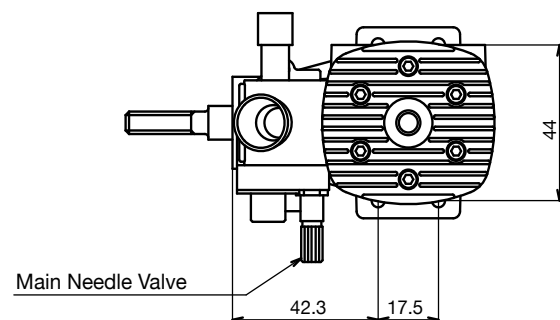


OPERATOR'S MANUAL

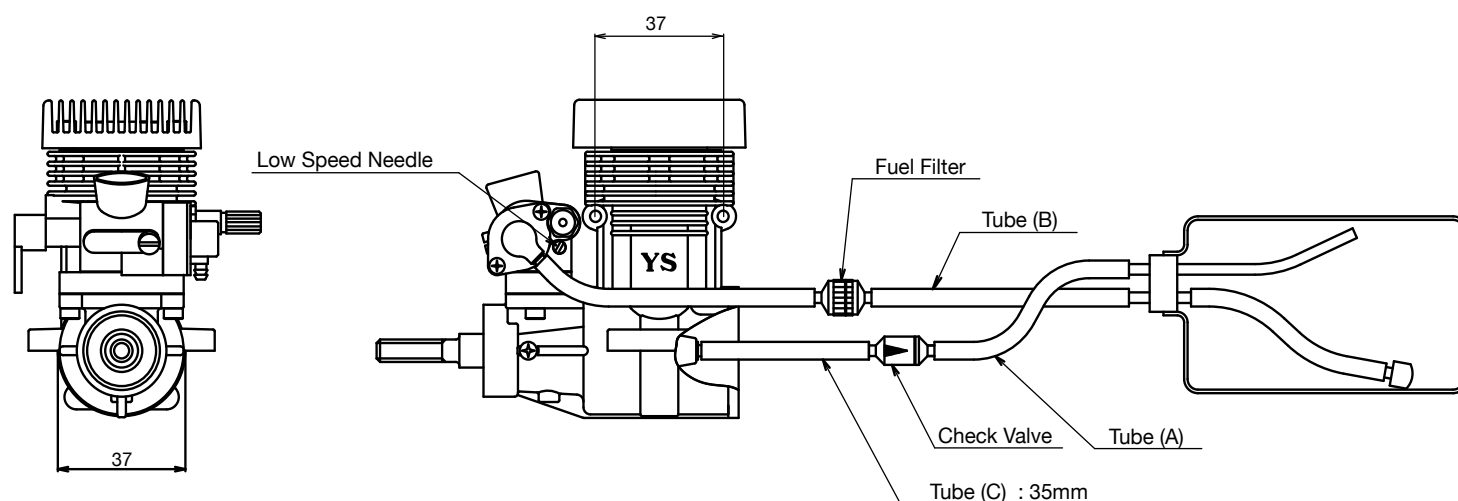
50ST (Part No.YS0030)

Fig.1



SPECIFICATION

Bore	22,0mm
Stroke	21,5mm
Displacement	8,17cc
Weight	398g
Practical rpm	2,000-20,000rpm



FEATURES

The YS 50ST Engine features the patented YS regulated fuel system for positive fuel flow during all types of flight conditions.

Factory authorized parts and service available worldwide.

CAUTIONS

1. Take care not to touch the engine immediately after shut-down to avoid painful burns.
2. Do not attempt to fly with engine problems as it can be dangerous. Fix the problem prior to flying.
3. When starting the engine, do not use full throttle but set throttle to low speed before applying the glow driver.
4. This engine is intended for helicopter use. Aircraft conversion parts are available from our service department.
5. This engine is intended for use by experienced modelers only. If you are not properly trained to operate this engine, please get assistance from a skilled modeler.
6. The user is responsible for operating this engine in a safe safe manner.

INSTALLATION

1. The fuel lines should be connected to the fuel tank as shown in the above diagram. Be careful to install the check valve in the correct direction. Since the tank is exposed to high pressures, be sure that all connections are secure to prevent pressure leakage.
2. Since the engine is sensitive to dirt in the fuel, a fuel filter must be used.
3. Tube (C) should be set exactly at 35mm between the engine and the check valve.
4. The check valve is designed exclusively for the 50ST. Use only YS factory parts for replacement.

MUFFLER

1. Use an expansion chamber muffler intended for 50 size helicopter engines. If there is a fuel tank pressure fitting on the muffler you choose, plug it, as it is not necessary to use muffler pressure with the YS system.
2. Please note that the use of tuned pipes and tuned muffler systems can interfere with the operation of the regulator system and result in poor engine performance.

