



TYPE-CERTIFICATE DATA SHEET

EASA.IM.E.010

for
General Electric Company
CT7-series engines

Type Certificate Holder

General Electric Company
1000 Western Ave
Lynn, Massachusetts 01910
USA

For Models:

CT7-8
CT7-8A
CT7-8B
CT7-8E
CT7-8F
CT7-8A5
CT7-8B5
CT7-8E5
CT7-8F5
CT7-8A6
CT7-2A
CT7-2E1
CT7-2F1
CT7-5A2
CT7-6
CT7-6A
CT7-7A
CT7-9B
CT7-9C
CT7-9C3



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I. General

1. Type/Models:

GE CT7-8, -8A, -8A5, -8B, -8B5, -8E, -8E5, -8F, -8F5, 8A6
GE CT7-2A, -2E1, -2F1, -5A2, -6, -6A, -7A, -9B, -9C, -9C3

2. Type Certificate Holder:

General Electric Company
1000 Western Ave
Lynn, Massachusetts 01910
USA

3. Manufacturer:

GE Aviation 1000 Western Ave Lynn, Massachusetts 01910 USA	Vector Aerospace Helicopter Services Inc. * 4551 Agar Drive Richmond, British Columbia Canada	Industria de Turbo Propulsores / Industria de Turbinas Helicoptero ** Edificio 300 Parque Tecnologico 48170 Zamudio Vizcaya Spain	AVIO S.p.A. *** Strada del Drosso 145 Torino Italy
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* See Note 16

** See Note 17

*** See Note 26

4. EASA Certification Application Date

GE CT7-8	GE CT7-8A	GE CT7-8B	GE CT7-8E	GE CT7-8F
12 Nov 1996	10 Oct 2003	10 Oct 2003	10 Oct 2003	10 Oct 2003

GE CT7-8A5	GE CT7-8B5	GE CT7-8E5	GE CT7-8F5	GE CT7-8A6
10 Oct 2003	10 Oct 2003	10 Oct 2003	10 Oct 2003	23 Jun 2011

GE CT7-2A	GE CT7-5A2	GE CT7-6	GE CT7-6A	GE CT7-7A
24 Jun 1981	20 May 1985	22 Aug 1988	22 Aug 1988	12 Jun 1984

GE CT7-9B	GE CT7-9C	GE CT7-9C3	GE CT7-2E1	GE CT7-2F1
23 Jan 1990	23 Jan 1990	N/A	16 Dec 2011	14 Sept 2017

Application for some of the engine models had been made to individual EU member states prior to EASA existence.



5. EASA Certification Date

GE CT7-8*	GE CT7-8A	GE CT7-8B	GE CT7-8E	GE CT7-8F
20 Jan 2003	08 Nov 2004	08 Nov 2004	08 Nov 2004	08 Nov 2004

GE CT7-8A5	GE CT7-8B5	GE CT7-8E5	GE CT7-8F5	GE CT7-8A6
08 Nov 2004	08 Nov 2004	08 Nov 2004	08 Nov 2004	17 Dec 2020

GE CT7-2A	GE CT7-5A2	GE CT7-6	GE CT7-6A	GE CT7-7A
19 Apr 1984	24 Oct 1985	14 July 1989	14 July 1989	15 Jan 1985

GE CT7-9B	GE CT7-9C	GE CT7-9C3	GE CT7-2E1	GE CT7-2F1
23 Jan 1990	23 Jan 1990	9 Dec 1998, (Refer to Section II.Certification Basis, 2.1)	30 August 2013	09 July 2019

For engine models having a certification date prior to the establishment of EASA (28 Sep.2003) these dates have been taken over from individual EU member states approval dates.

II. Certification Basis

1. FAA Certification Basis

See FAA TCDS E8NE.

2. EASA Certification Basis

2.1. Airworthiness Standards

For CT7-8:

- JAR-E Change 9 plus Orange Papers E/96/1 (21 October 1996) and E/97/1 (30 December 1997)
- JAR-E 790 at Change 10
- ICAO annex 16, Volume II, second edition, effective 11 November 1993

For CT7-8A (Prior to ESN 947931), -8B, -8F, -8A5, -8B5, -8E5 in addition to above:

- JAR-E 20(f) and JAR-E 25 at Change 12
- Emissions and Fuel Venting: EC 1702/2003 Annex Part 21A.18(b), 27 September 2003

For the CT7-8A (ESN 947931 and above), 8E:

- CS-E Initial Issue
- CS-34.1 Fuel Venting at Amendment 1
- (See note 29)

For CT7-8F5:

- CS-E at Initial Issue
- CS-34.1 Fuel Venting at Amendment 1
- (see note 28)



For the CT7-8A6:

- CS-E Initial Issue
- CS-34.1 Fuel Venting at Amendment 3

For CT7-2A:

- 14 CFR 33 effective 1 February 1965 as amended by 33-1, 33-2, 33-3, 33-4, 33-5

For CT7-2E1:

- CS-E at Initial Issue
- CS-E 50 at Amendment 1
- CS-34.1 Fuel Venting at Amendment 1

For CT7-2F1:

- CS-E at Initial Issue
- CS-E 50 at Amendment 1
- CS-34.1 Fuel Venting at Amendment 2

For CT7-5A2, -7A, -9B, -9C, -9C3:

- 14 CFR 33 effective 1 February 1965 as amended by 33-1, 33-2, 33-3, 33-4, 33-5
- 14 CFR 33.17, 14 CFR 33.77 Amendment 33-6

For CT7-6, -6A:

- 14 CFR 33 effective 1 February 1965 as amended by 33-1, 33-2, 33-3, 33-5;
- 14 CFR 33.87 Amendment 12

For CT7-2A, -5A2, -6, -6A, -7A, -8, -9B, -9C, -9C3:

These engine models had been certified in several EU member states before 28 September 2003. According to Article 3 Paragraph 1 (a)(i) of Commission Regulation (EU) 748/2012 for these engines the European TC and associated TCDS have been issued based on the Certification Basis as established by the State of Design.

The CT7-5A2, -7A, -9B, -9C had been certified in France according to the State of Design certification basis, recognised as being equivalent to JAR-E change 1 based on BCAR section C Issue 8 of 30 August 1974 as amended by Blue Papers 561, 563, 569, 619, 620, 621, 622 as applicable 6 June 1974 (i.e. JAR-E change 2 18 August 1975).

The CT7-6 and CT7-6A had been certified in Italy according to RAI Technical Requirements RAI Part 233 Amendment 5 and FAA Special condition 33-76-NE-2.

EASA Type Certification for the CT7-8 model is granted, in accordance with Article 2 Paragraph 1 (a)(i) of Commission Regulation EU 748/2012, based on the CAA United Kingdom validation letter issued following JAA Validation Recommendation.

Approval of CT7-9C3 model is granted, in accordance with Article 3 Paragraph 1 (a) (i) of Commission Regulation EU 748/2012, based on certification of the EADS CASA Aeroplane CN-235-300 and its installed engines performed by the Spanish DGAC ES. Later superseded by EASA Type Certification EASA.A.186.



2.2. Special Conditions

EASA Special Conditions:

For CT7-2E1: Approval of a transitory exhaust gas temperature (EGT) exceedance at take-off of 8°C (14°F), during 12 seconds maximum (ref. CS-E 740 Endurance Test).

For CT7-2F1: Approval of a transitory exhaust gas temperature (EGT) exceedance at take-off of 11°C (20°F), during 12 seconds maximum (ref. CS-E 740 Endurance Test).

For CT7-8F5: Approval of a transitory exhaust gas temperature (EGT) exceedance at take-off of 1.7°C (3°F), during 12 seconds maximum (ref. CS-E 740 Endurance Test).

Approval of a 30-Minute Power rating.

For CT7-8A6: Approval of a transitory exhaust gas temperature (EGT) exceedance at take-off of 1.7°C (3°F), during 12 seconds maximum –(ref. CS-E 740 Endurance Test).

