

## Maintenance manual DG-1000S

No.	Page	Description	Date
15	0.3 ÷ 0.8, 0.10 ÷ 0.12, 1.3, 1.5, 1.11, 1.16, 1.18, 1.19, 2.1, 2.6, 3.1, 4.6, 4.10, 4.12, 4.13, 6.1, 7.1, diagrams: 2, 3, 9, Enclosure 1 pages: 5, 8	Manual revision TN 1000/24, New type 12V sockets and plugs	October 2014
16	0.3, 0.4, 1.11	TN1000/34 small nose wheel	October 2017
17	0.3 - 0.7, 0.10, 0.11, 0.12, 1.3, 1.12, 1.14, 2.6, 4.9, 4.11, 6.1, 6.3 Enclosure 1 pages 5-7, Diagrams 2, 5, 5a, 7, 7a, 11, 20, Drawings 10E13, 10R146	TM1000/41 Manual revision	December 2018
18	0.3, 0.6, diagram 11	TN1000/41 revision 1	May 2019

**0.2 List of effective pages**

Section	page	issued	replaced	replaced	replaced	replaced
0	0.1	March 2002				
	0.2	see manual	amendments			
	0.3		“			
	0.4		“			
	0.5		“			
	0.6		“			
	0.7	March 2002	Febr. 2011	Oct. 2014	Dec. 2018	
	0.8	“	Febr. 2011			
	0.9	“	Febr. 2011			
	0.10	“	Febr. 2008	March 2008	Oct. 2008	Nov. 2008
			Febr. 2011	March 2011	Oct. 2014	
	0.11	“	Jan. 2005	Febr. 2011	Oct. 2014	Dec. 2018
	0.12	“	Febr. 2011	Oct. 2014	Dec. 2018	
1	1.1	March 2002				
	1.2	“	May 2008	Febr. 2011		
	1.3	“	Oct. 2014	Dec. 2018		
	1.4	“				
	1.5	“	Febr. 2011	Oct. 2014		
	1.6	“				
	1.7	“				
	1.8	“				
	1.9	“	Nov. 2004	Febr. 2008		
	1.10.	“	Febr. 2008			
	1.11	“	Febr. 2011	Oct. 2014	Oct.	
	1.12	“	2017 Dec. 2018			
	1.13	“				
	1.14	“	March 2008	Febr. 2011	Dec.2018	
	1.15	“	Febr. 2011			
	1.16	“	Oct. 2014			
	1.17	“				
	1.18	Febr. 2011	Oct. 2014			
	1.19	Oct. 2014				
2	2.1	March 2002	Febr. 2011	Oct. 2014		
	2.2	“				
	2.3	“				
	2.4	“	Febr. 2011			
	2.5	“	Febr. 2011			
	2.6	“	Jan. 2005	May 2008	Febr. 2011	Oct. 2014
			Dec. 2018			
	2.7	“	removed	May 2008		

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Section	page	issued	replaced	replaced	replaced	replaced
3	3.1	March 2002	Oct. 2014			
	3.2	“				
	3.3	“	Febr. 2011			
	3.4	“				
4	4.1	March 2002				
	4.2	“	May 2008			
	4.3	“				
	4.4	“				
	4.5	“				
	4.6	“	Oct. 2014			
	4.7	“	Febr. 2008			
	4.8	“	Febr. 2008	Oct. 2008	Febr. 2011	
	4.9	“	Febr. 2008	Oct. 2008	Dec. 2018	
	4.10	March 2002	Oct. 2014			
	4.11	“	Dec. 2018			
	4.12	“	Oct. 2014			
	4.13	“	Oct. 2014			
	4.14	“	Sept. 2003			
	4.15	“	Sept. 2003			
	4.16	“	Sept. 2003			
	4.17	“				
5	5.1	March 2002				
	5.2	“				
6	6.1	March 2002	Oct. 2014	Dec. 2018		
	6.2	“	Jan. 2005	May 2008	Febr. 2011	
	6.3	“	Dec. 2018			
	6.4	Jan. 2005	Febr. 2011			
7	7.1	March 2002	Jan. 2005	Oct. 2014		
8	8.1	March 2002				
9	9.1	March 2002				

**0.2 List of effective pages (continued)**

diagram	issued	replaced	replaced	replaced	replaced
1	Nov. 2001	May 2004	Oct. 2010		
2	Nov. 2001	Oct. 2014	Dec. 2018		
3	Nov. 2001	May 2008	Oct. 2014		
4	Nov. 2001				
5	Nov. 2001	Dec. 2018			
5a	Dec. 2018				
6	Nov. 2001	March 2008	March 2008	Not valid for 10-101, and from 10-128 on	
6a	March 2008				
7	Nov. 2001	Sept. 2003	Nov. 2004	Dec. 2018	
7a	Oct. 2008	Dec. 2018			
8	Nov. 2001	July 2011			
9	Nov. 2001	Jan. 2008	Febr. 2011	July 2011	Oct. 2014
10	Nov. 2001				
11	Nov. 2001	Sept. 2003 May 2019	May 2004	May 2008	Dec. 2018
12	Nov. 2001	Sept. 2003			
17	Febr. 2008				
18	Febr. 2008				
20	Nov. 2008	Dec. 2018			
21	Nov. 2008	Oct. 2010			
22	Nov. 2008				
5EP34	25.01.1990				
5V18	14.10.1994				
10FW2	5.10.1999				
10E3	28.11.2008	28.02.2011			
10E4 issue A	28.10.2008				
10E4 issue E	8.10.2010				
10E13	12.12.2018				
Encl. 1	Nov. 2008	Page 2, 2a, 8 Oct. 2010	1, 2, 2a, 4 8, Febr. 2011	5, 8 Oct. 2014	5-7 Dec. 2018
Encl. 2	March 2011	June 2012			
10EP41	4.02.2011				
10E6	23.02.2011	23.02.2012			
SI 67-07	5.11.2007				
Z193	4.11.2009				
10R146	7.01.2019				

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- 5V18 Tool for airbrake adjustment
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- 10E3 Wiring plan DG-1000S with electrically operated main landing gear
- 10E4 Wiring plan electrically operated main landing gear TN1000/14
- 10E4 Wiring plan electrically operated main landing gear TN1000/19
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- Encl. 2 Special equipment for aerobatics
- 10EP41 Installation plan G-logger DG-GL
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- SI 67-07 Service Info ballast box in the fin foam rubber rings
- Z193 406 MHZ ELT antenna BD3 installation 2-seaters
- 10R146 Installation of 3L oxygen cylinders

## 0.4 Airworthiness limitations

### 0.4.1 Repairs

Repair or replace damaged parts prior to next flight. Follow the instructions of the DG-1000 repair manual for repairs of the airframe. Repairs outside the scope of DG-1000 repair manual and major repairs must be accomplished at a certified repair station or by a certified mechanic rated for composite aircraft structure work in accordance with DG repair methods.

Use only genuine spare parts.

For all aircraft under EASA regulations the following applies: According to part 21, subpart M to accomplish major repairs an approved repair instruction is required, see also TN DG-G-01 “Approved repair methods according to EU Commission Regulation 1702/2003 part 21, subpart M”

### 0.4.2 Life time of the airframe

The maximum allowable operating time for German composite sailplanes and motorgliders was proofed for 12000 flight hours.

The initial life time for the DG-1000S is 3000 flight hours.

Extension of the life time to 12000 hours can only be achieved by implementing a comprehensive inspection program for the aircraft to be carried out in accordance with data that has been approved by an applicable aviation authority, see section 2.4 of this manual.

### *Only for USA*

*Note: The Airworthiness Limitations section is FAA approved and specifies maintenance required under Secs. 43.16 and 91.403 of the Federal Aviation Regulation unless an alternative program has been FAA approved.*

## 0.5 Further service information

### 0.5.1 Life time of components

Use only genuine spare parts. For part numbers see section 8 of this MM.

After exchanging life limited parts change the “Summary of operating hours” for your glider by entering the replacement dates of the exchanged parts.

- a) The **fabric straps of the safety harness** have to be exchanged according to the instructions of the respective manufacturer. If no limitations are given, exchange after 12 years, approved types see section 6.
- b) The **rubber cord** in the elevator control system see section 1.2.6 has to be replaced at least every 6 years, part no. 30091131.

### **0.5.2 Service times for other than life limited parts**

The **brake fluid of the wheel brake (option)** has to be exchanged after 4 years (types see section 1.6.4).

**Note:** All other components like tow hook, wheels, gas struts, control system parts, bolts, pins etc. have no life time limitation, but should be replaced when worn, damaged or disqualified by excessive corrosion.

### **0.5.3 Service time, maintenance documents**

Follow the instructions of the respective manufacturer:

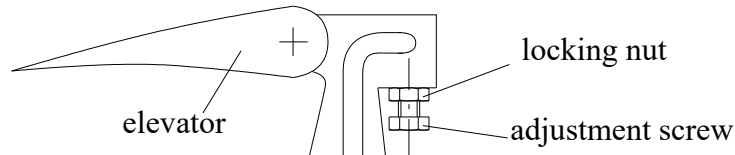
- a) Tow releases:  
Operating Manual for Safety Tow Releases Series: Europa G 88 Safety Tow Release, latest approved version.  
Operating Manual for Tow Releases Series: E 85 Nose Tow Release, latest approved version.
- b) Safety harness: instructions of the manufacturer, latest approved version.  
Approved types see section 6.
- c) Minimum instrumentation: instructions of the manufacturer, approved instruments see sections 6.



