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**SERVICE INFORMATION LETTER NO. SI40NG-085**

NOTE: Service information letters (SILs) are used only:

1. To distribute information from Diamond Aircraft Industries Inc. to our customers.
2. To distribute applicable information/documents from our suppliers to our customers with additional information.

NOTE: Typically there is no revision service for SILs. Each new information or change will be sent along with a new SIL.

**1. TECHNICAL DETAILS**

**1.1 Aircraft Affected**

DA 40 NG aircraft with engines listed in Austro Engine MSB-E4-039, latest approved revision.

**1.2 Subject**

Austro Engine Mandatory Service Bulletin MSB-E4-039 - Oil analysis and piston replacement.

**1.3 Reason**

**WARNING: MSB-E4-039 ADDRESSES CONDITIONS THAT MAY RESULT IN A LOSS OF ENGINE POWER. IT IS IMPERATIVE THAT OPERATORS COMPLY WITH MSB-E4-039.**

Investigations at Austro Engine have revealed certain engines have been produced with pistons where the pin bore and/or piston diameter are out of production tolerances. Engines using components with these deviations may be at greater risk of fatigue fractures, which may lead to oil loss, and/or engine power loss. Austro Engine has issued MSB-E4-039, which contains instructions for monitoring the engine oil for signs of potential engine failure, and if necessary, replacement of components. With the limits prescribed in the MSB in conjunction with data from Austro Engine, operators should have sufficient margins for detecting a potential engine failure.

**1.4 Information**

For detailed technical information, refer to the latest approved revision of Austro Engine MSB-E4-039, which is applicable without any further additions or restrictions.

Austro Engine MSB-E4-039 at revision 0 is attached to this SIL. In case of doubt, contact Austro Engine GmbH.

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**2. OTHER DETAILS**

To obtain satisfactory results, procedures specified in this service information letter must be accomplished in accordance with accepted methods and current government regulations. Diamond Aircraft Industries Inc. cannot be responsible for the quality of work performed in accomplishing the requirements of this service information letter. Diamond Aircraft reserves the right to void continued warranty coverage in the area affected by this service information letter if it is not incorporated. If you no longer own the aircraft to which this service information letter applies, please forward it to the current owner and send the name of the current owner to Diamond Aircraft Industries Inc. at the address below.

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# MANDATORY SERVICE BULLETIN

## No. MSB-E4-039/0

Distribution:	Portal
Date:	24.10.2022

### 1. Basic information

#### 1.1. Subject

Oil Analysis and Pistons replacement

#### 1.2. Record of revisions

Rev.	Date	Reason
0	24.10.2022	Initial approval

First Issue Date			Rev. No.	Revision Date				Page
24	10	2022	---	---	---	---	1-13	

### 1.3. Definitions and Acronyms

For the purpose of this Service Bulletin, the following definitions and acronyms apply:

<b>AD:</b>	Airworthiness Directive
<b>Diamond partners portal:</b>	partners.diamondaircraft.com
<b>FH:</b>	Flight Hours
<b>Flight Hours:</b>	Means the cumulative number of airborne hours in operation of each Engine computed from the time an aircraft leaves the ground until it touches the ground at the end of a flight
<b>GTC:</b>	General Terms of Commerce
<b>MSB:</b>	Mandatory Service Bulletin
<b>n/a:</b>	Not applicable
<b>no.:</b>	Number
<b>p/n or p/ns:</b>	Part number or Part numbers
<b>PPM:</b>	Parts per million
<b>SB:</b>	Service Bulletin
<b>s/n or s/ns:</b>	Serial number or Serial numbers
<b>TBO:</b>	Time Between Overhaul
<b>Time Between Overhaul:</b>	Is the maximum number of Flight Hours that may be logged on an engine before the Maintenance Manual requires the product be removed for overhaul or replacement. For E4 and E4P engines the recommended Time Between Overhaul is 1800 FH.
<b>TSN:</b>	Time Since New
<b>Time Since New:</b>	Is the amount of Flight Hours elapsed since new
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<b>Group 1 engines:</b>	Are model E4 engines in configuration “-A”, installed on single engine aeroplanes, which are included in <b>Table 1</b>
<b>Group 2 engines:</b>	Are model E4 engines in configuration “-B” or “-C” and Model E4P installed on twin engine aeroplanes, which are included in <b>Table 2</b>
<b>Group 3 engines:</b>	Are model E4 engines in configuration “-A”, installed on single engine aeroplanes, which are included in <b>Table 3</b>
<b>Group 4 engines:</b>	Are model E4 engines in configuration “-B” or “-C” and Model E4P installed on twin engine aeroplanes, which are included in

**Table 4**

### 1.4. Reason

Occurrences were reported of piston failures. Subsequent investigation determined that certain batches of pistons were produced with a dimensional deviation in the piston pin bore and a dimensional deviation in the piston diameter. Depending on the magnitude of the dimensional discrepancy fatigue failure of the pistons is possible, leading to a potential oil loss and engine power loss. To correct this possible unsafe condition, this Service Bulletin requires the following to be accomplished as per the time provide in §1.6:

- For group 1 and 2 engines, to take an oil sample and do an oil analysis up until TBO
- For group 3 and 4 engines, to take an oil sample and do an oil analysis and at the specified time replace the pistons (inclusive of piston rings and con-rods assy), **or** replace the engine core

First Issue Date			Rev. No.	Revision Date			Page
24	10	2022	---	---	---	---	2-13

## 1.5. Engines affected

**Engine affected:** E4 Series  
**Serial numbers affected:** All E4/E4P engines listed in Table 1, Table 2, Table 3 and Table 4

