



**MASALTA**



# OPERATION MANUAL PLATE COMPACTOR MS100 (PREVIOUSLY MS20)



**WARNING**

**CE**

To reduce the risk of injury, all operators and maintenance personnel must read and understand these instructions before operating, changing accessories, or performing maintenance on Masalta power equipment. All possible situations cannot be covered in these instructions. Care must be exercised by everyone using, Maintaining or working near this equipment.

## CONTENTS

Introduction .....	1
Application .....	1
Functions and controls.....	1
Accessories.....	1
Hazards and risks.....	1-2
Operation .....	2
Care and preventive maintenance.....	2-4
Specification .....	5
Transportation.....	5
Trouble shooting.....	5
Replacement Parts List .....	7-14
Warranty .....	15
Maintenance Record .....	15
EC Declaration .....	16

## INTRODUCTION

Thanks for your selection of this equipment. We have taken care in the design, manufacture and testing of the product. It is covered by a six month warranty. Should service or spare parts be required, prompt and efficient service is available from our company or our agent.

### General safety instruction for the operation of power equipment

The goal of our company is to produce power equipment that helps the operator work safely and efficiently. The most important safety device for this or any tool is the operator. Care and good judgement are the best protection against injury. All possible hazards cannot be covered here, but we have tried to highlight some of the important items, individuals should look for and obey caution, warning and danger signs placed on equipment, and displayed in the workplace. Operators should read and follow safety instruction packed with each products.

Learn how each machines works. Even if you have previously used similar machines, carefully check out each machine before you use it. Get the "feel" of it and know it's capabilities, limitations, potential hazards, how it operates, and how it stops.

## APPLICATIONS

Trench compaction	Earthworks
Road maintenance	Landscaping
Brickpaving	Driveway topping

## FUNCTIONS AND COPNTROLS

The motor is controlled by an ON/OFF switch or push button is mounted on the motor below the fuel tank.

Tension of the drive belt is adjustable, loosen the four nuts on the bolts which secure the motor to the base plate. Adjust the set screws which bear against the motor crankcase to achieve the required belt tension. Ensure that the four nuts and the set screw locknuts are tightened after adjustment.

## ACCESSORIES

Transport trolley – Fitted with 200mm rubber tyre.

Facility handling – Hooks into the base plate.

Water tank – for dust reduction cement stabilised soil, bitumen hot mix.

## HAZARDS AND RISKS

NEVER allow any person to operate the machine without adequate instruction.

ENSURE all operators read, understand and follow the operating instructions.

SERIOUS INJURY could result from improper or careless use of this machine.

Plates compactors are heavy units and should be positioned by two people of appropriate strength. Using the lifting handles provided on the machine, along with correct lifting techniques.

### ! MECHANICAL HAZARDS

DO NOT operate the machine unless all protective guards are in place.

KEEP handles and feet clear of rotating and moving parts as they will cause injury if contacted.

ENSURE that the motor operation switch is in the OFF position and the spark plug ignition lead is disconnected before removing the guards or making adjustments.

ENSURE both the machine and the operator are stable by setting up on level terrain and the machine will not tip over, slide or fall while in operation or unattended.

DO NOT leave the machine in operation while it is unattended.

ENSURE that the walls of a trench are stable and will not collapse due to the action of the vibration, prior to commencing compaction.

ENSURE that the area to be compacted does not contain any "live" electrical cables, gas, water or communication services which may be damaged by the action of vibration.

EXERCISE CARE when operating unit. Exposure to vibration or repetitive work actions may be harmful to hands and arms.

NEVER stand on the unit while it is operating.

DO NOT increase the governed no-load motor speed above 3,500 r/min. Any increase may result in personal injury and damage to the machine.

BE CAREFUL not to come in contact with the muffler when the engine is hot, since it can cause severe burns.

ENSURE that the repairs to the motor and machine are carried out by COMPETENT personnel.

### ! FIRE & EXPLOSION HAZARDS

PETROL is extremely flammable and explosive under certain conditions.

ENSURE that the petrol is only stored in an approved storage container.

DO NOT refuel the motor while it is in operation or hot.

DO NOT refuel the motor in the vicinity of sparks, a naked flame or a person smoking.

DO NOT over fill the fuel tank and avoid spilling petrol when refueling. Spilled petrol or petrol vapour may ignite. If spillage occurs, ensure that the area is dry before starting the motor.

ENSURE that the fuel tank cap is securely fitted after refueling.

### **! CHEMICAL HAZARDS**

DO NOT operate or refuel a petrol or diesel motor in a confined area without adequate ventilation.

CARBON MONOXIDE exhaust gases from internal combustion motor driven units can cause death in confined spaces.

### **! NOISE HAZARDS**

EXCESSIVE NOISE can lead to temporary or permanent loss of hearing.

WEAR an approved hearing protection device to limit noise exposure. As required by Occupational Health and Safety regulations.

### **PROTECTIVE CLOTHING**

ALWAYS wear approved hearing protection when working in a confined work space. Protective goggles and a dust mask should be worn when working in a dusty environment. Protective clothing and footwear may also be desirable when working with hot mix bitumen.

### **! ADDITIONAL HAZARDS**

Slip/Trip/Fall is a major cause of serious injury or death. Beware of uneven or slippery work surfaces.

Exercise care when working in the vicinity of unprotected holes or excavations.

## **OPERATION**

### **Pre start-up inspection**

The following Pre-start-up inspection must be performed before the start of each work session or after every four hours of use, whichever is first.. If any fault is discovered, the compactor must not be used until the fault is rectified.

1.Thoroughly inspect the compactor for signs of damage. Check components are present and secure. Pay special attention to the

belt drive safety guard fitted between the engine and the vibrator unit.

