

# Operating instructions

## ROTO 35 FS



Czech Republic



Congratulation for choosing the four stroke engine ROTO produced in Czech Republic. For more information about our engines please visit our web sites [www.rotomotor.cz](http://www.rotomotor.cz)

### **Assembly of the engine**

Please follow the instructions carefully.

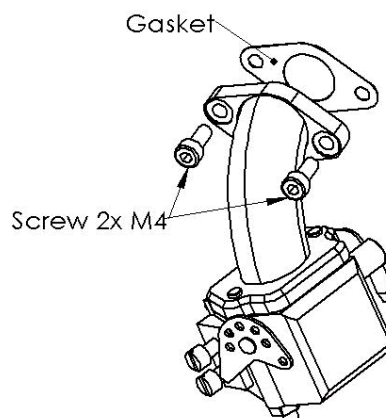
First check that all the listed parts are in the box.

Contents of the box:

1. Engine
2. Carburetor
3. Carburetor gasket
4. Exhaust
5. Engine mount
6. Hoses
7. Screws

#### **1. Mounting of the carburetor**

Please locate the carburetor + gasket and attach it with two 4 mm Allan head bolts. (included) (picture No.1)



#### **2. Attaching the oil overflow hose**

Connect the hose to the engine body.

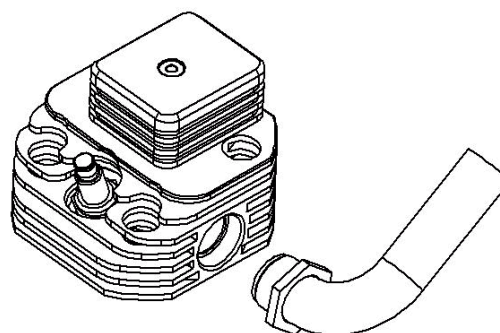
This hose should be connected to an overflow nipple on the engine and routes the spent oil out of the engine body to best suitable place in your model.

There is no restriction to the length of hose. (The hose must not be pinched).

#### **3. The exhaust**

The exhaust pipe should be attached with out the use of the gasket and care must be taken when tightening nut.

**DO NOT OVERTIGHTEN!** As this will permanently damage the head of engine!

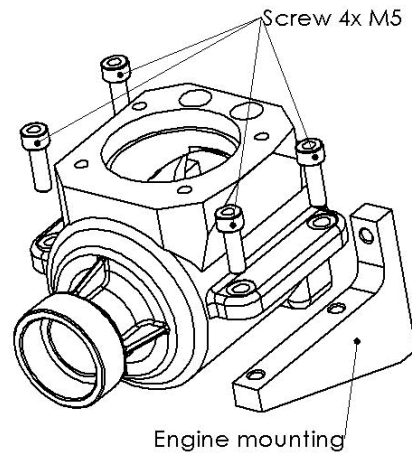


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#### **4. The engine mount**

The engine comes with aluminum engine mount and attaches to the engine with 4pc of 5mm Allan head bolts.



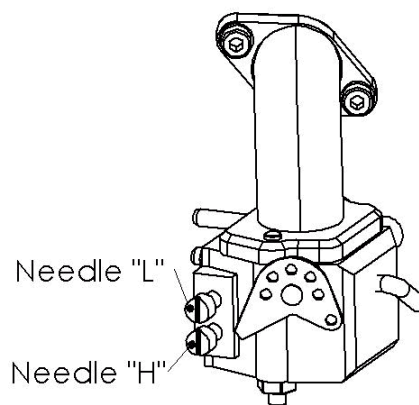
**Fuel:** Factory recommended fuel for the ROTO 35 FS is a standard 95 octane gasoline mixed with quality 2-stroke oil (Motul 710) at the 1:40 ratio (2,5%).

Gas L	Oil ml
1	25
2	50
3	75
4	100
5	125
6	150

#### **The carburetor adjustment**

The carburetor is factory adjusted and should NOT need an adjustment before a first flight.

Should you wish to adjust the carburetor after the Run-in period and fine tune it to the prop of your choice, please use the following procedure.



Set the High needle (H) for the highest RPM. After you are satisfied with High-end, adjust the Low (L) needle for smooth transition between High and Low range with out any hesitation.

Your engine should run 6,000 RPM with 20/10 prop  $\pm$ 5% at 1,000 Ft elevation.

### **The valves adjustment**

After the run- in period ( 2 hours) the valves must be adjusted. Remove the valve cover bolt and the valve cover. Turn prop until the magnet and sensor are lined up. Loosen the nuts and adjust the gap for 0.1 mm or 0.004” on both suction and exhaust valves.

Re-tighten and re-install the valve cover.

