

Mikasa

TAMPING RAMMER

MT-65HA

INSTRUCTION MANUAL



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



MIKASA SANGYO CO.,LTD.

302-02501

Tamping Rammer

[Application]

Mikasa Tamping Rammer has strong blow power and can compact the ground powerfully despite of its small size and lightweight.

Rammer is effective to compact almost soils except soft soil with much water.

And it can be used to compact of the base of a road, a dike and a building, and can be used to backfill of a gas pipe, a water pipe and cable.

[Warning of a false use and misuse]

Please do not use in such as following location, for that it causes body instability and injuries. In addition, impossible power increase the damage of a body.

- Pile driving work.
- Driving in the harder ground than ability of the machine.
- Driving in steeply slanting ground, such as an embankment.

Please use this rammer for compacting on soil, sediment, sand, beaching and asphalt only.

[Structure]

The upper side of main body as the center of gravity consists of Engine part, Slowdown-machine part, Guide portion as Reciprocating-movement part and Handle, Fuel Tank part that is connected through Shock absorber.

The lower side that compacts ground consists of spring case part that moves sliding motion, the anteverted part which bends the main body forward, Foot Part and Case part which covers Spring case.

[Power Transfer]

Air-cooled Single cylinder Engine is amounted on Mikasa Tamping Rammer as power source and centrifugal clutch is attached on the engine shaft.

Petrol Engine (4 cycle) is used as power source for on Mikasa Tamping Rammer.

Turning engine speed up let in the clutch. The rotation of engine goes through Pinion Gear that is integrated with Clutch Drum and Gear that is integrated with Crank Shaft, and then it is reduced to required number of rotation for Compacting.

Rotational movement of crankshaft is changed to reciprocating movement by Connecting Rod, this movement is transmitted to the foot through a pair of coil spring, makes the foot to compact ground.

Weight of main part and strong compressed power from spring generate a powerful compacting power on the foot.

1.SPECIFICATIONS

MODEL	MT-65HA
Overall	
Dimensions (mm)	
Length	730
Width	375
Height	1,020
Plate Size (mm)	
Length x Width	340 x 285
Performance	
Jumping Stroke (mm)	50 – 80
Impact Force	10.7–11.5kN(1,090kgf~1,170kgf)
Impact Number (Blows per minute)	645 – 695
Lubricating Oil (cc) (10W30)	750
Operating Speed	3,800~4,100min ⁻¹ (rpm)
Fuel	petrol
Fuel Tank Capacity	2litters
Operating Weight	66kg
ENGINE MODL	Honda GX100 Air-Cooled 4-Stroke petrol Engine
Max .Output	2.2kw(3.0PS)
Spark Plug	NGK CR5HSB

2. FOR YOUR OPERATING SAFETY

⚠ Before starting to operate....

- Read Instruction Manual carefully for proper and safe operation. Do not allow anyone to operate it unless one is familiar with the operation.
- See separate Engine Manual for its operation.
- Wear properly for operation including safety protectors such as hard hat or safety shoes.
- Check every part of machine for loosened fasteners or any other abnormality.
- Be sure to shutdown the engine before starting service work.
- Replace obscured caution plate with new, clearly legible one.
- Be sure to store the machine beyond childrens' reach.
- Mikasa is not liable for any trouble attributable to added modification without Mikasa's approval.



⚠ Replenishing with fuel

- Be sure to shutdown engine and allow it to cool before refueling.
- Do not allow any fire in the vicinity during fueling.(No smoking in particular)
- Be careful not spill fuel around. If spilled, wipe it off carefully.
- Filling up to filler port is hazardous as it may spill over.



⚠ During operation

- Engine exhaust is hazardous as it contains toxic carbon monoxide or the like. Do not operate in poorly ventilated area including indoors or tunnel.
- When starting or during operation, make sure to protect safety for personnel or against any obstacle around.
- Always pay attention to foothold and work in easy position that allows to keep your machine in good balance. Discontinue operation promptly whenever your machine goes deficient or you notice any abnormality.
- Be careful not to touch muffler as it becomes hot in operation. Be sure to stop engine before leaving the machine. Also shutdown engine for transporting it.



⚠ Loading or unloading with crane in use requires qualification. Crane operation or wire rope engagement should be carried out by qualified person.

- Stop engine before lifting.
- Use wire rope with sufficient strength.
- Use one point lifting hook and lift up-right without applying any shock.
- Do not allow person or animal enter below lifted machine.
- For safety, do not lift to height any more than necessary.



