

Technical Launch



Detailed Technical Launch of P44

Slogan, Idea and Goal of the P44

Einfach Spass | Pure fun | Simplement plaisir

The DHV 1-2 paraglider range is the largest and most preferred of all the different classes available.

The intermediate pilots tend to prefer these wing classes. The demands made by these pilots with regards to the wing performance on the one hand and their competency and ability on the other hand are often complete opposites.

The specific intention of the P44 was to provide these pilots with the most comfortable flying, i.e. fun should be part of the flight and the pleasure should not have to be waited upon. This sounds very simple, however, our experience, in close contact with intermediate pilots, proves otherwise.

Certification

The certification follows the worldwide recognised guidelines of the DHV.

Never the less, our testing goes well beyond these requirements to attain, among others, higher performance targets. Specifically, we test the lateral and frontal tuck behaviour, in accordance with our performance requirements, to much higher demands than made by DHV

Standings of the P44 within the DHV Classification Scheme

As most pilots realise the division of paragliders into the five different DHV safety classifications gives at best a rough indication of their characteristics with regards to suitability and behaviour during normal flying. Further characteristics, not encompassed by the DHV classification, are also decisive.

Sicherheit, Handling und Leistung

	DHV 1-2		
	LOWER BAND	INTERMEDIATE	HIGHER BAND
Safety and Damping			
Handling and Dynamics (active flying)			
Performance (Glide, sink rate, velocity)			

Classification with regards to Feature and Manoeuvre

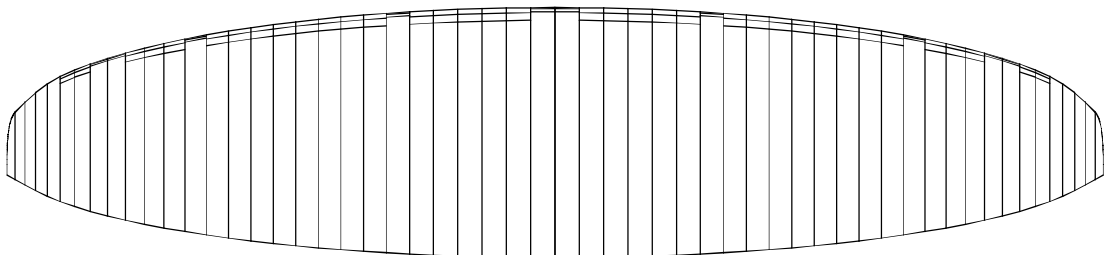
	DHV 1-2		
	LOWER BAND	INTERMEDIATE	HIGH ER BAND
Take-Off	Shaded		
Big Ears	Shaded		
B-Stall	Shaded		
Landing	Shaded		
Tuck Stability		Shaded	
Damping in Turbulence		Shaded	
Spiral Dive		Shaded	
Lateral Tuck		Shaded	
Frontal Tuck		Shaded	
Break Pressure		Shaded	Shaded
Available Speed Range			Shaded

Development Changes from P43

Plan Projection

The P44's plan projection has been modified in a number of steps to achieve the same performance and safety with a clearly more direct and hesitation free handling. At the same time the cell width was optimised to minimise the lateral weight distribution and the cell bulging.

As a bonus the P44 appears far more aesthetic than its predecessor.



