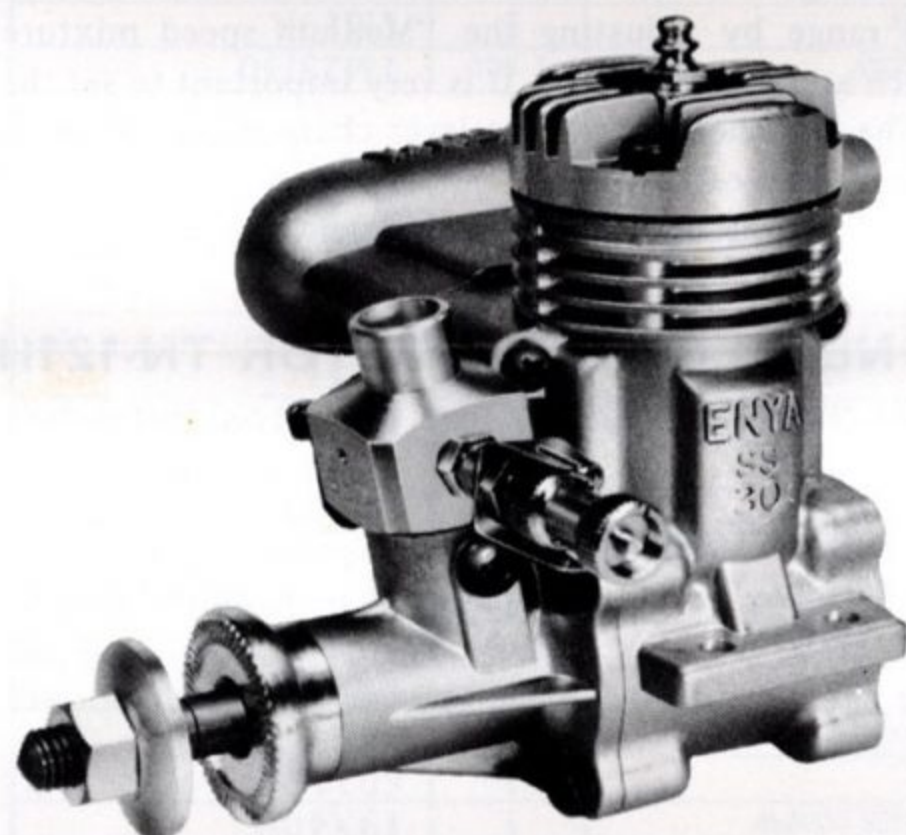


ENYA

Super Sport

25/35

OPERATING INSTRUCTION



ENYA Super Sport 30 (25)



ENYA Super Sport 25 BB & 30 BB

(25 AL-CHROME)
(30 RING)
(30 RING Marine)



ENYA Super Sport 30 HELI. GM.
ENYA Super Sport 35 HELI. TN.

25/35 MOUNT

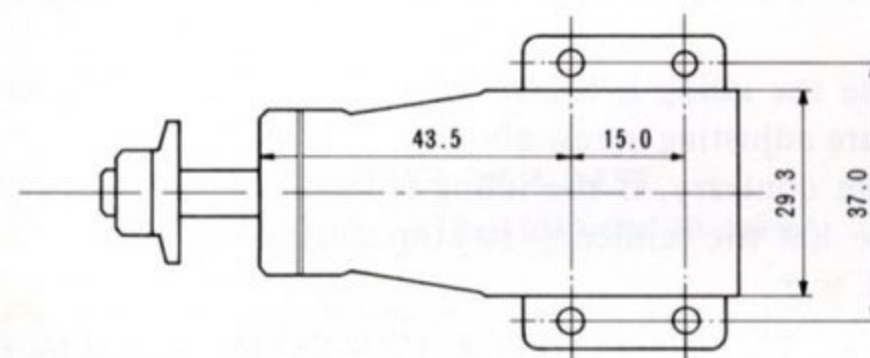
* DISTINCTIVE FEATURES

1. HIGH POWER and TORQUE with excellent throttling
2. Suitable for model R/C aerobatic, sport, and scale planes.
3. Sturdy and dependable construction
4. Easy handling
5. SS30 Ring Marine is suitable for model R/C boats.

