



SOXOS DB7

Words & Pictures: Raquel Bellot

The Soxos DB7, Swiss brand Heli Professional's flagship helicopter. Specifically, it started life as a Soxos 700 which was modified and updated by world champion Duncan Bossion. In this article we are going to delve into the details of this helicopter and point out what makes it different to others in the same class.



FIRST LOOK

The DB7 can be purchased in two kits, one without blades and the other with a set of Spinblades Black Belts, with 685mm as mains and 105mm for the tail. Upon opening the box we soon find all the components well laid out and numbered in bags. The more delicate aluminium parts are presented in a foam tray to assure that they arrive undamaged. It includes a paper manual which explains perfectly the steps required to complete assembly.

The main changes between the DB7 and the original Soxos 700 are the shape of the canopy, the main rotor and the speed controller tray.

First impressions are good, with the quality of both the carbon and aluminium soon drawing your attention. Not to mention the canopy design, gear system, tail gear assembly and simply the overall simple yet practical design of the whole helicopter.



≡ Flagship helicopter from Heli Professional

≡ Design of Soxos DB7 Canopy



MAIN ROTOR

The main rotor is made fully out of aluminium, anodised black. It uses a 10mm spindle shaft and 12mm main shaft. The overall look is of being rigid and robust. I especially like the fact that the grips are removable. This makes replacement easy in case it gets damaged, resulting also in a less costly repair than having to change the whole unit.

The included turnbuckles make setup a piece of cake taking just moments to achieve the precise results desired. With big strong ball links you feel confident in the whole CCPM 120° assembly.

Personally, I use Spinblades Black Belt 685mm mains, however depending on your style, up to 720mm can be used.



≡ First look of Main Head and Swashplate



≡ Details of ball bearings and another pieces which compose the main rotor



≡ The included turnbuckles make setup a piece of cake taking just moments to achieve the precise results desired

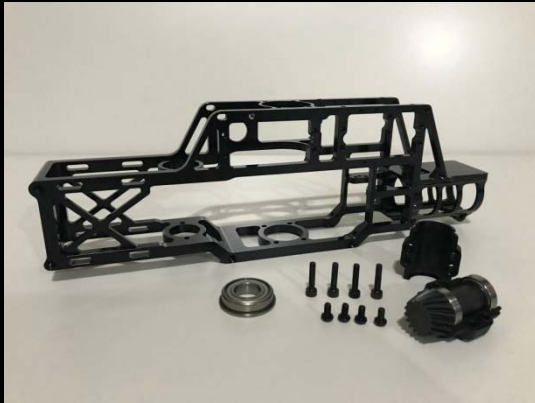


≡ Made in CNC anodized Matt Black.

≡ The overall look is of being rigid and robust.

FRAME

The Soxos DB7 frame is split into two parts. The first part is a main CNC machined structure, providing great strength to the whole structure given that it is milled from a single block and also assures perfect alignment of all other components. Not to mention the fact that with fewer components to put together, it really speeds up the build.



≡ Main CNC frame machined structure



≡ 2 carbon fiber plates of 2mm

The second part of the frame is the lower section, made up out of two 2mm carbon fiber plates. Onto these two plastic railings are installed which act as support for the battery tray.

The batteries themselves are mounted onto a plastic tray with velcro straps. The locking mechanism is released through a simple button, which makes the entire operation of installing and removing the batteries very simple.



≡ 2 Optipower 5000mah 6S 50C & SupraX PRO S7 connectors

Two plastic braces and aluminium skids complete the landing gear. A traditional and simple yet robust design which is connected to the main frame via four bolts.



The canopy is one of the most heavily modified parts of the heli. Providing a different yet aggressive look. The strategically placed openings allow airflow into the canopy over vital components such as the motor and speed controller. All topped off with a bright and high viz colour scheme providing great orientation in the sky. An innovation in the DB7 is the canopy latch which is very different to the norm. It has 2 aluminium balls on the top inside of the canopy and two plastic rails on the bottom side. All together a quick and effective way to secure it to the main body of the heli.



The main rotor itself is supported by two separate bearing blocks.

Something that stands out in this model is that throughout the entire setup no belts are used. The whole transmission is done through helical (off straight) gears. Used to seeing helis with a mix of gears and belts definitely draws attention.

Ever since I started with this helicopter, the transmission system has worked perfectly. It is also surprisingly quiet, especially when considering that it doesn't use belts.