This procedure should be repeated after 8 hours again. After that the valves should not need any more adjustment unless:

- there was a crash of the model
- a prop size or a pitch changed
- the engine was disassembled

### **Propeller installation**

The propeller must be attached with 4pc of 4mm bolts (included).

It is necessary to check and re-tighten the propeller several times, specially when using a new wood propeller (as new one will compress the wood in first running of the engine). Loose bolts will result in sheering of the bolts and CAUSING SERIOUS DAMAGE TO THE PERSON(s) or to your model!!!

### **Engine maintenance**

This four-stroke engine includes a magnetic particle trap. It is located under the carburetor in the engine block and is necessary every 10 hours of operation unscrewed and removed eventual dirt.

### **Engine installation**

It is necessary to provide enough fresh air to the intake of the carburetor. (In case of lack of air, the engine may exhibit poor performance and it may fluctuate at the maximum speed.)

It is necessary to ensure sufficient cooling of the cylinder heads and of the cylinders by sufficient supply of fresh air from the propeller and/or from the ambient environment.

### **ROTO electronic ignition instructions**

The ROTO ignition is a microprocessor controlled ignition with automatic spark timing advance made for 4stroke gas fuelled ROTO engines.

**Weight:** 100 grams, (3,5 Oz.)

**Supply Voltage:** 4-9V

**Input current:** 50 mA – 500 mA

**Advance range:** up to 38 degrees advance

The ignition is equipped with a novel feature, A IED indicator mounted on wire lead external to the ignition. The LED will blink when the ignition is first turn on indicating that the ignition is functional. After the engine is started the LED will blink at the RPM rate. Stopping the engine (with the choke or throttle) and keeping the ignition turned on will extinguish and after this short interval the LED will blink at a rate of ½ of the maximum RPM attained during the recent ignition operation. This data may be read from the LED with a optical tachometer (you may need to shield the tachometer sensor from other lights).

This RPM info will help you gather information on how your engine/prop combination is performing in the air!

### **Installation of the ignition**

The ignition needs to be located and mounted in such a manner that it is isolated from extreme temperature and shock. The power input connector is JR/Hitec compatible. The spark plug lead should be secured so it does not rub against engine or airframe components.

The hall sensor mounts on the crankcase of the engines. There are NO user adjustments required or needed.

**When the magnet on the hub of the engines passes the hall sensor (and the ignition is turned on) a high voltage pulse is supplied to the spark plug. BE CAREFUL! The spark pulse is in excess of 20 thousand volts!**

Test your model for proper radio operation before flying, turn on the radio system (transmitter antenna fully collapsed), start the engine (while being held by a second person) and walk away 100 feet while moving the sticks and observing the control surfaces. Any random movement of the surfaces indicates a problem with the radio system which must be investigated...do not fly the model.

**The ignition has two years warranty.** Do not attempt to service the ignition module. There are no user serviceable parts. Return it for repair or replacement. The warranty does not cover crash damage or abuse.

