

Mikasa

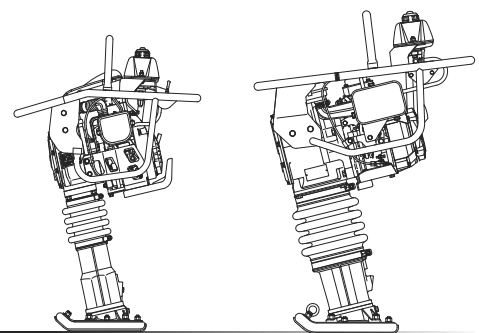
TAMPING RAMMER

MT-55/55L

MT-65H

MT-72FW/72FWA

MT-84F



INSTRUCTION MANUAL

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We thank you for selecting Mikasa Tamping Rammer.
For your safe and proper operation, please read this manual and
be always sure to keep it ready for reference.



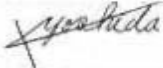
<http://www.mikasas.com>

Contents of "Declaration of Conformity"
Please refer the EC DECLARATION OF CONFORMITY
in this manual as well.

302-01720



1) DECLARATION OF CONFORMITY

2) Manufacturer's name and address.		Mikasa Sangyo Co., Ltd. 4-3, Sarugaku-cho 1 chome, Chiyoda-ku, Tokyo101-0064, Japan				
3) Name and address of the person who keeps the technical documentation.		Yoshiharu Nishimaki, engineer R. & D. Division, Mikasa Sangyo Co., Ltd. Shiraoka-machi, Saitama, Japan				
4) Type: Vibratory Rammers						
5) model	MT-55	MT-55L	MT-65H	MT-72FW	MT-72FWA	MT-84F
6) Equipment item number	251077	251084	251124	251242 251245	251247	251256 251257
7) Serial number	For serial number, please refer it on front page.					
8) power source cont. output <max.output>	Robin EH09-2F 1.5kW <2.1kW>	Robin EH09-2F 1.5kW <2.1kW>	Honda GX100U 1.7kW <2.1kW>	Robin EH12-2D 2.1kW <2.6kW>	Robin EH12-2D 2.1kW <2.6kW>	Robin EH12-2D 2.1kW <2.6kW>
9) Measured sound power level(dB)	102	101	105	105	101	102
10) Guaranteed sound power level(dB)	107	105	107	107	107	107
11) Max. Sound pressure level(dB)	93	91	96	96	91	92
12) Conformity assessment according to Annex:	VIII (Full Quality Assurance procedure)					
13) Name and address of the Notified Body	Société Nationale de Certification et d'Homologation (SNCH) 11, route de Luxembourg L-5230 Sandweiler LUXEMBOURG					
14) Related Directive	Directive 2000/14/EC and, to be followed by Directive 2005/88/EC , relating to the noise emission in the environment by equipment for use outdoors.					
15) Declaration	The equipment referred in this document, fulfills with all the requirements of Directive 2000/14/EC					
16) Other related Community Directives	2006/42/EC, 2005/88/EC, 2004/108/EC, 2002/88/EC(2004/26/EC) EN500-1, EN500-4					
17) EC Conformity Certificate No:	e13*2000/14*2005/14*0472*01					
18) Place and date of the declaration	Tokyo, Japan Jan, 2011 Signed by:  Keiichi YOSHIDA Director, Product Control Division Mikasa Sangyo Co., Ltd.					

TAMPING RAMMER INSTRUCTION MANUAL

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1. Preface

This instruction manual describes the proper methods for using the tamping rammer, as well as simple checks and maintenance. **Be sure to read this instruction manual before using the rammer**, in order to get full use of the excellent performance of this machine, to improve your operation and to perform engineering work effectively.

After reading this manual, **store it in a handy location** for easy reference.

For details about the engine in this machine, see the separate instruction manual for the engine.

For inquiries about repair parts, parts lists, service manuals, and repair of the machine, please contact the shop where you purchased it, our sales office, or the Mikasa Parts Service Center. In addition, parts lists are available on the MIKASA website at:
<http://www.mikasas.com/english/>

<p>The illustrations and Figures in this manual may be different from the machine you actually purchased due to design changes and other reasons for improvement.</p>
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2. Applications, Warnings, Structure and Power Transmission

Application

Though compact and lightweight, this rammer creates a strong impact and you may expect a large tamping effect on the ground.

It will compact nearly all types of soil, except soft soil that contains too much moisture.

Use this rammer to tamp the ground for creating roads, embankments, and to prepare the surface to support buildings. It can also be used when burying gas or water lines, and electric cables.

Warning about incorrect applications and techniques

Do not use this machine on ground that is harder than the machine can handle, or for driving pilings or tamping rock beds. Furthermore, use of the machine on sloping ground such as the side of an embankment, may make the machine unstable and can cause an accident. It can also result in premature machine wear due to uneven loads on the machine.

Use the machine with confidence for tamping earth and sand, soil, sand, gravel, and asphalt. Do not use the machine for other type of jobs.

Structure

The upper section of the machine functions as a weight and consists of an engine section guide, a gear reducer section, and reciprocating section. It also accommodates the handle and the fuel tank sections, which are connected by rubber dampers.

The lower section of the machine which hits the ground, consists of a spring case to engage sliding motion, a sloping section to allow the machine to tilt toward the front, bellows to cover the foot, a sliding section, and a protective sleeve.

Power transmission

Power is provided by an air-cooled, 4-cycle, single-cylinder gasoline engine. The output end of the engine crankshaft is equipped with a centrifugal clutch.


As the engine speed increases, the centrifugal clutch expands and a pinion gear that is a part of the clutch drum engages a gear in the crank shaft on the main frame. The engine speed is decreased in order to produce the required force for tamping.


The rotating motion of the main frame crankshaft is converted to a reciprocating motion through a connecting rod. This reciprocating motion causes the foot to go up and down through a strong coil spring. The weight of the main body and the strong force from the engine compress the spring and the foot moves up and down, striking the ground forcefully.


3. Warning Symbols

The triangle shaped marks used in this manual and on the decals stuck on the main body indicate common hazards. Be sure to read and observe the cautions described.

 **Warning labels indicating hazards to humans and to equipment.**

 **DANGER:** Denotes an extreme hazard. It calls attention to a procedure, practice, condition or the like, which, if not correctly performed or adhered to, is likely to result in serious injury or death.

 **WARNING:** Denotes a hazard. It calls attention to a procedure, practice, condition or the like, which, if not correctly performed or adhered to, could result in serious injury or death.

 **CAUTION:** Denotes a hazard. It calls attention to a procedure, practice, condition or the like, which, if not correctly performed or adhered to, could result in injury to people and may damage or destroy the product.

Precautions (without a triangular mark): Failure to follow the instructions may result in damage to property.

4. Safety Precautions

4.1 General precautions

 **WARNING**

- **DO NOT** work in the following conditions.
 - If you do not feel well due to overwork or illness.
 - If you are taking any medicine.
 - If you are under the influence of alcohol.

 **CAUTION**

- Read this instruction manual carefully and handle the machine as described so that you can work safely.



- For details about the engine, refer the separate instruction manual for the engine. Make sure you thoroughly understand the construction and operation of the machine.

- To work safely, always wear protective clothing (helmet, safety glasses, safety shoes, ear plugs etc.) and appropriate work clothes. Always check the machine to make sure that it is normal before starting operation.



- The decals on the machine body (operating methods, warning decals, etc.) are very important to ensure safety. Keep the machine body clean so that they can be read at all times. If any decal cannot be read, replace it with a new one.
- It is very dangerous if children come into contact with the machine. Take the utmost care about how and where the machine is stored.
- Before performing any maintenance, be sure to turn the engine off.
- Mikasa does not accept any liability for accidents or problems caused as a result of not using genuine Mikasa parts (foot assembly, etc.), or if the machine has been modified.

4.2 Precautions when adding fuel

DANGER

- When adding fuel.
 - Be sure to work in a well ventilated location.
 - Be sure to turn the engine off and wait until it has cooled down.
 - Take the machine to a clear flat location without any combustibles nearby. Be careful not any fuel. If you do spill some gasoline, wipe it all up.
 - Do not allow any open flames nearby while adding fuel. (In particular, smoking while adding fuel is strictly prohibited.)
- Adding fuel until it comes too close to the top of the inlet may cause the fuel to overflow. That is dangerous. Follow the instructions in the engine manual about the specified fuel level.
- When through adding fuel, tighten the tank cap securely.



