



## Smoke-EL (S)

# Assembly Instructions

Thank you for purchasing the **Smoke-EL**. Our product is the first electrically powered smoke device for RC-model building worldwide. The Smoke-EL is made in Germany and produced on highly modern CNC machines and the attention to detail we use to manufacture our devices ensures longevity as well as easy handling.

The starter set includes everything you need (except the tank) to launch your experience with our **Smoke-EL** products; batteries are optional. The device should be mounted outside your model (preferably beneath the hull or the tip). The capacity of the 6S1P Lipocell Batteries (included) is 1100mAh and can produce approximately 90 seconds of smoke. For this, the tank should hold 100ml.

**Smoke-EL** is not a toy! Please read the safety instructions.



**When using the Smoke-EL, internal temperatures can reach 1000°C**



### Mounting the Smoke-EL onto your model

The body of the **Smoke-EL**, and especially the steam, can reach temperatures of more than 100°C. Please make sure that neither cables nor tubes come into contact with the hot surfaces.

**Smoke-EL (S)** is supposed to be mounted on the hull or the tips of your model plane. We recommend using a free-hanging mount with an aluminum profile. You can easily mount it with wire straps and then simply detach the whole device for cleaning purposes. Please protect the wire straps with a shrinking sleeve because of the high temperatures.



**Please note: the housing of the smoke-tube is connected with the negative pole and therefore not potential-free**

The other components (battery, tank, SmokePump, and SmokeDriver) can be installed inside the hull of your plane. Please mount the tank for the RedOil at or near the gravity center of your model. Please refer to the picture above to assemble the other valves and tubes. Since you will have to calibrate the valves once they are operating, make sure to be able to reach them easily, and note the direction of the flow.

The SmokeDriver has to be mounted in a way to assure appropriate cooling. If your model hull is too small, it might be necessary to add additional air holes so that the airstream can cool down the SmokeDriver. Overheating might damage, and even destroy, the SmokeDriver.

The RC-receiver is connected via the cable of the SmokeDriver. You only need one free channel at the receiver for this; please put the channel on a three-step transmitter. For the comfortable use of the smoke device we also recommend to mix one caliper on the channel of the three-step button.

### Calibration and Usage of the Smoke Device

You can easily calibrate the smoke device by adjusting the two following parameters.

#### Path-alignment at the transmitter:

The performance of the pump is regulated through the path-alignment at the transmitter. An alignment of 70% is usually sufficient. Please adjust the path-alignment for the used channel on your transmitter (three-step switch) as follows: lowest position = -100%; middle position = 0%; and top position = 70%.

#### Valve Adjustment:

Each valve regulates the amount of oil for its corresponding smoke tube. Once the pump is switched on, a steady, thin flow should exit each smoke tube; make sure it is a very thin stream and not just a couple of drops. Please find out the optimal amount of oil you need for your model by testing various valve positions. If a lot of smoke exits the smoke tube right after switching the device on, and then the smoke decreases rapidly, you are using too much oil. Reduce the flow by closing the valve for the relevant tube a little further. If the smoke is steady, but too little, open the valve a little. You have correctly adjusted the flow once the smoke comes out steadily for 5-10 seconds and then decreases.

Since soot will deposit in the evaporator while using the **Smoke-EL**, you will have to adjust the valves occasionally. If you have to fully open the valves to produce enough smoke, you should clean the smoke tubes (see cleaning advice). This will happen after using approximately ½ liter RedOil. We recommend cleaning the tubes after 10 flights.

## Pre-Flight Check

After charging the SmokeBattery and filling the oil-tank, you have to conduct a pre-flight check. Connect the SmokeBattery to the SmokeDriver, and switch it to receiving (**please make sure that the 3-step switch is in the lowest, -100%, position**). Now push the switch to its top position; the pump starts to work and transports the RedOil to the smoke tubes. Let the pump run until a small but steady stream of oil exits the smoke tubes (if necessary, regulate the amount of oil with the valves).

The device is now aired and you can switch back to the lowest position (-100%). You can now use the device. When using the **Smoke-EL** for the first time, adjusting the valves can take some time; please disconnect the heater from the SmokeDriver during this time.



**Caution: Using the heater without SmokeOil in its evaporators will destroy the heater.**

## Warranty

The **Smoke-EL** is produced on highly modern machines and we choose our materials in respect to their longevity and precision. If you use the **Smoke-EL** as instructed you will be able to enjoy its smoke for a long time. We grant 12 months guarantee; if there is a problem please send the device to the address below.

## Technical Data **Smoke-EL (S)**

Weight per Smoke Tube.....	130g
Number of Evaporators.....	1 pc
Diameter.....	20mm
Length.....	180mm
Power.....	8-24A
Consumption per Minute.....	30ml / 500mAh

Enjoy **Smoke-EL** – the world's first electrical smoke-producing device.

Sieverstedt, August 2013

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## Safety Warnings



When using the **Smoke-EL**, internal temperatures can reach 1000°C



Using other oils than RedOil can destroy the heating elements and cause a fire within the device!



Only use our specifically developed RedOil.



Do not test the device on the ground. The missing airstream increases the danger of fire!



The housing and the smoke can reach temperature of more than 100°C



If you see any flames, turn the system off immediately!



Connect and disconnect the plugs only when the device is turned off.



Make sure that no cables, tubes, or other elements touch the **Smoke-EL**.