Approval of a 30-Minute Power rating

JAA Special Conditions:

For CT7-8, CT7-8B,
-8F, -8A5, -8B5, -8E5:

SC1 : Ratings
SC2 : Controls
SC3 : Provisions for Instruments
SC4 : Conditions applicable to Endurance tests
SC5 : Endurance Tests – Inspection Checks and Calibration Tests
SC6 : Functioning
SC8 : Endurance Tests
SC9 : Instructions for Continued Airworthiness Following Use of 30-Sec/2-Min OEI Ratings (CT7-8 only)
SC10: Safe Life Determination
SC11: Overtemperature Test
SC12: Overtorque and Overspeed
SC13: 30 Minute AEO Rating Definition
SC14: Endurance Test (30-minute AEO rating)
SC15 : Instructions for Continued Airworthiness (resulting from use of 30-minute AEO rating)

EASA Special Conditions:

For the CT7-8A, -8E

SC1: Transitory exhaust gas temperature exceedance
SC2: 30 Minute AEO Rating



FAA Special Conditions:

The following the engine models were issued a European national Type Certificate using the FAA certification basis for the engine, including the FAA Special Condition (see section II.2.1).

For CT7-2A, -6, -6A:	USA FAA Special Condition 33-76-NE-2
For CT7-5A2, -7A, -9B, -9C, -9C3:	USA FAA Special Condition 33-NE-1

2.3. Equivalent Safety Findings

JAR-E 840 – Rotor Integrity (CT7-8)

CS-E 820 – Over-Torque (CT7-8F5, 8A6)

2.4. Deviations

None



III. Technical Characteristics

1. Type Design Definition

As defined by the applicable GE Model Lists and approved design changes

CT7-8G01	CT7-8AG01	CT7-8A5G01	CT7-8A6G01 (*)	CT7-8BG01	CT7-8B5G01	CT7-8EG01
CT7-8E5G01	CT7-8FG01	CT7-8F5G01	CT7-2AG01	CT7-2E1G01	CT7-2F1G01	CT7-5A2G01
CT7-6G01	CT7-6AG01	CT7-7AG01	CT7-9BG01	CT7-9CG01	CT7-9C3G01	

(*) See note 30.

2. Description

The CT7-2A, -2E1, -2F1, -6, -6A, -8, -8A, -8A5, -8A6, -8B, -8B5, -8E, -8E5, -8F, -8F5 engine models are front drive turboshaft engines featuring a single-spool gas generator section consisting of a five-stage axial, single-stage centrifugal flow compressor, a through flow annular combustion chamber, a two-stage axial flow gas generator turbine, and a free or independent two-stage axial flow power turbine. The power turbine shaft is co-axial and extends to the front end of the engine. The engines also incorporate modular construction throughout, a top-mounted accessory package, an engine-driven fuel boost pump, a self-contained lubrication system, condition monitoring-diagnostics provisions. For the CT7-2E1, -2F1, -8, -8A, -8A5, -8A6, -8B, -8B5, -8E, -8E5, -8F, -8F5 engine models, a dual channel full authority digital electronic control (FADEC) system providing gas generator and power turbine speed control, engine load sharing, and redundant gas generator and power turbine overspeed protection. The engine type definition does not include the starter or the mounts.

The CT7-5A2, -7A, -9B, -9C, -9C3 engine models are front drive turboprop engines featuring a single-spool gas generator section consisting of a five-stage axial, single-stage centrifugal flow compressor, a through flow annular combustion chamber, a two-stage axial flow gas generator turbine, a free or independent two-stage axial flow power turbine and an integral propeller gearbox.

3. Equipment

As defined by the applicable GE Model Lists.

4. Dimensions

See Note 1.

For CT7-8, -8A, -8A5, -8A6, -8B, -8B5, -8E, -8E5, -8F:

Overall Length	123,9 cm	(48,8 inches)
Overall Width	66,0 cm	(26,0 inches)
Overall Height	63,5 cm	(25,0 inches)

For CT7-8F5:

Overall Length	107,4 cm	(42,3 inches)
Overall Width	66,0 cm	(26,0 inches)
Overall Height	63,5 cm	(25,0 inches)



For CT7-2A, -6:

Overall Length	119,4 cm	(47,0 inches)
Overall Width	66,0 cm	(26,0 inches)
Overall Height	63,5 cm	(25,0 inches)

For CT7-6A:

Overall Length	122,4 cm	(48,2 inches)
Overall Width	66,0 cm	(26,0 inches)
Overall Height	63,5 cm	(25,0 inches)

For CT7-5A2, -7A, -9B, -9C, -9C3 (with PGB):

Overall Length	243,8 cm	(96 inches)
Overall Width	66,0 cm	(26,0 inches)
Overall Height	73,7 cm	(29,0 inches)

For CT7-2E1, -2F1:

Overall Length	119,4 cm	(47 inches)
Overall Width	66,0 cm	(26,0 inches)
Overall Height	66,0 cm	(26,0 inches)

5. Dry Weight

For CT7-8:	243,6 kg (537,0 lbs.)	See Note 2
For CT7-8A, -8A5, -8A6, -8B, -8B5, -8E, -8E5, -8F, -8F5:	245,9 kg (542,0 lbs.)	See Note 2
For CT7-2A:	194,6 kg (429,0 lbs.)	See Note 2
For CT7-6, -6A:	223,6 kg (493,0 lbs.)	See Note 2
For CT7-5A2, -7A:	355,2 kg (783,0 lbs.)	See Note 2
For CT7-9B, -9C:	365,1 kg (805,0 lbs.)	See Note 2
For CT7-9C3:	366,0 kg (807,0 lbs.)	See Note 2
For CT7-2E1:	222,7 kg (491,0 lbs.)	See Note 2
For CT7-2F1:	218,6 kg (482,0 lbs.)	See Note 2

6. Ratings

See notes 3 and 4.

Ratings are AEO unless labeled OEI.



Ratings	CT7-8	CT7-8A**	CT7-8A5	CT7-8A6**	CT7-8B	CT7-8B5	CT7-8E**	CT7-8E5	CT7-8F	CT7-8F5**
Max Continuous (SL) Power, kW (Shaft hp) Output, rpm	1523 (2043) 21945	1523 (2043) 21945	1608 (2157) 21945	1736 (2329) 21945	1522 (2041) 20900	1606 (2154) 20900	1522 (2041) 20872	1606 (2154) 20872	1462 (1960) 20841	1604 (2151) 20841
Takeoff (5 min) (SL) Power, kW (Shaft hp) Output, rpm	1879 (2520) 21945	1879 (2520) 21945	1964 (2634) 21945	2009 (2695) 21945	1886 (2529) 20900	1946 (2609) 20900	1884 (2527) 20872	1945 (2608) 20872	1845 (2474) 20841	1941 (2603) 20841
30-Minute (SL) Power, kW (Shaft hp) Output, rpm	1742 (2336) 21945	1742 (2336) 21945	1897 (2544) 21945	1966 (2637) 21,945	1856 (2489) 20900	1886 (2529) 20900	1855 (2488) 20872	1885 (2528) 20872	1777 (2383) 20841	1882 (2524) 20841
Continuous OEI (SL) Power, kW (Shaft hp) Output, rpm	N/A	1863 (2498) 21945	1897 (2544) 21945	1966 (2637) 21,945	1856 (2489) 20900	1886 (2529) 20900	1855 (2488) 20872	1885 (2528) 20872	1777 (2383) 20841	1882 (2524) 20841
30-Minute OEI (SL) Power, kW (Shaft hp) Output, rpm	1863 (2498) 21945	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2-Minute OEI (SL) Power, kW (Shaft hp) Output, rpm	1879 (2520) 20848	1879 (2520) 20900	1943 (2606) 20900	2001 (2684) 20900	1881 (2523) 20900	1943 (2606) 20900	1881 (2522) 20872	1942 (2604) 20872	1812 (2430) 19800	1912 (2599) 20841
30-Second OEI (SL) Power, kW (Shaft hp) Output, rpm	1939 (2600) 20848	2043 (2740) 20900	2065 (2769) 20900	2122 (2845) 20900	2043 (2740) 20900	2065 (2769) 20900	2042 (2739) 20872	1989 (2767) 20872	1957 (2624) 19800	2031 (2762) 20841

