



European Aviation Safety Agency

EASA

**TYPE-CERTIFICATE
DATA SHEET**

EASA.IM.A.223

DA 20

Diamond Aircraft Industries Inc

1560 Crumlin Sideroad, London Ontario
N5V 1S2
Canada

For models: DA 20-A1
 DA 20-C1

Issue 05: 28 June 2012

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SECTION A: DA20-A1

A.I. General

1. Data Sheet No.: IM.A.223
2. a) Type: DA20
b) Model: DA20-A1
c) Variant: --
3. Airworthiness Category: CS-VLA see Note 2
4. Type Certificate Holder: DIAMOND AIRCRAFT INDUSTRIES INC.
1560 CRUMLIN SIDEROAD, LONDON ONTARIO,
N5V 1S2 CANADA
5. Manufacturer: DIAMOND AIRCRAFT INDUSTRIES INC.
1560 CRUMLIN SIDEROAD, LONDON ONTARIO,
N5V 1S2 CANADA
161-93 (TCCA)
6. Certification Application Date: None (Prior to 28. September 2003, accepted under EU Regulation EC 1702/2003)
7. National Certifying Authority: Transport Canada
8. National Authority Type Certificate Date: Transport Canada TC A-191 dated 29.July 1994

Pre 2003 European Certifications
Austria: FZ 014-ACG
Germany: LBA 1099
Italy: ENAC A 410
Spain: 260-I

A.II. EASA Certification Basis

1. Reference Date for determining the applicable requirements: Accepted under EU Regulation EC 1702/2003
2. Airworthiness Requirements: JAR-VLA including Amendment VLA/92/1
3. Special Conditions: SC A-02 Night VFR
SC B-01 Intentional Spinning
3. Exemptions: None
4. Deviations: None
5. Equivalent Safety Findings: Model equipped with Rotax 912 A3 engine:

- Findings of equivalent safety to AWM 523-VLA.203(a) for the Rotax 912 A3 engine as per Transport Canada letter 5010-A518 (AARDD) dated 22. June 1995
6. Requirements elected to comply: None
7. Environmental Standards: ICAO, Annex 16, Volume I, see EASA Type Certificate Data Sheet Noise TCDSN IM.A.223
8. Additional National Requirements: The EASA Aircraft Type Certification standard includes that of TCCA TCDS A-191, based on individual EU member state acceptance or certification of this standard prior to 28. September 2003 using JAR-VLA as the applicable airworthiness requirement. Other standards conforming to TC/TCDS standards certificated by individual EU member states prior to 28. September 2003 are also acceptable. (See note 2.)
9. (Reserved) N/A

A.III. Technical Characteristics and Operational Limitations

1. Type Design Definition: Configuration Document No. DA20-A1
Project Description DA 4.07.00, including Diamond Aircraft Drawing No. 20-0100-00-00 for the optional retrofit of the Rotax Model 912 S3 engine, Project Description PD-DA20-100
2. Description: Single engine, two-seated cantilever low wing airplane, composite construction, fixed tricycle landing gear, T-tail.
3. Equipment: Equipment List in AFM.
In addition a fire extinguisher and a fuel pipette/dipstick according AFM must be installed.
4. Dimensions:
- | | | |
|-----------|---------------------|--------------|
| Span | 10,84 m | (35 ft 7 in) |
| Length | 7,17 m | (23 ft 6 in) |
| Height | 2,10 m | (6 ft 11 in) |
| Wing Area | 11,6 m ² | (125 sq ft) |
5. Engine:
- 5.1.1 Model: Rotax 912 A3 or 912 F3 or 912 S3
- 5.1.2 Type Certificate: EASA Engine TCDS No. E.121
- 5.1.3 Limitations: with engine Rotax 912 A3 or 912 F3
Max take-off rotational engine speed 5800 r.p.m.
Max continuous rotational engine speed 5500 r.p.m.
Propeller reduction 1:2.2727

with engine Rotax 912 S3
Max take-off rotational engine speed 5800 r.p.m.
Max continuous rotational engine speed 5500 r.p.m
Propeller reduction 1:2.43

