TYPE-CERTIFICATE DATA SHEET

No. IM.E.005

for
Continental IO-360 series engines

Type Certificate Holder
Continental Aerospace Technologies, Inc.
2039 South Broad Street
Mobile, Alabama 36615, USA

For Models:

IO-360-A
IO-360-B
IO-360-C
IO-360-D
IO-360-E
IO-360-G
IO-360-H
IO-360-J
IO-360-K
IO-360-AF
IO-360-CB
IO-360-DB
IO-360-GB
IO-360-HB
IO-360-JB
IO-360-KB
IO-360-ES
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TABLE OF CONTENTS

I. General ............................................................................................................................................. 4
  1. Type/ Model................................................................................................................................. 4
  2. Type Certificate Holder .............................................................................................................. 4
  3. Manufacturer ............................................................................................................................. 4
  4. Date of Application .................................................................................................................... 4
  5. EASA Type Certification Date ................................................................................................... 4
II. Certification Basis ............................................................................................................................ 5
  1. State of Design Authority Certification Basis ........................................................................... 5
  2. Reference Date for determining the applicable airworthiness requirements ......................... 5
  3. EASA Certification Basis .......................................................................................................... 5
  3.1. Airworthiness Standards ........................................................................................................ 5
  3.2. Special Conditions (SC) ......................................................................................................... 5
  3.3. Equivalent Safety Findings ................................................................................................... 5
  3.4. Deviations .............................................................................................................................. 5
  3.5. Environmental Protection ..................................................................................................... 5
III. Technical Characteristics ................................................................................................................ 5
  1. Type Design Definition .............................................................................................................. 5
  2. Description ................................................................................................................................ 6
  3. Equipment ................................................................................................................................ 6
  4. Dimensions ............................................................................................................................... 6
  5. Dry Weight ................................................................................................................................ 6
  6. Ratings ..................................................................................................................................... 6
  7. Control System .......................................................................................................................... 7
  8. Fluids (Fuel, Oil, Coolant, Additives) .......................................................................................... 7
  9. Aircraft Accessory Drives .......................................................................................................... 7
IV. Operating Limitations ..................................................................................................................... 8
  1. Temperature Limits ................................................................................................................... 8
  2. Speed Limits .............................................................................................................................. 8
  3. Pressure Limits .......................................................................................................................... 8
  3.1 Fuel Pressure .......................................................................................................................... 8
  3.2 Oil Pressure .............................................................................................................................. 8
V. Operating and Service Instructions ................................................................................................. 8
VI. Notes ............................................................................................................................................ 9
SECTION: ADMINISTRATIVE .............................................................................................................. 11
  I. Acronyms and Abbreviations .................................................................................................... 11
  II. Type Certificate Holder Record ............................................................................................... 11
  III. Change Record ......................................................................................................................... 11
I. General

1. Type/ Model


2. Type Certificate Holder

Continental Aerospace Technologies, Inc.
2039 South Broad Street
Mobile, Alabama 36615, USA

(from 05 July 2013 to 03 September 2020, Continental Motors, Inc.)
(untuk 05 July 2013, Teledyne Continental Motors)

3. Manufacturer

Continental Aerospace Technologies, Inc.

(from 05 July 2013 to 03 September 2020, Continental Motors, Inc.)
(untuk 05 July 2013, Teledyne Continental Motors)

4. Date of Application

<table>
<thead>
<tr>
<th>IO-360-A, -B, -C, -D, -E</th>
<th>IO-360-K</th>
<th>IO-360-DB, -GB, -KB, -JB</th>
<th>IO-360-CB</th>
<th>IO-360-ES</th>
</tr>
</thead>
<tbody>
<tr>
<td>LBA Germany</td>
<td>LBA Germany</td>
<td>LBA Germany</td>
<td>LBA Germany</td>
<td>LBA Germany</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IO-360-AF</th>
<th>23 April 2015</th>
</tr>
</thead>
</table>

