

**MINISTÉRIO DA AERONÁUTICA
DEPARTAMENTO DE PESQUISAS E DESENVOLVIMENTO
CENTRO TÉCNICO AEROESPACIAL**

TYPE CERTIFICATE DATA SHEET Nº EM-8205-02

Type Certificate Holder:

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

EM-8205-02
Sheet 01

LYCOMING
O-320-B2B
O-320-B2C
O-320-B2D
O-320-D2A

October 98

Engines of models described herein conforming with this data sheet, which is part of Type Certificate No. 8205, 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	O-320-B2B , O-320-B2C , O-320-B2D, O-320-D2A				
TYPE	4HOA				
RATINGS		O-320-B2B	O-320-B2C	O-320-B2D	O-320-D2A
	Max. continuous, h.p. - r.p.m. full throttle at:				
	Sea level pressure altitude	160-2700	160-2700	160-2700	160-2700
	Takeoff, h.p. - r.p.m. full throttle at:				
	Sea level pressure altitude	160-2700	160-2700	160-2700	160-2700
					See Note 8

		O-320-B2B	O-320-B2C	O-320-B2D	O-320-D2A
FUEL TYPE	Minimum grade aviation gasoline	100 or 100LL	100 or 100LL	100 or 100LL	100 or 100LL
CARBURETION		Marvel-Schebler MA-4SPA	Marvel-Schebler MA-4SPA	Marvel Schebler HA6	Marvel-Schebler MA-4SPA
	Pressure limits	See Note 2	See Note 2	See Note 1	See Note 2
	Pump Drive	See Note 1	See Note 1	See Note 2	See Note 1
OIL, LUBRICATION	Lubricants should conform to the specifications as listed or to subsequent revisions thereto	Lycoming Specification No. 301-F	Lycoming Specification No. 301-F	Lycoming Specification No. 301-F	Lycoming Specification No. 301-F
	Oil sump capacity, qt.	8	8	8	8
	Usable oil sump capacity, qt.	6	6	6	6
TEMPERATURE LIMITS	Maximum permissible temperatures are as follows:				
	Cylinder head	500°F	500°F	500°F	500°F
	Cylinder barrel	325°F	325°F	325°F	325°F
	Oil inlet	245°F	245°F	245°F	245°F
PRESSURE LIMITS		See Note 2	See Note 2	See Note 2	See Note 2
IGNITION	Dual magnetos*	S4LN-21, S4LN-29 (TCM)+	S4LN-200, S4LN-204 (TCM)+	4373, 4370 (Slick)	S4LN-21, S4LN-20 (TCM)+
	Timing BTC	25	25	25	25
	Spark plugs	See Note 3	See Note 3	See Note 3	See Note 3
	* For alternate magnetos see latest revision of TEXTRON Lycoming Service Instruction 1443 + TCM formally Bendix				

		O-320-B2B	O-320-B2C	O-320-B2D	O-320-D2A
COMPRESSION	Bore and stroke, in.	5.125 x 3.875	5.125 x 3.875	5.125 x 3.875	5.125 x 3.875
	Displacement, cu. in.	319.8	319.8	319.8	319.8
	Compression ratio	8.50:1	8.50:1	8.50:1	8.50:1
WEIGHT, DRY	Kg - lb.	113.40 - 250	112.94 - 249	128.37 - 283	115.67 - 255
	C.G. location (dry)				
	From front face of propeller mounting flange, in.	14.25	14.25	14.70	14.25
	Off propeller shaft C.L., in.	0.97 Below 0.03 Right	0.97 Below 0.03 Right	0.79 Below 0.11 Right	0.97 Below 0.03 Right
PROPELLER SHAFT-SPECIFICATIONS		A.S. 127	A.S. 127	A.S. 127	A.S. 127
	Integral flanged hub	SAE 2 modified	SAE 2 modified	SAE 2 modified	SAE 2 modified
	Crankshaft Dampers (torsional)	#	#	#	#
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 CTA approved type design.				
CERTIFICATION BASIS	CAR 13- effective June 15, 1956, as amended by:	Amended	Models	Aplication	Issued TC
		13-1 & 13-2	O-320-B2B	05 Dec. 1980	13 May 1982
		13-3	O-320-B2C	10 June 1987	15 July 1987
		13-3	O-320-D2A	25 Sept 1990	03 June 1991
		13-4	O-320-B2D	27 July, 1998	18 Aug 1998
PRODUCTION BASIS	Production Certificate No. 3				

NOTES

NOTE 1 The following accessory drive provisions are available:

O-320

	B2B, B2C D2A	Rotating facing Drive Pad	Speed ratio to Crankshaft	Max. torque (in. lb)		Max. Overhang Moment (in.-lb)
				Continuous	Static	
Starter	*	CC	13.556:1	#	450	150
Starter	**	CC	16.556:1	#	450	150
Generator	*	C	1.910:1	60	120	175
Generator	**	C	2.500:1	60	120	175
Alternator	#	C	1.910:1	60	120	175
Alternator	**	C	3.250:1	60	120	175
Vacuum Pump	*	CC	1.300:1	70	450	25
Vacuum Pump	#	CC	1.313:1	70	450	25
Hydraulic Pump	#	C	1.300:1	100	800	40
Tachometer	*	C	0.500:1	7	50	5
Prop. Governor	#	C	0.895:1	125	1200	40
Prop. Governor	*	C	0.886:1	125	1200	40
Fuel Pump (Plunger)	**	#	0.500:1	#	#	10
Fuel Pump	**	CC	1.000:1	25	450	25
Optional Dual Drive Mounting on Vacuum Pump Drive Pad						
Vacuum Pump	**	CC	1.300:1	70	450	6
Hydraulic Pump or Vacuum Pump	**	CC	1.300:1	Total	Total	10
Vacuum Pump	**	CC	1.300:1	70	450	6
Vacuum Pump	#	CC	1.313:1	70	450	6
Prop. Governor	**	CC	1.300:1	Total	Total	10
Prop. Governor	#	C	1.000:1	125	1200	40

Does not apply

* Standard

** Optional

"C" Clockwise

"CC" Counter Clockwise

O-320

	B2D	Rotating facing Drive Pad	Speed ratio to Crankshaft	Max. torque (in. lb)		Max. Overhang Moment (in.-lb)
				Continuous	Static	
Starter	*	CC	13.556:1	#	450	150
Starter	**	CC	16.556:1	#	450	150
Generator	#	C	1.910:1	60	120	175
Generator	#	C	2.500:1	60	120	175
Alternator	#	C	1.910:1	60	120	175
Alternator	*	C	3.250:1	60	120	175
Vacuum Pump	**	CC	1.300:1	70	450	25
Vacuum Pump	#	CC	1.910:1	60	120	175
Hydraulic Pump	#	C	1.300:1	100	800	40
Tachometer	*	C	0.500:1	7	50	5
Prop. Governor	#	C	0.895:1	125	1200	40
Prop. Governor	*	C	0.866:1	125	1200	40
Fuel Pump (Plunger)	*	#	0.500:1	#	#	10
Fuel Pump	#	CC	1.000:1	25	450	25
Optional Dual Drive Mounting on Vacuum Pump Drive Pad						
Vacuum Pump	**	CC	1.300:1	70	450	6
Hydraulic Pump or Vacuum Pump	**	CC	1.300:1	Total	Total	10
Vacuum Pump	**	CC	1.300:1	70	450	6
Vacuum Pump	#	CC	1.313:1	70	450	6
Prop. Governor	**	CC	1.300:1	Total	Total	10
Prop. Governor	#	C	1.000:1	125	1200	40

Does not apply

* Standard

** Optional

"C" Clockwise

"CC" Counter Clockwise

NOTE 2 Fuel pressure limits: Minimum 0.5 p.s.i. - Maximum 8 p.s.i.
For gravity feed systems, minimum fuel pressure is 15.0 inches of gasoline differential pressure across the fuel inlet fitting on O-320D2J..

Oil pressure limits: Normal operation - Minimum 55 p.s.i. - Maximum 95 p.s.i.
Idling - 25 p.s.i.
Starting and warm-up - Maximum 115 p.s.i.

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 The below models incorporate additional characteristics as follows:

Characteristics

O-320 = Basic model - four cylinder, horizontally opposed air cooled, direct drive with automotive type generator and starter, provides for single acting controllable pitch propeller

O-320-B2B = Same as O-320-B1B except have not provisions for controllable pitch propellers.

O-320-B2C = Same as O-320-B2B and B3B respectively, except for magnetos.

O-320-B2D = Same as O-320-D1D except conical engine mounts and no prop governor.

O-320-D2A= Same as O-320-D1A except has no provisions for controllable pitch propellers.

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

NOTE 6 These engines are approved for horizontal helicopter application and operation.

NOTE 7 All models equipped with one impulse coupling magneto may use two impulse coupling magnetos as optional equipment. Starters, generators and alternators approved for use on the engines are listed in the latest revision of TEXTRON Lycoming Instruction No. 1154.

NOTE 8 The O-320-D series have alternate ratings of 150 hp at 2500 r.p.m. and 155 hp. at 2600 r.p.m.

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