**Table 1 - Affected Engine Serial Numbers, Group 1**

Group "1" Engines							
E4-A-06163	E4-A-06245	E4-A-06265	E4-A-06284	E4-A-06303	E4-A-06322	E4-A-06341	E4-A-06360
E4-A-06222	E4-A-06246	E4-A-06266	E4-A-06285	E4-A-06304	E4-A-06323	E4-A-06342	E4-A-06361
E4-A-06224	E4-A-06247	E4-A-06267	E4-A-06286	E4-A-06305	E4-A-06324	E4-A-06343	E4-A-06362
E4-A-06228	E4-A-06249	E4-A-06268	E4-A-06287	E4-A-06306	E4-A-06325	E4-A-06344	E4-A-06363
E4-A-06229	E4-A-06250	E4-A-06269	E4-A-06288	E4-A-06307	E4-A-06326	E4-A-06345	E4-A-06364
E4-A-06230	E4-A-06251	E4-A-06270	E4-A-06289	E4-A-06308	E4-A-06327	E4-A-06346	E4-A-06365
E4-A-06232	E4-A-06252	E4-A-06271	E4-A-06290	E4-A-06309	E4-A-06328	E4-A-06347	E4-A-06366
E4-A-06233	E4-A-06253	E4-A-06272	E4-A-06291	E4-A-06310	E4-A-06329	E4-A-06348	E4-A-06369
E4-A-06234	E4-A-06254	E4-A-06273	E4-A-06292	E4-A-06311	E4-A-06330	E4-A-06349	E4-A-06370
E4-A-06235	E4-A-06255	E4-A-06274	E4-A-06293	E4-A-06312	E4-A-06331	E4-A-06350	E4-A-06371
E4-A-06236	E4-A-06256	E4-A-06275	E4-A-06294	E4-A-06313	E4-A-06332	E4-A-06351	E4-A-06372
E4-A-06237	E4-A-06257	E4-A-06276	E4-A-06295	E4-A-06314	E4-A-06333	E4-A-06352	E4-A-06374
E4-A-06238	E4-A-06258	E4-A-06277	E4-A-06296	E4-A-06315	E4-A-06334	E4-A-06353	E4-A-06375
E4-A-06239	E4-A-06259	E4-A-06278	E4-A-06297	E4-A-06316	E4-A-06335	E4-A-06354	E4-A-06376
E4-A-06240	E4-A-06260	E4-A-06279	E4-A-06298	E4-A-06317	E4-A-06336	E4-A-06355	E4-A-06377
E4-A-06241	E4-A-06261	E4-A-06280	E4-A-06299	E4-A-06318	E4-A-06337	E4-A-06356	E4-A-06380
E4-A-06242	E4-A-06262	E4-A-06281	E4-A-06300	E4-A-06319	E4-A-06338	E4-A-06357	E4-A-06381
E4-A-06243	E4-A-06263	E4-A-06282	E4-A-06301	E4-A-06320	E4-A-06339	E4-A-06358	E4-A-06382
E4-A-06244	E4-A-06264	E4-A-06283	E4-A-06302	E4-A-06321	E4-A-06340	E4-A-06359	

**Table 2 - Affected Engine Serial Numbers, Group 2**

Group "2" Engines							
E4-B-06030	E4-B-06034	E4-B-06038	E4-B-06042	E4-B-06046	E4-B-06051	E4-B-06055	
E4-B-06031	E4-B-06035	E4-B-06039	E4-B-06043	E4-B-06047	E4-B-06052	E4-B-06056	
E4-B-06032	E4-B-06036	E4-B-06040	E4-B-06044	E4-B-06048	E4-B-06053	E4-B-06057	
E4-B-06033	E4-B-06037	E4-B-06041	E4-B-06045	E4-B-06050	E4-B-06054	E4-B-06058	
E4-C-00038	E4-C-06189	E4-C-06207	E4-C-06221	E4-C-06235	E4-C-06250	E4-C-06264	E4-C-06278
E4-C-00039	E4-C-06194	E4-C-06208	E4-C-06222	E4-C-06236	E4-C-06251	E4-C-06265	E4-C-06279
E4-C-00059	E4-C-06195	E4-C-06209	E4-C-06223	E4-C-06237	E4-C-06252	E4-C-06266	E4-C-06280
E4-C-00066	E4-C-06196	E4-C-06210	E4-C-06224	E4-C-06238	E4-C-06253	E4-C-06267	E4-C-06281
E4-C-00212	E4-C-06197	E4-C-06211	E4-C-06225	E4-C-06239	E4-C-06254	E4-C-06268	E4-C-06282
E4-C-00262	E4-C-06198	E4-C-06212	E4-C-06226	E4-C-06240	E4-C-06255	E4-C-06269	E4-C-06283
E4-C-00267	E4-C-06199	E4-C-06213	E4-C-06227	E4-C-06241	E4-C-06256	E4-C-06270	E4-C-06284
E4-C-00275	E4-C-06200	E4-C-06214	E4-C-06228	E4-C-06242	E4-C-06257	E4-C-06271	E4-C-156W00021
E4-C-00307	E4-C-06201	E4-C-06215	E4-C-06229	E4-C-06243	E4-C-06258	E4-C-06272	E4-C-156W00022
E4-C-00311	E4-C-06202	E4-C-06216	E4-C-06230	E4-C-06244	E4-C-06259	E4-C-06273	
E4-C-00314	E4-C-06203	E4-C-06217	E4-C-06231	E4-C-06245	E4-C-06260	E4-C-06274	
E4-C-00406	E4-C-06204	E4-C-06218	E4-C-06232	E4-C-06246	E4-C-06261	E4-C-06275	
E4-C-00578	E4-C-06205	E4-C-06219	E4-C-06233	E4-C-06247	E4-C-06262	E4-C-06276	
E4-C-06186	E4-C-06206	E4-C-06220	E4-C-06234	E4-C-06248	E4-C-06263	E4-C-06277	
E4P-C-06122	E4P-C-06132	E4P-C-06141	E4P-C-06149	E4P-C-06157	E4P-C-06165	E4P-C-06173	E4P-C-06181
E4P-C-06123	E4P-C-06133	E4P-C-06142	E4P-C-06150	E4P-C-06158	E4P-C-06166	E4P-C-06174	E4P-C-06182
E4P-C-06126	E4P-C-06134	E4P-C-06143	E4P-C-06151	E4P-C-06159	E4P-C-06167	E4P-C-06175	E4P-C-06183
E4P-C-06127	E4P-C-06135	E4P-C-06144	E4P-C-06152	E4P-C-06160	E4P-C-06168	E4P-C-06176	E4P-C-06184
E4P-C-06128	E4P-C-06136	E4P-C-06145	E4P-C-06153	E4P-C-06161	E4P-C-06169	E4P-C-06177	E4P-C-06186
E4P-C-06129	E4P-C-06137	E4P-C-06146	E4P-C-06154	E4P-C-06162	E4P-C-06170	E4P-C-06178	E4P-C-06187
E4P-C-06130	E4P-C-06138	E4P-C-06147	E4P-C-06155	E4P-C-06163	E4P-C-06171	E4P-C-06179	
E4P-C-06131	E4P-C-06139	E4P-C-06148	E4P-C-06156	E4P-C-06164	E4P-C-06172	E4P-C-06180	

