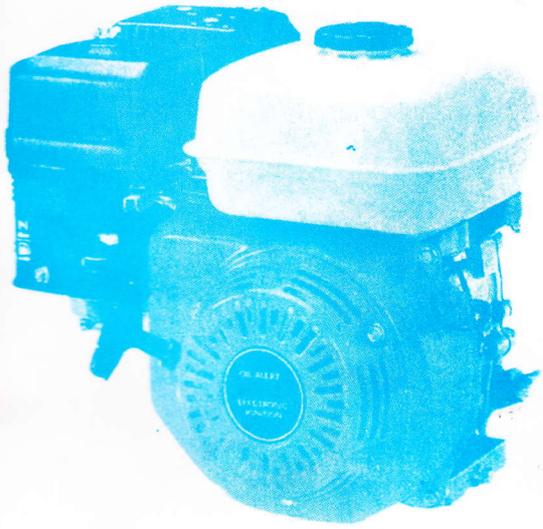


GENERAL GASOLINE ENGINE

OPERATING INSTRUCTION



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CHAPTER 1 SPECIFICATIONS

Model Description	154F	156F	160F	168FAE 168FA	168FBE 168FB
Engine type	OHV Forced air cooling, 4-stroke, 25° tilted, OHV, single cylinder.				
Bore×stroke	54×46	56×40	60×42	68×45	68×54
Displacement	97	98	118	163	196
Compression ratio	5.5:1	6.8:1	8.5:1	8.5:1	8.5:1
Max output and revolution Kw/(r/min)	1.2/3600	1.6/3600	2.6/3600	3.8/3600	4.2/3600
12h output and revolution Kw/(r/min)	0.8/3600	1.1/3600	2.1/3600	3.0/3600	3.4/3600
Max torque and revolution N.M/(r/min)	3.5/3000	4.5/2500	7.3/2500	10.8/2500	12.5/2500
Mode of ignition and starting	Transistor magnet ignition and recoil hand-pull starting				

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Model Description	170F	170FE	173F	173FE	177F	177FE
Engine type	Forced air cooling, 4-stroke, 25° tilted, OHV, single cylinder.					
Bore×stroke	70×54	70×54	73×58	73×58	77×58	77×58
Displacement	208	208	242	242	270	270
Compression ratio	8.5:1	8.5:1	8.5:1	8.5:1	8.5:1	8.5:1
Max output and revolution Kw/(r/min)	4.5/3600	4.5/3600	5.2/3600	5.2/3600	6.4/3600	6.4/3600
12h output and revolution Kw/(r/min)	3.8/3600	3.8/3600	4.8/3600	4.8/3600	6.0/3600	6.0/3600
Max torque and revolution N.M/(r/min)	13.5/2500	13.5/2500	14.5/2500	14.5/2500	15.5/2500	15.5/2500
Mode of ignition and starting	Transistor magnet ignition and recoil hand-pull starting					

-2-

Model Description	182F	182FE	188F	188FE	190F	190FE
Engine type	Forced air cooling, 4-stroke, 25° tilted, OHV, single cylinder.					
Bore×stroke	82×64	82×64	88×64	88×64	90×65	90×65
Displacement	337	337	389	389	420	420
Compression ratio	8.5:1	8.5:1	8.5:1	8.5:1	8.5:1	8.5:1
Max output and revolution Kw/(r/min)	7.2/3600	7.2/3600	7.8/3600	7.8/3600	8.3/3600	8.3/3600
12h output and revolution Kw/(r/min)	6.8/3600	6.8/3600	7.3/3600	7.3/3600	7.8/3600	7.8/3600
Max torque and revolution N.M/(r/min)	21/2500	21/2500	23/2500	23/2500	25/2500	25/2500
Mode of ignition and starting	Transistor magnet ignition and recoil hand-pull starting					

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CHAPTER II SAFETY MEASURES

1. During the operation of engine, the exhaust gas contains some compound of CO and CH. In order to avoid accident, the engine must not be used inside of the room, if it has to be used inside of the room, the exhaust gas must be led to the outside of the room and the outlet of the guide pipe must be not less than 1m from the doors&windows, meanwhile, the air in the room must be free from inhibition.
2. The inflammable, explosive and any other dangerous substances must be far away from the engine, the air in the working place must be free from inhibition. The fire source must be not less than 10m away from the engine, what's more, the engine must lie in the wind direction of the fire source.
3. When filling in fuel&lub.oil, the engine must be stopped, smoking is not allowed, if the fuel or lub oil overflow or leaks out, thoroughly clean it before the engine is started.
4. The operators must be specially trained. The persons who are not qualified to operate the engine are strictly forbidden to operate this engine.

