

AIRCRAFT TECHNICAL RECORD

Section 3. ENGINE LOG

ENGINE DATA

1. Make Austro Engine GmbH
 2. Model E4P-C
 3. Specification E00081EN
 4. Manufacturer's Serial Number E4P-C-00189
 5. Date of Manufacture July 2018
- _____
- _____
- _____



Section 3A: Engine Service and Maintenance Log

DATE / /	TIME RUN		TIME SINCE OVERHAUL		CYCLES		DESCRIPTION OF WORK PERFORMED (INSPECTION, REPAIRS, REPLACEMENT)
	HOURS	min	HOURS	min	Sub Total	TOTAL	
BROUGHT FORWARD 							



DIAMOND AIRCRAFT INC.
D.O.T. APPROVED MAINTENANCE
ORGANIZATION 161-93

Registration: N520RA
Airframe Total Time: 32.4
Engine LH SN: E4P-C-00189

AC Serial Number: 62 095
Work Order: SO 071970
Engine LH TT: 32.4

- Engine E4P, S/N E4P-C-00189, installed on Aircraft DA 62 S/N 62 095, LEFT
- Total Time Engine brought forward: 32.4 hrs
- EECU software installed: VC33_2P_06_21
- Engine and documentation inspected for Major Mod's and/or STC's incorporated, none found.
- All applicable Airworthiness Directives, Service Bulletins complied with.
- AWD Bi-weekly checked thru 2018-20
- Refer to Austro MM E4.08.04, latest revision for component inspection/exchange intervals
- Next inspection due: 100 hr inspection

The Maintenance Described has been performed IAW the Applicable Standard of Airworthiness



Date: OCT 11 2018



DIAMOND AIRCRAFT INC.
D.O.T. APPROVED MAINTENANCE
ORGANIZATION 161-93

Registration: N520RA
Airframe Total Time: 34.6
Engine LH SN: E4P-C-00189

AC Serial Number: 62 095
Work Order: SO 071970
Engine LH TT: 34.6

- LH propeller governor speed stop adjusted as required

The Maintenance Described has been performed IAW the Applicable Standard of Airworthiness



Date: OCT 19 2018

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Section 3A: Engine Service and Maintenance Log

DATE / /	TIME RUN		TIME SINCE OVERHAUL		CYCLES		DESCRIPTION OF WORK PERFORMED (INSPECTION, REPAIRS, REPLACEMENT)
	HOURS	min	HOURS	min	Sub Total	TOTAL	

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ABSOLUTE AERO

MAINTENANCE

21889 Skywest Drive, Hayward, CA 94541 • 510 782-6591

ENGINE ENTRY

WORK ORDER: 2587 AIRCRAFT: N520RA TACH: 103.0 TSOH: N/A TTE: 103.0

DATE: 12/12/2019

L/H ENGINE MODEL: Austro E4P-C S/N: E4P-C-00189

Complied with Austro MSB-E4-026/1 Electrical Harness Inspection and MSB-E4-003/24 EECU software update. Completed all 100 hour servicing using service kit (P/N: DA42-AE-100KIT). Drained and sampled oil. Removed and replaced oil filter with new. Examined old oil filter element, no contaminants found. Serviced engine with 6.5 liters of Aeroshell Diesel Ultra oil. Drained and sampled gearbox oil. Inspected and reinstalled gearbox oil filter. Serviced gearbox to fill using new Shell Spirax S6 GXME 75W80 oil. Pressure tested coolant system. Ground ran engine, leak and ops check good. No defects noted at this time. Downloaded ECU engine log file and event recorder. Verified AD's current through FAA AD biweekly 2019-25. All work completed in accordance with the Diamond DA 62 and Austro E4 Maintenance Manuals. -END

I certify that this engine has been inspected in accordance with FAR 43 Appendix D (100 Hour Inspection) and has been determined to be in an airworthy condition.

