DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

E14EA
Revision 16
TEXTRON LYCOMING
TIO-540-A1A, -A1B, -A2A,
-A2B, -A1C, -A2C, -C1A,
-E1A, -F2BD, -G1A, -H1A,
-J2B, -J2BD, -K1AD, -N2BD,
-R2AD, -S1AD, -T2AD, -U2A,
-V2AD, -W2A, -AA1AD,
-AB1AD, -AB1BD -AE2A,
-AF1A, -AF1B, -AG1A,
-AH1A, -AJ1A, AK1A
LTIO-540-F2BD-J2B, -J2BD,
-K1AD, -N2BD, -R2AD, -U2A,
-V2AD, -W2A
February 12, 2001

TYPE CERTIFICATE DATA SHEET NO. E14EA

Engines of models described herein conforming with this data sheet (which is a part of type certificate No. E14EA) and other approved data on file with the Federal Aviation Administration meet the minimum standards for use in certification 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 manual and other approved instructions.

Type Certificate Holder — Textron Lycoming
Avco Corporation
Williamsport, Pennsylvania 17701

Model Lycoming	TIO-540-A1A, -A1B, -A2A, -A2B	TIO-540-A1C, -A2C	TIO-540-E1A
Type 6HOA Direct Drive Turbocharged			
Rating (See Notes 4 and 13)			
Maximum continuous hp., rpm, in. Hg. at:			
Standard density critical alt. ft.	310-2575-40.2-15,000	310-2575-41.5-15,000	260-2575-36.0-15000
Standard density sea level alt. ft.	310-2575-38.6-S.L.	310-2575-40.0-S.L.	260-2575-34.1-S.L.
Takeoff (5 min.) hp., rpm, in. Hg. at:			
Standard density critical alt. ft.	310-2575-40.2-15,000	310-2575-41.5-15,000	260-2575-36.0-15000
Standard density sea level alt., ft.	310-2575-38.6-S.L.	310-2575-40.0-S.L.	260-2575-34.1-S.L.
Fuel (minimum grade aviation gasoline)	100/100LL	- -	- -
Lubricating oil (lubrication should conform to the specification as listed or to subsequent revisions thereto)	Lycoming Spec. No. 301-F Service Instruction No. 1014	- -	- -
Bore and stroke, in.	5.125 X 4.375	- -	- -
Displacement, cu. in.	541.5	- -	- -
Compression ratio	See Note 10.	- -	- -
Weight (dry) lb.	See Note 10.	- -	- -
C.G. location (with starter and alternator installed)			
From front face of prop. mounting flange, in.	22.22	- -	19.47
Off crankshaft C.L., in.	0.88 below & 0.18 right	- -	3.00 below & 0.11 left
Propeller shaft flange, SAE A.S. 127	Type 2 modified	- -	- -
Crankshaft dampers (torsional)	One 5th order	- -	- -
	One 6th order	- -	One 6th order (Note 8)

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Model Lycoming (cont'd)	TIO-540-A1A, -A1B, -A2A, -A2B	TIO-540-A1C, -A2C	TIO-540-E1A
Turbocharger	Note 10	- -	- -
Ignition, dual	Note 10	- -	- -
Ignition timing °BTC	20	- -	- -
Spark plugs	Note 6	- -	- -
Oil sump capacity, qt.	12	- -	- -
Usable oil, qt. (20° nose up or down)	9 1/4	- -	- -
NOTES - as applicable	1-7, 9, 10	1-7, 9, 10	1-10

Model Lycoming	TIO-540-H1A	TIO-540-F2BD LTIO-540-F2BD	TIO-540-J2B, -J2BD, -N2BD, LTIO-540-J2B, -J2BD, -N2BD
Type 6HOA Direct Drive Turbocharged			
Rating (See Notes 4 and 13)			
Maximum continuous hp., rpm, in. Hg. at:			
Standard density critical alt. ft.	270-2575-37.5-15,000	325-2575-46.0-15000	350-2575-46.0-15000
Standard density sea level alt. ft.	270-2575-35.9-S.L.	325-2575-43.5-S.L.	350-2575-43.0-S.L.
Takeoff (5 min.) hp., rpm, in. Hg. at:			
Standard density critical alt. ft.	270-2575-37.5-15,000	325-2575-46.0-15000	350-2575-46.0-15000
Standard density sea level alt., ft.	270-2575-35.9-S.L.	325-2575-43.5-S.L.	350-2575-43.0-15000
Fuel (minimum grade aviation gasoline)	100/100LL	- -	- -
Lubricating oil (lubrication should conform to the specification as listed or to subsequent revisions thereto)	Lycoming Spec. No. 301-F Service Instruction No. 1014	- -	- -
Bore and stroke, in.	5.125 X 4.375	- -	- -
Displacement, cu. in.	541.5	- -	- -
Compression ratio	See Note 10.	- -	- -
Weight (dry) lb.	See Note 10.	- -	- -
C.G. location (with starter and alternator installed)			
From front face of prop. mounting flange, in.	19.47	22.19	22.75
Off crankshaft C.L., in.	3.00 below & 0.11 left	0.88 below & 0.18 right	0.75 below & 0.16 right
Propeller shaft flange, SAE A.S. 127	Type 2 modified	- -	- -
Crankshaft dampers (torsional)	One 5th order	- -	- -
	One 6th order (Note 8)	One 6th order	- -
Fuel injection	Note 10	- -	- -
Turbocharger	Note 10	- -	- -
Ignition, dual	Note 10	- -	- -
Ignition timing °BTC	20	- -	- -
Spark plugs	Note 6	- -	- -
Oil sump capacity, qt.	12	- -	- -
Usable oil, qt. (20° nose up or down)	9 1/4	- -	- -
NOTES -- as applicable	1-10	1-7, 9, 10	1-7, 9, 10