SL – Sea Level



Ratings	CT7-2A	CT7-2E1**	CT7-2F1**	CT7-5A2	CT7-6	CT7-6A	CT7-7A*
Max Continuous (SL) Power, kW (Shaft hp) Output, rpm	1189 (1595) 21000	1395 (1871) 21000	1277 (1712) 21000	1193 (1600) 1384*	1281 (1718) 20463	1281 (1718) 20463	1268 (1700) 1384
Takeoff (5 min) (SL) Power, kW (Shaft hp) Output, rpm	1212 (1625) 21000	1480 (1985) 21000	1476 (1979) 21630	1294 (1735) 1384*	1491 (2000) 20463	1491 (2000) 20463	1268 (1700) 1384
Max Takeoff (5 min) (SL) Power, kW (Shaft hp) Output, rpm	N/A	N/A	N/A	N/A	N/A	N/A	N/A
30-Minute (SL) Power, kW (Shaft hp) Output, rpm	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Continuous OEI (SL) Power, kW (Shaft hp) Output, rpm	N/A	1480 (1985) 21000	1476 (1979) 21630	N/A	1491 (2000) 20463	1491 (2000) 20463	N/A
30-Minute OEI (SL) Power, kW (Shaft hp) Output, rpm	1212 (1625) 21000	N/A	N/A	N/A	N/A	N/A	N/A
2½-Minute OEI (SL) Power, kW (Shaft hp) Output, rpm	1286 (1725) 21000	N/A	N/A	N/A	1491 (2000) 20463	N/A	N/A
Flat 30-Sec/2-Min OEI (SL) Power, Kw (Shaft hp) Output, rpm	N/A	1651 (2214) 21000	N/A	N/A	N/A	N/A	N/A
2-Minute OEI (SL) Power, kW (Shaft hp) Output, rpm	N/A	N/A	1532 (2054) 21630	N/A	N/A	N/A	N/A
30-Second OEI (SL) Power, kW (Shaft hp) Output, rpm	N/A	N/A	1588 (2129) 21630	N/A	N/A	N/A	N/A



Ratings	CT7-9B*	CT7-9C*	CT7-9C3*
Max Continuous (SL) Power, kW (Shaft hp) Output, rpm	1305 (1750) 1384	1305 (1750) 1384	1305 (1750) 1384
Takeoff (5 min) (SL) Power, kW (Shaft hp) Output, rpm	1305 (1750) 1384	1305 (1750) 1384	1305 (1750) 1384
Max Takeoff (5 min) (SL) Power, kW (Shaft hp) Output, rpm	1394 (1870) 1384*	1394 (1870) 1384*	N/A
30-Minute (SL) Power, kW (Shaft hp) Output, rpm	N/A	N/A	N/A
Continuous OEI (SL) Power, kW (Shaft hp) Output, rpm	N/A	N/A	N/A
30-Minute OEI (SL) Power, kW (Shaft hp) Output, rpm	N/A	N/A	N/A
2½-Minute OEI (SL) Power, kW (Shaft hp) Output, rpm	N/A	N/A	N/A
Flat 30-Sec/2-Min OEI (SL) Power, Kw (Shaft hp) Output, rpm	N/A	N/A	N/A

* Output for these turboprop models is specified as propeller speed (gear reduced Np). 1384 rpm is not a rating or limitation and is presented for reference only. The limit for continuous operation is 1396 rpm. See section 2.2.

** Values shown are engine capabilities when the FADEC is not set to observe the more restrictive rotorcraft limitations. See Note 3.

7. Control System

The following engine models are equipped with a Full Authority Digital Engine Control (FADEC) system:

Fuel Control

For CT7-2E1, -2F1:
For CT7-8, -8A, -8B, -8E, -8F,
-8A5, -8A6, -8B5, -8E5, -8F5:

Woodward Governor FMU P/N 5165T63

Hamilton Sunstrand Fuel Metering Unit
(FMU) P/N 819700-8



EECU

For CT7-2E1, -2F1:	BAE Systems EECU P/N 5158T32
For CT7-8, -8A, -8B, -8E, -8F, -8A5, -8A6, -8B5, -8E5, -8F5:	Hamilton Sunstrand Electronic Engine Control Unit (EECU) P/N 4110T55

Note: EECU software is verified to level A according to RTCA Document DO-178B.

The following models are not equipped with a FADEC system; fuel control is provided by a Hydromechanical Metering Unit (HMU):

Fuel Control

For CT7-2A, -6, -6A:	Hamilton Standard P/N JFC-78-4
For CT7-5A2, -7A:	Hamilton Standard P/N JFC-78-5
For CT7-9B, -9C, -9C3:	Woodward Governor Model 3470

8. Fluids

8.1. Fuel

See Note 5.

The approved fuels and additives are identified in the current revision of the engine Operating Instructions:

For CT7-8, CT7-8A, -8B, -8F, -8A5, -8A6, -8B5:	GEK 105157
For CT7-8E, -8E5:	GEK 112153
For CT7-8F5:	GEK 114117
For CT7-2A:	SEI-569
For CT7-2E1:	GEK112766
For CT7-2F1:	GEK112102
For CT7-6, -6A:	SEI-694
For CT7-5A2, -7A, -9B, -9C, -9C3:	SEI-575

8.2. Oil

The approved engine oils, including approved brands, are identified in the current revision of the engine Operating Instructions:

For CT7-8, CT7-8A, -8B, -8F, -8A5, -8A6, -8B5:	GEK 105157
For CT7-8E, -8E5:	GEK 112153
For CT7-8F5:	GEK 114117
For CT7-2A:	SEI-569
For CT7-6, -6A:	SEI-694
For CT7-5A2, -7A, -9B, -9C, -9C3:	SEI-575
For CT7-2E1:	GEK112766
For CT7-2F1:	GEK112102



9. Accessory Drive Provisions

Models	Drive Pad	Type	Rotation Speed *	Speed	Maximum Torque Nm (in-lb) Continuous	Maximum Torque Nm (in-lb) Static
CT7-8, -8A, -8B, -8E, -8F, -8A5, -8A6, -8B5, -8E5	Starter	MS3326-2 (1)	CW	0,64979 (2)	38,0 (336)	101,7 (900) (3) / 113,0 (1000) (4)
CT7-8F5	Starter	V-Band Pad (13)	CW	0,64979 (2)	38,0 (336)	101,7 (900) (3) / 113,0 (1000) (4)
CT7-5A2, -7A, -9B, -9C, -9C3	Starter Generator	AS963A-12V (8)	CCW	0,26630 (2)	92,74 (820) (5) / 21.69 (192) (6)	172,9 (1530) (3) / 214,7(1900) (10) / 185,9 (1645) (7)
CT7-2E1	Starter Generator	AS963-1	CCW	0,29736 (2)	82,56(730) (5)	149,2(1320) (3) / 192,1(1700) (10) / 166,1(1470) (7)
CT7-2F1	Starter	MS3326-2 (1)	CW	0,64979 (2)	38,0 (336)	101,7 (900) (3) / 62,1 (550) (4)
Propeller Gearbox	Propeller Shaft	AS1414 (8)	CCW	0,06291 (9)	(8)	(8)
	Hydraulic Pump	MS3326(AS)-2 (8)	CW	0,27932 (9)	13.9 (123)	(11)
	AC generator	AS963A-12V (8)	CW	0,54650 (9)	41.8 (370) (12)	(12)
	Propeller Overspeed Governor	MS3325(AS)-2 (8)	CW	0,38091 (9)	1.13 (10)	(11)
	Propeller control unit	(13)	CW	0,06291 (9)	1.81 (16)	(11)

* Facing engine gearbox pad (CW = clockwise, CCW = counterclockwise)

- (1)** Modified for speed and strength requirements
- (2)** Ratio to gas generator speed (Rotation speed is divided by gas generator (GG) speed)
- (3)** 3-second maximum duration per start. The starter and/or start sequence must be controlled to avoid exceeding specified impact torque.
- (4)** Maximum axial impact force shall not exceed 1000 pounds
- (5)** Starter
- (6)** Generator mode for 3 minutes restricted at ground idle without customer bleed. Unrestricted is 12,7 Nm (112 in-lb)
- (7)** 0,05 seconds maximum duration
- (8)** For CT7-5A2, -7A: see Installation Manual SEI-585. For CT7-9B, -9C, -9C3: see Installation Manual SEI- 726.
- (9)** Ratio to power turbine speed
- (10)** Shear torque for starter/generator shaft shear section
- (11)** Overtorque allowance minimum of 1.5 x maximum normal rated torque for 10⁸ cycles and maximum 5 x maximum normal rated torque as a limit load
- (12)** Maximum overload up to 46,89 Nm (415 in-lb)
- (13)** See installation manual



10. Maximum Permissible Air Bleed Extraction

Model	Max Allowable Bleed Limit (Percentage of Core airflow)	
CT7-2A, -2E1, -2F1, -6, -6A, -8, -8A, -8A1, -8A5, -8A6 -8B, -8B5, -8E, -8E5, -8F	6,5%	
CT7-8F5	4,0%	
CT7-5A, -7A Customer bleed air is provided through two bleed ports (mid-compressor and compressor discharge). See CT7-5A2/-7A Installation Manual SEI-585.	At mid-compressor bleed port, (no engine anti-icing airflow) 6,5%	At compressor discharge bleed port approx 8% in flight, 12% while in APU mode
CT7-9B, -9C, -9C3 Customer bleed air is provided through two bleed ports (mid-compressor and compressor discharge). See CT7-9B/-9C/-9C3 Installation Manual SEI-726.	At mid-compressor bleed port (no engine anti-ice airflow) 6,5%	At compressor discharge bleed port approx 8% in flight and 12% while in APU mode

IV. Operational Limits

Limitations are AEO unless labeled OEI.