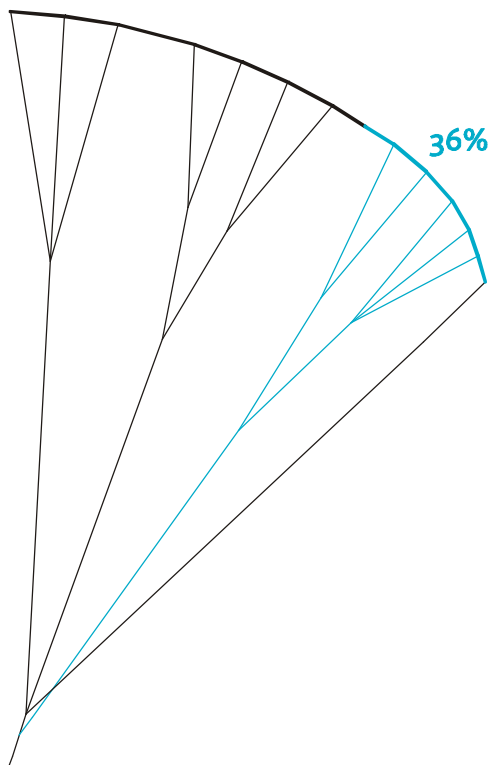
Line Layout

The line layout has been further optimised.

The outer suspension lines carry now 36% of the half span. This means using "Big Ears", initiated with the outer lines, has been made easier. We also optimised the load distribution in the suspension lines to better utilise their load capacity. By optimising the angles of the line forks, the line lengths could be further reduced without eliminating the number of suspension points. With thirteen generous suspension points per pane and side, the permanent deformation of the canopy due to aging of the wing material and strength issues due to reduced number of suspension points are completely eliminated.

The line diameter was purposely increased over that required by the stringent DHV strength testing and proof calculations.

All these additional measures lead to some performance loss but the benefit of added safety and worry free fun, while flying, are well worth paying this small price.



Handling

A lot of attention was given to the handling characteristics. In particular, accentuated long steering inputs and at the same time maintaining precise roll control during strong thermals was to be achieved.

A more distinct tendency for dynamic turning with increased leaning, compared with its predecessor, has been realised. The proper coordination of the roll and yaw rates during differing turn conditions lead to a quite subjective feeling of safety and trust in the glider.



Design

The trim strip (yellow in the shown example) has been widened to accentuate the tri-colour design even at greater distance and at the same time to improve the appearance with colour combinations of lesser contrast. Trough this measure the elegance of the original colour design concept could be preserved.



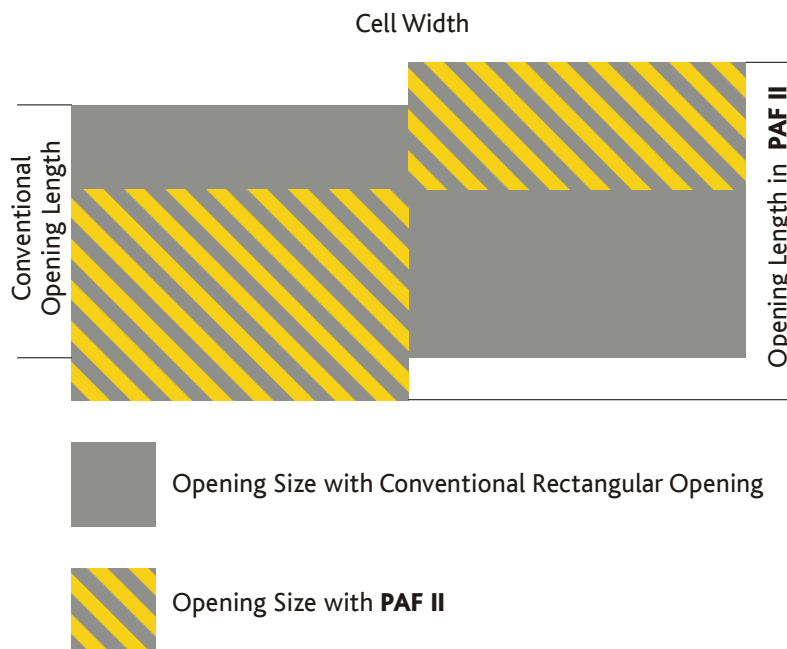
New Features

PAF II (Permanent Air Flow 2nd Generation)

Following PARATECH's already one wing generation old "Zigzag" leading edge **PAF** (Permanent Air Flow) cell opening arrangement we present for the first time in the P44 production model the **PAF II** evolution of this design. The objective was to eliminate the weaknesses of the earlier design without losing its advantages.



