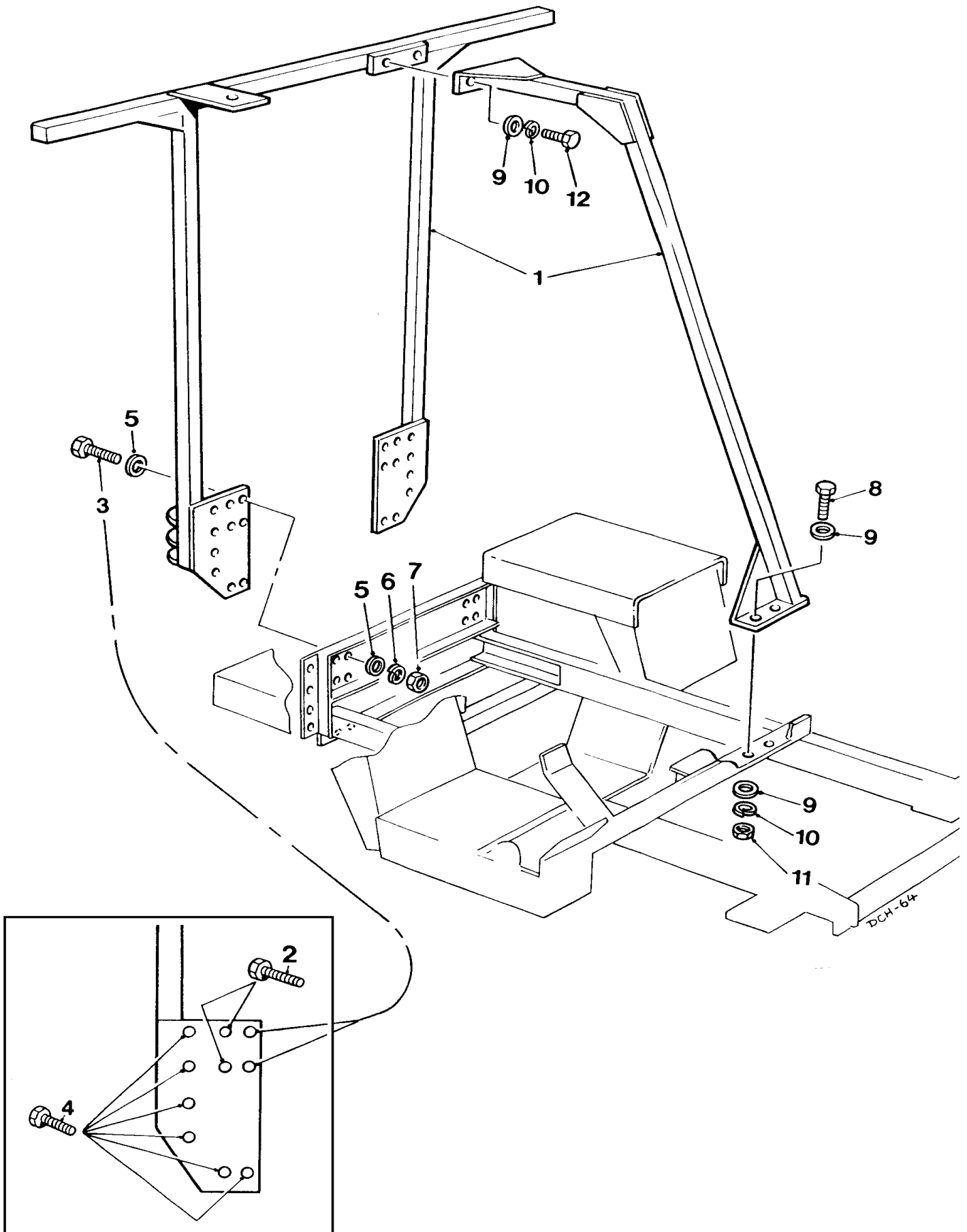


BATTERY TRAY**A - 1B**

| Item | Part no | Serial no | Description | Qty |
|-------------|----------------|------------------|---|------------|
| 10 | 513358600 | | COVER, battery | 1 |
| 11 | V2004055 | | CLAMP, battery | 1 |
| 12 | 11S04C | | SCREW,set | 2 |
| 13 | 7S04 | | NUT | 2 |
| 14 | 17S05 | | WASHER, spring | 2 |
| 15 | 267S06 | | WASHER, flat | 2 |
| 16 | 61S02 | | NUT | 2 |
| 17 | 267S04 | | WASHER, flat | 2 |
| 18 | V2004120 | | ROD, clamp | 2 |
| 19 | 513358500 | | TRAY, battery. (<i>welded to chassis</i>) | 1 |



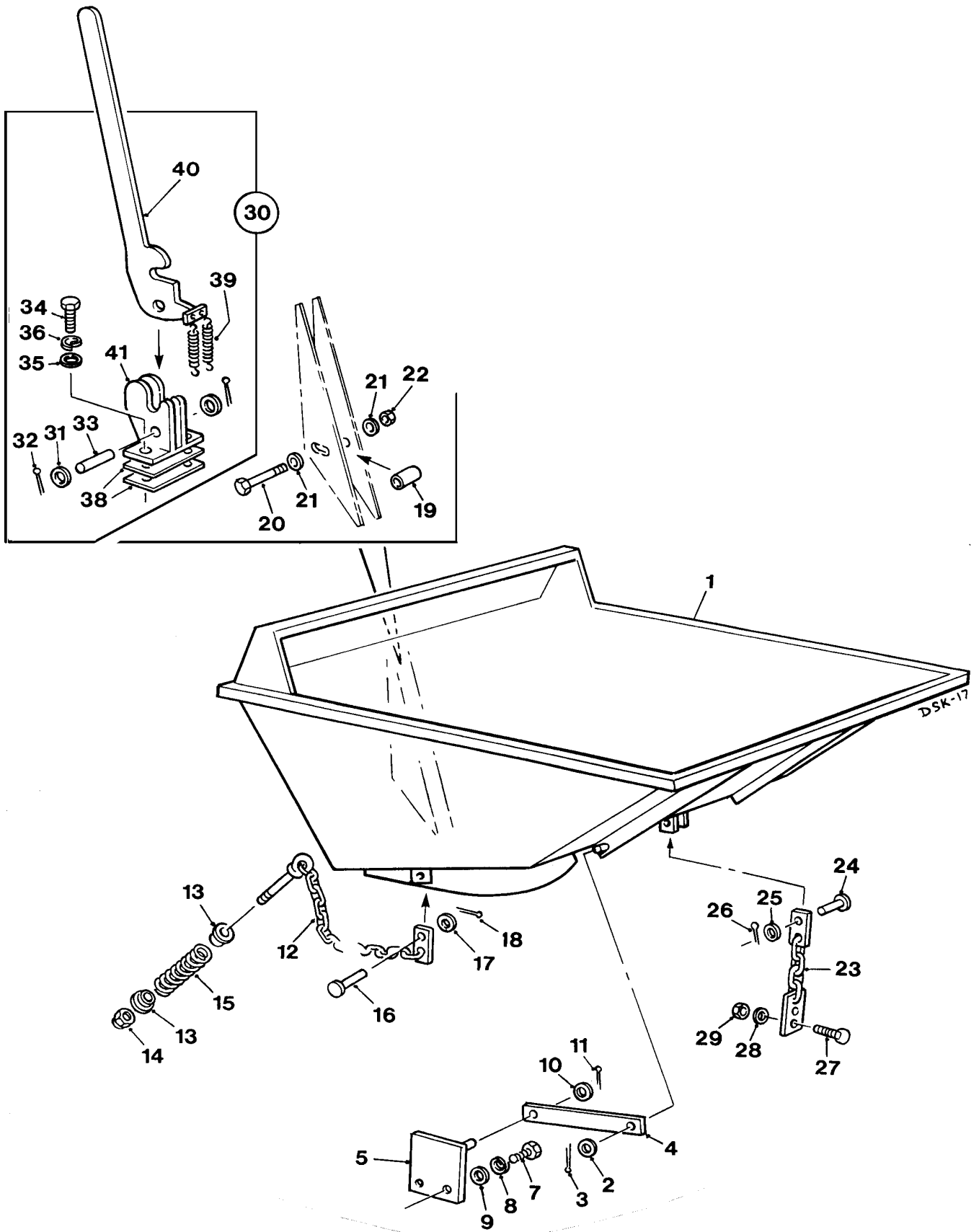
| Item | Part no | Serial no | Description | Qty |
|--|----------|-----------|-----------------------------------|-----|
| <i>This seat and belt must be used with R.O.P.S. kits (see pages A-1E and A-1F)</i> | | | | |
| 1 | V2005013 | | SEAT, assembly c/w with seat belt | 1 |
| 2 | V2000954 | | SEAT, 'KAB P2N' | |
| 3 | V602750 | | BRACKET, anchorage | 1 |
| 4 | V602752 | | SLIDE RAIL, assembly | 1 |
| 5 | V602751 | | UNIT, suspension 'XH2' (ISO 6683) | 1 |
| 8 | V602749 | | BELT, seat | 1 |
| 10 | V2004206 | | PLATE, clamp | 2 |
| 11 | 267S05 | | WASHER, flat | 4 |
| 12 | 17S04 | | WASHER, spring | 4 |
| 13 | 11S03C | | SCREW, set | 4 |



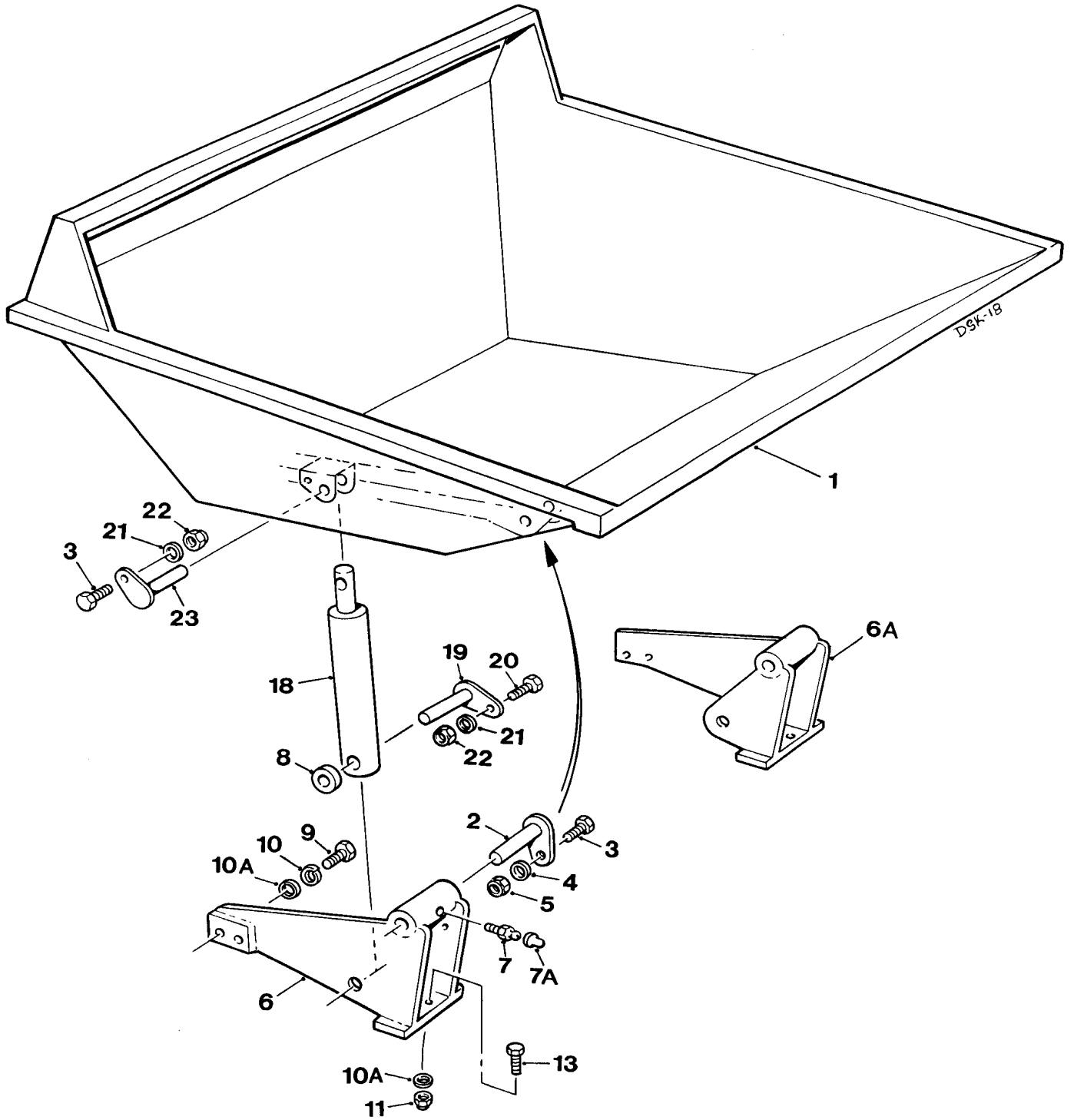
R.O.P.S. FRAME**A - 1E**

| Item | Part no | Serial no | Description | Qty |
|-------|----------|-----------|--|-----|
| ..... | V602747 | | # R.O.P.S. KIT, <i>includes items 1 to 12 below plus KAB XH2/P2N seat assembly with seat belt to ISO 6683. (See page A-1D)</i> | |
| 1 | V2004946 | | FRAME, R.O.P.S. | 1 |
| 2 | 11S04G | | SCREW, set | 4 |
| 3 | 11S04E | | SCREW, set | 4 |
| 4 | 11S04F | | SCREW, set | 12 |
| 5 | 267S06 | | WASHER, flat | 40 |
| 6 | 17S05 | | WASHER, spring | 20 |
| 7 | 7S04 | | NUT | 20 |
| 8 | 11S05G | | SCREW, set | 2 |
| 9 | 267S07 | | WASHER, flat | 6 |
| 10 | 17S06 | | WASHER, spring | 4 |
| 11 | 7S05 | | NUT | 2 |
| 12 | 11S05C | | SCREW, set | 2 |

To fit kit refer to Service Bulletin SB226

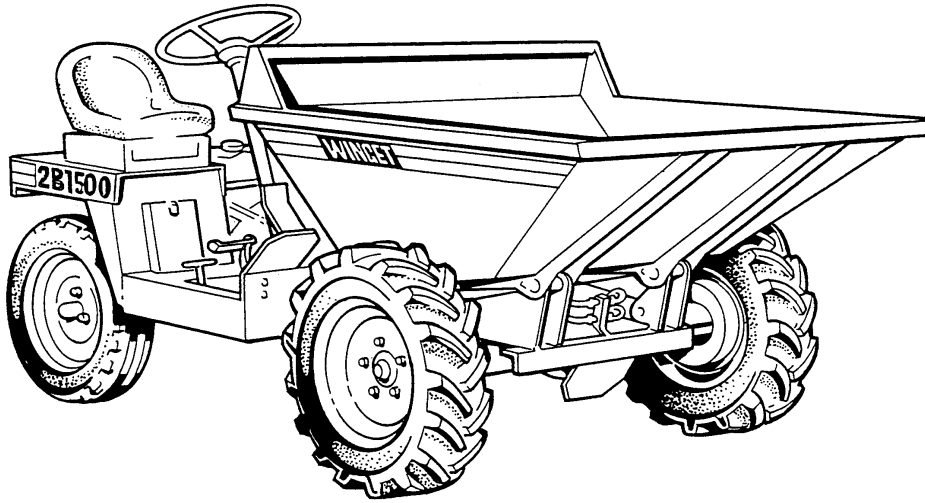


| Item | Part no | Serial no | Description | Qty |
|-------|------------|-----------|---|-----|
| 1 | 40295A04 | | SKIP, gravity tip | 1 |
| 2 | 10S06 | | WASHER, flat | 2 |
| 3 | 44S05G | | PIN, split | 2 |
| 4 | 10892A01 | | ARM, radius | 2 |
| 5 | 10893A01 | | BRACKET, mount, R.H. (<i>illustrated</i>) | 1 |
| ..... | 10893A02 | | BRACKET, mount, L.H. (<i>not illustrated</i>) | 1 |
| 7 | 11S05E | | SCREW, set | 4 |
| 8 | 17S06 | | WASHER, spring | 4 |
| 9 | 267S07 | | WASHER, flat | 4 |
| 10 | 10S06 | | WASHER | 2 |
| 11 | 44S05G | | PIN, split | 2 |
| 12 | 20286A10 | | CHAIN, skip check, c/w bolt | 2 |
| 13 | 10894A02 | | COLLAR, spring alignment | 4 |
| 14 | 59S04 | | NUT, nylon insert | 2 |
| 15 | C173A | | SPRING, compression | 2 |
| 16 | 10650A04 | | PIN, clevis | 2 |
| 17 | 10S04 | | WASHER | 2 |
| 18 | 44S03C | | PIN, split | 2 |
| 19 | C140A | | TUBE, skip catch | 1 |
| 20 | 8S06R | | BOLT | 1 |
| 21 | 247S09 | | WASHER, flat | 2 |
| 22 | 59S11 | | NUT, nylon insert | 1 |
| 23 | 20286A02 | | CHAIN, front | 1 |
| 24 | 10650A18 | | PIN, clevis | 1 |
| 25 | 10S03 | | WASHER, flat | 1 |
| 26 | 44S02C | | PIN, split | 1 |
| 27 | 11S03C | | SCREW, set | 2 |
| 28 | 17S04 | | WASHER, spring | 2 |
| 29 | 7S03 | | NUT | 2 |
| 30 | 40296A01 | | CATCH, skip, assembly | 1 |
| 31 | 10S06 | | WASHER, flat | 2 |
| 32 | 44S04E | | PIN, split | 2 |
| 33 | 40296A0105 | | PIN, pivot | 1 |
| 34 | 11S06G | | SCREW, set | 2 |
| 35 | 267S09 | | WASHER, flat | 2 |
| 36 | 17S08 | | WASHER, spring | 2 |
| 38 | 10054A04 | | SHIM | AR |
| 39 | C173B | | SPRING | 2 |
| 40 | 10912A03 | | LEVER, catch | 1 |
| 41 | ----- | | BODY, catch (<i>order assembly</i>) | 1 |



| Item | Part no | Serial no | Description | Qty |
|------|----------|-----------|---|-----|
| 1 | 40295A05 | | SKIP, hydraulic tip | 1 |
| 2 | 10470A10 | | PIN, pivot, skip | 2 |
| 3 | 11S04C | | SCREW, set | 4 |
| 4 | 267S06 | | WASHER, flat | 2 |
| 5 | 59S03 | | NUT, nylon insert | 2 |
| 6 | 30126A08 | | BRACKET, pivot, R.H. (<i>illustrated</i>) | 1 |
| 6A | 30126A09 | | BRACKET, pivot, L.H. (<i>not illustrated</i>) | 1 |
| 7 | 131S01 | | NIPPLE, grease | 2 |
| 7A | 176S01 | | CAP, grease nipple | 2 |
| 8 | L2791 | | SPACER | 2 |
| 9 | 8S05E | | BOLT | 4 |
| 10 | 17S06 | | WASHER, spring | 4 |
| 10A | 267S07 | | WASHER, flat | 6 |
| 11 | 59S04 | | NUT, nylon insert | 2 |
| 13 | 11S05E | | SCREW, set | 2 |
| 18 | - | | RAM, hyd (<i>see page H - 5</i>) | 2 |
| 19 | 10470A11 | | PIN, pivot | 2 |
| 20 | 11S04C | | SCREW, set | 2 |
| 21 | 267S06 | | WASHER, flat | 4 |
| 22 | 59S03 | | NUT, nylon insert | 4 |
| 23 | 10470A12 | | PIN, pivot | 2 |

2B1500 DUMPER



Axles & Wheels

WHEELS & TYRES **B - 1**

DRIVE AXLE, Newage & fittings **B - 2**

DRIVE AXLE, Newage, 215 series

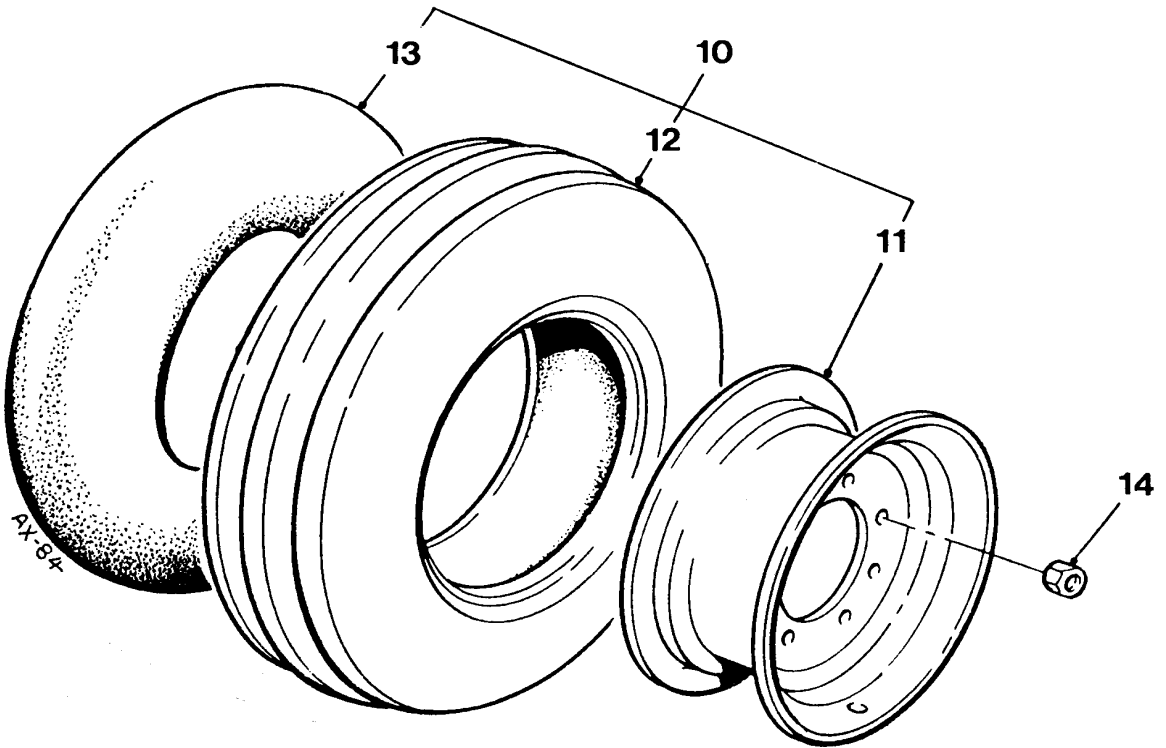
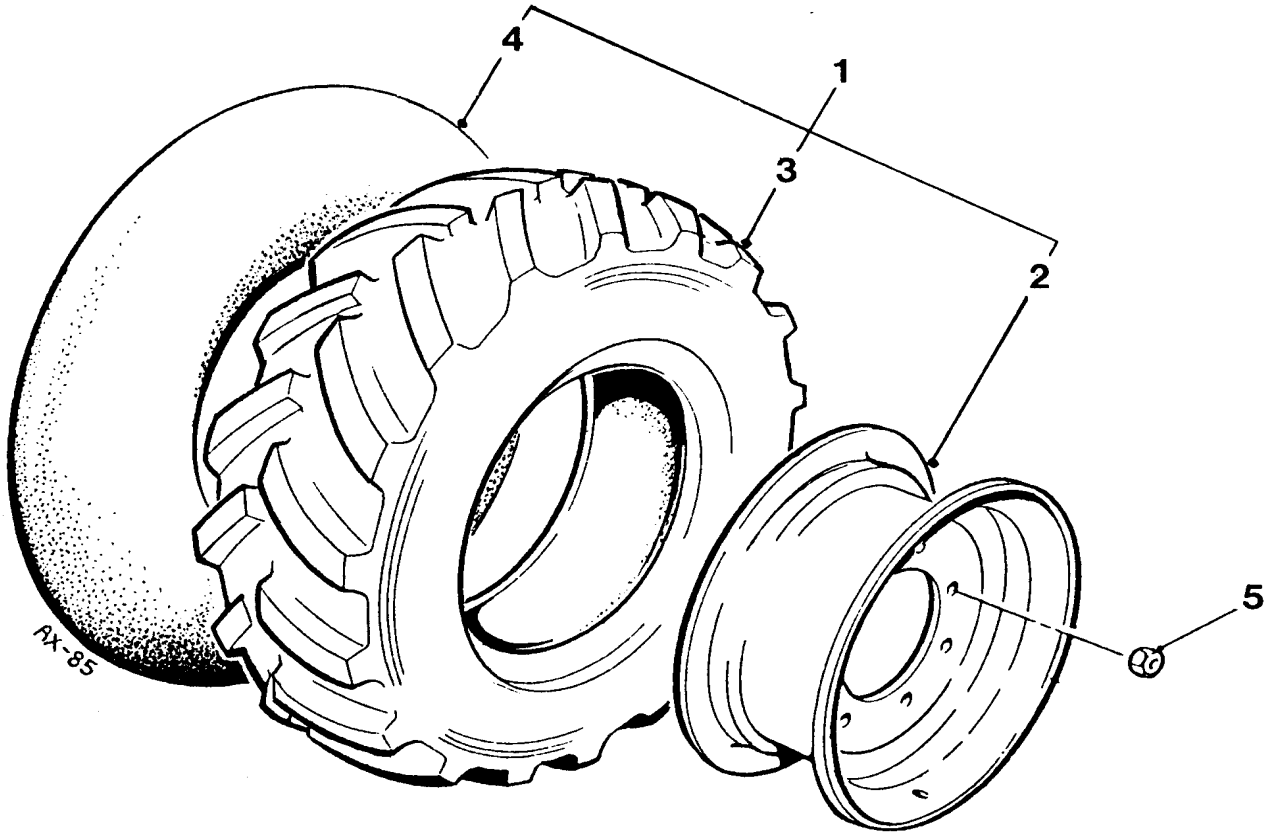
Input pinion & differential **B - 2A**

Planet carrier & axle casing **B - 2B**

Hub & axle shaft **B - 2C**

Brakes **B - 2D**

STEERING AXLE & STEERING RAM **B - 3**



| Item | Part no | Serial no | Description | Qty |
|------|---------|-----------|-------------|-----|
|------|---------|-----------|-------------|-----|

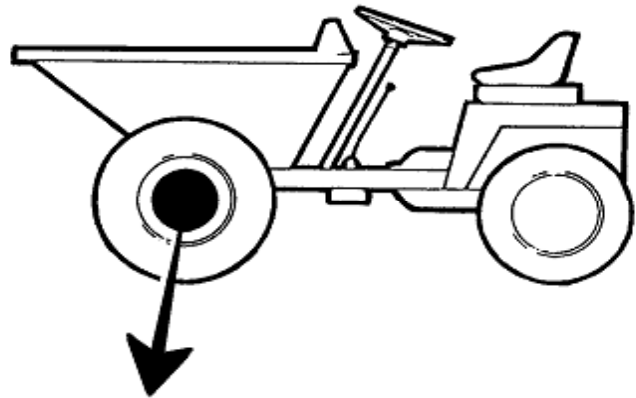
Check rim & tyre size before ordering.