First Issue Date			Rev. No.	Revision Date				Page
24	10	2022	---	---	---	---	3-13	

### Table 3 - Affected Engine Serial Numbers, Group 3

Group "3" Engines							
E4-A-00011	E4-A-00240	E4-A-00504	E4-A-05057	E4-A-06025	E4-A-06076	E4-A-06127	E4-A-06179
E4-A-00018	E4-A-00244	E4-A-00507	E4-A-05058	E4-A-06026	E4-A-06077	E4-A-06128	E4-A-06180
E4-A-00019	E4-A-00249	E4-A-00508	E4-A-05059	E4-A-06027	E4-A-06078	E4-A-06129	E4-A-06181
E4-A-00020	E4-A-00259	E4-A-00509	E4-A-05060	E4-A-06028	E4-A-06079	E4-A-06130	E4-A-06182
E4-A-00026	E4-A-00263	E4-A-00513	E4-A-05061	E4-A-06029	E4-A-06080	E4-A-06131	E4-A-06183
E4-A-00027	E4-A-00265	E4-A-00514	E4-A-05062	E4-A-06030	E4-A-06081	E4-A-06132	E4-A-06184
E4-A-00028	E4-A-00266	E4-A-00515	E4-A-05063	E4-A-06031	E4-A-06082	E4-A-06133	E4-A-06185
E4-A-00037	E4-A-00268	E4-A-00532	E4-A-05064	E4-A-06032	E4-A-06083	E4-A-06134	E4-A-06186
E4-A-00038	E4-A-00269	E4-A-00533	E4-A-05065	E4-A-06033	E4-A-06084	E4-A-06135	E4-A-06187
E4-A-00042	E4-A-00270	E4-A-00549	E4-A-05066	E4-A-06034	E4-A-06085	E4-A-06136	E4-A-06188
E4-A-00046	E4-A-00274	E4-A-00567	E4-A-05067	E4-A-06035	E4-A-06086	E4-A-06137	E4-A-06189
E4-A-00056	E4-A-00276	E4-A-00603	E4-A-05068	E4-A-06036	E4-A-06087	E4-A-06138	E4-A-06190
E4-A-00066	E4-A-00278	E4-A-00604	E4-A-05069	E4-A-06037	E4-A-06088	E4-A-06139	E4-A-06191
E4-A-00067	E4-A-00279	E4-A-00630	E4-A-05071	E4-A-06038	E4-A-06089	E4-A-06140	E4-A-06192
E4-A-00073	E4-A-00280	E4-A-00647	E4-A-05073	E4-A-06039	E4-A-06090	E4-A-06141	E4-A-06193
E4-A-00075	E4-A-00282	E4-A-00660	E4-A-05076	E4-A-06040	E4-A-06091	E4-A-06142	E4-A-06194
E4-A-00076	E4-A-00284	E4-A-05018	E4-A-05077	E4-A-06041	E4-A-06092	E4-A-06143	E4-A-06195
E4-A-00079	E4-A-00286	E4-A-05019	E4-A-05088	E4-A-06042	E4-A-06093	E4-A-06144	E4-A-06196
E4-A-00100	E4-A-00299	E4-A-05022	E4-A-05089	E4-A-06043	E4-A-06094	E4-A-06145	E4-A-06197
E4-A-00106	E4-A-00304	E4-A-05023	E4-A-05090	E4-A-06044	E4-A-06095	E4-A-06146	E4-A-06198
E4-A-00107	E4-A-00323	E4-A-05024	E4-A-05091	E4-A-06045	E4-A-06096	E4-A-06147	E4-A-06199
E4-A-00111	E4-A-00336	E4-A-05026	E4-A-05092	E4-A-06046	E4-A-06097	E4-A-06148	E4-A-06200
E4-A-00115	E4-A-00340	E4-A-05027	E4-A-05093	E4-A-06047	E4-A-06098	E4-A-06149	E4-A-06201
E4-A-00116	E4-A-00341	E4-A-05028	E4-A-05094	E4-A-06048	E4-A-06099	E4-A-06150	E4-A-06202
E4-A-00131	E4-A-00350	E4-A-05029	E4-A-05095	E4-A-06049	E4-A-06100	E4-A-06151	E4-A-06203
E4-A-00133	E4-A-00367	E4-A-05030	E4-A-05096	E4-A-06050	E4-A-06101	E4-A-06152	E4-A-06204
E4-A-00138	E4-A-00376	E4-A-05031	E4-A-05097	E4-A-06051	E4-A-06102	E4-A-06153	E4-A-06205
E4-A-00140	E4-A-00390	E4-A-05032	E4-A-06001	E4-A-06052	E4-A-06103	E4-A-06154	E4-A-06206
E4-A-00142	E4-A-00394	E4-A-05033	E4-A-06002	E4-A-06053	E4-A-06104	E4-A-06155	E4-A-06207
E4-A-00163	E4-A-00397	E4-A-05034	E4-A-06003	E4-A-06054	E4-A-06105	E4-A-06156	E4-A-06208
E4-A-00165	E4-A-00400	E4-A-05035	E4-A-06004	E4-A-06055	E4-A-06106	E4-A-06157	E4-A-06209
E4-A-00166	E4-A-00408	E4-A-05036	E4-A-06005	E4-A-06056	E4-A-06107	E4-A-06158	E4-A-06210
E4-A-00168	E4-A-00420	E4-A-05037	E4-A-06006	E4-A-06057	E4-A-06108	E4-A-06159	E4-A-06211
E4-A-00169	E4-A-00422	E4-A-05038	E4-A-06007	E4-A-06058	E4-A-06109	E4-A-06160	E4-A-06212
E4-A-00192	E4-A-00427	E4-A-05040	E4-A-06010	E4-A-06062	E4-A-06114	E4-A-06167	E4-A-06219
E4-A-00198	E4-A-00428	E4-A-05042	E4-A-06011	E4-A-06063	E4-A-06115	E4-A-06168	E4-A-06220
E4-A-00200	E4-A-00429	E4-A-05043	E4-A-06012	E4-A-06064	E4-A-06116	E4-A-06169	E4-A-06221
E4-A-00207	E4-A-00432	E4-A-05044	E4-A-06013	E4-A-06065	E4-A-06117	E4-A-06170	E4-A-06223
E4-A-00213	E4-A-00434	E4-A-05045	E4-A-06014	E4-A-06066	E4-A-06118	E4-A-06171	E4-A-06225
E4-A-00214	E4-A-00441	E4-A-05046	E4-A-06015	E4-A-06067	E4-A-06119	E4-A-06172	E4-A-06226
E4-A-00215	E4-A-00442	E4-A-05047	E4-A-06016	E4-A-06068	E4-A-06120	E4-A-06173	E4-A-06227
E4-A-00218	E4-A-00455	E4-A-05048	E4-A-06017	E4-A-06069	E4-A-06121	E4-A-06174	E4-A-06231
E4-A-00219	E4-A-00456	E4-A-05049	E4-A-06018	E4-A-06070	E4-A-06122	E4-A-06175	
E4-A-00221	E4-A-00474	E4-A-05050	E4-A-06019	E4-A-06071	E4-A-06123	E4-A-06176	
E4-A-00223	E4-A-00475	E4-A-05051	E4-A-06020	E4-A-06072	E4-A-06124	E4-A-06177	
E4-A-00224	E4-A-00484	E4-A-05052	E4-A-06021	E4-A-06073	E4-A-06125	E4-A-06178	
E4-A-00227	E4-A-00485	E4-A-05053	E4-A-06022	E4-A-06074	E4-A-06126	E4-A-06213	
E4-A-00228	E4-A-00487	E4-A-05054	E4-A-06023	E4-A-06075	E4-A-06161	E4-A-06214	
E4-A-00232	E4-A-00491	E4-A-05055	E4-A-06024	E4-A-06110	E4-A-06162	E4-A-06215	
E4-A-00237	E4-A-00492	E4-A-05056	E4-A-06059	E4-A-06111	E4-A-06164	E4-A-06216	
E4-A-00239	E4-A-00498	E4-A-06008	E4-A-06060	E4-A-06112	E4-A-06165	E4-A-06217	
E4-A-00423	E4-A-05039	E4-A-06009	E4-A-06061	E4-A-06113	E4-A-06166	E4-A-06218	

