Manual amendments

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1	2, 3, 4, 34, 57, 63, 64, 93, drawing W57	Engine, powerplant drive belt tension, DEI- circuit breaker, manual revision TN 843/13	Oct. 1999	
2	2, 3, 4, 11, 19, 27, 45, 47, 48, 49, 51, 62, 71, 79, 91, wiring diagram 5E101, drawing W40	Greasing schedule, new attachment of the throttle cable from ser.no 5E213 on, manual revision TN 843/16	Jan. 2001	
3	2, 3, 4, 5, 23 - 28, 30 - 34, 36a, 37, 49 - 51, 54, 72, 73, 78, 79, 84, 91, 93, wiring schemes 5E101 issues G and H, 5E218	Engine control, manual extension and retraction control, carburettors, engine doors rubber cord, manual revision TN 843/17	March 2002	
4	2, 4, 24, 91, diagram 13b, wiring scheme 5E101 issue I, drawing 5E218	Extension-retraction unit, TN 843/18 issue 2	June 2003	
5	2, 3 , 4, 24, 25, 47, 48, 50, 64, 65, 68, 73, 75, 76, diagram 18, drawing 5M110	Manual revision Powerplant: retaining cable mounting in fuselage TN 843/19	March 2004	
6	2, 3, 4, 5, 42, 49, 68, 89, 89a, 93, Enclosure 1	Manual revision TN 843/24	January 2006	
7	2, 3, 4, 24, 38, 43, 60, 89, 89a	Manual revision TN 843/28	May 2008	

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Enclosures		**issued**
Equipment list	(94)	Nov. 98
Checklist for checks and maintenance work	(95)	Nov. 98
5EP31 Installation Dräger oxygen system		08.10.90
5EP50 Installation ELT ACK		07.12.98
5E101 Wiring scheme issue I		25.06.03
5E102 Wiring plan DIN A 1 (in aircraft log) **or**		2.07.03
5E102 Wiring plan DIN A 1 **together with**		02.02.99
5E218 Amendment to the wiring plan 5E102		25.06.03
Instructions for inspection 500/20		July 1995
Questionnaire for TN 348/4		" "
Working instruction No. 1 for TN 348/4		Oct. 1994
Working instruction No. 2 for TN 348/4		" "
5V18 Tool for airbrake adjustment		14.10.94
Drawing W40		30.11.99
Drawing W51		20.11.96
Drawing W57		10.09.99
Drawing 8E210		22.05.97
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1.12. Retraction - extension mechanism

1.12.1 **Layout** see diagram 13b

1.12.2 **The retraction-extension mechanism** (spindle drive) consists of a 12 V electrically driven sealed ball screw shaft type Stross BSA10 special version for DG-500MB.

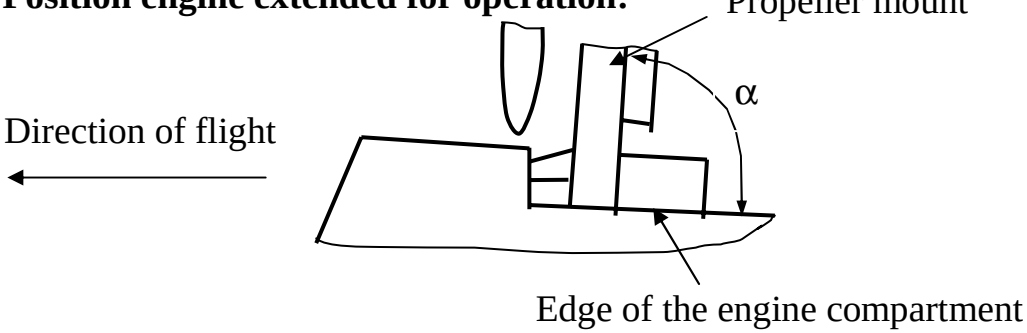
1.12.3 **Extension time of the spindledrive**
The time for extension is approx. 12-13 seconds. If the extension takes longer than 15 seconds the spindledrive must be replaced.
Measure at room temperature, with full batteries and via the ignition switch.

Note for 1.12.1 – 1.12.3: In ser. no. B16 and B17 a spindle drive Stross ATL10 RNC270 was installed during production. Installation see drawing 5M209 instead of diagram 13b. The extension time is about 17 seconds. If the extension takes longer than 20 seconds the spindledrive must be replaced. If this spindledrive must be replaced it should be replaced by a Stross BSA10, installation according to diagram 13b.

1.12.4 **Adjusting the powerplant retaining cable**
Extend the engine via the ignition switch until the extension will be switched off by the position switch.
without retaining cable shock absorber: It should be possible in this position to pull out the retaining cable approx. 25mm (1 in.) before it comes to its stop. If necessary adjust via the adjustment screw at the rear engine bay bulkhead. Secure the adjustment screw by fastening its lock nut.
with retaining cable shock absorber (from ser. no. 5E243B20 on and retrofit according to TN843/19): It should be possible in this position to pull out the retaining cable approx. 15mm (.6 in.) before it comes to its stop. If necessary adjust via the adjustment screw. Secure the adjustment screw by fastening its lock nut.

