

TYPE-CERTIFICATE DATA SHEET

No. IM.E.125

for PW617 Series Engines

Type Certificate Holder

Pratt & Whitney Canada Corp.

1000 Marie-Victorin Longeuil, Quebec Canada J4G 1A1

For Models: PW617F-E PW617F1-E

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TABLE OF CONTENTS

1. Type/ Model/ Variants 4 2. Type Certificate Holder 4 3. Manufacturer 4 4. Date of Application 4 5. EASA Type Certification Date 4 1. Certification Basis 4 1. State of Design Authority Certification Basis 4 2. Reference Date for determining the applicable airworthiness requirements 4 3. EASA Certification Basis 5 3.1. Airworthiness Standards 5 3.2. Special Conditions (SC) 5 3.3. Equivalent Safety Findings 5 3.4. Deviations 5 3.5. Environmental Protection 5 1. Type Design Definition 5 2. Description 5 3. Equipment 5 4. Dimensions 5 5. Dry Weight 6 6. Ratings 6 7. Control System 6 8. Fluids (Fuel, Oil, Coolant, Additives) 6 9. Aircraft Accessory Drives 6 10. Maximum Permissible Air Bleed Extraction 6 10. Operating Limitations 7 3. Oil repessure 7	I. General	4
2. Type Certificate Holder 4 3. Manufacturer 4 4. Date of Application 4 4. Date of Application 4 1. State of Application Date 4 1. State of Design Authority Certification Basis 4 1. State of Design Authority Certification Basis 4 2. Reference Date for determining the applicable airworthiness requirements 4 3. EASA Certification Basis 5 3.1. Airworthiness Standards 5 3.2. Special Conditions (SC) 5 3.3. Equivalent Safety Findings 5 3.4. Deviations 5 3.5. Environmental Protection 5 1. Type Design Definition 5 2. Description 5 3. Equipment 5 4. Dimensions 5 5. Dry Weight 6 6. Ratings 6 7. Control System 6 7. Control System 6 7. Speced Limits 7 7. Speced Limits 7 7. Speced Limits 7 7. Speced Limits 7 7. Operating and Service Instruction	1. Type/ Model/ Variants	4
3. Manufacturer 4 4. Date of Application 4 5. EASA Type Certification Date 4 II. Certification Basis 4 1. State of Design Authority Certification Basis 4 2. Reference Date for determining the applicable airworthiness requirements 4 3. EASA Certification Basis 5 3.1. Airworthiness Standards 5 3.2. Special Conditions (SC) 5 3.3. Equivalent Safety Findings 5 3.4. Deviations 5 3.5. Environmental Protection 5 11. Technical Characteristics 5 11. Type Design Definition 5 2. Description 5 3. Equipment 6 4. Dimensions 5 5. Dry Weight 6 6. Ratings 6 7. Control System 6 8. Fluids (Fuel, Oil, Coolant, Additives) 6 9. Aircraft Accessory Drives 6 6. N. Operating Limitations 7 6. Temperature Limits 7 7. Speed Limits 7 7. J. Fuel Pressure 7 7. Ope	2. Type Certificate Holder	4
4. Date of Application 4 5. EASA Type Certification Date 4 II. Certification Basis 4 1. State of Design Authority Certification Basis 4 2. Reference Date for determining the applicable airworthiness requirements 4 3. EASA Certification Basis 5 3.1. Airworthiness Standards 5 3.2. Special Conditions (SC) 5 3.3. Equivalent Safety Findings 5 3.4. Deviations 5 3.5. Environmental Protection 5 1. Type Design Definition 5 2. Description 5 3. Equipment 5 4. Dimensions 5 5. Dry Weight 6 6. Ratings 6 7. Control System 6 10. Maximum Permissible Air Bleed Extraction 6 10. Maximum Permissible Air Bleed Extraction 6 11. Temperature Limits 7 3. Oil Copacity, consumption limit 7 3. Oil capacity, consumption limit 7 4. Oil capacity, consumption limit 7 7. Operating and Service Instructions 8 8 <td>3. Manufacturer</td> <td>4</td>	3. Manufacturer	4
S. EASA Type Certification Date 4 II. Certification Basis 4 II. Certification Basis 4 1. State of Design Authority Certification Basis 4 2. Reference Date for determining the applicable airworthiness requirements 4 3. EASA Certification Basis 5 3.1. Airworthiness Standards 5 3.2. Special Conditions (SC) 5 3.3. Equivalent Safety Findings 5 3.4. Deviations 5 3.5. Environmental Protection 5 1. Type Design Definition 5 2. Description 5 3. Equipment 5 3. Dry Weight 6 6. Ratings 6 7. Control System 6 8. Fluids (Fuel, Oil, Coolant, Additives) 6 9. Aircraft Accessory Drives 6 10. Maximum Permissible Air Bleed Extraction 6 10. Voperating Limitations 7 3. I Fuel Pressure Limits 7 3. Coll Copacity, consumption limit 7 4. Oil capacity, consumption limit 7 4. Oil capacity, consumption limit 7 <td< td=""><td>4. Date of Application</td><td>4</td></td<>	4. Date of Application	4