Brandon Thompson A&P / IA 3212565



ABSOLUTE AERO

MAINTENANCE

21889 Skywest Drive, Hayward, CA 94541 • 510 782-6591

ENGINE ENTRY

WORK ORDER: 2984 AIRCRAFT: N520RA TACH: 163.5 TSOH: N/A TTE: 163.5

DATE: 12/15/2020

L/H ENGINE MODEL: Austro E4P-C S/N: E4P-C-00189

Complied with Austro MSB-E4-003/25 EECU software update. Completed all 100-hour servicing using service kit (P/N: DA42-AE-100KIT). Drained and sampled oil. Removed and replaced oil filter with new. Examined old oil filter element, no contaminants found. Serviced engine with 6 liters of Aeroshell Diesel Ultra oil. Drained and sampled gearbox oil. Inspected and reinstalled gearbox oil filter. Serviced gearbox to fill using new Shell Spirax S6 GXME 75W80 oil. Pressure tested coolant system. Ground ran engine, leak and ops check good. No defects noted at this time. Downloaded ECU engine log file and event recorder. AD 2020-14-07 "failure of the fuel injectors and timing chain" is applicable. Timing chain is original at this date, and there have been no windmilling restarts performed since new. Timing chain replacement is due before further flight, before it exceeds 900 hours in service, or within 100 flight hours of experiencing a windmilling restart, whichever occurs LATER. Fuel injector replacement is due before Tach: 900.0. AD 2020-15-05 verified revised procedure already incorporated in the AFM. No further action required. Verified AD's current through FAA AD biweekly 2020-25. All work completed in accordance with the Diamond DA 62 and Austro E4 Maintenance Manuals. -END

I certify that this engine has been inspected in accordance with FAR 43 Appendix D (100 Hour Inspection) and has been determined to be in an airworthy condition.

Brandon Thompson A&P / IA 3212565

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Take Flight Aviation LLC - 49 Hangar Road - Montgomery, NY 12549 - 8454574188

Austro, S/N: E4P-C-00189

May 03, 2021

N520RA
TACH: 271.5

1. Performed Annual inspection I/A/W AC43.13 Appendix D using Diamond DA62 AMM and Austro Engine Maintenance Manual as references.
2. Engine ground run performed pre-inspection and engine data downloaded.
3. Oil change performed. Removed and replaced oil filter with new filter p/n: E4A-52-100-802 from Austro Engine 100 hour kit. Engine serviced with 7.5 liters of Aeroshell Oil Diesel Ultra Engine Oil. Installed (15) 5W30LT - Aeroshell, Installed (1) E4A-52-000 - kit-100 hour.
4. Removed and replaced fuel filter with new filter p/n: WK724/3.
5. Gear box oil filters removed and inspected for particles, none found. Gear box oil drained and sampled, no particles found on magnetic drain plug. Reinstalled filter and drain plug. Filled gear box with 2.3L of Shell Spiral S6-GXME 75W-80 oil.
6. Visually inspected alternator, engine wiring harness and sensors, rear belt drive system, cylinder head drain, full fuel system, waste gate controller, exhaust system, and engine breather line. No defects noted.
7. Cooling system inspected. Coolant mixture ratio tested good. Verified proper operation of coolant tank pressure relief valve. Ops check good.
8. Alternate air and cabin heat systems both inspected and verified for proper operation.
9. Air intake and turbo charging system inspected. Removed, cleaned, serviced and reinstalled K&N air filter assembly. V-Band clamp on turbo charger inspected for defects, none found.
10. Inspected engine mounts for cracks, deterioration, or loose hardware.
11. Performed post-maintenance engine ground run. Performed leak check, none found. Downloaded EECU engine data.
12. All routine service items performed.
13. Verified AD compliance through this date.

With respect to the work performed, this engine is approved for return to service. Details of work performed are on file with Take Flight Aviation LLC under work order: WO_794.

