


# AIRCRAFT TECHNICAL RECORD

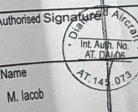
## Section 3. ENGINE LOG

1. Approving Competent Authority /Country <b>Austro Control GmbH Austria</b>	2. <b>AUTHORISED RELEASE CERTIFICATE EASA FORM 1</b>	3. Form Tracking Number <b>AE-590</b>
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4. Organisation Name and Address:  <b>Diamond AIRCRAFT</b>	<b>Diamond Aircraft Industries GmbH</b> N. A. Otto-Strasse 5 A-2700 Wiener Neustadt, AUSTRIA	5. Work Order / Contract / Invoice <b>ESO210171</b>
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6. Item	7. Description	8. Part No.	9. Qty.	10. Serial No.	11. Status / Work
1	E4 Engine Configuration A	E4-A-00-000-000	1	E4-A-06123	modified

12. Remarks  
Engine Modified acc. to AR-PO01 & OSB-E4-033/1 ; TSN: 00:00 ; SB's and AD's checked/performed see Engine Log page 7,  
Installed oil pump SN: 12016300139, TSN: 1578:26. For further information regarding the remaining flight duration, please refer to OSB-E4-033, latest revision.

delivered to:		14a. <input checked="" type="checkbox"/> Part-145.A.50 Release to Service <input type="checkbox"/> Other regulation specified in block 12	
13a. Certifies that the items identified above were manufactured in conformity to: <input type="checkbox"/> approved design data and are in condition for safe operation <input type="checkbox"/> non-approved design data 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 Part 145 and in respect to that work the items are considered ready for release to service.	
13b. Authorised Signature	13c. Approval / Authorisation Number	14b. Authorised Signature 	14c. Certificate/ Approval Ref. No. AT.145.073
13d. Name	13e. Date (dd mmm yyyy)	14d. Name M. Iacob	14d. Date (dd mmm yyyy) 02.Sep.2021

**USER / INSTALLER RESPONSIBILITIES**  
This certificate does not automatically constitute authority to install the item(s).  
Where the user/installer performs work in accordance with the national regulations of an airworthiness authority different from the airworthiness authority specified in block 1, it is essential that the user/installer ensures that his/her airworthiness authority accepts items from the airworthiness authority specified in block 1.  
Statements in blocks 13a and 14a do not constitute installation certification. In all cases the aircraft maintenance record must contain an installation certification issued in accordance with the national regulation by the user/installer before the aircraft may be flown.  
EASA Form 1-MF/145 Issue 2

RECEIVED  
2021 05 17 08

Austro Engines GmbH  
E4-A  
E00081EN  
E4-A-06123  
SEPTEMBER

# Section 3A: Engine Service and Maintenance Log



DIAMOND AIRCRAFT INDUSTRIES INC.  
D.O.T. APPROVED MANUFACTURER #161-93

Registration: N216DA  
AC Serial Number: 40.NC156  
Engine Serial Number: E4-A-06123  
Prop Serial Number: 211330  
Airframe Total Time: 3.9 HRS

- Total Time Engine Brought forward from Flight Test Journey Log (DAI - Form Q-157): 3.9 HRS
- Engine installed new on Aircraft DA 40 NG, S/N: 40.NC156
- Bi-weekly AWD check carried out to current revision 2021-23 all applicable AD's complied with, see attached.
- The work described above was carried out IAW the applicable Standard of Airworthiness.

*[Signature]*  
Inspector

NOV 15 2021  
Date

(Intentionally left blank below this point)



DIAMOND AIRCRAFT IND.  
D.O.T. APPROVED  
MAINTENANCE  
ORGANIZATION 161-93  
Diamond Aircraft Work Order: SO 073341

Registration: N216DA  
AC Serial Number: 40 NC156  
Airframe Total Time: 3.9 hrs  
Engine SN: E4-A-06123  
Engine TT: 3.9 hrs

The Following Maintenance was Performed:

- Engine HPP pump gear replaced on high pressure pump P/N: E4A-30-00-BHY iss AA.1, S/N: 20-10-19-01-00470. IAW Austro MiM Section 73-10-03
  - ✓ Gear P/N OFF: E4A-30-000-201 iss. AB.1
  - ✓ Gear S/N OFF: 1983
  - ✓ Gear P/N ON: E4A-30-000-201 iss. AE.1
  - Gear S/N ON: 4017

