

MANDATORY SERVICE BULLETIN

NO. MSB 20-049
NO. MSB 22-004

I. TECHNICAL DETAILS

1.1 Category

Mandatory.

1.2 Airplanes affected

Type: DV 20 / DV22
Serial numbers: all DV 20 / DV22

1.3 Time of Compliance

Within the next 100 hours of operation, but not later than 31-Dec-2005

1.4 Subject

Safety Lock for Canopy

ATA-Code: 52-00

1.5 Reason

During operation of the airplane, a canopy opened in flight presumably due to mis-operation. To give the operator an additional and cabin lock independent safety device to avoid dangerous flight states with an open canopy as a result of mis-operation, Diamond Aircraft Industries issued this Mandatory Service Bulletin.

1.6 Concurrent documents

MÄM 20-257, latest revision

1.7 Approval

The technical information or instructions contained in this document relate to the Mandatory Design Change Advisory No. MÄM 20-257 which has been approved under the authority of EASA Design Organization Approval no. EASA.21J.052.

The technical content in this document has been approved under the authority of EASA DOA No. EASA.21J.052.

1.8 Accomplishment/Instructions

Installation of the Canopy Safety Lock in accordance with the instructions given in the Work Instruction WI-MSB20-049.

Incorporate Temporary Revision /Temporäre Revision TR MÄM-20-257 into Airplane Flight Manual.

Work Instruction No. WI-MSB20-049 and Temporary Revision /Temporäre Revision TR MÄM-20-257 must be complied with.

Terminate Action:

If MSB20-049 is carried out, the lock wire installed into the LH and RH cover of the locking mechanism, prescribed in Work Instruction No. WI-MSB20-39, is no longer necessary.

1.9 Mass (Weight) and CG

Change in mass and cg is negligible.

II. PLANNING INFORMATION

2.1 Material & Availability

Materials are available from Diamond Aircraft Industries.

2.2 Special Tools

none

2.3 Labor effort

Overall work: 1 man hour

2.4 Credit

none *)

*) This kit is offered however to the customer for the prime costs of Diamond Aircraft Industries.

2.5 Reference documents

DV 20 Series Airplane Maintenance Manual, Doc. No. 4.02.02, always latest revision.

III. REMARKS

1. All measures must be carried out by the manufacturer, a certified aircraft service station or a certified aircraft maintenance mechanic.
2. Accomplishment of the measures must be confirmed in the log book.
3. In case of any doubt, contact Diamond Aircraft Industries.

WORK INSTRUCTION

WI-MSB 20-049

WI-MSB 22-004

„INSTALLATION OF CANOPY SAFETY LOCK“

I. GENERAL INFORMATION

1.1 Subject:

The mandatory installation of a Canopy Safety Lock

1.2 Reference Documents:

Diamond Aircraft DV 20 Airplane Maintenance Manual, Doc. No. 4.02.02, latest effective issue.

1.3 Remarks:

- a) The work must be carried out by a certified aircraft service station or a certified aircraft maintenance mechanic. In case of doubt, contact Diamond Aircraft.
- b) All works, particular those that are not especially described in this work instruction, have to be carried out in accordance with the referenced maintenance manual issue.

II. DRAWINGS, SPECIAL TOOLS & MATERIAL

2.1 Drawings:

DV2-5221-01-00 Canopy Safety Lock Assembly (Kabinenhaubensicherung ZSB)
or D20-5200-64-00

DV2-5221-00-00 Installation of Canopy Safety Lock (Kabinenhaubensicherung Einbau)
or D20-5200-00-00

2.2 Special Tools:

none

2.3 Material:

All required Materials are available from Diamond Aircraft Industries

<u>Qty</u>	<u>Description</u>	<u>Part Number</u>
1	MSB-20-049-Kit:	
1	Canopy Safety Lock Assembly	DV2-5221-01-00 or D20-5200-64-00
1	Locking Plate	DV2-5221-00-01 or D20-5200-00-04
1	Placard outside LH	DV2-1123-20-02
1	Placard inside RH	DV2-1124-20-02
1	Placard inside LH	DV2-1133-20-02
1	Placard outside RH	DV2-1134-20-02
2	Hexagon Screw M6 x 18	LN9037-06018 or LN 9037-06024
2	Washer M6	DIN6797-AM6-ZP or DIN6797A-6-ZP
1	Screw M5 x 10	DIN965-AM5x10-A2 or DIN965-M5x10-A2

