

SUBJEKT : Powerplant DG-400

EFFECTIVITY : DG-400 from serial no. 4 -1 on

ACCOMPLISHMENT: as soon as possible preferable with the next 25h inspection but at latest 30. Oct.1991.

REASON : 1., 2. Vibration damage occurred on some DG-400's. Our investigations resulted in the modifications which shall be executed with this technical note
3. The rubber of the fuel hoses is subject to get tears due to the high temperatures at the engine. Therefore the replacement time of 5 years is too long and must be limited to max. 3 years.

INSTRUCTIONS : 1a) Dismount the propellershaft 4M24, inspect for cracks.
1b) If no cracks have been found, the shaft must be remachined by a qualified workshop licensed for this kind of metal work.
1c) If cracks have been found a new shaft must be installed.
2. Modification of screwed connection of rear propeller mounting plate.
For instructions 1 and 2 follow the working instruction no.1 for TN 826/25.
3. Exchange of the fuel hoses at the engine (see maintenance manual DG-400 sect. 3.4.3 issued August 1991 TN 826/24) if the hoses are in service for more then 3 years.

MATERIAL : Working instruction no. 1 for TN 826/25
2 bolts 4M31/1
2 bushes 4M31/3
4 half-bushes 4M31/4
if necessary:
service kit fuel lines at the engine
1 propeller shaft 4M24

WEIGHT AND BALANCE : /

REMARKS : Instructions are to be executed by the manufacturer or by a licensed workshop and to be inspected and entered in the aircraft logs by a licensed inspector.

Bruchsal 4, date Aug.2.1991

LBA - approved:

The German original of this TN has been approved by the LBA under the date of 91/08/12 and is signed by Mr. Fendt. *Fendt*
The translation into English has been done by best knowledge and judgement. In any case of doubt the German original is authoritative.

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 LBA anerkannter Luftfahrttechnischer Betrieb II A 279

Working Instruction no.1
 for TN 826/25

Numbering of parts see drawing 1 for TN 826/25.

1. Extend the engine, then switch off the main switch.
2. Dismount the carburettor cover, therefore remove the 2 screws (10). Protect the carburettor intake from dirt etc..
3. Remove propeller, toothed belt and propellershaft 4M24 according to maintenance manual sect. 4.1.1 - 4.1.3.
4. Remove the pulley from the propellershaft according to maintenance manual sect. 4.2.1 - 4.2.5.
The ball bearings may remain on the shaft.
- 5a) Execute an inspection for cracks of the propellershaft 4M24 at the intersection of the 40mm (1.57in) diameter shaft to the eccentric.
Crack-inspection must be done with a dye penetration method, approved by MIL I-25135C e.g. MET-L-CHEK. *by a qualified person.*
- b) If no cracks can be detected, the shaft can be remachined according to detail A on drawing 4M24 by a qualified workshop licensed for this kind of metal work
After remachining another inspection for cracks is necessary.
- c) If cracks are detected a new shaft must be installed.
6. Dismount the spring at the exhaust manifold.
7. Dismount the lower mounting bolts (4) of the rear propeller-mounting plate 4M3.
8. Take off rear propeller mounting plate 4M3 with the exhaust muffler.
It is not necessary to dismount the muffler from the plate 4M3. You need only to bend forward the front propeller mounting plate 4M2.
9. Dismount the front mounting bolt of the startermotor (5).
10. Remove rear mounting blocks 4M5 together with the starter motor, therefore remove the bolts 4M31/1, the washers 4M31/2 and the spring washers 12 DIN 7980. These parts will not be used for reassembly.
During reassembly the modification item 12 must be executed.
11. Prior to reassembly clean all parts with acetone and remove remains of Loctite from all threads. During reassembly secure all screwed connections with Loctite 72 b except for securing bolt (1) and slotted nut (2).
All bolts secured with Loctite should be marked with red securing paint.



