WINGET

OPERATION, MAINTENANCE & SPARE PARTS MANUAL

7P (200P) PORTABLE PAN MIXER

EXPORT SPECIFICATION

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This manual is a reprint of the Winget publication No S83 last printed during June 1975 and is a direct copy of one of the remaining original manuals.

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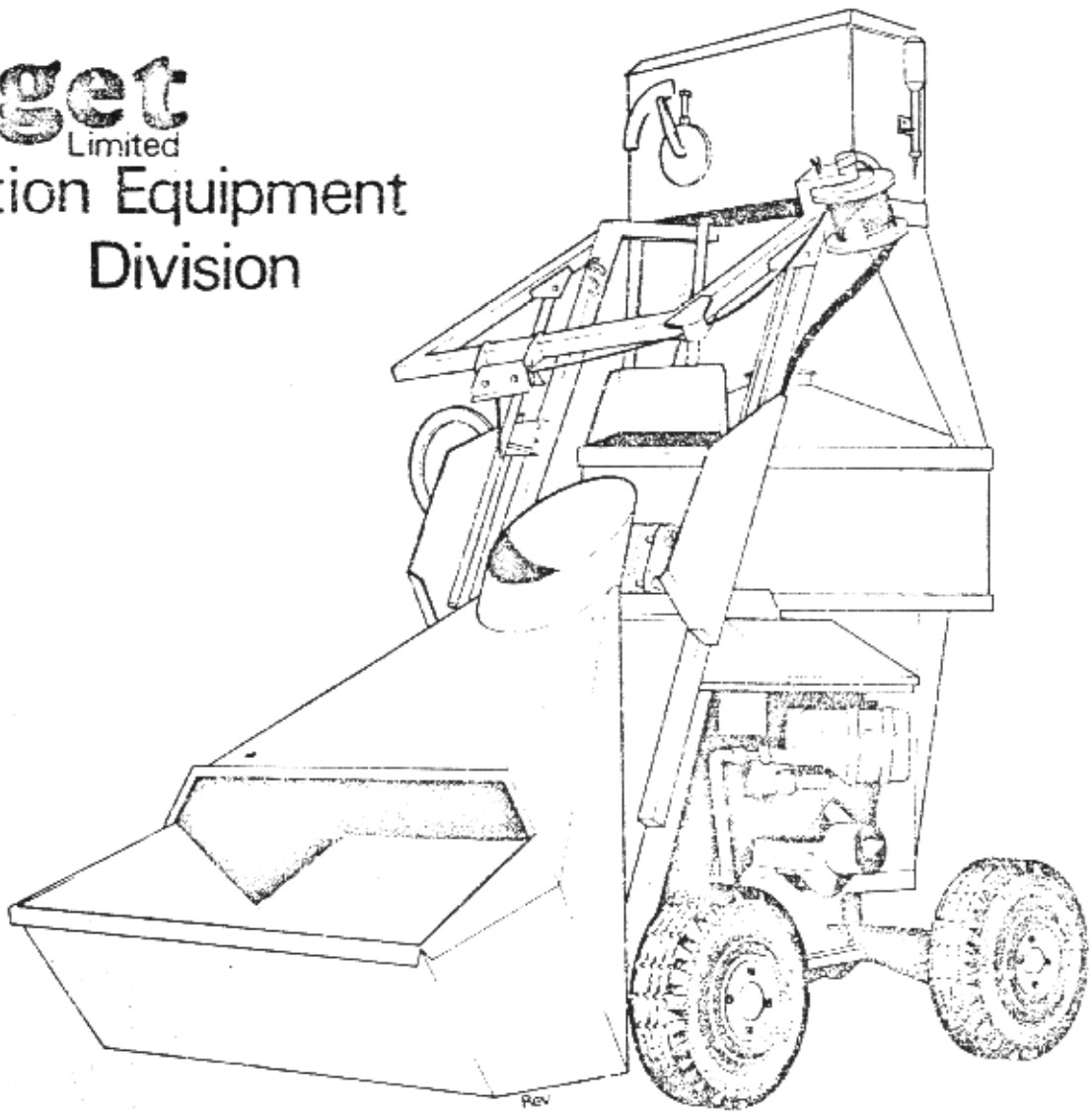
Winget Limited

Construction Equipment Division



7P (200P) Export Only

Operation, Maintenance and Spare Parts Manual

INTRODUCTION

The operating instructions and maintenance recommendations contained in this book will enable you to become familiar with your mixer to obtain the best results in the shortest possible time.

The life and trouble free running of your machine will depend largely on the care it receives. It is your responsibility to ensure that the maintenance instructions outlined in this book are carried out.

When replacements are required, it is essential that only genuine parts are used and that any repair or servicing work is carried out be competent mechanics.

WINGET LTD.

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GUARANTEE

The Company will supply free of charge to any destination in the British Isles named in the tender, or F.O.B.British Port in the case of goods situated abroad, any part or parts which, under normal use and service, appears, to the Company's satisfaction, to have been at the time of delivery defective indesign, workmanship or material, or at its discretion, the Company will repair such parts, provided it is notified thereof within twelve months or 2,000 working hours from the date of delivery (whichever shall be the earlier) or, where the Company is responsible for erection, within twelve months from the date on which the customer is notified that any plant or machinery is ready for starting up provided that:

a) Written notice is given to the Company within seven days of the discovery of the defect.

b) Unless otherwise agreed, the alleged defective part or parts are returned to the Company's works, carriage paid, and its inspection establishes the claim. Replaced parts shall become the property of the Company.

c) No part which is not of the Company's manufacture has been fitted, otherwise than by it or on its behalf, with its written approval.

d) No unauthorised alteration or modification has been made to the machine or component the subject of the claim.

In no case shall the Company be responsible for the cost of fitting replacement parts.

Machine parts or components sold by the Company but not of its manufacture are subject to the Guarantee contained herein or such guarantee as is provided by the makers thereof where such guarantee is less than the Guarantee herein contained.

The obligation to repair or replace defective goods herein shall constitute the sole and total liability of the Company whether arising under contract negligence or otherwise for such defective goods or for any loss, damage or injury to any person or any property arising from the defective goods.

This Guarantee is extracted from the Company's standard conditions of sale.

Group	Ref. No.	Amendment
A4	—	Remove Pages 21 to 28 and 29 to 31 and replace with new pages supplied.
D5	—	Add new page.
E5 and E6	—	Remove and replace with new page.
E11	51	Add to Parts List Ref. No. 51 Valve Cover Plate 555-1946 Qty. 1. Add to illustration with Ref. No. 34, 33, 29.
E11—29, E13—35, E15—29 and E17—38	—	Delete Part No. 450-660000, replace with Part No. 450-696000.
E13	55	Add to Parts List Ref. No. 55. Valve Cover Plate 555-1946 Qty. 1. Add to illustration with Ref. 43, 41, 35.
E15	49	Add to Parts List Ref. No. 49. Valve Cover Plate 555-1946 Qty. 1. Add to illustration with Ref. 36, 39, 35, 29.
E17	63	Add to Parts List Ref. No. 63. Valve Cover Plate 555-1946 Qty. 1. Add to illustration with Ref. 50, 47, 46, 38.
J2	6	Delete Part No. 397-227 and replace with 397-226000.
L11	31	Add to base of Air Cleaner Ref. No. 27. Ref. No. 31 Split Pin 353-304800 Qty. 1.
L11 and L12	—	Add Note: Cyclopac Air Cleaner to be mounted in lowest position with top mounting band hard against shoulder of upper part of body and with stack cap forward.
L12	33	Add to base of Air Cleaner Ref. No. 30. Ref. No. 33 Aplit Pin 353-304800 Qty. 1.
L13	—	Remove Norco from title replace with Electric Motor.
N1	—	Remove Pages 1 to 23 and 24 to 37 and replace with new pages supplied.
Loadcell and Gauge Spares	1	Delete Part No. 555-1244 and replace with 555-1945.

* New pages A4, D5, E5, E6, N1 above have been replaced.

Ensure that the label depicted below is located on your machine.

Winget Limited

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.

If the machine is repainted for any reason a replacement label must be obtained from Winget on Spare Part Number 50-46946.

NOTES FOR SAFE OPERATION

1. IMPORTANT

Read the instructions in this handbook together with these notes, and satisfy yourself that you understand all the controls and their function before attempting to operate the machine.

2. BEFORE STARTING THE MIXER

Check:
a) That all guards are in position and fitted correctly.
b) All control levers are in neutral.
c) No one is in or on the machine.
d) On electric powered mixers, ensure that the power supply has been correctly connected by a qualified electrician and any trailing cable is protected from damage and not liable to be tripped over.

3. WHEN OPERATING THE MIXER

a) Do not allow unauthorized persons to climb on or have any part in the operation of the machine.

b) Do not climb on the machine yourself unless absolutely necessary and then:-

(i) Use only the steps and platforms provided.
(ii) Keep your clothing clear of any moving parts.

c) In the case of mixers fitted with loading hoppers, do not allow any person to walk, stand or lean under the hopper when raised.

d) Where mixers are fitted with drag feeders, do not allow the rope to become snagged around any obstruction or person. Replace ropes as soon as badly frayed.

e) Do not add fuel, hydraulic oil or lubricate the machine whilst it is running.

f) If engine housing is fitted keep this closed whilst mixer is running.

4. MAINTENANCE AND REPAIRS

Before starting any work:-

a) Stop the engine or switch off electric motor, isolate from mains supply and remove fuses.

b) If working out of sight under the machine or in the drum, try to have a trained person standing by.

c) Display a warning notice.

d) Do not work under raised loading hopper unless it is securely chained or propped.

5. ON COMPLETION OF MAINTENANCE

Check: a) That the mixer functions correctly.

b) All guards are correctly fitted.

c) All control levers are in neutrel position.

If you are in any doubt about the safe condition of your machine please consult Winget Limited Service Department.

Description & Operation

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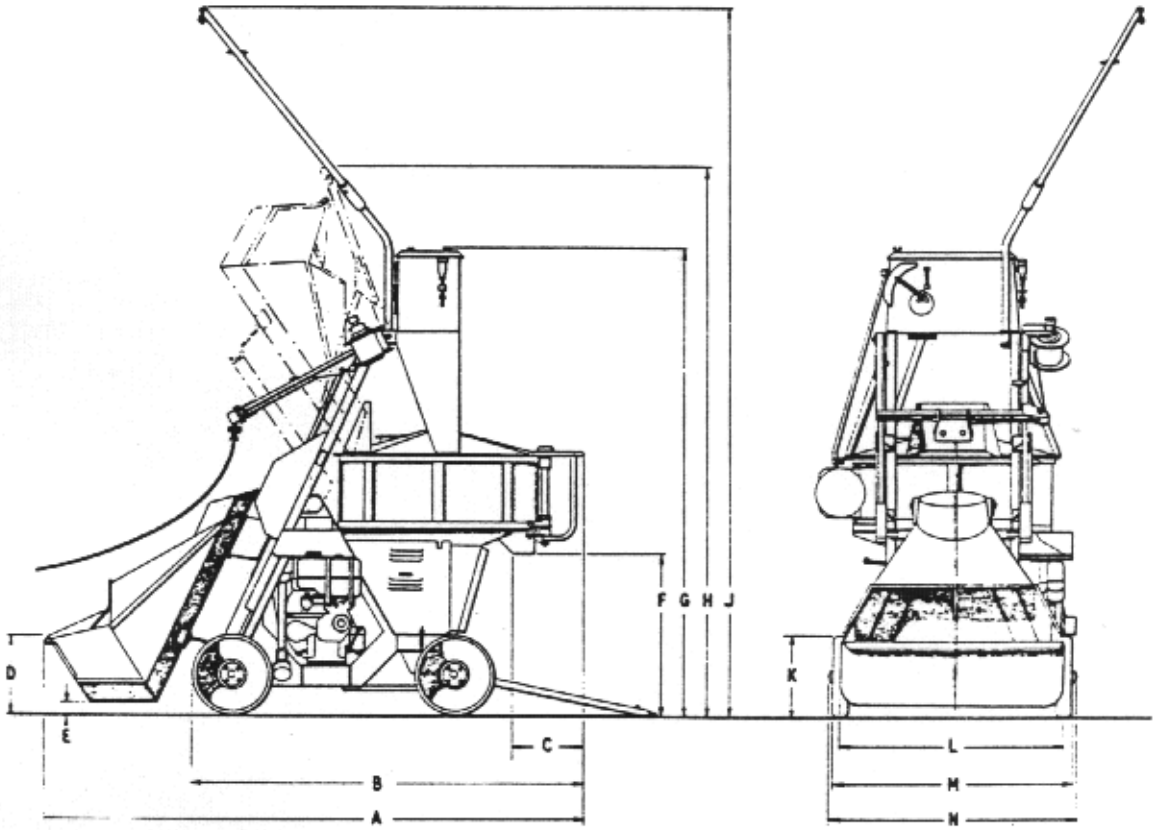
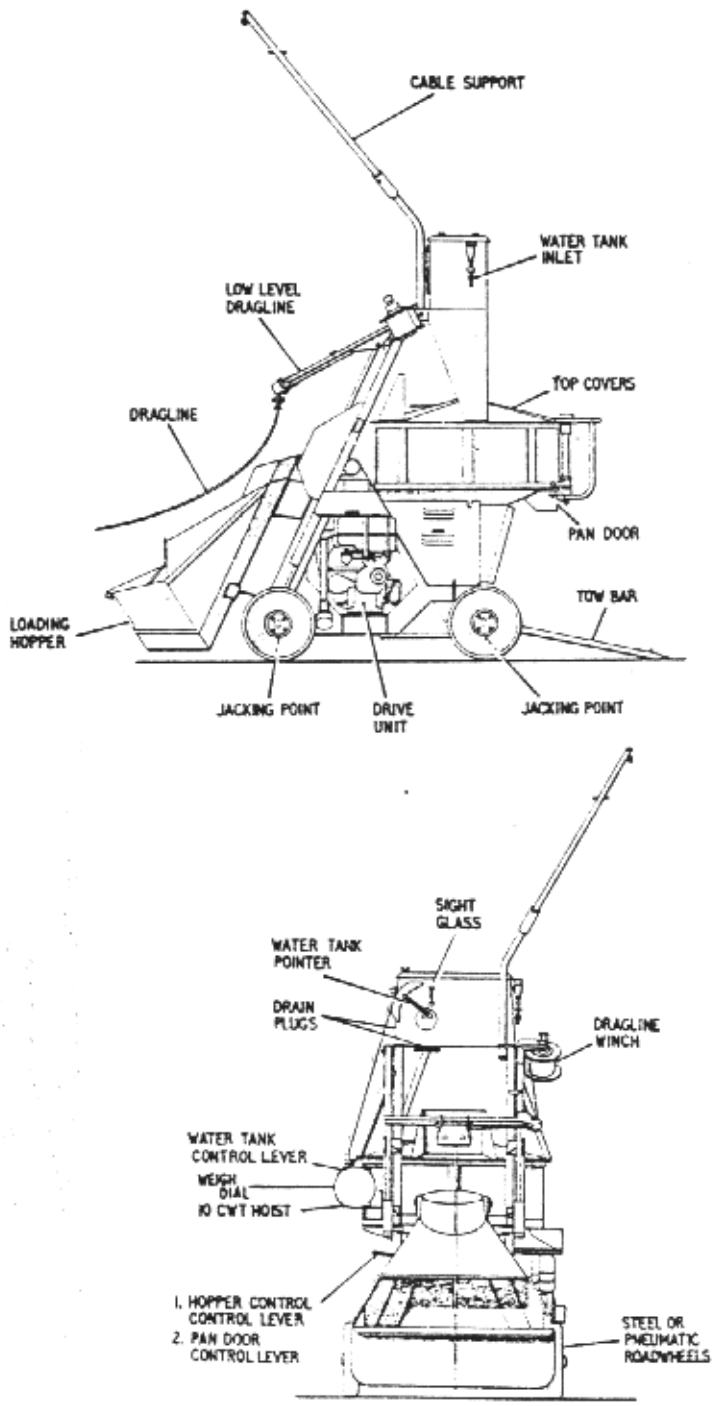


DIMENSIONAL DRAWING FIG. 1.

A	372. cm	12 ft. 3 in.
B	271 cm	8 ft. 11 in.
C	48 cm	1 ft. 7 in.
D	52 cm	1ft. 9 in.
E	8 cm	3 in.
F	112 cm	3 ft. 8 in.
G	323 cm	10 ft. 7 in.

H	377 cm	12 ft. 5 in.
J	488 cm	16 ft. 0 in.
K	56 cm	1 ft. 10 in.
L	152 cm	5 ft. 0 in.
M	164 cm	5 ft. 5 in.
N	173 cm	5 ft. 8 in.

Approximate weight 2286 kgs (5040 1bs) depending on Drive unit filted.



GENERAL ARRANGEMENT FIG. 2.

Transportation of Mixer

For the purpose of transporting your mixer to site the water tank has been mounted on the dragline jib. This must be moved back to the working position over the mixing Pan. First move the dragline jib manually into a horizontal position. Remove the hex. head bolts, nuts and spring washers from the stowage brackets and slide the water tank into working position. Secure with existing bolts through six holes provided. Reconnect the outlet pipe to the water tank using two hex. head bolts, nuts, spring washers and gaskets. Also reconnect the tank operating rod, one end to the water control level and the other end to the ram link; replacing washers and split pin one end and Locknut the other.

Anti-Bounce

Anti-bounce bracket and tie bar are supplied as optional extras, to be used when towing a mixer fitted with pneumatic wheels where local regulations allow.
The anti-bounce bracket is bolted to the hopper cradle by means of two hex. head bolts, nuts and spring washers, and locked in position to the two jacking tubes welded to the mainframe thus preventing the hopper bouncing when in transit. A tie bar is also supplied to prevent movement of the dragline jib, fixed in position one end with Hex. head bolt, nut and locknut. Using existing hole in guard and upper stop bracket, while the other end is located in a lug attached to dragline jib and tightened down securely using a special locking nut.

Tyre Pressure

If pneumatic wheels are fitted check tyre pressure, regularly, and set at 2.81 Kg/cm^2 (40 PSI) except when 600–16 RK3A tyre is fitted then set at 3.86 Kg/cm^2 (55 PSI).

INSTALLING YOUR MIXER ON SITE

a) See that your mixer is standing level in both directions with the wheels in line. Check using spirit level along and across weighing links (10-D5). This is necessary if accurate weighing is to be achieved. Remove anti-bounce bracket and tie bar if fitted. Lower jacks (if fitted) with handles provided to take weight off the road wheels, when this is done engage sprags and screw up to lock the front axle and firmly chock the mixer in place. Remove and stow the towing bar, replace drop end pin in front axle. The wheels may now be removed and either stored or fitted to another machine.

b) If a batch weigher is fitted, make certain that there are at least 50 mm (two inches) clearance between the ground and the base of the hopper when the loadcell striker is resting on the loadcell striker guide.

c) If a dragline feeder is fitted, erect the electric cable support mast.

d) Study carefully the engine instruction handbook, before any attempt is made to use the mixer. Check the amount of fuel in fuel tank and especially the level of the lubricating oil in the engine sump. The covers on this machine provide ample ventilation, so keep them in position.

e) Remove the hopper safety chain. This is done by turning the engine by hand, with the hopper control lever held in the RAISE position. When the hopper is fully up, release the chain and lower the hopper. (This chain must always be used when transporting the mixer)

DANGER Do not walk, stand or lean under raised hopper unless it is securely chained.

f) Check level of the hydraulic oil in the header tank, with the hopper down. Oil should be visible but not more than 12 mm (½") up from the bottom of the filler (15-E5).

g) Connect the water supply to the water syphon tank inlet. A gauge glass mounted on the side of the tank will show when the top compartment of the tank is full. Minimum head of water required above the centre of the inlet valve is 1830 mm (6 ft.). The bore of hose to be used must be 25mm (1 in.) minimum with a short run of hose, if continuous working is required.

WARNING Before starting engine ensure water supply has been turned on. Water pump MUST NOT be run dry.

h) Assemble the portable feed apron, if one is to be used, placing it squarely in front of the mixer so that the hopper does not foul it when being raised or lowered. The vertical rubber flap is pushed forward by the dragline shovel when charging the hopper, the flap preventing materials from falling between the hopper and ramp. Finally, stake the apron securely in position, using the four picketing lugs on the sides. Extend the centre position of the ramp to separate the aggregate by fitting boards.

j) If an electric drive is used, after the circuit has been connected or re-connected, ensure correct direction rotation of motor. This should be in a clockwise direction when viewed from the starter side of the mixer. (ie opposite side to controls)

k) Check that the clutch (if fitted) is disengaged before starting the engine.

l) Check 1.5 mm to 3.0 mm (1/16" to 1/8 ") clearance between mixing blades and adjacent wearing plates.

m) Plough blades to run on pan centre line.

n) Check level of oil in reduction gearbox.

TRANSMISSION

The drive to the reduction gearbox is by a polyvee vee belt from the power unit direct to gearbox, the gearbox having a reduction ratio of 30 to 1. A jockey pulley is mounted on the mainframe allowing adjustment to be made to the polyvee vee belt when necessary. A sintered plate clutch may be fitted as an optional extra. This is mounted on the input shaft of the gearbox and is manually operated. Its advantages are:-

a) To reduce wear in allowing the rotor drive to be disengaged during idle periods (only when pan is empty).

b) To disengage the rotor for starting the engine.

c) To allow independent operation of the hydraulic services and dragline winch unit.
The speed of the rotor is 33. r.p.m. at an engine speed of 1800 r.p.m. (Electric 1450 r.p.m.)

If a diesel engine is fitted to your mixer, read carefully the manufacturer's operating and maintenance manual, a copy of which is supplied with this machine. If an electric drive is used, the motor must be connected to run in a clockwise direction when viewed from the starter side of the mixer. (ie opposite side to controls).

MIXER CONTROLS

Hopper Control

The hydraulic control valve for operating the hopper is located on the mixer on the left hand side looking from the hopper end. The position is illustrated on Fig: 2.

Hopper Operation

To raise the hopper move the control lever upwards as far as it will go and hold it there until the hopper is fully up. Loaded hopper must not be dropped onto the loadcell as this will cause damage to the weighing mechanism. DO NOT hold control in the "Raise" position with the hopper up more than a few seconds or overheating and loss of efficiency will result.
To lower hopper push the control lever downwards; releasing the lever will check the descent of the hopper as necessary.

DISCHARGE DOOR-HAND OPERATED

To open discharge door turn manual door opening handle (9-P2) clockwise and anti-clockwise to close.

DISCHARGE DOOR - POWER OPERATED

To open door move control lever down, and up to close from mid position as indicated. DO NOT hold lever in open or close position when door is at end of its travel in either direction. Intermediate positions of the door may be obtained by releasing the lever when the door is in the desired position.

CLUTCH - OPTIONAL

A side to side control is used to operate the clutch unit coupling the drive unit to the mixing blades. Push the control lever to right to engage and left to disengage drive. It should be noted that the use of the clutch be restricted to engine starting and during idle periods when rotation of the mixing blades are not required. THE PRACTICE OF ENGAGING THE CLUTCH WHEN THE PAN IS CHARGED WITH MATERIAL MUST BE AVOIDED, EXCEPT IN AN EMERGENCY, AS THIS WILL SERIOUSLY OVERLOAD THE TRANSMISSION SYSTEM.

OPERATION—MIXING

It is important that the mixing blades are rotating at their full working speed before material is fed into the pan. It is recommended to reduce mixing time cycle to a minimum, cement, water and aggregate be added to the pan simultaneously. The actual mixing time will vary depending on type of mix, but average time for charge and mix is 45 seconds. THE MIX SHOULD NEVER BE ALLOWED TO REMAIN IN THE PAN FOR MORE THAN TWICE THE MIXING TIME REQUIRED FOR ANY PARTICULAR MIX.

The action of mixing blades and aggregate generates a small amount of heat which will cause water content to drop and consequently stiffen the mix. In event of the mixer stalling, clutch should be disengaged and the power unit re-started to restore hydraulic power to open the discharge door. Stop power unit as a safety precaution, add water to mix and shovel out as much concrete as possible before attempting to re-start mixer.

OPERATION-DICHARGING

Normal discharge is by opening the discharge door and allowing the rotating mixing blades to discharge the concrete.

CLEANING THE MIXER

At the end of each day's work, or if the mixer is standing idle for a period of more than two hours, the mixer should be thouroughly washed out to prevent concrete setting in the pan or on the mixing blades A CLEAN MIXER IS MORE EFFICIENT, REDUCING THE WEAR ON PAN & MIXING BLADES.
Washing down should be carried out as follows:-
Remove top covers, and with the mixing blades rotating, rinse inside of the pan using a high pressure hose pipe. A quantity of gravel added to the pan will assist in a more intensive action. After some minutes open the discharge door and completely empty pan. Stop engine and thoroughly hose down paddle arms to remove all traces of concrete. Check setting of each mixing and scraper blade and adjust if necessary.

BATCH WEIGHER

The weigher gauge is mounted over the drive unit on r.h. side of machine when facing hopper and is connected by hydraulic piping to the loadcell mounted at the front/centre of the main frame.
HYDRAULIC CIRCUIT IS PRIMED AND SEALED ON LEAVING THE WORKS AND ON NO ACCOUNT SHOULD IT BE TAMPERED WITH.
The gauge calibrated from 0.500 kg. (0.1100 lb), gives accurate indication of batch weights. The adjustable coloured pointers mounted on the rim of the gauge can be set by the operator, to the aggregate proportions required. A protective cover is provided for the gauge box to prevent damage when not in use.
IT IS IMPORTANT THAT THE MIXER IS STANDING FIRM AND LEVEL AND THAT THERE IS AT LEAST TWO INCHES CLEARANCE BETWEEN THE GROUND AND THE BASE OF THE HOPPER AT ALL TIMES.
If aggregate is allowed to build up around the hopper and weigh gear links an inaccurate gauge reading will be obtained.

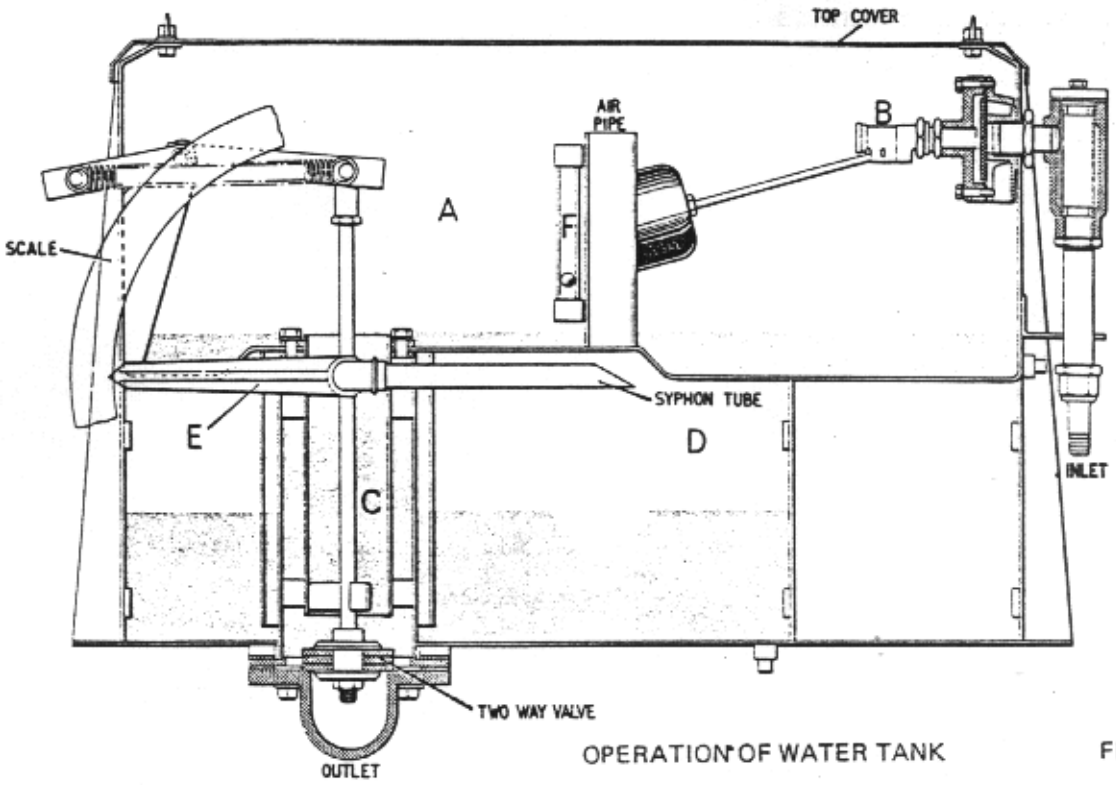
NORMAL OPERATION—WEIGHING GAUGE

Set the pointers on the gauge to the aggregate proportions you require. With the engine running, lower the hopper slowly on to the loadcell. Hold the hopper control lever fully down for a few seconds until the gauge needle begins to move up to "ZERO" then release. The hopper is then ready to load.
If you cannot get a "ZERO" reading adjust the gauge as described in the following paragraph:

TO "ZERO" WEIGHING GAUGE

With the mixer engine running proceed as follows

a) Lower the hopper on to the loadcell as described.
b) Check that the hopper is clear of the ground.
c) Taking care not to stand on any part of the hopper or weigh gear links, adjust knurled knob on side of gauge to set the pointer to "ZERO"
d) Repeat lowering the hopper three or four times to check that you obtain a consistent "ZERO" reading.



OPERATION OF WATER TANK FIG. 3.

WATER TANK

The water tank is of the syphon type which automatically measures the required quantity of water, from 7 to 56 litres (1½ to 12 gallons), set by the pointer "E" on the graduated scale at side of tank. The pointer is locked in the desired position by means of a clamp nut. Remember to release this and re-tighten each time the pointer is moved.

FILLING—WATER TANK

The operation of the tank is simple, with the water control lever set in the up position, the tank will automatically fill. Water enters the upper compartment "A" through the inlet valve and strainer unit "B" runs down the syphon cylinder "C" thus flooding the lower compartment "D" until the float lifts, cutting off the main supply. As soon as the indicator float in the sight glass tube "F" begins to rise, sufficient water is available for a measured amount of water to be discharged.

DISCHARGING—WATER TANK

Lower the water control lever which, in turn, lifts the two way valve from its lower seat to stop any further supply of water entering the lower compartment and, at the same time, the required amount of water will be discharged into the mixing drum. After discharging, reset lever.

DRAINING THE TANK

During periods of frosty weather, to avoid damage to the water tank, it is advisable to drain the tank at the end of each day's work. To do this set the pointer at the maximum discharge amount. Drain by disconnecting the mains water supply and operating the water control lever several times and also open the drain tap in the bottom of the tank. Closing it again when the tank is completely empty.

WATER PUMP SHOULD NEVER BE RUN DRY OR THE SEAL MAY BE DAMAGED.

DRAGLINE FEEDER

The winch mounted on the right of the dragline jib is hydraulically driven. The winch is energised via a hydraulic soleniod valve, by a push button switch mounted on the shovel handle. A car type dynamo, belt driven from the engine supplies power to energise the solenoid valve.

DRAGLINE FEEDER—OPERATION

Rig the mixer as shown in Fig. 2 and, with the engine running, pull the shovel back over the aggregate away from the mixer. Depressing the push-switch on the shovel handle will energise the winch and start to drag the shovel towards the mixer. To stop the loaded shovel when it has reached the hopper, simply release the push-switch and tip the contents of the shovel into the hopper.

After rigging the electric control cable, a trial run of the shovel may show that the slack of the electric cable is not taken up by the bottom free pulley as the shovel moves into the mixer. To prevent this increase the size of the weight on the bottom free pulley, if the pulley then comes too close to the ground wind a couple of turns of cable on to the stowage arm on the shovel.

ELECTRIC DRIVE MIXERS

When an electric motor is fitted, it is usual to transport the mixer with the loading hopper propped in the half raised position, as it is not possible to raise the hopper without connecting a supply to the motor. DO NOT move prop until electric motor is connected to the supply and normal hydraulic control of the hopper is obtained.

HOPPER LOADING ARRANGEMENTS

It is advisable to use a portable feeding apron or erect a barrier of boards so that materials may be conveniently tipped into the hopper. This is particularly important when using a mixer fitted with a batch weigher, to avoid a build-up of aggregate underneath the hopper.

BEFORE STARTING UP

a) Read carefully the engine manufacturer's handbook supplied with the mixer. Check the level of fuel in tank and especially the level of lubricating oil in engine sump.

The covers on this machine provide ample ventilation so keep them closed.

b) With the HOPPER DOWN, check the level of the hydraulic oil in header tank.

c) Connect the water supply to the water syphon tank inlet. The gauge glass will show you when it is full.

WHEN MIXING IS FINISHED

a) Empty and clean out mixing pan with plenty of water.

b) Clean out hopper.

c) Drain water syphon tank if frost is likely.

d) Raise hopper and fix safety chain.

e) Stop engine (or electric motor if fitted).

f) Wash down outside of mixer.

g) Grease up machine for next day's work.

VOLTAGE SETTING INSTRUCTIONS

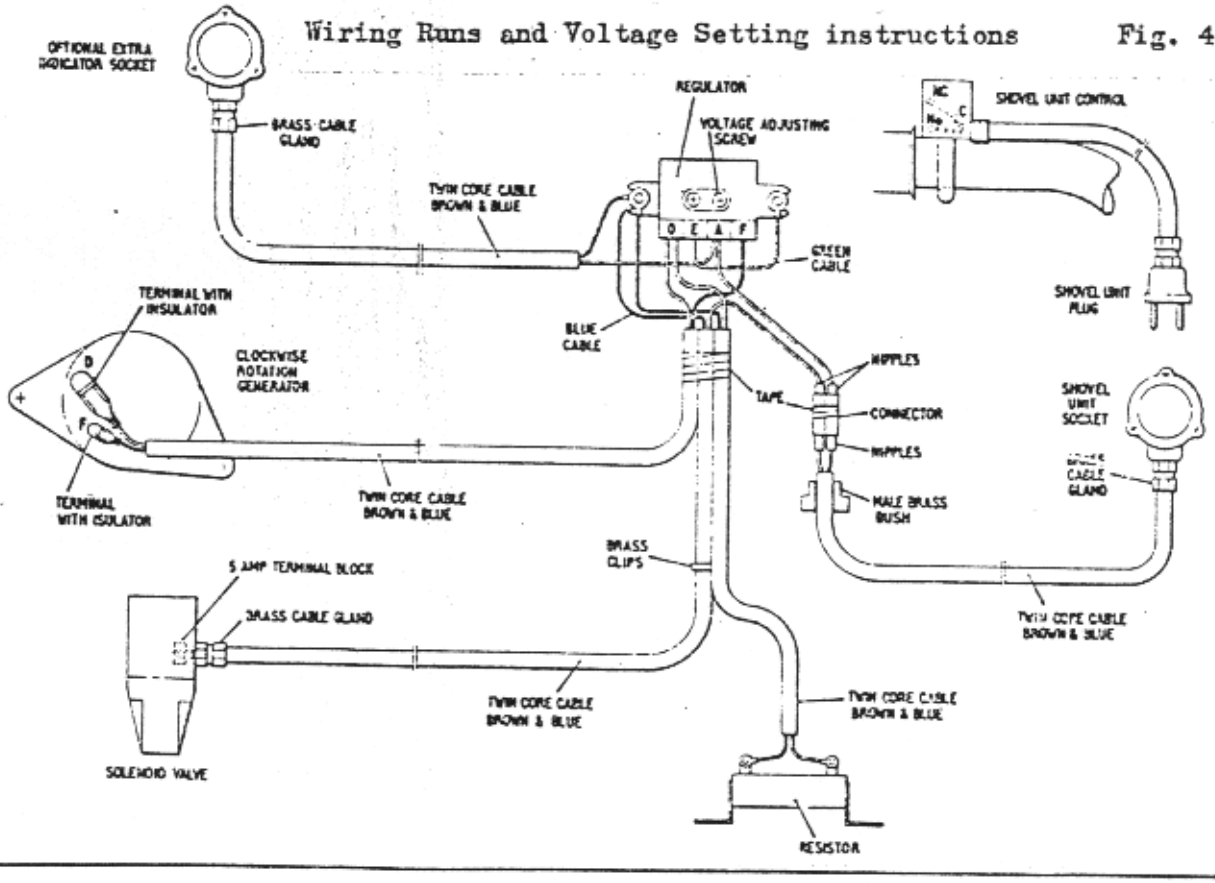
Start machine. Plug in loading shovel to machine, remove solenoid valve cover and regulator adjusting screw rubber plug, connect a d.c. voltmeter to the two way terminal block inside the valve body, with the aid of a second person to operate the loading shovel, by depressing the shovel control unit push button. Note the reading on the voltmeter. The correct figure should be 12 volts. If the voltmeter reads in the reverse direction interchange the voltmeter leads.

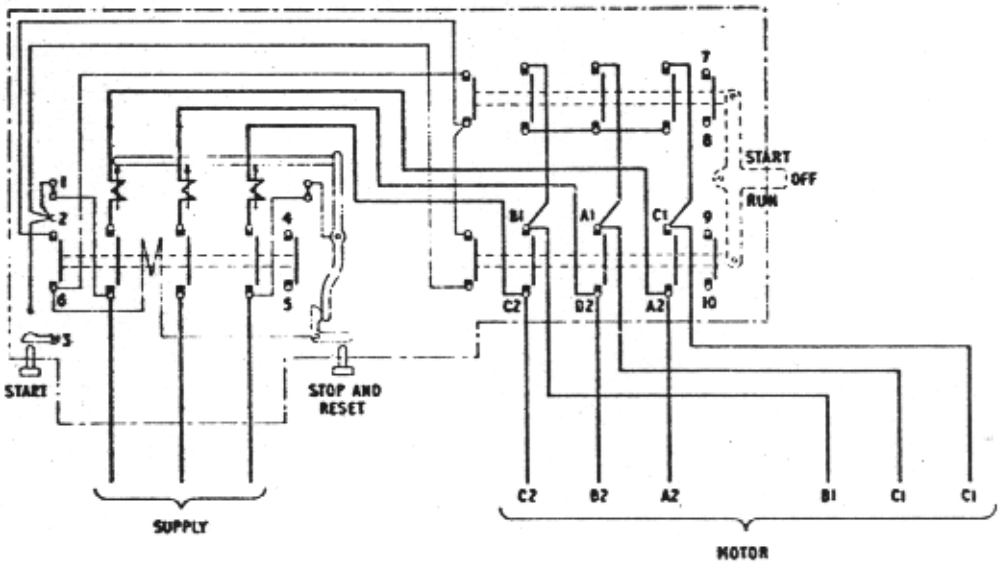
PROCEDURE FOR SETTING VOLTAGE

If voltage is incorrect then with meter still connected and the loading shovel working, turn voltage regulator adjusting screw situated above connection point 'A' with a small short screwdriver either clockwise or anti-clockwise until meter reads 12 volts constantly after adjustment replace valve cover and regulator plug.

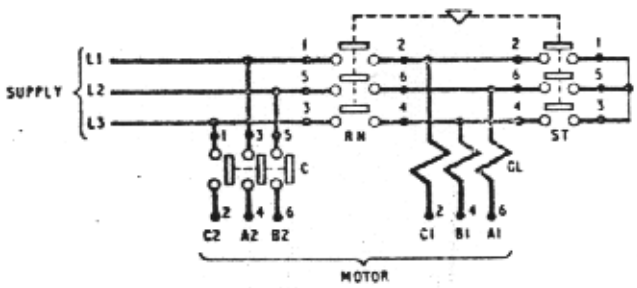
Note:- Do not interfere with adjusting screw above Connection Point 'E'
Optional extra socket voltage will read 15 volts approx. after the above has been carried out.

Wiring Runs and Voltage Setting instructions Fig. 4

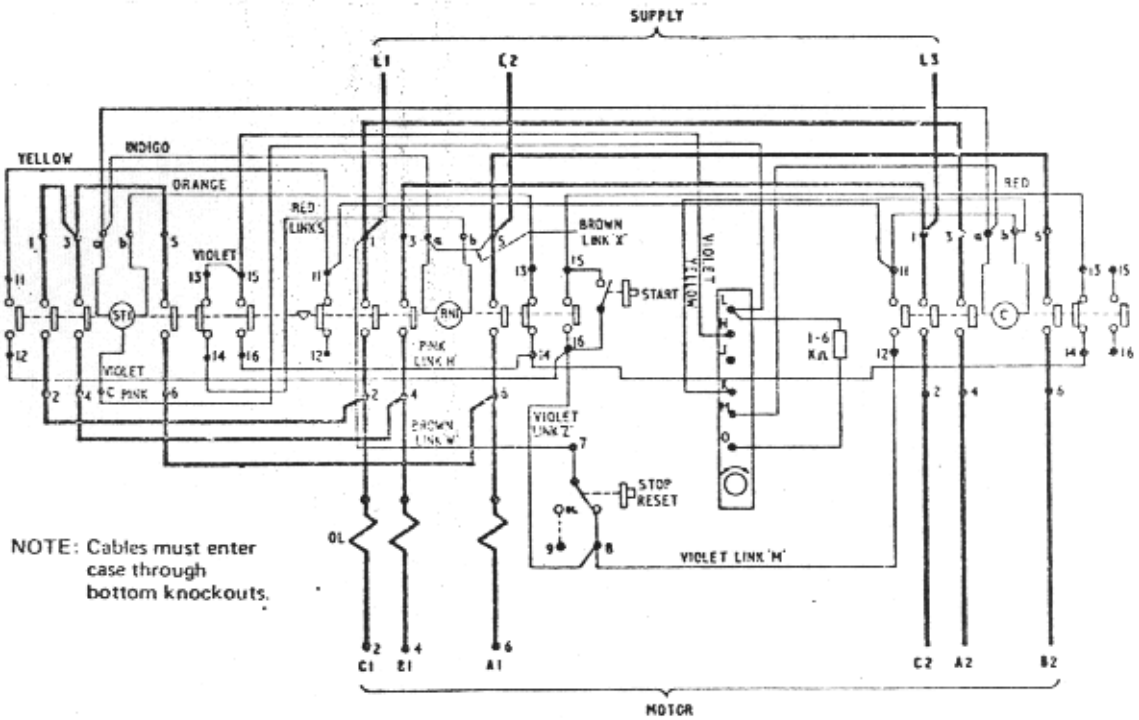




Hand Starter - Internal Wiring Diagram Fig. 5



Automatic Starter - Key Diagram Fig. 6



Automatic Starter - Internal Wiring Diagram Fig. 7

Maintenance

LUBRICATION

SERVICING FREQUENCY

The times quoted in this section i.e. weekly, monthly etc. are based on the following table of running hours:-

DAILY	–	8 RUNNING HOURS
WEEKLY	–	50 RUNNING HOURS
MONTHLY	–	200 RUNNING HOURS
THREE MONTHLY	–	600 RUNNING HOURS
SIX MONTHLY	–	1200 RUNNING HOURS

GENERAL

All shafts and bearings needing daily attention, are lubricated through drilled shafts and special grease-ways by fitting grease nipples. The lubrication diagram Fig. 7 will give you the location of these grease nipples, which should be greased daily, using a grease gun charged with a good quality medium grease (SHELL ALVANIA 2)

It is essential that operators do not allow grease or oil used for servicing to become contaminated with sand or cement dust. At weekly intervals a little engine oil should be applied to pin joints on clutch lever linkage, and low level dragline pivots, etc.

REDUCTION GEARBOX

STAUFFER LUBRICATION–REDUCTION GEARBOX

At weekly intervals the stauffer protruding through the main-frame adjacent to the discharge door chute should be given several turns. Refill SHELL ALVANIA 2. Grease when empty.

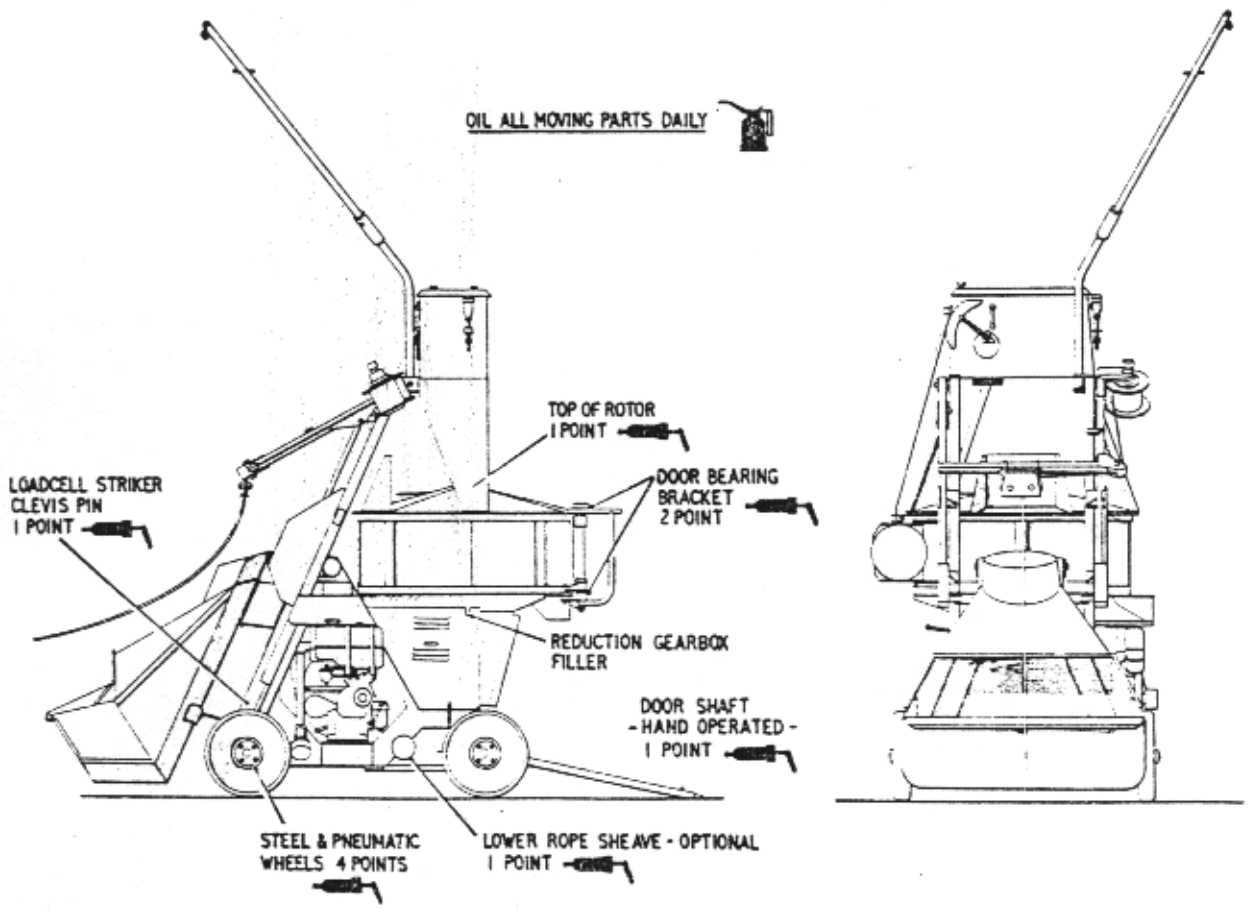
OIL CHANGE–REDUCTION GEARBOX

Oil in the gearbox should be changed after the first three months running and subsequently every six months. This is best carried out at the end of a day's work when the oil is warm.

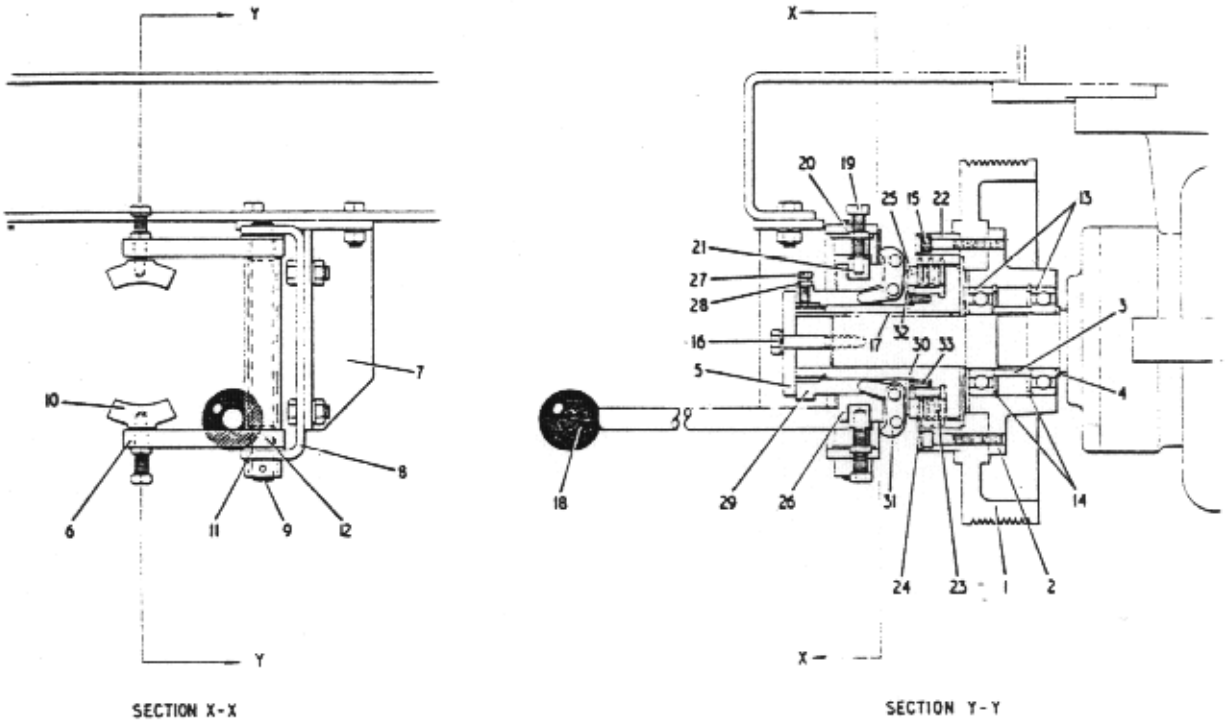
1. Remove drain plug and collect oil in a suitable container-capacity 5.12 litres (9 pints) approx.
2. Refill with SHELL VITREA 79 or equivalent to level.

TOPPING UP–REDUCTION GEARBOX

An extension piece is fitted to the reduction gearbox with a filler tube attached. This is located on the engine side of the mixer. Remove the oil filler cap and top up as necessary until level with top of filler tube using SHELL VITREA 79.



LUBRICATION FIG. 8.



CLUTCH ASSEMBLY FIG. 9.

POLYVEE VEE BELT ADJUSTMENT

It is important that the tension of Polyvee belts be checked at weekly intervals to ensure efficient power transmission.

An adjusting screw is fitted to the jockey pulley. First slacken off self locking nut on pivot shaft. Allowing jockey pulley to move freely along slot in pivot shaft bracket when adjustment is made. Next bring nut and locknut together on adjusting screw and make the necessary adjustment. There should be no free movement in the Polyvee vee belt when adjustment has been made. Finally release nut from locknut and secure in position.

CLUTCH ADJUSTMENT

During running in period, the clutch should be frequently checked, if excessive slipping and overheating are to be avoided. It must be appreciated that in a new clutch (or one fitted with new discs) full driving power will not be reached until discs have bedded in and at the start one or two adjustments may be necessary to achieve this after which normal checks can be adopted.

To adjust clutch ref. to fig. 8 slacken off the locking screws (27) and turn the adjusting bush (29) clockwise until the required torque capacity is obtained. A correctly adjusted clutch will require only a moderate force on the operating lever. Attach a spring balance to the operating knob and check pull necessary to engage clutch this should be 11.3 Kgs. (25 lbs). When this has been done it is vitally important that the locking screws be tightened into the bottom of the nearest serrations in the centre (30) and locked in that position, merely tightening on top of the serrations may result in serious damage to the clutch.

LUBRICATING–CLUTCH

The toggles, and the sleeve should be lightly smeared with grease but the amount used should be only sufficient to prevent the moving parts from running dry leading to seizure. On no account must any form of lubricant be allowed to come in to contact with the friction discs.

REPLACING SINTRED DISCS

1. First release lock nuts (20) and slacken off tappet screws (19) and remove tappet brasses (21).
2. Remove setscrew (16) and clutch shaft cap (5)
3. Withdraw split pin and drop clutch operating pin (9) Thus releasing clutch operating arm (6).
4. Remove capscrews (15) and withdraw clutch unit from wormshaft.
5. Place the clutch unit on a clean bench surface, and unscrew adjusting bush (29) also removing sleeve (26).
6. Withdraw the pressure plate (32) three springs (33) and front plate (25).
7. Withdraw the three sintred discs (24) and spacer plates (23) Inspect and replace sintred discs if necessary. At this stage it would also be advisable to consider replacing tappet brasses (21).

Reverse this procedure for re-assembling.

MIXING AND SCRAPER BLADES ADJUSTMENT

Blades should be inspected daily for wear and adjusted if necessary to 1.5 mm to 3 mm (1/16" to 1/8") clearance between blade and bottom or side of pan as follows:-

1. Open discharge door and stop engine. Turn engine by hand with clutch engaged until the blade to be checked is adjacent to door opening.
2. Slacken blade fixing bolts to check alignment and retighten.
3. Slacken two setscrews on blade arm clamp. First check position of blade from centre of rotor, secondly make any necessary adjustment to blade clearance by tapping the end of paddle blade support until the correct clearance is obtained between blade and wearing plate. Retighten fixing bolts and setscrews securely.
4. After adjustment has been made, it is recommended that as a final check before running the drive unit, the rotor housing be rotated several times to ensure the blades do not foul the pan.

FAILURE TO MAINTAIN BLADES IN CORRECT ALIGNMENT WILL RESULT IN CONSIDERABLE WEAR TO BOTH BLADES AND WEARING PLATES.

FITTING NEW BLADES

Badly worn blades should be renewed as follows:-

1. Open discharge door and stop engine. Turn engine by hand, with clutch engaged, until the worn blade is over door opening.
2. Detach worn blade by removing the two fixing bolts, securing it to the blade support.
3. Fit new blade and tighten up after adjustment has been made.
4. Turn rotor to check that blade does not foul pan.

REPLACEMENT OF WEARING PLATES

To assist in replacement of either the inner, outer or bottom wearing plates, they have been divided into easily removable sections.

long life.

1. Remove a paddle arm support and paddle blade as previously described and turn engine by hand, with clutch engaged until the empty rotor arm is over the wearing plate to be removed.
2. If bottom wearing plates are to be removed, remove side cover to obtain access to counter sunk setscrews.
3. Remove counter sunk fixing screws and worn plates from machine. Refit new plates ensuring good seating scraping off any deposit of concrete built up locally around edge of the area covered by the old wearing plate.
4. Re-assemble mixing blades and check clearances.
5. Operate discharge door and adjust sealing strip-lock in position.

HYDRAULIC SYSTEM HEADER TANK

Ensure that the Hopper is FULLY DOWN and the engine STOPPED. Top up as necessary with oil of recommended grade, do not mix different grades of oil and clean around filler cap before removal. This is located inside the main frame on the side of the mixer opposite to the engine. Once a week check that the oil level in the tank is visible but no more than 12 mm (½") up from the bottom of the filter (15-E5)

FILLING FILTER REMOVAL—HYDRAULIC

The tank is provided with a cylindrical filter which filters the hydraulic oil when filling or topping up the system. This filter is combined with a breather unit which is incorporated in the filter cap. The filter should be removed once every three months for inspection, this can be carried out without draining the tank as follows:-

a) Clean the top of the tank and remove the filter cap/breather unit.
b) Unscrew the six self tapping screws securing the filter to the tank.
c) Remove filter. Cover the opening with a clean rag whilst filter is removed.
d) Thoroughly clean the filter in petrol, and air dry well before reassembly.
e) Remove rag and replace filter and self tapping screws.
f) Top up with oil if necessary and replace cap/ breather unit.

CLEANING BREATHER UNIT—HYDRAULIC

The breather in the cap on top of the filling filter should be washed in petrol every month and air dried thoroughly before re-fitting. Keep opening in tank covered with clean rag while cleaning breather.

CLEANING SUCTION FILTER—HYDRAULIC

The suction filter is located at the bottom of the hydraulic tank, this should be removed and cleaned in petrol ONLY when carrying out a complete machine overhaul.

DISMANTLING HYDRAULIC SYSTEM

Do not remove or expose any part of the internal hydraulic gear in the event of a breakdown unless instructed to do so. If you do, this may lead to further complications in correcting the fault. Remember that you have a "WINGET" Service Depot near you which is always ready and willing to help.

RECOMMENDED OILS HYDRAULIC

The capacity of the system is approximately 22 litres (5 gallons) and is filled at the works with SHELL TELLUS 29 for use in temperatures up to 90°F or TELLUS 33 in temperatures above 90°F. The particular grade shown on a label attached to the top of the header tank.

WATER TANK

Remove top cover every month. Clean and grease valve mechanism.

BATCH WEIGHER

To ensure maximum efficiency, keep the weighing mechanism as clean as possible, avoid build-up of material around link pivots (10-D1). Do not allow aggregate to accumulate on the ground under the hopper.

SPECIAL NOTE:

ON NO ACCOUNT MUST THE LOADCELL BE DISCONNECTED FROM THE WEIGHING DIAL. NO RESPONSIBILITY WILL BE TAKEN IF THE LEAD SEALS WHICH ARE ATTACHED TO THE PIPE UNIONS ARE BROKEN.

DRAGLINE FEEDER

Check dynamo brushes periodically. The regulator cut-outs should be maintained at 12½ to 13 volts. If the electric cable (25-G1) to the shovel needs repair it should not be shortened to less than 20 metres (65 feet).

