

# **DG Flugzeugbau GmbH**

## ***DG-1001S***

**The two-seater sailplane for all purposes**

**Safety • Elegance • Performance**

## ***DG-1001T*** (turbo)

**The two-seater self-sustaining powered sailplane**

**Highest performance in the 20m two-seater class combined  
with a powerful self-sustainer engine**



***Passion, Power + Performance***

### **Special features of all DG-1001**

With the DG-1001, DG-Flugzeugbau offers a two-seater sailplane for the 20m competition class, which was designed with consideration of the latest developments regarding safety, aerodynamics and materials.

Excellent flight characteristics, high manoeuvrability, superior visibility from the front and also from the rear seat and the comfortable seating positions make flying the DG-1001 a pleasure.

Optional wingtips create an 18-meter sailplane especially suitable for training and aerobatics (Category A).

### **Wings**

For easy rigging, a parting at  $y=8.600\text{mm}$  (17.2 meter span) is provided. The wingtip extensions (length 1,4m) with permanently installed winglets according to the latest aerodynamic knowledge are fitted to the inner wing-panels with a dihedral bend, providing a span of 20 meters. This configuration was especially designed for cross-country and competition flying.

Thanks to the carbonfibre construction, the inner wing-panels of the DG-1001 weigh only about 90kg even though very thin wing-sections are used.

### **Safety**

- automatic hook-ups for all controls and the waterballast system
- outstanding visibility, even for small pilots in the rear cockpit, due to the height adjustable rear seat
- very effective double storey airbrakes
- high, spring mounted landing gear with large tyre and hydraulic disc brake
- landing gear handle at the left side, so the right hand can stay on the control stick at all times

### **Undercarriage**

The undercarriage of the DG-1001 standard version doesn't possess a nose wheel, but features a completely newly designed main landing gear, which extends so far to the front that the large wheel will be in front of the centre of gravity.

This main undercarriage is electrically operated. In addition manual emergency extension is possible. All landing gear controls are installed in both cockpits.

Optionally this main landing gear is available with a manual operating system as known from the DG-1000.

The comfortable spring mounted landing gear is equipped with a hydraulic disk-brake as standard.

Optionally the well proven DG-500 resp. DG-505 undercarriage with nose wheel and fixed or retractable main wheel are available.

### **Tailplanes**

The T-tail is of a completely new design with new profiles and optimised to the wingspan and wing area.

We should especially like to point out the fin tank, for compensation of the centre of gravity shift when flying with waterballast and the completely new designed ballast box in the fin. With these features it is very easy to optimise the centre of gravity of the aircraft for different loads.

By use of trim weights (brass plates) in the ballast box the mass of the second pilot can be compensated, important for example for competition flying and spin training. Through the plexiglas cover the ballast configuration can be seen at a glance.

The same trim weights can also be used in the front cockpit (option) to compensate low pilot weight.

### **Performance**

The laminar airfoil HQK-51 was designed by Dr. Karl-Heinz Horstmann (DLR Braunschweig) especially for the DG-1001 wing.

The winglets and also the optimised wing-fuselage-intersection have been developed by Prof. L.M.M. Boermans (TU Delft, Netherlands).

Altogether a sailplane with excellent performance, gentle stall characteristics and very low bug- and rain-sensitivity has been created.

The new canopy frames designed for the DG-1001 are equipped with Silicone hoses for sealing to provide excellent airtightness over a wide temperature range.

A cockpit air suction device (Mandl Absaugung) improves the Cockpit ventilation and enhances the gliding performance.

### Special features DG-1001T

DG-1001T is equipped with the powerful well tested Solo 2350C engine. The optimized carbon fibre composite propeller was designed by DG and is produced at DG.

The automatic powerplant control only available with DG-motorgliders, which is also installed in the DG-1001T, is still leading the way in making engine operation easy and comfortable, suitable even for inexperienced pilots. The new engine control instrument DEI-NT (new technology) with graphic display, incorporates a stall warning device and many additional safety warnings such as landing gear alarm or warning airbrakes not locked. Outside air temperature gauge and logbook are standard equipment.

A second DEI-NT and engine control elements are available for the rear cockpit as an option, important for pilot training

## Technical Data DG-1001S and DG-1001T

<b>Wingspan</b>	<b>m</b>	<b>18</b>	<b>20</b>
Wing surface	m <sup>2</sup>	16,72	17,53
Aspect ratio	/	19,38	22,82
Length	m	8,57	
Fuselage height	m	1,0	
Fuselage width	m	0,73	
Horizontal tailplane span	m	3,2	
Waterballast	max. kg (l)	160	160
Max. mass	kg	750	750
Max. wing loading	kg/m <sup>2</sup>	44,9	42,8
Max. mass for aerobatics (Category A)	kg	630	-

Max. speed	km/h	270	270
Certified for aerobatics		Category A full aerobatics	Category U only simple aerobatics

