

## Flight manual DG-1000S

### 0.1 Record of revisions continued

Rev. No.	Affected Pages/ section	Description	Issue Date	EASA Approval Date	Inserted Date Signature
8	0.5, 9.1-9.12	Electrically operated main landing gear TN1000/14	November 2008	28. January 2009	
9	0.6, 9.1, 9.2, 9.13	Special equipment for very small pilots TN1000/17	May 2010	20. July 2010	
10	0.2 – 0.5, 1.4, 1.5, 2.9, 2.10, 4.3, 4.5, 4.6, 4.8, 4.9, 4.12, 6.3 ÷ 6.6, 6.11, 7.1, 7.2, 7.8, 7.10, 7.12, 7.13, 9.7, 9.13	Manual revision TN1000 /18	February 2011	13.05.11	
11	0.2, 0.5, 9.1, 9.2, 9.14, 9.15	Special equipment for aerobatics TN1000/20	March 2011	6.05.2011	
12	0.2, 0.5, 9.15	TN1000/20 Revision 1	June 2012	20.07.2012	
13	0.1 ÷ 0.5, 1.5, 2.7, 2.9, 4.6 4.8, 4.18, 5.2, 5.4, 6.4, 6.7, 7.10, 7.11, 7.13, 9.8, 9.12	Manual revision TN1000 /24	October 2014	11.11.2014	
14	0.2, 0.3, 0.4, 1.4, 1.5, 1.6, 2.6, 2.8, 2.12, 4.3, 4.6, 4.13, 4.21, 5.4, 5.5	TN1000/25 18m winglets 17,2m end plates	February 2016	July 4, 2016	
15	0.2, 0.5, 7.8	TN1000/34 small nose wheel	October 2017	approval under the authority of DOA Ref. EASA.21J.530 12.09.2017	
16	0.2 - 0.5, 2.7, 2.12, 6.4, 6.6, 7.2, 7.3, 7.6, 7.7, 7.10, 7.12, 7.13, 9.10	TN1000/41 manual revision, increase of max. cockpit load	December 2018	14.03.2019	
17	0.2 – 0.4, 2.7, 2.12, 6.4, 6.5, 6.7, 6.8	TN1000/41 Revision 1	May 2019	28.05.2019	

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### 0.2 List of effective pages

Section	page	issued	replaced	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	"	Febr. 2011	Febr. 2016	
	1.5	"	Febr. 2011	Oct. 2014	Febr. 2016
	1.6	"	Febr. 2016		
	2	App. 2.1	March 2002	Sept. 2003	
" 2.2		"			
" 2.3		"			
" 2.4		"			
" 2.5		"	May 2008		
" 2.6		"	Febr. 2016		
" 2.7		"	January 2005	Oct. 2014	Dec. 2018
				May 2019	
" 2.8		"	Febr. 2016		
" 2.9		"	Sept. 2003	May 2008	Oct. 2014
			Febr. 2011		
" 2.10		"	Febr. 2011		
" 2.11		"	Sept. 2003		
" 2.12		"	May 2004	May 2008	Febr. 2016
			Dec. 2018	May 2019	
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	Febr. 2011	Febr. 2016
	" 4.4	"			

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### 0.2 List of effective pages (cont.)

Section	Page	issued	replaced	replaced	replaced	
4	App.	4.5	March 2002 Febr. 2011	Sept. 2003	June 2004	
	"	4.6	"	Febr. 2011	Oct. 2014	Febr. 2016
		4.7				
	"	4.8	"	Febr. 2011	Oct. 2014	
	"	4.9	"	Febr. 2008	Febr. 2011	
	"	4.10	"			
	"	4.11	"			
	"	4.12	"	Febr. 2011		
	"	4.13	"	Febr. 2008	Febr. 2016	
	"	4.14	"			
	"	4.15	"			
	"	4.16	"			
	"	4.17	"	January 2005		
	"	4.18	"	Oct. 2014		
	"	4.19	"			
	"	4.20	"			
	"	4.21	"	Febr. 2016		
	"	4.22	"			
	"	4.23	"			
	"	4.24	"			
5	"	5.1	March 2002			
	"	5.2	"	Oct. 2014		
	"	5.3	"			
	"	5.4	"	Sept. 2003	Oct. 2014	Febr. 2016
	App.	5.5	"	Febr. 2016		
		5.6	"			
		5.7	"			
6		6.1	March 2002			
		6.2	"			
		6.3	"	Sept. 2003	Febr. 2011	
		6.4	"	Febr. 2011 May 2019	Oct. 2014	Dec. 2018
		6.5	"	Sept. 2003	Febr. 2011	May 2019
		6.6	"	Febr. 2011	Dec. 2018	
		6.7	"	Oct. 2014	May 2019	
		6.8	"	May 2019		
		6.9	"			
		6.10	"	Sept. 2003		
		6.11	"	Febr. 2011		

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### 0.2 List of effective pages (cont.)