### 1.2.4 Elevator control circuit free play

With the elevator held fixed in the zero position, the free play at the top of the control column can be  $\pm 2$  mm ( $\pm 0.08$  in.). Within the automatic elevator connection there should be no free play noticeable in the zero position when the elevator is moved at its trailing edge.

Any free play can be reduced by screwing in the adjustment screw on the automatic connector funnel.



### 1.2.5 Trim

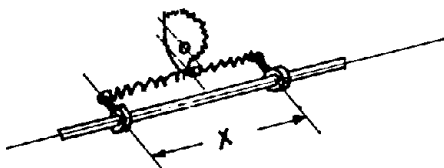
#### Complete readjustment

The trim mechanism should be adjusted so that with full forward (nose down) trim the control column is pulled by the trim springs into its maximum forward position with a force P of approx. 30 N (6.6 lbs.).

The force P is to be measured with a spring balance at the upper end of the control stick. Read the force, when the stick just starts to move.

The tensioning of the trim mechanism springs is adjusted as shown in the sketch.  
 $x = 340$  mm (13.4 in.)

The springs are located in the rear cockpit on the left hand side.



The correct adjustment should be verified in flight and corrected if necessary. Trimming should be possible up to 200 – 220 km/h (108 - 119 kts.).

**Note:** If the DG-1000S can be trimmed up to higher speeds it is likely that the trim is not sufficient in circling flight.

## **1.7 Tow hooks**

### **1.7.1 Tow release circuit**

See diagram 5,

**from ser. No. 10-268 on** (except for 271-274) see diagram 5a.

### **1.7.2 Adjustment**

Check if both tow releases open fully.

Adjustment at the bellcrank 10R32 in the rear cockpit.

**From ser. No. 10-268 on** (except for 271-274): Adjustment is done at the connection of pushrod 10R162 to bellcrank 10R161 in the rear cockpit. The adjustable seat shell and the cover 10RU170 must be removed to accomplish the adjustment..

### **1.7.3 Damages**

The ring muzzle of the C.G. hook should not be bent or ground down and should move easily. If the muzzle is damaged, the tow release has to be exchanged and repaired by the manufacturer (Tost).

### **1.7.4 Removing the tow hooks**

#### **C.G. tow hook:**

Remove the cover (front side of rear seat).

Remove the mounting bolts and the actuating lever. Don't remove the bolt which carries the actuating lever.

Move the tow hook some mm in an upward direction (use a piece of hard wood and a hammer). Then pull it out in forward and upward direction.

#### **Nose tow hook:**

Remove the tow hook with the fittings 5R3/2 and 3.

### **1.7.5 Rubber cords**

To keep the actuating cables tight there is a rubber cord at both of the cables in the compartment below the foot of the rear instrument panel.

Replace the rubber cords if worn. To accomplish this you have to detach and swivel the foot of the rear instrument panel to the back.

For further information refer to the operating and maintenance instructions for the release mechanism.

### 1.8.2 Fin tank

The fin ballast tank is constructed as integral tank.

a) Adjustment

The release cable must be adjusted so that the cable just becomes loose when the handle is parallel to the fuselage wall.

b) Inspection

According to sect. 2.2 a special inspection is to be carried out on the fin ballast tank system at each annual inspection.

The dump time of the full fin tank should be timed and should not exceed 120 seconds.

Check the indication of the outside air temperature gauge, e.g. with a calibrated thermometer.

**Up to ser.no. 10-100 and ser.no. 10-102 to 10-127:**

Remove the tailwheel and the cover plate in the tailwheel box. Check the control cable and the lever of the valve carefully for wear. Check the control cable at the operating handle too. If the cable or the lever is worn, further use of the fin tank is prohibited. Please contact DG Flugzeugbau for a detailed repair instruction.

**Ser.no. 10-101, and from ser. no. 10-128 on:**

Check the control cable at the operating handle and at the dump valve (installed in the lower rudder mounting bracket). If the cable is worn, further use of the fin tank is prohibited.

## 2.4 Inspection procedure for increase of service time

### 1. General

The results of fatigue tests of wingspar sections have demonstrated that the service time of GFRP/CFRP gliders and motorgliders may be limited to 12000 hours, if for each individual glider (in addition to the obligatory annual inspections) the airworthiness is demonstrated according to a special multi-step inspection program particularly with regard to the service life.

### 2. Dates

When the glider has reached a service time of 3000 hours, an inspection must be done in accordance with the inspection program mentioned under point 3. If the results of this inspection are positive or if any defects found have been duly repaired, the service time of the glider is extended by another 3000 hours to a total of 6000 hours (first step).

The above inspection program must be repeated when the glider has reached a service time of 6000 hours. If the results of this inspection are positive or if any defects found have been duly repaired, the service time of the glider is extended to 9000 hours (second step).

When the glider has reached a service time of 9000 h the above inspection program must be repeated. If the results of the inspection are still positive, or if any defects found have been duly repaired, the service time may be extended to a total of 10000 hours (third step).

Proceed analogous when reaching 10000 and 11000 hours (4. + 5. step).

3. DG Flugzeugbau will develop an inspection program to be executed at 3000 h, 6000 h, 9000h, and every 1000 hours thereafter up to the 12000 hour limit. This program will be approved by the aviation authorities and will be available for purchase from DG Flugzeugbau.

When you request the inspection document, the following data should be submitted: Model/Type, Registration, Serial Number and the operating hours at which the inspection will be performed. A charge will be made for the inspection document.

4. The inspection must only be done by a licensed repair station or inspector.
5. The results of the inspections have to be recorded in an inspection test report wherein comments are required for each inspection instruction. If the inspections are done outside the DG Flugzeugbau facilities, a copy of the records must be sent to DG Flugzeugbau for evaluation and information.

H Removal of the front upper fork 10FW13/1

- 1 Remove the main wheel see A.
- 2 Retract the landing gear.  
**Warning:** The landing gear will retract by itself when unlocked by the force of the gas spring!
- 3 Disassemble the gas spring from the left side of the undercarriage box see 4.5.0.
- 4 Extend the landing gear again.
- 5 Remove the 2 bolts M6×26 LN9037 which connect the struts 10FW14/3 to the front upper fork 10FW13/1.
- 6 Remove the pushrod 10FW20 from the actuating lever 10FW15/1.
- 7 Remove the 2 bolts M6x35 LN9037 which connect the actuating lever 10FW15/1 to the shaft 10FW15/3. Shift lever 10FW15/1 in outboard direction and remove it.
- 8 **Up to ser. no. 10-132:** Remove the 3 bolts M6x35 LN9037 which connect the shaft 10FW15/3 (left) and 10FW15/2 (right) to the fork 10FW13/1.  
**From ser. no. 10-133 on:** Remove the 2 bolts M6x35 LN9037 which connect the shaft 10FW15/3 (left hand side) to the fork 10FW13/1.  
**With TN1000/13 executed, standard from ser. no. 10-133 on:** remove the locking catch. (lock for retracted position)
- 9 **Up to ser. no. 10-132:** Shift the shaft 10FW15/3 towards the left fuselage wall. Mark the shaft at the outside fuselage wall (e.g. by illuminating this area from the inside) and drill a dia. 18 mm hole through the fuselage wall. Insert a bolt with thread M8 into the shaft to pull out the shaft through the hole.  
**From ser. no. 10-133 on:** Pull out the axle 10FW15/3 at the actuation lever.  
Note: The axle 10FW15/3 has been shortened, so there it is no more necessary to drill a hole through the fuselage wall.
- 10 **Up to ser. no. 10-132:** Insert a bolt with thread M10 into the shaft 10FW15/2 to pull out the shaft (no hole in the fuselage shell needed).  
**From ser. no. 10-133 on:** Remove the axle with cone clamping devices 10FW124 according to point G 7 (axle 10FW127)
- 11 Remove the fork 10FW13/1.

I Installation

- 1 Reverse the above procedures
- 2 Use new nuts LN9348 or DIN985-8 zn and a new split pin dia. 1.6x12 DIN94 zn. Install bolts in same directions and washers at same positions.  
During reassembly secure the 2 bolts A with Loctite 243 or safety wire.
- 3 **From ser. no. 10-133 on:** Clean and lubricate (using oil) the axles 10FW124 and 10FW127 before reinstallation. Fasten the counter nut with a torque of 6.5 Nm (4.8 ft lb) for axle 10FW124 and 12 Nm (8.8 ft lb) for axle 10FW127.  
**Caution:** Only in ser. no. 10-134 a thinner axle 10FW137 is installed at the right hand side of fork 10FW12/2. . Fasten the counter nut of this axle only with a torque of 6.5 Nm.

**Note:** It is sufficient to tape the holes drilled for removal of the axles. GFRP repair is not necessary.

D Removal of the front landing gear strut

- 1 Remove the baggage compartment floor
- 2 Remove the main wheel see A
- 3 Screw out the front landing gear axis 5FW6 (spanner 13 mm) and pull it out towards the fuselage wall. Mark the head of the axis at the fuselage wall and drill a 15 mm hole through the fuselage wall. Pull out the axis through this hole.
- 4 Take out the front landing gear strut.