DYNAMO BELT ADJUSTMENT

Slacken the two setbolts on the dynamo adjusting link (1-J1) and the two bolts securing the dynamo to its mounting bracket (2-J1) Pivot the dynamo until the drive belt is correctly tensioned, then re-tighten all bolts securely.

LUBRICATION

Grease nipples provided are shown in Fig. 6. Include these in your daily servicing.

GENERAL MAINTENANCE

Keep the mixer clean. Check for tightness, from time to time, and especially during the first few weeks of operation all bolts, nuts, keys, etc. Particular attention should be paid to engine fixing bolts. Clean top of header tank before removing filler cap or filter. Add oil of recommended grade only, through the filter provided. Drain water syphon tank during frosty weather. Lubricate all moving parts each night ready for the next day's working.

POWER OPERATED DOOR

Ensure the ram is set up to maintain a clearance between stop on pan door and welded distance pieces on the chute. This must be checked by moving the door physically not under power. Failure to do so may result in cracked door casting.

LIFTING BEAM

A lifting beam can be obtained to simplify the method of removing the engine. The lifting beam is bolted horizontally across the dragline and water tank support frames with the overhang on the engine side.

TO REMOVE ENGINE.

1. Ensure hopper is in the down position.
2. Remove fuel tank cover assembly complete with air cleaner.
3. Prop up fork end of jib struts on lower stop brackets.
4. Unbolt upper stop brackets and dragline guards from support frames.
5. Bolt lifting beam to support frames by lower lugs with overhang on engine side.
6. Place traveller assembly onto beam and secure stop bolt in position on end of beam.
7. Suspend lifting gear from traveller assembly.
8. Disconnect all mountings and connections to engine.
9. Position lifting gear around engine securely.
10. Lift engine and pull clear of machine along beam.

SERVICING SCHEDULE

DAILY

MIXER	Lubricate daily through grease nipples using a good quality medium grease. Alvania Grease 2 is used at works—see lubrication diagram. Thoroughly clean out mixing pan when mixing is finished, with water and gravel. Wash out hopper and hose down mixer.
MIXING AND SCRAPER BLADES	Inspect for wear and adjust to give 1.5 mm to 3.00 mm (1/16" to 1/8") clearance between bottom and side of pan. See page 8
ENGINE SUMP LUBRICATION FUEL TANK	See Engine Handbook

NOTE

IT IS IN THE USERS OWN INTEREST TO MAINTAIN ENGINE AIR, LUBRICATING OIL AND FUELFILTERS AT THE MANUFACTURER'S RECOMMENDED INTERVALS, TOPPING UP WITH CLEAN OIL AND FUEL FROM CLEAN CONTAINERS AS NECESSARY. RUNNING THE ENGINE WITH DEFECTIVE AIR OR OIL FILTERS WILL RESULT IN RAPID WEAR, HIGH RUNNING COST AND LOSS OF RELIABILITY.

WEEKLY

REDUCTION GEARBOX	Check oil level, for location See Fig. 6
HYDRAULIC HEADER TANK	Clean top of tank—remove filler cap and check level. Check with hopper down and engine stopped.
DRAGLINE	Check belt tension, adjust if necessary.
POLYVEE AD—JUSTMENT	Check tension of vee belt as described on page 7
ROTOR CLUTCH	Grease operating tappet brasses. Attach a spring balance to the operating knob and check pull necessary to engage clutch, this should be 11.3 kgs. (25 lbs). Give Stauffer one turn. (Wormbox)

WEEKLY

GENERAL	Apply a little engine oil to pin joints on water tank controls, axle pivots etc. Check two screws on hydraulic valve (hopper)

MONTHLY

BREATHER FILTER ON HYDRAULIC TANK	Remove breather filter and rinse in clean petrol, air dry thoroughly before refitting. Cover aperture while filter is being cleaned.

THREE MONTHLY

REDUCTION GEARBOX	Change oil after first three months operation and subsequently every six months—see below.
HYDRAULIC HEADER TANK FILLING FILTER	Remove, clean and inspect See page 8

SIX MONTHLY

BREATHER FILTER ON HYDRAULIC TANK	Renew Breather Filter.
REDUCTION GEARBOX	Drain and refill. See page 6

EQUIVALENT GRADES OF OIL

APPLICATION	SHELL	BP	ESSO	MOBIL	CASTROL
Worm Box	Vitrea Oil 79	Energol CS550	Teresso140	Mobil Gear 632	Alpha 717
Hydraulic System—up to 90°F	Tellus Oil 29	Energol HLP80	Nuto H.54	Mobil D. T. E. 25	Hyspin AWS 32
Hydraulic System—above 90°F	Tellus Oil 33	Energol HLP100	Nuto H.54	Mobil D. T. E. 26	Hyspin AWS 68
Grease Points	Alvania Grease 2	Energrease LS2	Beacon 2	Mobilplex 47	Spheerol APT 2

NOTE:- In the above we list the lubricant specifications as recommended by various companies. These are intended as a guide only and should your site conditions be in any way abnormal your local oil supplier should be consulted.

Spares

Please note that a number of components are described as being c/w screws, nuts and washers, this is no longer the case and all fixings should be ordered separately if required. Imperial fixings may no longer be available and the nearest metric equivalent will be supplied.

Winget

TO FIND A SPARE PART

The assemblies have been divided into groups and given identification letters A.B.C. etc. To identify a component, first find the relevant assembly in the list given on next page, this will give you a group letter to turn to. On turning to this group the illustrations will enable you to identify the part you required and give you a reference number. Against this number in the Parts List will be found the DESCRIPTION and PART NUMBER information which we require.

To avoid delays and errors, remember always to quote :-

THE MACHINE NUMBER
– which will be found stamped on a plate at the side of the machine

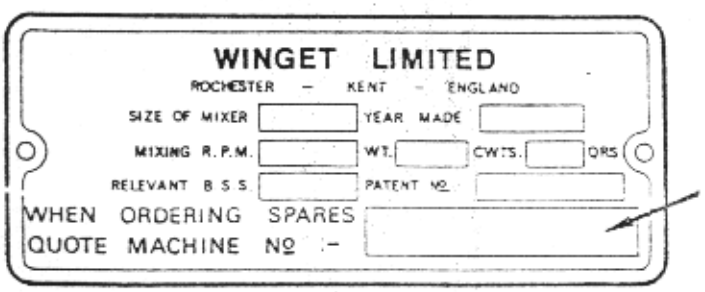
DON'T RISK DELAYS AND ERRORS

REMEMBER

ALWAYS QUOTE

THE SERIAL NUMBER

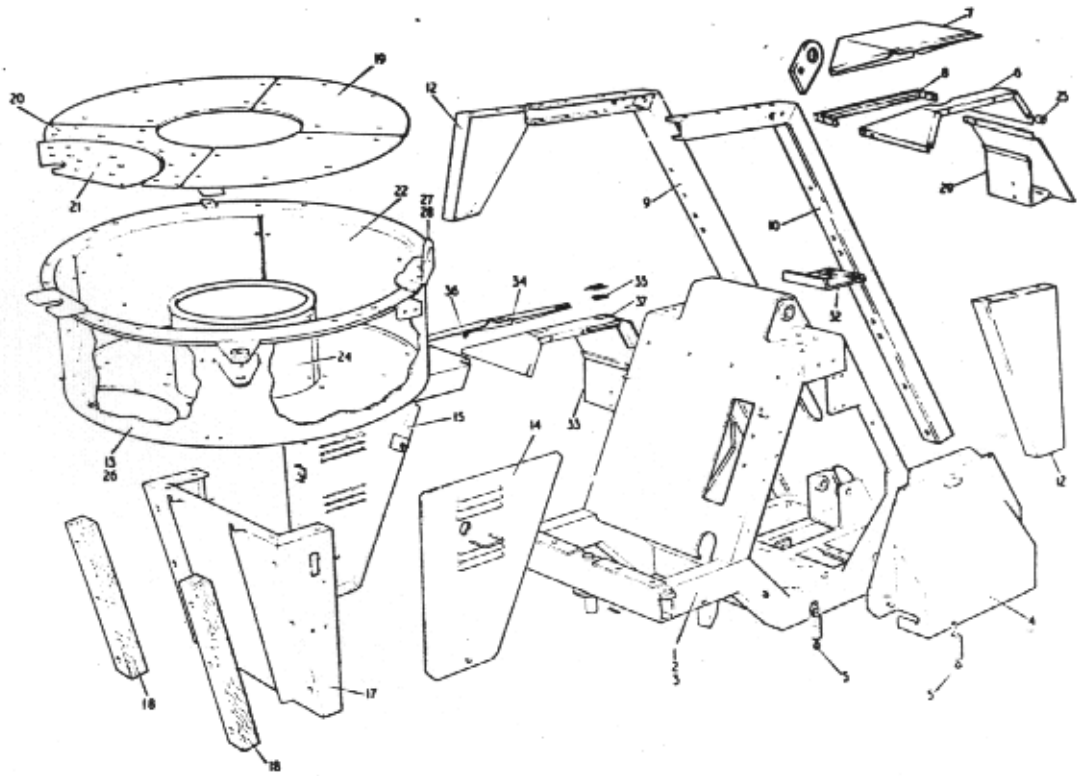
OF THE MACHINE



AND THE ENGINE NUMBER

A4	Mainframe Pan Wearing Plates and Guards
A5	Portability Steel Wheels
A6	Portability Pneumatic Wheels
B13	Mixing Blades and Rotor
B14	Pan Covers
D5	Cradle, Hopper, Loadcell and Gauge
E5	Hydraulic Tank
E6	Hopper Ram
E7	Control Valve
E8	Dragline Control Block
E9	Control Block (Hoist)
*E10	Basic Hydraulic Circuit
*E11	Basic and Dragline
*E12	Basic and Hoist
*E13	Basic, Hoist and Dragline
*E14	Power Door & Hoist
*E15	Dragline and Power Door
*E16	Power Door
*E17	Power Door, Hoist and Dragline
E18	Door Ram
*E21	Cessna Valve Assembly
*E22	Hydraulics for Cessna Valve
F3	Water Tank Mechanism
F10	Water Tank (12 Gallon)
F11	Water Tank Controls
F12	Water Pump (Type used when Water meter is fitted)
F13	Water Pump (Type used when Water meter is not fitted)
F15	Water System — without Water Meter fitted
F17	Water System — with Water Meter fitted
G1	Dragline
G2	Anti-Bounce
H1	Hoist Assembly (Export)
H2	Lower Rope Sheave (Export Hoist)
H3	Winch and Hoist Mechanism Mk II
H4	Winch and Hoist Mechanism Mk III
J2	Dynamo Drive
K2	Compressor Drive — (Optional Extra)
L11	Lister SR3
L12	Petter PH2
L13	Norco Electric
M1	Wiring Diagram
N1	Worm Reduction Unit
P1	Discharge Door (Hand and Power)
P2	Discharge Door Operation (Hand and Power)
Q1	Clutch Assembly
R1	Jockey Pulley
S1	Drive Bearing Bracket and Pump Mounting
U1	Dragline Loading Ramp
V1	Mixer with Portasilo

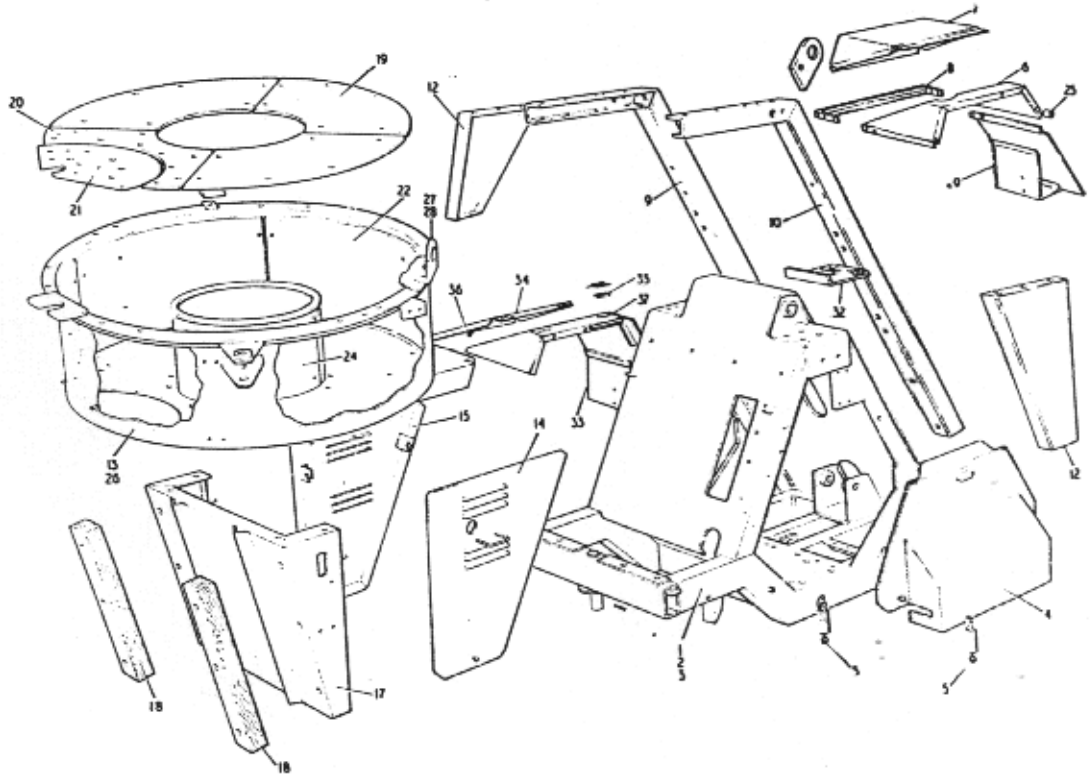
* On these pages, certain parts are marked with symbols. Detailed illustrations of these parts will be found at the end of Group E.



Ref Nº	Description	Part Nº	Qty
1	Mainframe (Basic)	555-1579	1
2	*Mainframe for Non-Weigher Machines used with (Basic) Mainframe 555-1579	555-1096	1
3	*Mainframe for Pneumatic Wheels & Manual Jacking Optional used with (Basic) Mainframe 555-1579	555-1026	1
4	Control side Cover	555-1315	1
5	Bonnet Clip	221-101000	4
6	Fuel Tank Shroud complete with	555-1284	1
	Hex Head Bolt	460-506100	1
	Hex Head Bolts	460-506060	4
	Hex Head Bolts	460-506080	2
	Hex Head Bolt	460-506280	1
	Hex Nuts	331-850600	8
	Spring Washers	464-306000	8
7	Engine Fuel Tank Cover complete with	555-1286	1
	Hex Head Bolt	460-506060	1
	Hex Nut	331-850600	1
	Spring Washer	464-306000	1
8	Back Stop for Fuel Tank Cover	555-1285	1
9	Dragline & Water Tank Support Frame (R.H.) complete with	555-1456	1
	Hex Head Bolts	460-350830	3
	Hex Head Bolts	460-350812	3
	Hex Nuts	330-350800	6
	Spring Washers	464-308000	6
	Plain Washers	463-308000	3
10	Dragline & Water Tank Support Frame (L.H.) complete with	555-1457	1
	Hex Head Bolts	460-350830	3
	Hex Head Bolts	460-350812	3
	Hex Nuts	330-350800	6
	Spring Washers	464-308000	6
	Plain Washers	463-308000	3

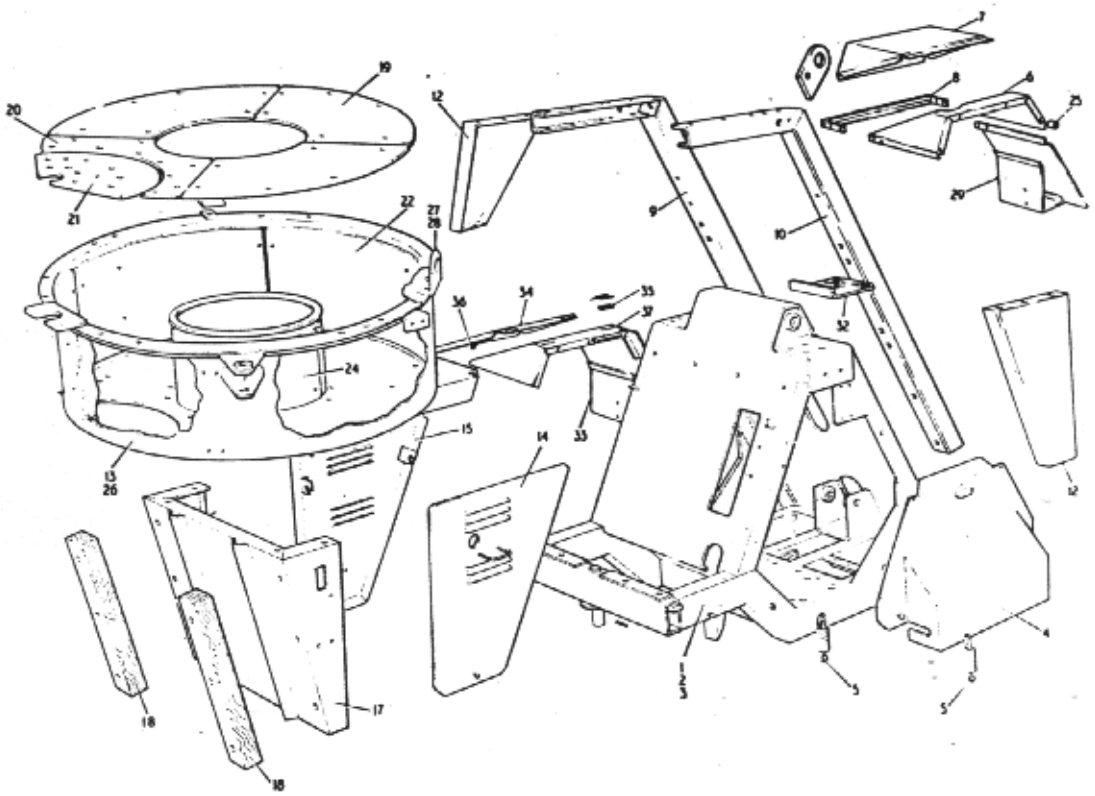
MAINFRAME, PAN, WEARING PLATES & GUARDS

***When Ordering these items the Basic Mainframe No.1 must always be Quoted too.**



Ref Nº	Description	Part Nº	Qty
11	–	–	–
12	Water Tank Support complete with	555-1604	1RH 1LH
	Hex Head Bolts	460-350810	4
	Hex Nuts	330-350800	4
	Spring Washers	464-308000	4
13	Mixing Pan (Power Door) complete with	555-1580	1
	Hex Head Bolts	460-350810	4
	Hex Nuts	330-350800	4
	Spring Washers	464-308000	4
14	Side Panel L.H.	555-1584	1
15	Side Panel R.H.	555-1585	1
16	–	–	–
17	Pedestal for Pan complete with	555-1386	1
	Hex Head Setscrews	418-250806	4
	Spring Washers	464-308000	4
	Hex Head Bolts	460-350608	6
	Hex Nuts	330-350600	6
	Spring Washers	464-306000	6
18	Wooden Buffers complete with	512-1334	2
	Coach Bolts	461-556160	6
	Hex Nuts	331 950600	6
	Spring Washers	464-306000	6
19	Pan Bottom Wearing Plate complete with	555-15821	3
	Csk Head Setscrews	400-15822	18
	Hex Nuts	330-350800	18
	Spring Washers	464-308000	18
20	Pan Bottom Wearing Plate Around Door inlet complete with	555-15822	1
	Csk Head Setscrews	400-158320	6
	Csk Head Setscrews	400-158220	4
	Hex Nuts	330-350800	10
	Spring Washers	464-308000	10

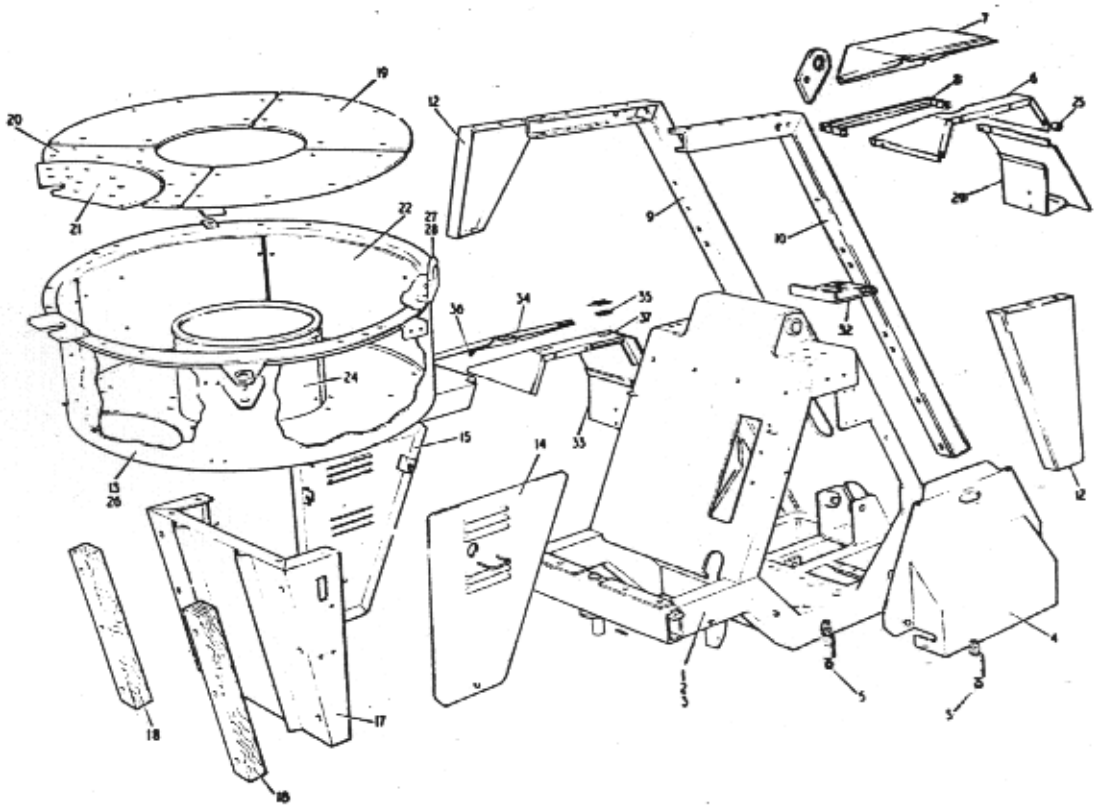
***When Ordering these items the Basic Mainframe No.1 must always be Quoted too.**



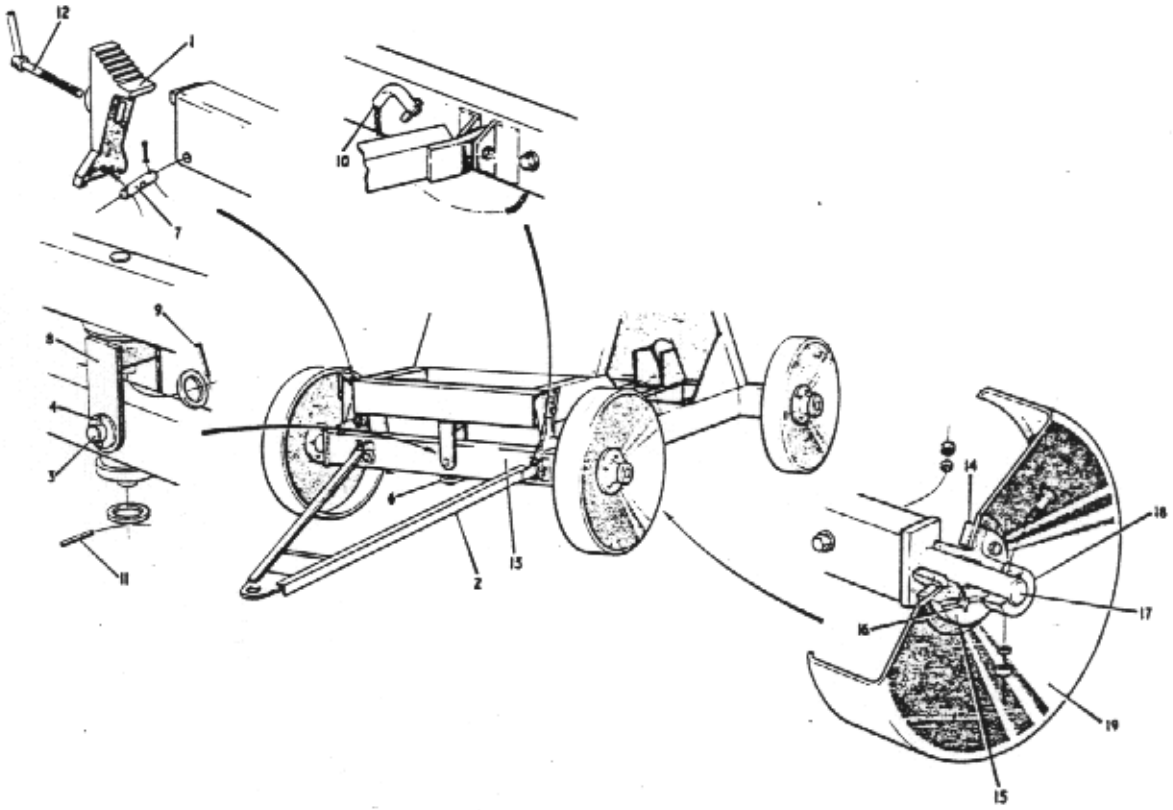
Ref Nº	Description	Part Nº	Qty
21	Door Wearing Plate complete with	555-15823	1
	Csk Head Setscrews	400-156260	10
	Hex Nuts	330-350600	10
	Spring Washers	464-306000	10
22	Pan Outer Wearing Plates complete with	555-15831	3
	Csk Head Setscrews	400-156180	18
	Hex Nuts	330-350600	18
	Spring Washers	464-306000	18
23	Pan Outer Wearing Plates Door complete with	555-15832	1
	Csk Head Setscrews	400-156180	6
	Hex Nuts	330-350600	6
	Spring Washers	464-306000	6
24	Pan Inner Wearing Plates complete with	555-1592	2
	Csk Head Setscrews	400-156180	12
	Hex Nuts	330-350600	12
	Spring Washers	464-306000	12
25	Distance Piece	555-1700	1
26	Mixing Pan (Hand Door) complete with	555-1580/ 555-1874	1
	Hex Head Bolts	460-350810	4
	Hex Nuts	330-350800	4
●27	Lifting Lug complete with	555-1842	2
	Hex Head Bolts	460-350812	4
	Binx Nuts	335-760800	4
	Plain Washers	463-308000	4
●28	Square Washer	463-408000	1
	Machine Less Water Tank and Dragline ●		

MAINFRAME, PAN, WEARING PLATES & GUARDS

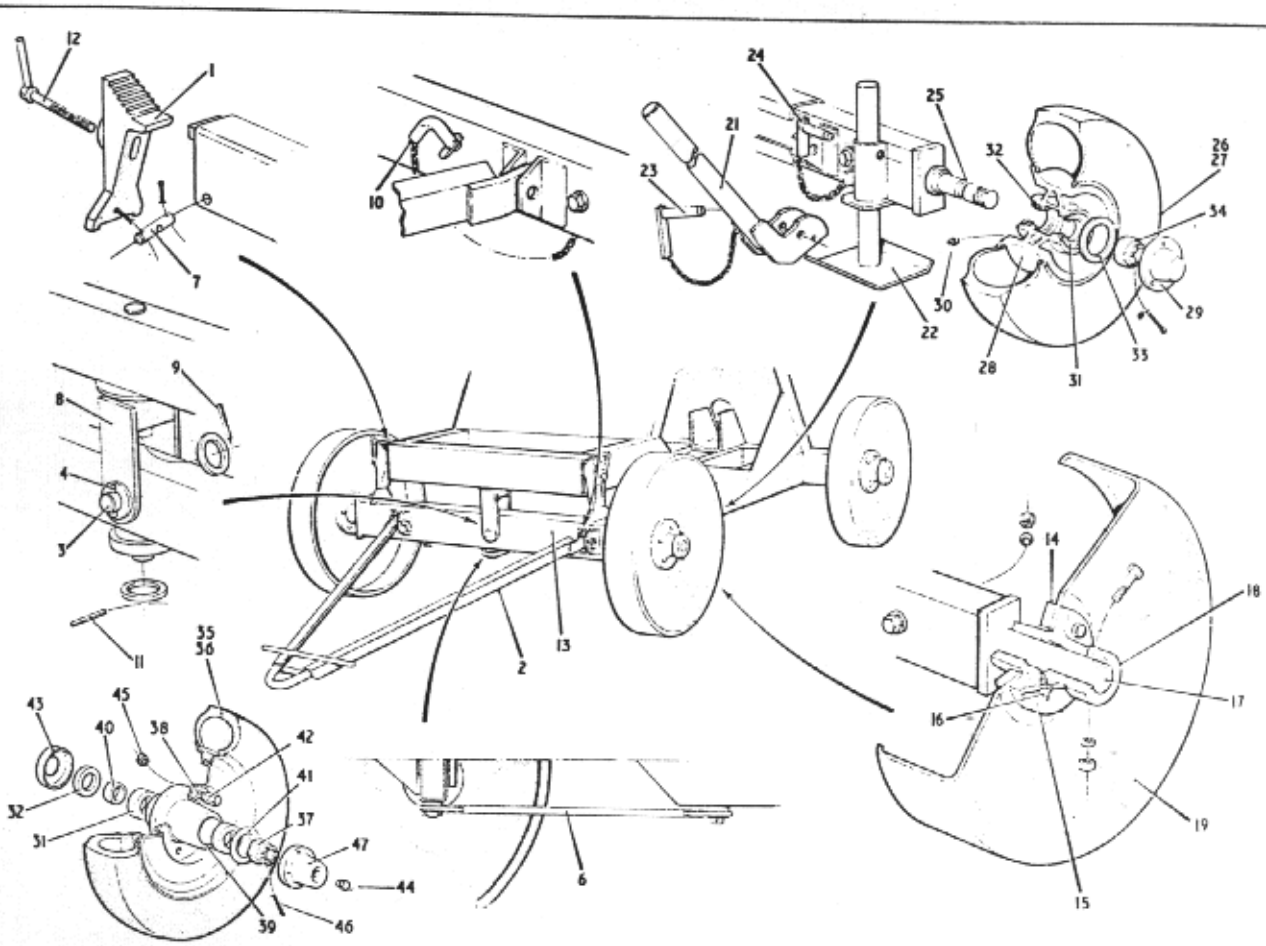
*When Ordering these items the Basic Mainframe No.1 must always be Quoted too.



Ref Nº	Description	Part Nº	Qty
29	Fuel Tank Cover Extension	555-1883	1
30	–	–	–
31	–	–	–
32	Step, complete with	555-1904	1
	Hex Head Bolts	460-350812	2
	Hex Nuts	330-350800	2
	Spring Washers	464-308000	2
	Plain Washers	463-308000	2
33	Fuel Tank Shroud complete with	555-1931	1
	Hex Head Bolts	460-506100	1
	Hex Head Bolts	460-506080	2
	Hex Nuts	331-350600	3
	Spring Washers	464-306000	3
34	Hinged Fuel Tank Cover complete with	555-1932	1
	CSK Head Screws	400-810060	6
	Hex Nuts	342-910000	6
	Spring Washers	464-260000	6
35	Packers	555-1933	2
36	Latch for Hinged Fuel Tank Cover complete with	555-1934	1
	Hex Head Bolt	460-504060	1
	Binx Nut	335-760400	1
	Spring Washers	463-304000	1
37	Foam Rubber Cord	394-414000	1 Lgth

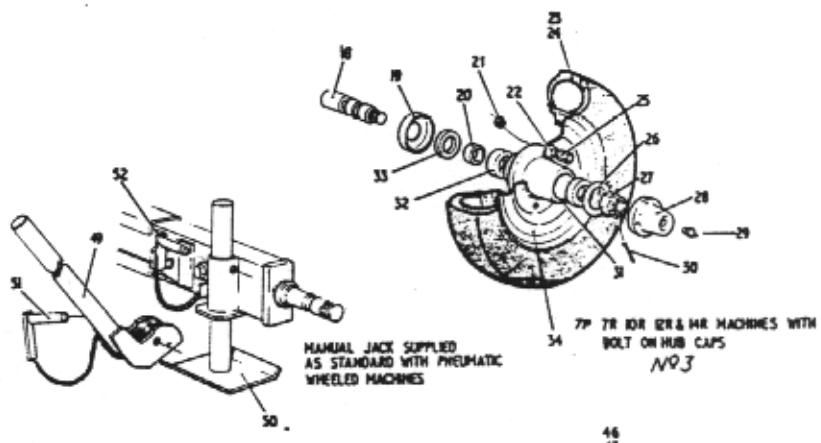


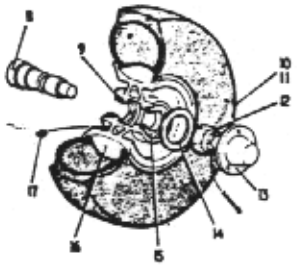
Ref Nº	Description	Part Nº	Qty
1	Axle Sprags	555-1011	2
2	Towbar	555-1012	1
3	Axle Pivot Pin	555-1014	1
4	Sel-Lock Pins complete with	353-803320	2
	Plain Washers	463-320000	2
5	—	—	—
6	Axle Tie bar	555-1016	1
7	Sprag Pins complete with	555-1017	2
	Split Pins	353-304160	4
8	Axle Pivot	555-1019	1
9	Sel-Lock Pin complete with	353-806320	1
	Plain Washer	463-324000	1
10	Towbar Drop End Pins	555-1021	2
11	Sel-Lock Pins complete with	353-803240	2
	Plain Washers	463-316000	2
12	Sprag Retainers complete with	555-1018	2
	Heavy Plain Washers	463-410000	2
13	Front Axle	555-1027	1
14	Backing Plates	511-1654	4
15	Wheel Hubs	511-1438	4
16	Straight Nipples	333-104200	4
17	Stub Axles complete with	555-1023	4
	Hex Hd Bolts	460-350830	4
	Hex Nuts	440-350800	4
	Spring Washers	464-308000	4
18	Collars complete with	145-504000	4
	Hex Hd Bolts	460-350630	4
	Hex Nuts	330-350600	4
	Spring Washers	464-306000	4
19	Road Wheels complete with	511-1467	4
	Hex Hd Bolts	460-351016	16
	Hex Nuts	330-351000	16
	Spring Washers	464-310000	16

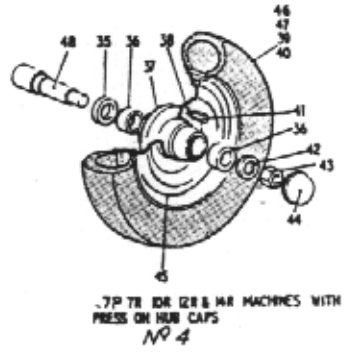


Ref Nº	Description	Part Nº	Qty
44	Greaser (6.50 x 16 wheel)	475-650010	4
45	Locknut (6.50 x 16 wheel)	331-209000	20
46	Split Pin (6.50 x 16 wheel)	353-308200	4
47	Hub Cap (6.50 x 16 wheel)	475-650011	4
48	Stub Axle Spacer—For Steel Wheel Only (Not illustrated)	555-1025	4

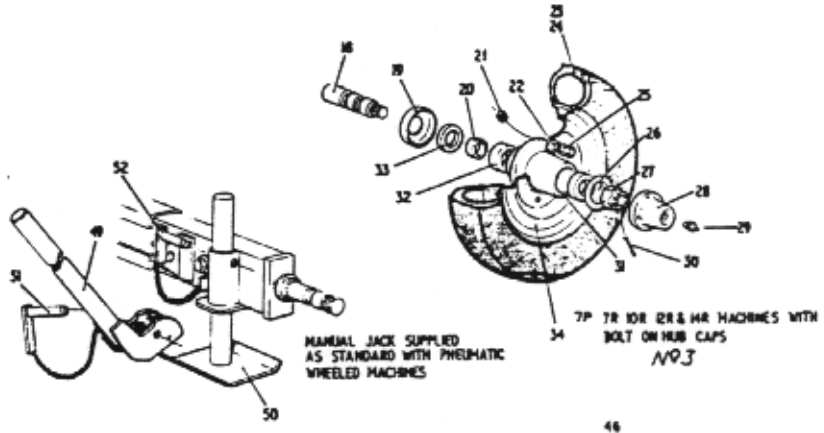
MACHINES BEFORE No. 516 ARE NORMALLY FITTED WITH 7.50 x 10 PNEUMATIC WHEELS. THESE MAY BE REPLACED BY 6.50 x 16 PNEUMATIC WHEELS IF REQUIRED. BUT ITEM 555-1923 MUST FIRST BE WELDED ONTO AXLE STOPS AS A PRECAUTION AGAINST FOULING THE CONTROL SIDE COVERS.

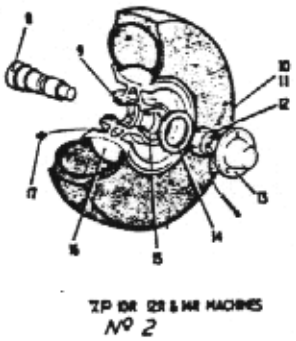


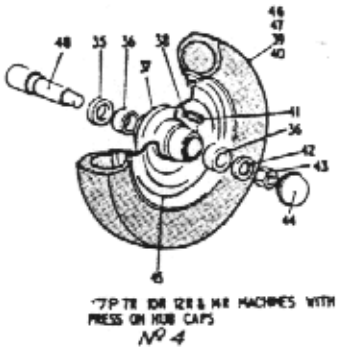




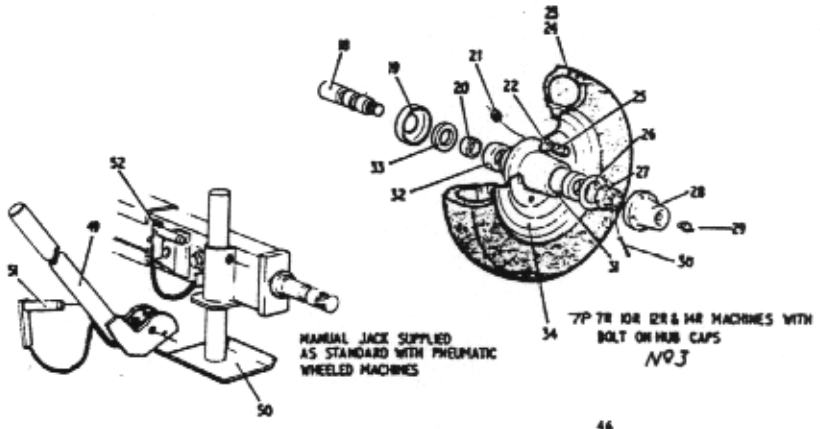
Ref No	Description	Part No	Qty
1	–	–	–
2	–	–	–
3	–	–	–
4	–	–	–
5	–	–	–
7	–	–	–
	For 7P, 10R, 12R and 14R Machines fitted with 7.50 x 10.00 tyres (Illustration No. 2)		
8	Stub Axle complete with	555-1032	4
	Hex Hd Bolts	460-350832	4
	Hex Nuts	330-350800	4
	Spring Washers	464-308000	4
9	Oil Seal	475-750109	4
10	Tyre	475-750101	4
11	Tube	475-750102	4
12	Axle Nut complete with Split Pin	475-750111	4
13	Hub Cap complete with Screws	475-750104	4
14	Fibre Washer	475-750110	4
15	Bearings	475-750107	8
16	Wheel Hub	475-750103	4
17	Grease Nipples	475-750106	4
	For 7P, 7R, 10R, 12R and 14R Machines fitted with 6.50 x 16.00 tyres and bolt on hub caps (Illustration No. 3)		
18	Stub Axle complete with	555-1032	4
	Hex Hd Bolts	460-350832	4
	Hex Nuts	330-350800	4
	Spring Washers	464-308000	4
19	Oil Guard	475-650009	4
20	Abutment Ring	475-650006	4
21	Locknut	331-209000	20

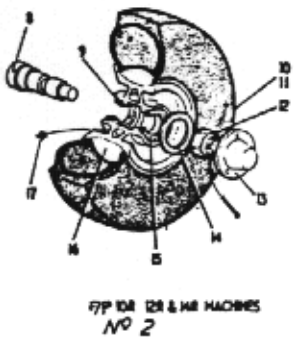


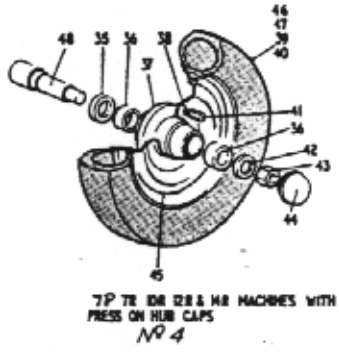




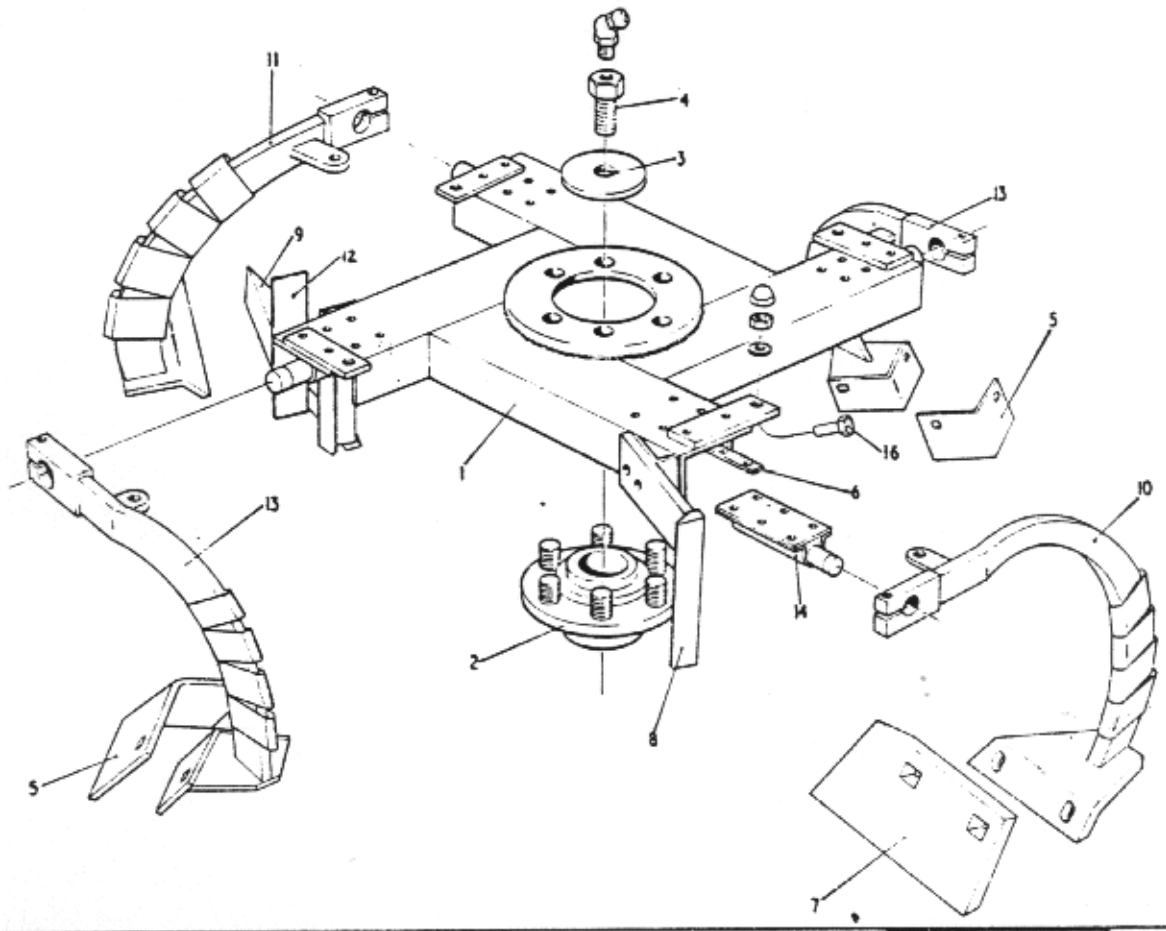
Ref No	Description	Part No	Qty
22	Stud	475-650004	20
23	Tyre	475-650001	4
24	Tube	475-650002	4
25	Nut	475-650008	20
26	Fibre Seal	475-650007	4
27	Axle Nut	475-650003	4
28	Hub Cap	475-650011	4
29	Greaser	475-650010	4
30	Split Pin	353-308200	4
31	Hub Shell	475-650005	4
32	Bearings	475-750107	8
33	Oil Seals	475-750109	4
34	Wheel Pressings	475-650013	4
	For 7P, 7R, 10R, 12R and 14R Machines fitted with 6.50 x 16.00 tyres or 6.00 x 16.00 RK3 tyres and press on hub caps (Illustration No. 4)		
35	Oil Seal	475-310001	4
36	Bearing	475-310002	8
37	Hub	475-310003	4
38	Wheel Stud	475-310004	5
39	Tyre (6.50 x 16.00)	475-650001	4
40	Tube (6.50 x 16.00)	475-650002	4
41	Wheel Nut	475-310005	5
42	Washer	475-310006	4
43	Axle Nut	475-310007	4
44	Grease Cap	475-310009	4
45	Wheel Pressing	475-650013	4
46	Tyre (6.00 x 16.00 RK3)	475-600017	4
47	Tube (6.00 x 16.00 RK3)	475-600018	4
48	Stub Axle complete with	555-5029	4
	Hex Hd Bolts	460-350832	4



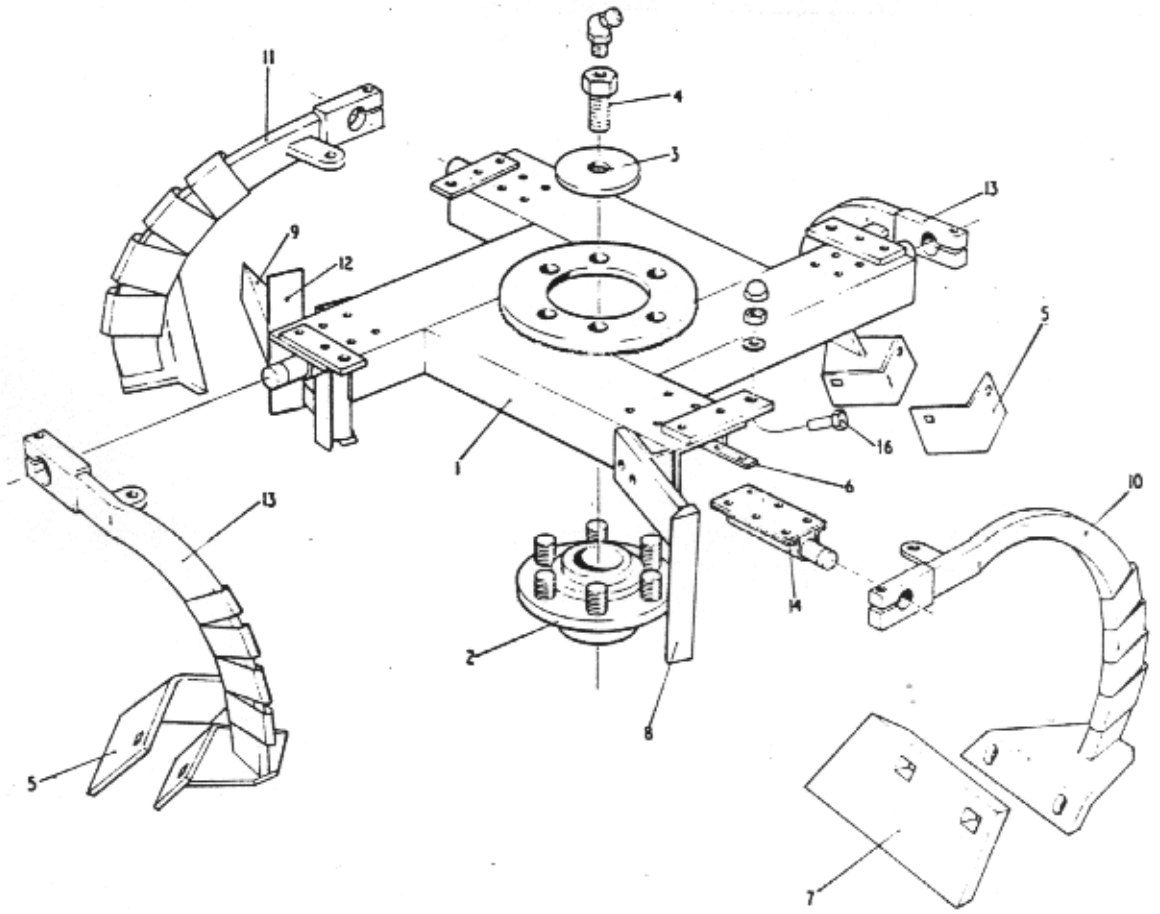




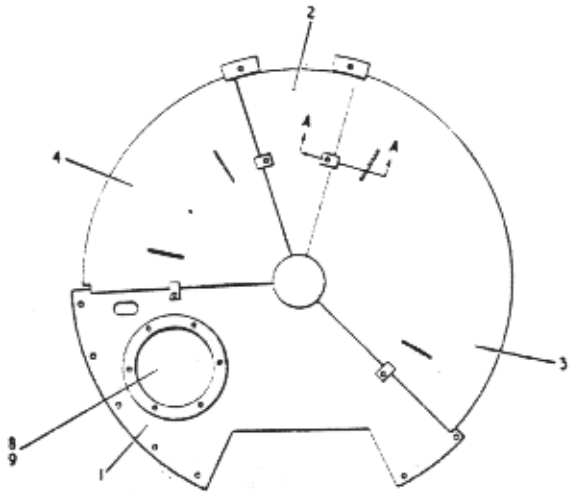
Ref No	Description	Part No	Qty
	Hex Nuts	330-350800	4
	Spring Washers	464-308000	4
	Note: Wheel Assembly No. 4 can be fitted with 6.50 x 16.00 or 6.00 x 16.00 RK3 tyres and tubes (see items 39, 40, 46 and 47)		
49	Manual Jack	555-1028	1
50	Jack Foot	555-1029	4
51	Jack Pivot Pin	555-1031	1
52	Jack Pin	555-1030	1 set

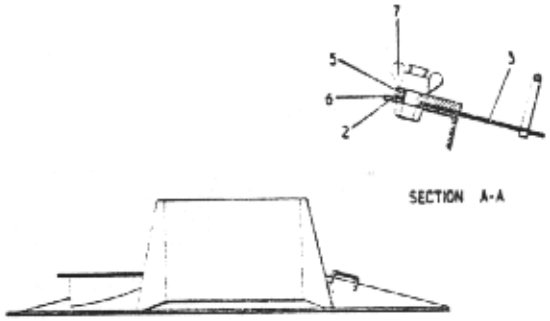


Ref Nº	Description	Part Nº	Qty
1	Flexitor Rotor	555-1968	1
2	Rotor Carrier complete with	512-1064	1
	Hex Nuts	331-851000	6
	Spring Washers	464-310000	6
3	Reduction Shaft Retaining Collar	512-1051	1
4	Setscrew complete with	555-1598	1
	Grease Nipple	333-773000	1
5	Plough Blade complete with	512-1392 -	2
	Special Bolts	514-1624	4
	Binx Nuts	330-310800	4
	Plain Washers	463-308000	4
6	Flexitor Packer	555-1965	8
7	Inner Paddle Blade complete with	512-1393 -	1
	Special Bolts	514-1624	2
	Binx Nuts	330-310800	2
	Plain Washers	463-308000	2
8	Outer Scraper Blade complete with	555-1967 -	1
	Hex Hd Bolts	460-508018	2
	Hex Nuts	331-850800	2
	Plain Washers	463-308000	2
	Spring Washers	464-308000	2
9	Outer Paddle Blade complete with	512-1394 -	1
	Special Bolts	514-1624	2
	Binx Nuts	330-310800	2
	Plain Washers	463-308000	2
10	Inner Mixing Blade Arm complete with	512-1067 -	1
	Hex Hd Bolt	460-508026	1
	Hex Nut	331-850800	1
	Spring Washer	464-308000	1



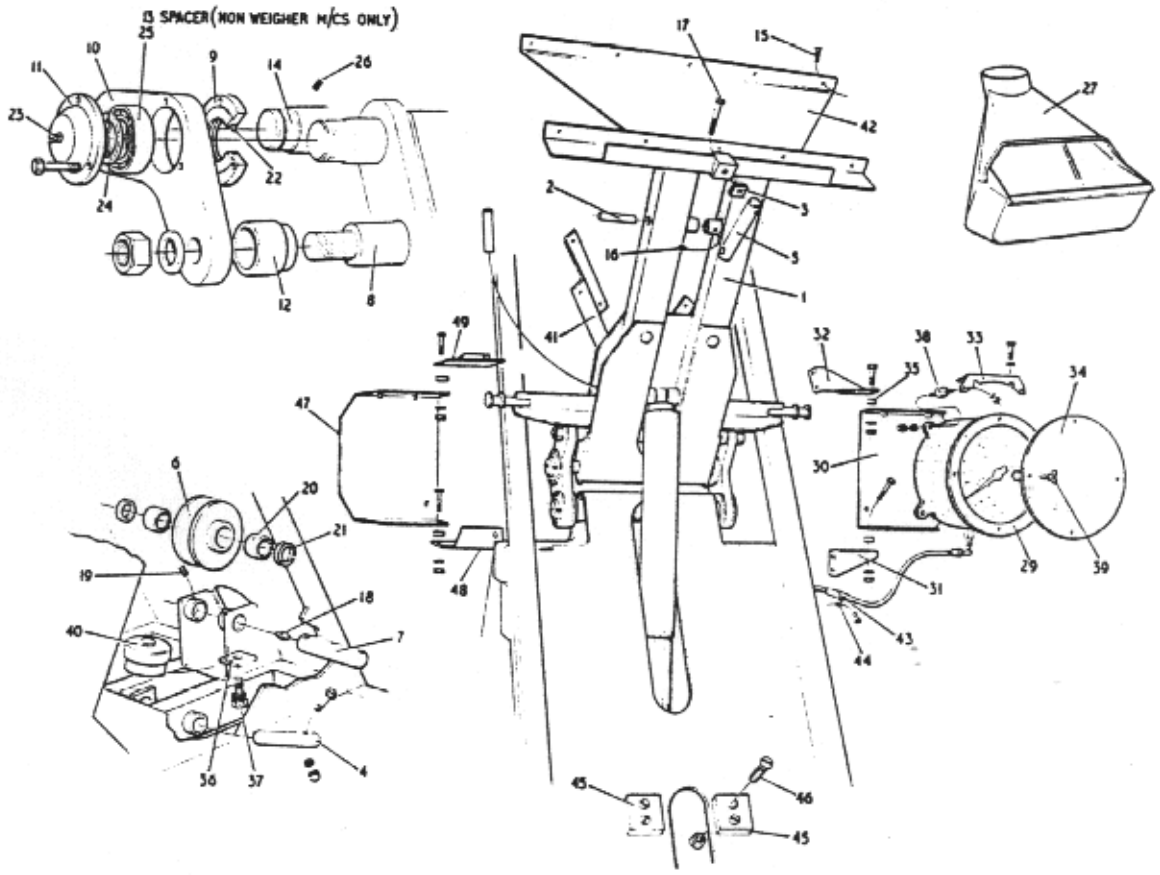
Ref Nº	Description	Part Nº	Qty
11	Outer Mixing Blade Arm complete with	512-1068	1
	Hex Hd Bolt	460-508026	1
	Hex Nut	331-850800	1
	Spring Washer	464-308000	1
12	Inner Scraper Blade complete with	555-1578	1
	Hex Hd Bolts	460-508014	2
	Hex Nuts	330-350800	2
	Spring Washers	464-308000	2
	Plain Washers	463-308000	2
13	Plough Blade Arm complete with q	512-1065	2
	Hex Hd Bolts	460-508026	2
	Hex Nuts	331-850800	2
	Spring Washers	464-308000	2
14	Flexitor complete with	447-102000	4
	Hex Hd Bolts	460-506010	24
	Hex Nuts	331-850600	24
	Spring Washers	464-306000	24
15	Gaiters for Paddle Arms	512-1040	16
16	Hex Hd Bolt complete with	460-508030	4
	Hex Nut	331-850800	4
	Domed Nut	332-726000	4
	Plain Washer	463-308000	4





Ref Nº	Description	Part Nº	Qty
1	Pan Cover - Feed Sector complete with	555-1539	1
	Hex Hd Bolt	460-50808	7
	Hex Nut	331-8508	7
	Spring Washer	464-308	7
2	Pan Cover - Small Fixed Sector complete with	555-1542	1
	Hex Hd Bolt	460-50808	2
	Hex Nut	331-8508	2
	Spring Washer	464-308	2
3	Pan Cover - Large Loose	555-1540	1
4	Pan Cover - Small Loose	555-1541	1
5	Pan Cover Clip	555-1544	4
6	Bright Washers	463-308	4
7	Wing Nut	335-158	4
8	Cover Plate complete with	555-1543	1
	Hex Hd Bolt	460-50608	6
	Hex Nuts	331-8506	6
	Spring Washers	464-306	6
9	Gasket	555-1545	1