2. Check the engine oil level and top up as necessary.

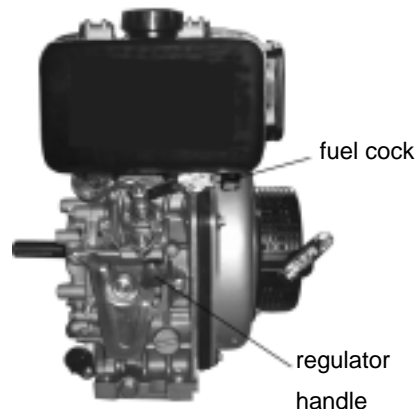
3. Check the engine fuel level and top up as necessary.

4. Check for fuel and oil leaks

### **Start and stop Procedure**

#### **Diesel Engine**

1. Open the fuel cock.



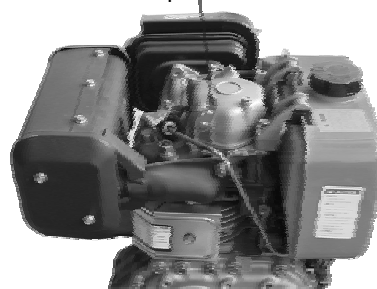
2. Turn the governor lever to "STARTING" position.

3. Hold the recoil starter handle.

4. Pull the starter handle until you feel the resistance, then return handle slowly.

5. Press the decompression lever to "Non-compression" position. The lever will return back automatically after the engine started.

decompression lever



6. Hold the recoil starter handle with two hands and pull it hardly.

7. It is difficult to start the engine at cold weather. Remove the rubber plug on the cylinder head and fill about 2CC engine oil before starting.

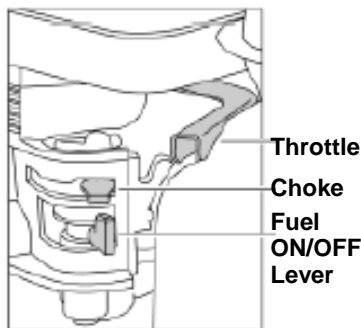
8. To stop the engine, set the governor lever to the low speed position, then run the engine at zero load five minutes.

9. Set the governor lever to the "STOP" position. Do not stop the engine with the decompression lever.

10. Set the fuel cock the "OFF" position.

## Petrol Engine

1. Open the fuel tap by moving the fuel ON / OFF lever fully to the right.
2. If starting the engine from cold, set the choke ON by moving the choke lever fully to the left. If restarting a warm engine, the choke is usually not required. However, if the engine has cooled to a degree, partial choke may be required.
3. Turn the engine ON/OFF switch clockwise to the "1" position.
4. Set the throttle to the idle position by moving the throttle lever fully to the right. Do not start the engine on full throttle, as the compactor will vibrate as soon as the engine starts.
5. Taking a firm hold of the control handle with one hand, grasp the recoil starter handle with the other.. Pull the recoil starter until engine resistance is felt, then let starter return.
6. Taking care not to pull the starter's cope fully out, pull the starter handle briskly.
7. Repeat until the engine fires.
8. Once the engine fires gradually, set the choke lever to the OFF position by moving it to the right.
9. If the engine fails to fire after several attempts, follow the trouble-shooting guide on page 5.
10. To stop the engine, set the throttle to idle and turn the engine ON /OFF switch anticlockwise to the "0" position.
11. Turn the fuel off.



The machine is best suited to the compaction of bituminous and granular materials e.g. granular soils such as silt and clay are best compacted using the impact force produced by a vibrating rammer.

Where possible the site should be graded and leveled before commencing compaction.

For more information on starting and correct operating procedures of the motor, refer to the motor operation manual supplied with the unit.

Increase the motor speed to the maximum setting using the hand throttle lever, before commencing compacting.

The machine should be controlled by grasping the handle with both hands and applying restraint to control the forward motion.

Steer the machine by moving the handle sideways to the right or left.

ALWAYS maintain good footing so that you do not slip and loose control when starting or operating the machine.

Inspect the water hose and its connections to ensure that they do not leak.

## CARE AND PREVENTIVE MAINTENANCE

Check the oil level in the motor crankcase daily.

Inspect the rubber anti vibration mounts for wear or deterioration.

Inspect the water hose and its connections to ensure that they do not leak.

Clean the underside of the plate regularly to prevent a build up of material.

Use unleaded grade petrol and ensure that the fuel is free from contamination.

The vibratory motion provides a self propelling action. Position the handle at the opposite end of the machine to the vibrator.

Start the motor using the recoil starter. (If the motor is fitted with an on/off switch this must first be turned to ON before starting.)Correct moisture content in soil is vital to proper compaction. Water acts as a lubricant to help slide soil particles together. Too little moisture means inadequate compaction; too much moisture leaves water-filled voids that weaken the soil's load-bearing ability.

Compaction of dry materials will be facilitated by moistening with a water hose fitted with a sprinkler.

Excessive watering or water content will cause the machine to stall.

The optional water tank kit is recommended when the machine is used on bituminous surfaces as the water film prevents a build up of material on the underside of the plate.

## CAUTION:



Inspection and other services should always be carried out on hard and level ground with the engine shutdown.

### Inspection and Maintenance Service Tables.

To make sure your plate compactor is always in good working condition before using, carry out the maintenance inspection in accordance with Tables 1 through 3.