"- -" indicates "same as preceding model."

Model Lycoming	TIO-540-R2AD LTIO-540-R2AD	TIO-540-C1A, -G1A	TIO-540-K1AD LTIO-540-K1AD
Type 6HOA Direct Drive Turbocharged			
Rating (See Note 4)			
Maximum continuous hp., rpm, in. Hg. at:			
Standard density critical alt. ft.	340-2575-44.0-15000	250-2575-34.0-15000	250-2575-34.0-15000
Standard density sea level alt. ft.	350-2575-44.0-S.L.	250-2575-33.0-S.L.	250-2575-34.0-S.L.
Takeoff (5 min.) hp., rpm, in. Hg. at:			
Standard density critical alt. ft.	340-2575-44.0-15000	250-2575-34.0-15000	250-2575-34.0-15000
Standard density sea level alt., ft.	350-2575-44.0-S.L.	250-2575-33.0-S.L.	250-2575-34.0-S.L.
Fuel (minimum grade aviation gasoline)	100/100LL	- -	- -
Lubricating oil (lubrication should conform to the specification as listed or to subsequent revisions thereto)	Lycoming Spec. No. 301-F Service Instruction No. 1014	- -	- -
Bore and stroke, in.	5.125 X 4.375	- -	- -
Displacement, cu. in.	541.5	- -	- -
Compression ratio	See Note 10.	- -	- -
Weight (dry) lb.	See Note 10.	- -	- -
C.G. location (with starter and alternator installed)			
From front face of prop. mounting flange, in.	22.75	19.27	21.0
Off crankshaft C.L., in.	0.75 below & 0.16 right	2.30 below & 0.23 left	0.50 below & 0.31 left
Propeller shaft flange, SAE A.S. 127	Type 2 modified		- -
Crankshaft dampers (torsional)	One 5th order	- -	- -
	One 6th order	One 6th order (Note 8)	- -
Fuel injection	Note 10	- -	- -
Turbocharger	Note 10	- -	- -
Ignition, dual	Note 10	- -	- -
Ignition timing °BTC	20	- -	- -
Spark plugs	Note 6	- -	- -
Oil sump capacity, qt.	12	- -	8
Usable oil, qt. (20° nose up or down)	9 1/4	- -	6
NOTES - as applicable	1-7, 9, 10, 11, 13	1-10	1-10

"- -" indicates "same as preceding model."

Model Lycoming	TIO-540-S1AD	TIO-540-T2AD	TIO-540-U2A LTIO-540-U2A
Type 6HOA Direct Drive Turbocharged			
Rating (See Note 4)			
Maximum continuous hp., rpm, in. Hg. at:			
Standard density critical alt. ft.	295-2700-36.0-16000	330-2400-43.0-12000	350-2500-42.2-12000
Standard density sea level alt. ft.	300-2700-36.0-S.L. & 12000 ft.	330-2400-40.5-S.L.	350-2500-41.2-S.L.
Takeoff (5 min.) hp., rpm, in. Hg. at:			
Standard density critical alt. ft.	295-2700-36.0-16000	330-2400-43.0-12000	350-2500-42.2-12000
Standard density sea level alt., ft.	300-2700-36.0-S.L. & 12000 ft.	330-2400-43.0-S.L.	350-2500-41.2-S.L.
Fuel (minimum grade aviation gasoline)	100/100LL	- -	- -
Lubricating oil (lubrication should conform to the specification as listed or to subsequent revisions thereto)	Lycoming Spec. No. 301-F Service Instruction No. 1014	- -	- -
Bore and stroke, in.	5.125 X 4.375	- -	- -
Displacement, cu. in.	541.5	- -	- -
Compression ratio	See Note 10.	- -	- -
Weight (dry) lb.	See Note 10.	- -	- -
C.G. location (with starter and alternator installed)			
From front face of prop. mounting flange, in.	18.58	22.75	20.38
Off crankshaft C.L., in.	1.31 below & 1.00 right	0.75 below & 0.16 right	1.4 below & 0.25 right
Propeller shaft flange, SAE A.S. 127	Type 2 modified	- -	- -
Crankshaft dampers (torsional)	One 5th order	- -	- -
	One 6th order (Note 8)	- -	- -
Fuel injection	Note 10	- -	- -
Turbocharger	Note 10	- -	- -
Ignition, dual	Note 10	- -	- -
Ignition timing °BTC	20	- -	- -
Spark plugs	Note 6	- -	- -
Oil sump capacity, qt.	12	- -	- -
Usable oil, qt. (20° nose up or down)	9 3/4	- -	- -
NOTES - as applicable	1-10	1-7, 9. 10	1-7, 9, 10

"- -" indicates "same as preceding model."