STARTING PROCEDURE

For the best overall performance with your 50ST Helicopter Engine, we recommend 30% nitro fuel blended especially for helicopter use. Lower nitro percentages may be used, but reduced performance will result.

1. Always remove tube (A) at the check valve first. The fuel tank is pressurized by the engine and you need to relieve the pressure. Then, disconnect tube (B) and fill between the filter and the tank. If you make a mistake in the procedure, fuel will squirt out. An easy method is to use T-Fittings between the check valve and the tank, and between the fuel filter and the tank with plugs that can be removed for pressure relief and fuel filling.
2. From the fully closed (clockwise) position, open the main needle valve 1,75 turns. Close the idle needle fully (clockwise) and open 1 turn. These are the initial settings and will be re-adjusted as you set up the engine and helicopter.
3. Open the throttle fully and run the engine with an electric starter for about 10 seconds without connecting the glow driver. This pressurizes the fuel tank and the engine is now ready for starting. Set the throttle barrel to low speed and connect the glow driver before starting the engine with the electric starter.
4. If the engine refuses to start, remove the glow driver, open the main needle valve 2 turns from its present setting and repeat Step 3. Return to low throttle and start the engine. After starting, return the main needle to its running setting before advancing the throttle.

IDLE ADJUSTMENT

Begin with the idle needle with 1 turn open from closed (clockwise) and adjust from that point. Turning this needle clockwise will lean the fuel mixture, and counter-clockwise will richen the fuel mixture. Changes in fuel and weather conditions may require re-adjustment.

HOVER ADJUSTMENT

Hover is adjusted with the main needle valve. There is some interaction between the hover setting and full throttle setting, so be aware that one adjustment will affect the other.

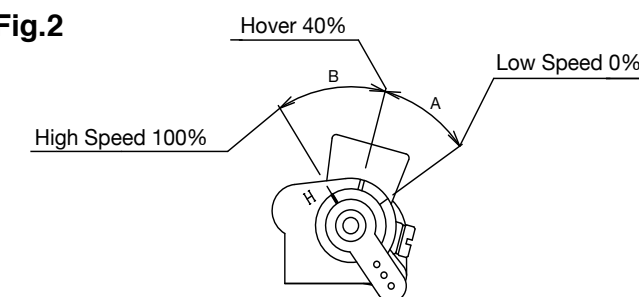
HIGH SPEED ADJUSTMENT

High speed is also adjusted with the main needle valve. Turning the needle valve clockwise will lean the fuel mixture, and counter-clockwise will richen the fuel mixture. Adjust carefully as this setting will also affect the hover adjustment.

THROTTLE LINKAGE

Set the throttle stick on the transmitter at the center, and adjust the linkage to put the mark on the carb body and the mark on the throttle barrel in line. Hovering should take place with the throttle stick near the center position if the linkage ratio is properly set. If the ratio is incorrect, the throttle barrel will be too far open at the center position on the stick and hovering will commence at a lower stick position.

Fig.2



BREAK-IN

It is not necessary to mount this engine on a test stand for break-in. However, the engine should be adjusted slightly on the rich setting for the first few flights to ensure proper break-in. Always use a good quality fuel which contains 30% nitro and an oil content of 20-30%.