4.3 Precautions about where to use the machine

DANGER

- **DO NOT** run the engine in an unventilated location, such as indoors or in a tunnel. The exhaust gas from the engine is carbon monoxide and is deadly.
- **DO NOT** operate the machine near open fires.



4.4 Precautions before starting work

CAUTION

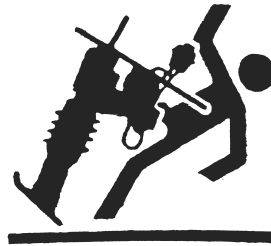
- If you use the machine for a long time, be careful to watch for signs of vibration syndrome. Since this machine vibrates, operation for a long time may have a negative effect on your body. Take sufficient breaks while working.
- Before starting to operate the machine, check for other people or obstacles that are too close for safe operation.
- When starting the engine, the rammer may jump suddenly. Hold the handle firmly with one hand and pull the recoil starter with the other hand.
- Always be careful around scaffolding. Operate the rammer in a stable manner so that it will not become unbalanced.
- During operation, don't let the foot of the machine come too close to your foot. The plate may smash your foot.
- The main parts of the engine, the muffler, and muffler cover will be very hot during operation. Be careful not to touch them during operation or soon after operation.
- If you encounter any problems or abnormality with the machine during operation, while moving it, or stopping operation, stop work immediately.
- Before leaving the machine, be sure to turn the engine off. Also, make sure to turn the engine off if you want to move the machine. When the throttle lever is in the stop position, the fuel cock is closed. Do not move the lever away from the stop position.
- When lifting the machine by the handle, be careful not to pinch your fingers between the handle and main body.



4.4 Precautions before starting work(Continued)

DANGER

- Take the utmost care not to allow the machine to fall during work, or when stopped or stored. Secure the machine with a rope or similar tie when stored or left idle so that it cannot fall. If the rammer falls over when children are around, a serious accident may occur. If the machine foot is worn, the machine will be especially unstable. If the machine foot is worn badly, replace it with a new one.

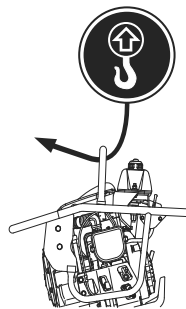


- If the machine falls over while working, the machine will move forward due to the kicking motion of the foot while it is lying on its side. If the ground is solid, it will move quickly and is very dangerous. To ensure that the operator and anyone nearby are safe, turn the throttle lever to the engine stop position and make sure the machine stops. You must be extremely careful when working on a road because a serious accident can easily occur.

4.5 Precautions while lifting

DANGER

- Before lifting the machine, make sure that there is no damage to any of the components on the machine (look especially for damage to the rubber dampers and the hook). There must not be any loose or missing screws and the machine must generally be in a safe condition.
- Turn the engine off before lifting the machine.
- Use wire cables with enough strength to support the machine.
- **DO NOT** lift it higher than necessary, for safety.
- **DO NOT** use a damaged wire cable.
- Only use the single hook to lift the machine. **DO NOT** support it from any other points (such as the handle).



- Never lift or lower the machine rapidly when using a hydraulic shovel or a crane.
- When lifting the machine, do not allow any people or animals to pass under or near the machine.
- When using any type of equipment to lift the machine, be careful that the lifting equipment does not cause an accident. Make sure you check the lifting equipment carefully, to ensure that there are no problems or damage.

4.6 Transportation and storage precautions

DANGER

When transporting

- Before transporting the machine, stop the engine.
- **DO NOT** try to move it before the engine and machine body have cooled down enough.
- Drain any fuel before transporting the machine.
- Transport the rammer in a manner that keeps it level. If you must lay the machine down to transport it, drain any fuel from the fuel tank and carburetor. Then close the fuel tank cap and oil fill plug securely. Next, position the machine so that the carburetor will be facing up.
- Secure the machine body so that the machine cannot move or fall during transportation.
- When you want to lift the machine by gripping the handle, be careful not to pinch your fingers or hands between the handle and the main body.
- Since this machine is quite heavy, use a truck specifically designed to transport heavy objects.

When storing the machine

- After the engine and machine body have cooled down enough, store the rammer so that it is level. Fasten the machine as needed so that the machine cannot fall down. If it you must lay the machine down, close the fuel tank cap and oil fill plug securely. Arrange the machine position so that the carburetor will be facing up. After it is lying down, make sure there are no oil or fuel leaks. (If fuel is leaking, drain it all from the fuel tank.)

4.7 Maintenance precautions

WARNING

- Appropriate maintenance of the machine is required to ensure safety and keep the machine performing well. Always be aware of the machine's condition and keep it in good condition.

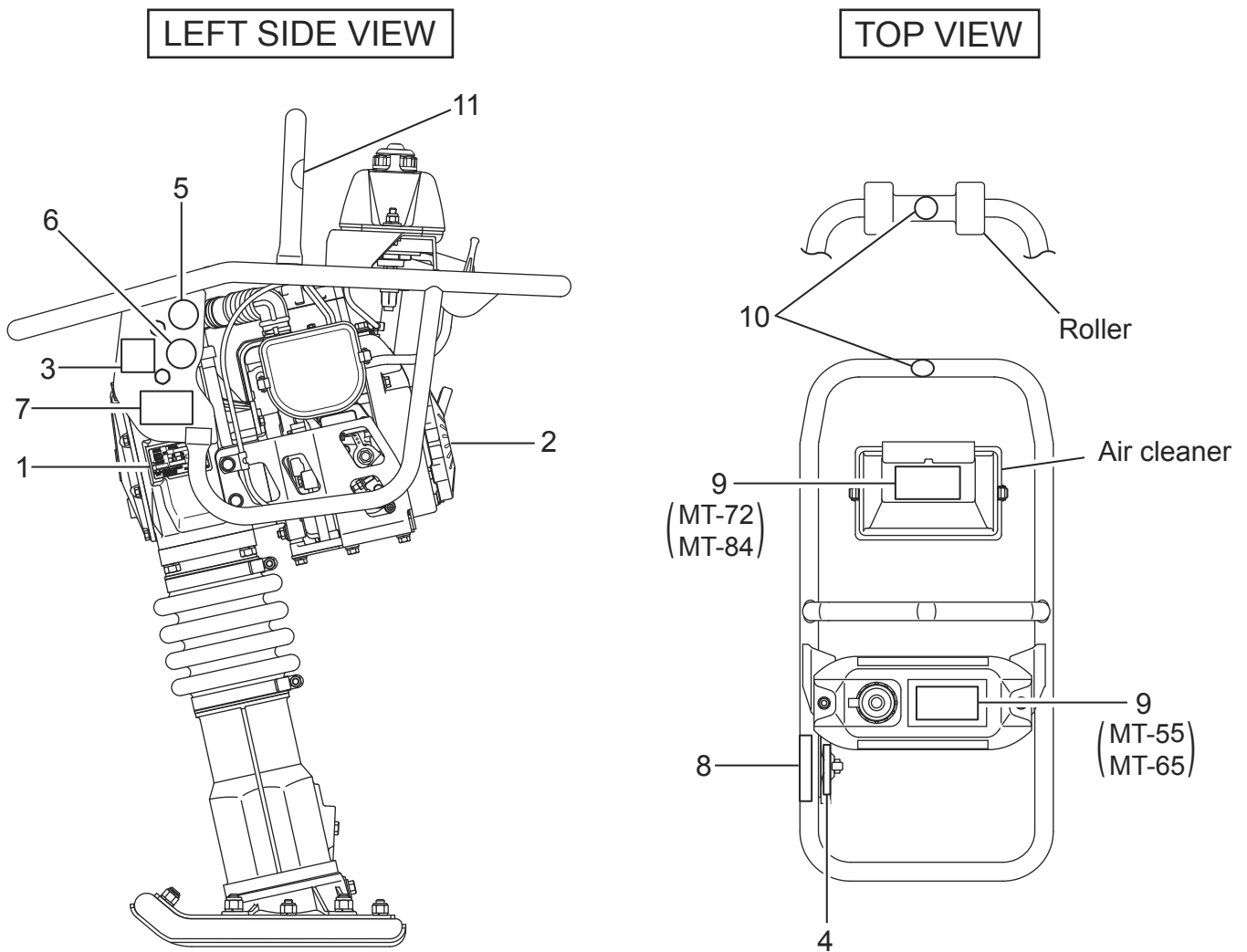
CAUTION

- Be sure to turn the engine off before checking or adjusting the machine.
- The muffler and muffler guard become very hot. Do not touch them until they will have cooled down.
- The lubrication oil and engine oil are very hot and can burn you. Do not start any maintenance on the machine while the oil remains hot.