**Note:** It is sufficient to tape the hole. GFRP repair is not necessary.

E Installation

Reverse the above procedures

Use new nuts LN9348 or or DIN985-8 zn or at the brake anchor bolt a flat self-locking nut SSN003 or DIN439 Treloc and a new split pin dia. 1.6x12 DIN94 zn. Install bolts in same directions and washers at same positions.

During reassembly secure the 2 bolts A with Loctite 243 or safety wire.

## 6 Instrumentation and accessories list

### Air speed indicator (0 - 300 km/h, 165 kts)

Manufacturer	Type	Certification No.
Winter	6 FMS 4(diam. 80mm)	TS 10.210/15
	0-300 km/h Ident.No. 6421453	
Winter	0-160 kts Ident.No. 6423453	TS 10.210/19
	7 FMS 4(diam. 58mm)	
	0-300 km/h Ident.No. 7421453	
	0-160 kts Ident.No. 7423453	

The airspeed indicator must have colour coded speed ranges marked as indicated in the flight manual section 2.3.

### Altimeter

Manufacturer	Type	Certification No.
Winter	4 FGH 10 (diam. 80mm)	TS 10.220/46
	1.000-10.000m Ident.No.4110	
	1.000-20.000 ft Ident.No.4320	
Winter	4 FGH 20 (diam.58mm)	TS 10.220/47
	1.000-10.000m Ident.No.4220	
Winter	4 FGH 40 (diam.58mm)	TS 10.220/48
	1.000-20.000ft Ident.No.4550	

Or any other TSO C 10b specified and approved altimeter with fine range pointer 1 turn max. 1000 m, 3000 ft.

### Harness (seat)

Manufacturer	Type	Certification No.
Gadringer	BAGU 5202 G	40.070/32
	SCHUGU 2700 G	40.071/05
alternatively	rubber coated adjuster bars	
	BAGU 5202	40.070/32
Optional in addition	SCHUGU 2700	40.071/05
	from manufacturing year 2000 on	
Optional in addition	Crotch strap BOGU1303 8 mm hole	40.072/4
	Schroth	40.073/11
Optional in addition	4-01-0.104 with crotch strap	

**Variometer**

<b>Manufacturer</b>	<b>Type</b>	<b>Certification No.</b>
Winter	5 StVM5 (Durchm.58)	TS 10.230/14
	± 5 m/s Ident.No. 5451	
	±1000 ft/min Ident.No. 5452	
	± 10 kts Ident.No. 5453	
Winter	5 STV 5 (Durchm.80)	TS 10.230/13
	± 5 m/s Ident.No. 5251	
	±1000 ft/min Ident.No. 5252	
	± 10 kts Ident.No. 5253	

**Turn and bank indicator**

<b>Manufacturer</b>	<b>Type</b>	<b>Certification No.</b>
Apparatebau Gauting	WZ-402/31 12 V	10.241/8

**Outside air temperature gauge**

<b>Manufacturer</b>	<b>Type</b>	<b>Certification No.</b>
Störk	TF 00-059 K (-20 - + 40 °C)	/

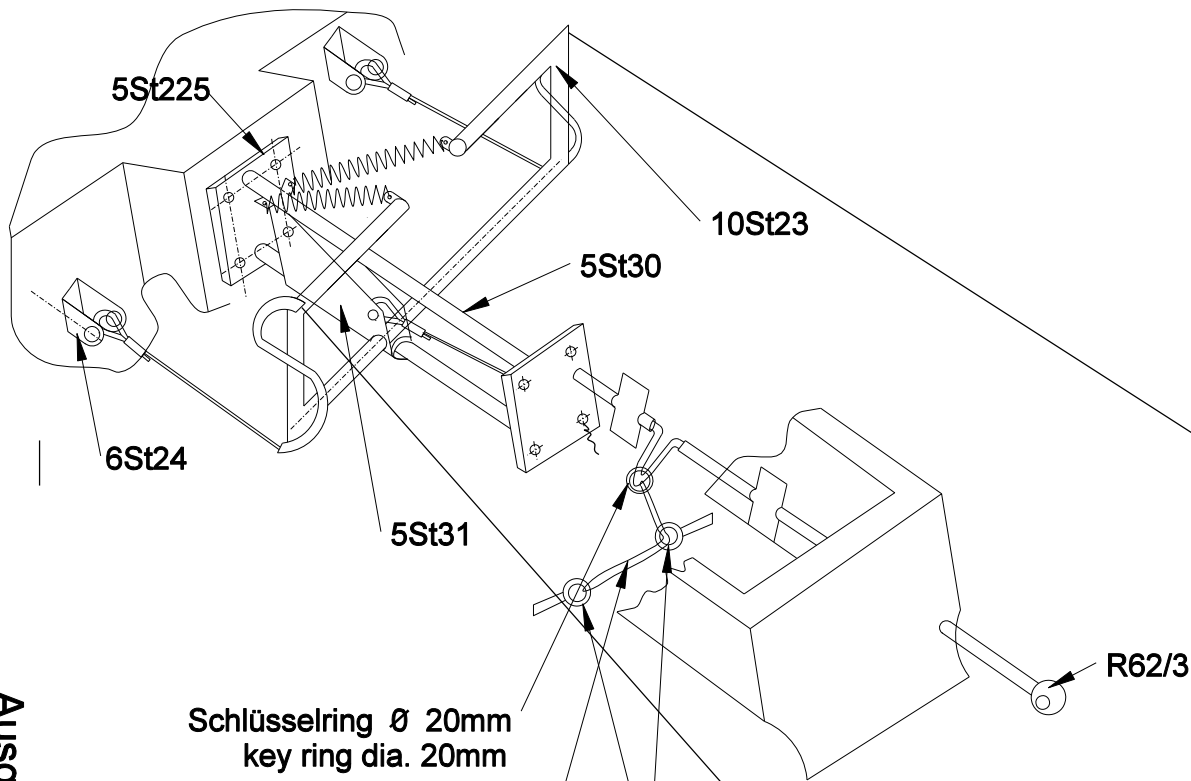
**Accelerometer**

(for Category A Aerobatics)

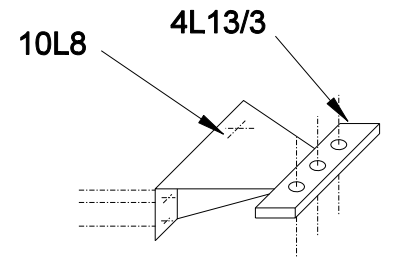
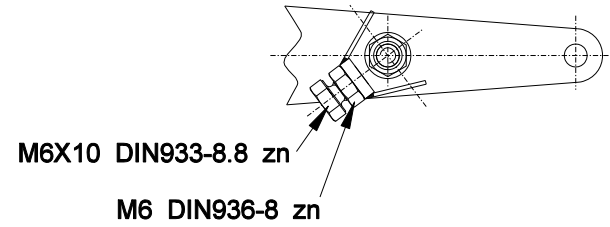
Accelerometer capable of retaining max. and min. g-values with markings red radial lines at +7g and -5g.

<b>Manufacturer</b>	<b>Type</b>	<b>Certification No.</b>
Falcon Gauge	GM5 10-2	MIL-A-5885 C
AOA	BM 470-RL/L	MIL-A-5885 A



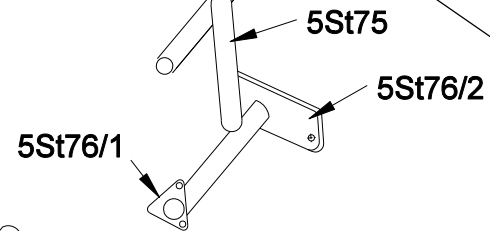


**Ansicht/view X**



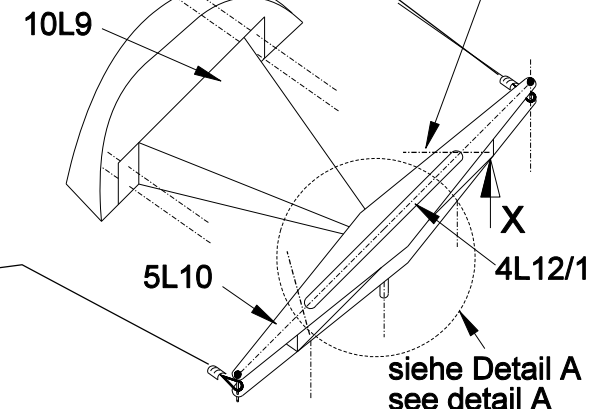
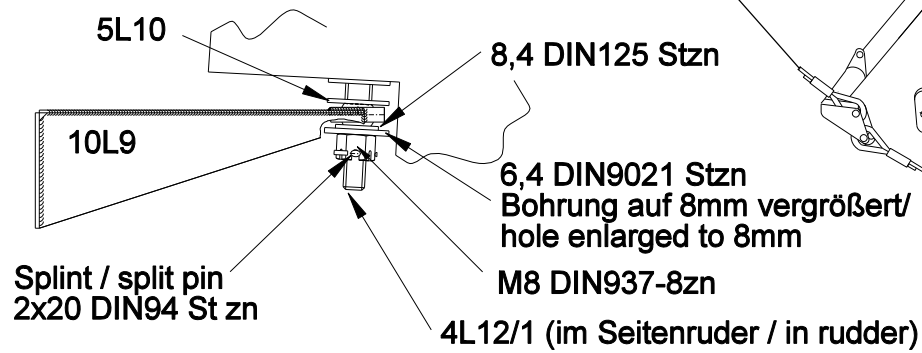
Schlüsselring Ø 20mm  
key ring dia. 20mm  
Gummiseil Ø 2 L=410mm  
rubber cord dia. 2mm length 410mm