* SPECIFICATIONS

[Type] 2 cycle glow plug ignition, front induction, Schnuerle type scavenging system with booster port

	Super Sport 25	Super Sport 25 BB	Super Sport 25 AL-CHROME	Super Sport 30	Super Sport 30 BB	Super Sport 30 RING	Super Sport 30 HELI. GM.	Super Sport 35 HELI. TN.
Applications	Trainer, sport, scale aircraft	Sport, scale, aerobatics aircraft	Sport, scale, aerobatics aircraft	Sport, scale aircraft	Sport, scale, aerobatics aircraft	Sport, scale, aerobatics aircraft	Helicopter	Helicopter
Cylinder bore x stroke mm	17.8 x 16.4	17.8 x 16.4	17.8 x 16.4	19.0 x 17.0	19.0 x 17.0	19.0 x 17.0	19.0 x 17.0	19.5 x 18.7
Displacement cc	4.08 (0.249 cu.in.)	4.08 (0.249 cu.in.)	4.08 (0.249 cu.in.)	4.82 (0.294 cu.in.)	4.82 (0.294 cu.in.)	4.82 (0.294 cu.in.)	4.82 (0.294 cu.in.)	5.59 (0.341 cu.in.)
Weight g	210 (7.5 oz.)	225 (8.04 oz.)	210 (7.5 oz.)	210 (7.5 oz.)	225 (8.04 oz.)	220 (7.9 oz.)	245 (8.75 oz.)	240 (8.57 oz.)
Main bearing	Bronze	2 ball bearings	2 ball bearings	Bronze	2 ball bearings	2 ball bearings	2 ball bearings	2 ball bearings
Cylinder liner	Hardened steel	Hardened steel	Aluminum alloy, chromed	Hardened steel	Hardened steel	Hardened steel	Hardened steel	Hardened steel
Piston	Cast iron	Cast iron	High silicon Al. alloy	Cast iron	Cast iron	Lo-ex. Al alloy, ringed	Lo-ex. Al alloy, ringed	Lo-ex. Al alloy, ringed
Carburetor	Normal barrel type	G5.5 or 2 needles type	G5.5 or 2 needles type	Normal barrel type	G5.5 or 2 needles type	G5.5 or 2 needles type	ENYA GM6.0 HELI.	2 needles type
Power range PS	0.5 ~ 0.65	0.6 ~ 0.75	0.65 ~ 0.8	0.6 ~ 0.75	0.7 ~ 0.85	0.7 ~ 0.85	0.7 ~ 0.85	0.8 ~ 0.9
Power range with muffler PS	0.4 ~ 0.55	0.5 ~ 0.65	0.55 ~ 0.7	0.5 ~ 0.65	0.6 ~ 0.75	0.6 ~ 0.75	0.6 ~ 0.75	0.7 ~ 0.8
Speed range r.p.m.	8,000 ~ 15,000	8,000 ~ 16,000	8,000 ~ 17,000	8,000 ~ 15,000	8,000 ~ 16,000	8,000 ~ 16,000	10,000 ~ 17,000	10,000 ~ 16,000
Idling speed r.p.m.	2,500 ~ 2,800	2,500 ~ 2,800	2,500 ~ 2,800	2,500 ~ 2,800	2,500 ~ 2,800	2,500 ~ 2,800	2,500 ~ 2,800	2,500 ~ 2,800
Suitable glow plug	ENYA No. 3, 4	ENYA No. 3, 4	ENYA No. 3, 4	ENYA No. 3, 4	ENYA No. 3, 4	ENYA No. 3, 4	ENYA No. 3, 4	ENYA No. 3, 4
Propeller size in	10 x 4 ~ 6, 9 x 6 ~ 7	10 x 4 ~ 6, 9 x 6 ~ 7	10 x 4 ~ 6, 9 x 6 ~ 7	10 x 4 ~ 6, 9 ~ 9.5 x 6 ~ 7	10 x 4 ~ 6, 9 ~ 9.5 x 6 ~ 7	10 x 4 ~ 6, 9 ~ 9.5 x 6 ~ 7		
Best propeller size in	9 x 6	9 x 6	9 x 6	9.5 x 6	9.5 x 6	9.5 x 6		
Muffler	M250	M251	M251	M251	M251	M251	ENYA M301H	ENYA M301H
Tuned muffler		TM 25/30	TM 25/30		TM 25/30	TM 25/30		



* SPECIAL ATTENTION

1. In general, a model engine is very powerful and runs at very high speed. Never handle it carelessly. "Safety first" is most important in all respects when you run a model engine.
2. Before you run your engine, take care of the following points.
 - o Tighten the engine mounting screws and propeller nut once again.
 - o Make sure that there is nobody near (except your assistant).
 - o When you fly your plane, or run your boat, it is most important to confirm that your radio control equipment works well. If you find a defective point on it, stop flying your plane, and repair it perfectly.

