AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL - BRASIL

TYPE CERTIFICATE DATA SHEET Nº EM-8207

Type Certificate Holder:

TEXTRON LYCOMING - AVCO CORPORATION
625, Oliver Street
Williamsport, Pennsylvania PA 17701
USA

EM-8207-05

Sheet 01

LYCOMING

IO-360-C1C, -C1C6, -A3B6D, L2A, -B1G6, -C1G6, -M1A, -A1B6
AEIO-360-A1B6, -B2F,

05 November 2008

Engines of models described herein conforming with this data sheet, which is part of Type Certificate No. 8207, 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-360-C1C, -C1C6, -A3B6D, -L2A, B1G6, -C1G6, -M1A, -A1B6; AEIO-360-A1B6, -B2F

TYPE 4 HOA DIRECT DRIVE

RATINGS

	IO-360 -C1C, -C1C6, -C1G6, -A1B6	IO-360 -A3B6D	IO-360 -L2A	AEIO-360 -B2F IO-360-B1G6, IO-360-M1A	AEIO-360 -A1B6
Max. continuous, hp – rpm full throttle at: Sea level pressure altitude:	200-2 700	200-2 700	160-2 400	180-2 700	200-2 700
Takeoff, hp - rpm full throttle at: Sea level pressure altitude:	200-2 700	200-2 700	160-2 400	180-2 700	200-2 700

		IO-360 -C1C, -C1C6, -C1G6, -A1B6	IO-360 -A3B6D	IO-360 -L2A	AEIO-360 -B2F IO-360-B1G6, IO-360-M1A	AEIO-360 -A1B6
FUEL TYPE	Minimum grade aviation gasoline	100/100LL	100/100LL	100/100LL	100/100LL	100/100LL
	Fuel pump	AC Type	AC Type	AC Type	AC Type	AC Type
CARBURETION / INJECTION	Fuel injector	PAC (1) RSA-5AD1	PAC (1) RSA-5AD1	PAC (1) RSA-5AD1	PAC (1) RSA-5AD1	PAC (1) RSA-5AD1
	(1) Precision Airmotive (PAC) formally Bendix					
OIL, LUBRICATION	(Lubricants should conform to the specification as listed or to subsequent revisions thereto).	Lycoming Spec. No. 301 and Service Instruction 1014	Lycoming Spec. No. 301 and Service Instruction 1014	Lycoming Spec. No. 301 and Service Instruction 1014	Lycoming Spec. No. 301 and Service Instruction 1014	Lycoming Spec. No. 301 and Service Instruction 1014
	Sump capacity, qt	8	8	8	8	8
	Usable oil, qt (Except AEIO Series)	6	6	6	6	6
	Engine Position	NOTE 10	NOTE 10	NOTE 10	NOTE 10	NOTE 10
	Usable oil, qt. (AEIO series)	4	4	4	4	4
TEMPERATURE LIMITS	Maximum permissible temperatures:					
	Cylinder Head (Well Type Thermocouple)	500°F	500°F	500°F	500°F	500°F
	Cylinder Base (See Note 6 for Exceptions)	325°F	325°F	325°F	325°F	325°F
	Oil Inlet	245°F	245°F	245°F	245°F	245°F
PRESSURE LIMITS		See Note 1	See Note 1	See Note 1	See Note 1	See Note 1

		IO-360 -C1C, -C1C6, -C1G6, -A1B6	IO-360 -A3B6D	IO-360 -L2A	AEIO-360 -B2F IO-360-B1G6, IO-360-M1A	AEIO-360 -A1B6
IGNITION	Magnetos	See NOTE 11	See NOTE 11	See NOTE 11	See NOTE 11	See NOTE 11
	Timing, OBTC -	25	25(4)	25	25	25
	Spark Plugs	See Note 3	See Note 3	See Note 3	See Note 3	See Note 3
	(2) For alternate magnetos see latest revision of TEXTRON Lycoming Service Instruction 1443 (3) Teledyne (TCM) formally Bendix (4) Have optional timing of 20 OBTC					
COMPRESSION	Bore and stroke, in -	5.1250 x 4.3750	5.1250 x 4.3750	5.1250 x 4.3750	5.1250 x 4.3750	5.1250 x 4.3750
	Displacement, cu. in. -	361	361	361	361	361
	Compression ratio -	8.7:1	8.7:1	8.5:1	8.5:1	8.7:1
WEIGHT	dry, lb. C.G. location (dry less starter and alternator)-	See NOTE 11	See NOTE 11	See NOTE 11	See NOTE 11	See NOTE 11
PROPELLER SHAFT-SPECIFICATIONS	SAE No. AS-127	Flange, Type 2 Modified	Flange, Type 2 Modified	Flange, Type 2 Modified	Flange, Type 2 Modified	Flange, Type 2 Modified

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 FAA, 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 CAR 13 effective, effective 15 June 1956, as amended by 13-1, 13-2, 13-3.

