

Maintenance Manual DG-1000T

No.	Page	Description	Date
12	0.2 ÷ 0.9, 0.9a, 0.10 ÷ 0.12, 1.2, 1.5, 1.11, 1.14, 1.15, 1.27 ÷ 1.29, 1.33, 2.1, 2.4 ÷ 2.6, 3.3, 4.8, 5.1, 6.1, 6.2, 6.4, 8.3, 9.2, diagr. 1, 9, 11, encl. 4 pages 1, 2, 2a, 3, Z193, SI 67-07, remove 5EP50	Manual revision TN1000/18	February 2011
13	0.6, diagrams 8 and 9	Wheel brake TN1000/21	July 2011
14	0.2 ÷ 0.7, 0.10 ÷ 0.12, 1.3, 1.5, 1.11, 1.16, 1.29, 1.30, 2.1, 2.6, 3.1, 4.6, 4.10, 4.12, 4.13, 4.19, 4.20, 6.1, 7.1, 8.2, 8.3, diagrams: 2, 3, 9, Enclosure 4 pages: 4, 7	Manual revision TN 1000/24, New type 12V sockets and plugs, Changes due to TN 4603-14 of the Solo company (Exchange of the axle of the upper drive belt pulley on pages 4.19 and 4.20)	October 2014
15	0.2, 0.3 - 0.6, 0.9a, 0.11, 1.18, 3.5, 3.8, 4.20, 4.20a, 4.26, 4.28, 8.1 – 8.3 diagram 13, diagram 15, diagram 15a	Propeller adapter ring with elastomeric damper TN 1000/26 Alternative mechanical fuel pump TN 1000/28	August 2015
16	0.2 -0.6, 0.11, 0.12, 2.1, 2.2, 3.7, 6.3, 8.2, 8.3, diagram 2	Manual revision TN1000/32	July 2017
17	0.2, 0.3, 1.11	TN1000/34 small nose wheel	October 2017
18	0.2-0.7, 0.10 - 0.13, 2.6, 3.9, 6.1, 8.2, diagrams 15 and 15a, file working instruction No. 1 for TN 1000/38 at the end of the MM.	TN1000/38 PU fuel hoses, limitation of life-time, replacement by new types of fuel hoses	February 2018
19	0.2 - 0.6, 1.14, 2.1, 2.2, 4.9, 6.3 diagrams 7, 7a, 20, enclosure 4 page 6	TN1000/42 Canopy lock, rear locking rods, manual revision	July 2019

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0.2 List of effective pages

Section	page	issued	replaced/	replaced/	replaced/	
0	0.0	June 2005	January 2007			
	0.1	see manual amendments				
	0.2		"			
	0.3		"			
	0.4		"			
	0.5		"			
	0.6		"			
	0.7	June 2005	January 2007 Febr. 2018	Febr. 2011	Oct. 2014	
	0.8	"	Febr. 2011			
	0.9	"	Febr. 2011			
	0.9a	Febr. 2011	August 2015			
	0.10			Febr. 2008	March 2008	Oct. 2008
				Nov. 2008	Febr. 2011	Oct. 2014
	0.11			Febr. 2018		
Febr. 2011				Oct. 2014	August 2015	
0.12			July 2017	Febr. 2018		
			January 2007	Febr. 2011	Oct. 2014	
0.13			July 2017	Febr. 2018		
			Febr. 2018			
1	1.1	June 2005	January 2007			
	1.2	"	Febr. 2011			
	1.3	"	Oct. 2014			
	1.4	"				
	1.5	"	Febr. 2011	Oct. 2014		
	1.6	"				
	1.7	"				
	1.8	"				
	1.9	"	Febr. 2008			
	1.10	"	Febr. 2008			
	1.11	"	Febr. 2011	Oct. 2014	Oct. 2017	
	1.12	"				
	1.13	"				
	1.14	"	March 2008	Febr. 2011	July 2019	
	1.15	"	Febr. 2011			
	1.16	"	Oct. 2014			
	1.17	"				
	1.18	"	August 2015			
	1.19	"	March 2008			
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	1.21	"				
	1.22	"		October 2006		
	1.23	"		October 2006		
	1.24	"				