FRONT

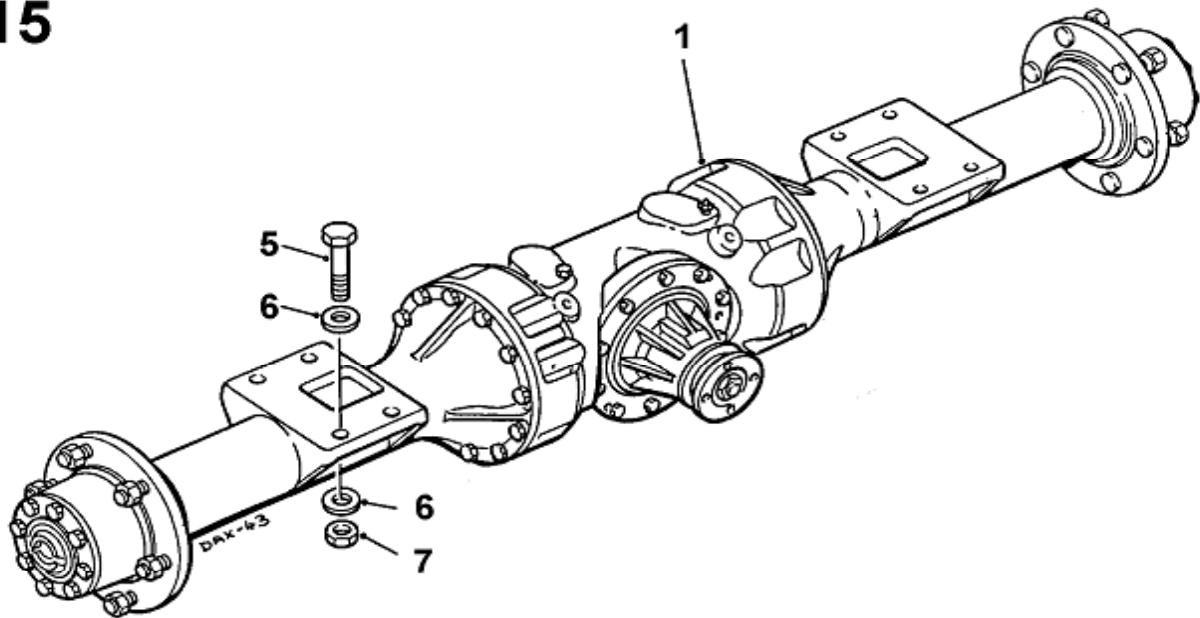
| | | | | |
|---|----------|--|------------------------------|----|
| 1 | 24S57 | | WHEEL, front, L.H., assembly | 1 |
| 1 | 24S58 | | WHEEL, front, R.H., assembly | 1 |
| 2 | 30192A03 | | RIM, wheel, 5.5 x 16 | 1 |
| 3 | 22S09 | | TYRE, 7.50 x 16 | 1 |
| 4 | 23S03 | | TUBE, 7.50 x 16 | 1 |
| 5 | 10668A01 | | NUT, wheel | 10 |

REAR

| | | | | |
|----|-----------|--|----------------------------------|----|
| 10 | 475600019 | | WHEEL, rear, assembly, 6.00 X 19 | 2 |
| 11 | V602680 | | RIM, wheel, 16" | 1 |
| 12 | 475600017 | | TYRE, 6.00 x 16 | 1 |
| 13 | 475600018 | | TUBE, inner | 1 |
| 14 | V602678 | | NUT, wheel | 10 |



215

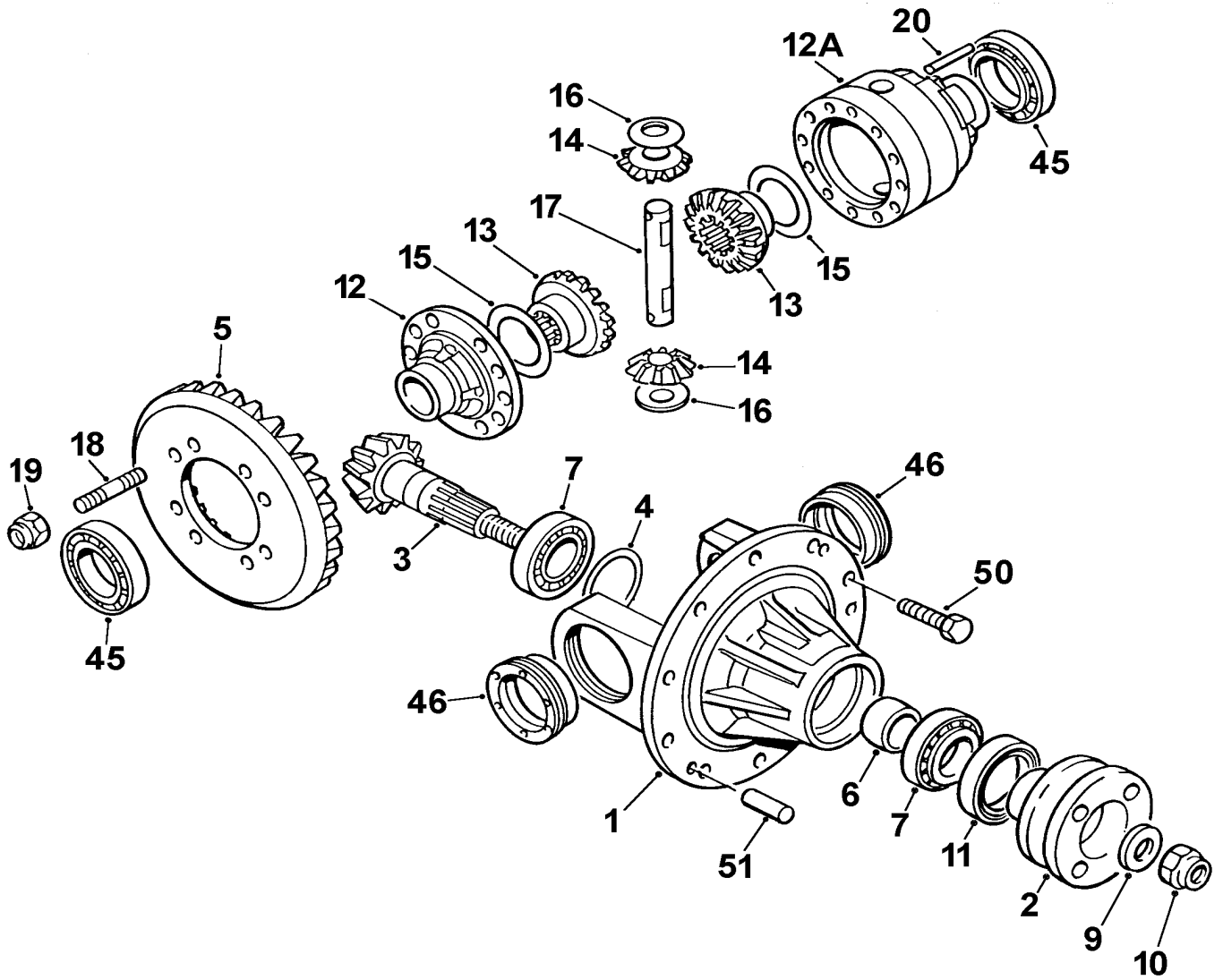


FRONT DRIVE AXLE (Newage 215) & FIXINGS

B - 2

| Item | Part no | Serial no | Description | Qty |
|------|----------|-----------|---|-----|
| | | | 2B1500 | |
| 1 | 30156A13 | | AXLE, 215 <i>(See page B-2A for Input pinion & differential)</i> <i>(See page B-2B for planet carrier & axle casing)</i> <i>(See page B-2C for hub & axle shaft)</i> <i>(See page B-2D for brakes)</i> | 1 |
| 5 | 8S06G | | BOLT | 8 |
| 6 | 267S09 | | WASHER, flat | 16 |
| 7 | 59S11 | | NUT, "Nyloc" | 8 |
| | | | | 8 |
| | | | | 8 |

215 series

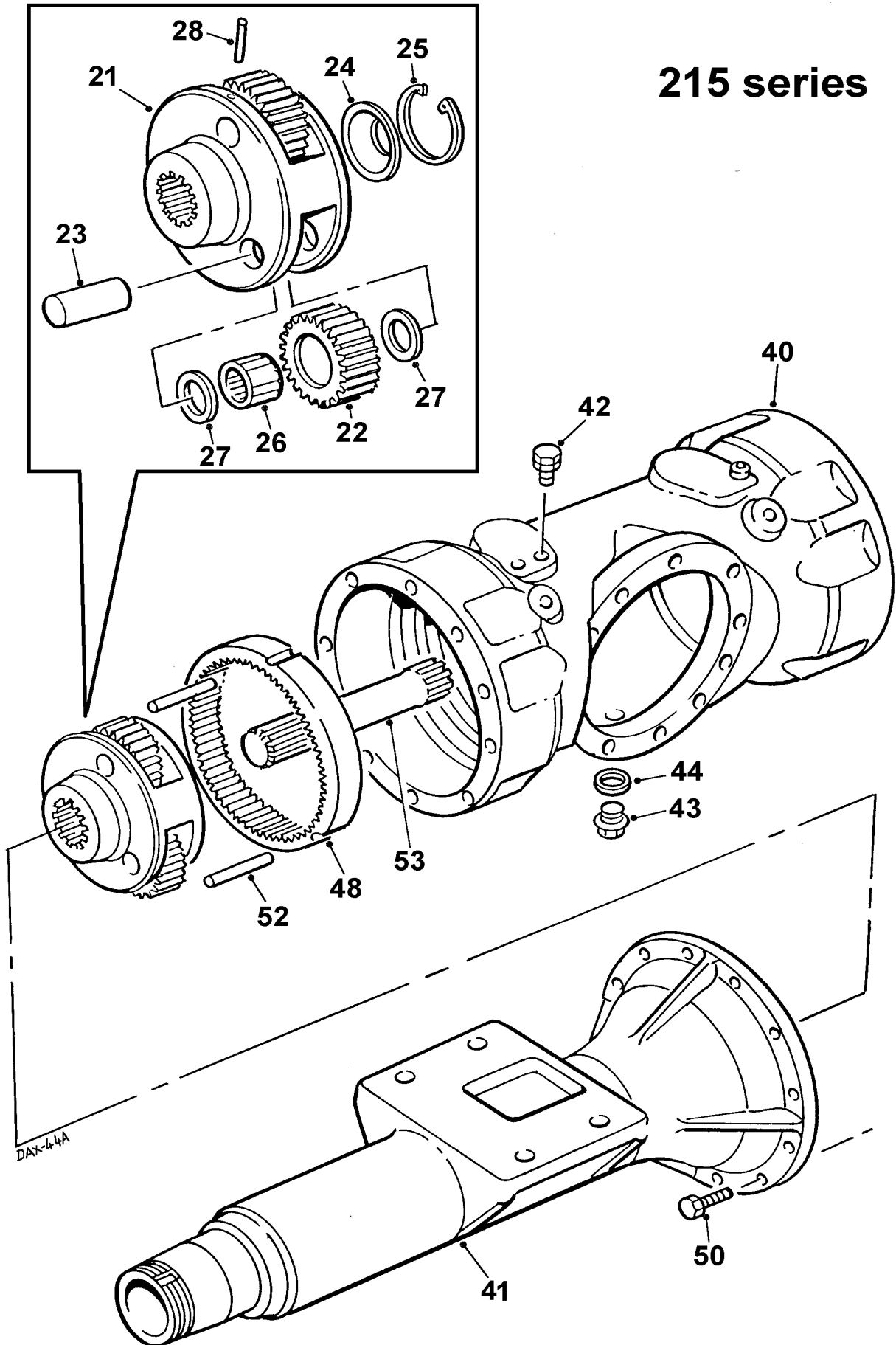


INPUT PINION & DIFFERENTIAL
Newage 215 series drive axle

B - 2A

| Item | Part no | Serial no | Description | Qty |
|------|------------|-----------|--------------------------------------|-----|
| 1 | 30082A0401 | | PINION, input cartridge | 1 |
| 2 | 30082A0402 | | FLANGE, input drive, c/w seal shield | 1 |
| 3 | 30082A0403 | | PINION, spiral bevel | 1 |
| 4 | 30082A0282 | | SHIM, 0.25mm | 2 |
| .... | 30082A0280 | | SHIM, 0.3mm | 2 |
| .... | 30082A0281 | | SHIM, 0.4mm | 2 |
| 5 | 30082A0403 | | WHEEL, spiral bevel | 1 |
| 6 | 30082A0235 | | SPACER | 1 |
| 7 | 30082A0234 | | BEARING, cup & cone assembly | 2 |
| .... | 30082A0274 | | BEARING, cup | 1 |
| .... | 30082A0273 | | BEARING, cone | 1 |
| 9 | 30082A0231 | | WASHER, plain | 1 |
| 10 | 30082A0232 | | NUT | 1 |
| 11 | 30082A0236 | | SEAL, oil | 2 |
| 12 | 30082A0404 | | COVER, differential | 1 |
| 12A | 30082A0405 | | CASING, differential | 1 |
| 13 | 30082A0283 | | WHEEL, differential | 2 |
| 14 | 30082A0284 | | PINION, differential | 2 |
| 15 | 30082A0241 | | WASHER, thrust | 2 |
| 16 | 30082A0242 | | WASHER, thrust | 2 |
| 17 | 30082A0303 | | SPIDER, differential, (half) | 1 |
| 18 | 30082A0406 | | STUD | 8 |
| 19 | 59S03 | | NUT, 'Nyloc' | 8 |
| 20 | 30082A0306 | | PIN, Spirol | 2 |
| 45 | 119325000 | | BEARING, cup & cone assy. | 2 |
| 46 | 30082A0416 | | NUT, bearing adjustment | 2 |
| 50 | 8S04B | | BOLT | 34 |
| 51 | 30156A0112 | | DOWEL, 10dia x 20mm | 2 |

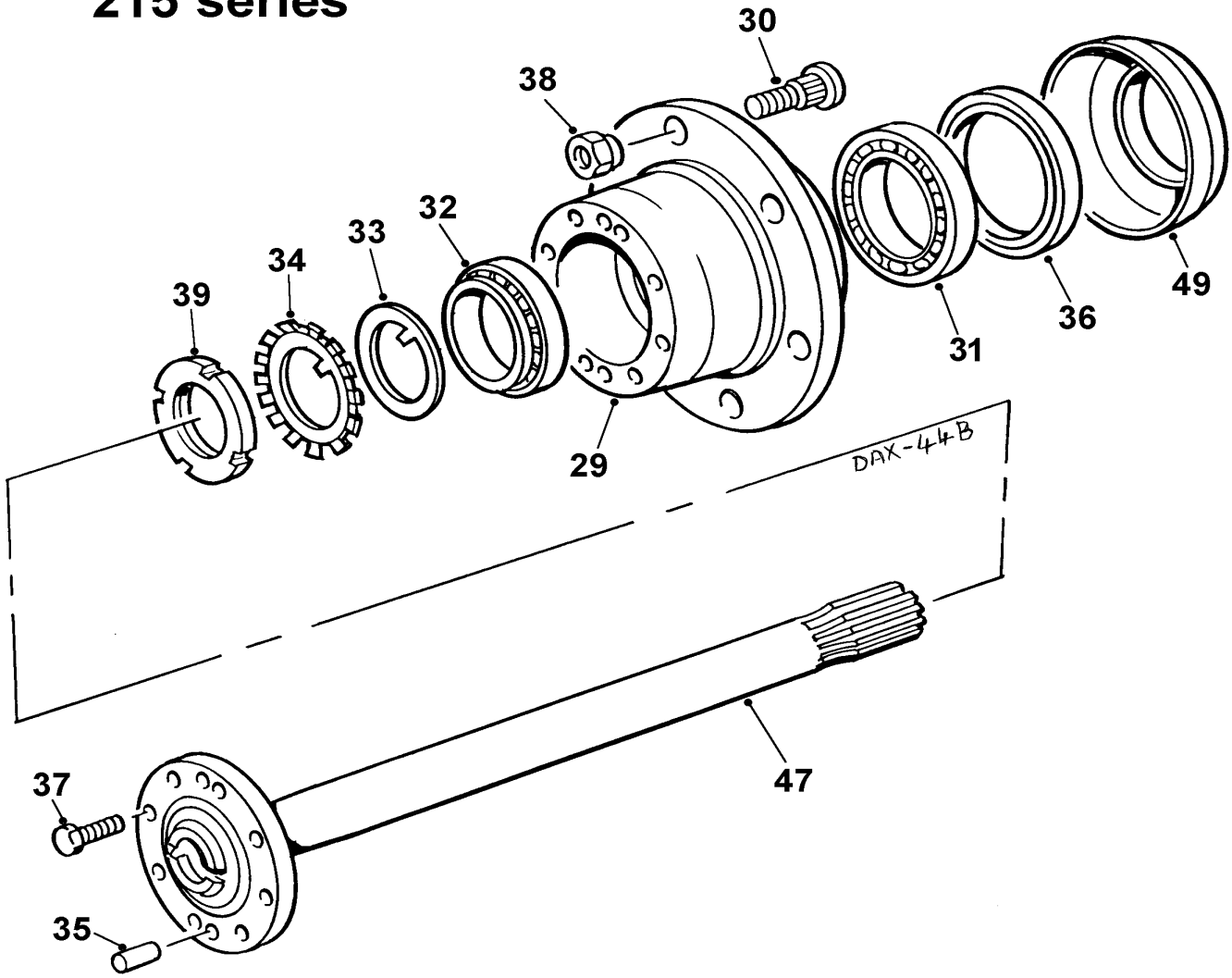
215 series



PLANET CARRIER & AXLE CASING**B - 2B****Newage 215 series drive axle**

| Item | Part no | Serial no | Description | Qty |
|-------------|----------------|------------------|--------------------|------------|
| 21 | 30156A0802 | | CARRIER, planet | 1 |
| 22 | 30156A0803 | | GEAR, planet | 3 |
| 23 | 30156A0804 | | PIN, planet | 3 |
| 24 | 30156A0805 | | SPACER | 1 |
| 25 | 30082A0265 | | CIRCLIP | 1 |
| 26 | 30082A0289 | | BEARING, needle | 3 |
| 27 | 30082A0249 | | WASHER, thrust | 6 |
| 28 | 30156A0162 | | DOWEL, spring | 3 |
| 40 | 30082A0413 | | CASING, main | 1 |
| 41 | 30082A0414 | | ARM, axle (1475mm) | 2 |
| 42 | 30082A0415 | | BREATHER | 1 |
| 43 | 30097A0163 | | PLUG, drain | 2 |
| 44 | 100S04 | | SEAL, bonded | 2 |
| 48 | 30156A0202 | | ANNULUS | 2 |
| 50 | 8S04B | | BOLT | 34 |
| 52 | 30156A0102 | | DOWEL, 8dia x 60mm | 4 |
| 53 | 30082A0418 | | GEAR, sun | 2 |

215 series

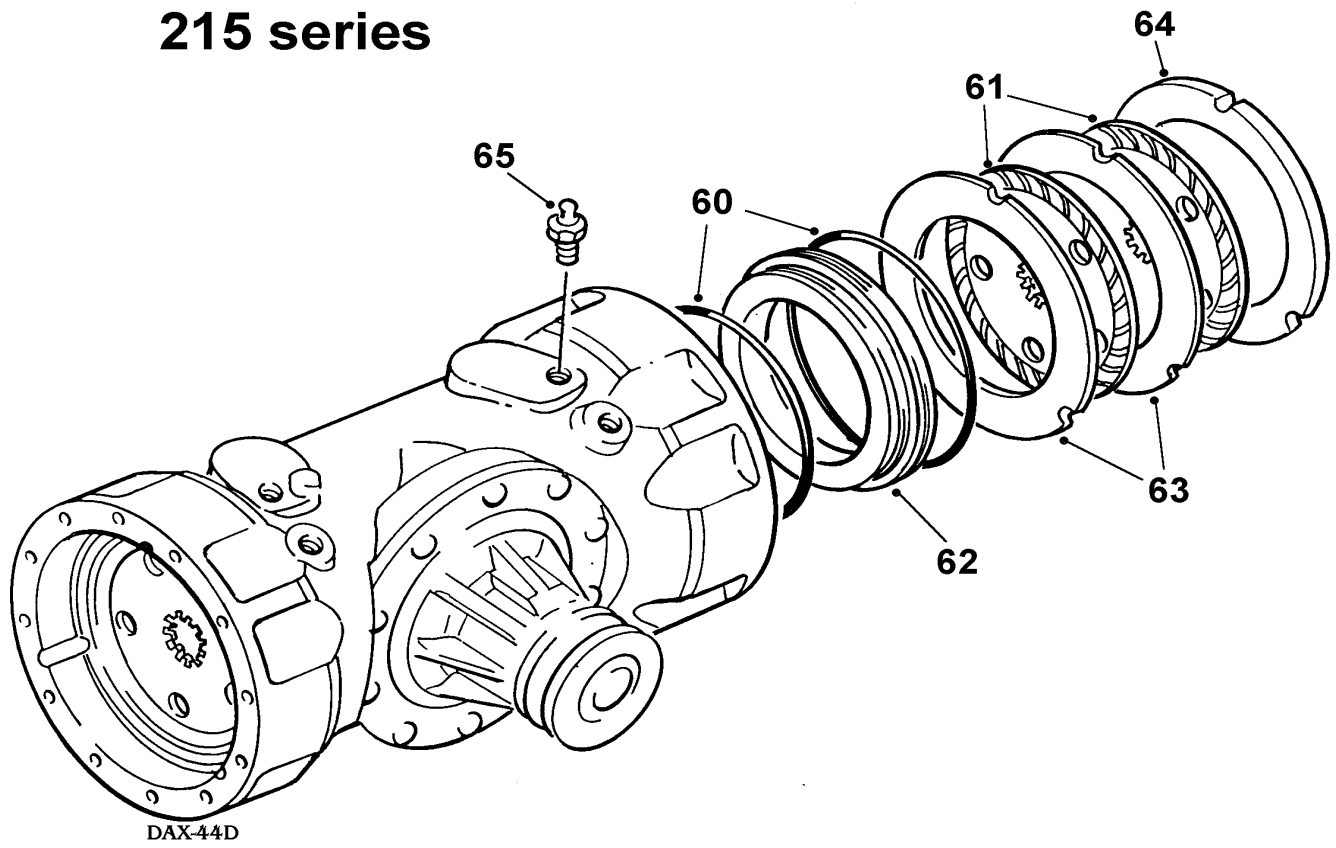


HUB & AXLE SHAFT
Newage 215 series drive axle

B - 2C

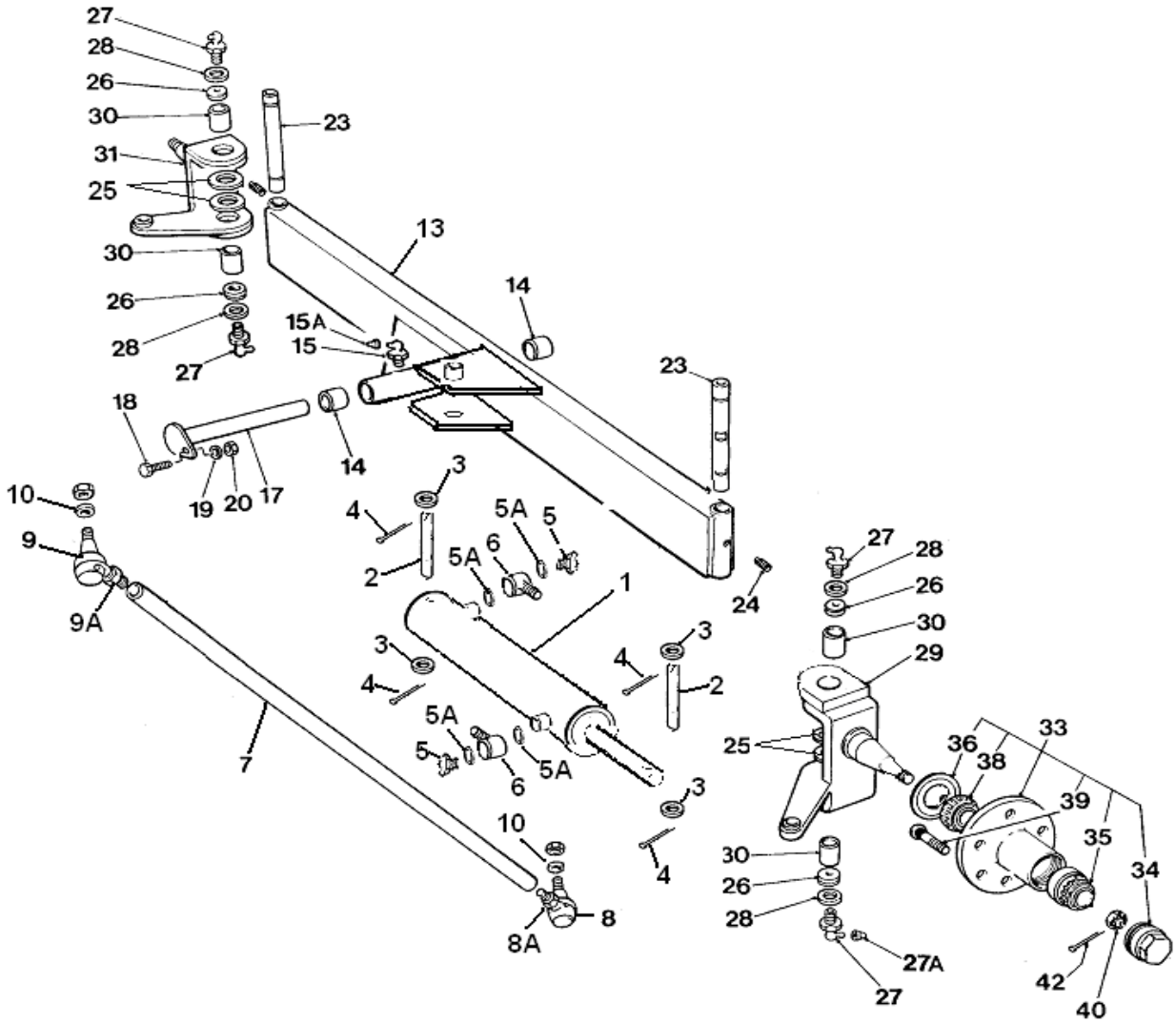
| Item | Part no | Serial no | Description | Qty |
|------|------------|-----------|--|------|
| 29 | 30082A0407 | | HUB | 1 |
| 30 | 30156A0122 | | STUD, wheel | 5 |
| 31 | 30082A0408 | | BEARING | 1 |
| 32 | 30082A0409 | | BEARING | 1 |
| 33 | 30082A0222 | | SPACER | 1 |
| 34 | 30347A0201 | | LOCKWASHER | 1 |
| 35 | 30156A0112 | | DOWEL, spring | 2 |
| 36 | 30082A0410 | | SEAL, oil | 1 |
| 37 | 8S04B | | BOLT | 8 |
| 38 | ..... |  | NUT, wheel (see " <i>Wheels</i> ", page B-1) | .... |
| 39 | 30082A0411 | | LOCKNUT | 1 |
| 47 | 30082A0417 | | SHAFT, axle (1475mm) | 2 |
| 49 | 30082A0422 | | COVER, seal, wheel hub | 2 |