Model		Application	Issued TC
IO-360	-C1C	05 Dec. 1980	13 May 1982
	-C1C6	05 Dec. 1980	24 Jun. 1987
	-A3B6D	10 Feb. 1987	24 Jun. 1987
	-L2A	10 Feb. 1997	06 Oct. 1998
	-B1G6	05 Aug. 2002	13 Feb. 2003
	-C1G6	14 Aug. 2002	13 Feb. 2003
	-M1A	31 May 2006	22 Aug. 2006
	-A1B6	10 July 2008	05 Nov. 2008
AEIO-360	-A1B6	31 Mar. 1987	24 Jun. 1987
	-B2F	10 Jun. 1987	24 Jun. 1987

PRODUCTION BASIS Production Certificate No. 3

NOTES:

NOTE 1 Pressure limits:

Fuel, (psi):

At inlet to diaphragm pump	Maximum	Minimum	injector idle cutoff
At inlet to injector-	35	-2	55

Bust Pump Outlet Limits to Injector, (psi) :

	Parallel Boosts		Series Boosts	
	Maximum	Minimum	Maximum	Minimum
Zero fuel flow -	45	#	35	#
Maximun fuel flow -	#	14	#	14

Oil, (psi):

	Maximum	Minimum
Normal operation-	95	55
Idling -	#	25
Starting and warm-up -	115	

NOTE 2 The following accessory are available:

Accessory	AEIO-360- -A1B6	AEIO-360- -B2F	IO-360- -L2A	IO-360- A3B6D	Rotation facing Drive Pad	Speed Ratio to Crankshaft	Max. Torque (in lb) Cont.	Max. Torque (in lb) Static	Max. Overhang Moment (in lb)
Starter	*	*	*	*	CC	16.5560:1	#	450	150
Starter	#	#	#	#	C	13.5560:1	#	450	150
Generator	#	#	#	#	C	1.91:1	60	120	175
Generator	#	#	#	#	C	2.50:1	60	120	175
Alternator	*	*	*	*	C	3.25:1	60	120	175
Vacuum Pump	*	*	*	*	CC	1.30:1	70	450	25
Tachometer	*	*	*	*	C	0.55:1	7	50	5
Fuel Pump	*	*	*	*	Plunger	0.50:1	#	#	10
Fuel Pump	#	#	#	#	CC	1.00:1	25	450	25
Fuel Pump	#	#	#	#	CC	1.00:1	125	450	25
Prop. Governor	*	*	#	#	C	0.866:1	125	1200	40
Prop. Governor	#	#	#	#	C	0.895:1	125	1200	40
Prop. Governor	#	#	#	*	C	0.85:1	125	1200	25
Hydraulic Pump	#	#	*	#	C	1.30:1	100	800	40
Hydraulic Pump	#	#	#	#	C	1.30:1	180	2200	150
Optional Dual Drive Mounting on Vacuum Pump Drive Pad									
Vacuum Pump	**	**	**	#	CC	1.30:1	70	450	6
Hydraulic Pump	**	**	**	#	CC	1.30:1	Total	Total	10
or									
Vacuum Pump	**	**	#	#	CC	1.20:1	70	450	6
Prop. Governor	**	**	#	#	CC	1.30:1	Total	Total	10

NOTE 2 (Cont.)

Accessory	IO-360- -C1C	-C1C6	-B1G6, -M1A	-C1G6, -A1B6	Rotation facing Drive Pad	Speed Ratio to Crankshaft	Max. Torque (in lb.) Cont	Static	Max. Overhang Moment (in lb)
Starter	*	*	*	*	CC	16.5560:1	#	450	150
Starter	#	#	#	#	CC	13.5560:1	#	150	150
Generator	#	#	#	#	C	1.91:1	60	120	175
Generator	#	#	#	#	C	2.50:1	60	120	175
Alternator	*	*	*	*	C	3.20:1	60	120	175
Vacuum Pump	*	*	*	*	CC	1.30:1	70	450	25
Tachometer	*	*	*	*	C	0.50	7	50	5
Fuel Pump	*	*	*	*	Plunger	0.50:1	#	#	10
Fuel Pump	#	#	#	#	CC	1.00:1	25	450	25
Fuel Pump	#	#	#	#	CC	1.00:1	125	450	25
Prop. Governor	*	*	#	*	C	0.866:1	125	1200	40
Prop. Governor	#	#	*	#	C	0.895:1	125	1200	40
Prop. Governor	#	#	#	#	C	0.85:1	125	1200	25
Hydraulic Pump	#	#	*	#	C	1.30:1	100	800	40
Hydraulic Pump	#	#	#	#	C	1.30:1	180	2200	150
Optional Dual Drive Mounting on Vacuum Pump Drive Pad									
Vacuum Pump	**	**	#	**	CC	1.30:1	70	450	6
Hydraulic Pump	**	**	#	**	CC	1.30:1	Total	Total	10
or									
Vacuum Pump	**	**	#	**		1.30:1	70	450	6
Prop. Governor	**	**	#	**		1.30:1	Total	Total	10