- After performing any maintenance, check the condition of the safety components and the general safety of the machine. In particular, check the nuts and bolts thoroughly.
- If you have to disassemble any components on the machine, be sure to refer the maintenance standard sheets and always work safely.

4.8 Labeling position and list














REF No.	PART No.	PART NAME	Q' TY	LABEL No.	REMARK
1	—	PLATE, SERIAL NO.	1	—	
2	9201-00240	DECAL, (M-MARK)	1	NP-24	MT-55/72/84
3	9202-10330	DECAL, EC NOISE REQ. LWA105	1	NPA-1033	
4	9202-11690	DECAL, LEVER OPERATION	1	NPA-1169	
5	9209-00100	DECAL, EYE PROTECTION	1	NPA-1468	
6	9209-00100	DECAL, EAR PROTECTION	1	NPA-1469	
7	9209-00100	DECAL, CAUTION ICONS / MT	1	NPA-1470	
8	9209-00100	DECAL, FUEL CAUTION	1	NPA-1471	
9	9209-00100	DECAL, ENGINE HANDLING / GS	1	NPA-1472	
10	9209-00100	DECAL, DO NOT LIFTING	1	NPA-1473	
11	9209-00100	DECAL, LIFTING POSITION	1	NPA-1474	

4.9 Descriptions of symbols used on warning labels

Part code No. 9209-00100 DECAL, SET /MT /EXP, EU



- | | |
|---|--|
| <p>①  Danger: poisonous exhaust gas
Carbon monoxide poisoning may occur if the exhaust gas is inhaled. Do not operate the machine in a poorly ventilated area.</p> <p>②  Danger: The fall of the body
Take the utmost care not to allow the machine to fall during work, or when stopped or stored.</p> <p>③  Read the manual carefully.
Always read the operation manual and have good understanding of operation before your work.</p> <p>④  Be careful not to get burned.
Accidental burn may occur if you touch the hot parts (engine, muffler, etc.) during operation or immediately after the machine stops.</p> <p>⑤  Be careful not to get hit by the plate.
During operation, don't let the foot of the machine come too close to your foot. The plate may smash your foot.</p> | <p>⑥  Refueling Hazard.
Don't fill the fuel tank while the engine is running or hot.</p> <p>⑦  Fire hazard
Stop the engine when refueling. Fire may occur if a flame is near the tank fuel port.</p> <p>⑧  Danger of eye damage.
Always use eye protection while operating the machine.</p> <p>⑨  Danger of hearing damage caused by noise
Always use ear plugs while operating the machine.</p> <p>⑩  Lifting position.
For lifting, use only one point hoisting hook, and do not lift at any other part.</p> <p>⑪  Lifting by the handle is prohibited.
Due to a falling risk, do not lift the machine by the handle.</p> |
|---|--|

Starting, and stopping

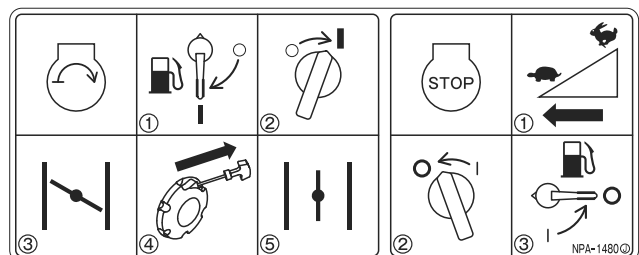
P/N 9209-00100 DECAL, SET /MT /EXP, EU

START

- ① Open Fuel Cock to start
- ② Turn Stop Switch to "I"(ON) position
- ③ Close Choke Lever
- ④ Pull Recoil Starter to start
- ⑤ Return Choke Lever to open

STOP

- ① Return Throttle Lever fully until "O"(OFF) position to stop work
- ② After cooling down enough, stop the engine to move Stop Switch to "O"(OFF) position
- ③ Close Fuel Cock at the end



5. Specifications

MODEL	MT- 55	MT- 55L	MT- 65H	MT-72FW	MT-72FWA	MT-84F
Main Dimensions (mm)						
Overall Length	680	715	730	730	713	713
Overall Width	350	350	370	415	415	415
Overall Height	1,030	1,025	1,070	1,045	1,025	1,025
Plate Size (mm) Length x Width	340 x 265	340 x 265	340 x 285	340 x 285	340 x 285	340 x 285
Performance						
Jumping Stroke (mm)	30-70	30-70	50 - 80	50 - 75	40 - 60	50 - 75
Impact Force	9.8kN (1,000kgf)	9.8kN (1,000kgf)	12.7kN (1,300kgf)	13.7kN (1,400kgf)	11.8kN (1,200kgf)	15.6kN (1,600kgf)
Impact Number (Blows per minute)	644 - 695	644 - 695	640 - 695	640 - 680	640 - 680	660 - 698
Lubricating Oil (cc) <10W-30>	520	520	750	800	800	800
Operating Speed (m ⁻¹) [rpm]	3,800~4,100	3,800~4,100	3,500~4,100	3,400~3,600	3,400~3,600	3,500~3,700
Fuel	petrol	petrol	petrol	petrol	petrol	petrol
Fuel Tank Capacity	2litters	2litters	2litters	2.5litters	2litters	2litters
Operating Weight ENGINE MODEL (Air-Cooled 4-Stroke petrol Engine)	57kg ROBIN EH09-2F	62kg ROBIN EH09-2F	66kg HONDA GX100U	74kg ROBIN EH12-2D	72kg ROBIN EH12-2D	84kg ROBIN EH12-2D
Max. Output	2 .1kw(2.8PS)	2 .1kw(2.8PS)	2.1kw(2.9PS)	2. 6kw(3.5PS)	2. 6kw(3.5PS)	2. 6kw(3.5PS)
Spark Plug	NGK BMR4A	NGK BMR4A	NGK CR5HSB	NGK B6HS	NGK B6HS	NGK B6HS

Hand-Arm Vibration Level

Model	Ahv (m/sec ²)
MT-55	11.2
MT-55L	5.8
MT-65H	16.1
MT-72FW	17.3
MT-72FWA	15.1
MT-84F	14.0

Vibration Level is in comply with EU Directive2002/44/EC and the value is shown as 3 axix min. vibration level.

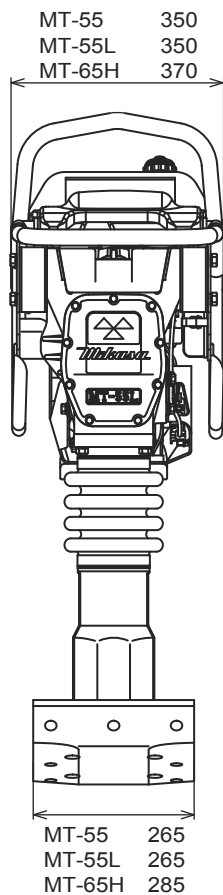
Test course (Crushed gravel) is in comply with EN500-4.

The above values are subject to change in case that the machine is modified or/and the required regulations change.