Model Lycoming	TIO-540-V2AD LTIO-540-V2AD (See Note 14)	TIO-540-W2A LTIO-540-W2A (See Note 14)	TIO-540-AA1AD* TIO-540-AB1AD TIO-540-AB1BD
Type 6HOA Direct Drive Turbocharged			
Rating (See Note 4)			
Maximum continuous hp., rpm, in. Hg. at:			
Standard density critical alt. ft.	340-2600-42.0-18000	350-2600-44.2-15000	250-2575-32.5-15000
Standard density sea level alt. ft.	350-2600-42.0-S.L.	350-2600-44.2-S.L.	250-2575-32.5-S.L.
Takeoff (5 min.) hp., rpm, in. Hg. at:			
Standard density critical alt. ft.	340-2600-42.0-18000	350-2600-44.2-15000	250-2575-32.5-15000
Standard density sea level alt., ft.	350-2600-42.0-S.L.	350-2600-44.2-S.L.	250-2575-32.5-S.L.
Fuel (minimum grade aviation gasoline)	100/100LL	- -	- -
Lubricating oil (lubrication should conform to the specification as listed or to subsequent revisions thereto)	Lycoming Spec. No. 301-F Service Instruction No. 1014	- -	- -
Bore and stroke, in.	5.125 X 4.375	- -	- -
Displacement, cu. in.	541.5	- -	- -
Compression ratio	See Note 10.	- -	- -
Weight (dry) lb.	See Note 10.	- -	- -
C.G. location (with starter and alternator installed)			
From front face of prop. mounting flange, in.	23.05	22.10	18.91
Off crankshaft C.L., in.	0.59 below & 0.14 right	0.10 below & 0.48 right	2.20 below & 0.67 left
Propeller shaft flange, SAE A.S. 127	Type 2 modified	- -	- -
Crankshaft dampers (torsional)	One 5th order	- -	- -
	One 6th order	- -	- -
Fuel injection	Note 10	- -	- -
Turbocharger	Note 10	- -	- -
Ignition, dual	Note 10	- -	- -
Ignition timing °BTC	20	- -	- -
Spark plugs	Note 6	- -	- -
Oil sump capacity, qt.	12	- -	- - **
Usable oil, qt. (20° nose up or down)	9 1/4	- -	- - ***
NOTES - as applicable	1-7, 9, 10, 14	1-7, 9, 10, 14	1-7, 9, 10, 15

"- -" indicates "same as preceding model."

*TIO-540-AA1AD Model is approved with an alternate rating of 270hp/2575 rpm from S.L. to 15,000 ft.
** 10 for AA1AD
*** 7 1/4 for AA1AD.

Model Lycoming	TIO-540-AE2A	TIO-540-AF1A TIO-540-AF1B	TIO-540-AG1A
Type 6HOA Direct Drive Turbocharged			
Rating (See Note 4)			
Maximum continuous hp., rpm, in. Hg. at:			
Standard density critical alt. ft.	350-2500-42.0-20000	270-2575-36.5-20000	270 - 2575 - 36.5 -15000
Standard density sea level alt. ft.	350-2500-42.0-S.L.	270-2575-35.0-S.L.	270 - 2575 - 36.5 - SL
Takeoff (5 min.) hp., rpm, in. Hg. at:			
Standard density critical alt. ft.	350-2500-42.0-20000	270-2575-36.5-20000	270 - 2575 - 36.5 -15000
Standard density sea level alt., ft.	350-2500-42.0-S.L.	270-2575-35.0-S.L.	270 - 2575 - 36.5 - SL
Fuel (minimum grade aviation gasoline)	100/100LL	- -	- -
Lubricating oil (lubrication should conform to the specification as listed or to subsequent revisions thereto)	Lycoming Spec. No. 301-F Service Instruction No. 1014	- -	- -
Bore and stroke, in.	5.125 X 4.375	- -	- -
Displacement, cu. in.	541.5	- -	- -
Compression ratio	See Note 10.	- -	- -
Weight (dry) lb.	See Note 10.	- -	- -
C.G. location (with starter and alternator installed)			
From front face of prop. mounting flange, in.	18.88	18.30	19.00
Off crankshaft C.L., in.	0.95 below & 0.63 left	2.30 below & 0.64 left	1.75 below & 1.20 left
Propeller shaft flange, SAE A.S. 127	Type 2 modified	- -	- -
Crankshaft dampers (torsional)	One 5th order	- -	- -
	One 6th order	- -	- -
Fuel injection	Note 10	- -	- -
Turbocharger	Note 10	- -	- -
Ignition, dual	Note 10	- -	- -
Ignition timing °BTC	20	- -	- -
Spark plugs	Note 6	- -	- -
Oil sump capacity, qt.	12	10	10
Usable oil, qt. (20° nose up or down)	9 1/4	7 1/4	5
NOTES - as applicable	1-7, 9, 10, 11	1-7, 9, 10	1-10, 12

"- -" indicates "same as preceding model."

