

1. Approving Civil Aviation Authority/Country: <b>FAA/UNITED STATES</b>	2. <b>AUTHORIZED RELEASE CERTIFICATE</b> <b>FAA FORM 8130-3, AIRWORTHINESS APPROVAL TAG</b>	3. FORM TRACKING NUMBER:  <b>RL-11297-61A</b>
--	--	---

4. ORGANIZATION NAME AND ADDRESS:      PRODUCTION CERTIFICATE #3 Lycoming Engines, 652 Oliver St., Williamsport, PA 17701	5. WORK ORDER/CONTRACT/ INVOICE NUMBER: <b>MS-480139</b>
--	--

6. ITEM:	7. DESCRIPTION:	8. PART NUMBER:	9. QUANTITY:	10. SERIAL NUMBER:	11. STATUS/WORK:
1.1	Aircraft Engine	RENPL-9426	1	RL-11297-61A	SEE BLOCK 12

12. REMARKS      ENGINE MODEL: TIO-540-S1AD <b>Rebuilt to original PAH's specifications in accordance with 14CFR par. 43.3(j)</b>  AIRWORTHINESS APPROVAL - ENGINE
---

13a. Certifies the items identified above were manufactured in conformity to:  ___ Approved design data and are in condition for safe operation. ___ Non-approved design data specified in Block 12.
--

14a.      14CFR 43.9 Return to Service ___X___ Other regulation specified in Block 12  Certifies that unless otherwise specified in Block 12, the work identified in Block 11 and described in Block 12 was accomplished in accordance with Title 14, Code of Federal Regulations, Part 43 and in respect to that work, the items are approved for return to service.
--

13b. Authorized Signature:
----------------------------

13c. Approval/ Authorization No.:
--------------------------------------

14b. Authorized Signature:  <i>J. Dabback</i>
---

14c. Approval/Certificate No:  LYC PC3
--

13d. Name (Typed or Printed):
-------------------------------

13e. Date (dd/mmm/yyyy):
--------------------------

14d. Name (Typed or Printed):  J. DABBACK
---

14e. Date (dd/mmm/yyyy):  17 FEB 2017
---

**USER/INSTALLER RESPONSIBILITIES**

It is important to understand that the existence of this Document alone, does not automatically constitute authority to install the aircraft engine/propeller/article.

Where the user/installer performs work in accordance with the national regulations of an Airworthiness Authority different than the Airworthiness Authority of the country specified in Block 1, it is essential that the user/installer ensures that his/her Airworthiness Authority accepts aircraft engine(s)/propeller(s)/article(s) from the Airworthiness Authority of the country specified in Block 1.

Statements in Block 13a and 14a do not constitute installation certification. In all cases maintenance records must contain an installation certification issued in accordance with the national regulations by the user/installer before the aircraft may be flown.

**LYCOMING.** Record of Accessories and Major Parts Shipped with Engine

Model No: TIO-540-S1AD

Serial No: RL-11297-61A

ENPL: RENPL-9426

Order No: AR677058

TC No: E14EA

Date: 16-FEB-17

Inspector:



---

All accessories listed are 0 (zero) time since New or 0 (zero) time since Overhaul. All accessories are new unless part number is succeeded by -85 or -70

---

<u>Part Name</u>	<u>Part Number</u>	<u>Manufacture</u>	<u>Serial#</u>	<u>Setting</u>
AB Press. Controller	LW-14445-10-85	Hartzell	H-SFO00061	
Crankcase Match No	11F24022-D3-85		K0731	
Crankshaft Serial No	13F47734-85		V537949129	
Fuel Pump	62E28150	Hartzell	H-UAN050FP	
Injector	LW-15987	PAM	75GH4102	2524791-7
Magneto - Dual	66E21579-70	Kelly	E-04429	
Spark Plug	1182-H7	Champion		
Turbocharger	LW-15749	Hartzell	H-TDL00094	



