



AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL - BRASIL

TYPE CERTIFICATE DATA SHEET Nº EM-2005T10

Type Certificate Holder:

SOCIÉTÉ DE MOTORISATIONS AÉRONAUTIQUES (SMA)

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FRANCE

EM-2005T10-01

Sheet 01

SMA

SR305-230

12 February 2009

Engines of models described herein conforming with this data sheet, which is part of Type Certificate No. 2005T10, 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 SR305-230

TYPE Flat four cylinders, horizontally opposed, direct drive piston engine. Cooling by air and by an internal oil cooling circuit. Four stroke Diesel cycle, turbocharged, direct injection by a mechanical pump with electronic control. Displacement equal to 4988 cm³

RATINGS SR305-230

Max. continuous, kW (hp) - rpm full throttle at:	
Sea level pressure altitude:	169 (230) - 2 200
Takeoff, kW (hp) - rpm full throttle at:	
Sea level pressure altitude:	169 (230) - 2 200

		SR305-230
FUEL TYPE	Minimum grade aviation fuel	JET-A1 (F-35) JET-A1 (ASTM D1655) JET-A (ASTM D1655)
CARBURETION / INJECTION	Direct fuel injection	
OIL, LUBRICATION	(Lubricants should conform to the specification as listed or to subsequent revisions thereto).	SMA SB-01-79-001
	Sump capacity, liter	6.5
	Usable oil, liter	Refer to Operating Manual
TEMPERATURE LIMITS	Maximum permissible temperatures	
	Oil temperature:	
	Minimum for starting:	-20 °C
	Minimum for power up:	65 °C
	Maximum:	120 °C
	Fuel temperature:	Use of anti-icing additive is mandatory for fuel temperatures below 0°C. Refer to the latest revision of Service Bulletin SMA SB-01-73-001
	Minimum:	
	Maximum:	65 °C at the inlet of the engine low pressure pump

TEMPERATURE LIMITS (Cont.)	Maximum cylinder head temperature	200 °C. The cylinder head temperature gauge must comply with the installation manual specifications		
	Maximum intake air temperature (at intake manifold inlet)	65 °C		
	Maximum exhaust gas temperature (at turbine inlet)	730 °C		
ROTATIONAL SPEED LIMITS	Turbocharger maximum speed	146 000 rpm		
	Engine maximum speed	2 200 rpm See note 5		
PRESSURE LIMITS		See Note 1		
COMPRESSION	Bore and stroke, mm	126x 100		
	Displacement, mm ³	4 988		
	Compression ratio	15		
WEIGHT	Dry, kg	195		
PROPELLER SHAFT-SPECIFICATIONS		AS127 SAE6		
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 SMA on behalf of 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	RBHA 33 "Airworthiness Requirements. Aircraft Engines." corresponding to 14 CFR Part 33 effective 01 February 1965, and Amendments 33-1 through Amendment 33.18.	<u>Model</u> SR305-230	<u>Application</u> 10 June 2002	<u>Issued TC</u> 05 Feb. 2007

NOTES:**NOTE 1**Pressure limits:

Fuel, (kPa) absolute pressure

Minimum: 60 kPa at the inlet of the engine low pressure pump

Oil, (kPa) relative pressure

Minimum, at idle: 100 kPa

Nominal: 320 kPa to 620 kPa

Maximum, cold engine: 1200 kPa

Intake manifold air pressure (absolute - at intake manifold inlet)

At sea level, in standard atmospheric conditions:

In emergency (mechanical) mode: 271 kPa in static sea level standard conditions (15 °C and 101.32 kPa).

For other operating conditions, refer to the "Operating Manual"

NOTE 2Aircraft Accessory Drives:

	Direction of rotation (*)	Speed of rotation(rpm) (**)	Maximum torque	Type of drive
Propeller governor	CCW	2 708	24 N.m	AND 20010
Vacuum pump(s)	CW	2 589	10.5 N.m	AND 20000
Alternator	CCW	2 200	N/A	Belt
Air conditioning compressor or 2 nd alternator	CCW	2 200	N/A	Belt

(*) CW = clockwise / CCW = counter-clockwise. The direction of rotation of the accessory power drives is indicated considering that the drive pad is seen from the outside, or from the front of the engine for accessories that driven from the engine front pulley.

(**) The speed of rotation of the accessory power drives is indicated for an engine speed of 2 200 rpm.

NOTE 3

These engines incorporate provisions for absorbing propeller thrust in tractor installations.

NOTE 4

Transient Overspeed : 2 350 rpm limited to 3 seconds

Inadvertent Maximum Engine Overspeed : 2 420 rpm limited to 20 seconds

- NOTE 5** The life limits of engine components are indicated in the "Engine Maintenance Manual", chapter 5, "Airworthiness Limitations" Section.
- NOTE 6** The engine static take off power is available at sea level, in standard atmospheric conditions (15°C and 101.32 kPa).
- NOTE 7** The engine is approved for installation on aircraft certified under the Normal (N) or Utility (U) categories.
- NOTE 8** The starting and operating envelope of the engine is defined in the "Installation Manual".
- NOTE 9** The electronic engine control unit must not be installed in a dedicated fire zone. The installation conditions are defined in the "Installation Manual".
- NOTE 10** The protection of the electronic engine control against lightning and electromagnetic interference has been tested in accordance with the DO 160D. The levels of protection are defined in the "Installation Manual".
- NOTE 11** The SR305-230 engine model was initially certified with a 2 blade constant speed propeller, with a moment of inertia of 3.5 kg.m² and a weight of 35 kg. The list of the propellers that are approved for use with the engine is published in the "Installation Manual".



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