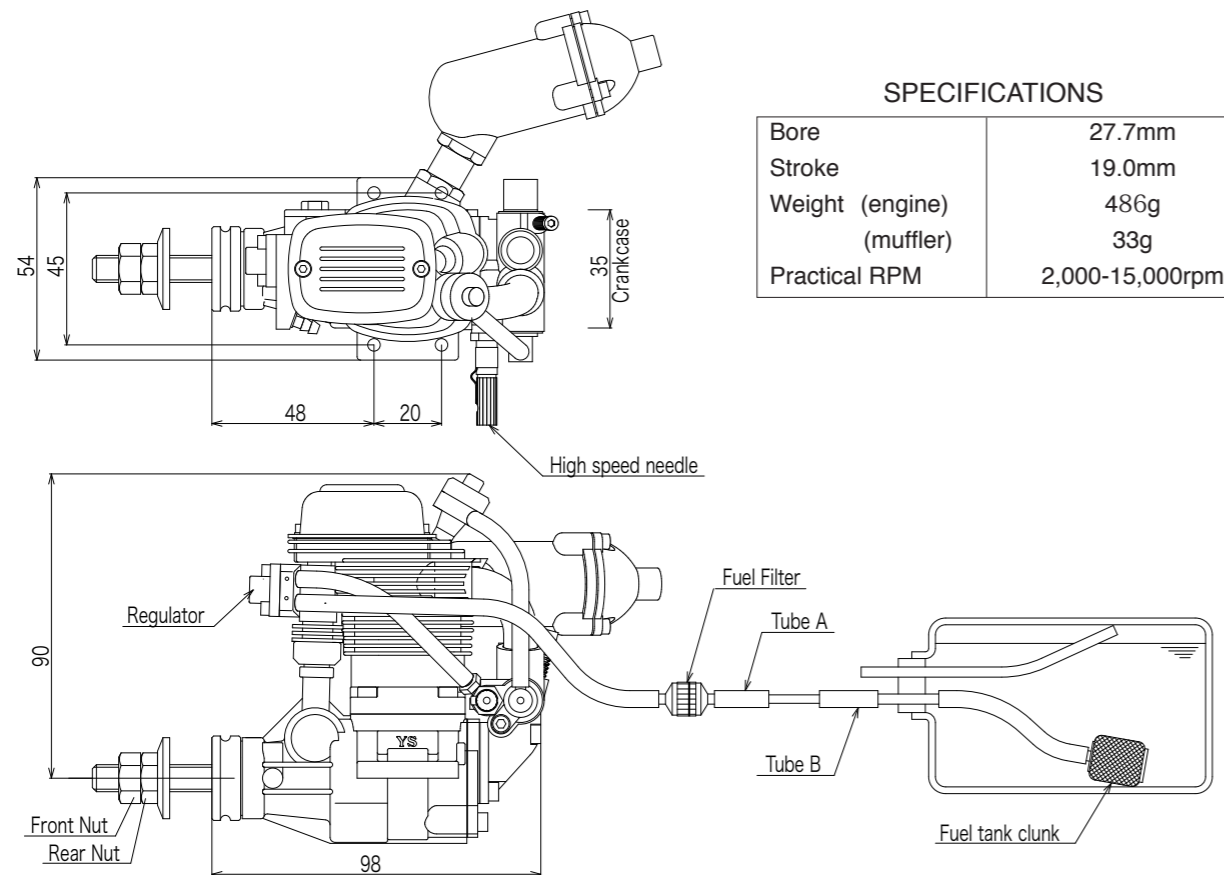


FIG 1



SPECIFICATIONS

Bore	27.7mm
Stroke	19.0mm
Weight (engine)	486g
(muffler)	33g
Practical RPM	2,000-15,000rpm

Safety Instructions

In order for you to use of the engine, please read through this instruction manual carefully. This instruction manual uses special words, if you have any difficulties for understanding, please ask the hobby shop you purchased or contact us directory.

1. Mount the propeller nut supply with the engine.
2. Select a good quality propeller and follow instruction by manufactures.
3. Select a propeller size not increases practical rpm in the air.
4. Be sure not people standing front and sides of propeller while running.
5. Use electric starter to start the engine with idle position of the carburetor.
6. After start the engine, move behind of propeller and well adjust needle setting before you fly.
7. It becomes extreme high temperature while and after engine runs. Do not touch engine, exhaust header, muffler, and any parts attached to the engine while engine runs or before cool it down.
8. If engine runs not correctly, DON'T FLY!
9. Do not use this engine other than radio controlled airplanes. Can not use for radio controlled helicopters.
10. You have full responsibility while you operate the engine. Please be extra care for safety when never you operate the engine.

Installation

WE RECOMMEND THAT THIS ENGINE BE MOUNTED ON A SHOCK ABSORBING SOFT MOUNT

1. Connect the engine to the tank as shown in fig.1. The recommended fuel tank size is 400 to 500cc. A standard clunk type fuel tank may be used. If this type of tank is used, you must use the special clunk supplied with the engine. Please note that with this clunk, all of the fuel cannot be used from the tank. As soon as any part of the clunk becomes exposed, the engine will stop due to air entering the fuel pump.
2. Always use a fuel filter. We recommend YS filter (6720). With this filter, you must remove the cloth portion of the filter and leave both the metal filter screens in place.

