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# TYPE-CERTIFICATE DATA SHEET

NO. EASA.IM.A.223

**for**  
DA20

**Type Certificate Holder**  
Diamond Aircraft Industries Inc.

1560 Crumlin Sideroad  
5V 1S2, London Ontario  
Canada

For models: DA20-A1  
DA20-C1



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<b>section A: DA20-A1</b>	<b>4</b>
<b>A.I. General</b>	<b>4</b>
<b>A.II. EASA Certification Basis</b>	<b>4</b>
<b>A.III. Technical Characteristics and Operational Limitations</b>	<b>5</b>
<b>A.IV. Operating and Service Instructions</b>	<b>8</b>
<b>A.V. Notes</b>	<b>9</b>
<b>section B: DA20 C-1</b>	<b>10</b>
<b>B.I. General</b>	<b>10</b>
<b>B.II. EASA Certification Basis</b>	<b>10</b>
<b>B.III. Technical Characteristics and Operational Limitations</b>	<b>10</b>
<b>B.IV. Operating and Service Instructions</b>	<b>14</b>
<b>B.V. Notes</b>	<b>15</b>
<b>SECTION ADMINISTRATIVE</b>	<b>16</b>
<b>SA Acronyms &amp; Abbreviations</b>	<b>16</b>
<b>SA Type Certificate Holder Record</b>	<b>16</b>
<b>SA Change Record</b>	<b>16</b>



## **SECTION A: DA20-A1**

### **A.I. General**

1. Type/ Model/ Variant
  - 1.1 Type DA20
  - 1.2 Model DA20-A1
  - 1.3 Variant -
2. Airworthiness Category CS-VLA see Note 2
3. Manufacturer DIAMOND AIRCRAFT INDUSTRIES INC.  
1560 CRUMLIN SIDEROAD, LONDON ONTARIO,  
N5V 1S2 CANADA  
161-93 (TCCA)
4. EASA Type Certification Application Date None (Prior to 28. September 2003, accepted under EU Regulation EC 1702/2003)
5. State of Design Authority Canada, Transport Canad
6. State of Design Authority Type Certificate Date  
Transport Canada TC A-191 dated 29.July 1994
7. EASA Type Certification Date Pre 2003 European Certifications  
Austria: FZ 014-ACG  
Germany: LBA 1099 (10<sup>th</sup> of May 1996)  
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  
A-02 Night VFR  
B-01 Intentional Spinning
4. Exemptions None
5. (Reserved) Deviations None
6. 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
7. Environmental Protection 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.)

**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 <sup>2</sup>	(125 sq ft)

- 5. Engine
  - 5.1. Model Rotax 912 A3 or 912 F3 or 912 S3
  - 5.2 Type Certificate EASA Engine TCDS No. E.121
  - 5.3 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
 

Normal Category	at v <sub>A</sub>	at v <sub>NE</sub>	with Flaps in TO or LDG position
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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. Flight Envelope

### 12. Approved Operations Capability

Day/Night-VFR see Note 2,3

### 13. Maximum Masses

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° ±1° Down: 13°±1°
	Elevator	Up: 16° ±1° Down: 14°±1°
	Trim tab (elevator neutral)	See AMM
	Rudder	Left: 30° ±1° Right: 30° ±1°
	Flaps	Take-off Flap setting: 15° ±1° Landing: 40,5° ±1°
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
22. (Reserved)	For approved Types and rating see AM	



#### **A.IV. Operating and Service Instructions**

- |                                |  |
|--------------------------------|--|
| 1. Flight Manual               | Model with engine Rotax 912 A3 or 912 F3<br>Document No. DA202<br>Model with engine Rotax 912 S3<br>Document No. DA202-100 (English)<br>See Note 4 |
| 2. Maintenance Manual          | Airplane Maintenance Manual Doc. No. DA201   |
| 3. Structural Repair Manual    | N/A  |
| 4. Weight and Balance Manual   | N/A  |
| 5. Illustrated Parts Catalogue | Illustrated Parts Catalogue Doc. No. DA203-A1  |



## **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 superceeded 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 C-1**