James T. Markey IA AP3166872IA



Take Flight Aviation LLC - 49 Hangar Road - Montgomery, NY 12549 - 8454574188

Austro, S/N: E4P-C-00189

August 16, 2021

N520RA
Hobbs: 229.3

TACH: 374.4

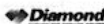
1. Performed Annual inspection I/A/W 14 CFR part 43 Appendix D using Diamond DA62 checklist, Aircraft Maintenance Manual and Austro Engine Maintenance Manual as references.
2. Engine ground run performed pre-inspection and engine data downloaded.
3. Oil change performed. Removed and replaced oil filter with new filter p/n: E4A-52-100-802 from Austro Engine 100 hour kit. Engine serviced with 7.5 liters of Aeroshell Oil Diesel Ultra Engine Oil. Installed (15) P/N 5W30LT - Aeroshell, Installed P/N E4A-52-000 - kit-100 hour.
4. Removed and replaced fuel filter with new filter p/n: WK724/3.
5. Gear box oil filters removed and inspected for particles, none found. Gear box oil drained and sampled, no particles found on magnetic drain plug. Reinstalled filter and drain plug. Filled gear box with 2.3L of Shell Spiral S6-GXME 75W-80 oil.
6. Visually inspected alternator, engine wiring harness and sensors, rear belt drive system, cylinder head drain, full fuel system, waste gate controller, exhaust system, and engine breather line. No defects noted.
7. Cooling system inspected. Coolant mixture ratio tested good. Verified proper operation of coolant tank pressure relief valve. Ops check good.
8. Alternate air and cabin heat systems both inspected and verified for proper operation.
9. Air intake and turbo charging system inspected. Removed, cleaned, serviced and reinstalled K&N air filter assembly. V-Band clamp on turbo charger inspected for defects, none found.
10. Inspected engine mounts for cracks, deterioration, or loose hardware.
11. Performed post-maintenance engine ground run. Performed leak check, none found. Downloaded EECU engine data.
12. All routine service items performed.
13. Verified AD compliance through this date.
14. Turbo waste gate controller removed from L/H engine and replaced with new unit. Installed P/N E4A-41-120-000 - Actuator.

I certify this aircraft was inspected in accordance with an Annual Inspection, this engine is determined Airworthy and is approved for return to service. Details of work performed are on file with Take Flight Aviation LLC under work order: WO_911.

James T. Markey IA AP3166872IA

Section 3A: Engine Service and Maintenance Log

WO: WO_970



Engine L - page 1 of 1

Take Flight Aviation LLC • 49 Hangar Road • Montgomery, NY 12549 • 8454574188

N520RA
Hobbs: 230.9

Tach: 374.5

Austro, S/N: E4P-C-00189

August 21, 2021

Removed and replaced INOP L/H prop. governor with serviceable unit. P/N P-877-16. Installed P/N P-877-16 - Prop. Governor, S/N: 126141H/G 12/16.

With respect to the work performed, I certify that this engine (L) is determined airworthy and is approved for return to service. Details of work performed are on file with Take Flight Aviation LLC under work order: WO_970.

James T. Markey IA AP3166872IA

James T. Markey

Registration #: N520RA

Manufacturer: Austro Engines

Serial No: E4P-C-00189

Part/Model No: E4P

Work Order No: 534



BLUE LINE
TECHNICAL SERVICES

TACH: 516.60

HOBBS: 439.20

A/C Total Time: 516.60

Engine TSN: 516.60

Date: 09/07/2022

- Annual Inspection. Drained oil, pulled sample. Serviced engine with 7 liters of Aeroshell Ultra Diesel and using 100hr kit (P/N: E4A-52-300-KIT). Replaced fuel filter (P/N: WK724-3). Performed 100hr gearbox service: drained and strained gearbox oil and cleaned filter. Topped off coolant with G48. Ground run and leak check good. All ADS checked for compliance. I certify that this engine has been inspected IAW an Annual inspection and per FAR 43 App. D and Austro MM and was determined to be in an airworthy condition.
- Replaced left engine wastegate controller with new PN# E4A-41-120-000. Reinstalled bridge.
- Vacuumed and blow out bird nest in LH engine airduct.

THE AIRCRAFT, AIRFRAME, ENGINE, PROPELLER, OR APPLIANCE IDENTIFIED ABOVE WAS REPAIRED AND/OR INSPECTED IN ACCORDANCE WITH BLUE LINE TECHNICAL SERVICES LLC AND CURRENT MAINTENANCE RULES OF THE FEDERAL AVIATION REGULATIONS AND IS APPROVED WITH RESPECT TO WORK PERFORMED AT THIS TIME IN RETURN TO SERVICE.

