

## **SECTION C: DA 42 NG**

### **C.I. General**

1. Data Sheet No.: EASA.A.005
2. a) Type: DA 42  
b) Model: DA 42 NG  
c) Variant: --
3. Airworthiness Category: JAR 23 Normal Category
4. Type Certificate Holder: DIAMOND AIRCRAFT INDUSTRIES GMBH  
N.A. OTTO-STR. 5  
A-2700 WIENER NEUSTADT  
AUSTRIA
5. Manufacturer: DIAMOND AIRCRAFT INDUSTRIES GMBH  
N.A. OTTO-STR. 5  
A-2700 WIENER NEUSTADT  
AUSTRIA  
  
DIAMOND AIRCRAFT INDUSTRIES INC.  
1560 CRUMLIN SIDEROAD, LONDON ONTARIO  
N5V 1S2  
CANADA  
  
CETC WUHU DIAMOND AIRCRAFT MANUFACTURE CO.,  
LTD.  
ANHUI XINWU ECONOMIC DEVELOPMENT ZONE,  
WUHU COUNTY  
PEOPLE'S REPUBLIC OF CHINA
6. Certification Application Date: 17-Jan-2008
7. (Reserved) N/A
8. (Reserved) N/A

### **C.II. EASA Certification Basis**

1. Reference Date for determining the applicable requirements: 02-Apr-2002

2. Airworthiness Requirements: JAR-23, Amendment 1, issued 01-Feb-2001  
JAR-1, Change 5, issued 15-Jul-1996
3. Special Conditions:
- CRI D-02 Variable Elevator Stop
  - CRI E-02 Use of Jet Fuel for Reciprocating Engines
  - CRI E-03 Use of Diesel Fuel for Reciprocating Engines
  - CRI E-04 Liquid Cooling – Coolant Tank
  - CRI E-05 Electronically-controlled Reciprocating Diesel Engine
  - CRI E-06 Engine Vibration Level
  - CRI E-07 Engine Torque
  - CRI F-01 Protection from the Effects of HIRF
  - CRI F-03 Protection from the Effects of Lightning Strikes, Indirect Effects
  - CRI F-04 Power plant Instruments
  - CRI F-07 Human Factors in Integrated Avionic System
3. Exemptions: None
4. Deviations: None
5. Equivalent Safety Findings: CRI E-10 Electrical Fuel Pump
6. Requirements elected to comply:
- CS 23.1507 (CS 23/0)
  - CS 23.49 (CS 23/1)
  - CS 23.562 (CS 23/1)
  - With OÄM 42-324 installed: CS 23.2270 (a)-(d), (CS23/5)
7. Environmental Standards: ICAO, Annex 16, Volume 1, Part II and as implemented in Decision No. 2003/4/RM amended by Decision 2007/007/R of The Executive Director of the Agency dated 2 April 2007, on certification specifications providing for acceptable means of compliance for aircraft noise  
CS-36, Amendment 1  
see Note 2
8. (Reserved) N/A
9. (Reserved) N/A
10. Operational Suitability Requirements OSD MMEL: CS-GEN-MMEL, Initial Issue dated 31 January 2014

### **C.III. Technical Characteristics and Operational Limitations**

1. Type Design Definition: Current issue of Doc. No. 7.07.00, Chapter V004/7 including Design Changes VÄM 42-004, MÄM 42-313, MÄM 42-316 to 318, 42-322, 42-325 and following
2. Description: Twin engine, four-seated cantilever low wing airplane, composite construction, retractable tricycle landing gear, T-tail
3. Equipment: Equipment list, AFM, Section 6, see Note 3
4. Dimensions:
 

Span	13.42 m	(44 ft 0 in)
Length	8.56 m	(28 ft 1 in)
Height	2.49 m	( 8 ft 2 in)
Wing Area	16.29 m <sup>2</sup>	(175.3 sqft)
5. Engine:
  - 5.1.1 Model: 2 Austro Engine E4 see Note 4
  - 5.1.2 Type Certificate: EASA Engine Type Certificate Data Sheet E.200
  - 5.1.3 Limitations:
 

Max take-off rotational speed (5 min.)	2300 r.p.m.
Max continuous rotational speed	2100 r.p.m
(Propeller shaft r.p.m)	
with MÄM 42-600 installed	2300 r.p.m
Max T/O Power (5min)	100% (123,5 kW)
Max. continuous Power	92% (114 kW)

For power-plants limits refer to AFM, Section 2
  - 5.1.4 Firmware: see DAI MSB 42NG-002 See Note 4
  - 5.1.5 Mapping: see DAI MSB 42NG-002 See Note 4
6. Load factors:
 

	at $v_A$	at $v_{NE}$	with flaps in T/O or LDG position
Positive:	3.8	3.8	2.0
Negative	-1.52	0	
7. Propeller:
  - 7.1 Model: 2 MT-Propeller MTV-6-R-C-F/CF187-129 or  
2 MT-Propeller MTV-6-R-C-F/CF 190-69 see Note 8
  - 7.2 Type Certificate: EASA Prop. Type Certificate Data Sheet P.094  
See note 5
  - 7.3 Number of blades: 3
  - 7.4 Diameter: 1870 mm or 1900 mm (MÄM 42-600)
  - 7.5 Sense of Rotation: CW

