TYPE-CERTIFICATE
DATA SHEET

No. IM.E.105

for
Continental TSIO-550 series engines

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

For Models:

Continental TSIO-550-A
Continental TSIO-550-B
Continental TSIO-550-C
Continental TSIO-550-E
Continental TSIO-550-G
Continental TSIO-550-K
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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 3 September 2020, Continental Motors, Inc.)
(unti 05 July 2013, Teledyne Continental Motors)

3. Manufacturer

Continental Aerospace Technologies, Inc.

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

4. Date of Application

<table>
<thead>
<tr>
<th>Model</th>
<th>Date</th>
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<tbody>
<tr>
<td>TSIO-550-A</td>
<td>27 Jan 1997</td>
</tr>
<tr>
<td>TSIO-550-B</td>
<td>27 Jan 1997</td>
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<tr>
<td>TSIO-550-C</td>
<td>27 Jan 1997</td>
</tr>
<tr>
<td>TSIO-550-E</td>
<td>27 Jan 1997</td>
</tr>
<tr>
<td>TSIO-550-G</td>
<td>13 Oct 2009</td>
</tr>
<tr>
<td>TSIO-550-K</td>
<td>13 Oct 2009</td>
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5. EASA Type Certification Date

<table>
<thead>
<tr>
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<th>Date</th>
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<tr>
<td>TSIO-550-A</td>
<td>29 Jan 1998</td>
</tr>
<tr>
<td>TSIO-550-B</td>
<td>29 Jan 1998</td>
</tr>
<tr>
<td>TSIO-550-C</td>
<td>29 Jan 1998</td>
</tr>
<tr>
<td>TSIO-550-E</td>
<td>29 Jan 1998</td>
</tr>
<tr>
<td>TSIO-550-G</td>
<td>21 June 2010</td>
</tr>
<tr>
<td>TSIO-550-K</td>
<td>21 June 2010</td>
</tr>
</tbody>
</table>

EASA Type-Certification for the TSIO-550-A, -B, -C and -E engine models is granted, in accordance with Article 2 paragraph 3(a)(i) of EU Commission Regulation EC 1702/2003, based on the respective EU Member States approvals prior to 28 September 2003.

II. Certification Basis

1. State of Design Authority Certification Basis

See FAA TCDS E550

2. Reference Date for determining the applicable airworthiness requirements

Same as FAA certification reference date:
TSIO-550-G: 06 July 2005
TSIO-550-K: 14 April 2008
3. EASA Certification Basis

3.1. Airworthiness Standards

TSIO-550-A: FAR 33 through Amendment 9 effective October 14, 1980
TSIO-550-B: FAR 33 through Amendment 12 effective September 2, 1988
TSIO-550-C: FAR 33 through Amendment 13 effective August 18, 1990
TSIO-550-E: FAR 33 through Amendment 13 effective August 18, 1990
TSIO-550-G: CS-E Initial Issue
TSIO-550-K: CS-E Amendment 1

3.2. Special Conditions (SC)

none

3.3. Equivalent Safety Findings

none

3.4. Deviations

none

3.5. Environmental Protection

none (not required for piston engines)

III. Technical Characteristics

1. Type Design Definition

As defined by CONTINENTAL stocklist

2. Description

The Continental TSIO-550 engine is a fuel injected, turbocharged, horizontally opposed, six cylinder four stroke, spark ignited, aircooled, wet sump engine incorporating a top induction system, bottom exhaust, and provisions for front and rear mounted accessories.

Displacement: 9.046 dm³ (552 cu. in.)
Bore x stroke: 133.4 mm x 108.0 mm (5.25 in. x 4.25 in.)
Compression ratio: 7.5 : 1
Gear ratio: N/A
3. Equipment

Magnetos: Slick Champion 6220 (both sides) or CONTINENTAL S6RN-201 and S6RN-205, or CONTINENTAL S6RSC-25P pressurized with appropriate pressurization system and ignition harness.

Spark Plugs: Ref. CONTINENTAL Service Information Letter SIL03-2 or latest FAA approved revision

Alternators: The engine is provided with a gear driven alternator, optional provisions for a front mounted, belt-driven alternator, and for a belt-driven freon compressor are available. The compatibility of these options must be accomplished by the installer.