Section	Page	issued	replaced	replaced	replaced
7	7.1	March 2002	Febr. 2011		
	7.2	"	Febr. 2011		
	7.3	"	Dec. 2018		
	7.4	"			
	7.5	"	Febr. 2008		
	7.6	"	June 2004	Dec. 2018	
	7.7	"	Dec. 2018		
	7.8	"	Febr. 2011	Oct. 2017	
	7.9	"	Febr. 2011		
	7.10	"	Sept. 2003 Dec. 2018	Febr. 2011	Oct. 2014
	7.11	"	Oct. 2004	Oct. 2014	
	7.12	"	Febr. 2011	Dec. 2018	
	7.13	"	May 2008 Dec. 2018	Febr. 2011	Oct. 2014
8	8.1	March 2002			
	8.2	"			
	8.3	"			
	8.4	"			
	8.5	"			
	8.6	"			
9	9.1	March 2002	May 2010	March 2011	
	9.2	"	May 2010	March 2011	
	9.3	"			
	9.4	"			
	9.5	"			
	9.6	"			
	9.7	"	Febr. 2011		
	9.8	"	Oct. 2014		
	9.9	"			
	9.10	"	Dec. 2018		
	9.11	"			
	9.12	"	Oct. 2014		
	9.13	May 2010	Febr. 2011		
	9.14	March 2011			
	9.15	March 2011	June 2012		

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## 2.7 Manoeuvring load factors

The following load factors must not be exceeded:

Category		Utility	Aerobatic
at manoeuvring speed	$V_A$	+5,3 -2,65	+7,0 -5,0
at max. speed	$V_{NE}$	+4,0 -1,5	+7,0 -5,0
with airbrakes extended	$V_{NE}$	+3,5 0	+3,5 0

## 2.8 Flight crew

a) single seated, only permissible in the front seat

max. load in the front seat 110 kg (242 lbs.)

min. load in the front seat see placard in cockpit and weighing report page 6.7

b) two seated

Either the front seat or the rear seat may be designated as seat of the pilot in command.

If the rear seat is to be designated it must be assured that all necessary operating items and instruments are installed and that the pilot in command has sufficient training in flying safely from the rear seat.

Max. load in the front and in the rear seat: 105 kg (231 lbs.) per seat or max. 110 kg (242 lbs.) in the front seat with the load in the rear seat not exceeding 90 kg (198 lbs.).

**Exemption:** The load in the front and in the rear seat may be increased to max. 110 kg per seat. To accomplish this the mass of the rear pilot must be compensated by ballast in the ballast box in the fin, see section 6.8.7. In general this means that the ballast box must be filled completely.

Min. cockpit load in the front seat is the min. cockpit load see a) minus 40% of the load in the rear seat. This means that 10 kg (22 lbs.) in the rear seat replaces 4 kg (8.8 lbs.) missing cockpit load in the front seat.

With these loads, the C.G. range given under 6.8 will be kept in the limits if the empty weight C.G. is in its limits. See loading chart in sect. 6.8.

### Caution:

With lower pilot weights lead ballast must be added to the seat.

Ballast put on the seat (lead ballast cushion) must be fastened at the safety belt anchor point.

Option: Provision for removable trim-ballast in the front cockpit see sect 7.15.1.

**Note:** For Australia the lower limit for the min. load in the cockpit should not exceed 66 kg (146 lbs.). A provision for removable ballast see sect. 7.15.1 is mandatory.

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## 2.17 Limitations placards

<b>DG Flugzeugbau GmbH</b>		
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:		
<i>Pos. Loop, Chandelle, Spin, Stall turn</i>		
In addition Category A:		
Only with 17,2m or 18 m span without winglets, without water ballast:		
<i>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</i>		
Maximum mass:		
Category A	630 kg	1389 lbs.
Category U	750 kg	1653 lbs.

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

The load in the front and in the rear seat may be increased to max. 110 kg (242 lbs.) per seat. To accomplish this the mass of the rear pilot must be compensated by ballast in the ballast box in the fin.

With lower pilot weight necessary ballast must be added.

- 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?

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

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

**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**

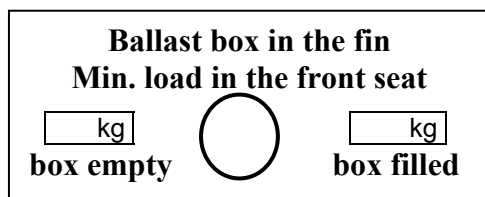
Tail wheel

**Reifendruck 2,5 bar**  
**Tyre pressure 36 psi**

Main wheel

**Reifendruck 2,5 bar**  
**Tyre pressure 36 psi**

Nose wheel (if installed)



**At the control-light in the front instrument panel**

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

**at the upper left hand side of the fin**

## 6.8 Loading chart

### 6.8.1 Cockpit load

see weighing report section 6.8.8.

a) single seated:

max. load in the front seat 110 kg (242 lbs)

min. load in the front seat see placard in cockpit and weighing report

b) two-seated:

Max. load in the front and in the rear seat: 105 kg (231 lbs.) per seat or max. 110 kg (242 lbs.) in the front seat with the load in the rear seat not exceeding 90 kg (198 lbs.).