5. EASA Type Certification Date

<table>
<thead>
<tr>
<th>IO-360-A, -B, -C, -D, -E</th>
<th>IO-360-DB, -GB, -KB, -JB</th>
<th>IO-360-CB</th>
<th>IO-360-G</th>
<th>IO-360-H</th>
</tr>
</thead>
<tbody>
<tr>
<td>LBA TC/TCDS 4583</td>
<td>LBA TC/TCDS 4583</td>
<td>LBA TC/TCDS 4583</td>
<td>DGAC-F Aircraft TC no. 50 and TCDS no. 124 (Reims F337)</td>
<td>DGAC-F Aircraft TC no. 61 and TCDS no. 131 (Robin HR100-210)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IO-360-HB</th>
<th>IO-360-J</th>
<th>IO-360-K</th>
<th>IO-360-ES</th>
<th>IO-360-AF</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 April 1979</td>
<td>27 Oct 1972</td>
<td>12 Jan 1978</td>
<td>31 March 2004</td>
<td>17 April 2018</td>
</tr>
<tr>
<td>DGAC-F Aircraft TC no. 43 and TCDS no. 117 (Reims FR172)</td>
<td>LBA TC/TCDS 4583</td>
<td>EASA: IM.E.005</td>
<td>EASA: IM.E.005</td>
<td></td>
</tr>
</tbody>
</table>
II. Certification Basis

1. State of Design Authority Certification Basis

See FAA TCDS E1CE

2. Reference Date for determining the applicable airworthiness requirements

Validation Reference Date (same as FAA certification reference date):
- 15 June 1956 for all models except IO-360-ES and IO-360-AF
- 02 Sept 1988 for IO-360-ES
- 05 July 2012 for IO-360-AF

3. EASA Certification Basis

3.1. Airworthiness Standards

CAR 13 Amendment 13-1 to 13-3 (all models except IO-360-ES and IO-360-AF)
JAR-E Change 7 (IO-360-ES)
CS-E Amendment 3 dated 23 December 2010 (IO-360-AF)

3.2. Special Conditions (SC)

none

3.3. Equivalent Safety Findings

CS-E 130 (g) Fireproofness of engine attachment points (IO-360-AF)

3.4. Deviations

none

3.5. Environmental Protection

none (not required for piston engines)

III. Technical Characteristics

1. Type Design Definition

2. Description

The Continental IO-360 engine is a horizontally opposed, six cylinder cooled, wet sump engine incorporating a top induction system, bottom exhaust, and provisions for front and rear mounted accessories.

- Displacement: 5,900 dm³
- Bore x stroke: 112.7 mm x 98.4 mm
- Compression ratio: 8.5 : 1 (all models except IO-360-B and IO-360-AF)
  - 6.5 : 1 (IO-360-B)
  - 7.5 : 1 (IO-360-AF)
- Gear ratio: none

3. Equipment


4. Dimensions

<table>
<thead>
<tr>
<th>Dimension</th>
<th>All models</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Length</td>
<td>930 mm (36.6 in.)</td>
</tr>
<tr>
<td>Overall Height</td>
<td>670 mm (26.4 in.)</td>
</tr>
<tr>
<td>Width</td>
<td>840 mm (33.1 in.)</td>
</tr>
</tbody>
</table>

5. Dry Weight

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>133.4 kg</td>
<td>135.6 kg</td>
<td>135.2 kg</td>
<td>145.1 kg</td>
<td>152 kg</td>
</tr>
<tr>
<td>(lbs)</td>
<td>(294 lbs)</td>
<td>(299 lbs)</td>
<td>(298 lbs)</td>
<td>(320 lbs)</td>
<td>(335 lbs)</td>
</tr>
</tbody>
</table>

(weight without starter and alternator)

6. Ratings

IO-360-A:

<table>
<thead>
<tr>
<th>Rating</th>
<th>Engine Speed (rpm)</th>
<th>Power (kW / HP)</th>
<th>Manifold Pressure (bar / in. Hg)</th>
<th>Altitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Continuous</td>
<td>2800</td>
<td>145 / 195</td>
<td>0.90 / 26.5</td>
<td>2250 ft.</td>
</tr>
<tr>
<td>Maximum Continuous</td>
<td>2800</td>
<td>145 / 195</td>
<td>0.90 / 26.5</td>
<td>Sea Level</td>
</tr>
<tr>
<td>Take-off 5 min.</td>
<td>2800</td>
<td>157 / 210</td>
<td>Full Throttle</td>
<td>Sea Level</td>
</tr>
</tbody>
</table>
### 7. Control System

The Continental IO-360 engine models are equipped with a mechanical CMI fuel injection system and a two magneto ignition system.

### 8. Fluids (Fuel, Oil, Coolant, Additives)

**Fuel:** Aviation Gasoline, minimum grade 100 or 100LL (all models except IO-360-B and IO-360-AF)

Aviation Gasoline, minimum grade 80, or UL91 (IO-360-B)

Aviation Gasoline, minimum grade 91 or UL91. (IO-360-AF)

See latest revision of Continental Aerospace Technologies Standard Practice Maintenance Manual for Spark Ignited Engines, M-0.