⚠ For transportation

- Shutdown engine for transportation.
- For transportation, tighten fuel tank cap securely and close fuel cock to prevent fuel from spilling.
- Drain fuel for transportation over long distance or bad road.
- Secure machine firmly to prevent it from moving or tipping.
- Rammer should be transported in such position as it is placed on level ground. In case of it must be laid down for transportation, drain fuel tank as well as carburetor and make sure that oil plug is tightened securely.
- Direction to lay down the rammer, must be such that air cleaner comes to top. After laying it, make sure that there is no leak of oil or residual fuel.

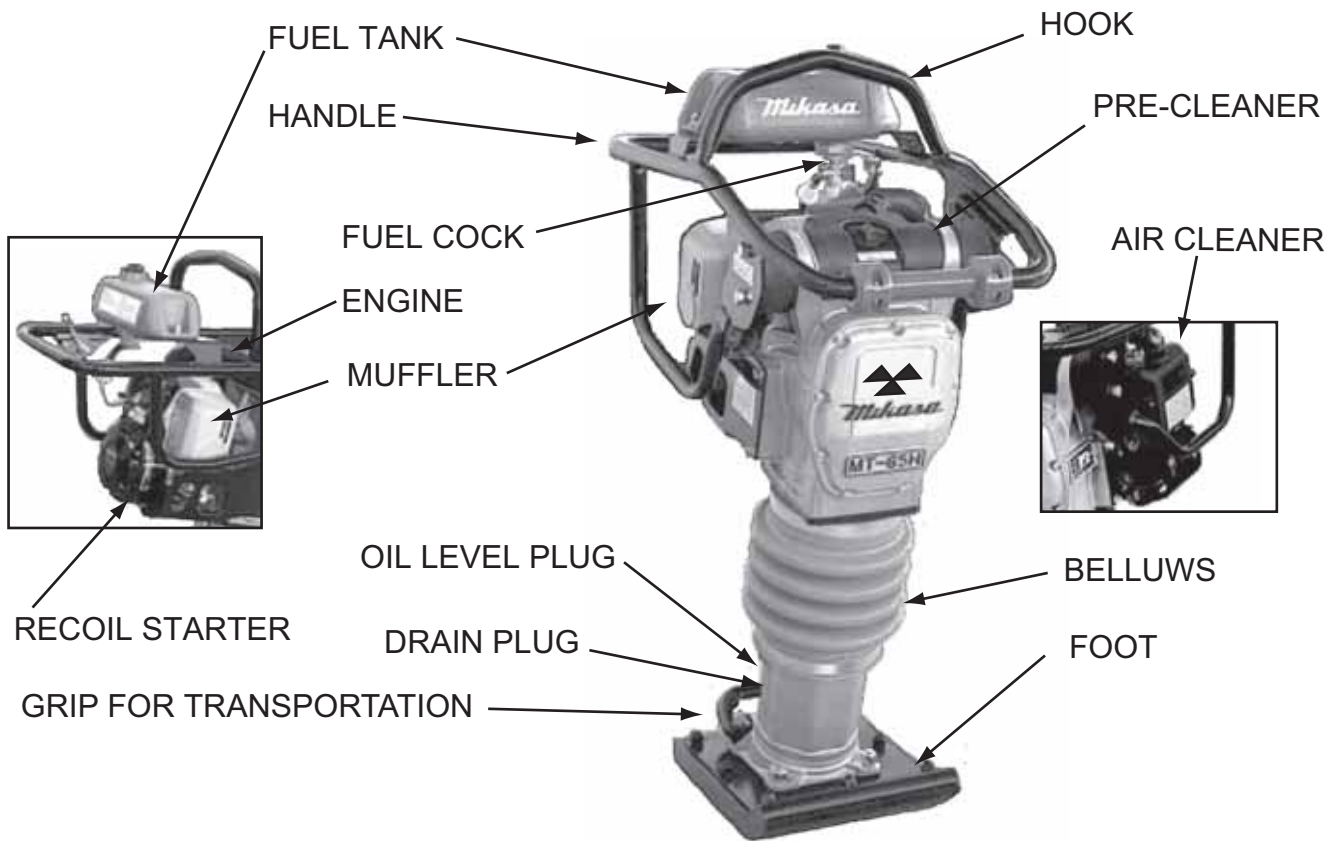


Fig.1

1. Definition of Tamping Rammer

MT-65HA Tamping Rammer is a compacting machine, capable of quickly working by applying consecutive impacts to the surface of soil in order to level the uneven soil surface, to compact the soil uniformly so that the void among soil particles are minimized and to increase its dry density with moisture in the soil removed.