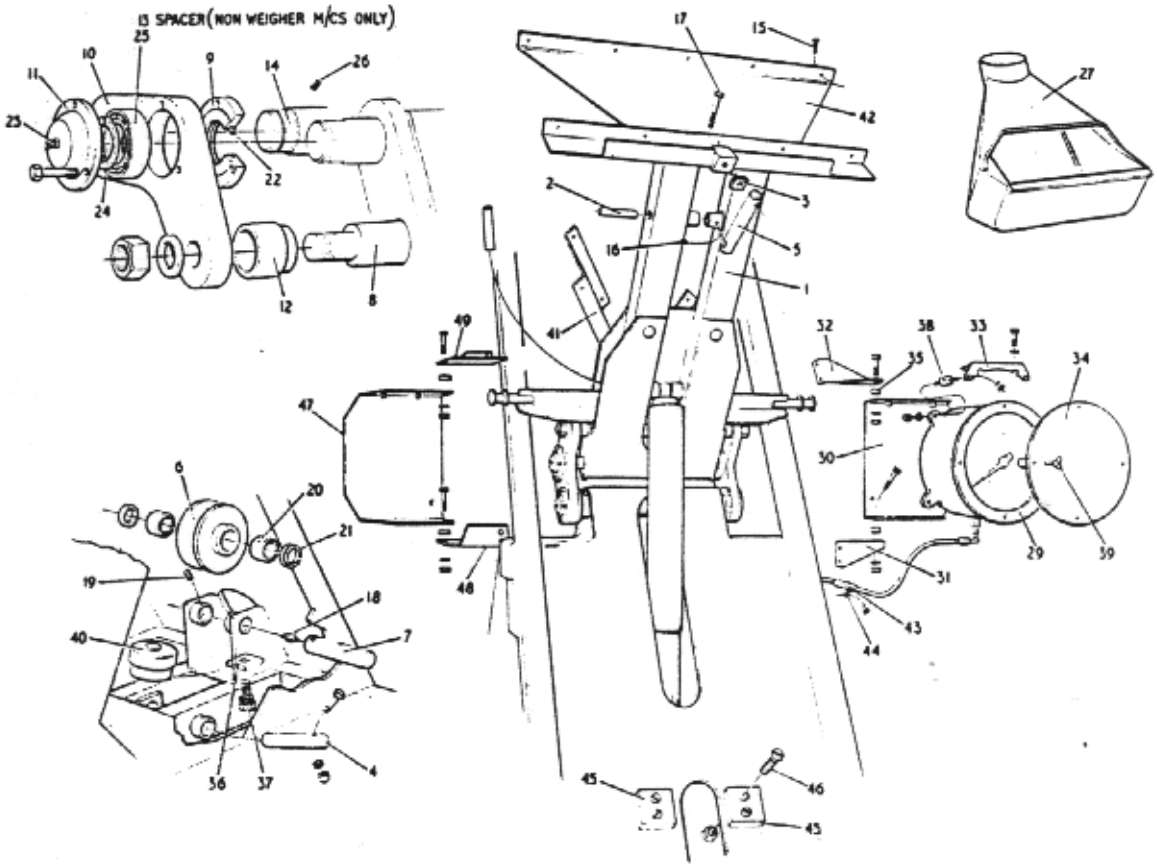
PAN COVERS



Ref Nº	Description	Part Nº	Qty +	Qty *
1	Hopper Cradle (without Dragline)	555-1079	1	1
	Hopper Cradle (with Dragline)	555-1206	1	1
2	Hopper Cradle Pin	555-1093	1	–
3	Loadcell Striker Packer	555-1092	1Set	–
4	Hopper Ram Pin complete with	555-1085	2	2
	Hex Hd Bolts	460-350618	2	2
	Hex Nuts	330-3506	2	2
	Spring Washers	464-306	2	2
5	Loadcell Striker	555-1091	1	–
6	Loadcell Striker Guide	555-1089	1	–
7	Pin for Loadcell Striker Guide	555-1090	1	–
8	Link Shaft complete with	555-1087	1	1
	Hex Nuts	330-3520	2	2
	Plain Washers	463-320	2	2
9	Seal Housing	555-1086	4	4
10	Link Arm	555-1088	1pr	1pr
11	Bearing Cap complete with	555-1219	4	4
	Hex Hd Bolts	460-50516	12	12
	Spring Washers	464-305	12	12
12	Sleeve	555-1095	–	2
13	Spacer	555-1094	–	2
14	Shaft	555-1080	1	1
15	Csk Hd Screw complete with	400-151014	9	9
	Hex Nut	330-35010	9	9
	Lock Nut	330-5510	9	9
16	Socket Setscrew with Cone Point	404-910510	1	–
17	Hex Hd Setscrew complete with	418-250826	1	–
	Spring Washers	464-308	1	–
18	StraightGrease Nipple	333-1061	1	–
19	Socket Setscrew Flat Point	404-90608	1	–
20	Needle Roller Bearing	113-149	2	–

CRADLE HOPPER LOADCELL & GAUGE

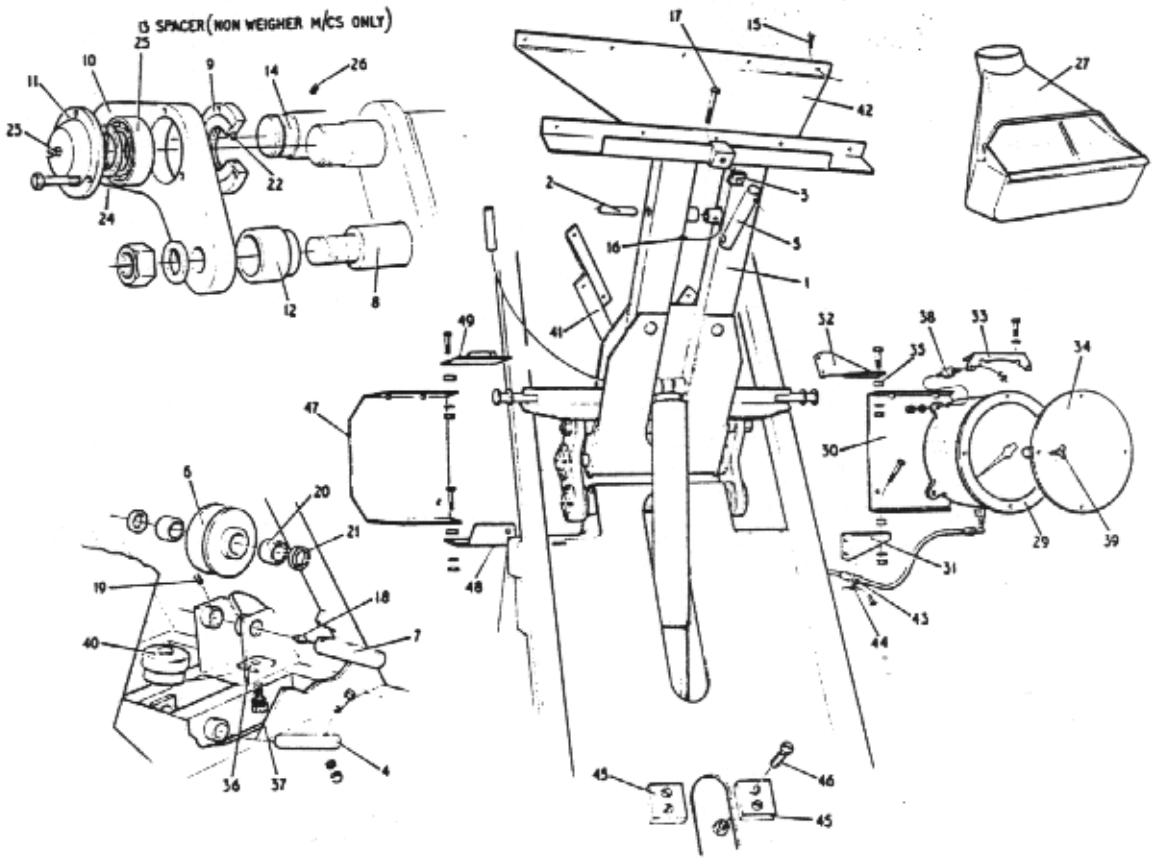
†Weigher
*Non Weigher



Ref Nº	Description	Part Nº	Qty †	Qty *
21	Seal	417-780	2	–
22	Nu-Lip Rings	391-802	4	4
23	Grease Nipple 45º	333-6011	4	4
24	External Circlip	142-318	4	2
25	Needle Roller Bearing	103-951	4	2
26	Socket Setscrew Cone P.T.	404-910610	2	2
27	Hopper	555-1044	1	1
28	Chain for Hopper (Not Illustrated)	50-29285	1	1
29	Weigh Gauge	267-204	1	–
30	Weigh Dial Mounting Plate complete with	555-1246	1	–
	Hex Hd Bolts	460-50606	2	–
	Spring Washers	464-306	2	–
31	Weigh Dial support (Lower) complete with	555-1247	1	–
	Hex Hd Bolt	460-50812	1	–
	Hex Nut	330-3508	1	–
	Spring Washer	464-308	1	–
	Hex Hd Bolt	460-50608	2	–
	Hex Nut	330-3506	2	–
	Spring Washer	464-306	2	–
32	Weigh Dial support (Upper) complete with	555-1248	1	–
	Hex Hd Bolt	460-50812	1	–
	Hex Nut	330-3508	1	–
	Spring Washer	464-308	1	–
	Hex Hd Setscrews	418-250606	2	–
	Hex Nuts	330-3506	2	–
	Spring Washers	464-306	2	–
33	Weigh Dial Mounting Plate (Upper)	555-1249	1	–

†Weigher
*Non Weigher

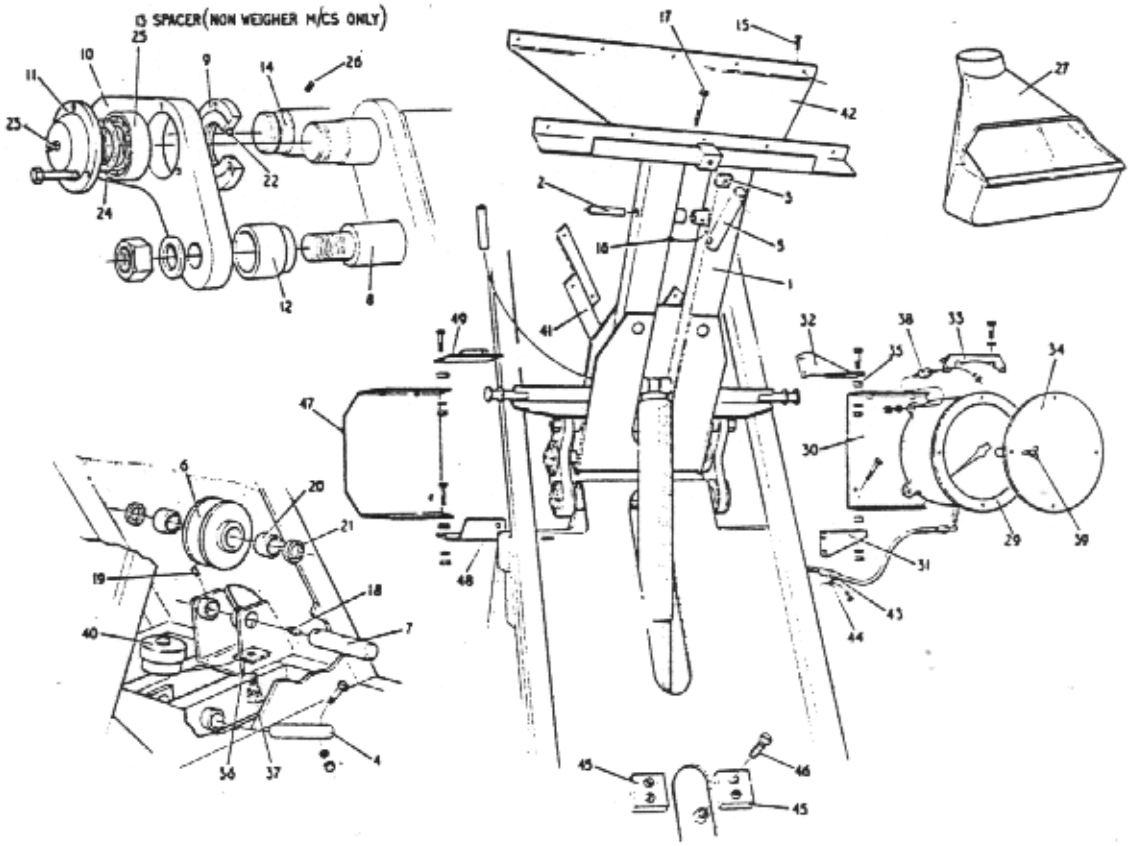
CRADLE HOPPER LOADCELL & GAUGE



Ref Nº	Description	Part Nº	Qty + *
34	Dial Cover	555-1250	1 –
35	Spacer	555-1251	2 –
36	Loadcell Packer	512-1183	1 Set –
37	Hex Hd Setscrew complete with	418-350810	1 –
	Spring Washer	464-308	1 –
38	Flexible Mountings complete with	105-343	4 –
	Hex Nuts	330-505	8 –
	Spring Washers	464-305	8 –
39	Thumb Screw	407-310512	4 –
40	Loadcell & Gauge complete	555-1243	1 –
41	Packing Bracket complete with	555-1098	2 2
	Hex Hd Bolt	460-351010	4 4
	Binx Nut	330-3610	4 4
	Plain Washers	463-310	4 4
42	Hopper Packer complete with	555-1099	1 1
	Hex Hd Bolt	460-351010	3 3
	Binx Nut	330-3610	3 3
	Plain Washers	463-310	3 3
43	Hose Guard	555-1701	1 –
44	Brass Cable Clip complete with	143-246	2 –
	Hex Hd Bolt	418-9025	2 –
	Hex Nut	331-802	2 –
	Spring Washer	463-102	2 –
45	Cradle Stop	555-1096	– 2
46	Csk Screws complete with	400-150812	– 4
	Binx Nut	335-7608	– 4

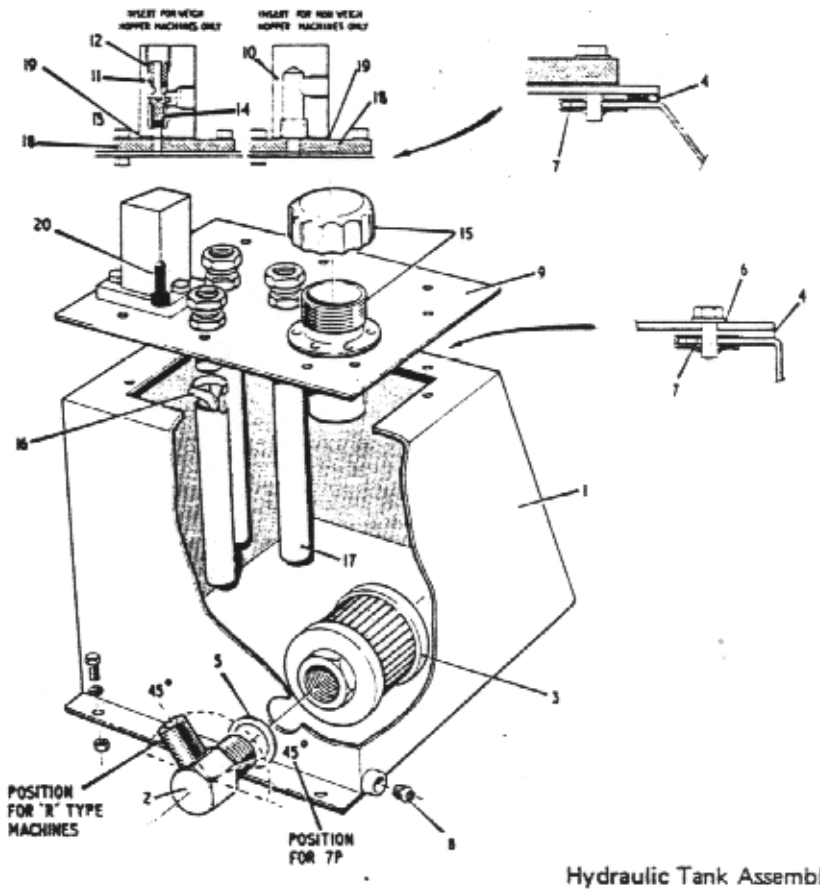
†Weigher
*Non Weigher

CRADLE HOPPER LOADCELL & GAUGE



Ref Nº	Description	Part Nº	Qty +	Qty •
47	Weigh Dial Mounting Plate complete with	555-1927	1	–
	Hex Hd Bolts	460-350606	2	–
	Spring Washers	464-306000	2	–
48	Weigh Dial Support (Lower) complete with	555-1928	1	–
	Hex Hd Bolts	460-350830	2	–
	Hex Nuts	330-350800	3	–
	Spring Washers	464-308000	3	–
	Hex Hd Bolt	460-350812	1	–
49	Weigh Dial Support (Upper) complete with	555-1929	1	–
	Hex Hd Bolt	460-350626	1	–
	Hex Nut	330-350600	1	–
	Spring Washer	464-306000	1	–
	Hex Hd Bolt	460-350812	1	–
	Hex Nut	330-350800	1	–
	Spring Washer	464-308000	1	–

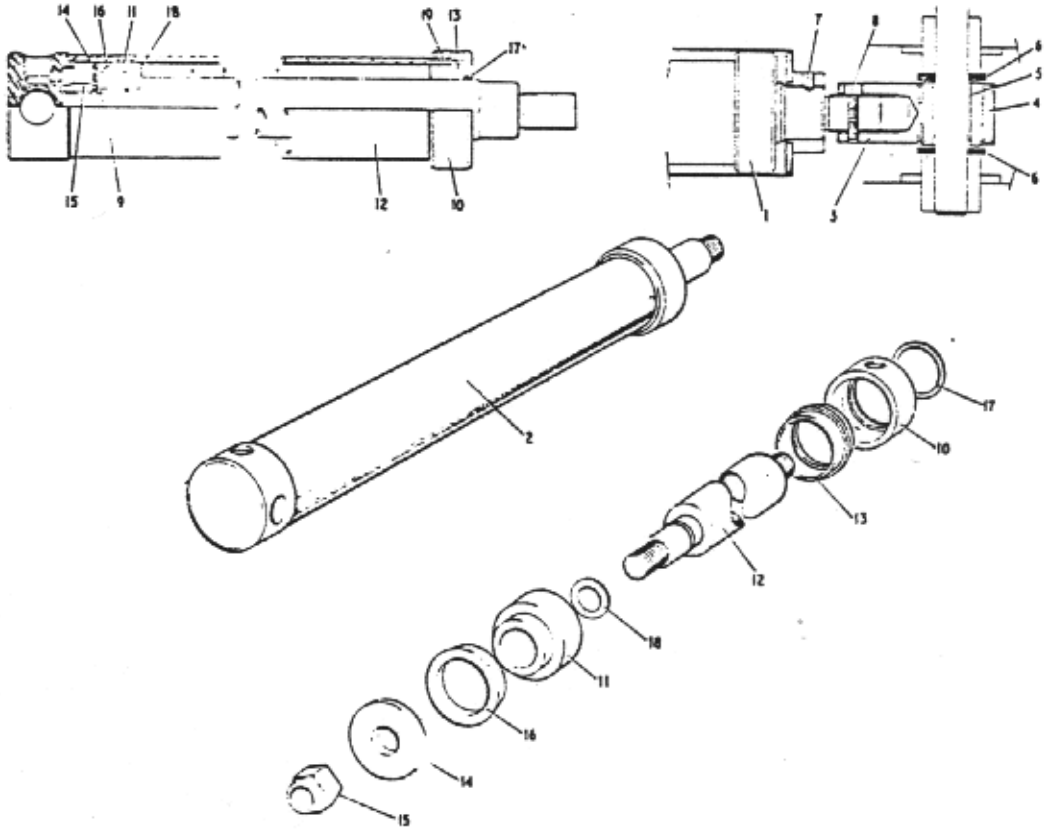
CRADLE HOPPER LOADCELL & GAUGE



Hydraulic Tank Assembly 555-1356

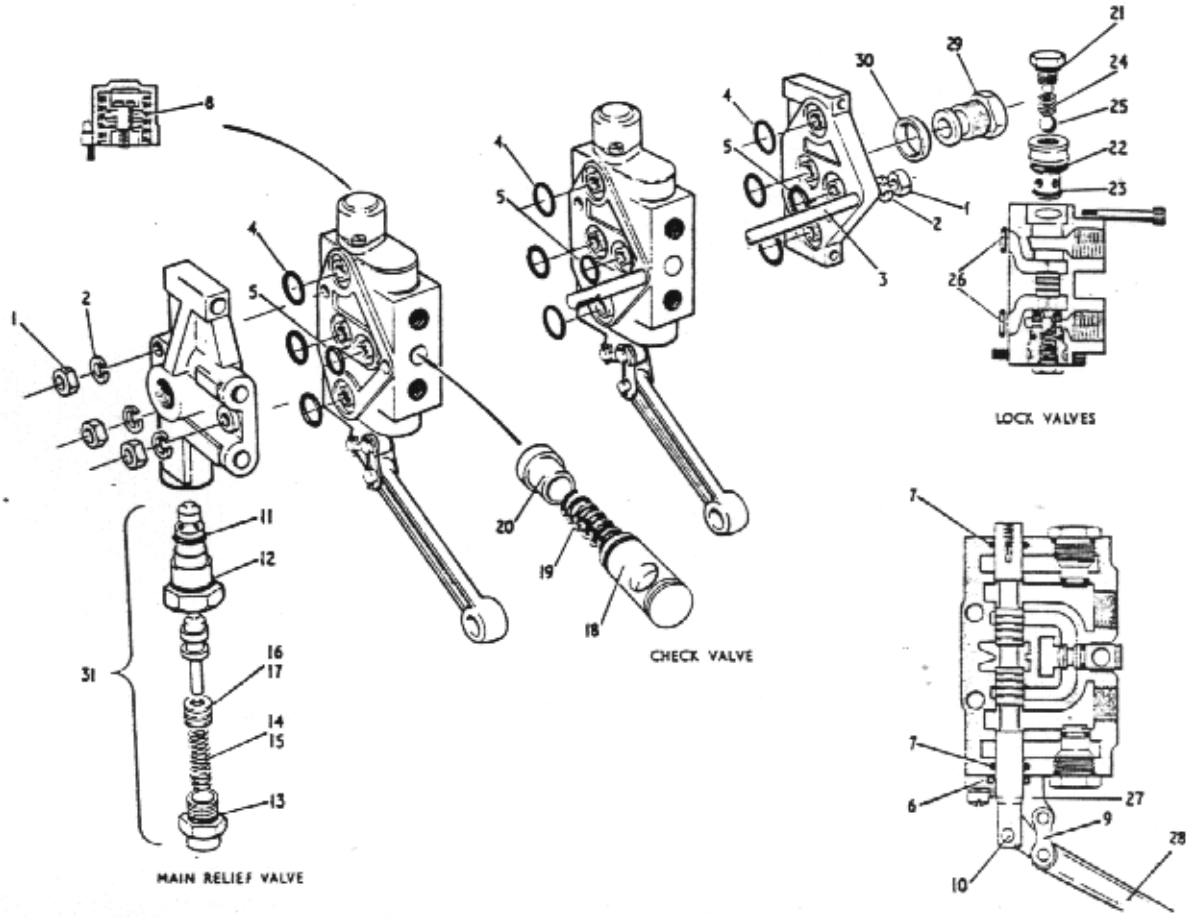
Ref Nº	Description	Part Nº	Qty
1	Hydraulic Tank complete with	555-1359	1
	Hex Hd Bolt	460-50608	3
	Hex Nut	331-8506	3
	Spring Washers	464-306	3
2	Strainer Connection	555-1361	1
3	Single Unit Suction Filter	220-514	1
4	Self Adhesive Gasket	254-916	1 Length
5	Bonded Seal	417-808	1
6	Selon Washers	464-804	11
7	Spire Captive Nut	332-719	10
8	Taper Plug	360-208	1
9	Cover for Hydraulic Tank complete with	555-1360	1
	Hex Hd Setscrews	418-350405	9
10	Connecting Block (Non Weigher M/Cs) complete with	555-1373	1
11	Bleed Valve Block (Weigher M/Cs) complete with	555-1374	1
12	Bleed Valve Plunger	50-31395	1
13	Bleed Valve Joint	555-1375	1
14	Compression Spring	420-428	1
15	Filler Breather with Self Tap Screws	220-246	1
16	Hose Clamp	143-108	3
17	Clear P.V.C. Tube	260-81208	3
18	Adaptor Plate complete with	555-1869	1
	Hex Hd Bolt	460-50411	1
	Hex Hd Setscrew	418-350408	1
19	Adaptor Plate Gasket	555-1870	1
20	Skt Hd. Capscrews	404-70410	2

HYDRAULIC TANK



Ref Nº	Description	Part Nº	Qty
1	Ram Shroud	555-1367	1
2	Hopper Ram	555-1376	1
3	End Piece for Ram	555-1366	1
4	Insert for Ram End	555-1365	1
5	Bush	112-801100	2
6	Bright Plain Washers	555-1679	2
7	Skt. Screw (Half Dog PT.)	404-930606	1
8	Skt. Hd. Capscrews	404-706240	2
9	Tube Assy L1753	272-127100	1
10	Locking Ring L1752	272-127200	1
11	Piston Head L1748	272-127300	1
12	Piston Rod L1747	272-127400	1
13	Insert L1751	272-127500	1
14	Back-up Plage L1749	272-127600	1
15	Locknut L222	272-127700	1
16	Piston Seal L1754	272-127800	1
17	Wiper Ring L1755	272-127900	1
18	Piston Head 'O' Ring L220	272-127010	1
19	Grub Screw L1582	272-127011	1

Hopper Ram - Up to Ram No. 8200

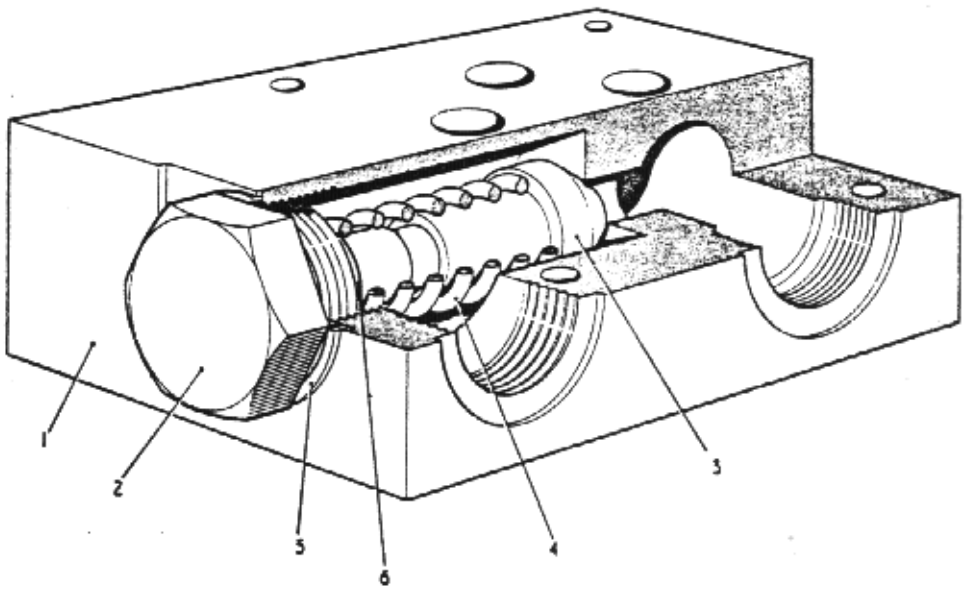


Ref Nº	Description		Part Nº	Qty
* 1	Hex Nut	102/5/00152	451-431111	6
* 2	Spring Washer	102/5/00275	451-431200	6
* 3	Stud Range	102/3/00091-99	451-431300	3
* 4	'O' Ring	102/5/00071	451-431400	9
* 5	'O' Ring	102/5/00072	451-431500	3
* 6	Wiper Seal	102/5/00231	451-431600	1
* 7	'O' Ring	HE/4600/2	451-431700	2
* 8	Spring	102/5/00038	451-431800	1
* 9	Link	102/5/00013	451-431900	1
*10	Pin	102/5/00045	451-431100	1
*11	'O' Ring	102/5/000427	451-431110	1
*12	'O' Ring	102/5/00086	451-431120	1
*13	'O' Ring	102/5/00077	451-431130	1
*14	Spring (500-1500 P.S.I.)	102/5/00145	451-431140	1
*15	Spring (1500-3000 P.S.I.)	102/5/00056	451-431150	1
*16	Shim 003"	102/5/00059	451-431160	As Reqd.
*17	Shim 020"	102/5/00122	451-431170	As Reqd.
*18	'O' Ring	HE/3500/8	451-431180	1
*19	Spring	102/5/00043	451-431190	1
*20	Poppet	102/5/00042	451-431200	1
*21	'O' Ring	HE/3500/8	451-431210	2
*22	'O' Ring	HE/1500/11	451-431220	2
*23	'O' Ring	102/5/00060	451-431230	2
*24	Spring	102/5/00106	451-431240	2
*25	Ball	102/5/00090	451-431250	2
*26	'O' Ring	102/5/00072	451-431260	2
*27	Handle Bracket	102/5/00004	451-431270	1
*28	Handle	102/3/00015	451-431280	1
*29	Adaptor	102/3/00133	451-431290	1
*30	Bonded Seal	102/5/00151	451-431300	1
*31	Main Relief Valve complete	102/5/3079	451-431310	1

CONTROL VALVE

*WHEN ORDERING THESE SPARES PLEASE QUOTE DESCRIPTION & CODE PRECEEDING ALSO

When Ordering Always Quote :— Machine Nº, Part Nº, Description & Quantity



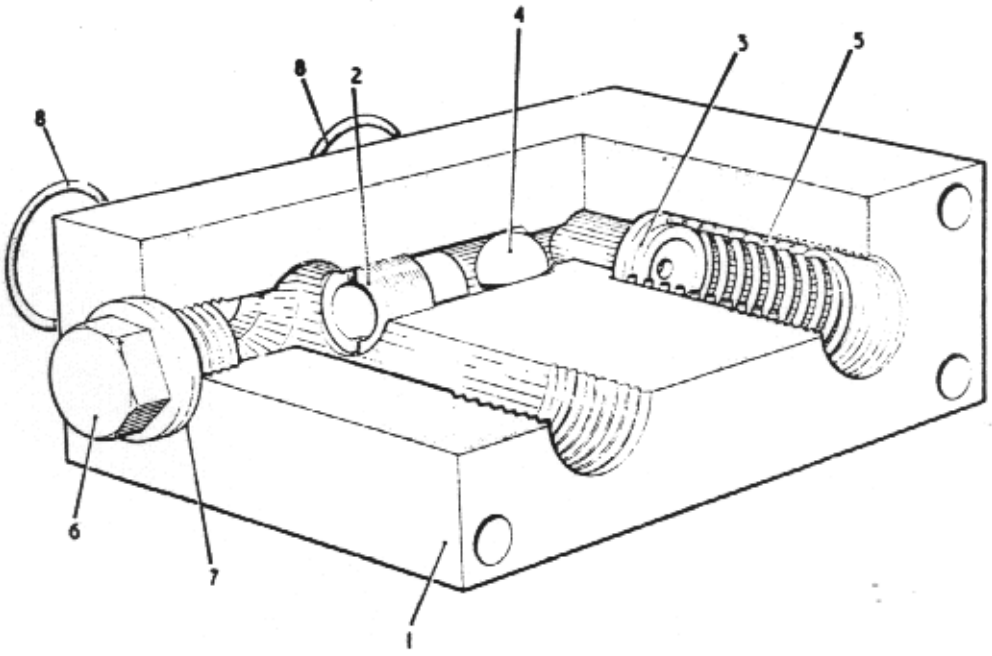
• Relief Valve to "Blow Off" at 1000/1200 P.S.I.

Dragline Control Block Assembly 555-1378

Ref Nº	Description	Part Nº	Qty
1	Dragline Control Block	555-1379	1
2	Valve Guide	555-1382	1
3	Relief Valve	555-1383	1
4	Compression Spring	555-1384	1
5	Bonded Seal	417-804	1
6	Plain Washers	463-305	As Req.

DRAGLINE CONTROL BLOCK

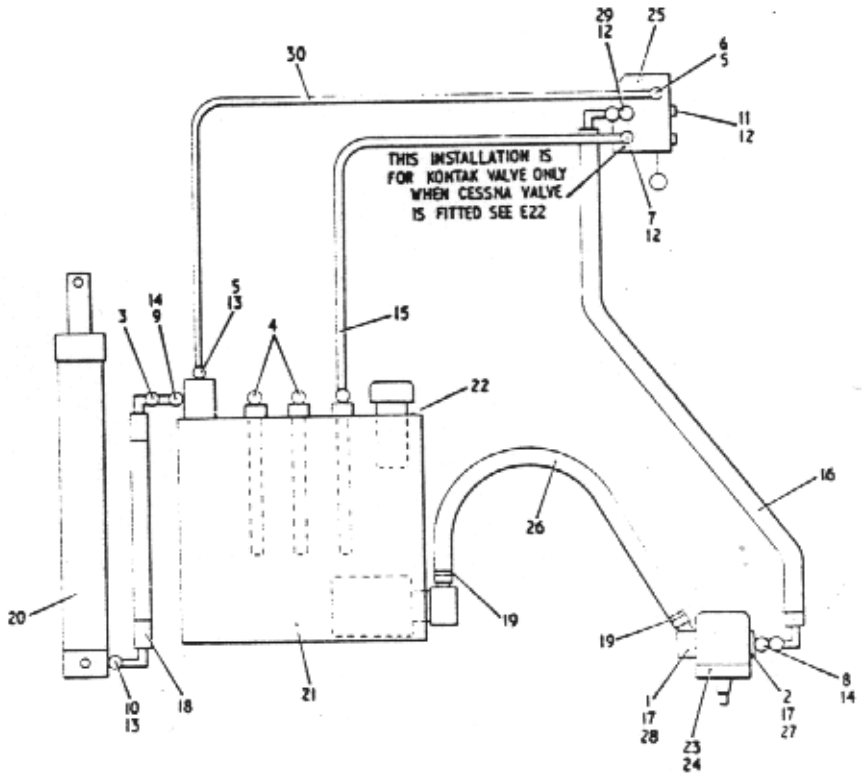
When Ordering Always Quote :— Machine Nº, Part Nº, Description & Quantity



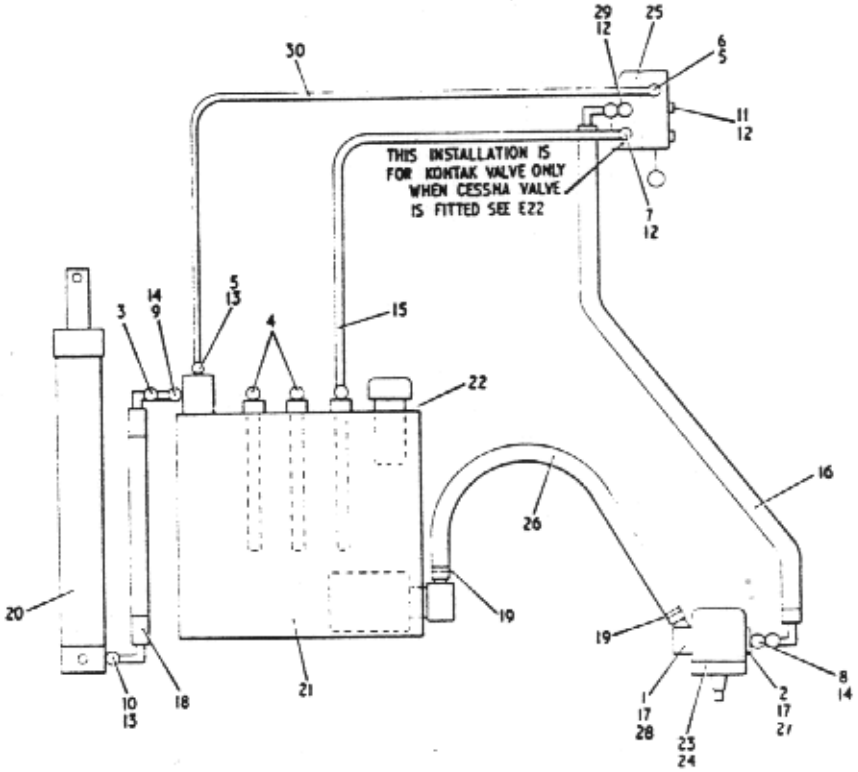
Control Block Assembly 555-1392

Ref Nº	Description	Part Nº	Qty
1	Hoist Control Block	555-1393	1
2	Plug	555-1395	1
3	Check Valve	555-1394	1
4	Bail	101-112	1
5	Compression Spring	423-10912	1
6	Brass Collared Plug	360-103	1
7	Bonded Seal	417-803	1
8	'O' Ring	391-82068	2

CONTROL BLOCK (EXPORT HOIST)

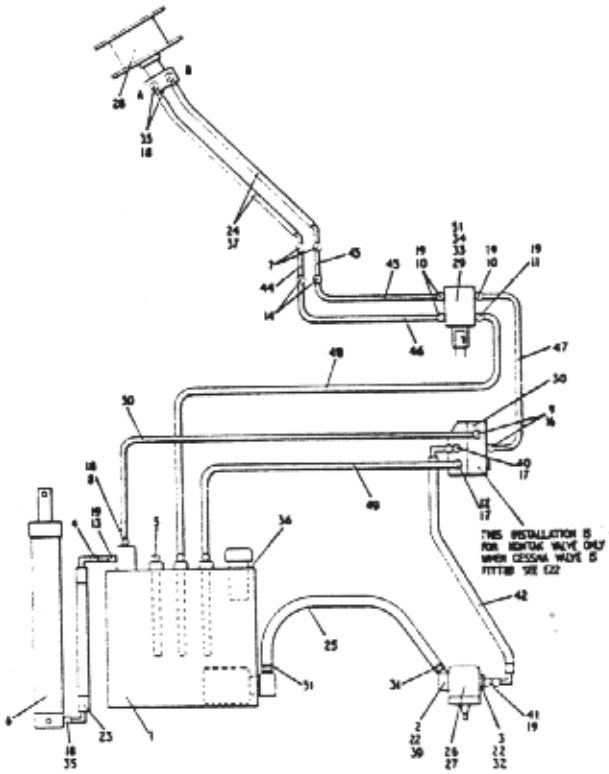


Ref Nº	Description	Part Nº	Qty
1	Pump Inlet Connector	555-1369	1
2	Pump Outlet Connector	555-1364	1
3	Connection for Flexible Pipe	513-1195	1
4	Blank Bars	555-1368	2
5 ●	Male Stud Coupling	446-349000	2
6	Bonded Seal	417-804000	1
* 7 ●	Male Stud Coupling	446-335000	1
8	Male Stud Adaptor	446-611000	1
9 □	Standpipe Adaptor	446-403000	1
10 △	Male Coned Adaptor	446-614000	1
*11 ○	Brass Collared Plug	360-106000	1
*12 ✱	Bonded Seals	417-806000	3
13 ✱	Bonded Seals	417-804000	2
14 ✱	Bonded Seals	417-803000	2
15	Tank to Control Valve Pipe	555-1696	1
16	Pump to Control Valve Hose	555-1895	1
17 ■	'O' Ring	391-832000	2
18	Hopper Ram Hose	555-2043	1
19	Hose Clamp	143-159000	2
20	Hopper Ram Assembly Complete with Shroud (See E6)	555-1358	1
21	Hydraulic Tank Assembly (See E5)	555-1356	1
22	Hydraulic Tank Cover Assembly (See E5)	555-1357	1
23	Pump (Diesel M/C's Only) Complete with	365-823000	1
	Hex Hd Screws	418-350410	4
	Spring Washers	464-304000	4
24	Pump (Electric M/C's Only) Complete with	365-322000	1
	Hex Hd Screws	418-350410	4
	Spring Washers	464-304000	4
*25	Kontak Control Valve Complete with (See E7)	451-431000	1
	Hex Hd Screws	418-250520	3
	Hex Nuts	330-350500	3
	Spring Washers	464-305000	3

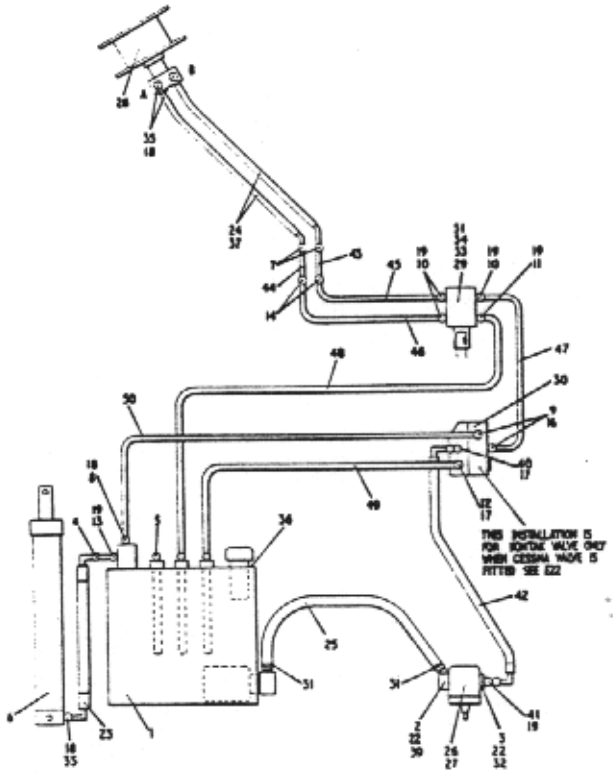


Ref Nº	Description	Part Nº	Qty
26	Oil Resistant Hose (Blue)	260-908010	1
27	Skt Hd Capscrew	404-750516	4
28	—	—	—
*29	Adaptor Male Reducer	013-410000	1
30	Bleed Valve to Control Valve Pipe	555-1690	1

Items marked thus * for use with 'Kontak' Control Valve only



Ref Nº		Description	Part Nº	Qty
1		Hydraulic Tank (See E5)	555-1356	1
2		Pump Inlet Connector	555-1369	1
3		Pump Outlet Connector	555-1364	1
4		Connection for Flexible Pipe	513-1195	1
5		Blanking Bar	555-1368	1
6		Hopper Ram Assembly Complete with Shroud (See E6)	555-1358	1
7		Pipe Header	555-1380	1
8	●	Male Stud Coupling	446-349000	1
* 9	●	Male Stud Couplings	446-349000	2
10	●	Male Stud Couplings	446-628000	3
11	●	Male Stud Coupling	446-631000	1
*12	●	Male Stud Coupling	446-335000	1
13	□	Standpipe Adaptor	446-403000	1
14		Bulkhead Fittings	466-488000	2
15		–	–	–
16	✱	Bonded Seals	417-804000	2
*17	✱	Bonded Seals	417-806000	2
18	✱	Bonded Seals	417-804000	4
19	✱	Bonded Seals	417-803000	6
20		–	–	–
21		–	–	–
22	■	'O' Rings	391-832000	2
23		Hopper Ram Hose	555-2043	1
24		Dragline Winch Hose	555-2044	2
25		Oil Resistant Hose (Blue)	260-908010	1
26		Pump (Diesel M/C's Only) Complete with	365-823000	1
		Hex Hd Screws	418-350410	4
		Spring Washers	464-304000	4
27		Pump (Electric M/C's Only) Complete with	365-822000	1
		Hex Hd Screws	418-350410	4
		Spring Washers	464-304000	4



Ref Nº	Description	Part Nº	Qty
28	Hydraulic Winch Mk II (See H3)	555-1226	1
	Hydraulic Winch Mk III (See H4)	555-1917	1
29	Valve Complete with	450-696000	1
	Hex Hd Screws	418-350405	4
	Spring Washers	464-304000	4
30	Control Valve Complete with (See E7)	451-431000	1
	Hex Hd Screws	418-250620	3
	Hex Nuts	330-350600	3
	Spring Washers	464-306000	3
31	Hose Clamps	143-159000	2
32 △	Skt Hd Capscrews	404-750516	4
33 △	Skt Hd Capscrews	404-750444	4
34	Dragline Control Block Assembly (See E8)	555-1378	1
35 ▲	Male Coned Adaptors	466-614000	3
36	Hydraulic Tank Cover Assembly (See E5)	555-1357	1
37	P.V.C. Covered Strap and Buckles	124-108900	2
38 △	Skt Hd Capscrews – Vickers Valve Only	404-750240	4
39	–	–	–
*40	Adaptor Male Reducer	013-410000	1
41	Male Stud Adaptor	446-611000	1
42	Pump to Control Valve Hose	555-1895	1
43	Bulkhead to Pipe Header (Supply) Pipe	555-1694	1
44	Bulkhead to Pipe Header (Return) Pipe	555-1695	1
45	Solenoid Valve to Bulkhead (Supply) Pipe	555-1692	1
46	Bulkhead to Solenoid Valve (Return) Pipe	555-1693	1
47	Control Valve to Solenoid Valve Pipe	555-1691	1
48	Tank to Solenoid Valve Pipe	555-1697	1
49	Tank to Control Valve Pipe	555-1696	1
50	Bleed Valve to Control Valve Pipe	555-1690	1
51	Valve Cover Plate	555-1946	1
	Items marked thus * for use with 'Kontak' Control Valve only		

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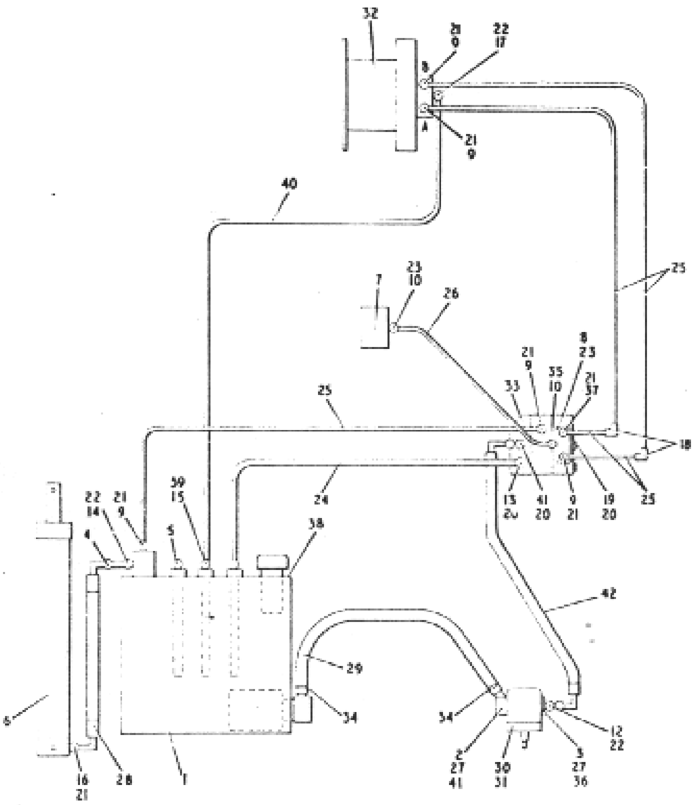
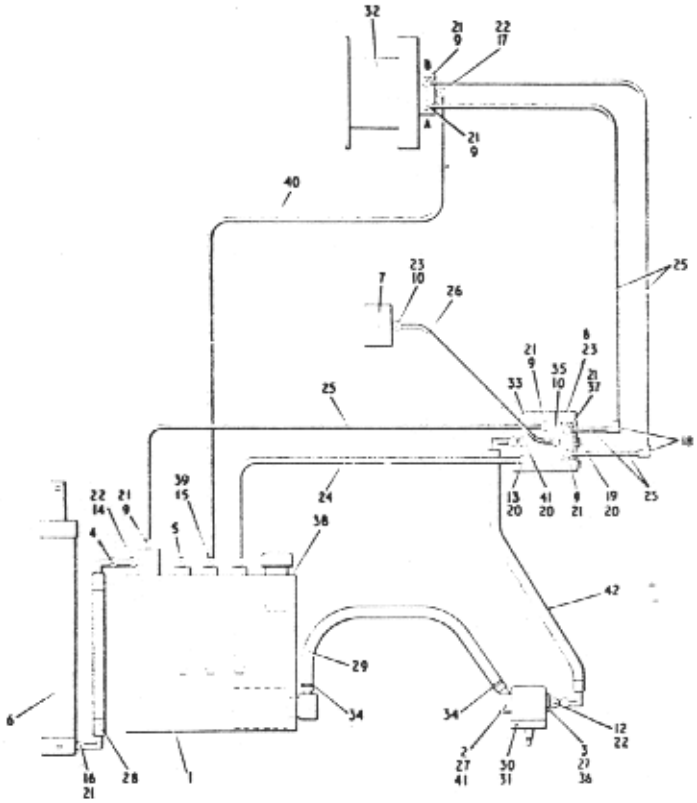
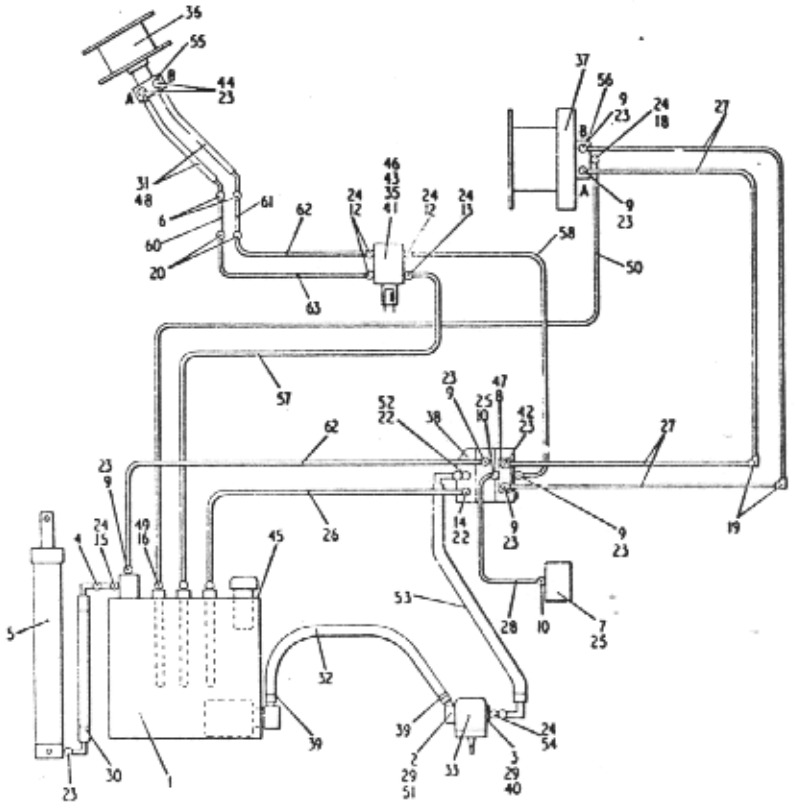


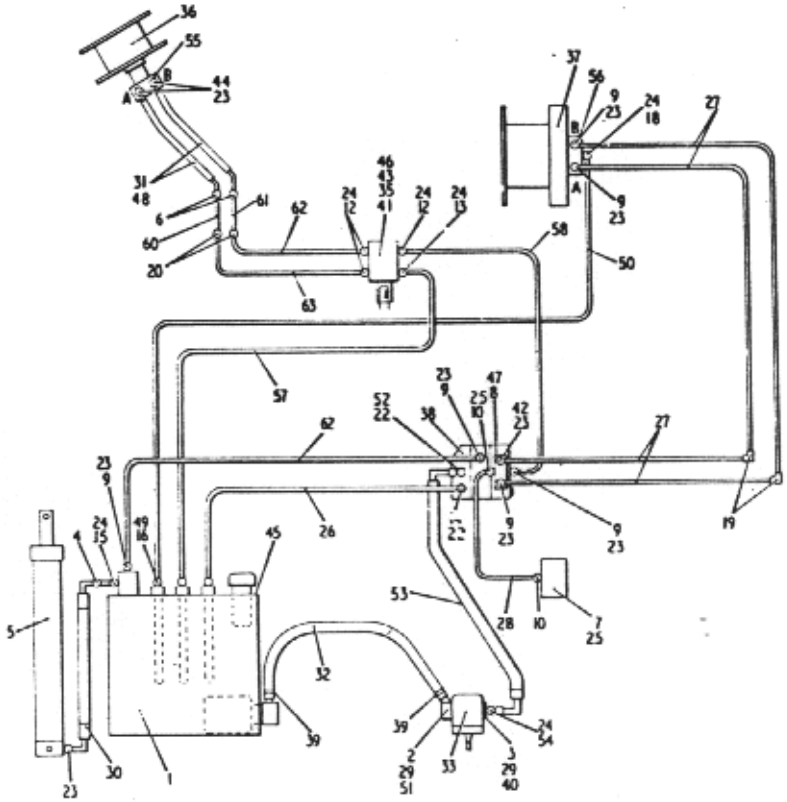
Ref NO	Description	Part NO	Qty
1	Hydraulic Tank Assembly (See E5)	555-1356	1
2	Pump Inlet Connector	555-1369	1
3	Pump Outlet Connector	555-1364	1
4	Connection for Flexible Pipe	513-1195	1
5	Blanking Bar	555-1368	1
6	Hopper Ram Assembly Complete with Shroud (See E6)	555-1358	1
7	Brake Release Cylinder Assembly (See H1)	555-1334	1
8	Control Block Assembly (See E9)	555-1392	1
9 ◕	Male Stud Couplings	446-349000	5
10 ◕	Male Stud Couplings	446-493000	2
11	Bright Steel Tube	555-1690	1
12 ▲	Male Coned Adaptor	446-611000	1
13 ●	Male Stud Coupling	446-335000	1
14 □	Standpipe Adaptor	446-403000	1
15 □	Standpipe Adaptor	446-654000	1
16 ▲	Male Coned Adaptor	446-614000	1
17 ✧	Banjo Coupling	141-908610	1
18	Equal Elbows	464-420000	2
19 ○	Brass Collared Plug	360-106000	1
20 ✸	Bonded Seals	417-806000	3
21 ✸	Bonded Seals	417-804000	7
22 ✸	Bonded Seals	417-803000	3
23 ✸	Bonded Seals	417-802000	2
24	Bright Steel Tube	555-1696	1
25	Bright Steel Tube	413-508180	1 length to suit
26	Bright Steel Tube	413-506200	1 length to suit
27 ■	'O' Rings	391-832000	2
28	Hopper Ram Hose	555-2043	1
29	Oil Resistant Hose (Blue)	260-908010	1



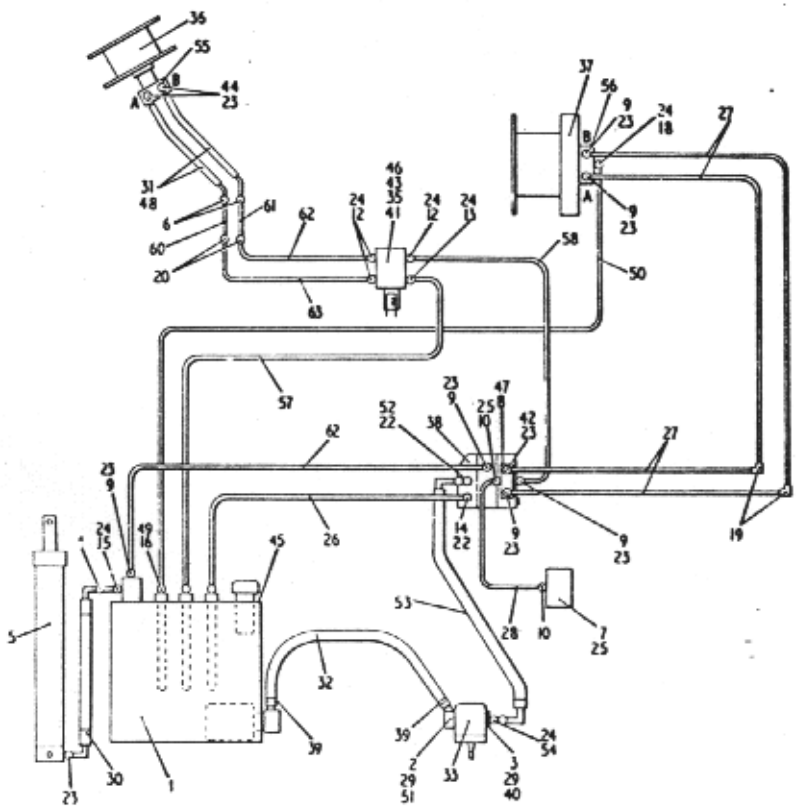
Ref Nº	Description	Part Nº	Qty
30	Pump (Diesel Machines only) Complete with	365-823000	1
	Hex Hd Screws	418-350410	4
	Spring Washers	464-304000	4
31	Pump (Electric Machines only) Complete with	365-822000	1
	Hex Hd Screws	418-350410	4
	Spring Washers	464-304000	4
32	Hydraulic Hoist Mk II (See H3)	555-1819	1
	Hydraulic Hoist Mk III (See H4)	555-1918	1
33	Control Valve (See E7) Complete with	451-432000	1
	Hex Hd Screws	418-250620	3
	Hex Nuts	330-350600	3
	Spring Washers	464-306000	3
34	Hose Clamps	143-703000	2
35 △	Skt Hd Capscrews	404-750432	4
36 △	Skt Hd Capscrews	404-750516	4
37	Coupling	555-1396	1
38	Hydraulic Tank Cover Assembly (See E5)	555-1357	1
39	Female Stud Coupling	141-608810	1
40	Nylon Pipe	110-533020	1 length to suit
41	Adaptor Male	013-41000	1
42	Pump to Control Valve Hose	555-1895	1



