AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL - BRASIL

TYPE CERTIFICATE DATA SHEET Nº EM-2013T01

Type Certificate Holder:

Austro Engine GmbH
Rudolf-Diesel- Straße 11
2700 Wiener Neustadt
Austria

EM-2013T01
Sheet 01
AUSTRO ENGINE
AE50R, AE50RA, AE50RAB, IAE50R-AA
22 February 2013

Engines of models described herein conforming with this data sheet, which is part of Type Certificate No.2013T01, 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 AE50R, AE50RA, AE50RAB, IAE50R-AA

TYPE Single rotor Wankel–type rotary engine

RATINGS

	AE50R, AE50RA, AE50RAB	IAE50R-AA
Max. continuous, hp. - rpm. full throttle:	46-6900	48-7100
Takeoff, hp. - rpm full throttle:	49-7500	50-7750

The performance values specified above correspond to minimum values defined under the conditions of ICAO or ARDC standard atmosphere.

Legend: "--" Same as preceding

MODEL		AE50R, AE50RA, AE50RAB	IAE50R-AA
FUEL TYPE	(mínimum grade aviation gasoline)	AVGAS100LL	---
CARBURETION / INJECTION		Carburettor	Injection System
OIL, LUBRICATION		See Engine Manual E1.01.01-E for approved oils	See Engine Manual E1.01.05-E for approved oils
SENCE OF ROTATION		Clockwise direction when viewed from the driving side of the engine	---
COMPRESSION RATIO		9:1	---
IGNITION		Conventional Dual Ignition System	Electronically Controlled Dual Ignition System
WEIGHT (DRY)	kg (lb)	26.8 (59.08)	27 (59.5)
PRINCIPAL DIMENSIONS			
ECCENTRICITY	mm (in)	11.6 (0.45)	---
WIDTH OF HOUSING	mm (in)	68.2 (2.68)	---
GENERATING RADIUS	mm (in)	69.0 (2.71)	---
DISPLACEMENT	cm^3	294	---
OVERALL LENGTH	mm (in)	420 (16.53)	---
OVERALL HEIGHT	mm (in)	296 (11.65)	---
WIDTH	mm (in)	348 (13.70)	339 (13.34)
TEMPERATURE LIMITS		See Note 1	---
APPLICABLE NOTES		1,2,3,4,5,6,7,8,9,10,11,12	---

Legend: "--" Same as preceding

IMPORT REQUIREMENTS

Each engine imported separately and/or spare parts must be accompanied by an Airworthiness Certificate for Export and/or an Airworthiness Approval Tag, respectively, issued by EASA, attesting that the particular engine and/or parts were submitted to the governmental quality control before delivery and are in conformity with the ANAC approved type design.

CERTIFICATION BASIS

	Model	Application	Issued TC
JAR 22 Change 4 dated 13 September 1982, incl. Orange Paper 22/01/1990	AE50R, AE50RA, AE50RAB	27/08/2012	22/02/2013
JAR 22 Change 5 dated 28 October 1995	IAE50R-AA	27/08/2012	22/02/2013

NOTES:

NOTE 1 Maximum permissible temperatures:

	AE50R, AE50RA, AE50RAB	IAE50R-AA
Cooling Fluid, take off, min. C° (F°)	60 (140)	---
Cooling Fluid, take off, max. C° (F°)	90 (194)	---
Cooling Fluid, continued operation, max. C° (F°)	107 (224.6)	100 (212)
Exhaust Gas Temperature, max. C° (F°)	950 (1742)	970 (1778)
Fan Cooling Air at Cooling Air Exhaust, max. C° (F°)	125 (257)	110 (230) ; 120 (248) *
Ambient Temperature for Starting, min. C° (F°)	-10 (14)**	-10 (14)**
Ambient Temperature, continued operation, max. C° (F°)	45 (113)	55 (131)

* Max. 3 min.
** See Note 12

NOTE 2 Pressure limits:

Fuel Pressure at Carburettor inlet: PSI (bar) – AE50R, AE50RA, AE50RAB 4 (0.276) min. 6 (0.414) max.
Nominal Fuel Pressure – Injection System: PSI (bar) – IAE50R-AA 43.51 (3.0) ± 2.9 (0.2)

NOTE 3 Gear ratio:
N/A

NOTE 4 Aircraft accessory drives:
None.

NOTE 5 Control System:
The AE50R, AE50RA and AER50RAB engine models are equipped with a conventional dual ignition system and a carburetor. The IAE50R-AA engine model is equipped with electronically controlled (dual) ignition and injection system.

NOTE 6 Maximum / Minimum speeds:

	AE50R, AE50RA, AE50RAB	IAE50R-AA
Maximum cont. speed, rpm:	6900	7100
Maximum Engine Speed, take off, rpm:	7500 *	7750 **
Maximum Engine Over-Speed (20 sec.), rpm:	7800	8000

* Max. 5 min.
** Max. 3 min.

NOTE 7 Oil consumption and capacity limits:
See engine Manual.

NOTE 8 Operation and service instructions:

	AE50R, AE50RA, AE50RAB	IAE50R-AA
Manual for engine (Operation, Maintenance, Installation)	E1.01.01-E (*)	E1.01.05-E (*)

(*) or later approved revisions.

NOTE 9 With effect from 10 March 2003, the responsibilities of the Type Certificate Holder for the AE50R series engines transferred from Mid-West Engines Limited to Diamond Aircraft Industries.
Coincident with this the ICAO Annex 8 responsibilities of the Authority of the State of Design transferred from the United Kingdom Civil Aviation Authority (CAA-UK) to Austro Control (ACG).
With effect from 04 April 2011, the responsibilities of the Type Certificate Holder for the AE50R series engines transferred from Diamond Aircraft Industries to Austro Engine GmbH.
The EASA Type Certificate EASA.E.085 transfers the Authority of the State of Design from ACG to EASA.
The Type Certification of GAER50R engine model has been withdrawn on request of Austro Engine.
This engine variant had never been produced and had not entered into service.

NOTE 10 Engines up to S/N R1-0494 and all engines of S/N NR601-... were produced by Mid-West Engines Limited based on CAA UK Type Certificate Nº 134.

NOTE 11 The engine ratings have been determined under the following conditions:
Driven generator (power supply to fuel pumps and ignition system, buffered by battery).
Coolant temperature at housing Outlet 85 °C (185 ºF) (+5 °C (41 ºF) / - 0 °C (32ºF)).
Free Air intake, Intake Tube Length 356 mm (14 inches).
Test Stand Exhaust System
Power taken from Output Shaft
The generator causes usually a power reduction of 0.75 kW (1 HP).
The gearbox causes usually a power reduction of 1.5 kW (2 HP).

NOTE 12 Starting at ambient temperatures below -10°C (14º F) is permitted if approved priming system is used.

NOTE 13 EASA considers that all Airworthiness Directives (AD's) issued by ACG Austria related to these products are still applicable unless EASA replaces or cancels them.

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