652 Oliver Street Williamsport, PA 17701 U.S.A.

Sign for AD's Coded 1 (Applicable to engine Model)

Engine Model No: TIO-540-S1AD

Engine SN: RL-11297-61A

16-FEB-17

AD No. / Rev	SB / Rev	Description	Method of Compliance	Next Due	Code
75-09-15	382	BENDIX FUEL INJ RS-43 INSP OF MOD OF FLOW DIVIDERS	NEW P/N GASKET INSTALLED	N/A	1
78-23-10		NEW P/N INSTALLED	NEW P/N INSTALLED	N/A	1
80-17-10	448/A	TURBOCHARGER TRANSITION WASTE GATE ASSEMBLY	NEW P/N LW-16858 INSTALLED	N/A	1
83-22-04	467	BENDIX BULLETIN #RS-88	BENDIX INJ NOT INSTALLED	N/A	1
91-08-07	494	INSTALLATION OF RESTRICTED FUEL PUMP VENT FITTINGS	INST. NEW RESTRICTED FITTING	N/A	1
91-08-07	497	INSTALLATION OF RESTRICTED FUEL PUMP VENT FITTINGS	INST. NEW RESTRICTED FITTING	N/A	1
92-12-05	501/B	LW-14077 PISTON PIN	NEW PARTS INSTALLED	N/A	1
95-07-01	-	CONNECTING ROD BOLT FAILURE	LYCOMING PART INSTALLED	N/A	1
95-26-02	398	ENGINES OPERATED WITH LOW OCTANE FUEL	ENGINE IS NEW OR HAS BEEN REBUILT AT MANUFACTURER	N/A	1
91-21-01/R1	499/B	INSTALLATION OF ONE-PIECE EXH. PIPE KIT	NEW P/N EXHAUST PIPE INSTALLED	N/A	1
89-12-04	484	INSP. ALIGNMENT AND MODIFICATION OF CROSSOVER EXH.	NEW DESIGN CROSSOVER PIPE INST	N/A	1
97-15-11	527/C	RECALL OF PISTON PIN P/N LW-14077	NEW CONFIGURATION P/N INST.	N/A	1
2002-12-07	543/B	OIL FILTER CONVERTER PLATE GASKET REPLACEMENT	NEW P/N CONVERTER PLATE INSTALLED	N/A	1
2002-19-03	553	CRANKSHAFT INSP. FOR LYC. 6 CYL. TURBO ENGINES	CRANKSHAFT INSTALLED NOT AFFECTED BY THIS AD	N/A	1
2002-19-03	552	CRANKSHAFT INSP. FOR LYC. 6 CYL. TURBO ENGINES	CRANKSHAFT INSTALLED NOT AFFECTED BY THIS AD	N/A	1
2002-19-03	553	CRANKSHAFT INSP. FOR LYC. 6 CYL. TURBO ENGINES	CRANKSHAFT INSTALLED NOT AFFECTED BY THIS AD	N/A	1
2002-19-03	553	CRANKSHAFT INSP. FOR LYC. 6 CYL. TURBO ENGINES	CRANKSHAFT INSTALLED NOT AFFECTED BY THIS AD	N/A	1
2002-19-03	553	CRANKSHAFT INSP. FOR LYC. 6 CYL. TURBO ENGINES	CRANKSHAFT INSTALLED NOT AFFECTED BY THIS AD	N/A	1