**Oil:** Continental Specification MHS-24, see latest revision of Continental Aerospace Technologies Standard Practice Maintenance Manual for Spark Ignited Engines, M-0.

### 9. Aircraft Accessory Drives

<table>
<thead>
<tr>
<th>Designation</th>
<th>Rotation direction</th>
<th>Speed ratio to crankshaft</th>
<th>Max. Torque Nm (in. lbs)</th>
<th>Max. Overhang moment Nm (in. lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Continuous</td>
<td>static</td>
</tr>
<tr>
<td>Prop. Governor 1)</td>
<td>CW</td>
<td>1:1</td>
<td>3.28 (29)</td>
<td>93.21 (825)</td>
</tr>
<tr>
<td>Tachometer</td>
<td>CCW</td>
<td>1.239:1</td>
<td>0.79 (7)</td>
<td>5.65 (50)</td>
</tr>
<tr>
<td>Vacuum pump Optional 2)</td>
<td>CCW</td>
<td>1.545:1</td>
<td>11.30 (100)</td>
<td>90.39 (800)</td>
</tr>
<tr>
<td>Vacuum pump (1-3-5 side) 3)</td>
<td>CW</td>
<td>1.316:1</td>
<td>3.05 (27)</td>
<td>90.39 (800)</td>
</tr>
<tr>
<td>Vacuum pump (2-4-6 side) 4)</td>
<td>CW</td>
<td>1.316:1</td>
<td>3.05 (27)</td>
<td>90.39 (800)</td>
</tr>
<tr>
<td>Generator</td>
<td>CCW</td>
<td>2.035:1</td>
<td>6.78 (60)</td>
<td>67.79 (600)</td>
</tr>
<tr>
<td>Oil Cooler</td>
<td>CCW</td>
<td>2.035:1</td>
<td>6.78 (60)</td>
<td>67.79 (600)</td>
</tr>
</tbody>
</table>

1) Modified 20001 pad

2) AND 20000 pad modified for speed, -A, -B, -D, -DB, -E, -H, -HB, -J, -JB, -K, -KB, -ES only; AF not applicable.

3) AND 20000 pad modified (no oil provision; accessory clearances limited), -C, -CB, -G, -GB only

4) AND 20000 pad modified, -C, -CB, -G, -GB only

Note: The performance values specified above correspond to minimum values defined under the conditions of ICAO or ARDC standard atmosphere.
IV. Operating Limitations

1. Temperature Limits

Cylinder head bayonet, thermocouple: 238 °C (460 °F)
Cylinder barrel: 154 °C (310 °F)
Oil inlet: 107 °C (225 °F) for IO-360-A, -B
116 °C (240 °F) for IO-360-C, -D, -E, -G, -H, -J, -K, -AF,
-CB, -DB, -GB, -HB, -JB, -KB, -ES

2. Speed Limits

Max. Overspeed (max. 10 seconds, Momentary overspeed): 3000 rpm
See latest revision of CONTINENTAL Standard Practice Maintenance Manual M-0, Chapter 6, for detailed information.

3. Pressure Limits

3.1 Fuel Pressure

<table>
<thead>
<tr>
<th>Inlet to injection pump, minimum:</th>
<th>maximum:</th>
<th>Outlet to vapour return line, maximum:</th>
</tr>
</thead>
<tbody>
<tr>
<td>-13.8 kPa (-2.0 psig)</td>
<td>55.2 kPa (8.0 psig)</td>
<td>24.1 kPa (3.5 psig)</td>
</tr>
</tbody>
</table>

3.2 Oil Pressure

| 2-4-6 side – normal: | 379...655 kPa (30...60 psig) |
| 2-4-6 side – minimum idle: | 69 kPa (10 psig) |

V. Operating and Service Instructions

Manuals

<table>
<thead>
<tr>
<th>Manuals</th>
<th>IO-360 series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation and Installation Manual</td>
<td>OI-7</td>
</tr>
</tbody>
</table>

Instructions for Continued Airworthiness

<table>
<thead>
<tr>
<th>Manuals</th>
<th>IO-360 series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance and Overhaul Manual</td>
<td>M-7</td>
</tr>
<tr>
<td>Standard Practice Maintenance Manual for Spark Ignited Engines</td>
<td>M-0</td>
</tr>
<tr>
<td>Illustrated Parts Catalogue</td>
<td>available at <a href="http://www.continental.aero">www.continental.aero</a></td>
</tr>
</tbody>
</table>

Service Bulletins and Service Letters | As issued |
VI. Notes

Note 1: The EASA approved Airworthiness Limitations Section of the Instructions for Continued Airworthiness is published in the applicable "Maintenance and Overhaul Manual" document M-7, chapter 4 "Airworthiness Limitations".

