

MOKI 400 S Radial**Operating Instructions**

Capacity	400 cc
Power	23 bhp
Weight	11 lbs/9,6 kg
Propeller	<u>2 Blade SEP :</u> 38x18 @ 3800 rpm
	<u>3 Blade SEP</u> 36x20 @ 3700 rpm

Oil Mix 1 part Moto-X Synthetic to 50 parts unleaded normal petrol

Moki S 400 is a 4 stroke petrol motor with an incomparable power to size and weight ratio. The motor has been developed to produce maximum power at relatively low rpm with high torque characteristics. It includes a state-of-the-art computerised electronic ignition system and runs on environmentally friendly unleaded petrol. Silencing is made by a very efficient scale collector ring system, which not only gives excellent silencing but also that incomparable scale sound. The engine is delivered with a cast radial mount and computerised ignition system. The engine has been developed especially for the giant scale and aerobatic enthusiast.....being the ideal choice for 1/3 and 1/2 scale aircraft, weighing up to 100 kg.

The mixture is delivered by a pumped carburettor to the crankcase of the motor, and then from here via an induction tube to the cylinders. This method gives an excellent lubrication of all moving parts. The pressure pulse to drive the carb pump is made by an integrated pump in the front of the crankcase, connected to the carb by an external silicone tube.

The camring is located in the front of the crankcase and receives a separate lubrication. The ignition hall sensor is located also in the crankcase and is connected to the ignition pack with a ribbon cable. **Ensure that no cables come into contact with the engine or exhaust system.**

The ignition system itself is located in a separate, specially screened cylinder which should be mounted separate from the motor in a convenient place and shock protected. The ignition pack controls the firing sequence, the advance curve as well as an ignition cut-off, to stop the motor overspeeding and creating noise problems. Furthermore, data is recorded to act as a service record, such as the motor number, hours of operation and revs used. A screened cable triggers the five high tension coils, located in the rear of the crankcase, the spark is distributed directly to each of the five sparkplugs.

Setting up:

Each motor is run for a short period at the factory, valve and carb settings are checked. A test report of findings is included with each engine.

The valve clearance is set at 0.05-0.08mm, (5-8 thou) **using feeler gauges, set with both valves closed** between rocker pad and pushrod. Ensure the valves are closed by turning prop (ignition off) until the cylinder has reached Top Dead Centre (TDC)

and both valves are fully shut. Please take care that correct valve clearance is maintained at all times, because burning and overheating of the valves seats will occur if the engine is run with valves that cannot fully close.

The valve gear is laid-out so that when the motor is warm, the valve clearance will increase, therefore check clearances cold. Take care not to put any side load on the pushrods during handling as they will bend and cannot be straightened.

Lubricate valve gear with light machine oil before each days flying.

Before initial running, check that the prop bolts are of the correct length for your propeller, tightened equally and securely, Your tank should be of 40-80 oz capacity and be fitted with a filter and 1/8 " / 2,5 mm bore petrol resistant fuel line, these items are available from us.

The ignition battery pack should be 2S LiPo or 2S LiFe directly with an input of 6 to 9V. **Please fit the ignition switch, as although the ignition back to an idling current when the engine stops, turning the prop will arm the ignition automatically.**

It is assumed that you have run large petrol engines before, and please mount the engine with the cylinder between fuel pump and sensor cable uppermost, to a firewall at least 1/2" thick, using high tensile 5mm bolts, shakeproof washers and blindnuts or selflocking nuts and large diameter washers . If you choose to make a test stand, ensure this is FIRMLY anchored to an immovable object such as a building!!! **Please do not underestimate the power available from the engine!!!!**

Starting:

Ignition switched OFF, turn the prop with closed choke flap until the fuel reaches the carburetor. Ensure your helper has a firm grip on the model and that no curious spectators are in line with or in front of the prop.

Ignition ON, and holding the prop firmly, turn the prop 2-3 full turns to suck fuel into the engine. Now with a firm flick, try and start the engine, the engine should fire and stop, now open the shock flap, **set the throttle just open** and flip the engine over to start it. Let the engine run at approximately 1.200 rpm for two minutes to warm up. Thereafter, the carburetor may be finely tuned to suit your propeller by adjusting the L and H needles on the carb. Please avoid prolonged idling on the ground as this can lead to overheating due to lack of airflow through the fins.

L needle adjusts the low end mixture, and H adjusts the high speed mixture. The conical screw adjusts the idle speed.

Please note that:

1. The L influences the H mixture setting and vice versa. If the engine tries to stop when throttling up then richen the L screw anticlockwise. The H screw should be leaned until the engine reaches maximum revs and then backed off an 1/8 turn.
2. Dependent on cowling layout, turbulence with high and low pressure can cause mixture inconsistencies in flight, causing richening or weakening adjustments of the mixture to be necessary. Baffling between the cylinders will cure any overheating.
3. Remember that once the engine is warm, hot air with a low fuel/air ratio will be in the crankcase, this may lead to reduced maximum revs when the engine is hot and a weaker mixture, needing a slight richening of the needles to avoid an overlean condition.
4. Although the carb has a pump, it is good practice to ensure that the tank centre-line is on, near and close to the carburettor centre-line.

Routine Maintenance

With a new motor, you will find it necessary to check the valve clearance more often than normal, this is because the valve mechanism is undergoing the running-in process, and the cams, pushrods and rockers are still to bed in.

If the motor does not run for a while, oil can gather in the lower cylinders, turning the engine over a few times will normally remove this.

Take care when removing the plug caps they should be gently levered off vertically, don't twist them back and forth, this will cause damage to plug and cap. When replacing, ensure the caps go on with a double click. The plug gap should be 0,3-0,4 mm, this is factory set.

Periodically check the tightness of all EXTERNAL nuts and bolts, don't overtighten. Before each day's flying, don't forget to lightly oil the valve gear.

If fitting a cowling, you may find it necessary to baffle with balsa or light ply between the cylinders to ensure the air passes through the fins.

Due to us having no control over the use and operation of this motor, MOKI Modell Kft. and its agents accept no liability for damage caused to persons or property.

Warranty

On all engine parts we issue a guarantee of two years. In case of problems please send the engine out-of-the-box to our office. **Do not disassemble any engine parts.** Please do not forget to add the original invoice.

We state explicitly that use of engine with added parts or additional drive systems changing the delivery status and / or do not have the technical release of MOKI in written form, will terminate all guarantees.

We wish you many hours of fun with your new purchase.

Please fly quietly, safely and have many Happy Landings!

If you have any problems, then please feel free to call us.