TYPE-CERTIFICATE DATA SHEET

No. E.120

for Piston Engines
CMD22 Series

Type Certificate Holder

C.M.D. S.p.A – Costruzioni Motori Diesel

Nucleo Industriale – Valle di Vitalba
85020 - Atella Potenza
Italy

For Models: CMD22

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I. General

1. Type/ Model

Type CMD22 Series
Model CMD22

2. Type Certificate Holder

C.M.D. S.p.A. – Costruzioni Motori Diesel
Nucleo Industriale – Valle di Vitalba
85020 Atella Potenza, Italy

EASA.AP-452

3. Manufacturer

As above

4. Date of Application

15 February 2016

5. EASA Type Certification Date

12 January 2018

II. Certification Basis

1. State of Design Authority Certification Basis

Not applicable

2. Reference Date for determining the applicable airworthiness requirements

Refer to section 4 (Date of Application) of part I. General

3. EASA Certification Basis

3.1. Airworthiness Standards

CMD22 : CS 22 Appendix H, Certification Specifications for Sailplanes and Powered Sailplanes Amendment 2 5 March 2009

3.2. Special Conditions (SC)

None

3.3. Equivalent Safety Findings

None

3.4. Deviations

None

3.5. Environmental Protection

None (not required for piston engines)

III. Technical Characteristics

1. Type Design Definition

As defined by the type design definition no. U22-TSP-720-0119

2. Description

The CMD22 engine is an air-cooled 4-stroke, 4 cylinder horizontally opposed, spark ignition engine, equipped with an electronic engine control system for injection and dual ignition, and a propeller reduction gearbox (ratio 1 : 2).

3. Equipment

See Engine Installation Manual

4. Dimensions

Description	mm	in.
Overall length	635	25
Overall height	434	17.1
Overall width	641	25.2

5. Dry Mass

Description	Mass kg (lb)
Engine	71.5 (158.7)
Alternator	2.5 (5.5)
ECU, sensors and actuators	1.4 (3.08)
Engine Harness	2.2 (5.29)
Total Mass	**77.60 (172.57)**

6. Ratings

Description	kW	rpm (crankshaft)
Max. continuous performance at sea level pressure altitude	78	4850
Take-off performance rpm (max. 5 min.) at sea level pressure altitude	87	5000

7. Control System

The CMD 22 engines are controlled by a single ECU for ignition and injection.
Refer to the Installation / Operator's Manuals for further information

8. Fluids (Fuel, Oil, Coolant, Additives)

See Operators Manual U22-EOM-720-0132

9. Aircraft Accessory Drives

N°	Type	Max continuous torque [Nm]	Drive ratio to crankshaft	direction of rotation
Pad 1	AND 20000	15	1:2	CCW (counter clockwise)
Pad 2	AND 20010	15	1:2	CW (clockwise)

10. Maximum Permissible Air Bleed Extraction

Not applicable

IV. Operating Limitations

1. Temperature Limits

Description	**°C**	**° F**
Cylinder head temperature	200	392
Oil temperature	135	275
Exhaust gas temperature	800	1472

2. Speed Limits

Take-off Speed, max. 5 min.: 5000 rpm (crankshaft)

Maximum Continuous Speed: 4850 rpm (crankshaft)

3. Pressure Limits

3.1 Fuel Pressure

Description	**bar** (gauge)	**psig**
Maximum	3.9	56.60
Minimum	3.6	52.21

3.2 Oil Pressure

Description	**bar** (gauge)	**psig**
Normal operating range	min 2.0 max 6.0	min 29 max 87
Minimum below 2000 rpm	0.8	11.60
At cold start and warming up	max 7.0	max 101.52

4. Oil capacity, consumption limit

Description	Lit	US gal
Oil capacity maximum	3.75	0.99
Oil capacity minimum	2.75	0.73
Max. Oil consumption per hour	0.06	0.016

V. Operating and Service Instructions

Manuals	N° Document
Engine Installation Manual	U22-EIM-720-0130
Engine Operator Manual	U22-EOM-720-0132

Instructions for Continued Airworthiness (ICA)	N° Document
Engine Maintenance Manual	U22-EMM-720-0131
Engine Illustrated Parts Catalog	U22-IPC-720-0133
Engine Overhaul Manual	Not issued yet
Service Bulletins, Service Instructions and Service Letters	As published

VI. Notes

Note 1 : The EASA approved Airworthiness Limitations Section of the Instructions for Continued Airworthiness is published in Engine Maintenance Manual", chapter 4 "Airworthiness Limitations".

Note 2 : The Electronic Engine Control System (Engine Control Unit, Can Power Unit, Engine Wiring, spark cable, starter motor, crankshaft sensors and actuators.) complies with RTCA/DO-160G section 17-18-20-21-22-25. Refer to Engine Installation Manual U22-EIM-720-0130.

Note 3 : For recommended TBO see Engine Maintenance Manual U22-EMM-720-0131

SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

CHT	Cylinder Head Temperature
CW	clockwise
CCW	counter-clockwise
CS-22	Certification Specifications for Sailplanes and Powered Sailplanes
DO-160	Environmental Conditions and Test Procedures for Airborne
EASA	European Aviation Safety Agency
ECU	Engine Control Unit
EIM	Engine Installation Manual
IPC	Illustrated Parts Catalog
EMM	Engine Maintenance Manual
EOM	Engine Operators Manual
rpm	revolutions per minute
RTCA	Radio Technical Commission for Aeronautics
SB	Service Bulletin
SI	Service Instruction
TBO	Time between Overhaul
TCDS	Type Certificate Data Sheet

II. Type Certificate Holder Record

n/a

III. Change Record

Issue	Date	Changes	TC issue
Issue 01	12 January 2018	Initial Issue	Initial Issue, 12 January 2018

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