Note 2: Engine model numbers may include a suffix to define minor specification changes and/or accessory packages. Example: IO-360-A(10).

Note 3: Propeller shaft: ARP-502, Type I flange; 123.83 mm (4 7/8 inch) outside diameter with six 12.7 mm (1/2 inch) bolt holes in 101.6 mm (4 inch) diameter circle.

Note 4: The Model IO-360-D is similar to IO-360-A except for rating and oil cooled pistons.
The Model IO-360-B is similar to IO-360-A except for reduced compression ratio and rated power.
The Model IO-360-C is similar to IO-360-D except for accessory drive provisions.
The Model IO-360-E is similar to IO-360-D except for oil sump and suction tube.
The Model IO-360-G is similar to IO-360-C except for crankshaft counterweight tuning.
The Model IO-360-H is similar to IO-360-D except for crankshaft counterweight tuning.
The Model IO-360-J is similar to IO-360-H except for rating.
The Model IO-360-K is similar to IO-360-H except for rating.
The Model IO-360-DB is similar to the IO-360-D except for modified crankshaft.
The Model IO-360-GB is similar to the IO-360-G except for modified crankshaft.
The Model IO-360-JB is similar to the IO-360-J except for modified crankshaft.
The Model IO-360-KB is similar to the IO-360-K except for modified crankshaft.
The Model IO-360-CB is similar to the IO-360-C except for modified crankshaft.
The Model IO-360-HB is similar to the IO-360-H except for modified crankshaft.
The Model IO-360-ES is similar to the IO-360-HB except for the modified spider induction system.
The Model IO-360-AF is similar to the IO-360-ES except for starter and alternator, and eligible fuel.

Note 5: All engines are eligible for installation of EQ No. 6001 oil filter adapter.


Note 7: The IO-360-A, -C, -CB, -D, -DB, -G, -GB, -H, -HB, -J, -JB, -K, -KB, -ES are eligible for pusher and tractor operation and are approved for installation of propellers or propeller-fan combination having inertias up to 9 kgs² (20 lb sec²) and overhang moments up to 55.4 Nm (490 in lb). The maximum overhung weight and moment arm are 311 N (70 lb) and 203 mm (8 in) respectively.

Note 8: Those engines which are designated with a suffix letter "B" (i.e., IO-360-DB) are interchangeable with those engines of the same model letter without the suffix letter (i.e., IO-360-D).
Those engines which are designated without the suffix letter (i.e., IO-360-D) are non-interchangeable with those engines which are designated with the suffix letter "B" (i.e., IO-360-DB).

**Note 9:** Installed engine weight shall vary, depending upon the accessories selected by the installer. See engine installation manual for calculation factors.

**Note 10:** IO-360-A, C, -D, -G and -H engines were also produced under license of Continental by Rolls-Royce plc. with the designation: Rolls-Royce IO-360-A, C, -D, -G and -H.
SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

n/a

II. Type Certificate Holder Record

Continental Aerospace Technologies, Inc.
(from 05 July 2013 to 03 September 2020, Continental Motors, Inc.)
(until 05 July 2013, Teledyne Continental Motors)

III. Change Record

<table>
<thead>
<tr>
<th>Issue</th>
<th>Date</th>
<th>Changes</th>
<th>TC issue</th>
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<tbody>
<tr>
<td>Issue 01</td>
<td>31 March 2004</td>
<td>Initial Issue</td>
<td>Initial issue 31 March 2004</td>
</tr>
<tr>
<td>Issue 02</td>
<td>05 July 2013</td>
<td>Name Change of TC Holder and Manufacturer</td>
<td>05 July 2013</td>
</tr>
<tr>
<td>Issue 03</td>
<td>17 April 2018</td>
<td>Change of TCDS format, Model IO-360-AF added</td>
<td>17 April 2018</td>
</tr>
<tr>
<td>Issue 04</td>
<td>03 May 2018</td>
<td>Addition of grandfathered model IO-360-HB</td>
<td>03 May 2018</td>
</tr>
<tr>
<td>Issue 05</td>
<td>03 September 2020</td>
<td>Name Change of TC Holder and Manufacturer</td>
<td>03 September 2020</td>
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</table>

-END