Its application includes soil compacting operation for road, embankment or reservoir as well as backfilling operation for gas pipeline, water pipeline or cable installation work.

2. Construction of Tamping Rammer

Air-cooled engine has been installed as its source of power.

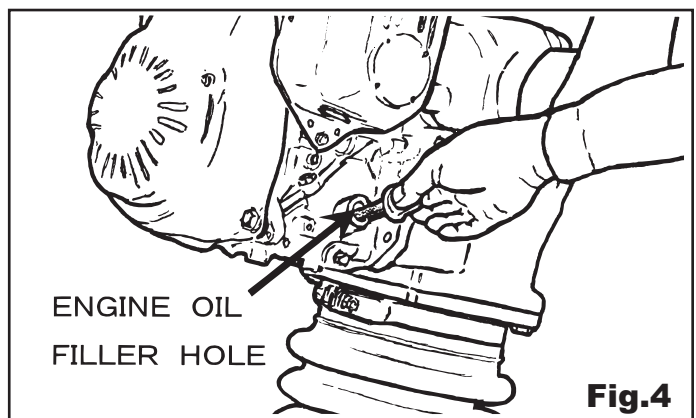
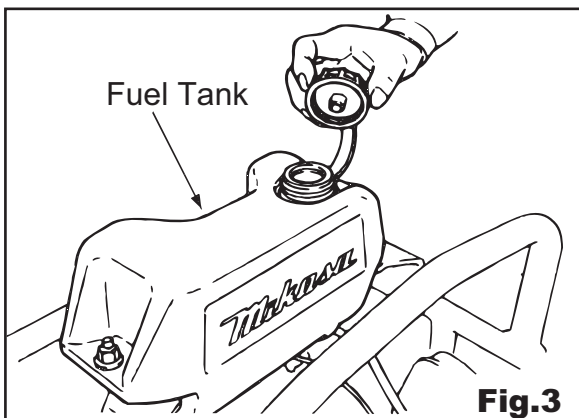
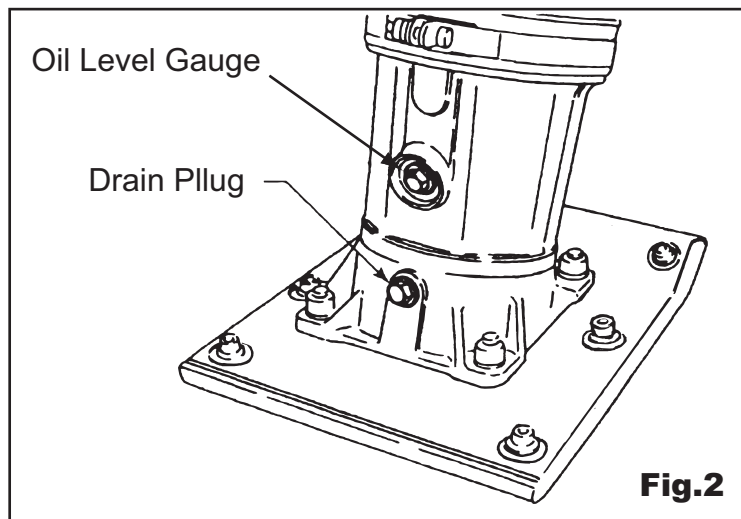
Transmission of the power is taken place by increasing engine speed to engage the centrifugal clutch, and the speed is substantially reduced by means of gears and rotational motion is converted into reciprocal (vertical) motion.

A heavy duty spring is installed at the part that moves up and down so that its force and the weight of tamping rammer work each other to develop powerful compacting force at the foot of the rammer.

Proper service and operation are essential for full commissioning of such performance.