**Exemption:** The load in the front and in the rear seat may be increased to max. 110 kg per seat. To accomplish this the mass of the rear pilot must be compensated by ballast in the ballast box in the fin, see section 6.8.7. In general this means that the ballast box must be filled completely.

min. cockpit load in the front seat is the min. cockpit load see a) minus 40% of the load in the rear seat.

With these loads, the C.G. range given under section 6.8.8 will be kept in the limits if the empty weight C.G. is in its limits.

With lower pilot weight necessary ballast must be added in the seat or in the optional ballast boxes see below. Ballast put on the seat (lead ballast cushion) must be fastened at the connections of the safety belts.

**Note:** Extremely light pilots may remove the fin battery, see section 6.8.4.

### 6.8.2 Removable ballast for underweight pilots

**Option:** Ballast boxes in the front cockpit for removable ballast (trim weights), see section 7.15.1.

### 6.8.3 Baggage

max. 15 kg (33lbs)

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 7,5 kg (16.5 lbs.). With the load added in the fuselage the max. load without waterballast (W.B.) (see weighing report section 6.8.8) must not be exceeded.

## 6.8 Loading chart

### 6.8.1 Cockpit load

see weighing report section 6.8.8.

a) single seated:

max. load in the front seat 110 kg (242 lbs)

min. load in the front seat see placard in cockpit and weighing report

b) two-seated:

max. cockpit load is 110 kg (242 lbs.) in the front seat and 110 kg (242 lbs.) in the rear seat.

min. cockpit load in the front seat is the min. cockpit load see a) minus 40% of the load in the rear seat.

With these loads, the C.G. range given under section 6.8.8 will be kept in the limits if the empty weight C.G. is in its limits.

With lower pilot weight necessary ballast must be added in the seat or in the optional ballast boxes see below. Ballast put on the seat (lead ballast cushion) must be fastened at the connections of the safety belts.

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### 6.8.4 Battery in the fin

Only the use of the factory supplied battery Z110 (mass 5.5 kg, 12.1 lbs.) is permitted.

**Warning:** Flying is only allowed with the battery in the fin as otherwise the forward C.G. limit may be exceeded.

Instead of the battery a suitable weight of 5,5 kg may be used.

**Note:** Extremely light pilots flying solo may remove the fin battery. This lowers the min. front cockpit load by 16 kg (35 lbs.). Install a battery in the baggage compartment according to section 7.15.5 instead.

### 6.8.5 Waterballast in the wing tanks (Option)

The tanks have a capacity of 80 l (21,2 US gallons) per wing

**The permitted amount of waterballast** is dependent on the empty weight and of the load in the fuselage and can be determined from the diagram "**Ballast chart**" section 6.8.10.

It is only allowed to fly with symmetric wing ballast!

### 6.8.6 Fin ballast tank (Option)

Water ballast in the fin tank should be used to compensate the forward move of C.G. due to the water ballast in the wings.

The amount of ballast in the fin is dependent on the amount of water in the wing tanks and to be determined from the following table.

waterballast in the	
wings	fin
kg	kg
20	0,6
40	1,3
60	2,1
80	2,9
100	3,8
120	4,6
140	5,4
160	6,2
/	/

waterballast in the	
wings	fin
lbs.	lbs.
40	1,2
80	2,7
120	4,2
160	5,9
200	7,5
240	9,2
280	10,8
320	12,4
350	13,5

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### 6.8.7 Ballast box in the fin

#### a) Compensation of the C.G. shift due to the rear pilot:

The ballast box can accommodate max. 4 weights of 2,4 kg mass (heavy weight) and 2 weights of 1,2 kg mass (light weight), so the max. mass is 12 kg.

The number of weights can be determined by the following table:

Mass of rear pilot		Number of trim weights	Number of blinks of the lamp in the front instrument panel see section 4.2.4
kg	lbs.		
55	121	2 heavy + 1 light	5
65	143	3 heavy	6
75	165	3 heavy + 1 light	7
85	187	4 heavy	8
95	209	4 heavy + 1 light	9
105	231	4 heavy + 2 light	10

**Warning:** When flying solo usually the ballast box must be emptied to prevent flying with a dangerous C.G. position.

However heavy pilots may use trim weights in the ballast box to compensate their weight, determination of the amount of trim weights see b).