III. INSTRUCTIONS

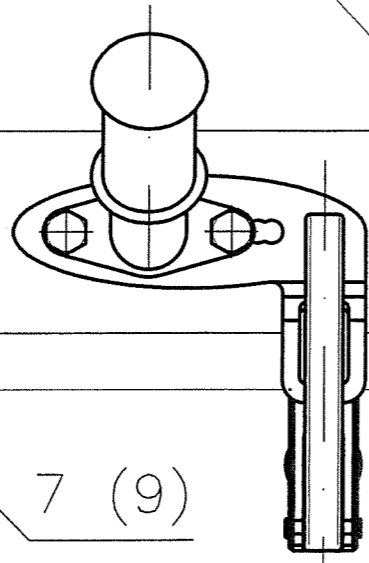
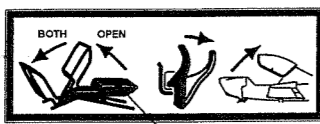
1	Remove grip on LH side of the Canopy.
2	<p>Install Locking Plate and grip (refer to drawing DV2-5221-00-00 or D20-5200-00-00)</p> <p>NOTE: The locking plate has four positions to install, use most forward possible position. Locking Plate must not interfere with instrument panel. If the locking plate contacts the instrument panel, use next position behind, until the clearance between the locking plate and the instrument panel is sufficient.</p> <p>Use new (longer) screws and new washers.</p>
3	Mark center of the cutout in the Locking Plate and transmit it to the outside of the fuselage.
4	Mark Position of Push-button and screw on the outside of the fuselage according to drawing DV2-5221-00-00 or D20-5200-00-00.
5	Pre-drill hole (d 10 mm = 0.39 in) for the push button.
6	Remove item 6 (Guide sleeve) of Canopy Safety Lock. (refer to drawing DV2-5221-01-00 or D20-5200-64-00)
7	Position Canopy Safety Lock Assembly and mark cut out on the interior inside.
8	Remove Canopy Safety Lock Assembly and cut out interior on marked position.
9	Measure the thickness of the fuselage in the pre-drilled hole for the push-button.
10	Mark hole for the fixing screw on the fuselage. Thickness of the fuselage + 27 mm (1.06 in) from the outside edge of the fuselage
11	Pre-drill hole for the fixing screw (d 3.0mm = 0.12 in)
12	Position Canopy Safety Lock again and check correct position of pre-drilled holes.
13	Remove Canopy Safety Lock.
14	Drill up hole for fixing screw (d 5.1 mm = 0.20 in) according to drawing DV2-5221-00-00 or D20-5200-00-00
15	Drill up hole for Push-button (d 14.0 mm = 0.55 in)
16	Install Canopy Safety Lock with fixing screw and Guide Sleeve.
17	Install Placards (refer to drawing DV2-5221-00-00 or D20-5200-00-00)
18	Do a functional test of the Canopy Safety Lock.
19	Make entries as necessary in aircraft records.

8 7 6 5 4 3 2 1

Ansicht innen:

M1:2

Instrumentenbrett

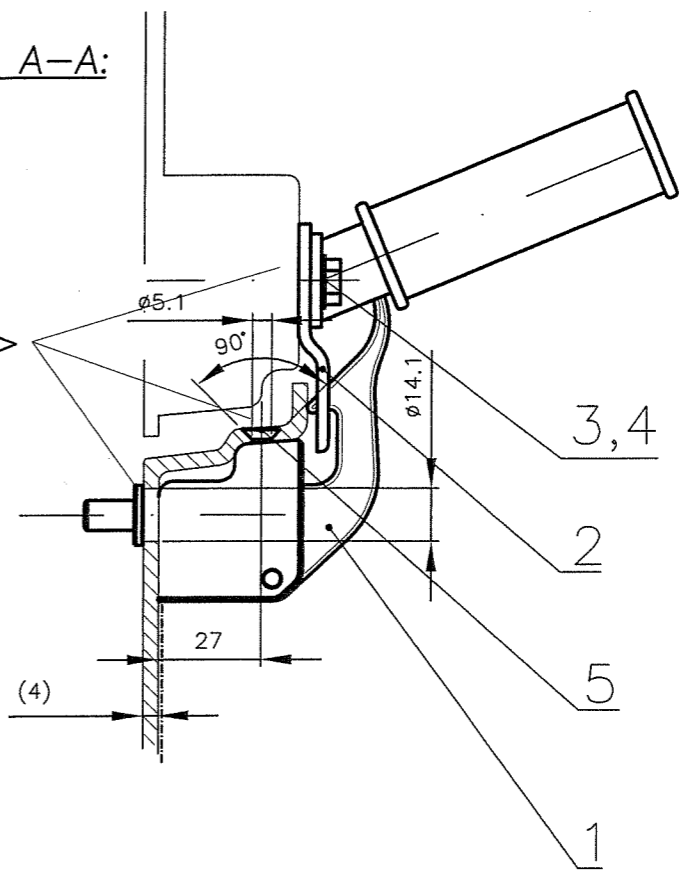
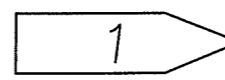


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Schnitt A-A:

M1:2



3,4

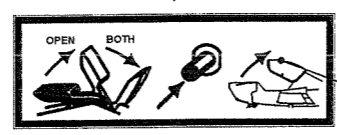
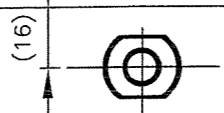
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Ansicht außen:

M1:2



6 (8)

Hinweis zur Fertigung:

1 Gewinde mit Loctite-Schraubensicherungslack sichern!

Pos.	Stk. L	Stk. R	Teile Nr.:	Benennung	Orientierung/Abmessungen	Lieferant/Bemerkung
9	-	1	DV2-1124-20-02	Placard inside RH		
8	-	1	DV2-1134-20-02	Placard outside RH		
7	1	-	DV2-1133-20-02	Placard inside LH		
6	1	-	DV2-1123-20-02	Placard outside LH		
5	1	-	DIN965-AN5x10-A2	Senkkopfschraube		
4	2	-	LN9037-06018	Sechskantschraube		
3	2	-	DIN6797-AM6-ZP	Sicherungsscheibe		
2	1	-	DV2-5221-00-01	Verriegelungsblech		
1	1	-	DV2-5221-01-00	Kabinenhaubensicherung ZSB		

DIESE UNTERLAGE IST UNSER GEISTIGES EIGENTUM UND DARF OHNE UNSERE AUSDRUECKLICHE GENEHMIGUNG WEDER VERVIELFAELTIGT NOCH DRITTEN PERSONEN UEBERLASSEN WERDEN! UEBERTRETUNGEN UNTERLIEGEN DER VERFOLGUNG NACH DEM URHEBERRECHT.
DIAMOND AIRCRAFT INDUSTRIES GmbH