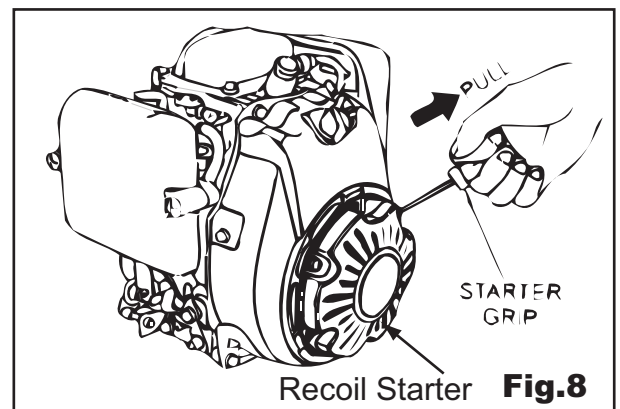
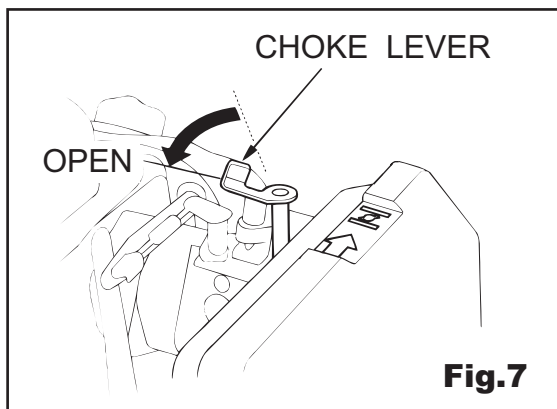
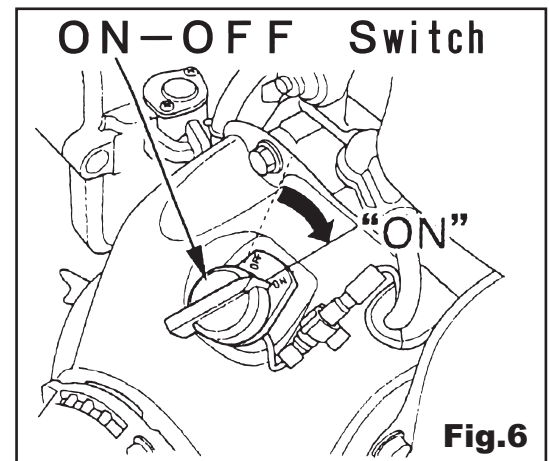
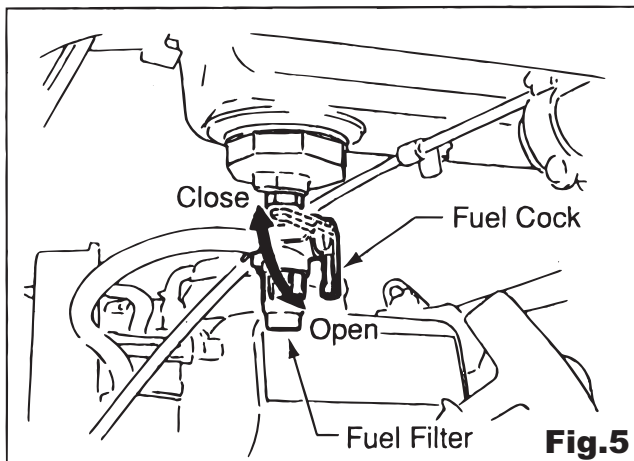
3.PRIOR TO STARTING THE OPERATION

- 3-1. This machine is of oil bath lubrication system.
- 3-2. 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 10W30 SE,SF or better grade. Capacity is 750cc for MT-65HA.(Fig.2)
- 3-3. 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.3 and 4) Nevertheless, oil level should be checked prior to start up without fail. For lubrication, use automobile engine oil of 10W30-SE,SF or better grade. See Engine Operating Manual for further detail.
- 3-4. 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.
- 3-5. Remove dirt and dust. Particularly clean the vicinity of recoil starter and foot.



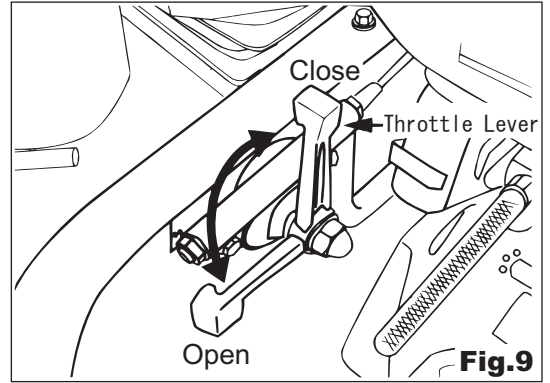
4. STARTING-UP

- 4-1. Lower the fuel cock lever to let fuel flow. To start, switch must be in the "ON" position. (Fig.5,6)
- 4-2. With carburetor choke lever closed, set throttle lever to open 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.7)
- 4-3. 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.8)
- 4-4. 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.
- 4-5. 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 blended gas.