Model Lycoming	TIO-540-AH1A	TIO-540-AJ1A	TIO-540-AK1A
Type 6HOA Direct Drive Turbocharged			
Rating (See Note 4)			
Maximum continuous hp., rpm, in. Hg. at:			
Standard density critical alt. ft.	300 - 2500 - 38.0 -12000	310 - 2500 - 39.0 – 14000	235 – 2400 – 32.0 -15000
Standard density sea level alt. ft.	300 - 2500 - 38.0 - SL	310 - 2500 - 39.0 - SL	235 – 2400 – 32.0 - SL
Takeoff (5 min.) hp., rpm, in. Hg. at:			
Standard density critical alt. ft.	300 - 2500 - 38.0 –12000	310 - 2500 - 39.0 – 14000	235 – 2400 – 32.0 -15000
Standard density sea level alt., ft.	300 - 2500 - 38.0 - SL	310 - 2500 - 39.0 - SL	235 – 2400 – 32.0 - SL
Fuel (minimum grade aviation gasoline)	100/100LL	- -	--
Lubricating oil (lubrication should conform to the specification as listed or to subsequent revisions thereto)	Lycoming Spec. No. 301-F Service Instruction No. 1014	- -	--
Bore and stroke, in.	5.125	- -	--
Displacement, cu. in.	4.375	- -	--
Compression ratio	See Note 10.	- -	--
Weight (dry) lb.	See Note 10.	- -	--
C.G. location (with starter and alternator installed)			
From front face of prop. mounting flange, in.	18.70	18.50*	18.94*
Off crankshaft C.L., in.	1.87 below & 1.00 right	0.75 below & 1.13 left*	1.50 below & 1.25 left*
Propeller shaft flange, SAE A.S. 127	Type 2 modified	- -	--
Crankshaft dampers (torsional)	One 5th order One 6th order	- -	--
Fuel injection	Note 10	- -	--
Turbocharger	Note 10	- -	--
Ignition, dual	Note 10	- -	--
Ignition timing °BTC	20	- -	--
Spark plugs	Note 6	- -	--
Oil sump capacity, qt.	12	11	8
Usable oil, qt. (20° nose up or down)	9 1/4	5 1/2	4
NOTES - as applicable	1-10, 12	- -	--

"- -" indicates "same as preceding model."

* No alternator installed

Certification Basis:

Regulations and Amendments	Model	Date of Application	Date Type Certificate E14EA Issued/Revised
CAR 13 effective June 15, 1956 as amended by 13-1, 13-2, 13-3, 13-4	TIO-540-A1A	May 26, 1964	December 6, 1965
	TIO-540-A1B	October 6, 1967	October 9, 1967
	TIO-540-A2A	March 26, 1968	April 1, 1968
	TIO-540-A2B	March 26, 1968	April 1, 1968
	TIO-540-C1A	September 7, 1967	June 6, 1968
	TIO-540-E1A	September 3, 1970	September 18, 1970
	TIO-540-G1A	September 2, 1970	September 18, 1970
	TIO-540-A1C	November 17, 1970	January 6, 1971
	TIO-540-A2C	November 17, 1970	January 6, 1971
	TIO-540-H1A	April 8, 1971	April 16, 1971
	TIO-540-F2BD	April 20, 1970	July 23, 1971
	LTIO-540-F2BD	February 9, 1972	February 16, 1972
	L/TIO-540-J2BD	August 25, 1971	April 7, 1972
	L/TIO-540-K1AD	December 4, 1973	February 28, 1974
	L/TIO-540-N2BD	January 29, 1973	February 16, 1973
	TIO-540-R2AD	April 23, 1975	September 25, 1975
	LTIO-540-R2AD	October 7, 1977	October 13, 1977
	TIO-540-S1AD	January 31, 1977	June 14, 1977
	TIO-540-T2AD	February 17, 1981	March 5, 1981
	L/TIO-540-U2A	June 2, 1981	February 12, 1982
	L/TIO-540-J2B	August 20, 1981	September 9, 1981
	L/TIO-540-V2AD	December 22, 1981	January 31, 1983
	L/TIO-540-W2A	October 29, 1982	August 17, 1984
	TIO-540-AB1AD	June 14, 1984	January 16, 1985
	TIO-540-AA1AD	February 20, 1985	June 25, 1985
	TIO-540-AE2A	March 9, 1987	August 12, 1988
	TIO-540-AF1A	September 13, 1988	June 23, 1989
	TIO-540-AB1BD	May 18, 1993	August 11, 1993
	TIO-540-AG1A	December 1,1994	June 20, 1995
	TIO-540-AF1B	December 7, 1995	January 25, 1996
	TIO-540-AH1A	February 12, 1997	June 25, 1997
	TIO-540-AJ1A	March 5, 1998	April 30, 1998
	TIO-540-AK1A	February 22, 2000	February 2, 2001

Production basis: Production Certificate No. 3.

