ENGINE REVIEW

BIDALOT EOLE 135

Photo : Véronique Burkhardt Pilote Sascha Burkhardt

A bit behind schedule, the Eole 135 from the French manufacturer Bidalot is finally available as a production model, initially with Kangook and Adventure. Here's our first impression...

Bidalot Technologies is a French motor manufacturer founded in 1988 by the engineer Jean Bidalot. Now successfully established in the two wheel market, they would like to offer, for their debut into the world of aeronautics, a reliable 135 cc engine, powerful enough to be placed in the 180 cc niche.

The first prototypes were very promising, but the thermal stability needed to be improved. 25 HP in a 135 cc engine requires good management of the cooling system.

Kangook and Adventure, the two manufactures which took part in the development, now have this engine in their catalogue. We tried the final version of the Eole 135 on a Kangook Trekk chassis.

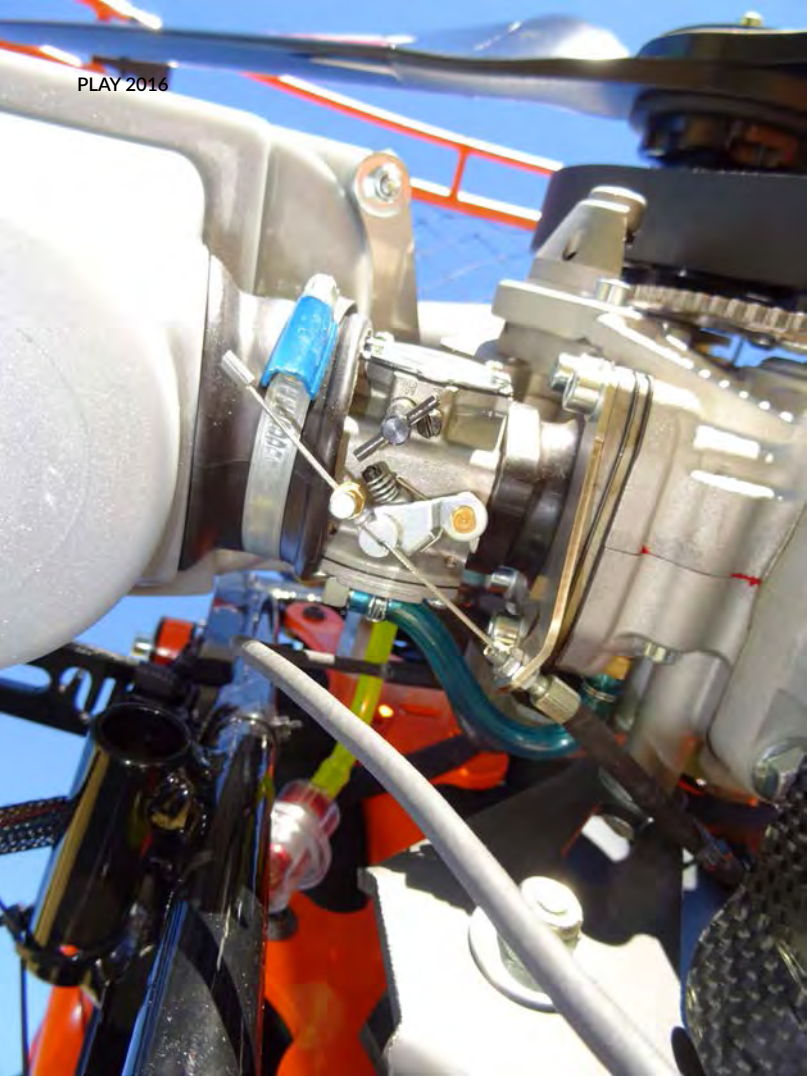
The Bidalot isn't specially designed to be 'light', but a 25 HP engine weighing 14.5 kg (motor without chassis and with an electric starter) is fairly good.

The motor doesn't have a manual starter or a clutch. A belt reduction transfers the power to the specially made propeller, part of which has a large angle of attack to improve the cooling.

Often on two stroke motors, when you increase the throttle, there is a little 'gap' in the power in the middle, then it all comes at once.

Bidalot, of course, wanted to solve this problem and offer a very linear power curve instead.

To get to know the beast, we carried out our first test using a Kangook Trekk chassis with the second generation of the Trekk 'Fagot cage'. We'll give the full report in our next issue.



The membrane carburettor is, as always, difficult to adjust, but is requested (wrongly?!) by many clients. However that's another story...

The exhaust pipe: it took more than 15 prototypes to get the result they wanted.

To do this, the manufacturer, amongst other things, made the crankshaft heavier. They also worked a lot on the connection between the membrane carburettor and the exhaust system.

When we launched the test motor it started without hesitation every time. The idle is smooth, regular and sounds very nice. In fact, minimal noise is part of the specifications. There is little vibration and the heavier crankshaft no doubt contributes to this.

