

# POWERFAB 125 Digger

## Operating Instructions

Before commencing to work the machine check that components have not been damaged.

Before operating the machine study the instructions in this manual and familiarise yourself with the controls. See illustration 7. There are certain fundamentals which should always be applied whatever the skill of the operator. These are mainly concerned with safety — your safety and that of others.

Before starting work walk over your work area — check for buried services. If in doubt ask someone who knows the site.

Do not dig in hazardous conditions.

Think out your operating sequence (do not dig yourself into a corner or have to cross your own trenches).

Ensure that your stand will bear the machine weight without collapsing.

### OPERATING AND SITE MANOEUVRE

The digging operation with this excavator is identical to that used with conventional wheel and track driven excavators. Since this machine does not possess a transmission system any forward or reverse movement must be achieved by walking the machine. This procedure is common to all excavators. The technique may be quickly mastered by any operator using the bucket and ground as a fulcrum point with Boom and Dipper arm extended. By operating the Boom and Dipper cylinders the machine may be either rolled forward on its two wheels or pushed backwards. The machine may also be moved in any arc by swinging the Boom to place the Bucket in its required ground position to give turning movement.

Care must be taken that the rear and two front stabilisers are in the correct position before digging. The rear stabiliser must be pushed down until the wheels have been raised clear of the ground by approximately 2" (50mm). The front stabiliser legs may be fitted in either of two positions. To do this remove its outer pin only, then swing the leg until alternative hole is in line with the hole in the chassis cross member. Insert pin and fit spring clip.

The two positions are: —

- (1) The "out position" where the legs are pointing out and away from the chassis and the feet are at their widest centres, this is the position that will give maximum stability and the position that must be used for all normal digging operations.
- (2) The "in position" where the legs are lying in line with the chassis and the feet are at their narrowest centres. This is the position that will give minimum stability. This position is primarily intended for the following conditions: —
  - (A) Access purpose when passing the machine through a restricted opening.
  - (B) When digging close to a wall where the leg nearest to the wall will be fitted in the in position. NOTE the other leg must be fitted in the out position where slewing is required.
  - (C) When using a concrete breaker in a narrow passage where both legs are in the in position and no slewing operation is to be carried out.

### TRENCH DIGGING

Before commencing fix a marker line. This should be a good long sight and is important in that a bad start is hard to correct.

Position your machine over and along the line and fully extend the Boom and Dipper arms with the Boom slew post over the line.

Now raise the wheels from the ground by pushing down the rear outrigger.

### NOTE

For the most efficient working conditions the outriggers must penetrate the ground deep enough to overcome the resistance to digging

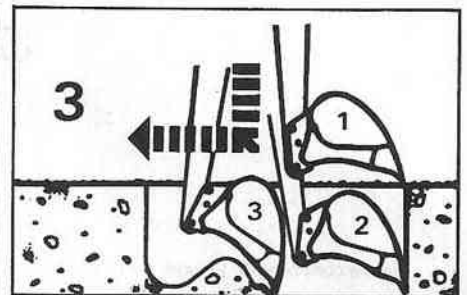
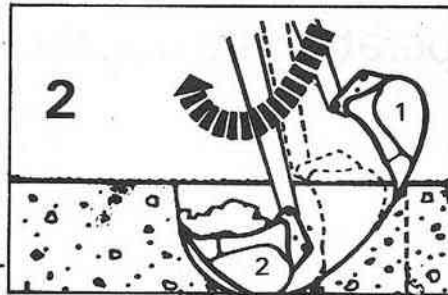
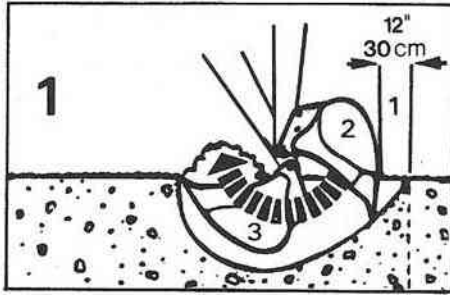
The weight ratio is such that the machine is most efficient when operating with a person whose weight is at least 60 kilos (130 lbs). Where the operator is below this weight a rear ballast may be added to the rear of the machine up to a maximum of 45 kilos (100 lbs) to ensure good loading stability.