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	1.25	"			
	1.26	"			
	1.27	"	Febr. 2011		
	1.28	"	Febr. 2011		
	1.29	"	Febr. 2011	Oct. 2014	
	1.30	"	Oct. 2014		
	1.31	"	May 2008		
	1.32	"			
	1.33	"	Febr. 2011		
2	2.1	June 2005	March 2008 July 2017	Febr. 2011 July 2019	Oct. 2014
	2.2	"	July 2017	July 2019	
	2.3	"			
	2.4	"	Febr. 2011		
	2.5	"	Febr. 2011		
	2.6	"	May 2008 Febr. 2018	Febr. 2011	Oct. 2014
3	3.1	June 2005	Oct. 2014		
	3.2	"			
	3.3	"	Febr. 2011		
	3.4	"			
	3.5	"	August 2015		
	3.6	"			
	3.7	"	July 2017		
	3.8	"	August 2015		
	3.9	"	Febr. 2018		
4	4.1	June 2005			
	4.2	"	January 2007		
	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	July 2019
	4.10	June 2005	Oct. 2014		
	4.11	"			
	4.12	"	Oct. 2014		

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Section	page	issued	replaced/	replaced/	replaced/
	4.13	"	Oct. 2014		
	4.14	"			
	4.15	"			
	4.16	"	January 2007		
	4.17	"	January 2007		
	4.18	"	May 2008		
	4.19	"	Oct. 2014		
	4.20	"	Oct. 2014	August 2015	
	4.20a	August 2015			
	2.21	"	January 2007		
	4.22	"			
	4.23	"			
	4.24	"			
	4.25	"			
	4.26	"	August 2015		
	4.27	"			
	4.28	"	January 2007	August 2015	
	4.29	"			
	4.30	"			
	4.31	"			
5	5.1	June 2005	Febr. 2011		
	5.2	"			
6	6.1	June 2005	Febr. 2011	Oct. 2014	
	6.2	"	May 2008	Febr. 2011	
	6.3	"	July 2017	July 2019	
	6.4	"	Febr. 2011		
7	7.1	June 2005	Oct. 2014		
8	8.1	June 2005	January 2007	August 2015	
	8.2	"	Dec. 2006	January 2007	Oct. 2014
			August 2015	July 2017	Febr. 2018
	8.3	"	May 2008	Febr. 2011	Oct. 2014
			August 2015	July 2017	
	8.4	"	January 2007		
9	9.1	June 2005			
	9.2	"	Febr. 2011		

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diagram	issued	replaced/	replaced/	replaced/
1	May 2004	Oct. 2010		
2	Nov. 2001	Oct. 2014	July 2017	
3	June 2005	Oct. 2014		
4	Nov. 2001			
5	Nov. 2001	January 2007		
6	Nov. 2001	January 2007	March 2008	Not valid for 10-101, and from 10-128 on
6a	March 2008			
7	Nov. 2004	July 2019		
7a	Oct. 2008	July 2019		
8	Nov. 2001	January 2007	July 2011	
9	June 2005	January 2007 Oct. 2014	Febr. 2011	July 2011
10	May. 2005	January 2007		
11	June 2005	Febr. 2011		
12	Sept. 2003	January 2007		
13	June 2005	August 2015		
14	June 2005	October 2007		
15	June 2005	January 2007	August 2015	Febr. 2018
15a	Oct. 2006	Dec. 2006 Febr. 2018	January 2007	August 2015
16	June 2005	May 2008		
17	Febr. 2008			
18	Febr. 2008			
19	March 2008			
20	Nov. 2008	July 2019		
21	Nov. 2008	Oct. 2010		
22	Nov. 2008			
5EP34	25.01.90			
5V18	14.10.94			
10FW2	05.10.99			
10E4 issue A	28.10.08			
10E4 issue E	8.10.10			
10E102	14.09.05	5.12.05	26.01.06	
10E103	24.06.05			
Encl. 1	June 2005			
Encl. 2	June 2005	Page 1 January 2007	Pages 2, 3 May 2008	
Encl. 3	March 2008			
Encl. 4	Nov. 2008	Page 2, 2a , 7 Oct. 2010 Page 6 July 2019	1, 2, 2a, 3 Febr. 2011	4, 7 Oct. 2014
SI 67-07	5.11.2007			
Z193	4.11.2009			