First Issue Date			Rev. No.		Revision Date		Page
24	10	2022	---	---	---	---	4-13

**Table 4 - Affected Engine Serial Numbers, Group 4**

Group "4" Engines							
E4-B-00001	E4-B-00075	E4-B-00147	E4-B-00231	E4-B-00488	E4-B-05008	E4-B-06007	E4-B-06018
E4-B-00028	E4-B-00084	E4-B-00163	E4-B-00273	E4-B-00536	E4-B-05009	E4-B-06008	E4-B-06019
E4-B-00031	E4-B-00099	E4-B-00164	E4-B-00282	E4-B-00540	E4-B-05010	E4-B-06009	E4-B-06020
E4-B-00039	E4-B-00109	E4-B-00171	E4-B-00297	E4-B-00541	E4-B-05011	E4-B-06010	E4-B-06021
E4-B-00049	E4-B-00110	E4-B-00173	E4-B-00379	E4-B-05001	E4-B-05012	E4-B-06011	E4-B-06022
E4-B-00050	E4-B-00112	E4-B-00196	E4-B-00382	E4-B-05002	E4-B-06001	E4-B-06012	E4-B-06023
E4-B-00059	E4-B-00131	E4-B-00202	E4-B-00383	E4-B-05003	E4-B-06002	E4-B-06013	E4-B-06024
E4-B-00060	E4-B-00136	E4-B-00208	E4-B-00417	E4-B-05004	E4-B-06003	E4-B-06014	E4-B-06025
E4-B-00061	E4-B-00140	E4-B-00209	E4-B-00433	E4-B-05005	E4-B-06004	E4-B-06015	E4-B-06027
E4-B-00063	E4-B-00143	E4-B-00216	E4-B-00434	E4-B-05006	E4-B-06005	E4-B-06016	E4-B-06028
E4-B-00065	E4-B-00145	E4-B-00225	E4-B-00487	E4-B-05007	E4-B-06006	E4-B-06017	E4-B-06029
E4-C-00001	E4-C-00313	E4-C-05054	E4-C-05119	E4-C-06035	E4-C-06077	E4-C-06119	E4-C-06162
E4-C-00004	E4-C-00344	E4-C-05055	E4-C-05120	E4-C-06036	E4-C-06078	E4-C-06120	E4-C-06163
E4-C-00007	E4-C-00349	E4-C-05056	E4-C-05121	E4-C-06037	E4-C-06079	E4-C-06121	E4-C-06164
E4-C-00008	E4-C-00350	E4-C-05057	E4-C-05122	E4-C-06038	E4-C-06080	E4-C-06122	E4-C-06165
E4-C-00018	E4-C-00366	E4-C-05058	E4-C-05123	E4-C-06039	E4-C-06081	E4-C-06123	E4-C-06166
E4-C-00041	E4-C-00378	E4-C-05059	E4-C-05124	E4-C-06040	E4-C-06082	E4-C-06124	E4-C-06167
E4-C-00042	E4-C-00473	E4-C-05060	E4-C-05125	E4-C-06041	E4-C-06083	E4-C-06125	E4-C-06168
E4-C-00060	E4-C-00480	E4-C-05061	E4-C-05126	E4-C-06042	E4-C-06084	E4-C-06126	E4-C-06169
E4-C-00061	E4-C-00568	E4-C-05062	E4-C-06001	E4-C-06043	E4-C-06085	E4-C-06127	E4-C-06170
E4-C-00069	E4-C-00569	E4-C-05063	E4-C-06002	E4-C-06044	E4-C-06086	E4-C-06128	E4-C-06171
E4-C-00087	E4-C-00604	E4-C-05064	E4-C-06003	E4-C-06045	E4-C-06087	E4-C-06129	E4-C-06172
E4-C-00088	E4-C-00622	E4-C-05065	E4-C-06004	E4-C-06046	E4-C-06088	E4-C-06130	E4-C-06173
E4-C-00091	E4-C-00623	E4-C-05066	E4-C-06005	E4-C-06047	E4-C-06089	E4-C-06131	E4-C-06174
E4-C-00092	E4-C-00623	E4-C-05067	E4-C-06006	E4-C-06048	E4-C-06090	E4-C-06132	E4-C-06175
E4-C-00118	E4-C-05013	E4-C-05068	E4-C-06007	E4-C-06049	E4-C-06091	E4-C-06133	E4-C-06176