Avoid steep gradients and unstable conditions which are liable to affect the stability of the machine. Where a gradient which is at right angles to the line of the trench is excessive a levelling operation should be carried out before digging the trench.

An axle extension channel is also supplied (item 10 on fig 1 of parts section). This is provided as an option and with the standard stub axles fitted, will provide greater stability when walking the machine on open ground. This is not suitable for use where access is restricted, and here the standard stub axles should be fitted direct to the chassis.

We may proceed with the trench digging operation as shown in illustration 1 to 6 inclusive.

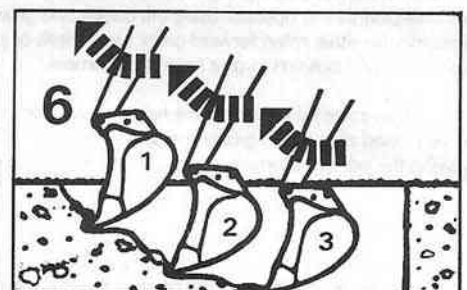
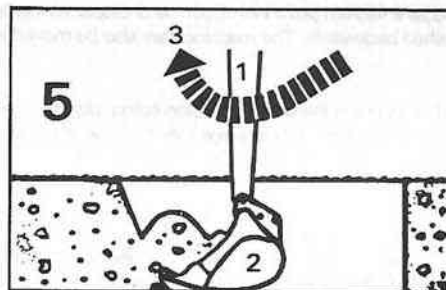
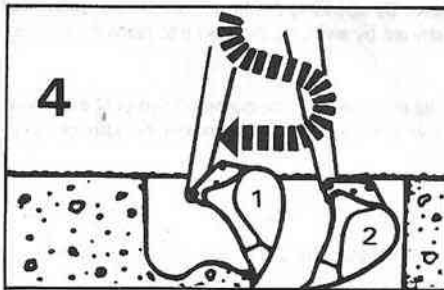
# OPENING A DIG



1. Enter bucket here to allow for bucket rolling.
2. Apply dipper pressure and lightly roll the bucket.
3. Allow the boom to follow the bucket rotation.

1. Sliding action of bucket compacts earth.
2. Allow bucket roll to bring the bucket clear — then lift out. Bucket fills in short distance at this point.

1. Lower the boom moving dipper away to keep bucket lip vertical.
2. Fully roll the bucket as it reaches bottom.
3. Pull dipper inward 60 cm (2 ft) to clear the back of the bucket.
4. Gently open the boom lift service to allow natural lift to the boom.



1. Push dipper away and at the same time —
2. Roll the bucket inward keeping it level with the bottom of the dig.

1. Pull the dipper inwards and —
2. Gently roll the bucket to keep the teeth at the correct angle with the bottom of the dig.
3. Continue to roll the bucket and lift clear. Move the dipper outwards and prepare to dump.

1. On subsequent "pitches" work to the bottom of the dig in layers.
- 2,3. Layer thickness depends upon material density.