**TABLE 1. MACHINE INSPECTION**

Item	Hours of Operation
(Starting check)	Every 8 hours (every day)
Loosened or lost screws	Every 8 hours (every day)
Damage of any part	Every 8 hours (every day)
Function of controlling system part	Every 8 hours (every day)
Vibrator oil check	Every 100 hours
Vibrator oil replacement	Every 200 hours
V-belt (clutch) check	Every 200 hours

**TABLE 2. ENGINE CHECK**

(For details, see separate engine Manual)	
Item	Hours of Operation
Leakage of oil fuel	Every 8 hours (every day)
Tightness of fastening Threads	Every 8 hours (every day)
Engine oil check and replenishment	Every 8 hours (every day) (Replenish to specified Max. level)
Engine oil replenishment	At first 20 hours, then every 100 hours
Air cleaner cleaning	Every 50 hours

## CAUTION:



These inspection intervals are for operation under normal conditions. Adjust your inspection intervals based on the number hours plate compactor is in use, and particular working conditions.

## CAUTION:



Fuel piping and connections should be replaced every 2 years.

### Daily Service

- Check for leakage of fuel or oil.
- Remove soil and clean the bottom of compaction plate.
- Check engine oil.

Check for loose screws including tightness. See Table 3 below (tightening torque), for retightening.

**TABLE 3. TIGHTENING TORQUE (in. kg/cm) Diameter**

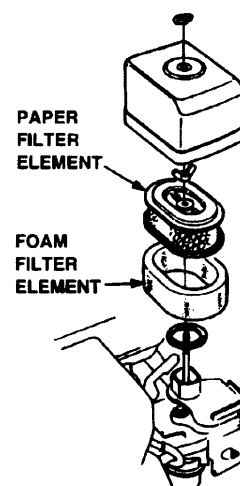
Material	6mm	8mm	10mm	12mm	14mm	16mm	18mm	20mm
4T	70	150	300	500	750	1100	1400	2000
6-8T	100	250	500	800	1300	2000	2700	3800
11T	150	400	800	1200	2000	2900	4200	5600
*	100 (6mm)		300-350 (8mm)		650-700 (10mm)			
*(In case counter-part is of aluminum)								
(Threads in use with this machine are all right handed)								
Material and quality of material is marked on each bolt, and screw.								

### Changing Vibrator Grease

Check and regrease exciter every 500 hours of operation. Use SHELL ALVANIA R3 grease or equivalent.

### Air Filter

1. The air filter element should be cleaned because a clogged air cleaner can cause poor engine starting, lack of power and shorten engine life substantially.
2. To clean or replace air filter loosen the wing nut on the air filter housing (Figure 1), remove the cover and take out air filter cartridge. If only cleaning of the air filter is desired blow through the air filter cartridge from the inside, moving a jet of dry compressed air up and down until all dust is removed.



**Figure 1 Air Filter**

## CAUTION:



**NEVER** attempt to check the V-belt with the engine running. Severe injury can occur if your hand gets caught between the V-belt and the clutch. Always use safety gloves.

### ● Checking and Replacing the V-belt and Clutch

After 200 hours of operation, remove the upper belt cover to check the V-belt tension (Figure 2). Tension is proper if the belt bends about 10mm when depressed strongly with finger between shafts. Loose or worn V-belts reduces power transmission efficiency, causing weak compaction and reduces the life of the belt itself.

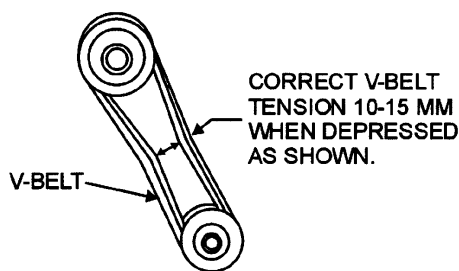


Figure 2. V-Belt Tension

## CAUTION:



Whenever the compactor's vibration becomes weak or lost during normal operation regardless of operation hours, check the V-belt and clutch immediately.

### ● Replacing the V-belt

Remove the upper and lower belt covers. Engage an offset wrench (13mm) or the like to vibrator pulley (lower) fastening bolt. Engage waste cloth or the like at midway of V-belt on the left side and while pulling it back strongly, rotate the offset wrench clockwise so that the V-belt will come off.

### ● Reinstalling the V-belt

Engage V-belt to lower vibrator pulley and push the V-belt to left side of upper clutch and, in the same manner as in removal, rotate offset wrench clockwise so that the V-belt goes back on.

### ● Checking Clutch

Check the clutch simultaneously with V-belt checking. With belt removed, check outer drum of the clutch for seizure and "V" groove for wear or damage with your eyes. Clean the "V" groove as necessary. Wear of lining or shoe should be checked with running check. If the shoe is worn, power transmission becomes deficient and slipping will result.

## SPECIFICATIONS

### MOTOR

MS100-1	Diesel, Kama 170	3.2kW output
MS100-2	Petrol, 168-2	4.8 kW output
MS100-3	Petrol, Robin EY20	3.4kW output
MS100-4	Petrol, Honda GX160	4.0kW output

Governed speed - 3,500r/min

### DRIVE BELT

1 x 'A' section vee belt

### VIBRATOR

Frequency ---- 7,000 vibration/min

Centrifugal force ----- 19.8 kN

### OPERATION MASS:

MS100-1	104kgs
MS100-2	94kgs
MS100-3	95kgs
MS100-4	95kgs

### BEARINGS

The following bearing are sealed:

Centrifugal clutch – grease lubricated


Vibrator – oil bath lubricated

### ACOUSTIC NOISE (According to 2000/14/EC)

	MS100-1	MS100-2/3/4
Measured sound power level	104.1dB	101.8dB
Guaranteed sound power level	107.1dB	104.8dB
Uncertainty:	3dB	3dB