4. Dimensions

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Length</td>
<td>1082 mm (42.6 in)</td>
<td>1035 mm (40.75 in)</td>
<td>1082 mm (42.6 in)</td>
<td>1023 mm (40.26 in)</td>
</tr>
<tr>
<td>Overall Height</td>
<td>851 mm (33.5 in)</td>
<td>831 mm (32.7 in)</td>
<td>851 mm (33.5 in)</td>
<td>832 mm (32.76 in)</td>
</tr>
<tr>
<td>Width</td>
<td>1072 mm (42.5 in)</td>
<td>1072 mm (42.2 in)</td>
<td>1080 mm (42.5 in)</td>
<td>1072 mm (42.20 in)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>TSIO-550-G</th>
<th>TSIO-550-K</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Length</td>
<td>1022 mm (40.3 in)</td>
<td>1268 mm (49.9 in)</td>
</tr>
<tr>
<td>Overall Height</td>
<td>900 mm (35.4 in)</td>
<td>864 mm (34 in)</td>
</tr>
<tr>
<td>Width</td>
<td>912 mm (39.9 in)</td>
<td>1077 mm (42.4 in)</td>
</tr>
</tbody>
</table>

5. Dry Weight

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>200 kg (442 lbs)</td>
<td>259 kg (571 lbs)</td>
<td>237 kg (522 lbs)</td>
<td>257 kg (566 lbs)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>TSIO-550-G</th>
<th>TSIO-550-K</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>251 kg (554 lbs)</td>
<td>237 kg (522 lbs)</td>
</tr>
</tbody>
</table>

Note: The weight listed above represent a minimum runnable engine and include the turbochargers.

6. Ratings

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. Continuous</td>
<td>268 kW (360 HP) at 2600 RPM and 139 kPa (41 in.Hg) manifold pressure and 3658 m (12000 ft) critical altitude</td>
<td>261 kW (350 HP) at 2700 RPM and 129 kPa (38 in.Hg) manifold pressure and 3658 m (12000 ft) critical altitude</td>
<td>231 kW (310 HP) at 2600 RPM and 120 kPa (35.5 in.Hg) manifold pressure and 5486 m (18000 ft) critical altitude</td>
<td>268 kW (350 HP) at 2700 RPM and 130 kPa (38.5 in.Hg) manifold pressure and 5486 m (18000 ft) critical altitude</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rating</th>
<th>TSIO-550-G</th>
<th>TSIO-550-K</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. Continuous</td>
<td>231 kW (310 HP) at 2700 RPM and 115 kPa (34 in.Hg) manifold pressure and 6706 m (22000 ft) critical altitude</td>
<td>235 kW (315 HP) at 2500 RPM and 127 kPa (37.5 in.Hg) manifold pressure and 5486 m (18000 ft) critical altitude</td>
</tr>
</tbody>
</table>

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Proprietary document. Copies are not controlled. Confirm revision status through the EASA-Internet/Intranet.
Note: the performance values specified above correspond to minimum values defined under the conditions of ICAO or ARDC standard atmosphere.

7. Control System

The TSIO-550 series engines are equipped with a mechanical CONTINENTAL fuel injection system and a two magneto ignition system.

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

Fuel: Aviation Gasoline, minimum grade 100LL, 100, RH95/130, or B95/130 CIS (see Note 5)

Oil: see CONTINENTAL Spec MHS No. 24

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>Propeller governor</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>0.5:1</td>
<td>0.79 (7)</td>
<td>5.65 (50)</td>
</tr>
<tr>
<td>Starter</td>
<td>CCW</td>
<td>48:1</td>
<td>22.60 (200)</td>
<td>45.19 (400)</td>
</tr>
<tr>
<td>Fuel Pump (Injection)</td>
<td>CW</td>
<td>1:1</td>
<td>2.82 (25)</td>
<td>76.83 (680)</td>
</tr>
<tr>
<td>Generator, gear driven</td>
<td>CW</td>
<td>3:1</td>
<td>16.95 (150)</td>
<td>90.39 (800)</td>
</tr>
<tr>
<td>Accessory Drive (2)</td>
<td>CW</td>
<td>1.5:1</td>
<td>11.30 (100)</td>
<td>90.39 (800)</td>
</tr>
</tbody>
</table>

Notes: - CW - clockwise; CCW – counter clockwise (viewing drive pad)
  1) Modified AND 20010 pad
  2) One drive is eligible at 22.60 Nm (200 in. lbs) continuous torque load provided the other does not exceed 11.30 Nm (100 in. lbs) continuous torque load.