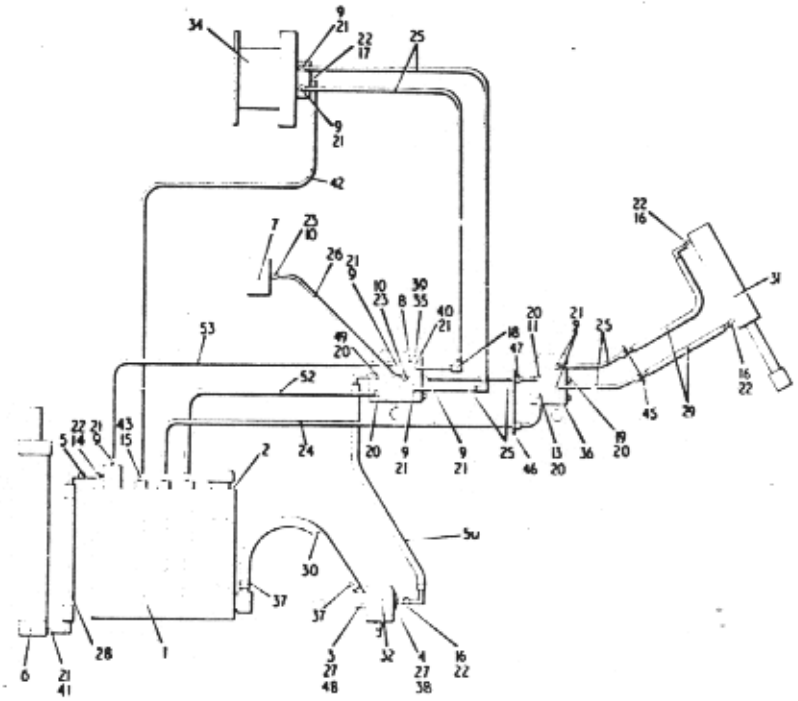
Ref Nº	Description	Part Nº	Qty
1	Hydraulic Tank Assembly (See E5)	555-1356	1
2	Pump Inlet Connector	555-1370	1
3	Pump Outlet Connector	555-1364	1
4	Connection for Flexible Pipe	555-1195	1
5	Hopper Ram Assembly Complete with Shroud (See E6)	555-1358	1
6	Pipe Header	555-1380	1
7	Brake Release Cylinder Assembly (See H1)	555-1334	1
8	Control Block Assembly (See E9)	555-1392	1
9 ●	Male Stud Couplings	446-349000	6
10 ●	Male Stud Couplings	446-493000	2
11	—	—	—
12 ●	Male Stud Couplings	446-628000	3
13 ●	Male Stud Coupling	446-631000	1
14 ●	Male Stud Coupling	446-335000	1
15 □	Standpipe Adaptor	446-403000	1
16 □	Standpipe Adaptor	446 654000	1
17	—	—	—
18 ☼	Banjo Coupling	141-908610	1
19	Equal Elbows	446-420000	2
20	Bulkhead Fittings	221-303000	2
21	—	—	—
22 ✱	Bonded Seals	417-806000	2
23 ✱	Bonded Seals	417-804000	10
24 ✱	Bonded Seals	417-803000	7
25 ✱	Bonded Seals	417-802000	2
26	Bright Steel Tube for Hydraulic Use	555 1696	1
27	Bright Steel Tube for Hydraulic Use	413-508180	1
28	Bright Steel Tube for Hydraulic Use	413-506200	1
29 ▣	'O' Rings	391-832000	2
30	Hopper Ram Hose	555-2043	1
31	Dragline Winch Hoses	555-2044	2
32	Oil Resistant Hose (Blue)	260-908010	1



Ref Nº		Description	Part Nº	Qty
33		Pump (Diesel Machines Only) Complete with	361-132000	1
		Hex Hd Bolts	460-350410	4
		Binx Nuts	330-360400	4
34		Pump (Electric Machines Only) Complete with	361-133000	1
		Hex Hd Bolts	460-350410	4
		Binx Nuts	330-360400	4
35		Valve Complete with	450-661000	1
		Hex Hd Screws	418-250405	4
		Spring Washers	464-304000	4
36		Winch Mk II	555-1226	1
		Winch Mk III	555-1917	1
37		Hoist Mk II	555-1819	1
		Hoist Mk III	555-1918	1
38		Control Valve Complete with (See E7)	451-432000	1
		Hex Hd Screws	418-250620	3
		Hex Nuts	330-350600	3
		Spring Washers	464-306000	3
39		Hose Clamp	143-703000	2
40	△	Skt Hd Capscrews	404-750516	4
41	△	Skt Hd Capscrews	404-750428	4
42		Coupling	555-1396	1
43		Dragline Control Block Assembly (See E8)	555-1378	1
44	▲	Male Cone Adaptor	446-614000	1
45		Hydraulic Tank Cover Assembly (See E5)	555-1357	1
46	△	Skt Hd Capscrew (Vickers Valve Only)	404-750424	4
47	△	Skt Hd Capscrews	404-750432	4
48		P.V.C. Covered Strap and Buckle	124-108900	2
49		Female Stud Coupling	141-608810	1
50		Nylon Pipe	110-958020	1 length
51	△	Skt Hd Capscrews	404-750532	2
52		Male Adaptor	013-410000	1
53		Pump to Control Valve Hose	555-1895	1

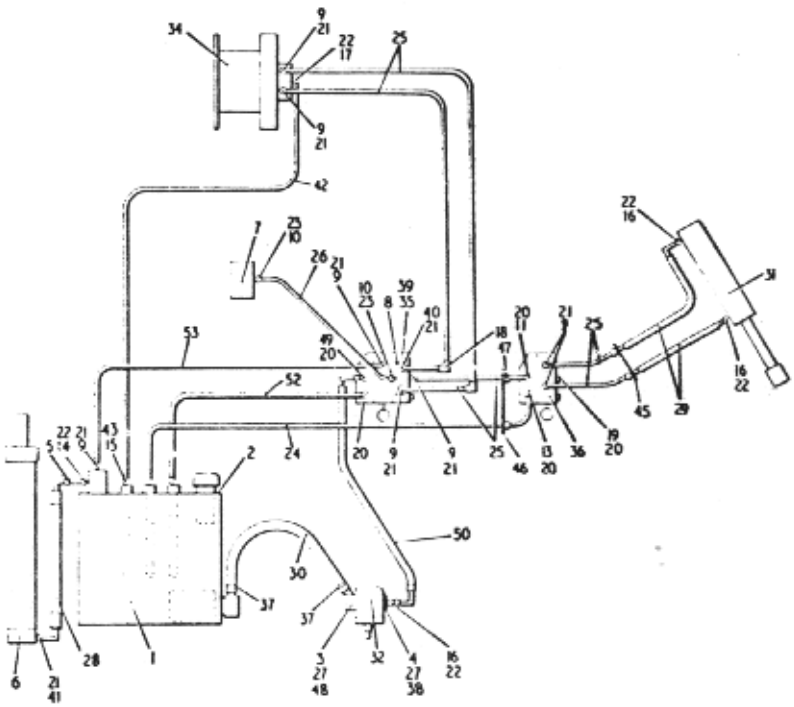


Ref Nº	Description	Part Nº	Qty
54	Male Stud Adaptor	446-611000	1
55	Port Block Complete with Screws and Seals	480-105015	1
56	Rotational Port Block Complete with Screws and Seals	480-105016	1
57	Bright Steel Tube	555-1697	1
58	Bright Steel Tube	555-1691	1
59	Bright Steel Tube	555-1690	1
60	Bright Steel Tube	555-1695	1
61	Bright Steel Tube	555-1694	1
62	Bright Steel Tube	555-1692	1
63	Bright Steel Tube	555-1693	1

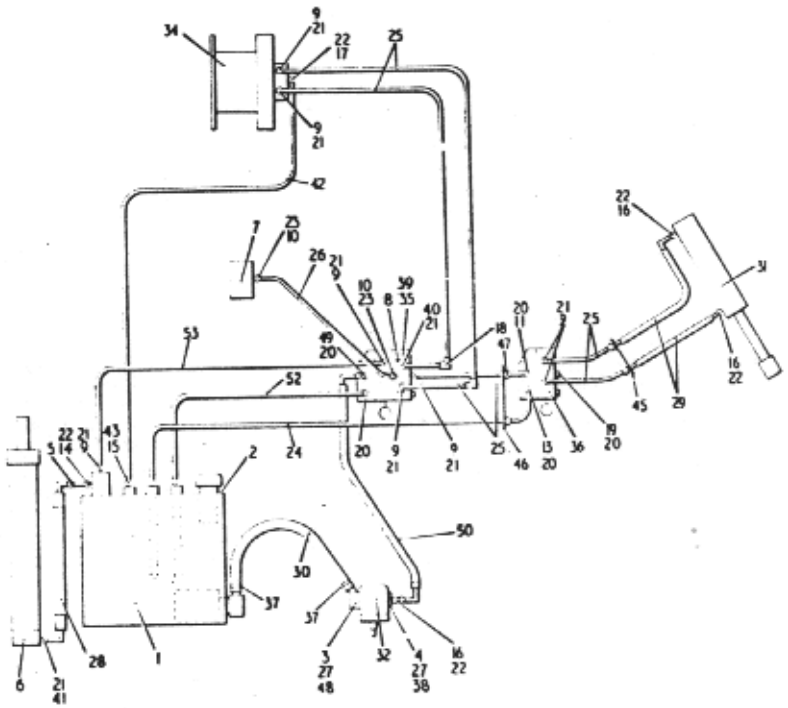


Ref Nº	Description	Part Nº	Qty
1	Hydraulic Tank Assembly (See E5)	555-1356	1
2	Hydraulic Tank Cover Assembly (See E5)	555-1357	1
3	Pump Inlet Connector	555-1370	1
4	Pump Outlet Connector	555-1364	1
5	Connection For Flexible Pipe	513-1195	1
6	Hopper Ram Assembly Complete with Shroud (See E6)	555-1358	1
7	Brake Release Cylinder Assembly (See H1)	555-1334	1
8	Control Block Assembly (See E9)	555-1392	1
9 ●	Male Stud Couplings	446-349000	8
10 ●	Male Stud Couplings	446-493000	2
11 ●	Male Stud Coupling	446-612000	1
12	—	—	—
13 ●	Male Stud Coupling	446-335000	2
14 □	Standpipe Adaptor	446-403000	1
15 □	Standpipe Adaptor	446-654000	1
16 ▲	Male Coned Adaptors	446-611000	3
17 ☼	Banjo Coupling	141-908610	1
18	Equal Elbow	446-420000	2
19 ○	Brass Collared Plug	360-106000	1
20 ✱	Bonded Seals	417-806000	5
21 ✱	Bonded Seals	417-804000	10
22 ✱	Bonded Seals	417-803000	5
23 ✱	Bonded Seals	417-802000	2
24	Bright Steel Tube -- Length to Suit	—	1
25	Bright Steel Tube — Length to Suit	—	1
26	Bright Steel Tube — Length to Suit	—	1
27 ■	'O' Ring	391-832000	2
28	Hopper Ram Hose	555-2043	1
29	Single Wire Hose Female Straight Female 90°	260-909000	2
30	Oil Resistant Hose (Blue)	260-908010	1
31	Double Acting Ram (See E18)	272-126000	1

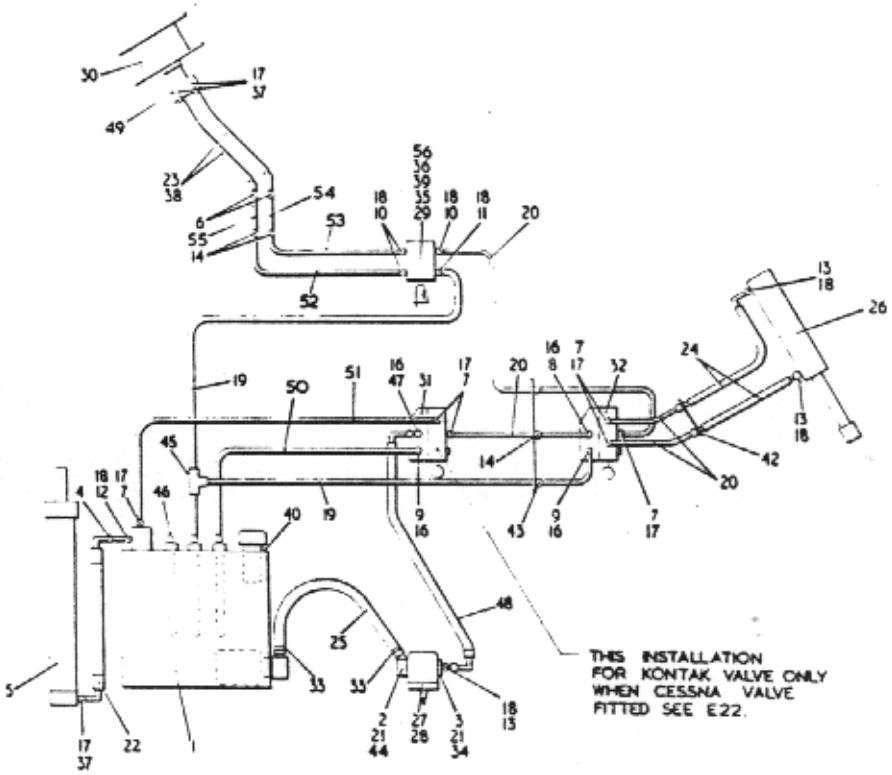
When Ordering Always Quote Machine Nº Part Nº Description & Quantity



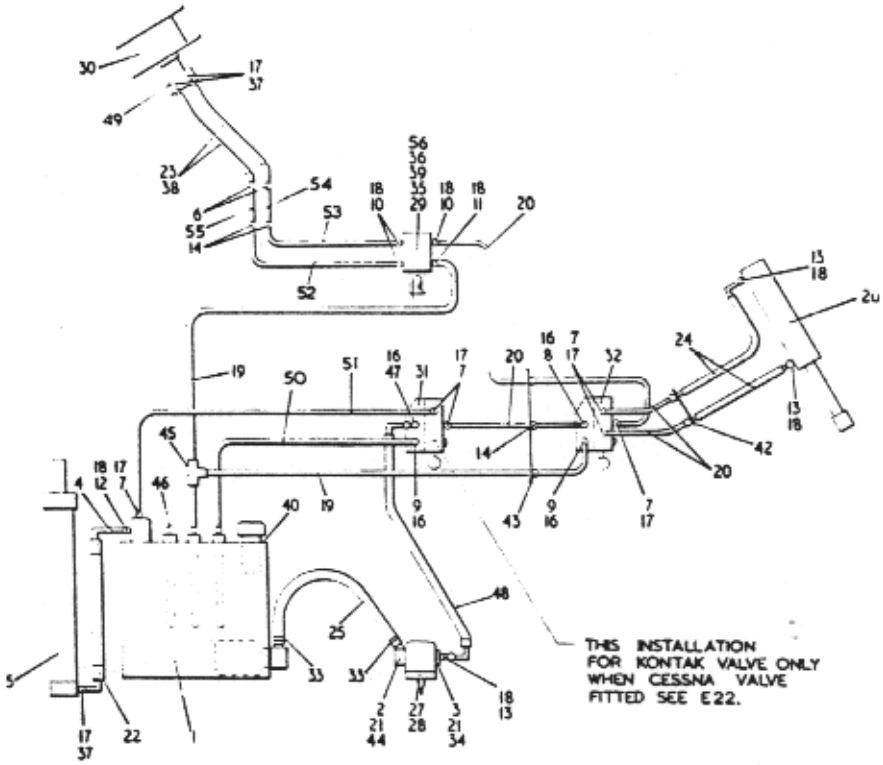
Ref Nº	Description	Part Nº	Qty
32	Pump (Diesel Machines Only) Complete with	361-132000	1
	Hex Hd Bolts	460-350410	4
	Binx Nuts	330-360400	4
33	Pump (Electric Machines Only) Complete with	361-133000	1
	Hex Hd Bolts	460-350410	4
	Binx Nuts	330-360400	4
34	Hoist Mk II (See H3)	555-1819	1
	Hoist Mk III (See H4)	555-1918	1
35	Control Valve Complete with	451-432000	1
	Hex Hd Screws	418-250620	3
	Hex Nuts	330-350600	3
	Spring Washers	464-306000	3
36	Control Valve Complete with	451-435000	1
	Hex Hd Screws	418-250626	3
	Hex Nuts	418-250600	3
	Spring Washers	464-306000	3
37	Hose Clamps	143-703000	2
38 △	Skt Hd Capscrews	404-750516	2
39 △	Skt Hd Capscrews	404-750432	4
40	Coupling	555-1396	1
41 ▲	Male Coned Adaptor	446-614000	1
42	Nylon Pipe	110-958020	1 length
43	Female Stud Coupling	141-608810	1
44	Spacers for Control Valve (Ref. 36)	555-1773	3
45	Pipe Header (Pan)	555-1840	1
46	Pipe Header (Frame) Complete with	555-1841	1
	Hex Hd Bolt	460-350608	1
	Hex Nut	330-350600	1
	Spring Washer	464-306000	1
47	Bulkhead Connector	464-488000	1
48 △	Skt Hd Capscrews	404-750532	2
49	Adaptor Male	013-410000	1



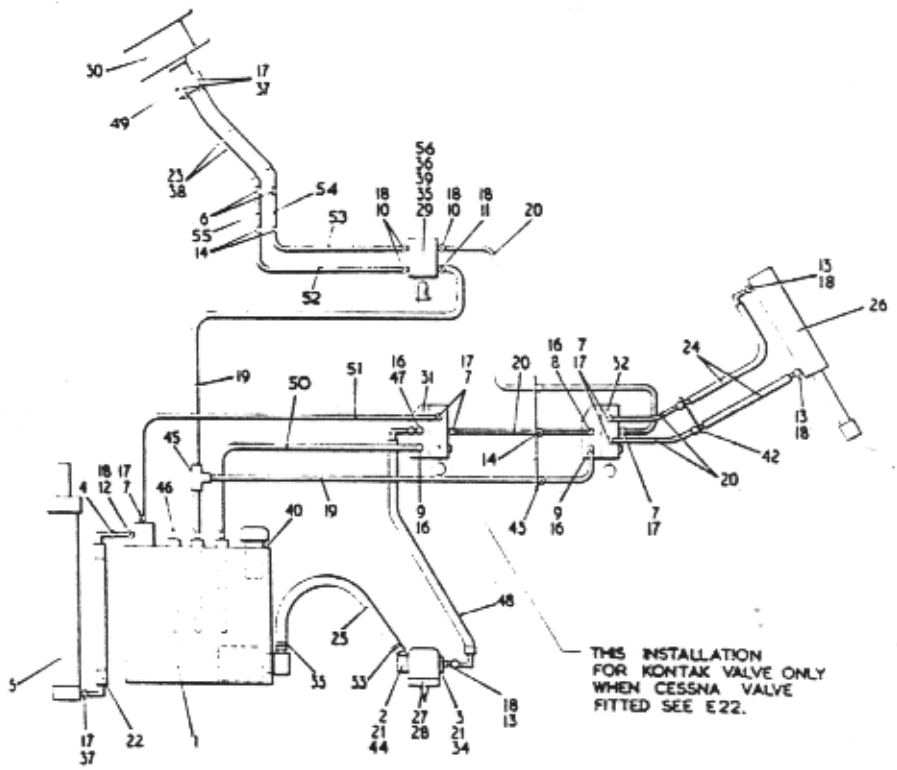
Ref Nº	Description	Part Nº	Qty
50	Pump to Control Valve Hose	555-1895	1
51	Rotational Port Block Complete with Screws and Seals	480-105016	1
52	Bright Steel Tube	555-1696	1
53	Bright Steel Tube	555-1690	1



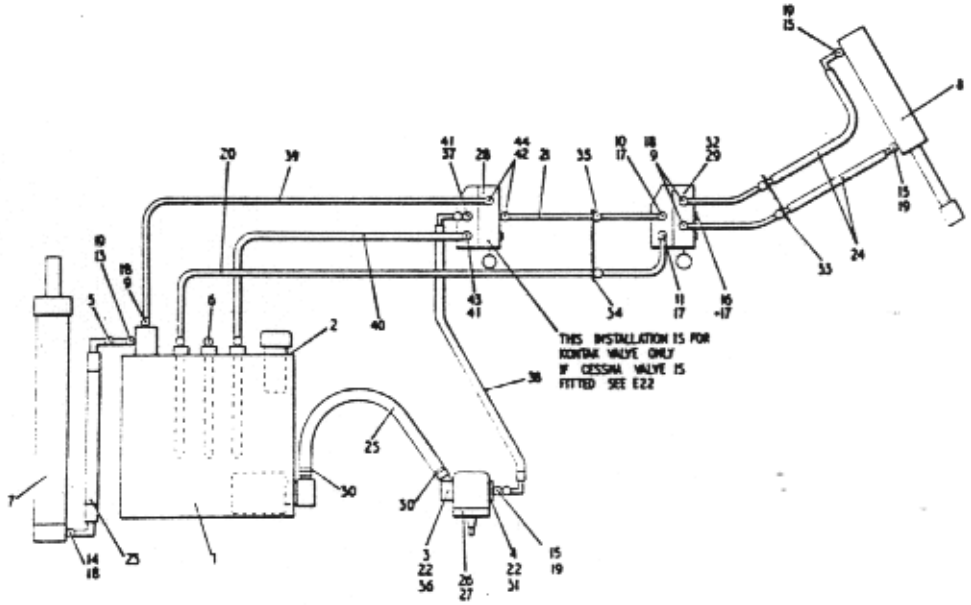
Ref Nº	Description	Part Nº	Qty
1	Hydraulic Tank Assembly (See E5)	555-1356	1
2	Pump Inlet Connector	555-1370	1
3	Pump Outlet Connector	555-1364	1
4	Connection for Flexible Pipe	513-1195	1
5	Hopper Ram Assembly Complete with Shroud (See E6)	555-1358	1
6	Pipe Header	555-1380	1
7 ●	Male Stud Couplings	446-349000	6
8 ●	Male Stud Coupling	446-612000	1
9 ●	Male Stud Couplings	446-335000	2
10 ●	Male Stud Couplings	446-628000	3
11 ●	Male Stud Coupling	446-631000	1
12 □	Standpipe Adaptor	446-403000	1
13 ▲	Male Coned Adaptor	446-611000	3
14	Bulkhead Fittings	221-303000	3
15	–	–	–
16 ✱	Bonded Seals	417-806000	4
17 ✱	Bonded Seals	417-804000	9
18 ✱	Bonded Seals	417-803000	8
19	Bright Steel Tube – Length to suit	–	1
20	Bright Steel Tube – Length to suit	–	1
21 ■	'O' Rings	391-832000	2
22	Hopper Ram Hose	555-2043	1
23	Dragline Winch Hose	555-2044	2
24	Single Wire Hose Female Straight Female 90°	260-909000	2
25	Oil Resistant Hose (Blue)	260-909010	1
26	Double Acting Ram (See E18)	272-126000	1
27	Pump (Diesel Machines Only) Complete with	361-132000	1
	Hex Hd Bolts	460-350410	4
	Binx Nuts	330-360400	4
28	Pump (Electric Machines Only) Complete with	361-133000	1
	Hex Hd Bolts	460-350410	4
	Binx Nuts	330-360400	4



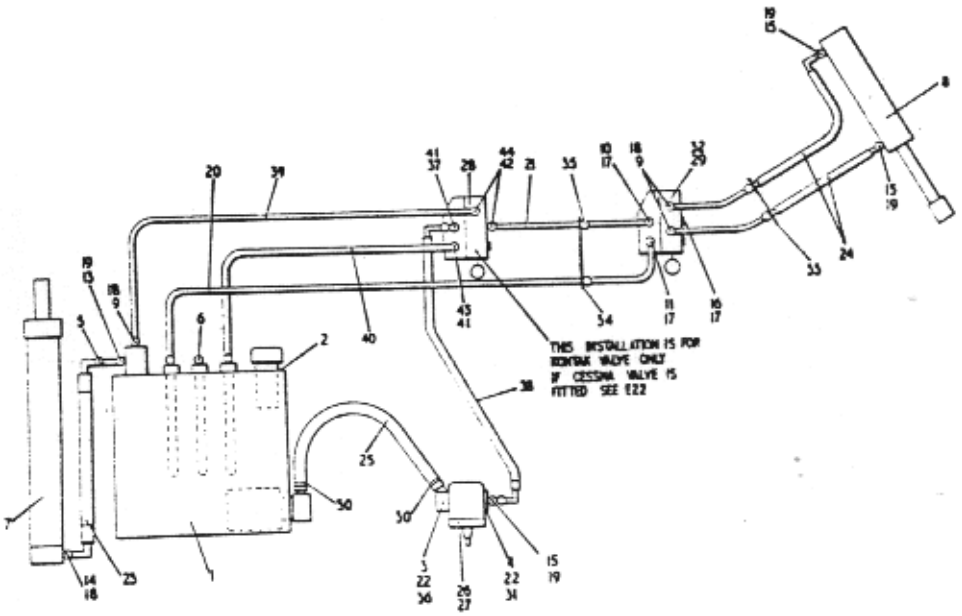
Ref Nº	Description	Part Nº	Qty
29	Valve Complete with	450-661000	1
	Hex Hd Screws	418-350405	4
	Spring Washers	464-304000	4
30	Hydraulic Winch Mk II (See H3)	555-1226	1
	Hydraulic Winch Mk III (See H4)	555-1917	1
31	'Kontak' Control Valve Complete with	451-431000	1
	Hex Hd Screws	418-250620	3
	Hex Nuts	330-350600	3
	Spring Washers	464-306000	3
32	Control Valve complete with	451-435000	1
	Hex Hd Bolts	418-250626	3
	Hex Nuts	330-350600	3
	Spring Washers	464-306000	3
33	Hose Clamps	143-703000	2
34 △	Skt Hd Capscrews	404-750516	2
35 △	Skt Hd Capscrews	404-750428	4
36	Dragline Control Block Assembly (See E8)	555-1378	1
37 ▲	Male Coned Adaptor	446-630000	3
38	P.V.C. Covered Strap and Buckle	124-108900	2
39 △	Skt Hd Capscrews	404-750424	4
40	Hydraulic Tank Cover (See E5)	555-1357	1
41	Spacers for Ref. No. 32 Control Valve	555-1773	3
42	Pipe Header (Pan)	555-1840	1
43	Pipe Header (Frame) Complete with	555-1841	1
	Hex Hd Bolts	460-350608	1
	Hex Nuts	330-350600	1
	Spring Washers	464-306000	1
44 ▲	Skt Hd Capscrews	404-750532	2
45	Equal Tee	446-311000	1
46	Blanking Bar	555-1368	1
47	Adaptor Male	013-410000	1
48	Pump to Control Valve Hose	555-1895	1



Ref Nº	Description	Part Nº	Qty
49	Port Block Complete with Screws and Seals	480-105015	1
50	Bright Steel Tube	555-1696	1
51	Bright Steel Tube	555-1690	1
52	Bright Steel Tube	555-1693	1
53	Bright Steel Tube	555-1692	1
54	Bright Steel Tube	555-1694	1
55	Bright Steel Tube	555-1695	1
56	Valve Cover Plate	555-1946	1

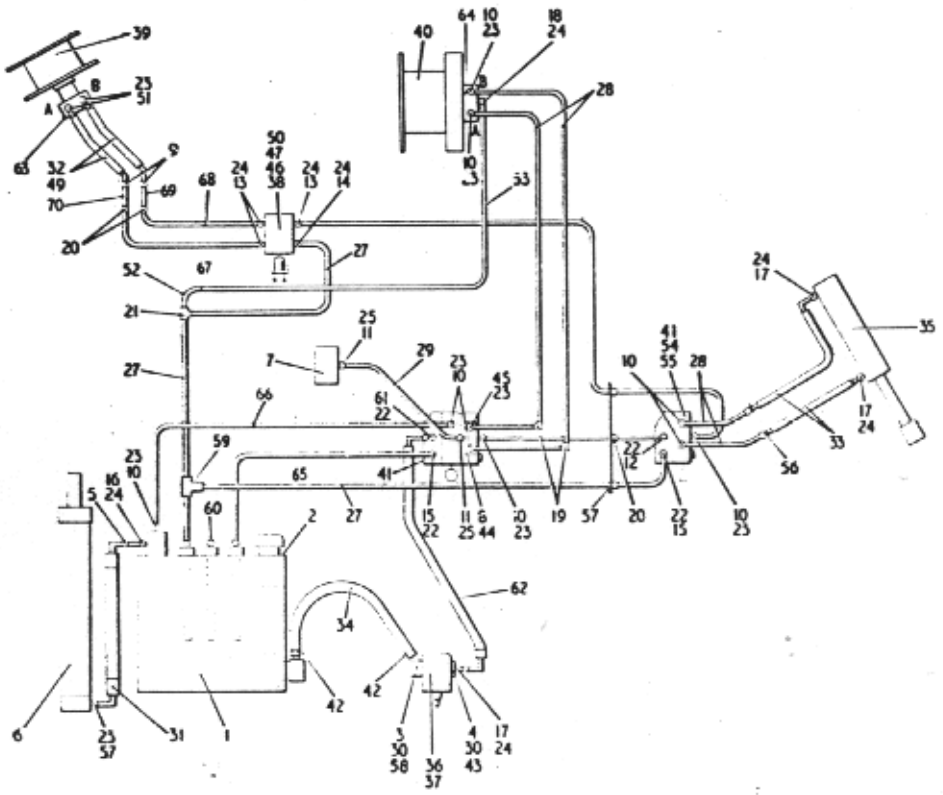


Ref Nº	Description	Part Nº	Qty
1	Hydraulic Tank Assembly (See E5)	555-1356	
2	Hydraulic Tank Cover Assembly (See E5)	555-1357	1
3	Pump Inlet Connector	555-1370	1
4	Pump Outlet Connector	555-1364	1
5	Connection for Flexible Pipe	513-1195	1
6	Blanking Bar	555-1368	1
7	Hopper Ram Assembly complete with Shroud (See E6)	555-1358	1
8	Double Acting Ram (See E18)	272-126000	1
9 ●	Male Stud Couplings	446-349000	3
10 ●	Male Stud Couplings	446-612000	2
11 ●	Male Stud Coupling	446-335000	1
12	—	—	—
13 □	Standpipe Adaptor	446-403000	1
14 ▲	Male Coned Adaptor	446-614000	1
15 ▲	Male Coned Adaptors	446-611000	2
16 ○	Brass Collared Plug	360-106000	1
17 ✱	Bonded Seals	417-806000	3
18 ✱	Bonded Seals	417-804000	4
19 ✱	Bonded Seals	417-803000	4
20	Bright Steel Tube — Length to suit	—	2
21	Bright Steel Tube — Length to suit	—	3
22 ■	'O' Rings	391-832000	2
23	Hopper Ram Hose	555-2043	1
24	Single Wire Hose Female Straight Female 90°	260-909000	2
25	Oil Resistant Hose (Blue)	260-908010	1
26	Pump (Diesel Machines Only) Complete with	361-132000	1
	Hex Hd Bolts	460-350410	4
	Binx Nuts	330-360400	4
27	Pump (Electric Machines Only) Complete with	361-133000	1
	Hex Hd Bolts	460-350410	4
	Binx Nuts	330-360400	4



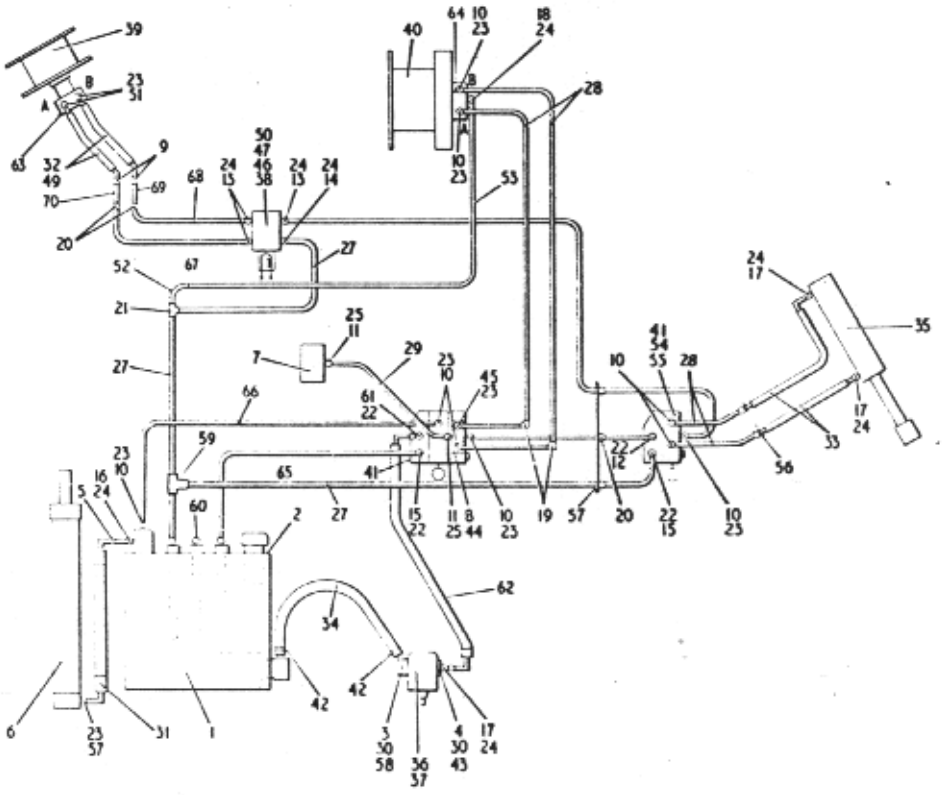
Ref Nº	Description	Part Nº	Qty
*28	Control Valve Complete with	451-431000	1
	Hex Hd Setscrews	418-250620	3
	Hex Nuts	330-350600	3
	Spring Washers	464-306000	3
29	Control Valve complete with	451-435000	1
	Hex Hd Setscrews	418-250626	3
	Hex Nuts	330-350600	3
	Spring Washers	464-306000	3
30	Hose Clamps	143-703000	2
31 △	Skt Hd Capscrews	404-750516	2
32	Spacers for Ref. No. 29 Control Valve	555-1773	3
33	Pipe Header (Pan)	555-1840	1
34	Pipe Header (Frame) Complete with	555-1841	1
	Hex Hd Bolts	460-350608	1
	Hex Nuts	330-350600	1
	Spring Washers	464-306000	1
35	Bulkhead Connection	446-488000	1
36 △	Skt Hd Capscrews	404-750532	2
*37	Adaptor Male	013-410000	1
38	Pump to Control Valve Hose	555-1895	1
39	Bright Steel Tube	555-1690	1
40	Bright Steel Tube	555-1696	1
*41	Bonded Seals	417-806000	2
*42 ●	Male Stud Couplings	446-349000	2
*43 ●	Male Stud Coupling	446-335000	1
*44 ✱	Bonded Seals	417-804000	2

Items marked thus * are for 'Kontak' Control Valve only



Ref Nº	Description	Part Nº	Qty
1	Hydraulic Tank Assembly (See E5)	555-1356	1
2	Hydraulic Tank Cover Assembly (See E5)	555-1357	1
3	Pump Inlet Connector	555-1370	1
4	Pump Outlet Connector	555-1364	1
5	Connection for Flexible Pipe	513-1195	1
6	Hopper Ram Assembly complete with Shroud (See E6)	555-1358	1
7	Brake Release Sylinder (See H1)	555-1334	1
8	Control Block Assembly (See E9)	555-1392	1
9	Pipe Header	555-1380	1
10 ●	Male Stud Couplings	446-349000	9
11 ●	Male Stud Couplings	446-493000	2
12 ●	Male Stud Coupling	446-612000	1
13 ●	Male Stud Couplings	446-628000	3
15 ●	Male Stud Couplings	446-335000	2
16 □	Standpipe Adaptor	446-629000	1
17 ▲	Male Coned Adaptors	446-611000	3
18 ☼	Banjo Coupling	141-90861	1
19	Equal Elbows	446-403000	2
20	Bulkhead Fittings	221-303000	3
21	Unequal Tee	446-500000	1
22 ✱	Bonded Seals	417-806000	4
23 ✱	Bonded Seals	417-804000	13
24 ✱	Bonded Seals	417-803000	9
25 ✱	Bonded Seals	417-802000	2
26	—	—	—
27	Bright Steel Tube	—	1
28	Bright Steel Tube	—	1
29	Bright Steel Tube	—	1
30 ■	'O' Ring	391-832000	2
31	Hopper Ram Hose	555-2043	1
32	Dragline Winch Hose	555-2044	2
33	Single Wire Hose Female Straight Female 90°	260-909000	2

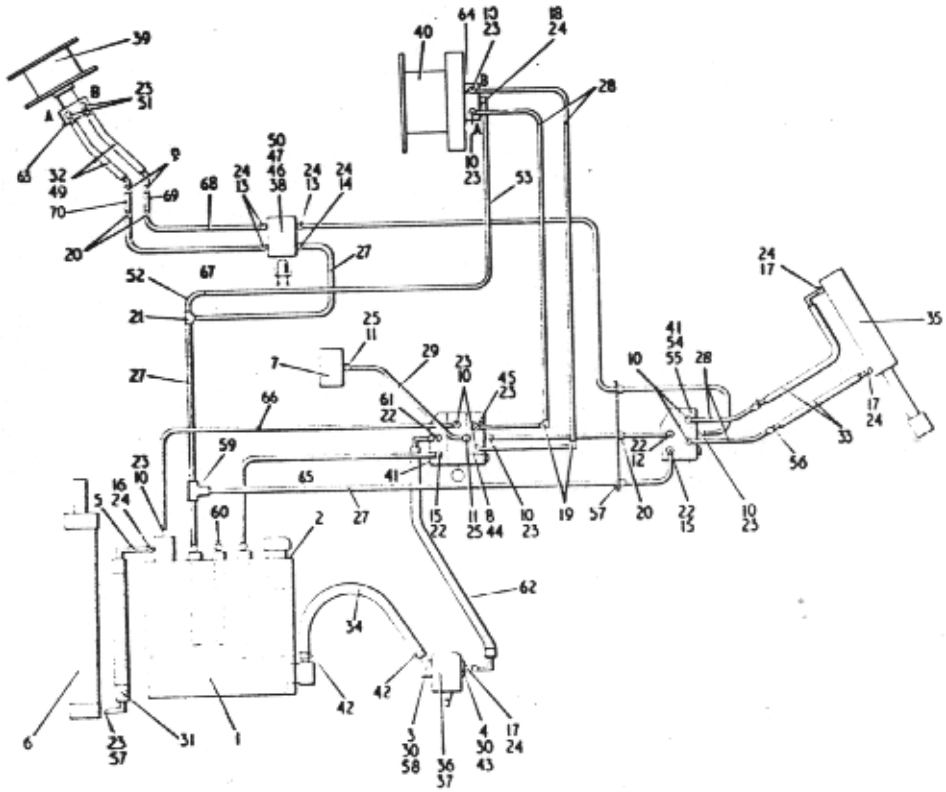
POWER DOOR EXPORT HOIST & DRAGLINE



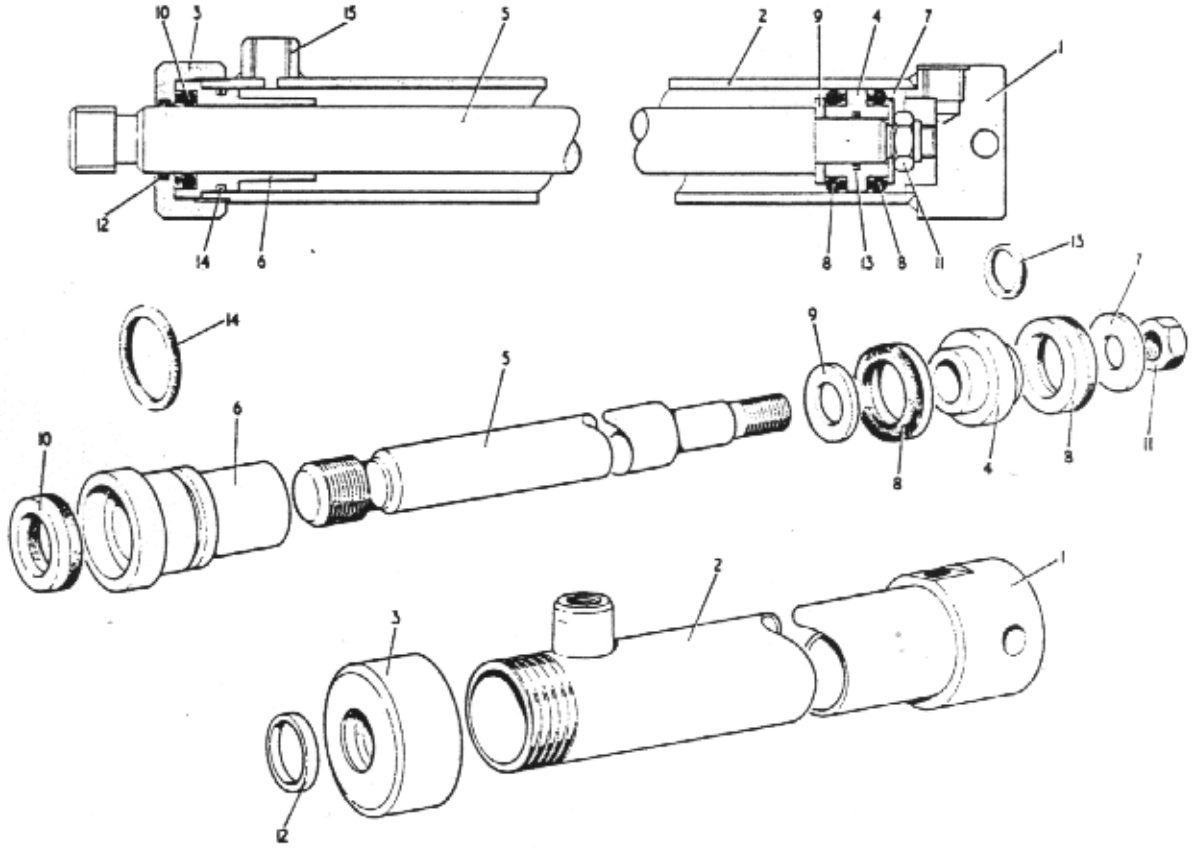
Ref Nº	Description	Part Nº	Qty
34	Oil Resistant Hose (Blue)	260-908010	1
35	Double Acting Ram (See E18)	272-126000	1
36	Pump (Diesel Machines only) complete with	361-132000	1
	Hex Hd Bolts	460-350410	4
	Binx Nuts	330-360400	4
37	Pump (Electric Machines only) complete with	361-133000	1
	Hex Hd Bolts	460-350410	4
	Binx Nuts	330-360400	4
38	Valve complete with	450-661000	1
	Hex Hd Setscrews	418-350405	4
	Spring Washers	464-304000	4
39	Winch Mk II (See H3)	555-1226	1
	Winch Mk III (See H4)	555-1917	1
40	Hoist Mk II (See H3)	555-1819	1
	Hoist Mk III (See H4)	555-1918	1
41	Control Valve complete with	451-432000	1
	Hex Hd Setscrews	418-250620	3
	Hex Nuts	330-350600	3
	Spring Washers	464-306000	3
42	Hose Clamps	143-703000	2
43 △	Skt Hd Capscrews	404-750516	2
44 △	Skt Hd Capscrews	404-750432	4
45	Coupling	555-1396	1
46	Dragline Control Assembly (See E3)	555-1378	1
47 △	Skt Hd Capscrews	404-750424	4
48	—	—	—
49	P.V.C. Covered Strap and Buckle	124-108900	2
50 △	Skt Hd Capscrews	404-750444	4
51 ▲	Male Cone Adaptors	446-614000	3
52	Standpipe Elbow	141-558800	1
53	Nylon Pipe	110-958020	1 length

POWER DOOR EXPORT HOIST & DRAGLINE

Machine Nº Part Nº Description Quantity

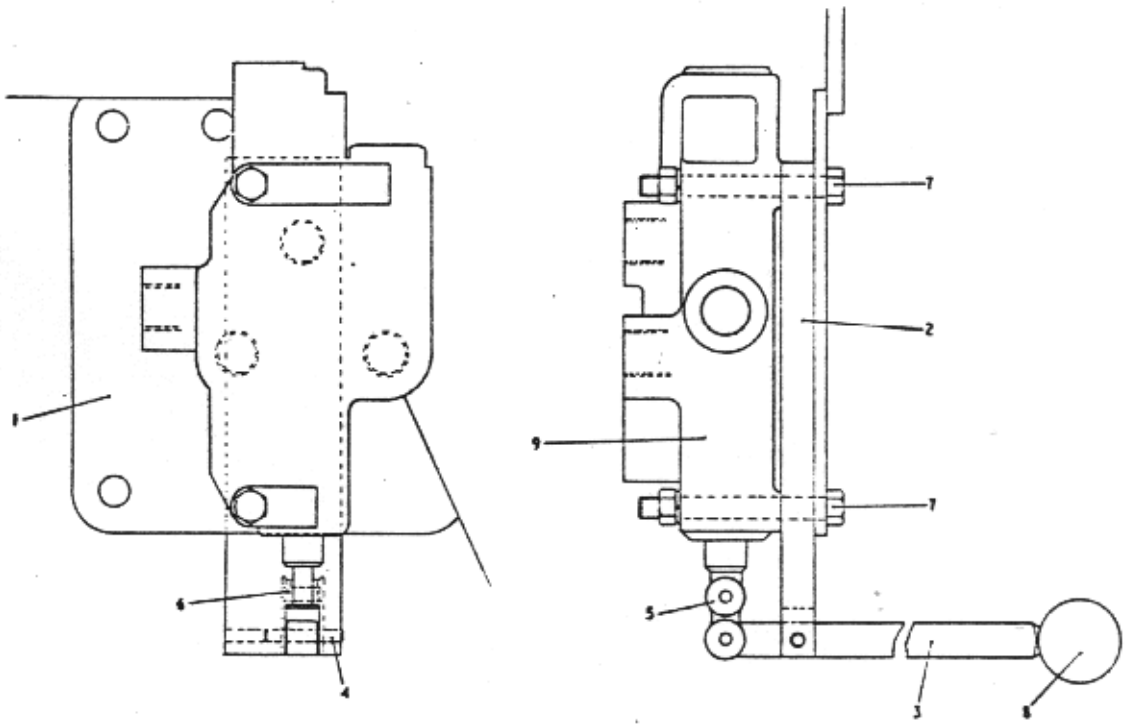


Ref Nº	Description	Part Nº	Qty
54	Control Valve complete with	451-435000	1
	Hex Hd Setscrews	418-250626	3
	Hex Nuts	330-350600	3
	Spring Washers	464-306000	3
55	Spacers used with Ref. No. 54 Control Valve	555-1773	3
56	Pipe Header (Pan)	555-1840	1
57	Pipe Header (Frame) complete with	555-1841	1
	Hex Hd Bolt	460-350608	1
	Hex Nut	330-350600	1
	Spring Washer	464-306000	1
58 △	Skt Hd Capscrews	404-750532	2
59	Equal Tee	446 311000	1
60	Blanking Bar	555-1368	1
61	Adaptor Male	013-410000	1
62	Pump to Control Valve Hose	555-1895	1
63	Port Block Complete with Seals and Screws	480-105015	1
64	Rotational Port Block Complete with Seals and Screws	480-105016	1
65	Bright Steel Tube	555-1696	1
66	Bright Steel Tube	555-1690	1
67	Bright Steel Tube	555-1693	1
68	Bright Steel Tube	555-1692	1
69	Bright Steel Tube	555-1694	1
70	Bright Steel Tube	555-1695	1
71	Valve Cover Plate	555-1946	1

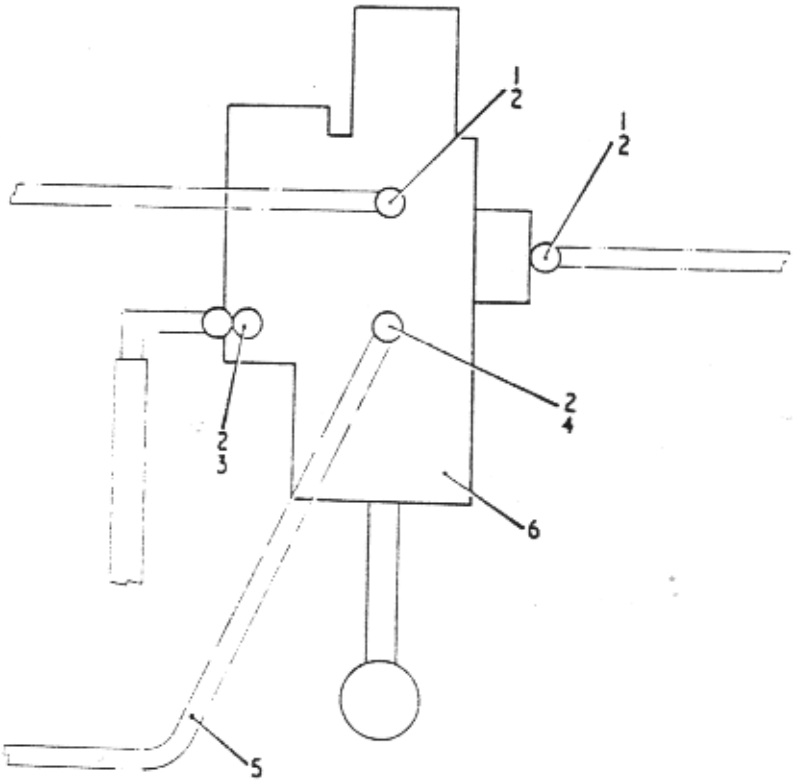


Ref Nº	Description		Part Nº	Qty
1	Cylinder Plug	3601	272-1261	1
2	Cylinder	3602	272-1262	1
3	Tube Cap	3603	272-1263	1
4	Piston Head	3604	272-1264	1
5	Piston Rod	3605	272-1265	1
6	Tube Sleeve	3606	272-1266	1
7	Backing Washer (Rear)	3607	272-1267	1
8	Piston Seal	3609	272-1268	2
9	Backing Washer (Front)	3618	272-1269	1
10	Sleeve Seal	3619	272-12610	1
11	Locknut	3621	272-12611	1
12	Wiper	3622	272-12612	1
13	Piston Head 'O' Ring	3623	272-12613	1
14	Sleeve 'O' Ring	3620	272-12614	1
15	Inlet Boss	3624	272-12615	1

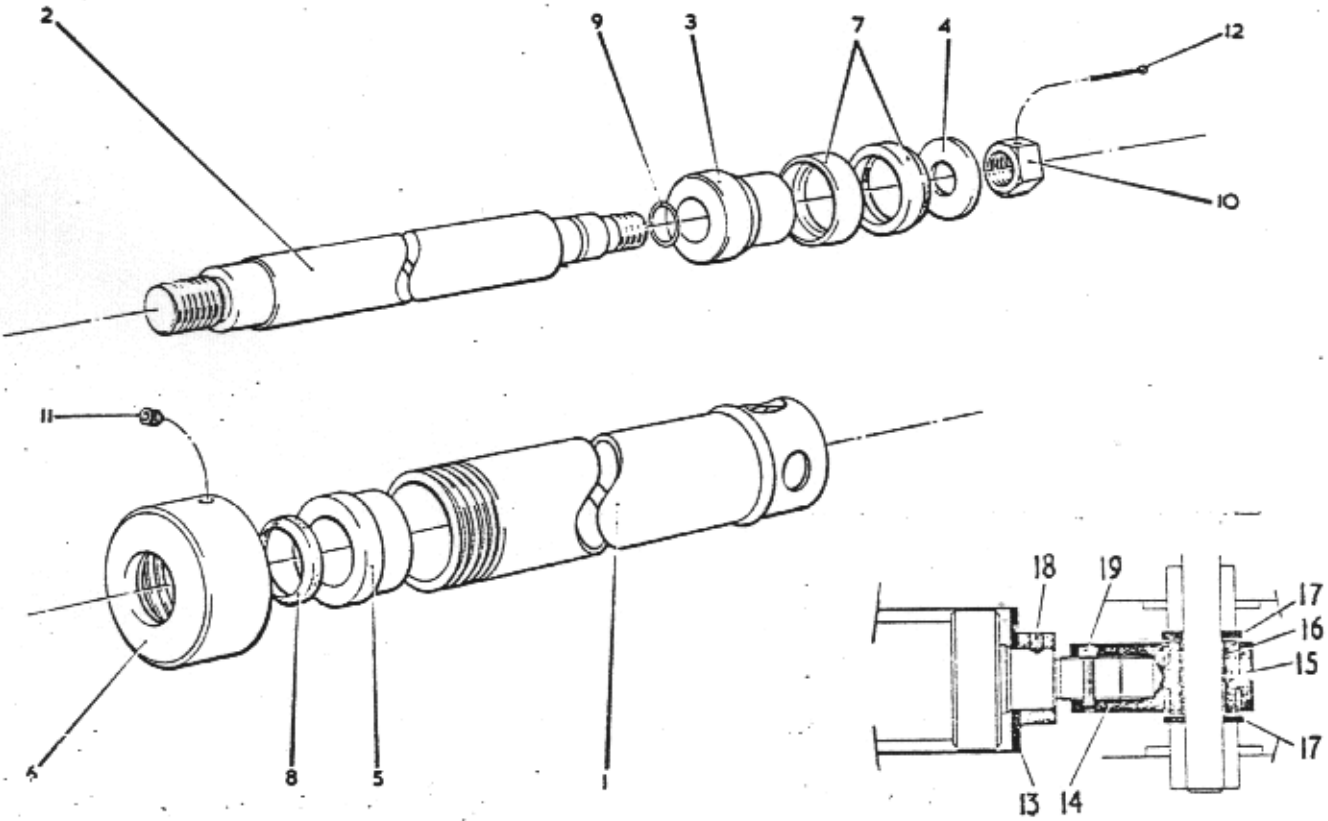
PAN DOOR RAM



Ref Nº	Description	Part Nº	Qty
1	Hopper Valve Plate	555-1804	1
2	Lever Pivot	555-2054	1
3	Control Valve Operation Lever	555-2055	1
4	Spirol Pin	353-803120	1
5	Spring Connecting Link	310-105000	1
6	Washers	463-303000	As reqd.
7	Hex Hd Bolts complete with	460-350522	2
	Hex Nuts	330-350500	2
	Spring Washers	464-305000	2
8	Black Knob	307-140000	1
9	Cessna Valve	451-440000	1



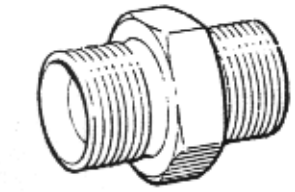
Ref Nº	Description	Part Nº	Qty
1 ●	Parallel Male Stud Couplings	446-628000	2
2 ✱	Bonded Seals	417-803000	4
3	Male Stud Adaptor	446-611000	1
4 ●	Parallel Male Stud Coupling	446-631000	1
5	Hydraulic Pipe (Cessna Valve to Tank)	555-2053	1
6	Cessna Valve complete with (See E21)	451-440000	1
	Hex Hd Bolts	460-350522	2
	Hex Nuts	330-350500	2
	Spring Washers	464-305000	2



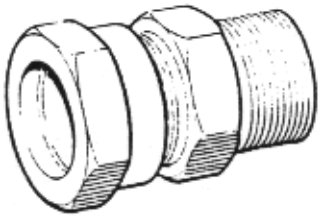
Ref Nº	Description		Part Nº	Qty
*1	Tube Assembly	L.2750	272-130001	1
*2	Piston Rod	L.1747	272-127400	1
*3	Piston Head	L.1748	272-127300	1
*4	Backup Plate	L.1749	272-127600	1
*5	Front Insert	L.2752	272-127013	1
*6	Front Cap	L.2753	272-127012	1
*7	Piston Seal Assembly	L.1754	272-127800	1
*8	Wiper Seal	L.1755	272-127900	1
*9	'O' Ring	L.220	272-127100	1
*10	Nut	L.2754	272-127016	1
*11	Setscrew	L.1582	272-127011	1
*12	Cotter Pin	L.2755	272-127015	1
13	Ram Shroud		555-1367	1
14	End Piece for Ram		555-1366	1
15	Insert for Ram End		555-1365	1
16	Bush		112-801100	2
17	Bright Plain Washers		555-1679	2
18	Skt. Head Setscrew (Half Dog Pt.)		404-930606	1
19	Skt. Head Capscrews		404-706240	2

* Items mark thus may be bought complete as:
Hopper Ram Assembly Part No. 272-130000