Fuel

1. Use a good quality alcohol based model engine fuel containing 10% to 30% nitro, and oil content 5% to 25%. You can not use gasoline fuel.
2. When you filling the tank, disconnects Fuel Tube "A", or Fuel Tube "B" see "Fig.1" from connecting tube to filling. If you use "T" nipple on the fuel line to filling, use fuel stopper on the Fuel Tube "A" see "Fig.1" to avoid fuel in to the engine.

Propeller

1. Due to the high output power of the DZ70 engine, it is supplied with a double locknut system for added safety. Mount the propeller and tighten the rear nut. Next, tighten the front nut. The rear nut has an offset shoulder so the front nut will secure itself to the rear nut.
2. Please retighten propeller nut periodically.
3. Select a propeller that will allow the engine to run at maximum speed between 8,000 to 10,000 rpm range.
4. We recommend sizes 14x7, 14x8, 15x7. Other prop sizes may be used as long as the correct rpm range.

High Speed Needle Adjustment

1. Adjustment of the high speed is done by the carburetor needle valve. When the needle valve is turned clockwise, the mixture is leaner. When it is turned counter-clockwise, the mixture is richer. A good starting position for the high speed needle valve is 2 turns open from the fully closed position. At this setting the engine will be very rich and may die when you remove the glow driver. If this happens, turn the needle valve in 1/2 turn and try again. The final running setting for the high speed needle will be approximately 1 to 1-2 turns open from fully closed.
2. When the engine is started, open the throttle gradually. Next, find the peak position (highest RPM) by adjusting the needle valve. Then the needle valve should be opened approximately 1/8 _ 1/4 turns from full RPM to achieve best performance.

Brake-in

1. Starting the engine with high speed needle valve 2 turns open from the fully closed position and idle position on carburetor.
2. After start the engine, increases rpm gradually by operates throttle control up and down. Do not suddenly open throttle to fully open position.
3. If mixture is too rich and miss firing, turn clockwise high speed needle valve to leaner mixture.
4. Brake-in the engine one or two tanks of fuel on the ground with richest possible mixture setting.

Idling adjustment

1. To get 2,000rpm to 3,000rpm idling.
2. When the regulator is turned counter-clockwise, the idle mixture is leaner. When the regulator is turned clockwise, the idle mixture is richer. Adjust regulator by turn 45 degree at a time.
3. If idle mixture is too rich, gradually rpm drops and stops after continuous idling. If engine stops when you change attitude of airplane on the ground also too rich on idle mixture. If mixture is too lean on idle, rpm is go up and down and not keep stable when you make continuous idle.

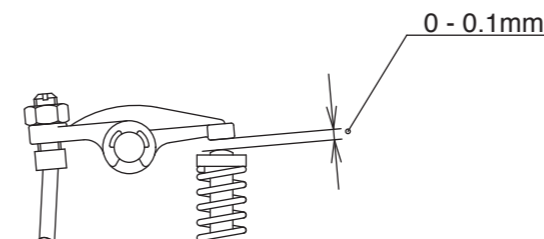
Glow Plug

Select the most appropriate glow plug from those designed specifically for 4 cycle engines. Glow plug selection greatly affects the maximum engine output and low idle. If RPM's decrease or stop when the booster cord is removed, replace the plug. We recommend the YS#4 plug for maximum performance.

Tappets Adjustment

1. Tappet clearance is preset at the factory.
2. Clearance adjustment may need after first one hour running time due to initial wear. After first adjustment, clearance should be checked as normal maintenance for every 10 hours running for maintain maximum performance.
3. Clearance adjustment should be done when the engine is cool.
4. The proper clearance should be set at 0mm (0.000") to 0.1mm (0.004"). The adjustment is achieved by loosening the lock nut see "Fig.2" and turning the adjustment screw see "Fig.2". The engine must be at top dead center on the compression stroke before any adjustments are made. This engine runs best with the valves set at a tight setting. If the valves are set too loose, power will be affected.

Fig2



Cam Gear Timing

If for some reason you have to disassemble your engine, please follow these important steps on reassembling the cam gear.

1. Remove the carburetor and back plate assembly. Notice the impression mark or dot opposite the rod journal on the crankshaft.
2. This mark is to point straight down or lined up with the outer case seam line at the bottom and hold crankshaft securely.
3. Reinstall the cam with the dot facing you. After you fully installing cam and then check dot should be pointing straight down will give you right timing.

Cleaning

This engine is using silicon gaskets, "O" rings etc. Please use methanol or model engine fuel for cleaning. Do not use Kerosene, Gasoline, Machine oil, Automobile parts cleaner or house hold lubricants to clean. It will harm silicon parts.