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Working Instruction no.1
 for TN 826/25

12. Mount the blocks 4M5 according to drawing 4M3 to the engine. Therefore recut the threads in the engine and check the contact surface between engine and 4M5 evenness. To prevent turning of the bushes 4M31/3 place thin sheet metal between the flat sides of the bushes and the startermotor. Remove these sheet metal plates after tightening 4M31/3. Make sure, that parts 4M5 and 4M31/3 don't touch the starter motor. The tightening torque for bolts 4M31/1 is increased to 70 Nm (52 ft lb). Tighten precisely to this value. After 10 minutes (Loctite not cured) tighten again with the same value.
13. Reassemble front starter motor mounting bolt.
14. Mount the rear propeller mounting plate 4M3 with the exhaust muffler. Place the muffler into the exhaust manifold. Position the plate 4M3 correctly and fix it with the bolts (4) to the blocks 4M5. Place a washer 10.5 DIN 125 underneath the bolt heads. Fix the spring from muffler to manifold. Install propellershaft with pulley. Mount the part 4M1/2 (3), springwasher 4M27 and slotted nut (2). Further work see section 4.1 maintenance manual "Mounting and tensioning of the drive belt".
15. Mount the carburettor cover again to part 4M4 and 4M5 with the bolts (10) and washers 5.3 DIN 125.

Tightening torques

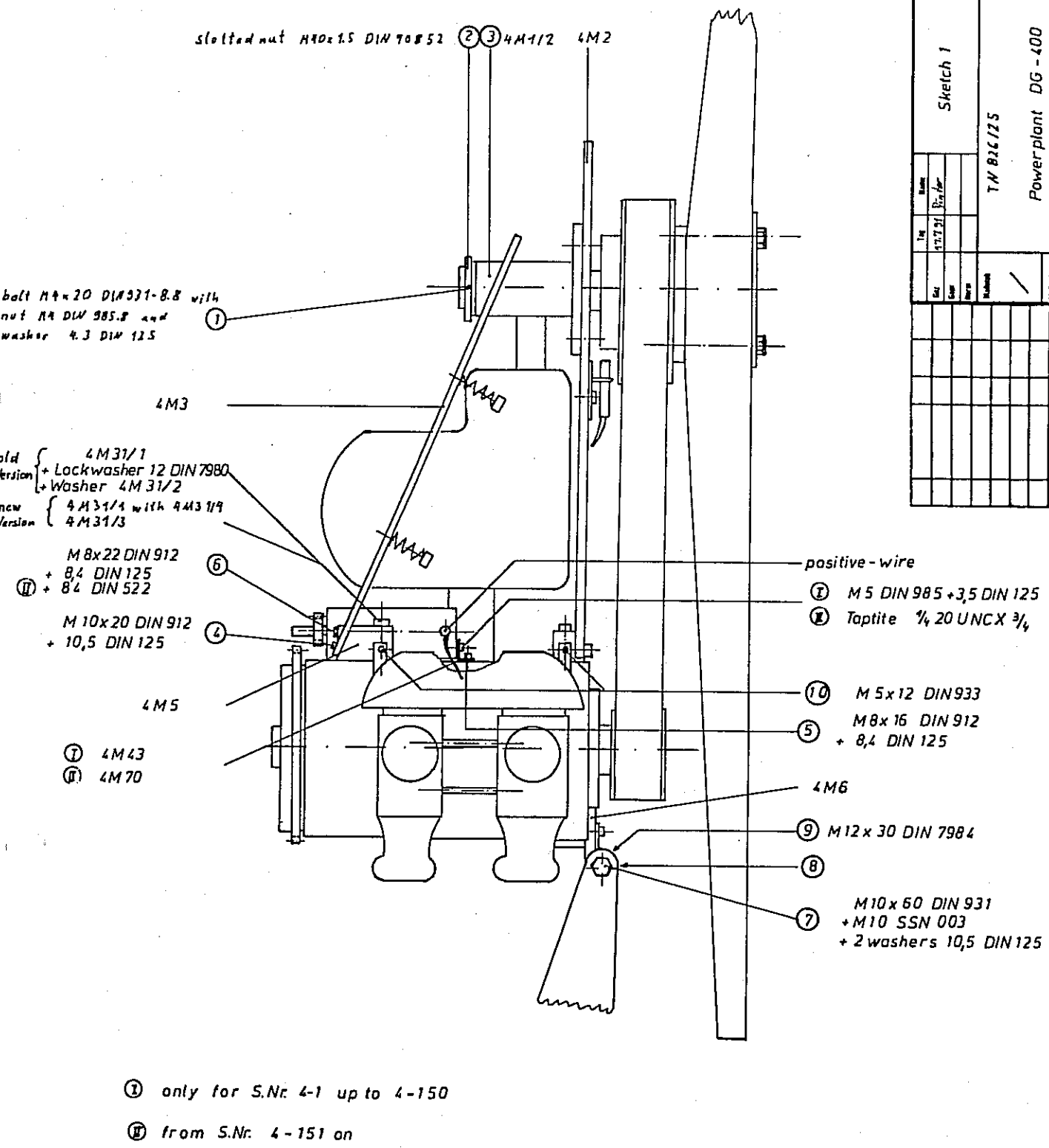
M12 bolts 4M31/1	70 Nm (52 ft lb)
M12 -----	50 Nm (37 ft lb)
M10 -----	40 Nm (30 ft lb)
M 8 -----	24 Nm (18 ft lb)
M 6 -----	10 Nm (7,5 ft lb)