1. Temperature Limits

Maximum Gas Generator Inter-Turbine Temperature (T4.5/ITT), °C (°F)

T4.5 is measured at the inlet of the LP Turbine.

Rating	CT7-8	CT7-8A, -8B	CT7-8A5, -8B5, -8E, -8E5, -8F, -8F5	CT7-8A6
30-Second OEI	1010 (1851)	1049 (1921)	1049 (1921)	1097 (2006)
2-Minute OEI	990 (1814)	1006 (1843)	1006 (1843)	1013 (1855)
Continuous OEI	N/A	988 (1811)	988 (1811)	996 (1824)
30-Minute OEI	979 (1794)	N/A	N/A	N/A
Maximum Transient (12 sec)	987 (1809)	1003 (1838)	1003 (1838)	1008 (1847)
Takeoff (5 min)	986 (1807)	995 (1823)	1002 (1835)	1007 (1844)
30-Minute	957 (1755)	988 (1811)	988 (1811)	996 (1824)
Maximum Continuous	920 (1688)	935 (1715)	935 (1715)	946 (1734)
Starting	1000 (1832)	1000 (1832)	1000 (1832)	1000 (1832)



Rating	CT7-2A	CT7-2E1	CT7-2F1	CT7-6, -6A
30-Second OEI	N/A	N/A	1078 (1972)	N/A
2-Minute OEI	N/A	N/A	991 (1815)	N/A
2½-Minute OEI	915 (1680)	N/A	N/A	968 (1774)
Flat 30-Sec/2-Min OEI	N/A	1101 (2013)	N/A	N/A
Continuous OEI	N/A	983 (1802)	963 (1765)	948 (1738)
30-Minute OEI	878 (1613)	N/A	N/A	N/A
Maximum Transient (12 sec)	950 (1742)	991 (1816)	974 (1785)	1011 (1852)
Takeoff (5 min)	878 (1613)	983 (1802)	963 (1765)	948(1738)
30-Minute	N/A	N/A	N/A	N/A
Maximum Continuous	863 (1585)	957 (1755)	897 (1647)	899 (1650)
Starting	950 (1742)	963 (1766)	963 (1765)	948 (1738)

Rating	CT7-5A2, -7A	CT7-9B	CT7-9C	CT7-9C3
Takeoff (5 min)	929 (1705)	917 (1683)	See Note 18	917 (1683)
Takeoff (2 min transient included in 5 min takeoff)	N/A	927 (1701)	N/A	927 (1701)
Maximum Takeoff (APR) (5 min)	N/A	940 (1724)	N/A	950 (1742)
Maximum Takeoff (APR) (2 min transient included in 5 min max takeoff)	N/A	950 (1742)	N/A	950 (1742)
Maximum Continuous	917 (1682)	944 (1731)	944 (1731)	944 (1731)
Maximum Transient (12 sec)	960 (1760)	965 (1769)	975 (1787)	965 (1769)
Starting	960 (1760)	965 (1769)	970 (1778)	965 (1769)

1.2. Oil Temperature, °C (°F)

For all CT7-8 models:

<u>Oil Type</u>	<u>Condition</u>	<u>Min</u>	<u>Max</u>
Type I (MIL-L-7808)	Cold Start-up	-54 (-65)	
Type II (MIL-L-23699)	Cold Start-up	-40 (-40)	
Type I or II	Normal Operation		132 (270)
Type I or II	Transient (15 minutes maximum)		149 (300)

For CT7-2A, -6, -6A:

<u>Oil Type</u>	<u>Condition</u>	<u>Min</u>	<u>Max</u>
Type I (MIL-L-7808)	Cold Start-up	-40 (-40)	
Type II (MIL-L-23699)	Cold Start-up	-40 (-40)	
Type I or II	Normal Operation		150 (302)



For CT7-5A2, -7A, -9B, -9C, -9C3:

<u>Oil Type</u>	<u>Condition</u>	<u>Min</u>	<u>Max</u>
Type I (MIL-L-7808)	Cold Start-up	-54 (-65)	
Type II (MIL-L-23699)	Cold Start-up	-40 (-40)	
Type I or II	Normal Operation		132 (270)
Type I or II	Transient (15 minutes maximum)		149 (300)

For CT7-2E1, -2F1:

<u>Oil Type</u>	<u>Condition</u>	<u>Min</u>	<u>Max</u>
Type I (MIL-L-7808)	Cold Start-up	-50 (-58)	
Type II (MIL-L-23699)	Cold Start-up	-40 (-40)	
Type I or II	Normal Operation		132 (270)
Type I or II	Transient (15 minutes maximum)		149 (300)

1.3. Fuel Temperature, °C (°F)

Temperature at the boost pump inlet.

For all CT7 models except CT7-2E1 and CT7-2F1:

<u>ASTM D 1655 Fuels</u>	<u>Min</u>	<u>Max</u>
JET A (JP-5)	-40 (-40)	57 (135)
JET B (JP-4)	-54 (-65)	16 (60)

For CT7-2E1, -2F1:

<u>ASTM D 1655 Fuels</u>	<u>Min</u>	<u>Max</u>
JET A/A1 (JP-5)/ JP8/8+100	-40 (-40)	60 (140)
JET B (JP-4)	-54 (-65)	29 (85)

For all CT7 models except CT7-2E1 and CT7-2F1: The maximum allowed fuel viscosity is 12 centistokes. Fuel heating and anti icing additive is not required at fuel temperatures above -26°C.

For CT7-2E1, -2F1: The maximum allowed fuel viscosity is 12 centistokes. Fuel heating and anti icing additive is not required at fuel temperatures above -15°C.



2. Maximum Permissible Rotor Speed

2.1. Gas Generator Speed (Ng), rpm

Rating	CT7-8	CT7-8A, -8A5, -8B, -8B5, -8E, -8E5, -8F	CT7- 8A6	CT7-2A	CT7-8F5	CT7-2E1	CT7- 2F1	CT7-6, -6A	CT7-5A2, -7A	CT7-9B, -9C3	CT7-9C
30-Second OEI	46340	46340	46340	N/A	46340	N/A	46935	N/A	N/A	N/A	N/A
2-Minute OEI	46010	46010	46010	N/A	46010	N/A	46935	N/A	N/A	N/A	N/A
2½-Minute OEI	N/A	N/A	N/A	46070	N/A	N/A	N/A	46060	N/A	N/A	N/A
Flat 30-Sec/ 2-Min OEI	N/A	N/A	N/A	N/A	N/A	46935	N/A	N/A	N/A	N/A	N/A
Continuous OEI	N/A	45,760	46010	N/A	46010	45907	45907	45900	N/A	N/A	N/A
30-Minute OEI	45760	N/A	N/A	45430	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Takeoff (5 min)	46010	46010	46010	45430	46010	45907	45907	45900	45000	45288	Note 28
Max Takeoff	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	45600	45600
30-Minute	45350	45,760	46010	N/A	46010	N/A	N/A	N/A	N/A	N/A	N/A
Max Continuous	44660	44660	44950	45240	44660	45907	45907	45420	44720	45600	45600
Max Transient (12 sec)	46120	46120	46120	47000	46120	46137	46137	47440	47000	47000	47000

100 percent Ng is defined for all CT7 models as 44700 rpm.