7.6 Settings:	Low pitch setting	12 ° 13° (MÄM 42-600)
	Feather position:	81 ° 80° (MÄM 42-600)
	Start Lock:	15°
8. Fluids:		
8.1 Fuel:	Jet A-1 (ASTM 1655), see note 7 Diesel (EN590), see note 11	
8.2 Oil:	Engine:	Shell Helix Ultra 5W30 or 5W40 or see AFM, Section 2
	Gearbox:	Shell SPIRAX GSX 75W-80 or Shell SPIRAX S6 GXME 75W-80 or see AFM, Section 2
8.3 Coolant:	Water / Cooler Protection for more details see AFM, Section 2	
8.4 Ice Protection Fluids:	AL-5 (DTD 406B) or Aeroshell Compound 07 for more details see AFM, Suppl. S03	
9. Fluid capacities:		
9.1 Fuel:	Standard Fuel Tank	
	Total:	196.8 liters    52 US Gallons
	Usable:	189.2 liters    50 US Gallons
	Auxiliary Fuel Tank	
	Total:	104 liters    27,4 US Gallons
	Usable:	100 liters    26,4 US Gallons
9.2 Oil: each engine	Maximum:	7 liters
	Minimum:	5 liters
9.3 Coolant system capacity:	Approx. 7 liters	
10. Air Speeds:	Design Manoeuvring Speed $v_A$	
	up to 1700 kg	114 KEAS
	1701 to 1800 kg	121 KEAS
	above 1800 kg	125 KEAS
	Flap Extended Speed $v_{FE}$	
	Approach	135 KEAS
	Landing	110 KEAS
	Maximum Landing Gear Operation Speed $v_{LO}$	
		155 KEAS

	Maximum Landing Gear Extended Speed $v_{LE}$	192 KEAS
	Minimum Control Speed Airborne $v_{MCA}$	75 KEAS
	MÄM 42-600	70 KEAS
	Maximum structural cruising speed $v_{NO}$	
	(= Maximum structural design speed $v_c$ )	155 KEAS
	Never exceed speed $v_{NE}$	192 KEAS
11. Maximum Operating Altitude:	5486 m (18 000 ft)	
12. Allweather Operations Capability:	Day/Night-VFR, IFR Flights into known or forecast icing conditions See Note 6	
13. Maximum Weights:	See Note 12	
Take-off		1900 kg (4189 lb)
	If MÄM 42-678 is installed	1999 kg (4407 lb)
Zero Fuel		1765 kg (3891 lb)
	If MÄM 42-659 is installed	1835 kg (4045 lb)
Landing		1805 kg (3979 lb)
	If MÄM 42-659 is installed	1999 kg (4407 lb)
14. Centre of Gravity Range:	Forward limit	
	At 1450 kg	2.350 m behind Datum
	At 1468 kg	2.350 m behind Datum
	At 1900 kg	2.418 m behind Datum
	If MÄM 42-678 is installed	
	At 1999 kg	2.434 m behind Datum
		Varying linearly with mass in between
	Rear limit	
	At 1450 kg	2.454 m behind Datum
	At 1700 kg and above	2.480 m behind Datum
		Varying linearly with mass in between
	If OÄM 42-199 is installed (see note 10):	
	For all weights	2.450 m behind Datum
	If OÄM 42-199 and MÄM 42-600 are installed: (see note 10)	
	At 1450 kg	2.454 m behind Datum
	At 1510 kg and above	2.460 m behind Datum

15. Datum: 2.196 m in front of leading edge of stub-wing at the wing joint
16. Control surface deflections:
- |                   |   |       |           |
|-------------------|---|-------|-----------|
| Aileron           | trailing edge up                          | 25°   | ± 2°      |
|                   | trailing edge down                        | 15°   | +2/-0°    |
| Elevator          | trailing edge up                          | 15.5° | ± 0.5°    |
|                   | trailing edge down                        | 13°   | ± 1°      |
| Elevator Trim Tab | nose up at elevator neutral               | 28°   | ± 5°      |
|                   | nose down at elevator neutral             | 25°   | ± 5°      |
| Rudder            | left                                      | 27°   | ± 1°      |
|                   | right                                     | 29°   | ± 1°      |
| Rudder Trim Tab   | trim RH at rudder neutral                 | 45°   | ± 3°      |
|                   | trim LH at rudder neutral                 | 41°   | ± 3°      |
|                   | with MÄM 42-600 installed:                |       |           |
|                   | trim RH at rudder neutral                 | 43°   | ± 3°      |
|                   | trim LH at rudder neutral                 | 39°   | ± 5°      |
|                   | with MÄM 42-600 and MÄM 42-885 installed: |       |           |
| Flaps             | trim RH at rudder neutral                 | 48°   | ± 3°      |
|                   | trim LH at rudder neutral                 | 36°   | ± 5°      |
|                   | Cruise flap setting                       | 0°    | + 2° - 0° |
|                   | Approach flap setting                     | 20°   | + 4° - 2° |
|                   | Landing flap setting                      | 42°   | +3° - 1°  |
17. Levelling Means: floor of front baggage compartment levelled
18. Minimum Flight Crew: 1 (Pilot)
19. Maximum Passenger Seating Capacity: 3
20. Baggage/Cargo Compartments:
- | Location                               | max. allowable Load |
|--|---------------------|
| Front Baggage Compartment              | 30 kg (66 lb)       |
| Behind Rear Seats                      | 45 kg (100 lb)      |
| Aft part of Baggage Extension          | 18 kg (40 lb)       |
| Whole aft Baggage Compartment together | 45 kg (100 lbs)     |
21. Wheels and Tyres: Nose Wheel Tyre Size 5.00 – 5  
Main Wheel Tyre Size 15x6.0–6 see Note 9
22. (Reserved): N/A