Pertinent details of maintenance are held in the Maintenance Facility under Work Order No 534 dated .

Date: 9/07/2022 Signature: *James T. Markey*

Work Order: 534

AP Number: 3352118JA

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Registration #: N520RA
 Manufacturer: Austro Engines
 Serial No: E4P-C-00189
 Part/Model No: E4P
 Work Order No: 1843



TACH: 646.40
 HOBBS: 603.60
 A/C Total Time: 646.40
 Engine TSN: 646.40
 Date: 10/07/2023

E:

- 100/200/300/600hr and Annual Inspection. Drained engine oil, pulled sample. Serviced engine with 7 Lts of Aeroshell Ultra Diesel and using 100hr kit (P/N: E4A-52-000-KIT). Replaced fuel filter (P/N: WK724-3). Performed 300hr gearbox service: drained oil and serviced with Spirax GSX 75W-80 and replaced filter with new (P/N: E4A-70-000-806). Topped off coolant with G48. Ground run and leak check good. Checked all ADs for compliance. I certify this engine has been inspected IAW a 100/200/300/600hr and Annual inspection per FAR 43 App. D and Austro MM and was determined to be in an airworthy condition.
- Replaced flywheel with new (P/N: E4PB-73-000-000-KIT) with new screws (P/N: E4A-73-000-801). Next inspection due 946.4 TT. Next replacement due 1246.4 TT.
- Replaced high pressure fuel pump with new (P/N: E4A-30-000-BHY, S/N: 22-10-07-02-00260) using new gaskets 2 ea (P/N: DIN7603-12X16X2.0) and new sealing rings 2 ea (P/N: DIN7603-A12X16-AL). High pressure pump replacement next due 1246.4TT.
- Updated ECU version to V.26.

THE AIRCRAFT, AIRFRAME, ENGINE, PROPELLER, OR APPLIANCE IDENTIFIED ABOVE WAS REPAIRED AND/OR INSPECTED IN ACCORDANCE WITH BLUE LINE TECHNICAL SERVICES LLC AND CURRENT MAINTENANCE RULES OF THE FEDERAL AVIATION REGULATIONS AND IS APPROVED WITH RESPECT TO WORK PERFORMED AT THIS TIME IN RETURN TO SERVICE.

Pertinent details of maintenance are held in this Maintenance Facility under Work Order No 1843 dated .

Date: 10/07/2023 Signature: Raul W. Wapner Work Order: 1843
 AP Number: A-73801290 JA

Registration #: N520RA
 Manufacturer: Austro Engines
 Serial No: E4P-C-00189
 Part/Model No: E4P
 Work Order No: 2380



TACH: 731.70
 HOBBS: 722.50
 A/C Total Time: 731.70
 Engine TSN: 731.70
 Date: 02/23/2024

- Installed new exhaust gaskets P/N E4A-04-000-001 on LH engine.

THE AIRCRAFT, AIRFRAME, ENGINE, PROPELLER, OR APPLIANCE IDENTIFIED ABOVE WAS REPAIRED AND/OR INSPECTED IN ACCORDANCE WITH BLUE LINE TECHNICAL SERVICES LLC AND CURRENT MAINTENANCE RULES OF THE FEDERAL AVIATION REGULATIONS AND IS APPROVED WITH RESPECT TO WORK PERFORMED AT THIS TIME IN RETURN TO SERVICE.

Pertinent details of maintenance are held in this Maintenance Facility under Work Order No 2380 dated .