215 series



BRAKES**B - 2D****Newage 215 series drive axle**

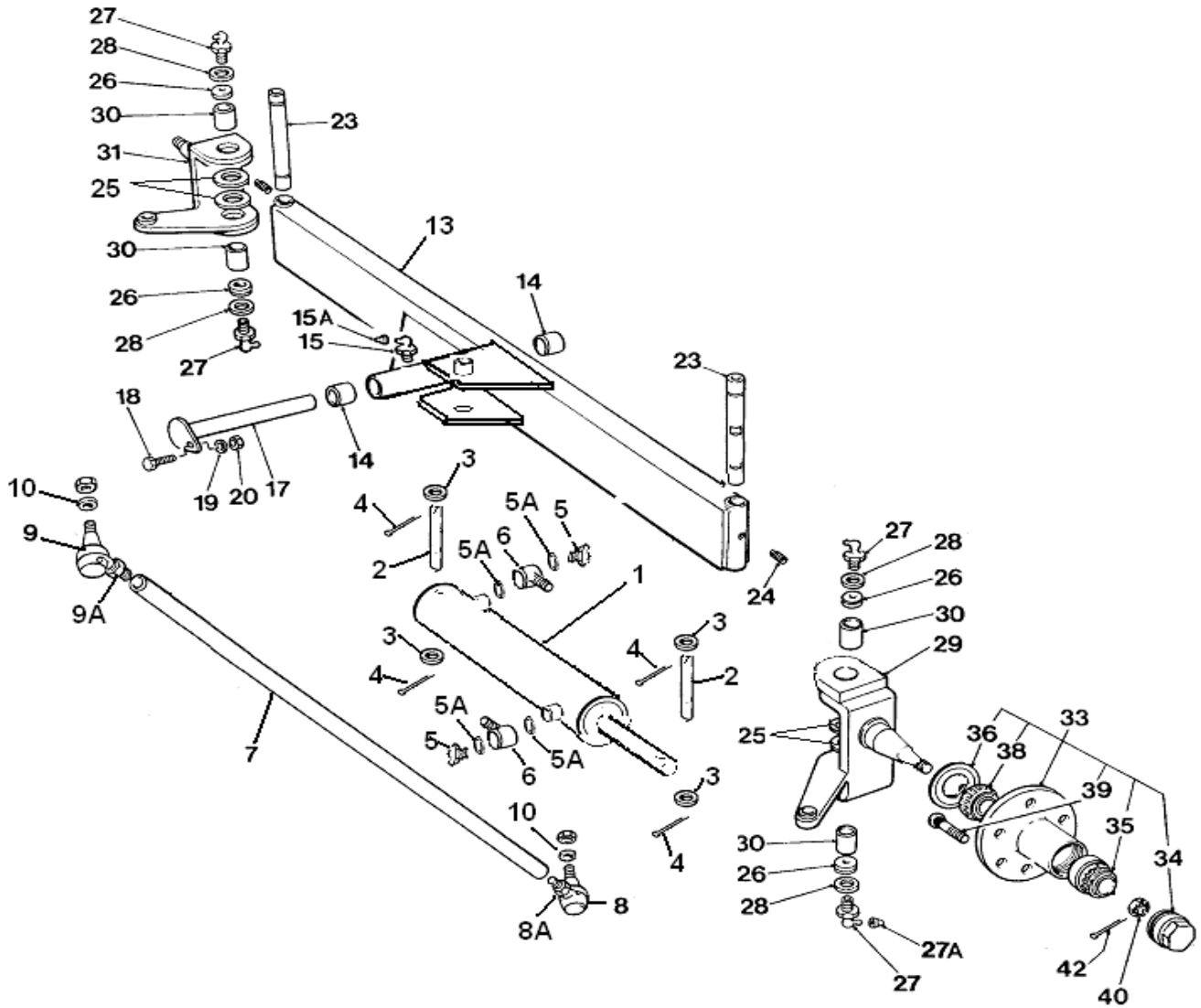
| Item | Part no | Serial no | Description | Qty |
|-------------|----------------|------------------|---|------------|
| 60 | 30156A0108 | | KIT, 'O' ring seals, brake piston | 1 |
| *61 | 30156A0908 | | DISC, brake, sintered | 4 |
| 62 | 30156A0107 | | PISTON, brake | 2 |
| *63 | 30156A0909 | | PLATE, brake, fixed | 4 |
| *64 | 30156A0910 | | SPACER, brake | 2 |
| 65 | 30082A0419 | | VALVE, brake bleeding | 1 |
| | *30156A0911 | | Kit, brake plates, consisting of items marked * | |



STEERING AXLE & STEERING RAM

B - 3

| Item | Part no | Serial no | Description | Qty |
|------|----------|-----------|---|-----|
| 1 | V2005330 | | RAM, steering <i>see page H5</i> | 1 |
| 2 | V2005342 | | PIN, retaining | 2 |
| 3 | 267S08 | | WASHER, flat | 4 |
| 4 | 44S16J | | PIN, split | 4 |
| 5 | 115S03 | | BANJO,bolt | 2 |
| 5A | 100S02 | | SEAL, bonded | 4 |
| 6 | 114S06D | | BANJO, body, straight male | 2 |
| 7 | V2006336 | | TRACK ROD, 11/16" UNF threads | 1 |
| 8 | V2006335 | | BALL JOINT, RH, 11/16" UNF c/w nut | 1 |
| 8A | 95S13 | | NUT THIN, lock RH 11/16" UNF <i>order one 95S13 with each R.H. ball joint</i> | 1 |
| 9 | V2006334 | | BALL JOINT, LH, 11/16" UNF c/w nut | 1 |
| 9A | 272S17 | | NUT THIN, lock LH 11/16" UNF <i>order one 272S13 with each L.H. ball joint</i> | 1 |
| 10 | 267S07 | | WASHER, flat, M12 | 2 |
| 13 | 30298A01 | | AXLE, steering | 1 |
| 14 | 4SHL91 | | BUSH, axle pivot | 2 |
| 15 | 131S02 | | NIPPLE, grease, 90 deg | 1 |
| 15A | 176S01 | | CAP, grease nipple | 1 |
| 17 | 20161A05 | | PIN, axle pivot | 1 |
| 18 | 8S04C | | BOLT | 1 |
| 19 | 267S06 | | WASHER | 1 |
| 20 | 59S03 | | NUT, nylon insert | 1 |
| 23 | L264 | | KING PIN | 2 |
| 24 | 185S05D4 | | SCREW, grub | 2 |
| 25 | C175 | | WASHER, thrust | 4 |
| 26 | C180A | | WASHER, felt | 4 |
| 27 | 131S02 | | NIPPLE, grease, 90 deg | 4 |
| 27A | 176S01 | | CAP, grease nipple | 4 |
| 28 | C180B | | WASHER, flat, special | 4 |
| 29 | V2006325 | | STUB AXLE, R.H. | 1 |
| 30 | C190 | | BUSH, king pin | 4 |
| 31 | V2006324 | | STUB AXLE, L.H. | 1 |
| - | V602679 | | HUB, assembly | 2 |
| 33 | - | | HUB (<i>order V602679 assembly</i>) | 1 |
| 34 | V602676 | | HUB CAP | 1 |

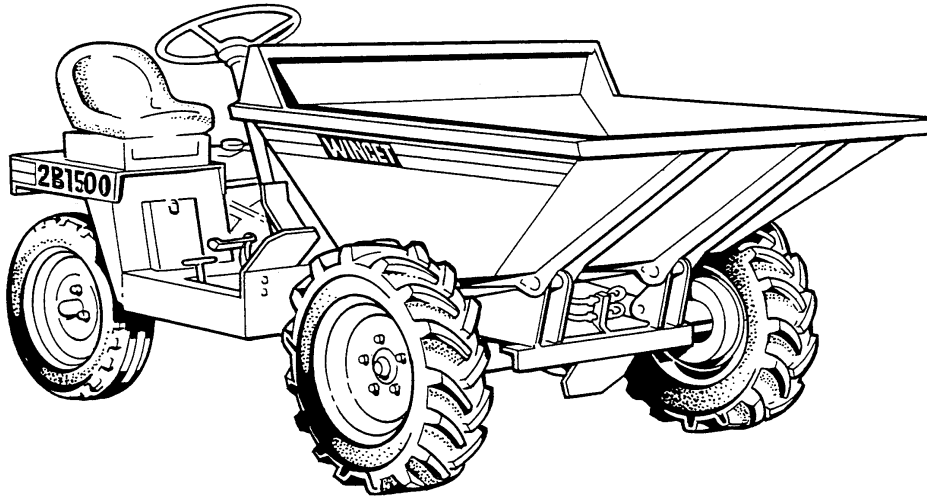


STEERING AXLE & STEERING RAM

B - 3

| Item | Part no | Serial no | Description | Qty |
|------|---------|-----------|---------------------------------|-----|
| 35 | V602666 | | BEARING, hub, outer | 1 |
| 36 | V602668 | | SEAL, oil, hub bearing | 1 |
| 38 | V602667 | | BEARING, hub, inner | 1 |
| 39 | V602677 | | STUD, wheel | 3 |
| 40 | V603755 | | NUT, slotted, 40mm across flats | 1 |
| 42 | 44S04E | | PIN, split | 1 |

2B1500 DUMPER



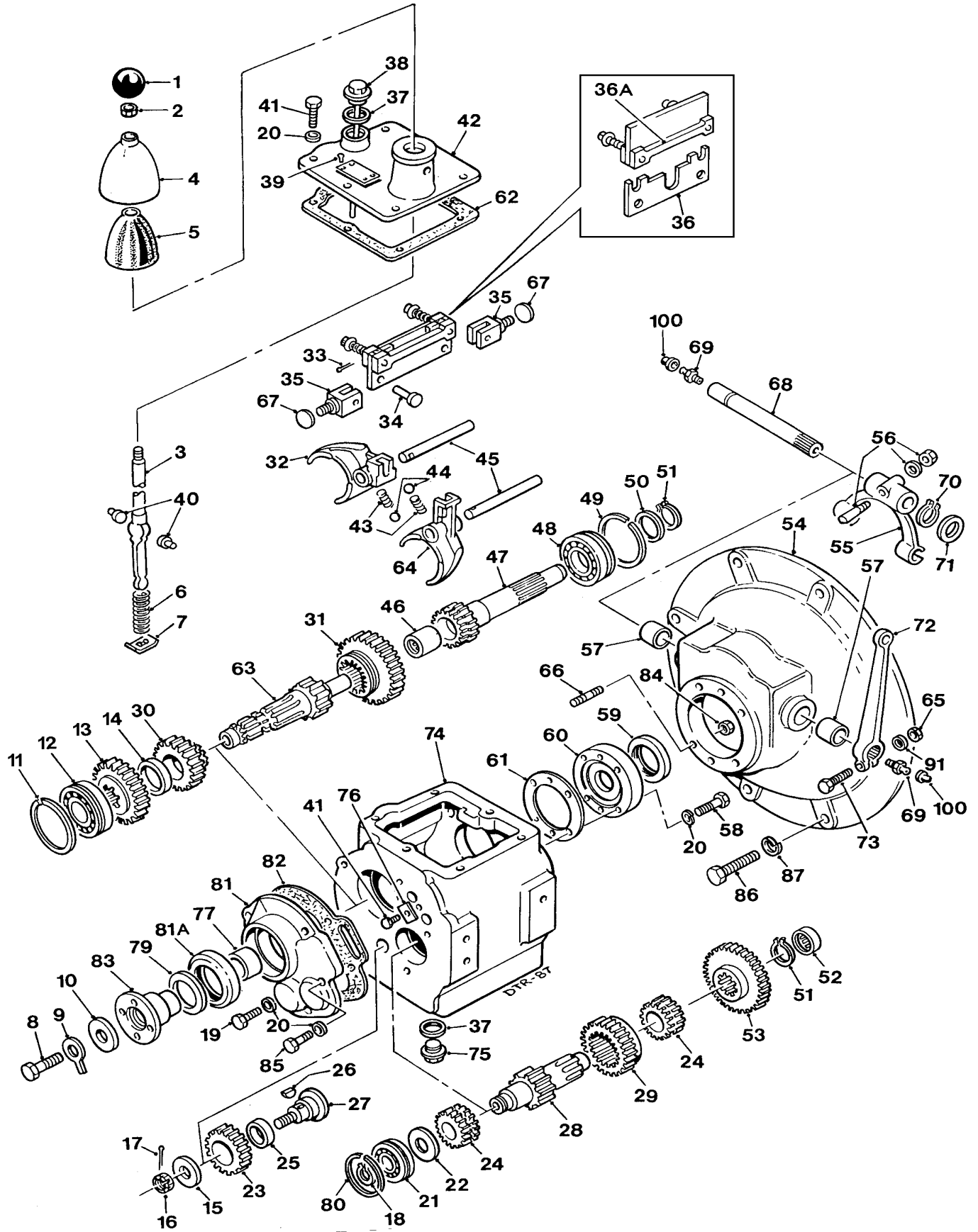
Transmission

GEARBOX, Newage
Used with Newage 215 axle **C - 1**

FLYWHEEL & CLUTCH **C - 2**

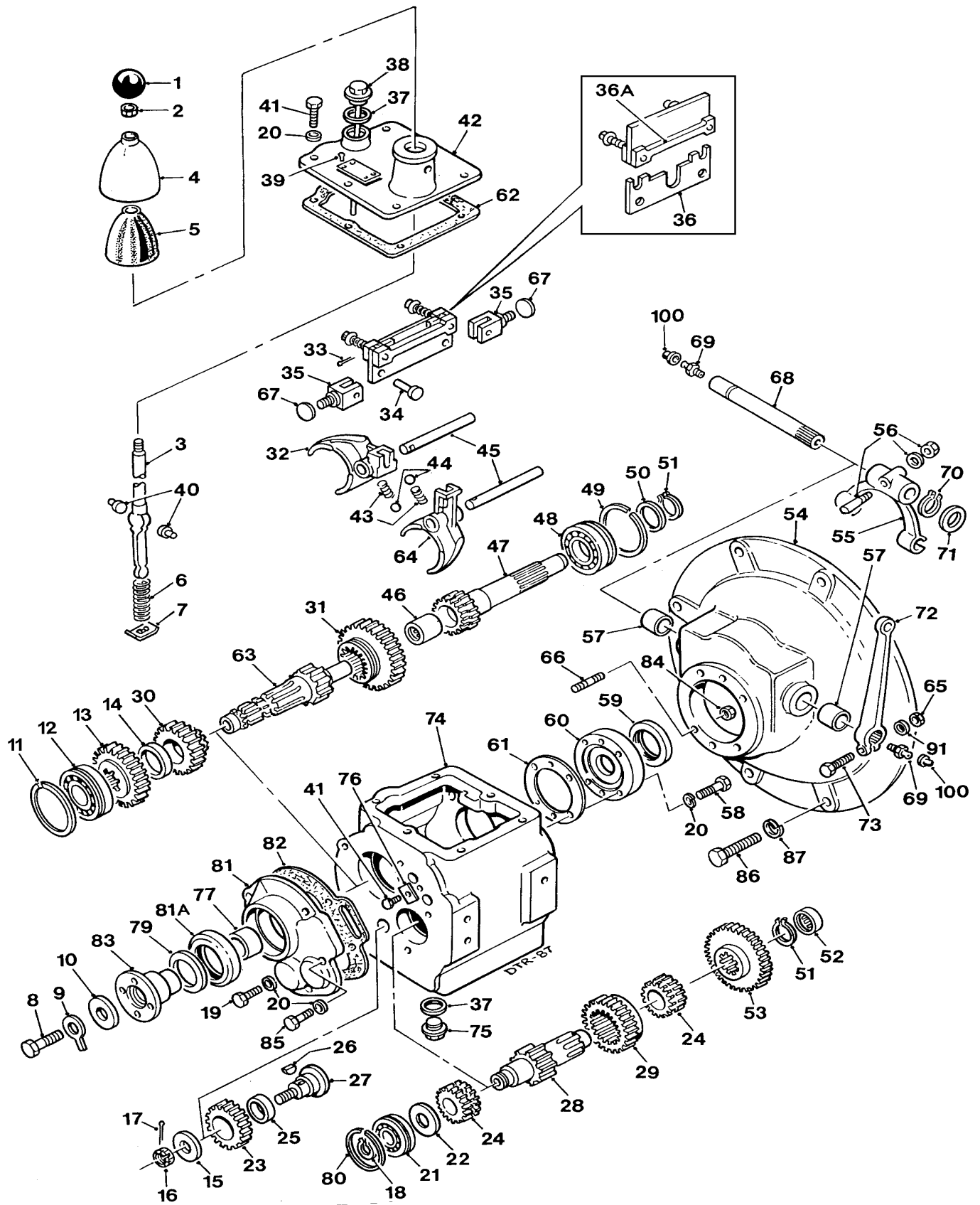
CLUTCH PEDAL **C - 3**

PROPELLER SHAFT **C - 4**



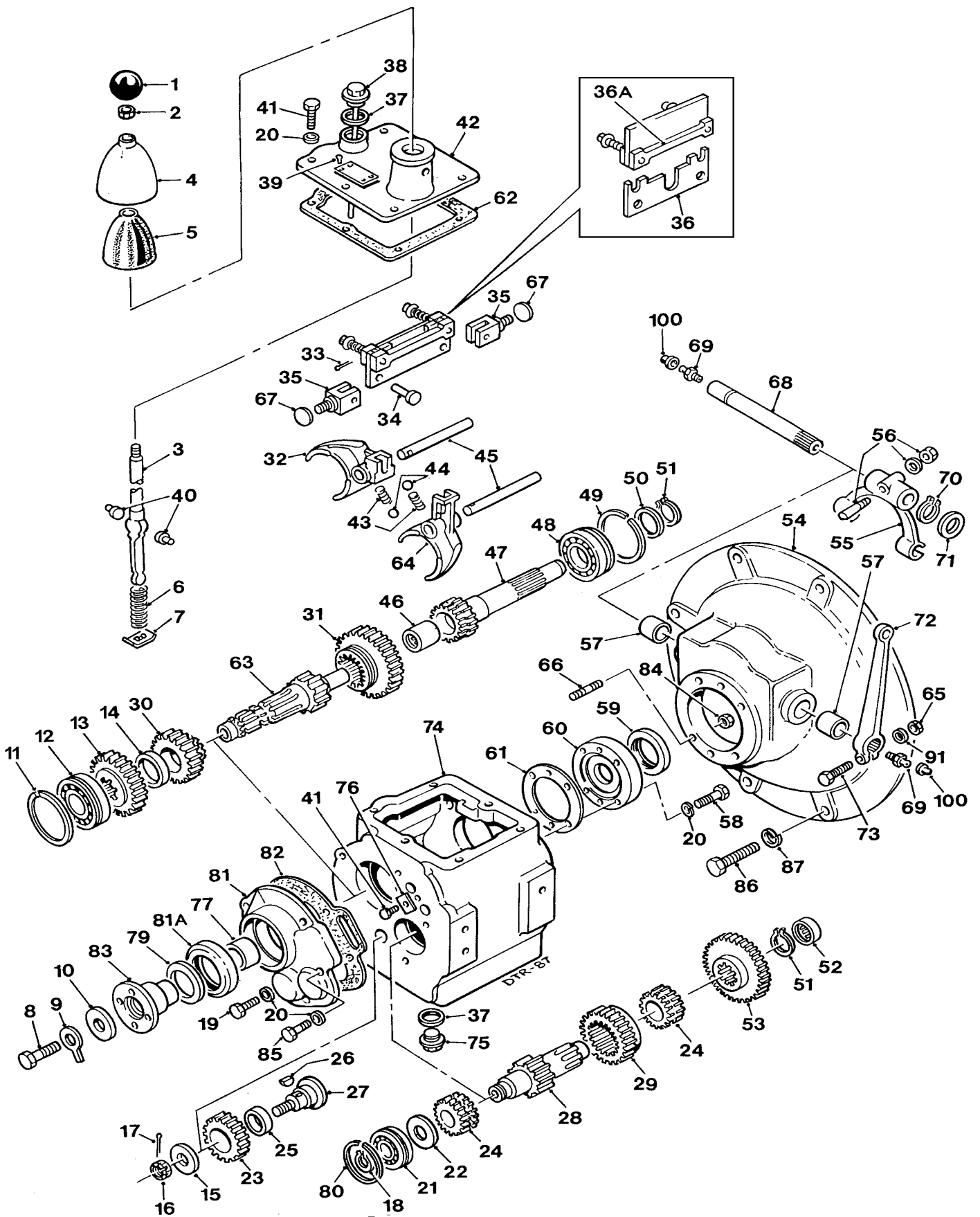
GEARBOX (Used with Newage 215 axles)**C - 1**

| Item | Part no | Serial no | Description | Qty |
|------|------------|-----------|--|-----|
| - | 30101A04 | | GEARBOX, (40M2S322), assembly, | 1 |
| 1 | 30101A0201 | | KNOB, gear lever | 1 |
| 2 | 95S03 | | NUT, locking | 1 |
| 3 | 20097A05 | | LEVER, gear | 1 |
| 4 | 30101A0203 | | CAP, gear lever | 1 |
| 5 | 30101A0204 | | GAITER, gear lever | 1 |
| 6 | 30101A0205 | | SPRING, gear lever | 1 |
| 7 | 30101A0206 | | PLATE, gear lever retaining | 1 |
| 8 | 28S05E | | BOLT | 1 |
| 9 | 30101A0207 | | WASHER, tab | 1 |
| 10 | 30101A0208 | | WASHER | 1 |
| 11 | 30101A0209 | | RING, snap | 1 |
| 12 | 88S06E | | BEARING, mainshaft, rear | 1 |
| 13 | 30101A0211 | | GEAR, output | 1 |
| 14 | 30101A0212 | | SPACER, output gear | 1 |
| 15 | 30101A0213 | | WASHER, reverse pinion shaft | 1 |
| 16 | 102S04 | | NUT, slotted | 1 |
| 17 | 44S02C | | PIN, split | 1 |
| 18 | 30218A0206 | | CIRCLIP | 1 |
| 19 | 28S01D | | BOLT | 3 |
| 20 | 30039A0169 | | WASHER, nylon | 9 |
| 21 | 88S04E | | BEARING, layshaft | 1 |
| 22 | 30101A0217 | | SPACER, bearing | 1 |
| 23 | 30101A0218 | | PINION, reverse | 2 |
| 24 | 30101A0219 | | GEAR, reverse | 2 |
| 25 | 30101A0220 | | BUSH, reverse pinion | 1 |
| 26 | 30101A0221 | | KEY | 1 |
| 27 | 30101A0222 | | SHAFT, reverse pinion | 1 |
| 28 | 30101A0280 | 0155335 / | # LAYSHAFT (Metric) | 1 |
| 29 | 30101A0224 | | GEAR, 2nd speed, sliding | 1 |
| 30 | 30101A0225 | | GEAR, 2nd speed | 1 |
| 31 | 30101A0226 | | GEAR, 1st speed | 1 |
| 32 | 30101A0227 | | FORK, 2nd & 3rd selector | 1 |
| 33 | 44S01C | | PIN, split | 2 |
| 34 | 30101A0228 | | PIN, clevis | 2 |
| 35 | 30101A0229 | | CLEVIS, interlock plate | 2 |
| 36 | 30101A0276 | | PLATE, interlock | 1 |
| 36A | 30101A0275 | | SPRUNG INTERLOCK, c/w installation tool | 1 |
| 37 | 42S05 | | WASHER, sealing | 2 |
| 38 | 30218A0248 | | DIPSTICK, (flange to bottom =6") | 1 |
| 39 | — | | SCREW, drive (for serial no. plate) | 4 |



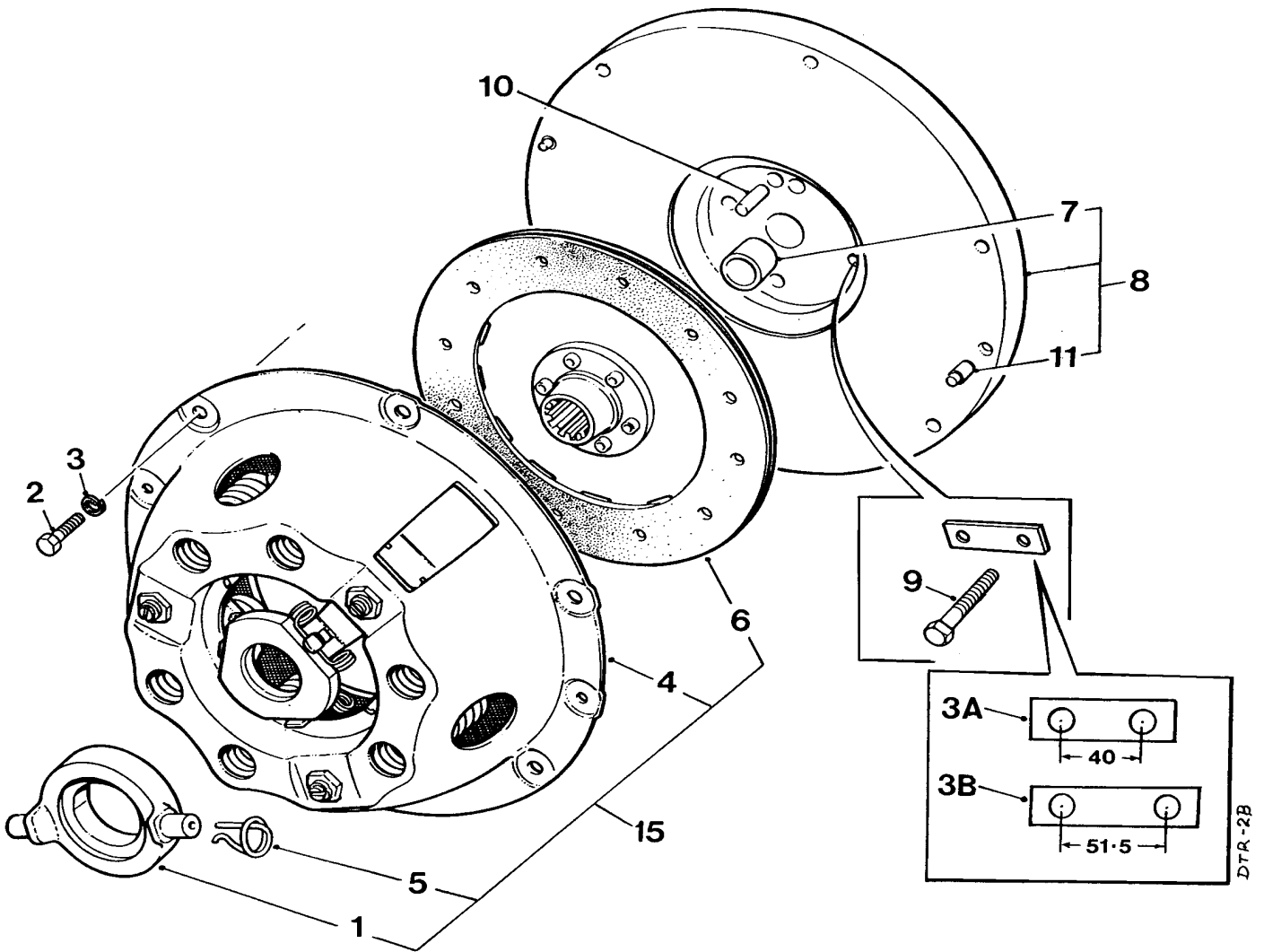
GEARBOX (Used with Newage 215 axles)**C - 1**

| Item | Part no | Serial no | Description | Qty |
|------|------------|-----------|------------------------------------|-----|
| 40 | 30101A0234 | | PAD, gear lever | 2 |
| 41 | 28S01C | | BOLT | 7 |
| 42 | 30101A0235 | | COVER, top | 1 |
| 43 | 30097A0185 | | SPRING, detent | 2 |
| 44 | 30097A0199 | | BALL, detent | 2 |
| 45 | 30101A0237 | | SHAFT, selector | 2 |
| 46 | 30101A0238 | | BEARING, needle (part of item 47) | 1 |
| 47 | 30101A0239 | | SHAFT, primary, assy (with item46) | 1 |
| 48 | 88S16F | | BEARING, input | 1 |
| 49 | 30101A0241 | | RING, snap | 1 |
| 50 | 30101A0242 | | SPACER, bearing | 1 |
| 51 | 30101A0243 | | CIRCLIP | 2 |
| 52 | 30101A0279 | 0155335 / | BEARING (Metric), layshaft | 1 |
| 53 | 30101A0245 | | GEAR, 1st reduction | 1 |
| 54 | 30101A0246 | | HOUSING, clutch | 1 |
| 55 | 30097A0110 | | FORK, clutch release | 1 |
| 56 | 30097A0111 | | COTTER, NUT & WASHER | 1 |
| 57 | 30097A0114 | | BUSH, cross shaft | 2 |
| 58 | 6S01A | | BOLT | 4 |
| 59 | 30101A0247 | | SEAL, (part of item 60) | 1 |
| 60 | 30101A0248 | | COVER, front assy. (with item 59) | 1 |
| 61 | 30101A0249 | | GASKET, front cover | 1 |
| 62 | 30101A0250 | | GASKET, top cover | 1 |
| 63 | 30101A0251 | | OUTPUT SHAFT | 1 |
| 64 | 30101A0252 | | FORK, selector, 1st & reverse | 1 |
| 65 | 9S01 | | NUT | 1 |
| 66 | 30101A0253 | | STUD | 6 |
| 67 | 30101A0254 | | PLUG | 3 |
| 68 | 30101A0255 | | SHAFT, clutch cross | 1 |
| 69 | 131S06 | | NIPPLE, grease | 2 |
| 70 | 30101A0256 | | CIRCLIP | 1 |
| 71 | 30097A0133 | | WASHER, cross shaft | 1 |
| 72 | 30097A0109 | | LEVER, clutch release | 1 |
| 73 | 6S01C | | BOLT | 1 |
| 74 | 30101A0281 | 0155335 / | CASE, gearbox | 1 |
| 75 | 30097A0163 | | PLUG, drain | 1 |
| 76 | 30101A0259 | | STRIP, selector locking | 1 |
| 77 | 30101A0260 | | SPACER | 1 |
| 79 | 30101A0265 | | SHIELD, dust | 1 |
| 80 | 30101A0261 | | RING, snap | 1 |
| 81 | 30101A0262 | | COVER, output, assembly | 1 |
| 81A | 89S02 | | SEAL, oil | 1 |
| 82 | 30101A0263 | | GASKET, output cover | 1 |