E4-C-00119	E4-C-05014	E4-C-05069	E4-C-06008	E4-C-06050	E4-C-06092	E4-C-06134	E4-C-06177
E4-C-00122	E4-C-05028	E4-C-05070	E4-C-06009	E4-C-06051	E4-C-06093	E4-C-06135	E4-C-06178
E4-C-00125	E4-C-05029	E4-C-05071	E4-C-06010	E4-C-06052	E4-C-06094	E4-C-06136	E4-C-06179
E4-C-00138	E4-C-05030	E4-C-05072	E4-C-06011	E4-C-06053	E4-C-06095	E4-C-06137	E4-C-06180
E4-C-00171	E4-C-05031	E4-C-05073	E4-C-06012	E4-C-06054	E4-C-06096	E4-C-06138	E4-C-06181
E4-C-00172	E4-C-05032	E4-C-05074	E4-C-06013	E4-C-06055	E4-C-06097	E4-C-06139	E4-C-06182
E4-C-00182	E4-C-05033	E4-C-05075	E4-C-06014	E4-C-06056	E4-C-06098	E4-C-06140	E4-C-06183
E4-C-00196	E4-C-05034	E4-C-05076	E4-C-06015	E4-C-06057	E4-C-06099	E4-C-06141	E4-C-06184
E4-C-00199	E4-C-05035	E4-C-05077	E4-C-06016	E4-C-06058	E4-C-06100	E4-C-06142	E4-C-06185
E4-C-00200	E4-C-05036	E4-C-05078	E4-C-06017	E4-C-06059	E4-C-06101	E4-C-06143	E4-C-06187
E4-C-00201	E4-C-05037	E4-C-05079	E4-C-06018	E4-C-06060	E4-C-06102	E4-C-06144	E4-C-06188
E4-C-00210	E4-C-05038	E4-C-05080	E4-C-06019	E4-C-06061	E4-C-06103	E4-C-06145	E4-C-06190
E4-C-00218	E4-C-05039	E4-C-05081	E4-C-06020	E4-C-06062	E4-C-06104	E4-C-06146	E4-C-06191
E4-C-00227	E4-C-05040	E4-C-05082	E4-C-06021	E4-C-06063	E4-C-06105	E4-C-06148	E4-C-06192
E4-C-00233	E4-C-05041	E4-C-05083	E4-C-06022	E4-C-06064	E4-C-06106	E4-C-06149	E4-C-06193
E4-C-00230	E4-C-05042	E4-C-05084	E4-C-06023	E4-C-06065	E4-C-06107	E4-C-06150	E4-C-156W00010
E4-C-00243	E4-C-05043	E4-C-05085	E4-C-06024	E4-C-06066	E4-C-06108	E4-C-06151	E4-C-156W00012
E4-C-00248	E4-C-05044	E4-C-05086	E4-C-06025	E4-C-06067	E4-C-06109	E4-C-06152	E4-C-156W00011
E4-C-00263	E4-C-05045	E4-C-05087	E4-C-06026	E4-C-06068	E4-C-06110	E4-C-06153	E4-C-156W00009
E4-C-00266	E4-C-05046	E4-C-05088	E4-C-06027	E4-C-06069	E4-C-06111	E4-C-06154	E4-C-156W00013
E4-C-00270	E4-C-05047	E4-C-05095	E4-C-06028	E4-C-06070	E4-C-06112	E4-C-06155	E4-C-156W00016
E4-C-00274	E4-C-05048	E4-C-05097	E4-C-06029	E4-C-06071	E4-C-06113	E4-C-06156	E4-C-156W00015
E4-C-00279	E4-C-05049	E4-C-05112	E4-C-06030	E4-C-06072	E4-C-06114	E4-C-06157	E4-C-156W00017
E4-C-00282	E4-C-05050	E4-C-05113	E4-C-06031	E4-C-06073	E4-C-06115	E4-C-06158	E4-C-156W00019
E4-C-00301	E4-C-05051	E4-C-05114	E4-C-06032	E4-C-06074	E4-C-06116	E4-C-06159	E4-C-156W00018
E4-C-00309	E4-C-05052	E4-C-05115	E4-C-06033	E4-C-06075	E4-C-06117	E4-C-06160	E4-C-156W00020
E4-C-00312	E4-C-05053	E4-C-05118	E4-C-06034	E4-C-06076	E4-C-06118	E4-C-06161	E4-C-156W00014