Ringschraube/eye bolt  
M6-PH 370630



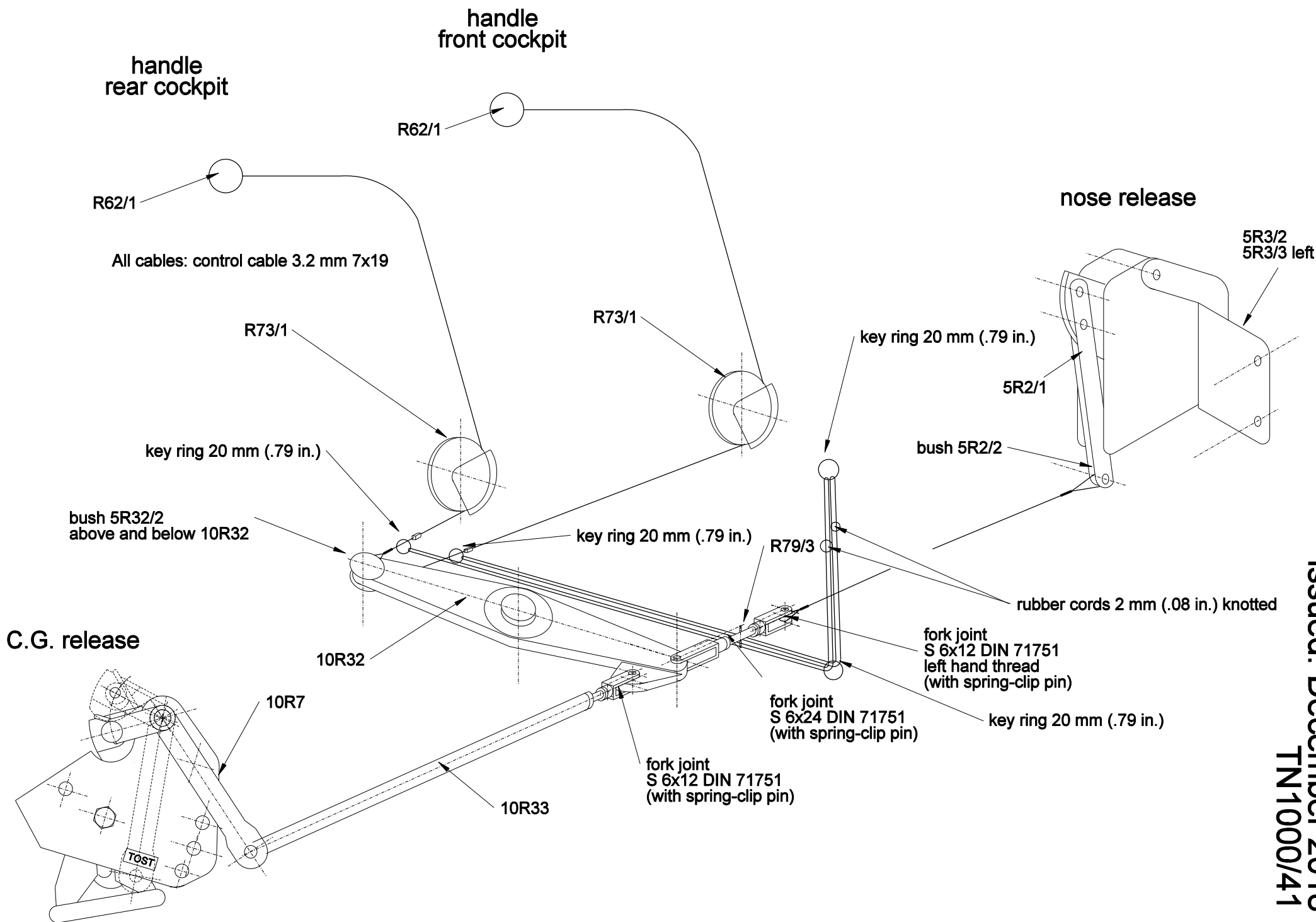
Anschlag siehe Ansicht X  
stop see view X

