U.S. DEPARTMENT OF TRANSPORTATION

FEDERAL AVIATION ADMINISTRATION

TYPE CERTIFICATE DATA SHEET
1E16

TCDS NUMBER: 1E16

REVISION: 15

DATE: August 21, 2008

MODELS: CJ610-1, CJ610-4, CJ610-5, CJ610-6, CJ610-8, CJ610-8A, CJ610-9

Engines of models described herein conforming with this data sheet (which is a part of Type Certificate No. 1E16) and other approved data on file with the Federal Aviation Administration, meet the minimum standards for use in certificated aircraft in accordance with pertinent aircraft data sheets and applicable portions of the Civil Air Regulations/Federal Aviation Regulations provided they are installed, operated, and maintained as prescribed by the approved manufacturer's manuals and other approved instructions.

Type Certificate (TC) Holder: General Electric Company
GE – Aviation
1000 Western Ave
Lynn, Massachusetts 01910

Model	CJ610-1	CJ610-4	CJ610-5	CJ610-6
Type	Turbojet: 8 stage axial flow compressor, 2 stage turbine, annular type combustion chamber			
Ratings (See NOTE 5)				
Maximum continuous at sea level, static thrust, lb.	2700	- -	2780	- -
Takeoff (5 min.) at sea level, static thrust, lb.	2850	- -	2950	- -
Fuel control (See NOTE 14)	General Electric Model MFC-2	- -	- -	- -
Fuel pump	Chandler-Evans Model 9234 with integral boost.	- -	- -	- -
Fuel (See NOTES 7, 8, and 11)	Kerosene, JP-4 & JP-5 type fuels conforming to G.E. Jet Fuel Spec. D50TF2, current revision.	- -	- -	- -
Oil (See NOTE 11)	Oil conforming to G.E. Spec. D50TF1, current revision.	- -	- -	- -
Principal dimensions				
Length, in. (flange to flange)	40.50	- -	- -	- -
Max. dia., in. (max. flange)	17.56	- -	- -	- -
Center of gravity (dry weight) with standard equipment:				
Aft of front frame flange fwd. face, in.	14.1	16.1	14.1	15.55
Below engine horizontal centerline, in.	1.8	1.7	1.8	1.7
To right of engine vertical centerline, in.	0.6	0.5	0.6	0.5
Weight (dry) lb. (includes as standard equipment basic engine accessories and speed control, oil tank, fuel-oil cooler, ignition system less power source, inlet anti-icing system and exhaust thermocouples, Compressor Spool Rotor on CJ610-6 (SB 72-148) and CJ610-8A (SB 72-154)).	403	393	406	418
Usable oil tank capacity (integral), qts.	3	- -	- -	- -
Ignition (24 - 30 volts D.C.)	Capacitor discharge exciter P/Ns 37D401588, 4006T58, 4016T54, 4920T03, or 4026T03 and two igniter plugs P/Ns 37B201652, 37C311124 or 4013T35.	- -	- -	- -
NOTES	1 thru 11, 13, 14, & 15	- -	- -	- -

LEGEND: "- -" INDICATES "SAME AS PRECEDING MODEL"
"---" NOT APPLICABLE
NOTICE: ALL PAGES ARE REFORMATTED. SIGNIFICANT CHANGES, IF ANY ARE BLACK.LINED IN THE LEFT MARGIN

Model	CJ610-8	CJ610-8A	CJ610-9
Type	Turbojet: 8 stage axial flow compressor, 2 stage turbine, annular type combustion chamber		
Ratings (See NOTE 5)			
Maximum continuous at sea level, static thrust, lb.	2925	2850	2925
Takeoff (5 min.) at sea level, static thrust, lb.	3100	2950	3100
Fuel control (See NOTE 14)	General Electric Model MFC-2	- -	- -
Fuel pump	Chandler-Evans Model 9234 with integral boost.	- -	- -
Fuel (See NOTES 7, 8, and 11)	Kerosene, JP-4 & JP-5 type fuels conforming to G.E. Jet Fuel Spec. D50TF2, current revision.	- -	- -
Oil (See NOTE 11)	Oil conforming to G.E. Spec. D50TF1, current revision.	- -	- -
Principal dimensions			
Length, in. (flange to flange)	40.50	- -	- -
Max. dia., in. (max. flange)	17.56	- -	- -
Center of gravity (dry weight) with standard equipment:			
Aft of front frame flange fwd. face, in.	16.0	15.65	14.2
Below engine horizontal centerline, in.	1.7	- -	1.8
To right of engine vertical centerline, in.	0.5	- -	0.6
Weight (dry) lb. (includes as standard equipment basic engine accessories and speed control, oil tank, fuel-oil cooler, ignition system less power source, inlet anti-icing system and exhaust thermocouples, Compressor Spool Rotor on CJ610-6 (SB 72-148) and CJ610-8A (SB 72-154)).	411	433	421
Usable oil tank capacity (integral), qts.	3	- -	- -
Ignition (24 - 30 volts D.C.)	Capacitor discharge exciter P/Ns 37D401588, 4006T58, 4016T54, 4920T03, or 4026T03 and two igniter plugs P/Ns 37B201652, 37C311124 or 4013T35.	- -	- -
NOTES	1 thru 11, 13, 14, & 15	- -	- -