**Note:** If the ballast box is filled up, the min. cockpit load in the front seat is raised by 35 kg (77 lbs.).

The resulting value (min. cockpit load in front seat from weighing without ballast + 35 kg) must be entered in the table on page 6.7 as value XX and also on the placard at the indication lights for the fin tank on the front instrument panel.

**Warning:** When using the trim weights make sure not to exceed the max. weight of 750kg (1653 lbs.) Category „U” or 630kg (1389 lbs.) Category „A“.

#### b) Trim-possibility for heavy pilots:

The ballast box may be used for this purpose too.

One trim weight of 1.2 kg raises the min. load in the front seat by 3.5 kg (7.7 lbs.).

One trim weight of 2.4 kg raises the min. load in the front seat by 7 kg (15.4 lbs.).

#### Example for combination of a) and b):

Min. cockpit load of the glider:	70 kg	permissible amount of trim weights
Mass of the front pilot:	84 kg	2 x 2.4 kg
Mass of the rear pilot:	65 kg	3 x 2.4 kg or 2 x 2,4 kg and 2 x 1,2 kg
Total amount of trim ballast:		12 kg

This means that the ballast box can be filled completely for this example.

Higher pilot masses can't be compensated.

**Note for a) and b):** A table for easy determination of the allowable No. of trim weights will be given to the owner when taking over his DG-1000S. In case the weight and balance changes you may request for an updated table. DG will supply such table raising a service charge. To accomplish this you have to transmit the actual weight and balance to DG.

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### 6.8.8 Weighing report (for section 6.3)

Distances in mm, masses in kg -- 25.4 mm = 1 inch / 1 kg = 2.2046 lbs.

<b>Date of weighing:</b>						
<b>Executed by:</b>						
<b>Date of equipment list:</b>						
<b>wing span</b>	18m/ 17.2m	20m				
<b>Empty mass</b>						
<b>Empty mass C.G.</b>						
<b>Max. mass without W.B.</b>						
Cat. U						
Cat. A	630	/				
<b>Max. load without W.B.</b>						
Cat. U						
Cat. A						
<b>max. mass with WB</b>						
<b>max. useful load with W.B.</b>						
<b>min. cockpit load YY (kg)</b>						
<b>min. cockpit load XX (kg)</b>						
<b>max. load in both seats</b>	210*	210*				
<b>Inspector, signature, stamp</b>						

W.B.= waterballast

YY= min. load in front seat for solo flying with fin ballast box empty.

XX= YY+35= min. load in front seat for solo flying with fin ballast box filled.

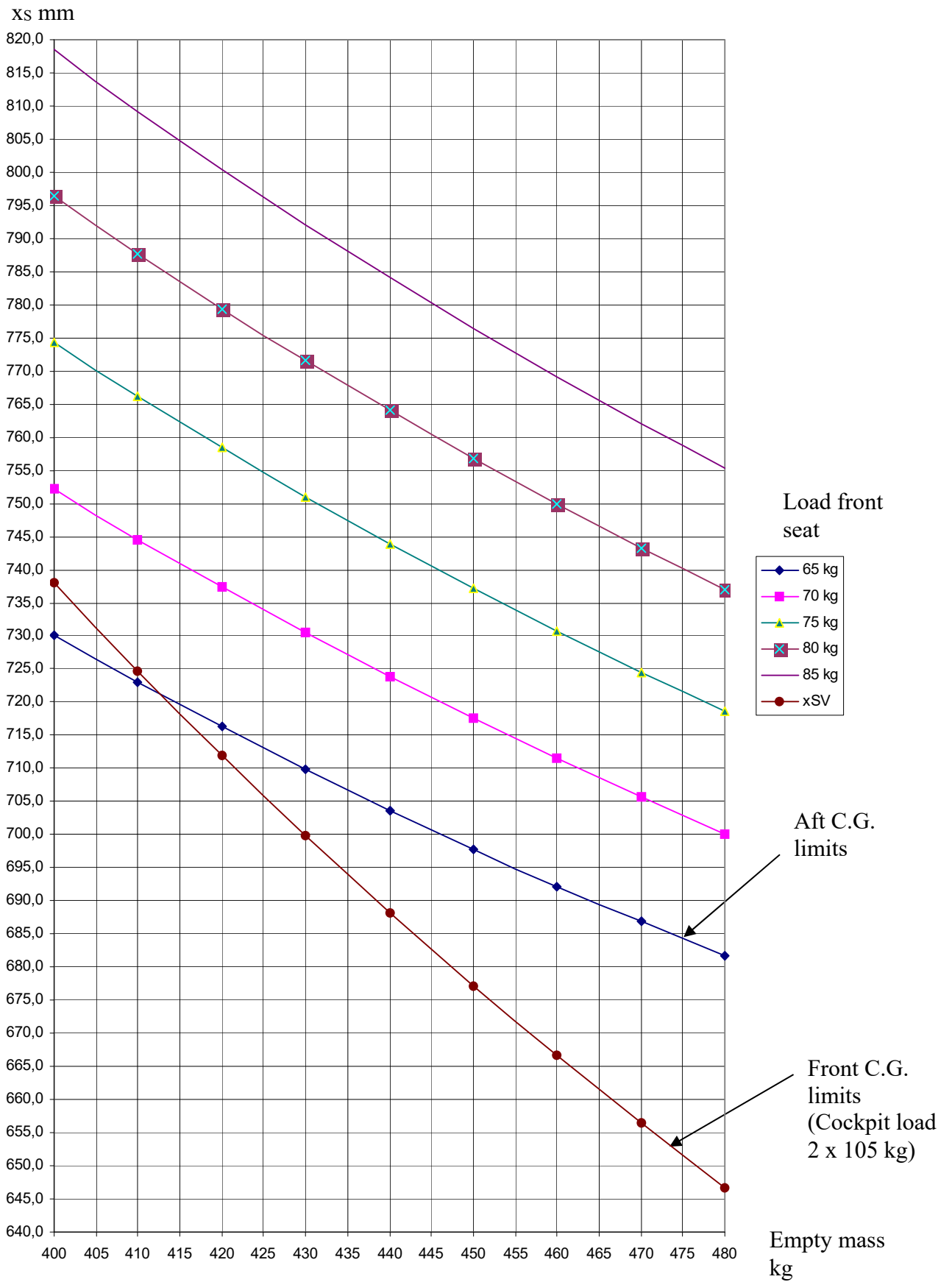
\*The load in the front and in the rear seat may be increased to max.110 kg per seat. To accomplish this the mass of the rear pilot must be compensated by ballast in the ballast box in the fin, see section 6.8.7.