PAF II allows, dependent on the ratio of the front and rear opening, an adjustment of the length of the opening but maintaining at the same time a constant area of the opening or alternatively the reverse. In the shown example the area of the opening for **PAF II** is 30% smaller, while the length of the opening is 30% longer.



CD-Band

A further first is the introduction of the small CD-Band tension reducing bracing band between the C- and D-suspension line planes. This prevents undesired deformations of the rear wing area during strong steering and braking.



Material

We exclusively use raw material from recognised manufacturers, all leaders in their respective field of expertise. Through this we can maintain close contact and an involvement in ongoing development. Quality and reliability remains our first consideration.



Wing Material



Suspension Line Material



Thread



Screw Karabiner



Brace and Riser Material



Reinforcement Material

Technical Data

	P44 XS	P44 SM	P44 ML	P44 L
Wing Area (projected)	20.18 m ²	21.9 m ²	23.62 m ²	25.51 m ²
Wing Area (flat)	23.5 m ²	25.5 m ²	27.5 m ²	29.7 m ²
Span (flat)	11.27 m	11.74m	12.19 m	12.67 m
Aspect Ratio (flat)	5.4	5.4	5.4	5.4
Suspension Line Length	6.30 m	6.56 m	6.81 m	7.08 m
Number of Cells	25/56	25/56	25/56	25/56
Permissible Take-Off Weight	60 - 80 kg	75 - 100 kg	85 - 110 kg	105 - 130 kg
Optimal Pilot Weight	40 - 60 kg	55 - 80 kg	65 - 90 kg	85 - 110 kg
Glider Weight	5.5 kg	5.9 kg	6.4 kg	6.8 kg
Minimum Speed	21 km/h	21 km/h	21 km/h	21 km/h
Trim Speed	38 km/h	38 km/h	38 km/h	38 km/h
Maximum Speed	49 km/h	49 km/h	49 km/h	49 km/h
DULV Certification	-	-	**	**
DHV Certification	1 - 2 GH **	1 - 2 GH **	1 - 2 GH *	1 - 2 GH **

* Test Flights endorsed , ** In progress

Development Concept

The R&D Division under the guidance of Uwe Bernholz, BEng (Aeronautical and Aerospace Engineering), are known for their competence in the development of glider design and construction. His philosophy for the development of a glider can be summarised in one sentence:

« Greater Aspect Ratio for more Safety at equal Performance »

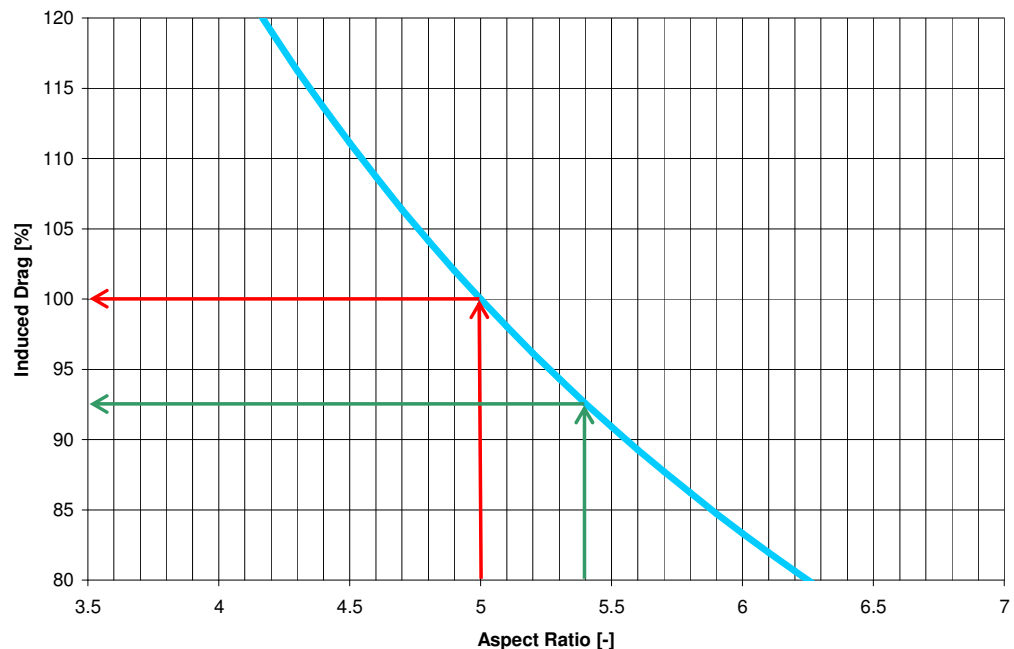
All PARATECH gliders, when compared with other competing wings, have one thing in common. The aspect ratio (slenderness) of the wing is most often greater.