2.2. Power Turbine Speed (Np), rpm

Rating or Operating Speed	CT7-8, -8A, -8A5	CT7-8B, -8B5	CT7-8E, -8E5	CT7-8F, -8F5	CT7-8A6	CT7-2A	CT7-2E1
Nominal Rating**	21945	20900	20872	20841	21945	21000	21420
Minimum Governing	N/A	N/A	N/A	N/A	N/A	19000	N/A
Maximum Governing	21945	20900	20872	20841	21945	21000	22000
Maximum Permissible	22200	22200	22200	22200	22200	21000	22000
Maximum Transient (12 sec)	24350	24350	24350	24350	24350	22500	23100

Rating or Operating Speed	CT7-2F1	CT7-6, -6A	CT7-5A2	CT7-7A	CT7-9B, -9C, -9C3
Nominal Rating**	21630	20463	1384*	1384*	22000
Minimum Governing	N/A	18200	970	970	19855
Maximum Governing	22000	21000	N/A	N/A	N/A
Maximum Continuous	22000	22200	1396*	1396*	22200
Maximum Transient (12 sec)	23100	25300	N/A	N/A	N/A

* Output for these turboprop models is specified as propeller speed (gear reduced Np).

** The Nominal Rating defines 100 percent Np for each model.



3. Torque, Nm (ft-lb)

Maximum torque on the power turbine shaft during operation.

Rating	CT7-8	CT7-8A*, -8A5, -8B, -8B5, -8E*, -8E5, -8F, -8F5	CT7-8F5	CT7-8A6
30-Second OEI	916 (676)	952 (702)	995 (734)	995 (734)
2-Minute OEI	862 (636)	895 (660)	895 (660)	952(702)
Continuous OEI	N/A	868 (640)	868 (640)	895 (660)
30-Minute OEI	819 (604)	N/A	N/A	N/A
Takeoff (5 min)	818 (603)	895 (660)	895 (660)	916(676)
30-Minute	778 (574)	868 (640)	868 (640)	895 (660)
Maximum Continuous	712 (525)	827 (610)	827 (610)	827 (610)
Maximum Transient (12 sec)	865 (638)	1053 (777)	1053 (777)	1053 (777)

Rating	CT7-2A	CT7-2E1*	CT7-2F1*	CT7-6/6A
30-Second OEI	N/A	N/A	779 (575)	N/A
2-Minute OEI	N/A	N/A	770 (575)	N/A
2½-minute OEI	N/A	N/A	N/A	759 (560)
Flat 30-Sec/ 2-Min OEI	N/A	779 (575)	N/A	N/A
30-Minute OEI	678 (500)	N/A	N/A	N/A
Continuous OEI	N/A	698 (515)	698 (515)	742 (547)
Takeoff (5 min)	678 (500)	698 (515)	698 (515)	742 (547)
Maximum Takeoff (5 min)	N/A	N/A	N/A	N/A
30-Minute	N/A	N/A	N/A	N/A
Maximum Continuous	610 (450)	664(490)	664(490)	662 (488)
Maximum Transient (12 sec)	949 (700)	739(545)	739(545)	949 (700)

Rating	CT7-5A2	CT7-7A	CT7-9B, -9C, -9C3
30-Second OEI	N/A	N/A	N/A
2-Minute OEI	N/A	N/A	N/A
2½-minute OEI	N/A	N/A	N/A
Flat 30-Sec/ 2-Min OEI	N/A	N/A	N/A
30-Minute OEI	N/A	N/A	N/A
Continuous OEI	N/A	N/A	N/A
Takeoff (5 min)	569 (420)	560 (413)	692 (510)
Maximum Takeoff (5 min)	569 (420)	587 (433)	692 (510)
30-Minute	N/A	N/A	N/A
Maximum Continuous	527 (389)	527 (389)	624 (460)
Maximum Transient (12 sec)	678 (500)	678 (500)	814 (600)

* Values shown are engine capabilities when the FADEC is not set to observe the more restrictive rotorcraft limitations. See Note 3.



4. Pressure

4.1. Fuel Pressure, kPa (psi)

Fuel pressure at the engine boost pump inlet.

THIS APPLIES TO ALL CT7 MODELS:

For all operation, including starts, the minimum pressure shall be 6,9 kPa (1,0 psi) above true vapour pressure of the fuel, with a vapour/liquid ratio less than or equal to 1,0. Maximum fuel pressure shall be 344,7 kPa (50 psi) above absolute ambient atmospheric pressure. In addition, minimum fuel pressure during starting shall be no lower than atmospheric pressure (or tank pressure, whichever is higher) minus 19,3 kPa (2,8 psi).

4.2. Oil Pressure, kPa (psid)

THIS APPLIES TO ALL CT7 MODELS:

Oil Pressure Limit	CT7-2A	CT7-6, -6A, -8/8A, -8A5, -8A6, -8B, -8B5, -8E, -8E5, -8F, -8F5, -2E1, -2F1	CT7-5A2, -7A, -9B, -9C, -9C3
Ground idle, minimum	138 (20)	138 (20)	N/A
Operating range	276 - 690 (40 -100)	207 - 690 (30 -100)	N/A
Power unit	N/A	N/A	N/A
Ground idle, minimum	N/A	N/A	138 (20)
Operating range	N/A	N/A	207 - 690 (30 -100)
Propeller gearbox	N/A	N/A	N/A
Ground idle, minimum	N/A	N/A	34,5 - 172 (5-25)
Operating range	N/A	N/A	172 - 965 (25-140)

Maximum for continuous operation: 689,5 kPa (100 psid)

5. Installation Assumptions

The installation assumptions are stated in the appropriate engine Installation Manual.
For the CT7-8A6, see Note 30.

6. Time Limited Dispatch

The engine is Approved for Time Limited Dispatch:

CT7-8, -8A, -8A6

The engine is approved for Time Limited Dispatch in accordance with JAR-E 510 (e) / CS-E 1030 as applicable to the type design. The maximum rectification period for each dispatchable state is specified in the Airworthiness Limitations Section of the applicable GE manual (GEK 105159). Details of the fault codes, various configurations and maximum operating intervals are in GE Report No. GEK 112652, Control System Time Limited Dispatch Summary for the Sikorsky S92/CH148 Helicopter.

CT7-2E1

The engine is approved for Time Limited Dispatch in accordance with CS-E 1030 as applicable to the type design. The maximum rectification period for each dispatchable state is specified in the Airworthiness Limitations Section of the applicable GE manual (GEK 112043-02). Details of the fault codes, various configurations and maximum operating intervals are in GEK 112055, Control System Time Limited Dispatch Summary for the AW189 Helicopter.



CT7-2F1

The engine is approved for Time Limited Dispatch in accordance with CS-E 1030 as applicable to the type design. Maintenance requirements for engine control systems are contained in the Engine Maintenance Manual GEK 112043-03. Details of the fault codes, various configurations and maximum operating intervals are in GEK 112046, Control System Time Limited Dispatch Summary for the Bell 525 Helicopter.

The engine is not approved for Time Limited Dispatch:

CT7-2A
CT7-8A5-8B, -8B5, -8E, -8E5, -8F, -8F5

The engine is not approved for Time Limited Dispatch in accordance with JAR-E 510 (e) / CS-E 1030 as applicable to the type design

Not applicable:

CT7-2A (SEI-570)
CT7-6, -6A (SEI-695)
CT7-5A2, -7A, -9B, -9C, -9C3 (SEI-576)

V. Operating and Service Instructions

See Note 15

Manuals	CT7-8, -8A, -8A5, -8A6, -8B, -8B5, -8E, -8E5, -8F	CT7-8F5	CT7-2A	CT7-5A2, -7A	CT7-6, -6A	CT7-9B, -9C, -9C3	CT7-2E1	CT7-2F1
Engine Installation Manual	SEI-866	GEK 114116	SEI-520	SEI-585	SEI-693	SEI-726	GEK 112765	GEK 112103
Engine Operating Instructions	GEK 105157 (-8E, -8E5: GEK 112153)	GEK 114117	SEI-569	SEI-575	SEI-694	SEI-575	GEK 112766	GEK 112102

Instructions for Continued Airworthiness (ICA)	CT7-8, -8A, -8A5, -8A6, -8B, -8B5, -8E, -8E5, -8F	CT7-8F5	CT7-2A	CT7-5A2, -7A	CT7-6, -6A	CT7-9B, -9C, -9C3	CT7-2E1	CT7-2F1
Engine Maintenance Manual	GEK 105159	GEK 105159	SEI-570	SEI-576	SEI-695	SEI-576	GEK 112043-02	GEK 112043-03
Engine Overhaul (Shop) Manual	GEK 105175	GEK 105175	SEI-572	SE-578	SEI-696	SEI-578	GEK 112044-02	GEK 112044-03



