



the all-new Rio 2 from Avian  
15m<sup>2</sup> and 17m<sup>2</sup> sizes.





# Avian Rio 2

The all new Rio 2 is the latest sports wing from Avian.

The Rio 2 makes things better for you, the pilot. It is easier and quicker to rig, easier to fly and easier to land. And of course, with all new fittings it looks smarter on the ground as well as cleaner in the air.

There have been so many changes from the original Rio that we have had to list them:



*Strong, aerodynamic and easy to rig (flat or on the control frame).  
Quick, tool-less, change of uprights.*

## What's new?

### Suitable for more pilots

The Rio 2 is now available in two sizes: The 15m<sup>2</sup> and 17m<sup>2</sup> version. So many more pilots can fly a Rio 2. The Rio has also been tested to higher payloads and so is perfect for use with FLPA (Foot Launched Powered Aviation) Power units like the Wasp, Doodle Bug and Mosquito.

There is even an ultra strong Rio 'T' version specially built for light Trikes like the Samba and Dragonfly.

### Rigging and de-rigging

The Rio will of course rig flat, which is vital for windy hill flying conditions such as those found in the British Isles. Also the Rio 2 is designed for easier rigging on the keel. The new control frame fittings prevent the glider flopping from side to side.

### New sail design

Just looking at the Rio 2 the new sail is obvious. The batten ends and elastics on the trailing edge have disappeared in favour of new clip batten ends. These robust, easy to use fittings give the longest sail life.

The new under-surface shape with logo cut into the sail is striking, but only the more observant will notice the new wide keel pocket to reduce drag and improve handling.

Even less obvious are the new production methods used to manufacture the Rio 2. The new sail is now cut with a laser. This gives great accuracy and all fabric edges are 'hot cut' - the best protection against fraying fabric.

### Variable Geometry option

Variable Geometry is now available on the Rio 2. This allows the pilot to adjust the wing tension in flight, changing the blend of performance and handling. This can be useful in both aerotowing and cross country flight.

### Short packing

Those of you who travel by plane with your hang glider will know how important it is for the baggage handlers to have packages under 12 feet in length. Amazingly both sizes\* of Rio 2 will short pack under 12 feet.

### Safety

Avian are committed to the BHPA airworthiness scheme with its exacting pitch stability and load testing regime.

Avian are also committed to continuous safety improvement throughout the glider. It is for this reason that the Rio 2 now has both luff lines and washout control. These are two well tested, means of ensuring good pitch stability at all speeds and VG settings.







*New lower control frame fittings. Smart, strong and very quick to change uprights or wires.*



*VG cord routing is down the centre of the aluminium upright tube. This makes the VG cord light to pull. Centre routing also makes changing the VG upright easy.*



*The laser-cut sail allows for custom designs as well as consistently accurate sails.*



*Tensioning is via a two-to-one pulley system making rigging easy. Double location cords are used to prevent tension stop twisting.*



*An Avian original and now widely copied: our clip batten ends make for fast, easy and secure rigging as well as a reduction in drag.*



## New airframe components

The modifications to the Rio 2 are not just skin deep. Many of the internal components are new and improved:

The inner leading edge is now manufactured with a beautiful, lighter and stronger cross-tube hinge.

The outer leading edges feature similar components for mounting the new washout batten.

The washout batten is a world first on a hang glider (see below). It combines the washout rod of the latest topless racing gliders with a full length batten. This saves the weight of a batten and is quicker to rig. An added safety feature of the washout batten, learnt from high performance gliders, has resulted in support wires that are impossible to wrap around the rod accidentally. A small point but one that results in safer rigging.

The cross tubes, centre junction and VG fittings are all new on the Rio 2. They provide neat, centre loading and smooth VG adjustment.