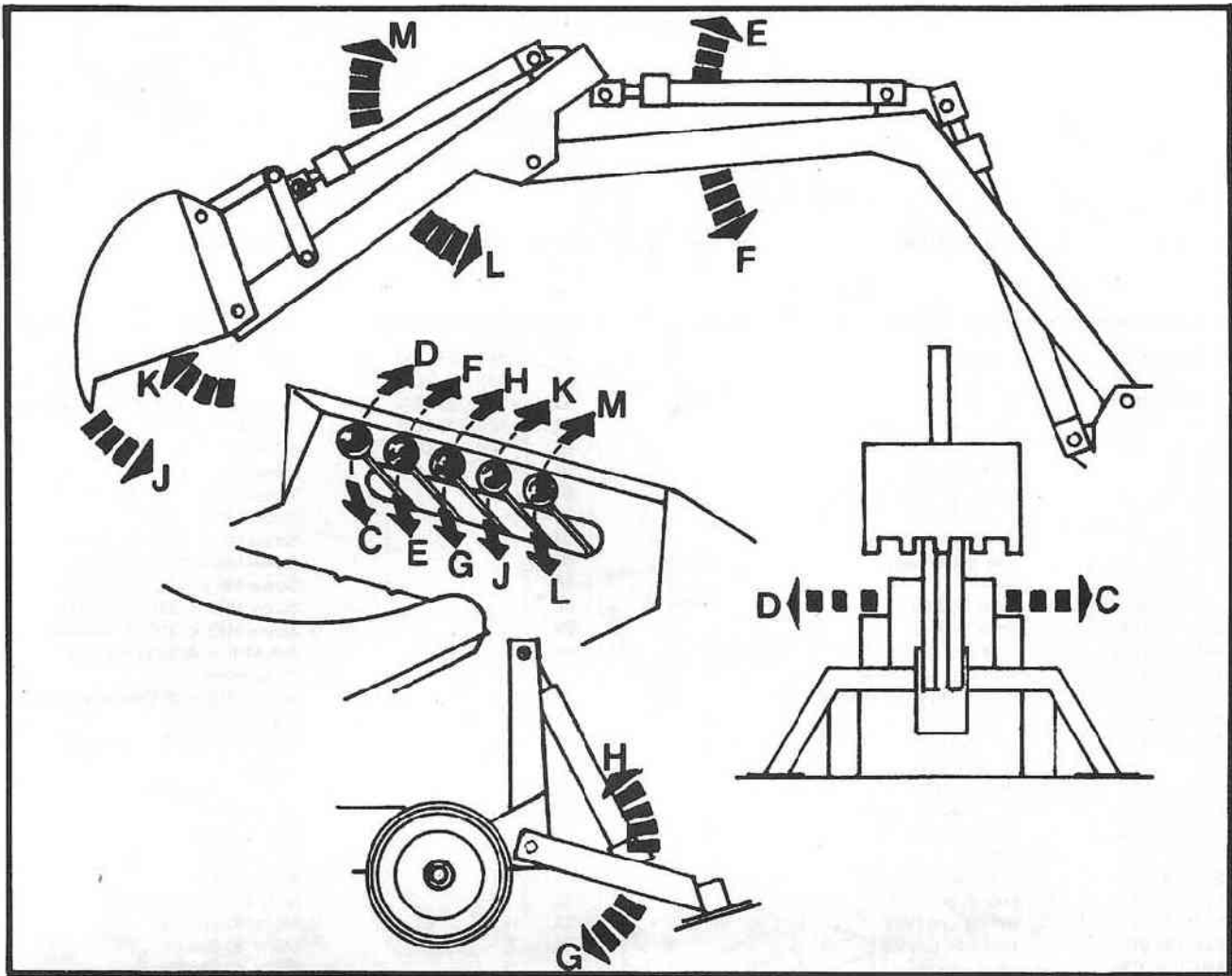
## CLEARING BURIED SERVICES

A major danger in excavating is the possibility of striking buried services unless you are certain that none exist in your work area — proceed with caution and watch for tell tale signs such as

1. changes to soil texture or colour
2. patches of gravel or sand
3. ceramic tiles or earthenware piping
4. plastic marker strips — in some places it is practice to bury them 150 mm (6") above cables

Always treat such signs with caution and hand dig if necessary to expose the object — once exposed do not dig down with your machine to clear it. The compressive action of excavating may break or damage it.

Where a possibility of buried services exists it is safer to dig in layers similar to that shown in illustration 6.