Freimass-toleranzen :
DIN 7168 m
ISO 2768 m
OeN M 1365 m

Masstab : 1:2
Benennung : **Kabinenhaubensicherung Einbau**

Diamond
AIRCRAFT
Industries GmbH
A-2700 Wiener Neustadt, N. A. Otto-Str. 5

05	Datum	Name
Bearb.	11.07	Grabner
Gepr.	11.07	M.A.
Nächster Zusammenbau:		
-		

DV 20

Zeichnungs Nr.: DV2-5221-00-00 Blatt 1 BI

Zust. MÄM 20-257 11.07.05 TG Files:\DV20\DV20.DWG\5221\DV2-5221-00-00.dwg Ers. fuer :

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F

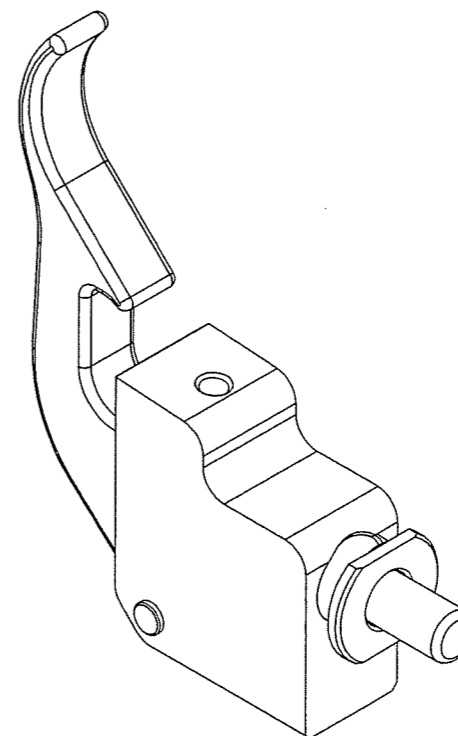
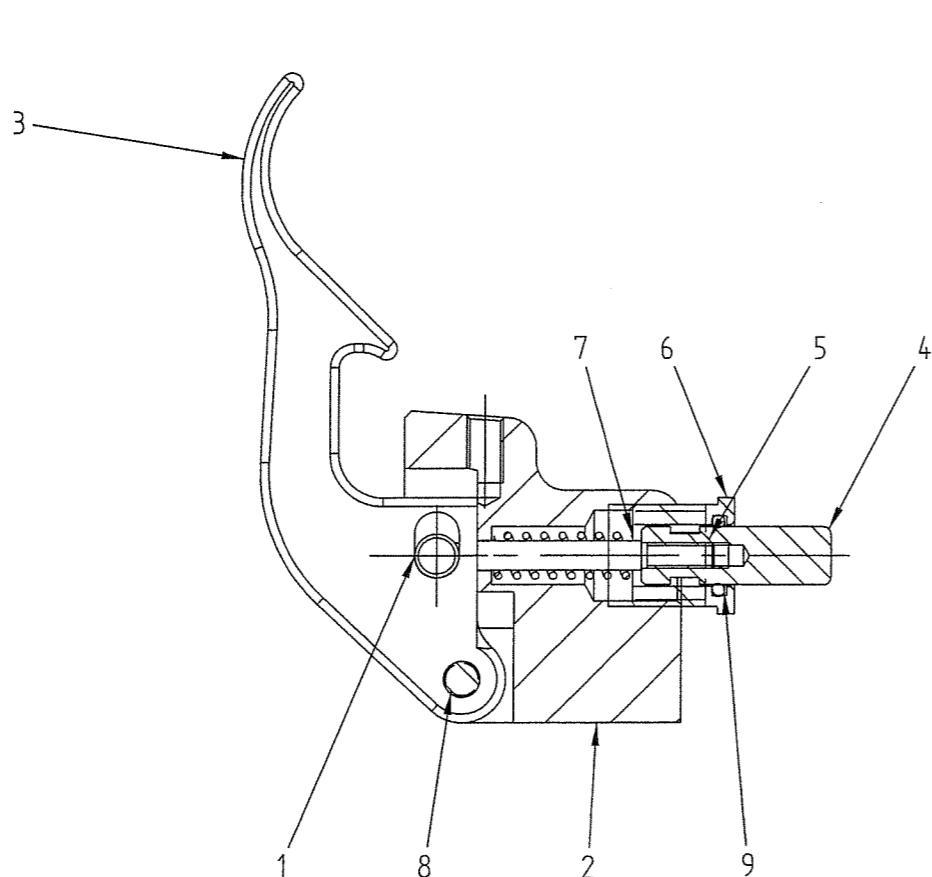
E