### DG-1001S

Empty mass with basic instruments	approx. kg	411	415
Wing loading (with 80kg payload)	approx. kg/m <sup>2</sup>	29,4	28,2
Lowest rate of sink (single seated)	m/s		0,51
at	km/h		79
Stall speed (mass 550kg)	km/h	70	68
Best glide ratio (max. mass) approx.	/		1:46,5
at	km/h		120

### DG-1001T

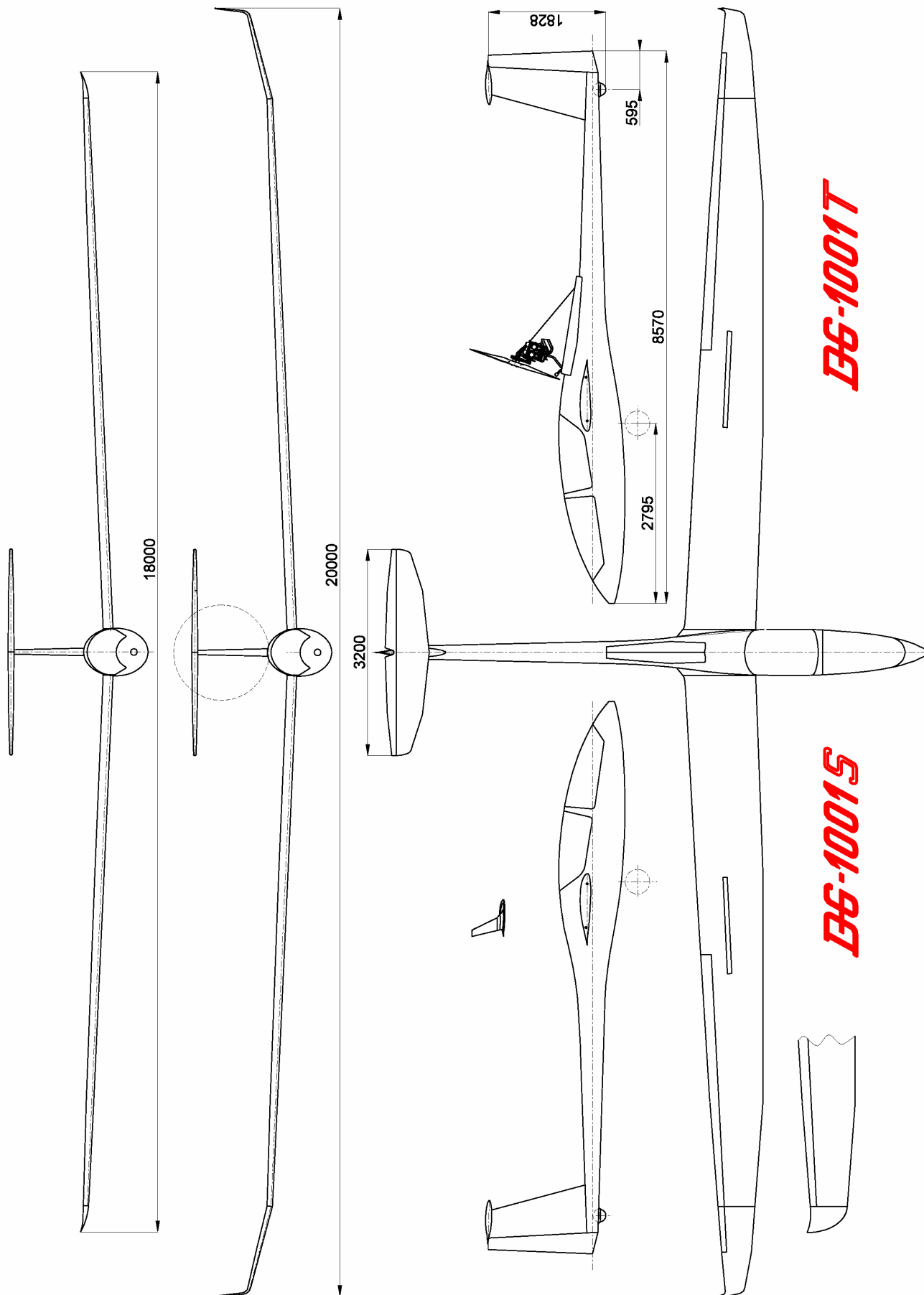
Empty mass with basic instruments	approx. kg	461	465
Wing loading (with 80kg payload)	approx. kg/m <sup>2</sup>	32	31
Lowest rate of sink (single seated)	m/s		0,53
at	km/h		80
Stall speed (mass 550kg)	km/h	70	68
Best glide ratio (max. mass) approx.	/		1:46,5
at	km/h		120

### Powerplant

engine	Solo 2350C two-cylinder-two-stroke-engine		
power	22 KW / 30 hp		
Reduction gear	1:2,3		
Fuel tank capacity	22 Liter		
Propeller	DG-P001-1 Carbon Fibre Composite		
Climb rate (20m span, 670 kg)	1,27 m/S		
Cruise speed	127 km/h		

Data power on for MSL, 15°C

Optional equipment raises the empty mass accordingly



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issued: February 2009 subject to change