For power-plants limits refer to AFM, Section 2

6. Load factors: at v_A at v_{NE} with flaps in T/O or LDG position

Normal Category			
Positive:	4,4	4,4	2.0
Negative	-2,2	-2,2	0

7. Propeller:

- 7.1 Model: Hoffmann HO-V352F/170FQ or Hoffmann HO-V352F/C170FQ
- 7.2 Type Certificate: LBA TCDS No. 32.130/88
- 7.3 Number of blades: 2
- 7.4 Diameter: Maximum: 1.70 m (5 ft 6.9 in.) + 0 mm
Minimum: 1.70 m (5 ft 6.9.in.) - 10 mm (0.39 in.)
- 7.5 Sense of Rotation: Counter Clockwise
- 7.6 Setting: Low pitch setting: 10.5°
High pitch setting: 30°

8. Fluids:

- 8.1 Fuel: AVGAS 100 LL or Unleaded Automotive Fuel 95 RON / 91 AKI (Specification EN 228)

See AFM for approved possible fuel types.

- 8.2 Oil: Oils conforming to 4 stroke motorcycle oil of a registered brand with gear additives that meets or exceeds API classification SF or SG
For more details see AFM, Section 2

- 8.3 Coolant: EVANS NPG+ waterless coolant or 50/50 Glycol type coolant as specified in the latest revision of ROTAX Service Bulletin SI-912-016

9. Fluid capacities:

- 9.1 Fuel: Total: 76 liters 20,1 US Gallons
Usable: 74 liters 19,5 US Gallons
- 9.2 Oil: Maximum: 3,4 liters 3,6 qts
Minimum: 3.0 liters 3,2 qts
- 9.3 Coolant system capacity: Closed loop coolant system
Maximum: 2,5 liters 2,6 qts
Minimum: 2,4 liters 2,5 qts

10. Air Speeds:	Design Manoeuvring Speed v_A :	104 KIAS
	Flap Extended Speed v_{FE} :	81 KIAS
	Maximum structural cruising speed v_{NO} :	116 KIAS
	Never exceed speed v_{NE} :	157 KIAS
11. Maximum Operating Altitude:	-	
12. Allweather Operations Capability:	Day/Night-VFR see Note 2,3	
13. Maximum Weights:	with engine Rotax 912 A3 or 912 F3	
	Take-Off	730 kg (1609 lbs)
	Landing	730 kg (1609 lbs)
	with engine Rotax 912 S3	
	Take-Off	750 kg (1653 lbs)
	Landing	750 kg (1653 lbs)
14. Centre of Gravity Range:	Forward limit (for all masses):	250 mm (9.84 in.) behind Datum
	Rear limit (for all masses):	390 mm (15.35 in.) behind Datum
15. Datum:	tangent to the leading edge of the wing at the root rib	
16. Control surface deflections:		
Aileron	Up: $16^\circ, \pm 1^\circ$	Down: $13^\circ, \pm 1^\circ$
Elevator	Up: $16^\circ, \pm 1^\circ$	Down: $14^\circ, \pm 1^\circ$
Trim tab (elevator neutral)	See AMM	
Rudder	Left: $30^\circ, \pm 1^\circ$	Right: $30^\circ, \pm 1^\circ$
Flaps	Take-off Flap setting: $15^\circ, \pm 1^\circ$ Landing: $40.5^\circ, \pm 1^\circ$	
17. Levelling Means:	Wedge 52:1000, 500mm (19.69 in) in front of the rudder fin.	
18. Minimum Flight Crew:	1 (Pilot)	
19. Maximum Passenger Seating Capacity:	1	
20. Baggage/Cargo Compartments:	20 kg (44 lbs) only permissible with baggage harness	
21. Wheels and Tyres:	Nose Wheel Tyre Size	5.00 – 4, 6 ply or

	5.00 – 4, TR60 valve tube
Main Wheel Tyre Size	5.00 – 5 ,6 ply or 15 x 6.0-5
	For approved Types and rating see AMM
22. (Reserved):	N/A

A.IV. Operating and Service Instructions

1. Flight Manual: Model with engine Rotax 912 A3 or 912 F3
Document No. DA202

Model with engine Rotax 912 S3
Document No. DA202-100 (English)
See Note 4
2. Technical Manual: Airplane Maintenance Manual Doc. No. DA201
3. Spare Parts Catalogue: Illustrated Parts Catalogue Doc. No. DA203-A1
4. Instruments and aggregates: ---

