Authority / Country:

FAA / UNITED STATES

AUTHORIZED RELEASE CERTIFICATE

FAA Form 8130-3, AIRWORTHINESS APPROVAL TAG

120419122475-1-1

4. Organization Name and Address: Airmotive Engineering Corporation (PQ0003SW)
9503 Middlex San Antonio, TX 78217

5. Work Order / Contract / Invoice Number: 122475

6. Item:	7. Description:	8. Part Number:	9. Eligibility: *	10. Quantity:	11. Serial/Batch Number:	12. Status /Wrk
1	Crankshaft Assy EcPn AEL32101-4	AEL32101	N/A	1EA	See Blk 13	NEW

13. Remarks:

Line#1-83324-01

14. Certifies the items identified above were manufactured in conformity to:

☑ Approved design data and are in a condition for safe operation

☐ Non-approved design data specified in Block 13.

19

☐ 14 CFR 43.9 Return to service

☐ Other regulation specified in Block 13

Certifies that unless otherwise specified in Block 13, the work identified in Block 1 and described in Block 13 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.

15. Authorized Signature: [redacted]

16. Approval / Authorization Number: **DMIR832976SW**

20. Authorized Signature:

21. Approval / Certificate No:

17. Name (Typed or Printed): **Steven Thatcher**

18. Date (mmm/dd/yyyy): Apr/19/2012

22. Name (Typed or Printed):

23. Date (mmm/dd/yyyy):

User/Installer Responsibilities

It is important to understand that the existence of this Document alone does not automatically constitute authority to install the part/component/assembly.
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 ess that the user/installer ensures that his/her airworthiness authority accepts the parts/components/assemblies from the airworthiness authority of the country specified in block 1.
Statements in Blocks 14 and 19 do not constitute installation certification. In all cases, aircraft maintenance records must contain an installation certification issued in accordance with the national regulations by the user/installer before the aircraft may be flown.

US Department of Transportation
Federal Aviation Administration

MAJOR REPAIR AND ALTERATION
(Airframe, Powerplant, Propeller, or Appliance)

Form Approved
OMB No. 2120-0020
2/28/2011

Electronic Tracking Number

For FAA Use Only

INSTRUCTIONS: Print or type all entries. See Title 14 CFR §43.9, Part 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form. This report is required by law (49 U.S.C. §44701). Failure to report can result in a civil penalty for each such violation. (49 U.S.C. §46301(a))

1. Aircraft	Nationality and Registration Mark	Serial No.	
	Make	Model	Series
2. Owner	Name *(As shown on registration certificate)*	Address *(As shown on registration certificate)* Address City State Zip Country	

3. For FAA Use Only

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
☐	☐	AIRFRAME	———	*(As described in Item 1 above)*	———
☐	☑	POWERPLANT	Lycoming	O-320-E2A	L17772-27A
☐	☐	PROPELLER			
☐	☐	APPLIANCE	Type Manufacturer		

6. Conformity Statement

A. Agency's Name and Address	B. Kind of Agency			
Name Lee Allen	☐	U. S. Certificated Mechanic	☑	Manufacturer
Address [redacted]	☐	Foreign Certificated Mechanic	C. Certificate No.	
City State TX	☐	Certificated Repair Station		
Zip 77871-1605 Country USA	☐	Certificated Maintenance Organization	A&P [redacted] IA	

D. I certify that the repair and/or alteration made to the unit(s) identified in item 5 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the information furnished herein is true and correct to the best of my knowledge.

Extended range fuel per 14 CFR Part 43 App. B ☐	Signature/Date of Authorized Individual [redacted] 10-12-2014

7. Approval for Return to Service

Pursuant to the authority given persons specified below, the unit identified in item 5 was inspected in the manner prescribed by Administrator of the Federal Aviation Administration and is ☑ Approved ☐ Rejected

BY	☐	FAA Flt. Standards Inspector	☐	Manufacturer	☐	Maintenance Organization	☐ Persons Approved by Canadian Department of Transport
	☐	FAA Designee	☐	Repair Station	✓	Inspection Authorization	Other *(Specify)*

Certificate or Designation No. A&P [redacted] IA	Signature/Date of Authorized Individual [redacted] 10-12-2014

NOTICE

Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. An alteration must be compatible with all previous alterations to assure continued conformity with the applicable airworthiness requirements.

8. Description of Work Accomplished
(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)

Nationality and Registration Mark	Date

The engine was rebuilt using a new AEL32101-4 crankshaft serial number 83320-01 for 7/16 inch propeller bolts. New high compression pistons AEL75089 and wrist pins SL13444-1 were installed. Two serviceable Slick magnetos were installed. These changes convert the engine to 160 H.P. and into a O-320D2G. IAW Lycoming Service Instruction number 1304J the data plate was stamped with a "C" suffix at the end of the serial number to signify the engine has been altered.

