Care and Operation of G -Mark .30 Radial Engine

Specification:

Radial Five (5) Cylinder Two cycle glow engine
Bore (Cylinder Diameter): 11.2----- (0,441 in.)
Stroke
10.15----- (0,400 in.)
Displacement
24.95 cc (0.305 cu.in.)
Weight without plugs
320g (11.29 oz.)
Suitable propeller size
2 'diameter × 4' pitch

1. Break-in

In order to maintain durability, high efficiency, good starting of your engine, break in new engine first playing attention to following points.

- (1) Use same propeller and glow fuel which you will use for actual flight.
- 2 Attach the engine firmly to the fixed base for test running.
- 3 Operating and starting the engine, refer to item 2.

Operation points

	Running Time	Running condition	Needle valve	Throttle valve	
First stage	20 minutes	Low revolution	Same of beginning of running slow not to stop	Fully open	
Second Stage	15 minutes	Middle → High revolution	Close gradually	Fully open	
Third stage	5 minutes	Highest revolution	Adjust valve to attain high running	Fully open	
Fourth stage	5 minute	High Low	High revolution	Open ₹ Close	

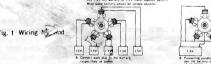
Note I At first stage, be careful not to rise the temperature.

Note 2 While break in, avoid continuous running. Repeat 2 5 minutes at intervals.

Note 3 At highest revolution, constant and stable revolution will be attained. At this stage, break in is completed

2. Preparation for running

- ① Mount the engine to the plane or the fixed base firmly.
- ② Mount the fuel tank back of the engine, then arrange the tubes and pour the fuel into tank. Install the tank as fuel level should be same height as of needle valve or a little lower than position of needle valve.
- (3) Connect 1.5 mm diameter wire to operating lever of throttle valve is the wire at the position of fully opend. (In case engine is mounted in the airplane, links the 1.5 mm diameter wire from the engine control servo motor.)
- Mount the propeller firmly to the engine.
- OOn account of exprosions by turns, strong repulsion arose from compression would be absorbed. Therefore, it is possible to start it with a manual crank operation. However, it would be better way to use the motorized starter.
- ⑤ Open the needle valve (couter clockwise). Then close the air inta y a finger and rotate the propeller once or twice to lead the fuel to carburetor. (Be careful the engine does not inhale the fuel too much.)
- 6 Squirt a few drop of fuel into the carburetor and muffler by an injector or small choke pump.
- Onnect the unfinished end of the booster cord to the battery, and the clip to the glow plug in place. Do this procedure to each plug and battery. Refer to illustrations for connecting methods.



- (8) In case of using the motorized starter, check its revolution direction and revolve while pressing it against spinner. Engine gradually becomes to start with explosive sound.
- O'The broken-in engine is usually easy to start with a manual grank operation. In this instance, orank up at the highest possible speed.
- When the engine starts, close the needle valve until smooth high revolution of engine is attained. After stable revolution is attained, take off the booster cord. Adjust revolution of the engine by opening or closing the needle valve. Closing the needle valve gradually, the revolution increases up to highest revolutions, then revolution begin to decrease. Best running position is a just lower revolution than highest revolution by opening needle valve a little. Remove battery connection after attaining good running.
- O'The five-cylinder engine could continue to revolve even if one plug is not workable.
- If the adequate revolution number could not be attained in adjusting needle valve to attain highest running, check each cylinder whether it would explode.
- If you will find out an un-explosed cylinder, repeat to it the same procedure shown above until it starts to explode.

The upside-down cylinder is apt to fail to to the because the fuel is liable to accumulate. You may distinguish the un-exploded cylinder by fouching each one because its temperature would be lower. In this case, pay a special attention not to suffer burns.

You had better use one battery for one plug as shown illustration (Fig. 1) in order to start smoothly in a parallel circuit, oholeck whether the efectric capacity is enough well and use the thicker wire not to break the booster cord by heating arose from the electric current.

Operating throttle lever to check running from highest revolution to lowest and adjust range of

3. Meisures when the engine fails to start

- When the engine does not run with explosive sounds, remove glow plug and connect to the battery to check filament coil in the center.
 - A. Be sure the battery is a good one.
 - B. Breaking of the booster cord. (Replace by right booster cord.)
 - C. Breaking of plug filment. (Replace by right plug.)
- When the engine cranks with explosive sound but does not run, the engine breathe in the fuel too much, that is, over choking conditions. (Close the needle valve and continue cranking to burn fuel, then start the engine usually.)
- When the engine starts to run and stop at highest revolutions, it is necessary to open needle valve. (Open needle valve half a turn, and put fuel through muffler's pouring hole, then begin to start engine.)
- (4) Clean up needle valve, fuel tube to keep fuel lubricating smoothly.

4. Mouting the engine in the airplane

- (1) Beam-mount is installed at the rear of the engine. Furnish the strong beam where the engine is installed.
- 2 Nipple is installed on the front housing to put pressure on.
- 3 Select the lighter airframe model (less than 1.7kgs) because the power of this engine is same as that of the 20 - 25 class single cylinder engine.

5. Propeller

Propeller diameter 9' pitch 4' is suitable for this engine as standard size. Select best suitable propeller size after testing with your airplane.

6. Fuel

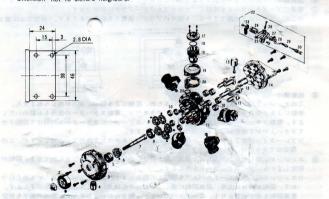
Use glow fuel for small engine at model shop. Best running is attainable by using the fuel containing 10-25% nitro-methane.

7. Glow plug

Select best glow plug, considering fuel type, propeller, conditions of weather, etc.

8. Special attention

- Never disassemble the engine because it is precisely processed.
 Even if it would be disassembled owing to unavoidable circumstances, never remove any gear of the front gear box until thing the mark where gears bite each other.
 The front gear box is quite important to settle the gear timing.
- 2 If it is disassembled or revised, we charge you any costs of repairs and or parts in this instance.
- When operating, running the engine, flying the airplane, driving or sailing the model, pay special attention not to disturb neighbors.



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Parts List							
Illust No.	Part No.	Description	Illust No.	Part No.	Description		
F PERSON	FN-M6	Propeller nut	12	30104R	Crank shaft		
2	30216R	Drive washer set	13	30117R	Rotary valve		
3, 4	30220R	Front housing assembly	14	30218R	Back mount assembly		
5	L-1480	Ball bearing	15, 16	12301	Cylinder / Piston assembly		
6	30311R	Center gear set	17, 18	06304	Cylinder head/Gasket set		
7	30102R	Main shaft	9, 20, 21	30306R	Manifold set		
8	L-1790	Ball bearing	22'	12207	Throttle valve assembly		
9	30310R	Radial gear set	23~26	12308	Throttle housing assembly		
10	L-1060	Ball bearing	7/~30	12303	Needle valve assembly		
d base.	30219R	Crank case assembly	30	1212	Needle		



3RD FL. SUZUKI BLDG. No.2 2-5 KANDA NISHIKI CHO CHIYODA-KU. TOKYO IDI JAPAN