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CHAPTER III PREPARATION BEFORE OPERATION

1. Check engine oil Level

First stop the engine, then, check the engine oil level. Unscrew the oil dip stick to check whether the engine oil is within the range of specified limit. If the oil level is too low, add the engine oil till the specified height (see figure 3-1)

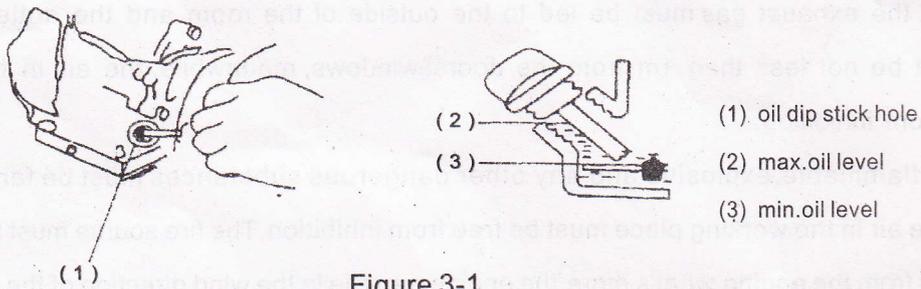


Figure 3-1

Attention: The engine oil brand is 15W/40SAE.

2. Check fuel oil level:

Open the fuel tank cover, check the fuel level. If the level is too low, add the fuel from filling-hole, till the oil level reaching the red stop plate inside of the strainer. The fuel brand is 90# gasoline

Do not mix the gasoline with the engine oil.

Do not use the gasoline with foreign materials (see figure 3-2)

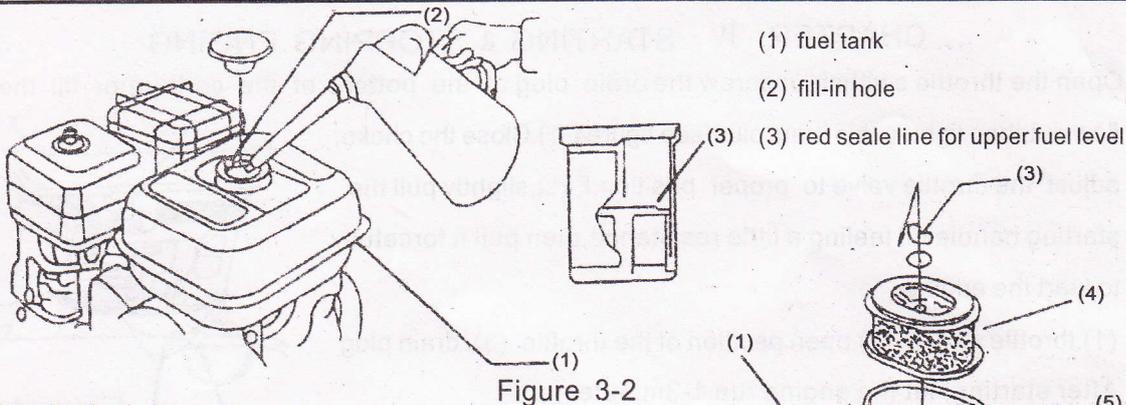


Figure 3-2

3. Check air cleaner:

This air cleaner is dry-mode cleaner, and there are two kinds of filter elements, i.e. paper element and foam element. When check, remove the case of the air cleaner, check whether the filter element is clean. If there is any dirt and foreign material, clean and dry it, repeat this operation several times, finally reassemble it.