GEARBOX (Used with Newage 215 axles)**C - 1**

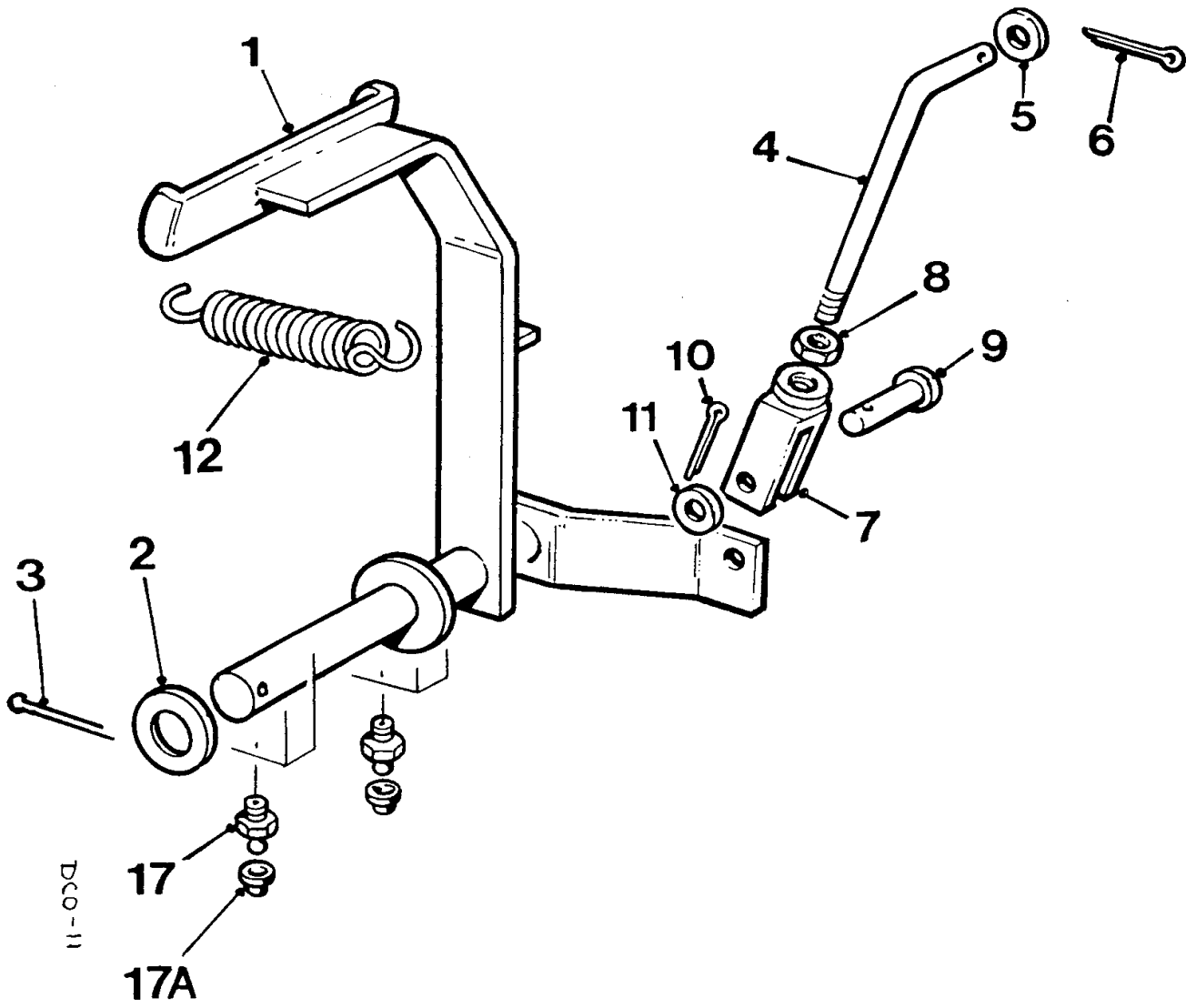
| Item | Part no | Serial no | Description | Qty |
|---|----------------|------------------|---------------------------|------------|
| 83 | 30218A0203 | | COUPLING | 1 |
| 84 | 107S03 | | NUT | 6 |
| 85 | 6S01B | | BOLT | 2 |
| 86 | 66S03A | | SCREW, set, Imperial, UNC | 8 |
| 86 | 11S04C | | SCREW, set, Metric | 8 |
| 87 | 41S05 | | WASHER, spring, Imperial | 8 |
| 87 | 17S05 | | WASHER, spring, Metric | 8 |
| <i>Confirm threads in Engine Adaptor Ring to identify correct set screws</i> | | | | |
| 91 | 67S01 | | WASHER, shake proof | 1 |
| 100 | 176S01 | | CAP, grease nipple | 2 |



FLYWHEEL & CLUTCH

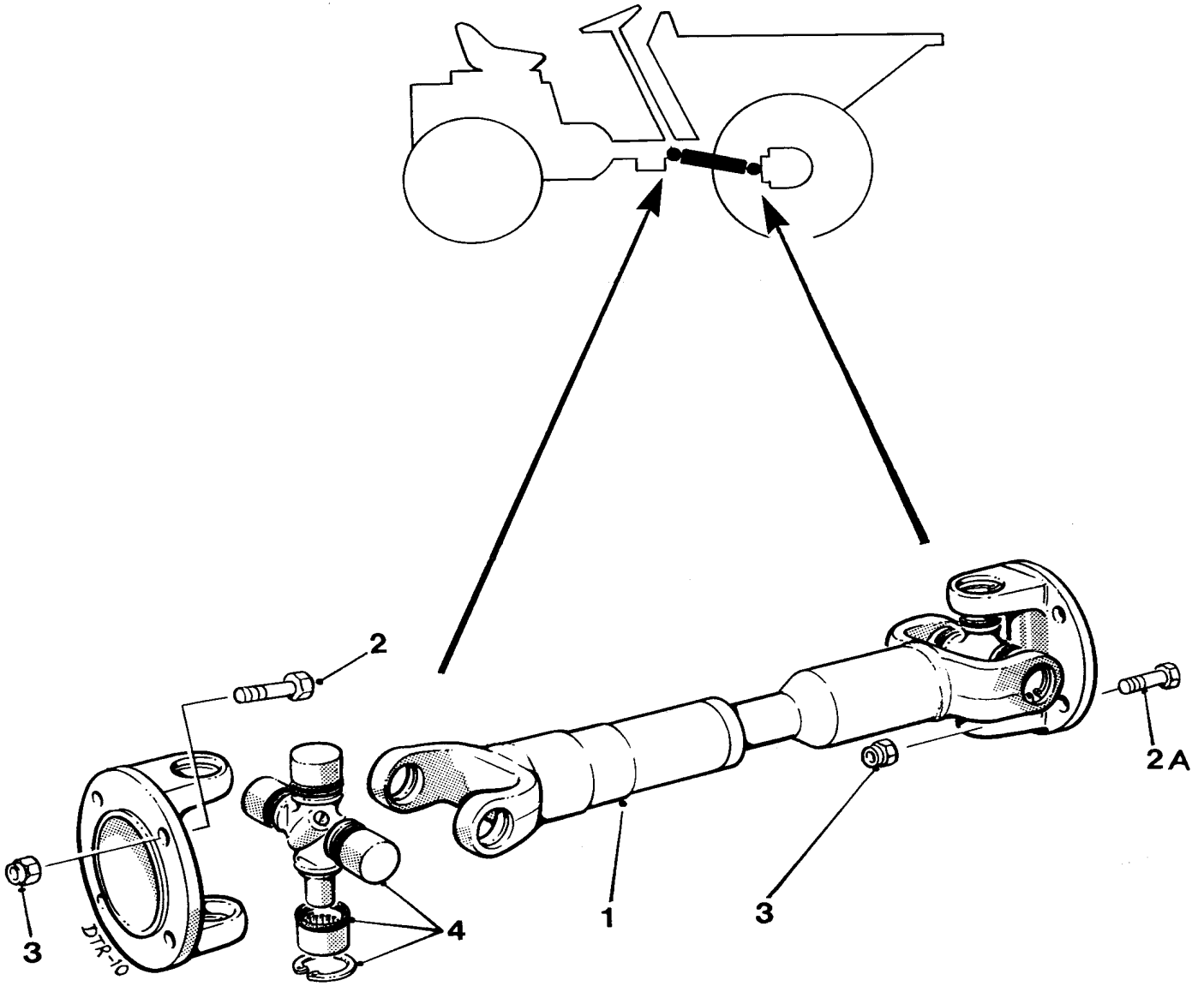
C - 2

| Item | Part no | Serial no | Description | Qty |
|------|------------|-----------|--|-----|
| 1 | 10579A01 | | BEARING, release | 1 |
| 2 | 28S02D | | SCREW | 6 |
| 3 | 41S04 | | WASHER, spring | 6 |
| 3A | 10531A02 | | WASHER, locking, 60mm long, Lister-Petter TR1 engines | 1 |
| 3B | 10531A03 | | WASHER, locking, 70mm long, Lister-Petter TR1 engines | 1 |
| 4 | 10597A01 | | COVER | 1 |
| 5 | 10579A0101 | | SPRING, retaining, release bearing | 2 |
| 6 | 10598A02 | | PLATE, drive, 8" | 1 |
| 7 | 10580A0101 | | BUSH | 1 |
| 8 | 10580A02 | | FLYWHEEL, 8" | 1 |
| 9 | 8S03B | | BOLT, Lister-Petter TR1 engines | 4 |
| 10 | C321 | | DOWEL | 1 |
| 11 | 10580A0102 | | DOWEL | 2 |
| 15 | 10948A02 | | KIT, Clutch repair <i>Consists of items 1,4,5 & 6</i> | 1 |



CLUTCH PEDAL**C - 3**

| Item | Part no | Serial no | Description | Qty |
|-------------|----------------|------------------|--------------------|------------|
| 1 | 20096A07 | | PEDAL, clutch | 1 |
| 2 | 10S08 | | WASHER, flat | 1 |
| 3 | 44S05E | | PIN, split | 1 |
| 4 | 10481A03 | | ROD, clutch | 1 |
| 5 | 10S03 | | WASHER, flat | 1 |
| 6 | 44S03C | | PIN, split | 1 |
| 7 | C174J | | CLEVIS | 1 |
| 8 | 95S03 | | NUT | 1 |
| 9 | 10650A18 | | PIN, clevis | 1 |
| 10 | 44S02C | | PIN, split | 1 |
| 11 | 10S03 | | WASHER, flat | 1 |
| 12 | C173B | | SPRING, return | 1 |
| 17 | 131S01 | | NIPPLE, grease | 2 |
| 17A | 176S01 | | CAP, grease nipple | 2 |

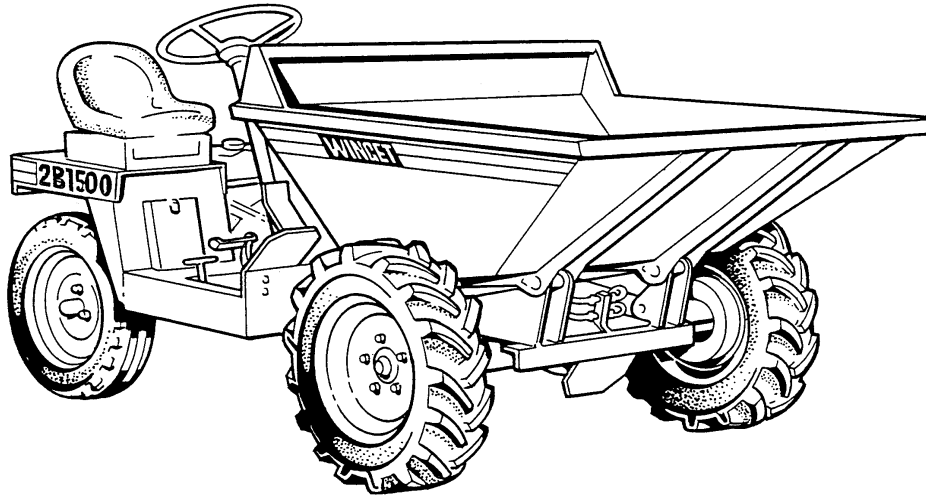


PROPELLER SHAFT

C - 4

| Item | Part no | Serial no | Description | Qty |
|-------|----------|-----------|---|-----|
| 1 | 20088A01 | | PROPELLER SHAFT | 1 |
| ..... | 176S01 | | CAP, grease nipple (<i>not illustrated</i>) | 3 |
| 2 | 6S03C | | BOLT, gearbox end, 1 1/2" long | 4 |
| 2A | 6S03A | | BOLT, axle end, 1 1/8" long | 4 |
| 3 | 107S14 | | NUT, 3/8" nylon insert, full | 8 |
| 4 | 10568A01 | | KIT, U/J, repair | AR |
| ..... | 131S06 | | NIPPLE, grease (<i>not illustrated</i>) | 3 |

2B1500 DUMPER



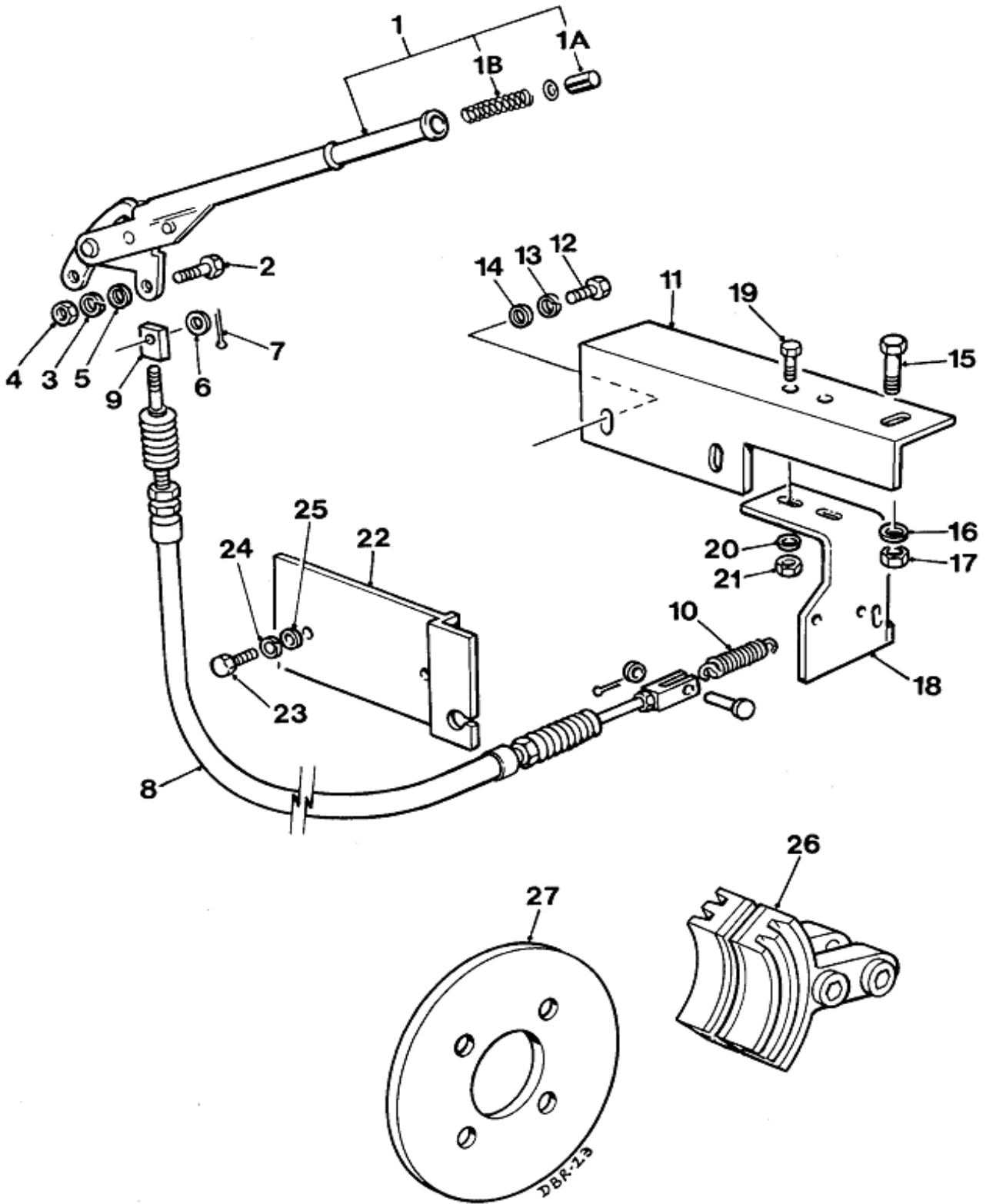
Brakes

HANDBRAKE, CABLE & CALIPER **D - 1**

CALIPER **D - 2**

BRAKE PEDAL **D - 3**

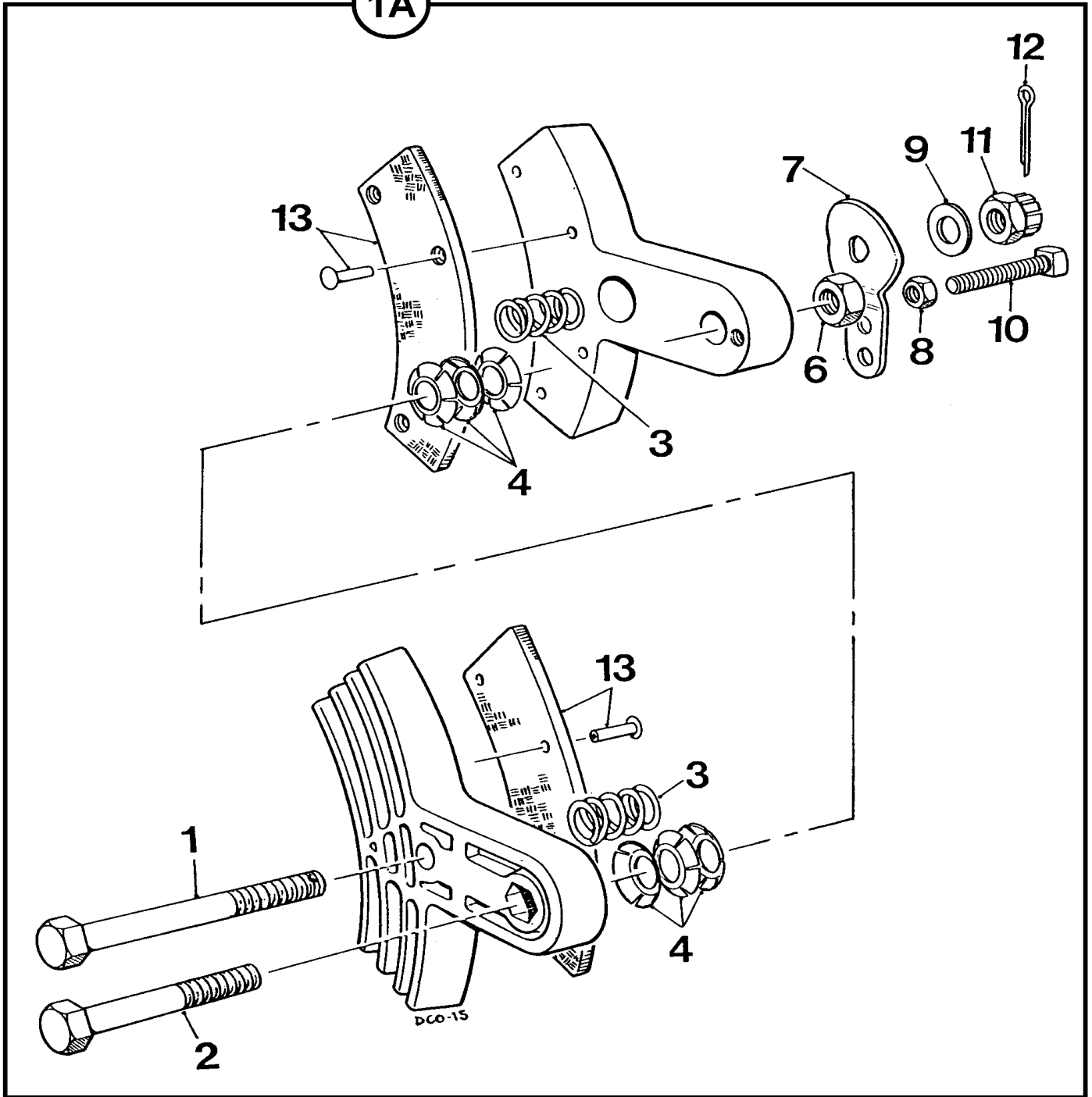
BRAKE HOSES & FITTINGS **D - 4**



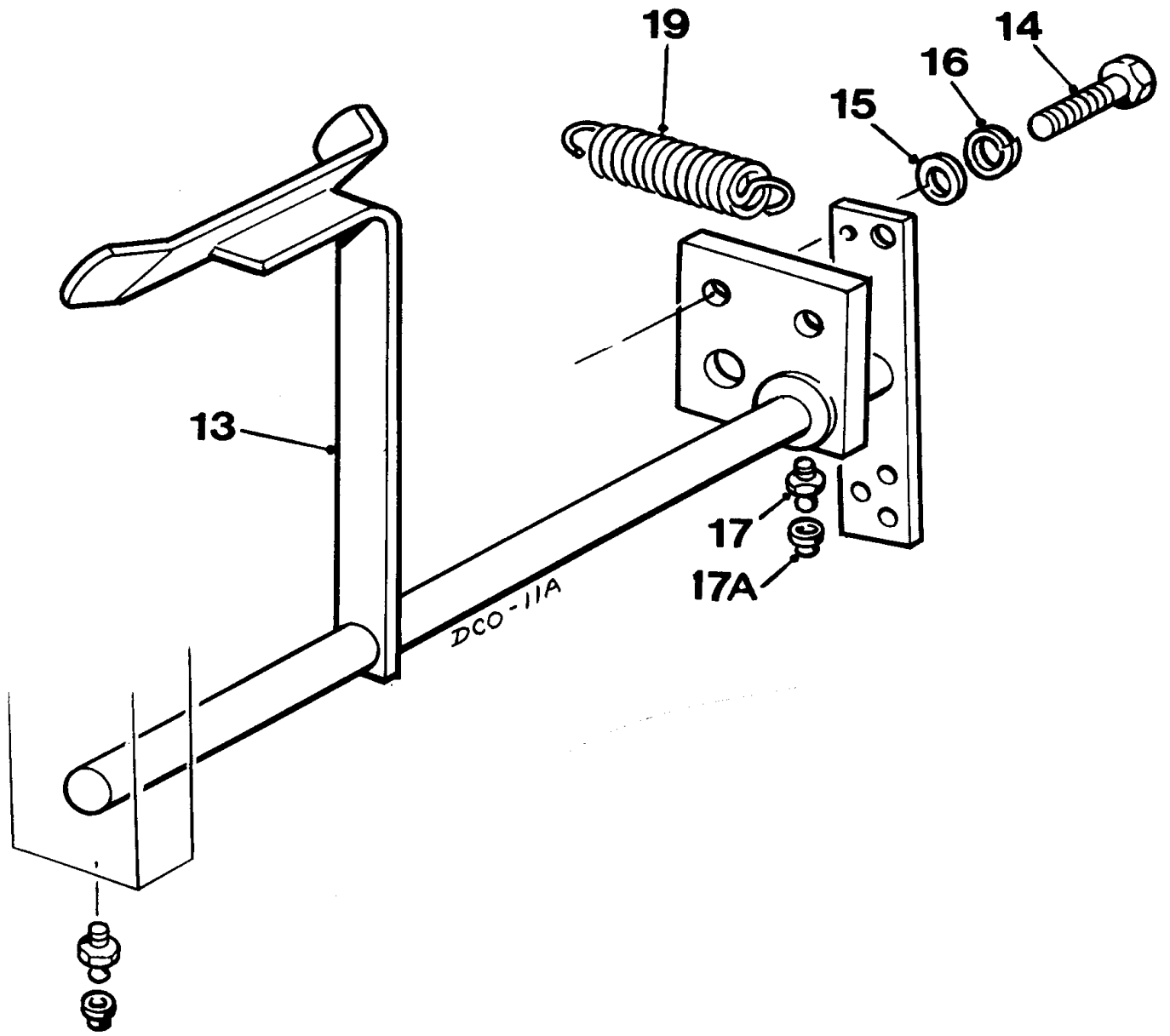
HANDBRAKE, (Newage axles only)**D - 1**

| Item | Part no | Serial no | Description | Qty |
|-------------|----------------|------------------|---------------------------|------------|
| 1 | 20208A01 | | LEVER, handbrake assembly | 1 |
| 1A | 20208A0101 | | BUTTON, handbrake | 1 |
| 1B | 20208A0102 | | SPRING, handbrake | 1 |
| 2 | 11S04C | | SCREW | 2 |
| 3 | 17S05 | | WASHER, spring | 2 |
| 4 | 7S04 | | NUT | 2 |
| 5 | 267S06 | | WASHER, flat | 2 |
| 6 | 10S03 | | WASHER, flat | 1 |
| 7 | 44S02B | | PIN, split | 1 |
| 8 | 20273A02 | | CABLE, handbrake | 1 |
| 9 | L309 | | BLOCK | 1 |
| 10 | C173D | | SPRING, return | 1 |
| 11 | 20282A11 | | BRACKET, gearbox mounting | 1 |
| 12 | 28S03D | | SCREW, set | 2 |
| 13 | 41S05 | | WASHER, spring | 4 |
| 14 | 10S03 | | WASHER, flat | 2 |
| 15 | 8S05D | | BOLT | 1 |
| 16 | 267S07 | | WASHER, flat | 1 |
| 17 | 59S04 | | NUT, nylon insert | 1 |
| 18 | 20282A07 | | BRACKET, caliper mounting | 1 |
| 19 | 11S03C | | SCREW, set | 2 |
| 20 | 267S05 | | WASHER, flat | 2 |
| 21 | 59S12 | | NUT, nylon insert | 2 |
| 22 | 20282A08 | | BRACKET | 1 |
| 23 | 28S03D | | SCREW, set | 2 |
| 24 | 41S05 | | WASHER, spring | 2 |
| 25 | 10S03 | | WASHER, flat | 2 |
| 26 | 10578A01 | | CALIPER, disc brake | 1 |
| 27 | 10385A02 | | DISC, handbrake | 1 |