* FUEL

ENYA Super Sport engines will operate satisfactorily with most kinds of high quality glow plug engine fuel.

STANDARD VOLUMETRIC RATIO OF FUEL COMPONENTS		
	High power	Normal
Castor oil or high quality synthetic oil	20%	20%
Nitro-methane	10 ~ 15%	0 ~ 10%
Methyl-alcohol	70 ~ 65%	80 ~ 70%

* GLOW PLUG

ENYA glow plug No. 3 and No. 4 are suitable to SS25/30 engine.

* FUEL TANK

A fuel tank of about 150 ~ 200 cc is recommended for normal flights. For easiest engine starting, set the fuel tank at nearly same level as the carburetor. It is also recommended to pressurize the fuel tank with the exhaust pressure

of the muffler to get the steady engine running during the maneuvers. Connect the fuel tank with the pressure nipple of exhaust muffler by a hose. After filling the tank with fuel, close the filler.

* PROPELLER

It is important to choose well balanced propellers of high quality for your engine.

When you want the best power, choose a propeller which runs between 12,000 ~ 13,500 r.p.m. on the ground. And in case you want a quiet and moderate flight, choose a large propeller which runs between 9,000 ~ 11,000 r.p.m.

* PREPERATIONS BEFORE STARTING

1. Fix the engine onto the test stand or plane securely, and attach the muffler.
2. Connect the hose from the fuel tank to the carburetor.
3. Make sure that the battery heats the glow plug sufficiently.
4. Tighten the glow plug and propeller. Choose the best angle for the propeller at the compression stroke for finger flipping.
5. Close the needle valve and fill the tank with fuel.

* THE FIRST STARTING OF A NEW ENGINE

The following process is recommended to start a new engine at the first time.

1. Inject about 10 drops of fuel into the inlet port of carburetor. (In cold weather increase the drops of fuel.)
2. Close the throttle valve by half.
3. Flick the propeller counter-clockwise 10 ~ 15 times quickly. The fuel will be sucked into the crank case and blown up into the cylinder and combustion chamber.
4. Connect the battery to the glow plug and flick the propeller quickly until the engine begins to pop and starts. (The running will continue 1 ~ 2 seconds.)

(Continued to next page)

5. Once the engine starts, the restart becomes very easy. Inject farther 4 ~ 5 drops of fuel and flick the propeller. The engine will start by 1 or 2 flipping.
6. Now, open the needle-valve 3 turns. (In case the tank is pressurised, 2 turns.) Close the intake port of carburetor with your finger, and flick the propeller until the fuel in the hose reaches to the carburetor.
7. Inject farther 4 ~ 5 drops of fuel. Connect the battery to the glow plug again, and flick the propeller. The engine will start soon, and continue running.
8. Once the engine starts, open the throttle-valve fully and detach the battery connection. Adjust the needle-valve slowly to the best running position.
9. After you find the best running position, open it again about ¼ turn. The mixture will become slightly rich. This is the best position of needle-valve to fly your plane. It is most important for the engine to run always with slightly rich mixture.
10. When you feel difficult to start the engine in cold weather, detach the glow plug, and inject several drops of fuel directly into the cylinder. The engine will start soon.

✿ BREAKING-IN

Run your engine with a rich mixture during first 1 hour. After this period, you may run it in full power. But it is very important to run the engine always with a slightly rich mixture. It will take 2 ~ 3 hours for the engine to reach its peak in power and smoothness.

✿ ENYA NORMAL BARREL TYPE CARBURETOR ADJUSTMENT

The construction is simple, and the adjustment is easy. But the engines equipped with this carburetor perform very well on usual sport and scale plains.