First Issue Date			Rev. No.	Revision Date			Page
24	10	2022	---	---	---	---	5-13

Group "4" Engines							
E4P-B-05001	E4P-B-05002	E4P-B-05003	E4P-B-05004				
E4P-C-00020	E4P-C-05014	E4P-C-06019	E4P-C-06038	E4P-C-06057	E4P-C-06077	E4P-C-06096	E4P-C-06115
E4P-C-00023	E4P-C-06001	E4P-C-06020	E4P-C-06039	E4P-C-06058	E4P-C-06078	E4P-C-06097	E4P-C-06116
E4P-C-00051	E4P-C-06002	E4P-C-06021	E4P-C-06040	E4P-C-06059	E4P-C-06079	E4P-C-06098	E4P-C-06117
E4P-C-00066	E4P-C-06003	E4P-C-06022	E4P-C-06041	E4P-C-06060	E4P-C-06080	E4P-C-06099	E4P-C-06118
E4P-C-00069	E4P-C-06004	E4P-C-06023	E4P-C-06042	E4P-C-06061	E4P-C-06081	E4P-C-06100	E4P-C-06119
E4P-C-00224	E4P-C-06005	E4P-C-06024	E4P-C-06043	E4P-C-06062	E4P-C-06082	E4P-C-06101	E4P-C-06120
E4P-C-05001	E4P-C-06006	E4P-C-06025	E4P-C-06044	E4P-C-06063	E4P-C-06083	E4P-C-06102	E4P-C-06121
E4P-C-05002	E4P-C-06007	E4P-C-06026	E4P-C-06045	E4P-C-06064	E4P-C-06084	E4P-C-06103	E4P-C-06124
E4P-C-05003	E4P-C-06008	E4P-C-06027	E4P-C-06046	E4P-C-06065	E4P-C-06085	E4P-C-06104	E4P-C-06125
E4P-C-05004	E4P-C-06009	E4P-C-06028	E4P-C-06047	E4P-C-06066	E4P-C-06086	E4P-C-06105	E4P-C-99213
E4P-C-05005	E4P-C-06010	E4P-C-06029	E4P-C-06048	E4P-C-06067	E4P-C-06087	E4P-C-06106	
E4P-C-05006	E4P-C-06011	E4P-C-06030	E4P-C-06049	E4P-C-06068	E4P-C-06088	E4P-C-06107	
E4P-C-05007	E4P-C-06012	E4P-C-06031	E4P-C-06050	E4P-C-06069	E4P-C-06089	E4P-C-06108	
E4P-C-05008	E4P-C-06013	E4P-C-06032	E4P-C-06051	E4P-C-06070	E4P-C-06090	E4P-C-06109	
E4P-C-05009	E4P-C-06014	E4P-C-06033	E4P-C-06052	E4P-C-06071	E4P-C-06091	E4P-C-06110	
E4P-C-05010	E4P-C-06015	E4P-C-06034	E4P-C-06053	E4P-C-06072	E4P-C-06092	E4P-C-06111	
E4P-C-05011	E4P-C-06016	E4P-C-06035	E4P-C-06054	E4P-C-06074	E4P-C-06093	E4P-C-06112	
E4P-C-05012	E4P-C-06017	E4P-C-06036	E4P-C-06055	E4P-C-06075	E4P-C-06094	E4P-C-06113	
E4P-C-05013	E4P-C-06018	E4P-C-06037	E4P-C-06056	E4P-C-06076	E4P-C-06095	E4P-C-06114	

First Issue Date			Rev. No.	Revision Date			Page
24	10	2022	---	---	---	---	6-13

## 1.6. Required Actions and Time of Compliance

GROUP "1" ENGINES		
ALL the engine s/n listed in <b>Table 1</b>	Do an Engine Oil Analysis <sup>(2)</sup>	<p><b>Within the next 15 FH or with the next scheduled maintenance action, whichever occurs first</b></p> <p><b><u>THEN</u></b></p> <p><b>Every 50 FH up to the engine TBO</b></p>
GROUP "2" ENGINES		
ALL the engine s/n listed in <b>Table 2</b>	Do an Engine Oil Analysis <sup>(2)</sup>	<p><b>Within the next 25 FH or with the next scheduled maintenance action, whichever occurs first</b></p> <p><b><u>THEN</u></b></p> <p><b>Every 100 FH up to the engine TBO</b></p>
GROUP "3" ENGINES		
ALL the engines s/n listed in <b>Table 3</b> with <b>0 FH to 900 FH</b>	Do an Engine Oil Analysis <sup>(2)</sup>	<p><b>Within the next 15 FH or with the next scheduled maintenance action, whichever occurs first</b></p> <p><b><u>THEN</u></b></p> <p><b>Every 50 FH up to 900FH</b></p>
	<p><b><u>AND</u></b></p> <p>Replace the Pistons, the Piston rings and the Con-rods assy<sup>(1)</sup></p> <p><b><u>OR</u></b></p> <p>Replace the engine core</p>	
ALL the engines s/n listed in <b>Table 3</b> above <b>900 FH</b>	<p>Replace the Pistons, the Piston rings and the Con-rods assy<sup>(1)</sup></p> <p><b><u>OR</u></b></p> <p>Replace the engine core</p>	<p><b>Within the next 15 FH or with the next scheduled maintenance action, whichever occurs first</b></p>
GROUP "4" ENGINES		
ALL the engines s/n listed in <b>Table 4</b> with <b>0 FH to 1000 FH</b>	Do an Engine Oil Analysis <sup>(2)</sup>	<p><b>Within the next 25 FH or with the next scheduled maintenance action, whichever occurs first</b></p> <p><b><u>THEN</u></b></p> <p><b>Every 100 FH up to 1000FH</b></p>
	<p>Replace the Pistons, the Piston rings and the Con-rods assy<sup>(1)</sup></p> <p><b><u>OR</u></b></p> <p>Replace the engine core</p>	
ALL the engines s/n listed in <b>Table 4</b> above <b>1000 FH</b>	<p>Replace the Pistons, the Piston rings and the Con-rods assy<sup>(1)</sup></p> <p><b><u>OR</u></b></p> <p>Replace the engine core</p>	<p><b>Within the next 25 FH or with the next scheduled maintenance action, whichever occurs first</b></p>

### Pistons replacement:

-  **(1):** The Pistons, piston rings and con-rods replacement can be accomplished by (or under written authorization of) Austro Engine GmbH.

First Issue Date			Rev. No.	Revision Date			Page
24	10	2022	---	---	---	---	7-13

**Release to service:**

For Group 1 and 3 engines having accumulated 0 to 14FH TSN where the first oil sample is taken, the airplane can be released to service for the residual amount of FH of the required time of compliance (e.g. Oil sample taken at 5FH, release to service for 10FH while waiting for oil analysis results).

For Group 2 and 4 engines having accumulated 0 to 24FH TSN where the first oil sample is taken, the airplane can be released to service for the residual amount of FH of the required time of compliance (e.g. Oil sample taken at 10FH, release to service for 15FH while waiting for oil analysis results).

**(2):** For Group 1 and 3 engines having accumulated more than 14FH TSN where the first oil sample is taken, the airplane can be released to service only after the receipt of the oil analysis results;

For Group 2 and 4 engines having accumulated more than 24FH TSN where the first oil sample is taken, the airplane can be released to service only after the receipt of the oil analysis results

For the recurrent oil analysis taken every 50FH or 100FH as applicable, the airplane can be released to service:

- Group 1 and 3: for 50FH, while waiting for the oil analysis results
- Group 2 and 4: for 100FH, while waiting for the oil analysis results

## 1.7. Concurrent documents / references

**Note:** If not specified, the latest revision of the referenced documents applies.

- Work instruction WI-MSB-E4-039
- Service Instruction SI-E4-013 "Oil sampling"

## 1.8. Other publications affected

None

## 1.9. Credits

### Group 1 and 3 engines:

Engines that have had an oil analysis performed at the last scheduled maintenance (e.g. 100FH maintenance) and have accumulated less than 50FH from that oil analysis will meet the requirements of the first oil analysis to be performed within 15FH, provided the aluminium value is within the value shown in Table 5. (These engines do not need to take the first oil sample).