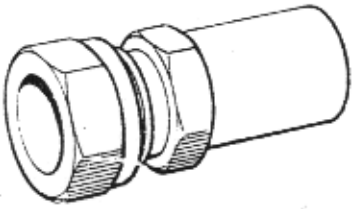
Hopper Ram From M/C No.8201



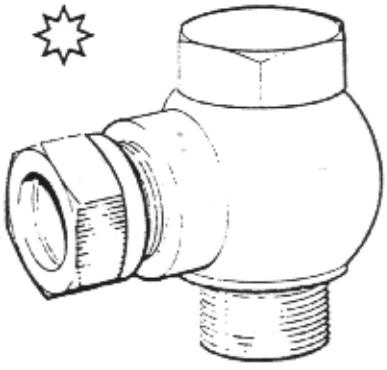
MALE CONE ADAPTOR



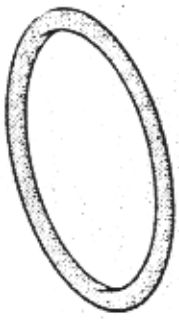
MALE STUD COUPLING



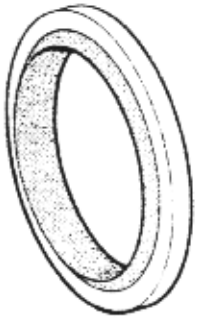
STANDPIPE ADAPTOR



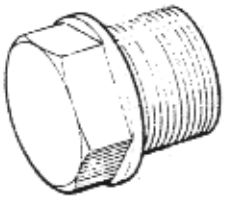
BANJO COUPLING



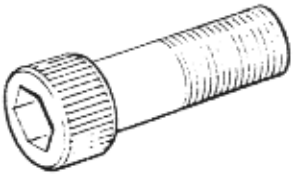
O RING



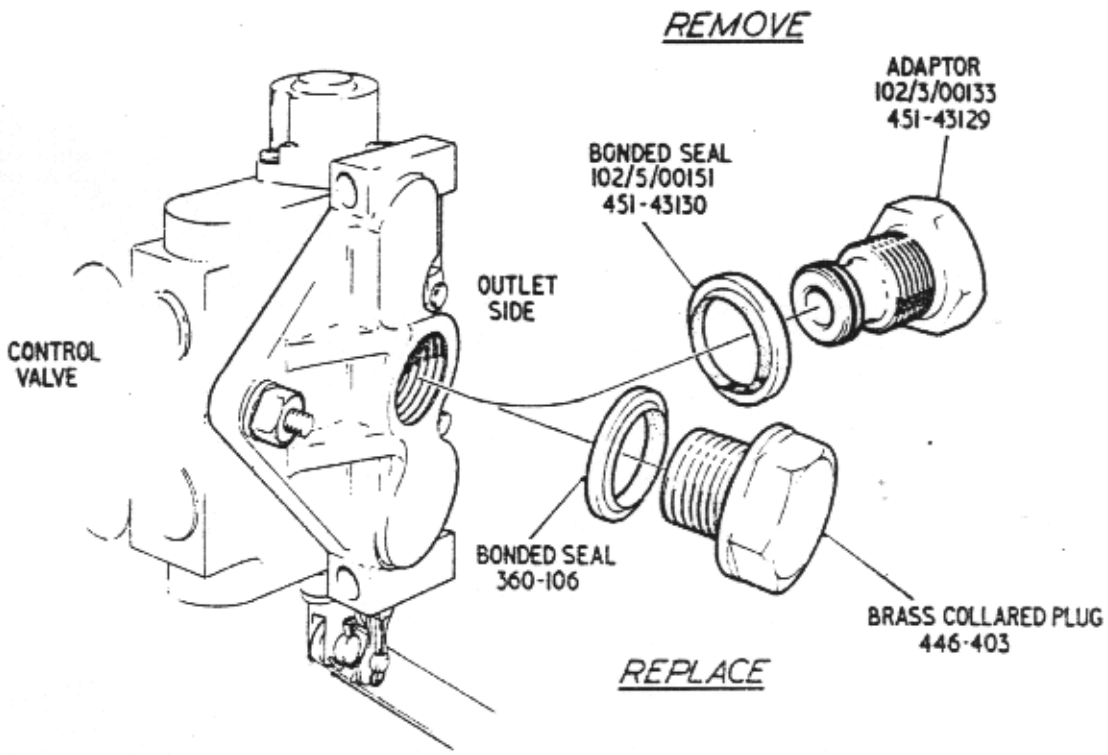
BONDED SEAL



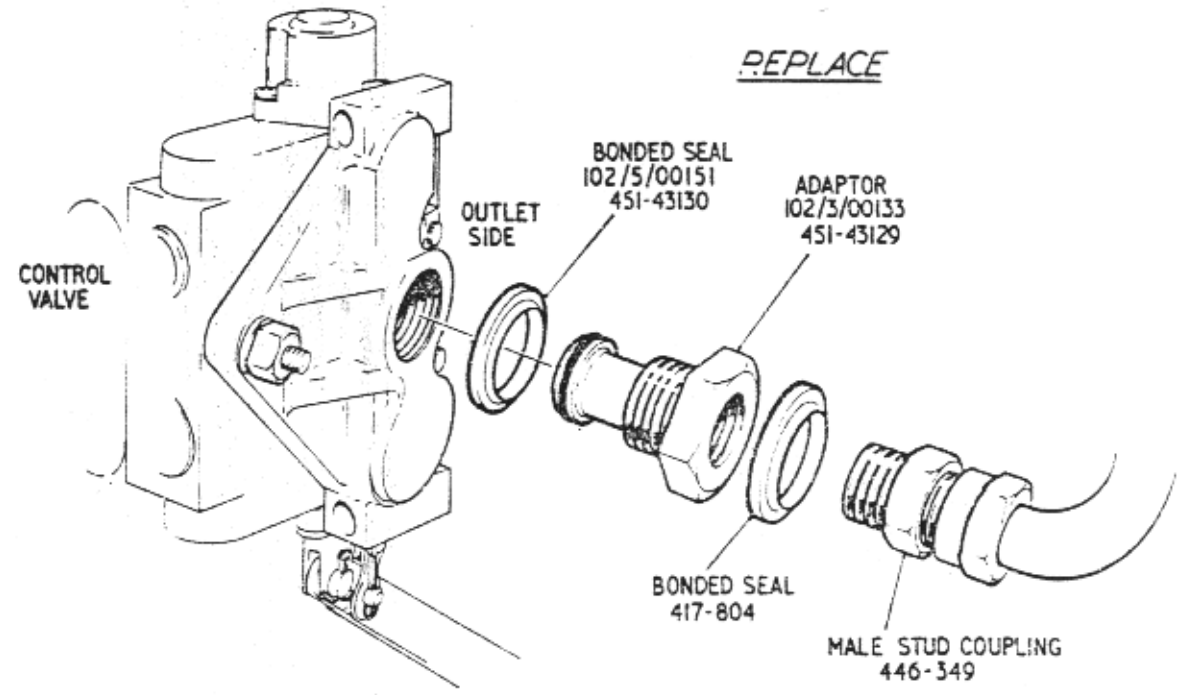
BRASS COLLARED PLUG



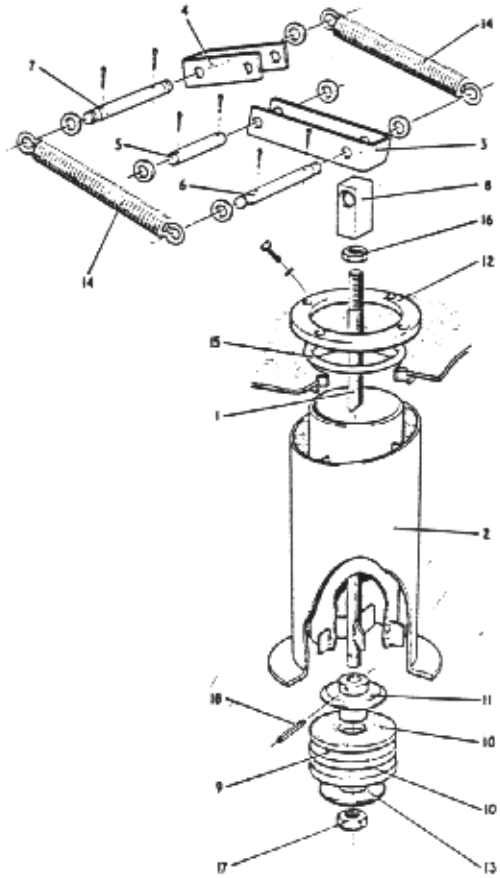
SOCKET HEAD CAPSCREW



WHEN CONVERTING FROM DRAGLINE TO BASIC

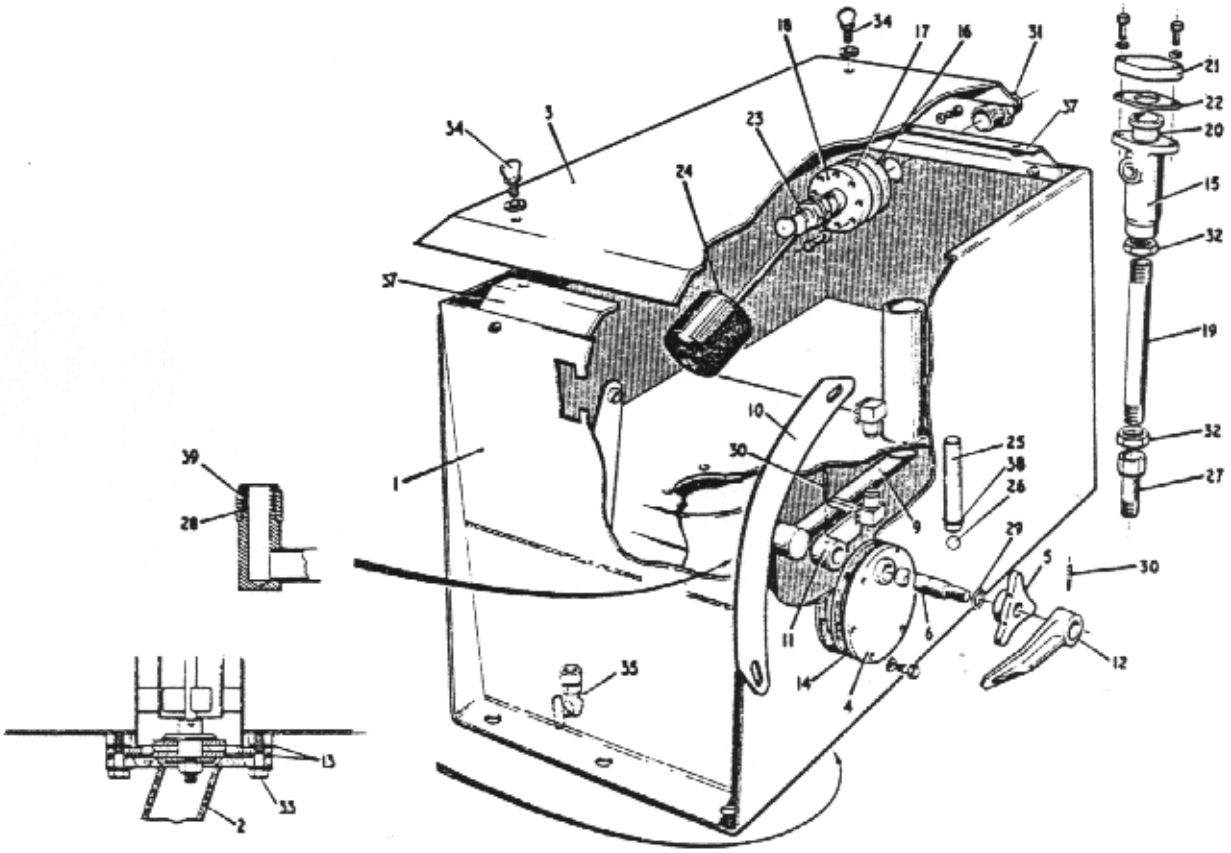


WHEN CONVERTING FROM BASIC TO DRAGLINE



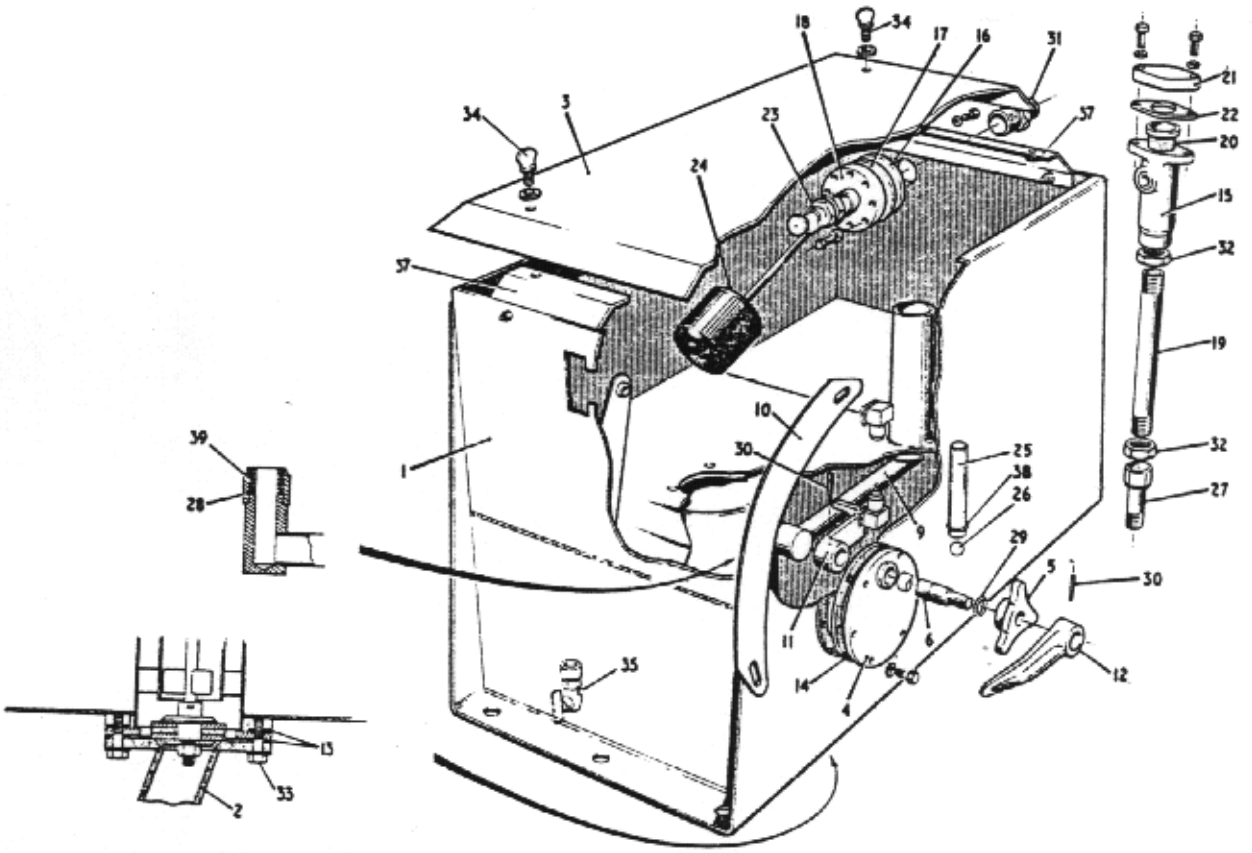
Ref Nº	Description	Part Nº	Qty
1	Valve Control Rod	555-1160	1
2	Syphon Cylinder Assembly	555-1161	1
3	Valve Link	555-1179	1
4	Ram Link	555-1178	1
5	Connecting Pin complete with	555-1174	1
	Plain Washers	464-308	2
	Split Pin	353-30610	2
6	Valve Pivot complete with	555-1173	1
	Plain Washer	463-308	2
	Split Pin	353-30610	2
7	Ram Pivot complete with	555-1172	1
	Plain Washer	463-309	2
	Split Pin	353-30412	2
8	Valve Rod Boss	555-1175	1
9	Centre Plate	555-1165	1
10	Valve Sealing	555-1184	2
11	Valve Backing Plate	555-1177	1
12	'O' Ring Flange complete with	555-1164	1
	Hex Hd. Setscrews (Cadmium Plated)	418-3506061	4
	Selon Washers	464-809	4
13	Valve Washer	555-1166	1
14	Tension Spring	420-429	2
15	'O' Ring	391-350	1
16	Locknut	330-2508	1
17	'Binx' Self-Locking Nut	335-7608	1
18	Roll Pin (Cadmium Plated)	353-803241	1

WATER TANK MECHANISM



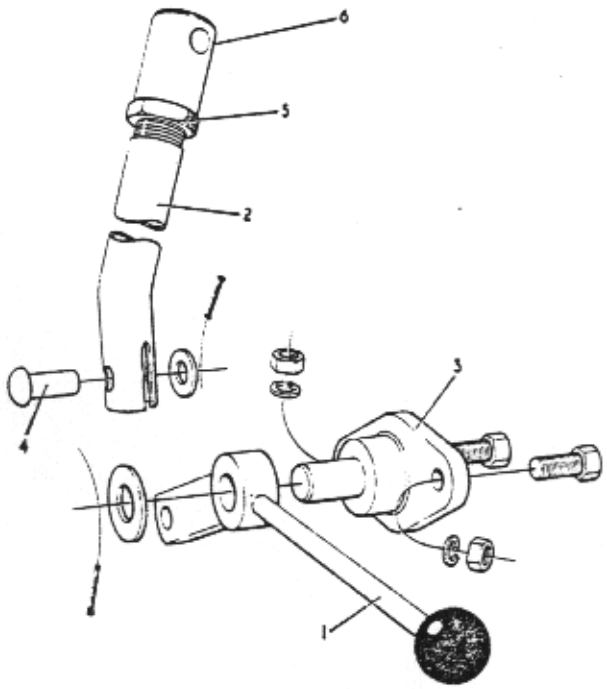
Ref Nº	Description	Part Nº	Qty
1	12 Gallon Water Tank complete with	555-1188	1
	Hex Hd Bolts	460-350808	6
	Hex Nuts	331-8508	6
	Spring Washers	464-308	6
2	Water Outlet Pipe	555-1195	1
3	Water Tank Cover	555-1159	1
4	Pivot Housing complete with	555-1155	1
	Hex Hd Bolts	460-350508	6
	Selon Washers	464-807	6
5	Handle	555-1158	1
6	Pivot Shaft	555-1171	1
7	—	—	—
8	—	—	—
9	Syphon Break Tube	555-1153	1
10	Tank Scale (12 Gallon Tank) Litres 8 Gallons complete with	555-1190	1
	Hex Hd Setscrews	418-250606	2
	Plain Washers	463-306	2
11	Pivot Lever	555-1156	1
12	Pointer	555-1157	1
13	Rubber Joint	555-1185	2
14	Tank Gasket	555-1186	1
15	Strainer Body	50-29172	1
16	Float Valve Body complete with	614-1273	1
	Hex Hd Setscrews	418-350504	2
	Spring Washers	464-305	2
17	Diaphragm	614-1266	1
18	Float Valve Cover complete with	614-1278	1
	Hex Hex Bolts	460-50410	8
	Selon Washers	464-304	8
19	Water Supply Pipe	50-28583	1
20	Strainer Element	50-29174	1

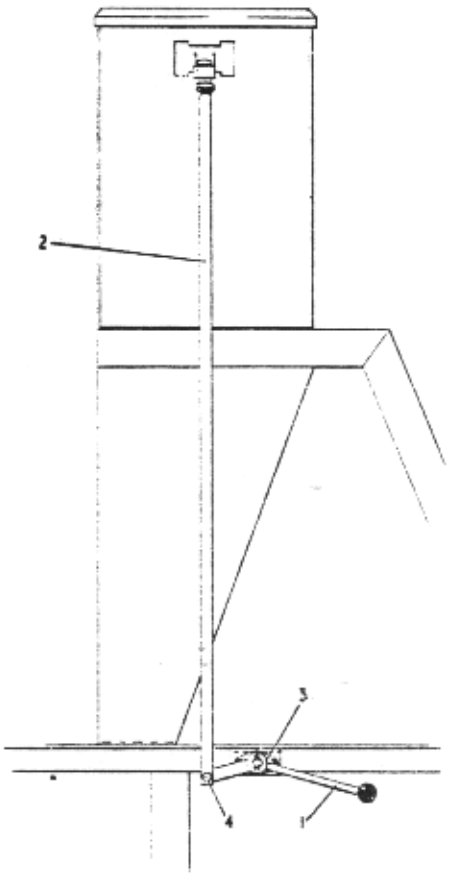
WATER TANK



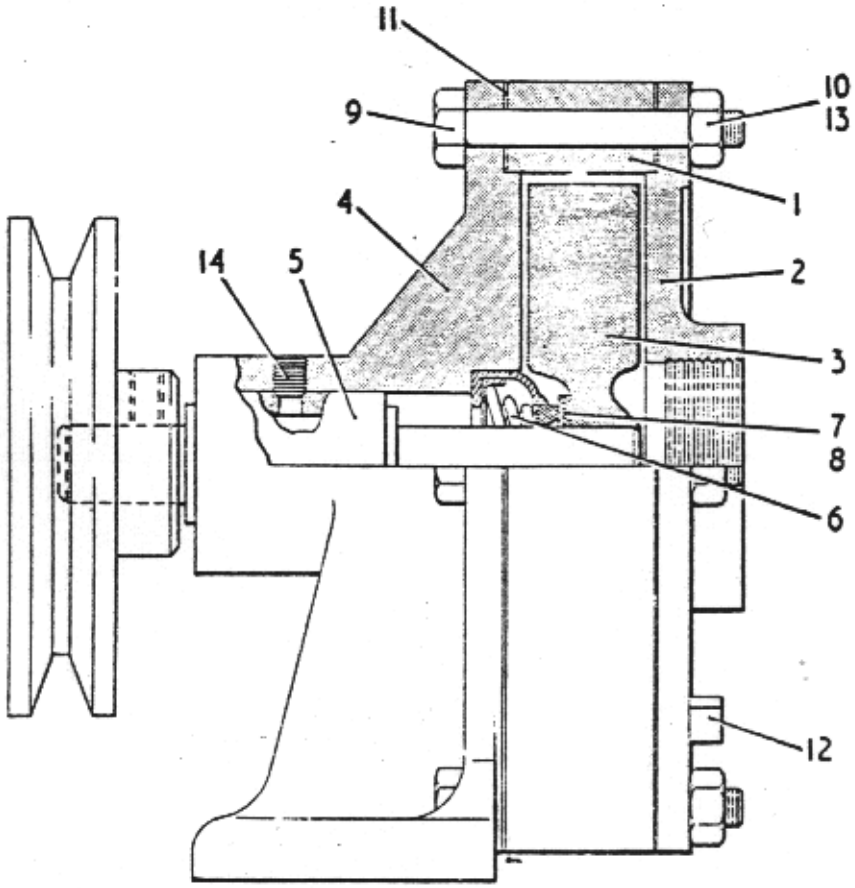
Ref Nº	Description	Part Nº	Qty
21	Strainer Body Cap complete with	50-29175	1
	Hex Hd Setscrews	418-350508	2
	Spring Washers	464-305	2
22	Strainer Cap Gasket	50-29177	1
23	Ball Float Valve	451-1081	1
24	Polythene Float	220-302	1
25	Plastic Tube	430-904	1
26	Ball	101-256	1
27	Hose Connection	130-31212	1
28	'O' Ring	391-828	1
29	'O' Ring	391-825	1
30	Taper Pin	352-10814	2
31	Reducing Nipple	245-40806	1
32	Backnut	240-106	2
33	Hex Hd Bolts complete with	460-50714	4
	Selon Washers	464-809	4
34	Thumbscrew complete with	407-310506	4
	Plain Washers	463-305	4
35	Draincock	140-802	1
36	Water Tank Stowage Bracket complete with	555-1673	2
	Hex Hd Bolts	460-50626	4
	Hex Nuts	331-8506	4
	Spring Washers	464-306	4
	(Not Illustrated)		
37	Water Tank Cover Bracket complete with	555-1867	2
	Hex Hd Bolts	460-50505	4
	Hex Nuts	331-8505	4
	Spring Washers	464-305	4
38	Hose Clamp	143-106	1
39	Brass Bush	555-1181	1

WATER TANK





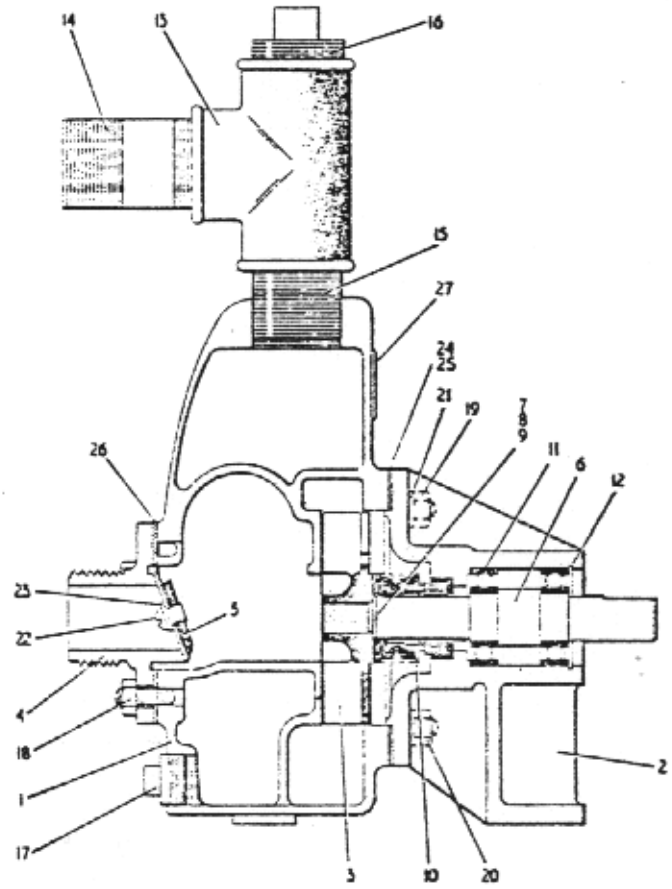
Ref Nº	Description	Part Nº	Qty
1	Water Control Lever	555-1200	1
2	Tank Operating Rod	555-1205	1
3	Control Lever Pivot complete with	555-1199	1
	Hex Hd Bolts	460-350610	2
	Hex Nuts	330-3506	2
	Spring Washers	464-306	2
	Plain Washer	463-312	1
	Split Pin	353-30412	1
4	Lever Rod connection Pin complete with	555-1202	1
	Plain Washer	463-305	1
	Split Pin	353-3036	1
5	Locknut	240-104	1
6	End Piece for Tank Operating Rod	555-1702	1



Ref Nº	Description		Part Nº	Qty
1	Body –	11-053-015	–	1
2	Front Cover –	11-055-0115	–	1
3	Impellor –	12-068-0125	–	1
4	Bearing Pedestal –	13-059-0125	–	1
5	Spindle –	16-072-083	–	1
6	Dupax Seal –	38-840-992	–	1
7	Seal Seat –	38-842-061	–	1
8	Seal Rubber –	38-843-133	–	1
9	Hex. Head Bolt –	32-561-052	–	4
10	Hex. Nut –	34-161-082	–	4
11	Gasket –	38-158-133	–	2
12	Plug –	30-023-992	–	2
13	Lockwasher –	36-563-992	–	4
14	Grubscrew –	32-622-052	–	1
15	Name Plate –	47-011-023 (Not Illustrated)	–	1
16	Stud –	34-650-022 (Not Illustrated)	–	4

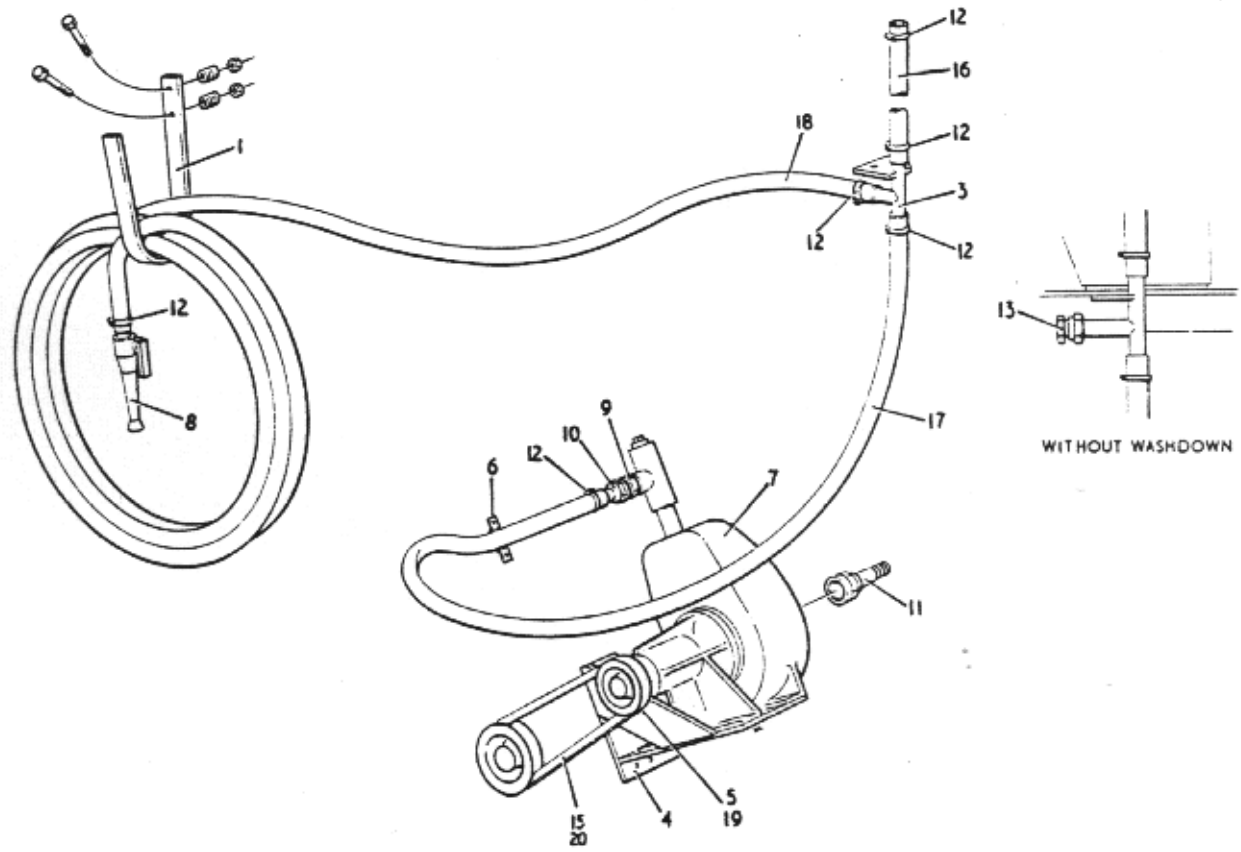
Item No. 14 is not fitted on Mk II Pumps
it is Loctighted in position

WATER PUMP USED WHEN WATER METER IS FITTED



Ref Nº	Description	Part Nº	Qty
1	Casing – HD 13869	365/235/001	1
2	Bearing Housing – HD 10471	365/235/002	1
3	Impeller – HD 15069	365/235/003	1
4	Suction Flange – HD 15003	365/235/004	1
5	Valve Weight – HD 10571	365/235/005	1
6	Shaft – HD 10671	365/235/006	1
7	Impeller Shim 005" – 1W5	365/235/007	As Req.
8	Impeller Shim .010" – 1W10	365/235/008	As Req.
9	Impeller Shim .015" – 1W15	365/235/009	As Req.
10	Shaft Seal – 5-T106	365/235/010	1
11	Bearing – 6003 2RS	365/235/011	1
12	Circlip – 1300 - 35m	365/235/012	1
13	Discharge Tee – 7R - 8T	365/235/013	1
14	Space Nipple 6W - 8N	365/235/014	1
15	Close Taper Nipple 19W-8N	365/235/015	1
16	Priming Plug – 85R - P8	365/235/016	1
17	Drain Plug 85R - P6	365/235/017	1
18	Suction Flange Stud 4NC7	365/235/018	3
19	Casing Stud - 4NC7	365/235/019	4
20	Hexagon Nut - 4NC	365/235/020	7
21	Spring Washer - 4SW	365/235/021	4
22	Valve Weight Screw - 4NC 2SR	365/235/022	1
23	Valve Weight Washer - 4W	365/235/023	1
24	Casing Gasket 1/64 in. - HD 15569	365/235/024	
25	Casing Gasket 1/32 in. - HD 15669	365/235/025	
26	Check Valve Gasket - HD 15469	365/235/026	1
27	Nameplate - HD 109695	365/235/027	1

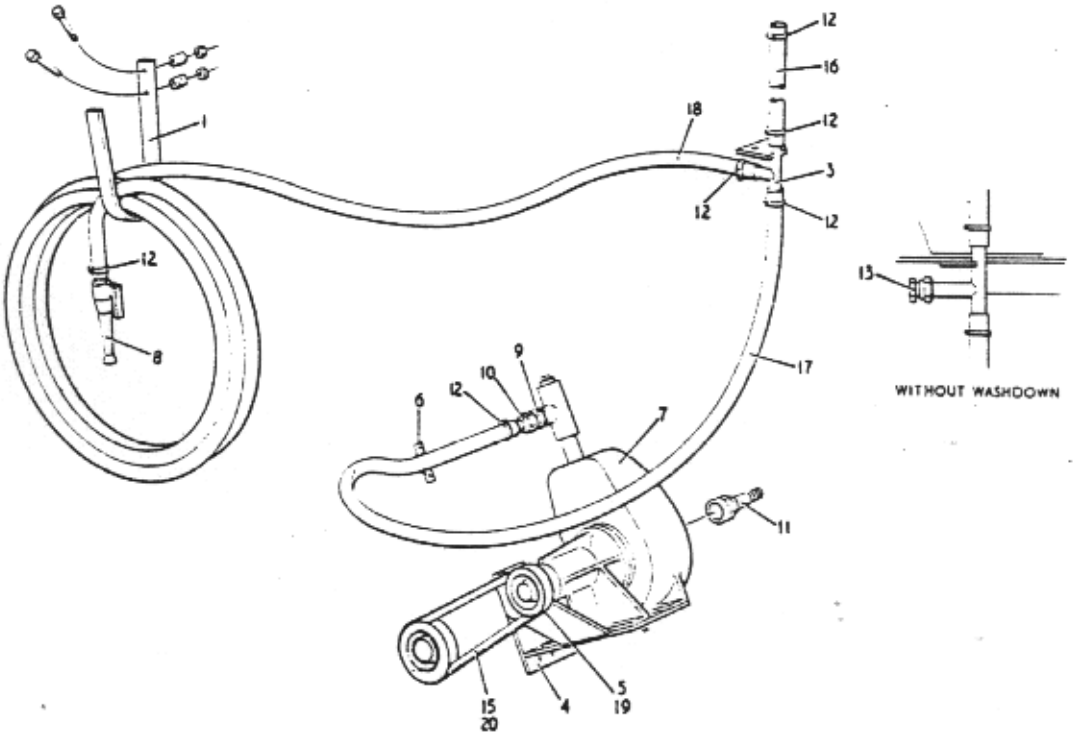
WATER PUMP WITH WASHDOWN ONLY



Ref Nº	Description	Part Nº	Qty +	Qty *
1	Washdown Hose Support complete with	555-1758	1	—
	Hex Hd Bolt	460-350614	2	—
	Hex Nut	330-3506	2	—
	Spring Washers	464-306	2	—
	Plain Washers	463-306	As Req.	—
2	Water Pump Warning Label (Not Illustrated)	555-1776	1	1
3	Hose Adaptor Pipe complete with	555-1777	1	1
	Hex Hd Bolt	418-250812	1	1
	Hex Nut	330-3508	1	1
	Spring Washers	464-308	1	1
4	Water Pump Mounting complete with	555-1780	1	1
	Hex Hd Bolts	460-350506	4	4
	Binx Nut	330-3605	4	4
5	Water Pump Pulley	555-1778	1	1
6	Conduit Pipe Clip complete with	133-908	1	1
	Hex Hd Bolts	460-3301004	2	2
	Hex Nuts	330-35210	2	2
	Spring Washers	464-304	2	2

WASHDOWN SYSTEM WITHOUT WATER METER

+With Wash Down
*Less Wash Down

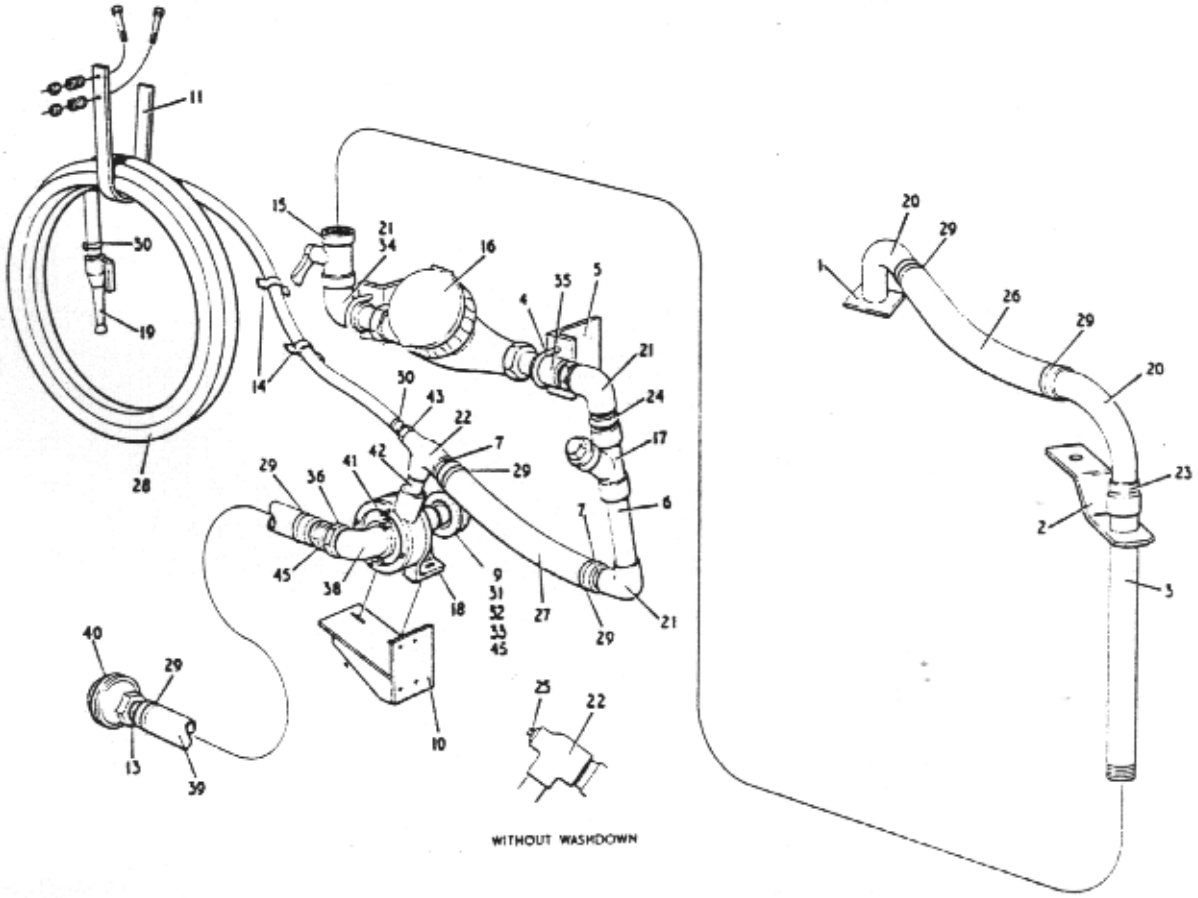


Ref Nº	Description	Part Nº	Qty	
			+	*
7	Water Pump complete with	365-235000	1	1
	Hex Hd Bolts	460-350406	4	4
	Binx Nuts	330-360400	4	4
	Plain Washers	463-304000	4	4
8	Plastic Control Nozzle	130-352000	1	—
9	Reducing Nipple Male/Male	245-408060	1	1
10	Brass Hose Connector	130-312160	1	1
11	Brass Hose Connector	130-316120	1	1
12	Clip	132-856000	6	4
13	Blank End	446-655060	—	1
14	—	—	—	—
15	'V' Belt	397-609000	1	1
16	Hose — 1220mm (4' 0") Long	260-906480	1	1
17	Hose — 2440mm (8' 0") Long	260-906960	1	1
18	Hose — 6095mm (20' 0") Long	260-906240	1	—
19	Skt Hd Setscrew Cone PT.	404-910406	1	1
20	'V' Belt (Used when Dynamo is fitted)	397-234000	1	1

WASHDOWN SYSTEM WITHOUT WATER METER

+With Wash Down
*Less Wash Down

When Ordering Always Quote :— Machine Nº, Part Nº, Description & Quantity

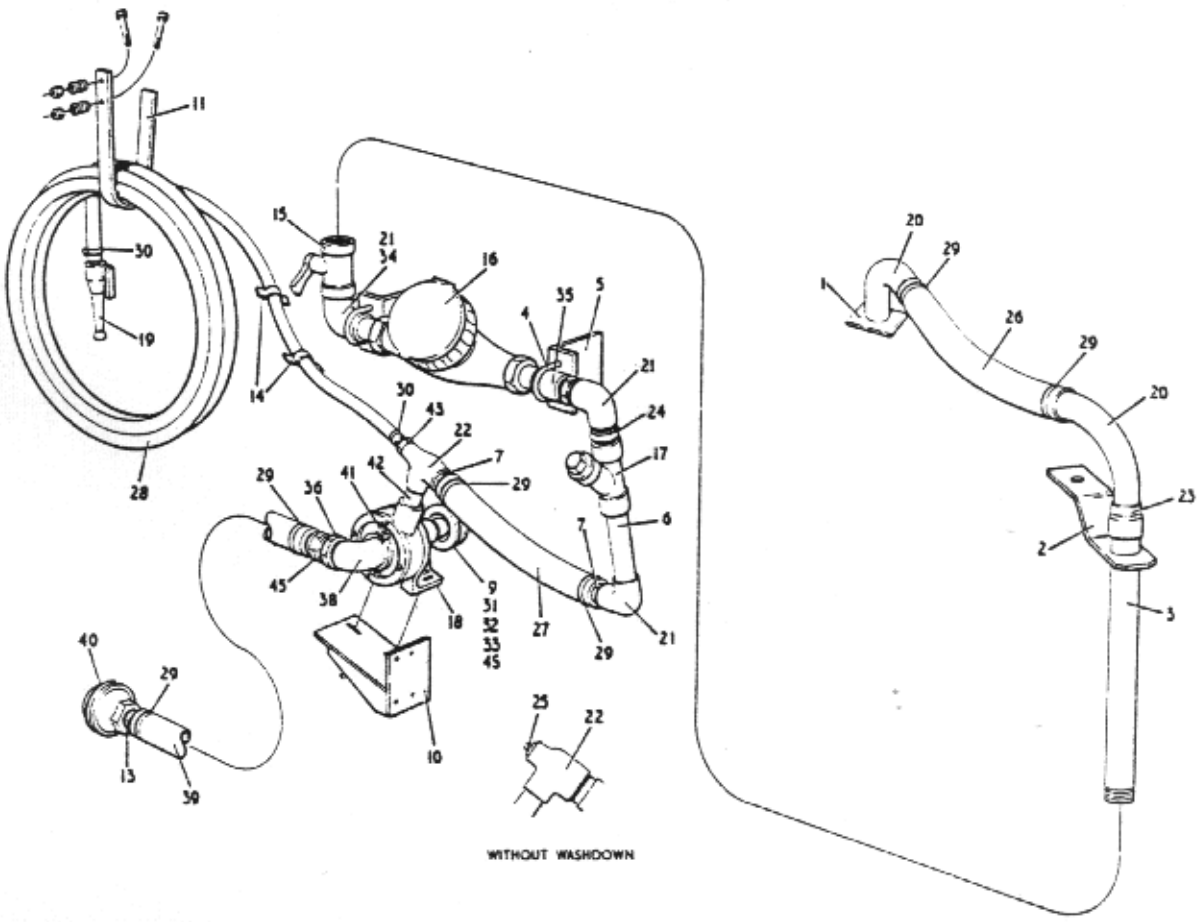


Ref Nº	Description	Part Nº	Qty ● ▲ ■
1	Water Pipe Connecting Plate complete with	555-1763	1 1 1
	Hex Hd Bolt	460-350606	2 2 2
	Hex Nut	330-3506	2 2 2
	Spring Washer	464-306	2 2 2
2	Water Pipe Clip complete with	555-1767	1 1 1
	Hex Hd Bolt	460-50810	1 1 1
	Hex Nut	331-8508	1 1 1
	Spring Washer	464-308	1 1 1
3	Water Pipe	555-1766	1 1 1
4	'U' Bolt for Flowmeter complete with	555-1765	2 2 2
	Hex Nuts	330-3506	4 4 4
	Spring Washers	464-306	4 4 4
5	Flowmeter Mounting Bracket	555-1768	2 2 2
6	Connecting Pipe	555-1760	1 - 1
7	Insert for Valve	555-1764	2 - 2
8	Mod to Side Guard-RH Not Illustrated	555-1844	- - 1
9	Water Pump Pulley	555-1762	1 - 1
10	Water Pump Bracket complete with	555-1761	1 - 1
	Hex Hd Bolt	460-350506	4 - 4
	Binx Nut	330-3605	4 - 4
11	Washdown Hose Support complete with	555-1758	- - 1
	Hex Hd Bolt	460-350614	- - 2
	Hex Nut	330-3506	- - 2
	Spring Washers	464-306	- - 2
	Plain Washers	463-306	- -as req
12	Water Pump Warning Label (Not Illustrated)	555-1776	1 - 1

WATER PUMP & WATER METER

●Pump Feed only
▲Mains Feed only
■Pump Feed & Washdown

When Ordering Always Quote :— Machine Nº, Part Nº, Description & Quantity

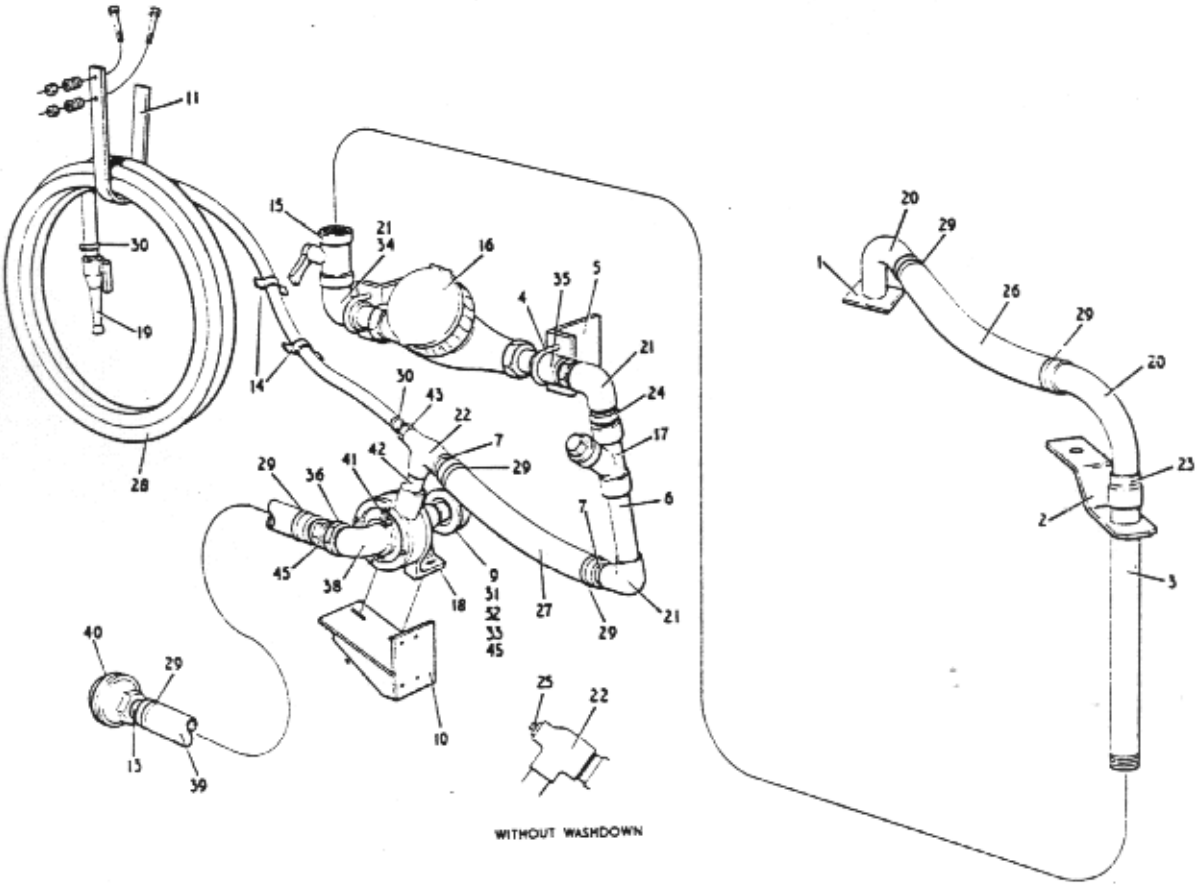


Ref Nº	Description	Part Nº	Qty ● ▲ ■
13	Hose Connector	555-1796	1 - 1
14	Conduit Pipe Clip complete with	133-908	- - 2
	Hex Hd Bolt	460-3301004	- - 4
	Hex Nuts	330-35210	- - 4
	Spring Washers	464-304	- - 4
15	Valve	450-151	1 1 1
16	Flowmeter	202-319	1 1 1
17	'Y' Type Strainer	409-255	
18	Water Pump complete with	365-237	1 - 1
	Hex Hd Bolts	460-350610	2 - 2
	Binx Nut	330-3606	2 - 2
	Plain Washers	463-306	2 - 2
19	Plastic Control Nozzle	130-352	- - 1
20	Bend	240-210	2 2 2
21	Elbow	241-112	3 2 3
22	Female Reducing Tee	242-65408	1 - 1
23	Reducing Socket	242-112/10	1 1 1
24	Hex Nipple	243-912	2 2 2
25	Plug	241-704	1 - -
26	Hose 356mm 14" Long	260-91214	1 1 1
27	Hose 356 mm 18" Long	260-91218	1 - 1
28	Water Delivery Hose 20' - 0" Long	260-906240	- - 1

WATER PUMP & WATER METER

●Pump Feed only
▲Mains Feed only
■Pump Feed & Washdown

When Ordering Always Quote :— Machine Nº, Part Nº, Description & Quantity



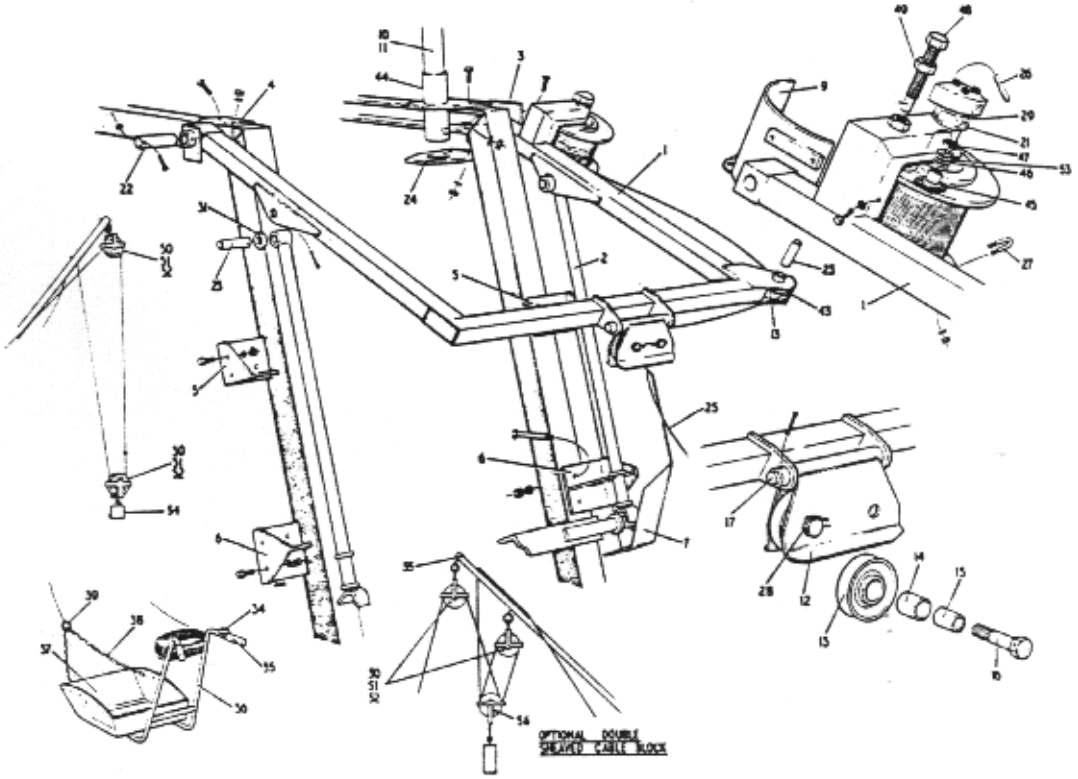
Ref Nº	Description	Part Nº	Qty ● ▲ ■
29	Clip	143-108	6 2 6
30	Clip	132-856	- - 2
31	V Belt (Diesel Machines Only)	397-229000	1 - 1
32	V Belt (Electric Machines Only)	397-230000	1 - 1
33	Cone PT. Skt. Setscrews	403-560406	1 - 1
34	Running Nipple	241-512	1 1 1
35	Socket	241-912	1 1 1
36	Hex Nipple	241-510	1 - 1
37	Brass Hose Connector	130-32020	1 - 1
38	Male/Female Elbow	240-710	1 - 1
39	Hose 3048mm 10' - 0" Long	260-912120	1 - 1
40	Foot Valve & Strainer	409-256	1 - 1
41	Straight Brass Drain Tap (Taper Thread)	440-10101	1 - 1
42	Barrel Nipple	245-308	1 - 1
43	Straight Brass Male Hose Connector	130-20401	- - 1
44	Control Side Cover (Not Illustrated)	555-1845	1 - 1
45	☼ V-Belt (Used when Dynamo is fitted)	397-238000	1 1

☼ Item marked thus replaces Ref. No. 31 or 32 when Dynamo is fitted.