A.V. Notes:

1. S/N 10002 through 10092 originally equipped with Rotax 912 A3 engine may be retrofitted with a Rotax 912 F3 engine accordance with Service bulletin DA20-73-01.
S/N 10093 through 10331 inclusive is originally equipped with Rotax 912 F3 engine.
S/N 10002 through 10332 inclusive originally equipped with Rotax 912 A3 or F3 engine may be modified to a Rotax 912 S3 by in accordance with Diamond Drawing No. 20-0100-00-00.
2. IFR, Acrobatic flights are prohibited. Flight in known or expected icing condition is also prohibited. Intentional Spins with flaps up are approved in accordance to the Flight Manual.
3. Night VFR flights has been approved if the required equipment according to Flight Manual is installed. Night VFR is not approved if engine 912A3 is installed.
4. Flight Manual DA202-VLA is valid for day VFR, no intentional spinning aircraft only and superceded by Manual DA202 Revision 18 and Manual DA202-100 Revision 6 or later Transport Canada approved Revision, covering all kinds of operation. Manual DA202-VLA will be no longer revised.
5. The minimum oil pressure limit for Rotax 912 A3 and 912 F3 powered DA20-A1 airplanes, as delivered, is 1.5 bar (22psi). Rotax has retroactively revised the

minimum oil pressure limit for Rotax 912 A3 and 912 F3 engines to be 0,8 bar (12 psi) below 3500 RPM and 2.0 bar (29 psi) above 3500 RPM. The original oil pressure limits are valid for aircraft equipped with an oil pressure gauge marked accordingly. The revised limit is valid for any aircraft retrofit with an oil pressure gauge marked with the revised limits. (see also AFM)

SECTION B: DA20-C1

B.I. General

- | | |
|--|--|
| 1. Data Sheet No.: | IM.A.223 |
| 2. a) Type: | DA20 |
| b) Model: | DA20-C1 |
| c) Variant: | -- |
| 3. Airworthiness Category: | CS-VLA see Note 1 |
| 4. Type Certificate Holder: | DIAMOND AIRCRAFT INDUSTRIES INC.
1560 CRUMLIN SIDEROAD, LONDON ONTARIO,
N5V 1S2 CANADA |
| 5. Manufacturer: | DIAMOND AIRCRAFT INDUSTRIES INC.
1560 CRUMLIN SIDEROAD, LONDON ONTARIO,
N5V 1S2 CANADA |
| 6. Certification Application Date: | None (Prior to 28. September 2003, accepted under EU Regulation EC 1702/2003) |
| 7. National Certifying Authority | Transport Canada |
| 8. National Authority Type Certificate Date: | Transport Canada TC A-191 dated 19.Dec.1997 |
| | Pre 2003 European Certifications |
| | Italy: ENAC A 410 |
| | United Kingdom: Approval Note 27046 |

B.II. EASA Certification Basis

- | | |
|--|--|
| 1. Reference Date for determining the applicable requirements: | Accepted under EU Regulation EC 1702/2003 |
| 2. Airworthiness Requirements: | JAR-VLA including Amendment VLA/92/1 |
| 3. Special Conditions: | CRI A-07 Maximum Take Off Mass 800 kg
CRI A-02, Night VFR
SC B-01 Intentional Spinning |
| 4. Exemptions: | None |
| 5. Deviations: | None |
| 6. Equivalent Safety Findings: | CRI A-08 Night VFR with 800kg MTOM |
| 7. Requirements elected to comply: | None |
| 8. Environmental Standards: | ICAO, Annex 16, Volume I, see EASA Type Certificate Data Sheet Noise TCDSN IM.A.223 |

9. Additional National Requirements: The EASA Aircraft Type Certification standard includes that of TCCA TCDS A-191, based on individual EU member state acceptance or certification of this standard prior to 28. September 2003 using JAR-VLA as the applicable airworthiness requirement. Other standards conforming to TC/TCDS standards certificated by individual EU member states prior to 28. September 2003 are also acceptable. (See note 1)
10. (Reserved) N/A