Securing

Secure all screwed connections with Loctite 72 b except for those secured by selflocking nuts. All bolts secured with Loctite are to be marked with red securing paint.

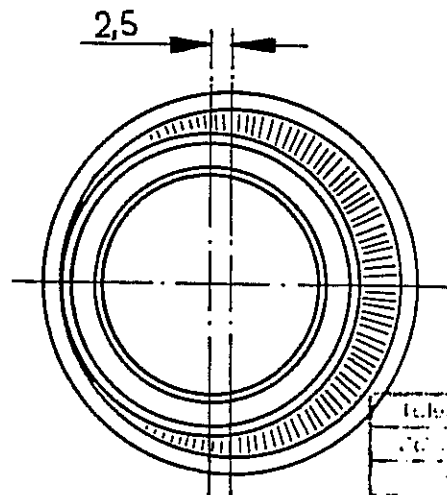
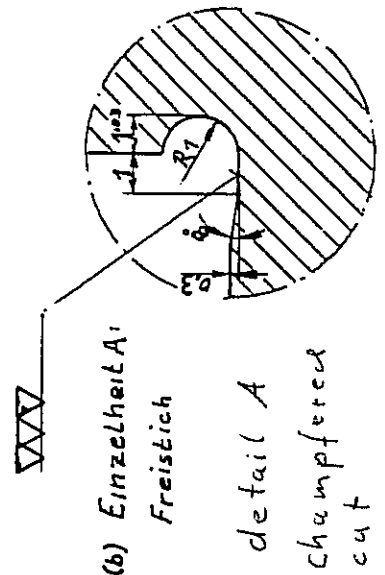