During our first tests with maximum throttle, we almost got the impression that it had 'enough power, but with none to spare.' The explanation for this misconception is that as the power increases evenly as the throttle is increased, you don't get the huge kick that you see on machines which are less linear. But when the throttle is suddenly released at full power, you can easily see to what extent it was pushing just before...

The linearity in the increase in power is therefore a great success. The pilot can also see this when skimming the ground, where the motor has direct but gentle transmission from the throttle controls. We only had two little inconsequential 'hiccups' on half throttle, perhaps due to an air bubble.

At all revs the noise remained very nice, for the pilot, as well as for the spectators on the ground. Therefore this motor seems to keep all its promises.

Obviously the question of reliability comes up; that's the other major requirement for a motor. A Kangook dealer in Brittany observed a dozen Bidalot motors in use. On his own machine, he clocked up 70 flying hours, including a flight at the beginning of October where he got to 4670 metres above Morbihan (a department in Brittany). Other machines had flown 90 hours, all apparently without any problems. Very encouraging!

In addition, Kangook dealer Sébastien Pérez confirmed that, for him, the Eole 135 would be a good replacement for the Vittorazi Moster 185...

The asymmetric form of the 'hat' as well as the oblique orientation of the fins, have been calculated.

Bidalot design and assemble their engines in France, but make the components in Italy for example.

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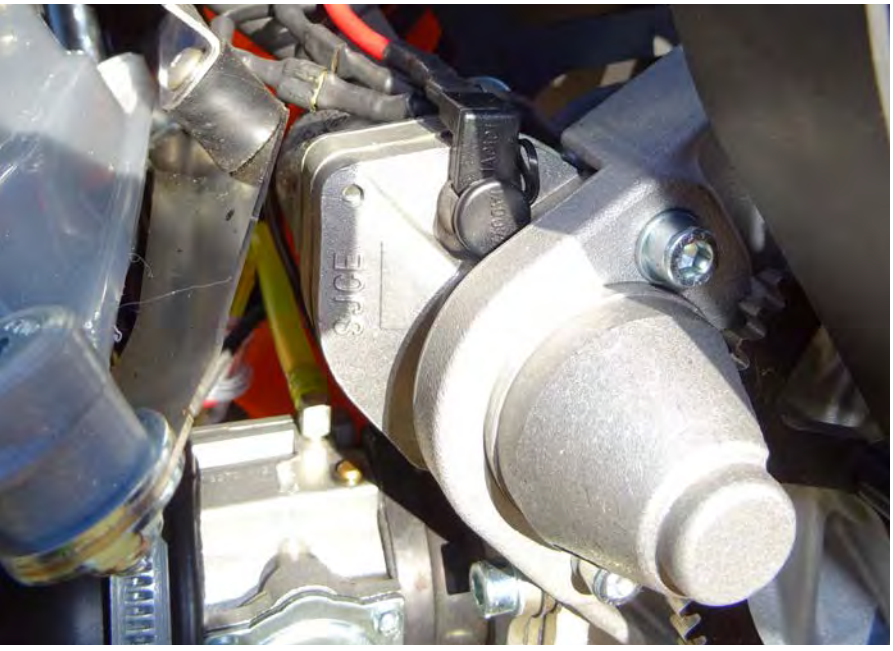

The electric starter is very reliable; it starts with a quarter turn. The pilot can therefore start the motor after inflating; this is an advantage for safety and compensates in large part for the absence of a clutch. On the other hand, the LiPo battery isn't recharged by the motor.

BIDALOT EOLE 135 TECHNICAL DATA

Manufacturer: Bidalot Technologies, Z.A. de Berroueta - F-64122 Urrugne
Mail : www.bidalot.fr

Model	2 stroke
Cooling	Air
Stoke and bore	54.5 x Ø56.0mm
Capacity	135.24 cc
Cylinder	Aluminium, 5 ports, Booster exhaust, with Nikasil coating
Piston	cast, high silicone aluminium in 2 segments
Compression ratio	10.5:1
Induction	By crankcase valve, with carbon leaves
Carburettor	Walbro WB37C
Air filter	Airbox with filter and sound insulation
Ignition/Alternator	Electronic/no
Fuel	Unleaded petrol 98 + 2% 100% synthetic oil
Reduction	POLY-V 3.15/1 BELT
Starter	Electric only
Propeller/rotation	125 cm (115 cm,130 cm) anti clockwise
Mass of the complete motor	14.5kg
Maximum power	25HP @ 7300 rpm
Max revolutions/recommended cruising	8100 rpm / 6500 rpm
Maximum thrust	71kg
Price (bare motor with starter)	2 590 €

Adventure is one of two manufacturers to offer the Bidalot Eole 135 in their foot launch machines in the ranges X-Race and X-Race LT, with a 115 or 130 propeller.

Chief engineer at Adventure Paramotors, Emmanuel Layan, and his team have also contributed to the development of this machine.

The Eole 135 is placed in the same niche as the Tiger, but with more power for a similar weight
Tiger: 160 cc, 14.4 kg, 22 HP.
Bidalot Eole: 135 cc, 14.4 kg, 25 HP.

Photo : Adventure
www.paramoteur.com