NOTE 1. Maximum permissible temperatures:

Cylinder head (well type thermocouple)	500°F (480°F model - W2A, -V2AD, -AJ1A)
Cylinder base	Note 5
Oil inlet	245°F
Exhaust gas	*1650° F (See Note 4 for turbo inlet location)
Fuel injector inlet air	400°F
Compressor temperature rise	Not applicable (see Note 4)

*TIO-540-AE2A, -AF1A, -AF1B models are approved for 1750°F E.G.T. model TIO-540-AJ1A approved for 1675°F E.G.T., model TIO-540-AK1A approved for 1685°F E.G.T.

NOTE 2. Pressure Limits:

Fuel pressure (p.s.i. above injector inlet air pressure)	Minimum (p.s.i.)	Maximum (p.s.i.)	Idle (min p.s.i.)
at inlet to fuel injector (-A models except -A1C, -A2C)	25	45	12
at inlet to fuel injector (-A1C, -A2C models)	25	55	12
at inlet to fuel injector (-C, -E, -G, -H models)	18	45	12
at inlet to fuel injector (-F model)	30	65	12
at inlet to fuel injector (-J, -N model)	34	65	12
at inlet to fuel injector (-K model)	20	45	12
at inlet to fuel injector (-R model)	34	65	12
at inlet to fuel injector (-S model)	25	65	12
at inlet to fuel injector (-T model)	34	65	12
at inlet to fuel injector (-U model)	30	65	12
at inlet to fuel injector (-V, -AH models)	27	65	12
at inlet to fuel injector (-W model)	31	65	12
at inlet to fuel injector (-AB1AD, -AB1BD models)	20	65	12
at inlet to fuel injector (-AA1AD model)	20	65	12
at inlet to fuel injector (-AE2A, -AJ1A models)	29	65	12
at inlet to fuel injector (-AF1A, -AF1B models)	24	55	12
at inlet to fuel injector (-AG1A, -AK1A models)	20	55	12

Fuel Pressure (p.s.i. above ambient air pressure)	Minimum (p.s.i.)	Maximum (p.s.i.)	Idle (min p.s.i.)
at inlet to engine fuel pump (-A, -F, -R, -S, -U, -V, -W) (-J, -N, -T, -AE2A, -AH1A, -AJ1A models)	-2	65	--
at inlet to engine fuel pump (-C, -E, -G, -H, -K -AF1A,) (-AF1B, -AG1A, -AK1A models)	-2	55	--

Manifold Pressure (cumulative total with altitude adjustment)	Maximum (in. Hg Abs)
-A models (except –A1C, -A2C)	45
-A1C, -A2C models	46
-C, -E, -G models	39.5
-H models	40.7
-F, -J, -N models	49
-K models	34.5
-R models	44
-S models	36
-T models	45.2
-U models, AE2A	42.0
-W models	50.6
-AA1AD, -AB1AD, -AB1BD, -AF1A, -AF1B, -AH1A models	38
-AG1A, -AJ1A models	39
-AK1A model	32

Oil Pressure	Minimum (p.s.i.)	Maximum (p.s.i.)
Normal (all models)	55	95
Idle (all models)	25	--
Starting and warm-up (all models)	--	115
Turbocharger exhaust back pressure		0.5

NOTE 3. The following accessory provisions are available:

Accessory	-A1A, -A1B, -A2A, -A2B, -A1C, -A2C, -C1A, -E1A, -G1A, -H1A, -J2B, -U2A, -W2A	AK1A -AJ1A	-AE2A	-AF1A -AF1B	-F2BD, -J2BD, -N2BD, -R2AD, -S1AD, -T2AD, -U2A, -V2AD, -W2A, -J2B, -AB1AD, -AA1AD, -AG1A, -AH1A	-AB1BD	-K1AD	Rotating Facing Drive Pad TIO	Rotating Facing Drive Pad LTIO	Speed Ratio to Crankshaft	Maximum Torque in. lb. Cont.	Maximum Torque in. lb. Static	Maximum Overhang Moment in.-lb.
Starter	*	*	*	*	*	*	*	CC	C	16.556:1	---	450	150
Alternator	*	--	--	--	*	*	*	C	CC	3.200:1	60	120	175
Alternator	-	--	*	--	-	-	-	C	-	3.800:1	60	120	175
Vacuum pump	**	*	*	*	*	*	*	CC	C	1.300:1	70	450	25
Hydraulic pump	**	*	*	*	--	--	--	C	CC	1.385:1	100	800	40
Hydraulic pump	--	--	--	--	*	--	*	C	CC	1.300:1	100	800	40
Tachometer	*	*	--	*	*	*	*	C	CC	0.500:1	7	50	5
Propeller governor***	*	--	--	--	--	--	*	C	CC	0.895:1	125	1200	25
Propeller governor****	*	*	*	*	*	--	--	C	CC	0.947:1	125	2200	25
Propeller governor****	--	--	--	--	--	*	--	C	CC	1.3000:1	125	2200	25
Fuel pump	-	*	-	-	*	*	*	C	CC	1.000:1	25	450	25
Fuel pump	*	--	*	*	--	--	--	CC	C	1.000:1	25	450	25
Freon comp.	--	--	-	-	--	--	**	C	CC	1.300:1	180	2200	150
Freon comp.	--	--	*	*	**	*	--	C	CC	1.462:1*****	Limited by belt.		