### **B.I. General**

1. Type/ Model/ Variant
  - 1.1 Type DA20
  - 1.2 Model DA20-C1
  - 1.3 Variant -
2. Airworthiness Category CS-VLA see Note 1
3. Manufacturer DIAMOND AIRCRAFT INDUSTRIES INC.  
1560 CRUMLIN SIDEROAD, LONDON ONTARIO,  
N5V 1S2 CANADA  
161-93 (TCCA)
4. EASA Type Certification Application Date None (Prior to 28. September 2003, accepted under EU Regulation EC 1702/2003)
5. State of Design Authority Canada, Transport Canad
6. State of Design Authority Type Certificate Date Transport Canada TC A-191 dated 19<sup>th</sup> of December 1997
7. EASA Type Certification Date 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 A-07 Maximum Take Off Mass 800 kg  
A-02 Night VFR  
B-01 Intentional Spinning
4. Exemptions None
5. (Reserved) Deviations None
6. Equivalent Safety Findings A-08 Night VFR with 800kg MTOM
7. Environmental Protection 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 1.)

### **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 in AFM.

In addition a fire extinguisher and a fuel pipette/ dipstick according 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 <sup>2</sup>	(125 sq ft)

## 5. Engine

### 5.1. Model

Teledyne Condinental Motors IO-240-B

### 5.2 Type Certificate

Engine Type Certificate Data Sheet EASA IM.E.169

### 5.3 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

Normal Category	at v <sub>A</sub>	at v <sub>NE</sub>	with Flaps in LDG position
Positive	4,4	4,4	2,0
Negative	-2,2	-2,2	0

## 7. Propeller

### 7.1 Model

Sensenich W69EK-63 (up to Aircraft S/N C0149) or

Sensenich W69EK7-63 or

Sensenich W69EK7-63G or

Sensenich W69EK7-63GM

### 7.2 Type Certificate

LBA TCDS No. 32.110/29

### 7.3 Number of blades

2

### 7.4 Diameter

W69EK7-63 : 1.752 m (69.0 in.)

W69EK7-63G : 1.752 m (69.0 in.)

W69EK7-63GM : 1.752 m (69.0 in.)

W69EK-63 : 1.752 m (69.0 in.)

### 7.5 Sense of Rotation

Clockwise



7.6 Setting	Fix Pitch
8. Fluids	
8.1 Fuel	AVGAS 100 or 100LL see Note 4
8.2 Oil	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. Flight Envelope	-
12. Approved Operations Capability	Day-VFR see Note 1
13. Maximum Masses	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 tangent to the leading edge of the wing at the root rib	
15. Datum		
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 AM	
22. (Reserved)		



#### **B.IV. Operating and Service Instructions**

- |                                |   |
|--------------------------------|---|
| 1. Flight Manual               | Document No. DA202-C1 (English)               |
| 2. Maintenance Manual          | Document No. DA201-C1                         |
| 3. Structural Repair Manual    | N/A   |
| 4. Weight and Balance Manual   | N/A   |
| 5. Illustrated Parts Catalogue | Illustrated Parts Catalogue Doc. No. DA203-C1 |



## **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. All DA20-C1 aircraft were eligible for the Special Condition; however only aircraft equipped with Sensenich propellers were approved for operation at a MTOW above 750 kg (1653 lb). Diamond has confirmed that no Hoffmann propeller equipped DA20-C1 aircraft remain in service, references to the Hoffmann propeller have been removed from the applicable Airplane Flight Manual and no data is provided to operators to support its installation. Accordingly references to the Hoffmann propeller have been removed from the TCDS

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).



## SECTION ADMINISTRATIVE

### SA Acronyms & Abbreviations

### SA Type Certificate Holder Record

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

### SA Change Record

Issue	Date	Changes	TC Issue No. & Date
1	07. Nov 2008	Initial 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	-
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	-
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	-
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	-
6	05-December 2022	B.III, 7.1: added: “Sensenich W69EK7-63GM” Removed: “Hoffmann HO-14HM-175 157” from Section B, Revised Note 2 in Section B	-

-END-