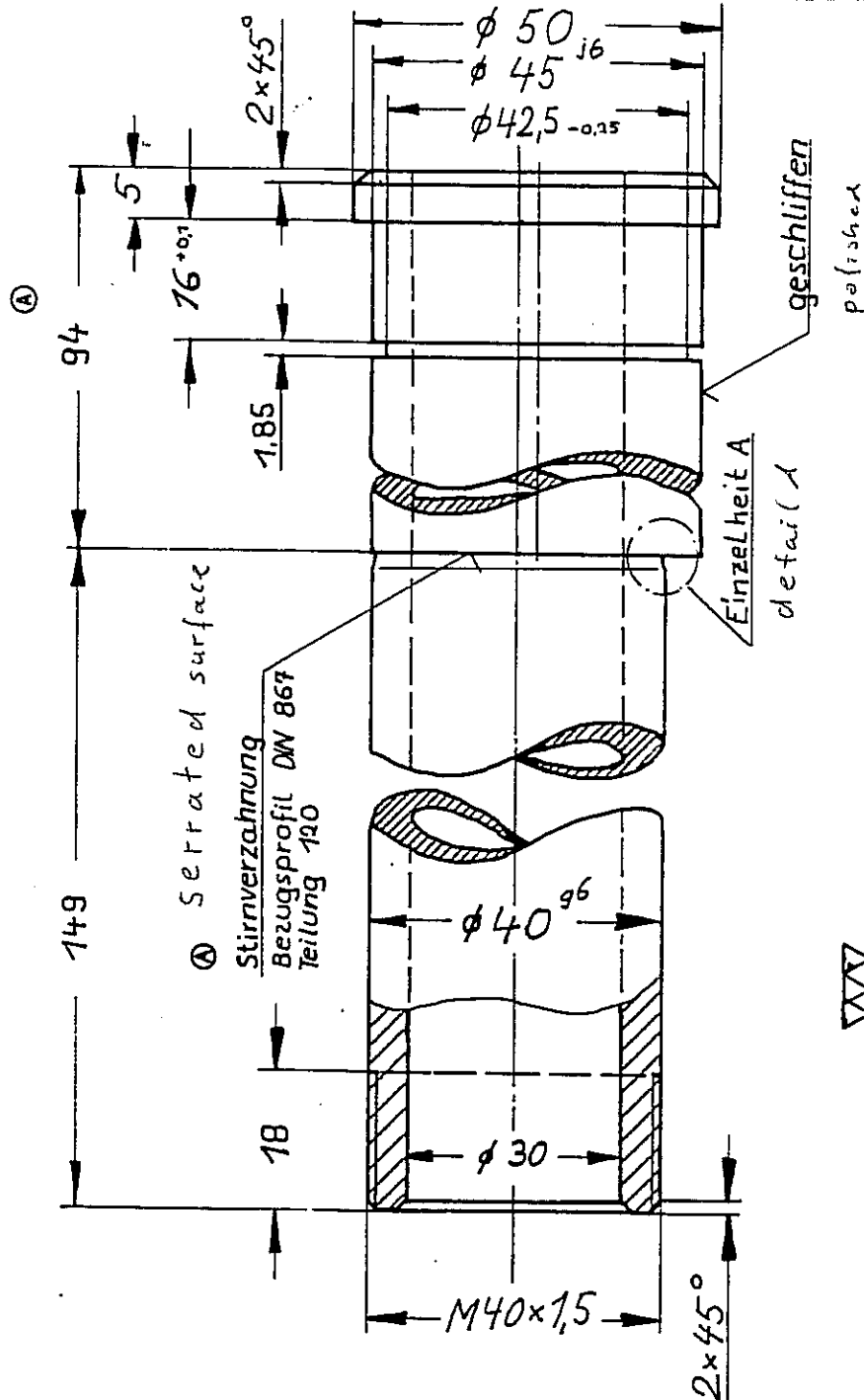
Enclosures: Drawing 4M24
 Drawing 4M31
 Drawing 1 for TN 826/25

Sketch 1		TN 826125		Powerplant DG - 400			
Tag	Rev.	Rev.	Rev.	Rev.	Rev.	Rev.	Rev.
12.7.21							
Gez.	Gez.	Gez.	Gez.	Gez.	Gez.	Gez.	Gez.