**Detail A**



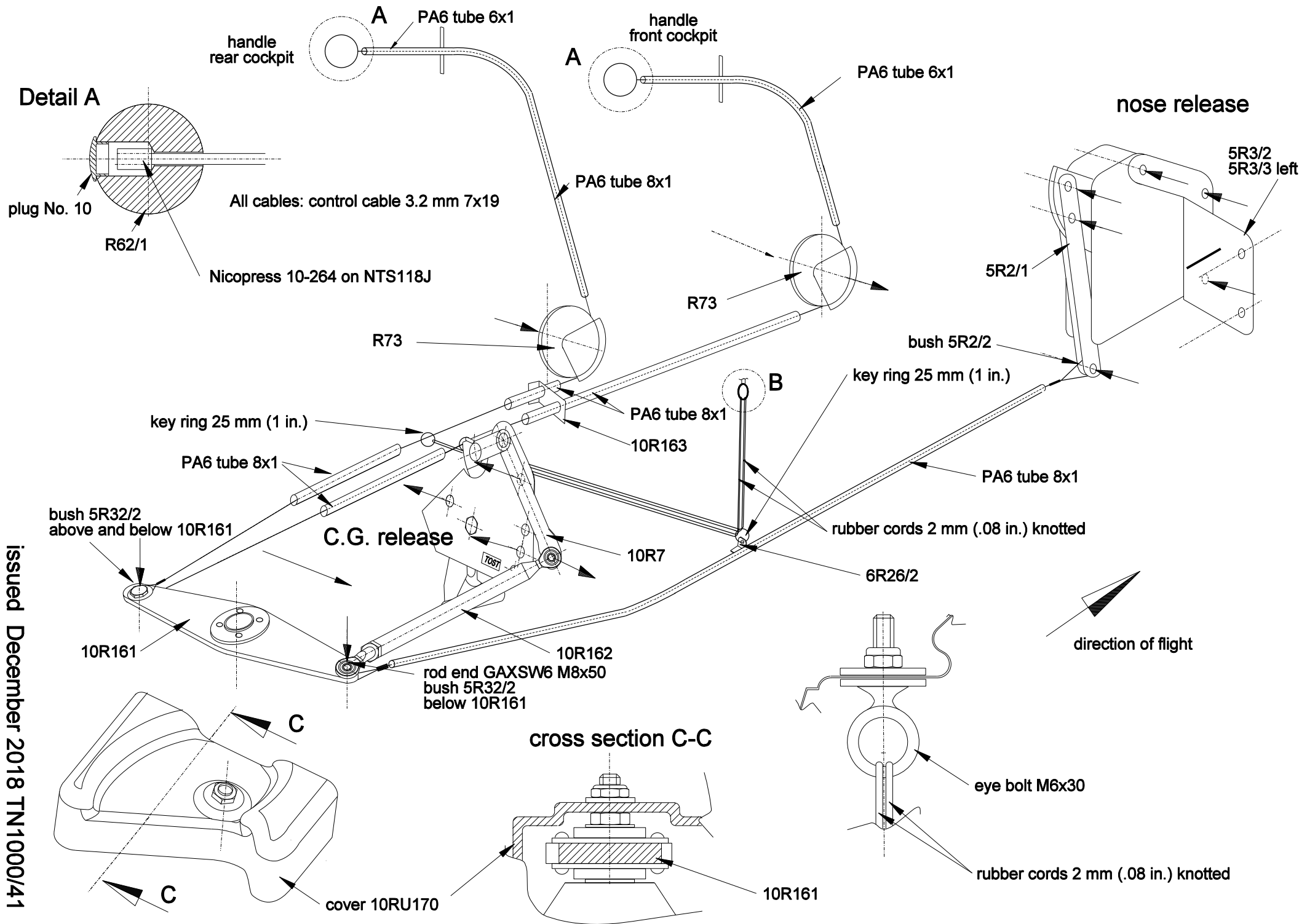
Seitensteuerung  
rudder control

Diagramm 2  
diagram 2



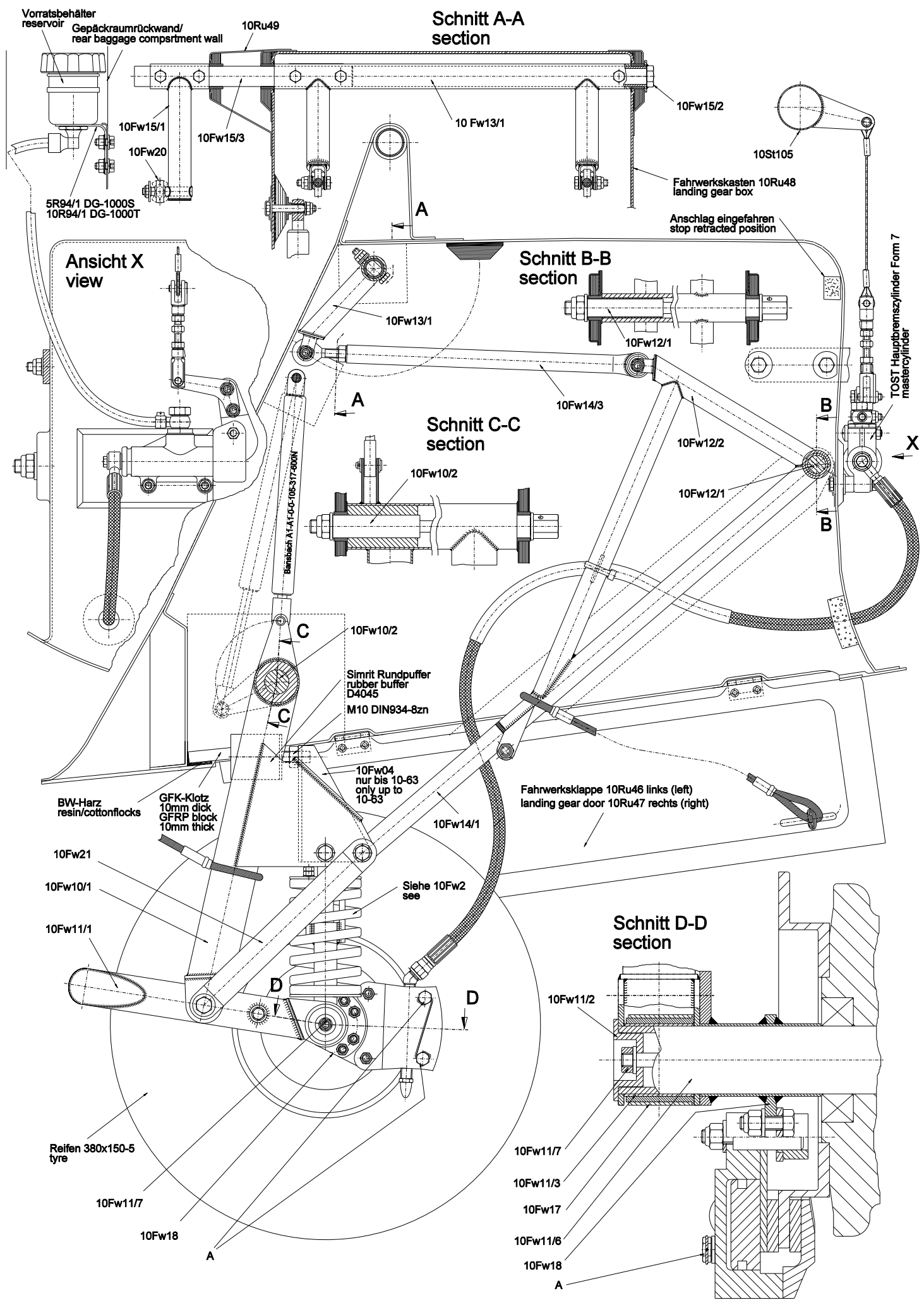
Tow releases

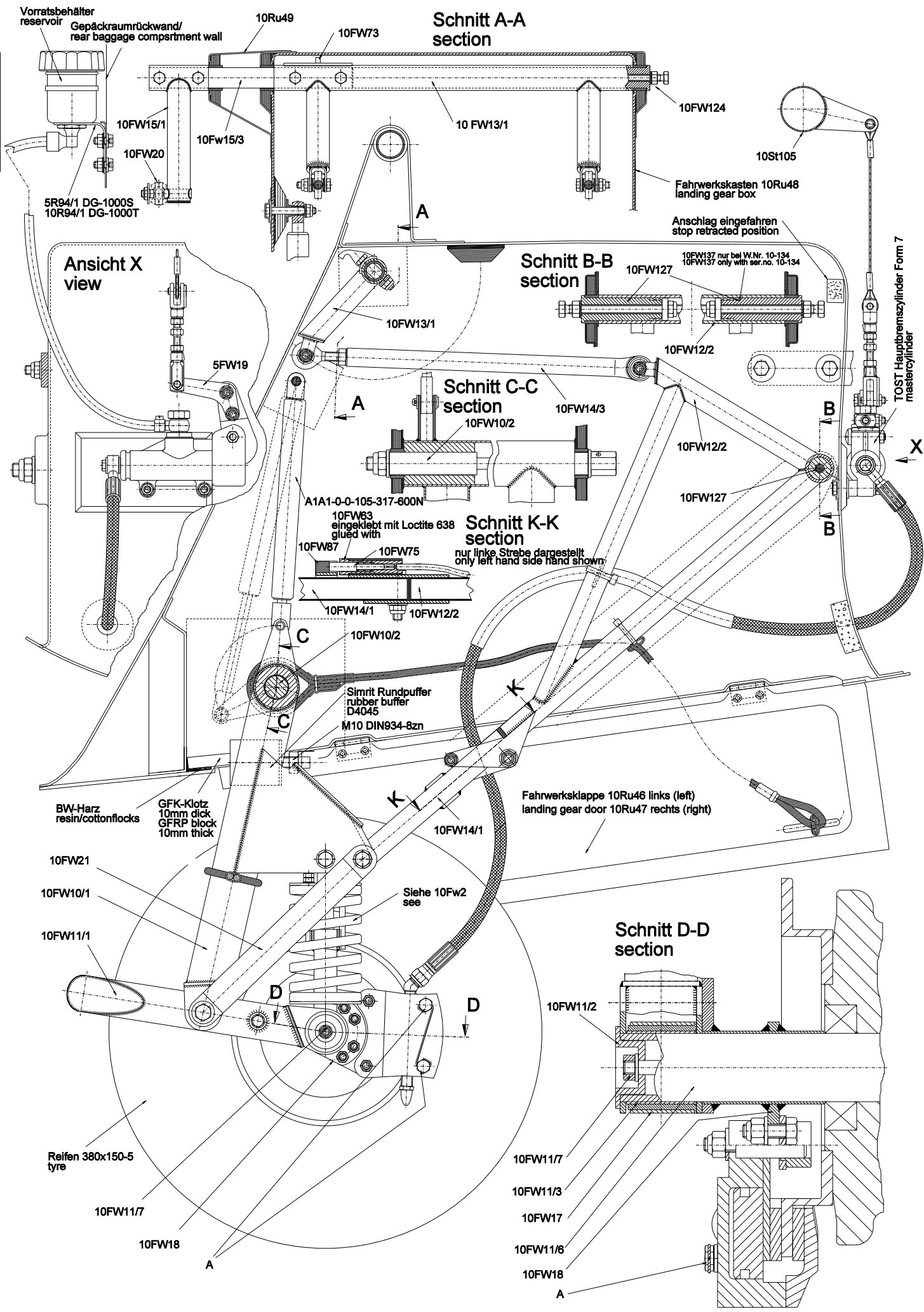
diagram 5  
 issued: December 2018  
 TN1000/41



Tow releases from ser. No. 10-268 (except for 271-274) on diagram 5a

issued December 2018 TN1000/41





Ausgabe: Dezember 2018  
 issued: December 2018  
 Diagramm 7a  
 diagram 7a  
 Fahwerk, hydraulische Radbremse ab V.Nr. 10-133  
 landing gear, hydraulic wheelbrake from ser. No. 10-133 on

# placards DG-1000S

DG Flugzeugbau GmbH

Type: DG - 1000S Serial No.: 10- S

Year of construction:

	km/h	kts.
Winch launching	150	81
Aero-tow	185	100
Manoeuvring V <sub>A</sub>	185	100
Rough air	185	100
Maximum speed V <sub>NE</sub>	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.

## Loading chart

Cockpit load maximum or maximum minimum	front seat		rear seat		(Parachute included)
	kg	lbs.	kg	lbs.	
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.

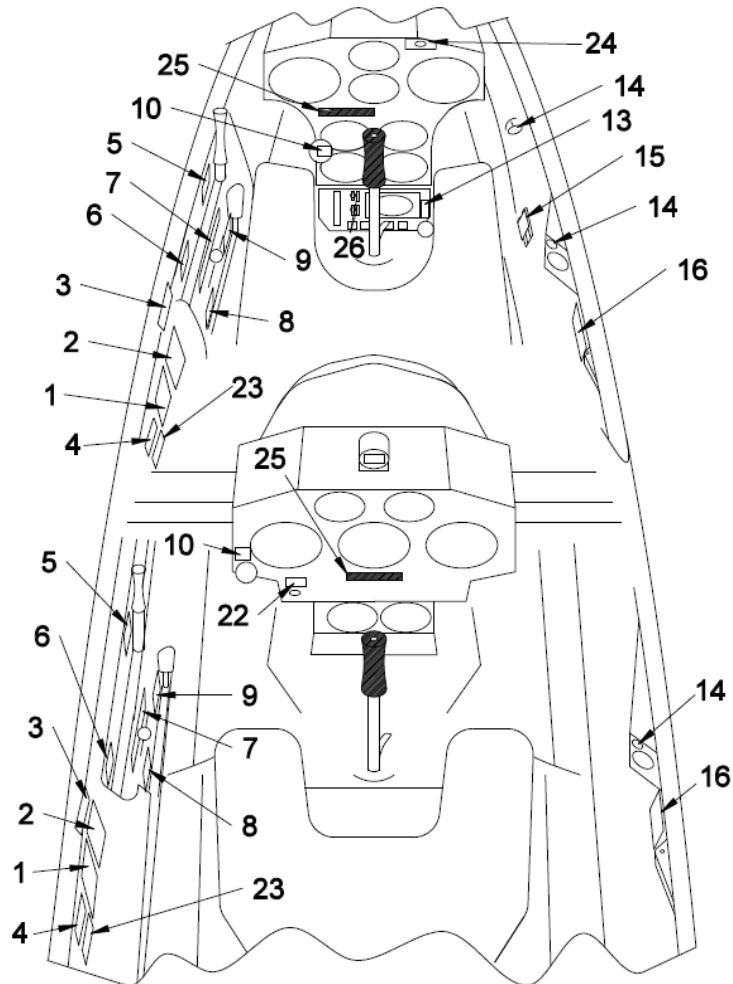
## limits for use of the waterballast tank