Why?

The aspect ratio impacts on the induced drag, that is the resistance based on the finite span of the wing and the inherent pressure fluctuations or vortices respectively. The larger the aspect ratio is - The smaller becomes the induced drag. The scientific relationship can be expressed as follows:

$$W_i \sim \frac{1}{\Lambda}$$

Currently available gliders in the DHV 1-2 classification range have aspect ratios in the order of 5. The P44's aspect ratio is 5.4. This allows a reduction of the induced drag of approximately 8%.



This reduction of the induced drag can be utilised to improve the gliders performance. The available performance increase may also be used to develop a more balanced extreme flight performance or for increased wing stability. A precondition to achieve this is a clear understanding of the relationship of these factors.

An efficient wing permits therefore more opportunity to develop greater safety and increased comfort during flying.

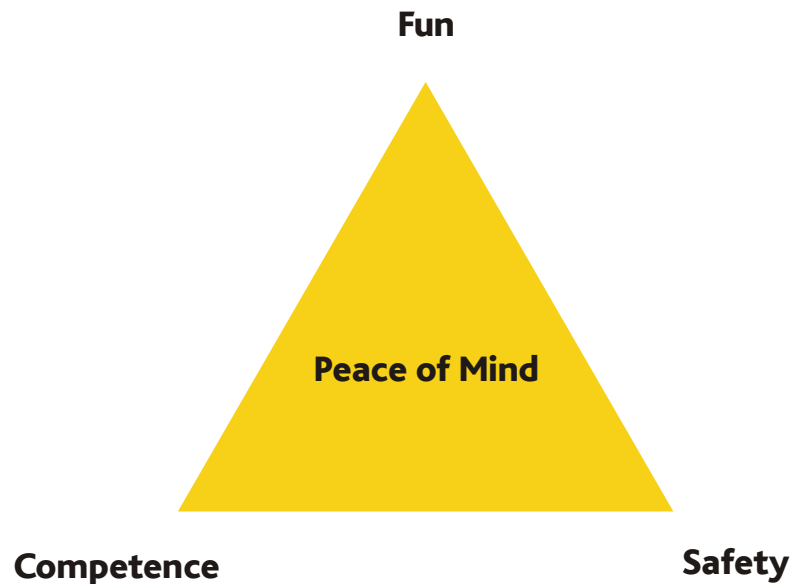
PARATECH

Values

Competence, Safety and Fun

The cornerstones of PARATECH approach to glider development are competence, safety and fun.

Our experience reaches as far back as 1986. An extra ordinary competent and gifted team works exclusively for PARATECH and develops on an ongoing basis totally independent products.



Philosophy

To provide pilots with more fun while flying by providing extra ordinary safety in each of our glider classes

PARATECH – Peace of Mind

PARATECH

PARATECH AG
Fehrlen 16
CH 9057 Weissbad
Telefon +41 71 787 30 31
Fax +41 71 787 30 32
info@paratech.ch
www.pاراتech.ch