## EXCAVATOR CONTROLS

### SAFETY PRECAUTIONS

1. Check that wheel split pins are in position and that tyres are fully inflated. Pressure should be 60 PSI (4 Bar)
2. Periodically check that pins are locked in position and that all bolts are tight.
3. When parking fully extended excavator and lower bucket to ground then stop engine.
4. Check for obstruction, or buried services.
5. Avoid steep gradients.
6. Do not work on or under the machine with the engine running.
7. Stop Engine before filling hydraulic system.
8. Check frequently for leaks or damage to hydraulic system.
9. Where front stabiliser legs have been moved to the in position for passing through a narrow opening. They must be re-positioned in the out position before commencement of the digging cycle when on open ground. NEVER SLEW OVER A FRONT STABILISER LEG THAT IS FITTED IN THE IN POSITION.
10. If it has been found necessary to remove a stabiliser foot for access purposes, care must be taken that it is replaced and the bolts fully tightened down before commencement of digging operation.
11. When trench digging never move forward over the trench. This could cause the trench side to collapse which could take the machine with it. Always move backward away from the trench.
12. The operating valve relief unit has been factory set. Never try to adjust this.
13. The operator should never personally enter a deep trench without taking safety precautions against trench wall collapse. Shutter and support the trench sides in the area where it is required to work.