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 correct indication of the outside air temperature gauge (in the DEI-NT) 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 Inspections

2.1 Daily inspection

see flight manual section 4.3

2.2 Regular inspections

A Annual inspection (and 100hr inspection – only for USA)

- Execute all items of the daily inspection see flight manual section 4.3.
- Check the rudder cables for wear especially around the “S” tubes on the rudder pedals. Worn rudder cables should be replaced (see section 4.2).
- Check the seals of the rudder (see section 1.3.5).
- Inspect all bolted connections and locking devices ie. locknuts, split pins etc.
- Check all metal parts for adequate greasing and rust prevention. (see section 3.3).
- Check the control surface deflections (see sections 1.2 up to 1.4).
- Check the free play in all control circuits (see section 1.2 up to 1.6)
- Check the fore and aft play of the wings (see section 1.11).
- Check the canopy emergency releases according to section 7.14 of the flight manual.
- Check the tension of the lines of the waterbag attachment (see section 4.1).
- Check the rubber cords in the control system (see sections 1.2.6 and 1.7.5).
- Check the thickness of the wheel brake linings and of the brake disc (see section 1.6.4).
- Check if the brake fluid has to be exchanged (see section 1.6.4).
- Check the airbrakes according to section 4.4.
- Check the fin ballast tank system according to section 1.8.2.
- Check the fin ballast box according to section 1.9.
- Check the friction of the canopy opening handles (canopies removed from fuselage): A force of 10 – 20N (2.2 up to 4.4 lbs.) should be required at the end of the handle. If the force is too low tighten the hinge bolt of the handle accordingly.
- Check if the rear locking rods of front and rear canopy are screwed in tightly. To accomplish this close the locking mechanism with canopy open and try to rotate the locking rod clockwise using small pipe pliers and a piece of abrasive paper 240 grid around the rod to protect the rod from damage.

Caution: Don't rotate counter-clockwise, otherwise you may rotate the rod out of the thread and destroy the Loctite and lock nut securing.

If you are able to rotate the rod proceed with TN1000/42 instruction 3.

- Check if the powerplant has been serviced according to section 3.6.1.
- Check the friction brake of the throttle control (see section 1.12.8).
Option: throttle handle in rear cockpit TN1000/15:
Check of friction brake not applicable, not installed.
- Check the torque of the propeller bolts (see section 3.6.1 item 23).
- **Tow hooks:** The operating and maintenance instructions for the release mechanisms, see sect. 0.5.3 of this maintenance manual have to be followed.
- **All-up weight and centre of gravity:** These should be checked at least every 4 years during the yearly inspection.

B Special inspections

C.G. Tow hook:

After a wheel-up landing, the C.G. tow hook is to be cleaned and to be carefully checked for any damage.

C Fuselage nose:

After a landing where the fuselage nose has touched the ground, the nose tow hook is to be cleaned and to be checked for correct functioning.

Clean the hole of the PC port (necessary for the stall warning) located behind the fuselage nose on the lower surface.

D C.G. weighing: After all work which may influence the C.G.

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 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. **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 12 Nm (8.8 ft lb) for axle 10FW124 and 20 Nm (14.7 ft lb) for axle 10FW127.

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

Variometer

Manufacturer	Type	Certification No.
Winter	5 StVM5 (diam. 58)	TS 10.230/14
	± 5 m/s Ident.No. 5451	
	±1000 ft/min Ident.No. 5452	
Winter	± 10 kts Ident.No. 5453	
	5 STV 5 (diam. 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

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

Accelerometer

(for Category A Aerobatics)

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

Manufacturer	Type	Standard
Falcon Gauge	GM5 10-2	MIL-A-5885 C
AOA	BM 470-RL/L	MIL-A-5885 A

or other instruments designed for aircraft use according to MIL-A-5885 C (or later issues) standards may be installed.

