

Certification basis CAR Part 10, British Civil Airworthiness Requirements Section C equivalent to CAR Part 13 including Amendments 13-1 and 13-2. Type Certificate No. E-308 issued January 19, 1959; models 508 and 509 added September 1, 1959; 508A and 509A added July 12, 1963.
Date of Application for Type Certificate: March 29, 1956.

The aviation authority for the United Kingdom, the UK Civil Aviation Authority (CAA), originally type certificated this engine. The FAA validated this product under U.S. Type Certificate Number E-308. Effective September 28, 2003, the European Aviation Safety Agency (EASA) began oversight of this product on behalf of the UK.

Import Requirements To be considered eligible for installation on U.S. registered aircraft, each new engine to be exported to the United States with UK CAA or EASA airworthiness approval shall have a Joint Aviation Authorities (JAA) or EASA Form 1, Authorized Release Certificate. The JAA or EASA Form 1 should state that the engine conforms to the type design approved under the U.S. Type Certificate E-308, is in a condition for safe operation and has undergone a final operational check.

NOTE 1. Maximum LP speed for takeoff, Max. Continuous conditions and for reverse thrust, is 7335 LP r.p.m. (505, 508A, 509A) and 7356 LP r.p.m. (508, 509)

NOTE 2. Maximum permissible temperatures:
Turbine gas temperature (Mean of 6 thermocouples in exhaust cone):
Takeoff 1247°F. (675°C.)
Maximum continuous 1112°F. (600°C.)
Max. transient in starting 1247°F. (675°C.)
Max. with reverse thrust selected 1247°F. (675°C.)
Oil inlet temperature -67°F. to +221°F. (-55 to +105°C.)

NOTE 3. Fuel and oil pressure limits:
Minimum fuel inlet pressure measured at inlet to engine main pump = 0 lb. p.s.i. for 5 minutes, and 7 p.s.i.g. unrestricted. Oil pressure normal 30-45 p.s.i. gauge (minimum in flight at 9650 HP r.p.m. = 28).

NOTE 4. The ratings are based upon standard conditions with no air bleed or power takeoff, 60°F. and 29.92" hg. barometer, pw/po = .01, and with turbine gas temperature within limits. Engine to be fitted with straight jet pipe Part No. DES.51690, Issue 3, and 25.75" diameter final nozzle R-R Part No. CU.26100 and test bed intake flare J.59408, and using fuel of calorific volume 18,550 BThU/lb.
The thrust values quoted are minimum.
Thrust reverser unit Conway T.R. 501 for Conway 505, 508 and 508A

NOTE 5. The following accessory drive provisions are incorporated:

Drive	Rotation	Speed Ratio to turbine	Cont. Torque	Inst. Torque	Maximum Overhang
Starter	CW	.72 x H.P.	615 lb. ft.	1230 lb. ft.	470 lb. in.
H.P. Tacho	CC	.423 x H.P.	7 lb. in.	50 lb. in.	Negligible
L.P. Tacho	CW	.6066 x L.P.	7 lb. in.	50 lb. in.	Negligible
Sundstrand	CW	.683 x H.P.	1000 lb. in.	4400 lb. in.	Not overhung (Stressed to 625 lb. in.)
Hydraulic pump	CC	.352 x H.P.	1000 lb. in.	4400 lb. in.	104 lb. in.

NOTE 6. These engines meet FAA requirements for vibration, icing protection, for adequate turbine disc integrity, for rotor blade containment and do not require external armoring.

NOTE 7. Under all conditions compressor bleed air may be used for aircraft and engine services up to the maximum delivery permitted by the engine air bleed ports, provided that the r.p.m. or turbine gas temperature operating limitations are not exceeded.

NOTE 8. The maximum allowable thrust for below standard inlet air temperatures and/or ram conditions is 20,000 lb. for five minutes at takeoff conditions.

NOTE 9. Maximum permissible overspeed limit for the engine rotors are as follows:
Low Pressure Compressor - 7560 r.p.m. for 20 seconds (505, 508A, 509A),
7576 r.p.m. for 20 seconds (508, 509)
High Pressure Compressor - 10,500 r.p.m. for 20 seconds
If these limits are exceeded, the engine shall be overhauled.

NOTE 10. For aircraft using percentage type tachometers, the following conversion factors shall be used:
L.P. - 9938 H.P. r.p.m. = 100%
L.P. - 6924 L.P. r.p.m. = 100%

NOTE 11. The following fuels are eligible for these engines:

Aviation Kerosene Specifications

British D Eng. R.D. 2482 or 2494
Canadian 3-GP-23C Type 1
American A.S.T.M. D.1655-59T Type A or Type A-1
I.A.T.A. Kerosene Type Fuel

Aviation Wide-cut Specifications

British D Eng. R.D. 2486
Canadian 3-GP-22C Type 11
American MIL-J-5624F Grade JP4
A.S.T.M.D. 1655-59T Type B
I.A.T.A. Wide-cut fuel.

Fuels conforming to the approved specifications and later revisions may be used separately or mixed in any proportions without adversely affecting the engine operation or power output. No fuel control adjustment is required when changing fuel types.

NOTE 12 Each of the documents listed below must state that it is approved by the European Aviation Safety Agency (EASA) or, for approvals made before September 28, 2003 by the United Kingdom Civil Aviation Authority. Any such documents including those approved under a delegated authority, are accepted by the FAA and are considered FAA approved.

- Service bulletins,
- Structural repair manuals,
- Vendor manuals,
- Aircraft flight manuals, and
- Overhaul and maintenance manuals.
- Technical Variances

These approvals pertain to the type design only.

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