2002-19-03	552	CRANKSHAFT INSP. FOR LYC. 6 CYL. TURBO ENGINES	CRANKSHAFT INSTALLED NOT AFFECTED BY THIS AD	N/A	1
2002-19-03	552	CRANKSHAFT INSP. FOR LYC. 6 CYL. TURBO ENGINES	CRANKSHAFT INSTALLED NOT AFFECTED BY THIS AD	N/A	1
2002-19-03	552	CRANKSHAFT INSP. FOR LYC. 6 CYL. TURBO ENGINES	CRANKSHAFT INSTALLED NOT AFFECTED BY THIS AD	N/A	1
2003-14-03	529/B	ROTARY FUEL PUMP TORQUE.	NEW PUMP WITH "M" SUFFIX INSTALLED	N/A	1
2004-10-14	475/C	CRANKSHAFT GEAR MODIFICATION AND ASSY PROCEDURES	NEW P/N INSTALLED	N/A	1
2005-12-06	425/C	Inspection of impulse couplings and stop pins	New snap ring configured magneto installed	as per AD	1
2009-02-03	581	Inspection of Precision Airmotive Hex Plug in regulator cover	New improved gasket P/N 2577258 installed	N/A	1
2012-03-06	596	Avstar Fuel System fuel servo diaphragm	New configuration diaphragm installed	N/A	1
2015-19-07	342/G	FUEL LINE AND SUPPORT CLAMP INSPECTION & INSTALL.	NEW LINES INST. WITH NEW CLAMP	100 HOURS	1
73-23-01	367/F	INSP FOR CRACKS IN PISTON PINS	INST NEW PARTS	N/A	2
78-23-10		NEW P/N INSTALLED	NEW P/N INSTALLED	N/A	2
79-04-05	433/A	BENDIX FUEL INJ. BULLETIN RS-57	NEW P/N INSTALLED	N/A	2
81-12-06	459	BENDIX SERVICE BULLETIN #618	NEW CONF. PART INSTALLED	N/A	2
84-19-03/R1	-	CRACKS IN VALVE SEAT OF CYLINDER ASSY.	NEW P/N INSTALLED	N/A	2
87-10-06/R1	477/A	INSPECTION AND REWORK OF LW-18790 ROCKER ARM ASSY	NEW CONFIGURATION P/N INST.	N/A	2
89-15-10	487	FUEL PUMP VENT RESTRICTION	RESTRICTED TEE INSTALLED	N/A	2
91-08-07	494	INSTALLATION OF RESTRICTED FUEL PUMP VENT FITTINGS	INST. NEW RESTRICTED FITTING	N/A	2
91-08-07	497	INSTALLATION OF RESTRICTED FUEL PUMP VENT FITTINGS	INST. NEW RESTRICTED FITTING	N/A	2
91-10-04	491/A	INSPECTION OF EXHAUST TRANSITION BOLTS	LW-31SS-1.19 BOLT INST @ 17#	N/A	2
94-06-09	517	INCOMPLETE INTERNAL GROUNDING ON MAG CAPACITORS	NEW CONF. CAPACITORS INSTALLED	N/A	2
94-01-03/R2	-	DEFECTIVE IGN COILS AND ROTATING MAGNETS	NEW CONFIGURATION PART INST.	N/A	2
98-17-11	-	CRANKSHAFT REPAIRED BY NELSON	MAG/PARTICLE INSP OF C/SHAFT	N/A	2