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

1. Flight Manual: Document No. 7.01.15 or 7.01.16 (MÄM 42-600 installed)

2. Technical Manual: Airplane Maintenance Manual (AMM) Document No. 7.02.15 (incl. Airworthiness Limitations) Service Information and Service Bulletins
3. Spare Parts Catalogue (IPC): Document No. 7.03.15
4. Instruments and aggregates: refer to AMM Doc. No. 7.02.15 Chapter 1

#### **C.V. Operational Suitability Data (OSD)**

The Operational Suitability Data elements listed below are approved by the European Union Aviation Safety Agency under the EASA Type Certificate EASA.A.005 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014.

##### 1. Master Minimum Equipment List (MMEL)

The MMEL is defined in the Document No: 7.11.01, Revision Original or later approved revisions.

#### **C.VI. Notes:**

1. This certification applies to serial numbers 42.339, 42.379, 42.N001 and subsequent for production at Diamond-Austria, 42.NC001 and subsequent for production at Diamond-Canada. 42.NW002 and subsequent for production in Wuhu/China, see Note 14. DA42 may be converted to Model DA 42 NG by DAI approved SB OSB 42-068.
2. Approved Noise Levels in accordance to the EASA data sheet for noise TCDSN A.005.
3. For approved software versions of Gamin G1000 Integrated Avionic System see DAI MSB 42NG-003, at latest issue. Garmin Software PNo. 010-00670-01 or later approved version is required.
4. Approved engine model for installation in the DA 42 NG: E4-B  
with MÄM 42-600 installed : E4-C  
The approved firmware and mapping is according to DAI MSB 42NG-002 at latest issue.
5. Propeller Equipment: Governor P-877-16
6. Flights into known or forecast icing conditions is approved if the liquid fluid ice protection system in accordance to Major Design Change OÄM 42-160 is installed.
7. For additional approved Jet Fuel specifications see AFM Section 2.
8. The installation of Propeller MTV-6-R-C-F/CF 190-69 is only approved by complete installation of design change MÄM 42-600 which includes a number of different modifications.
9. Only specific brand names and types of tires are allowed for installation, see AMM and IPC
10. The Variable Elevator Stop is removed with OÄM 42-199 installed.

11. Operation with Diesel fuel is only approved if OÄM 42-251.

12. The following Design Mass Configurations are approved:

Design Changes installed	Standard	MÄM 42-659	MÄM 42-659 and MÄM 42-678	MÄM 42-659 and MÄM 42-678 and OÄM 42-260
MTOM	1900 kg (4189 lb)	1900 kg (4189 lb)	1999 kg (4407 lb)	2001 kg (4411 lb)
MZFM	1765 kg (3891 lb)	1835 kg (4045 lb)	1835 kg (4045 lb)	1835 kg (4045 lb)
MLM	1805 kg (3979 lb)	1900 kg (4189 lb)	1999 kg (4407 lb)	1999 kg (4407 lb)

MTOM – maximum take-off mass; MZFM – maximum zero fuel mass; MLM – maximum landing mass

The retrofit installation of the design changes is only approved per TC Holder Service Bulletins.

The Maximum Take Off Mass of 2001 kg (4411 lb) per OÄM 42-260 is intended only for cases where it is operationally more suitable to have a MTOM above 2000 kg. The forward Center of Gravity Limit at MTOM 2001 kg (4407 lb) is 2.434 m (95.83 in) aft of datum plane.

13. The commercial designation of the DA 42 NG with MÄM 42-600 installed is DA42-VI.

14. For serial number 42.NW002 and subsequent produced in Wuhu/China under Chinese Production Certificate PC0030A, EASA is considered state of design. Pending a bilateral agreement between the People’s Republic of China and the European Union (EU), this aircraft serial numbers are not eligible for registration in the EU. Spareparts with a Chinese Authorized Release Certificate are not eligible for EU registered aircraft.