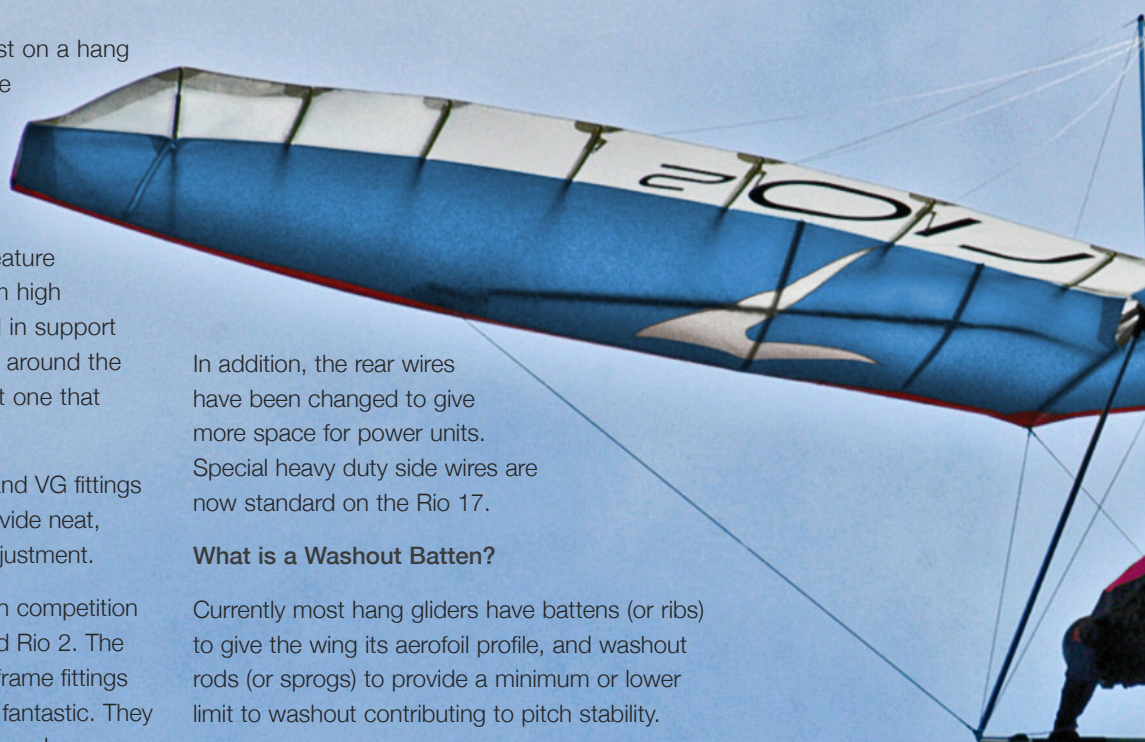
The technology transfer from Avian competition gliders has resulted in an improved Rio 2. The new aerofoil uprights and control frame fittings are beautifully machined and look fantastic. They make rigging on the keel a doddle and, more importantly, they have been designed with the pilot in mind:

When the inevitable occurs and a less than perfect landing results in a bent upright these fittings make the uprights, fast and easy to replace without the need for any tools. The fittings design

can also save you money. Its design, unlike other hang gliders, makes it extremely unlikely to damage the opposite upright or the robust fitting. Even a small detail like re-threading the VG cord is far easier than on other machines.

## The Rio 2 used with power

The Rio 2 has been designed with power use in mind. The removable keel to allow rotation of the propeller is now standard.



In addition, the rear wires have been changed to give more space for power units. Special heavy duty side wires are now standard on the Rio 17.

## What is a Washout Batten?

Currently most hang gliders have battens (or ribs) to give the wing its aerofoil profile, and washout rods (or sprogs) to provide a minimum or lower limit to washout contributing to pitch stability.

The washout batten combines a washout rod and batten. It is positioned where a conventional batten has been missed from the sail. When rigging it swings out and clips into the trailing edge of the sail to provide sail tension but also provides a washout limit for the wing. A short zip is done up to complete the rigging procedure.

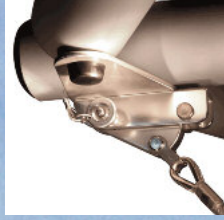
# Rio 2 Specification

Model	15	17
Span	9.8m	10.1m
Area	15m <sup>2</sup>	17m <sup>2</sup>
Aspect ratio	6.4:1	6:1
Packed length:	5.7m	6.1m
Quick short packed length	3.6m	4.0m
Short pack length	3.60m	3.66m*
Glider weight	26.5kg	30.0kg
Clip-in weight (free-flight)	70-110kg	90-130kg
Max clip-in weight (with power unit)	120kg	140kg
Speed range	24-80km/h	24-80km/h
Max L/D	11:1	11:1
Min sink rate (@7.05kg/m <sup>2</sup> )	1m/s	1m/s
Airworthiness certification	BHPA	BHPA

\*optional



The beauty isn't just skin-deep



*The washout batten system uses the latest CAD components taken from the most up to date competition hang gliders*



*Leading edge / cross tube junction: 21st century engineering*



*New 'super-smooth' ball-joint cross tube junction with variable geometry*



*Cross tubes are centre loaded through the ball for maximum strength*





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## avian

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