D

C

B

A



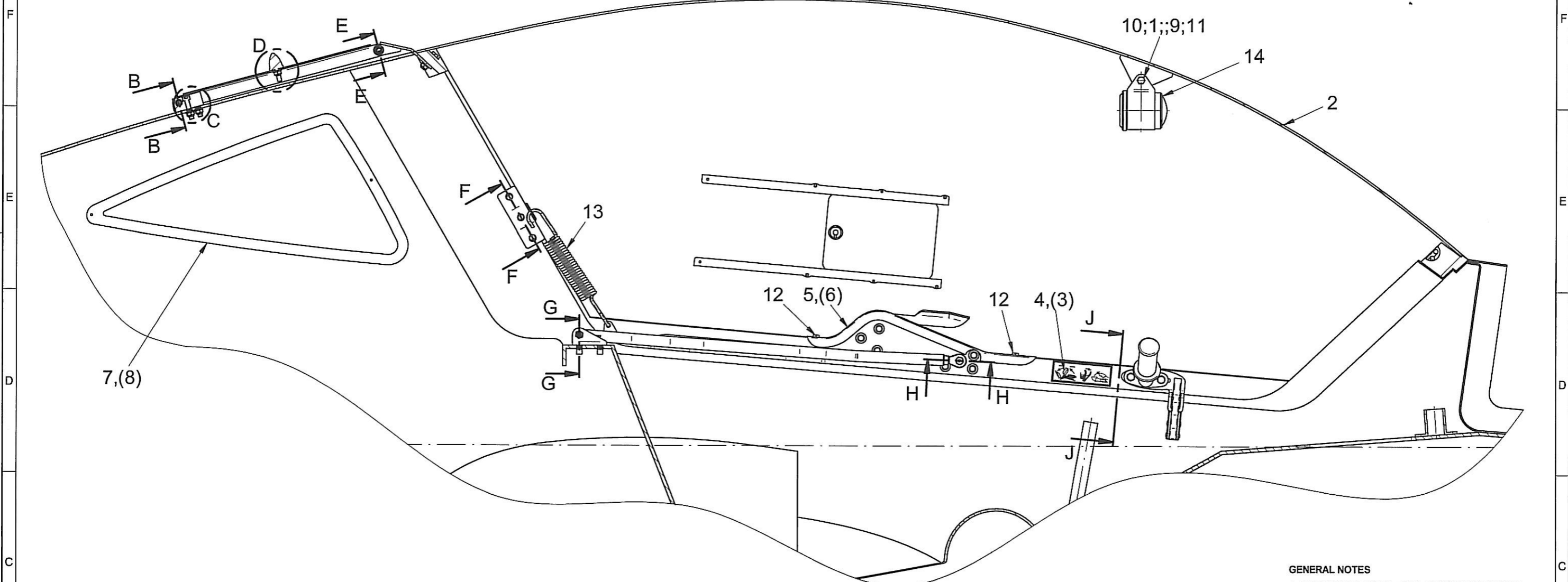
9	1	DIN 3771 d7,66 x 1,78	O-Ring			3
8	1	DIN 1472 d5/20	Passkerbstift		Bossard	3
7	1	D21930	Druckfeder		Febrotec	3
6	1	DV2-5221-01-32	Führungshülse	d 20		1
5	1	DV2-5221-01-31	Gewindestange	d 4		1
4	1	DV2-5221-01-30	Druckknopf	d 8		1
3	1	DV2-5221-01-02	Verriegelungshaken	10 dick		1
2	1	DV2-5221-01-01	Montageblock	18 dick		1
1	1	D41-5211-60-31_2	Bolzen	d 6,0		1
Pos.	Stk.	Zeichnung Nr./Teile Nr.:	Benennung	Orientierung/Abmessung	Lieferant/Bemerkung	

Freigabe: M. Reichel Datum: 12 JULI 2005 Name:		Geprüft: M. Volck Datum: 1 JULI 2005 Name:		Freimaßtoleranz: ISO 2768 mittel		Maßstab: 1:1
Nächster Zusammenbau: DV2-5221-00-00		Benennung: Kabinenhaubensicherung ZSB				
Name: M. Reichel Datum: 12 JULI 2005				Name:		
"a" MAM 20-257		Datum: 15.06.05		Name: t.grabner		Blatt 1 von 1
Rev. Änderung		Datum		Name		Gespeichert unter: DV2-5221-01-00a.asm
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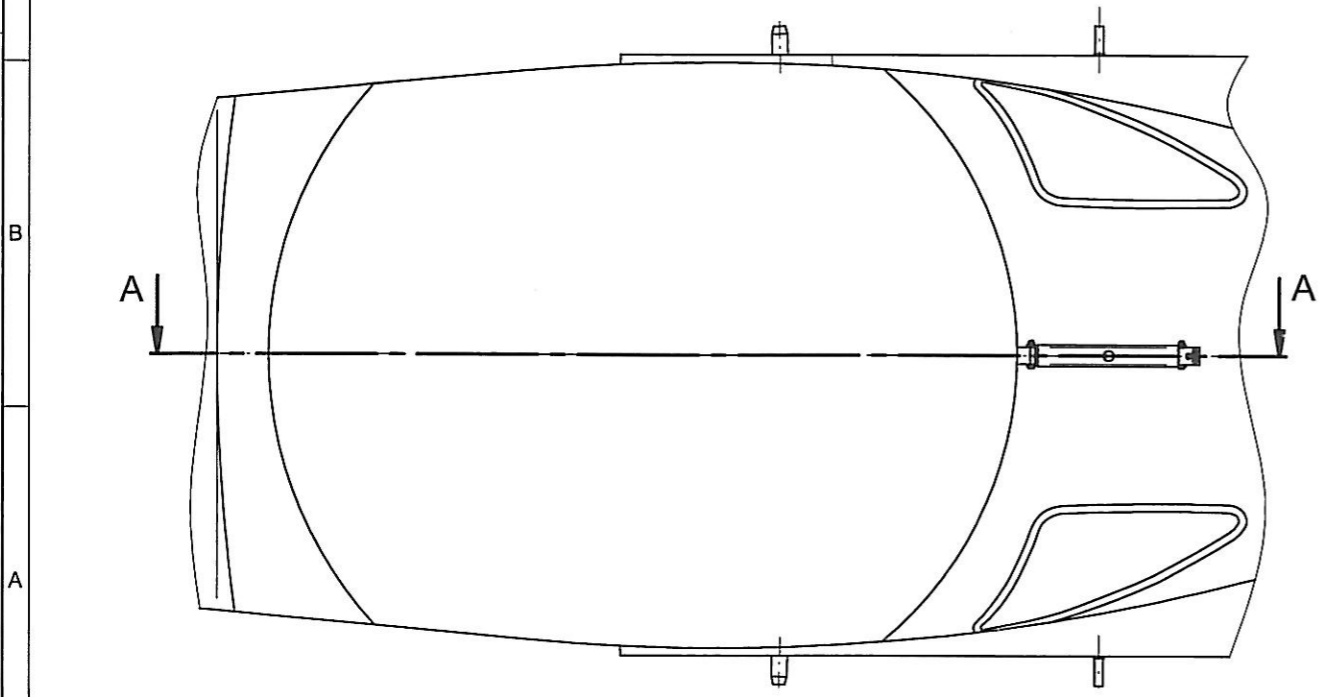
DIESE UNTERLAGE IST UNSER GEISTIGES EIGENTUM UND DARF OHNE UNSERE AUSDRÜCKLICHE GENEHMIGUNG ÜBER KEINWEILIG NICHT DRITTEN PERSONEN ÜBERLASSEN WERDEN. DIE VERLEHUNG DIESER BEDINGUNGEN WIRD ALS VERLEHUNG NACH DEM URHEBERRECHT, DANKO AIRCRAFT INDUSTRIES GmbH