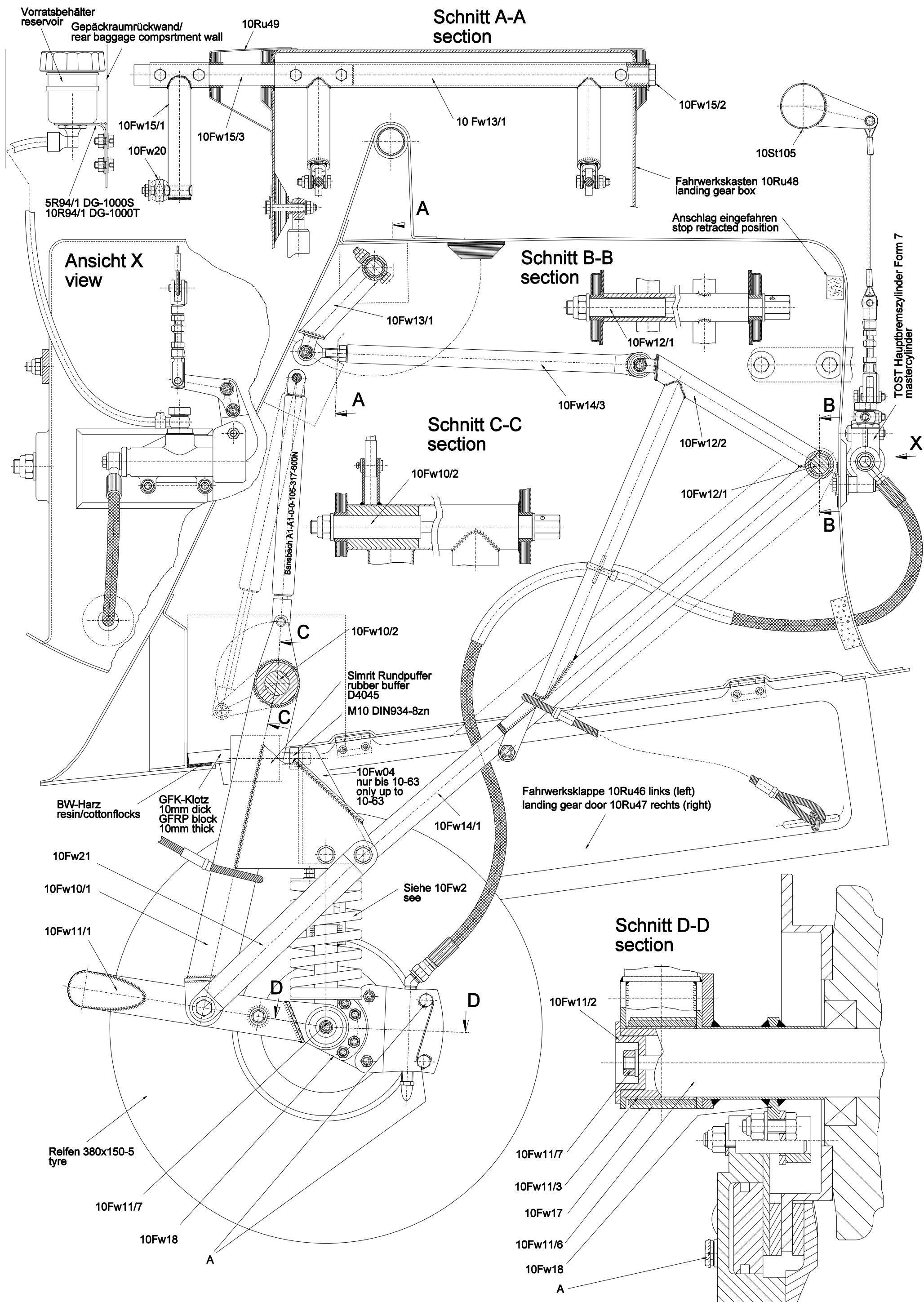
Outside air temperature gauge

incorporated in the DEI-NT see below

Engine instrumentation

(RPM, fuel, CHT, voltmeter, engine elapsed time, outside air temperature

Manufacturer	Type
DG Flugzeugbau	DEI-NT-DG-1000T



Ausgabe: Juli 2019 TM1000/42
 issued: July 2019 TN1000/42

Fahrwerk, hydraulische Radbremse bis W.Nr. 10-132
 landing gear, hydraulic wheelbrake up to ser. No. 10-132