Certification basis:

Regulations & Amendments	Model	Date of Application	Date Type Certificate No. 1E16 Issued/Revised
CAR 13 effective June 15, 1956 as amended by 13-1, 13-2, 13-3, 13-4 and 13-5	CJ610-1	September 14, 1960	December 6, 1961
	CJ610-2B	September 13, 1961	December 6, 1961
	CJ610-4	November 6, 1963	May 11, 1964
	CJ610-5	February 15, 1966	June 30, 1966
FAR 33 effective February 1, 1965 as amended by 33-1, 33-2, and 33-3	CJ610-6	February 15, 1966	June 30, 1966
	CJ610-8	June 27, 1967	January 31, 1968
	CJ610-9	June 27, 1967	January 31, 1968
	J85-GE-17B	November 30, 1967	January 15, 1968
	CJ610-2B	————————	Inactive - May 11, 1964
	J85-GE-17B	————————	Inactive - November 15, 1976
	CJ610-8A	November 23, 1976	April 13, 1977

Production basis: Production Certificate No. 108

NOTE 1. Maximum permissible engine rotor speeds are:

Takeoff	16,700 r.p.m.
Maximum continuous	16,500 r.p.m.

NOTE 2. Maximum permissible temperatures (°F).

	CJ610-1 & -4	CJ610-5 & -6	CJ610-8 & -9	CJ610-8A
Takeoff (5 min.) T_5	1300	1321	1375	1355
Maximum continuous	1250	1295	1345	1335
Maximum transient (10 seconds)	1440	- -	- -	- -
Maximum transient for starting (5 seconds)	1570	- -	- -	- -
Maximum transient for starting (2 seconds)	1670	- -	- -	- -
Oil reservoir (steady state)	365	- -	- -	- -
(transient 3 minutes)	380	- -	- -	- -
No. 2 and No. 3 bearing scavenge oil	380	- -	- -	- -

Refer to Operating Instructions SEI-188 for time-temperature envelope.

The exhaust gas temperature is measured by 8 thermocouples mounted in a radial plane in the exhaust cone.

NOTE 3. Fuel and oil pressure limits:

Fuel: Minimum at engine pump inlet: 5 p.s.i. above true fuel vapor pressure; or a pressure equal to fuel supply tank pressure, whichever is greater with a maximum of 50 p.s.i.g.

Oil pressure at oil filter inlet or oil cooler discharge:

Minimum	5 p.s.i.g.
Maximum	60 p.s.i.g.

Refer to Operating Instructions SEI-188 for operating range limits.

NOTE 4. Accessory drive provisions:

Pad	Accessory Drive Pads	AND Type	Speed r.p.m.	Torque Rating in. lb. Cont.	Torque Rating in. lb. Static	H.P. Extraction Maximum	Rotation **
P2 Front	Starter Generator	20002 XII-D	7088	500	2200	56	CC
P3 Rear	Fluid Pump	20002 XII-D	7088	500	2200	56	C
P4 Rear	Fluid Pump	20001 XI-B	7811	250	1650	31	C
P1*	Tachometer	20005 XV-B	4190	7	50	0.50	CC

Total customer power extraction in any combination from Pads 2, 3, and 4 shall not exceed 65 hp.

* Tachometer mounted on lube pump.

** "C" - Clockwise, "CC" - Counter-clockwise facing engine pad.

The customer power extraction limits vs. engine speed are presented in General Electric CJ610 Installation Manual No. SEI-126A. Location and details of the accessory drive pads are presented on the Installation Drawing, Section 1.