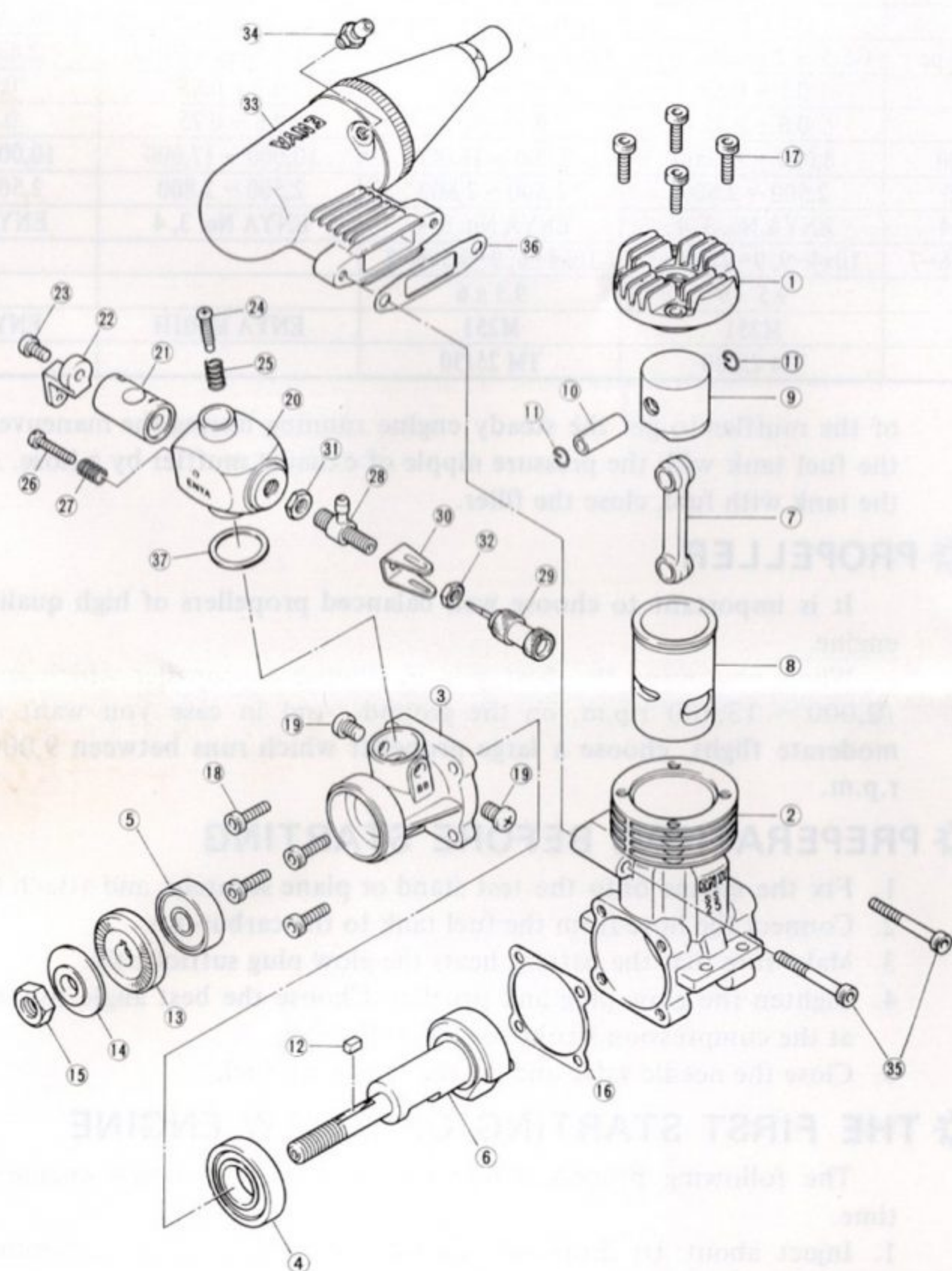
1. After you start the engine, open the throttle valve fully, and adjust the needle valve to the best position for flight. (The mixture will be slightly rich.)
2. Close the throttle valve slowly down to the idling. The normal idling speed is between 2,500 ~ 3,000 r.p.m.
3. You can control the idling speed and the richness of the idling mixture by adjusting the idling speed adjusting screw and the idling mixture adjusting screw respectively.
4. In case you want a faster idling, screw in the idling speed adjusting screw a bit.
5. In case the idling is too rich and Lo-Hi response is too slow, open the idling mixture adjusting screw about ½ ~ 1 turn.
6. On the contrary, if the idling is lean and Lo-Hi response is too fast, or the engine has the tendency to stop during the idling, close the screw about ½ ~ 1 turn.

✿ ENYA "G-TYPE" CARBURETOR ADJUSTMENT

The ENYA "G-type" carburetor is especially designed and produced to feed the engine constantly with the most suitable (slightly rich) mixture at all speeds.

It has a machined, taper fuel-metering groove on the surface of the throttle barrel. And the size of the fuel passage changes in accordance with the throttle valve moving so as to feed the engine constantly with a slightly rich mixture at

AN EXAMPLE OF EXPLODED VIEW
ENYA Super Sport 25BB



all speeds. Consequently, the response of the engine becomes very quick. And moreover, as the suction of fuel is always strong, the engine has no tendency to stop even if any hard speed controlling be made during the maneuvers.

