



TYPE CERTIFICATE DATA SHEET Nº EM-2023T01

Type Certificate Holder:

Continental Aerospace Technologies GmbH
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Germany

EM-2023T01-00

Sheet 01

CONTINENTAL
AEROSPACE

Centurion 3.0

06 June 2023

Engines of models described herein conforming with this data sheet, which is part of Type Certificate No. 2023T01, meet the minimum standards for use in certificated aircraft in accordance with pertinent aircraft data sheets and applicable portions of the Brazilian Aeronautical Regulations provided they are installed, operated, and maintained as prescribed by the approved manufacturer's manuals and other instructions.

MODEL Centurion 3.0

TYPE The Centurion 3.0 engine is a V6-cylinder, four stroke Diesel piston engine with an displacement of 2 987 cm³, equipped with common rail high pressure direct injection, turbocharger, gearbox with reduction ratio of 1 : 1.66 and an Electronic Engine Control Unit (EECU).

RATINGS	Centurion 3.0	<Model>
Max. continuous, hp. - rpm. full throttle at: Sea level pressure altitude:	272 HP (200 kW) at 3830 engine rpm (2300 prop rpm)	<hp-rpm>
Takeoff, hp. - rpm full throttle at: Sea level pressure altitude:	300 HP (221 kW) at 3880 engine rpm (2340 prop rpm)	<hp-rpm>

FUEL TYPE JET A-1 (ASTM D 1655), JET A (ASTM D 1655), Jet Fuel No.3 (GB 6537-2018)

OIL, LUBRICATION AeroShell Oil Diesel Ultra

WEIGHT DRY 265 kg

IMPORT REQUIREMENTS Each engine imported separately and/or spare parts must be accompanied by a EASA Export Airworthiness Approval through the EASA Form 1, Authorized Release Certificate, certifying that the engine conforms to a type design approved by the ANAC, as specified in the ANAC's type certificate data sheet No. 2023T01-00, is in condition for safe operation and has undergone a final operational check. The original Authorized Released Certificate should be sent with the engine and a copy remains with the issuing organization. For each engine it is required a list of exceptions (if any) in respect to the ANAC approved Type Design, listed in the EASA Authorized Release Certificate above mentioned.

CERTIFICATION BASIS

Brazilian Type Certificate No. 2023T01 issued on 30 March 2023 based 21.29 including the following requirements:

<u>Model</u>	<u>Application</u>	<u>Issued TC</u>
Centurio n 3.0	13/03/2023	31/03/2023

- RBAC 33 (corresponding to 14 CFR Part 33 including amendments 1 thru 55),
 - The compliance was verified through equivalency finding to EASA CS-E, Amendment 3 including EASA issued Special Conditions, Equivalent Level of Safety and endorsed by ANAC:

* EASA Special Conditions:

Addition to CS-E 210 Failure Analysis,

Addition to CS-E 240(d) Engine Flame Out during Flight

* EASA Equivalent Safety Findings:

CS-E 70, 100, 110 – Type design

CS-E 130(h) – Fireproofness of engine attachment points

CS-E 440(b)(3) Endurance Test – Schedule for Engine Incorporating a Turbocharger

MANUALS

Manuals	Centurion 3.0
Installation Manual	IM-06-01
Operation Manual	OM-06-01

Instructions for Continued Airworthiness (ICA)	Centurion 3.0
Maintenance Manual	OM-06-01
Overhaul Manual	not issued yet

NOTES:**NOTE 1 Temperature Limits**

	Temperature in °C / °F	Comments
Minimum opening up Oil Temperature	50 °C / 122 °F	
Max. Oil Temperature:	125 °C / 257 °F	
Minimum Ambient Temperature for Starting	+5 °C / 41 °F	With 32 ≤ Cetane N° < 38
	-25 °C / -13 °F	With Cetane N° ≥ 38
Minimum Fuel Temperature during operation	-25 °C / -13 °F	
Minimum opening up Cooling Fluid Temperature	60 °C / 140 °F	
Max. Cooling Fluid Temperature	105 °C / 221 °F	
Max. Gearbox Temperature	110 °C / 230 °F	
Max. Exhaust Gas Temperature	850 °C / 1562 °F	