"C" – Clockwise; "CC" – Counter-Clockwise; * Standard; ** Optional.
Total – refers to total torque of dual drives

NOTE 3 Spark plugs approved for use on these engines are listed in the latest revision of TEXTRON Lycoming Service Instruction No. 1042.

NOTE 4 These engines incorporate provisions for absorbing propeller thrust in both tractor and pusher installations.

NOTE 5 The listed models incorporate the following additional similarities or differences: (See FAA/USA TCDS nº 1E10)

IO-360-A3B6D	Same as IO-360-A1B6D except has propeller locating bushings rotated 120°clockwise.
IO-360-C1C	Same as IO-360-C1B except has 14 degree fuel injector inlet adapter and an impulse coupling Bendix S4LN-1227 magneto.
IO-360-C1C6	Same as IO-360-C1C except has a crankshaft equipped with one 6.3 order and one 8th order counterweights.
IO-360-L2A	Similar to IO-360-B2F except lower power rating
IO-360-B1G6	Similar to IO-360-B1E except front mounted governor, provisions for bed mounting and counterweighted crankshaft.
IO-360-C1G6	Same as IO-360-C1D except has two (2) retard magnetos instead of impulse magnetos, an unmachined front governor pad and provision for front bed mounting.
IO-360-M1A	Similar to IO-360-B1E except front inlet fuel injector, prop governor on front of crankcase and retard magneto.
IO-360-A1B6	Same as IO-360-A1B except has crankshaft equipped with one 6.3 order and one 8th order counterweights.
AEIO-360-A1B6	Same as IO-360-A1B6 except equipped with an inverted oil system kit for aerobatic flight.
AEIO-360-B2F	Same as IO-360-B2F except equipped with an inverted oil system kit for aerobatic flight.

NOTE 6 Cylinder base temperature limits are not applicable to engine models which incorporate internal piston cooling oil jets.

NOTE 7 Starters, generators, and alternators approved for use on these engines are listed in the latest revision of TEXTRON Lycoming Service Instructions No. 1154.

NOTE 8 Engine models of this series incorporate no crankshaft dampers unless the third section of the model designation exhibits a numerical digit in its fourth position, i.e. IO-360-A1B6. The digit "6" in the fourth position, indicates the incorporation of one 6.3 order and one 8th order counterweights.

NOTE 9 All models equipped with one impulse coupling magneto may use two impulse coupling magnetos as optional equipment.

NOTE 10 Usable Oil – Engine Position:

Maximum flight attitudes: for the IO-360 Series are 30º nose up or down;
for the AEIO-360-A Series are 30º nose up and 8º down;
for the AEIO-360-B Series are 30º nose up and 25º down;

A 20º nose down attitudes is allowed for the AEIO-360-A Series when the oil strainer is fitted with a 3 ½ in extension in accordance with AVCO Lycoming Service Bulletin nº 403.

NOTE 11 Weight, Center of Gravity and Magnetos:

Center of Gravity (in):

Model	Weight	From Front Face of Prop Shaft Flange	Off Crankshaft Center Line	Ignition
IO-360-C1C	291	14.66	.92 below; .15 left	TCM S4LN-1227, S4LN-12
IO-360-C1C6	298	14.66	.92 below; .15 left	TCM S4LN-1227, S4LN-1209
IO-C1G6	324	14.24	.83 below; .06 left	Slick 4345 (two)
IO-360-A3B6D	299	14.23	.82 below; .21 left	TCM D4LN-3000
IO-360-L2A	268	14.19	1.35 below; .05 left	Slick 4371 (two)
IO-360-B1G6	284	14.42	1.27 below; .03 right	Slick 4371 and 4370
IO-360M1A	279	14.00	.75 below, .00 on	Slick 4347 and 4370
AEIO-360-B2F	275	14.19	1.34 below; .05 left	TCM S4LN 1227 (two)
AEIO-360-A1B6	307	14.24	.83 below; .06 left	TCM S4LN.1227, S4LN-1209
IO-360-A1B6	302	14.24	.83 below; .06 left	TCM S4LN.1227, S4LN-1209

HÉLIO TARQUINIO JÚNIOR
Gerente-Geral Substituto, Certificação de Produto Aeronáutico
(Acting Manager, Aeronautical Product Certification)