1A

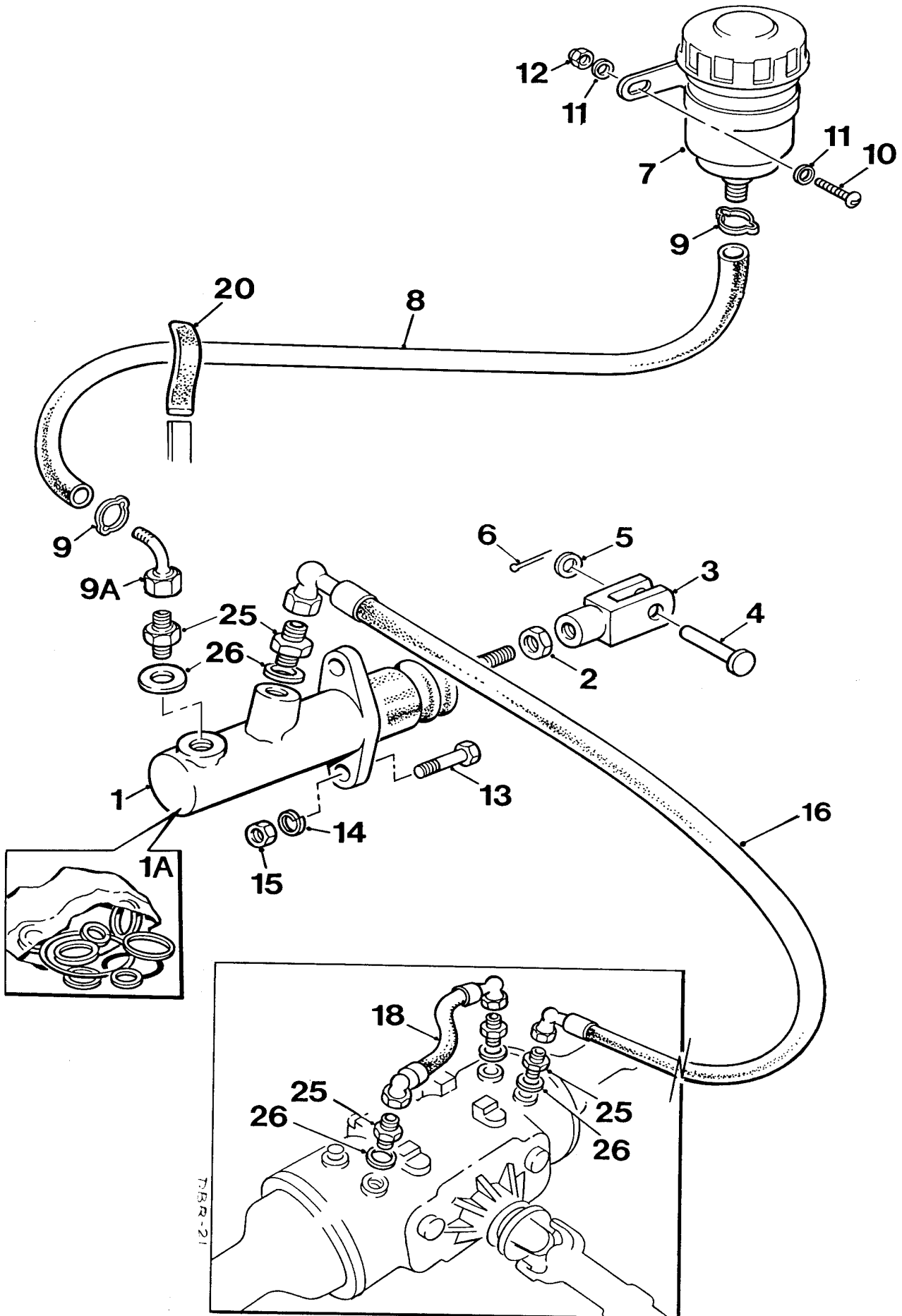


| Item | Part no | Serial no | Description | Qty |
|-----------------------|------------|-----------|--|-----|
| ALLOY CALIPERS | | | | |
| 1A | 10578A01 | | CALIPER, one pair, assembly | 1 |
| 1 | 11116 | | SCREW, with hole for pin, item 12 | 1 |
| 2 | 28S02P | | SCREW | 1 |
| 3 | 10578A0101 | | SPRING, centring | 4 |
| 4 | | | TENSION WASHER (obsolete) <i>use item 3 above</i> | |
| 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 |
| STEEL CALIPERS | | | | |
| 1A | 10578A01 | | CALIPER, one pair, assembly | 1 |
| 1 | 8S03M | | BOLT | 1 |
| 2 | 8S03J | | BOLT | 1 |
| 3 | 10578A0101 | | SPRING, centring | 4 |
| 6 | 59S12 | | NUT, nyloc | 1 |
| 7 | 10578A0104 | | CAM | 1 |
| 8 | 7S02 | | NUT | 1 |
| 9 | 10578A0105 | | WASHER | 1 |
| 10 | 11S02H | | SCREW, set | 1 |
| 11 | 59S12 | | NUT, nyloc | 1 |
| 13 | 1072A4 | | PAD c/w rivets | 2 |



BRAKE PEDAL**D - 3**

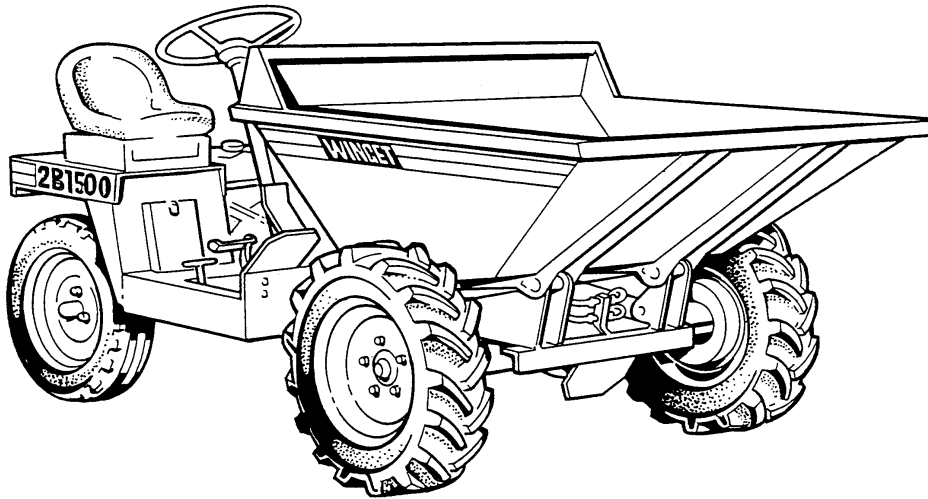
| Item | Part no | Serial no | Description | Qty |
|-------------|----------------|------------------|--------------------------|------------|
| 13 | 20232A02 | | PEDAL, brake | 1 |
| 14 | 8S04C | | BOLT | 2 |
| 15 | 267S06 | | WASHER, flat | 2 |
| 16 | 17S05 | | WASHER, spring | 2 |
| 17 | 131S01 | | NIPPLE, grease, threaded | 2 |
| 17A | 176S01 | | CAP, grease nipple | 2 |
| 19 | C173B | | SPRING | 1 |



BRAKE HOSES & FITTINGS**D - 4**

| Item | Part no | Serial no | Description | Qty |
|------|-----------|-----------|---|-----|
| 1 | 20102A02 | | MASTER CYL. M10 rod, Girling | 1 |
| 1A | 10570A01 | | REPAIR KIT, m/cyl. Girling | 1 |
| 2 | 7S04 | | NUT, 10mm | 1 |
| 3 | V2004648 | | CLEVIS, 10mm | 1 |
| 4 | 10650A18 | | PIN, clevis | 1 |
| 5 | 10S03 | | WASHER, flat | 1 |
| 6 | 44S02C | | PIN, split | 1 |
| 7 | V2003030 | | RESERVOIR c/w clip | 1 |
| 8 | V2002991 | | HOSE, (res.to m/cyl.) <i>order by meter</i> | |
| 9 | V2003029 | | CLIP, hose | 2 |
| 9A | 129S01A | | ADAPTOR, elbow 90 deg. | 1 |
| 10 | 82S03E | | SCREW, set | 2 |
| 11 | 10S73 | | WASHER, flat | 4 |
| 12 | 85S01 | | NUT, "Nyloc" | 2 |
| 13 | 8S03C | | BOLT | 2 |
| 14 | 17S04 | | WASHER, spring | 2 |
| 15 | 7S03 | | NUT | 2 |
| 16 | 53S01P | | HOSE, brake (master cylinder to axle) | 1 |
| 18 | 53S01W | | HOSE, brake, (axle bridge) | 1 |
| 20 | 208143000 | | SLEEVE, P.V.C., black | 2 |
| 25 | V2003515 | | ADAPTOR, male/male | 5 |
| 26 | 298S03 | | SEAL, bonded | 5 |

2B1500 DUMPER



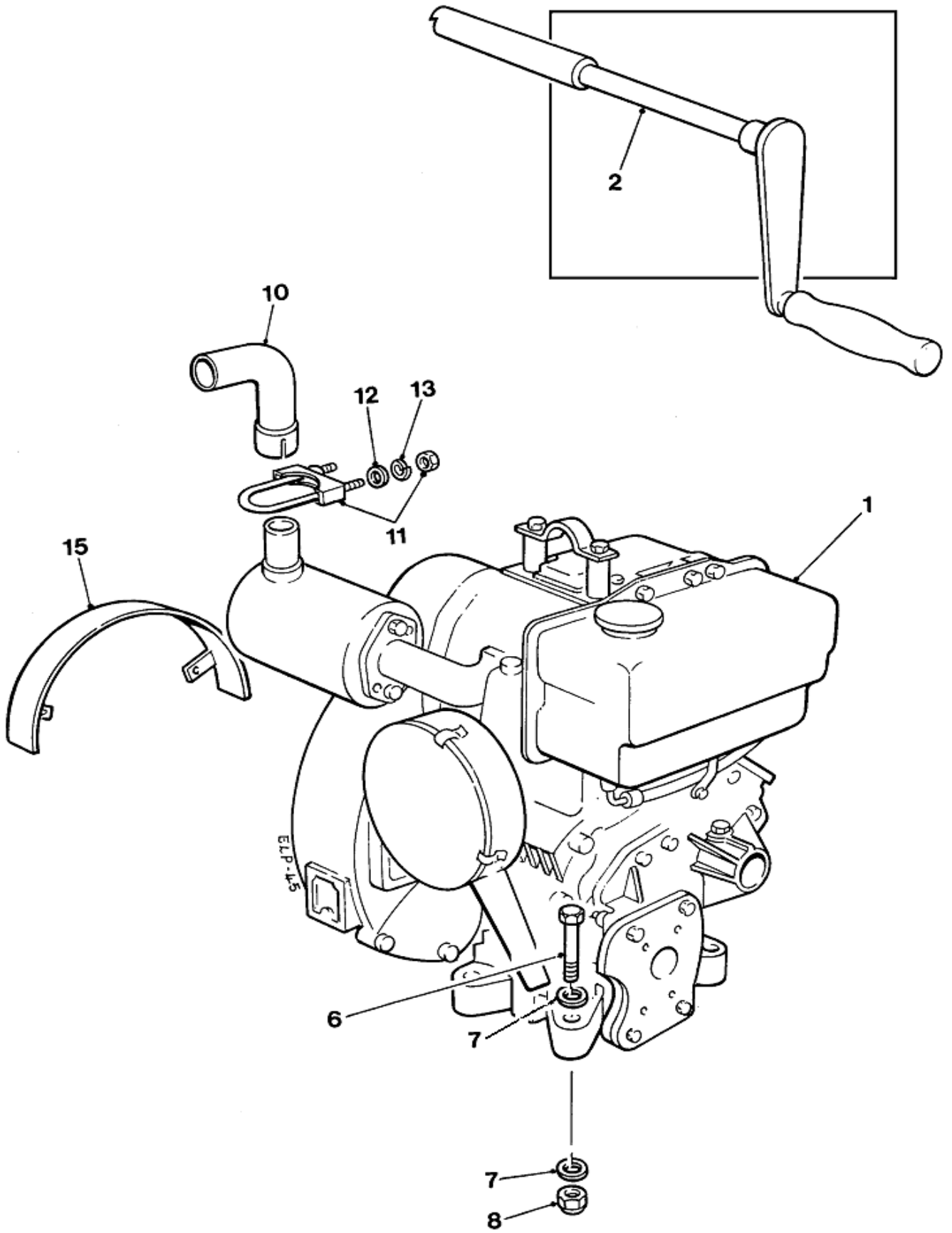
Engine & Controls

LISTER-PETTER TR1 ENGINE

E - 1

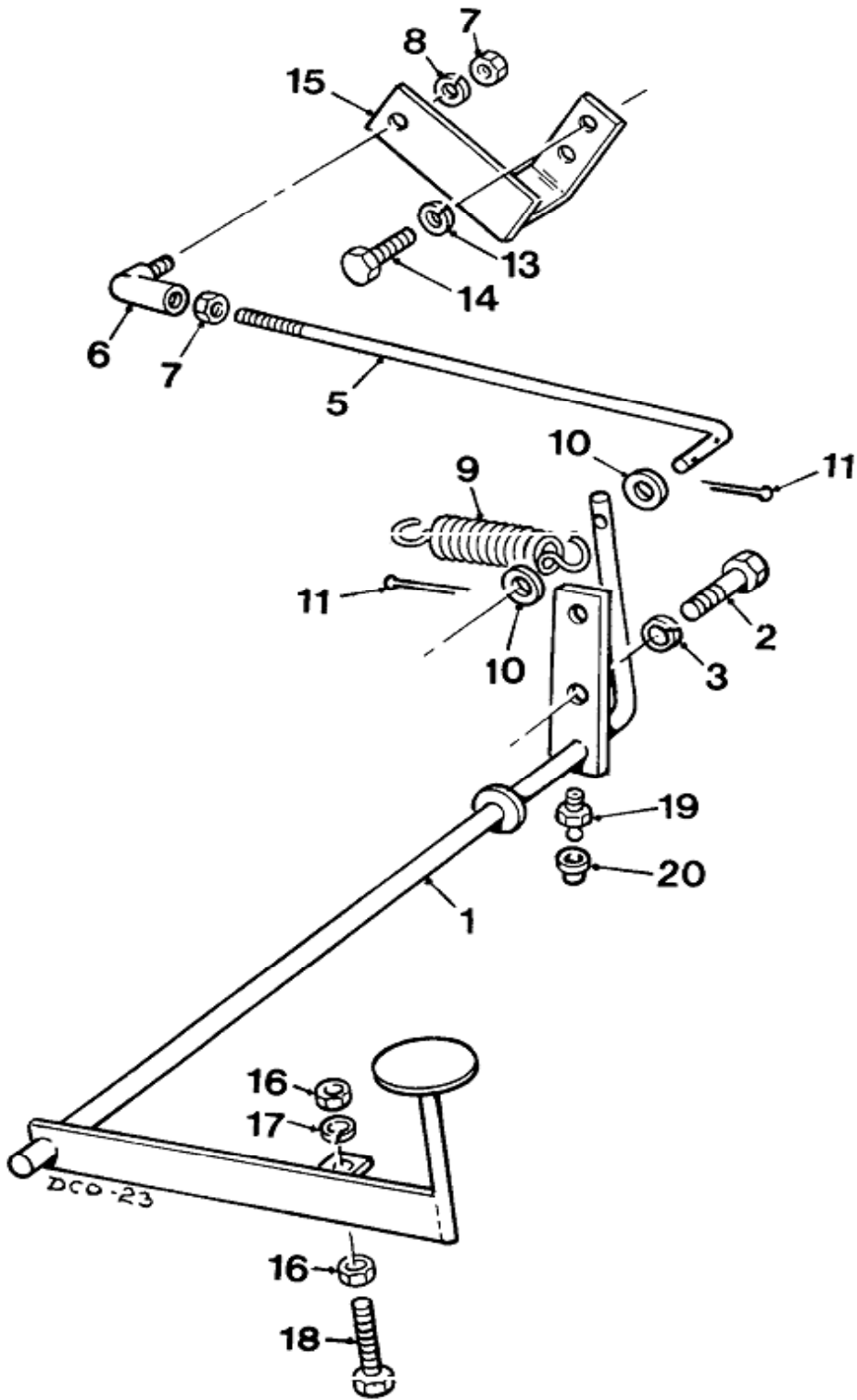
ACCELERATOR PEDAL & LINKAGE

E - 2



ENGINE, LISTER PETTER TR1**E - 1**

| Item | Part no | Serial no | Description | Qty |
|-------------|----------------|------------------|--|------------|
| 1 | V2000759 | | Engine, TR1, hand start (<i>hydraulic pump drive</i>) | 1 |
| 1 | V2000760 | | Engine, TR1, electric start (<i>hydraulic pump drive</i>) | 1 |
| 2 | 20354A03 | | HANDLE, starting | 1 |
| 6 | 8S05J | | BOLT | 4 |
| 7 | 267S07 | | WASHER, flat | 8 |
| 8 | 59S04 | | NUT, nylon insert | 4 |
| 10 | --- | | # PIPE, exhaust # <i>Supplied with engine</i> | |
| 11 | 153S08 | | CLAMP | 1 |
| 12 | 267S05 | | WASHER, flat | 2 |
| 13 | 17S04 | | WASHER, spring | 2 |
| 15 | 10987A02 | | HOUSING, clutch | 1 |

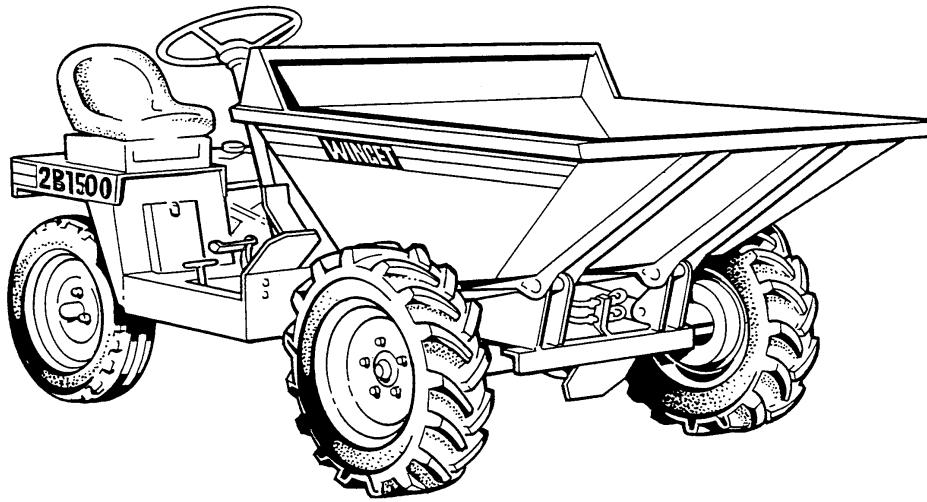


ACCELERATOR PEDAL & LINKAGE

E - 2

| Item | Part no | Serial no | Description | Qty |
|------|----------|-----------|--------------------|-----|
| 1 | 20231A03 | | PEDAL, accelerator | 1 |
| 2 | 8S04C | | BOLT | 2 |
| 3 | 17S05 | | WASHER | 2 |
| 5 | 10362A17 | | ROD | 1 |
| 6 | C160B | | BALL END | 1 |
| 7 | 2S02 | | NUT | 2 |
| 8 | 41S03 | | WASHER, spring | 1 |
| 9 | C173D | | SPRING, return | 1 |
| 10 | 267S04 | | WASHER, flat | 2 |
| 11 | 44S02C | | PIN, split | 2 |
| 13 | 17S03 | | WASHER, spring | 1 |
| 14 | 11S02A | | SCREW, set | 1 |
| 15 | 11031A03 | | LEVER, | 1 |
| 16 | 7S03 | | NUT, | 2 |
| 17 | 17S04 | | WASHER, spring | 1 |
| 18 | 11S03J | | SCREW, set | 1 |
| 19 | 131S01 | | NIPPLE, grease | 1 |
| 20 | 176S01 | | CAP, grease nipple | 1 |

2B1500 DUMPER



Electrics

CHARGING & STARTING CIRCUIT

Lister Petter TR1 electric start engine

F - 1

MAIN ELECTRICAL CIRCUIT.

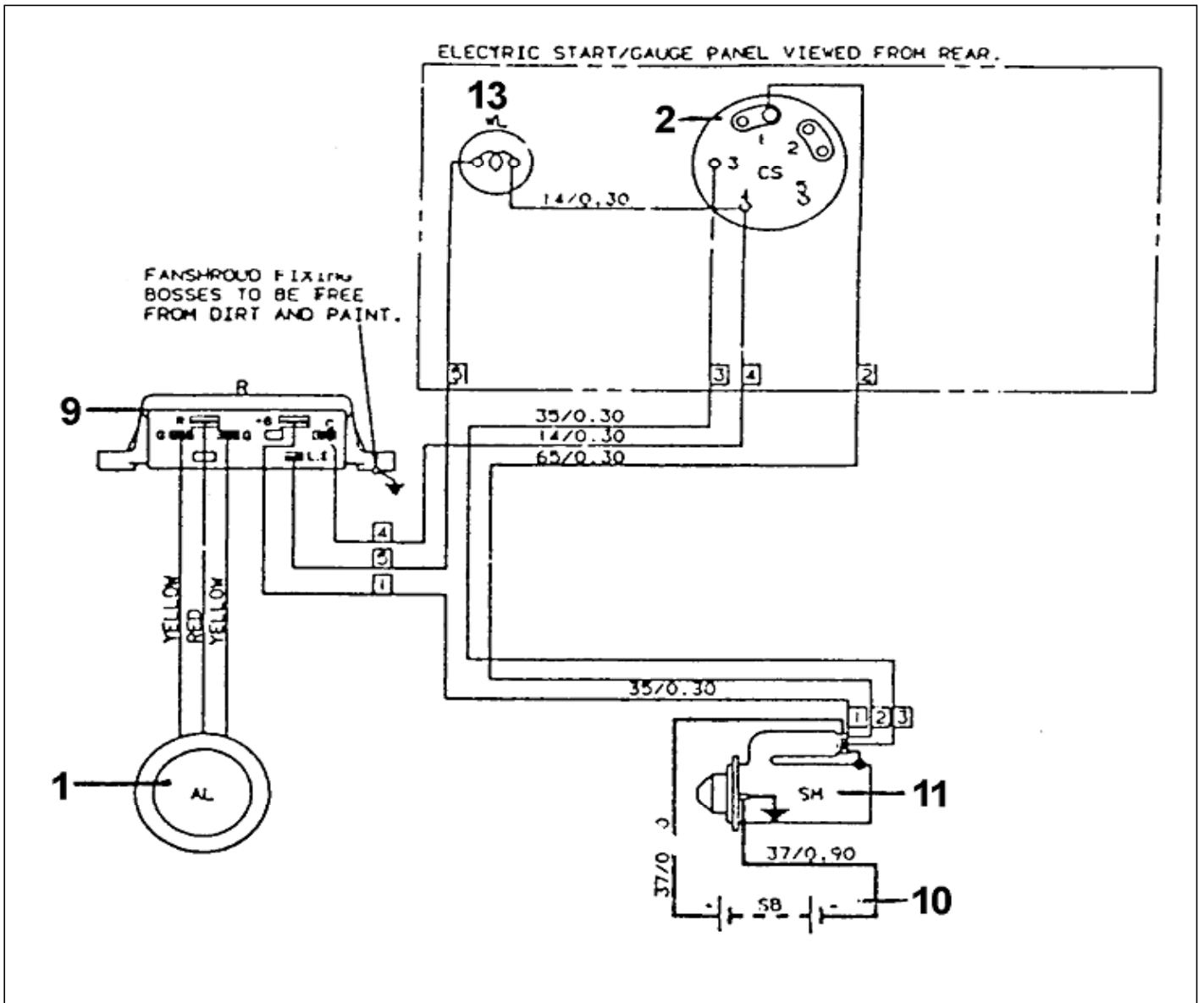
F - 2

ROAD LIGHTS.

F - 3

CONSOLE, road lights.

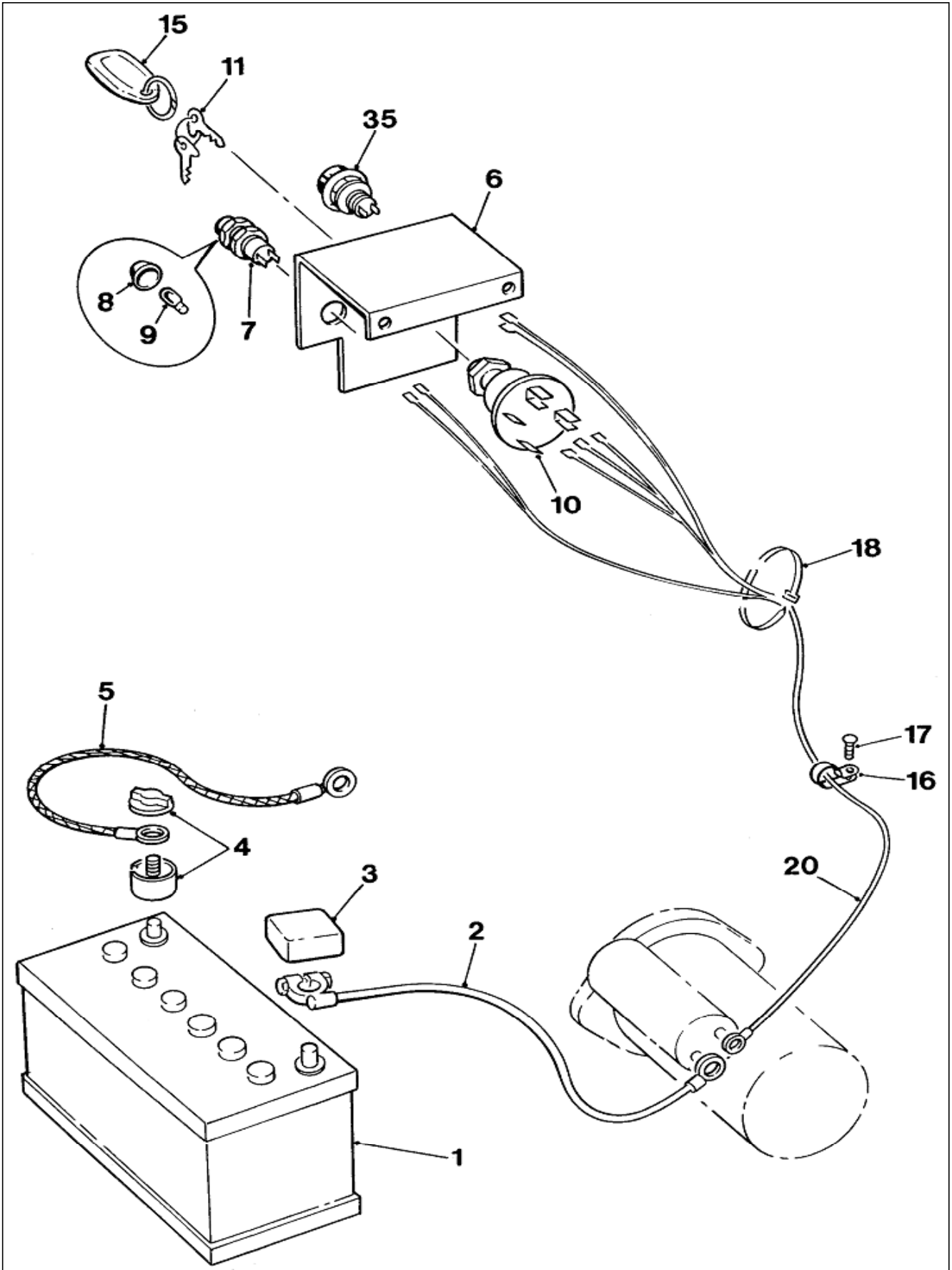
F - 4



CHARGING & STARTING CIRCUIT
Lister Petter TR1 electric start engine

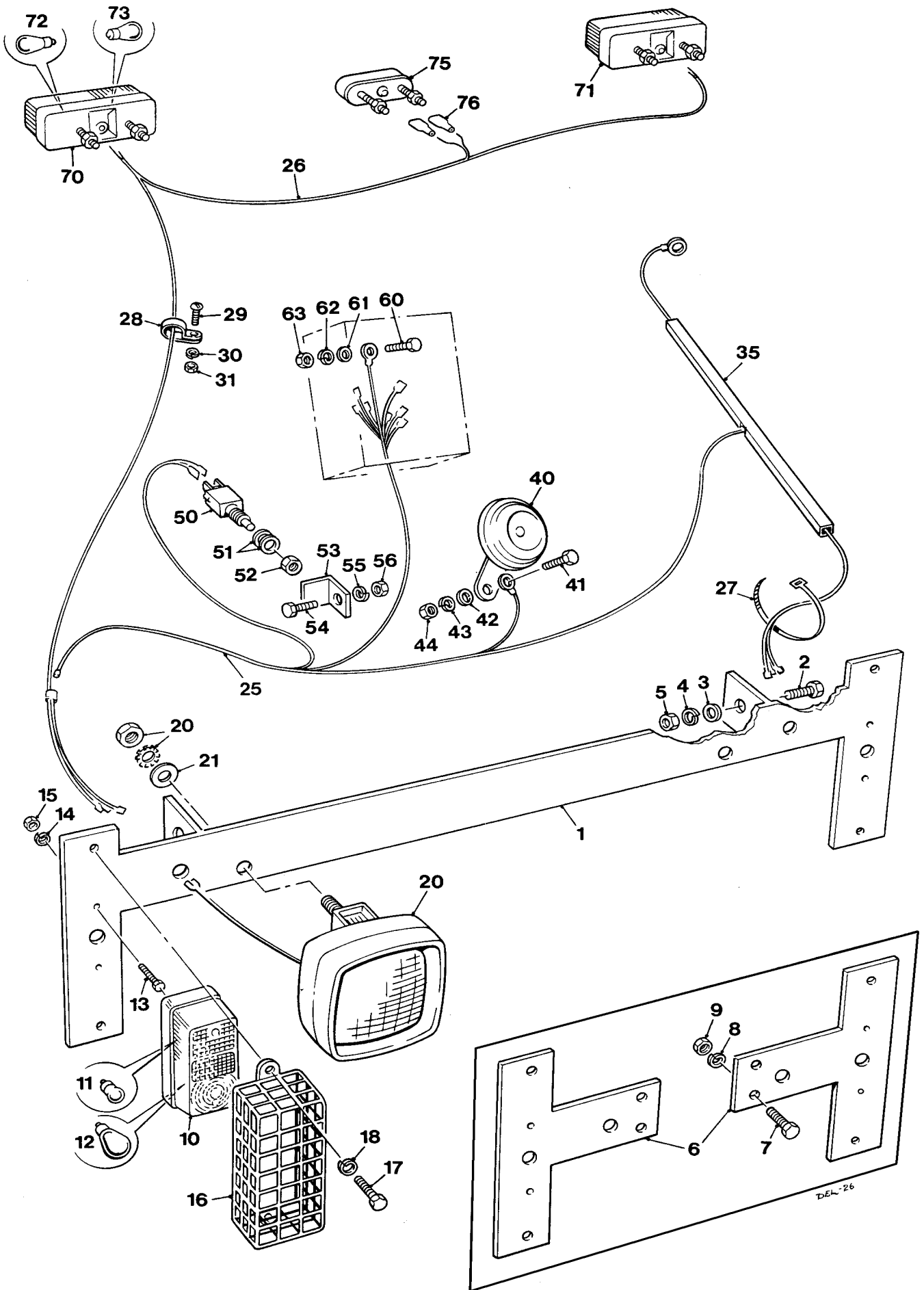
F - 1

| Item | Part no | Serial no | Description | Qty |
|--|------------|-----------|---|-----|
| Lister Petter TR1 Engines fitted with 'Nicsa' charging system | | | | |
| 1 | EL36608142 | | + STATOR, flywheel alternator | 1 |
| 1A | EL36608143 | | + ROTOR, flywheel alternator | 1 |
| 2 | V2004189 | | SWITCH, key start | 1 |
| 9 | EL36608144 | | + REGULATOR | 1 |
| 10 | 109S08 | | BATTERY | 1 |
| 11 | EL57030421 | | + STARTER MOTOR | 1 |
| 13 | V602634 | | LIGHT, warning | 1 |
| | | | + <i>Items supplied with engine.</i> | |
| | | | <i>For engine parts, see "Engine Parts Cat."</i> | |
| - | 30231A11 | | LOOM <i>see page F-2</i> | 1 |
| - | 20313A06 | | PANEL <i>see page F-2</i> | 1 |
| - | 11S02C | | SCREW, set, panel fixing (<i>not illustrated</i>) | 2 |
| - | 17S03 | | WASHER, spring (<i>not illustrated</i>) | 2 |
| - | 246S04 | | WASHER, flat (<i>not illustrated</i>) | 2 |