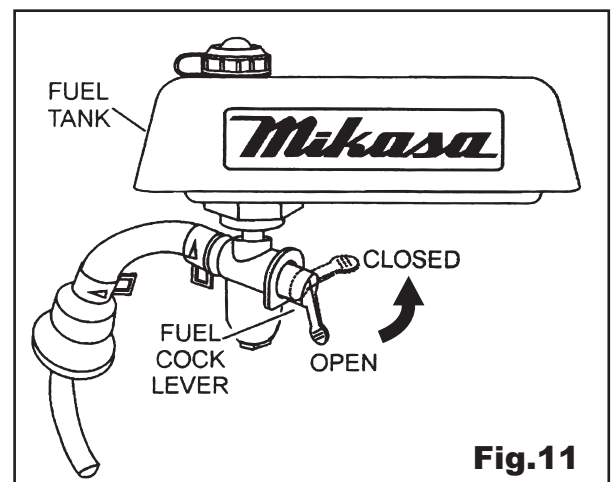
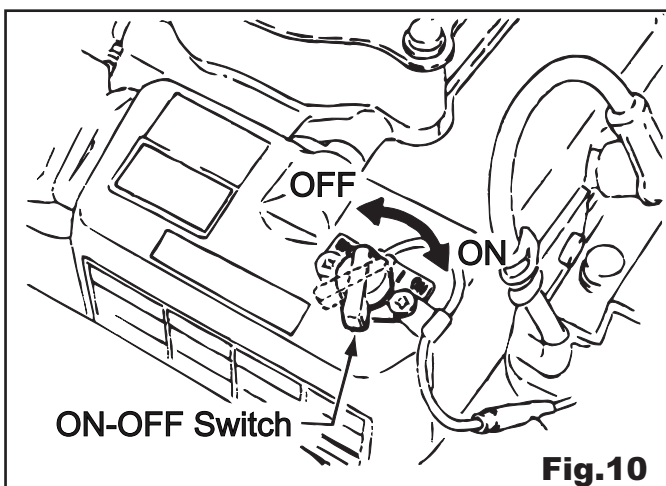
5. OPERATION

- 5-1. To start the rammer tamping action, move the throttle lever (fig.9) 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.
- 5-2. After starting to 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.
- 5-3. 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.
- 5-4. 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.
- 5-5. 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.
- 5-6. 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.



6. SHUT-DOWN

- 6-1. 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.10)
- 6-2. Close the fuel cock. (Fig.11)



7. 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.

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.

50 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.

500 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. 800cc of #10W-30 motor oil. Oil should be midway in sight glass. Break in oil should be changed after first 50 hours. (Fig.12)

Air Cleaner Cleaning / 6 to 12 months Service :