SECTION A-A
1:4

REVISION					
REV	SH	ZONE	DESCRIPTION	DATE	APPROVAL
-	01	ALL	MÄM 20-327 NEW DRAWING, SUPERSEDES DV2-5221-00-00 (LAST VALID REV.)	10.03.10	SEE TB



GENERAL NOTES
 1. PROCESSING OF PLEXIGLASS ACCORDING TO
 DPS 13 CHAPTER 2
 2. PRODUCED ACCORDING TO DPS 12 CHAPTER 6



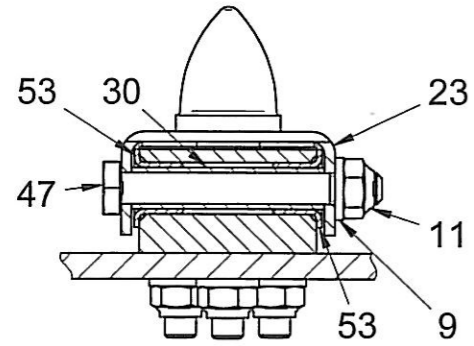
ITEM	QTY	PART NUMBER	DESCRIPTION	MATERIAL TYPE	H.T.	MATERIAL SIZE	SPECIFICATION	REMARK
14	2	C2300	AIRPATH COMPASS				NAV. NO. N000039	
13	2	3541-ZF040	TENSION SPRING			D4xDA21,5x200	NAV. NO. N000019	FA. TMEJ
12	4	DIN 7981-ST3,9x9,5-C-H-A2	PAN HEAD SELF TAPPING SCREW					
11	7	DIN 985-M6-A2	HEXAGON NUT					
10	1	DIN 933-M6x40-A2	HEXAGON SCREW					
9	17	DIN 125-6,4-A2	WASHER					
8	1	TC1-5620-02-01	REAR WINDOW RH					
7	1	TC1-5620-01-01	REAR WINDOW LH					
6	1	TC1-5200-42-00	CANOPY FRAME COVER MIDDLE RH					
5	1	TC1-5200-41-00	CANOPY FRAME COVER MIDDLE LH					
4	1	DV2-1133-20-02	PLACARD INSIDE LH					
3	1	DV2-1124-20-02	PLACARD INSIDE RH					
2	1	D20-5210-00-00	CANOPY ASSY					
1	1	B20-3900-02-04	COMPASS CLAMP					

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 OR DISCLOSED TO THIRD PARTIES WITHOUT THE PRIOR WRITTEN CONSENT OF
 DIAMOND AIRCRAFT INDUSTRIES

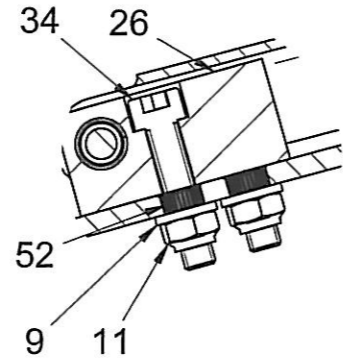
DIMENSIONS METRIC FIRST ANGLE PROJECTION UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM DIMENSION TOLERANCES 2 DECIMAL ±0,25 1 DECIMAL ±0,5 DECIMAL ±1 ANGLE ±1° RAD ±0,5		IDENTIFICATION MARKINGS DE-S-10-00003 CLASSIFICATION: NONE INTERCHANGEABLE PART NO THIS DRAWING WAS PRODUCED USING SOFTWARE: SOLID EDGE V18 FILENAME D20-5200-00-00.dft		Diamond Aircraft Industries N. A. Otto-Straße 5 A-2700 Wiener Neustadt	
DEPARTMENT: Trimmel DRAWN: Volck CHECKED: Volck QA: N/A STRESS: N/A MANUF.: N/A SYSTEM: N/A APPROVED: Jütte		SIGN: <i>[Signature]</i> DATE: 5 July 2010 PROJECT: DV 20 TITLE: CANOPY INSTALLATION DWG. ORIG.: DAIA DWG. NO.: D20-5200-00-00 CODE: 710197		SPECIFICATION: NAV. NO. N000039 REMARK: FA. TMEJ REV: .. SCALE: 1:10 SH: 01 OF 02	