☐ Additional Sheets Are Attached

DIVCO CRANKCASE WORK ORDER

WDC NO. 106747 DATE RECEIVED 3/1/12

Customer MONTY KEOWN P.O. No. 3-50 2h

Address [redacted], MS Carrier UPS

Phone 12[redacted] Model O-320 C/N. 72081

Case Mfg. LYC. S.N. L-19690-27A Match No. 8896

Customer Orders and Discrepancies

RECEIVING/REPAIR SEQUENCE	DATE	MECH. I.D.
1. Preliminary Insp. clean and Prep. Includes removal of LYC anchored Thru bolts	3/1	
2. Record Previous Repair W.O.s	3/2	A.A.
3. Record Deck Height LH 501 RH 503	3/14	
4. NDI (HIDDEN DAMAGE) Mark Discontinuities (go to step 8 if weld not required)		
5. Preheat and Arc Insp. (mim. 400 F)		
6. Prep. For Welding and weld (Note Weld Areas in description of repair)	3/15	WR4
7. Post Heat (4 Hrs. 400 F) Insp. For Crack Indications Visual		
8. Relocate Stud/Through Bolt Holes	3/16	
9. Mach. Cyl. Bore Surface		
10. Misc Deck Work	3/17	DH
11. Cut Mating Surface	3/18	
12. Rough Machine Bearing Bores (if required)	3-20	P7
13. If applicable install LYC anchored thru bolts Assemble/Torque		

Description of Repair Repaired a crack at upper front rib #4, lower front rib #3 & #4, lower rear rib #1, #2 cylinder.

Cut mating surfaces and resized bores to factory limits.

SERVICEABLE

Reject Remarks

Maint. Rel./8130-3 Issued by [redacted] Dated 3-30-12

1. Approving National Aviation Authority/Country:	2.	WDC #106747 DIV
FAA/UNITED STATES	**AUTHORIZED RELEASE CERTIFICATE** **FAA Form 8130-3, AIRWORTHINESS APPROVAL TAG**	5. Work Order/Contract/Invoice Number: INVOICE #101132

4. Organization Name and Address:

DIVCO, INC.
2806 N. SHERIDAN RD
TULSA, OK 74115

6. Item:	7. Description:	8. Part Number:	9. Eligibility:*	10. Quantity:	11. Serial/Batch Number:	12. Status/Work:
1	LYCOMING O-320 CRANKCASE	CASTING #72081	N/A	1 EACH	MATCH #8896	REPAIRED

13. Remarks:
REPAIRED A CRACK AT UPPER FRONT RIB #4 & LOWER FRONT RIB #3 & 4 & LOWER REAR RIB #1 & 2 CYLINDERS

CUT MATING SURFACES AND RESIZED BORES TO MANUFACTURER'S LIMITS.
CRANKCASE REPAIRED PER DIVCO APPROVED PROCESS SPECS 77-002, REV. AUGUST 21, 2007.

DATE COMPLETED: 03/30/2012
WDC #106747
CERTIFIES WORK SPECIFIED IN BLOCKS 12/13 WAS CARRIED OUT IN ACCORDANCE WITH EASA PART 145 AND WITH RESPECT TO THAT WORK THE COMPONENT IS CONSIDERED READY FOR RELEASE TO SERVICE UNDER EASA PART 145 APPROVAL NUMBER EASA 145-528

14. 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 13.**

19. ☒ **14 CFR 43.9 Return to Service** ☒ **Other regulation specified in Block 13**

Certifies that unless otherwise specified in block 13, the work identified in Block 12 and described in Block 13 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.

15. Authorized Signature:	16. Approval/Authorization No.:	20. Authorized Signature: [redacted]	21. Approval/Certificate No.: DB2R762K
17. Name (Typed or Printed):	18. Date (m/d/y):	22. Name (Typed or Printed): HERSCHEL MYERS	23. Date (m/d/y): MAR 30 2012

User/Installer Responsibilities

It is important to understand that the existence of this document alone does not automatically constitute authority to install the part/component/assembly.

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 parts/components/assemblies from the airworthiness authority of the country specified in Block1.

Statements in Blocks 14 and 19 do not constitute installation certification. In all cases, aircraft maintenance records must contain an installation certification issued in accordance with th national regulations by the user/installer before the aircraft may be flown.

*Installer must cross-check eligibility with applicable technical data.