VI. Notes

1. The Principle Dimensions are nominal values for reference only. More exact dimensions are defined in the Installation Manual Drawing found in the relevant engine Installation Manual.
2. Dry weight includes basic engine accessories and optional equipment as listed in the manufacturer's engine specification. Weight does not include FADEC cable from engine harness connectors to an aircraft-mounted FADEC.
3. For CT7-2A, -6, -6A, -8, -8A, -8A5, -8A6, -8B, -8B5, -8E, -8E5, -8F, -8F5:

The engine ratings are based on dry sea-level static ICAO standard condition of 15°C (59°F) and 101,3 kPa (29.92 inches Hg). The engine ratings specified are the minimum guaranteed and are based on calibrated test stand performance with no external air bleed for aircraft accessories, no anti-icing airflow, with GE Aviation inlet, GE Aviation P/N 1076662-542 (CT7-2A) or P/N17A132-505 (CT7-8, -8A, -8A5, -8A6, -8B, -8B5, -8E, -8E5, -8F, -8F5), and shaft shield, P/N 17A132-506 or GE Aviation P/N 1076662-486 (CT7-6, -6A), and shaft shield, GE Aviation P/N 1076662-592. CT7-8F5 outer bellmouth adapter, P/N 17A210-005, and inner bellmouth adapter, P/N 17A210-004. Exhaust configuration as defined by GE Aviation P/N 1076662-524 or P/N 1076662-554 (CT7-8, -8A, -8A5, -8A6, -8B, -8B5, -8E, -8E5, -8F, -8F5).

The following engine performance decks are the prime source of engine performance data throughout the flight envelope:

83102 (CT7-2A)	85163 (CT7-2D/2D1)	93093 (CT7-6/6A)	L0078C (CT7-8)
L0078S (CT7-8A)	L0091F (CT7-8A1)	L0081I (CT7-8A5)	L0096E (CT7-8A6)
L0096G (CT7-8A7)	L0081F (CT7-8B)	L0081J (CT7-8B5)	L0081G (CT7-8E)
L0081K (CT7-8E5)	L0081H (CT7-8F)	L0091W (CT7-8F5)	

Power ratings for the CT7-8A, -8E, 8F5 and -8A6 are based on operation in test cell mode (engine capabilities), which disables the FADEC torque limiting corresponding to the rotorcraft capabilities. In their respective rotorcraft installations, the FADEC applies the following torque limits in N-m (ft-lb):

Airframe Rating	CT7-8A	CT7-8E	CT7-8F5	CT7-8A6
30-Second OEI	953,5 (703,3)	764,7 (564,0)	N/A	946,9 (698.4)
2-Minute OEI	811,6 (598.6)	764,7 (564,0)	816,2 (602,0)	811,6 (598.6)
Continuous OEI	811,6 (598.6)	764,7 (564,0)	N/A	811,6 (598.6)
Takeoff (5-Min)	743,9 (548,7)	N/A	N/A	743,9 (548,7)
Maximum Continuous	N/A	634,4 (467,9)	816,2 (602,0)	

See also, engine Installation Manual and Operating Instructions for additional details.

For CT7 -5A2, -7A:

Static sea level standard conditions of 15 °C (59°F) and 101,3 kPa (29,92 inches Hg).
No inlet system loss, no anti-icing, no customer bleed or power extraction.
Exhaust system specified per Note 36 in the installation drawing.

Engine performance decks #85151 (CT7-5A2), #84129 (CT7-7A) summarize performance data.



CT7-5A2 takeoff flat rated to 34°C, maximum continuous flat rated to 35°C. CT7-7A takeoff flat rated to 33°C, maximum continuous flat rated to 30°C

For CT7-9B, -9B1, -9B2, -9C -9C3:

Static sea level standard conditions of 15°C (59°F) and 101,3 kPa (29,92 inches Hg).
No inlet system loss, no anti-icing, no customer bleed or power extraction.
Exhaust system specified per Note 36 in the installation drawing.

The following engine performance decks summarise the data:

88252A (CT7-9C)	95031A (CT7-9C3)
88250A (CT7-9B)	88250B (CT7-9B)

Alternate performance defined by 88250B applies to CT7-9B engines that comply with GE Service Bulletin 73-0046. The Service Bulletin configures the CT7-9B engine with an alternate fuel control that is capable of increased fuel flow at high throttle positions.

CT7-9B1/9B2, There are no current applications for these engine models..

For CT7-9B:

Maximum takeoff flat rated to 34°C, normal takeoff flat rated to 34°C, maximum continuous flat rated to 33°C.

CT7-9C:

Maximum takeoff flat rated to 35°C, normal takeoff flat rated to 41°C, maximum continuous flat rated to 41°C.

CT7-9C3:

Maximum takeoff flat rated to 38.5°C, normal takeoff flat rated to 38.5°C, maximum continuous flat rated to 41°C.

For CT7-2E1:

Static sea level standard conditions of 15°C (59°F) and 101,3 kPa (29,92 inches Hg).

GE Aircraft Engines air inlet, GE Aviation P/N 1076662-542 and shaft shield, GE Aviation P/N 1076662-592.

Exhaust configuration as defined by GE Aviation P/N 1076662-524 or P/N 1076662-554.

No inlet system loss, no anti-icing airflow, no customer bleed airflow or power extraction.

Engine performance deck #Q20190405 (CT7-2E1) is the prime source of engine performance data throughout the flight envelope.

Power ratings for the CT7-2E1 are based on operation in test cell mode (engine capabilities), which disables the FADEC torque limiting corresponding to the rotorcraft capabilities. In its rotorcraft installation, the FADEC applies the following torque limits in N-m (ft-lb):

Airframe Rating	CT7-2E1
30-Minute	482,0 (355,5)
30-second OEI	714,7 (527,2)
2-minute OEI	677,3 (499,6)
Continuous OEI	590,0 (435,2)



See also, Installation Manual GEK 112765 and Operating Instructions GEK 112766 for additional details.

For CT7-2F1:

Static sea level standard conditions of 15°C (59°F) and 101,3 kPa (29,92 inches Hg).

GE Aircraft Engines air inlet, GE Aviation P/N 1076662-542 and shaft shield, GE Aviation P/N 1076662-592.

Exhaust configuration as defined by GE Aviation P/N 1076662-524 or P/N 1076662-554.

No inlet system loss, no anti-icing airflow, no customer bleed airflow or power extraction.

Engine performance deck #L0098Q (CT7-2F1) is the prime source of engine performance data throughout the flight envelope.

Power ratings for the CT7-2F1 are based on operation in test cell mode (engine capabilities), which disables the FADEC torque limiting corresponding to the rotorcraft capabilities. In its rotorcraft installation, the FADEC applies the following torque limits in N-m (ft-lb):

		Torque Limit (per engine) *	Total Torque Limit (two engines)
Contingency/OEI	30 second	718,6 (530)	1305,7 (963)*
	2 minute	718,6 (530) +	1305,7 (963)*
	Continuous	618,3 (456) +	1305,7 (963)*
AEO	30 second OEI	718,6 (530)	1305,7 (963)**
	5 minute take off	698,3 (515) +	1044,0 (770) +
	Max continuous	664,4 (490) +	932,8 (688) +

*Note that, because an engine may determine that it is in an OEI situation when, in fact the other engine is producing power, Two engine limits are applied in OEI.

**AEO limits are set at the 30 sec OEI limits nominally.

+Limits are based on bits sent to engine by aircraft. The aircraft may or may not choose to use these bits.

Note: All transmission specific limits are at the direction and request of the Airframer.