REVISION					
REV	SH	ZONE	DESCRIPTION	DATE	APPROVAL
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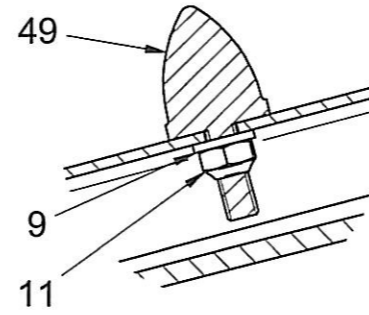
SECTION B-B



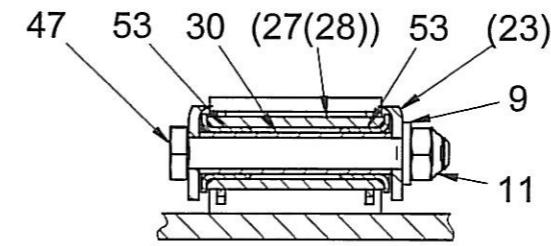
DETAIL C



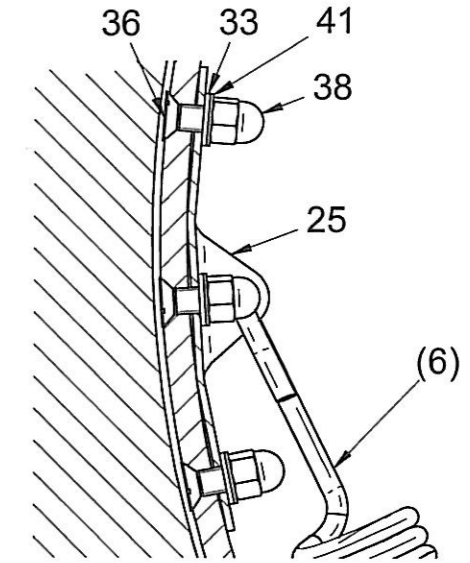
DETAIL D



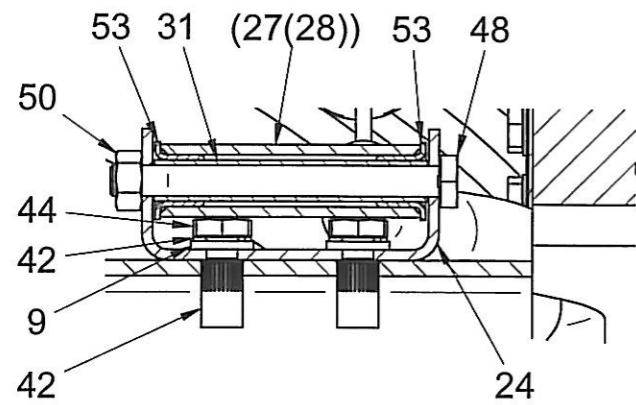
SECTION E-E



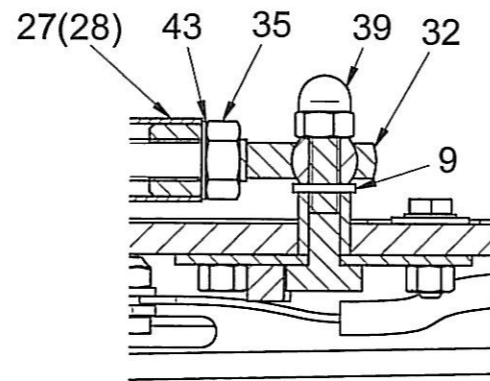
SECTION F-F



SECTION G-G

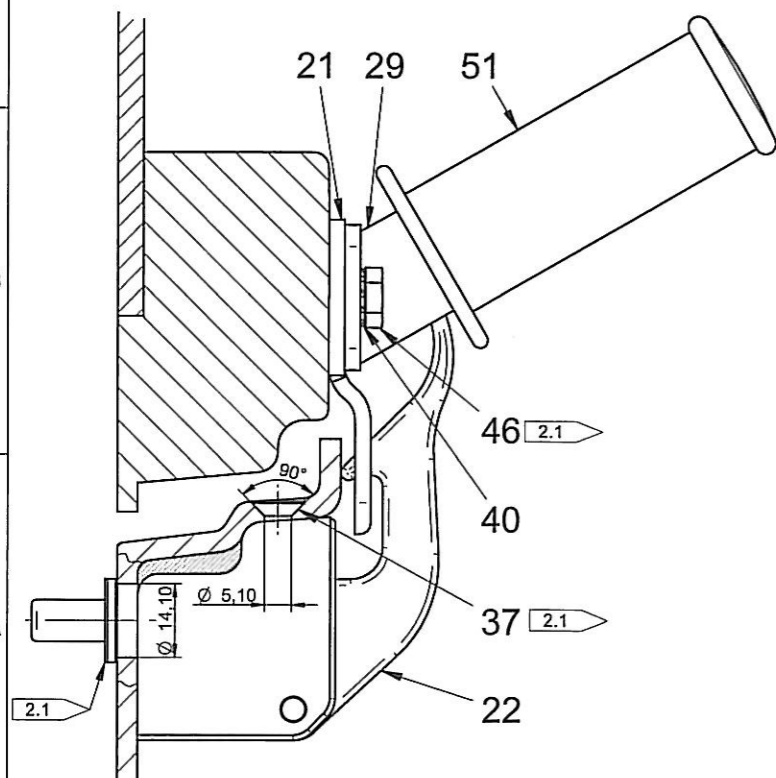


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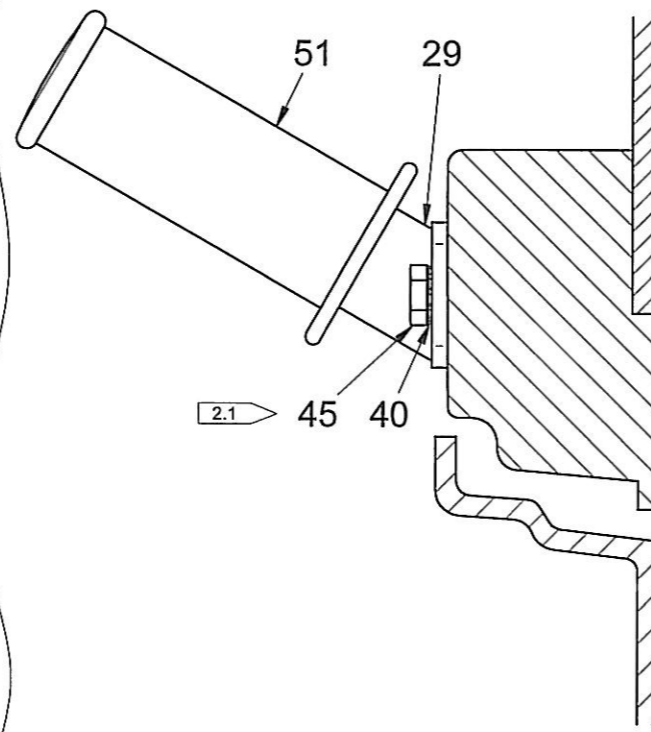