Weighing was executed with: battery in the fin Z110

tailwheel with:  plastic hub

brass hub (see section 7.15.4)

## 6.8.9 Empty weight C.G. limits (for 6.4)



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## 7.1 Introduction

This section provides description and operating of the sailplane and its systems.

M.M. = Maintenance manual

Refer to section 9 "Supplements" for details of optional systems and equipment.

## 7.2 Airframe

The DG-1000S is a two-place high performance sailplane, either with 18 m span or with 20 m span and permanently installed winglets

### Construction

<b>Wings</b>	CFRP-foam-sandwich-shell with CFRP-roving spar caps
<b>Ailerons</b>	CFRP-foam-sandwich-shell
<b>Rudder</b>	GFRP-foam sandwich-shell
<b>Horizontal stabilizer</b>	GFRP-foam sandwich-shell with CFRP-roving spar caps
<b>Elevator</b>	GFRP-shell
<b>Fuselage</b>	GFRP-shell, fuselage boom sandwich-shell with Tubus core

### Canopy

Two canopies hinged at the right hand fuselage side. Canopy transparencies made from Plexiglas GS 241 or optionally green GS Green 2942.

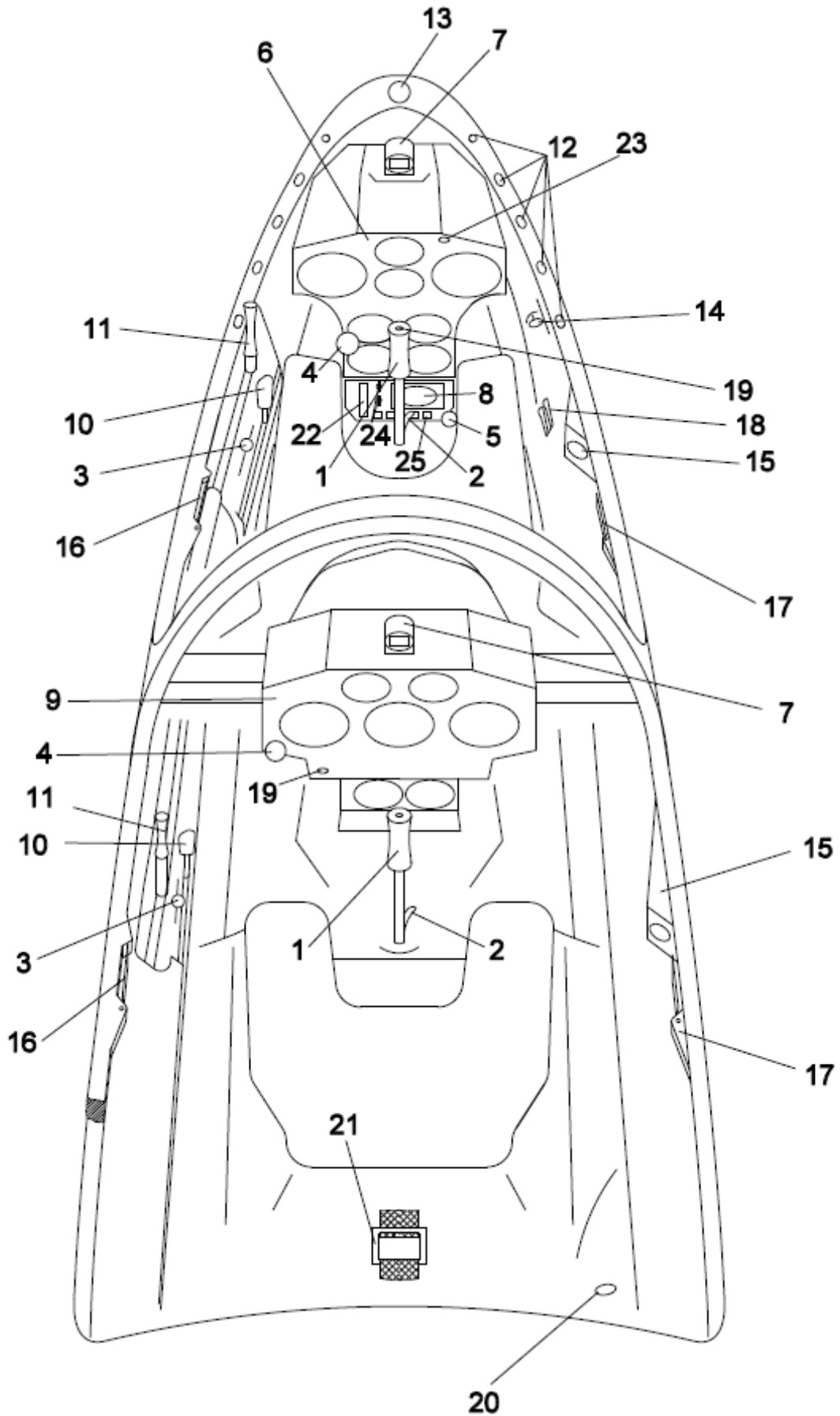
### Tailplane

T-Tail with conventional stabilizer-elevator and spring trim.

### Colour

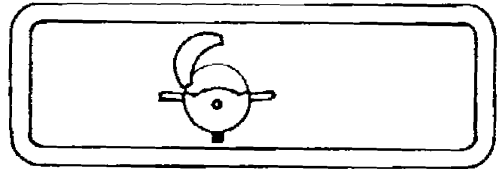
Airframe: white  
registration numbers: grey RAL 7001 (Pantone 444)  
or red RAL 3020 (Pantone 485)  
or blue RAL 5010 (Pantone 301)  
or blue RAL 5012 (Pantone 307)  
or green RAL 6001 (Pantone 349)

7.3 Cockpit, cockpit controls and placards

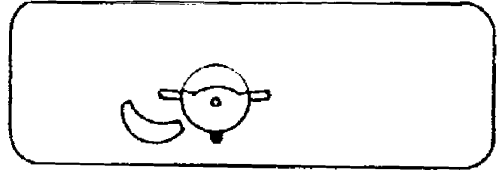


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- 16) Canopy opening handle - white-red  
towards the nose = closed  
into cockpit = open



- 17) Canopy emergency release handle - red  
towards the nose = closed  
into cockpit = open



For emergency release also handle 16 has to be operated!