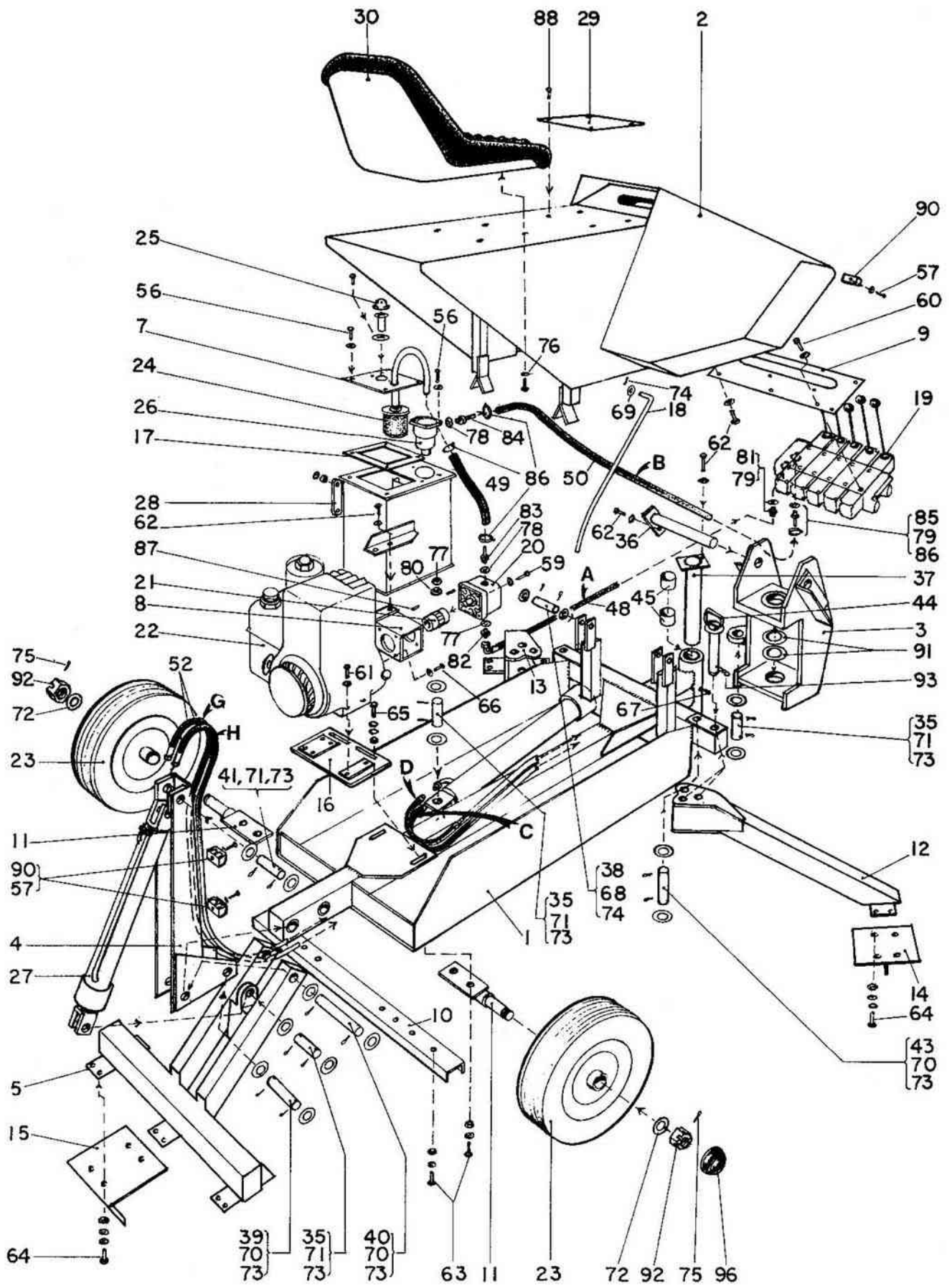
# PARTS LIST

ITEM	PART NO.	DESCRIPTION	TOTAL QTY	ITEM	PART NO.	DESCRIPTION	TOTAL QTY
1.	WA/125/0082.	Chassis	1	51.	MB/125/0036.	¼" to ¼" BSP Hose 1.24 m lg	2
2.	WA/125/0054.	Canopy	1	52.	MB/125/0037.	¼" to ¼" BSP Hose 2.36 m lg	2
3.	WA/125/0027.	Slewpost	1	53.	MB/125/0061.	¼" to ¼" x 90BSP hose 1.90m lg	2
4.	WA/125/0035.	Rear Stabiliser Bracket	1	54.	MB/125/0035.	¼" to ¼" BSP Hose 1.90m	2
5.	WA/125/0036.	Rear Stabiliser Leg	1	55.	MB/125/0034.	¼" to ¼" BSP Hose 3.25m	2
6.	WA/125/0043.	Hydraulic Tank	1	56.		Screw M6 x 16 C/W Washer	6
7.	WA/125/0050.	Hydraulic Tank Cover Plate	1	57.		Screw M6 x 35 C/W Washer	14
8.	WA/125/0042.	Pump Bracket	1	58.		Screw M6 x 60 C/W Washer	2
9.	PS/125/0135.	Valve Plate	1	59.		Screw M6 x 25 C/W Washer	4
10.	PS/125/0182.	Axle Extension	1	60.		Screw M8 x 15 C/W Washer	4
11.	WA/125/0077.	Axle	2	61.		Screw M8 x 40 C/W Washer	4
12.	WA/125/0085.	Front Stabiliser R/H	1	62.		Screw M10 x 20 C/W Washer	11
13.	WA/125/0084.	Front Stabiliser L/H	1	63.		Screw M10 x 30 C/W Washer	8
14.	WA/125/0053.	Foot Pad (Front)	2	64.		Bolt M16 x 45 C/W nut and 2 washers	16
15.	XA/125/0003.	Rear Outrigger Foot	2	65.		Screw M16 x 35 C/W nut and 2 H.D. Washers	2
16.	WA/125/0049.	Engine Mounting Plate	1	66.		Screw 5/16 UNF x ¾" C/W washers	4
17.	MB/125/0001.	Tank Gasket	1	67.		½" BSP Grease nipple	5
18.	RS/125/0038.	Support Rod	1	68.		M 12 Washer	4
19.	MB/125/0014.	Valve (5 Bank)	1	69.		M 16 Washer	1
20.	MB/125/0023.	Hydraulic Pump (C/W KEY)	1	70.		M 20 Washer	8
21.	MB/125/0018.	Pump Drive Coupling	1	71.		M 22 Washer	36
22.	MB/125/0030.	Honda Engine	1	72.		M 20 Machined Washer	2
23.	MB/125/0042.	Wheel	2	73.		M5 x 40 Split Pin	42
24.	MB/125/0016.	Hydraulic Strainer	1	74.		M3 x 40 Split Pin	5
25.	MB/125/0024.	Filler Cap	1	75.		M4 x 40 Split Pin	2