"C" Clockwise, "CC" Counter Clockwise

*Standard

**Optional

***Narrow deck engines

****Wide deck engines

*****With compressor pulley diameter of 6.00 inches.

NOTE 4. The Turbocharger meets the containment requirements of CAR 13.116 and does not require external protection.

Measure exhaust gas temperature at inlet location shown on Lycoming Drawing No. 63232(-A1A, -A2A, -A1B, -A2B, -A1C, -A2C), 63281 (-C1A, -E1A, -G1A, -H1A), 63393 (-F2BD), 63397 (-J2B/D), 63433 (-N2BD), 63416 (K1AD), 63444(-R2AD), 63517 (-T2AD), 63533 (-U2A), 63534 (-V2AD), 63537 (-W2A), 63545 (-AB1AD), 63582 (-AB1BD), 63546 (-AA1AD), 04D63570(-AE2A), 04063573 (-AF1A, -AF1B), 63583 (-AG1A), 63592 (-AH1A), O4D63594 (-AJ1A), 04D63601 (-AK1A).

Performance data for these engines are presented on Lycoming Curves No. 12993 (-A1A, -A2A, -A1B, -A2B), 13195-B(-A1C, -A2C), 13107-B(-C1A), 13172(-E1A), 13190-A(-G1A), 13208 (-H1A), 13201-A (-F2BD), 13215 (-J2BD, -N2BD), 13257-A (-K1AD), 13296 (-R2AD), and 13329(-S1AD), 13395 (-T2AD), 13399 (-U2A), 13415 (-V2AD), 13441 (-W2A), 13455 (-AB1AD, -AB1BD, -AA1AD), 13482(-AE2A), 13491(-AF1A -AF1B), 13509 (-AG1A), 13525 (-AH1A), 13538 (-AJ1A), 13556 (AK1A).

Maximum turbocharger speed is now being governed by manifold pressure rather than temperature rise. Maximum manifold pressure versus altitude are presented on Lycoming Curve Numbers 13166-A (-A1A), -A2A, -A1B, -A2B), 13196-C (-A1C, -A2C), 13197-A (-C1A, -G1A), 13209 (-H1A), 13202-B (-F2BD), 13216-C (-J2B/D, -N2BD), 13297 (-R2AD), 13263 (-K1AD), 13330 (-S1AD), 13396 (-T2AD), 13416 (-V2AD), 13442 (-W2A), 13456 (-AB1AD, -AB1BD, -AA1AD), 13483 (-AE2A), 13492 (-AF1A,-AF1B), 13510 (-AG1A), 13537 (AH1A), 13540-A (-AJ1A), 13558 (AK1A).

NOTE 5. Cylinder base temperature limits are not applicable to engine models which incorporate internal piston cooling oil jets.

NOTE 6. Spark plugs approved for use on these engines are listed in the latest revision of Textron Lycoming Service Instruction No. 1042.

NOTE 7. These engines incorporate the following similarities or differences:

TIO-540-A1A	Basic model. Six cylinder, air-cooled, horizontally-opposed, direct drive, fuel injected, top exhaust, turbocharged engine incorporating internal piston cooling oil jets. Uses two-blade propeller.
TIO-540-A1B	Similar to -A1A but has density controller with faster temperature response.
TIO-540-A2A	Similar to -A1A except has propeller flange bushings which accommodate either a two-blade or three-blade propeller.
TIO-540-A2B	Similar to -A1B except has propeller flange bushings which accommodate either a two-blade or three-blade propeller.
TIO-540-A1C	Similar to -A1B except BSFC is increased to .67/bhp-hr and the manifold pressure increased to 40.0 inches Hg.
TIO-540-A2C	Similar to -A2B except BSFC is increased to .67/bhp-hr and the manifold pressure increased to 40.0 inches Hg.
TIO-540-C1A	Differs from -A1A with lower compression ratio, different counterweights, and parallel valve cylinders.
TIO-540-E1A	Similar to -C1A except rating is increased, different turbocharger control setting and uses Bendix S6LN-1227 magneto instead of S6LN-1208 magneto.
TIO-540-G1A	Similar to -C1A except for higher compression ratio.
TIO-540-H1A	Similar to -E1A except rating is increased.
TIO-540-F2BD	Similar to -A2B except rated power is increased and incorporates the Bendix Dual Magneto.
LTIO-540-F2BD	Similar to -F2DB except that it has counter-clockwise (reversed) rotation.
TIO-540-J2BD	Similar to TIO-540-F2BD except rated power is increased and is equipped with an Air Research Model THO8460 turbocharger.
LTIO-540-H2BD	Similar to TIO-540-J2BD except that it has counter-clockwise (reverse) rotation.
L/TIO-540-J2B	Similar to L/TIO-J2BD except for two single Bendix Magnetos instead of a dual Bendix Magneto.
TIO-540-K1AD	Similar to -E1A except increased compression ratio, dual magneto, pressure controller, provision for cabin bleed air has the turbocharger mounted to the rear of the engine.
LTIO-540-K1AD	Similar to TIO-540-K1AD except that it has counter-clockwise (reverse) rotation.
TIO-540-N2BD	Similar to -J2BD except turbocharger is moved 1/2 inch to the left when viewed from the rear.

