DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

1E11
Revision 6
LYCOMING ENGINES
IGO-540-A1A
IGO-540-A1B
IGO-540-A1C
IGO-540-B1A
IGO-540-B1B
IGO-540-B1C

June 23, 2010

TYPE CERTIFICATE DATA SHEET NO. 1E11

Engines of models described herein conforming with this data sheet (which is part of type certificate No. 1E11) and other approved data on file with the Federal Aviation Administration, meet the minimum standards for use in certificated aircraft in accordance with pertinent aircraft data sheets and applicable portions of the Civil Air Regulations/Federal Aviation Regulations provided they are installed, operated, and maintained as prescribed by the approved manufacturer's manuals and other approved instructions.

Type Certificate Holder	Lycoming Engines An Operating Division of AVCO Corporation Williamsport, Pennsylvania 17701
Type Certificate Holder Record	Lycoming Division., AVCO Corp., Williamsport, PA. transferred TC 1E-11 to Lycoming Engines, An Operating Division of AVCO Corporation on June XX, 2010

Model: Lycoming	IGO-540-A1A, -A1B -B1A, -B1B, -B1C	IGO-540-A1C
Type: 6HOA, reduction gear ratio	77:120	- -
Rating:		
Maximum continuous, hp., r.p.m., full throttle at:		
Sea level pressure altitude	325-3000-S.L.	325-3000-S.L.
Takeoff, 5 min., hp., r.p.m., full throttle at:		
Sea Level Pressure altitude	350-3400-S.L.	350-3400-S.L.
Fuel (minimum grade aviation gasoline)	100/130	- -
Lubricating oil (lubricants should conform to the Specifications as listed or to subsequent revisions thereto.)	Lycoming Spec. No. 301-G*	- -
Bore and stroke, in.	5.125 x 4.375	- -
Displacement, cu. in.	541.5	- -
Compression ratio	8.7:1	- -
Weight (dry), lb.	See NOTE 7	- -
C.G. location		
From front face of thrust nut face, in.	19.59	20.23
Off crankshaft center line, in.	.56 below & .21 left	.41 below & .26 right
Propeller shaft, SAE No.	30 spline	- -
Crankshaft dampers (torsional)	Five 3rd order & one 6th order	- -
Fuel injection	See NOTE 7	- -
Ignition, dual	See NOTE 7	- -
Timing, °BTC	25	- -
Spark plugs	See NOTE 4	- -
Oil sump capacity	Dry sump	- -
NOTES:	1,2,3,4,5,6,7,8	- -

"- -" indicates "same as preceding model"
"—" indicates "does not apply"
* See latest edition of Lycoming Service Instruction 1014

Certification basis:

Regulations & Amendments	Model	Date of Application	Date Type Certificate No. 1E11 Issued/Revised
Car 13 Effective June 15, 1956	IGO-540-B1A	July 5, 1960	October 28, 1960
As Amended by 13-1, 13-2	IGO-540-A1A	June 2, 1961	August 22, 1961
13-3	IGO-540-A1B	July 10, 1961	August 22, 1961
	IGO-540-B1B	July 10, 1961	August 22, 1961
13-4	IGO-540-B1C	April 18, 1963	May 20, 1963
	IGO-540-A1C	February 18, 1972	March 14, 1972

Production basis: Production Certificate No. 3

NOTE 1. Maximum permissible temperature:

Cylinder Head (Well type thermocouple)	Cylinder base	Oil Inlet
475°F (500°F for -A1C model)	(NOTE 8)	235°F

NOTE 2. Fuel pressure limits:

	Min.	Max.	Idle (min.)	Injector in Idle cutoff
Inlet to injector (except -A1C model)	20 p.s.i.	26 p.s.i.	—	—
-A1C	25 p.s.i	40 p.s.i.	12 p.s.i.	55 p.s.i. (max.)
Oil pressure limits:				
(Normal operation)	65 p.s.i.	85 p.s.i.		
(Idling)	25 p.s.i.			

NOTE 3. The following accessory drives are provided:

Accessory	-A1A, -A1B -B1A, -B1B, -B1C	A1C	Rotation Pacing Drive Pad	Speed Ratio to Crankshaft	Maximum Torque (in. - lb.) Cont.	Maximum Torque (in. - lb.) Static	Max. Overhang Moment (in. - lb.)
Starter	*	*	C	1.000:1	—	12,000	300
Generator	*	—	C	2.600:1	500	2,200	400
Alternator	—	*	C	2.600:1	500	2,200	400
Vacuum Pump	*	*	C	1.083:1	200	800	25
Hydraulic Pump	*	*	C	1.083:1	400	1,650	175
Tachometer	*	*	CC	.500:1	7	50	—
Propeller Governor	*	—	C	.779:1	125	1,200	25
Fuel Pump	*	*	C	1.000:1	25	450	25

* Standard
** Optional
"C" Clockwise
"CC" Counter Clockwise

NOTE 4. Spark plugs: See latest revision of Lycoming Service Instruction No. 1042 for approved equipment.

NOTE 5. This engine incorporates provisions for absorbing propeller thrust in both tractor and pusher type installations.

NOTE 6. These engines incorporate the following additional characteristics:

IGO-540 Models

-A1A	Basis model.
-A1B	Similar to -A1A except incorporates low tension ignition system.
-A1C	Similar to -A1A except for fuel injector, magnetos, fuel pump, and alternator.
-B1A	Similar to -A1A except has exhaust ports on the top side of the cylinders and updraft cooling provisions.
-B1B	Similar to -B1A except incorporates low tension ignition system.
-B1C	Similar to -B1A except does not have servo-bleed in Injector servo-vent line and requires external servo-fuel restrictor in servo-vent line of aircraft fuel system.

NOTE 7.

IGO-540 Models	Weight (dry lb.	Fuel Injection*	Ignition, dual*
-A1A	506	RS10ED1	S6RN-204, S6RN-200
-A1B	517	RS10ED1	S6RN-604, S6RN-600
-A1C	509	RSA10DB1	S6RN-1208, S6RN-1209
-B1A	500	RS10ED2	S6RN-204, S6RN-200
-B1B	511	RS10ED2	S6RN-604, S6RN-600
-B1C	500	RS10ED2	S6RN-204, S6RN-200

* Precision Airmotive LLC was Bendix
+ TCM was Bendix

NOTE 8. Cylinder base temperature limits are not applicable to engine models which incorporate internal piston cooling oil jets.

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