Codes: 1 = AD Applicable to Model

2 = AD Not Applicable to Model

3 = Field Compliance where applicable

652 Oliver Street Williamsport, PA 17701 U.S.A.

Sign for AD's Coded 1 (Applicable to engine Model)

		BALANCING SERVICE		
2004-05-24	554	CRANKSHAFT GEAR RETAINING BOLT REPLACEMENT.	NEW BOLT P/N INSTALLED.	N/A
2005-19-11	566	Crankshaft replacement	Replace Crankshaft	N/A
2011-13-03	-	Hartzell Turbocharger	Turbo installed not affected	N/A
2012-19-01	589/A	CRANKSHAFT REPLACEMENT	REPLACE CRANKSHAFT	N/A
2013-21-02	346	HET Alert Service Bulletin No. 048	Affected turbochargers not utilized	N/A



Std Run-in Data Sheet

Engine # : RL-11297-61A	Model # : T10-540-S1AD	Order # : AR677058	Preservation : LPS 486
Operator 1: M. HERLOCHER	Accept/Date : <u>PMD</u>	Test Mode : Final	Part 3.2 Test <u>PMD</u>
Operator 2:	Accept/Date : <u>2-13-17</u>	BOM : RENPL-9426	Sign : <u>PMD</u>
Fuel Serial # : 75GH4102	Ignition Left : E-04429	Ignition Right :	SW Rev : LSW20001-A LCT
Fuel Slave : NO	Ignit_L Slave : NO	Ignit_R Slave : NO	Barometer : 29.47
Fuel Curve: C-13351-C	Float Bowl Connected to Fuel Pump Inlet : YES	Setting # : 2524791-7	Read Time : 2/13/17 14:22
Pre-Oil Temp : 165	Pre-Oil Pres : 90	Date/Time : 2/13/17 13:39	Test Status : Pass
ETS # : 724	ETS Rev : ECO-26195		

Comments

Variations

The following minor variations to the applicable engine test specification were observed during this test and determined to be acceptable 'as is'. The acceptance of these variations will not affect air worthiness or performance.

- 1) \_\_\_\_\_
  - 2) \_\_\_\_\_
  - 3) \_\_\_\_\_
  - 4) \_\_\_\_\_
- Engr. \_\_\_\_\_ Q.C. \_\_\_\_\_ Date \_\_\_\_\_

When / Test	Low Limit	Value	High Limit	Status
<b>2 Runin @ 1500 for 5 min</b>				
Allowable Speed Variation (RPM)	-75	0.4	75	Pass
Cylinder Head Temperature (DegF)		211.2	475	Pass
Exhaust Gas Temperature (DegF)		920.5	1650	Pass
Inlet Air Temp (DegF)	0	59.3	110	Pass
<b>5 Runin @ 1800 for 10 min</b>				
Allowable Speed Variation (RPM)	-75	0.4	75	Pass
Cylinder Head Temperature (DegF)		249.3	475	Pass
Exhaust Gas Temperature (DegF)		1132.1	1650	Pass
Inlet Air Temp (DegF)	0	60.2	110	Pass
<b>8 Runin @ 2200 for 10 min</b>				
Allowable Speed Variation (RPM)	-75	1.8	75	Pass
Cylinder Head Temperature (DegF)		261.6	475	Pass
Exhaust Gas Temperature (DegF)		1137.3	1650	Pass
Inlet Air Temp (DegF)	0	61.5	110	Pass
<b>11 MagChk @ 2200 for 1 min</b>				
Magneto Dropoff - Each Mag (RPM)		90.9	150	Pass
Magneto Dropoff - Difference (RPM)		20	35	Pass
Cylinder Head Temperature (DegF)		255.2	475	Pass
Exhaust Gas Temperature (DegF)		1112.6	1650	Pass
Inlet Air Temp (DegF)	0	61.3	110	Pass
<b>15 Idle @ 0 for 4 min</b>				
Idle Speed (RPM)	600	665	700	Pass
Turbocharger Oil Inlet Pressure @ Idle (PSI)	10	34		Pass
Cylinder Head Temperature (DegF)		236.5	475	Pass
Exhaust Gas Temperature (DegF)		529.5	1650	Pass
Oil Pressure @ Idle (PSI)	25	58.1		Pass
Inlet Air Temp (DegF)	0	58.1	110	Pass



Engine #: RL-11297-61A	Model #: T10-540-S1AD	Order #: AR677058
Operator 1: M. WERLOCHER	Accept/Date: <u>OMD</u>	Test Mode: Final
Operator 2:	Accept/Date: <u>2-14-17</u>	BOM: RENPL-9426
Fuel Serial #: 750H4102	Ignition Left: E-04429	Ignition Right:
Fuel Slave: NO	Ignit_L Slave: NO	Ignit_R Slave: NO
Fuel Curve: C-13351-C	Float Bowl Connected to Fuel Pump Inlet: YES	SW Rev: LSK2801-A LCP
Pre-Oil Temp: 165	Pre-Oil Pres: 90	Barometer: 29.4
ETS #: 724	ETS Rev: ECO-26195	Read Time: 2/14/17 06:10
	Setting #: 2524791-7	Test Status: Pass
	Date/Time: 2/14/17 05:13	

Comments

**Variations**  
The following minor variations to the applicable engine test specification were observed during this test and determined to be acceptable 'as is'. The acceptance of these variations will not affect air worthiness or performance.

