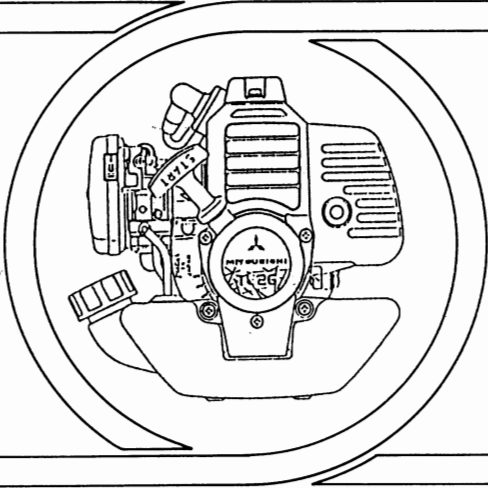


# MITSUBISHI MEIKI ENGINE

## OPERATION MANUAL

Read this manual completely before operating the engine, and use it correctly.



### TLseries (PFD, PSD)

**MITSUBISHI HEAVY INDUSTRIES, LTD.**

The description in this booklet is subject to change without previous notice.

## PRECAUTIONS FOR SAFE OPERATION

- ▷ Do not allow young children or untrained persons to operate the engine.
- ▷ When starting the engine, confirm that no person, or no tank filled with fuel, or no fuel supply equipment exists within a circle of 3 m radius. The heat or spark could cause ignition and results in a fire.
- ▷ Since the exhaust gas is harmful, be careful not to inhale it. Do not use the engine in ill-ventilated places such as the interior of room, tunnel or pit, etc.
- ▷ Avoid touching an ignition plug cap and a high tension cord during engine operation. It may cause an electric shock and a physical injury.
- ▷ Always stop the engine when interrupting the work or moving the engine to another place. The working machine may restart by the turn over or the unexpected attitude change of engine and may injure your body.
- ▷ When filling the fuel tank with gasoline, always stop the engine and pay attention to the surrounding fire source such as cigarettes. It will ignite fuel and may cause a fire.
- ▷ If fuel or gas leakage is found from the carburetor, fuel tank, crankcase, cylinder or the mating surface of components, do not use as it is but repair them immediately. The fuel leakage may cause an engine fire or engine damage that will result in physical injury.
- ▷ Check the engine for loose or missing screws. When a loose or missing one is found, do not use the engine as it is but always maintain the defects.

This product has been manufactured under strict quality control and it is certificated to have passed our inspection.



## PREPARATION BEFORE ENGINE STARTING

1. Fill the fuel tank with the correct mixture of regular automobile gasoline and 2 stroke engine oil.

Mixture ratio (by volume)

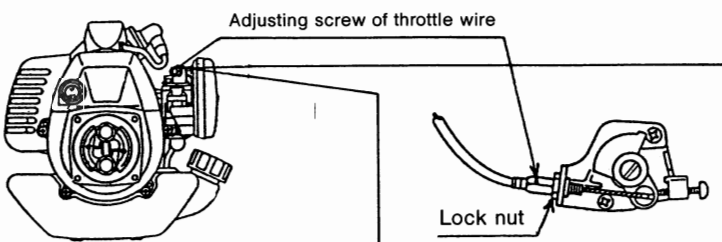
Gasoline	:	oil
25	:	1

### CAUTION




- 1) Using the fuel with incorrect mixture ratio may cause insufficient output power or malfunction of the engine.
- 2) Wipe up completely spilled gasoline. It may soil clothes or cause a fire.

