0 Revisions

0.1 Record of revisions

Any revision of the present manual, except actual weighing data, must be recorded in the following table and in case of approved sections endorsed by the responsible airworthiness authority.

The new or amended text in the revised page will be indicated by a black vertical line in the right hand margin, and the Revision No. and the date will be shown on the bottom left hand of the page.

Rev. No.	Affected Pages/ section	Description	Issue Date	LBA Approval Date	Inserted Date Signature
1	0.3-0.5, 2.1, 2.9, 2.11, 4.5, 5.4, 6.3, 6.5, 6.10, 7.10	Manual revision TN 413/2	September 2003	Sept. 25. 2003	
2	0.3, 2.12, 3.2, 4.3	Manual revision TN 413/3	May 2004	May 10. 2004	
3	0.3, 0.5, 4.5, 7.6	Ballast box in the fin TN 413/4	June 2004	June 29. 2004	
4	0.3, 0.5, 3.2, 7.11	Canopies Gas-struts TN 413/6	October 2004	January 13. 2005	
5	0.3, 0.4, 2.7, 3.5, 4.1, 4.17	Manual revision TN 413/8	January 2005	February 22. 2005	
Rev. No.	Affected Pages/ section	Description	Issue Date	EASA Approval Date	Inserted Date Signature
6	0.1, 0.4, 0.5, 4.9, 4.13, 7.5	landing gear positive locking device TN1000/13	February 2008	April 8. 2008	
	0.3, 0.5, 2.5, 2.9, 2.12, 7.13	Rudder pedals-loops (safety bows), manual revisions TN1000/16	May 2008	June 11. 2008	

0.2 List of effective pages

Section		page	issued	replaced/	replaced/
0		0.0	March 2002		
		0.1	see manual amendments		
		0.2	"		
		0.3	"		
		0.4	"		
		0.5	"		
		0.6	March 2002		
1		1.1	"		
		1.2	"		
		1.3	"		
		1.4	"		
		1.5	"		
		1.6	"		
2	App.	2.1	March 2002	Sept. 2003	
	"	2.2	"		
	"	2.3	"		
	"	2.4	"		
	"	2.5	"	May 2008	
	"	2.6	"		
	"	2.7	"	January 2005	
	"	2.8	"		
	"	2.9	"	Sept. 2003	May 2008
	"	2.10	"		
	"	2.11	"	Sept. 2003	
	"	2.12	"	May 2004	May 2008
3	"	3.1	March 2002		
	"	3.2	"	May 2004	Oct. 2004
	"	3.3	"		
	"	3.4	"		
	"	3.5	"	January 2005	
4	"	4.1	March 2002	January 2005	
	"	4.2	"		
	"	4.3	"	May 2004	
	"	4.4	"		
	"	4.5	"	Sept. 2003	June 2004

0.2 List of effective pages (cont.)

Section	Page	issued	replaced/	replaced/
7	7.1	March 2002		
	7.2	"		
	7.3	"		
	7.4	"		
	7.5	"	Febr. 2008	
	7.6	"	June 2004	
	7.7	"		
	7.8	"		
	7.9	"		
	7.10	"	Sept. 2003	
	7.11	"	Oct. 2004	
	7.12	"		
	7.13	"	May 2008	
8	8.1	March 2002		
	8.2	"		
	8.3	"		
	8.4	"		
	8.5	"		
	8.6	"		
9	9.1	March 2002		

2.4 Mass (weight)

Category A „Aerobatic“

Maximum take off weight:	630 kg	1389 lbs.
Maximum landing weight:	630 kg	1389 lbs.

Category „Utility“:
with waterballast:

Maximum take off weight:	750 kg	1653 lbs.
Maximum landing weight:	750 kg	1653 lbs.

without waterballast: Maximum take-off and landing mass = $W_{NLP} + W_{wings}$

W_{NLP} = Maximum mass of the non lifting parts (see below)

W_{wings} = actual mass of the wings

Maximum weight of the non lifting parts = 469 kg 1034 lbs.

Caution: It is recommended to dump the waterballast before landing on airfields. Dump the ballast before an outlanding in any case.

Maximum mass in baggage compartment: 15 kg 33 lbs.

Caution: Heavy pieces of baggage must be secured to the baggage compartment floor (screwing to the floor or with belts). The max. mass secured on one half of the floor (left and right of fuselage centre line) should not exceed 7,5kg (16.5 lbs.).

Ballast

1. Maximum waterballast

in the wings:	160 kg	353 lbs.
in the fin	6,2 kg	13.7 lbs.

2. Maximum mass in the trim-ballast box in the fin: 12 kg 26.5 lbs.

The max. take off mass is not to be exceeded with 1. and 2. together.