Diagramm 7
 diagram 7

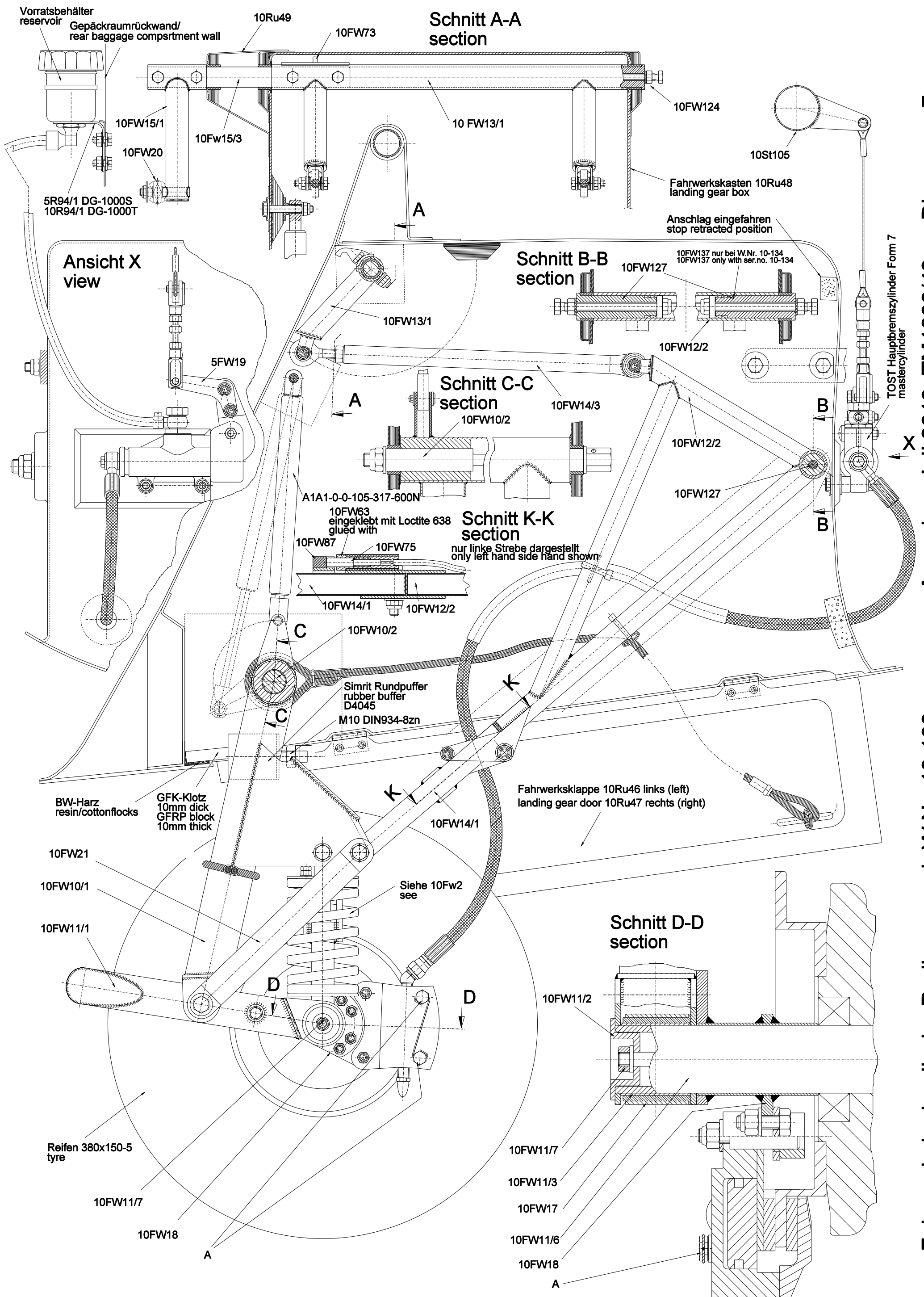
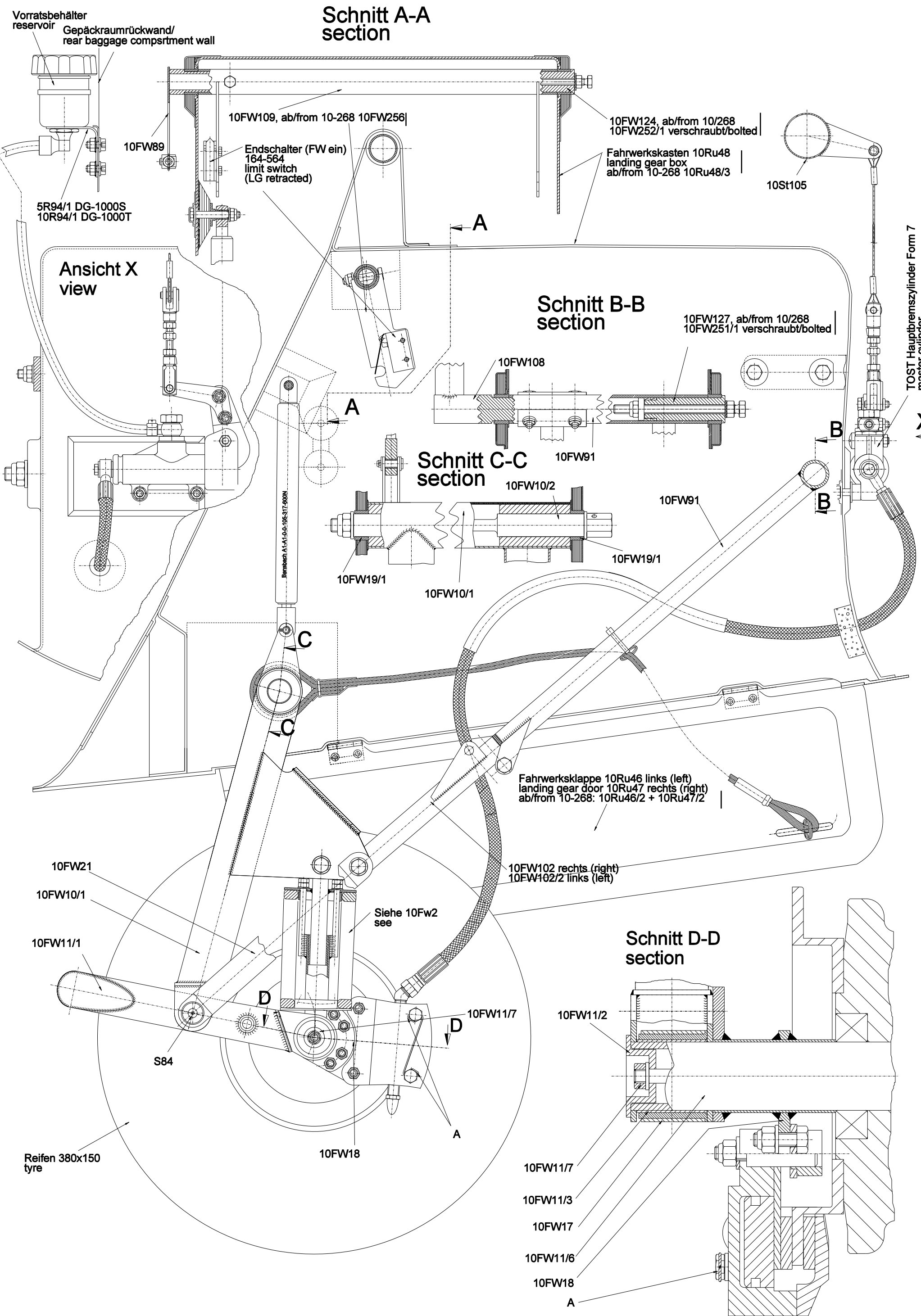


Diagramm 7a
 diagram 7a

Ausgabe: Juli 2019 TM1000/42
 issued: July 2019 TN1000/42

Fahrwerk, hydraulische Radbremse ab W.Nr. 10-133
 landing gear, hydraulic wheelbrake from ser. No. 10-133 on



Ausgabe: Juli 2019
issued: July 2019

Diagramm 20
diagram 20

TM1000/42
TM1000/42

elektrisch betätigtes Hauptfahrwerk, hydraulische Radbremse
electrically operated main landing gear, hydraulic wheelbrake

- 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 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.
- 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 12 Nm (8.8 ft lb) for axle 10FW124 and 20 Nm (14.7 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.