1. Approving National Aviation Authority/Country:	2.	3. Form Tracking Number:
FAA/UNITED STATES	**AUTHORIZED RELEASE CERTIFICATE** **FAA Form 8130-3, AIRWORTHINESS APPROVAL TAG**	#106747 DIV

4. Organization Name and Address:	5. Work Order/Contract/Invoice Number:
DivCo, Inc. 2806 N. Sheridan Road Tulsa, OK 74115	INVOICE #101137

6. Item:	7. Description:	8. Part Number:	9. Eligibility:*	10. Quantity:	11. Serial/Batch Number:	12. Status/Work:
1	LYCOMING 320 ACCESSORY CASE	CASTING #76096	N/A	1 EACH	N/A	REPAIRED

13. Remarks:

CLEAN , INSPECT, RE-SURFACED OIL PUMP PAD & COMPLY W/ S.I. 1341

PARTS REPAIRED PER DIVCO APPROVED PROCESS SPECS 77 -002, REV. AUGUST 21, 2007

DATE COMPLETED: 03/21/2012
DIV #106747

14. 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 13.

19. ☒ 14 CFR 43.9 Return to Service ☐ Other regulation specified in Block 13

Certifies that unless otherwise specified in block 13, the work identified in Block 12 and described in Block 13 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.

15. Authorized Signature:	16. Approval/Authorization No.:	20. Authorized Signature: [redacted]	21. Approval/Certificate No.: DB2R762K
17. Name (Typed or Printed):	18. Date (m/d/y):	22. Name (Typed or Printed): JOSEPH A. BROWN	23. Date (m/d/y): MAR 21 2012

User/Installer Responsibilities

It is important to understand that the existence of this document alone does not automatically constitute authority to install the part/component/assembly.

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 parts/components/assemblies from the airworthiness authority of the country specified in Block1.

Statements in Blocks 14 and 19 do not constitute installation certification. In all cases, aircraft maintenance records must contain an installation certification issued in accordance with the national regulations by the user/installer before the aircraft may beflown.

*Installer must cross-check eligibility with applicable technical data.

Air Power, Inc.

4900 S. Collins St.
Arlington, TX 76018
Ph: (800) 938-7278
FAX: (817) 472-9063

INVOICE

Invoice Date	Invoice Number
02/07/14	240407

Bill To:

Monty Keown
[redacted] 38654
UNITED STATES

Ship To:

Johnny Keown
[redacted] 77871
UNITED STATES

Customer No	Customer PO No.	Sales Order No.	Order Date	Sales Person	Tail No#
KEW004		223269	02/07/14	Ken Rawls	

Terms	Due Date	Ship Date	Ship Via	Email
Credit Card	02/07/14		Fed-Ex Ground	[redacted]

Item/Description	Serial No	Job No.	Unit	Qty	List Price	Disc. Price	Total Price
LW-25-1.25 BOLT-.250-20 X 1.25 LONG HEX			EA	8	2.20	1.47	11.76
LW-25-1.13 BOLT-.250-20 X 1.13 LONG HEX			EA	2	4.39	2.94	5.88
LW-25-0.94 BOLT-.250-20 X .94 LONG HEX			EA	28	1.03	0.69	19.32
LW-25-1.50 BOLT-.250-20 X 1.50 LONG HEX			EA	2	1.64	1.10	2.20
STD-1882 SCREW-.375-16 X 1.28 LG SOC DR			EA	2	18.68	14.38	28.76
71596 WASHER-ACCESSORY DRIVE GEAR			EA	1	16.40	10.99	10.99
STD-1727 WASHER-PLAIN-.33 ID X .75 OD X			EA	4	2.57	1.72	6.88
STD-1411 NUT-.250-20 PLAIN			EA	10	2.26	1.51	15.10
383-B NUT-.375-24 PLAIN			EA	16	5.79	3.88	62.08
STD-2030 NUT-.500-20 PLAIN			EA	18	10.12	6.78	122.04
STD-1410 NUT-.3125-18 PLAIN			EA	4	2.26	1.51	6.04
70484 SCREEN-OIL SUCTION			EA	1	26.55	17.79	17.7
FREIGHT Shipping Charges			EA	1	17.63	17.63	17.6

PACKING LIST

Shipment Number: 223952

Shipment Date: 02/07/14

Page: 1

Bill To: Monty Keown
[redacted] 38654
UNITED STATES

Ship To: Johnny Keown
[redacted] 77871
UNITED STATES

Ship Via Fed-Ex Ground

Customer ID KEW004
P.O. Number
P.O. Date 02/07/14
Sales Order No. 223269
SalesPerson Ken Rawls

Item No.	Description	Serial No.	Shipped	Ordered	Back Ord
LW-25-1.25	BOLT-.250-20 X 1.25 LONG HEX		8	8	
LW-25-1.13	BOLT-.250-20 X 1.13 LONG HEX		2	2	
LW-25-0.94	BOLT-.250-20 X .94 LONG HEX		28	28	
LW-25-1.50	BOLT-.250-20 X 1.50 LONG HEX		2	2	
STD-1882	SCREW-.375-16 X 1.28 LG SOC DR		2	2	
71596	WASHER-ACCESSORY DRIVE GEAR		1	1	
STD-1727	WASHER-PLAIN-.33 ID X .75 OD X		4	4	
STD-1411	NUT-.250-20 PLAIN		10	10	
383-B	NUT-.375-24 PLAIN		16	16	
STD-2090	NUT-.500-20 PLAIN		18	18	
STD-1410	NUT-.3125-18 PLAIN		4	4	
70484	SCREEN-OIL SUCTION		1	1	
FREIGHT	Shipping Charges		1	1	