Warning: Follow the loading procedures see section 6.

2.10 Minimum equipment

As minimum equipment only the instruments and equipment specified in the equipment list (see maintenance manual) are admissible.

Note: The actual equipment list is filed in the enclosures of the maintenance manual.

a) **Normal operation**
Airspeed indicator Range: 0-300 km/h (0-165kts.);
Speed range markings see sect. 2.3
Altimeter Range: 0 – min. 10.000 m,
Altimeter with fine range pointer, 1 turn max. 1000 m (3000 ft.)
Four piece symmetrical safety harness
VHF - transceiver (ready for operation)
Outside air temperature gauge with probe in the fuselage nose.
Marking blue for temperatures below 2°C, (36°F).
Battery Z110 or a ballast weight of 5.75kg (12.7 lbs.) installed in the battery box in the fin
Parachute automatic or manual type or a suitable firm back cushion approximately 8 cm (3 in.) thick for the front seat and 3 – 8 cm (1 – 3 in.) thick for the rear seat
Required placards, check lists
Flight and maintenance manual.

b) **In addition for cloud flying**
(Not permitted in the USA, Canada and Australia)
Variometer
Turn and bank indicator

c) **In addition for aerobatics** (Category Aerobatic)
Accelerometer capable of retaining max. and min. g-values with markings red radial lines at +7 g and -5 g.

Remark:
Experience has shown that the installed airspeed indicator system may be used for cloud flying.

2.17 Limitations placards

DG Flugzeugbau GmbH
Type: DG – 1000S Serial No.: 10- S
Year of construction:

Maximum airspeeds	km/h	kts.
Winch launching	150	81
Aero-tow	185	100
Manoeuvring V_A	185	100
Rough air	185	100
Maximum speed V_{NE}	270	146

Approved aerobatic manoeuvres, only without waterballast:
Pos. Loop, Chandelle, Spin, Stall turn
In addition Category A:
Only with 18 m span without waterballast:
Half loop and half roll, half roll and half loop, slow roll, inverted flight, half positive flick roll from normal flight with half loop, half negative flick roll from inverted flight
Maximum mass:

Category A	630 kg	1389 lbs.
Category U	750 kg	1653 lbs.
Category U without waterballast	kg	lbs.

Other cockpit placards see section 7

Gepäck max. 15 kg
baggage max. 33 lbs.

Sollbruchstelle 10000 N
rated load 2200 lbs.

Reifendruck 4 bar
Tyre pressure 58 psi
Tail wheel

Loading chart

Cockpit load	front seat		rear seat		(Parachute
maximum	110 kg	242 lbs.	90 kg	198 lbs.	included)
or maximum	105 kg	231 lbs.	105 kg	231 lbs.	
minimum	kg	lbs.	/	/	

With lower pilot weight necessary ballast must be added.

Reifendruck 2,5 bar
Tyre pressure 36 psi
Main wheel

Cockpit Check
1. Lead ballast (for under weight pilot)?
2. Parachute worn properly?
3. Safety harness buckled?
4. Front seat: pedals adjusted?
   Rear seat: seating height adjusted?
5. All controls and knobs in reach?
6. Altimeter?
7. Dive brakes cycled and locked?
8. Positive control check ? (One person at the control surfaces).
9. Fin ballast tank emptied or correct amount filled in?
10. Trim ballast box in the fin, correct amount filled in? Locking device completely engaged?
11. Trim?
12. Both canopies locked?
13. Runway free?

Reifendruck 2,5 bar
Tyre pressure 36 psi
Nose wheel (if installed)

Ballast box in the fin
Min. load in the front seat
kg — **box empty** — **box filled** — kg

At the control-light in the front instrument panel

limits for use of the waterballast tank

minimum ground temperature	°C	13.5	17	24	31	38
	°F	56	63	75	88	100
maximum flight altitude above GND	m	1500	2000	3000	4000	5000
	ft.	5000	6500	10000	13000	16500

Warning:
Rigging of the horizontal tailplane is only permitted with nose down trim-setting!

Altitude in [m]	0-3000	4000	5000	6000	7000	8000
V_{NE} IAS km/h	270	256	243	230	217	205
Altitude in [ft]	0-10000	13000	16000	20000	23000	26000
V_{NE} IAS kts.	146	138	131	124	117	111

at the upper left hand side of the fin

7.15.5 Battery in the baggage compartment with battery selector switch

An additional battery Z01 12V 12AH may be installed in the baggage compartment. In this case a battery selector switch must be installed in the front instrument panel.
In the centre position of the switch both batteries are disconnected from the gliders electrical system.
In position I (left) the battery in the fin is connected to the electrical system.
In position II (right) the battery in the baggage compartment is connected to the electrical system.