MAIN ELECTRICAL CIRCUIT**F - 2**

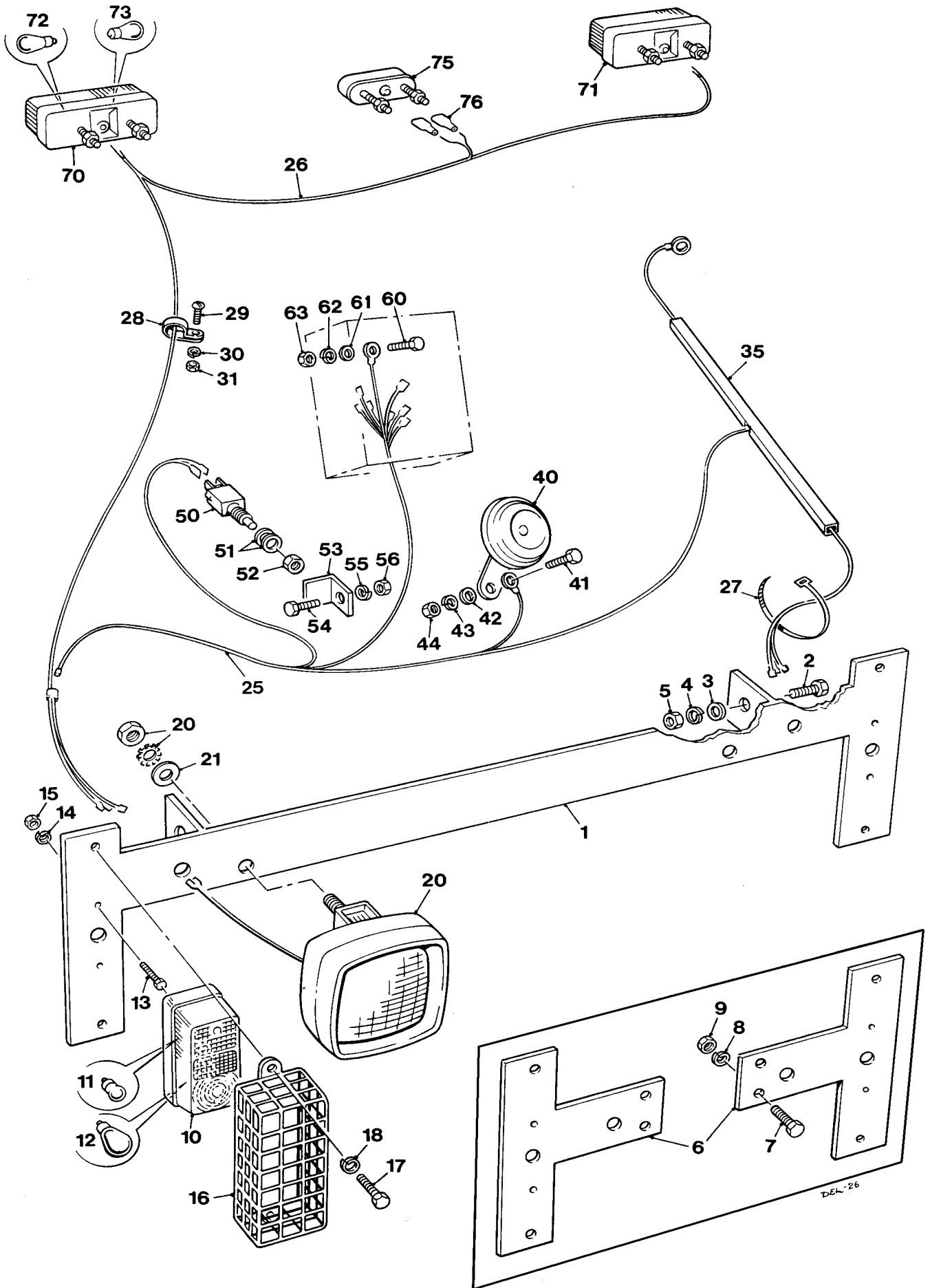
| Item | Part no | Serial no | Description | Qty |
|-------------|----------------|------------------|--------------------------------------|------------|
| 1 | 109S08 | | BATTERY | 1 |
| 2 | 10989A06 | | CABLE, positive | 1 |
| 3 | V2004204 | | INSULATOR, battery positive terminal | 1 |
| 4 | V2004214 | | ISOLATOR, battery negative terminal | 1 |
| 5 | V2003510 | | CABLE, earth | 1 |
| 6 | 20313A06 | | PANEL, instrument | 1 |
| 7 | V602634 | | LIGHT, battery charging | 1 |
| 8 | V602635 | | LENS | 1 |
| 9 | V602636 | | BULB | 1 |
| 10 | V2004189 | | SWITCH, key start | 1 |
| 11 | V601179 | | KEY, start switch | 1 |
| 15 | V2003540 | | RING, key | 1 |
| 16 | 143200900 | | CLIP, cable | 2 |
| 17 | 178SPS04C | | SCREW, self-tapping | 2 |
| 18 | V2003111 | | TIE, cable | 3 |
| 20 | 30231A11 | | LOOM, wiring | 1 |



ROAD LIGHTS

F - 3

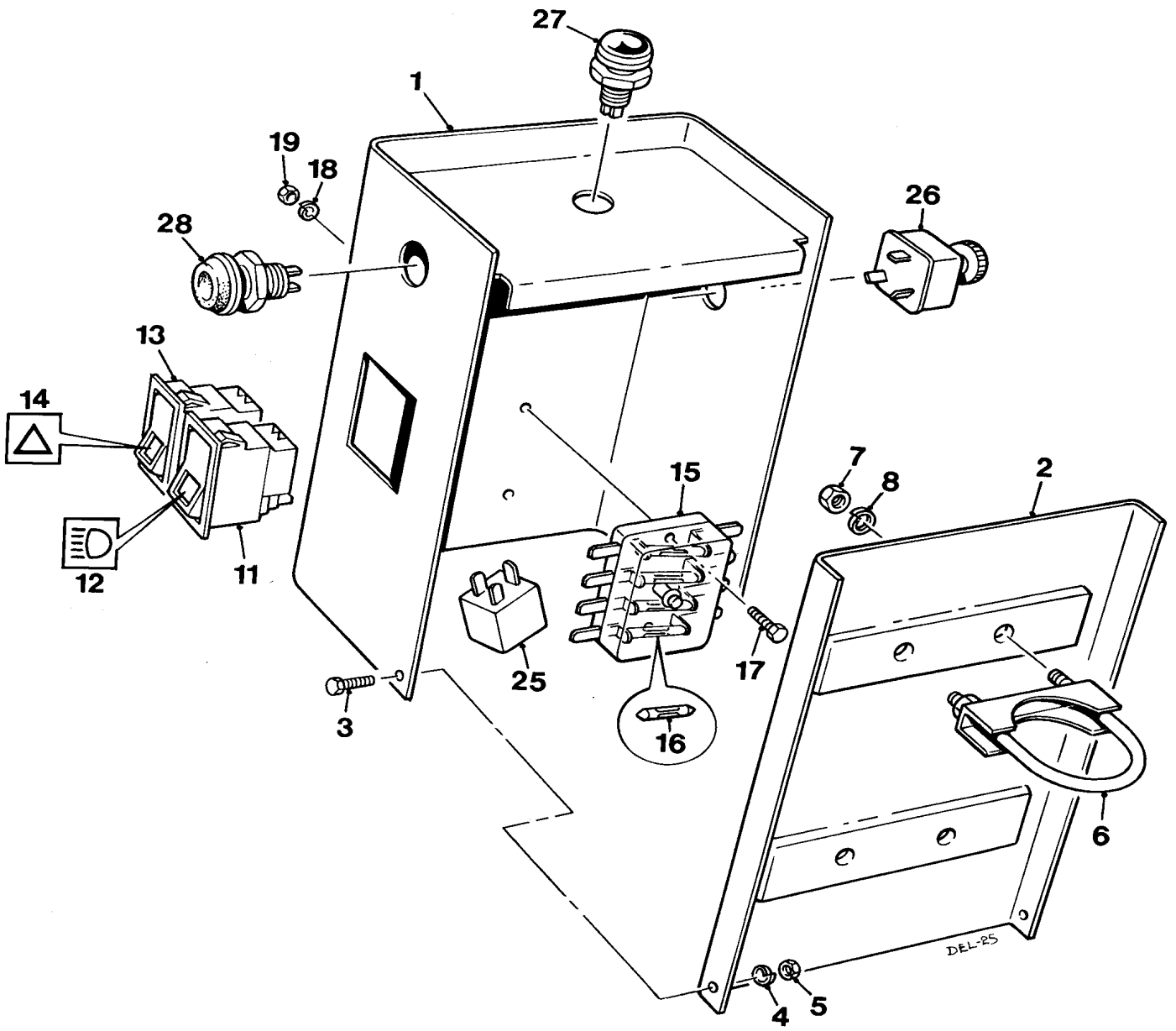
| Item | Part no | Serial no | Description | Qty |
|------|-----------|-----------|---|-----|
| 1 | 10973A03 | | BRACKET, front lights (hyd. tipping earth skips) | 1 |
| 2 | 11S05F | | SCREW, set | 2 |
| 3 | 267S07 | | WASHER, flat | 2 |
| 4 | 17S06 | | WASHER, spring | 2 |
| 5 | 7S05 | | NUT | 2 |
| 6 | 10973A04 | | BRACKET, front lights (gravity tip earth skips) | 2 |
| 7 | 11S03E | | SCREW, set | 2 |
| 8 | 17S04 | | WASHER, spring | 2 |
| 9 | 7S03 | | NUT | 2 |
| 10 | V2003652 | | LIGHTS, R.H. front, assembly | 1 |
| — | V2003637 | | LIGHTS, L.H. front, assembly (<i>not ill.</i>) | 1 |
| 11 | — | | BULB, sidelight 12V 5W | 1 |
| 12 | — | | BULB, indicator 12V 21W | 1 |
| 13 | 11S01C | | SCREW, set | 4 |
| 14 | 17S02 | | WASHER, spring | 4 |
| 15 | 7S01 | | NUT | 4 |
| 16 | V2003158 | | GUARD | 2 |
| 17 | 11S03AA | | SCREW, set | 4 |
| 18 | 17S04 | | WASHER, spring | 4 |
| 20 | V2003638 | | LIGHT, head, c/w nut & washer | 2 |
| 21 | V2004220 | | WASHER, Special | 2 |
| 25 | 20105A15 | | LOOM, front | 1 |
| 26 | 20105A14 | | LOOM, rear | 1 |
| 27 | V2003111 | | TIE, cable, 200mm long | 8 |
| 27 | V2003253 | | TIE, cable, 390mm long | 4 |
| 28 | 143200900 | | CLIP, nylon | 7 |
| 29 | 16S05B | | SCREW | 7 |
| 30 | 17S10 | | WASHER, spring | 7 |
| 31 | 7S09 | | NUT | 7 |
| 35 | V2004043 | | CONDUIT | AR |
| 40 | V2003144 | | HORN | 1 |
| 41 | 11S03B | | SCREW, set | 1 |
| 42 | 267S05 | | WASHER, flat | 1 |
| 43 | 17S04 | | WASHER, spring | 1 |
| 44 | 7S03 | | NUT | 1 |
| 50 | V2003168 | | SWITCH, brake lights | 1 |
| 51 | 267S07 | | WASHER, flat | AR |
| 52 | 95S05 | | NUT | 1 |



ROAD LIGHTS

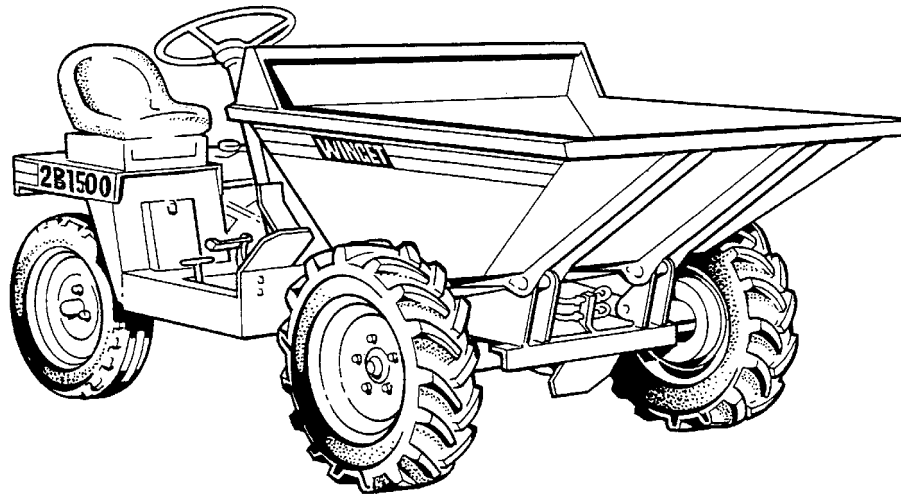
F - 3

| Item | Part no | Serial no | Description | Qty |
|------|-----------|-----------|---|-----|
| 53 | _____ | | BRACKET | 1 |
| 54 | 11S03C | | SCREW, set | 1 |
| 55 | 17S04 | | WASHER, spring | 1 |
| 56 | 7S03 | | NUT | 1 |
| 60 | 11S03B | | SCREW, set (<i>console earth terminal</i>) | 1 |
| 61 | 267S05 | | WASHER, flat | 1 |
| 62 | 17S04 | | WASHER, spring | 1 |
| 63 | 7S03 | | NUT | 1 |
| 70 | V2003651 | | LIGHT, R.H. rear, assembly | 1 |
| 71 | V2003636 | | LIGHT, L.H. rear, assembly | 1 |
| 72 | _____ | | BULB, indicator, 12V 21W | 1 |
| 73 | _____ | | BULB, brake/rear sidelight, 12V 21/5W | |
| 75 | V2003639 | | LIGHT, number plate | 1 |
| 76 | 191906000 | | CONNECTOR, 1/4" female Lucar | 2 |
| — | 191901900 | | Four-way common contact connector (<i>not illustrated</i>) | 1 |



| Item | Part no | Serial no | Description | Qty |
|------|----------|-----------|--|-----|
| 1 | 30267A04 | | CONSOLE | 1 |
| 2 | 20318A01 | | BACKPLATE, console | 1 |
| 3 | 11S01AA | | SCREW, set | 2 |
| 4 | 17S02 | | WASHER, spring | 2 |
| 5 | 7S01 | | NUT | 2 |
| 6 | 153S05 | | CLAMP, (<i>discard bracket</i>) assembly | 1 |
| 7 | 7S03 | | NUT | 2 |
| 8 | 17S04 | | WASHER, spring | 2 |
| 11 | V2003644 | | SWITCH, lights | 1 |
| 12 | V2003646 | | INSERT, mainbeam | 1 |
| 13 | V2003641 | | SWITCH, hazard lights | 1 |
| 14 | V2003647 | | INSERT, hazard lights | 1 |
| 15 | V601177 | | FUSE BOX, | 1 |
| 16 | V601173 | | FUSE, blade, use with item 15 | AR |
| 17 | 11S01A | | SCREW, set | 2 |
| 18 | 17S02 | | WASHER, spring | 2 |
| 19 | 7S01 | | NUT | 2 |
| 25 | V2003640 | | UNIT, flasher | 2 |
| 26 | V2003642 | | SWITCH, indicators | 1 |
| 27 | V2000326 | | LIGHT, indicator warning | 1 |
| 28 | V2003570 | | BUTTON, horn | 1 |

2B1500 DUMPER



Hydraulics

HYD PUMP, TANK & STEER VALVE, HYD TIP **H - 1**

HYD PUMP, TANK & STEER VALVE, GRA TIP **H - 1A**

DIRECT DRIVE HYDRAULIC PUMP **H - 1AA**

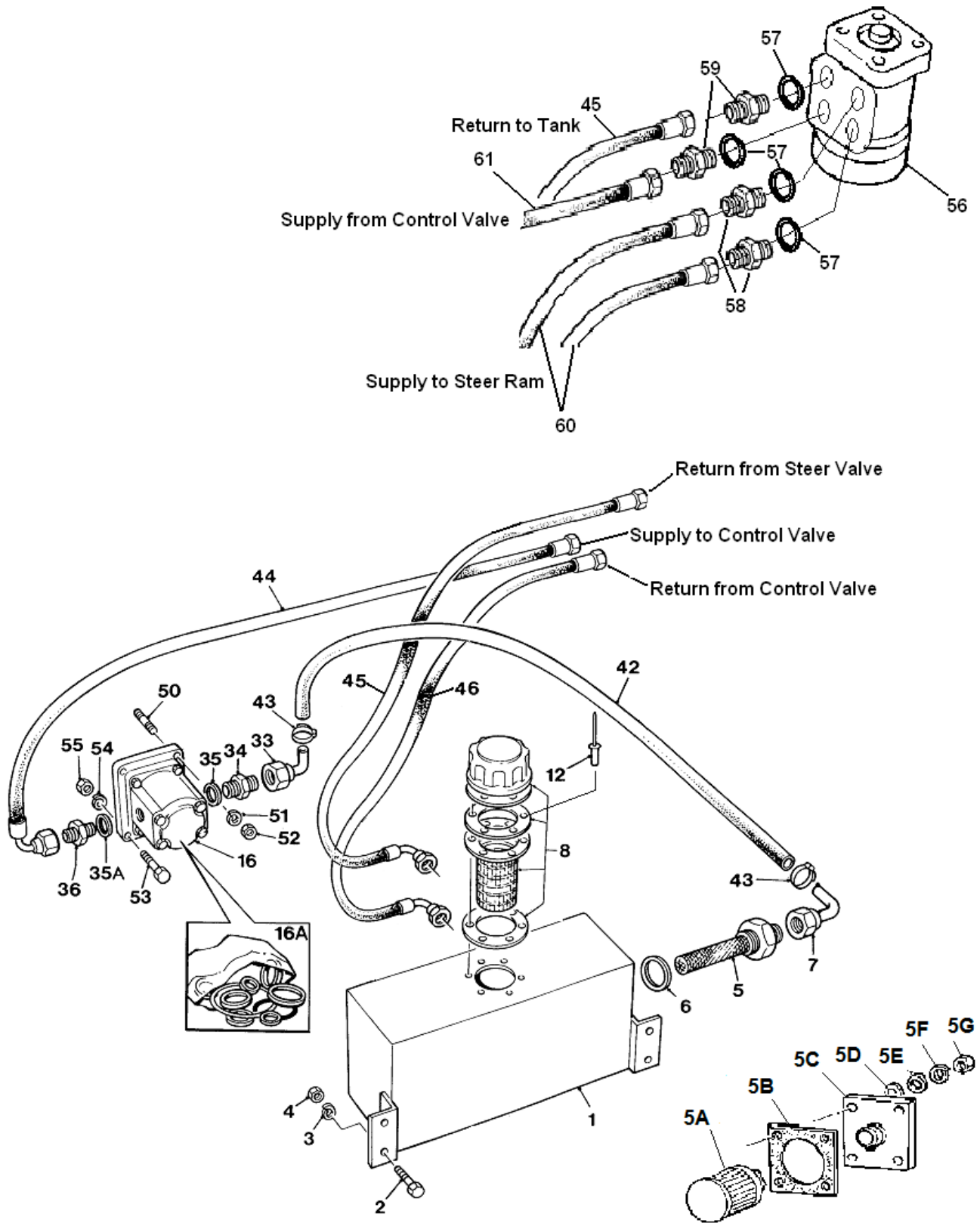
SKIP TIPPING HYDRAULIC CIRCUIT **H - 2**

CONTROL VALVE. **H - 3**

RAM, STANDARD SKIP TIPPING, METRIC **H - 4**

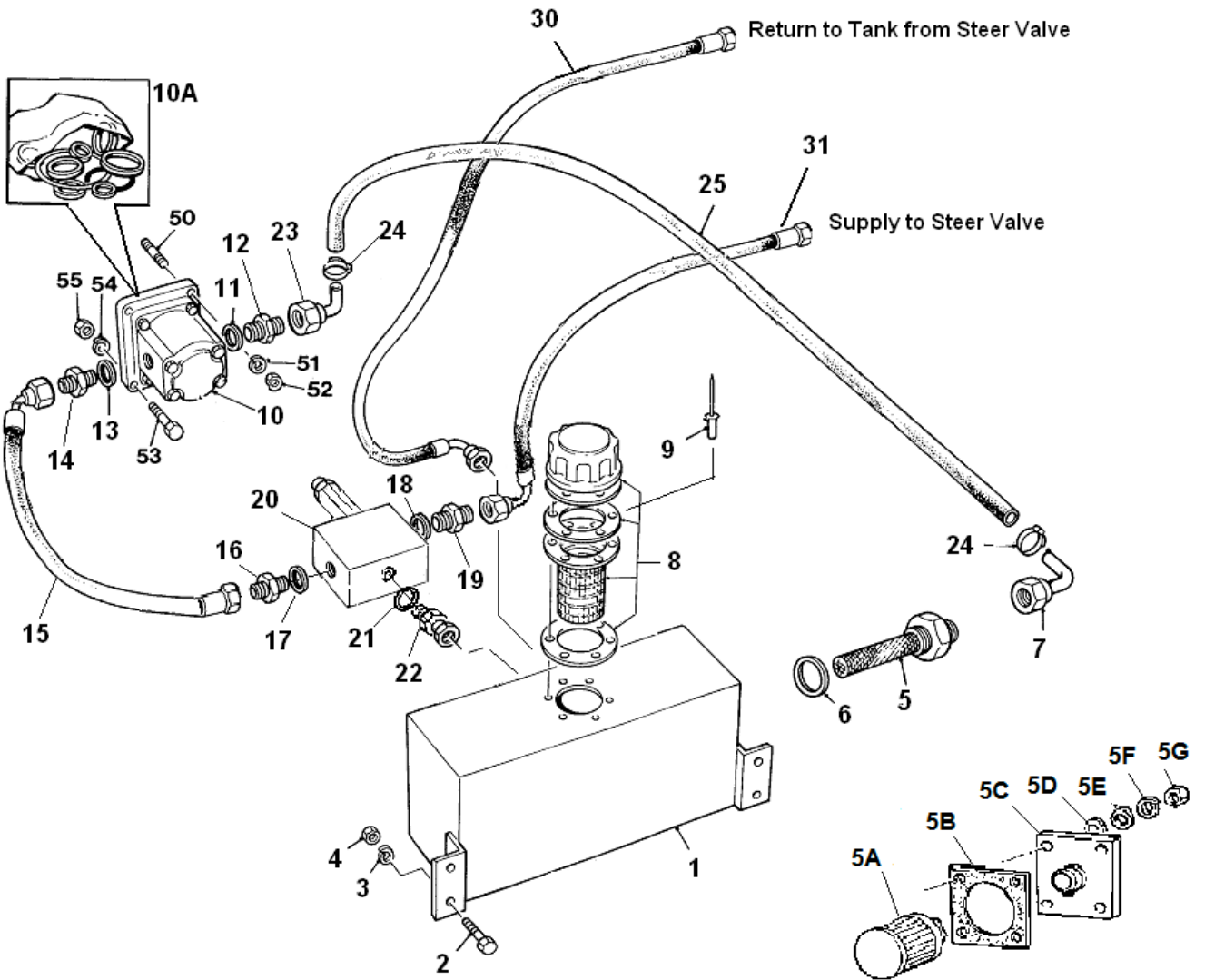
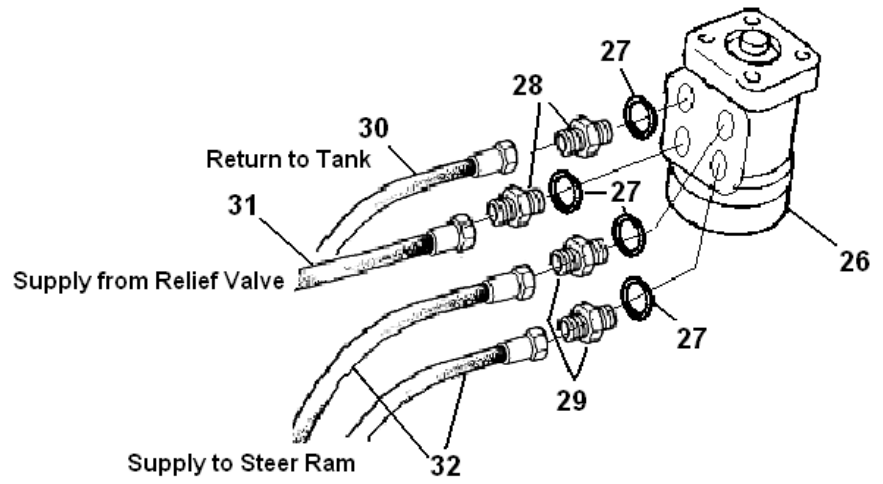
RAM, STEERING **H - 5**