Engine Cooling

Be sure to secure cooling air for engine cooling. If it is not enough cooling air for the engine causes heat up the regulator and carburetor to make vaporized or percolates the fuel and will get deteriorations of engine performance or stop the engine. Please read carefully below for provision.

1. Please open air intakes and outlets as big as possible.
2. Take off cowling when you make long engine adjustment included idle adjustment. When air temperature is high, it may heat ups the regulator and carburetor to make vaporized or percolate the fuel even with out cowling. If it happens, wait till engine well cooling down before you restart and adjust.

Rusting provision

Do not leave fuel in the engine after you finished for day. If you store the engine long period of time, few drops (about 1cc) of model engine lubricant oil from carburetor and clank several times. Do not use Automobile engine oil. They will not mix together with alcohol.

Parts and Repair Service

If you can not find repair parts form hobby shops, you can order parts direct to our factory. We also do repair your engine at our factory. If you need repair service, please make detailed of states and send together with the engine.

Warranty

We strictly inspect each process of production from parts to final assemble for keep good quality. If a performance deteriorates or part fails due to a manufacturing error under normal usage will repair no charge with in 1 year starting from the date of purchase. Warranty will not cover normal wear. Even with in 1 year warranty term, improper disassemble or assemble, under improper usage, any modification will avoid this warranty and there will be normal charge for parts and labors.

NO.	ITEM NO.	DESCRIPTION	QTY
1	G7001	Crank case	1
	G7002S	Cylinder head assembly	
2	G7002	Cylinder head with liner	1
3	F5103	Intake valve	1
4	F5104	Exhaust valve	1
5	F5105	Valve spring set	2
6	F9106	Spring retainer set	2
7	F9107	Valve spring clips	4
8	F3108	Cylinder head gasket	1
9	G7009	Head bolt set	4
10	F5111	Valve cover	1
11	F5112	Valve cover gasket	1
12	F5113	Valve cover screws	2
13	F5114	Intake pipe	1
14	F5115	Intake O rings	2
15	G7015	Crankshaft	1
16	G1016	Crankshaft ring	1
17	G1017	Rear bearing	1
18	F5118	Front bearing	1
19	F5119	Front bearing seal	1
20	F5120	Drive washer	1
21	F5121	Drive washer retainer	1
22	F1266	Prop washer	1
23	F2267	Prop nut set	2
24	G7024	Piston	1
25	G1025	Piston ring	1
26	F6126	Wrist pin	1
27	G1027	Wrist pin retainers	2
28	F5128	Rocker arm set	2
29	F2013	Intake tappet adjusting screw	1
30	F2014	Exhaust tappet adjusting screw	1
31	F1214	Adjuster nut set	2
32	F5131	Rocker arm shaft	1
33	F5132	Rocker arm screw	1
34	F1217	E ring clip set	2
35	G7034	Cam	1
36	F5135	Cam cover	1
37	F5136	Cam cover O-ring	1
38	F5137	Cam gear cover screws	2
39	F5138	Cam bearing set	2
40	F1236	Cam follower set	2
41	G7040	Push rod	1
42	G7041	Push rod cover	1
43	F5142	Push rod cover O ring	4
44	G1043	Con rod	1
	G1044A	Back plate assembly	
45	G1044	Back plate	1
46	G1045	Disc valve	1
47	G1046	Disc valve pin	1
48	G1047	Disc valve set screw	1
49	F5149	Back plate gasket	1
50	F5150	Back plate screws	2
	G7050S	Carburetor assembly	
51	G7050	Carburetor body with throttle	1
	G7087	Throttle barrel	1
52	G7051	Throttle barrel seal	1
53	R6124	Throttle barrel retainer	1
54	F1260S	Throttle arm set	1
55	F1258	Throttle stop screw	1
56	F1259	Throttle stop spring	1
	F5158S	Needle valve set	
57	F5158	Needle valve	1
58	F1546	Needle O ring	1
59	F1555	Needle socket	1
60	F1556	Needle socket O ring	2
61	F1557	Needle detent	1
62	F5164	Carburetor gasket	1
63	F5165	Carburetor screws	4
	G7163S	Fuel pump assembly	
64	G7163	Regulator body	1
65	F1245	Regulator adjusting screw	1
66	F1246	Regulator adjusting screw O-ring	1
67	G7166	Diaphragm	1
68	F2051	Regulator spring	1
69	G7068	Regulator screw set	2
70	G7069	Fuel pump body with plunger	1
71	G7070	Pump valves	2
72	G7071	Pump valve springs	2
73	G7072	Pump plate	1
74	G7073	Pump screws	2
75	G7074	Pump gasket	1
76	G7075	Pump insulator	1
77	F2188	Insulator O ring	1
78	F2059	Pump bracket	1
79	G7078	Upper push rod	1
80	G7079	Lower push rod	1
81	F4088	Check valve	
	F5173S	Muffler set	
82	F5173A	Muffler assembly	1
83	F5174	Exhaust pipe	1
84	F5175	Rock nuts	2
	F2083	Fuel tank clunk	1
	G1080	Gasket set	3
	G7086	O ring set	13