### 2. Adjustment of the throttle wire

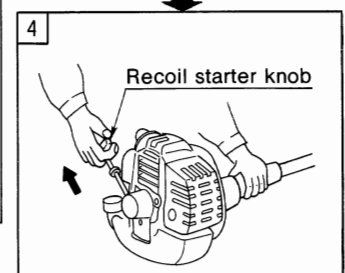
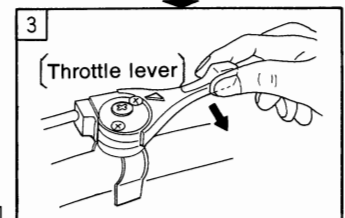
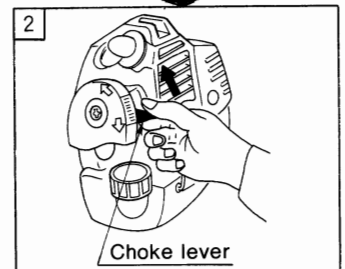
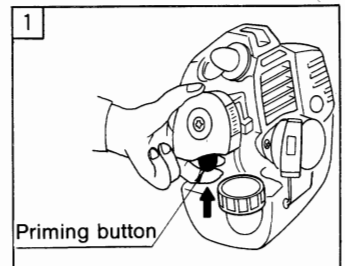
Adjust the play of throttle wire to 0.5 to 1.0 mm.  
Excessive play will cause a starting failure.



## STARTING

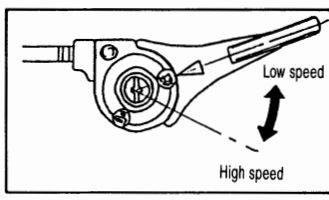
1. Press the priming button repeatedly with a finger till it touches the top in order to pump up the fuel and ensure a smooth start.  
(Press more than 10 times)
2. Move the choke lever to the fully closed position (  mark side).  
When fuel is remaining and the engine is warm, move the choke lever to the fully open position (  mark side).
3. Move the throttle lever to the position near the center between the low speed and high speed position.
4. Grasp the recoil starter knob and pull it rapidly.
5. After starting, watch the engine condition and move the choke lever slowly to the full open position (  mark side).  
When the explosion sound is heard, but the engine does not start, move the choke lever to the full open position and again pull the starter knob rapidly.

This engine is of the construction that the fuel returns to the fuel tank when the priming pump is operated. Even if the pump is operated a little too much, the fuel will not be pumped up excessively. It should be operated sufficiently. Because, when it is insufficient, a starting trouble may be raised.



# OPERATION

1. After engine starts, move the throttle lever to low speed position and warm up the engine for about one minute. As the engine becomes warm, smooth acceleration will be obtained.
2. Perform the work by setting the throttle lever to the required RPM.

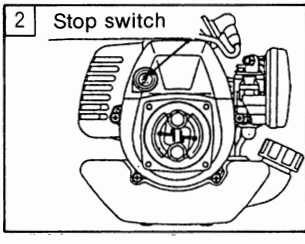
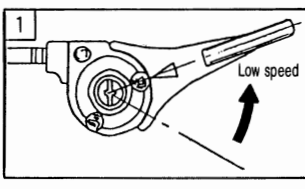


**CAUTION**

- 1) Since every part of the engine is not well lubricated just after the starting, avoid increasing the engine revolution rapidly.
- 2) When the throttle is in full open position, the engine revolution becomes considerably high, and that not only gives a bad effect on the engine life but also causes the engine failure. Do not race the engine (high revolution running without load), and avoid unnecessary high revolution running as well.

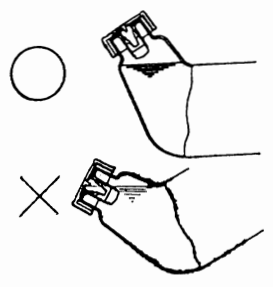
# STOPPAGE

1. Move the throttle lever to low speed position.
2. Press and hold the stop switch until the engine stops.  
In case of lever type switch, turn it to the "OFF" position.  
Replenish fuel before it is fully consumed. It will help to make the next starting easier.  
(Note) When the succeeding operation is not scheduled, empty the fuel tank and restart the engine to use up the fuel in the carburetor.



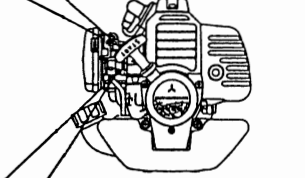
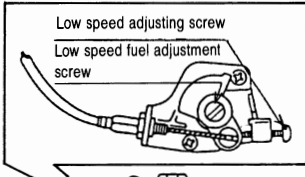
**CAUTION**

- 1) During summer when the engine is stopped for rest, be careful that the inner packing of tank cap is not submerged in the fuel as shown on the right illustration. If the air hole is submerged in the fuel, the fuel may leak due to the increased inner pressure in the fuel tank.
- 2) During operation and just after stopping, do not touch the engine unit, especially the muffler.