STEER COLUMN & VALVE **H - 6**



| Item | Part no | Serial no | Description | Qty |
|--|----------------|------------------|--------------------------------------|------------|
| 1 | 30286A08 | | TANK, hydraulic | 1 |
| 2 | 11S04C | | SCREW | 4 |
| 3 | 17S05 | | WASHER | 4 |
| 4 | 7S04 | | NUT | 4 |
| 5 | 901S02 | /1232 | FILTER, suction | 1 |
| 5A | V2005355 | 1233/ | FILTER, suction | 1 |
| 5B | V2005356 | 1233/ | GASKET | 1 |
| 5C | V2006399 | 1233/ | PLATE, filter mounting | 1 |
| 5D | 186S02 | 1233/ | WASHER, nylon | 4 |
| 5E | 267S04 | 1233/ | WASHER, flat | 4 |
| 5F | 17S03 | 1233/ | WASHER, spring | 4 |
| 5G | 7S02 | 1233/ | NUT | 4 |
| 6 | 100S08 | /1232 | SEAL, bonded | 1 |
| 7 | 129S05E | | ELBOW | 2 |
| 8 | 10565A01 | | CAP, filler, complete | 1 |
| 12 | 101S07E | | RIVET | 6 |
| 16 | 10977A03 | | PUMP, "Ultra/Dowty" C/W Rrotation | 1 |
| 16A | 10190A01 | | KIT, pump repair, "Dowty" & "Ultra" | AR |
| Refer to Page H-1AA for Direct Drive Hydraulic Pump | | | | |
| 33 | 129S05E | | ELBOW | 1 |
| 34 | 119S13 | | ADAPTOR, m/m unequal | 1 |
| 35 | 100S04 | | SEAL, bonded | 1 |
| 35A | 100S04 | | SEAL, bonded | 1 |
| 36 | 119S08 | | ADAPTOR, m/m unequal | 1 |
| 42 | 37S01K | | HOSE, 600mm long | 1 |
| 43 | V2003232 | | CLIP, hose | 2 |
| 44 | 31S02V | | HOSE, pump to control valve | 1 |
| 45 | 31S02O | | HOSE, tank return from steer valve | 1 |
| 46 | 31S02AA | | HOSE, tank return from control valve | 1 |
| Item 50 refer to TR Engine Parts Manual | | | | |
| 50 | — | | STUD | 1 |
| 51 | 17S05 | | WASHER, spring | 1 |
| 52 | 7S03 | | NUT | 1 |
| 53 | 8S03C | | BOLT | 3 |
| 54 | 17S05 | | WASHER, spring | 3 |
| 55 | 7S03 | | NUT | 3 |
| 56 | — | | VALVE, steer, see Page H6 | 1 |
| 57 | 100S04 | | SEAL, bonded | 4 |
| 58 | 119S04 | | ADAPTOR, m/m unequal | 2 |
| 59 | 119S08 | | ADAPTOR, m/m unequal | 2 |
| 60 | 321S01G | | HOSE, steer valve to steer ram | 2 |
| 61 | 31S02O | | HOSE, control valve to steer valve | 1 |

Note:- Hoses to/from Steer Valve route down inside of R.H. chassis leg



HYDRAULIC PUMP, TANK & STEER VALVE GRAVITY TIP

H - 1A

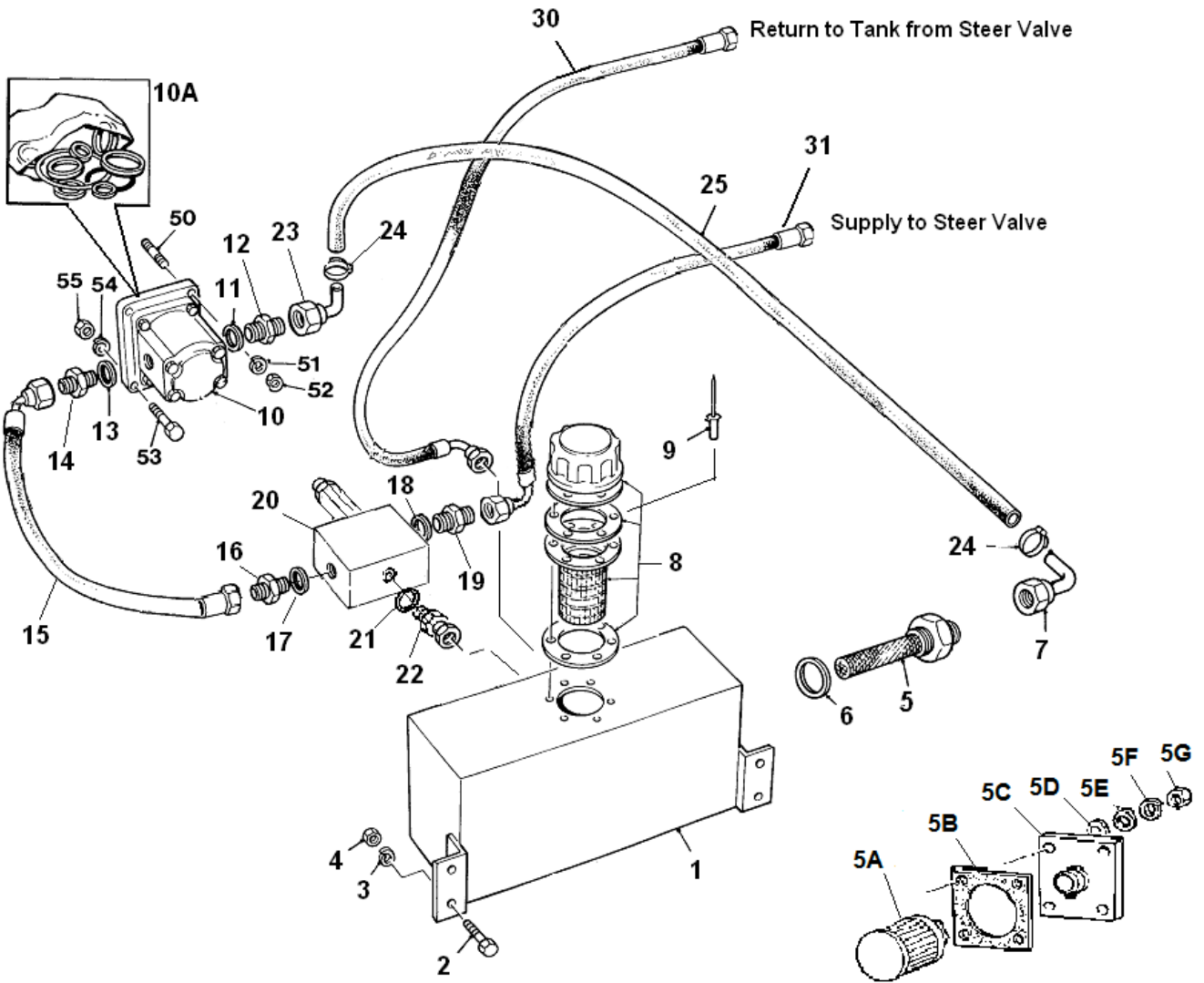
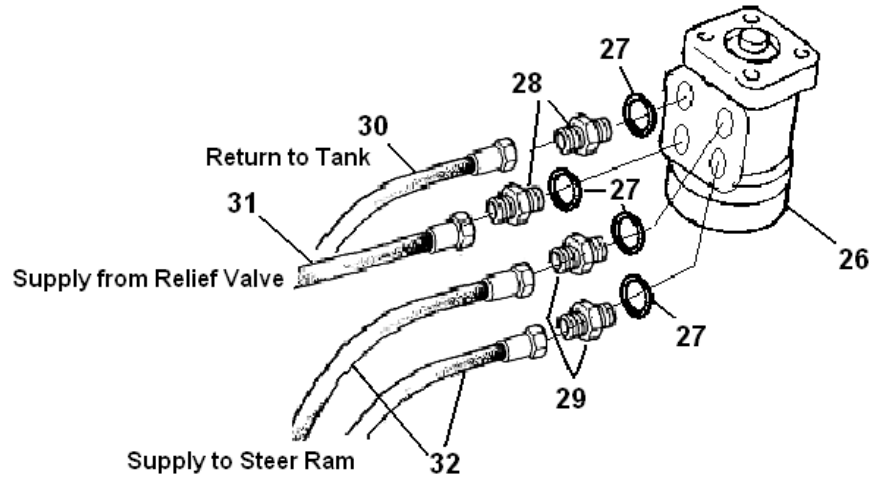
| Item | Part no | Serial no | Description | Qty |
|--|----------|-----------|-------------------------------------|-----|
| 1 | 30286A08 | | TANK, hydraulic | 1 |
| 2 | 11S04C | | SCREW | 4 |
| 3 | 17S05 | | WASHER | 4 |
| 4 | 7S04 | | NUT | 4 |
| 5 | 901S02 | /1232 | FILTER | 1 |
| 5A | V2005355 | 1233/ | FILTER, suction | 1 |
| 5B | V2005356 | 1233/ | GASKET | 1 |
| 5C | V2006399 | 1233/ | PLATE, filter mounting | 1 |
| 5D | 186S02 | 1233/ | WASHER, nylon | 4 |
| 5E | 267S04 | 1233/ | WASHER, flat | 4 |
| 5F | 17S03 | 1233/ | WASHER, spring | 4 |
| 5G | 7S02 | 1233/ | NUT | 4 |
| 6 | 100S08 | /1232 | SEAL, bonded | 1 |
| 7 | 129S05E | | ELBOW | 2 |
| 8 | 10565A01 | | CAP, filler, complete | 1 |
| 9 | 101S07E | | RIVET | 6 |
| 10 | 10977A03 | | PUMP, "Ultra/Dowty" C/W Rotation | 1 |
| 10A | 10190A01 | | KIT, pump repair, "Dowty" & "Ultra" | AR |
| Refer to Page H-1AA for Direct Drive Hydraulic Pump | | | | |
| 11 | 100S04 | | SEAL, bonded | 1 |
| 12 | 119S13 | | ADAPTOR | 1 |
| 13 | 100S04 | | SEAL, bonded | 1 |
| 14 | 119S08 | | ADAPTOR, m/m unequal | 1 |
| 15 | 31S02AA | | HOSE, pump to relief valve | 1 |
| 16 | 122S03 | | ADAPTOR, m/m equal | 1 |
| 17 | 100S03 | | SEAL, bonded | 1 |
| 18 | 100S03 | | SEAL, bonded | 1 |
| 19 | 122S03 | | ADAPTOR, m/m equal | 1 |
| 20 | V2006357 | | VALVE, relief | 1 |
| 21 | 100S03 | | SEAL, bonded | 1 |
| 22 | 112S07 | | ADAPTOR, m/f swivel | 1 |
| 23 | 129S05E | | ELBOW | 1 |
| 24 | V2003232 | | CLIP, hose | 2 |
| 25 | 37S01K | | HOSE, 600mm long | 1 |
| 26 | — | | VALVE, steer, see Page H6 | 1 |
| 27 | 100S04 | | SEAL, bonded, | 4 |
| 28 | 119S08 | | ADAPTOR, m/m unequal | 2 |
| 29 | 119S04 | | ADAPTOR, m/m unequal | 2 |
| 30 | 31S02O | | HOSE, tank return from steer valve | 1 |
| 31 | 31S02O | | HOSE, relief valve to steer valve | 1 |
| 32 | 321S01G | | HOSE, steer valve to steer ram | 2 |

Note:- Hoses to/from Steer Valve route down inside of R.H. chassis leg

Continued>>>

H - 1A

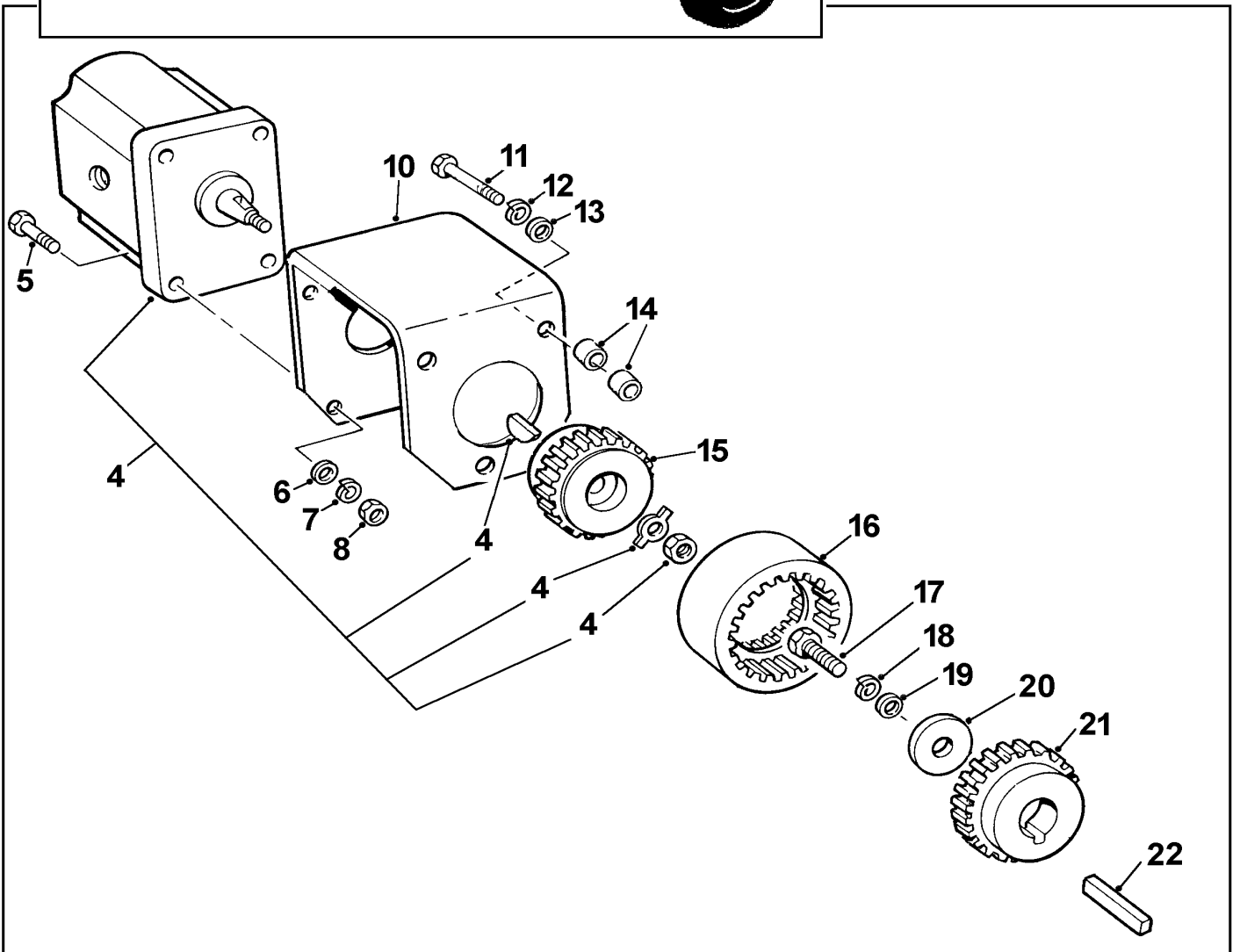
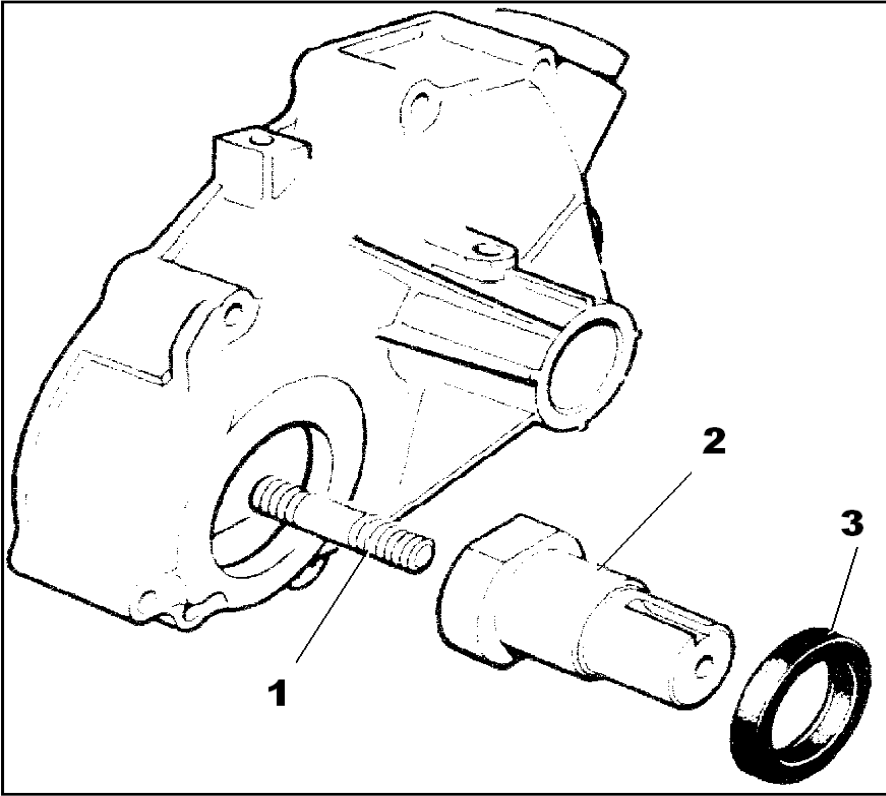
2B1500 Dumper



HYDRAULIC PUMP, TANK & STEER VALVE GRAVITY TIP

H - 1A

| Item | Part no | Serial no | Description | Qty |
|------|---------|-----------|--|-----|
| | | | Item 50 refer to TR Engine Parts Manual | |
| 50 | --- | | STUD | 1 |
| 51 | 17S05 | | WASHER, spring | 1 |
| 52 | 7S03 | | NUT | 1 |
| 53 | 8S03C | | BOLT | 3 |
| 54 | 17S05 | | WASHER, spring | 3 |



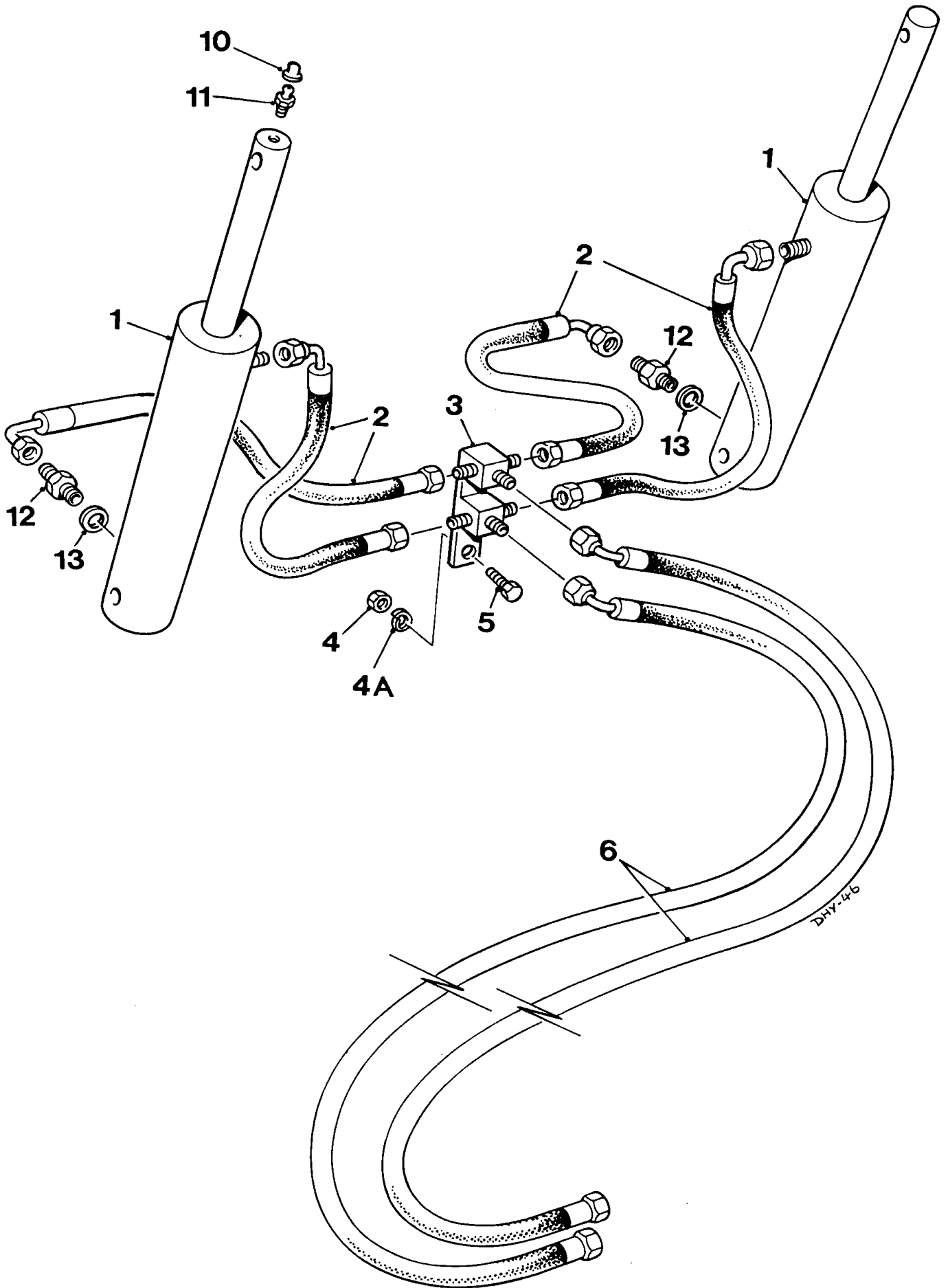
DIRECT DRIVE HYDRAULIC PUMP

H - 1AA

| Item | Part no | Serial no | Description | Qty |
|------|-----------|-----------|--|-----|
| 1 | V2006390 | | STUD | 1 |
| 2 | V2006381 | | EXTENSION SHAFT, pump drive | 1 |
| 3 | 417732500 | | SEAL, oil | 1 |
| 4 | 10977A06 | | HYDRAULIC PUMP A/C, assembly | 1 |
| 5 | 8S02C | | BOLT | 4 |
| 6 | 267S04 | | WASHER, flat | 4 |
| 7 | 17S03 | | WASHER, spring | 4 |
| 8 | 7S02 | | NUT | 4 |
| 10 | V2006385 | | BRACKET, pump mounting | 1 |
| 11 | 8S03N | | BOLT | 3 |
| 12 | 17S04 | | WASHER, spring | 3 |
| 13 | 267S05 | | WASHER, flat | 3 |
| 14 | 513340800 | | SPACER | 6 |
| 15 | V2006383 | | COUPLING, driven half, pump | 1 |
| 16 | V603660 | | SLEEVE COUPLING, nylon | 1 |
| | V2006389 | | COUPLING ASSEMBLY | 1 |
| | | | consists of items 15, 16 & 21 | 1 |
| 17 | 11S03B | | SCREW, set | 1 |
| 18 | 17S04 | | WASHER, spring | 1 |
| 19 | 267S05 | | WASHER, flat | 1 |
| 20 | V2004220 | | WASHER SPECIAL, flat | 1 |
| 21 | V2006384 | | COUPLING, drive half, engine shaft | 1 |
| 22 | 305110550 | | KEY, parallel | 1 |

Following Parts are not Illustrated

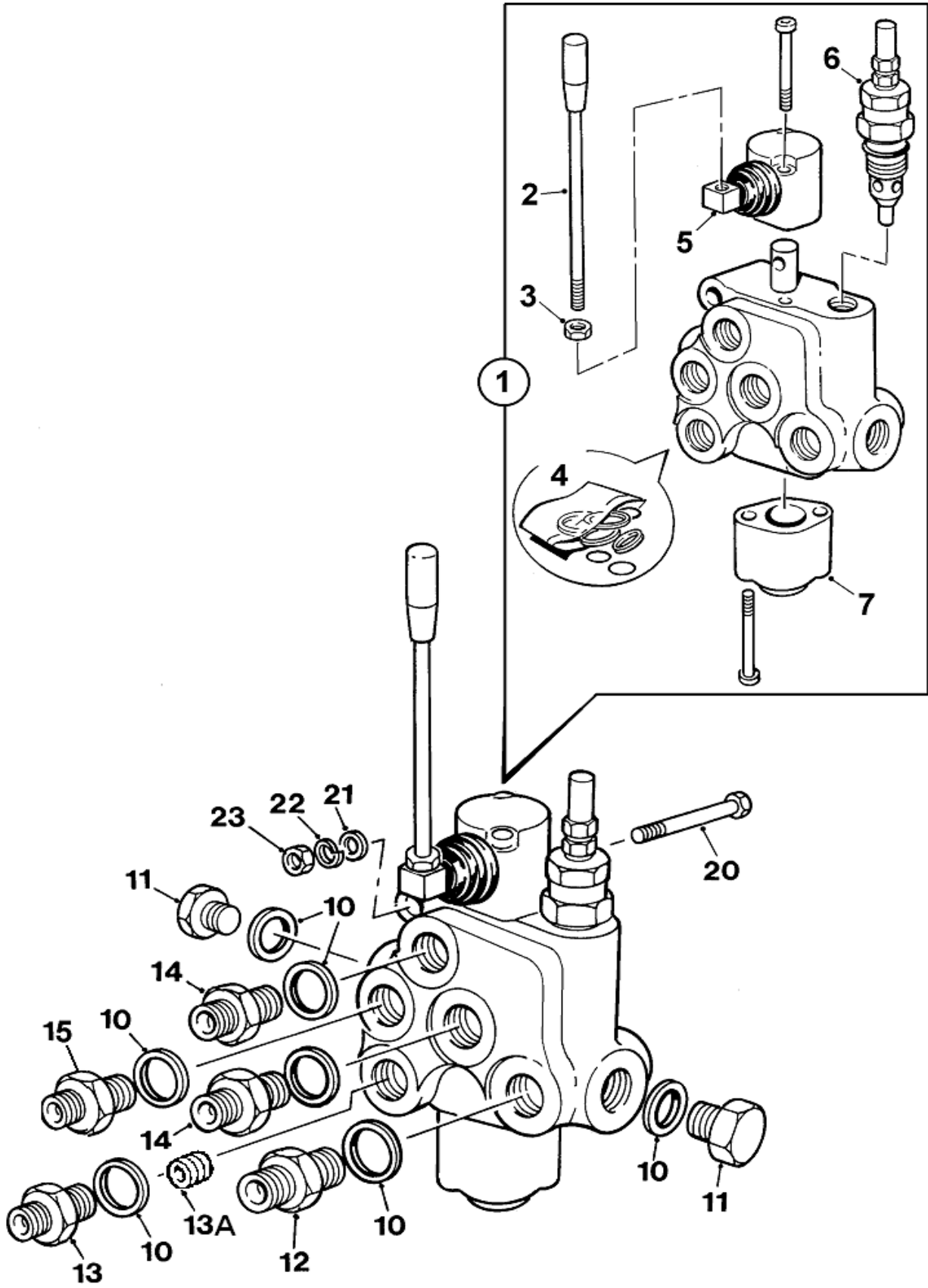
| | | | | |
|----|----------|--|-----------------|---|
| 23 | V2006388 | | GUARD, coupling | 1 |
| 24 | 11S03B | | SCREW, set | 1 |
| 25 | 17S04 | | WASHER, spring | 1 |
| 26 | 267S05 | | WASHER, flat | 1 |