LTIO-540-N2BD	Similar to TIO-540-N2BD except that it has counter-clockwise (reverse) rotation.
TIO-540-R2AD	Similar to -J2BD except lower rated speed and power, provision for cabin bleed and type of turbocharger controllers.
LTIO-540-R2AD	Similar to TIO-540-R2AD except that it has counter-clockwise (reverse) rotation.
TIO-540-S1AD	Similar to IO-540-M2A5D (1E4) except has a manually controllable turbocharger, front air inlet, lower compression ratio and provision for a controllable propeller.
TIO-540-T2AD	Similar to TIO-540-J2BD except for modified turbocharger transition section and lower rated power.
TIO-540-U2A	Similar to IO-540-AA1A5 except has thin wall, high crush bearings, narrow connecting rods, an intercooler (remote mounted) and a Rotomaster (Rajay) turbocharger package.
LTIO-540-U2A	Similar to TIO-540-U2A except that it has counter-clockwise (reverse) rotation.
TIO-540-V2AD	Similar to -J2BD except has down exhaust and top intake cylinder heads, employs an intercooler and the crankshaft, connecting rods and bearing combination similar to the -U2A.
LTIO-540-V2AD	Similar to the TIO-540-V2AD except that it has counter-clockwise (reverse) rotation.
TIO-540-W2A	Similar to the -V2AD except equipped with (2) Bendix S-1200 series magnetos, a density differential controller, not equipped with an induction intercooler nor any provisions for cabin bleed air.
LTIO-540-W2A	Similar to the TIO-540-W2A except that it has counter-clockwise (reverse) rotation.
TIO-540-AB1AD	Similar to the -K1AD except for the relocation of the turbocharger and has a density-differential controller. Also, the dual magneto is equipped with an impulse coupling instead of retard breaker.
TIO-540-AB1BD	Similar to the -AB1AD except the prop governor is on the accessory housing, scavenger pump on upper accessory pad and more effective counterweights.
TIO-540-AA1AD	Similar to the model -AB1AD except for a rear mounted prop governor drive, uses the -K1AD turbocharger mounting and has no provisions for cabin bleed.
TIO-540-AE2A	Similar to the TIO-540-U2A except with (2) Slick retard breaker, pressurized magnetos, twin AiResearch turbochargers with individual intercoolers, and a single wastegate modulated by a variable absolute pressure controller. Two sonic nozzles are provided for cabin pressurization.
TIO-540-AF1A	Similar to the TIO-540-AA1AD except equipped with (2) Slick pressurized magnetos, an intercooler, drives for (2) alternators and a different model Garrett turbocharger.
TIO-540-AF1B	Similar to the TIO-540-AF1A except incorporates exhaust valve guide oilers
TIO-540-AG1A	Similar to the TIO-540-AA1AD except equipped with (2) Slick pressurized magnetos, and a different model Garrett turbocharger which has been relocated.
TIO-540-AH1A	Similar to the TIO-540-A except equipped with (2) Slick pressurized magnetos, down exhaust heads and a different model Garrett turbocharger which has been relocated.
TIO-540-AJ1A	Similar to the TIO-540-W2A except equipped with a different model Garrett turbocharger and slope controller.
TIO-540-AK1A	Similar to TIO-540-AG1A except that it has a relocated AiResearch model TAO411 turbocharger, bottom mounted fuel injector and a lower rating

NOTE 8. The TIO-540-C1A, -E1A, -G1A, -H1A, -K1AD and LTIO-540-K1AD are equipped with special 5th and 6th order counterweights making them eligible for use with Hartzell “compact” propeller. When the TIO-540-G1A is used with a Hartzell HC-E2YK-2R/8465-7R propeller, the manifold pressure is limited in the 2000 rpm speed range to a maximum of 27 inches Hg.

NOTE 9. Starter, generators, and alternators approved for use on these engines are listed in the latest revision of Textron Lycoming Service Instruction No. 1154.

NOTE 10. The following tabulation shows turbocharger, fuel injector, weight, compression ratio and ignition.