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

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

## Cockpit Check

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



on  
main  
off

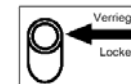
26

From 10-170 on and all ser. No.'s with electrically operated landing gear

intern  
battery  
fin

Senden  
transmit

22

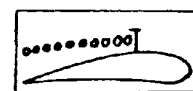


at cover plate of  
fin ballast box

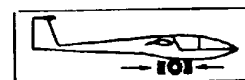
Ballast box in the fin  
Min. load in the front seat



24



5



6



8



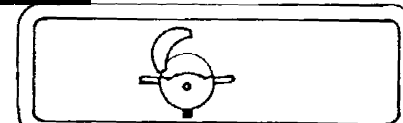
9



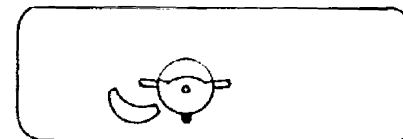
10



13



16



14



15

Bauteil Nr.:

part no. of  
components at  
all parts

Typ:	DG-1000S
W.Nr.	

fire proof placard at front  
main bulkhead

Gepäck max. 15 kg  
baggage max. 33 lbs.

at front main bulkhead

Reifendruck 2,5 bar  
Tyre pressure 36 psi

at the right wheel door

Sollbruchstelle 10000 N  
rated load 2200 lbs.

Reifendruck 2,5 bar  
Tyre pressure 36 psi

right above the nose  
wheel if applicable

Reifendruck 4 bar  
Tyre pressure 58 psi

right above the tailwheel

Bemsflüssigkeit

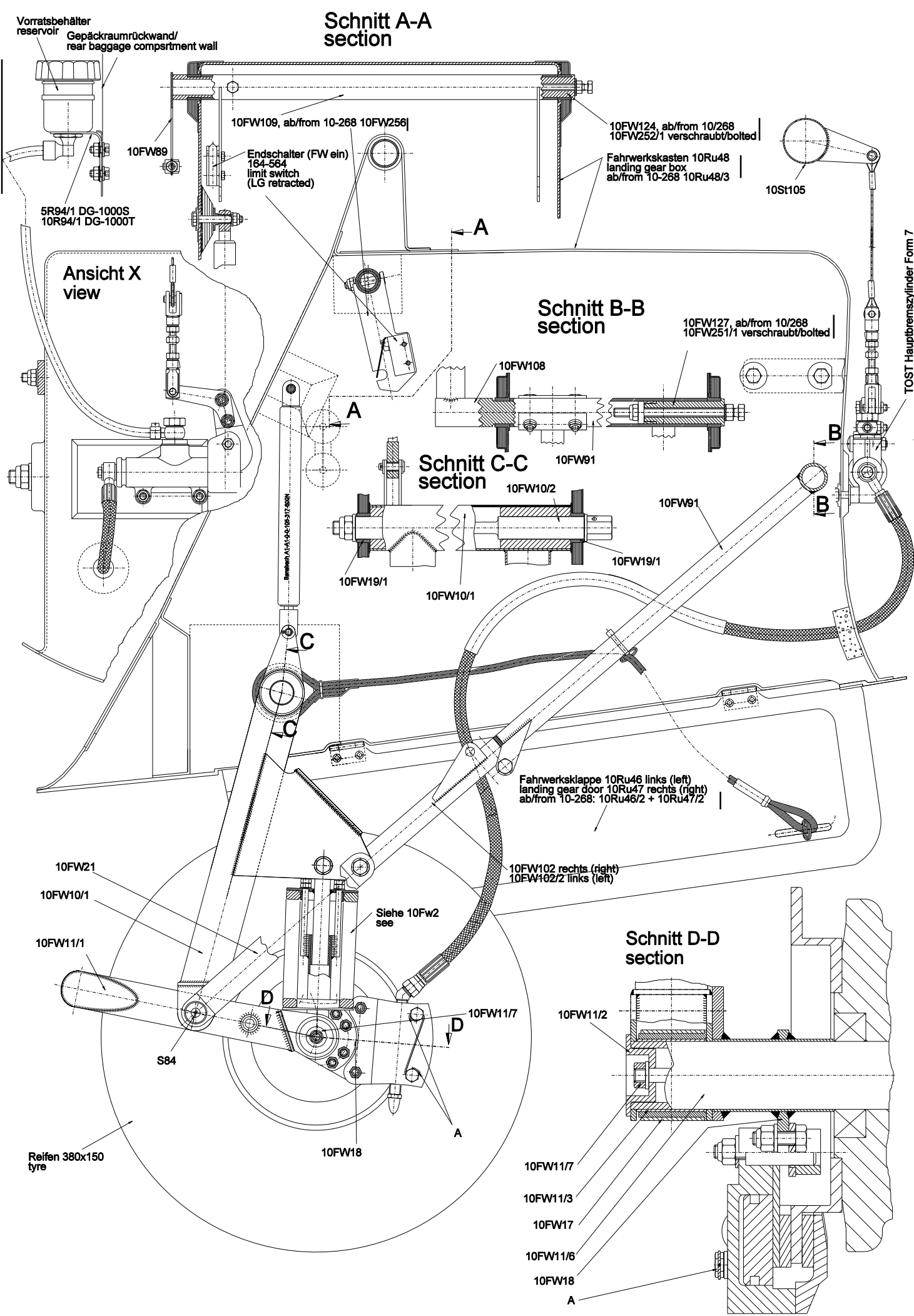
min. brake fluid  
DOT 3 / DOT 4

on brake fluid  
reservoir

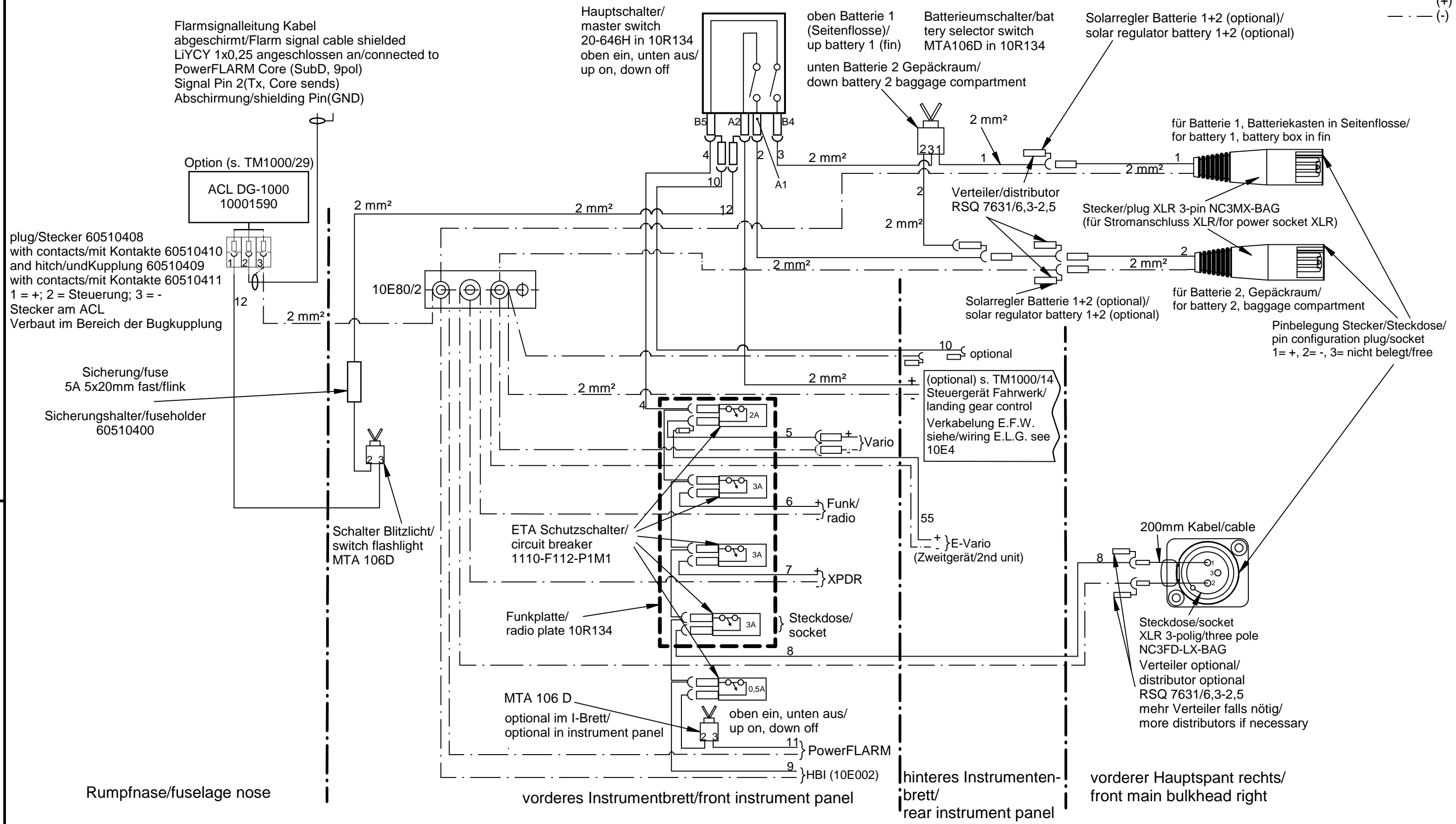
Warning:  
Rigging of the horizontal  
tailplane is only permitted with  
nose down trim-setting!