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



Date: NOV 30 2021

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PREVIOUS TOTALS

TOTALS SINCE NEW

NAME/  
SIGNATURE

LICENCE:  
AME or  
AMO/ACA



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

Diamond Aircraft Work Order: SO 073341

Registration: N21CDA  
AC Serial Number: 40 NC156  
Airframe Total Time: 4.9 hrs  
Engine SN: E4-A-06123  
Engine TT: 4.9 hrs

**The Following Maintenance was Performed:**

- HPP Inspected for compliance with MSB-E4-036 Rev 0. MSB found previously complied with
  - Gear P/N: E4A-30-000-201 iss AE.1
  - Gear S/N: 4017

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



Date: DEC 01 2021



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

Diamond Aircraft Work Order: SO 073341

Registration: N216DA  
AC Serial Number: 40 NC156  
Airframe Total Time: 3.9 hrs  
Engine SN: E4-A-06123  
Engine TT: 3.9 hrs

**The Following Maintenance was Performed:**

- Engine Inspection carried out IAW SI-E4-016 and found Cylinder Head PN: E4A-12-500-000 installed, and therefore MSB-E4-035 is applicable.
- Engine HPP pump gear replaced on high pressure pump P/N: E4A-30-00-BHY Iss AA.1, S/N: 20-10-19-01-00470. IAW Austro MM Section 73-10-03
  - Gear P/N OFF: E4A-30-000-201 iss. AB.1
  - Gear S/N OFF: 1983
  - Gear P/N ON: E4A-30-000-201 iss. AE.1
  - Gear S/N ON: 4017

Correcting Entry:  
As a result of the above Part Change, MSB-E4-034/rev 4, MSB-E4-035 / Rev 2, MSB-E4-036/rev 0, and FAA AWD 2021-22-20 are all complied with.

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



Date: DEC 03 2021

# 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 →							



## ENGINE LOGBOOK ENTRY

Date: JULY 15-2022

Acft: N216DA  
DIAMOND: DA-40NG  
S/N: 40.NC156

Total Service: 105.7  
ENGINE MODEL: E4A-00-000-000  
ENG S/N: E4-A-06123

Complied with 100 Hr. Inspection in accordance with FAR Part 43 Appendix D, using Diamond Maintenance Manual Inspection Form. Complied with AD research none apply at this time. Drained oil and replaced filter with new PN: HU-615/34, cut open filter inspected no defect noted at this time. Serviced engine with 7 Qtrs. Aeroshell Diesel Ultra 5W30. Filtered and refilled gearbox oil, no metal noted, replaced sealing ring. Performed operational check, no defect noted. Cleaned engine area, performed an engine ran for leaks. None noted.

I certify that the Engine above was inspected, in accordance a 100-hr inspection with DA 40 NG Series 100-Hour Inspection Form Chapter 05-28 Section 05-28 Maintenance Checklist DA 40 NG, Section 05-28-00 Maintenance Checklist Engine and was determined to be in airworthy condition and is approved for return to service.

  
JUAN M DELGADO 3147836 A&P



## ENGINE LOGBOOK ENTRY

Date: JANURY 04-2023

Acft: N216DA  
DIAMOND: DA-40NG  
S/N: 40.NC156

TOTAL SERVICE: 265.9  
ENGINE MODEL: E4A-00-000-000  
ENG S/N: E4-A-06123

Complied with 100 Hr. Inspection in accordance with FAR Part 43 Appendix D, using Diamond Maintenance Manual Inspection Form. Complied with AD research none apply at this time. Drained oil and replaced filter with new PN: HU-615/34, cut open filter inspected no defect noted at this time. Serviced engine with 7 Qtrs. Aeroshell Diesel Ultra 5W30. Complied with MSB-E4-039/0. Austro Engine Mandatory Service Bulletin Oil Analysis and piston replacement sent oil for analysis to AvLab Aviation Laboratories in Kenner Alabama. See attached oil analysis report. Filtered and refilled gearbox oil, no metal noted, replaced sealing ring. Performed operational check, no defect noted. Cleaned engine area, performed an engine ran for leaks. None noted.