B.III. Technical Characteristics and Operational Limitations

1. Type Design Definition: Configuration Document No. DA20-C1
2. Description: Single engine, two-seated cantilever low wing airplane, composite construction, fixed tricycle landing gear, T-tail
3. Equipment: Equipment List, AFM. In addition a fire extinguisher and a fuel dipstic acc. AFM must be installed
4. Dimensions:
- | | | |
|-----------|---------------------|--------------|
| Span | 10,87 m | (35 ft 8 in) |
| Length | 7.17 m | (23 ft 6 in) |
| Height | 2.19 m | (7 ft 2 in) |
| Wing Area | 11.6 m ² | (125 sq ft) |
5. Engine:
- 5.1.1 Model: Teledyne Condinental Motors IO-240-B
- 5.1.2 Type Certificate: Engine Type Certificate Data Sheet EASA IM.E.169
- 5.1.3 Firmware: none
- 5.1.4 Mapping none
- 5.1.5 Limitations: Max take-off rotational speed 2800 r.p.m.
Max continuous rotational speed 2800 r.p.m
- For power-plants limits refer to AFM, Section 2
6. Load factors:
- | | at v_A | at v_{NE} | with flaps
LDG position |
|-----------|----------|-------------|----------------------------|
| Positive: | 4.4 | 4.4 | 2.0 |
| Negative: | -2,2 | -2,2 | 0 |
7. Propeller:
- 7.1 Model: Hoffmann HO-14HM-175-157 or
Sensenich W69EK7-63 or
Sensenich W69EK7-63G or
Sensenich W69EK-63 (up to Aircraft S/N C0149)
- 7.2 Type Certificate: 32.110/29 (LBA)

- 7.3 Number of blades: 2
- 7.4 Diameter: HO-14HM-175-157 : 1.750 m (68.9 in.)
W69EK7-63 : 1.752 m (69.0 in.)
W69EK7-63G : 1.752 m (69.0 in.)
W69EK-63 : 1.752 m (69.0 in.)
- 7.5 Sense of Rotation: Clockwise
- 7.6 Settings: Fix Pitch
8. Fluids:
- 8.1 Fuel: AVGAS 100 or 100LL see Note 4
- 8.2 Oil: Engine: Aviation engine oil TCM specification
MHS24
For more details see AFM
- 8.3 Coolant: none
9. Fluid capacities:
- 9.1 Fuel: S/N C0001 to C0013
Usable: 80.5 litres 21.3 US Gal.
Unusable: 14.5 litres 3.8 US Gal.
Total: 95.0 litres 25.0 US Gal.
- S/N C0014 and subsequent, and S/N C0001 to C0013
if Service bulletin DA C1-28-01 incorporated
Usable: 91 litres 24.0 US Gal.
Unusable: 2 litres 0.5 US Gal.
Total: 93 litres 24.5 US Gal.
- All S/N if fuel tank (Dwg. No. 22-2813-00-00 is
installed)
Usable: 76 litres 20.0 US Gal.
Unusable: 2 litres 0.5 US Gal.
Total: 78 litres 20.5 US Gal.
- 9.2 Oil: Maximum: 5,68 liters 6 qts
Minimum: 3,79 liters 4 qts
- 9.3 Coolant system capacity: none
10. Air Speeds: Design Manoeuvring Speed v_A : 106 KIAS
Flap Extended Speed v_{FE} :
flaps in T/O position (15°) 100 KIAS
flaps in Landing position (45°) 78 KIAS
Maximum structural cruising speed v_{NO} : 118 KIAS
Never exceed speed v_{NE} : 164 KIAS
11. Maximum Operating Altitude: -