(see figure 3-3)

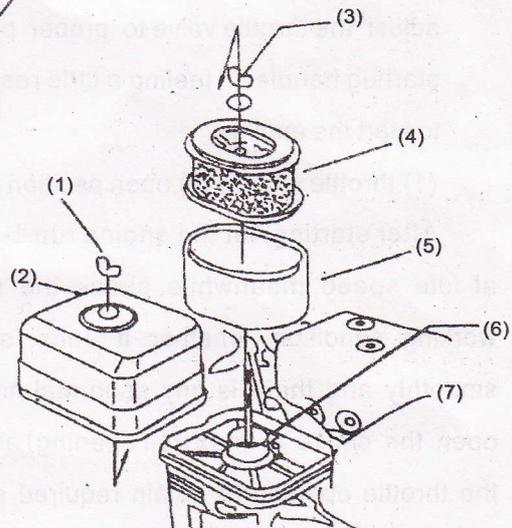


Figure 3-3

- | | | | |
|-------------------------|-----------------------|------------------------|--------------------------|
| (1) butterfly nut | (2) air cleaner cover | (3) butterfly nut | (4) paper filter-element |
| (5) foam filter element | (6) gasket | (7) cleaner base plate | |

CHAPTER IV STARTING & STOPPING ENGINE

1. Open the throttle switch, unscrew the drain plug at the bottom of the carburetor till the fuel flow out, then tighten this drain plug (see figure 4-1). Close the choke, adjust the throttle valve to proper position. First, slightly pull the starting handle till feeling a little resistance, then pull it forcefully to start the engine.

(1). throttle switch (2). open position of the throttle (3). drain plug

After starting, let the engine run 1-3 minutes at idle speed, meanwhile, check the engine's working condition whether it runs stably or smoothly and there is any abnormal noise, then open the choke to max (full opening) and adjust the throttle opening to obtain required speed. To the present, the starting process is completely over (see figure 4-2 and 4-3)

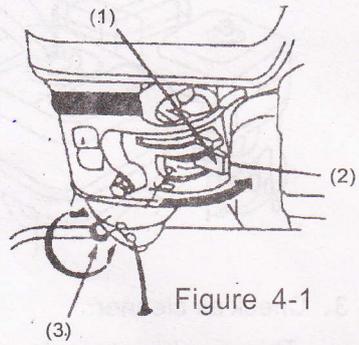
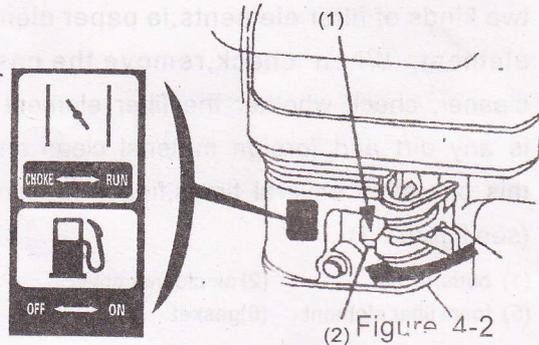
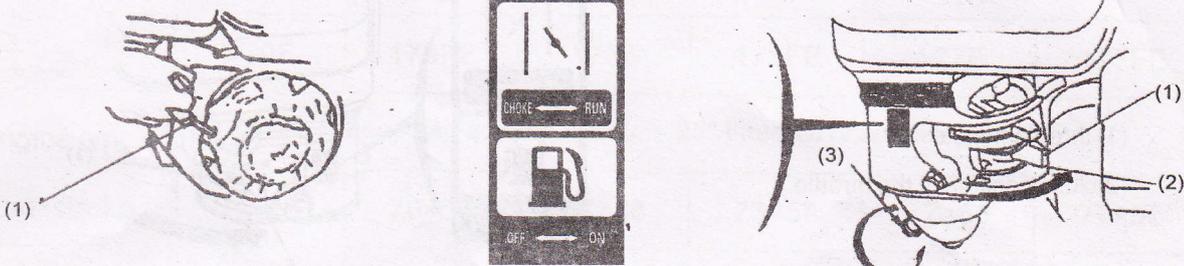


Figure 4-1



(2) Figure 4-2

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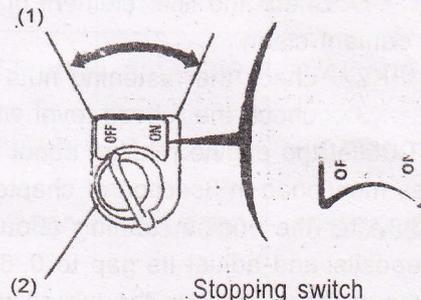


(1) choke close position of the choke (3) manual start the engine by pulling the c...