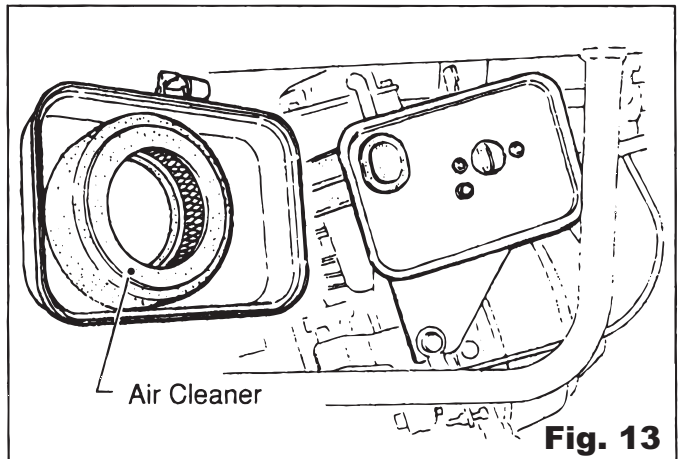
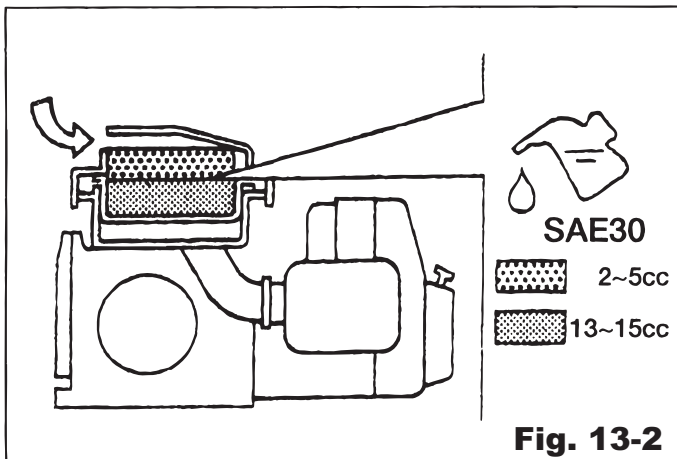
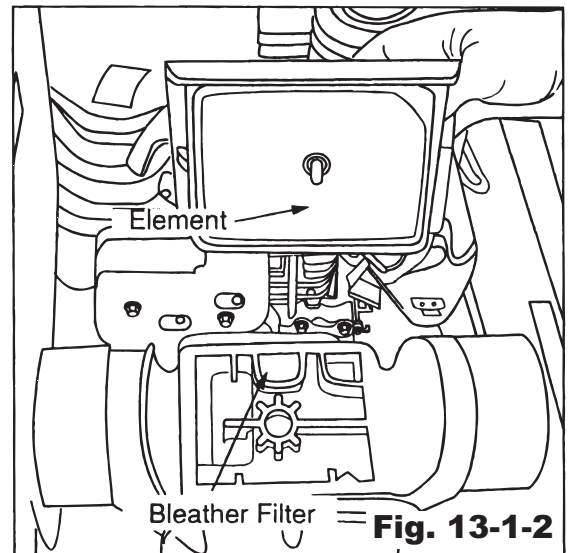
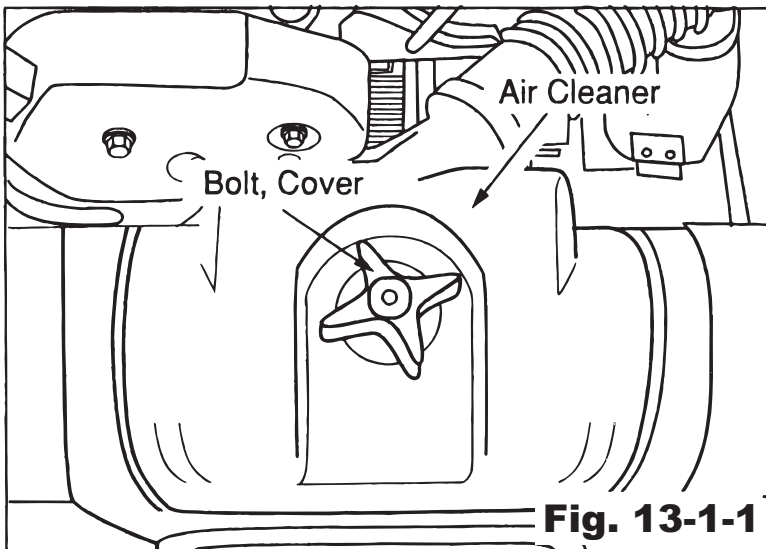
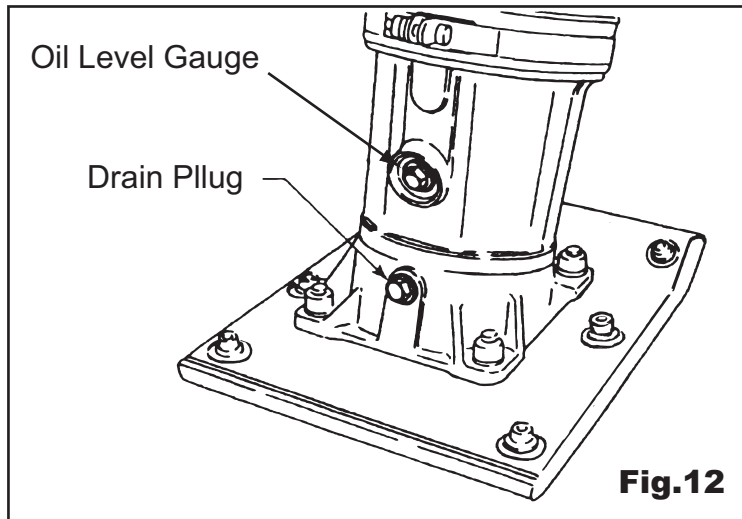
Remove element from pre-cleaner at the top of crank case and clean it with cleaning oil (kerosene). Take off 'Bolt, Cover' of the crankcase upper part and take 'Element' off 'AIR CLEANER' (Fig. 13-1-1 , Fig. 13-1-2). Wet the bottom element (gray) with 7-9cc and let upper element (yellow) be familiar with oil .

