

**DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**

TCDS NUMBER E00004NY REVISION: 2  LYCOMING ENGINES <u>MODEL:</u> IO-580-A1A, -B1A, AEIO-580-B1A May 24, 2012
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TYPE CERTIFICATE DATA SHEET NO. E00004NY

Engine model described herein conforming with this data sheet (which is a part of Type Certificate No. E00004NY) 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 Federal Aviation Regulations provided they are installed, operated and maintained as prescribed by the approved manufacturer's manuals and other approved instructions.

Type Certificate (T.C.) Holder:   Lycoming Engines  
   An Operating Division of AVCO Corporation  
   Williamsport, Pennsylvania 17701

I. Models: IO-580	A1A	B1A
Type	6HOA DIRECT DRIVE	--
Rating: Takeoff and maximum continuous hp., rpm, full throttle at: Sea level pressure altitude	300 - 2500	315 - 2700
Fuel (Minimum grade aviation gasoline)	100/100LL♦	--
Injection	SEE NOTE 5	--
Fuel Pump Drive	SEE NOTE 3	--
Oil Lubrication (Lubricants should conform to the specification as listed or to subsequent revisions thereto.)	Service Instruction No. 1014	--
Oil sump capacity, qt.	11	--
Usable oil qt., Normal operation 20° nose up or down	6.2 (up) 5.6 (down)	6
Ignition, dual		
Magnetos	SEE NOTE 7	--
Timing °BTC	20	--
Spark plugs	SEE NOTE 4	--
Compression		
Bore and stroke, in.	5.319 X 4.375	--
Displacement, cu. in.	583	--
Compression ratio	8.9:1	--
Weight (dry), lb.	SEE NOTE 5	--
C.G. location	SEE NOTE 7	--
Propeller shaft - Specification A.S. 127	Type 2 Flange Modified	--
NOTES	1,2,3,4,5,6,7,8	--

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

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I. Models: AEIO-580	B1A	
Type	6HOA DIRECT DRIVE	
Rating: Takeoff and maximum continuous hp., rpm, full throttle at: Sea level pressure altitude	315 - 2700	
Fuel		
(Minimum grade aviation gasoline)	100/100LL♦	
Injection	SEE NOTE 5	
Fuel Pump Drive	SEE NOTE 3	
Oil Lubrication		
(Lubricants should conform to the specification as listed or to subsequent revisions thereto.)	Service Instruction No. 1014	
Oil sump capacity, qt.	16	
Usable oil qt., Normal operation 20° nose up or down	6.2 (up) 5.6 (down)	
Minimum Safe oil qt., Aerobatic operation 37° nose up and 25° nose down	9.0	
Ignition, dual		
Magnetos	SEE NOTE 7	
Timing °BTC	20	
Spark plugs	SEE NOTE 4	
Compression		
Bore and stroke, in.	5.319 X 4.375	
Displacement, cu. in.	583	
Compression ratio	8.9:1	
Weight (dry), lb.	SEE NOTE 5	
C.G. location	SEE NOTE 7	
Propeller shaft - Specification A.S. 127	Type 2 Flange Modified	
NOTES	1,2,3,4,5,6,7,8	
♦ For alternate fuel grades, see the latest revision of Lycoming Service Instruction 1070		

Certification basis:

<u>Regulations &amp; Amendments</u>	<u>Model</u>	<u>Date of Application</u>	<u>Date Type Certificate No. E00004NY Issued</u>
FAR 33 effective February 1, 1965 As Amended by 33-1 through 33-18	IO-580-A1A	November 15, 1996	August 12, 1997
FAR 33 effective February 1, 1965 As Amended by 33-1 through 33-20	-B1A AEIO-580-B1A	May 16, 1997 February 8, 2006	March 23, 2001 August 13, 2007

Production basis: Production Certificate No. 3

NOTE 1. Temperature Limits (Maximum permissible):