### Group 2 and 4 engines:

Engines that have had an oil analysis performed at the last scheduled maintenance (e.g. 100FH maintenance) will meet the requirements of the first oil analysis to be performed within 25FH, provided the aluminium value is within the value stated in Table 5. (These engines do not need to take the first oil sample).

First Issue Date			Rev. No.	Revision Date				Page
24	10	2022	---	---	---	---	8-13	

## 2. Technical Details

### Engine Oil Analysis

- Start and warm up the engine
- Once the oil temperature is in green arc, shutdown the engine
- Take an oil sample:
  - Put a clean container under the oil quick-drain valve (lower side of the oil sump)
  - Open the oil quick drain valve
  - Collect ~100ml of oil
  - Close the oil quick drain valve
- Do an oil analysis according to ASTM D5185 standard
- Send the oil analysis results to Austro Engine via the Diamond Partner Portal

**NOTE:** Do not use emails to provide the oil analysis results to Austro Engine

- Compare the aluminium contents with the allowable provided in Table 5

**Table 5 - Oil check analysis - Aluminium PPM allowable**

<b>Aluminium</b>	≤ 8PPM
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**WARNING**

If Aluminium contents is higher than the indicated values, replace the pistons, the piston rings, the con-rods assy and the crankcase or replace the engine core

**NOTE:**

Austro Engine recommends following the SI-E4-013 “Oil Sampling” and providing the e-mail to which the analysis results can be sent.  
In case *Spectro* or *OelCheck* laboratories are used, the laboratory approved container to take the oil sample should be used.

### Engine core replacement

- Perform the replacement of the engine core in accordance with the instruction provided in the work instruction no. WI-MSB-E4-039-I

**NOTE:** The engine type plate must be removed from the uninstalled engine core and reinstalled on the new engine core. Instructions are provided in the WI-MSB-E4-039-I

- Fill and submit to Austro Engine the Service Bulletin Execution Report or, as alternative, mark the service bulletin as executed on the *Diamond partners portal*
- Send the removed parts back to Austro Engine according to the WI-MSB-E4-039-I.

### Pistons, piston rings and con-rod assy replacement

- Perform the replacement of the pistons, the piston rings, and the con-rod assy in accordance with the instruction provided in the work instruction no. WI-MSB-E4-039-II
- Fill and submit to Austro Engine the Service Bulletin Execution Report or as alternative, mark the service bulletin as executed on the *Diamond partners portal*
- Send the removed parts back to Austro Engine according to the WI-MSB-E4-039-II.

First Issue Date			Rev. No.	Revision Date			Page
24	10	2022	---	---	---	---	9-13

**Pistons, piston rings, crankcase and con-rod assy replacement**

- Perform the replacement of the pistons, the piston rings, the con-rod assy and the crankcase in accordance with the instruction provided in the work instruction no. WI-MSB-E4-039-II
- Fill and submit to Austro Engine the Service Bulletin Execution Report or as alternative, mark the service bulletin as executed on the *Diamond partners portal*
- Send the removed parts back to Austro Engine according to the WI-MSB-E4-039-II.

**2.1. Illustrations**

None

**2.2. Mass (weight)**

Not affected

**2.3. Approval statement**

The technical content of this document is approved under the authority of the DOA ref. EASA.21J.399.

**3. Planning Information**

**3.1. Material & Special tools**

The list of materials and special tools is provided in the WI-MSB-E4-039, latest applicable revision.

**3.2. Labour effort**

50 hours for Engine Core replacement

60 hours for Pistons, Piston Rings and Con-rods replacement <sup>(1)</sup>

1 hour per MSB Recurrent Oil sampling related labour <sup>(2)</sup>

 **(1):** When items available

 **(2):** Claim quarterly, scheduled maintenance oil sampling is excluded

**4. Warranty**

Costs for labour and parts related to the applicability of this MSB will be covered by Austro Engine GmbH warranty under the limitations outlined in paragraph 3.2 and within the currently valid GTC. Additional fees for oil samples required by this MSB will be covered by Austro Engine GmbH warranty under its currently valid GTC only for oil analysis performed at *Spectro* or *Oelcheck* laboratories.

For engine units affected by this MSB and approaching end TBO/TBR deadline pro-rate solutions will be offered on a case to case basis.

Diamond and Austro Engine GmbH GTCs are available at <https://www.diamondaircraft.com/en/GTC>

First Issue Date			Rev. No.	Revision Date			Page
24	10	2022	---	---	---	---	10-13

## 5. Remarks

### **NOTE:**

- All measures must be carried out by a certified engine station and certified engine mechanics
- The accomplishment of the instructions shown under chapter 2 must be confirmed in the respective engine log book
- The accomplishment of the instructions must be carried out within the time of compliance according chapter 1.6
- In case of doubt please contact the Austro Engine GmbH – After Sales Support (e-mail: [support@austroengine.at](mailto:support@austroengine.at); Tel: +43 2622 23000 2525)
- For credit information contact Austro Engine GmbH – After Sales Support (e-mail: [support@austroengine.at](mailto:support@austroengine.at); Tel: +43 2622 23000 2525)

## 6. Explanatory notes

### 6.1. Symbol explanation



**WARNING:** Disregarding these safety rules can cause personal injury or even death



**CAUTION:** Disregarding these special instructions and safety measures can cause damage to the engine or other components



**NOTE:** Additional note or instruction for better understanding of an instruction

First Issue Date			Rev. No.	Revision Date				Page
24	10	2022	---	---	---	---	11-13	