The top element (yellow) with 2-5cc and bottom element (gray) with 13 - 15cc of engine oil SAE 10W-30 squeeze out the oil before installing them. (Fig. 13-2) 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. 13)

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)

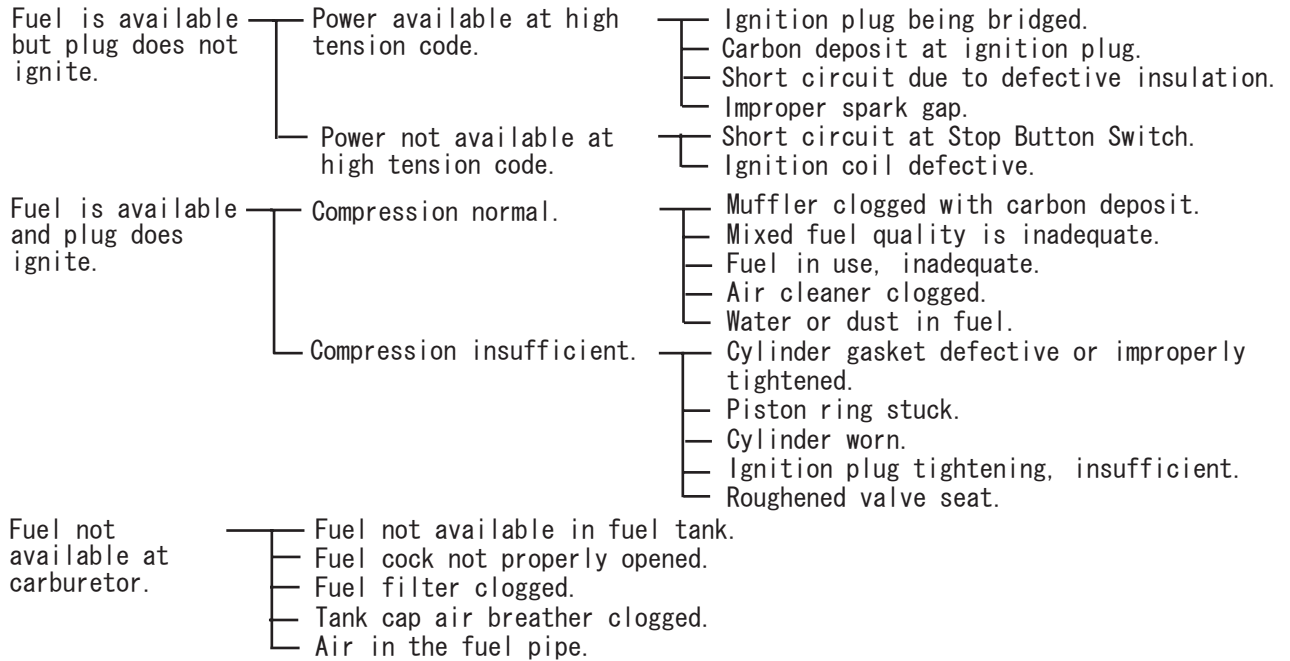
Long-term storage: Drain fuel from fuel tank, fuel line and carburetor. Remove spark plug and pour a few drops of motor oil into cylinder. Crank engine 3 or 4 times so that oil reaches all internal parts. Clean exterior with a cloth soaked in clean oil. Store unit covered with plastic sheet in a moisture free and dust free location out of direct sunlight.



