AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL - BRASIL

TYPE CERTIFICATE DATA SHEET Nº EM-2017T02

Type Certificate Holder:

LYCOMING ENGINES,
AN OPERATING DIVISION OF AVCO CORPORATION
625, Oliver Street
Williamsport, Pennsylvania PA 17701
USA

EM-2017T02-00

Sheet 01

LYCOMING ENGINES

IO-390-C1A6, -C3A6, -C1B6, -C3B6

26 June 2017

Engines of models described herein conforming with this data sheet, which is part of Type Certificate No. 2017T02, 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 IO-390-C1A6, -C3A6, -C1B6, -C3B6

TYPE 4 HOA DIRECT DRIVE

RATINGS

	IO-390 -C1A6, -C3A6, -C1B6, -C3B6
Power, Max. continuous and Takeoff, kW (hp) - rpm full throttle at:	
Sea level pressure altitude:	160 (215) - 2700

		IO-390 -C1A6, -C3A6, -C1B6, -C3B6
FUEL TYPE	Minimum grade aviation gasoline	100/100LL♦
	Fuel pump	NOTE 3
	Pressure	NOTE 2
	Injector and pump	NOTE 6
OIL, LUBRICATION	Lubricants should conform to the specification as listed or to subsequent revisions thereto	Service Instruction 1014
	Temperature	NOTE 1
	Pressure	NOTE 2
	Sump capacity, l (qt)	6.62 (7)
	Usable oil, l (qt)	3.31 (3.5)
	Engine position	NOTE 9
IGNITION, DUAL	Magnetos	NOTE 6
	Timing °BTC	20
	Spark plugs	NOTE 4
COMPRESSION	Bore and stroke cm (in)	13.51 x 11.11 (5.319 x 4.375)
	Displacement cm^3 (cu. in)	6374.8 (389)
	Compression ratio	8.9:1
MASS (DRY)		NOTE 6
C.G. LOCATION		NOTE 6
PROPELLER SHAFT-SPECIFICATIONS	SAE No. AS-127	Flange, Type 2 Modified

Legend: "--" Same as preceding "#" Does not apply

♦ For alternate fuel grades, see the latest revision of Lycoming Service Instruction 1070

IMPORT REQUIREMENTS

Each engine imported separately, and/or spare parts, must be accompanied by an Export Airworthiness Approval though the FAA Form 8130, Authorized Released Certificate, certifying that the engine is in compliance with the ANAC approved Type Design, defined by the Brazilian Type Certificate No. 2017T02, 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.

CERTIFICATION BASIS

Brazilian Type Certificate No. 2017T02 based on the RBAC §21.29 and RBAC 33, which endorse the 14 CFR §21.29 and 14 CFR Part 33 effective February 1, 1965, as amended by 33-1 through 33-34 except §33.8 replaced by compliance with CAR 13.16(c)

Model	Application	Issued TC
IO-390-C1A6, -C3A6, -C1B6, -C3B6	20 April 2017	19 June 2017

PRODUCTION BASIS

FAA Production Certificate No. 3

NOTES:

NOTE 1 Maximum permissible temperatures °C (°F):

Cylinder Head (Well Type Thermocouple):	241 (465)
Oil Inlet:	113 (235)

NOTE 2 Pressure limits, kPa (psi):

Fuel	Inlet to Fuel Pump	Maximum:	310 (45)
		Minimum:	-13.8 (-2)
	Inlet to Fuel Injector	Maximum:	310 (45)
		Minimum:	96.5 (14)

Oil		Maximum	Minimum
	Normal	655 (95)	379 (55)
	Idle	#	172 (25)
	Starting and warm-up	793 (115)	#

NOTE 3 The following accessory provisions are available:

Accessory	-C1A6, -C3A6	-C1B6 -C3B6	Rotation facing Drive Pad	Speed Ratio to Crankshaft	Max. Torque Nm (in.-lb.) Cont.	Max. Torque Nm (in.-lb.) Static	Max. Overhang Moment Nm (in.-lb.)
Starter•	*	*	CC	13.556:1		50.8 (450)	16.9 (150)
Alternator•	*	*	C	3.20:1	6.8 (60)	13.6 (120)	19.8 (175)
Accessory Drive #1×	*	*	CC	1.300:1	7.9 (70)	50.8 (450)	2.8 (25)
Accessory Drive #2×	#	*	C	1.300:1	11.3 (100)	90.4 (800)	4.5 (40)
Tachometer×	**	**	C	0.5:1	0.8 (7)	5.7 (50)	0.6 (5)
Prop. Governor	*	#	C	0.866:1	14.1 (125)	135.6 (1200)	4.5 (40)
Prop. Governor	#	*	C	0.895:1	14.1 (125)	135.6 (1200)	4.5 (40)
Fuel Pump	*	*	Plunger	0.5:1	#	#	1.1 (10)

"#" Does not apply * Standard ** Optional "C" Clockwise "CC" Counter Clockwise

• These Accessories are optional, see latest revision of SI 1154 for the approved alternates

× These drives are optional and accessory pads may be cast over.

NOTE 4 Spark plugs approved for use on this engine are listed in the latest revision of Lycoming Service Instruction No. 1042

NOTE 5 These engines incorporate provisions for absorbing propeller thrust in both tractor and pusher installations

NOTE 6 The following tabulations show std. dry weight (less alternator and starter), C.G.'s, fuel injectors, fuel pumps and magnetos for this model.

Model	Mass * kg (lb)	Center of Gravity From Front Face of Prop Shaft Flange cm (in)	Center of Gravity Off Crankshaft Center Line, cm (in)	Fuel Injector+	Fuel Pump	Ignition, Dual Slick♦
IO-390-C1A6, -C3A6	135 (298)	36.68 (14.44)	0.79 (0.31) below 0.05 (0.02) left	RSA-10AD1 or RSA-10AD2	Diaphragm Type	4345 4370
IO-390-C1A6, -C3A6	136 (300)	36.68 (14.44)	0.79 (0.31) below 0.05 (0.02) left	RSA-10AD1 or RSA-10AD2	Diaphragm Type	4345 4370

* Less Starter and Alternator

+ See latest revision of Lycoming SI 1532 for the approved alternates.

♦ See latest revision of Lycoming SI 1443 for the approved alternates.

NOTE 7 The listed models incorporate the following additional similarities or differences:

Model	Characteristics
IO-390-C1A6	Basic Model. Four cylinder air-cooled, horizontally opposed, direct drive, fuel injected, tuned induction engine having oil jets for internal piston cooling, lightweight oil sump, cold air induction housing and an RSA-10 fuel injector. Provisions for single action controllable pitch propeller.
IO-390-C3A6	Same as the -C1A6 except propeller flange bushings are reindexed.
IO-390-C1B6	Same as the –C1A6 except propeller governor located on left front of crankcase.
IO-390-C3B6	Same as the –C3A6 except propeller governor located on left front of crankcase.

NOTE 8 Starters and alternators approved for use on this engine are listed in the latest revision of Lycoming Service Instruction No. 1154

NOTE 9 Maximum flight attitudes for the IO-390-C Series are 30° nose up and 12° nose down.

NOTE 10 Engine Power variation of -2% to +5% is applicable to IO-390-C Series engine models.

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