 DOA no. EASA.21J.399	<b>Mandatory Service Bulletin</b> <b>No. MSB-E4-039/0</b>	Austro Engine GmbH Rudolf-Diesel-Strasse 11 A-2700 Wiener Neustadt Tel: +43 2622 23000 FAX: +43 2622 23000-2711
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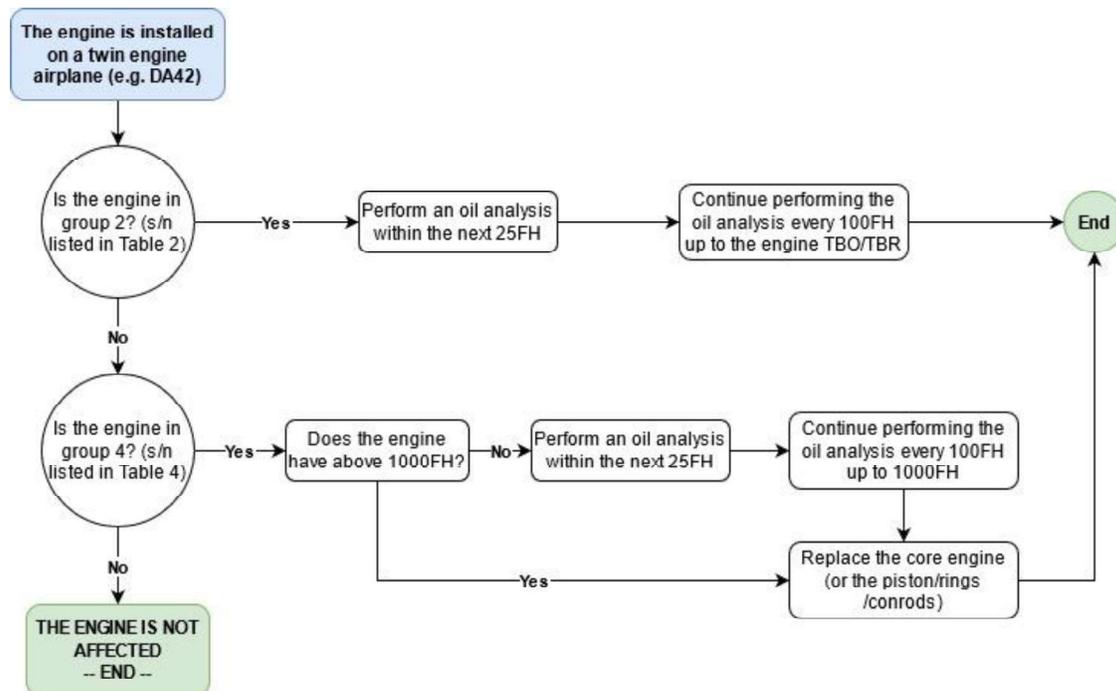
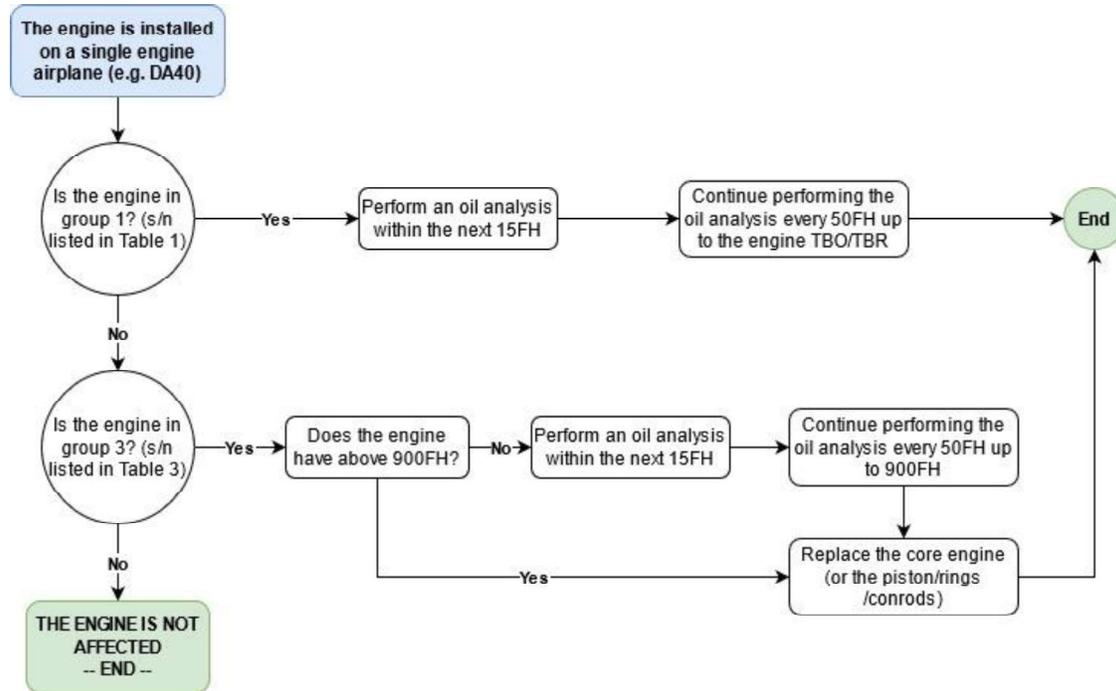
## 7. Appendix I

Table 6 – Service Bulletin Execution Report (SBER)

	Service Bulletin Execution Report		Note:
Aircraft Owner:			
Aircraft Operator:			<i>If different from the owner</i>
Aircraft type:			
Aircraft Serial Number:			
Aircraft Registration Marks:			
Engine (RH) s/n:			<i>For single engine a/c, fill only one row</i>
Engine (LH) s/n:			
Engine Flight Hours:	LH:	RH:	
Service center:			<i>Company Name or reference of the person(s) performing the service bulletin</i>
Action Performed, other than oil analysis:	<input type="checkbox"/> Pistons, Piston Rings, Con-rods replacement	<input type="checkbox"/> Engine core replacement	<i>Tick the applicable box</i>
Core engine replaced s/n			<i>Left in blank if no new core was installed</i>
Core engine installed s/n			
<p><b>NOTE:</b> A scanned version of this form must be provided to:  <a href="mailto:support@austroengine.at">support@austroengine.at</a>  <i>copy to:</i>  <a href="mailto:support-austria@diamondaircraft.com">support-austria@diamondaircraft.com</a>  <a href="mailto:support-canada@diamondaircraft.com">support-canada@diamondaircraft.com</a>  <a href="mailto:support-china@wfjt.com">support-china@wfjt.com</a>  <a href="mailto:service@cetcd.com">service@cetcd.com</a></p>			
<p><b>NOTE:</b> The original filled version of this form, must be packed with the removed parts and sent back to AE</p>			

First Issue Date			Rev. No.	Revision Date				Page
24	10	2022	---	---	---	---	12-13	

## 8. Appendix II – Process summary flowchart



First Issue Date			Rev. No.	Revision Date			Page
24	10	2022	---	---	---	---	13-13