12. Allweather Operations Capability: Day-VFR see Note 1
13. Maximum Weights: with Propeller HO-14HM-175 157
Ramp Weight: 753 kg (1660 lb)
Take-off / Landing 750 kg (1653 lb)
- with Propeller W69EK7-63, W69EK7-63G or W69EK-63
Ramp Weight: 803 kg (1770 lb)
Take-off / Landing 800 kg (1764 lb)
see Note 2
14. Centre of Gravity Range: Forward limit
up to 750 kg 202 mm (7,96 in)
at 800 kg 205 mm (8,07 in)
behind Datum, varying linearly with mass in between
- Rear limit
up to 750 kg 317 mm (12,48 in)
at 800 kg 309 mm (12,16 in)
behind Datum, varying linearly with mass in between
15. Datum: tangent to the leading edge of the wing at the root rib
16. Control surface deflections:
- | | | |
|-----------------------------|--|------------------|
| Aileron | Up: 15.5°, ±1° | Down: 13.5°, ±1° |
| Elevator | Up: 25°, ±1° | Down: 15°, ±1° |
| Trim tab (elevator neutral) | See AMM | |
| Rudder | Left: 27°, ±1° | Right: 27°, ±1° |
| Flaps | Take-off Flap setting: 15°, ±1°
Landing: 45°, ±1° | |
17. Levelling Means: Wedge 55.84:1000,
2000mm (78.7 in.) behind the canopy.
18. Minimum Flight Crew: 1 (Pilot)

- | | | |
|---|--|-----------------|
| 19. Maximum Passenger Seating Capacity: | 1 | |
| 20. Baggage/Cargo Compartments: | 20 kg (44 lbs) only permissible with baggage harness | |
| 21. Wheels and Tyres: | Nose Wheel Tyre Size | 5.00 – 4, 6 ply |
| | Main Wheel Tyre Size | 5.00 – 5, 6 ply |
| | For approved types and rating see AMM | |
| 22. (Reserved): | N/A | |

B.IV. Operating and Service Instructions

1. Flight Manual: Document No. DA202-C1 (English)
2. Technical Manual: Document No. DA201-C1
3. Spare Parts Catalogue: DA203-C1
4. Instruments and aggregates: ---

B.V. Notes:

1. IFR, Acrobatic flights are prohibited. Flight in known or expected icing condition is also prohibited. Intentional Spins with flaps up are approved in accordance to the Flight Manual.
Night VFR flights has been approved if the required equipment according to Flight Manual Document DA202-C1, Rev26 or later Transport Canada approved AFM revisions is installed.
2. The DA20-C1 was originally certified at a MTOW of 750kg (1653 lb). Based on the Special Condition A07 the MTOW of 800kg was approved post-certification. All DA20-C1 aircraft equipped with Propeller W69EK7-63, W69EK7-63G or W69EK-63 are eligible for 800kg when operated in accordance to Flight Manual DA20-C1 Document DA202-C1, Rev 25 (Supplement 4 required for 800kg MTOW) or later Transport Canada approved revisions..
3. This certification applied to Serial Numbers C0001 and subsequent.
4. Approved fuel specifications of AVGAS 100LL are CGSB 3.25 (Canadian) and ASTM D910 (USA).

ADMINISTRATIVE SECTION

I. Acronyms

II. Type Certificate Holder Record

Diamond Aircraft Industries Inc.
1560 Crumlin Sideroad, London Ontario
N5V 1S2
CANADA

III. Change Record

Issue	Date	Changes	TC Issue No. & Date
Issue 1	07. Nov 2008	Initial Issue	-
Issue 2	15-Apr-2005	Editorial Changes Clarification of the 912 A3 engine capability according to the TCCA TC A.III.5. Note 1 A.V.1 rewording Typographical Error B.III.2 and 5	-
Issue 3	18-Mar-2011	DA20-C1 Maximum Takeoff Mass increased to 800kg EASA Project 0010003947-001 Editorial Change to New EASA TCDS Format DA20-C1 Note 4 corrected to Note 1	-
Issue 4	04-Aug-2011	DA20-C1 Night VFR approval EASA Project 0010003946-001 B.V. Note 1 B.II. SC CRI A-02 „Night VFR“, ELOS CRI A-08“Night VFR with 800kg MTOM	-
Issue 5	28-Jun-2012	DA20-A1 and C1 approval for intentional spinning EASA Project 0010003945-001 DA20-C1 with G500 and DA20-A1 Night VFR EASA Project 0010013285-001 A.II.3 SC added A.IV Flight Manual DA202 A.V. Note 2,3,4 added B.II.3 SC A-02, ELOS A-08 added	-