As mentioned, the ESC tray was also modified by Dunkan when reviewing the original Soxos 700. It is designed with two carbon plates, joined by two CNC aluminium parts, which also have the Soxos logo engraved on the top. Personally, I agree completely with this mod, as most pilots now use large ESC's such as the Kontronik Cool Kosmik. Thanks to this new design, the ESC fits perfectly and can be securely attached to its designated location. Under the ESC there is also a large area where further components can be installed. In my case, its where I put my OptiPower Ultraguard 430



≡ ESC tray was modified to use large ESC's

≡ Kontronik Cool Kosmik 200A & Pyro 750-56 Competition

The flybarless system is mounted on a carbon plate towards the back of the chassis. Mounted close to the main shaft, it is an ideal location, close to the centre of the heli which is ideal.



TAIL AND BOOM

The tail receives power via a torque tube. However this is not any torque tube, it is quite a unique design. No end terminals are required. Personally, I feel this is a great system, better than any others available, as with the other more standard design it is common to have failures due to these terminals failing in flight.



The tail assembly itself is full aluminium. Using two rubber rings as shock absorbers to also prevent vibrations. The four screws which keep all the parts together also have these rubber rings for the same reason. The overall design is truly simple and works well.



≡ Design of torque tube & the rubber

The blade grips themselves are black and silver anodised aluminium and have a small pieces which allow you to setup visually.

Tail fins and tail boom braces are made in carbon fiber.

A further point that stands out in this heli is the drive system from the tail servo to the tail itself. The servo is mounted vertically via an aluminium support at the end of the tail boom assembly. The pushrod is then mounted directly onto the servo spline, which twists the rod rather than pushing and pulling it. The rod itself is secured additionally by two bearings, all of which provide the tail with great precision and smooth control.



≡View of the tail rotor and the bearings inside



≡The pushrod is mounted directly onto the servo spline. It provide the tail with great precision & smooth control.

≡Tail Servo MKS HBL880 and Spinblades Black Belt 105mm.

≡Microbeast Flybarless system

≡MKS HBL850 Cyclic servos



DB7 IN FLIGHT

For flight, my setup consists of 1800rpm in normal mode, 2100rpm for Idle 1, and 2200rpm in Idle 2.

Despite having been an official Soxos team pilot since summer 2017, I have been flying with Soxos helicopters since before then and really liked how the DB7 flew ever since day one. It was very exciting as I had seen other great pilots fly it with truly spectacular results. As far as design goes, it is a helicopter that fits in with my style and could see straight away that it would not let me down.



Following the first flights, it was obvious that the DB7 is a very stable helicopter. I started pushing the agility of the cyclic pitch and found how amazingly precise and fast it really is. As far as setup goes, I don't have any kind of special settings in my Microbeast, and despite this it feels great. The tail response is very fast and precise, even if the MKS X8 servos throughout really do help.

Manoeuvres can be done amazingly quickly and still feels like it is flying on rails, something that offers great confidence from the get go regardless of your style. I feel that the DB7 offers reliability, while providing great capability thanks to its light weight design.



SPECIFICATIONS

Brand: Heli Professional
Name: Soxos DB7

Weight: 2100g
without components and blades
Rotor diameter: 1590mm
Rotor blades: 685-720 mm
Motor main gear ratio main rotor: 1:7,94-
1:10.06
Gear ratio main rotor: tail rotor: 1:4.8
Motor Pinion: 16T
Web: www.heli-professional.com



≡ Spinblades Black Belt 685mm



Throttle Curve:

Normal: 60%

Idle Up 1: 68%

Idle Up 2: 75%

Pitch:

+11,5°/-11,5°



ELECTRONICS

Motor: Kontronik Pyro 750-56 (560KV)

Speed controller: Kontronik Cool Kosmik 200A

Flybarless system: Microbeast

Cyclic servos: MKS X8 HBL850

Tail servo: MKS X8 HBL880

Battery: 2 x Optipower 6S - 5000mah 50C

Optipower Ultraguard 430 Back up

Radio: Spektrum DX9

Receiver: Spektrum AR8000

Main blades: Spinblades Black Belt 685mm

Tail blades: Spinblades Black Belt 105mm

OPINION

I have been flying Soxos helicopters for almost a year now, and I'm really happy with the results. I have tried a couple of different configurations, however currently feel that I have a setup which really suits me.



The helicopter is quick and easy to build without any real sticking points. The quality of the materials used and overall finished is great too. It may be produced in China, like most other brands, however the majority of quality control is passed in Switzerland which works in Heli Professional's favour.

The Soxos DB7 has a simple design, but innovates where needed and provides great mechanical reliability.

Once in flight, it is agile, light and precise, providing an excellent response in any kind of manoeuvre.



It even has "crashability"! , as thanks to the prices on spares being similar or cheaper than other helicopters in the same class.

Overall, the Soxos DB7 may be a new kid on the block, but with its pedigree and flight characteristics, is a great option within the 700 size heli class. Try it, and you will see for yourself.



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