NOTE 5. Engine ratings are based on calibrated stand performance under the following conditions:

Operation at rated engine speeds.
Static sea level standard conditions of 59°F and 29.92 in. Hg.
General Electric bellmouth on air inlet and bullet nose.
No external air bleed or accessory drive power for aircraft accessories
Exhaust configuration as defined by General Electric Drawing 1076722-457P23 or 1076774-216.
No anti-icing airflow.
Turbine exhaust gas temperature limits not exceeded.

At sea level static conditions below 59°F, rated thrust will increase to maximum physical thrust limits as indicated:

	CJ610-1 & -4	CJ610-5 & -6	CJ610-8 & -9	CJ610-8A
Takeoff	3050 lb. @ 13°F	3180 lb. @ 23°F	- -	- -
Maximum continuous	2960 lb. @ 13°F	3135 lb. @ 11°F	3100 lb. @ 37°F	3135 lb. @ 11°F

These limits may be authorized for use at any ambient temperature for engines whose individual characteristics permit higher than rated thrust to be developed without exceeding approved temperature or r.p.m. limits.

For detailed performance data refer to the following General Electric publications:

	CJ610-1 & -4	CJ610-5 & -6	CJ610-8 & -9	CJ610-8A
Performance Bulletin	SEI-167	SEI-213	SEI-252	SEI-494
Power Setting Manual	TM64SE2103	SEI-213	SEI-252	SEI-494
Performance Deck	—	—	—	77002

NOTE 6. Maximum permissible bleed air extraction for aircraft purposes is 6% of compressor inlet air flow. Refer to the currently approved CJ610 Installation Manual No. SEI-126A for additional data.

NOTE 7. Commercial kerosene, JP-4 and JP-5 type fuels are acceptable, but whenever a change is made or a mixture is used, a readjustment of the fuel control specific gravity setting must be made for optimum acceleration performance. The use of aviation gasoline as an emergency fuel is permitted provided that its use is limited to no more than 25 hours during any one overhaul period. Refer to Maintenance Manual SEI-186.

NOTE 8. Optional additives which may be used in approved fuels are:

(1) Phillips PFA-55MB or anti-icing additives to Specifications MIL-I-27686E at a concentration not in excess of 0.15% by volume.
(2) Shell ASA-3 anti-static additive at a concentration that will provide not in excess of 300 conductivity units which is approximately equivalent to one (1) RPM.
(3) Sohio Biobor JF biocide additive at a concentration not in excess of 20 PPM elemental boron (270 PPM total additive).

The above additives may be used in combination.

NOTE 9. These engines meet FAA requirements for operation in icing conditions, for adequate turbine disk integrity and rotor blade containment and do not require airframe mounted armoring. Refer to Operating Instructions SEI-188 for operating procedure under icing conditions.

NOTE 10. The maximum permissible steady overspeed is 17,160 r.p.m. for 2 minutes and 17,820 r.p.m. on a transient basis. When either of these limits is exceeded, the engine must be inspected as defined in Operating Instructions SEI-188.

NOTE 11. Refer to General Electric Operating Instructions SEI-188 (Operating Engineering Bulletins Nos. 1 and 2) for list of approved fuels and oils.

NOTE 12. Deleted

NOTE 13. The CJ610-4, CJ610-6, CJ610-8, and CJ610-8A are similar to the CJ610-1, CJ610-5, and CJ610-9 except for location of the accessory gearbox. The CJ610-8 and -9, CJ610-5 and -6, and the CJ610-1 and -4 models are similar except for increased performance with improved parts. The CJ610-8A is similar to the CJ610-8 except for derated performance and increased operating envelope.

NOTE 14. An altitude idle speed reset unit (AIR) P/N 6002T64 is available and may be incorporated in the fuel control to automatically establish a special flight idle speed schedule within the limits of the minimum flight idle speeds defined in SEI-126A - CJ610 Installation Manual. For engines not equipped with AIR, either the aircraft system must be capable of maintaining the referenced minimum idle speed schedule or the pilot must monitor and manually reset idle speed to maintain the minimum speed schedule as defined in SEI-126A unless a modified schedule is coordinated with and approved by the General Electric Company. Engines equipped with AIR unit are identified by the letter "A" following the engine serial number.

NOTE 15. Certain engine parts are life limited. These limits are listed in the FAA approved General Electric CJ610 Engine Overhaul Manual, SEI-136, Section 72-00, Inspection.

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