at the upper left hand  
side of the fin

diagram 11  
issued May 2019  
TN1000/41 rev. 1



— (+)  
- - (-)



- wiring 2,0 mm<sup>2</sup> AWG14/ if not labeled 1,2 mm<sup>2</sup> AWG16 marked with heat shrink tubing. red "+", black "-"  
 - further options: fuse holder 60510400 installed in "+" wire (positioned at lower part of instrument panel)

>Verkabelung 2mm<sup>2</sup> AWG14/wenn nicht beschriftet 1,2mm<sup>2</sup> AWG16 markiert mit Schrumpfschlauch. rot "+", schwarz "-"  
 >weitere Optionen: Sicherungshalter 60510400 angeschlossen am "+" Strang (positioniert im unteren Bereich des Instrumentenbretts)

Toleranzen nach Arbeitsanweisung BA 1					Tag	Name	DG Flugzeugbau GmbH 76646 Bruchsal Otto-Lilienthal-Weg 2
Schweißen nach Arbeitsanweisung SA 1					Gez.	10.01.19 Breidenbach	
					Gepr.		
					Norm.		<b>Verkabelungsplan / wiring plan</b> <b>DG-1000S</b>  <b>10E13</b>
					Maßstab		
					Maße ohne Toleranzang. nach:		
					DIN		
Ausg	Änderung	ÄM	Tag	Name	ab/from 10-268		

Diese Zeichnung ist Eigentum der DG Flugzeugbau GmbH. Nicht ausdrücklich freigegebene Vervielfältigung oder Weitergabe an Dritte ist verboten.  
 DG Flugzeugbau GmbH.



## Section 3 Maintenance

### 3.3 Greasing and oiling

Subsection amended

- Electrically operated landing gear: Clean and grease the slotted hole at the attachment of the spindle drive to the bell crank 10FW106 (see diagram 21).

**Caution:** The linear guide on which the spindle drive is moving during emergency extension of the landing gear is made from plastic and should not be greased .

If these parts have been greased inadvertently you have to disassemble the parts and to clean them completely with Acetone.

## Section 4 Detailed instructions for assembly and servicing work

### 4.5 Removal and installation of the undercarriage (main wheel)

New Subsection

#### 4.5.3 Electrically operated main landing gear

see diagrams 20 and 21

A-D Removal of the main wheel of the brake assembly from the main wheel of the lower landing gear fork 10FW11/1 and removal of the spring legs 10FW2 see section 4.5.1 A-D

E. Removal of the drag struts 10FW102 (left) 10FW102/2 (right)

- 1 Remove the main wheel see see section 4.5.1 A.
- 2 Disassemble the gas strut from the left side of the landing gear box see section 4.5.0
- 3 Remove the 2 bolts M8 LN9037 which connect the struts to fork 10FW10/1. Mark the bolts. Don't interchange the bolts during reassembly!
- 4 Remove the 2 bolts M8×40 LN9037 which connect the struts to the rear fork 10FW91.
- 5 Remove the struts.

F. Removal of the front fork 10Fw10/1

see section 4.5.1 F

G. Removal of the shaft 10FW109 resp. 10FW268 **from ser. No. 10-268 on** (with the latches for locking the LG in retracted position)

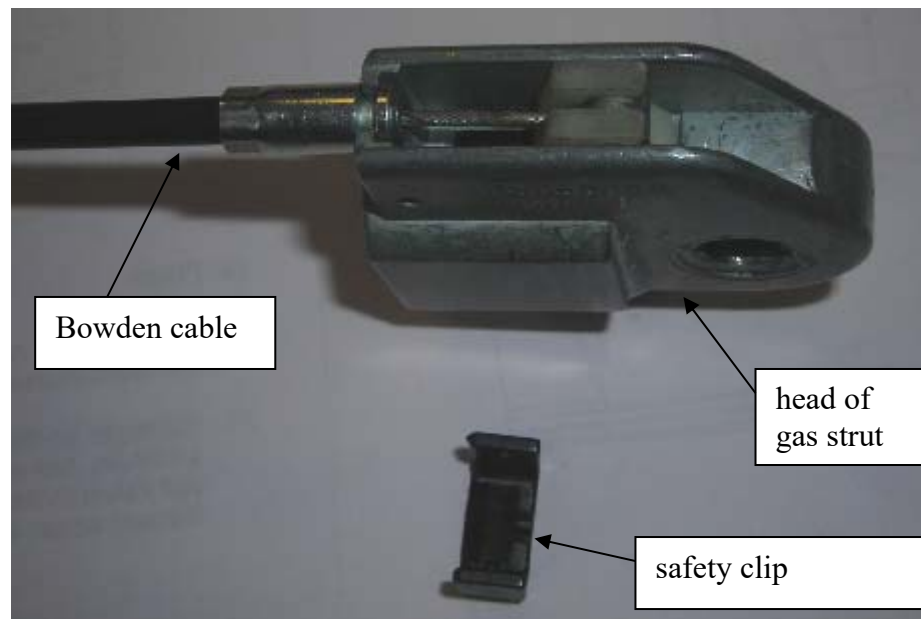
- 1 Remove the baggage compartment floor and the rear cover of the baggage compartment.
- 2 Disconnect the wiring from the limit switch (mounted to the left latch of the shaft).
- 3 Remove the push rod 10FW121 between bell crank 10FW130 and lever 10FW89.

## Enclosure 1 for Maintenance Manual DG-1000S

- 4 Remove bolt M6x32, which connects the lever 10FW89 to the shaft 10FW109 resp. 10FW268 **from ser. No. 10-268 on**.
- 5 **Up to ser. No. 10-267:** Remove the axle with cone clamping devices 10FW124. To remove the axle hold the screw head with a spanner and unfasten the counter nut with an open end spanner until the axle can be pulled out.  
**From ser. No. 10-268 on:** Remove axle 10FW252/1. To remove the axle screw a bolt M10 into the axle from the outside, then remove the bolt M6x32 LN9037 which fixes the axle in the shaft, pull out the axle at the M10 bolt.
- 6 Pull out the lever 10FW89.
- 7 Remove the shaft.

### H. Removal of the drive unit

- 1 Retract the landing gear
- 2 Press the toggle switch down and immediately up again and press simultaneously the press button. The landing gear now should be extended so far that the bolt which connects the spindle drive to the lever 10FW108 is located in the centre of the elongated hole. The bolts at the drag struts should be still in the latches. Remove the bolt.
- 3 Remove the wiring from the spindle drive, disconnect the connector plugs in the wiring to the limit switch (gas strut). Remove the Ty-rap which fixes the wires to the landing gear box.
- 4 Disconnect the Bowden cable of the emergency extension system from the head of the gas strut. To accomplish this remove the safety clip from the head and take out the Bowden cable, see picture..



- 5 Remove the bolt which mounts the gas strut to the extension of the landing gear box.

- 6 Slip the drive unit on the linear guide to the front position.
- 7 Remove the 2 rear bolts M6x28 which mount the linear guide to the landing gear box.
- 8 Slide the drive unit on the linear guide to the rear position. Be careful not to slide the drive unit too far so that it may slide off the linear guide.
- 9 Remove the 2 front bolts M6x28 which mount the linear guide to the landing gear box.
- 10 Remove the drive unit from the fuselage.