1. After you start the engine, warm it up about 30 seconds at high speed. Then try Hi-Lo and Lo-Hi operations taking an interval of 5 ~ 10 seconds on each side.
2. In case the idling speed is proper and the engine speed raises up smoothly from Lo to Hi within 1 or 2 seconds, it means all the conditions are good.
3. The adjustment method is same as in the case of the normal Barrel type carburetor.

✿ ENYA "GM TYPE" CARBURETOR ADJUSTMENT

ENYA SS 30 HELI. GM engine is equipped with "GM type" carburetor. The "GM type" carburetor is a highly modified version of the "G Type".

With this carburetor you can get the best mixture and throttle response you want at the medium speed range by adjusting the "Medium speed mixture adjusting lever". (+ means rich and - means lean). It is very important to set the mixture slightly rich side. The best position of the lever changes according to the fuel contents. (nitro-methane and oil)

As to the "GM type" carburetor and ENYA helicopter engines read the special instruction for them.

✿ ENYA "TN TYPE" (2 NEEDLES) CARBURETOR TN-121H

As to TN121H carburetor (Part No. S30H70) read the special instruction for it.

✿ ENYA TUNED MUFFLER T.M. 25/30

When you need ultra-high power to fly your plane, it is recommended to try ENYA tuned muffler TM25/30 on your engine. You can obtain without difficulty about 1,000 more r.p.m. and 20% higher power than with normal muffler.

✿ MAINTENANCE

1. ENYA Super Sport 25/30 engines are very robust and dependable. But do not disassemble them needlessly.
2. Do not screw up the cylinder head too tightly to avoid distorting the cylinder liner.

AN EXAMPLE OF PARTS LIST. ENYA Super Sport 25BB

No. in drawing	Name of part	Qty.	Part No.
1	Cylinder head	1	S2501
2	Cylinder block	1	S2503
3~5	Front housing with ball bearings	1 set	S25B07
3	Front housing	1	S25B07A
4	Ball bearing A	1	19X03B
5	Ball bearing B	1	195B07C
6	Crank shaft	1	S25B08
7	Connecting rod	1	S2505
8,9	Cylinder liner & piston assembly	1 set	S2504
8	Cylinder liner	1	S2504A
9	Piston	1	S2504B
10	Piston pin	1	S2506
11	Piston pin stop ring	2	464C61
12	Key	1	195B18
13	Drive washer	1	S25B10
14	Propeller washer	1	195B12
15	Propeller nut	1	195B14
16	Gasket of front housing	1	S2516
17	Cylinder head setting screw	4	354C15A(M3x10,C)
18	Front housing setting screw	4	354C15A(M3x10,C)
19~32,37	Throttle valve assembly	1 set	S2540
19	TV assembly setting screw	2	S2540GA(M4x5,+)
20	TV body	1	S2540A
21	TV valve	1	S2540B
22	TV lever	1	19X40C
23	TV lever setting screw	1	S2540E(M3x4,+)
24	Idling speed adjusting screw	1	19X40H
25	Locking spring	1	603301
26	Idling mixture adjusting screw	1	19X40J
27	Locking spring	1	19X40K
28~32	TV needle valve assembly	1 set	19X40F
28	Spray bar	1	19X40F2
29	Needle	1	29440F1
30	Needle setting spring	1	15220C
31	Spray bar setting 4mm nut	1	29440F4
32	Spring setting 4mm nut	1	09230F5
33~36	Muffler assembly	1 set	M251
33	Muffler body	1	M251A
34	Pressure nipple	1	093W03C
35	Muffler setting screw	2	S2515A(M3x25,+)
36	Gasket of muffler	1	M250K
37	Gasket of throttle valve	1	29B24
Optional part			
	Tuned muffler assembly	1 set	TM25/30
	Tuned muffler body	1	TM19A
	Muffler body setting band assembly	1 set	TM19DS
	Muffler body setting band	1	TM19D1
	Screw	1	TM19D2(M3x12,+)
	Nut	1	TM19D3(M3,N)
	Exhaust pipe assembly	1 set	TM25B
	Exhaust flange	1	TM25B1
	Exhaust pipe	1	TM19B2
	Exhaust pipe setting nut	1	TM19B3
	Tuned muffler setting screw	2	S2515A(M3x25,+)
	SS30 Marine cylinder head	1 set	S3001M

ENYA METAL PRODUCTS CO., LTD.

5-11-18 TOYOTAMA-KITA, NERIMAKU, TOKYO, JAPAN.