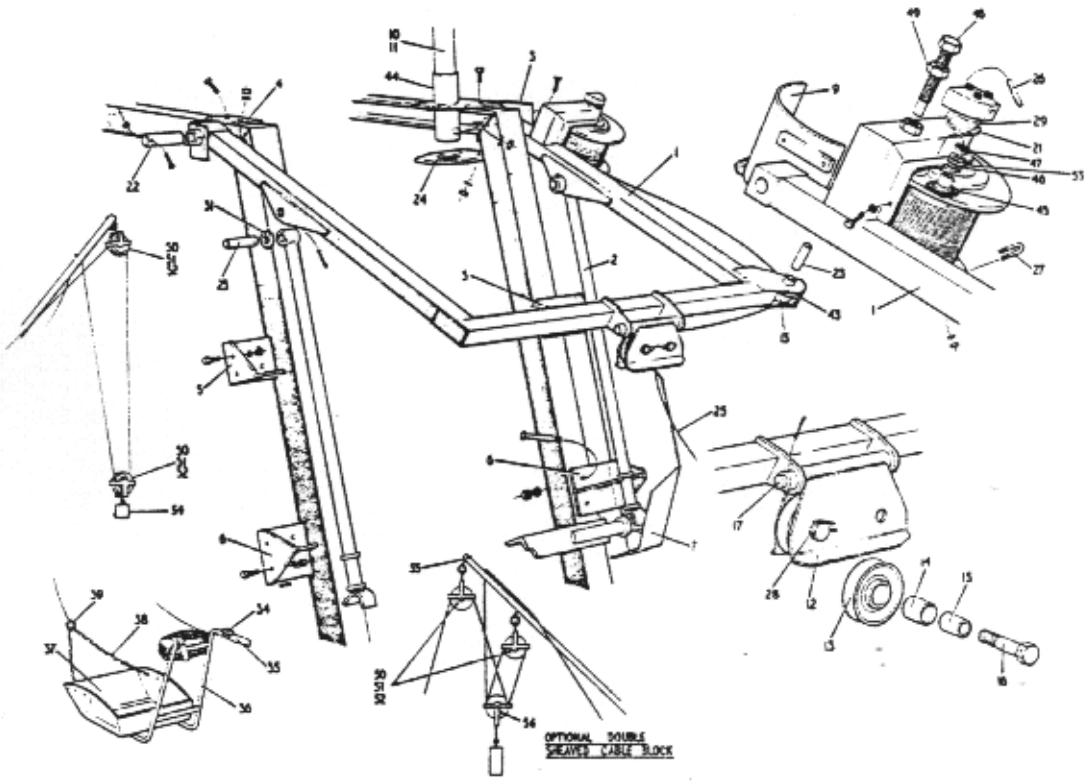
WATER PUMP & WATER METER

●Pump Feed only
▲Mains Feed only
■Pump Feed & Washdown

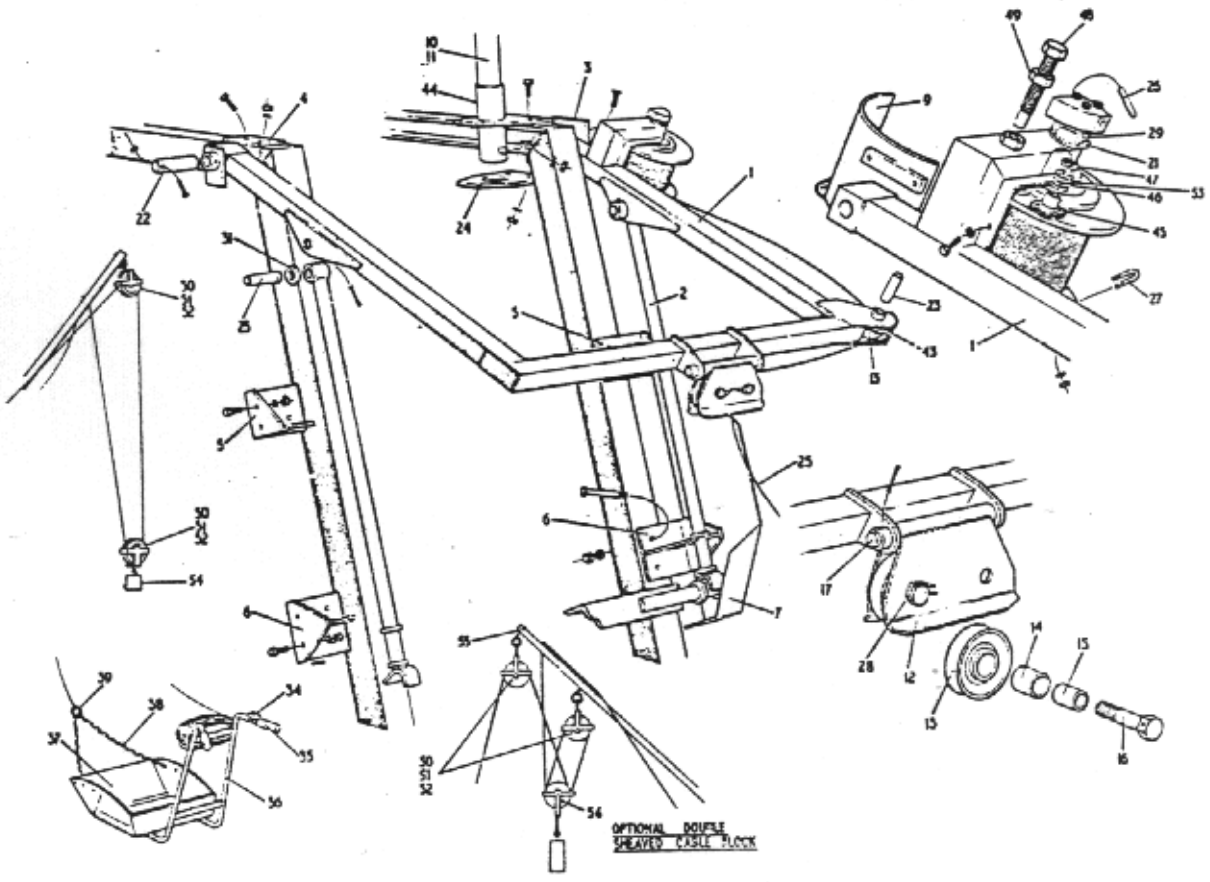
When Ordering Always Quote :— Machine Nº, Part Nº, Description & Quantity



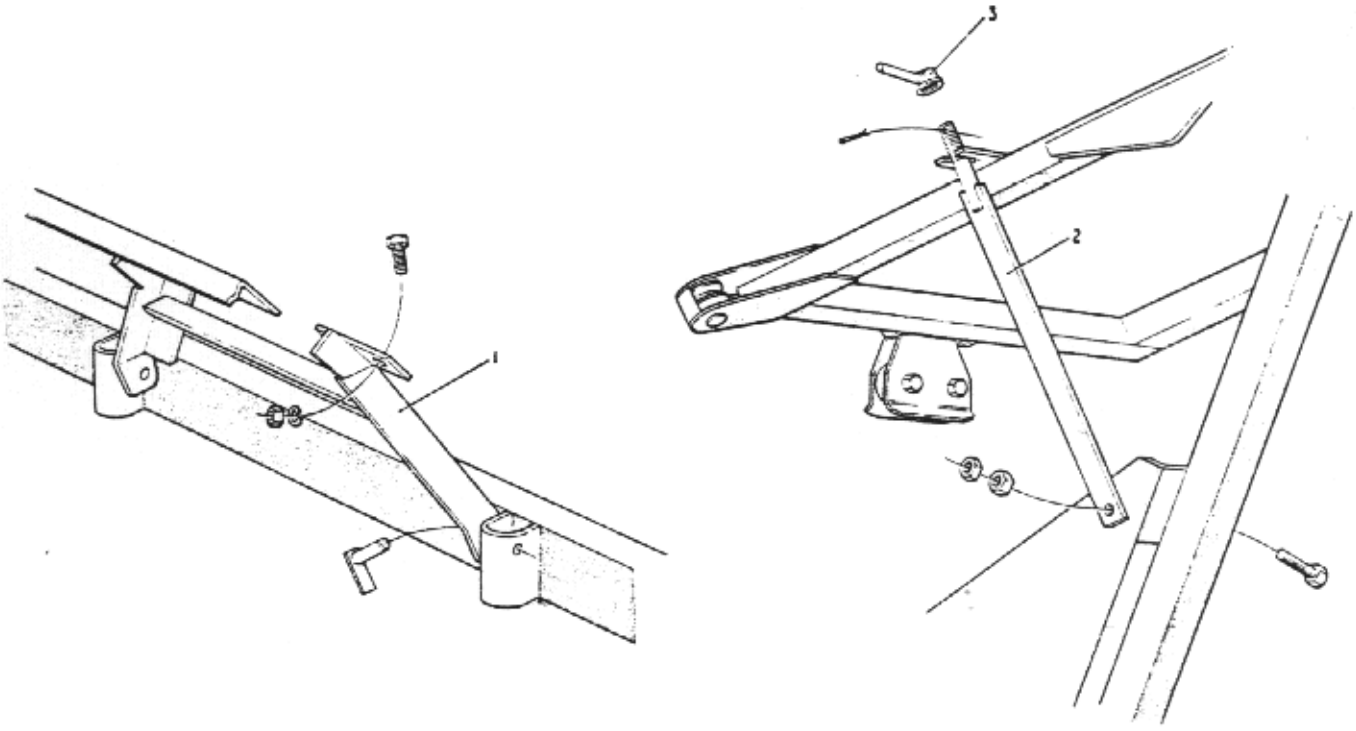
Ref Nº	Description	Part Nº	Qty
1	Assembly of Hydraulic Winch Mounting Bracket & Dragline Jig	555-1224	1
2	Jib Strut	555-1211	2
3	Jib Pivot Bracket (Engine Side) Complete with	555-1212	1
	Csk Hd Screws	400-150810	1
	Hex Nuts	330-350800	1
	Spring Washers	464-308000	1
4	Jib Pivot Bracket (Control Side) complete with	555-1213	1
	Hex Hd Bolts	460-350810	2
	Csk Hd Screws	400-150810	1
	Hex Nuts	330-350800	3
	Spring Washers	464-308000	3
5	Upper Stop Bracket complete with	555-1209	1RH 1 LH
	Hex Hd Bolts	460-350828	4
	Hex Nuts	330-350800	4
	Spring Washers	464-308000	4
6	Lower Stop Bracket complete with	555-1210	2
	Hex Hd Bolts	460-350828	4
	Hex Nuts	330-350800	4
	Spring Washers	464-308000	4
7	Guard complete with	555-1208	1RH 1 LH
	Hex Hd Bolts	460-350606	8
	Hex Nut	330-350600	8
	Spring Washers	464-306000	8
8	—	—	—
9	Rope Guard complete with	555-1228	1
	Hex Hd.Setscrews	418-250505	4
	Spring Washers	464-305000	4
10	Cable Mast Support complete with	555-1215	1
	Hex Hd Bolt	460-350824	1
	Hex Nut	330-350800	1
	Spring Washer	464-308000	1
11	Cable Support (Top End)	515-1344	1



Ref Nº	Description	Part Nº	Qty
12	Pulley Bracket	555-1214	1
13	Side Pulley	879-1195	3
14	Glacier Bush	879-1200	2
15	Pulley Sleeve	555-1219	2
16	Special Bolt	555-1222	2
17	Pulley Bracket Pivot Pin complete with	555-1220	1
	Split Pins	353-306200	1
18	–	–	–
19	–	–	–
20	–	–	–
21	Tab Washer	555-1232	1
22	Jib Pivot Pin complete with	555-1231	2
	Hex Hd Bolts	460-350416	2
	Hex Binx Nuts	330-360400	2
23	Pin complete with	555-1221	3
	Split Pins	353-306200	3
24	Cable Mast Steady complete with	555-1218	1
	Hex Hd Bolts	460-350810	2
	Hex Nuts	330-350800	2
	Spring Washers	464-308000	2
25	Steel Wire Tope 75' 0" (22.86 metres)	477-502000	1 length
26	Parallel Key (Radius Ends)	304-213210	1
27	Bull Dog Grip (Less Saddle) complete with	132-205000	1
	Spring Washers	464-305000	2
28	Steel Locking Wire	477-350000	1 length
29	Backnut	240-112000	1
30	Locknut	330-551000	1
31	Bright Plain Washer	463-316000	2
32	Bright Plain Washer	463-308000	1
33	Rubber Gommet (Not Illustrated)	254-847000	1
34	Press Button Switch	208-866000	1
35	Handle Grips	264-705000	2

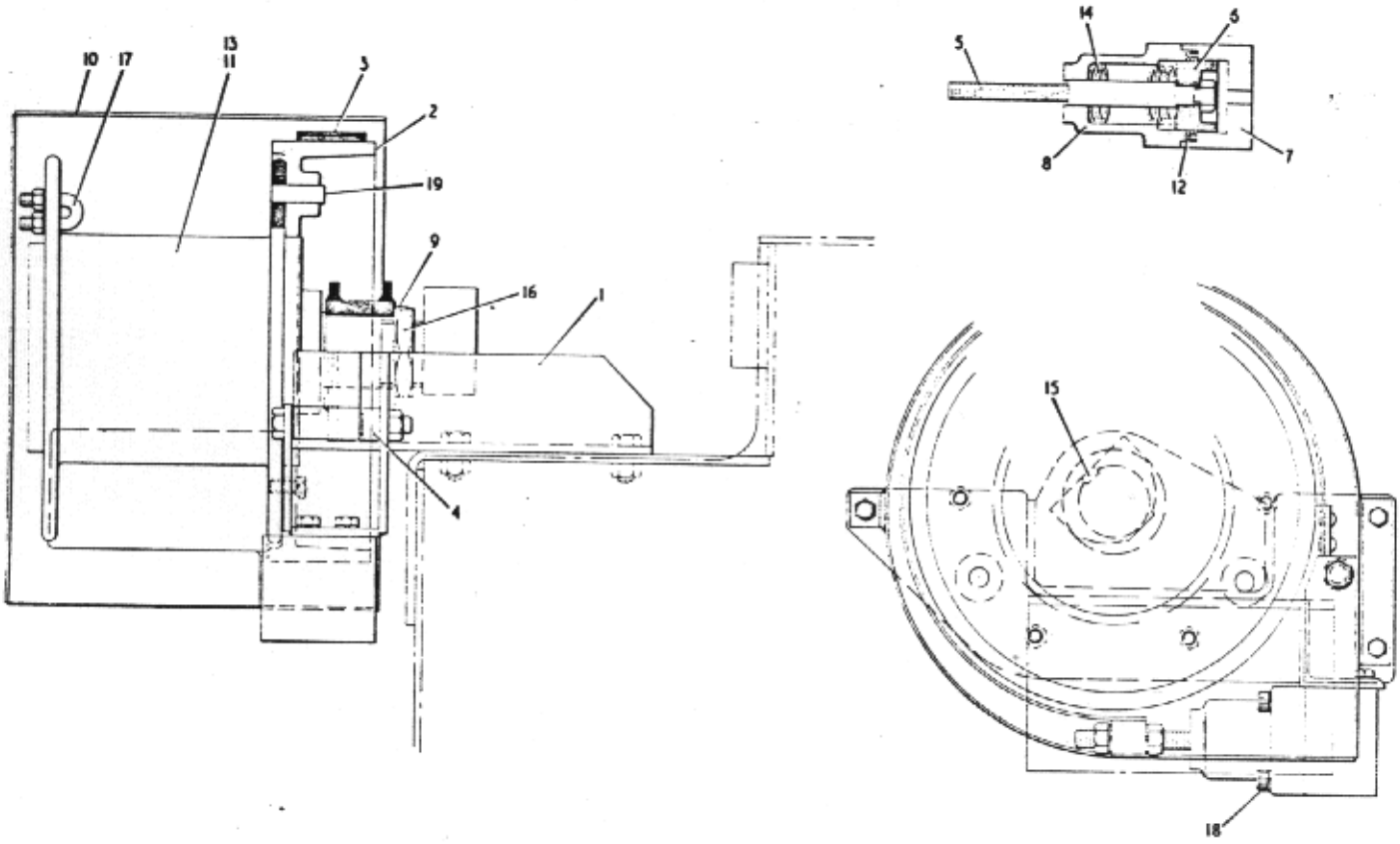


Ref Nº	Description	Part Nº	Qty
36	Handle	264-336000	1
37	Shovel Body	222-109000	1
38	Shovel Chain and Ring	135-902000	1
39	Shackle and Pin	353-855000	1
40	–	–	–
41	–	–	–
42	–	–	–
43	Dragline Pulley Spacer	555-1896	1
44 *	Cable Mast Support complete with	555-1876	1
	Hex Hd Bolts	460-350810	2
	Hex Nuts	330-350800	2
	Spring Washers	464-308000	2
45	Brake Pad	555-1924	1
46	Compression Spring	555-1926	1
47	Plain Washer	463-308000	1
48	Brake Adjusting Screw	555-1925	1
49	Hex Locknut	330-551000	1
50	Cable Control Block Bracket	929/A	2
51	Cable Control Block Pulley	930/B	2
52	Cable Control Block Spindle	929/B	2
53	Felt Washer	555-2012	1
54	Dragline Sheave Weight	555-2048	1
55	Mod. to Cable Support	555-2051	1
56	Double Sheave Cable Block	120-952000	1

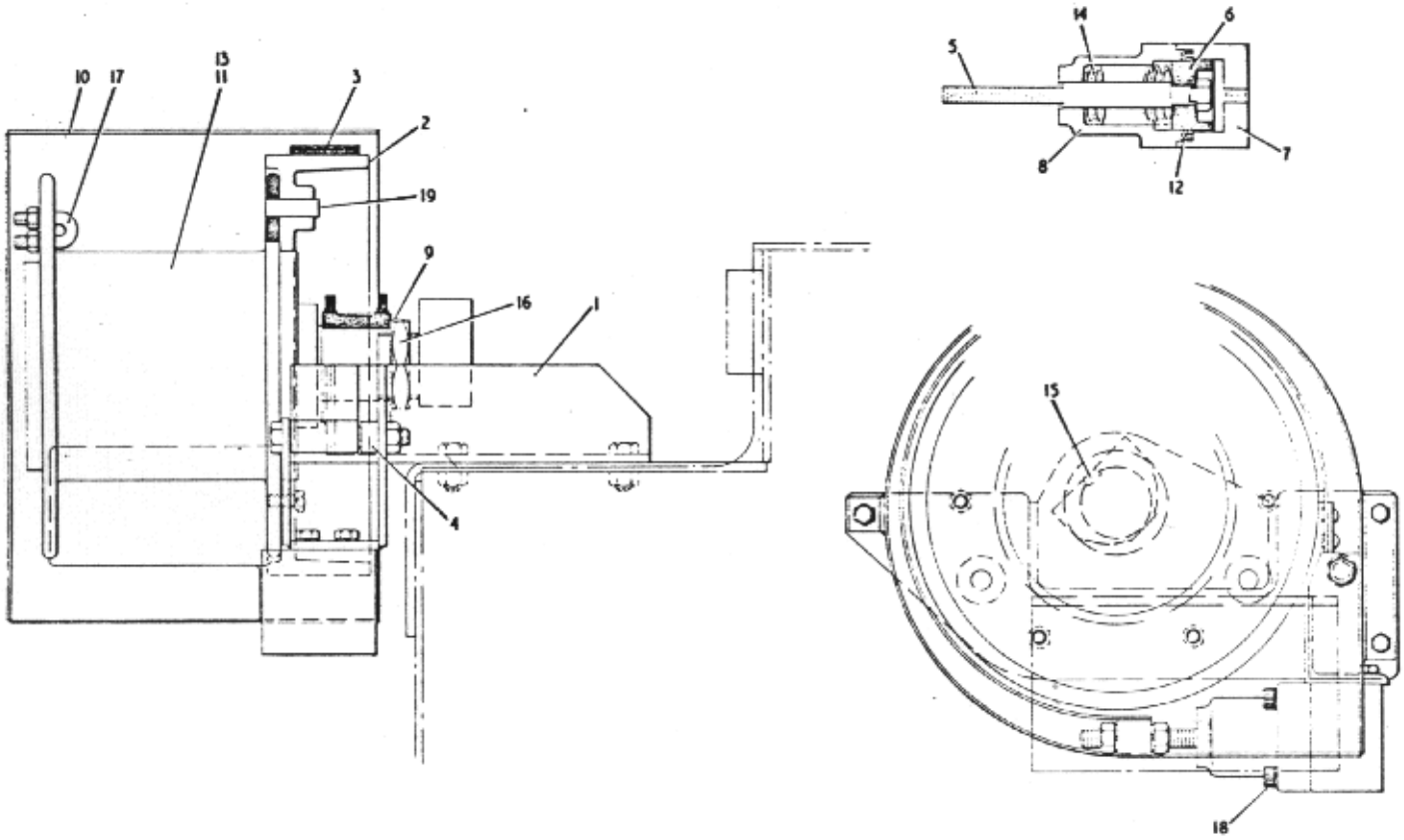


Ref Nº	Description	Part Nº	Qty
1	Hopper Anti-Bounce Bracket complete with	555-1280	1
	Hex Hd Bolts	460-510120	2
	Hex Nuts	331-851000	2
	Spring Washers	464-310000	2
2	Tie Bar complete with	555-1281	1
	Hex Hd Bolt	460-506140	1
	Hex Nut	331-850600	1
	Locknut	330-256000	1
	Split Pin	353-303600	1
3	Locking Nut	555-1282	1

ANTI-BOUNCE

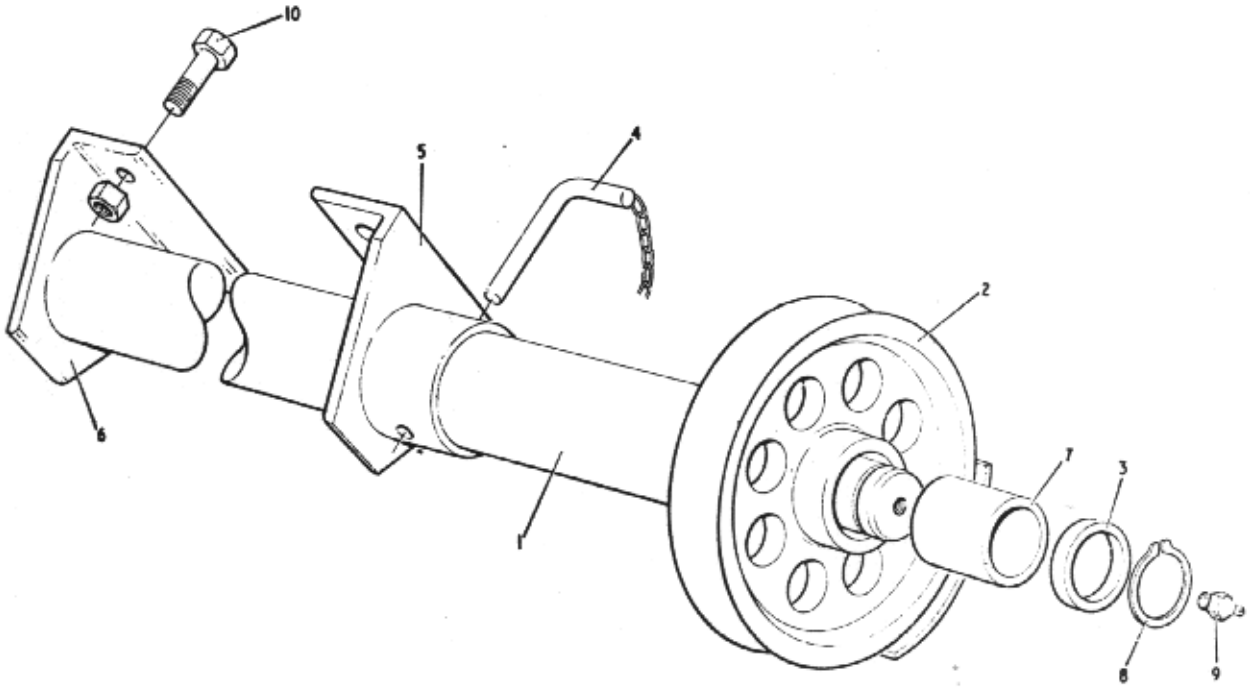


Ref Nº	Description	Part Nº	Qty
1	Hoist Bracket complete with	555-1339	1
	Hex Hd Bolt	460-350808	4
	Binx Nut	330-3608	4
2	Brake Drum complete with	555-1818	1
	Hex Hd Setscrews	418-350607	6
	Spring Washer	464-306	6
3	Brake Band	555-1824	1
4	Brake Band Spacer complete with	555-1823	1
	Hex Hd Bolt	460-350829	1
	Binx Nut	330-3608	1
5	Brake Release Shaft complete with	555-1343	1
	Binx Nut	330-3608	1
	Hex Nut	330-3508	2
	Spring Washer	464-308	2
6	Disc Spring Retainer	555-1347	1
7	Brake Release Block	555-1346	1
	Hex Hd Setscrews	418-250608	2
	Spring Washer	464-306	2
8	Brake Release Cylinder	555-1338	1

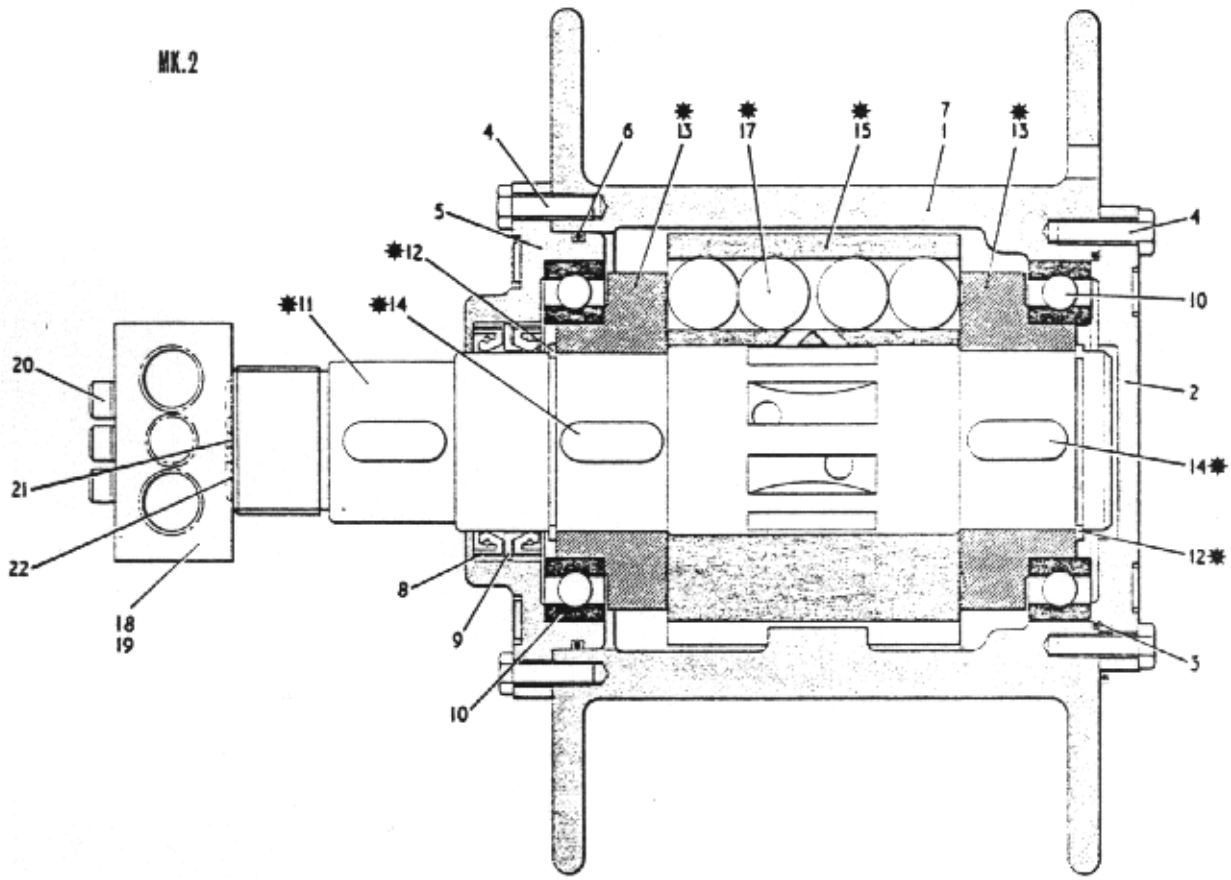


Ref Nº	Description	Part Nº	Qty
9	Tab Washer	555-1232	1
10	Hoist Guard complete with	555-1340	1
	Hex Hd Bolt	418-350506	3
	Nex Nut	331-850500	3
	Spring Washer	464-305000	3
11	Hoist Unit Mk II	555-1819	1
	Hoist Unit Mk III	555-1918	1
12	'U' Ring	391-501000	1
13	Wire Rope 45.72 metres – 150 ft. long	477-558000	1 Length
14	Disc Spring	420-427000	28
15	Parallel Key with Rd Ends	304-213210	1
16	Backnut	240-112000	1
17	Bull Dog Grip (Less Saddle) complete with	132-206000	1
	Spring Washers	464-306000	2
18	Skt Hd Capscrew complete with	404-706280	4
	Spring Washers	464-306000	4
19	Parallel Dowel Pin	352-158090	3

When Ordering Always Quote :— Machine Nº Part Nº Description & Quantity



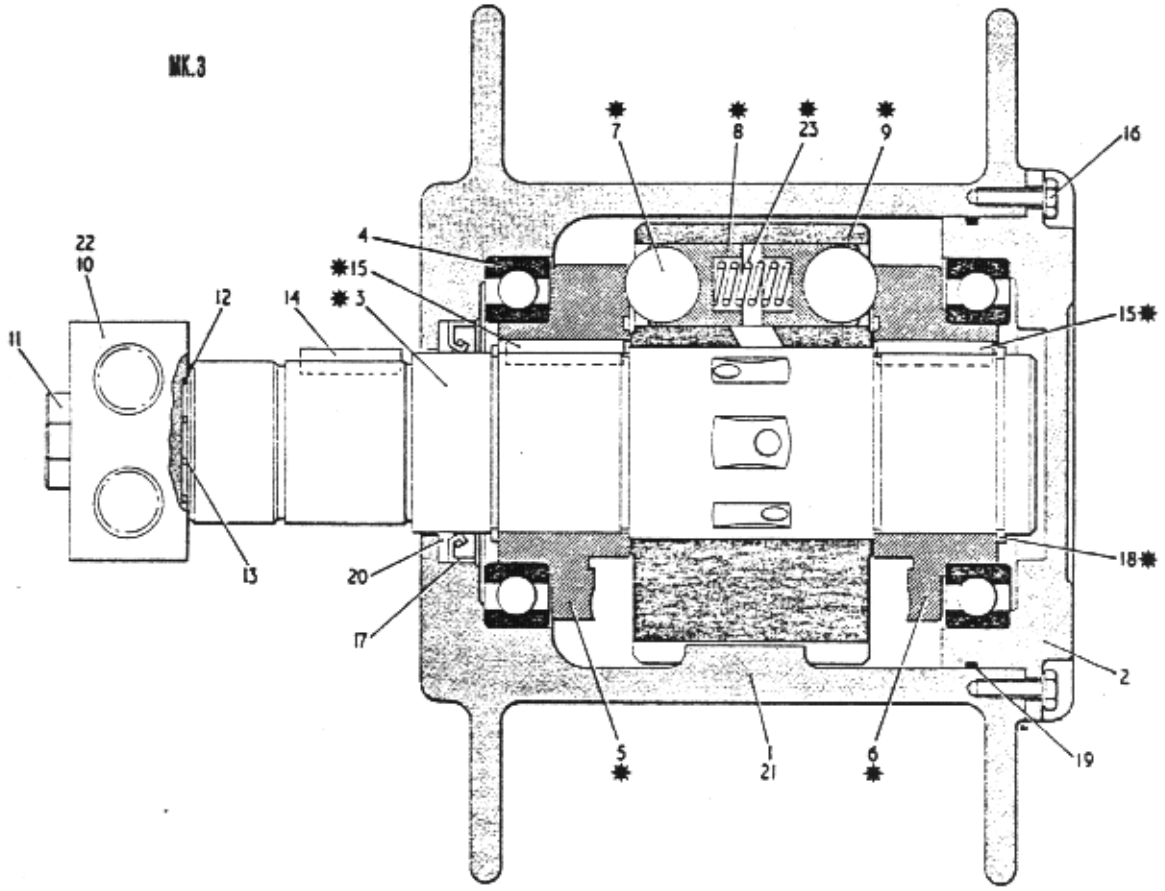
Ref Nº	Description	Part Nº	Qty
1	Mounting Bar	555-1342	1
2	Rope Sheave	555-1336	1
3	Quadrant Pivot Washer	555-1351	1
4	Locating Pin	555-1352	1
5	Bracket for Tube (R.H.)	555-1353	1
6	Bracket for Tube (L.H.)	555-1354	1
7	Bush	114-623	1
8	Circlip (External)	142-313	1
9	Straight Nipple	333-1022	1
10	Hex Hd. Bolts (H.T.) complete with Hex Binx Nut	460-350809 330-3608	4 4



Ref Nº	Description		Part Nº	Qty
1	Casing (Winch Only) Drilled to 555-1226	321/0147	480-10520	1
2	End Plate	321/0123	480-105001	1
3	'O' Ring	MH3-27	480-105002	1
4	Set Screw	MH3-26	480-105003	16
5	Bearing Housing	321/0124	480-105004	1
6	'O' Ring	MH3-26	480-105005	1
7	Casing (Hoist Only) Drilled to 555-1819	321/0147	480-105021	1
8	Oil Seal	MH3-7	480-105006	2
9	Back Up Ring	MH3-8	480-105007	1
10	Bearing No. 6015	MH3-19	480-105008	2
✱ 11	Shaft	321/0126	480-105009	1
✱ 12	External Circlip	MH3-23	480-105010	2
✱ 13	Cam	221/00900	480-105011	2
✱ 14	Cam Fixing Key	MH3-11	480-105012	2
✱ 15	Rotor	321/0122	480-105013	1
16				
✱ 17	Steel Ball	MH3-16	480-105014	36
18	Connection Block Single Rotation (Winch Only)	HS 2378	480-105015	1
19	Connection Block Bl Rotational (Hoist Only)	MH3-1	480-105016	1
20	Socket Head Cap Screw	MH3-2	480-105017	3
21	'O' Ring	MH3-3	480-105018	1
22	'O' Ring	MH3-4	480-105019	2
23	Cartridge Assembly		480-105022	1

✱ Items marked thus may only be purchased as a complete cartridge assembly Ref. No. 23 owing to the close tolerance involved in the mating parts of the motor which precludes them from being interchangeable.

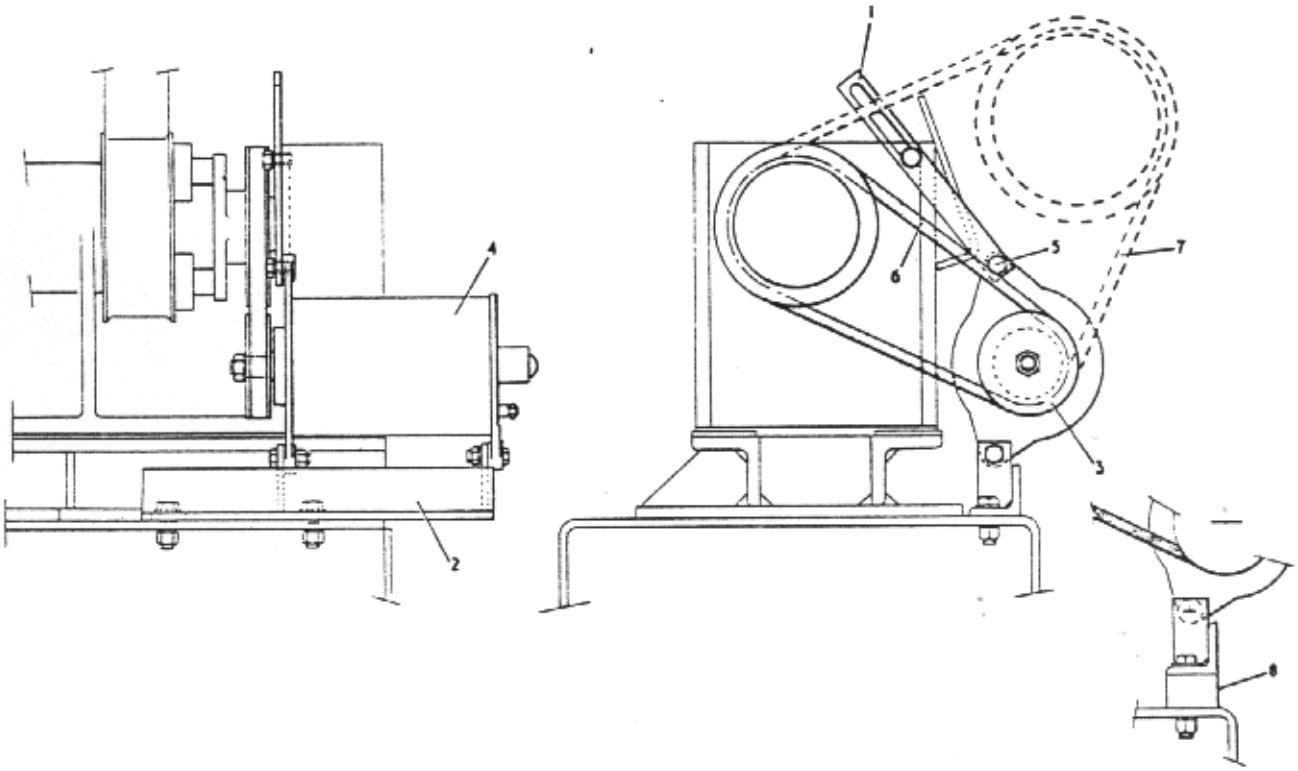
MARK II HYDRAULIC WINCH AND HOIST MECHANISM



Ref Nº	Description		Part Nº	Qty
1	Casing (Winch Only) Drilled to 555-1917	1410414	480-107021	1
2	Rear Cover	3410413	480-107001	1
✱ 3	Shaft	1410408	480-107002	1
4	Bearing	Ref. 6015	480-105008	2
✱ 5	Cam (Front)	SP 2670C	480-107004	1
✱ 6	Cam (Rear)	SP 2671C	480-107005	1
✱ 7	Ball	MH3-16	480-105014	18
✱ 8	Piston	SP 2672B	480-107007	18
✱ 9	Rotor	SP 2669C	480-107008	1
10	Connection Block Single Rotation (Winch Only)	HS 2378	480-105015	1
11	Socket Head Cap Screw	MH3-2	480-105017	3
12	'O' Ring	MH3-4	480-105019	2
13	'O' Ring	MH3-3	480-105018	1
14	Key	SP2674B	480-107013	1
✱ 15	Key	MH3-11	480-105012	2
16	Hex Head Bolts		480-107015	8
17	Rotary Shaft Seal	MH3-7	480-105006	1
✱ 18	Circlip	MH3-23	480-107017	2
19	'O' Ring	R 4537	480-107018	1
20	Back-Up Ring	MH3-8	480-107007	1
21	Casing (Hoist Only) Drilled to 555-1918	1410414	480-107022	1
22	Connection Block Bi-Rotational (Hoist Only)	MH3-1	480-105016	1
✱ 23	Anti Cavitation Spring	SP 1545	480-107023	9
24	Cartridge Assembly		480-107024	1

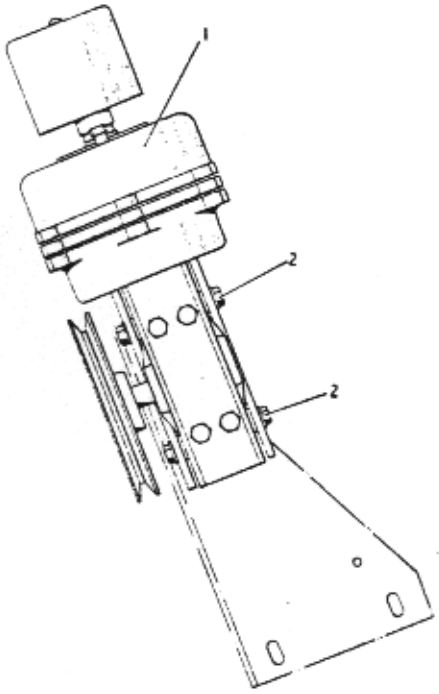
✱ Items marked thus may only be purchased as a complete cartridge assembly Ref. No. 24 owing to the close tolerances involved in the mating parts of the motor which precludes them from being interchangeable.

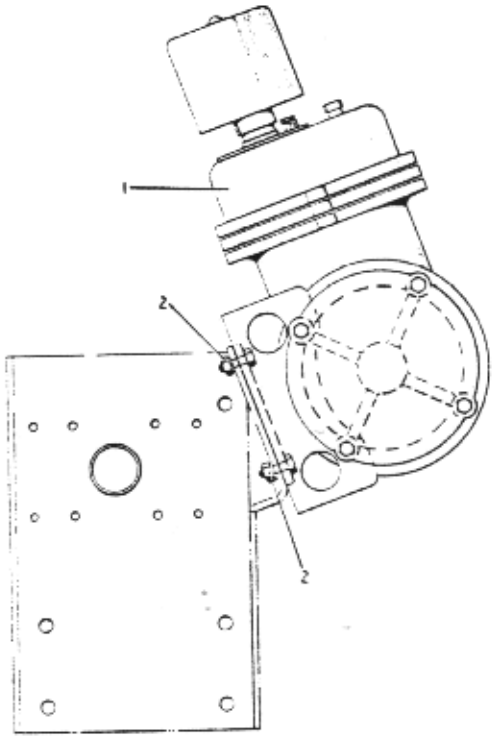
MARK III HYDRAULIC WINCH AND HOIST MECHANISM



Ref Nº	Description	Part Nº	Qty
1	Dynamo Adjuster complete with	555-1323	1
	Hex Hd Setscrew	418-350505	1
	Spring Washer	464-305	1
	Plain Washer	463-305	1
2	Dynamo Support	555-1771	1
	Hex Hd Bolt	460-350609	2
	Hex Nut	330-3506	2
	Spring Washer	464-306	2
	Plain Washer	463-306	2
3	Dynamo Pulley	555-1322	1
4	Dynamo complete with	205-501	1
	Hex Hd Bolt	460-350508	2
	Hex Nut	330-3505	2
	Spring Washers	464-305	2
5	Hex Hd Setscrew complete with	418-350505	1
	Spring Washer	464-305	1
6	Vee Belt (With Dynamo only fitted)	397-227	1
7	Vee Belt (With Dynamo & Aerator fitted)	397-238	1
8	Dynamo Packer (Electric Drive Only) complete with	555-1919	1
	Hex Hd Bolts	418-250617	2
	Hex Nuts	330-350600	2
	Spring Washers	464-306000	2
	Plain Washers	464-306000	2

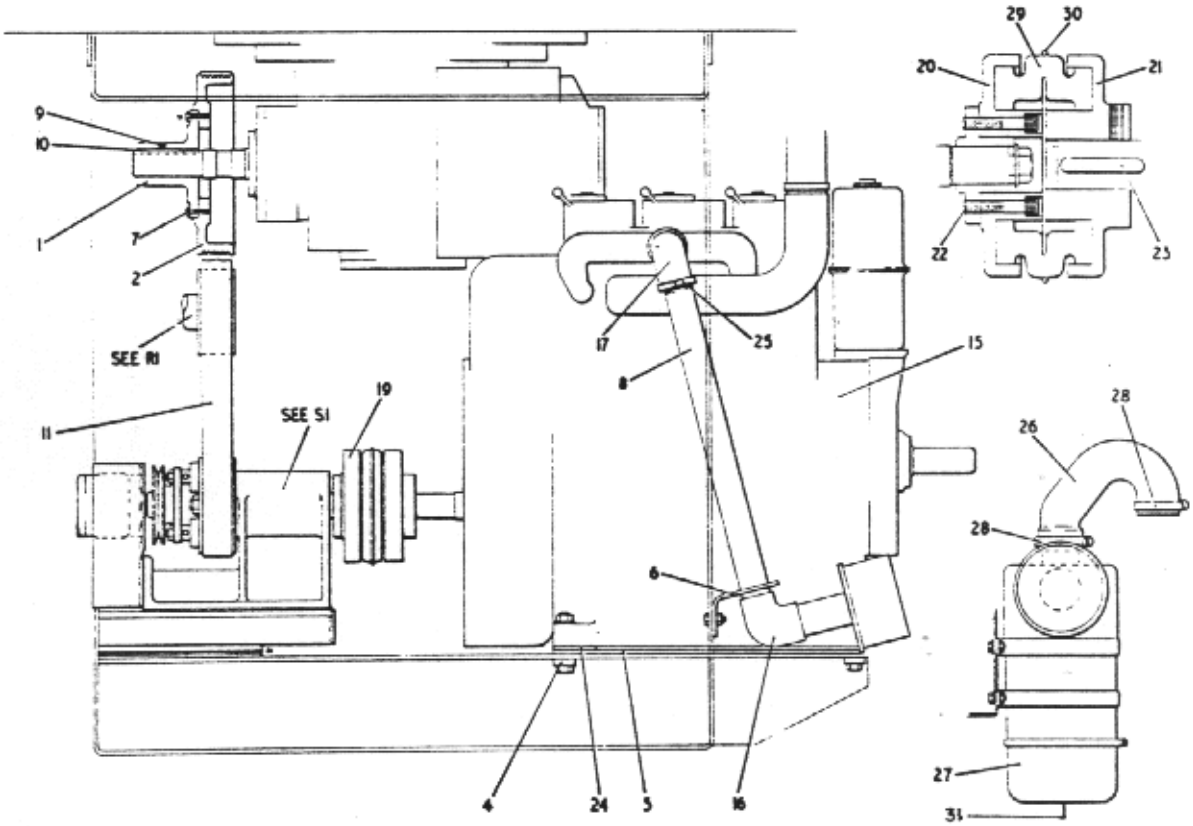
DYNAMO DRIVE ASSEMBLY



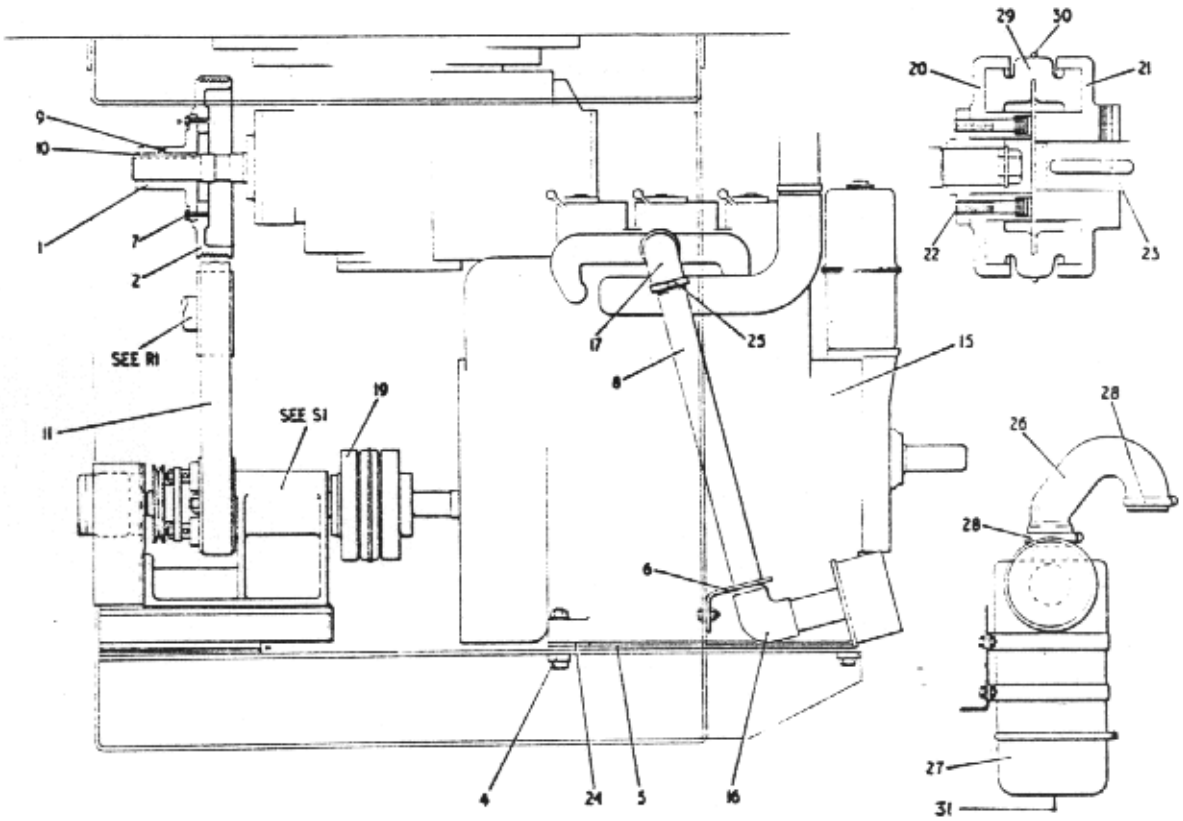


Ref Nº	Description	Part Nº	Qty
1	Compressor	136-252	1
2	Hex Hd Bolts complete with	418-250506	4
	Binx Nuts	330-3605	4
	Plain Washers	463-305	4

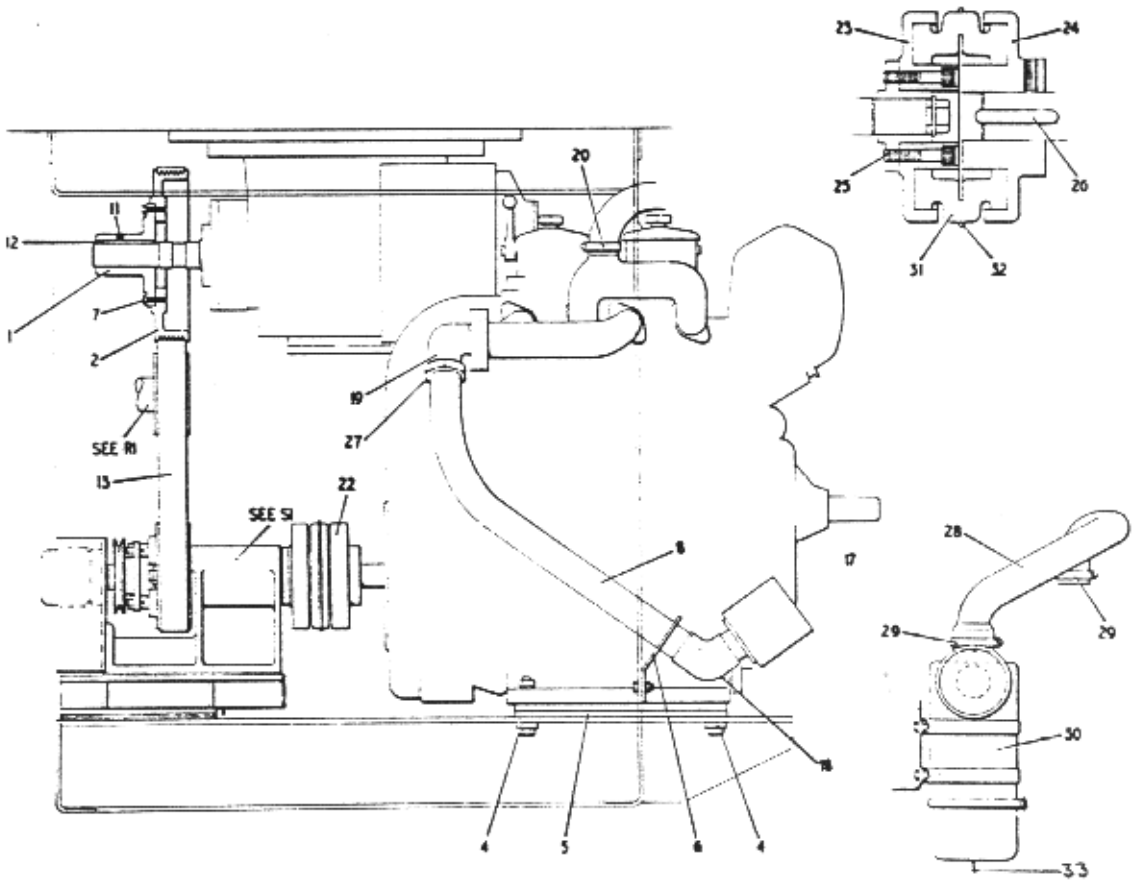
COMPRESSOR DRIVE—OPTIONAL



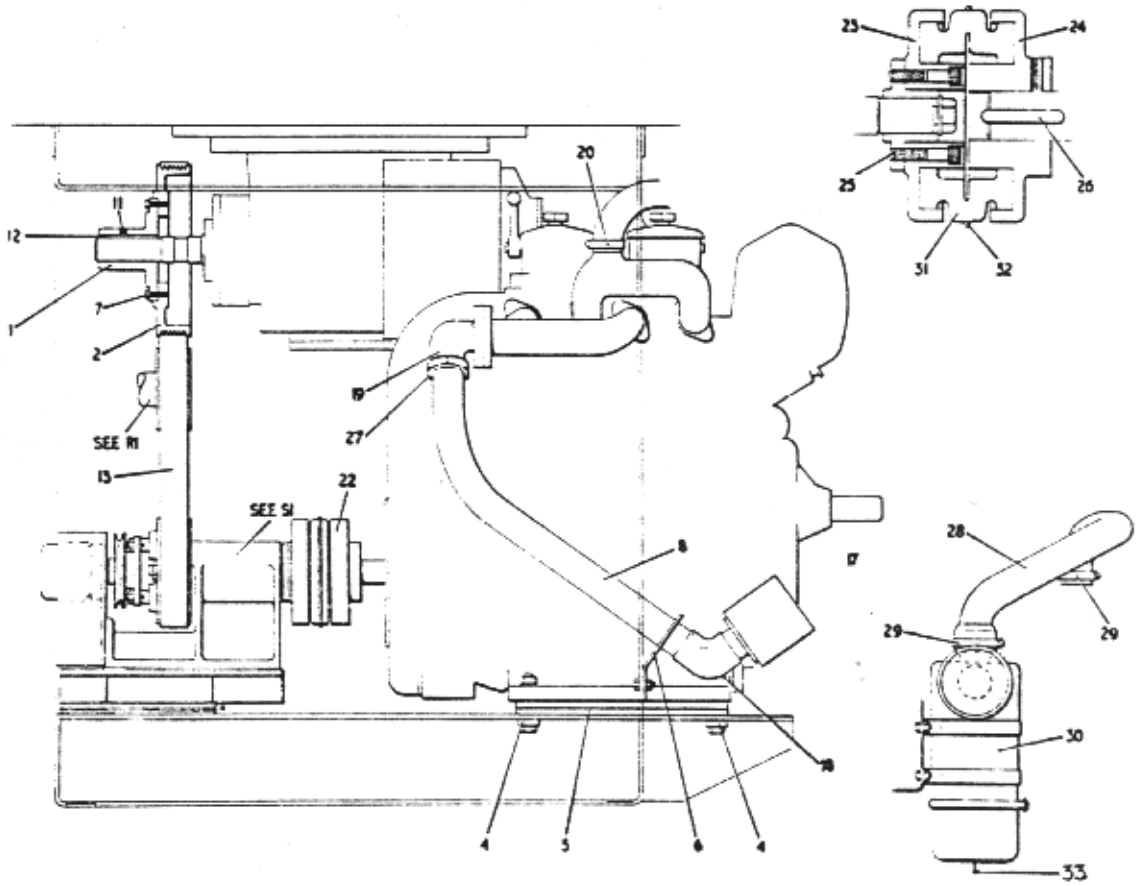
Ref Nº	Description	Part Nº	Qty
1	Drive Flange	555-1607	1
2	Drive Pulley	555-1608	1
3	—	—	—
4	Engine Bolt Retaining Bar	555-1405	2
5	Engine Packers	555-1856	1 set
6	Exhaust Pipe Clip complete with	555-1429	1
	Hex Hd Bolts	460-350608	2
	Binx Nuts	330-360600	2
	Plain Washers	463-306000	2
7	Special Bolt for Drive Flange complete with	555-1621	6
	Locking Wire	477-353000	1 Lgth
8	Exhaust Pipe	555-1428	1
9	Cone Pt. Socket Setscrew	403-560508	1
10	Parallel Key (Round Ends)	304-106240	1
11	Belt	112-414000	1
12	—	—	—
13	—	—	—
14	—	—	—
15	Lister SR3 Diesel Engine complete with		
	Hex Hd Bolts (H.T.)	460-350826	4
	Binx Nuts	330-360800	4
	Plain Washers	463-308000	4
16	135° Elbow	240-758000	1
17	Male/Female Elbow	240-712000	1
18	Starting Handle Hook (Not Illustrated) complete with	555-1407	1
	Hex Hd Bolts	460-505080	2
	Hex Nuts	331-850500	2
	Spring Washers	464-305000	2
19	Assembly of Coupling Complete	555-1832	1
20	Coupling Half (Bearing Bracket Side)	555-1815	1
21	Coupling Half (Drive Side)	555-2032	1



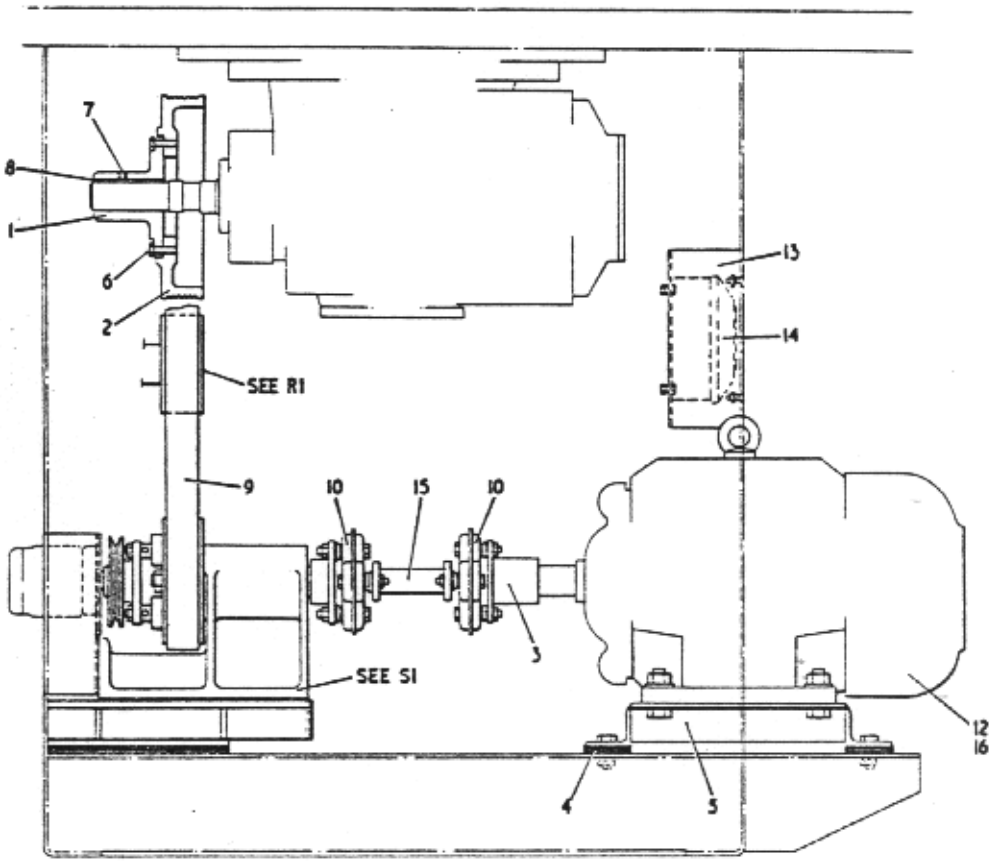
Ref Nº	Description	Part Nº	Qty
22	Skt. Hd. Capscrew	404-70628	4
23	Parallel Key (Round Ends)	304-106200	1
24	Engine Packers	555-1866	1 set
25	Backnut	240-112000	1
26	Moulded Rubber Inlet Pipe	555-1887	1
27	Air Cleaner complete with	220-237000	1
	Hex Hd Bolts	460-506060	4
	Hex Nuts	331-850600	4
	Spring Washers	464-306000	4
	Plain Washers	463-306000	4
28	Clip	132-103000	2
29	Rubber Centres	147-307002	1 pair
30	Wire Retaining Ring	147-307003	1
31	Split Pin	353-304800	1



Ref Nº	Description	Part Nº	Qty
1	Drive Flange	555-1607	1
2	Drive Pulley	555-1608	1
3	—	—	—
4	Engine Bolt Retaining Bar	555-1430	2
5	Engine Packers	555-1441	1 set
6	Exhaust Pipe Clip complete with	555-1440	1
	Hex Hd Bolt	460-350608	2
	Binx Nut	330-360600	2
	Plain Washers	463-306000	2
7	Special Bolts for Drive Flange complete with	555-1621	6
	Locking Wire	477-353000	1 Lgth
8	Exhaust Pipe	555-1439	1
9	—	—	—
10	—	—	—
11	Cone Pt. Skt. Setscrew	403-560608	1
12	Parallel Key (Round Ends)	304-106240	1
13	Belt	122-414000	1
14	—	—	—
15	—	—	—
16	—	—	—
17	Petter P.H.2. Diesel Engine complete with		
	Hex Hd Bolts (H.T.)	460-350826	4
	Binx Nuts	330-360800	4
	Plain Washers	463-308000	4
18	Equal Socket	241-912000	1
19	Male/Female Equal Elbow	240-712000	1
20	—	—	—
21	Starting Handle Hook (Not Illustrated) complete with	555-1407	1
	Hex Hd Bolts	460-505080	2
	Hex Nuts	331-850500	2
	Spring Washers	464-305000	2

