Civil Aviation Authority
United Kingdom

TYPE-CERTIFICATE DATA SHEET

UK.TC.E.00035
for
PT6A-67 series engines

Type Certificate Holder

Pratt & Whitney Canada
1000 Marie-Victorin
Longueuil
Quebec, J4G 1A1
Canada

Model(s):	PT6A-64
	PT6A-66
	PT6A-66A
	PT6A-66B
	PT6A-66D
	PT6E-66XT
	PT6A-67
	PT6A-67A
	PT6A-67AF
	PT6A-67AG
	PT6A-67B
	PT6A-67D
	PT6A-67F
	PT6A-67P
	PT6A-67R
	PT6A-67T
	PT6E-67XP
Issue:	01
Date of issue:	08 June 2022

EXPLANATORY NOTE

This Type-Certificate Data Sheet (TCDS) is the concise definition of the type-certificated product accepted and or approved by the CAA in the UK for the affected types and models.

This TCDS includes:

1. Details of the type design that affect the TCDS that have been approved or accepted by the CAA in the UK since 01 January 2021.
2. Attachment 1 is a copy of the EASA IM.E.008 at Issue 05 dated 11 October 2019 which was the EASA version on 31 December 2020 and therefore the version of the TCDS for the PT6A/E series engine accepted by the UK in accordance with Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement.
3. Where there has been no change to Attachment 1, this will be stated in this TCDS as 'no change'.

Table of Content

I. General

1. Type / Models

PT6E-66XT

2. Type Certificate Holder

No change.

3. Manufacturer

No change.

4. Date of Application

PT6E-66XT	
03 March 2022	

5. CAA Certification Reference Date

PT6E-66XT	
28 Oct 2019	

6. CAA Type Certification Date

PT6E-66XT	
31 May 2022	

II. Certification Basis

1. State of Design Authority Certification Basis

No change.

2. Reference Date for determining the applicable airworthiness requirements

27 March 1985
5 April 2016 for PT6E-67XP

3. UK CAA Certification Basis

3.1. Airworthiness Standards

PT6E-66XT
CS-E Amendment 4 dated 12 March 2015. CS-E 50 (l) of CS-E Amendment 6, dated 24 June 2020.

3.2. Special Conditions (SC)

PT6E-66XT
SC-E21 – Propeller control system components as part of engine type design.

3.3. Equivalent Safety Findings (ESF)

PT6E-66XT
None

3.4. Deviations

PT6E-66XT
None

3.5. Environmental Protection

PT6E-66XT
CS-34 Amendment 3, Fuel Venting

III. **Technical Characteristics**

1. Type Design Definition

As defined by the applicable Engine Assembly Drawings:

PT6E-66XT
3136600

2. Description

The PT6A and PT6E series turboprop engine comprises a 2 stage reduction gearbox, 2 stage power turbine, single stage gas generator turbine and 5 stage gas generator compressor (4 axial, 1 centrifugal). The fuel control is purely hydro-mechanical (except PT6E-67XP and PT6E-66XT which have an electronic control system).
The accessory gearbox design is common for all PT6A series with exception of the PT6A-67P and PT6E-67XP which has a mounting provision for a second generator unit.

3. Equipment

Engine equipment is specified by the applicable Type Design Definition.

4. Dimensions & Dry Weight

Model	Overall Length (mm)	Overall Diameter (mm)	Dry Weight (kg)
PT6E-66XT	1726.8	481.8	241.8

The Dry Weight includes Pratt & Whitney Canada supplied engine build-up components

5. Ratings

Engine Model	Maximum Continuous Power (kW)	Take-off Power (5 minutes) (kW)
PT6E-66XT	667	667

6. Control System

The PT6A series engine is controlled by a purely hydromechanical fuel control system.
The PT6E-67XP and PT6E-66XT are controlled by a dual channel Engine and Propeller Electronic Control System (EPECS). Refer to the applicable Illustrated Parts catalogue for part numbers.

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

No change.

8. Aircraft Accessory Drives

No change.

9. Maximum Permissible Air Bleed Extraction

Engine Model	Maximum External (%)	Maximum during Start (kg/min)
PT6E-66XT	7.5	0.68

IV. **Operating Limitations**

1. Temperature Limits

1.1 Maximum Interstage Turbine Temperature (ITT) (°C):

Engine Model	Maximum Continuous	Take-off (5 minutes)	Starting (Ground and Air)
PT6E-66XT	840	850	1000

1.2 Oil Temperature (°C):

For further details refer to the appropriate engine model Installation Manual operating limits for oil temperature.
For the PT6E- 66XT engine, Installation Manual 3135258 section 8.

	PT6E-66XT
Minimum	-40
Maximum Continuous Operation	104
Maximum Ground Operation	110
Maximum (10min)	110

1.3 Fuel Inlet Temperature

Refer to the appropriate engine model Installation Manual operating limits for fuel temperature.
For the PT6E-66XT engine, Installation Manual 3135258 section 6.