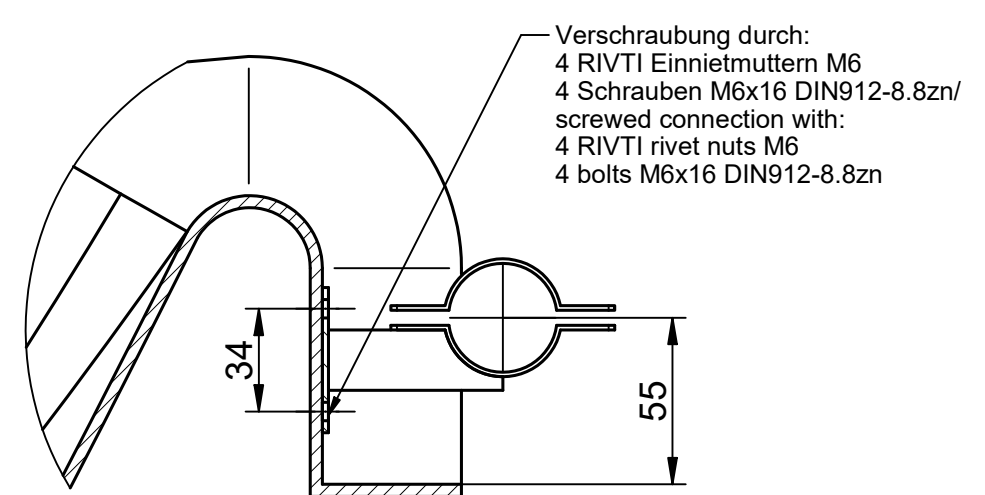
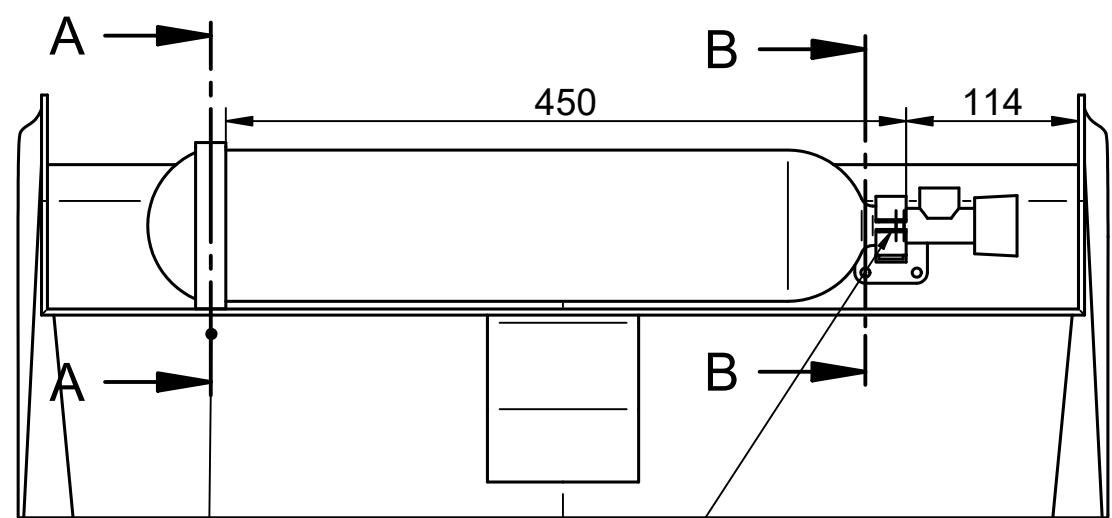
I. Removal of the rear fork 10FW91

- 1 Remove the main wheel see A.
- 2 Disassemble the gas strut from the left side of the undercarriage box see section 4.5.0
- 3 Remove the 2 bolts M8×40 LN9037 which connect the drag struts to the rear fork 10FW91.
- 4 Remove the drag struts.
- 5 Remove the landing gear drive unit according to H.
- 6 Remove the bolts which connect the rear fork with the lever 10FW108.
- 7 **Up to ser.No. 10-267:** Remove the axle with cone clamping devices 10FW127. To remove the axle hold the screw head with a spanner and unfasten the counter nut with an open end spanner until the axle can be pulled out.  
**From ser. No. 10-268 on:** Remove axle 10FW251/1. To remove the axle screw a bolt M10 into the axle from the outside, then remove the bolt M6x35 LN9037 which fixes the axle in the fork, pull out the axle at the M10 bolt.
- 8 Pull out the lever 10FW108.
- 9 Remove the rear fork.

J. Reinstallation

- 1 Reverse the above procedures.
- 2 Use new lock nuts and a new split pin dia. 1.6x12 DIN94 zn. Install bolts in same directions and washers at same positions.. During reassembly of the brake assembly secure the 2 bolts A with Loctite 243 or safety wire.
- 3 Clean and lubricate (using oil) the axles 10FW124 and 10FW127 before reinstallation. Fasten the counter nut with a torque of 6.5 Nm (4.8 ft lb) for axle 10FW124 and 12 Nm (8.8 ft lb) for axle 10FW127.
- 4 Secure the bolt M10x 44 which mounts the gas strut to the extension of the landing gear box with Loctite 243.

**Note:** It is sufficient to tape the holes drilled for removal of the axles. GFRP repair is not necessary.



Ansicht/view B

Halterung für Sauerstoffflasche Z37/  
holder for oxygen cylinder

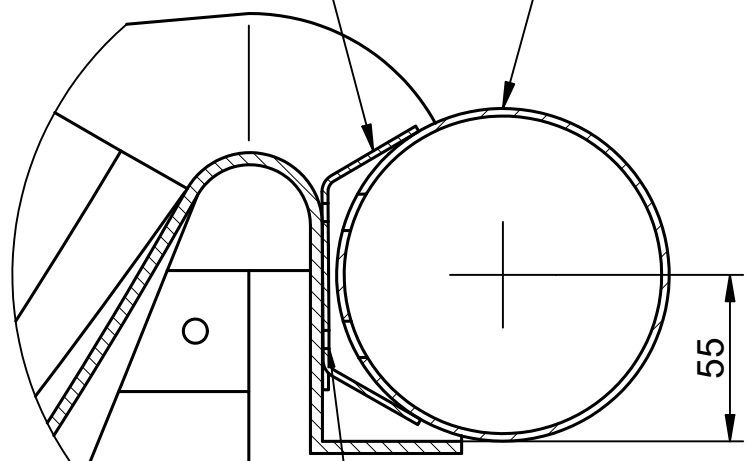
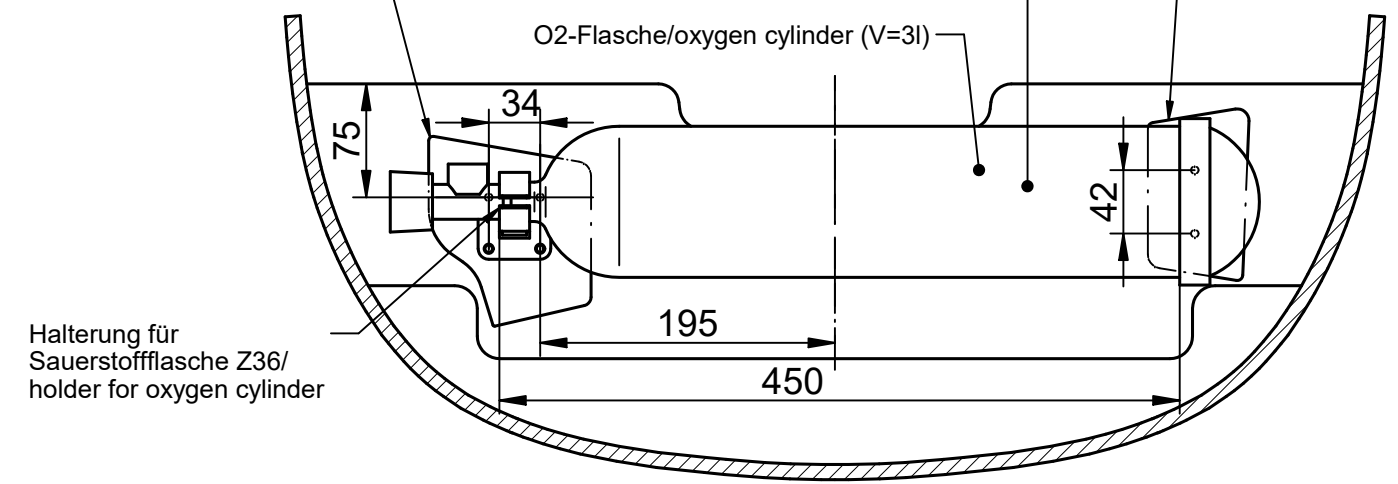
Halterung für Sauerstoffflasche Z36/  
holder for oxygen cylinder

Montage Gepäckraum/Installation in baggage compartment

Montage Fußraum (Blickrichtung entgegengesetzt Flugrichtung)/  
Installation behind pilots feet (view against direction of flight)

5Ru105 bei W.Nr. 10-264, 10-265, 10-267, 10-269, 10-270 und ab W.Nr. 10-275 in 10Ru32/2 integriert/  
5Ru105 for ser.No. 10-264, 10-265, 10-267, 10-269, 10-270 and from ser.No. 10-275 on integrated in 10Ru32/2

5Ru104 bei W.Nr. 10-264, 10-265, 10-267, 10-269, 10-270 und ab W.Nr. 10-275 in 10Ru32/3 integriert/  
5Ru104 for ser.No. 10-264, 10-265, 10-267, 10-269, 10-270 and from ser.No. 10-275 on integrated in 10Ru32/3



Ansicht/view A

Halterung Z36 ausgeblendet  
holder Z36 not shown

Verschraubung durch:  
2 RIVTI Einnietmuttern M6  
2 Schrauben M6x16 DIN912-8.8zn/  
screwed connection with:  
2 RIVTI rivet nuts M6  
2 bolts M6x16 DIN912-8.8zn

					Date	Name		 <b>DG Flugzeugbau GmbH</b> 76646 Bruchsal Otto-Lilienthal-Weg 2
					09.01.19	Breidenbach		
					Scale:	Einbau Sauerstoffflaschen 3L/ Installation of 3L oxygen cylinders	Next Assembly:	<b>10R146</b>
					1:X			
					General Tolerance according to: BA1			Solid Edge
					Welding according to: SA1			
Rev.	Change Description	S/N	Date	Name				Page 1 of 1

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