BG-400
TM 826-25

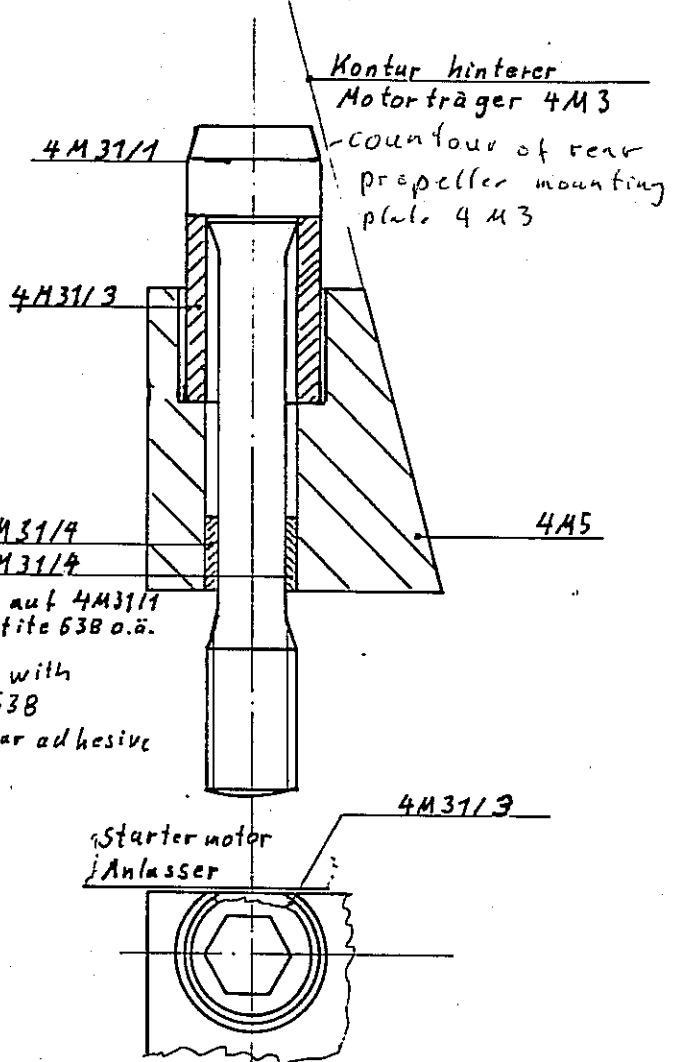
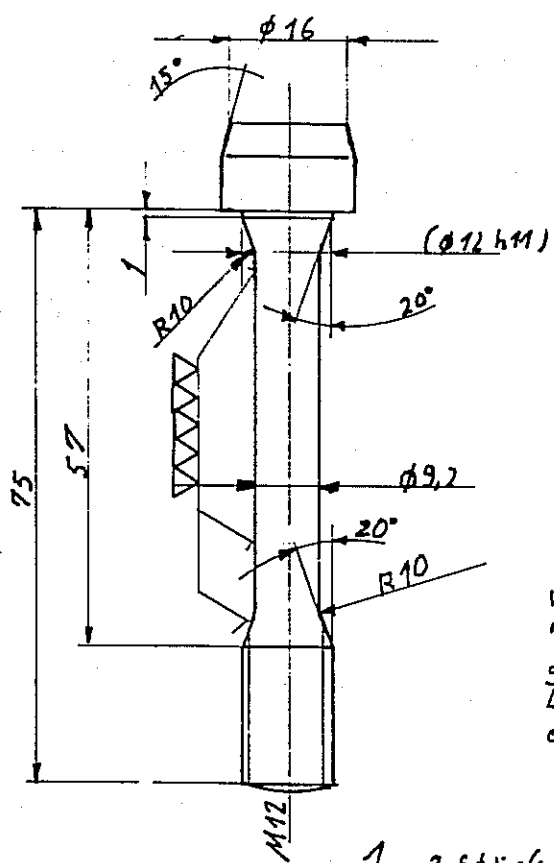
4M 24



(b)	Freistich	28.6.91	Lamp
(A)	Maße	26.11.82	Pl.
	Stirnverzahnung	26.11.82	Pl.
Ausg.	Änderung		3m8

Toleranzen nach	Arbeitsverfahren	ISO
Größen nach	Arbeitsverfahren	ISO
Material:	42CrMo4	