**SAFETY!!!**

**PLEASE READ THE INSTRUCTIONS CAREFULLY.**

**ALLWAYS USE GLOVES AND SAFETY GLASSES WHEN STARTING THE ENGINE!**

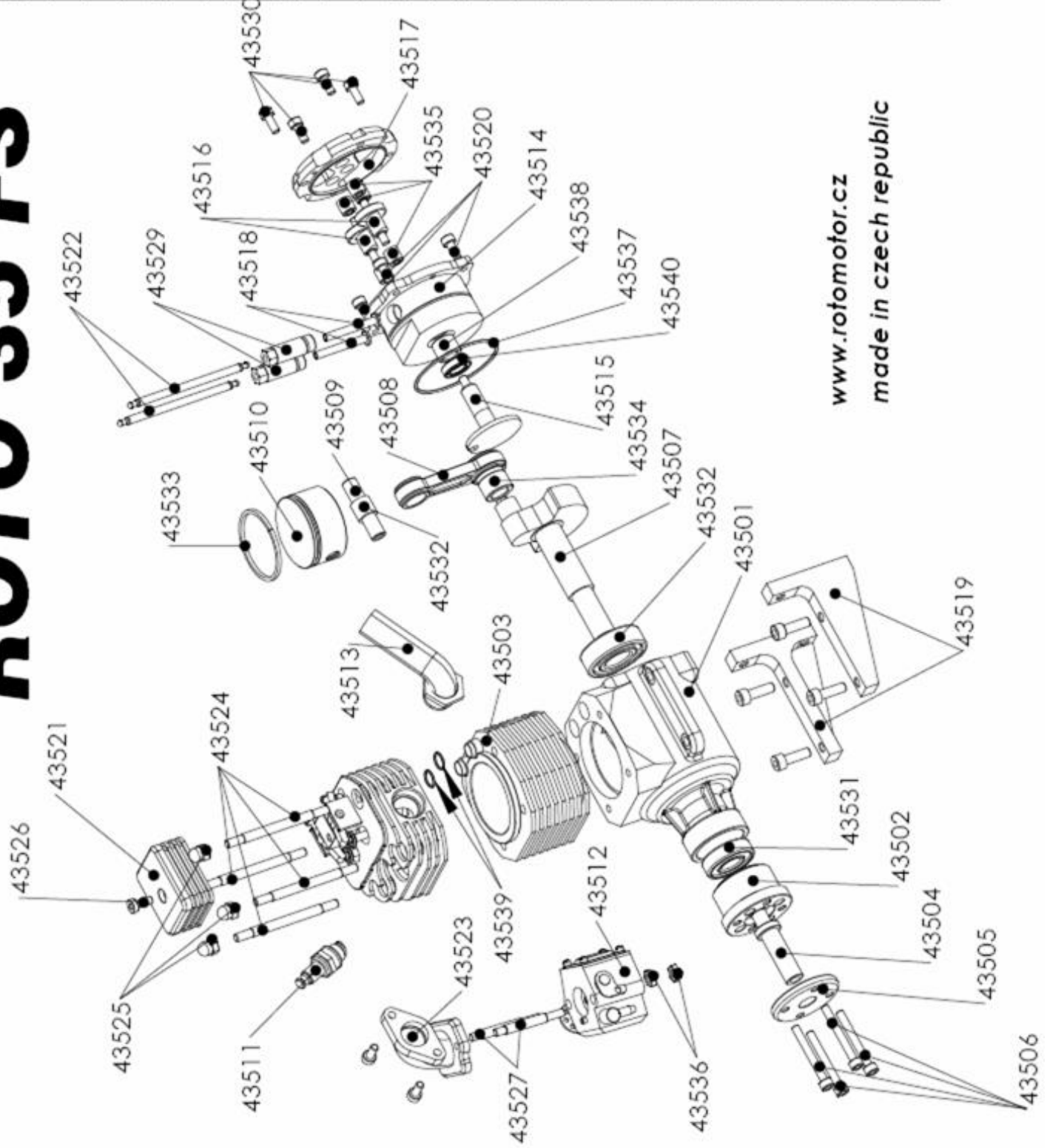
**The engine warranty is 40 months.**

## **WARANTY REGISTRATION CARD**

<b>Product name:</b>	
<b>Type:</b>	
<b>Product serial number:</b>	
<b>Date of purchase:</b>	
<b>Signature:</b>	
<b>Dealer's name, address:</b>	
<b>Stamp:</b>	

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# ROTO 35 FS



[www.rotomotor.cz](http://www.rotomotor.cz)  
made in czech republic

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Karier	Engine block (pir)	1
2	Uložecí vrátule	Hub	1
3	Válec	Cylinder	1
4	Čep vrátule	Propeller center bolt	1
5	Podložka vrátule	Propeller moun. plate	1
6	Šroub M4 x 35	Propeller screw (M4x35)	4
7	Klíčovka	Crank shaft	1
8	Ojnice	Connecting rod	1
9	Přírní čep	Wrist pin	1
10	Píst	Piston	1
11	SVÍČKA NGK MITO1	Spark plug NGK (MITO1)	1
12	Karburátor	Karburátor	1
13	Výfuk	Exhaust	1
14	Zadní víko	Back engine cover	1
15	Pastorek	Pinion Pinion	1
16	Vačka	Cam	2
17	Vlka	Cover	1
18	Zahradka	Tappet	2
19	Láze	Engine mount	2
20	Šroub M4x10	Screw M 4x10	6
21	Víko vrtáček	Lever cover	1
22	Trčka zahradka	Stick of tappet	2
23	Sání	Suction	1
24	Swamik válice	Cylinder bolt	4
25	Matice M5	Nut M5	4
26	Šroub M4x10 raky	Screw M4x10 low	1
27	Swamik karburátoru	Carburetor bolt	2
29	Vodítko	Guide	2
30	Šroub M4x4	Screw M4x4	4
31	Ložisko 6001	Bearing 6001	1
32	Ložisko 6002	Bearing 6002	1
33	Přírní kroužek	Pinion ring	1
34	Ložisko HK 1210	Bearing HK 1210	1
35	Ložisko HK 0408	Bearing HK 0408	5
36	Matice M4	Nut M4	2
37	O kroužek 50	O ring 50	1
38	Ložisko HK 0910	Bearing HK 0910	1
39	O kroužek 10	O ring 10	2
40	Gufeno	Guffeno	1