Date: 2/23/24 Signature: J-B- Work Order: 2380
 AP Number: 3713942

Section 3A: Engine Service and Maintenance Log

Engine L - page 1 of 1



Take Flight Aviation LLC - 49 Hangar Road - Montgomery, NY 12549 - 8454574188

N520RA
Hobbs: 765.4

Austro, S/N: E4P-C-00189
Tach: 764.7

October 25, 2024

L/H engine borescoped as required in order to inspect for signs of head gasket damage. Borescope results showed beginning failure of head gasket on L/H engines. Recommended replacement of both head assemblies and confirmed best course of action with Diamond. Diamond recommended replacement of both engine head assemblies IAW Diamond / Austro AHY to BHY conversion in response to head gasket damage. Removed and replaced LH engine head assy and associated parts with new assembly as required IAW AHY to BHY conversion. Aircraft ground-run as required in order to test engines. L/H Engine inspected for leaks or failures with no issues noted. Aircraft test flown IAW MM to flight-test engine operations. Aircraft flight-test indicated no issues. Reinspected L/H engine after test-flight for leaks as required with no issues noted. All ops. checked good with no defects noted. Installed P/N E4A-00-M02-BHY - Cylinder Head Assembly S/N: 03654, Installed P/N HU615/3x - Oil filter, Installed (7) P/N 5W30LT - Aeroshell, Installed P/N WK724-3 - Fuel filter, Installed (4) P/N E4A-03-000-801 - Austro Engine Gasket, Installed (10) P/N E4A-01-000-201 - Cylinder Head Screw, Installed P/N E4A-41-300-801 - 24V Change-Over Valve Rev/Lot: AA2, Installed P/N E4A-04-000-002 - Exhaust Gasket Rev/Lot: RC2103941, Installed (6) P/N DIN6797-A6, 4-A2 - Toothed Lock Washer, Installed P/N E4A-01-000-401 - Gasket, Installed P/N E4A-01-000-402 - Gasket, Installed (6) P/N Din6797-6.4-A - Din6797-6.4-A, Installed (3) P/N ISO4017-M8X20-10.9 - Bolt, Hex Head M8x20, Installed (3) P/N NL8 - Nord-Lock M8/8, 7/13, 5/2, Installed P/N E4A-33-000-804 - E4A-33-000-804, Installed (4) P/N DIN7603-12x16x2.0 - Ring Seal Rev/Lot: RC1801862, Installed (4) P/N OR 7.8X3.2-ACM70 - O-Ring Rev/Lot: RC2105515, Installed P/N E4A-05-000-104 - Engine Gasket Rev/Lot: RC2200512, Installed P/N E4A-56-100-000 - E4A-56-100-000, Installed P/N E4A-55-100-000 - E4A-55-100-000, Installed P/N AEP-00391-C-301 - AEP-00391-C-301, Installed (4) P/N DIN7603-14X18X2.0 - Copper Gasket, Installed P/N E4A-04-000-005 - Gasket, Installed P/N E4A-15-000-102 - O-Ring Cylinder Head Cover, Installed P/N OR_6x2-FPM75 - O-Ring 6x2, Installed P/N AEP-00361 - Restrictor for MSB-E4-029/2 Austro, Installed P/N E4A-23-30B-000 - Assy, Camshaft Exhaust, Installed P/N E4A-76-400-401 - Sealing Ring Rev/Lot: RW2000392-10000, Installed P/N E4A-14-100-301 - E4A-14-100-301, Installed P/N E4A-32-100-000 - Oil Drain Line, Installed (12) P/N ISO7044-M8-8-Cu - M8 Locknut Rev/Lot: RC2105742, Installed (2) P/N DIN7603-A12X16-AL - 12 x 16 O-Ring Rev/Lot: RC2101033, Installed P/N E4A-23-40B-000 - Assy, Camshaft Intake, Installed P/N DIN3771-9X1.8-FPM75 - O-Ring 9x1, 8 FPM75, Installed (2) P/N DIN3771-18X1.5-FPM75 - O-Ring 18x1, 5 FPM75, Installed (2) P/N OR_8X1-FPM75 - O-Ring, Installed (4) P/N E4A-03-000-201 - Screw, Installed (4) P/N E4A-04-000-001 - Manifold Gasket Rev/Lot: RC2202330, Installed P/N E4A-95-R15-000 - Repair Kit CAS1-CAS2 cable, Installed (4) P/N E4A-04-000-805 - Spherical Washer Rev/Lot: RC2105504, Installed P/N OR_63.17X2.62-FPM75 - O-Ring, Installed (2) P/N DIN6921-M6X16-8.8 - DIN6921-M6X16-8.8, Installed (2) P/N E4A-41-300-803 - 1-Öhr-Klemme 10.3 - 12.3 mm- Clamp, Installed (4) P/N DIN5401-10-G20 - Ball, 10mm G20, Installed (2) P/N DIN7603-A10x13.5-AL - 10 x 13.5 Washer, Installed P/N E4A-01-000-409 - CYLINDER HEAD GASKET, Installed P/N E4A-04-000-003 - Exhaust Gasket Rev/Lot: RC2107518, Installed (4) P/N E4A-04-000-806 - M8 x 40 Bolt Rev/Lot: RC2200369, Installed (4) P/N E4A-04-000-804 - Conical Washer Rev/Lot: RC2200031, Installed (4) P/N E4A-03-000-301 - Injector Clamp, modified, Installed P/N E4A-07-000-201 - Sprocket, Installed P/N E4A-07-000-201 - Sprocket, Timing Chain, Installed (4) P/N 2142110 - M10 Hex Nut w/ Flange.