4. Sea Level Static Power below 15°C (59°F).

Rating	CT7-8	CT7-8A	CT7-8A5	CT7-8A6
30-Second OEI	Increases linearly to 1995 kW (2675 shp) at 8°C (47°F), then flat to -49°C (-57°F), decreasing linearly to 1972 kW (2644 shp) at -54°C (-65°F)	Increases linearly to 2051 kW (2750 shp) at 11°C (51°F), then flat to -38°C (-36°F), decreasing linearly to 1972 kW (2645 shp) at -54°C (-65°F)	Flat to -49°C (-56°F) then decreasing to 1985 kW (2662 shp) at -54°C (-65°F)	Flat rated to -54°C (-65°F.)
2-Minute OEI	Flat rated to -54°C (-65°F)	Flat rated to -54°C (-65°F)	Flat rated to -54°C (-65°F)	Flat rated to -54°C (-65°F.)
Continuous OEI	N/A	Flat rated to -54°C (-65°F)	Flat rated to -54°C (-65°F)	Flat rated to -54°C (-65°F.)
30-Minute OEI	Flat rated to -54°C (-65°F)	N/A	N/A	N/A
Takeoff (5-min)	Flat rated to -54°C (-65°F)	Flat rated to -54°C (-65°F)	Flat rated to -54°C (-65°F)	Flat rated to -54°C (-65°F.)
30-Minute AEO	Flat rated to -54°C (-65°F)	Flat rated to -54°C (-65°F)	Flat rated to -54°C (-65°F)	Flat rated to -54°C (-65°F.)
Maximum Continuous	Increases linearly to 1573 kW (2110 shp) at 12°C (53°F), then flat rated to -54°C (-65°F)	Flat rated to -54°C (-65°F)	Flat rated to -54°C (-65°F)	Flat rated to -54°C (-65°F.)

Rating	CT7-8B	CT7-8B5, 8E5	CT7-8E	CT7-8F, -8F5
30-Second OEI	Flat to -39°C (-39°F) then decreasing to 1972 kW (2645 shp) at -54°C (-65°F)	Flat to -38°C (-36°F), then decreasing to 1985 kW (2662 shp) at -54°C (-65°F)	Flat to -42°C (-44°F), then decreasing to 1981 kW (2656 shp) at -54°C (-65°F)	Flat rated to -54°C (-65°F)
2-Minute OEI	Flat rated to -54°C (-65°F)	Flat rated to -54°C (-65°F)	Flat rated to -54°C (-65°F)	Flat rated to -54°C (-65°F)
Continuous OEI	Flat rated to -54°C (-65°F)	Flat rated to -54°C (-65°F)	Flat rated to -54°C (-65°F)	Flat rated to -54°C (-65°F)
30-Minute OEI	N/A	N/A	N/A	N/A
Takeoff (5-min)	Flat rated to -54°C (-65°F)	Flat rated to -54°C (-65°F)	Flat rated to -54°C (-65°F)	Flat rated to -54°C (-65°F)
30-Minute AEO	Flat rated to -54°C (-65°F)	Flat rated to -54°C (-65°F)	Flat rated to -54°C (-65°F)	Flat rated to -54°C (-65°F)
Maximum Continuous	Flat rated to -54°C (-65°F)	Flat rated to -54°C (-65°F)	Flat rated to -54°C (-65°F)	Flat rated to -54°C (-65°F)



Ratings	CT7-2A	CT7-2E1	CT7-2F1	CT7-6, -6A	CT7-5A2,-7A, -9B, -9C, -9C3
30-Second OEI	N/A	N/A	Decreases linearly to 1447 kW (1940 shp) at -58°F	N/A	N/A
2-Minute OEI	N/A	N/A	Decreases linearly to 1447 kW (1940 shp) at -58°F	N/A	N/A
Flat 30-second/ 2-minute OEI	N/A	Decreases linearly to 1516 kW (2033 shp) at -50°C (-58°F)	N/A	N/A	N/A
2½-minute OEI	Increases linearly to 1303 kW (1748 shp) at 0°C (32°F). For characteristics below 0°C, refer to Performance Bulletin, SEI-601	N/A	N/A	Increase linearly to 1620 kW (2,173 shp) at -54°C (-65°F)	N/A
Takeoff (5-min) & Maximum Takeoff* & 30-Min OEI* & Continuous OEI	Increases linearly to 1284 kW (1,722 shp) at 0°C (32°F); increases linearly to 1296 kW (1738 shp) at -5°C (23°F). For characteristics below -5°C, refer to Performance Bulletin, SEI-601.	Flat rated to -50°C (-58°F)	Flat rated to -31°F, decreases linearly to 1447 kW (1940 shp) at -58°F	Increase linearly to 1589 kW (2,131 shp) at -38°C (-36°F), then flat rated to -54°C (-65°F)	Flat rated to -54°C (-65°F)
Maximum Continuous	Increases linearly to 1573 kW (2110 shp) at 12°C (53°F), then flat rated to -54°C (-65°F)	Flat rated to -50°C (-58°F)	Flat rated to -58°F	Flat rated to -54°C (-65°F)	Flat rated to -54°C (-65°F)

* Maximum Takeoff and 30-Min OEI are not applicable to the CT7-2E1 and the CT7-2F1.

5. The following optional additive may be used in approved fuels (all CT7 models):

Phillips PFA-55-MB or anti-icing additives to specification MIL-1-27696 at a concentration not in excess of 0,15% by volume.

6. The EASA approved Airworthiness Limitations Section of the Instructions for Continued Airworthiness is published in chapter 5 "Airworthiness Limitations" of the applicable Engine Maintenance Manual:

SEI-570 (CT7-2A)
 GEK-112043-02 (CT7-2E1)
 GEK-112043-03 (CT7-2F1)
 SEI-695 (CT7-6, -6A)
 SEI-576 (CT7-5A2, -7A, -9B, -9C, -9C3)
 GEK-105159 (CT7-8, -8A, -8A5, -8A6, -8B, -8B5, -8E, -8E5, -8F, -8F5)



7. Recommended maintenance inspection intervals are published in the Engine Maintenance Manual, GEK 105159 (CT7-8, -8A, -8A5, -8A6, -8B, -8B5, -8E, -8E5, -8F, -8F5), SEI-570 (CT7-2A), GEK-112043-02 (CT7-2E1), GEK 112043-03 (CT7-2F1), SEI-695 (CT7-6, -6A), and SEI-576 (CT7-5A2, -7A, -9B, -9C, -9C3).
8. The engine casing and component temperature values and/or nacelle airflow requirements specified in Paragraphs A-8 and A-9 of the Installation Manual, SEI-866 (CT7-8, -8A, -8A5, -8A6, -8B, -8B5, -8E, -8E5, -8F), and GEK 114116 (CT7-8F5), SEI-520 (CT7-2A), Table B-7 in GEK 112765 (CT7-2E1) and GEK 112103 (CT7-2F1), SEI- 693 (CT7-6, -6A), must be observed when installing the engine.

The requirements specified in Paragraph A-9 of Installation Manual SEI-585 must be met when installing the turboprop engine (CT7-5A2, -7A). Similar requirements for CT7-9B, -9C, -9C3 installations are specified in Paragraph A-7 of Installation Manual SEI-726. Compliance with 14 CFR 33.17 Amendment 6 concerning ignition of leaking oil is obtained only when the above requirements are met.

9. Limits have been established for certain models with regard to electromagnetic interference (EMI) and lightning. Refer to the Installation Manual for details:
SEI-726 : CT7-9B, -9C, -9C3
SEI-866 : CT7-8, -8A, -8A5, -8A6, -8B, -8B5, -8E, -8E5, -8F
GEK 114116 : CT7-8F5
GEK 112765 : CT7-2E1
GEK 112103 : CT7-2F1
10. For 8, -8A, -8A5, -8A6, -8B, -8B5, -8E, -8E5, -8F, -8F5, the FADEC system isochronously governs Np/Nr and incorporates torque matching between engines. Automatic operational limiters are provided for torque, speed and gas generator exhaust gas temperature (T4.5/ITT).

For the CT7-2E1 and CT7-2F1 the FADEC system isosynchronously governs aircraft main rotor speed (Nr) by governing engine output shaft speed (Np), and incorporates torque or power turbine inlet temperature matching (pilot selectable) between engines. The FADEC also provides automatic operational limiters for torque, speed and power turbine inlet temperature (T4.5/ITT) as defined in the Installation Manual GEK 112765 (CT7-2E1) and GEK 112103 (CT7-2F1).

11. For the CT7-2E1 model, in an all engines operating (AEO) condition, the T4.5 limit will be automatically set to the flat 30-second/2-minute OEI limit when the engine senses a PT rotor speed (Np) droop to 95% of the reference speed, or to 99.5% of the reference speed with a rate of decrease faster than 3% per second. The T4.5 limit will reset to the Takeoff (AEO) limit when Np is greater than 99.5% of the reference speed and T4.5 is at least 5.5°C below the AEO T4.5 reference temperature for 3 seconds.