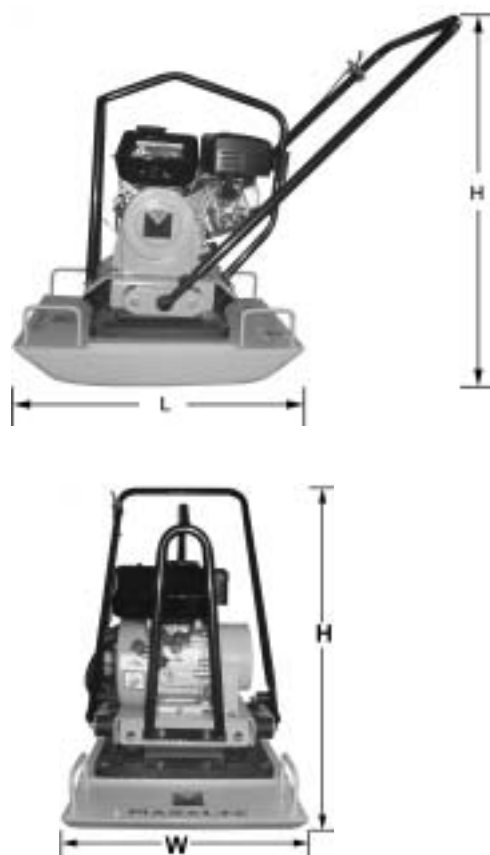
Hand-Arm-Vibration (as per ISO8662, Part 1, m/s<sup>2</sup>): 4-9

### Nameplate

<b>PLATE COMPACTOR MS100-1</b>		<b>CE</b>	
Frequency (vpm):	<b>7000</b>	Operation Mass (kg):	<b>104</b>
Power (kW):	<b>3.2</b>	Centrifugal Force (kN):	<b>19.8</b>
Speed (cm/s):	<b>45</b>	Compaction Depth (cm):	<b>30</b>
Manuf. Yr.:	<b>2005</b>	Serial No.:	
		<b>Masalta Engineering Co., Limited</b>	
<small>Rm 501, Fortune Plaza, No.278 of Suixi Rd., Hefei China</small>			

## WORKING SIZE (L X W X H):

110 X 46 X 66CM



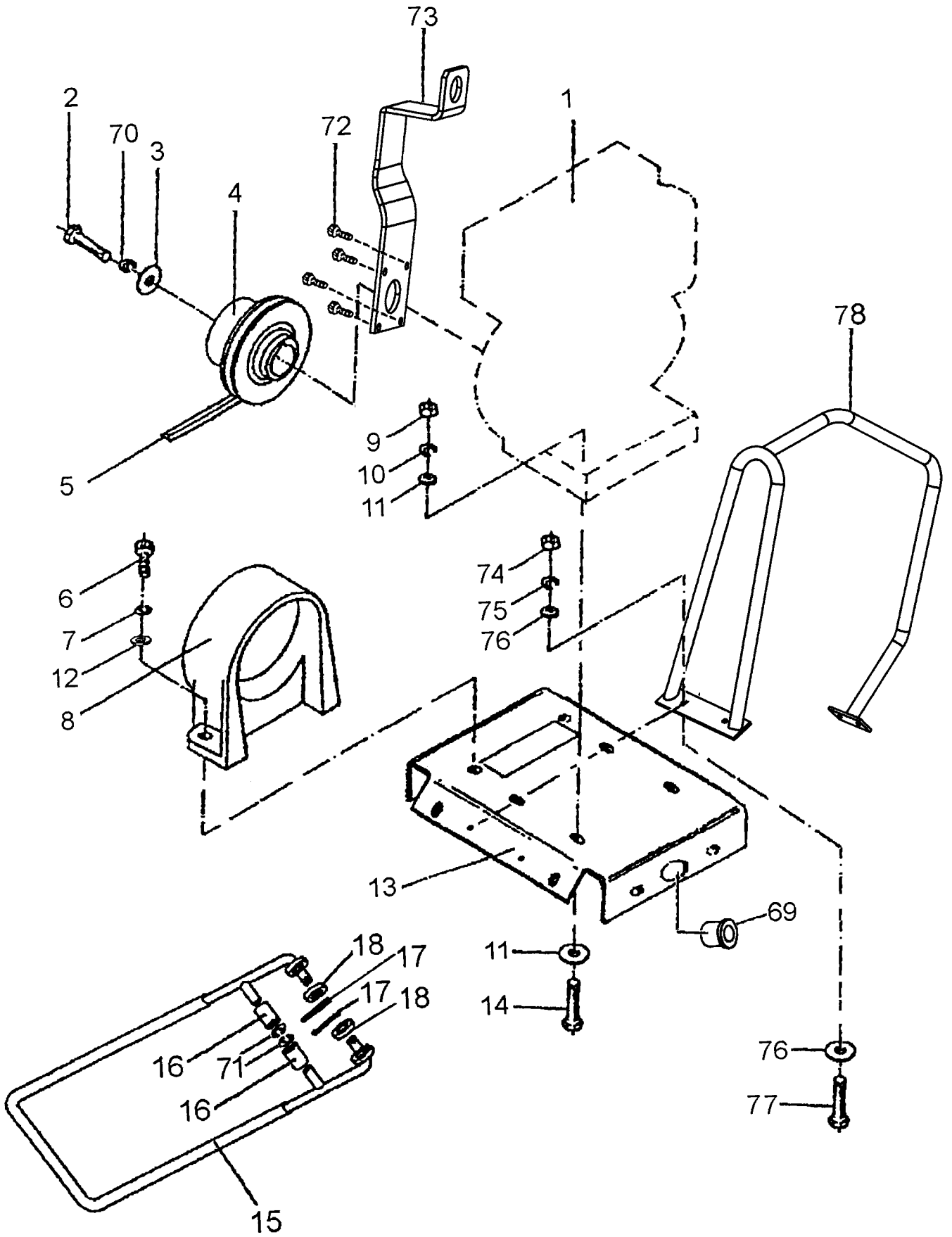
## TRANSPORTATION

1. Always shut off engine when transporting machine.
2. Make sure lifting device has enough capacity to hold machine (see identification plate on machine for weight).
3. Use central lifting point (a) when lifting machine.
4. Trolley wheel (b) is used for short distance transportation.