# ADJUSTMENT OF CARBURETOR

1. Low speed fuel adjustment screw  
It is standard to revert a turn after full close (right turns).  
• Right turns: Fuel becomes lean.  
• Left turns : Fuel becomes rich.
2. Adjust the low RPM with the low speed adjusting screw.  
• Right turns: RPM increases.  
• Left turns : RPM decrease.
3. In case that the engine is equipped with a high speed fuel adjusting screw:  
• Right turns: Fuel-air mixture becomes lean.  
• Left turns : Fuel-air mixture becomes rich.



(Note) The adjustment of the carburetor is usually not necessary, since it is adjusted at the optimum position when delivered from the factory. If the fuel mixture is adjusted extremely lean, it may cause the seizure of engine.

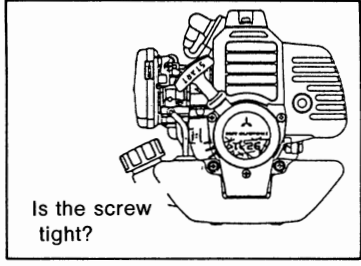
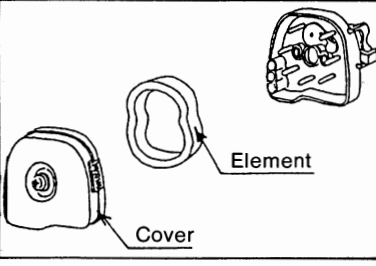
# DAILY MAINTENANCE

**Cleaning of air cleaner**

After cleaning the air cleaner element with gasoline, soak it with engine oil and squeeze it tightly by hand.

**Checking for the tightness of screws**

Check the screws periodically for tightness, and if any are loose, tighten it again.



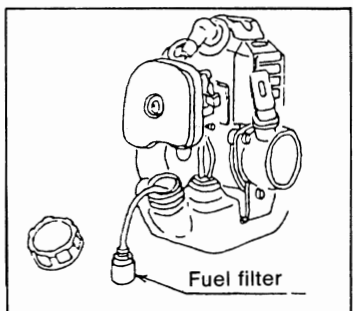
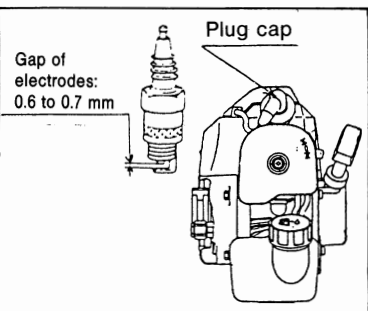
# MAINTENANCE FOR EVERY 50 HOURS OPERATION

**Cleaning and adjusting of ignition plug**

Remove the carbon deposit on the electrode and insulator, and adjust the gap of electrodes to 0.6 to 0.7 mm. When installing, push on the plug cap securely.

**Cleaning of fuel filter**

Pull out the filter with a steel wire, etc. from the fuel filler port, and clean it well with gasoline. If the dirt is extreme, replace the fuel filter and clean inner of the fuel tank as well.



**Removal of carbon deposit**

Remove the carbon deposit from the muffler inlet and outlet, cylinder and piston.  
The engine maintenance technic and maintenance tools are necessary for this work. Please consult the dealer or the nearest service center.

# LONG TIME STORAGE

When the engine is not used for more than a month, maintain and store it according to the following procedure so that starting failure or malfunction does not occur.

1. Empty the fuel in the fuel tank. Then start the engine and continue operation until it stops by shortage of fuel.
2. Clean the inside of fuel tank and the fuel filter with new gasoline.
3. Remove the ignition plug and pour a small quantity of new engine oil into the plug hole. After pulling the recoil starter two or three times, install the ignition plug, and then pull the recoil starter slowly again. When a heavy draw is felt, stop pulling it in order to put a piston at the right position.
4. Clean the exterior of the engine with a cloth soaked with oil, and store the engine at a place where it is dry and away from heat or fire.

**CAUTION**

If the engine is kept for a long time with fuel contained in it, the impurities in the fuel will clog the fuel passages of the carburetor or fuel filter and result in unsatisfactory operation. Empty the fuel without fail when the engine is stored for a long time.