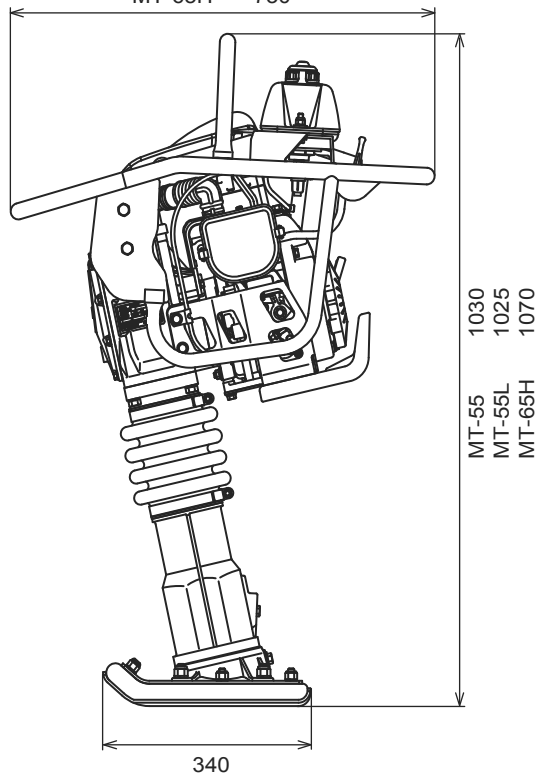
6. Appearance

6.1 Outside dimension

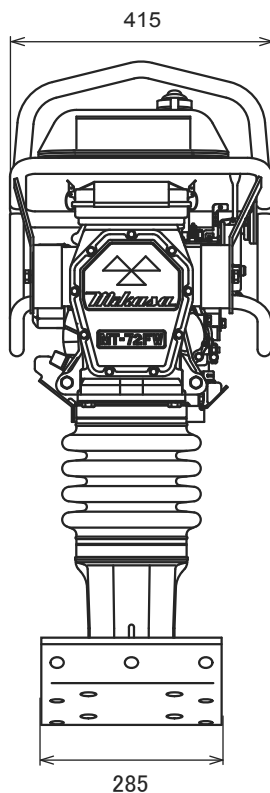
MT-55
MT-55L
MT-65H



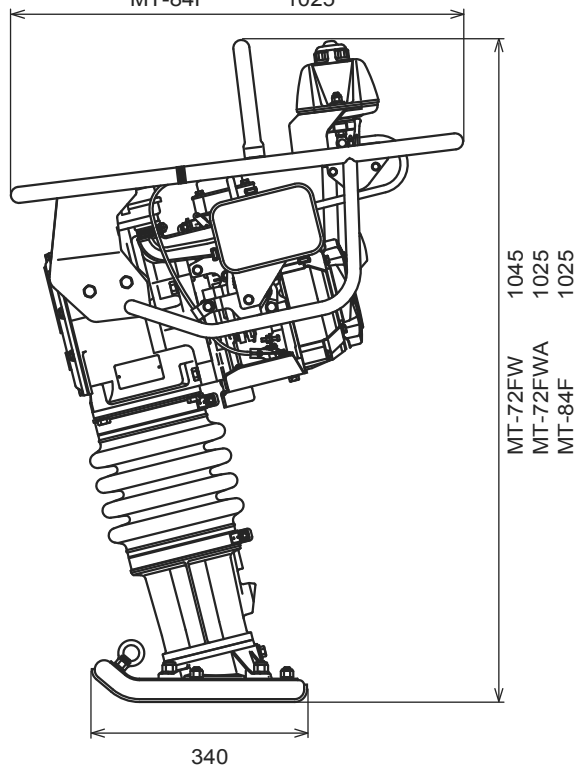
MT-55	680
MT-55L	715
MT-65H	730



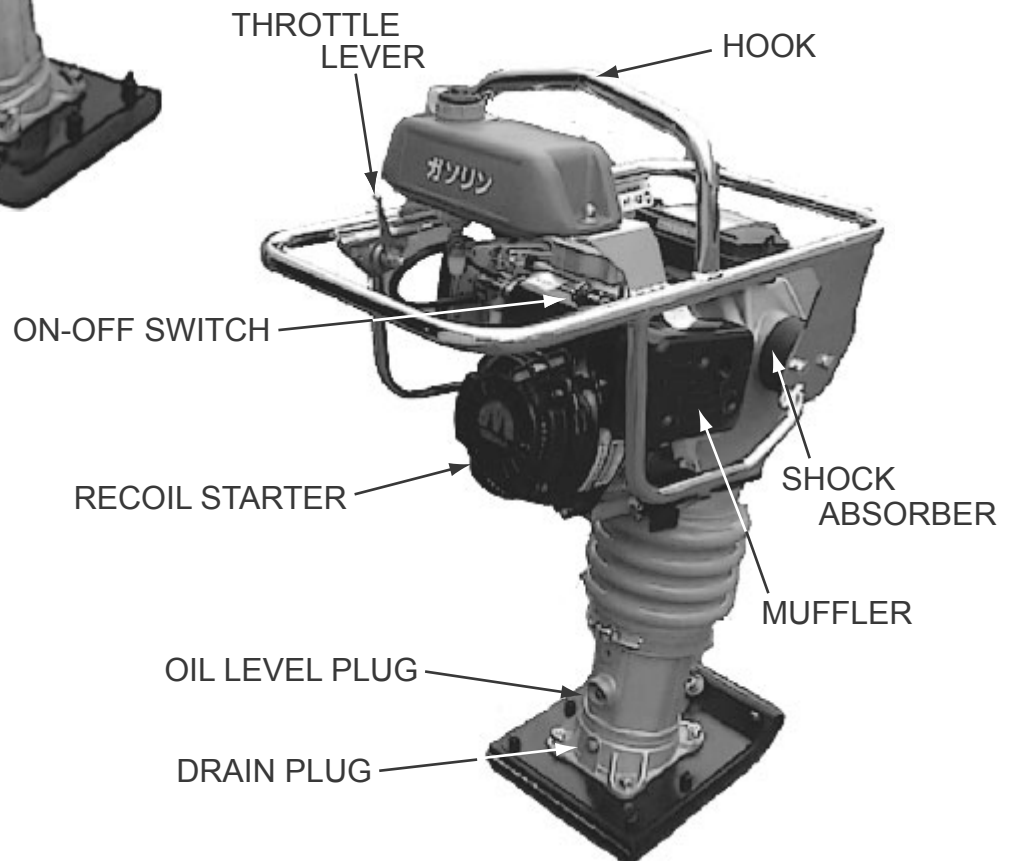
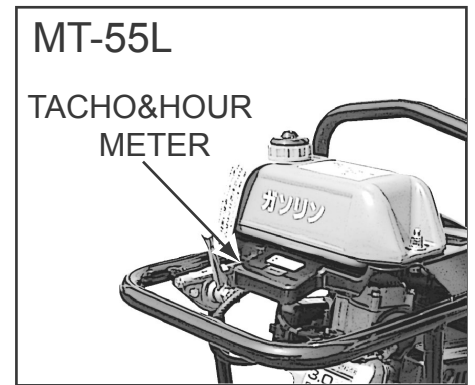
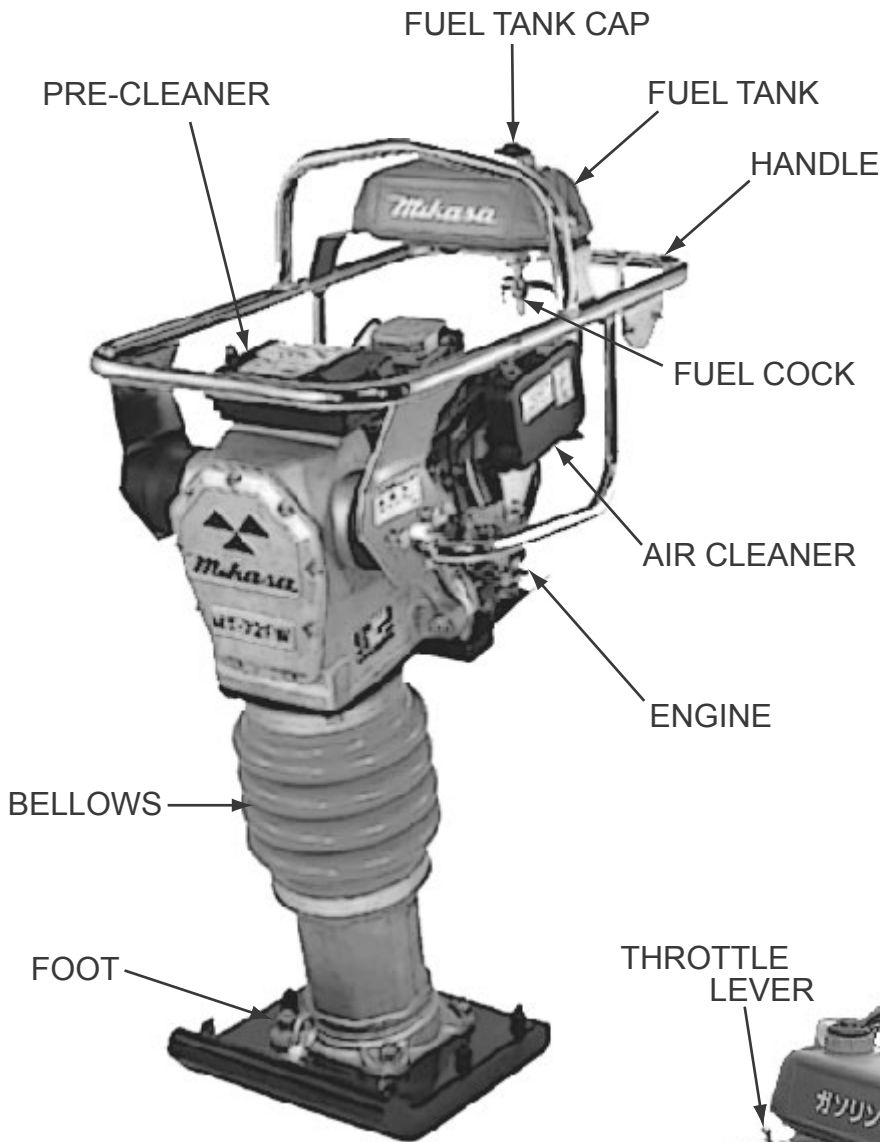
MT-72FW / FWA
MT-84F