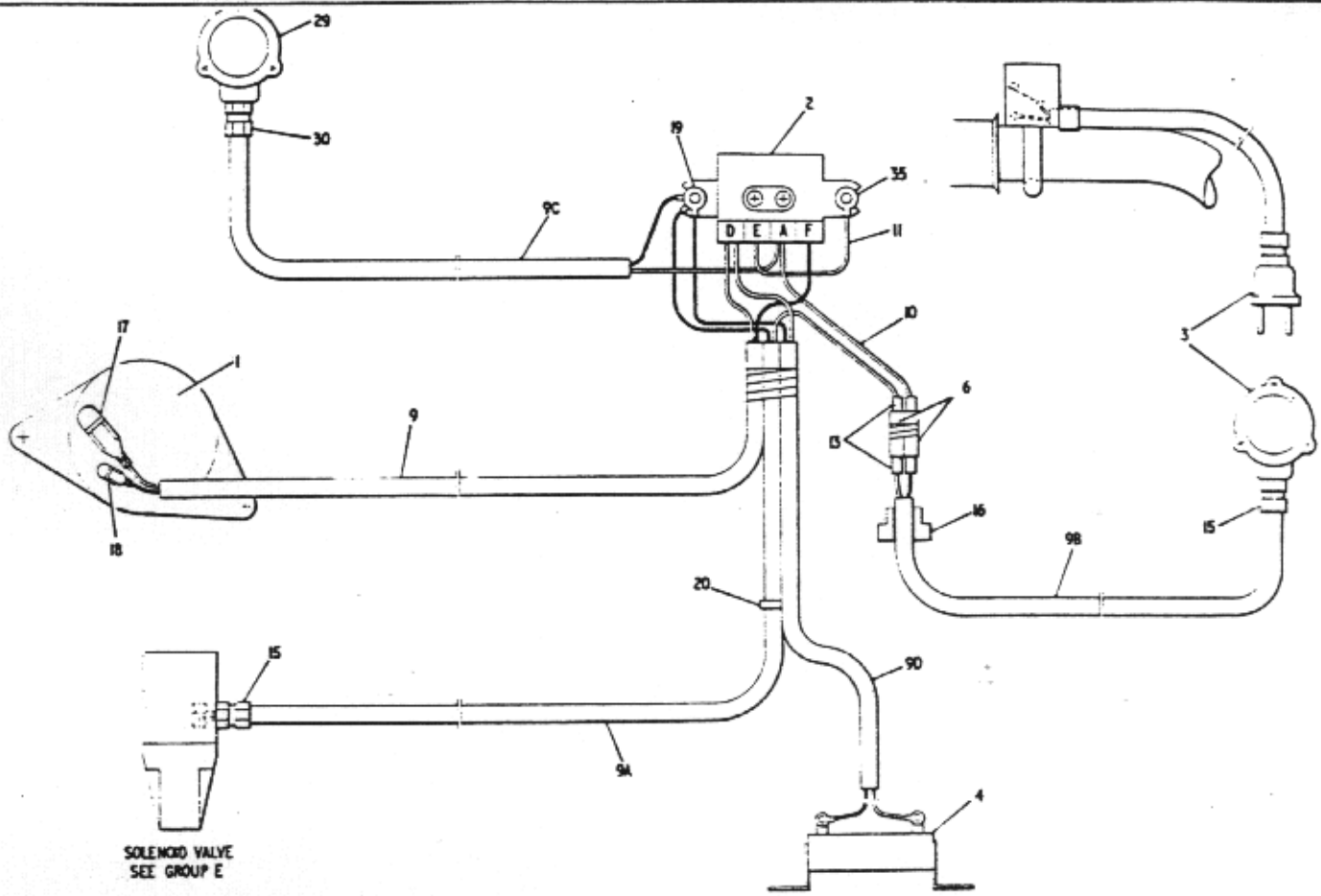


Ref Nº	Description	Part Nº	Qty
22	Assembly of Coupling Complete	555-1832	1
23	Coupling Half (Bearing Bracket Side)	555-1815	1
24	Coupling Half (Drive Side)	555-2032	1
25	Skt. Hd Capscrew	404-706280	4
26	Parallel Key (Round Ends)	304-106200	1
27	Backnut	240-112000	1
28	Moulded Rubber Inlet Pipe	555-1892	1
29	Clip	132-120040	2
30	Air Cleaner complete with	220-229000	1
	Hex Hd Bolts	460-505050	4
	Hex Nuts	331-850500	4
	Spring Washers	464-305000	4
	Plain Washers	463-305000	4
31	Rubber Centres	147-307002	1 pair
32	Wire Retaining Ring	147-307002	1
33	Split Pin	353-304800	1



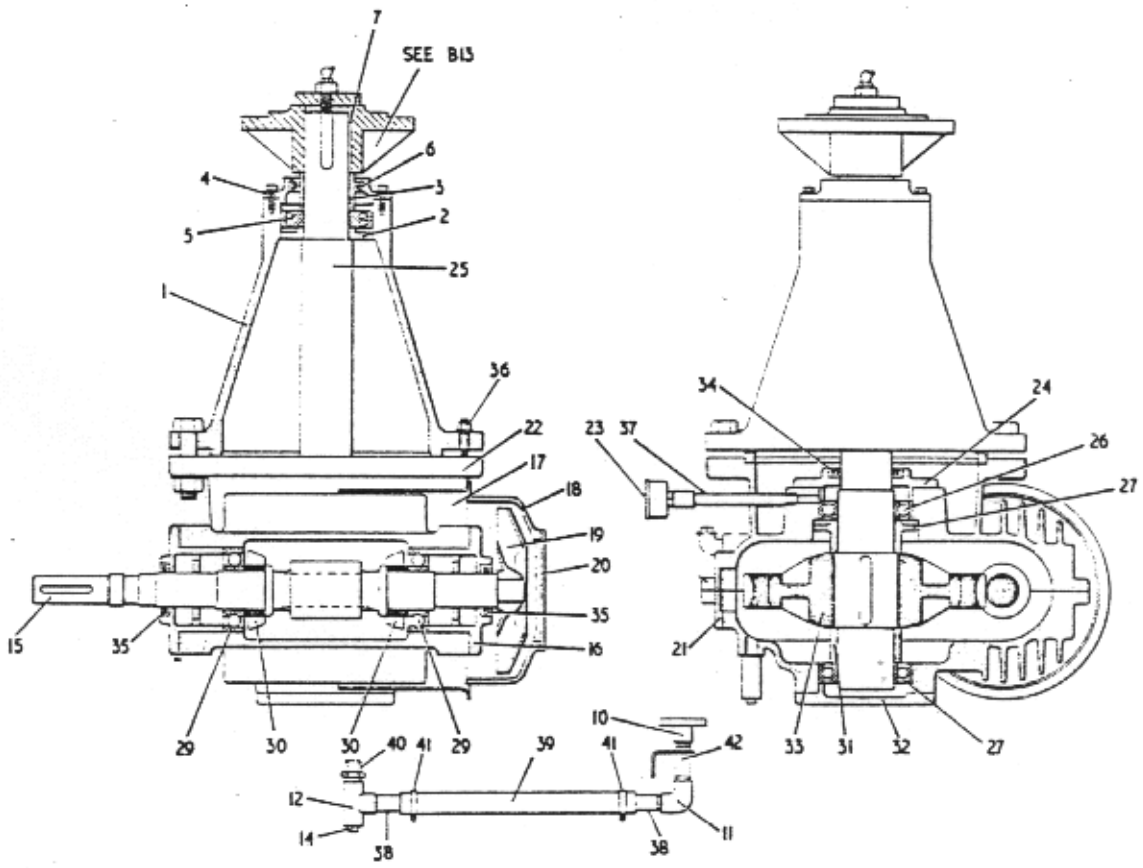
Ref Nº	Description	Part Nº	Qty
1	Drive Flange	555-1607	1
2	Driven Pulley	555-1608	1
3	Drive Flange	555-1455	1
4	Motor Mounting Packers	555-1626	1Set
5	Electric Motor Mounting complete with	555-1454	1
	Hex Hd Bolts (H.T)	460-350812	4
	Binx Nuts	330-3608	4
	Plain Washers	463-308	4
6	Special Bolt for Drive Flange complete with	555-1621	6
	Locking Wire	477-353	1Length
7	Cone Pt Socket Setscrew	403-560508	1
8	Parallel Key (Rd Ends)	304-10624	1
9	Belt	122-414	1
10	Coupling	130-955	2
11	Cone Pt Skt Setscrew	404-910506	1
12	Norco Electric Motor complete with	–	1
	Hex Hd Bolts (H.T)	460-350818	4
	Binx Nuts	330-3608	4
	Plain Washers	463-308	4
13	Starter Mounting Bracket complete with	555-1442	1
	Csk Hd Screws	400-150608	4
	Hex Nuts	330-3506	4
	Spring Washers	464-306	4
14	Starter complete with	208-301500	1
	Hex Hd Bolts	460-350406	4
	Hex Nuts	330-3504	4
	Spring Washers	464-304	4
15	Connecting Shaft	555-1426	1
16	Adaptor	555-1877	1 set
17	Transparent Protective Cap	205-626000	2

NORCO ELECTRIC



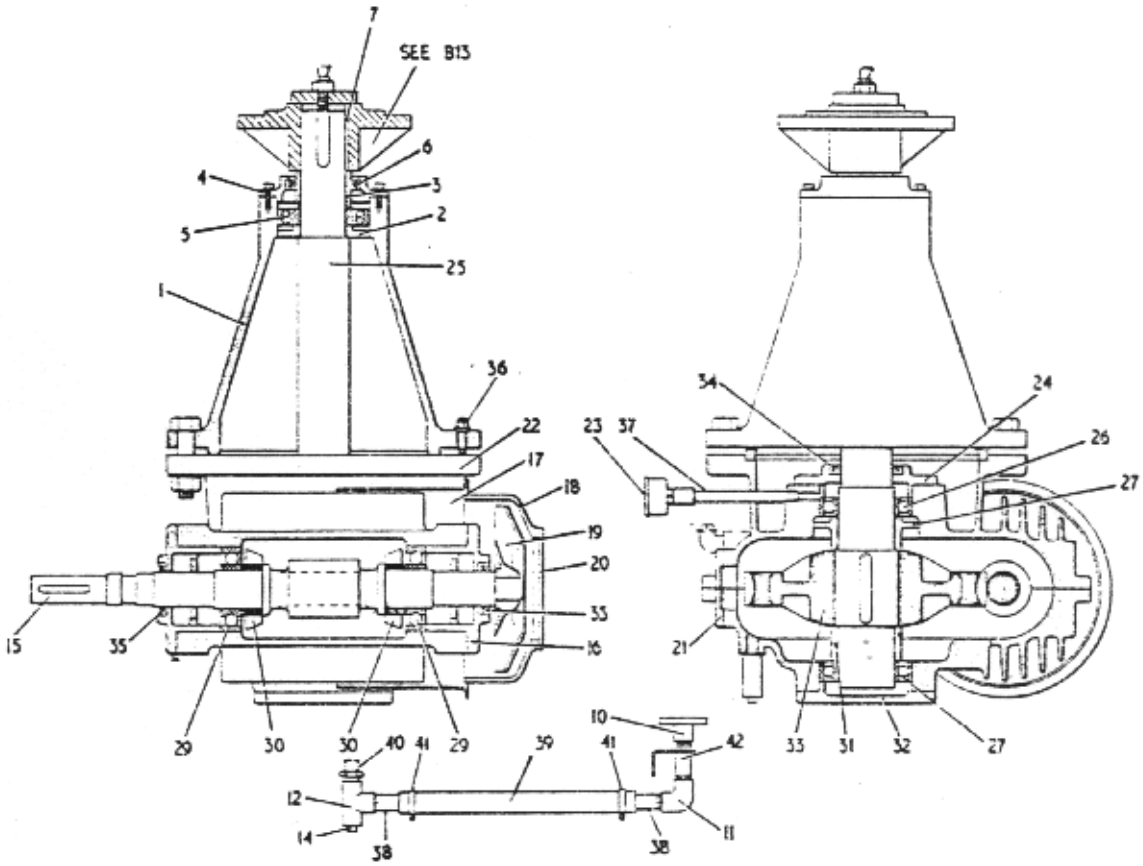
Ref Nº	Description	Part Nº	Qty
1	Generator	205-402000	1
2	Regulator	383-208000	1
3	Plug and Socket	205-323000	1
4	Resistor	207-652000	1
5	–	–	–
6	Connectors	147-604000	2
7	–	–	–
8	–	–	–
9	Twin Core P.V.C. Cable Brown and Blue Inner Cores:–		1
	2.9 metres long Generator to Regulator	144-747000	1
9a	1.5 metres long Solenoid to Earth and Connector	144-747000	1
9b	2.13 metres long Connectors to Shovel Socket	144-747000	1
9c	1.5 metres long Regulator and Earth to Optional Socket	144-747000	1
9d	3.56 metres long Resistor to Regulator	144-747000	1
10	Single Core 32/0.20 Red P.V.C. Cable 127mm long from Regulator to Connector	144-748000	1
11	Single Core 32/0.20 Green P.V.C. Cable 127mm long from Regulator to Earth	144-749000	1
12	–	–	–
13	Nipples	333-354000	4
14	–	–	–
15	¾in. Brass Cable Gland	250-103000	2
16	¾in. Male Brass Bush	131-405000	1
17	Terminal with Insulator	191-917000	1
18	Terminal with Insulator	191-918000	1
19	Terminal OBA	191-912000	3
20	Clips	132-821000	14
21	Twin Core Cable Red and Black Inner Cores 23 metres long	144-734000	1
29	Plug and Socket	205-323000	1
30	¾in. Brass Cable Gland		1
35	Terminal	191-912000	1

WIRING DIAGRAM



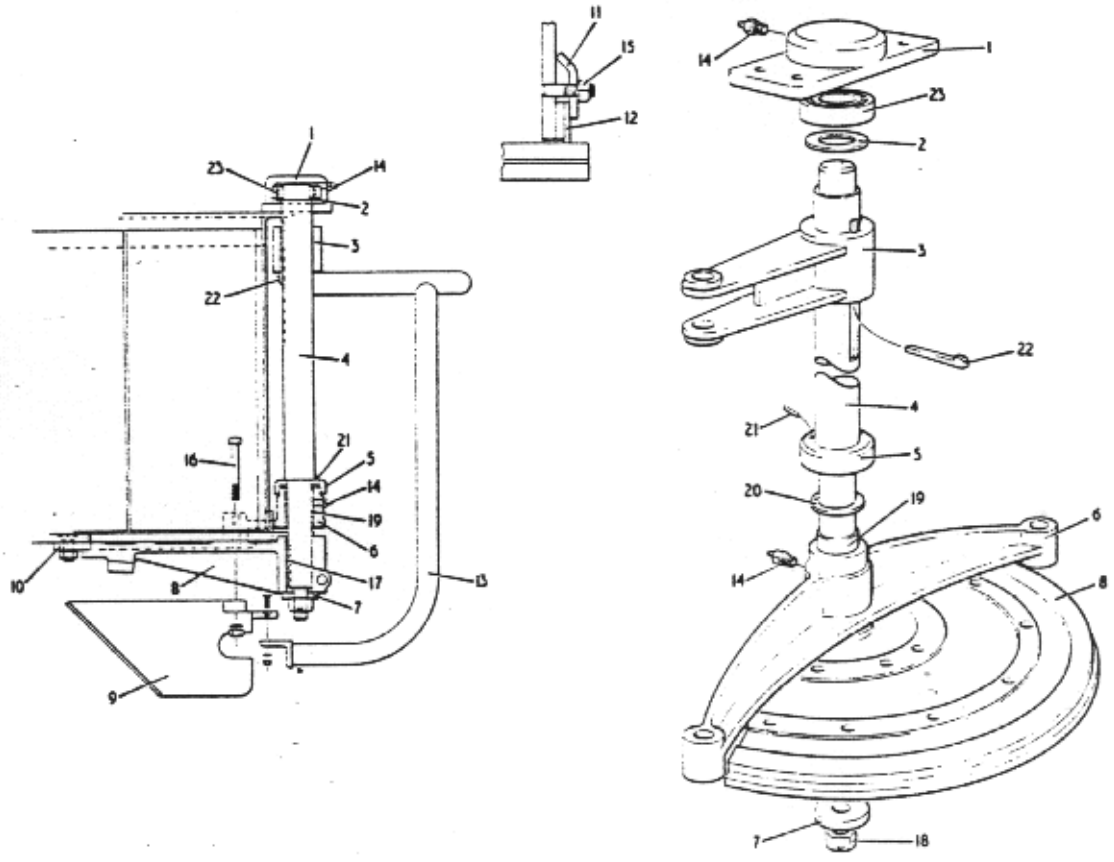
Ref Nº	Description	Part Nº	Qty
1	Reduction Shaft Housing complete with	555-1575	1
	Hex Hd Bright Bolts	460-351428	4
	Binx Nuts	330-361400	4
	Plain Washers	463-314000	4
2	Short Spacer	512-1035	1
3	Long Spacer	555-1595	1
4	Oil Seal Housing complete with	555-1577	1
	Hex Hd Setscrews	418-350607	4
	Spring Washers	464-306000	4
5	Ball Bearing	104-120000	1
6	Oil Seal	417-781000	1
7	Parallel Key (Round Ends)	304-11024B	1
8	–	–	–
9	–	–	–
10	Oil Filler Cap	555-1599	1
11	Elbow	241-106000	1
12	Tee	242-206000	1
13	–	–	–
14	Plug	241-706000	1
15	Wormshaft L.H. (c 37039)	– 2541094027	1
16	Wormshaft Open Cover (B 21607)	– 254109006	2
17	Deflector (C 14020)	–	1
18	Fan Cowl (C 14019)	– 254109012	1
19	Fan (B 7604) 254117013	~~254109021~~	1
20	Wire Mesh Guard	–	1
21	Inspection Cover (B 37043)	254109024	1
22	Gear Case (F 35284)	254109025	1
23	No. 6 Grease Stauffer	–	1
24	S.S. Shaft Open Cover (B 14782)	254109005	1
25	Slow Speed Shaft (C 37022)	254109026	1
26	S.S. Shaft Ball Bearing (175 ACD) LJT7S (7215)	254109018	2

WORM REDUCTION UNIT



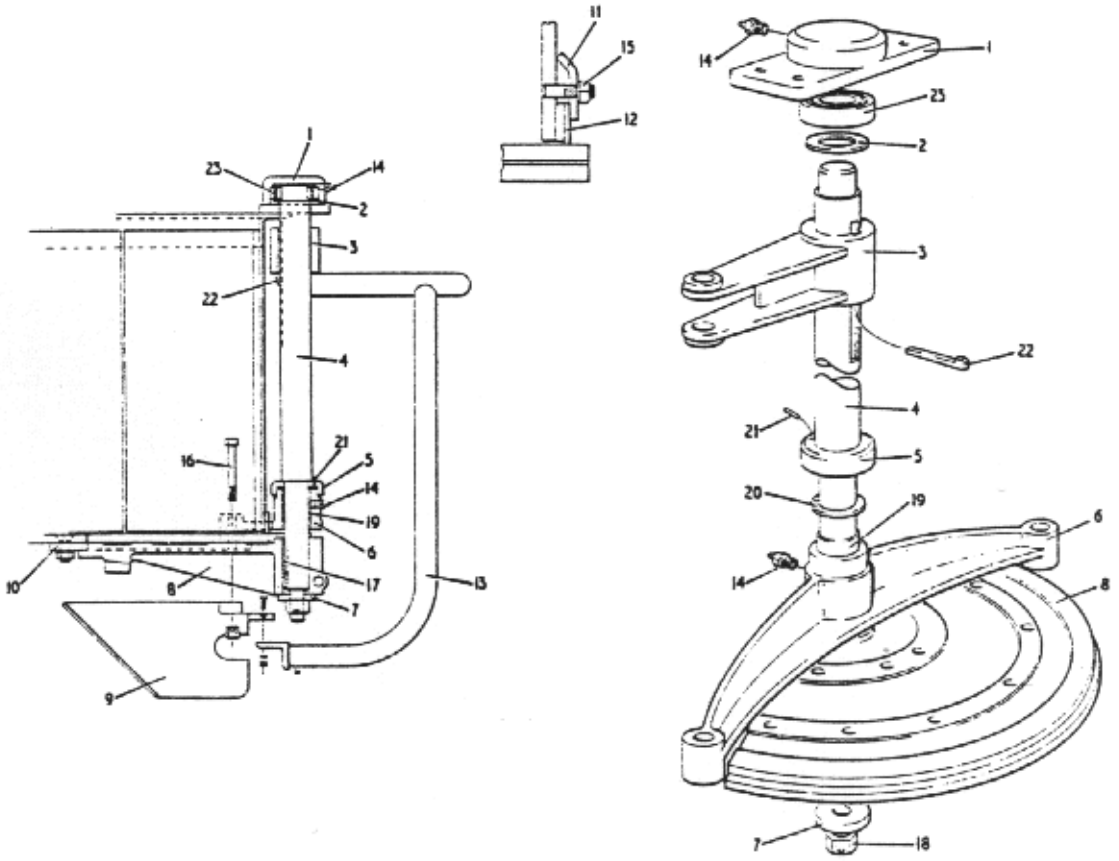
Ref Nº	Description	Part Nº	Qty
27	Grease Retaining Plate (B 35283)	254109020	1
28	Narrow Spacer (B 4808)	254109022	1
29	Double Purpose Bearings MS (15 ACD)	254109019	2
30	Oil Flinger (B 4814)	254109004	2
31	Wide Spacer (B 4809)	254109002	1
32	S.S. Shaft Blank (B 32553)	254109011	1
33	Worm Wheel (B 37040) (30 TEETH)	254109023	1
34	S.S. Shaft (400228)	254109015	1
35	Wormshaft Oil Seal (275124) W 27517550	417128440	2
36	Studs complete with	411-905120	2
	Hex Nuts	331-850500	2
	Plain Washers	463-305000	2
37	Greaser Extension Pipe	555-1898	1
38	Extension Piece	555-1971	2
39	Clear P.V.C. Tube	260-816012	1
40	Equal Hexagon Nipple	243-906000	1
41	Clips	132-101000	2
42	Filler Tube complete with	555-1970	1
	Hex Hd Bolts	460-505060	2
	Hex Nuts	331-850500	2
	Spring Washers	464-305000	2

WORM REDUCTION UNIT



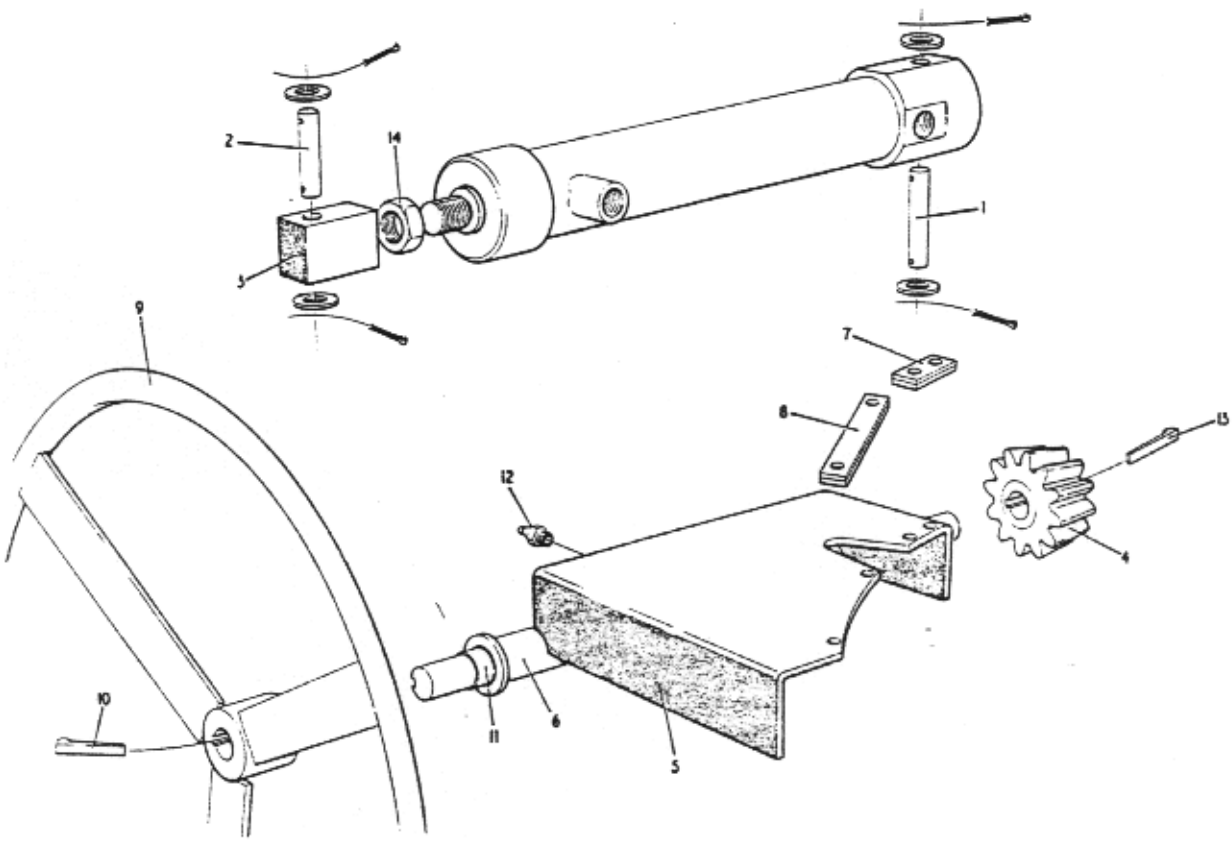
Ref Nº	Description	Part Nº	Qty
1	Bearing Bracket complete with	555-1549	1
1	Hex Hd Brightbolts H.T.	460-350816	2
	Hex Hd Bright Bolt H.T.	460-350814	2
	Binx Nuts	330-3608	4
	Plain Washers	463-308	4
2	Thrust Washer	512-1046	1
3	Ram Piston Bracket (Power Door only)	555-1565	1
4	Door Operating Shaft	555-1551	1
5	Door Operating Shaft Collar	555-1554	1
6	Lower Steady for Shaft	555-1548	1
7	Washer	512-1047	1
8	Discharge Door complete with	555-1547	1
	Hex Hd Bolt	460-350828	1
	Binx Nut	330-3608	1
	Plain Washer	463-308	1
9	Chute	555-1553	1
10	Discharge Door Sealing Ring	555-1550	1
11	Sealing Strip Clamp	512-1041	4
12	Door Sealing Strip	555-1555	1
13	Door Guard complete with	555-1552	1
	Hex Hd Bolts	460-350810	2
	Hex Nuts	330-3508	2
	Spring Washers	464-308	2

DISCHARGE DOOR (HAND & POWER)



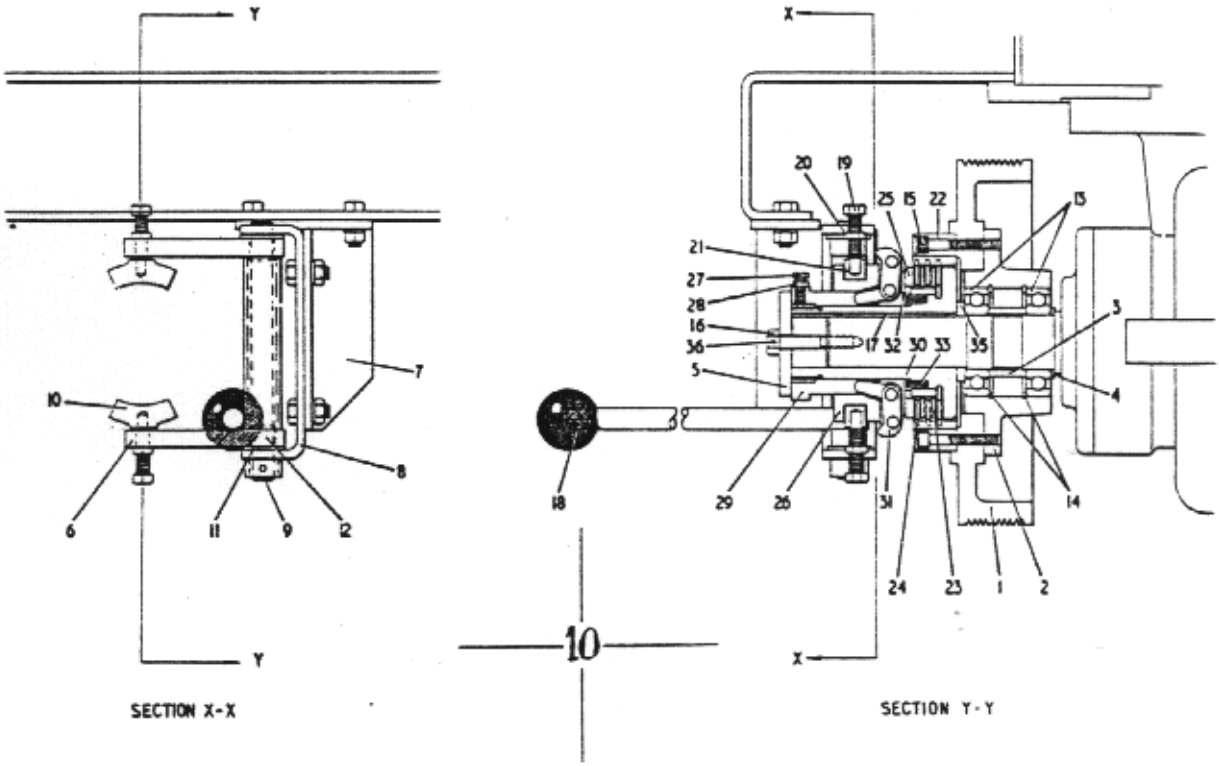
Ref Nº	Description	Part Nº	Qty
14	Straight Nipple	241-501	2
15	Hex Nuts complete with	331-8506	4
	Spring Washers	464-306	4
16	Hex Hd Bolts Bright complete with	460-351032	2
	Binx Nut	330-3610	2
	Plain Washers	463-310	2
17	Parallel Key (Radius Ends)	304-10622	1
18	Binx Nut	330-3612	1
19	Bush	112-8003	1
20	Thrust Washer	464-702	1
21	Hardened Steel Dowel	352-1538	1
22	Gib Head Key (Power Door only)	300-11626	1
23	Ball Bearing	104-112	1
24	Csk Hd Setscrews complete with	400-150810	2
	Hex Nut	330-3508	2
	Spring Washer	464-308	2

DISCHARGE DOOR (HAND & POWER)



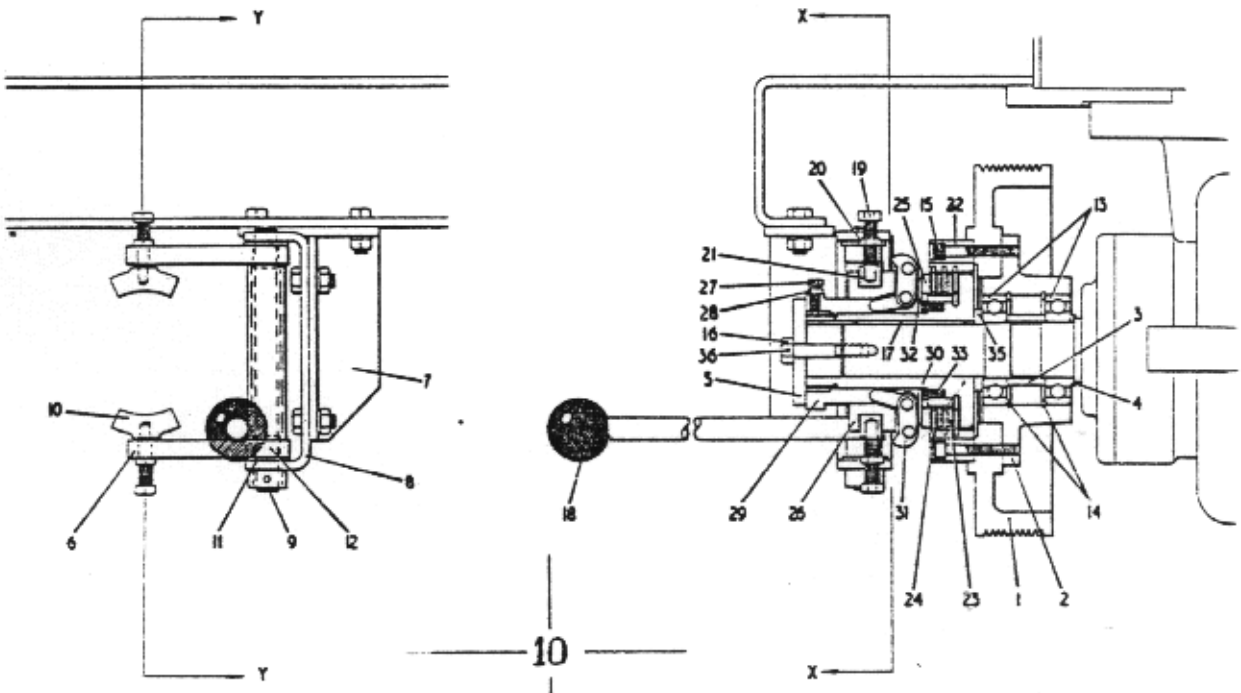
Ref Nº	Description	Part Nº	Qty
1	Ram Cylinder Bracket Pin (Power Door Only) complete with	555-1567	1
	Bright Plainwashers	463-312	2
	Split Pin	353-30510	2
2	Ram Piston Retaining Pin (Power Door only) complete with	555-1568	1
	Bright Plainwashers	463-312	2
	Split Pin	353-30510	2
3	Endpiece (Power Door only)	555-1566	1
4	Bevel Pinion (12 Teeth) (Hand Door only)	555-1557	1
5	Pinion Shaft Bracket (Hand Door only) complete with	555-1559	1
	Hex Nuts	330-3508	4
	Spring Washers	464-308	4
6	Pinion Shaft (Hand Door only)	555-1562	1
7	Packer Small (Hand Door only)	555-1564	2
8	Packer Large (Hand Door only)	555-1563	2
9	Manual Door Opening Handle (Hand Door only)	555-1558	1
10	Gib Head Key (Hand Door only)	300-20418	1
11	Bush (Hand Door only)	112-837	2
12	Straight Nipple (Hand Door only)	241-501	1
13	Gib Head Key (Hand Door only)	300-20414	1
14	Locknut (Power Door only)	331-216	1

DISCHARGE DOOR OPERATION (HAND & POWER)



Ref Nº	Description	Part Nº	Qty
1	Driven Pulley	555-1628	1
2	Clutch Drive Pulley Spigot	555-1629	1
3	Clutch Bearing Spacer	512-1211	1
4	Clutch Bearing Packer	512-1210	1
5	Clutch Shaft Cap	512-1214	1
6	Clutch Operating Arm	555-1630	1
7	Clutch Operating Support Bracket complete with	555-1632	
	Hex Hd Bolt	460-350608	4
	Hex Nut	330-3506	4
	Spring Washer	464-306	4
8	Clutch Operating Arm Swivel Bracket	555-1631	1
9	Clutch Operating Pin complete with	555-1633	1
	Split Pin	353-30512	1
10	Clutch Assembly	130-930	1
11	Bright Plain Washers	463-310	2
12	Bush	114-622	2
13	Ball Bearing	109-44001	2
14	Circlip	142-319	2
15	Skt Hd Capscrew	404-750532	6
16	Retaining Bolt complete with	555-1848	2
	Spring Washer	464-306	1
17	Parallel Key (Rd Ends)	304-10624	1
18	Plastic Knob	307-120	1
19	Tappet Screws – 3269	130-93001	2
20	Tappet Nuts – 3508	130-93002	2
21	Tappet Brasses – 20187	130-93003	2
22	External – 21644	130-93004	1
23	Spacer Plates – 5673	130-93005	2

CLUTCH

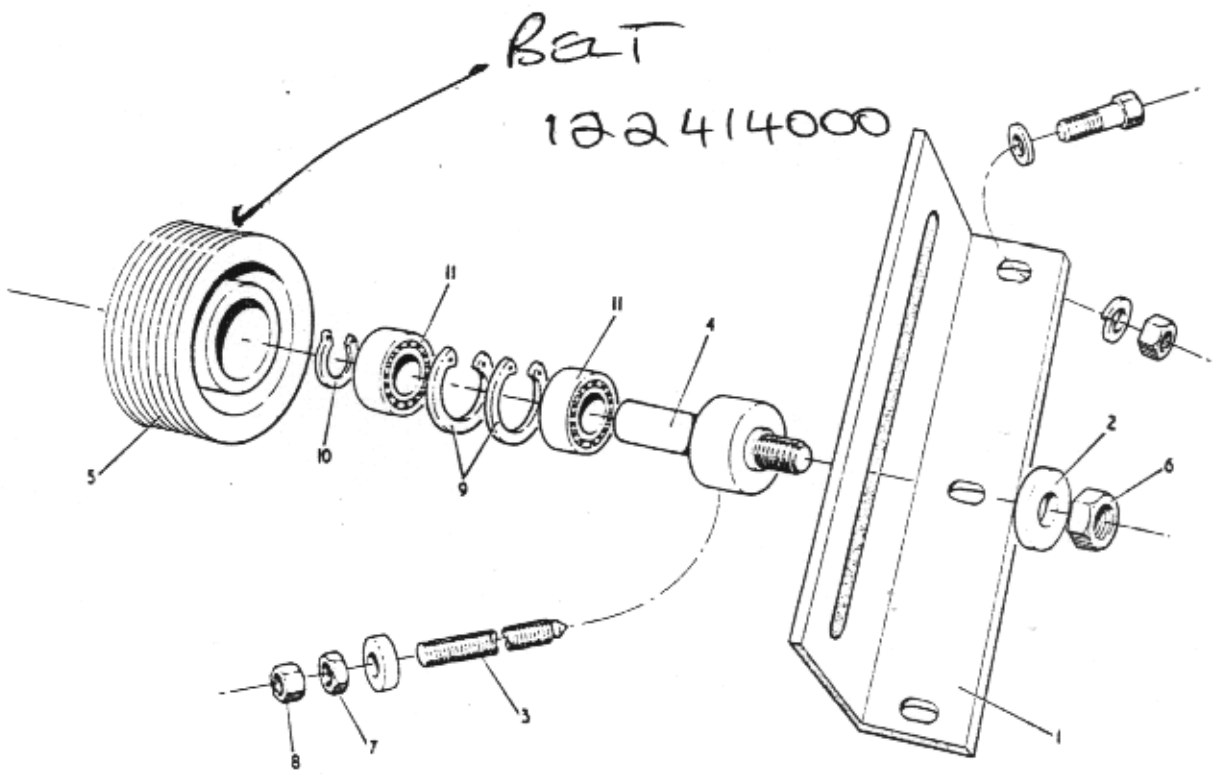


SECTION X-X

SECTION Y-Y

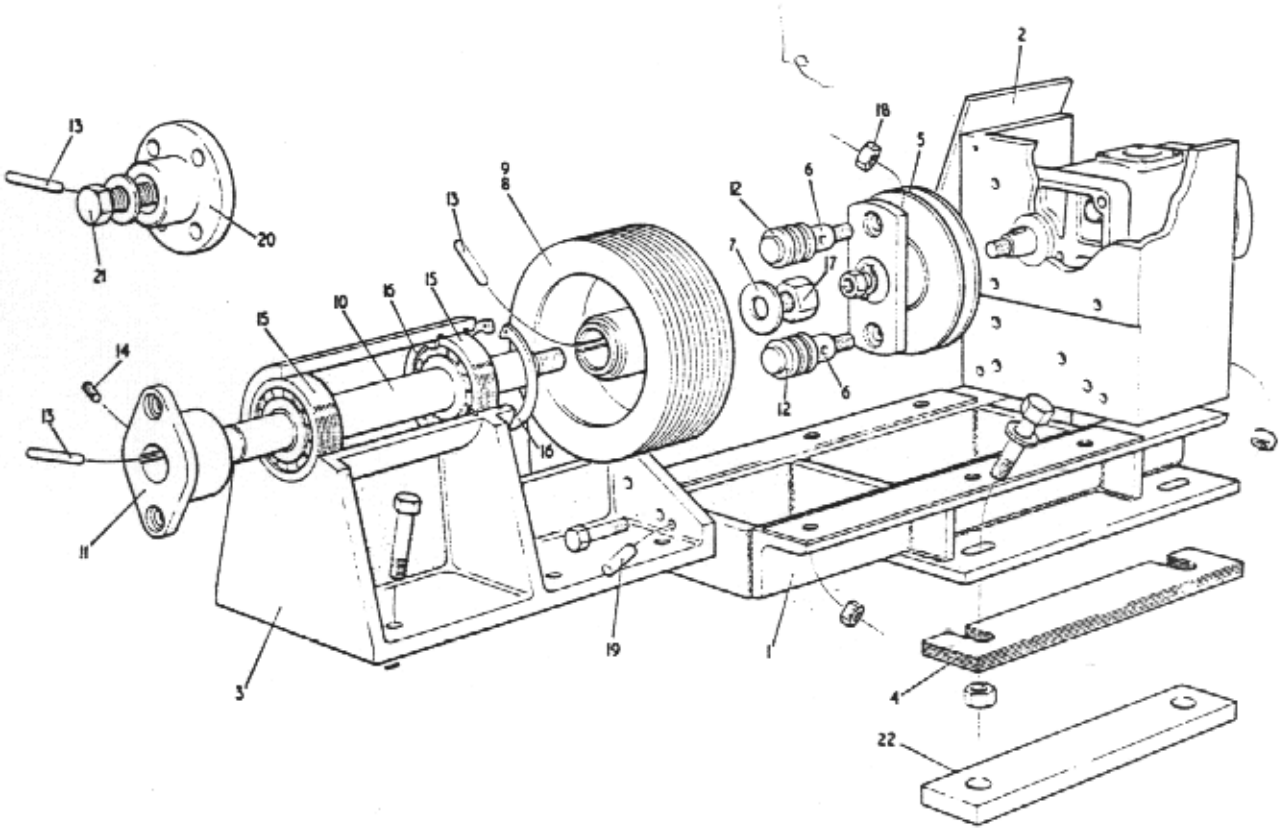
Ref Nº	Description	Part Nº	Qty
24	Sintred Discs – 3021	130-9306	3
25	Front Plate – 21645	130-9307	1
26	Sleeve – 22569	130-9308	1
27	Locking Screws – 3261	130-9309	2
28	Locking Nuts – 3507	130-9310	2
29	Adjusting Bush – 20033	130-9311	1
30	Centre – 21641	130-9312	1
31	Lip Link Toggle Assembly – 5312	130-9313	2
32	Pressure Plate – 3177	130-9314	1
33	Springs – 4045	130-9315	3
34	Pins – 3239 (Not Illustrated)	130-9316	2
35	Washer for Clutch Bearing	512-1119	1
36	Locking Wire	477-353	5" Length

CLUTCH



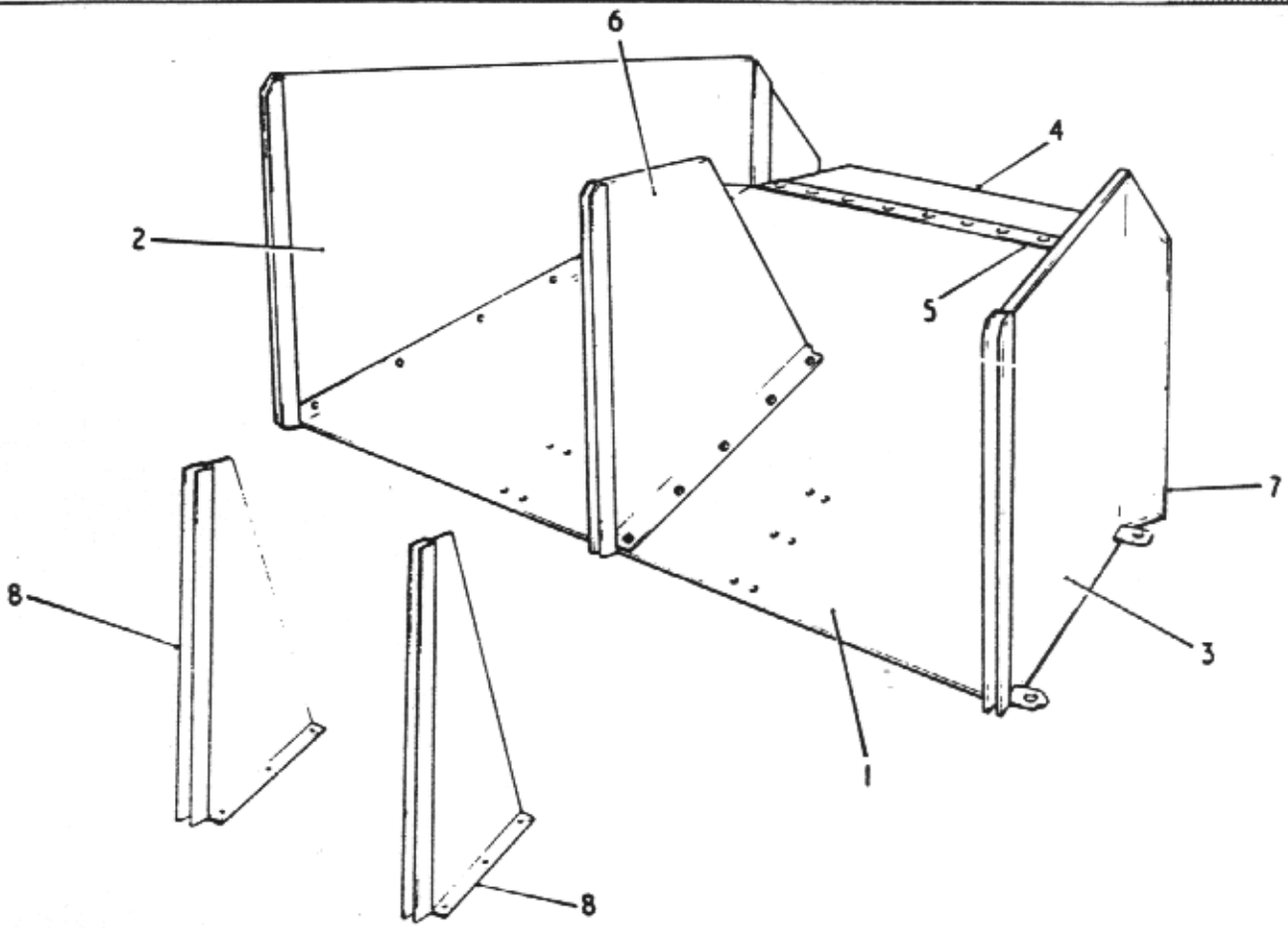
Ref Nº	Description	Part Nº	Qty
1	Pivot Shaft Bracket complete with	555-1611	1
	Hex Hd Bolt	460-350812	3
	Hex Nut	330-3508	3
	Spring Washer	464-308	3
	Plain Washer	463-308	3
2	Washer for Jockey Pulley Bracket	555-1615	1
3	Adjusting Screw	555-1620	1
4	Pivot Shaft for Jockey Pulley	555-1614	1
5	Jockey Pulley	555-1609	1
6	Binx Nut	330-3612	1
7	Hex Locknut	330-258	1
8	Hex Nut	331-8508	1
9	Internal Circlip	142-322	2
10	External Circlip	142-320	1
11	Ball Bearing	109-625	2

JOCKEY PULLEY

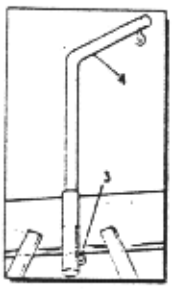


Ref Nº	Description	Part Nº	Qty
1	Drive Bearing Support complete with	555-1685	1
	Hex Hd Bolts (Lister & Petter Drive only)	460-350811	4
	Hex Hd Bolts (Electric Drive only)	460-350814	4
	Binx Nuts	330-3608	4
	Plain Washers	463-308	4
2	Pump Mounting Bracket complete with	555-1686	1
	Hex Hd Bolts	460-350711	4
	Binx Nuts	330-3607	4
3	Drive Bearing Bracket complete with	555-1684	1
	Hex Hd Bolt	460-350713	6
	Binx Nut	330-3607	6
4	Drive Bearing Support Packers (Electric Drive only)	555-1687	1 Set
5	Pump Pulley	555-1416	1
6	Coupling Pin	555-1616	2
7	Washer for Drive Shaft	555-1617	1
8	Drive Pulley (Diesel)	555-1622	1
9	Drive Pulley (Electric)	555-1625	1
10	Drive Shaft	555-1612	1
11	Drive Shaft Flange (Electric Drive only)	555-1613	1
12	Coupling Rings	137-355	6
13	Parallel Key (Rd Ends)	304-10512	2
14	Cone Pt Setscrew (Electric Drive only)	404-910510	1
15	Ball Bearing	102-93001	2
16	Circlip	142-310	2
17	Binx Nut	330-3610	1
18	Binx Nut	330-3607	2
19	Parallel Dowel Pin	352-1628	2
20	Drive Shaft Flange (Lister & Petter Drives only)	555-1813	1
21	Hex. Hd Setbolt complete with (Lister & Petter Drives only)	418-251008	1
	Plain Washers	463-310	1
22	Drive Bearing Support Bar	555-1916	2

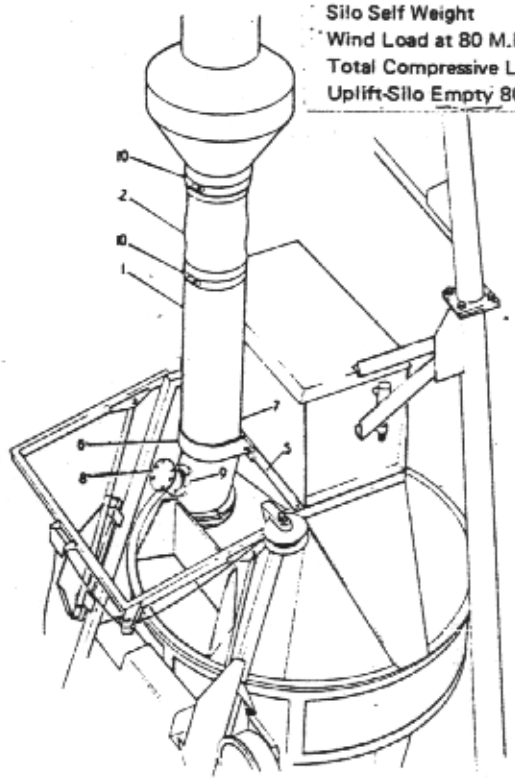
DRIVE BEARING BRACKET & PUMP MOUNTING



Ref Nº	Description	Part Nº	Qty
1	Bottom Ramp Plate	555-1963-1	1
2	R.H. Side Plate complete with	555-1963-2-4-10	1
	Hex Hd Bolts	460-350808	6
	Hex Nuts	330-350800	6
	Spring Washers	464-308000	6
3	L.H. Side Plate complete with	555-1963-3-4-10	1
	Hex Hd Bolts	460-350808	6
	Hex Nuts	330-350800	6
	Spring Washers	464-308000	6
4	Rubber Flap complete with	555-1963-12	1
	Csk Hd Bolts	400-250612	10
	Nuts	331-8506	10
	Spring Washers	464-306	10
5	Rubber Retaining Strap	555-1963-15	1
6	Centre Partition Two Compartments complete with	555-1963-4-6-7-11	1
	Hex Hd Bolts	460-350808	10
	Hex Nuts	330-350800	10
	Spring Washers	464-308000	10
7	Centre Support Angle complete with	555-1963-8-9	1
	Hex Hd Bolts	460-350808	8
	Hex Nuts	330-350800	8
	Spring Washers	464-308000	8
8	Dividers for Three Compartments complete with	555-1048	1 LH. 1 RH
	Hex Hd Bolts	460-350808	12
	Hex Nuts	330-350800	12
	Spring Washers	464-308000	12



BASE LOAD TABLE	TONS PER BASE PLAGE P20	P30
Silo Contents	5.0	7.5
Silo Self Weight	0.75	0.75
Wind Load at 80 M.P.H.	1.6	2.35
Total Compressive Load	7.35	10.6
Uplift-Silo Empty 80 M.P.H. Wind	0.35	1.6

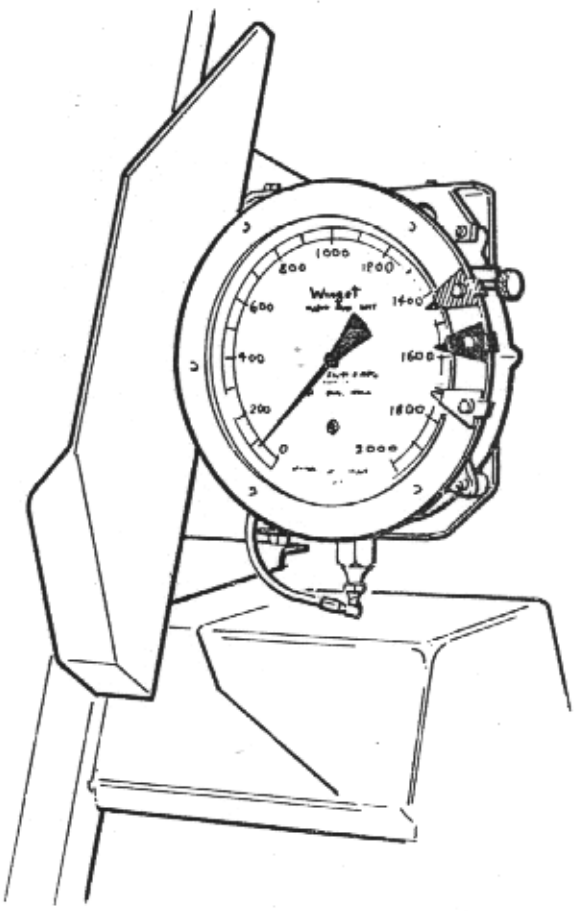


Ref Nº	Description	Part Nº	Qty
1	Cement Chute complete with	555-1748	1
	Hex Hd Bolts	460-50610	6
	Hex Nuts	331-850600	6
	Spring Washers	464-306000	6
2	Silo Batcher Sock	555-2049	1
3	Support Bracket to Pedestal	555-1741	1
4	Cable Support	50-44259	1
5	Support Angle for Cement Chute complete with	555-1749	1
	Hex Hd Bolts	460-50812	2
	Hex Nuts	331-850800	2
	Spring Washers	464-308000	2
6	Strap For Cement Chute complete with	555-1750	1
	Hex Hd Bolts	460-50810	2
	Hex Nuts	331-850800	2
	Spring Washers	464-308000	2
7	Rubber Pad for Cement	555-1751	1
	CSK Hd Setscrews	400-554080	2
	Binx Nuts	335-760400	2
	Plain Washers	464-304000	2
8	Cover for Cement Chute complete with	555-1752	1
	Hex Hd Setscrews	418-350606	6
	Spring Washer	464-306000	6
9	Cement Chute Flange Gasket	555-1545	1
10	Clip	132-130000	2
11	Foundation Bolts (not illustrated)	555-1746	16

Winget

LIMITED

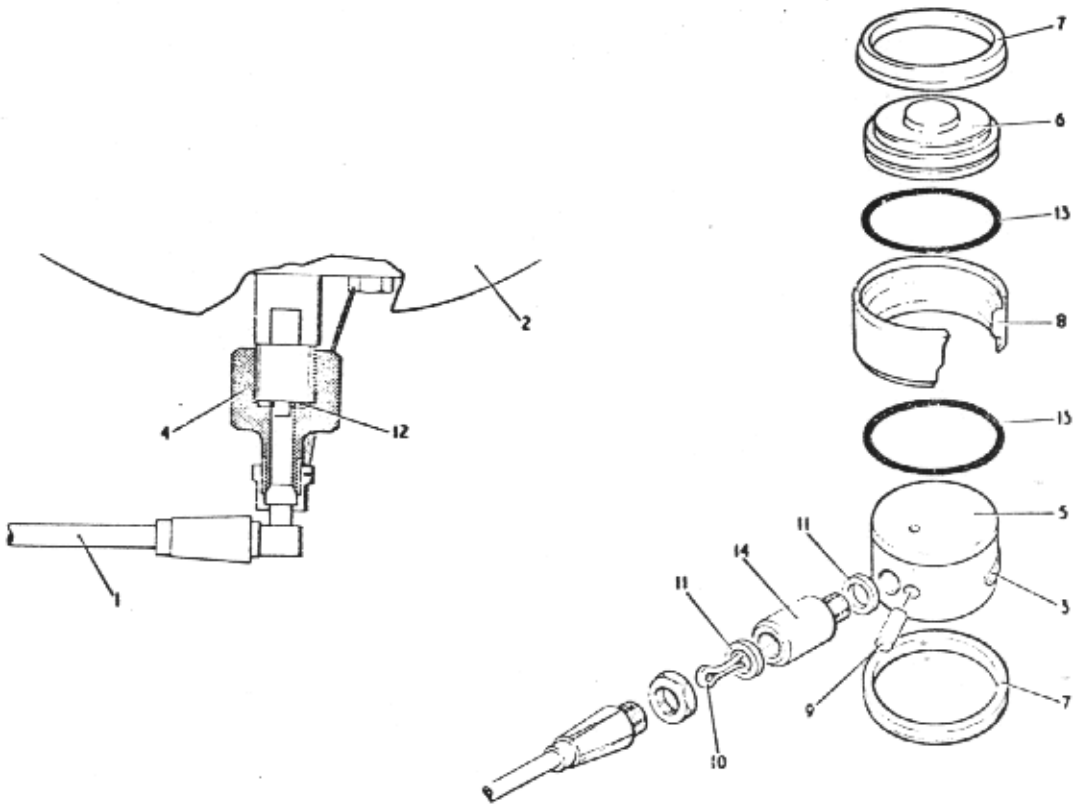
CONSTRUCTION EQUIPMENT DIVISION



Loadcell & Gauge

OPERATION MAINTENANCE & SPARE PARTS MANUAL

LIST OF CONTENTS



Ref Nº	Description	Part Nº	Qty
1	Hose	555-1945	1
2	Weigh Gauge (Ref. to Group D)	—	—
3	Loadcell Patent Plate Attachment	511-1372	1
4	Gauge Adaptor	555-1828	1
5	Loadcell Body	50-46812	1
6	Platen	50-30306	1
7	Sealing Ring	50-30307	2
8	Floating Sleeve	50-30308	1
9	Locking Pin complete with Lead Seal on Wire	50-30360 020158	1 1
10	Split Pin	353-3047	1
11	Bonded Seal	417-802	2
12	Bonded Seal	417-858	1
13	'O' Ring	391-351	2
14	Loadcell Adaptor	555-1827	1

LOADCELL AND GAUGE

GENERAL

The loadcell and gauge is a hydraulic method of recording pressure exerted on the loadcell button, by the batch in the weigh hopper.