Model	Turbocharger	Fuel Injection	Weight (dry) lb.	Compression Ratio	Ignition, Dual *
TIO-540-A1A	TE0659	RSA-10AD1	509	7.30:1	TCM** S6LN-1208, S6LN-1209
-A1B	TE0659	RSA-10AD1	509	7.30:1	S6LN-1208, S6LN-1209
-A2A	TE0659	RSA-10AD1	509	7.30:1	S6LN-1208, S6LN-1209
-A2B	TE0659	RSA-10AD1	509	7.30:1	S6LN-1208, S6LN-1209
-A1C	TE0659	RSA-10AD1	511	7.30:1	S6LN-1208, S6LN-1209
-A2C	TE0659	RSA-10AD1	511	7.30:1	TCM**S6LN-1208, S6LN-1209
-C1A	TE0659	RSA-5AD1	456	7.20:1	S6LN-1208, S6LN-1209
-E1A	TE0659	RSA-5AD1	453	7.20:1	S6LN-1227, S6LN-1209
-G1A	TE0659	RSA-5AD1	456	8.50:1	S6LN-1208, S6LN-1209
-H1A	TE0659	RSA-5AD1	453	7.20:1	S6LN-1227, S6LN-1209
-F2BD	TE0659	RSA-10ED1	514	7.30:1	D6LN-22303200
-J2B	TH08A60	RSA-10ED1	558	7.30:1	S61N-1208, S6LN-1209
-J2BD	TH08A60	RSA-10ED1	518	7.30:1	D6LN-22303200
-K1AD	TE0695	RSA-5AD1	459	8.00:1	D6LN-32002230
-N2BD	TE08A60	RSA-10ED1	518	7.30:1	D6LN-32002230
-S1AD	TE0659	RSA-10ED1	502	7.30:1	D6LN-30002231
-R2AD	TH08A69	RSA-10EB1	524	7.30:1	D6LN-32002230
-T2AD	TH08A60	RSA-10ED1	549	7.30:1	D6LN-32002230
-U2A	3AU(V)2ME60H3	RSA-10ED1	578	7.30:1	S6LN-1258, S6LN-1259
-J2B	TH08A60	RSA-10ED1	558	7.30:1	S6LN-1208, S6LN-1209
-V2AD	TH08A69	RSA-10DB2	565	7.30:1	D6LN-3200
-W2A	TH08A69	RSA-10ED1	554	7.30:1	S6LN-1208, S6LN-1209
-AB1AD	TE0659	RSA-5AD1	474	8.00:1	D6LN-30313000
-AB1BD	TE0659	RSA-5AD1	474	8.00:1	D6LN-30313000
-AA1AD	TE0659	RSA-5AD1	483	8.00:1	D6LN-30313200
-AE2A	TA0411(2)	RSA-10ED1	595	7.30:1	Slick 6263, 6260 (right)
-AF1A	TA0413	RSA-10ED1	473	8.00:1	Slick 6261, 6260 (right)
-AF1B	TA0413	RSA-10ED1	473	8.00:1	Slick 6261, 6260 (right)
-AG1A	TAO413	RSA-5AD1	485	8.00:1	Slick 6361, 6360 (right)
-AH1A	TAO413	RSA-10ED1	542	7.30:1	Slick 6361, 6360 (right)
-AJ1A	TA6102	RSA-10ED1	532	7.30:1	Slick 6361, 6360 (right)
-AK1A	TA0411	RSA-5AD1	464	8.00:1	Slick 6361 (2)
LTIO-540-F2BD	TE0659	RSA-10ED1	514	7.30:1	Slick 6361 (2)D6RN-3200
-J2BD	TH08A60	RSA-10ED1	518	7.30:1	D6RN-22303200
-K1AD	TE0695	RSA-5AD1	459	8.00:1	D6LN-22303200
-N2BD	TH08A60	RSA-10ED1	518	7.30:1	D6RN-22303200
-U2A	3AU(V)2ME60H3	RSA-10ED1	578	7.30:1	S6LN-1258, S6LN-1259
-J2B	TH08A60	RSA-10ED1	558	7.30:1	S6LN-1208, S6LN-1209
-V2AD	TH08A69	RSA-10DB2	565	7.30:1	D6LN-3200
-W2A	TH08A69	RSA-10ED1	549	7.30:1	S6LN-1208, S6LN-1209

* For alternate magnetos see latest edition of Textron Lycoming Service Instruction No. 1443
** TCM formally Bendix

NOTE 11. Air from the compressor of the AiResearch Turbocharger is suitable for cabin pressurization. The installation must provide for cabin air temperature control from 300°F to 20,000 feet hot day condition under maximum engine power. For cabin air outlet flange dimensions see Textron Lycoming Drawing No. 63444 for -R2AD model.

A sonic nozzle must be provided to preclude affecting engine performance by cabin air bleed. TIO-540-AE2A model is equipped with two sonic nozzles to supply air for cabin pressurization, reference Lycoming Drawing No. 04D63570.

NOTE 12. All models equipped with one impulse coupling magneto may use two impulse coupling magnetos as optional equipment.

NOTE 13. TIO-540-R2AD and LTIO-540-R2AD have an alt. rating of 340 hp at 2500 rpm and 44.0 in.Hg at S.L. and 325 hp at 2500 rpm and 44.0 in HG at 15,000 feet.

NOTE 14. The maximum continuous ratings for these engines have been specified with 10 horsepower extracted at the accessory drives.

NOTE 15. The TIO-540-AB1BD has more effective counterweights for use with a McCauly propeller.

.....END.....