## TROUBLE SHOOTING

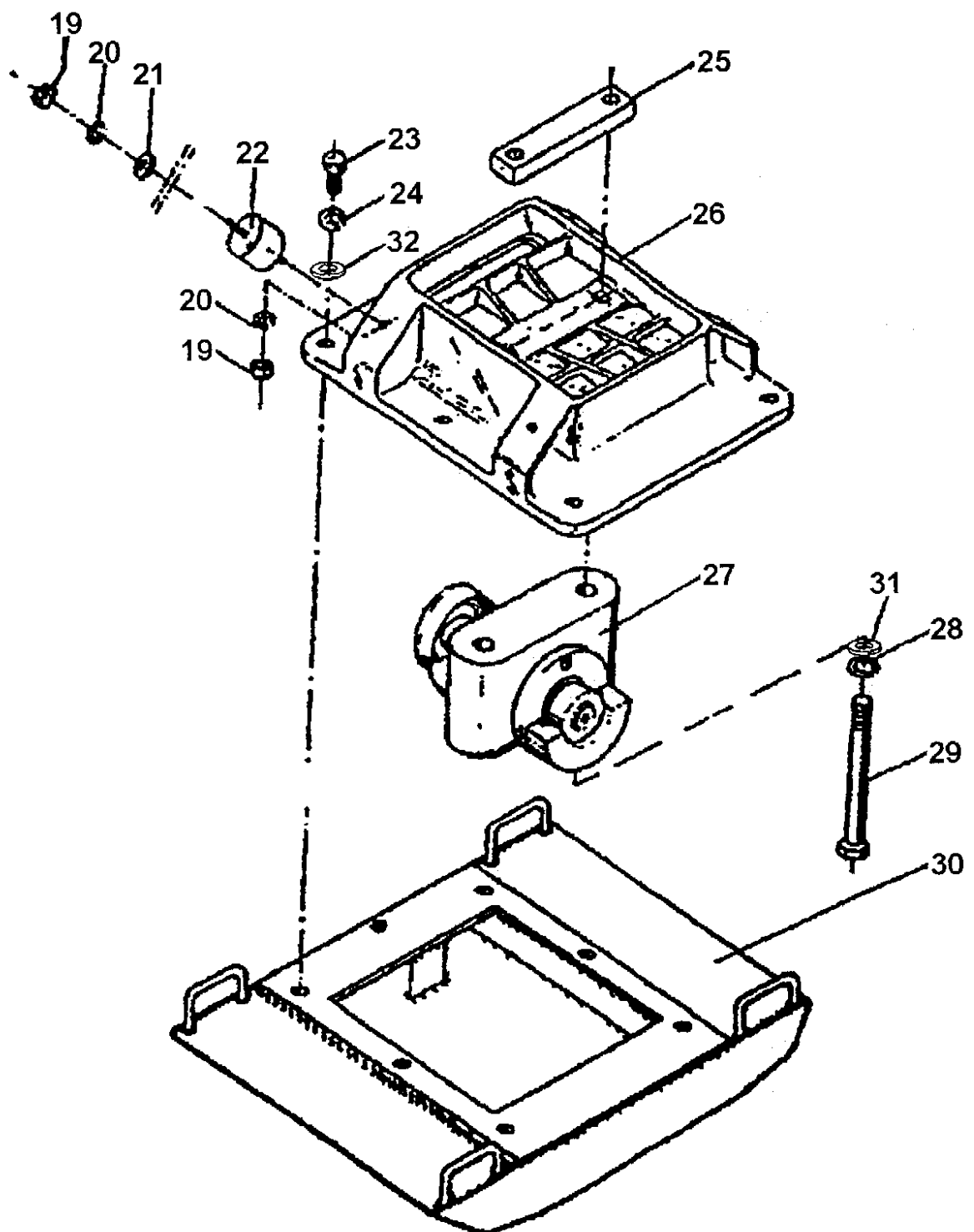
SYMPTOM	POSSIBLE CAUSES AND CORRECTION
Motor will not start.	<ul style="list-style-type: none"> <li>· Check the ON/OFF switch to ensure that it is switched 'ON'.</li> <li>· Check the fuel supply.</li> <li>· If a Honda or Robin motor is fitted check the crankcase oil level as an oil sensor device is fitted to these motors which prevents starting and stops the motor when the oil level is low.</li> <li>· Ensure the spark plug ignition lead is connected.</li> <li>· Check the carburetor jet and bowl to ensure they are clean.</li> </ul>
Motor stops	<ul style="list-style-type: none"> <li>· Check the fuel supply.</li> <li>· Check that the fuel cock is turned on.</li> <li>· Check the condition of the air filter.</li> </ul>
Petrol Motor lacks power.	<ul style="list-style-type: none"> <li>· Check the condition of the air filter.</li> <li>· Check the condition of the spark plug.</li> </ul>
Water flow stops	<ul style="list-style-type: none"> <li>· Insufficient water.</li> <li>· Blockage in water hose or sprinkler bar.</li> </ul>
Insufficient vibration	<ul style="list-style-type: none"> <li>· Check for a slipping or a missing vee belt</li> <li>· Check that the motor governed speed is 3,500r/min</li> </ul>
Machine is not moving freely	<ul style="list-style-type: none"> <li>· Check the underside of the plate for a build up of material.</li> </ul>