2. Speed Limits:

Engine Model	Gas Generator (N1) (rpm)	Gas Generator (N1) (rpm) Transient	Power Turbine Module Output (N2) (rpm)	Power Turbine Module Output (N2) Transient (rpm)
PT6E-66XT	39,000	39,079 *	2000 (100%)	2200 (110%)

* Transient : 20 seconds

3. Torque Limits

Max Permissible Torque Limits (Nm)

Engine Model	Take-off (5 mins)	Alternate Take-off	Max. Continuous	Transient: (20 sec)
PT6E-66XT	3417	N/A	3417	3890

4. Pressure Limits

4.1 Oil Pressure Limits

Refer to the appropriate engine model installation manual operating limits for oil pressure.
For the PT6E-66XT engine, Installation Manual 3135258 section 8.
PT6E-66XT: Pressure range (gauge) 689.4 – 930.7 kPa (100-135 psi)

4.2 Fuel Pump Inlet Pressure

Refer to the appropriate engine model Installation Manual operating limits for fuel pump inlet pressure. For the PT6E-66XT engine, Installation Manual 3135258 section 6.

5. Time Limited Dispatch

Not applicable to PT6A Series engines.

PT6E-66XT: The engines are approved for Time Limited Dispatch in accordance with CS-E 1030. The maximum rectification period for each dispatchable state is specified in the Airworthiness Limitations Section of the Maintenance Manual.

6. ETOPS Capability

Not Applicable, the engine is not approved for ETOPS capability in accordance with CS-E 1040.

V. Operating and Service Instructions

Manuals

Engine Model	Engine Operating Instructions	Engine Installation Manual	Control System Interface Control Document
PT6E-66XT	See Inst. Manual	3135258	ER 8481

Instructions for Continued Airworthiness

Engine Model	Engine Maintenance Manual	Line Maintenance Manual	Engine Overhaul Manual	Service Bulletins
PT6E-66XT	3134822	3136179	3134823	77000 Series

VI. **Notes**

Note 1: The EASA approved Airworthiness Limitations Section of the Instructions for Continued Airworthiness is published in applicable maintenance manual, chapter "Airworthiness Limitations Section" (for PT6E-67XP and PT6E-66XT). The approved life limitations for rotating parts are published in the following Service Bulletins: SB14002 - PT6A-64, PT6A-66, PT6A-67, PT6A-67A, PT6A-67R, PT6A-67B, PT6A-67D, PT6A-66A, PT6A-67T, PT6A-66D, PT6A-66B, PT6A-67P SB14302 - PT6A-67AF SB14502 - PT6A-67AG, PT6A-67F

Note 2: Dry weight includes basic engine accessories and optional equipment as listed in the manufacturer's engine specification.

Note 3: The engine ratings are based on dry sea-level static ICAO Standard Atmospheric Conditions, no air bleed, no external accessory power extraction. The specified engine ratings are the minimum guaranteed using specified fuel and oil and are based on calibrated stand performance using inlet ducting and exhaust stubs as specified in the Installation Manual.

Engine Model	Take off power is flat rated up to an ambient temperature ^{O}C	Maximum Continuous power is flat rated up to an ambient temperature ^{O}C
PT6E-66XT	65	65

Note 4: The time temperature limits are specified in the Specific Operating Instructions or Installation Manuals.

Note 5: The following Service Bulletins (or Maintenance Manual) defining operating Times Between Overhaul (TBO), Hot Section Inspection (HSI) intervals, and sampling and escalation procedures:
SB14003 - PT6A-67R, PT6A-67D
SB14303 - PT6A-67AF, PT6A-67F
SB14503 - PT6A-67AG
SB14603 - PT6A-64, PT6A-66, PT6A-67, PT6A-67A, PT6A-67B, PT6A-66A, PT6A-67T, PT6A-66D, PT6A-66B, PT6A-67P
MM 3076392 - PT6E-67XP
MM 3134822 – PT6E-66XT

Note 6: The PT6A-67AF is a special purpose version of the PT6A-67 series of engines intended for use in military and firefighting aviation. This model may not be re-designated for other than military or firefighting operations.

Note 7: The PT6A-67AG is a special purpose version of the PT6A-67 series of engines intended for use in agricultural aviation. This model may not be re-designated for other than agricultural operations.

Note 8: Compliance with FAR 34.21(e)(3) has been shown for PT6A-67R, PT6A-67AF, PT6A-67AG, PT6A-67F, PT6A-67T.

Note 9: The engines meet the TCCA (AWM 533.68 or FAR 33.68) and EASA (JAR-E 780 or CS-E 780) requirements of for operation in icing conditions when the aircraft intake system conforms with the P&WC Installation Manual Instructions for inertial separation of snow and icing particles. The engines also meet the TCCA (AWM 533.27 or FAR 33.27) and EASA (JAR-E 840 / CS-E 840) requirements for adequate disc integrity and rotor blade containment and does not require

external armoring.

Note 10: PT6E-67XP and PT6E-66XT Lightning protection levels and electromagnetic interference are specified in the applicable Installation Manual.

Note 11: The Electronic Engine Control unit on the PT6E-67XP and PT6E-66XT must not be installed in a designated fire zone.

VII. ADMINISTRATIVE

I. Acronyms and Abbreviations

Acronym / Abbreviation	Definition
CAA	Civil Aviation Authority
EASA	European Union Aviation Safety Agency
OSD	Operational Suitability Data
TC	Type Certificate
TCDS	Type Certificate Data Sheet
TCH	Type Certificate Holder

II. Type Certificate Holder Record

TCH Record	Period
Pratt & Whitney Canada 1000 Marie-Victorin Longueuil Quebec Canada J4G 1A1	Present. No changes.

III. Change Record

TCDS Issue No.	TCDS Issue Date	Changes	TC Issue and Date
1	31 May 2022	Initial Issue. Introduction of new model PT6E-66XT (UK.MAJ.00135)	Issue 1 31 May 2022

Attachment 1

TCDS EASA.IM.E.008
PT6A_67 Series Iss 05.

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