Run up and functional check of work completed satisfactory

James T. Markey A&P 3166872

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Take Flight Aviation LLC - 49 Hangar Road - Montgomery, NY 12549 - 8454574188

Austro, E4P-C, S/N: E4P-C-00190

October 25, 2024

N520RA

Tach: 764.7

Hobbs: 765.4

1. Performed Annual inspection I/A/W 14 CFR part 43 Appendix D using Diamond DA62 AMM and Austro Engine Maintenance Manual as references.
2. Engine ground run performed pre-inspection and engine data downloaded.
3. Oil change performed: Drained oil and removed oil filter. Inspected oil filter for contamination with no defects noted. Installed, torqued, and safety wired new oil filter as required. Engine serviced with oil as required. Installed P/N E4A-52-000 - kit-100 hour, Installed (7) P/N 5W30LT - Aeroshell, Installed P/N Blackstone Kit - Oil Analysis.
4. Removed and replaced fuel filter with new filter p/n: WK724/3.
5. Gear box oil filters removed and inspected for particles, none found. Gear box oil drained and sampled, no particles found on magnetic drain plug. Reinstalled filter and drain plug. Filled gear box with 2.3L of Shell Spiral S6-GXME 75W-80 oil.
6. Visually inspected alternator, engine wiring harness and sensors, rear belt drive system, cylinder head drain, full fuel system, waste gate controller, exhaust system, and engine breather line. No defects noted.
7. Cooling system inspected. Coolant mixture ratio tested good. Verified proper operation of coolant tank pressure relief valve. Ops check good.
8. Alternate air and cabin heat systems both inspected and verified for proper operation.
9. Air intake and turbo charging system inspected. Removed, cleaned, serviced and reinstalled K&N air filter assembly. V-Band clamp on turbo charger inspected for defects, none found.
10. Inspected engine mounts for cracks, deterioration, or loose hardware.
11. Performed post-maintenance engine ground run. Performed leak check, none found. Downloaded EECU engine data.
12. All routine service items performed.
13. Verified AD compliance through this date.
14. Removed and replaced LH engine turbo waste gate clip with new as required. Installed P/N E4A-41-120-000 - Waste Gate Controller.
15. Removed and replaced LH engine dipstick with new as required. Installed P/N E4A-51-100-000-040 - Dipstick.
16. Removed and replaced LH engine turbo charger with new. Installed S/N: AD-608700-00128.
17. Cleaned and applied heat paint on LH engine injector cover as required. Installed P/N HENSOTHERM2K - Fire Paint Base, Installed P/N HENSOTOP84A - Fire Paint Top Coat.
18. Removed and replaced the RH oil pressure sensor. Installed P/N E4A-52-100-801 - OIL/FUEL PRESSURE SENSOR.

I certify that this engine (L/H) has been inspected in accordance with an Annual Inspection, and that this engine has been determined airworthy and is approved for return to service.

James T. Markey IA 3166872