NOTE 2 Speed Limits

Maximum Engine Over-speed (Crankshaft Speed)	4220 rpm (2500 prop rpm)
Take-off speed	3880 rpm (2340 prop rpm)
Max. continuous speed	3830 rpm (2300 prop rpm)

NOTE 3

	Rotation facing	Speed Ratio to Crankshaft	Max. Torque	Type of drive
Accessory	Drive Pad			
Accessory Drive Prop. Governor	CCW	3 900	13 Nm	AND 20000 MODIFIED

CCW = Counter-Clock-Wise
Speed is indicated for a reference engine speed of 3880 rpm.
Accessory drive direction of rotation is as viewed facing the drive.

NOTE 4 Pressure Limits:

Minimum Fuel Pressure (at inlet of feed pump)	-300 mbar (4.4 psig)
Maximum Fuel Pressure (at inlet of feed pump)	1000 mbar (14.5 psig)
Minimum Oil Pressure at Idle Conditions	2 bar (29 psig)
Oil Pressure (normal operation)	2.3... 7.0 bar (33.4 ... 101.5 psig)
Maximum Oil Pressure	7.5 bar (108.8 psig)

NOTE 5 Time Limited Dispatch (TLD)

The engine is not approved for Time Limited Dispatch. All engine systems and equipment must be functional prior to aircraft take-off. Any detected engine system or equipment failure must be corrected before next flight. For special instructions, see OM-06-01.

NOTE 6 Operating Altitude

Maximum altitude	7 620 m (25 000 ft)
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- NOTE 7** The EASA approved Airworthiness Limitations Section of the Instructions for Continued Airworthiness is published in the applicable "Operation & Maintenance Manual" document, chapter 06-OM-05-01 "Airworthiness Limitations". This ALS section is empty because no life limit is necessary for these models.
- NOTE 8** Suffixes in parentheses may be added to the engine model number to define installation specific configuration changes. The software of the electronic engine control for each application has a specific software mapping. See Service Bulletin TM TAE 000-0007 for the installation versions and software mappings. Also refer to Installation Manual for appropriate installation.
- NOTE 9** The Centurion 3.0 series engines are approved for the installation in Part 23 normal and utility category airplanes.
- NOTE 10** The Centurion 3.0 series engines are approved for operation with jet fuels (see Operation Manual OM-06-01). The engine has been tested for fuels up to a maximum ignition delay time of 6,78 ms resp. a minimum derived cetane number of 32 (determined according EN 15195/ASTM D6890).
- NOTE 11** The Centurion 3.0 engine, including the FADEC, is approved for use with the propeller MTV--12-D/210-56 models. This approval does not include the approval of the propellers and their control systems.
- NOTE 12** This engine design features an integrated propeller control in the FADEC. The software in the FADEC has been developed in accordance with DO-178B at level C. The approval of the engine and its FADEC does not include approval of the propeller control system.
- NOTE 13** The recommended Time Between Overhaul (TBO) is published in SB TMG 300-0001.
- NOTE 14** The engine control system has been tested according to DO-160G for lightning protection and magnetic interference. The demonstrated levels are declared in the Installation Manual.
- NOTE 15** The EECU must not be installed in a dedicated fire zone. The installation conditions are defined in the Installation Manual.
- NOTE 16** Installation Assumptions: See Installation Manual.
- NOTE 17** Containment has been demonstrated for max. turbocharger speed of 192 500 rpm.
- NOTE 18** Sales name of the model Centurion 3.0: CD-300

CHANGE RECORD

Revision	Application Date	Changes
00	13 March 2023	Original Issue

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This TCDS is available at ANAC website:

<https://sistemas.anac.gov.br/certificacao/Produtos/EspecificacaoOrgE.asp>