SKIP TIPPING HYDRAULIC CIRCUIT

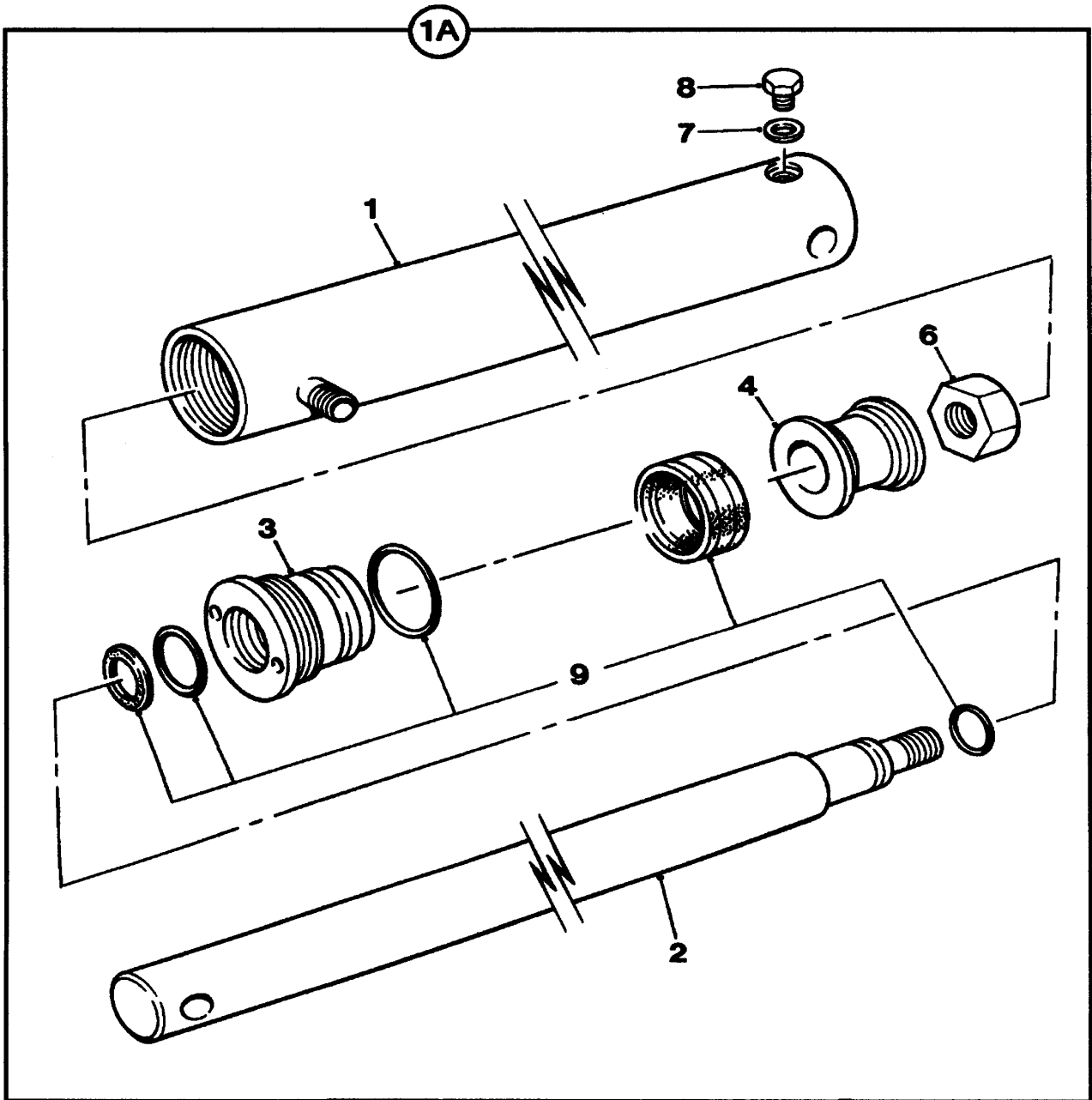
H - 2

| Item | Part no | Serial no | Description | Qty |
|------|----------|-----------|-----------------------------|-----|
| 1 | 30287A06 | | RAM (see page H-4) | 2 |
| 2 | 31S02GG | | HOSE | 4 |
| 3 | 10464A02 | | FITTING, double tee bracket | 1 |
| 4 | 7S03 | | NUT | 1 |
| 4A | 17S04 | | WASHER, spring | 1 |
| 5 | 11S03E | | SCREW, set | 1 |
| 6 | 31S02YY | | HOSE | 2 |
| 10 | 176S01 | | CAP, grease nipple | 4 |
| 11 | 131S01 | | NIPPLE, grease, straight | 2 |
| — | 131S02 | | NIPPLE, grease, 90 deg. | 2 |
| 12 | 122S03 | | ADAPTOR, m/m | 2 |
| 12A | 127S03 | | PLUG, blank | 2 |
| 13 | 100S03 | | SEAL, bonded | 4 |



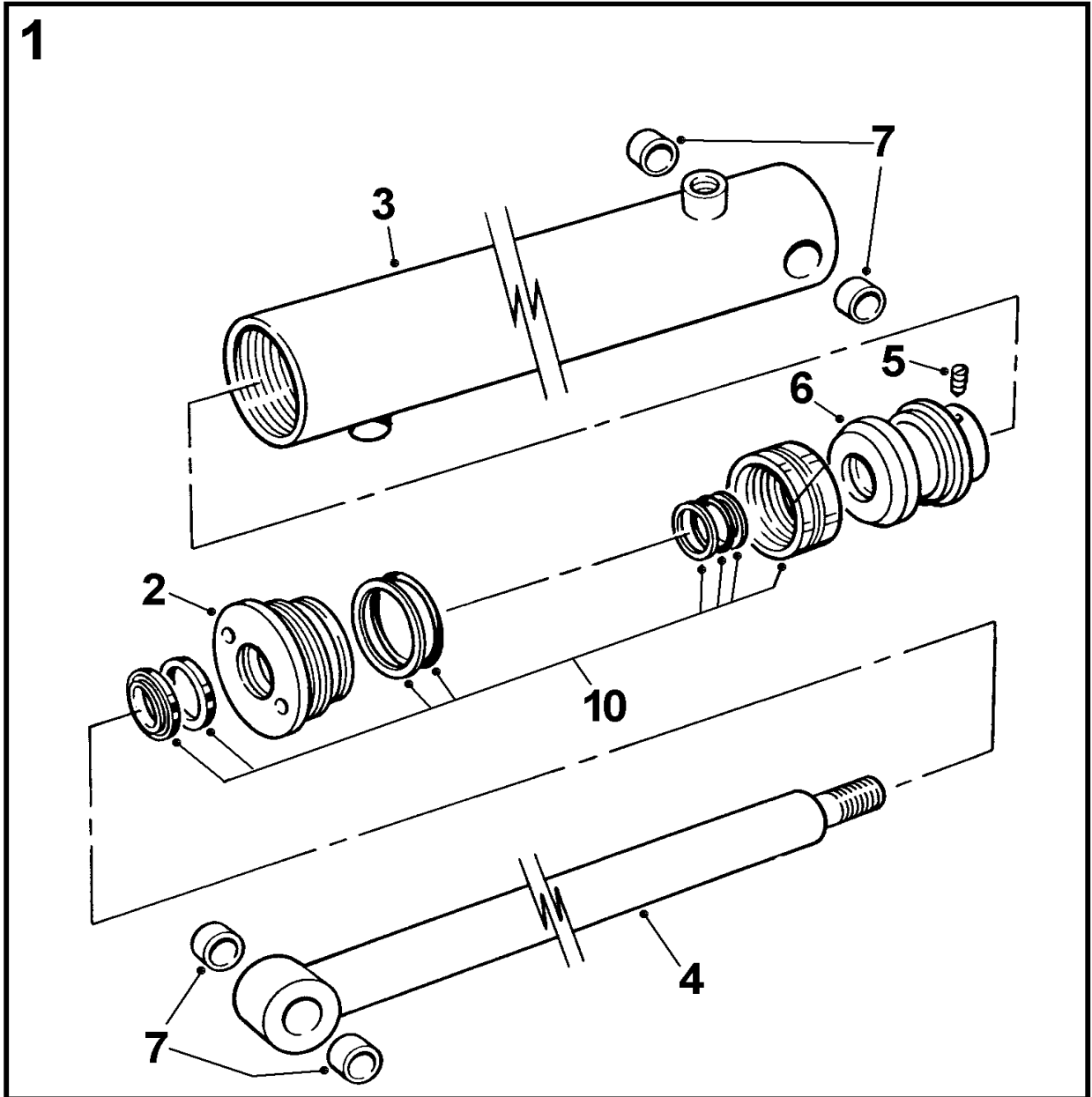
CONTROL VALVE,**H - 3**

| Item | Part no | Serial no | Description | Qty |
|-------------|----------------|------------------|------------------------------------|------------|
| 1 | V2004106 | | VALVE, control, assembly | |
| 2 | V602630 | | LEVER, knob & nut, assembly | 1 |
| 3 | 7S04 | | NUT | 1 |
| 4 | V602629 | | KIT, control valve repair | AR |
| 5 | V603565 | | END CAP, lever | 1 |
| 6 | V603605 | | VALVE, relief | 1 |
| 7 | V603606 | | END CAP, spring base | 1 |
| 10 | 100S03 | | SEAL, bonded | 7 |
| 11 | 127S03 | | PLUG, male | 2 |
| 12 | 122S03 | | ADAPTOR, m/m, supply from pump | 1 |
| 13 | 122S03 | | ADAPTOR, m/m, to steering valve | 1 |
| 13A | V2004607 | | PLUG, H.P.C.O. | 1 |
| 14 | 93S01 | | ADAPTOR, bulkhead m/m, to tip rams | 2 |
| 15 | 122S03 | | ADAPTOR, m/m, return to tank | 1 |
| 20 | 8S03H | | BOLT | 2 |
| 21 | 267S05 | | WASHER, flat | 2 |
| 22 | 17S04 | | WASHER, spring | 2 |
| 23 | 7S03 | | NUT | 2 |



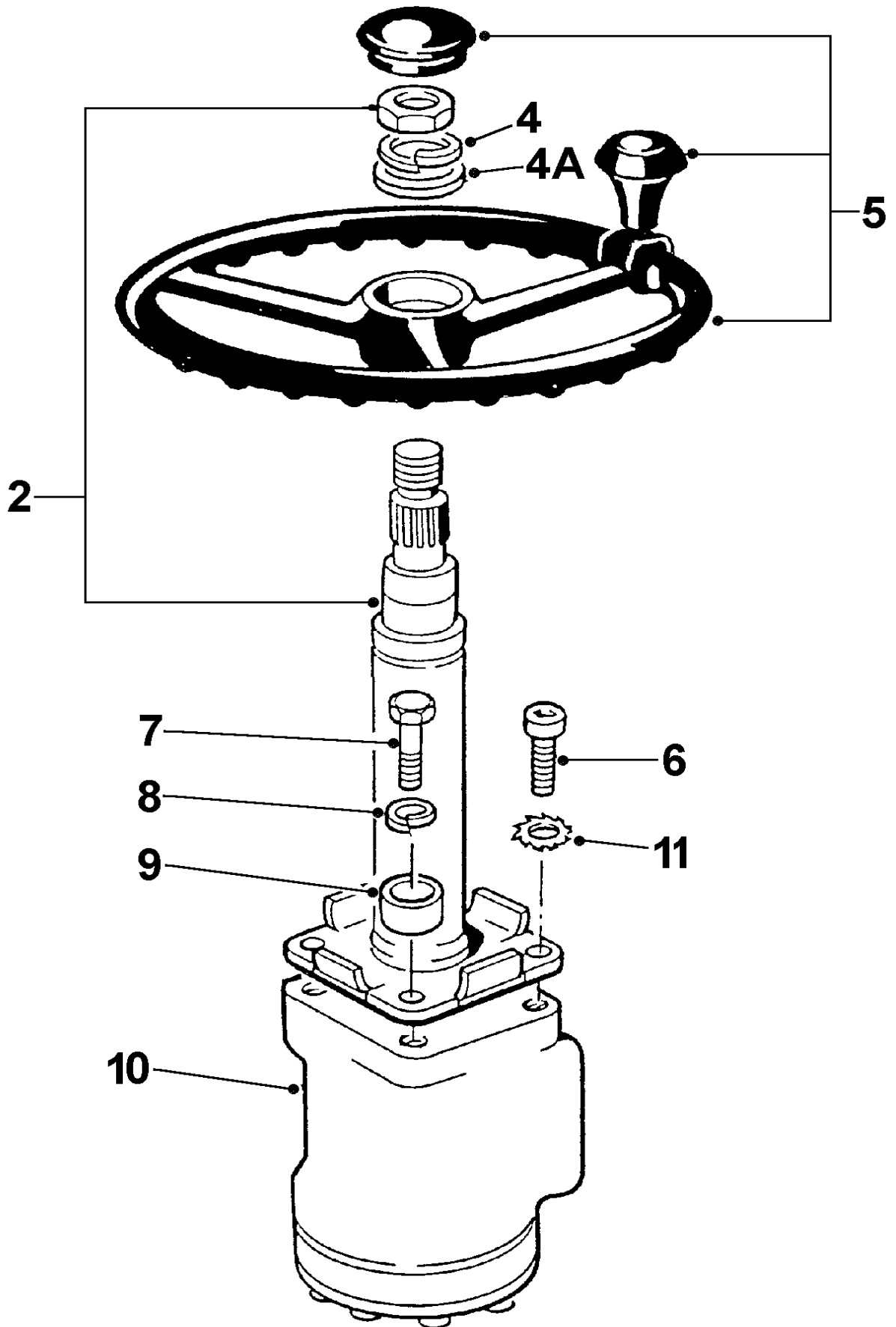
RAM, (METRIC) tipping, hydraulic skip**H - 4**

| Item | Part no | Serial no | Description | Qty |
|-------------|----------------|------------------|-------------------------------------|------------|
| 1A | 30287A06 | | RAM, hyd, assembly, metric rod & cy | 1 |
| 1 | 30287A0601 | | CYLINDER, ram (metric) | 1 |
| 2 | 30287A0602 | | ROD, piston (metric) | 1 |
| 3 | 30287A0603 | | NUT, gland ring | 1 |
| 4 | 30287A0604 | | PISTON, one piece | 1 |
| 5 | 30287A0605 | | Spacer, rod, not illustrated | 1 |
| 6 | | | NUT, nylon insert M20x1.5 | 1 |
| 6A | 54S04K | | Pin, tension M5x30 | 1 |
| 7 | 100S03 | | SEAL, bonded | 1 |
| 8 | 127S03 | | PLUG, blanking | 1 |
| 9 | 10558A11 | | KIT, seals | 1 |



RAM, steering**H - 5**

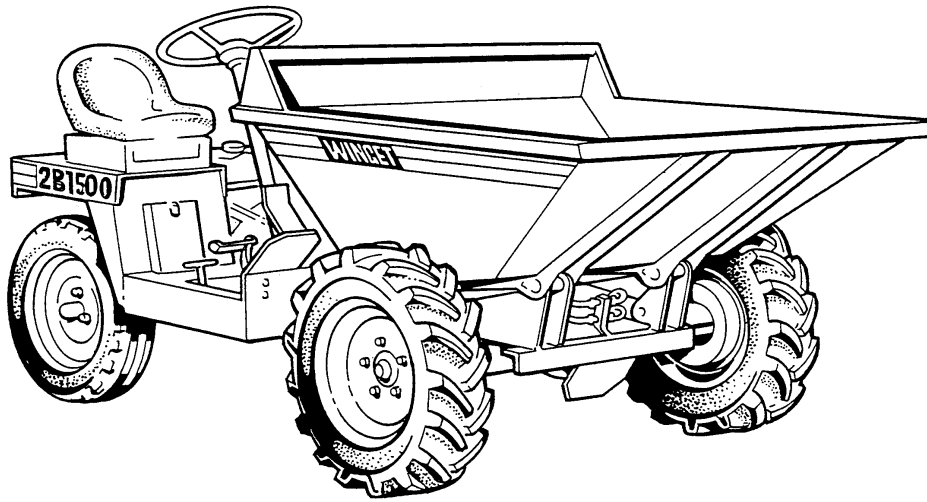
| Item | Part no | Serial no | Description | Qty |
|-------------|----------------|------------------|------------------------|------------|
| 1 | V2005330 | | RAM, assembly steering | 1 |
| 2 | V603576 | | RETAINER, cylinder | 1 |
| 3 | V603577 | | CYLINDER | 1 |
| 4 | V603578 | | ROD | 1 |
| 5 | V603579 | | SCREW, grub | 1 |
| 6 | V603580 | | PISTON | 1 |
| 7 | V603013 | | BUSH | 4 |
| 10 | V603574 | | KIT, seals | 1 |



STEER COLUMN & VALVE**H - 6**

| Item | Part no | Serial no | Description | Qty |
|-------------|----------------|------------------|-----------------------------|------------|
| 2 | V2002872 | | COLUMN, steering | 1 |
| 4 | 17S08 | | WASHER, spring | 1 |
| 4A | 267S09 | | WASHER, flat | 1 |
| 5 | V2004152 | | WHEEL, steering c/w spinner | 1 |
| 6 | 68S05C | | SCREW, socket cap | 1 |
| 7 | 8S04C | | BOLT | 3 |
| 8 | 17S05 | | WASHER, spring | 3 |
| 9 | CSE182 | | SPACER | 3 |
| 10 | V2006352 | | VALVE, steering | |
| 10A | | | KIT, seals | 1 |
| 11 | 13S04 | | WASHER, shakeproof | 1 |

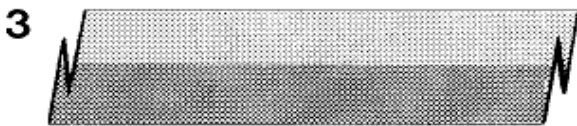
2B1500 DUMPER



Miscellaneous

DECALS & PLATES

J - 1 to J - 3



11

| | | | |
|----------------|------------|---|-------|
| WINGET | | WINGET LIMITED P.O. Box 41, Stonehouse Lane, Bolton, Lancs, BL4 0LS Tel: 01204 883163 Fax: 01204 883206 | |
| Model | _____ | | |
| Serial No. | _____ | | |
| Engine No. | _____ | | |
| Capacity | Mass (kg) | _____ | |
| SRO No. | Power (kW) | _____ | |
| Year Of Manuf. | Eng. (rpm) | Drum (rpm) | _____ |

A Sverdrup Group Company

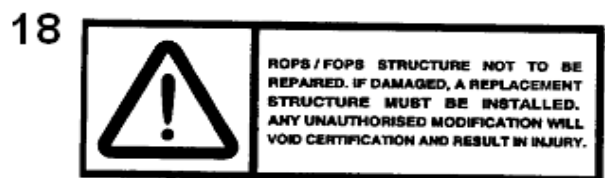
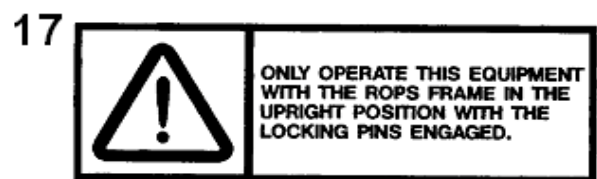
12

**TAKE EXTRA CARE WHEN TIPPING
NON FREE RUNNING LOADS**



16

WARNING
DO NOT WORK UNDER
UNPROPPED SKIP



19

| | | |
|---|--|--|
| TYPE CERTIFICATION FOR ROLL OVER AND FALLING OBJECT PROTECTIVE STRUCTURE | | TESTED TO STANDARDS: ROPS : ISO 3471/1984 SAE J1046/1988 |
| MANUFACTURED BY: WINGET LTD, PO BOX 41, BOLTON, BL4 0LS. TEL: 01204 883163 FAX: 01204 883206 | FOR APPLICATION ON: WINGET LTD, PO BOX 41, BOLTON, BL4 0LS. VEHICLE MODEL: | CAB FRAME SERIAL No. _____ |
| MAXIMUM VEHICLE MASS: | _____ | XGS. |

| Item | Part no | Serial no | Description | Qty |
|-------|----------|-----------|--|-------|
| — | V601779 | | KIT, decals, 2B1500 | 1 kit |
| | | | Each kit contains all decals required for one dumper | |
| 1 | V2003100 | | DECAL, Hydraulic oil | 1 |
| 2 | V2003101 | | DECAL, Diesel fuel | 1 |
| 3 | V2003038 | | DECAL, Stripe, bodywork, | 3 |
| 4 | V2003039 | | DECAL, Winget logo | 3 |
| 10 | 10284A01 | | DECAL, Dump/return | 1 |
| 11 | V2003037 | | PLATE , Serial Number | 1 |
| 12 | 10536A02 | | DECAL, Non free running loads | 1 |
| 15 | V2004235 | | DECAL, Negative earth | 1 |
| 16 | DM157 | | DECAL, Skip warning | 1 |
| 17 | V2005310 | | DECAL, R.O.P.S. folding# | 1 |
| 18 | V2004754 | | DECAL, Damage to R.O.P.S. frame# | 1 |
| 19 | V2005030 | | PLATE, R.O.P.S. identification# | 1 |
| ..... | 101S05D | | RIVET, used with items 11& 19. | 4 |

Items are not supplied in decal kit

1 2B 1500

3

| RECOMMENDED LUBRICATING OILS | | | | | | |
|--|--|--|--|--|--|--|
| COMPANY | ENGINE | DRIVE AXLE | TRANSFER BOX | GEARBOX | HYDRAULIC SYSTEM | HYDRAULIC SYSTEM |
| AGIP AGIP SPT AGIP SFC AGIP SFC | AGIP SPT AGIP SFC AGIP SFC | AGIP SPT AGIP SFC AGIP SFC | AGIP SPT AGIP SFC AGIP SFC | AGIP SPT AGIP SFC AGIP SFC | AGIP SPT AGIP SFC AGIP SFC | AGIP SPT AGIP SFC AGIP SFC |
| Castrol Castrol SPT Castrol SFC Castrol SFC | Castrol SPT Castrol SFC Castrol SFC | Castrol SPT Castrol SFC Castrol SFC | Castrol SPT Castrol SFC Castrol SFC | Castrol SPT Castrol SFC Castrol SFC | Castrol SPT Castrol SFC Castrol SFC | Castrol SPT Castrol SFC Castrol SFC |
| Shell Shell SPT Shell SFC Shell SFC | Shell SPT Shell SFC Shell SFC | Shell SPT Shell SFC Shell SFC | Shell SPT Shell SFC Shell SFC | Shell SPT Shell SFC Shell SFC | Shell SPT Shell SFC Shell SFC | Shell SPT Shell SFC Shell SFC |
| BP BP SPT BP SFC BP SFC | BP SPT BP SFC BP SFC | BP SPT BP SFC BP SFC | BP SPT BP SFC BP SFC | BP SPT BP SFC BP SFC | BP SPT BP SFC BP SFC | BP SPT BP SFC BP SFC |
| MOBIL MOBIL SPT MOBIL SFC MOBIL SFC | MOBIL SPT MOBIL SFC MOBIL SFC | MOBIL SPT MOBIL SFC MOBIL SFC | MOBIL SPT MOBIL SFC MOBIL SFC | MOBIL SPT MOBIL SFC MOBIL SFC | MOBIL SPT MOBIL SFC MOBIL SFC | MOBIL SPT MOBIL SFC MOBIL SFC |
| ALL TRANSCONAL ALL TRANSCONAL SPT ALL TRANSCONAL SFC ALL TRANSCONAL SFC | ALL TRANSCONAL SPT ALL TRANSCONAL SFC ALL TRANSCONAL SFC | ALL TRANSCONAL SPT ALL TRANSCONAL SFC ALL TRANSCONAL SFC | ALL TRANSCONAL SPT ALL TRANSCONAL SFC ALL TRANSCONAL SFC | ALL TRANSCONAL SPT ALL TRANSCONAL SFC ALL TRANSCONAL SFC | ALL TRANSCONAL SPT ALL TRANSCONAL SFC ALL TRANSCONAL SFC | ALL TRANSCONAL SPT ALL TRANSCONAL SFC ALL TRANSCONAL SFC |

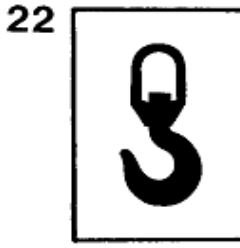
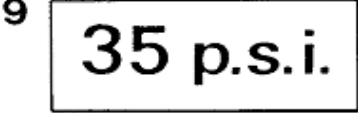
IN THE EVENT OF THE ABOVE OILS NOT BEING AVAILABLE EQUIVALENT OILS SUPPLIED BY A REPUTABLE MANUFACTURER MAY BE USED

19

SAFETY WARNING

- 1 Before starting this machine, the operator should be familiar with the operating instructions issued by the manufacturer.
- 2 The manufacturer's rated capacity must never be exceeded.
- 3 Before carrying out any maintenance, servicing, or greasing, always ensure that the engine has been switched off. Never work on a machine while it is running.

W504694600



15

Top up with Hydraulic Oil ONLY
DO NOT use Brake Fluid

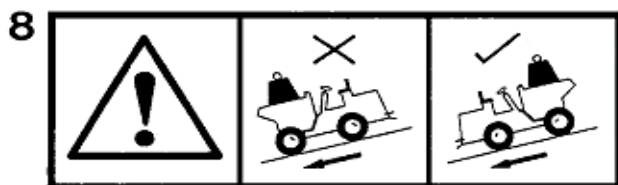
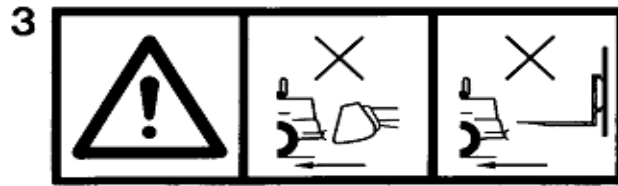
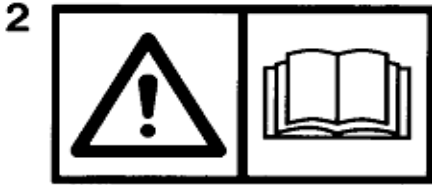


DECALS & PLATES

J - 2

| Item | Part no | Serial no | Description | Qty |
|------|-----------|-----------|-----------------------------|-----|
| 1 | V2003153 | | DECAL, 2B1500 | 2 |
| 3 | DM197 | | DECAL, Lubrication oils | 1 |
| 7 | V2003142 | | DECAL, Warning - wheel nuts | 1 |
| 9 | 10540A02 | | DECAL, 35psi tyre pressure | 4 |
| 15 | 10848A01 | | DECAL, Brake fluid | 1 |
| 17 | V2004472 | | DECAL, Max. payload 1500kgs | 1 |
| 19 | 504694600 | | DECAL, Safety warning | 1 |
| 20 | V2003598 | | DECAL, British made | 1 |
| 22 | V2003665 | | DECAL, Lift here | 2 |

Items not supplied in decal kit



DECALS & PLATES**J - 3**

| Item | Part no | Serial no | Description | Qty |
|-------------|----------------|------------------|-----------------------------|------------|
| 1 | V2004227 | | DECAL, Battery isolator | 1 |
| 2 | V2004229 | | DECAL, Operators handbook | 1 |
| 3 | V2004245 | | DECAL, No buckets, No forks | 1 |
| 4 | V2004244 | | DECAL, Towbar loadings | 1 |
| 5 | V2004282 | | DECAL, Hot surfaces | 1 |
| 6 | V2004307 | | DECAL, Electrical hazard | 1 |
| 7 | V2004288 | | DECAL, Starting handle | 1 |
| 8 | V2004450 | | DECAL, Gradients | 1 |
| 13 | V2004744 | | DECAL, Eye protection | 1 |
| 15 | V2005126 | | DECAL, Heaped load | 1 |

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