MT-72FW	1045
MT-72FWA	1025
MT-84F	1025



6.2 Components



7. Inspection before Operation

- 7-1. This machine is of oil bath lubrication system.
- 7-2. Check the oil level through a window at rear end of the foot.
Replenish oil if oil is not visible at the window. For lubrication, use automobile engine oil of 10W-30 SE,SF or better grade. Capacity is 520cc for MT-55/MT-55L, 750cc for MT-65H and 800cc for MT-72FW or the like. (Fig.1)
- 7-3. Fill the fuel tank with regular gasoline (unleaded). Simultaneously, check engine oil and make it a habit to replenish on the earlier side. Low lubrication oil level may result in engine seizure due to consumption during operation. (Fig.2 and 3-1,3-2) Nevertheless, oil level should be checked prior to start up without fail. For lubrication, use automobile engine oil of 10W-30 SE,SF or better grade. See Engine Operating Manual for further detail.
- 7-4. Check every bolt, nut or screwed area for tightness. Loosened due to vibration may result in unexpectedly serious trouble. Be sure to tighten any screwed area.
- 7-5. Remove dirt and dust. Particularly clean the vicinity of recoil starter and foot.

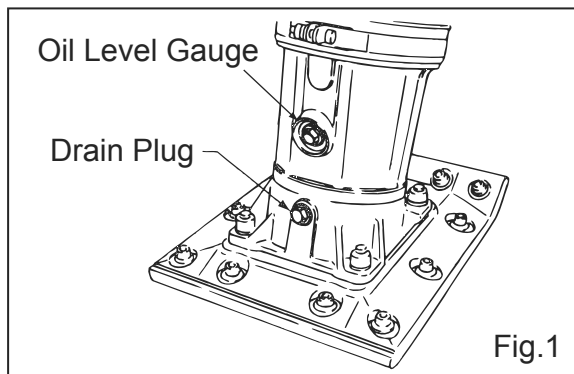


Fig.1

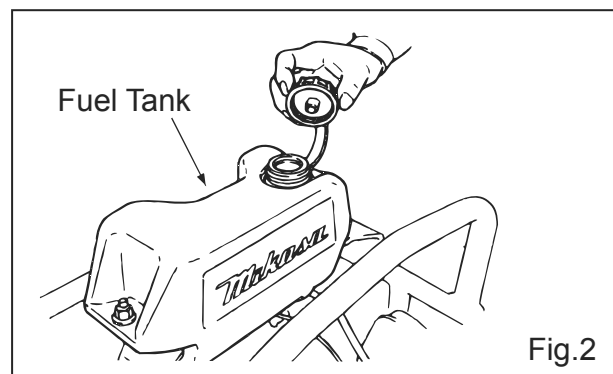


Fig.2

For MT-72FW / 72FWA / 84F

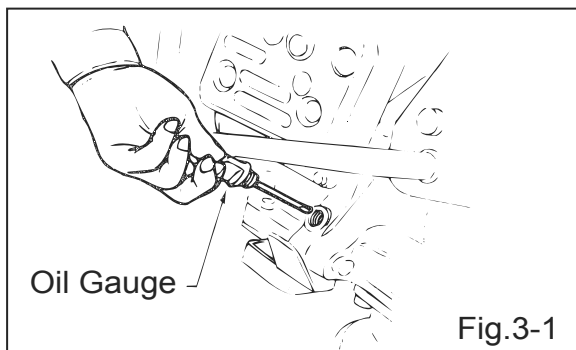


Fig.3-1

For MT-55 / 55L / 65H

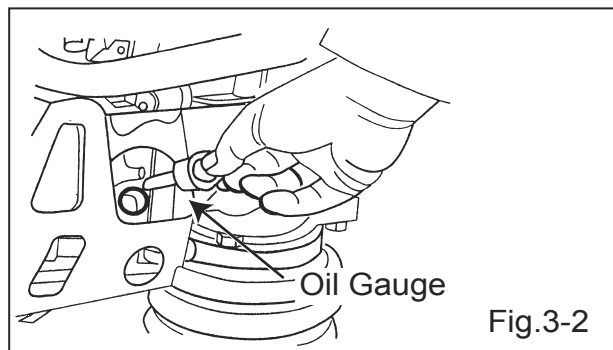


Fig.3-2

CAUTION

GRIP HANDLEBAR

Before starting operation check GRIP HANDLEBAR (FOOT/MT) to:

1. Make sure that there is no damage on the bolts.
2. Make sure that there is no crack or breakage on handle.
3. Make sure that there is no fissure on the surface, if there is abnormal or damage, replace with new one.



For operation

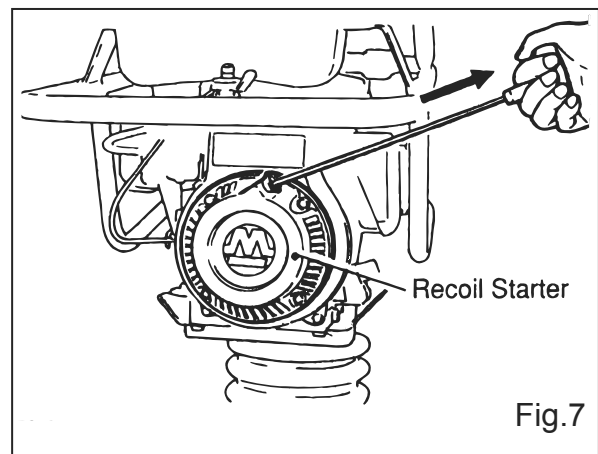
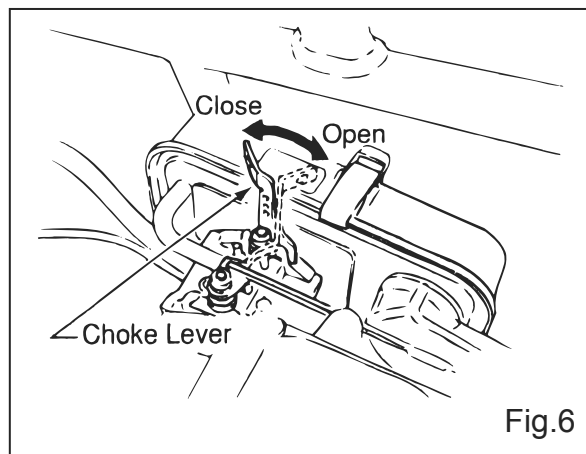
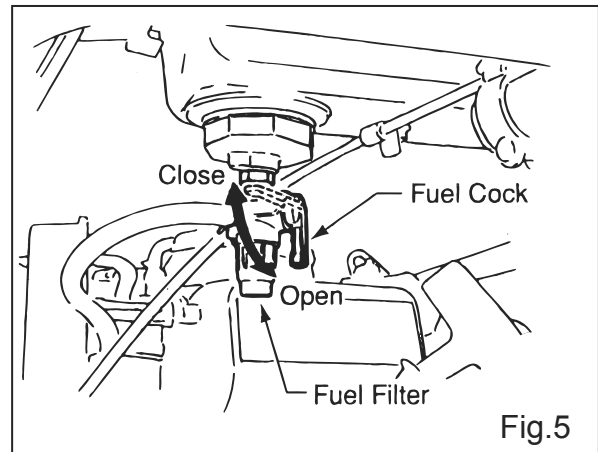
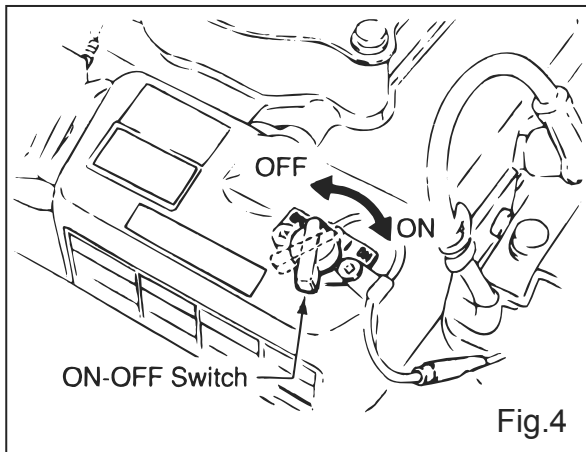
GRIP HANDLEBAR (FOOT/MT) is to be used to uplift the shoe part of the machine with the body laid down on the ground or truck bed.