- 18) Water ballast dump handles - silver  
lever on top of the handles = fin tank  
Rotate backward to dump. The wing waterballast can only be dumped after dumping the fin waterballast
- |                  |                  |
|------------------|------------------|
| upper handle     | = right wingtank |
| lower handle     | = left wingtank  |
| forward          | = valve closed   |
| into the cockpit | = valve open.    |



**Senden  
transmit**

- 19) Push to talk button (Option)
- 20) 12 V socket for charging the batteries and power supply for accessories.  
**Caution:** For charging switch off all electrical consumers incl. 23).
- 21) Adjustment strap for the rear seat shell (to be operated on the ground)
- 22) Outside-air temperature gauge (required with fin tank).

- 23) Control light for the trim ballast box in the fin:

The control light in the front instrument panel starts blinking after each transaction with the weights. By counting the amount of blinks, the amount of ballast can be determined. For a heavy weight 2 blinks appear and 1 blink for a light weight, this means 10 blinks if the box is filled up completely. After a pause of 2-3 seconds the blinking will be repeated etc.. The blinking can be stopped by pressing on the control light. Pressing again on the control light reactivates the blinking feature.

<b>Trim-ballast box in the fin</b>	
<b>Min. load in the front seat</b>	
[ ] kg	[ ] kg
<b>box empty</b>	<b>box filled</b>

**In addition with TN413/4 executed, standard from ser. no. 10-49 on:**

A switch will be operated by the locking pin of the ballast box cover. As long as the switch is not closed, the control light for the ballast box will blink with doubled speed without interruption. The blinking can't be switched off by pressing on the control light.