1) \_\_\_\_\_  
2) \_\_\_\_\_  
3) \_\_\_\_\_  
4) \_\_\_\_\_

Engr. \_\_\_\_\_ Q.C. \_\_\_\_\_ Date \_\_\_\_\_

When / Test	Low Limit	Value	High Limit	Status
<b>2 Airflow @ AF-900 for 4 min</b>				
Fuel Flow Limits (PPH)	82.4	88.59	101.4 @ AF-899	Pass
Fuel Nozzle Limits ("HG)	N/A	6.55	N/A	Pass
Cylinder Head Temperature (DegF)		232.4	475	Pass
Exhaust Gas Temperature (DegF)		1080.1	1650	Pass
Inlet Air Temp (DegF)	0	61.8	110	Pass
<b>4 Airflow @ AF-1500 for 4 min</b>				
Fuel Flow Limits (PPH)	152.7	157.73	162.8 @ AF-1498	Pass
Fuel Nozzle Limits ("HG)	18.8	18.87	20.4 @ AF-1498	Pass
Cylinder Head Temperature (DegF)		256.3	475	Pass
Exhaust Gas Temperature (DegF)		1159.8	1650	Pass
Inlet Air Temp (DegF)	0	61.9	110	Pass
Fuel Flow Limits (PPH)	200.8			
Fuel Flow Limits (PPH)	200.4			
<b>16 Airflow @ AF-1900 for 4 min</b>				
Fuel Flow Limits (PPH)	200.1	201.42	204.1 @ AF-1901	Pass
Fuel Nozzle Limits ("HG)	28.9	30.59	31.4 @ AF-1901	Pass
Cylinder Head Temperature (DegF)		285.3	475	Pass
Exhaust Gas Temperature (DegF)		1244.1	1650	Pass
inlet Air Temp (DegF)	0	61.7	110	Pass
<b>18 Rated @ Rated for 15 min</b>				
Rated Speed (RPM)	2650	2705.6	2750	Pass
Manifold Pressure @ Rated ("HG)	35.5	35.95	36.5	Pass
Fuel Pressure @ Rated (PSI)	36	37.4	40	Pass
Oil Pressure @ Rated (PSI)	75	80.8	85	Pass
Turbocharger Oil Inlet Pressure @ Rated (PSI)	30	47		Pass
Air Flow Limits (PPH)	2003.9	2064.8		Pass
Cylinder Head Temperature (DegF)		298.3	475	Pass
Exhaust Gas Temperature (DegF)		1285.9	1650	Pass
Oil Gallery Temp @ Rated (DegF)				
Inlet Air Temp (DegF)	165	203.2	215	Pass
	0	61.7	110	Pass
<b>21 Final_Idle @ 0 for 4 min</b>				
Idle Speed (RPM)	600	651.9	700	Pass
Fuel Pressure @ Final Idle (PSI)	30	33.4		Pass
Cylinder Head Temperature (DegF)		230.9	475	Pass
Exhaust Gas Temperature (DegF)		543.8	1650	Pass
Oil Gallery Temp @ Final_Idle (DegF)				
Oil Pressure @ Idle (PSI)	140	163.6	215	Pass
Manifold Pressure @ Final Idle (In Hg)	25	55.1		Pass
Inlet Air Temp (DegF)	8	14	17	Pass
	0	58	110	Pass
<b>23 Manual @ N/A for 0 min</b>				
Acceleration Check (sec)	2	4	5	Pass
Idle Cut-off Time (sec)	0	3	5	Pass



