

FIG.1

SPECIFICATIONS

BORE	34mm
STROKE	31.8mm
DISPLACEMENT	28.87cc
WEIGHT	915g
RPM	2,000 ~ 11,000rpm

BREAK-IN

To maximize engine performance and increase durability, please follow this break-in procedure:

1. Use the same size (or slightly smaller) propeller than you intend to use in flying.
2. Use a good quality fuel which contains 15-30% nitromethane and an oil content of 15-20%. Synthetic or castor oil can be used, or a combination of synthetic and castor. Do not use four cycle fuel due to low oil content.
3. The needle valve should be set so that the engine is running at a rich setting. Run the engine approximately 20 minutes with this setting.
4. Mount the engine to the model and fly ten times with this setting. This concludes the break-in procedure. It is advisable to always use a slightly rich setting to keep the moving parts lubricated, even after the break-in period.

HIGH SPEED ADJUSTMENT

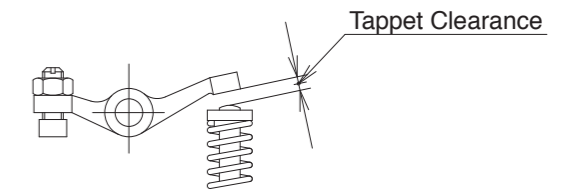
1. Adjustment of high speed is done by the high speed needle valve. When it is turned clockwise, the mixture is leaner. When it is turned counterclockwise, the mixture is richer. A good starting position for the high speed needle valve is 1 1/2 - 2 turns open from fully close position.
2. When the engine 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 of a turn from full RPM to achieve best performance. The engine may stop if the throttle is opened to full immediately after starting. Wait until the engine temperature rises and then open the throttle slowly.
3. For flying, it is advisable to use a slightly richer mixture setting. By using a richer mixture, the engine temperature is maintained and RPM stability improves.

LOW SPEED ADJUSTMENT

This engine is equipped with a low speed needle valve to adjust the mixture from low to mid throttle. This needle valve is located on the side of the throttle barrel opposite the throttle arm (FIG.1).

1. Open the low speed needle to 2 turns from fully closed position.
2. The low speed needle valve should be set after the high speed needle valve has been adjusted. Close the throttle gradually to a idle (approximately 2,000rpm). Let it idle for 20 to 30 seconds and then slowly advance the throttle. The adjustment is satisfactory at low speed if transition is smooth at this time.
3. If the engine is running rough on idle, the low speed mixture is rich. If the engine starts to speed up and dies on idle or starts to detonate, when advancing the throttle, the mixture is lean. Turn the low speed needle valve clockwise to richen and counterclockwise for a leane mixture (note that the direction of the low speed needle valve is opposite the high speed needle valve). Adjustments to the low speed needle valve should be 1/8 to 1/4 of a turn increment at a time to achieve smooth throttle response.

FIG.2



TAPPET CLEARANCE ADJUSTMENT

1. Tappet clearance is factory preset. No adjustment is necessary unit after 1 hour of operation(including break-in period).
2. Clearance adjustment should be done when the engine is cool. When the engine temperature is high, clearance is higher due to thermal expansion.
3. The proper clearance setting should be at 0 - 0.1mm. The adjustment is achieved by loosing the locknut (FIG.2) and turning the adjusting screw. Tighten the locknut after the adjustment is achieved. After the initial 1 hour adjustment, this procedure should be performed after every 2 hours of use.

CAMGEAR TIMING ADJUSTMENT

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 backplate assembly. Notice the impression made on the crankshaft counterweight. Position it directly straight down or in line with the case outer seam line.
2. When reinstalling the cam gear, the side with a point mark should be facing the opening of the gear box. Note that it should also be mounted with the point mark located towards the top of the engine just below the cam followers.

IMPORTANT! Silicone rubber is used in many parts of the YS engine. Use only glow fuel or methanol for cleaning. Gasoline and other volatile solutions will damage the silicone if used.

WARRANTY

Strict quality control is implemented by our factory in all phases, from parts manufacturing to final assembly. If performance deteriorates or a part fails due to a manufacturing error, YS will repair or replace the engine at no charge in the period of one year from date of purchase. Warranty does not cover normal maintenance.

Should the engine be modified, incorrectly assembled or abused, there will be a normal charge for parts and labor. The use of four cycle fuel due to the low oil content will also void warranty.

