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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I. General

1. Type/ Model

Continental IO-360 / Continental 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

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.)
(until 05 July 2013, Teledyne Continental Motors)

3. Manufacturer

Continental Aerospace Technologies, Inc.

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

4. Date of Application

IO-360-A, -B, -C, -D, -E	IO-360-K	IO-360-DB, -GB, -KB, -JB	IO-360-CB	IO-360-ES
03 Jul 1972	10 Oct 1977	10 Oct 1978	09 Sept 1988	08 Aug 2000
LBA Germany	LBA Germany	LBA Germany	LBA Germany	LBA Germany

IO-360-AF				
23 April 2015				

5. EASA Type Certification Date

IO-360-A, -B, -C, -D, -E	IO-360-DB, -GB, -JB, -KB	IO-360-CB	IO-360-G	IO-360-H
28 Sept 1972	06 Nov 1979	21 Sept 1988	23 Febr 1970	27 Sept 1972
LBA TC/TCDS 4583	LBA TC/TCDS 4583	LBA TC/TCDS 4583	DGAC-F Aircraft TC no. 50 and TCDS no. 124 (Reims F337)	DGAC-F Aircraft TC no. 61 and TCDS no. 131 (Robin HR100-210)

IO-360-HB	IO-360-J	IO-360-K	IO-360-ES	IO-360-AF
10 April 1979	27 Oct 1972	12 Jan 1978	31 March 2004	17 April 2018
	DGAC-F Aircraft TC no. 43 and TCDS no. 117 (Reims FR172)	LBA TC/TCDS 4583	EASA. IM.E.005	EASA. IM.E.005

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

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, IO-360-AF as defined in CONTINENTAL Stocklist and Installation Drawing (latest revision).

2. Description

The Continental IO-360 engine is 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 dm^3
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

See latest revision of Continental Aerospace Technologies Installation and Operation Manual OI-7.

4. Dimensions

	All models	
Overall Length	930 mm (36.6 in.)	
Overall Height	670 mm (26.4 in.)	
Width	840 mm (33.1 in.)	

5. Dry Weight

IO-360-A, -D, DB, -E, -H, -HB, -J, -JB, -K, -KB	IO-360-B	IO-360-C, -CB, -G, -GB	IO-360-ES	IO-360-AF
133.4 kg	135.6 kg	135.2 kg	145.1 kg	152 kg
(294 lbs)	(299 lbs)	(298 lbs)	(320 lbs)	(335 lbs)

(weight without starter and alternator)

6. Ratings

IO-360-A:

Rating	Engine Speed (rpm)	Power (kW / HP)	Manifold Pressure (bar / in. Hg)	Altitude
Maximum Continuous	2800	145 / 195	0.90 / 26.5	2250 ft.
Maximum Continuous	2800	145 / 195	0.90 / 26.5	Sea Level
Take-off 5 min.	2800	157 / 210	Full Throttle	Sea Level

Rating		IO-360-B	IO-360-C, -CB, -D, -DB, -E, -G, -GB, -H, -HB, -ES	IO-360-J, -JB, -K, -KB	IO-360-AF
Power, kW (HP), full throttle at sea level pressure altitude	Take-off	134 (180) at 2800 rpm	157 (210) at 2800 rpm	157 (210) at 2800 rpm	145 (195) at 2800 rpm
	Maximum Continuous	134 (180) at 2800 rpm	157 (210) at 2800 rpm	145 (195) at 2600 rpm	145 (195) at 2800 rpm

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

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

Designation	**Rotation direction**	**Speed ratio to crankshaft**	**Max. Torque Nm (in. lbs)**		**Max. Overhang moment Nm (in. lbs)**
			Continuous	**static**	
Prop. Governor [1)]	CW	1:1	3.28 (29)	93.21 (825)	5.65 (50)
Tachometer	CCW	1.239:1	0.79 (7)	5.65 (50)	2.82 (25)
Vacuum pump Optional [2)]	CCW	1.545:1	11.30 (100)	90.39 (800)	5.65 (50)
Vacuum pump (1-3-5 side) [3)]	CW	1.316:1	3.05 (27)	90.39 (800)	0.94 (8.3)
Vacuum pump (2-4-6 side) [4)]	CW	1.316:1	3.05 (27)	90.39 (800)	0.94 (8.3)
Generator	CCW	2.035:1	6.78 (60)	67.79 (600)	5.65 (50)
Oil Cooler					7.34 (65)
Starter CMI P/N 627841 (Delco-Remy P/N 1108234) eligible.					

"C" - Clockwise, "CCW" - Counter-Clockwise

[1)] Modified AND 20010 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

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

Inlet to injection pump,	minimum:	-13.8 kPa (-2.0 psig)
	maximum:	55.2 kPa (8.0 psig)
Outlet to vapour return line,	maximum:	24.1 kPa (3.5 psig)

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

	IO-360 series
Operation and Installation Manual	OI-7

Instructions for Continued Airworthiness

	IO-360 series
Maintenance and Overhaul Manual	M-7
Standard Practice Maintenance Manual for Spark Ignited Engines	M-0
Illustrated Parts Catalogue	available at www.continental.aero
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 6: Models IO-360-A, -B, -C, -D and -E incorporate crankshaft with two 6th order dampers. Models IO-360-AF, -CB, -DB, -ES, -HB, -G, -GB, -H, -J, -JB, -K, and -KB incorporate crankshaft with one 6th and one 4 1/2 order damper.

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 kgs^2 (20 lb sec^2) 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

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

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