MS100 PARTS LIST 1

# MS100 PARTS LIST 1

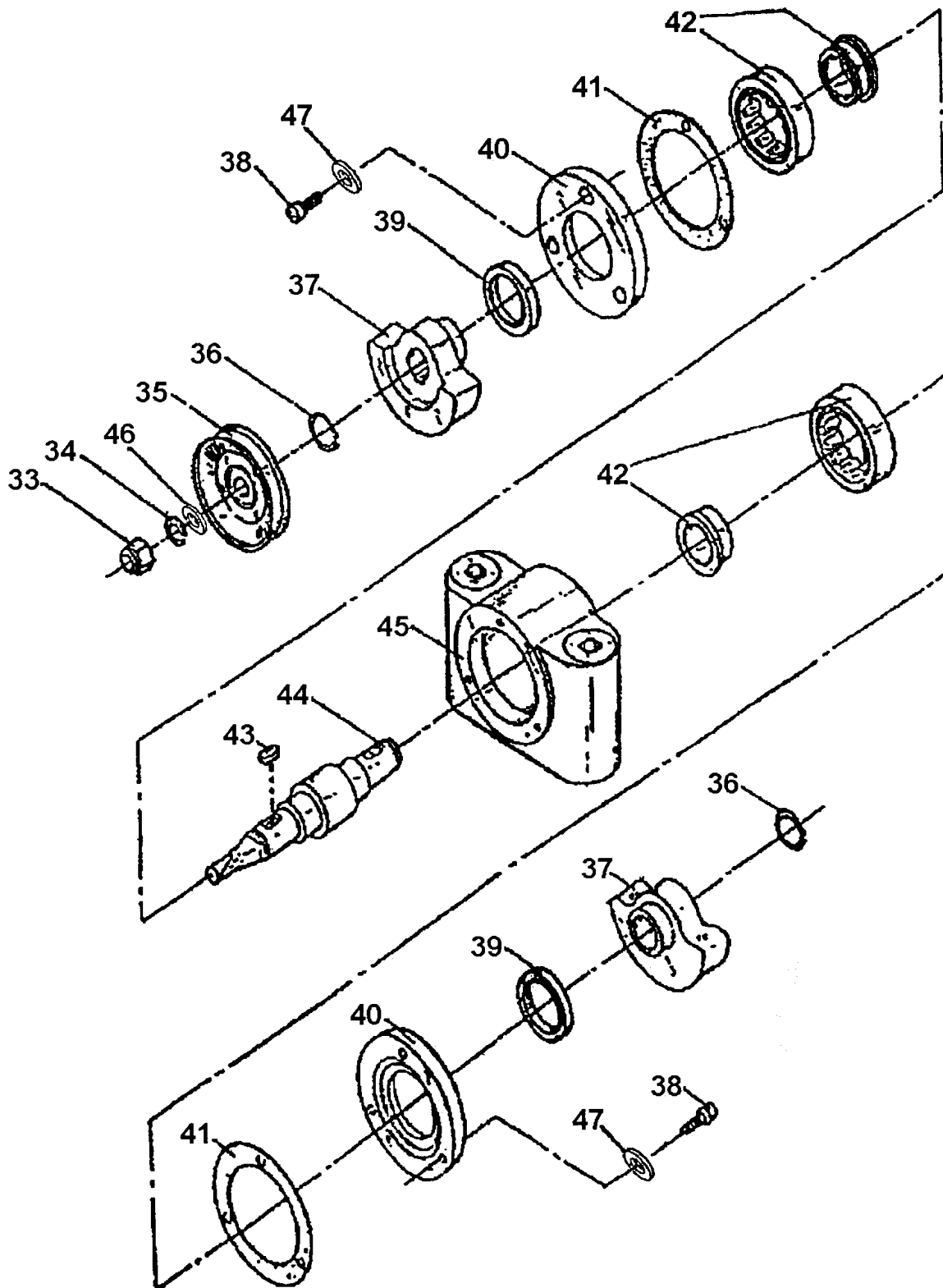
ITEM NO.	PART NO.	DESCRIPTION	QTY
1	0020001-1	DIESEL ENGINE	1
	0020001-2	HONDA ENGINE	1
	0020001-3	ROBIN ENGINE	1
2	0070000	BOLT-GB70	1
3	0097000	WASHER-GB97.1	1
4	2006000-1	CLUTCH CPL FOR DIESEL ENGINE	1
	2006000-2	CLUTCH CPL FOR HONDA ENGINE	1
	2006000-3	CLUTCH CPL FOR ROBINE ENGINE	1
5	0013575	V-BELT-GB13575.1	1
6	0070006	CAP SCREW M6 x 20-GB70	2
7	0093006	SPRING WASHER6-GB93	2
8	2003000	V-BELT GUARD	1
9	0061708	NUT M8-GB6170	4
10	0093008	SPRING WASHER8-GB93	4
11	0097008	WASHER8-GB97.1	8
12	0097006	WASHER6-GB97.1	2
13	2002000	ENGINE MOUNTING PLATE	1
14	0057858	BOLT M8 x 35-GB5785	4
15	2004000	HANDLE ASSY	1
16	2005000	VIBRATION MOUNT	2
17	2004001	SPLIT PIN	2
18	2004002	WASHER	2
69	2002002	SLEEVE	2
70	0093008	SPRING WASHER 8 - GB93	2
71	0089412	RETAINING RING 12 - GB894	2
72	0061708	NUT M8 - GB6170 (OPTIONAL)	4
73	2006001	LIFTING HOOK (OPTIONAL)	1
74	0061708	NUT M8 - GB6170 (OPTIONAL)	4
75	0093008	SPRING WASHER 8 - GB93 (OPTIONAL)	4
76	0097008	WASHER 8 - GB97.1 (OPTIONAL)	8
77	0070008	BOLT M8 X 30 - GB70 (OPTIONAL)	4
78	2009000	FRAME ASSEMBLY (OPTIONAL)	1