I certify that the Engine above was inspected, in accordance with DA 40 NG Series 100/200 Hours Inspection Form Chapter 05-28 Section 05-28 Maintenance Checklist DA 40 NG, Section 05-28-00 Maintenance Checklist Engine and was determined to be in airworthy condition and is approved for return to service.

  
JUAN M DELGADO 3147836 A&P / IA

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PREVIOUS TOTALS						
TOTALS SINCE NEW						

CARRY FORWARD to Top of Next Page

FLYING HIGH AGAIN/JACAIR  
Attn: JUAN DELGADO  
623 FITZHUGH BLVD

Aircraft: DA40  
S/N: 40NC156  
Tail No.: N216DA

Date: 9/14/2023  
Engine S/N: E4A06123  
Engine Model: AUSTRO

SMYRNA TN 37167  
United States

Values in (parenthesis) below your results are average values from all our analysis data for the same engine model with similar engine hours and oil hours. See [www.avlab.com/explain](http://www.avlab.com/explain) for detailed explanation of the statistical analysis used with your laboratory results.

CURRENT SAMPLE	SAMPLE APPEARS NORMAL. Send next sample at normal interval.											Normal	Elevate
<b>Sample Date:</b> 9/7/2023 <b>Analysis Date:</b> 9/13/2023 <b>Sample Number:</b> P60 <b>Cylinder Type:</b> steel  <b>TSN/TSO:</b> 333.4 <b>Oil Hours:</b> 67.5 <b>Filter Hours:</b> <b>Oil Added:</b> <b>Filter Wt. (mgs):</b>	*** OIL ANALYSIS RESULTS IN PARTS PER MILLION ***												
	Iron	Copper	Nickel	Chromium	Silver	Magnesium	Aluminum	Lead	Silicon	Titanium	Tin		
	35.2	1.8	0.2	2.2	< 0.1	17.2	1.8	47	3.3	< 0.1	< 0.1	< 0.1	
	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	
*** FILTER ANALYSIS RESULTS ***													
<b>Material:</b>	Stainless Steel	Carbon Steel	Alloy Steel	Bearing Alloy	Copper	Silver	Magn.	Alum.	Grit	Misc.			
<b>Amount:</b>													
<b>Type:</b>													
<b>Sample number:</b> <b>Cylinder Type:</b> unknown  <b>TSN/TSO:</b> 265.9 <b>Oil Hours:</b> 160.2 <b>Filter Hours:</b> 162.0 <b>Oil Added:</b> <b>Filter Wt. (mgs):</b> <b>Flashpoint(deg. F):</b> <b>H2O (ppm):</b> <b>Total Acid No.:</b>	73.7	2.5	1.4	3.7	< 0.1	10.6	3.2	55	4.7	< 0.1	< 0.1	< 0.1	
	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	
	*** FILTER ANALYSIS RESULTS ***												
	<b>Material:</b>	Stainless Steel	Carbon Steel	Alloy Steel	Bearing Alloy	Copper	Silver	Magn.	Alum.	Grit	Misc.		
<b>Amount:</b>													
<b>Type:</b>													
<b>Form:</b>													

Comments: ALL OIL VALUES SEEM FINE. WE WILL CONTINUE TO MONITOR THIS ENGINE WITH YOUR NEXT SAMPLE.



## ENGINE LOGBOOK ENTRY

Date: SEP 07, 2023

Acft: N216DA  
DIAMOND: DA-40NG  
S/N: 40.NC156

TOTAL SERVICE: 333.4  
ENG S/N: E4-A-06123  
PROP S/N: 201330

Drained oil and replaced filter with new PN: HU-615/34, cut open filter inspected no defect noted at this time. Serviced engine with 7 Qtrs. Aeroshell Diesel Ultra 5W30. Complied with MSB-E4-039/2. Austro Engine Mandatory Service Bulletin Oil Analysis and piston replacement. Sent oil for analysis to AvLab Aviation Laboratories in Kenner Alabama.

I certify that the above work was accomplished, inspected, found in airworthy condition, and approved for return to service.