1.12.5 **Position switches**
Position engine retracted: via a switch actuated by the propellermount
Position engine extended: via a switch actuated by the muffler frame

1.12.6 **Adjustment of the powerplant positions**
Position engine extended for operation:



D) **Special inspections**

Tow hook

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

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

3. Ask the manufacturer for the necessary inspection document.
   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 the manufacturer or 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 manufacturer's facilities, a copy of the records must be sent to the manufacturer for his evaluation and information.

6. The annual inspection is not affected by this inspection program.

4.7 Working instructions for heat-shrink tubing

To insulate various parts of the electrical system heat-shrink tubing is used.

For repair and maintenance the heat-shrink tubing often has to be removed.

For removal use a sharp knife. To insulate again slip a new piece of heat-shrink tubing over the part which is to be insulated.

Use a hot air gun (min. 200°C, 390°F) to heat the tubing until it shrinks and gives a tight fit.

4.8 Securing with Loctite

All bolts on the engine except for the propeller mounting bolts (lockwire) which are not secured with locking nuts have to be secured with Loctite 243. Loctite 72 b (672) may be used as an alternative.

If a bolt can't be unscrewed you must heat this section with a hot air gun to reduce the locking force of the Loctite.

Before reinstallation you have to clean the thread of the bolt and the inside thread from any remains of Loctite. For this procedure use Acetone. If necessary recut the inside thread.
Before you apply Loctite, the bolt and inside thread have to be degreased with spray cleaner Loctite 7063. Wipe off the bolt and clean the inside thread with compressed air. Repeat twice for inside threads.

Apply only a small amount of Loctite to the bolt thread. Too much Loctite may cause damage when you try to loosen the bolt again.

With blind holes the Loctite must be applied to the thread in the hole and not to the bolt.

All locked and secured bolts have to be marked with red securing paint which also marks the respective component at that particular point. Remove the old red securing paint before reinstallation of the bolt.

Caution: Loctite must be used within 2 years of production date. The production date is printed on the bottom of the bottle.
96A means January 1996, 96B means February 1996 and so on.

6.5 **VHF transceiver**

Manufacturer	Type	Certification No.
Dittel	FSG-40 S	10.911/45
	FSG-50	10.911/71
	FSG-60 M	10.911/72
	FSG-70,71 M	10.911/81
	FSG-90	10.911/98JTSO
	FSG 2T	LBA.0.10.911/103JTSO
Becker	AR 3201-(1)	10.911/76
	AR 2008/25 (A)	10.911/48
	AR 4201	JTSO-2C37 D, ED-23A
Filser	ATR 720 A	10.911/74
	ATR 720 C	10.911/83
	ATR 600	LBA.0.10.911/106JTSO
	ATR 500	LBA.0.10.911/113JTSO
	ATR 833	EASA.210.0193

or other instruments certified for aircraft use according to TSO or JTSO or ETSO standards may be installed.

Note: Only radios with diameter 58mm (2 ¼ in.) can be installed at the assigned place in the console below the instrument panel.

6.6 **Variometer**

Manufacturer	Type	Certification No.
Winter	5 St VM5 (dia.58 mm) ±5 m/sec Ident.No.5451 ±1000 ft/min ident.No.5452 ±10 kts Ident.No.5453	TS 10.230/14
Winter	5 StV5 (dia.80 mm) ±5 m/sec Ident.No.5251 ±1000 ft/min Ident.No.5252 ±10 kts Ident.No.5253	TS 10.230/13

6.7 **Turn and bank indicator**

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

6.8 **Engine instrumentation**

(RPM, fuel, CHT, voltmeter, engine elapsed - time indicator, EGT as an Option)

Manufacturer	Type	
DG Flugzeugbau	DEI-MC 500 B	main instrument, front cockpit
	DEI-M 500 ZB	in the rear cockpit

6.9. Outside air temperature gauge

Manufacturer	Type
Störk	TF 00-059K (-20 - + 40° C)

6.10 Instruments which are not part of the minimum equipment:

Transponders: Transponders certified for aircraft use according to TSO or JTSO or ETSO standards may be installed.

Other instruments and equipment (eg. variometers, gliding computers or flight data recorders):
Instruments and other equipment may be installed if they do not in themselves, or by their effect upon the sailplane, constitute a hazard to safe operation.

Caution: If additional instruments or equipment are to be installed after production of the glider, it must be assured that they will be installed in the places provided by the design. If installed in other places it must be assured that they are secured safely.
Electrical instruments and equipment must be connected via appropriately rated fuses, the power consumption of each single part should not exceed 3A.

After installation raise a new weight and balance report.