MS100 PARTS LIST 2

## MS100 PARTS LIST 2

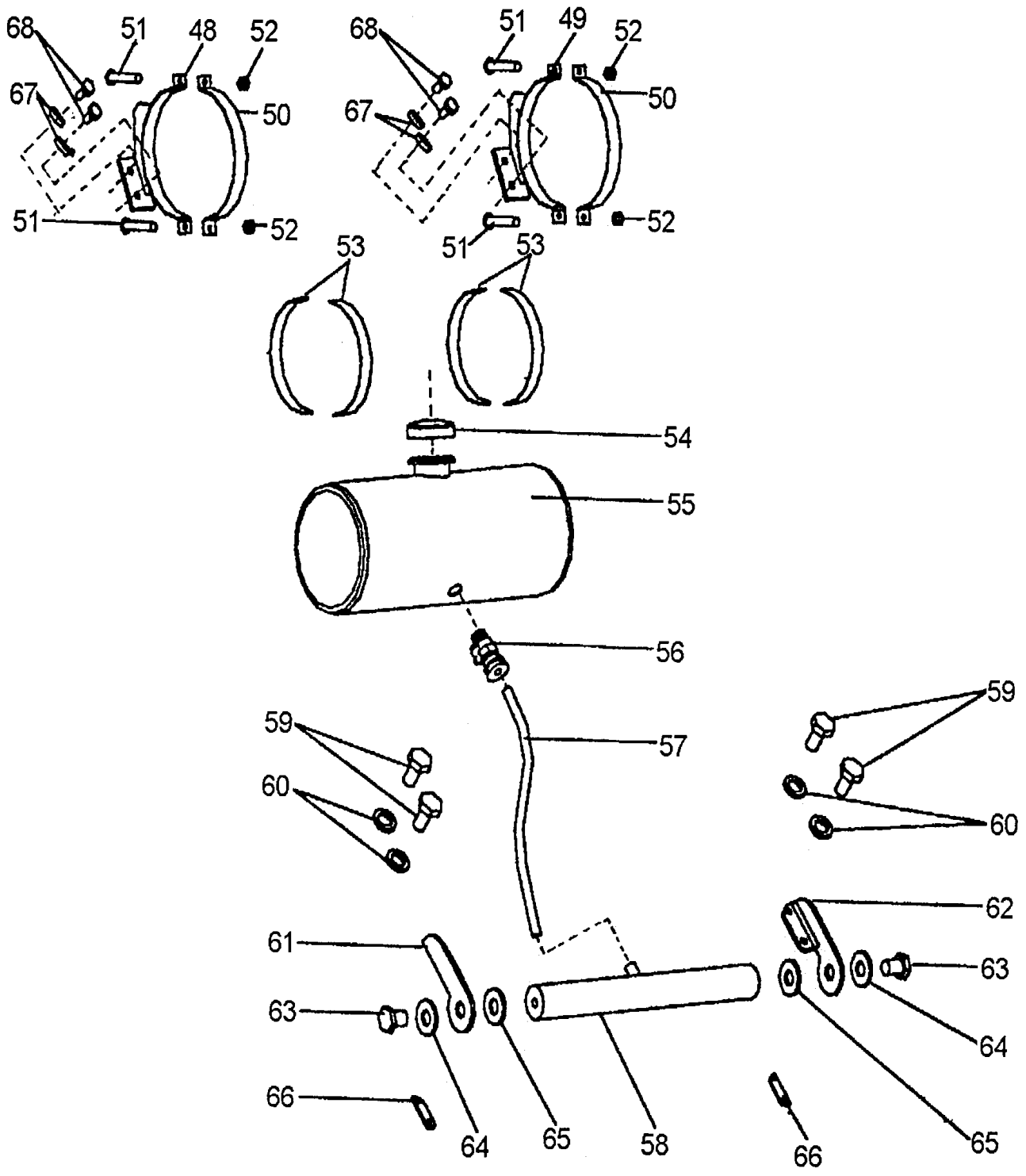
ITEM NO.	PART NO.	DESCRIPTION	QTY
19	0061710	NUT M10-GB6170	8
20	0093010	SPRING WASHER10-GB93	8
21	0097010	WASHER10-GB97.1	4
22	2002001	VIBRATION DAMPER	4
23	0057812	BOLT M12 x 40-GB5782	8
24	0093012	SPRING WASHER12-GB93	8
25	2007007	MOUNTING BAR	1
26	2007006	ALUMINIUM BASE	1
27	2007000	EXCITER CPL	1
28	0093016	SPRING WASHER16-GB93	2
29	0057816	BOLT M16 x 155-GB5782	2
30	2001000	BASE PLATE	1
31	0097016	WASHER16-GB97.1	2
32	0097012	WASHER12-GB97.1	8