  
JUAN M DELGADO 3147836 A&P

# Section 3A: Engine Service and Maintenance Log



## ENGINE LOGBOOK ENTRY

Date: DECEMBER 21-2023

Acft: N216DA  
DIAMOND: DA-40NG  
S/N: 40.NC156

TOTAL SERVICE: 351.6  
ENGINE MODEL: E4A-00-000-000  
ENG S/N: E4-A-06123

Complied with 100/200 Hr. Inspection in accordance with FAR Part 43 Appendix D, using Diamond Maintenance Manual Inspection Form. Complied with AD research none apply at this time. Drained oil and replaced filter with new PN: HU-615/34, cut open filter inspected no defect noted at this time. Serviced engine with 7 Qtrs. Aeroshell Diesel Ultra 5W30. Complied with MSB-E4-039/2. Austro Engine Mandatory Service Bulletin Oil Analysis and piston replacement sent oil for analysis to AvLab Aviation Laboratories in Kenner Alabama. See attached report. Drained and refilled gearbox oil new 1.8 Lts of oil Shell Spirax SAE 75W90, no metal noted, replaced sealing ring. Performed operational check, no defect noted. Cleaned engine area, performed an engine ran for leaks. None noted.

I certify that the Engine above was inspected, in accordance with DA 40 NG Series 100/200 Hours Inspection Form Chapter 05-28 Section 05-28 Maintenance Checklist DA 40 NG, Section 05-28-00 Maintenance Checklist Engine and was determined to be in airworthy condition and is approved for return to service.

  
JUAN M DELGADO 3147836 A&P / IA



910 MARIA STREET  
KENNER, LOUISIANA 70062  
(504) 469-6751

FLYING HIGH AGAIN/JACAIR  
Attn: JUAN DELGADO  
623 FITZHUGH BLVD

Aircraft: DA40  
S/N: 40NC156  
Tail No.: N216DA

Date: 12/22/2023  
Engine S/N: E4A06123  
Engine Model: AUSTRO

SMYRNA TN 37167  
United States

(in parenthesis) below your results are average values from all our analysis data for the same engine model with similar engine hours and oil. See [www.avlab.com/explain](http://www.avlab.com/explain) for detailed explanation of the statistical analysis used with your laboratory results.

ENT SAMPLE	SAMPLE APPEARS NORMAL. Send next sample at normal interval.											
	<div style="display: flex; justify-content: space-around;"> <span style="background-color: #90EE90; padding: 2px;">Normal</span> <span style="background-color: #FFD700; padding: 2px;">Elevated</span> <span style="background-color: #FF0000; padding: 2px;">High</span> </div>											
Sample Date: 12/16/2023	*** OIL ANALYSIS RESULTS IN PARTS PER MILLION ***											
Analysis Date: 12/21/2023	Iron	Copper	Nickel	Chromium	Silver	Magnesium	Aluminum	Lead	Silicon	Titanium	Tin	Moly.
Sample Number: P03	9.1	0.2	< 0.1	0.2	< 0.1	10.0	0.1	22	3.1	< 0.1	< 0.1	< 0.1
Cylinder Type: steel	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
	*** FILTER ANALYSIS RESULTS ***											
TSN/TSO: 351.6	Material:	Stainless Steel	Carbon Steel	Alloy Steel	Bearing Alloy	Copper	Silver	Magn.	Alum.	Grit	Misc.	
Oil Hours: 18.2	Amount:											
Filter Hours:												

DarkHorse Maintenance LLC · 4430 AIRPORT RD · SPRINGFIELD, TN 37172 · 615-626-0870

N216DA  
ACFT TACH: 401.3

Austro, E4-A, S/N: E4-A-06123

February 22, 2024

Upon daily inspection ACFT was found to have a possible coolant leak.

- Inspected cooling system and pressurized system to verify leak; no leaks found but a low coolant level caution light was found illuminated..
- Checked coolant level and found to be low.
- Bled coolant system.
- Serviced coolant system with a 50/50 mix of distilled water and G48 coolant.
- Performed engine runup to facilitate ops and leak check; no defects noted at this time.

All maintenance performed with reference to Diamonds DA40NG AMM sections 12 and 75.

Donald Huffman A&P/IA 3842583

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TOTALS

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TOTALS

TOTALS  
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