Figure 4-3

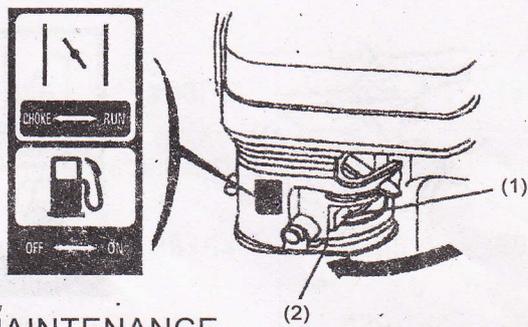
2. Stopping engine

Adjust the throttle valve to a proper position, to make the engine run at the minimum steady speed, then, close the choke and put the stopping switch to "off" position, the engine will stop at once. (see figure 4-5). There is a stopping switch on the right crankcase cover of gasoline engine. You can stop the engine only by putting the switch to "off" position, the engine stops at once.



Stopping switch
Figure 4-4

- (1) throttle handle
- (2) close position of the throttle



CHAPTER V MAINTENANCE

Figure 4-5

1. Everyday maintenance (routine maintenance)

<1>. Check the filter element of the air cleaner, remove the dirt and foreign materials to keep the element clean.

<2>. check the fastening nuts whether they are tightened.

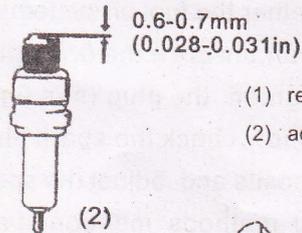
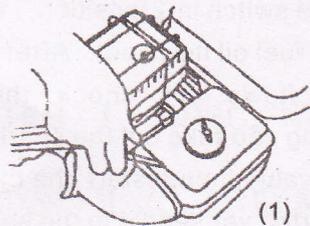
<3>. check the lub. oil level whether it is within specified range.

2. After the engine running about 25 hours, the the air cleaner should be cleaned. The cleaning method as mentioned in 3section of chapterIII.

3. After the engine running about 50hours, the spark plug must be checked, remove its carbon deposits, and adjust its gap to 0.6-0.7mm (see figure 5-1). Check radiating fin and remove the dirt among them. Replace the lub oil, unscrew the drain plug, tilt the engine slightly and let the lub oil drain out, add the kerosene to clean and then drain it out finally, tighten the drain plug and fill in the new lub oil to the specified oil level.

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Care must be taken , the lub oil brand is 15W/40SAE, the filling volume for 160F、168FA/B is 0.6L, 173QF, 177QF, 182QF and 188QF is 1.1L



- (1) remove the spark plug
- (2) adjust spark plug gap

Figure 5-1

4. After every 100 hours running, the fuel tank and filter strainer must be cleaned. Open the fuel tank cover, take out the filter strainer and clean it with brush. Take off the fuel tank, clean inside (internal) of the tank, remove the dirt and water attached on the internal surface of the tank. Reassemble the tank and fit the strainer, then fill in new fuel oil till the oil level reaching the red scale line (refer to 2-section in chapterIII)

5. After running every two years, check the ageing condition of the oil tube. If there is any ageing, hardening or crack, it must be replaced. Tighten the replaced oil tube joints and check its leakage.



- (1) oil drain-plug
- (2) fill oil hole
- (3) specified oil level

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CHAPTER VI TROUBLESHOOTING

If the engine can not be started or starting is difficult, the engine should be checked or repaired. First, check whether the fuel oil system has oil. Place the throttle switch in (2) position, make the oil way with oil, then, unscrew the drain plug (3) to see whether the fuel oil flows out. After the fuel oil flowing out, tighten the plug (see figure.3-1). If no fuel oil flows out, check the fuel line carefully. Secondly, check the spark plug. Remove the spark plug cap, take out the spark plug, clean the carbon deposits and adjust the spark plug gap to specified value, then, restart the engine as per the starting methods mentioned ahead. If it can not be started yet, send it to the service station to repair. The users do not disassemble or assemble by yourselves.

CHAPTER VII

MAINTENANCE BEFORE STOPPING USE FOR LONG TIME

For some reasons, the engine is not used for a long time, it must be maintained one time before it is stored.

First take off the fuel tank, drain out all fuel oil and clean the dirt and water inside of the tank. Open the fuel cock, unscrew the drain plug at the bottom of carburetor, drain out fuel oil in carburetor thoroughly, then tighten the drain plug.

Secondly, unscrew the drain plug at the bottom of the crankcase and drain out the lub oil in the crankcase thoroughly, then tighten the drain plug.

Finally, clean the outer surface of the engine with clean cotton, remove the dirt and dust etc. Then store the engine in a place where is in good ventilation condition and far from dirt.