FLAG NOTES
2.1 APPLY WITH LOCTITE 243

SECTION J-J LH



SECTION J-J RH

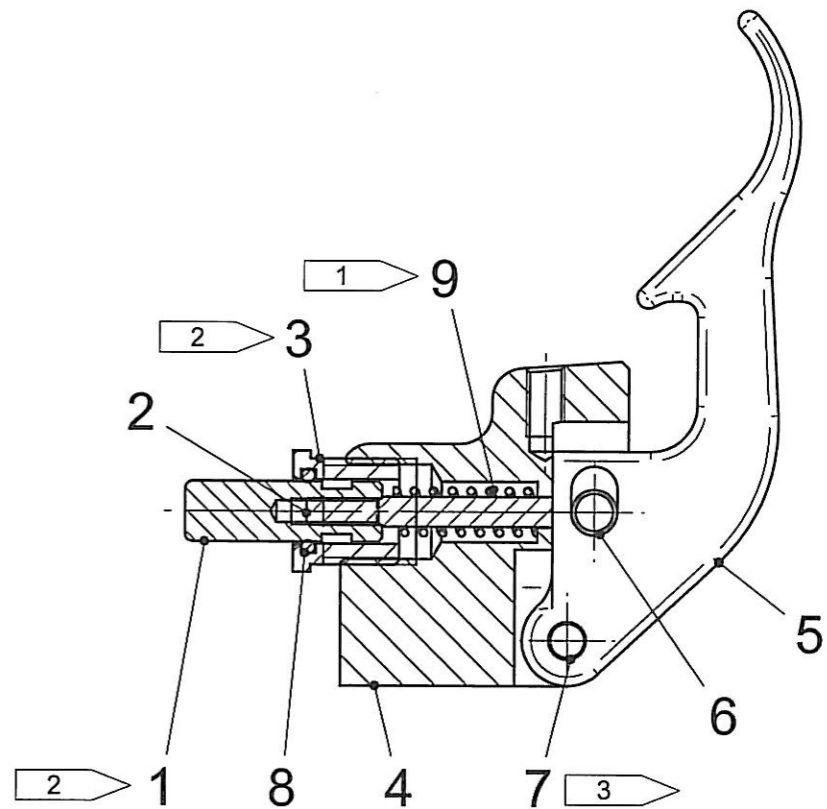


ITEM	QTY	PART NUMBER	DESCRIPTION	MATERIAL TYPE	H.T.	MATERIAL SIZE	SPECIFICATION	REMARK
53	8	PAF 08095 P11	COLLAR BUSH					FA. INA
52	11	M6 POLY R ST	PRESS NUT					FA. KOENIG
51	2	850-10.2	CANOPY HANDLE (RUBBER)					FA. ZIMMER JOSEF
50	1	BN 175-M6-ZP	HEXAGON NUT					
49	1	12.2010.2003	BUFFER					
48	2	LN 9037-M6x62	HEXAGON SCREW			M6xD20x24	DIN 95364 F	FA. ANGST & PFISTER
47	2	LN 9037-M6x50	HEXAGON SCREW					
46	2	LN 9037-M6x24	HEXAGON SCREW					
45	2	LN 9037-M6x16	HEXAGON SCREW					
44	8	LN 9037-M6x14	HEXAGON SCREW					
43	2	DIN 6797J-8,4-A2	LOCK WASHER					
42	8	DIN 6797J-6,4-A2	LOCK WASHER					
41	12	DIN 6797J-5,3-A2	LOCK WASHER					
40	4	DIN 6797A-6,4-ZP	LOCK WASHER					
39	2	DIN 1587-M6-A2	HEXAGON DOMED CAP NUT					
38	12	DIN 1587-M5-A2	HEXAGON DOMED CAP NUT					
37	1	DIN 965-M5x10-A2	COUNTERSUNK HEAD SCREW					
36	12	DIN 963-M5x16-YZP	COUNTERSUNK HEAD SCREW					
35	2	DIN 934-M8-A2	HEXAGON NUT					
34	3	DIN 912-M6x30-YZP	HEXAGON SOCKET HEAD CAP SCREW					
33	12	DIN 125A-5,3-A2	WASHER					
32	2	DAI-9027-00-01	BALL JOINT					
31	1	DS BU1-08-06-0524-C1	DS BUSHING VERSION 1					
30	2	DS BU1-08-06-0386-C1	DS BUSHING VERSION 1					
29	2	TC1-5200-63-00	CANOPY HANDLE ASSY					
28	1	TC1-5200-62-00	CANOPY SUPPORT LEVER ASSY RH					
27	1	TC1-5200-61-00	CANOPY SUPPORT LEVER ASSY LH					
26	1	TC1-5200-00-51	ALU BLOCK					
25	2	TC1-5200-00-03	SPRING MOUNTING SHEET					
24	2	TC1-5220-00-02	BEARING BLOCK FOR CANOPY LEVER					
23	1	TC1-5220-00-01	CANOPY CENTER ARM					
22	1	D20-5200-64-00	CANOPY LOCKING SAFETY DEVICE ASSY					
21	1	D20-5200-00-04	LOCKING PLATE					

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DIMENSIONS METRIC FIRST ANGLE PROJECTION UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM DIMENSION TOLERANCES 2 DECIMAL ±0,25 10 DECIMAL ±0,5 DECIMAL ±1 ANGLE ±1° RAD ±0,5		IDENTIFICATION MARKINGS DE-S-10-00003 CLASSIFICATION: NONE INTERCHANGEABLE PART NO THIS DRAWING WAS PRODUCED USING SOFTWARE: SOLID EDGE V18 FILENAME: D20-5200-00-00.dft		Diamond Aircraft Industries N. A. Otto-Straße 5 A-2700 Wiener Neustadt DEPARTMENT: Trimmel SIGN: [Signature] DATE: 5 July 2010 PROJECT: DV 20 TITLE: CANOPY INSTALLATION DWG. ORIG: DAIA DWG. NO: D20-5200-00-00 REV: ..	