IV. Operating Limitations

1. Temperature Limits

Cylinder head bayonet thermocouple: 238 °C (460 °F)
Oil inlet: 116 °C (240 °F)
Exhaust Gas Turbocharger Inlet Temperature (TIT): 954 °C (1750 °F) continuous operation
1010 °C (1850 °F) 30 Second Limit
913 °C (1675 °F) for TSIO-550-G at altitudes ≥ 6706 m (22000 ft)
2. Speed Limits

Max. overspeed (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

Inlet to injection pump, minimum: - 13.8 kPa (-2.0 psig)
maximum: + 41.4 kPa (+6.0 psig)
Outlet to vapor return line, max.: + 24.1 kPa (+3.5 psig)

3.2 Oil Pressure

At outlet and at turbocharger oil inlet:
Idle: 69 kPa (10 psig)
Normal: 207...414 kPa (30...60 psig)

At outlet:
Maximum (cold oil): 690 kPa (100 psig)

3.3 Manifold Pressure

TSIO-550-A: 139 kPa (41 in.Hg) at ≤ 3658 m (12000 ft)
112 kPa (33 in.Hg) at > 3658 m (12000 ft) and ≤ 6096 m (20000 ft)

TSIO-550-B: 127 kPa (38 in.Hg) at ≤ 3658 m (12000 ft)

TSIO-550-C, -E: 120 kPa (35.5 in.Hg) at ≤ 5486 m (18000 ft)

TSIO-550-G: 115 kPa (34 in.Hg) at ≤ 6706 m (22000 ft)

TSIO-550-K: 127 kPa (37.5 in.Hg) at ≤ 5486 m (18000 ft)

V. Operating and Service Instructions

Manuals

Installation and Operation Manual OI-18

Instructions for Continued Airworthiness

Maintenance Manual M-18

Service Bulletins and Service Letters As issued
VI. Notes

Note 1: All models incorporate a crankshaft with one 4th, one 5th and two 6th order dampers.

Note 2: Engine model numbers may include a suffix to define minor specification changes and/or accessory packages. Example TSIO-550-C(10).

Note 3: Maximum exhaust back pressure shall not exceed 6.78 kPa (2 in.Hg.) above ambient at the turbocharger exhaust outlet flange.

Note 4: A means of controlling maximum turbocharger discharge pressure, engine manifold pressure and proper placarding shall be provided to limit manifold pressure (and TIT for the TSIO-550-G model) as outlined under »2.3 Manifold Pressure Limits« except as stated in Notes 5.

Note 5: When operating with 95/130 grade fuel, the altitude limitation for maximum continuous power and speed is 3000 m (9840 ft) and, for maximum recommended cruise power and speed, is 6000 m (19680 ft).

Note 6: The TSIO-550-G engine installation is only allowed in aircraft for which a declaration has been provided that fire proof engine attachment points according to CS-E 130(h) of CS-E Initial Issue are not required.

Note 7: The TSIO-550-K engine installation is only allowed in aircraft for which a declaration has been provided that fire proof engine attachment points according to CS-E 130(g) of CS-E Amendment 1 are not required.

Note 8: Compliance with FAA AD 2010-11-04, 2007-16-10, and 2004-08-10 (if applicable) is required for the TSIO-550-G engine.
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>
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<tr>
<td>Issue 01</td>
<td>21 June 2010</td>
<td>Initial Issue</td>
<td>21 June 2010</td>
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<tr>
<td>Issue 02</td>
<td>05 July 2013</td>
<td>Name Change of TC Holder and Manufacturer</td>
<td>05 July 2013</td>
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<tr>
<td>Issue 03</td>
<td>03 September 2020</td>
<td>Name Change of TC Holder and Manufacturer</td>
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-END-