For the CT7-8, -8A, -8A5, -8A6, -8E, -8E5, -8F and -8F5 models, in an AEO condition, the FADEC provides torque, speed and T4.5 Limiting at takeoff power. For specific models,

CT7-8, -8A, -8A5, -8A6: The T4.5 limit will be automatically set to 30-second OEI limit when the engine senses an Np droop of more than 5%. The T4.5 limit will reset to the Takeoff (AEO) limit when Np is at or above 99% of the reference Np speed.

CT7-8E, -8E5: The T4.5 limit will be automatically set to 30-second OEI limit when the engine senses an Np droop to 96% or less. The T4.5 limit will reset to the Takeoff (AEO) limit when Np is at or above 99% of the reference Np speed.

CT7-8F, -8F5: The T4.5 limit will be automatically set to 30-second OEI limits when the engine senses an Np droop to 93% or less. The T4.5 limit will reset to the Takeoff (AEO) limit when Np is at or above 99% of the reference Np speed.



Any such event will trigger a 30-second OEI rating cockpit annunciation and post-flight maintenance action in accordance with the Maintenance Manual.

12. The operating / starting envelope is provided in the Engine Installation Manual
13. The Component Maintenance Manual (CMM) for the CT7-8A5, -8B, -8B5, -8E5, -8F FADEC has not been issued. Any FADEC removed from service on a CT7-8A5, -8B, -8B5, -8E5, -8F engine may not be repaired until the CMM is issued.
14. Note deleted, duplication of note 11.
15. For 8, -8A, -8A5, -8A6, -8B, -8B5, -8E, -8E5, -8F, -8F5, -2E1, and -2F1 models, engine maintenance logic is provided by the FADEC system, which transmits maintenance information over an ARINC data bus. This information includes system fault event indications and power assurance calculation results. For the -8 models, refer to Maintenance Manual GEK 105159 and Installation Manual SEI-866 (-8F5: GEK 114116). For the CT7-2E1, refer to Installation Manual GEK 112765 and Maintenance Manual GEK 112043-02. For the CT7-2F1, refer to Installation Manual GEK 112103 and Maintenance Manual GEK 112043-03.
16. CT7-8A engines and parts thereof manufactured by Vector Aerospace Helicopter Services Inc., 4551 Agar Drive, Richmond, British Columbia, Canada under Licensing Agreement Number 10.0062 with the General Electric Company, are identified by engine Serial Numbers 530001 to 530099.
17. CT7-8F5 engines and parts thereof manufactured by Industria de Turbo Propulsores S. A. (ITP)/Industria de Turbinas Helicoptero S.A. (ITH) Edificio 300, Parque Tecnológico, 48170 Zamudio, Vizcaya, Spain under Appendix of Licensing Agreement Number 79.0055 with GE Aviation are identified by engine Serial Numbers 731004 to 731099 and 733001 to 733100.
18. For the CT7-9C model, the limits for gas generator speed (Ng) and power turbine inlet temperature (T4.5/ITT) at normal takeoff power rating are further defined as follows:

The Ng limit is 45288 rpm when outside air temperature (OAT) is less than 35°C (95°F). When OAT is between 35°C and 41°C (106°F), the Ng limit varies linearly with OAT. When OAT is greater than 41°C the Ng is 45600 rpm.

The T4.5/ITT limit is 921°C (1690°F) when OAT is less than 35°C (95°F). When OAT is between 35°C and 41°C (106°F), the T4.5/ITT limit varies linearly with OAT from 921°C (1689°F) to 944°C (1731°F). When OAT is greater than 41°C the T4.5/ITT limit is 950°C (1742°F).
19. The CT7-2A engine control system incorporates total torque limiting capability which limits total torque of a twin engine installation to a combined output of approximately 834 Nm (615 ft-lb) at rated output speed
20. For CT7-5A2, -7A, -9B, -9C, -9C3: propeller steady state avoidance ranges are 375 to 500 rpm and 625 to 950 rpm.
21. CT7-5A2, -7A, -9B, -9C, -9C3 engines can incorporate a propeller brake assembly as optional equipment. Refer to CT7-5A2, -7A Installation Manual SEI 585 or CT7-9B, -9C, -9C3 Installation Manual SEI 726 for aircraft installation considerations. The aircraft propeller brake system must preclude inadvertent brake applications.



22. Turboprop models (CT7-5A2, -7A, -9B, -9C, -9C3) incorporate a constant torque governing system including overtorque and overtemperature limiting features.
23. For the CT7-9B, -9C, -9C3 models, the normal takeoff power, power turbine inlet temperature (T4.5/ITT) and gas generator speed (Ng) limits are presented for the purpose of defining the maximum T4.5/ITT and Ng at which normal takeoff power can be set to ensure that maximum takeoff power will be achieved if demanded by the automatic power reserve (APR) mechanism in the engine control system and that no maximum limits will be exceeded.
24. The CT7-5A2, -7A, -9B, -9C, -9C3 engines, may be operated under the Derivative Engine Takeoff Rating program as outlined in GE Aviation CT7 Operations Engineering Bulletins 1 and 11, latest Revisions. The Derivative Engine Takeoff Rating reduces the Note 3 flat rating temperatures for maximum takeoff, normal takeoff and maximum continuous by 5°C.
25. Removed at issue 6.
26. CT7-8E engines and parts thereof manufactured by AVIO S.p.A., Strada del Drosso 145, Torino, Italy, under Licensing Agreement Number 79.0055 with the General Electric Company, are identified by engine Serial Numbers 087001 to 087050.
27. For foreign object ingestion abatement, the turboprop CT7-5A2/7A/9B/9C3 shall be fitted with an inlet duct conforming to the following GE Aviation inlet duct reference drawings:
17A133-912 and SK585500-121 Sheets 1, 2 and 3 (CT7-5A2/7A)
17A151-828 and 17A151-837 (CT7-9B/9C3)

GE Aviation should be consulted regarding the aerodynamics and structural requirements of this feature.

The turboshaft CT7-8F5 shall be limited to aircraft installation in which it is shown that a bird cannot strike the engine, be ingested into the engine, or adversely restrict airflow into the engine as defined in the Installation Manual (GEK 114116).

28. CT7-8F5: Following an EASA and FAA major change, GE requested to elect to comply with CS-E Initial Issue as a revised certification basis for the CT7-8F5. Following approval of the major change the certification basis for the CT7-8F5 was reidentified as CS-E Initial Issue on the 12.06.2015.
29. CT7-8A/-8E: Following an EASA and FAA major change, GE requested to elect to comply with CS-E Initial Issue as a revised certification basis for the CT7-8A and CT7-8E. Following approval of the major change 10064599 the certification basis for the CT7-8A and -8E was reidentified as CS-E Initial Issue on 7 February 2018. All CT7-8Es will be issued to the CS-E Initial Issue cert basis. For the CT7-8A, the CS-E Initial Issue cert basis is applicable from engine serial number 947931 onwards.
30. For the CT7-8A6, the GE Change in Design approval reference CID# 974086 is required to be embodied in the type design configuration.



SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

n/a

II. Type Certificate Holder Record

n/a

III. Change Record

Issue	Date	Changes	TC issue
Issue 01	08 Nov 2004	Initial Issue	08 Nov 2004
Issue 02	30 Aug 2013	Addition of various models	30 Aug 2013
Issue 03	05 Sept 2013	Administrative update	-
Issue 04	23 March 2015	Incorporating Major Change Approval 10052698 for CT7-2E1 Software V4.00	-
Issue 05	12 June 2015	Incorporating Major Change Approval 10053661 for CT7-8F5 NH 90 Engine / Airframe Integration Installation Changes and CT7-8F5 Upgrade Programme	-
Issue 06	07 February 2018	Incorporating Major Change Approval 10064599 for CT7 -8A & 8E certification basis revision	-
Issue 07	09 July 2019	Addition of CT7-2F1 model, revision to note 3 (CT7-2E1); incorporating EASA Major Change Approval 10070341 CT-2E1 OEI power ratings increases	09 July 2019
Issue 08	25 August 2020	Changes to reflect FAA TCDS E8NE at Revision 39 (EASA Major Change Approval 0010074093)	
Issue 09	17 December 2020	Addition of CT7-8A6 model	17 Dec 2020

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