DATE 19_____	RECORDING TACH TIME	TODAYS FLIGHT	TOTAL TIME IN SERVICE	**Description of Inspections, Tests, Repairs and Alterations** Entries must be endorsed with Name, Rating and Certificate Number of Technician or Repair Facility. (*See* back pages for other specific entries.)
				10/12/2014 Lycoming O-320-E2A serial #L17772-27AC was rebuit this date Assembled engine IAW Lycoming overhaul manual Cleaned inspected and powder coated oil sump. Engine was converted to an O-320-D2G by installing O320 A sump, AEL75089 pistons, SL13444-1 piston pins, AEL 32101-4 Crank assembly and 76110 accessory case. Added a "C" suffix to the engine serial number on the data plate IAW Lycoming service instruction 1304J dated 11/12/1999. See 337 covering this change. I certify the engine to be airworthy at this time. Overhauled & certified parts: 4 chrome cylinders 1 76110 accessory case 8 78290 lifters and sockets 1 Crankcase serial #L-19670-27A 1 76097 Camshaft 4 78030 Connecting rods 8 Lycoming Rocker arms 8 72877 lifter bodies 1 74996 idler gear 1 75072 idler gear

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DATE 19____	RECORDING TACH TIME	TODAYS FLIGHT	TOTAL TIME IN SERVICE	**Description of Inspections, Tests, Repairs and Alterations** Entries must be endorsed with Name, Rating and Certificate Number of Technician or Repair Facility. (*See* back pages for other specific entries.)

New parts purchased:
1 AEL 32101-4 Crank assembly serial # 83324-01
4 AEL75089 matched pistons 1264 grams each
4 SL 5401-SC piston ring set
4 SL13444-1 piston pins
8 SL78027 rod bolts
8 SL12186 rod bolt nuts
8 AEL69373 rod bearings
1 SL78528 oil pump housing
1 SL18109A-S oil pump impellor kit
1 AEL19646 crank gear
1 STD-847 crank gear bolt
2 AEL13884 front main bearings
4 AEL69373 main bearings
1 SL1028-B Oil relief ball
1 SL61084 Oil relief spring
4 SL13790A Rocker shaft
6 SL12892 Rocker shaft thrust buttons
4 SL69603 Intake hoses
4 AEL-STD2160 Oil drain hoses
All crankcase bolts
16 383B cylinder nuts
16 STD-2090 cylinder nuts

END

Lee Allen
A&P [redacted] IA
[redacted]

Sept 20, 2024 – Cessna 172K N7037G S/N- 17258737
Engine- Lycoming Model- O-320-D2G S/N- L17772-27AC TSMOH: 0.0
Propeller-McCauley Model-1C160/DTM7557 S/N- 730543 TSMOH: 728.51
ACTT: 4711.26 Tach: 751.66 Hobbs: 2104.8

AIRFRAME LOG ENTRY

- Removed Engine Model: O-320-E2D, S/N: L26213-27A
- Installed Engine Model: O-320-D2G, S/N: L17772-27AC, per RAM Aircraft Modifications, Inc. STC SA2375SW
- Test ran engine, Leak and Ops Check good.
- Aircraft approved for Maintenance Test Flight at this time

[redacted]

Robert J. Pierce A&P [redacted] IA

Sept 20, 2024 – Cessna 172K N7037G S/N- 17258737
Engine- Lycoming Model- O-320-D2G S/N- L17772-27AC TSMOH: 0.0
Propeller-McCauley Model-1C160/DTM7557 S/N- 730543 TSMOH: 728.51
ACTT: 4711.26 Tach: 751.66 Hobbs: 2104.8

ENGINE LOG ENTRY

- Installed overhauled engine Model: O-320-D2G, S/N: L17772-27AC, on C172K S/N: 17258737 per RAM Aircraft Modifications, Inc. STC SA2375SW
- Installed 8 ea new spark plugs P/N: UREM38E
- Installed rebuilt carburetor model: MA4SPA, P/N: 10-5217, S/N: MS14XC13
- Installed 4 ea new shock mounts, P/N: J9613-19
- Installed serviceable L/H magneto model: 4371, S/N: 91050067
- Installed Surefly ignition module, model: SIM4N, S/N: 4423015 per STC SE04349CH
- Test ran engine and adjusted carburetor, leak and ops check good.
- Aircraft approved for Maintenance Test Flight at this time

[redacted]

Robert J. Pierce A&P [redacted] IA