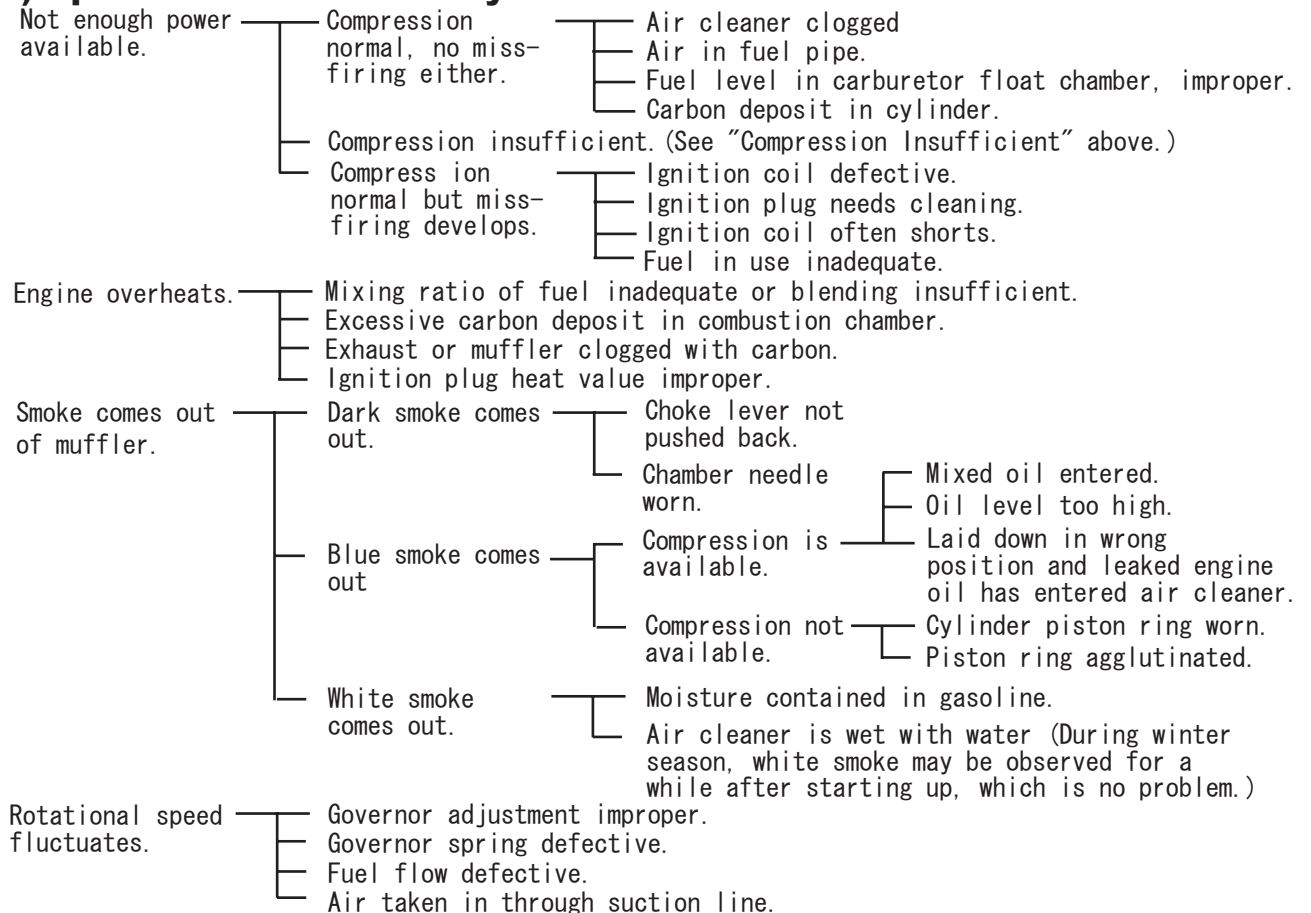
8. Trouble Shooting

1. Engine

(1) Difficult to start



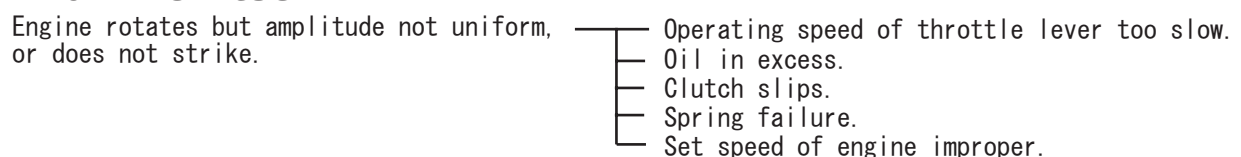
(2) Operation not satisfactory



(3) Recoil starter does not operate smoothly.

- Dust in rotating part.
- Spiral spring failure.

2. Rammer itself





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