INSTALLATION

1. Connect the engine to the tank as shown in FIG.1. Since high pressure is applied to the tank, tighten all connections carefully. Care must be taken to prevent pressure leakage due to undertightening of the check valve or by kinking the fuel lines.
2. Always uses a fuel filter (not included). We recommend the YS filter (6720).
3. Match the direction of the check valve arrow to FIG.1, with the arrow facing towards the tank.

GIOW 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 YS #4 (P0040) or OS Type F.

PROPELLER INSTALLATION

Due to the high torque of the FZ175S engine, we have equipped it with double locknuts for safety.

1. Mount the propeller and tighten the rear nut. Next, tighten the front nut as shown in FIG.1.
2. Select a good quality propeller that will turn in the 7,000 to 9,000rpm range. We recommend sizes 18x10, 18x11, 19x10.

START-UP

1. Remove tube(B) from the filter, remove tube(A) from the check valve, then fill the tank.
Caution: If tank is filled or under pressure, remove tube(A) first, then remove tube(B). Fuel will eject if tube(B) is removed first while the tank is pressurized.
2. Open the needle valve 1 1/2~ 2 from the fully closed position.
3. Open the throttle about 10% from the idle position and slowly turn the propeller ten turns. This primes the system by pressurizing the tank and sending fuel to the carburetor.
4. Pour several drops of fuel into the carburetor.
5. Close the throttle to the idle position and connect the glow plug cord. The engine is now ready for starting.

Do not attempt to start at full throttle, as this is very dangerous.

NO.	Item No.	Name	QTY
1	G3001	Crankcase	1
2	F1202	Valve cover	1
3	F1203	Valve cover gasket	1
4	F1204	Valve cover screws	2
5	F8005	Head gasket	1
	G3006A	Head assembly	
6	G3006	Cylinder head	1
7	F1407	Inlet valve	1
8	F1408	Exhaust valve	1
9	F8009	Inlet valve spring	1
10	F8010	Exhaust valve spring	1
11	F1410	Spring retainer set	2
12	F1411	Spring retainer clips	4
13	F1212	Rocker arm set	2
14	F1213	Tappet adjusting screws	2
15	F1214	Tappet adjusting nuts	2
16	F1215	Rocker arm shaft	1
17	F1216	Rocker arm screw	1
18	F1217	E rings	2
19	F1518	Head screws	5
20	G3020	Crankshaft	1
21	F8023	Cylinder liner	1
22	E3024	Piston	1
23	F8025	Wrist pin	1
24	F4026	Piston ring	1
25	E3027	Connecting rod	1
26	F8128A	Back plate assembly	1
27	F1230	Back plate gasket	1
28	F2132	Carburetor insulator	1
29	F2192	Insulator gasket	1
30	F2133	Back plate screw set	6
31	F1232	Cam gear cover	1
32	F1233	Cam gear cover O ring	1
33	F1234	Cam gear cover screws	2
34	F2036	Cam gear	1
35	F8140	Cam followers	2
36	G3036	Push rods	2
37	G3037	Push rod covers	2
38	F1239	Push rod cover O rings	4
39	F1240	Front bearing	1
40	F9122	Front bearing oil seal	1
41	F1341	Rear bearing	1
42	F1242	Cam gear bearings	2
	G3043S	Carburetor assembly	
43	G3043	Carburetor body	1
44	G3044	Throttle barrel	1
45	F9156	Low speed needle	
46	F9157	Low speed needle O ring	
	F1545S	Needle valve set	
47	F1545	High speed needle	1
48	F1546	High speed needle O ring	1
49	G2062	Needle socket	1
50	G1060	Needle socket O rings	3
51	F1557	Needle valve detent	1
52	F1483	Throttle barrel seal	1
53	R6124	Throttle barrel retainer	1
54	F1258	Throttle stop screw	1
55	F1259	Throttle stop spring	1
56	F1260S	Throttle arm set	1
57	F2073	Carburetor gasket	1
	G1066A	Regulator assembly	
58	S1036	Regulator body A	1
59	S1038	Diaphragm	1
60	S1049	Regulator valve	1
61	S1041	Regulator valve O ring	1
62	G1070	Regulator body B	1
63	G1071	Regulator screws	2
64	G2073	Regulator spacer	1
65	F1564	Drive washer	1
66	F1565	Drive washer retainer	1
67	F8081	Intake pipe	1
68	F1269	Intake pipe O rings	4
69	F8083	Wrist pin access plug	1
70	F1266	Propeller washer	1
71	F2267	Propeller nut set	2
72	F2084	Wrist pin access screw	1
	G3071	Gasket set	4
	G3072	O Ring set	13
	F1272	Check valve	1