The weigher gauge is mounted in a box on the side of the mixer and connected by a hydraulic pipe to the loadcell situated under the weigh hopper.

The gauge calibration differs to the mixer on which it is fitted, the adjustable coloured pointers mounted on the rim of the gauge can be set by the operator, to the aggregate proportions required. A protective lid is provided for the gauge box to prevent damage when not in use. The loadcells are of the 10 sq. in. (64·5 sq. cm.) type and a load/pressure ratio of 10:1.

The loadcell and gauge is a closed circuit and any leakage from anywhere in the system will cause incorrect reading.

A screw is provided for zeroing the weigh gauge needle to take into account temperatures and variations in the weight of the hopper due to build-up of materials. Ensure that at all times there is a minimum of 2 in. or 50 mm. clearance between the hopper bottom and the ground.

WEIGH GAUGE

If by any chance a loaded hopper is dropped on to the loadcell by accident, causing undue shock to the gauge, this could loosen the pointer needle which is soldered on to its spindle. If this happens, remove the gauge from the loadcell pipe and release the front glass. Rotate the needle pointer gently to check if the solder connection has become loose. As shown in Fig. 1. If so, re-solder carefully. To ensure correct position for re-soldering pointer. Set the zeroing knob at a mid-position, and solder the pointer back from zero, the combined weight of cradle and hopper. Make sure that surplus solder does not run into the small bearing behind the needle pointer.

OSCILLATION

If the gauge needle pointer should oscillate unduly, first remove the back plate, by removing six Allen screws. For identification purposes, the only parts requiring adjustment for oscillation are painted blue. Loosen the blue locknut (1), as shown in Fig. 1, and turn the hexagon headed screw (2) below in a clockwise direction, until the pointer oscillation is

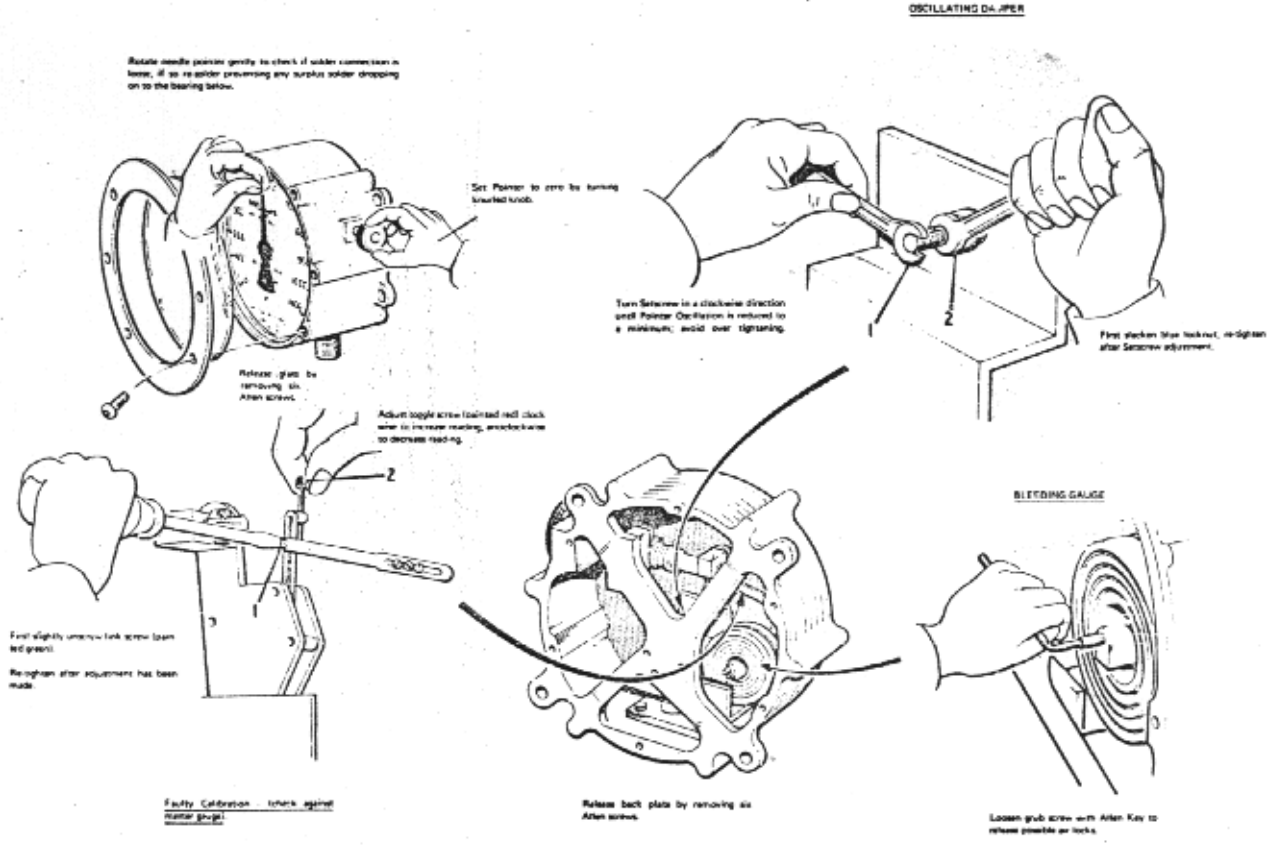


FIG. 1 GAUGE ADJUSTMENT

reduced to a minimum. At the same time avoid excessive tightening of the hexagon headed screw. A known weight should now be added to ensure that application of the damper has not affected weight reading. If the reading has been affected, this will indicate that the hexagon headed screw has been tightened down too far, so it should be released slightly until the reading becomes accurate. Remove the weights and check the pointer returns to zero. Re-tighten the blue locknut and refit back plate.

NOTE

The damper must not be applied too tightly, for this may cause movement wear and affect the calibration of the pointer.

CALIBRATION

If the calibration is found to be inaccurate, the pointer should be adjusted against a master gauge, as shown in Fig. 1. For identification purposes, the only parts requiring adjustment for calibration are painted red and green. First, slightly loosen link screw (1) painted green, then adjust knurled toggle screw (2) painted red, by hand. Turn clock-wise to accelerate the reading and anti-clockwise to decrease reading. This should be done on a gauge test rig or equivalent. After correct adjustment has been made, retighten link screw (1). Other screws must not be interfered with.

LOADCELL REPAIR

The loadcell itself can be made inoperative if a loaded hopper is dropped by accident on to it, or if aggregate were tipped from a dumper directly into the hopper. Both could cause the top half to turn over at an angle. This means that at least one "O" ring has been damaged. When this happens, the loadcell must be disconnected from the gauge and removed from the machine and the damaged rings replaced. There are two methods used for opening the loadcell. Firstly, by a press. Block up the loadcell on the base of the press using packing under the floating sleeve, this is to ensure that the body will move downwards, thus breaking the seals when pressure is applied to the loadcell button. Secondly, the diameter of the floating sleeve can be turned down on a lathe so as to reduce the thickness to approx. ·010 in. (·25 mm.) at which stage the rims of the floating sleeve may be broken away releasing the sealing rings and inner parts. Clean and check the condition of all parts. Renew sealing rings and re-assemble, clamp the body of the loadcell in the lathe and rotate at a slow speed. By using a steel bar gradually roll the rims of the floating sleeve, thus re-sealing the loadcell.

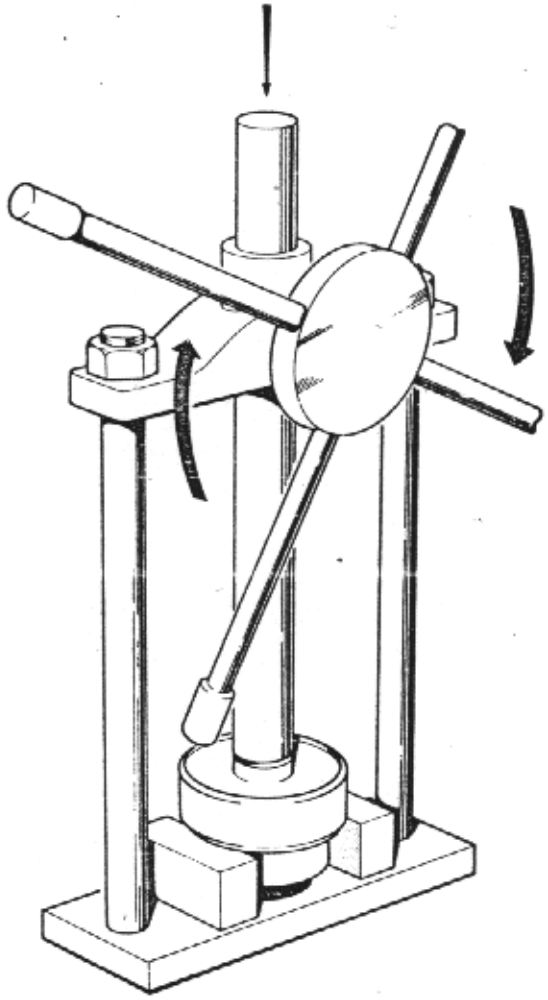


FIG. 2 PARTING LOADCELL BY PRESS

It is necessary when parting the Loadcell in the press, to ensure that the Floating Sleeve has been packed sufficiently to move downwards when pressure is applied to the Loadcell Button thus breaking the seals.

Alternatively the Floating Sleeve may be turned off in the lathe. First clamp the body of the Loadcell in the chuck and by taking light cuts, reduce the diameter by 0·100 ins. or 2·50 mm. At this stage it should be possible to split the outer skin releasing the inner parts.

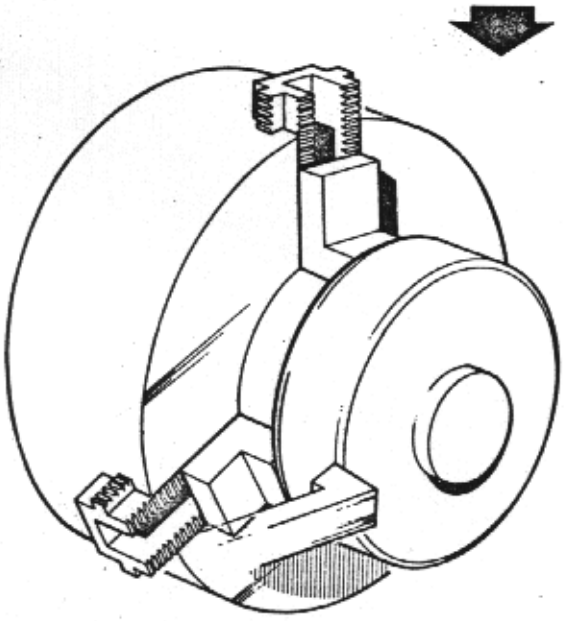


FIG. 3 PARTING LOADCELL BY LATHE

Resealing the loadcell—with all parts assembled in position apply a coating of Goodyear "Pliobond" around the outside edge of sealing rings. Now clamp the loadcell body in the chuck and gradually roll both edges of the floating sleeve thus locking the inner parts in position.

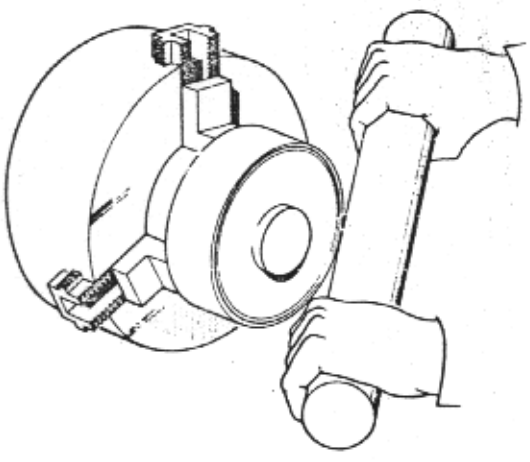


FIG. 4 RESEALING LOADCELL

REFILLING LOADCELL

The most efficient way of filling a loadcell and gauge, is by using a vacuum pump unit. This is normal practice. However, where this special equipment is not available, the operation can in some instances be carried out by hand. If care is taken, and the following procedure adopted: Place the loadcell in the vice with the button on one jaw, and the inlet for oil upwards, fill the loadcell with Wakefield Girling Brake and Clutch Fluid (crimson) and at the same time slightly compress the vice not more than $\frac{1}{16}$ in. or 1·60 mm., and let it return. Repeat this procedure several times. This will remove air bubbles. N.B. It must be remembered that when the loadcell is in use on the machine, the total amount of compression is less than $\frac{1}{16}$ in. or 1·6 mm. Therefore, when compressing this in the vice, it must be remembered to under no circumstances exceed $\frac{1}{16}$ in. or 1·6 mm., otherwise damage to the "O" ring seals may occur. It is advised before completely filling the loadcell to remove it from the vice, hold it in your hand with the button downwards, give a series of taps on the base of the loadcell with the other hand, as shown in Fig. 6 This will remove all remaining air locks. Replace the loadcell in the vice and compress a few more times. Continue filling to the point of overflow. Remove from the vice and place to one side with the oil filling end upwards.

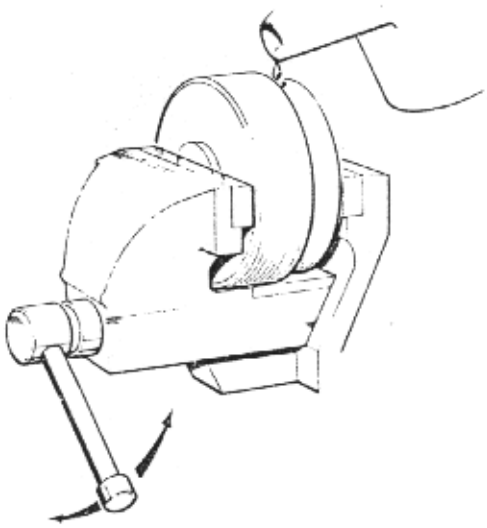


FIG. 5 REFILLING LOADCELL

Air bubbles may still be present in fluid. To remove secure Loadcell in vice with union hold upwards. Fill with oil. Move vice handle compressing Loadcell not more than $\frac{1}{16}$", then release. Repeat this process several times.

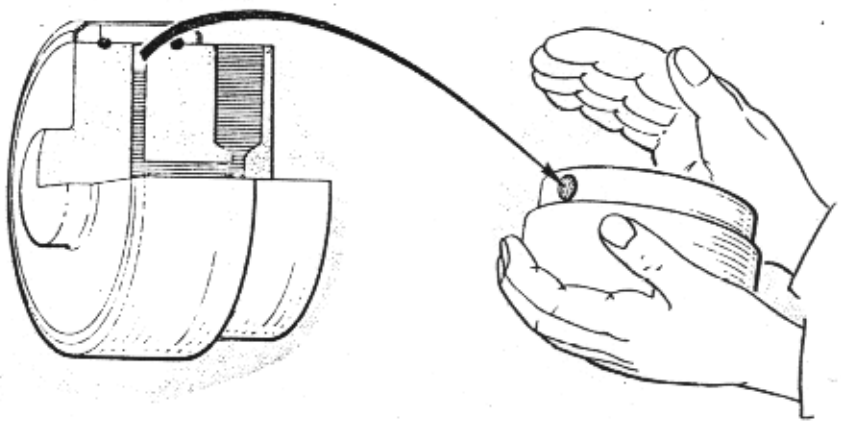


FIG. 6 RELEASING AIR FROM LOADCELL

During the Loadcell Filling Operation an air lock usually occurs in the fluid chamber. This will cause inaccurate weigh dial readings if allowed to remain.

To release Air Lock place Loadcell in hand and give a series of light taps with the other hand.

Replace Union and Pipe

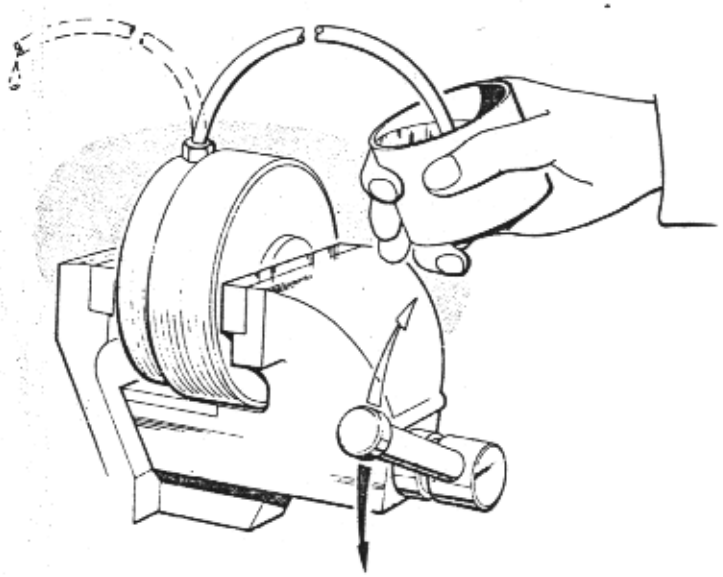


FIG. 7 REMOVING AIR FROM PIPE

Once again it is important to remove all air from pipe. Screw the vice up until fluid protrudes from end of pipe. Placing the pipe end in an improvised cup filled with fluid, release pressure on Loadcell and the fluid will be drawn up the tube. Ensure that the tube is kept upright until fitted to gauge, so that fluid will not run out.

GAUGE

Due to a vacuum the gauge will invariably hold its quota of oil, but in any case, lay the gauge on its face and fix a right-angle adaptor to the oil inlet and fill with Wakefield Girling Brake and Clutch Fluid (crimson), shown in Fig. 8 open the bleed screw situated on the middle coil of the Bowden tube shown in Fig. 1. The weight of the fluid will expel any trace of air. Care should be taken to avoid oil dripping onto the back of the dial face. Ensure that the bleed screw is correctly tightened.

TUBE

The tube requires more careful attention to make sure that all air is extruded from the tube when being filled with oil. One method of dealing with this is to first screw the end of the tube to the loadcell, again holding the loadcell in the vice as shown in Fig. 7 Screw the vice up until oil reaches the top of the tube. Place the pipe end in an improvised cup filled with fluid. Release pressure on the loadcell and the fluid will be drawn up the tube. Ensure that the tube is kept upright until fitted to gauge. Then join the top end of the tube to the gauge making sure that both unions on the gauge and tube are full of oil.

REFITTING

When the filling operation is complete, the gauge and loadcell may be refitted to the machine and tested with known weights, provided the adjusting screws in the gauge which control calibration have not been moved, the gauge should register correctly. A zeroing knob is provided on the side of the gauge, as shown in Fig. 1, this should be adjusted with the hopper empty and down on the loadcell. Check there is a clearance between the hopper and ground before zeroing.

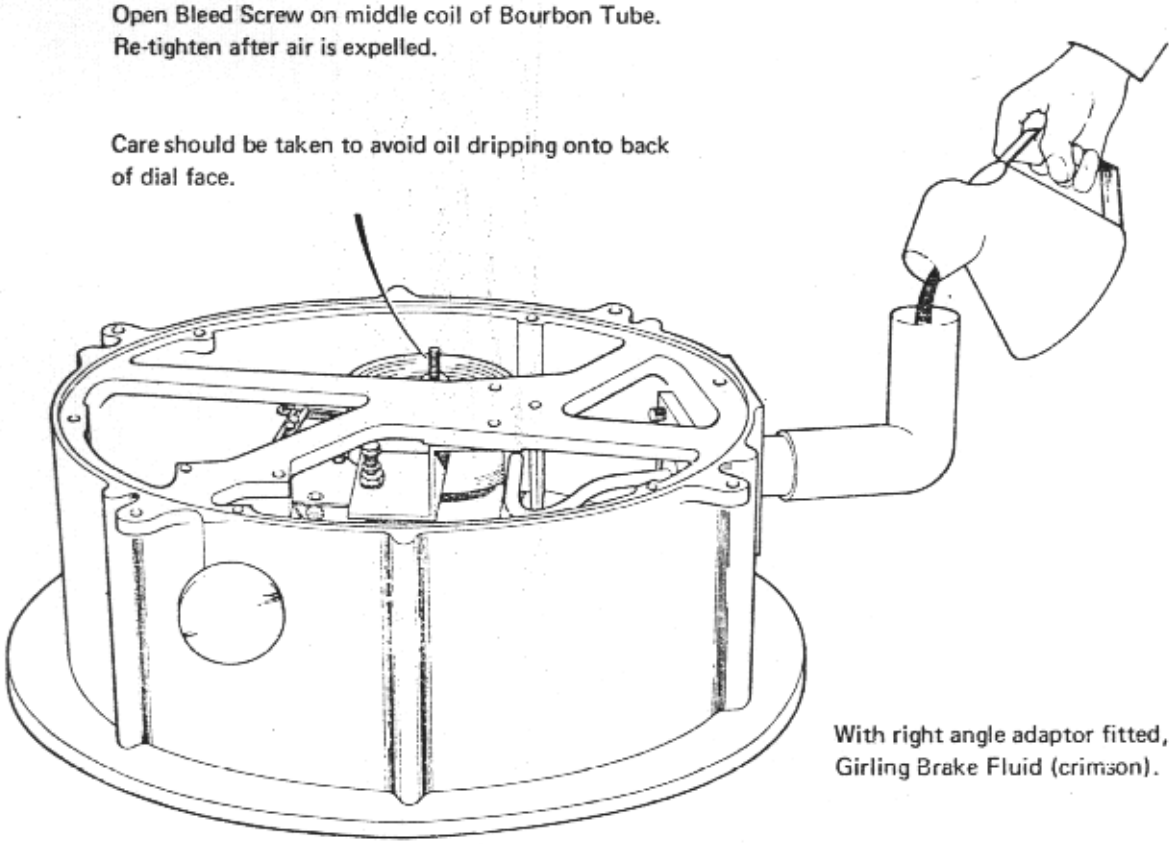


FIG. 8 REFILLING GAUGE

SETTING UP OF WEIGH MECHANISM

All reference numbers given below can be found in Spare Parts section of this manual.

Assuming the loadcell and gauge are completely accurate, the following should now be checked. Obvious faults such as grout and fine aggregate around mechanism and base of hopper one assumes would be checked and cleaned before investigating the finer points.

1. Check that when hopper is in the down position the jib struts (Ref. 2 Group G 1) are clear of the horizontal hopper bars either side and do not foul the welded washers, see **Fig. 9**

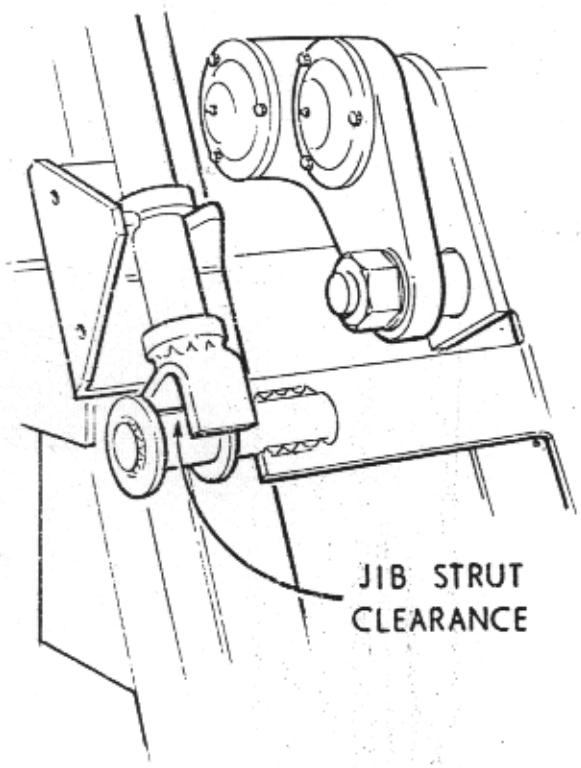


FIG. 9 JIB STRUT CLEARANCE

2. When loadcell striker (Ref. 5. Group D) is resting on the loadcell. Check that the loadcell striker guide (Ref. 6 Group D) does not touch either side of its housing, see **Fig. 10** (look from inside of engine compartments to check this) if it does, slacken off hex nuts either end of the link shaft (Ref. 8 Group D) and correct by moving hopper over away from offending side. Retighten hex nuts and check clearance again after raising and lowering hopper several times.

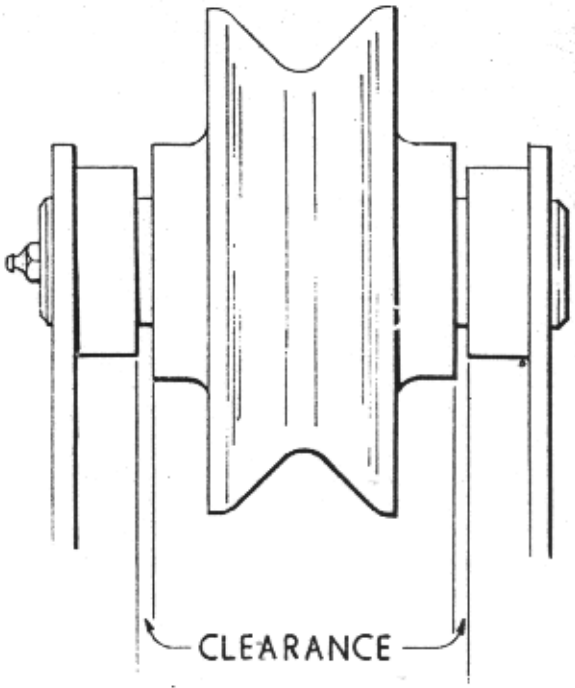


FIG. 10 LOADCELL STRIKER GUIDE CLEARANCE

3. Check loadcell striker guide (Ref. 6 Group D) rotates freely, if it does not, it may be simply due to lack of lubrication. If so lubricate loadcell striker guide pin (Ref. 7 Group D) through grease nipple provided. If loadcell striker guide still does not rotate freely inspect needle roller bearings (Ref. 20 Group D) and seals (Ref. 21 Group D) and replace if necessary.
4. Check loadcell striker (Ref. 5 Group D) has not developed flat spots where it hits the loadcell striker guide (Ref. 6 Group D) as this may cause inaccurate batch weighing. Either turn loadcell striker around 180° and use on undamaged side or replace.

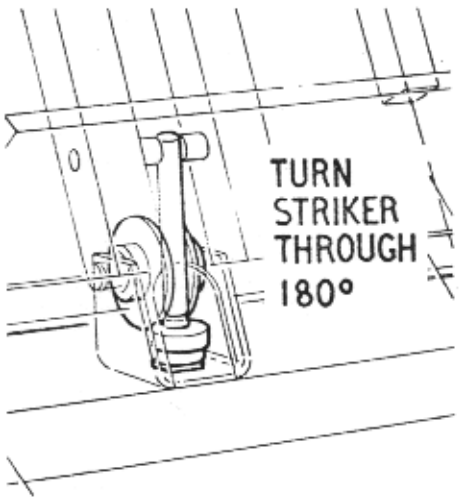


FIG. 11 DAMAGE TO LINK ARMS

5. Incorrect amount of packing under loadcell will cause inaccurate batch weighing. The following checks must be made:-
   a) Check top edge of both link arms (Ref. 10 Group D) are horizontal within 1/16" (2 mm) see Fig. 3, if not adjust loadcell packing— (Ref. 36 Group D).
   b) Check link shaft (Ref. 8 Group D) is clear of holes in hopper cradle (Ref. 1 Group D) either end See Fig. 3 (inspect from both inside and outside engine compartment). Correct by adjusting loadcell packing.
   c) Check link arm needle roller bearings (Ref. 25 Group D) for excessive wear. These may need replacing to ensure complete accuracy of weigh mechanism.
   d) When lowering hopper, loadcell striker (Ref. 5 Group D) must make contact with loadcell striker guide (Ref. 6 Group D) before coming to rest on the loadcell, if it does not reduce packing under loadcell and re-check level of link arms.
   (e) To increase gauge reading at low load's increase packing under loadcell.

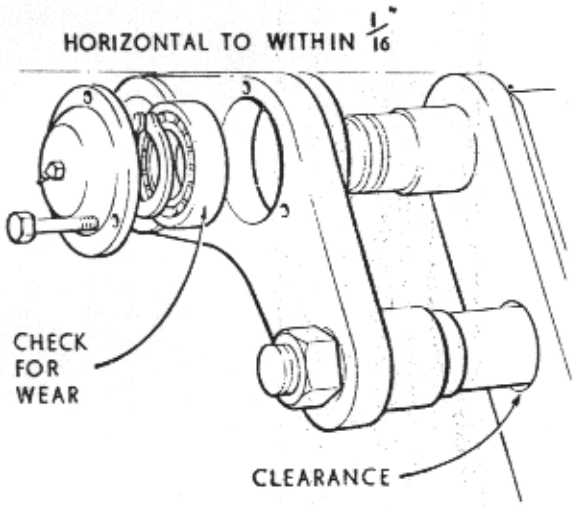


FIG. 12 INACCURACY OF LINK ARMS

6. Check loadcell striker (Ref. 5 Group D) is at the correct angle of 25° to hopper cradle, see Fig. 13 (Ref. 1 Group D). Adjustment can be made by altering loadcell striker packing (Ref. 3 Group D) until correct angle is obtained.
   To increase gauge reading at high load's increase loadcell striker packing.

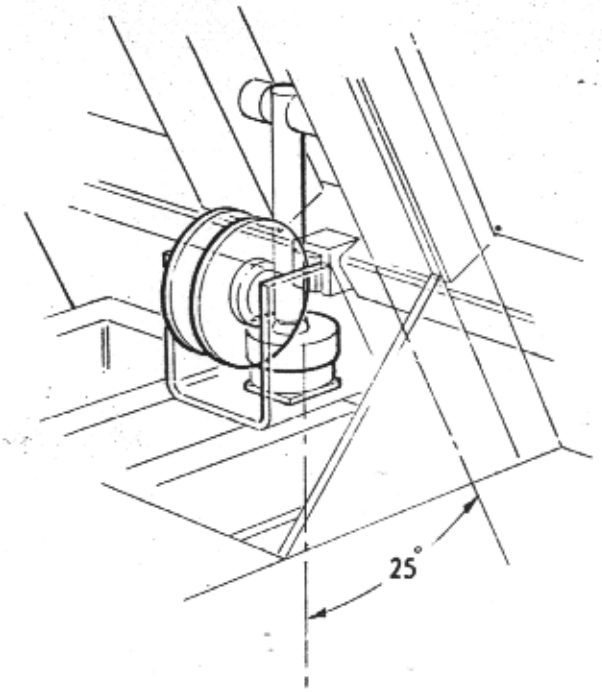


FIG. 13 CORRECT ANGLE OF LOADCELL STRIKER

7. If gauge is sluggish, or fails to move up to zero from pre-set allowance. Check SAE of hydraulic oil. SAE 10 oil for temperatures up to 60° F (16° C) - SAE 20 oil for temperatures between 60°F and 90°F (16° C) and (32° C) - SAE 30 oil for temperatures above 90° F (32° C). Top up system as necessary using an oil of correct grade as noted above. Do not mix different brands of oil. The bleed valve plunger (Ref. 12 Group E5) will not open if incorrect grade is used, see Fig. 14 Also check bleed valve plunger opens fully.

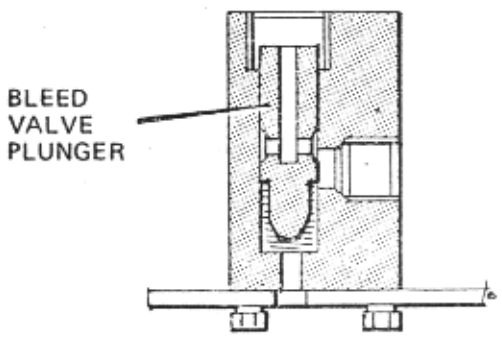
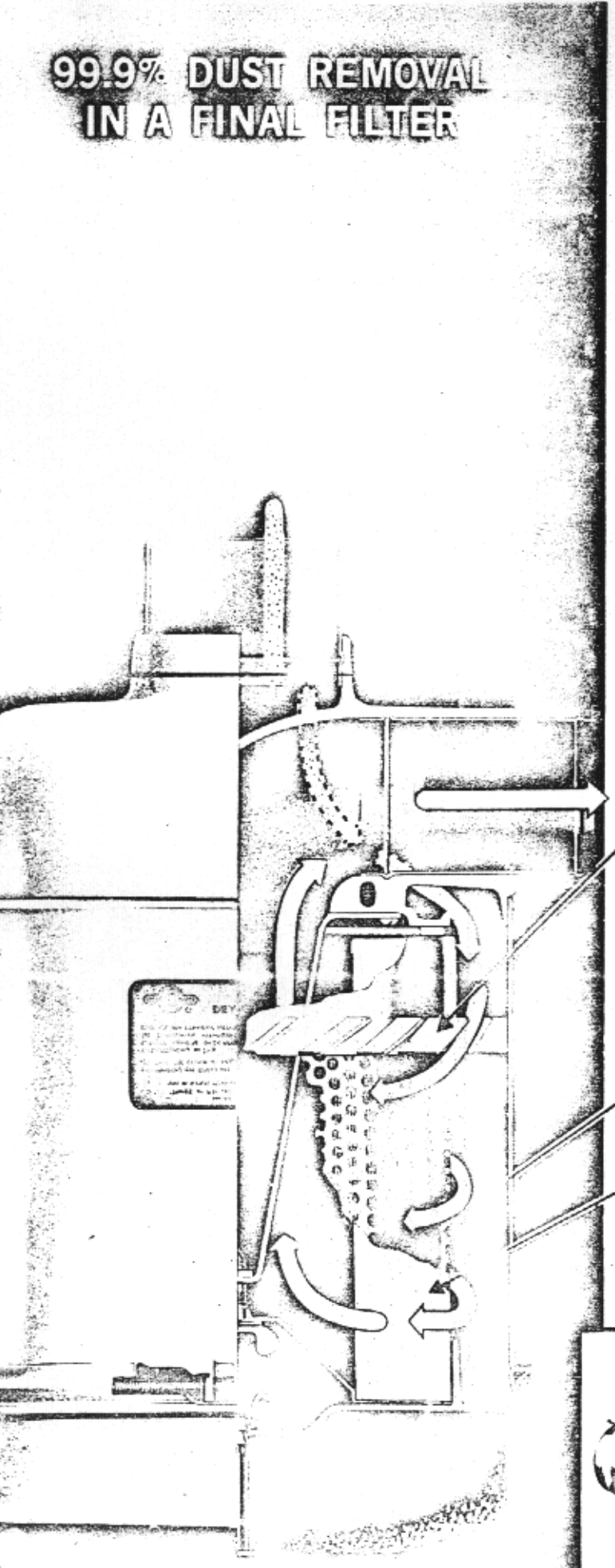


FIG. 14 BLEED VALVE

After all previous checks have been made use known weights evenly distributed in hopper to check correct gauge reading progressively through its range.

99.9% DUST REMOVAL IN A FINAL FILTER



DESIGN AND PERFORMANCE ADVANTAGES

REDUCED ENGINE WEAR The high efficiency of the Cyclopac will provide long engine life under operating conditions where dust is the principal cause of engine wear.

WEIGHT SAVING DESIGN Simplicity of design eliminates unnecessary weight.

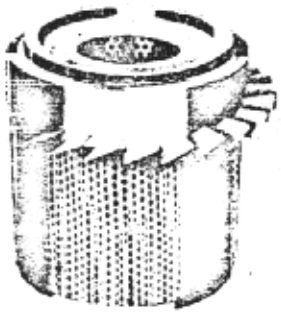
SERVICEABLE DURALIFE FILTER The Duralife paper filter normally requires only infrequent attention. When service is required, the filter need not be replaced. It can be renewed by back-flowing with compressed air or washing in water and Cooper-Kleen Filter Element Cleaner. This feature of Duralife multiplies the usable life of the filter and cuts maintenance costs substantially.

ALL WEATHER OPERATION The Cyclopac is not affected by adverse weather conditions.

INTERCHANGEABILITY Models are available to be used interchangeably with centre tube inlet oil bath air cleaners. Field conversion is easily accomplished.

FLEXIBILITY Cleaner can be mounted either vertically or horizontally to simplify installation, reduce ducting, and often improve the overall appearance of the unit on which it is installed.

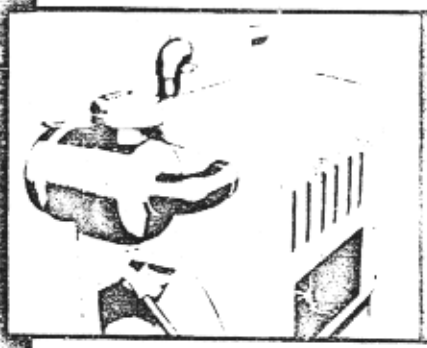
CONSTRUCTION AND OPERATION



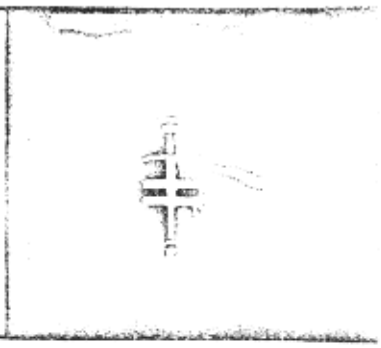
PRE-CLEANER The illustration shows a fin which gives high-speed rotation to the intake air, and separates a large portion of the dust from the air by centrifugal action. The *plastic fin*, *the element*, and the *gasket* are vital parts of the cleaner and are designed into a single replaceable assembly. This design feature assures continued high performance of the cleaner.

EJECTED DUST The dust is swept through a slot in the baffle and collected in the dust cup. On a horizontal installation, the slot in the baffle is located at the top. The cleaner performs equally well in all positions.

DURALIFE ELEMENT The small portion of the dust remaining in the pre-cleaned air is removed by the Duralife element. The element is chemically-treated and oven-cured for resistance to oil and water. Perforated steel supports the element inside and out and, together with rigid metal end caps, provides structural rigidity to this vital part of the cleaner. The element can be cleaned for re-use by one of several recommended processes.



FWG CYCLOPAC installed horizontally on power unit.

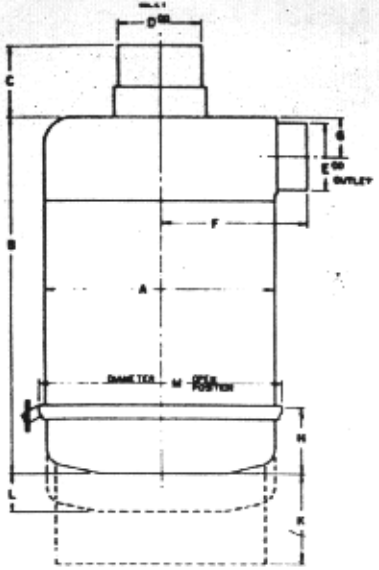


FWA CYCLOPAC installed vertically on over-highway truck.

SPECIFICATIONS

Cyclopac FW Series

AIR CLEANERS



FWA and FWG cleaners can be mounted either horizontally or vertically.

FWA

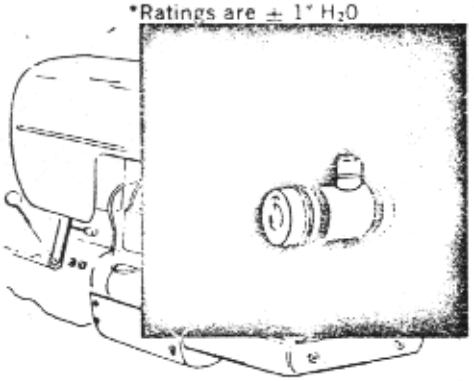
Air Cleaner Model	* Air Flow Rating At 8" H_2O	A	B	C	D	E	F	G	H	K	L	M	Approx. Wt. Lbs.
DA 128	80	5 1/2	14 31/32	1 7/8	2	2	4	1 7/16	3 3/16	8 1/2	1 3/8	6 1/8	6
DA 127	110	6 1/2	17 3/32	2 1/16	2 1/2	2 1/4	4 1/2	1 23/32	3 1/2	8 11/16	1 3/8	7 3/8	8
DA 129	190	8	18 23/32	2 1/16	3	3	6 1/16	2 3/16	3 1/2	9 11/16	1 3/8	8 7/8	10 1/2
DA 131	290	10 3/16	18 1/2	3 1/2	3 1/2	4	7 1/16	2 1/4	4	7 3/16	1 1/2	11 1/16	20
DA 141	385	11 1/16	19 1/4	3 1/2	4 1/2	4	7 1/16	2 3/8	4	7 3/16	1 1/2	13 3/8	28

*Ratings are ± 1" H_2O

FWG

Air Cleaner Model	* Air Flow Rating At 8" H_2O	A	B	C	D	E	F	G	H	K	L	M	Approx. Wt. Lbs.
DA 121	95	5 1/2	12 7/32	1 3/8	2	2	4	1 1/4	3 7/32	8 17/32	1 3/8	6 1/8	4 3/4
DA 122	140	6 1/2	13 23/32	1 1/16	2 1/2	2 1/4	4 1/2	1 1/2	3 1/2	8 15/16	1 3/8	7 3/8	6 1/2
DA 123	250	8	14 23/32	1 1/16	3	3	6 1/16	1 1/2	3 1/2	9 7/8	1 3/8	8 7/8	9 1/2
DA 130	330	10 3/16	16 7/32	1 3/4	4	4	7 1/2	2 1/16	4	7 3/32	1 1/4	11 1/16	17
DA 140	450	11 1/16	17 29/32	3 1/32	5	5	8 29/32	4 1/16	4	10 3/32	1 1/2	13 3/8	29
DA 150	730	14	21 1/16	2 1/4	6	6	10 1/8	5 9/32	4	13 1/8	1	15 1/16	40 1/2

*Ratings are ± 1" H_2O



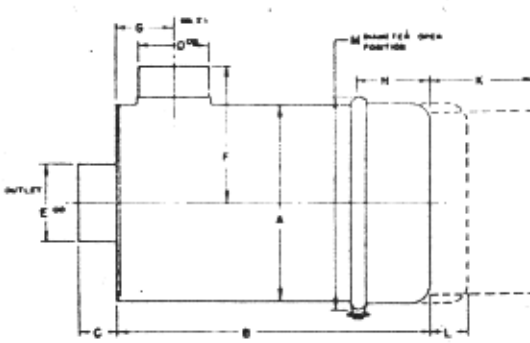
FWG CYCLOPAC installed horizontally on farm tractor.

COOPER-KLEEN FILTER CLEANER

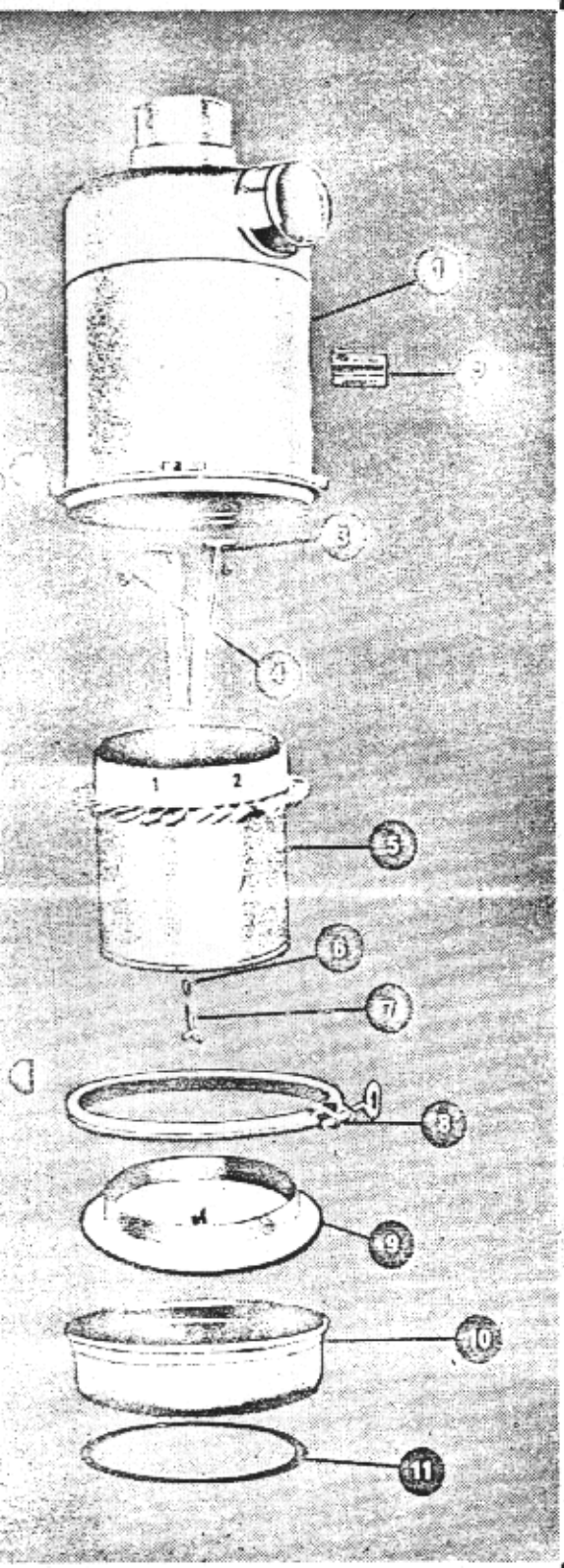
Detergent with carbon dissolving additive. Mix with water. Cleans any washable paper filter.

RESTRICTION INDICATOR

Signal locks in view when filter element requires servicing. Mount on dash or cleaner ducting. (See separate leaflet.)



Cyclopac



AIR CLEANER SERVICE PARTS

FWA

	DA 128	DA 127	DA 129	DA 131	DA 141			
1 Body Assy.	DU 807	DU 798	DU 817	DU 898	DU 1236			
2 Instruction Transfer	DU 669A	DU 669A	DU 669A	DU 669A	DU 669A			
3 Yoke	*	*	*	*	*			
4 Lockwasher Screw	*	*	*	*	*			
5 Element Assy	**DU 664**	**DU 750**	**DU 770**	**DU 879**	**DU 1233**			
6 Gasket Washer	DU 658	DU 658	DU 658	DU 260	DU 260			
7 Wing Nut	DU 657	DU 657	DU 657	DU 257	DU 257			
8 Clamp Assy.	DU 665	DU 749	DU 420	DU 882	DU 481			
9 Baffle	DU 641	DU 747	DU 766	DU 880	DU 1207			
10 Cup Assy.	DU 666	DU 748	DU 769	DU 881	DU 1208			
11 Cup Gasket	None	None	None	DU 876	DU 314			

* Not a Service Part.

FWG

	DA 121	DA 122	DA 123	DA 130	DA 140	DA 150	
1 Body Assy.	DU 667	DU 753	DU 773	DU 877	DU 1205	DU 1517	
2 Instruction Transfer	DU 669A	DU 669A	DU 669A	DU 669A	DU 669A	DU 669A	
3 Yoke	*	*	*	*	*	*	
4 Lockw'her Screw	*	*	*	*	*	*	
5 Element Assy.	**DU 664**	**DU 750**	**DU 770**	**DU 879**	**DU 1204**	**DU 1518**	
6 Gasket Washer	DU 658	DU 658	DU 658	DU 260	DU 658	DU 658	
7 Wing Nut	DU 657	DU 657	DU 657	DU 257	DU 657	DU 657	
8 Clamp Assy.	DU 665	DU 749	DU 420	DU 882	DU 481	DU 977	
9 Baffle	DU 641	DU 747	DU 766	DU 880	DU 1207	DU 1519	
10 Cup Assy.	DU 666	DU 748	DU 769	DU 881	DU 1208	DU 1520	
11 Cup Gasket	None	None	None	DU 876	DU 314	DU 223	

* Not Service Part.

TURNER & NEWALL LIMITED

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INSPECTION CHECK-OFF LIST

At every air cleaner service inspect the following for damage or leaks. Take the necessary corrective measures.

- ☐ Dust cup retainer damage
- ☐ Dust cup (sealing edge dam a;e)
- ☐ Element gasket washer
- ☐ Element gasket (part of element)
- ☐ Element leaks, damage
- ☐ Connections between air cleaner and engine

NOTE: Element leaks are indicated by: (1) Areas of concentrated dust on clean side of element; (2) Light shining through holes when light bulb is held inside element.

ABOVE LIST ILLUSTRATES EASY SERVICE AND FEW PARTS TO INSPECT. PROPER FUNCTION OF THE AIR CLEANER AND RESULTANT TOP PERFORMANCE IS GUARANTEED ONLY THROUGH USE OF GENUINE DURALIFE FILTER ELEMENTS.

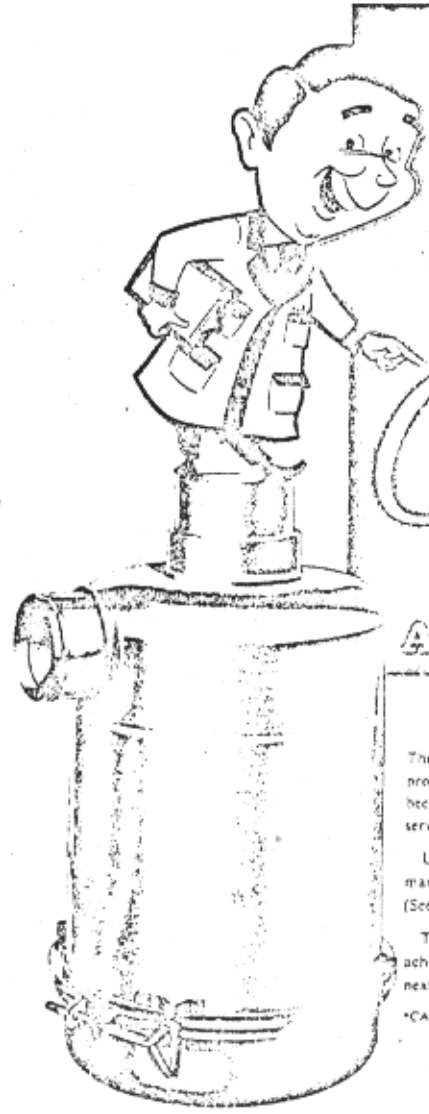
Element is designed so it can be removed for service even if body of air cleaner is dented.

GENERAL SERVICE

The air cleaner should be inspected constantly for leaks. A damaged air cleaner can seriously affect the performance and life of the engine. The following simple service steps are easily made while the engine is being serviced in the field.

The simple service steps are as follows:

1. Watch all connections for mechanical tightness. Be sure cleaner outlet pipe is not fractured.
2. If cleaner has been dented or damaged, check all connections immediately.
3. In case of leakage and if adjustment does not correct the trouble, replace necessary parts or gaskets.



SERVICE BULLETIN

Servicing Instructions

Cyclopac FW SERIES AIR CLEANERS

Brit. Patent No. 907811

The FW air cleaner is designed to give you maximum engine protection with a minimum of parts. Maintenance costs are low because the service parts of the air cleaner are few and easily serviced. The heart of the air cleaner is cleanable and reuseable.*

Use the Coopers restriction indicator and you will get the maximum life and minimum service costs for your operation. (See separate leaflet.)

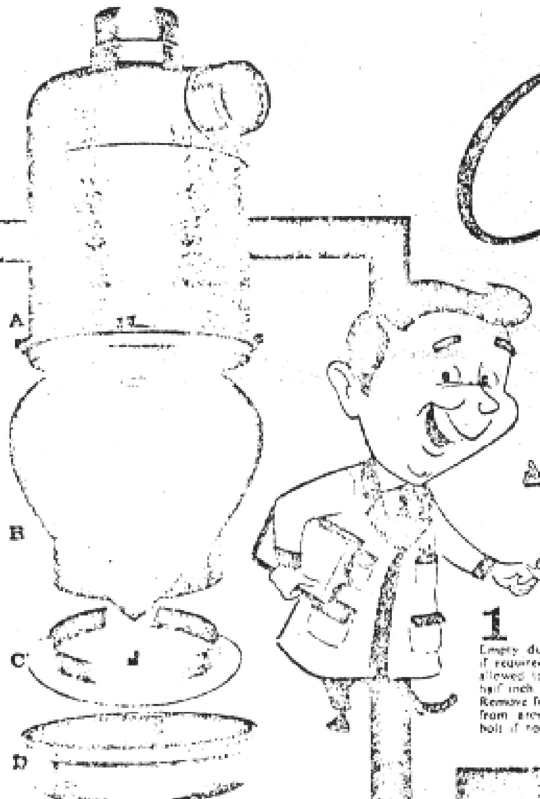
These basic advantages designed into the air cleaner can be achieved provided you follow the simple service steps on the next page.

*CAUTION: Only Duralife filter elements should be used. They are designed for maximum performance with simplicity of operation and maintenance.

Made under licence to the Donaldson Company Inc. Minneapolis, U.S.A.

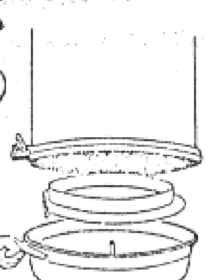
Coopers Filters Limited

Abergavenny, Monmouthshire, NP7 9LW. Telephone: 2041.

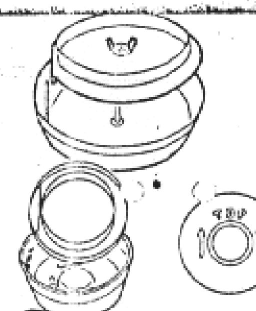


Cyclopac FW SERIES AIR CLEANERS

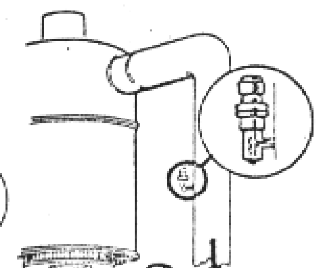
Maximum engine protection against the ravages of dust is possible ONLY if the air cleaner is serviced at *regular* intervals. Over servicing does not utilize the air cleaner features to the fullest. Set up a schedule and KEEP on schedule. The procedure is simple — just follow these easy steps as shown.



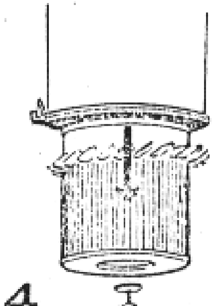
1 Empty dust cup daily or more often if required. Dust level should not be allowed to build up to less than one-half inch from slot in dust cup baffle. Remove foreign material such as leaves from around filter and tighten wing bolt if necessary.



2 Assembly of baffle to dust cup (top view) for 10" dia. air cleaner and larger shows bolt and nut retention. Lower view (for under 10" dia.) use lip on baffle for retention. Note: For horizontal mounting rotate cup to proper position as shown by arrows on bottom of cup.



3 Restriction indicator (See separate leaflet) should be located in transfer piping between air cleaner outlet and engine manifold away from bends or elbows. It will indicate when to service Duralife element.



4 When plugged element is indicated by restriction indicator or other means, remove wing bolt and gasket washer. Remove element.

5 For minimum vehicle down time replace element with a new or cleaned Duralife element. Service later as indicated in the following steps. If element is to be cleaned for immediate re-use protect induction system by replacing dust cup.

6 Inspect element gasket for damage and replace element if necessary.

The Cyclopac FW style air cleaner is designed with a minimum number of parts. The heart of the air cleaner is one piece and can be cleaned and reused. The air cleaner is designed for fast, easy disassembly so that it may be serviced efficiently and quickly.

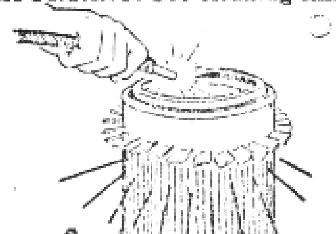
A Body Assembly. This sturdy shell contains the ducting and sealing surface of the air cleaner.

B Duralife Filter Element. The heart of the air cleaner consists of the initial separator (fins), the final filter and the sealing gasket in one cleanable and reusable part. Rigid manufacturing specifications and controls are the key to the built-in quality of this part.

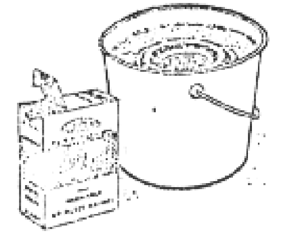
C Baffle Assembly. Retains the dirt in the dust cup.

D Dust Cup is reservoir for dust separated from air stream by the initial separator.

IMPORTANT: Pre-cleaning fins are NOT removable!

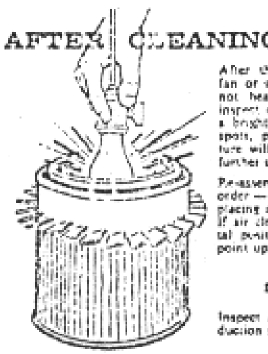


A Direct dry, clean air up and down pleats on the clean air side of the Duralife element. Caution: Air pressure at nozzle must not exceed 100 PSI. Maintain reasonable distance between nozzle and Duralife element.



B COOPER-KLEEN DETERGENT AIR FILTER COMPOUND. [illegible] COOPER-KLEEN is non-caustic, and makes an excellent cleaner for removing oil and grease from ALL surfaces. DIRECTIONS FOR USE: [illegible] METHOD: [illegible] DO NOT [illegible] DRY. A properly washed element will provide 90% to 100% of new element life.

AFTER CLEANING AND DRYING



After the element has been dried (a fan or air draft may be used, but do not heat element to hasten drying), inspect element for damage by placing a bright light inside the element. Thin spots, pin holes or the slightest rupture will render the cartridge unfit for further use.

Re-assemble the air cleaner in reverse order — inspecting all gaskets and replacing any that are questionable. If air cleaner is mounted in a horizontal position, be sure dust cup arrows point up.

CAUTION:
DO NOT USE OIL IN DUST CUP

Inspect and tighten all air cleaner induction system connections.

ELEMENT SHOULD BE REPLACED AFTER 6 CLEANINGS OR ANNUALLY

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