26.	MB/125/0017.	Return Line Filter	1	76.		5/16" UMC x ¼" Screw C/W Washer	4
27.	MB/125/0012.	Hydraulic Cylinder	5	77.	MB/125/0051	¼" B.S.P. Dowty Seal	2
28.	MB/125/0025.	Level Gauge	1	78.	MB/125/0052.	½" B.S.P. Dowty Seal	2
29.	MB/125/0019.	Instruction Plate	1	79.	MB/125/0053.	¼" B.S.P. Dowty Seal	12
30.	MB/125/0041.	Seat	1	80.	MB/125/0054.	¼" B.S.P. Tank Plug	1
31.	WA/125/0029.	Boom	1	81.	MB/125/0055.	½" to ¼" B.S.P. Adaptor	10
32.	WA/125/0031.	Bucket Arm	1	82.	MB/125/0056.	¼" to ¼" Adaptor	1
33.	WA/125/0044.	Bucket Push Link	1	83.	MB/125/0057.	¾" to ¾" dia stand connector	1
34.	WA/125/0008.	Bucket Link	2	84.	MB/125/0058.	¾" to ½" dia stand connector	1
35.	RS/125/0005.	Pin 22 x 70 Long	13	85.	MB/125/0059.	½" to ½" dia stand connector	1
36.	PP/125/0002.	Pin 32 dia x 230 Long	1	86.	MB/125/0022.	¾" dia Jubilee Clips	4
37.	PP/125/0007.	Pin 50 dia x 261 Long	1	87.	MB/125/0040.	Engine Shaft 20 4 x 4mm	
38.	RS/125/0041.	Pin 12 dia x 90 Long	2	88.		No.6 Pan Self tapping screw	4
39.	PP/125/0003.	Pin 20 dia x 55 Long	1	89.	MB/125/0020.	Single Pipe Clasp	8
40.	PP/125/0004.	Pin 20 dia x 255 Long	1	90.	MB/125/0021.	Double Pipe Clasp	10
41.	RS/125/0020.	Pin 22 dia x 125 Long	1	91.	MB/125/0050.	Pivot Thrust Washer	2
42.	PP/125/0001.	Pin 25 dia x 146 Long	3	92.		M 20 Castle Nut	2
43.	RS/125/0045.	Pin 20 dia x 145 Long	2	93.	MB/125/0062.	Spring Clip	6
44.	WA/125/0086.	Pin 20 dia x 125 Long	2	94.	MB/125/0063.	½" to ¼" Restrictor Adaptor	1
45.	MB/125/3060.	Bush 60 long x 50 dia	2	95.		Paint ½ pint (0.881) Tin	1
46.	MB/125/3240.	Bush 40 long x 32 dia	2	96.	MB/125/0064.	Hub Cap	2
47.	MB/125/2530.	Bush 30 long x 25 dia	6				
48.	MB/125/0038.	¼" to ¼" x 90BSP Hose 0.812 m long	1				
49.	MB/125/0033.	16 mm Bore Hose 0.165 m long	1				
50.	MB/125/0039.	12.5 mm BORE HOSE 0.686 m long	1				