APPROVED: Jütte DATE: 19.7.10		APPROVED: [Signature]		DWG. ORIG: DAIA DWG. NO: D20-5200-00-00 REV: .. CODE: 710197 SCALE: 1:1 SH: 02 OF 02	

REVISION					
REV	SH	ZONE	DESCRIPTION	DATE	APPROVAL
-	01	ALL	MÄM 20-327 NEW DRAWING, SUPERSEDES DV2-5221-01-00 (LAST VALID REV.) FIT, FORM AND FUNCTION ARE IDENTICAL WITH IT.	14.12.09	SEE TB

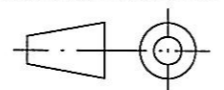



FLAG NOTES

- 1 GREASE WITH MOLYKOTE PASTE DX, WHITE
- 2 APPLY WITH LOCTITE 243
- 3 TURN CLOSE TOLERANCE GROOVED PIN TO $\varnothing 5 \pm 0/-0,1$ MM AT BEARING OF ITEM 5, THAT ON THE SIDE WITH THE GROOVE THERE ARE 5MM AND ON THE OPPOSITE SIDE THERE ARE 10MM UNMACHINED.

ITEM	QTY	PART NUMBER	DESCRIPTION	MATERIAL TYPE	H.T.	MATERIAL SIZE	SPECIFICATION	REMARK
9	1	D21930	PRESSURE SPRING					FEBROTEC
8	1	DIN 3771 d7,66 x 1,78	O-RING					
7	1	DIN 1472 d5/20	CLOSE TOLERANCE GROOVED PIN					
6	1	D41-5211-60-31_2	PIN	1.4305				
5	1	D20-5200-64-52	LOCKING LEVER	3.1355.51				
4	1	D20-5200-64-51	MOUNTING BLOCK	3.2315.72				
3	1	D20-5200-64-33	GUIDE BUSH	3.2315.72				
2	1	D20-5200-64-32	THREAD ROD	1.4301				
1	1	D20-5200-64-31	PUSH BUTTON	3.2315.72				

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DIMENSIONS METRIC FIRST ANGLE PROJECTION  UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM DIMENSION TOLERANCES 2 DECIMAL ±0,25 1 DECIMAL ±0,5 DECIMAL ±1 ANGLE ±1° RAD ±0,5 FINISH IN MICRO-METER 3.2		IDENTIFICATION MARKINGS DE-S-10-00003 CLASSIFICATION: NONE INTERCHANGEABLE PART YES THIS DRAWING WAS PRODUCED USING SOFTWARE: SOLID EDGE V18 FILENAME D20-5200-64-00.asm	 Diamond Aircraft Industries N. A. Otto-Straße 5 A-2700 Wiener Neustadt DEPARTMENT DRAWN Trimmel CHECKED: Volck QA: N/A STRESS: N/A MANUF.: N/A SYSTEM: N/A APPROVED: Jütte	DATE 5 July 2010 19. 7. 10 PROJECT DV 20 TITLE CANOPY LOCKING SAFETY DEVICE ASSY DWG.ORIG. DAIA DWG.NO. D20-5200-64-00 REV "-"	CODE 710197 SCALE 1:1 SH 01 OF 01
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