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- 24) In the front instrument panel or in the console below the front instrument panel (Option)
- a) Main switch up= “on”, down= “off”  
or
  - b) battery selector switch combined with main switch  
Right or up= battery 2 in the baggage compartment  
Centre= off  
left or down= battery 1 in the fin  
or
  - c) separate main switch and separate selector switch, both in console below the front instrument panel.  
up= battery in baggage compartment  
down= battery in the fin

intern battery fin
--------------------------

**Caution:** To supply electrical power and for charging via the socket item 20) switch to the selected battery and the main switch to “on” (except for b)).

- 25) Circuit breakers (Option), from ser. No. 10-268 on 4 circuit breakers standard.

### 7.4 Flight controls

#### Rudder control

See diagram 2 M.M

Cable system with adjustable pedals in the front cockpit.

#### Elevator control

See diagram 1 M.M.

All pushrods slide in maintenance free nylon ball guides.

Automatic control hook up system. Spring trimmer with release lever at the control stick and control knob at the left cockpit wall. To trim, you have to operate the release lever at the control stick and place the control knob to the desired position.

#### Aileron control

See diagram 3 and 4 M.M.

Pushrods slide in maintenance free nylon ball guides.

Automatic control hook up system.

### 7.5 Airbrakes

See diagram 3 and 4 M.M.

Double storey Schempp-Hirth type airbrakes on the upper wing surface.

The wheel brake is operated by the airbrake system. Pushrods in the wings slide in maintenance free nylon ball guides. Automatic control hook up system.



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### 7.11 Ballast box in the fin

A box for ballast (trim-weights) is installed in the fin. It can be used to compensate the mass of the rear pilot and as a trim-possibility for heavy pilots. Max. ballast capacity: 12 kg.

Filling see section 4.2.4, determination of the permissible amount of ballast see section 6.8.7.

Indication of the amount of ballast inserted is via a control light in the front instrument panel see section 4.2.4 and section 7.3 item 23).

### 7.12 Electrical system

Battery in the fin.

For C.G. reasons the battery is installed in the fin. Only the use of the factory supplied battery Z110 (12 V, min. 12 Ah, mass 5.5 kg, 12.1 lbs.) is permitted. The battery fuse is installed at the battery, type: G fuse 250 V with indicator 5 x 25 medium slow / 4 A.

**For batteries produced from mid of 2002 on:** Type: G fuse G 250 V 5 x 20 / 4 A fast.

After inserting the connector plug in the fin the battery is connected to the electrical system of the glider. If you want to charge the battery inside the glider this can be done via the socket (see section 7.3 item 20).

**Caution:** If a main switch (Option, see section 7.3 item 24) is installed switch to “on” for charging via the socket (see section 7.3 item 20).

**Warning:** Use only automatic chargers designed to charge sealed lead acid batteries. To charge the battery to its full capacity a charger with 14.4 V max. charging voltage is necessary (normal automatic chargers charge only up to 13.8V). Such a charger is available from DG Flugzeugbau code no. Z 08. For periodical recharging the “power independent “ unit is suitable. This unit is also available from DG Flugzeugbau.

All current - carrying wiring conforms to aeronautical specifications.

### 7.15.2 Oxygen system

#### a) Installation of the oxygen cylinders

##### **Up to serial No. 10-267 and ser. No. 10-271-274:**

Max. size of oxygen bottle is 7 l capacity with diameter 140 mm (5.5 in.).

Installation place: In a tube at the right hand side behind the rear pilot.

If a bottle with smaller diameter is used, this bottle must be wrapped with plastic to come to the same diameter of 140 mm. The bottle must be fixed at its neck with a bracket Z 14 (available at DG-Flugzeugbau GmbH).

##### **From ser.No. 10-268 on except for 10-271-274:**

2 oxygen bottle of 3 l capacity with diameter 100 mm (3.94 in.) may be installed.

Installation places: One bottle in front of the rear seat and one bottle in the baggage compartment, see drawing 10R146 attached to the MM.

Installation is only approved using the equipment supplied by DG-Flugzeugbau GmbH..

**Note:** If an oxygen bottle is installed in the baggage compartment installation of a battery see section 7.17.5 and/or of an ELT see section 7.17.3 is not possible.

#### b) Installation of the oxygen equipment

To ensure a safe installation ask DG Flugzeugbau for an installation instruction. For the installation of the Dräger Höhenatmer E 20088 you will find an installation plan 5EP34 in the maintenance Manual.

### 7.15.3 ELT Emergency Locator Transmitter and Transponder

Installation see maintenance manual DG-1000S section 6.