1. Use proper lifting techniques to avoid back injury. GRIP HANDLEBAR (FOOT/MT) is for manual lifting only.
2. Do not use GRIP HANDLEBAR (FOOT/MT) as a rammer lift point. Use the lifting point on the top of the machine.
3. Do not move the rammer with GRIP HANDLEBAR (FOOT/MT) and the front rollers more than 5 meters.

MT-55 or Option

8. Starting

- 8-1. Lower the fuel cock lever to let fuel flow. To start, switch must be in the "ON" position. (Fig.4,5)
- 8-2. With carburetor choke lever closed, set throttle lever to CLOSE position. In cold weather, it should be closed fully, while in summer season or if engine is warm, make it half-open or full-open.
In case the engine failed to start, leaving the choke lever fully closed causes an excessive fuel intake. Therefore it should be returned to the half-open position. (Fig.6)
- 8-3. Grip the recoil starter handle and pull it a little to feel a slight resistance. Then pull it powerfully from there. To release the handle do not release it at the position where it has been pulled to, but release it after returning closely to the starter case. (Fig.7)
- 8-4. If the engine has started, while listening to explosion sounds, return the choke lever slowly to full-open position. Be sure to perform a warm-up run for the period 3 to 5 minutes at low speed while paying careful attention to gas leakage or abnormal sound.
- 8-5. If it is difficult to start the engine by repeatedly pulling the starter rope, remove ignition plug and check the sparking performance. If the plug is wet due to excessive fuel intake or soiled, replace the coil or clean sufficiently to its internals. With the ignition plug removed, pull the recoil starter handle 2-3 times to discharge excessive gas.



9. Operation

9-1. To start tamping action, move the throttle lever (fig.8) quickly from CLOSE to the FULL OPEN position. Do not move the throttle lever slowly as this may cause damage to the clutch or spring.

9-2. After starting tamping action, adjust the jumping motion to suit particular soil condition by lightly controlling the throttle lever. When the engine speed falls between the set values shown on the engine, your work can be carried out at the best efficiency. Increasing the engine speed unnecessarily, does not cause the compaction force to increase. On the contrary, a resultant resonance causes the compaction force to decrease, damaging the machine.

9-3. Under cold weather, the oil in the machine being viscous, resistance at reciprocating part is greater causing the tamping rammer to perform somewhat irregular movement. Therefore, it is recommended to perform warm up run while moving the throttle lever repeatedly between ON and OFF positions, before entering the work.

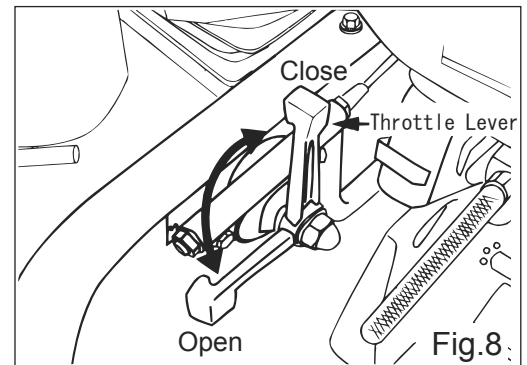
9-4. Soil contacting surface of the foot is lined with heat-treated metal sheet for extra strength. However, for compacting cobblestone, use the filling up soil for example so that the foot hits the soil uniformly.

9-5. The tamping rammer has been designed to advance while jumping. For quicker advance, erect the machine by pushing its handle down slightly so that flat surface of the foot at its rear end contacts the ground.

9-6. To discontinue the work, contrary to the starting, move the throttle lever quickly from ON to OFF.

The throttle lever should not be moved slowly.

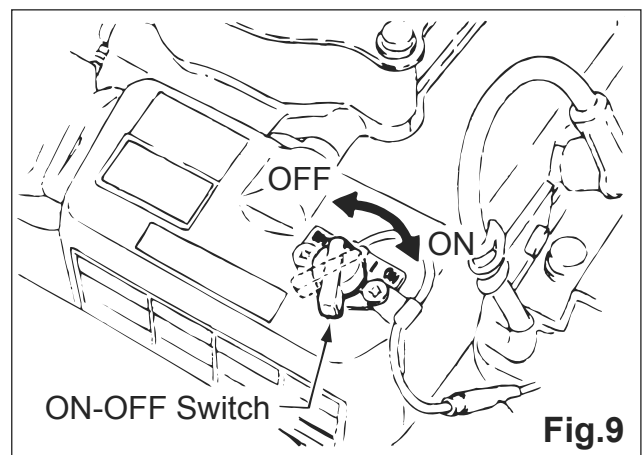
For MT-55/55L/65H/72FW



10. Stopping the Machine

10-1. With the throttle lever closed from ON to OFF, run the engine for 3- 5 minutes at low speed, and after temperature is lowered, turn the switch to the "OFF" position. (Fig.9)

10-2. Close the fuel cock.



11. Service and Storage

CAUTION:

- **Flammable liquid. Stop engine and do not smoke or allow work in immediate area when refueling. Fire or explosion could result from flames or sparks.**
- **Moving part Shutdown engine before performing service or maintenance. Contact with moving parts can cause serious injury.**
- **High temperature. Allow machine and engine to cool before performing service or maintenance. Contact with hot components can cause serious burns.**

11-1. Daily service

Remove dirt and dust from engine and control area. Clean air cleaner as necessary. Check and retighten all fasteners as necessary. Check spring box and bellows for oil leaks. Repair as needed.

11-2. Fifty hours service

Clean air cleaner cover. Adjust spark plug gap to 0.02-0.03 inch (0.6-0.7mm). This unit has electronic ignition which requires no adjustments.

11-3. Three-hundred hours service

Remove fuel filter cap and clean. Clean every part of unit and retighten bolts and nuts as necessary.

Drain oil reservoir on foot housing. Refill with approx. 520cc of #10W-30 motor oil for MT-55/MT-55L, 750cc for MT-65H and 800cc for MT-72FW. Oil should be midway in sight glass. Break in oil should be changed after first 50 hours. (Fig. 10)

11-4. Air cleaner cleaning (Periodical service)

Remove element from pre-cleaner at the top of crank case and clean it with cleaning oil (kerosene).

Take off 'Bolt, Cover' of the crankcase upper part and take 'Element' off 'AIR CLEANER' (Fig.11, Fig12). Wet the bottom element (gray) with 7-9cc and let upper element (yellow) be familiar with oil (MT-55/55L/65H).