Models: IO-580-A1A, -B1A, AEIO-580-B1A

Cylinder head (well type thermocouple)	465° F
Oil gallery	235° F

## NOTE 2. Pressure Limits:

Fuel:	p.s.i. at inlet to fuel pump		
	<u>Maximum</u>	<u>Minimum</u>	
	65	-2	
	p.s.i. at inlet to fuel injector		
	<u>Maximum</u>	<u>Minimum</u>	<u>Minimum Idle</u>
	65	29	12
Oil:	<u>Maximum</u>	<u>Minimum</u>	
Normal operation	95 p.s.i.	55 p.s.i.	
Idling	#	25 p.s.i.	
Starting, warm-up, Taxi and Take off	115 p.s.i.	#	

"#" indicates does not apply

## NOTE 3. Accessory Drive Provisions: For additional information on engine drives, refer to Lycoming Operator's Manual.

Accessory	A1A	B1A	Rotation Facing Drive pad	Speed Ratio to Crankshaft	Maximum Torque (in.-lb.) Continuous Static		Maximum Overhung Moment (in.-lb.)
Starter	*	*	CC	16.556:1	#	450	150
Alternator	*	*	C	3.20:1	60	120	175
Accessory # 1	*	*	CC	1.300:1	70	450	25
Hydraulic Pump	*	*	C	1.385:1	100	800	40
Tachometer	*	*	C	0.500:1	7	50	5
Prop governor	*	*	C	0.947:1	125	2200	25
Fuel Pump	*		Plunger	0.500:1	#	#	10
Fuel pump		*	CC	1.000:1	25	450	25

"#" indicates: Does not apply.

"C" Clockwise, "CC" Counter-Clockwise

Accessory	AEIO-580-B1A	Rotation Facing Drive pad	Speed Ratio to Crankshaft	Maximum Torque (in.-lb.) Continuous Static		Maximum Overhung Moment (in.-lb.)
Starter	*	CC	16.556:1	#	450	150
Alternator	*	C	3.20:1	60	120	175
Accessory # 1	*	CC	1.300:1	70	450	25
Hydraulic Pump	*	C	1.385:1	100	800	40
Tachometer	*	C	0.500:1	7	50	5
Prop governor	*	C	0.947:1	125	2200	25
Fuel Pump		Plunger	0.500:1	#	#	10
Fuel pump	*	CC	1.000:1	25	450	25

"#" indicates: Does not apply.

"C" Clockwise, "CC" Counter-Clockwise

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

NOTE 5. Model similarities and differences:

	<u>Model</u>	<u>Weight (dry) lbs.*</u>	<u>Fuel Injection #</u>	<u>Characteristics</u>
IO-580	-A1A	444	RSA-10ED1	Basic model - 6 cylinder, - horizontally opposed air-cooled direct drive, with fuel injection, downdraft cooling with top side intake and bottom side exhaust ports.
	-B1A	434	RSA-10ED1	Similar to -A1A with down intake and down exhaust
AEIO-580	-B1A	446	RSA-10ED1 or Lycoming FM-250	Similar to B1A with aerobatic fuel and oil system.

\* Less Starter and Alternator

# Precision Airmotive Corp. (PAC)

NOTE 6. Accessories and Equipment:

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

NOTE 7. Ignition and center of gravity:

	<u>Model</u>	<u>Ignition, dual</u>	<u>C.G. location (dry with starter installed)</u>	
			<u>From front face of propeller mounting flange (in.)</u>	<u>Off prop. shaft C.L. (in.) Vertical Lateral</u>
IO-580	-A1A	Slick Model 6351 (2)	18.03	0.13 above 0.11 left
	-B1A	Slick 6393 (left) 6350 (Right)	18.13	0.50 below 0.94 left
AEIO-580	-B1A	Slick 6393 (left) 6350 (Right)	18.13	0.50 below 0.94 left

NOTE 8. This engine incorporates provisions for absorbing propeller thrust in both tractor and pusher type installations.

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