**MS20 PARTS LIST 3**

## MS100 PARTS LIST 3

ITEM NO.	PART NO.	DESCRIPTION	QTY
33	0061712	NUT M12-GB6170	1
34	0093012	SPRING WASHER12-GB93	1
35	2007001	PULLEY	1
36	0089424	RETAINING RING24-GB894	2
37	2007005	UNBALANCE WEIGHT	2
38	0070006	CAP SCREW M6 x 20-GB70	6
39	0098770	OIL SEAL-GB9877	2
40	2007004	BEARING COVER	2
41	2007008	BEARING COVER GASKET	2
42	0027606	BEARING42306-GB276	2
43	0010768	KEY A8 x 25-GB1076	2
44	2007002	SHAFT	1
45	2007003	PILLOW BLOCK	1
46	0097012	WASHER12-GB97.1	1
47	0093006	SPRING WASHER6-GB93	6



**MS100 PARTS LIST 4**

## MS100 PARTS LIST 4

ITEM NO.	PART NO.	DESCRIPTION	QTY
48	2008001	CLIP HOOP (L. SEAT)	1
49	2008002	CLIP HOOP (R. SEAT)	1
50	2008003	CLIP HOOP	2
51	0081805	BOLT M5X30-GB818	4
52	0088905	NUT M5-GB889	4
53	2008004	RUBBER BELT	4
54	2008005	CAP OF WATER TANK	1
55	2008006	WATER TANK	1
56	2008007	COCK	1
57	2008008	HOSE 10X100	1
58	2008009	SPRING PIPE	1
59	0070008	BOLT M8X16-GB70	4
60	0093008	SPRING WASHER8-GB93	4
61	2008010	PIPE HOLDER (L.)	1
62	2008011	PIPE HOLDER (R.)	1
63	0057838	BOLT M8X16-GB5783	2
64	0093008	SPRING WASHER8-GB93	2
65	2008012	SEAT PACKING	2
66	2008013	RUBBER WASHER	2
67	0093008	SPRING WASHER8-GB93	4
68	0057838	BOLT M8X16-GB5783	4

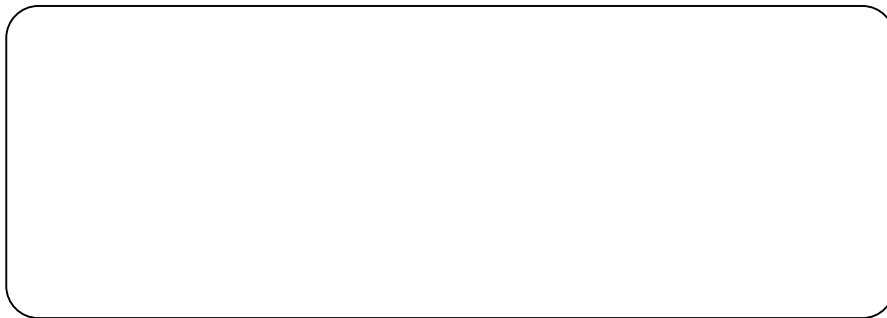


**EEC DECLARATION OF CONFORMITY / DECLARATION CE DE CONFORMITE / DECLARACI3N DE CONFORMIDAD CE  
DECLARAC3O CE DE CONFORMIDADE / EG-VERKLARING VAN OVEREENSTEMMING**

- GB** We, Masalta Engineering Co., Limited, RM 501, Fortune Plaza, No.278 of Suixi Rd., Hefei 230041, China, hereby certify that if the product described within this certificate is bought from an authorised Masalta dealer within the EEC, it conforms to the following EEC directives: 98/37/EC (This directive is a consolidation of the original machinery directive 89/392/EEC).
- F** Nous soussignons, Masalta Engineering Co., Limited, RM 501, Fortune Plaza, No.278 of Suixi Rd., Hefei 230041, China, certifions que si le produit d3crit dans ce certificat est achet3 chez un distributeur autoris3 Masalta au sein de la CEE, il est conforme aux normes ci-apr3s: 98/37/CE (cette norme est une codification des normes de la machine d'origine 89/392/CEE).
- E** La Sociedad, Masalta Engineering Co., Limited, RM 501, Fortune Plaza, No.278 of Suixi Rd., Hefei 230041, China, por el presente documento certifica que si el producto descrito en este certificado es comprado a un distribuidor autorizado de Masalta en la CEE, este es conforme a las siguientes directivas: 98/37/CE de la CEE (Esta directiva consolida la directiva inicial sobre maquinaria 89/392/CEE).
- P** O signat3rio, Masalta Engineering Co., Limited, RM 501, Fortune Plaza, No.278 of Suixi Rd., Hefei 230041, China, pelo presente, declara que se o produto descrito neste certificado foi adquirido a um distribuidor autorizado do Masalta em qualquer pa3s da UE, est 3 em conformidade com o estabelecido nas seguintes directivas comunit3rias: 98/37/EC (esta directiva 3 uma consolida3o da directiva de maquinaria original 89/392/EEC).
- NL** Ondergetekende, Masalta Engineering Co., Limited, RM 501, Fortune Plaza, No.278 of Suixi Rd., Hefei 230041, China, verklaren hierbij dat als het product zoals beschreven in dit certificaat is gekocht van een erkende Masalta dealer binnen de EEG, het voldoet aan de volgnede EEG richtlijnen: 98/37/EC (Deze richtlijn is een opvolger van de orginele Machinerichtlijn 89/392/EEG).



*Distributed By*



**MASALTA ENGINEERING CO.,LTD**

Add:RM 501, Fortune Plaza, No.278 of Suixi Rd., Hefei 230041,China

Tel: 86-551-5609770, 5609780 Fax: 86-551-5609010, 5621707

E-mail: [masalta@mail.hf.ah.cn](mailto:masalta@mail.hf.ah.cn), [sales@masalta.com.cn](mailto:sales@masalta.com.cn)

[Http://www.masalta.com.cn](http://www.masalta.com.cn)