MT-72FW is the top element (yellow) with 2 - 5cc and bottom element (gray) with 13 - 15cc of engine oil SAE10W-30 squeeze out the oil before installing them. (Fig. 13) Air cleaner of the engine side will hardly be contaminated, If it is, however, after cleaning the element with kerosene, dip it in mixed oil consisting of 3 parts of gasoline and 1 part of engine oil. Then tightly squeeze outer primary element (sponge) and shake off well the inner secondary element before installing them. (Fig. 14, Fig. 15)

11-5. Storage

Rammer should be stored in such position as it is placed on level, after engine and machine have been cooled down. Be sure to secure the rammer as necessary to avoid falling down. If the rammer has to be laid down inevitably, tighten fuel tank cap and engine oil plug securely and wait until engine and machine are cooled down. After laying it down, make sure that there is no leak of fuel or oil. (If fuel leaks, drain the tank)

- **Long-term storage:** Drain fuel from fuel tank, fuel line and carburetor. Remove spark plug and pour a few drops of motor oil into cylinder. Crank engine 3 or 4 times so that oil reaches all internal parts.

Clean exterior with a cloth soaked in clean oil store unit covered with plastic sheet in a moisture free and dust free location out of direct sunlight.

All models

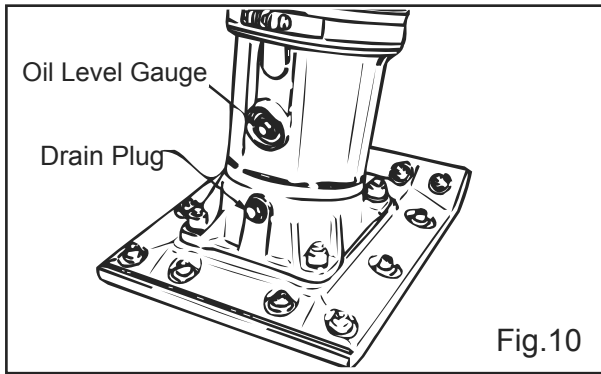


Fig.10

For MT-55 / 55L / 65H

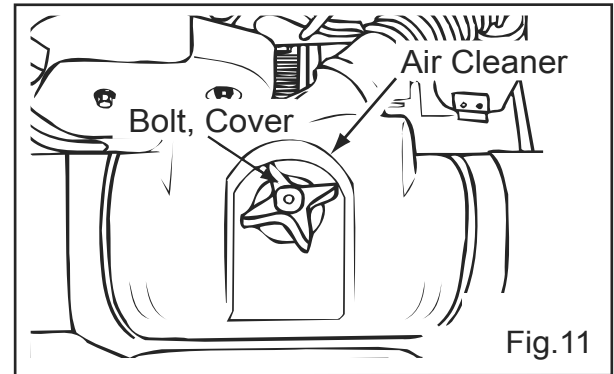


Fig.11

For MT-55 / 55L / 65H