**Caution:** Concerning 7.15.2 and 7.15.3

The installation has to be accomplished by DG-Flugzeugbau or by an approved service station and to be inspected and entered in the aircraft log book by a licensed inspector.

### 7.15.4 Heavy tailwheel

Instead of the standard tailwheel with plastic hub S23 a tailwheel with brass hub S27/1 may be installed. The installation kit S27/4 is available at DG Flugzeugbau.

The difference in mass between both hubs is 3.1 kg (6.84 lbs.). With the brass hub the min. front cockpit load is increased by 8.5 kg (18.74 lbs.). This higher value must be entered in the cockpit data placards and on page 6.7. Even if the heavy tailwheel is installed only sometimes, the higher min. cockpit load must be entered.

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### 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.

The battery fuse is installed at the battery, type: G fuse 250 V 5 x 25 medium slow / 4 A.

**For batteries produced from mid of 2002 on:** Type: G fuse G 250 V 5 x 20 / 4 A fast.

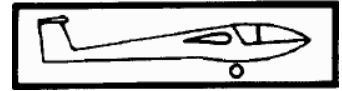
A battery selector switch must be installed in the front instrument panel or in the console below the front instrument panel (see section 7.3 item 24 b)

**From ser. No. 10-170 on and all ser. No.'s with electrically operated landing gear:** The selector switch and the main switch are installed in the console below the front instrument panel (see section 7.3 item 24 c).

**Caution:** For charging the batteries via the socket (section 7.3 item 20) switch the selector switch to the selected battery and the main switch on (except for section 7.3 item 24 b).

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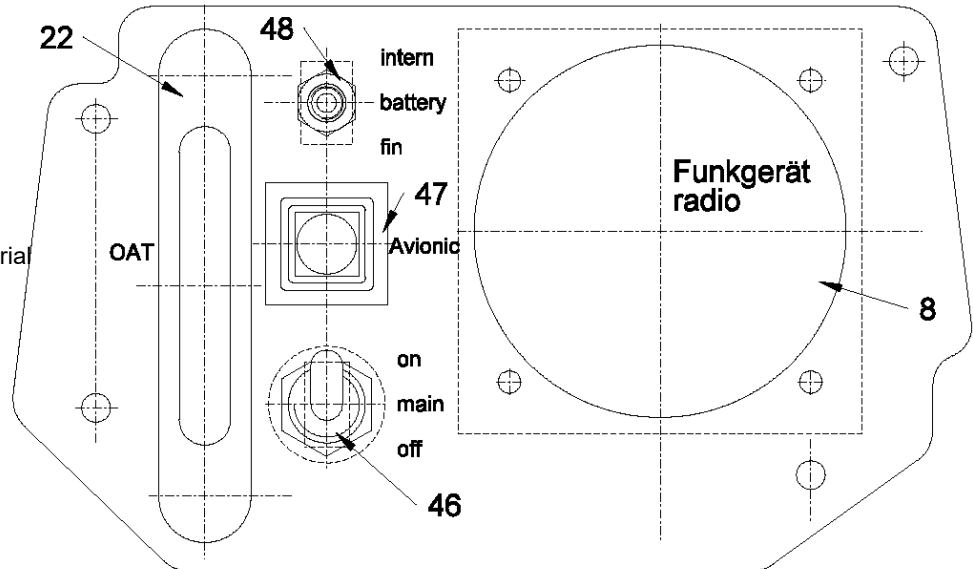
45) Landing gear emergency extension handles black-red  
 The handles are located at the left hand fuselage wall, one in each cockpit at the positions of the handles for the manually operated landing gears, item 10).



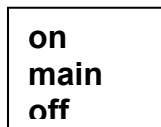
For emergency extension pull on one of the 2 red emergency extension handles, pull the handle until the landing gear is fully extended.

**console below  
 the front indG**

**Flugzeugbau GmbH**  
 Type: DG – 1000S Serial  
 No.: 10- S  
 Year of construction:  
 Maximum airspeeds  
 Winch launching  
 Aero-tow  
 Manoeuvrina V<sub>A</sub>



46) Main switch for the entire electrical system  
 up= on



down= off

**Note:** If you don't operate the DG-1000, switch off the main switch. Otherwise the landing gear control unit will draw a small current and will empty the battery with time.

47) Circuit breaker for the instruments 4A Avionic

**Note:** The circuit breaker 47 may be installed below the switch 46. In addition there may be more circuit breakers in the same row.

**From ser.no. 10-268 on** 4 circuit breakers are standard.

48) Selector switch for instrument power supply  
 up= battery in baggage compartment



down= battery in the fin

**Caution:** To supply electrical power and for charging via the socket (see section 7.3 item 20) switch to the selected battery and main switch 46) to "on".

**Note:** 26) Control light for the trim ballast box in the fin may not be installed at the position shown in the sketch on page 7.3 but at another suitable place in the front instrument panel.