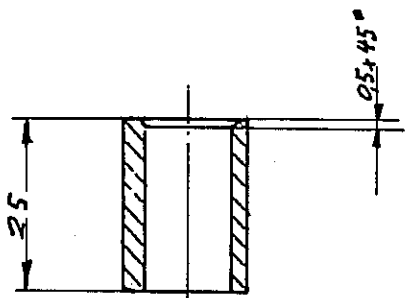
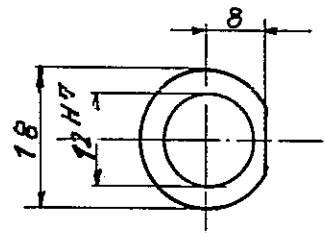
propellerschaft
Propellerwelle



Verklebt auf 4M31/1 mit Loctite 638 o.ä.
glued on with Loctite 638 or similar adhesive

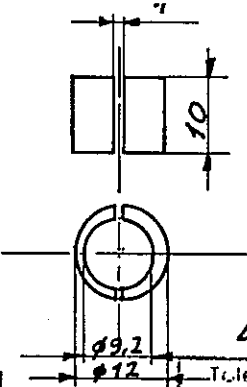
1 2 Stück

Toleranzen nach Arbeitsanweisung BA 1
Schweißen nach Arbeitsanweisung SA 1
Oberflächenschutz: /
Werkstoff: Schraube M12 x 30 DW 512 10.9



3 2 Stück

Toleranzen nach Arbeitsanweisung BA 1
Schweißen nach Arbeitsanweisung SA 1
Oberflächenschutz: /
Werkstoff: 42CrMo4



4 2x2 Halves

Toleranzen nach Arbeitsanweisung BA 1
Schweißen nach Arbeitsanweisung SA 1
Oberflächenschutz: /
Werkstoff: Al Cu Mg Pb F38 $\phi 12$

					Tag	Name	DG-400 TN 826-25	Glaser-Dirks Flugzeugbau GmbH 7520 Bruchsal 4 Im Schöllengarten 19-20
					Gez.	25.6.91 W. Dirks		
					Gepr.			
					Norm.			
					Maßstab	1:1	Verschraubung hintere Propellerträgerplatte 1 Dehnschraube tapered bolt	 4M31
					Maße ohne Toleranzang. nach:	3 Hülse buch 4 Zentrierhülse - Halbschalen halves	screwed joint of rear propeller mounting plate	
Ausg.	Änderung	AM	Tag	Name				

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 LBA anerkannter Luftfahrttechnischer Betrieb für die IB CS

TN 826/25

Anlage 10/4

Type: DG-400

1. DESCRIPTION OF UNSAFE CONDITION: Vibration damage
 at the powerplant.
 a) propellerschaft
 b) screwed connection of rear propeller mounting plate
2. PROBABLE CONSEQUENCE, IF UNSAFE CONDITION IS NOT RECTIFIED:
 complete loss of engine power, damage to other parts of the
 powerplant, damage to the wings
3. IS CONDITION LIKELY TO EXIST IN OTHER PRODUCTS OF THE SAME TYPE?
 YES or NO:
 all DG-400
4. SERIAL NUMBER APPLICABILITY:
 all ser. no.'s
5. DIFFERENCES BETWEEN FCAA A.D. AND SERVICE BULLETIN, IF ANY?
 /
6. BASIS OF SERVICE LIFE OF LIFE LIMITED PARTS (e.g. service
 experience, test or analysis):
 /
7. BASIS OF INSPECTION TIMES:
 /
8. AVAILABILITY OF REPLACEMENT PARTS:
 Glaser-Dirks Flugzeugbau GmbH
9. COMPATIBILITY OF MODIFICATION WITH OTHER AIRPLANE COMPONENTS:
 none
10. NUMBER OF SIMILAR INCIDENTS/REPORTS:
 1a) 2 incidents
 1b) 4 incidents
11. APPROXIMATE COST TO ACCOMPLISH MODIFICATION/INSPECTION:
 Material DM 162,00 up to DM 489,00
 Labour appr. 6 hours