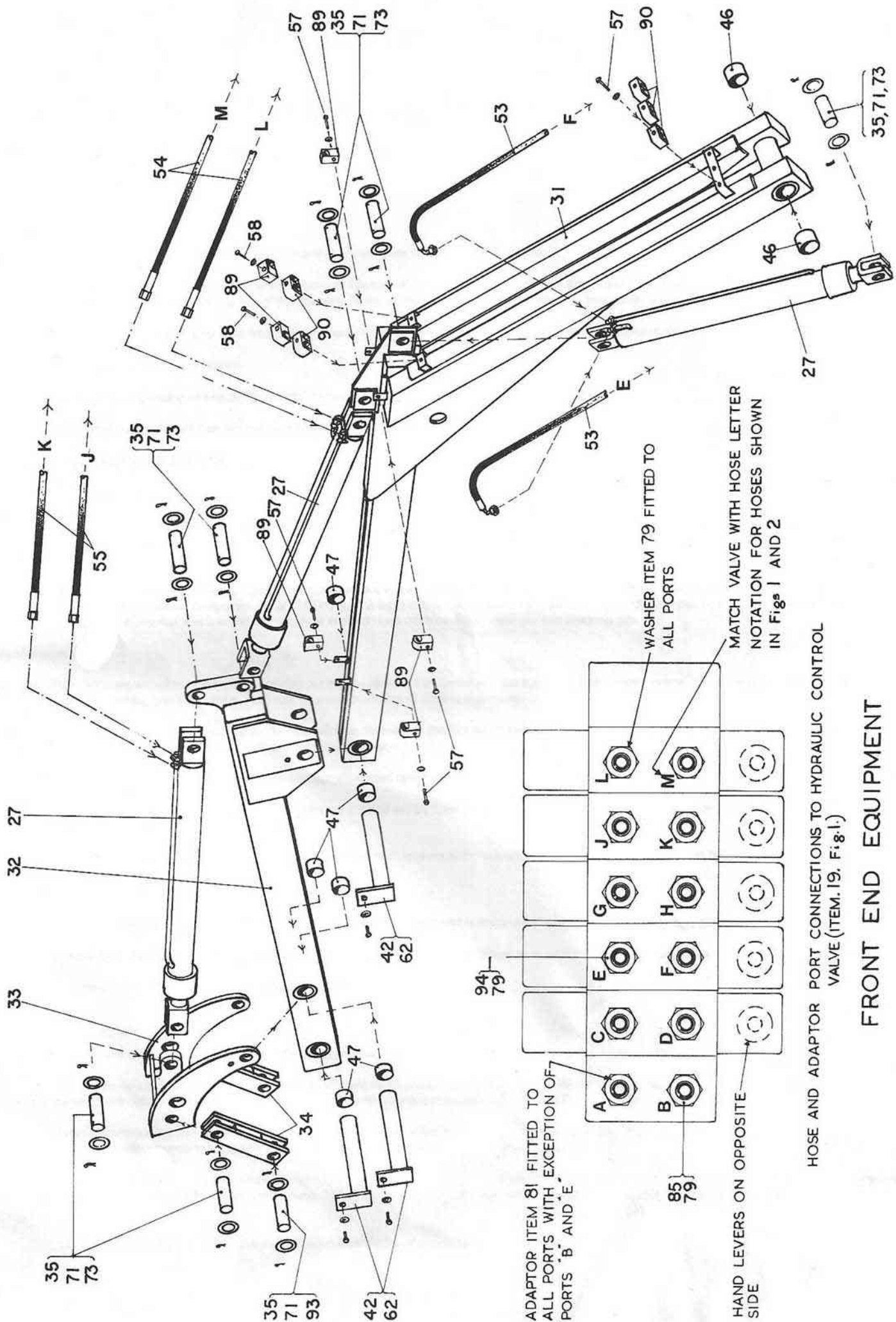
Recommended engine oil SAE IOW — 40

Recommended Hydraulic Oil Esso Nuto H68 or equivalent

Fig.1.



CHASSIS AND POWER UNIT



ADAPTOR ITEM 81 FITTED TO ALL PORTS WITH EXCEPTION OF PORTS B AND E

94-79

WASHER ITEM 79 FITTED TO ALL PORTS

MATCH VALVE WITH HOSE LETTER NOTATION FOR HOSES SHOWN IN FIGS 1 AND 2

HAND LEVERS ON OPPOSITE SIDE

HOSE AND ADAPTOR PORT CONNECTIONS TO HYDRAULIC CONTROL VALVE (ITEM. 19, FIG. 1)

### FRONT END EQUIPMENT

35,71,73