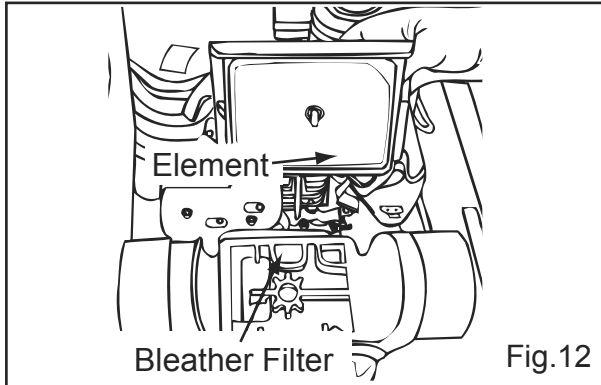


Fig.12

For MT-72FW / 72FWA / 84F

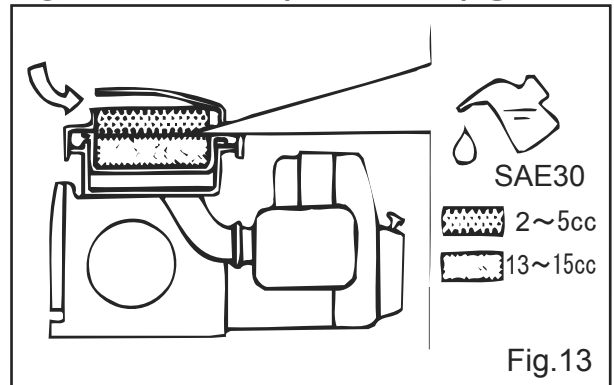


Fig.13

For MT-72FW / 72FWA / 84F

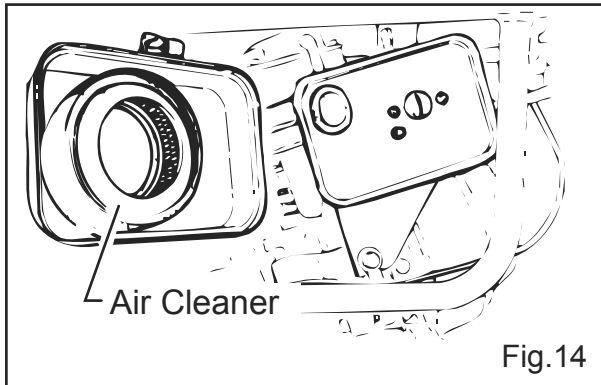


Fig.14

For MT-55 / 55L

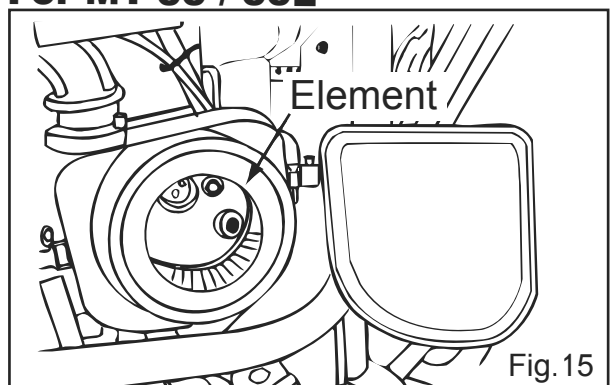


Fig.15

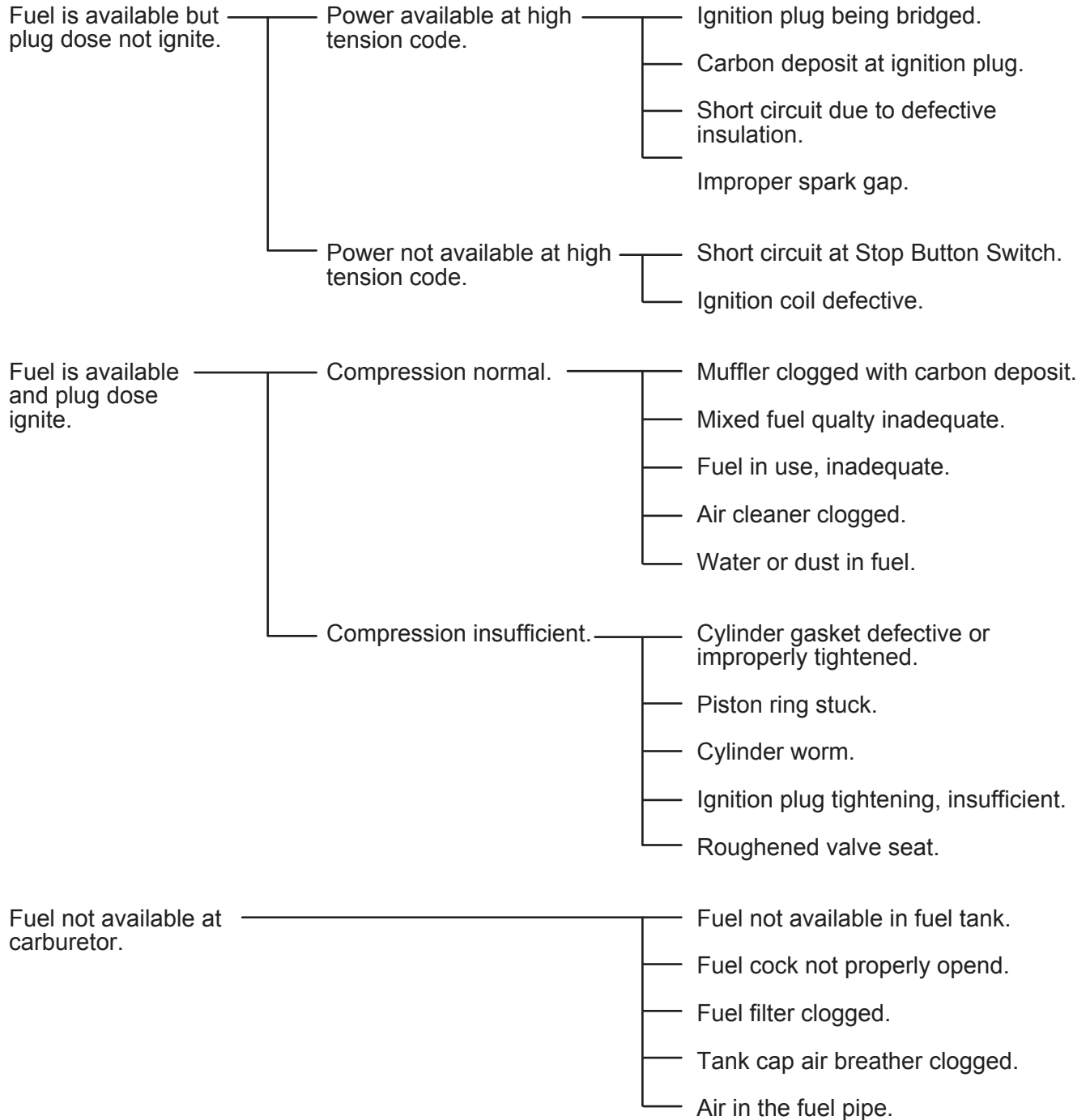
Table of scheduled checks

How often?	Place to check	Item to check	Oil etc.
Daily (before starting operation)	Appearance Air cleaner Bolts, nuts Handle Rubber damper Engine oil Main body lubrication oil Fuel tank Fuel system	Flaws, deformity, stains Dirt, flaws, deformation Loose or missing parts Flaws, deformity, cracks, breaks Flaws, deformity, cracks, breaks Leaks, oil level, dirt Leaks, oil level, dirt Leaks, fuel level, presence of dirt Leaks, wear, loose parts	Engine oil Engine oil Gasoline
After first 20 hours	Engine oil	Replace only after the first 20 hours.	Engine oil
Every 50 hours	Spark plug Engine oil	Clean, adjust gap Replace	Engine oil
Every 80 to 100 hours	Primary element	Cleaning	Lamp kerosene Engine oil (25-30cc)
Every 100 to 150 hours	Secondary element	Cleaning	Neutral detergent (water washing and dry)
Every 200 hours	Main body lubrication oil	Replace only after the first 50 hours.	Engine oil
Every 2 years	Fuel hose	Replace	

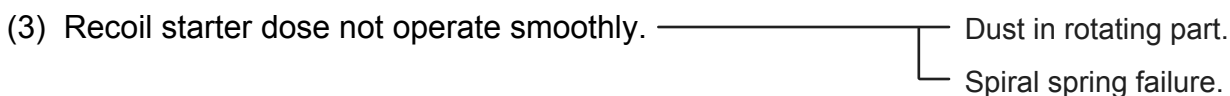
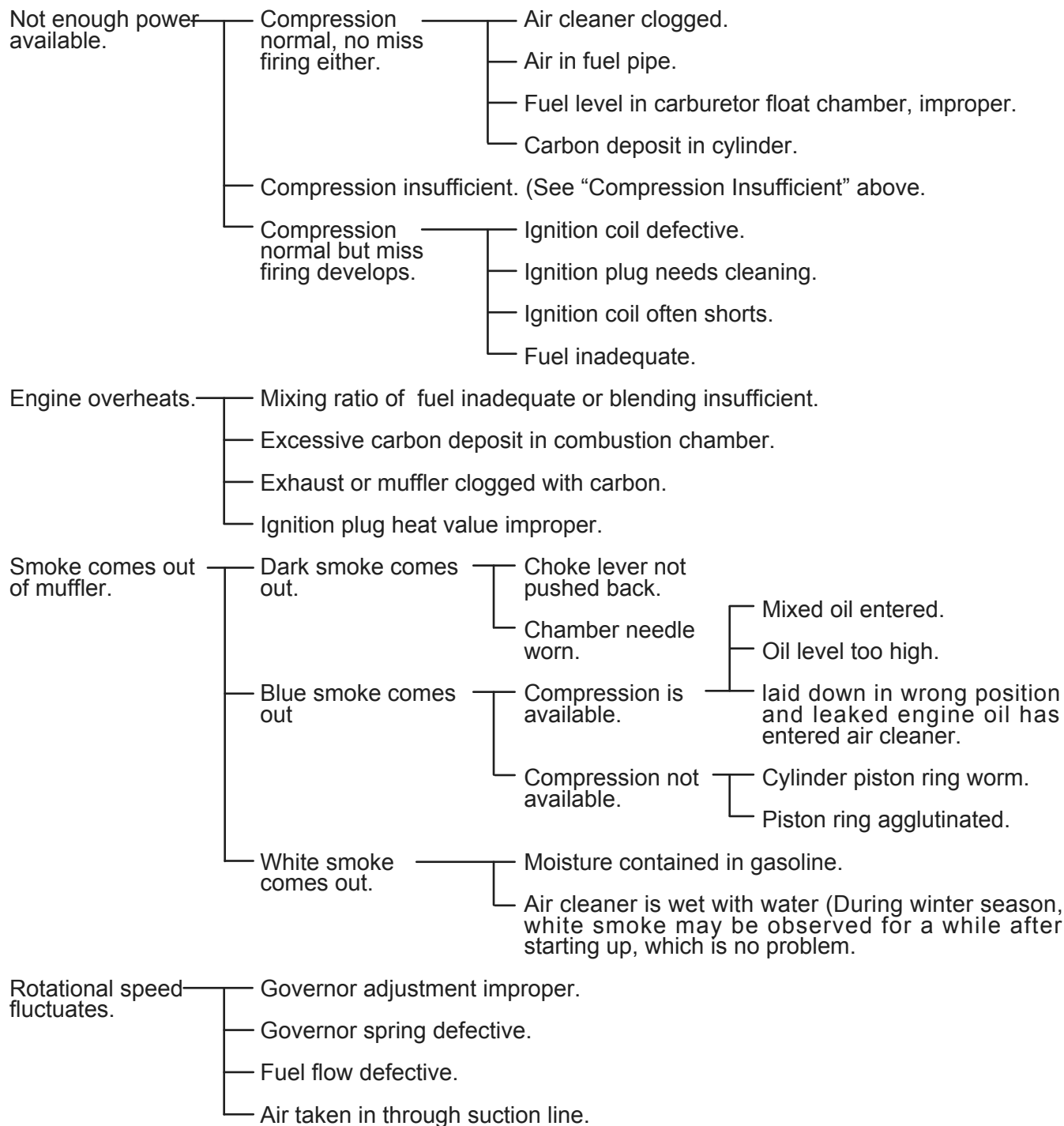
12. Troubleshooting

12.1 Engine

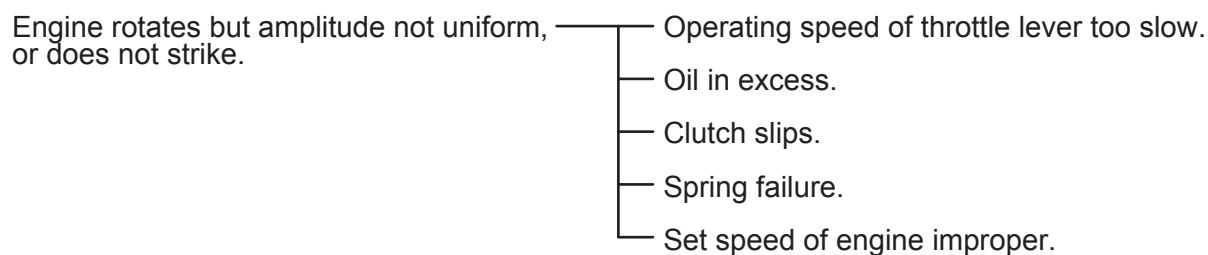
(1) Difficult to start



(2) Operation not satisfactory



12.2 Rammer itself



Mikasa