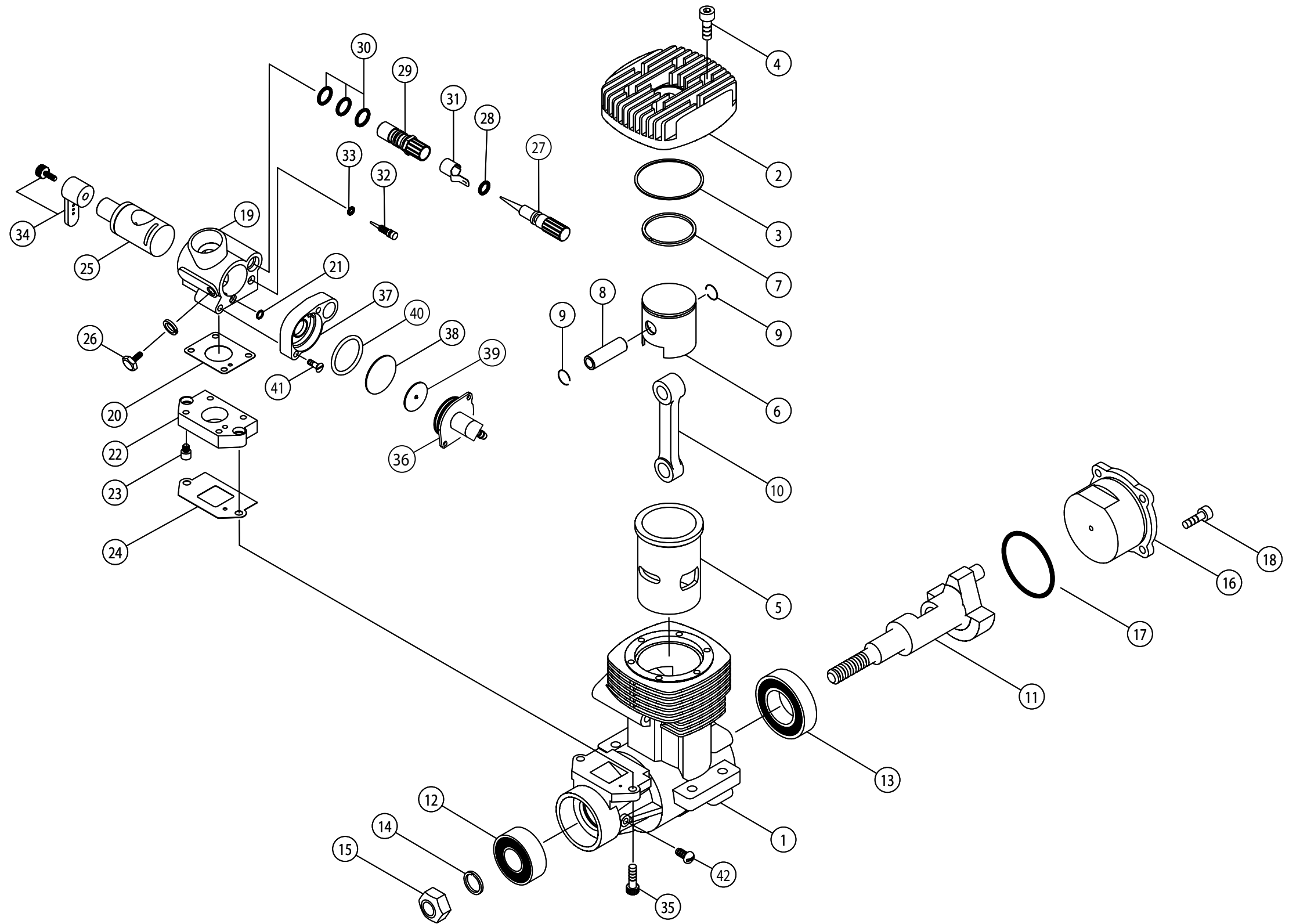
GLOW PLIG

1. We have found that the glow plugs listed below will give the best engine performance;
 - YS #2
 - OS #8
 - Enya #3
2. Replace the glow plug when idling or top end performance decreases.

IMPORTANT!

Silicone rubber is used in many parts of the YS Engine. Use only glow fuel for cleaning. Gasoline or other solvents will damage silicone if used.

NO.	PART#	DESCRIPTION	QTY
1	YS5180	Crankcase	1
2	YS5185	Cylinder head	1
3	YS5190	Head gasket	1
4	YS5195	Head set screws	6
5	YS5200	Liner and piston set	
6	YS5205	Liner	1
7	YS5210	piston	1
8	YS5215	Piston ring	1
9	YS5220	Wrist pin	1
10	YS5362	Wrist pin retainers	2
11	YS5230	Con rod	1
12	YS5235	Crankshaft	1
13	YS1050	Front bearing	1
14	YS5240	Rear bearing	1
15	YS5243	Drive washer spacer	1
16	YS5245	Prop nut	1
17	YS5250	Back plate	1
18	YS5255	Back plate O ring	1
19	YS5260	Back plate set screws	4
20	YS5270	Carburetor body	1
21	YS5275	Carburetor gasket	1
22	YS5280	Carburetor O ring	1
23	YS5285	Carburetor insulator	1
24	YS5290	Insulator set screws	4
25	YS5295	Insulator gasket	1
26	YS5300	Throttle barrel	1
27	YS0380	Throttle barrel retainer screw	1
28	YS5305	Needle valve set	
29	YS5310	Needle valve	1
30	YS2695	Needle valve O ring	1
31	YS5315	Needle socket	1
32	YS5320	Needle socket O ring	3
33	YS2710	Needle valve detent	1
34	YS4845	Low speed needle	1
35	YS4150	Low speed needle O ring	1
36	YS0200	Throttle arm set	1
37	YS5325	Carburetor screws	2
38	YS5332	Regulator body A	1
39	YS5335	Regulator body B	1
40	YS5340	Diaphragm	1
41	YS5343	Regulator valve	1
42	YS5345	Regulator O ring	1
43	YS5362	Regulator set screws	2
44	YS5365	Crankcase plug	1
45	YS2510	Check valve	1
46	YS5370	Gasket set	2
47	YS5375	O ring set	8



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 Parts and Service 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.

YS Parts and Service

1370 Porter Drive Minden NV 89423
 Phone: 775-267-9252
 Fax: 775-267-9690