II. Certification Basis 4 1. State of Design Authority Certification Basis 4 2. Reference Date for determining the applicable airworthiness requirements 4 3. EASA Certification Basis 5 3.1. Airworthiness Standards 5 3.2. Special Conditions (SC) 5 3.3. Equivalent Safety Findings 5 3.4. Deviations 5 3.5. Environmental Protection 5 11. Technical Characteristics 5 11. Type Design Definition 5 2. Description 5 3. Equipment 5 4. Dimensions 5 5. Dry Weight 6 6. Ratings 6 7. Control System 6 10. Maximum Permissible Air Bleed Extraction 6 11. Temperature Limits 7 3. Pressure Limits 7 3. Pressure Limits 7 3. Fuel Pressure 7 3. Fuel Pressure 7 3. Fuel Pressure 7 3. Fuel Pressure 7 3. Pressure Limits 8 5. Difference 7 <	5. EASA Type Certification Date	4
1. State of Design Authority Certification Basis 4 2. Reference Date for determining the applicable airworthiness requirements 4 3. EASA Certification Basis 5 3.1. Airworthiness Standards 5 3.2. Special Conditions (SC) 5 3.3. Equivalent Safety Findings 5 3.4. Deviations 5 3.5. Environmental Protection 5 11. Technical Characteristics 5 1. Type Design Definition 5 2. Description 5 3. Equipment 5 4. Dimensions 5 5. Dry Weight 6 6. Ratings 6 7. Control System 6 8. Fluids (Fuel, Oil, Coolant, Additives) 6 9. Aircraft Accessory Drives 6 10. Maximum Permissible Air Bleed Extraction 6 10. Maximum Permissible Air Bleed Extraction 6 10. Voperating Limitations 7 3. Pressure Limits 7 3. Pressure Limits 7 3. Pressure Limits 7 3. Pressure Limits 7 3. Operating and Service Instructions	II. Certification Basis	4
2. Reference Date for determining the applicable airworthiness requirements 4 3. EASA Certification Basis 5 3.1. Airworthiness Standards 5 3.2. Special Conditions (SC) 5 3.3. Equivalent Safety Findings 5 3.4. Deviations 5 3.5. Environmental Protection 5 1. Type Design Definition 5 2. Description 5 3. Equipment 5 4. Dimensions 5 5. Dry Weight 6 6. Ratings 6 7. Control System 6 8. Fluids (Fuel, Oil, Coolant, Additives) 6 9. Aircraft Accessory Drives 6 10. Maximum Permissible Air Bleed Extraction 6 10. Maximum Permissible Air Bleed Extraction 6 10. Maximum Permissible Air Bleed Extraction 7 3. Pressure Limits 7 3. Leul Pressure 7 3. Leul Pressure 7 3. Leul Pressure 7 3. Unit Consumption limit 7 3. Operating and Service Instructions 8 V. Operating and Service Instructions	1. State of Design Authority Certification Basis	4
3. EASA Certification Basis 5 3.1. Airworthiness Standards 5 3.2. Special Conditions (SC) 5 3.3. Equivalent Safety Findings 5 3.4. Deviations 5 3.5. Environmental Protection 5 III. Technical Characteristics 5 1. Type Design Definition 5 2. Description 5 3. Equipment. 5 4. Dimensions 5 5. Dry Weight 6 6. Ratings 6 7. Control System 6 6. Ratings 6 7. Control System 6 10. Maximum Permissible Air Bleed Extraction 6 10. Voperating Limitations 6 1. Temperature Limits 7 3. Pressure Limits 7 3. I Fuel Pressure 7 3. Oil capacity, consumption limit 7 7. Operating and Service Instructions 8 8 9 11. Tenperature Instructions 8 9 1. Acronyms and Abbreviations 9 1. Acronyms and Abbreviations	2. Reference Date for determining the applicable airworthiness requirements	4
3.1. Airworthiness Standards 5 3.2. Special Conditions (SC) 5 3.3. Equivalent Safety Findings 5 3.4. Deviations 5 3.4. Deviations 5 3.5. Environmental Protection 5 11. Technical Characteristics 5 11. Type Design Definition 5 2. Description 5 3. Equipment 5 4. Dimensions 5 5. Dry Weight 6 6. Ratings 6 7. Control System 6 6. Ratings 6 9. Aircraft Accessory Drives 6 10. Maximum Permissible Air Bleed Extraction 6 10. Maximum Permissible Air Bleed Extraction 6 11. Temperature Limits 7 3. Pressure Limits 7 3. Pressure Limits 7 3. Oil capacity, consumption limit 7 7. Operating and Service Instructions 8 8 9 1. Acronyms and Abbreviations 9 1. Acronyms and Abbreviations 9 1. Change Record 9	3. EASA Certification Basis	5
3.2. Special Conditions (SC) 5 3.3. Equivalent Safety Findings 5 3.4. Deviations 5 3.5. Environmental Protection 5 11. Technical Characteristics 5 1. Type Design Definition 5 2. Description 5 3. Equipment 5 4. Dimensions 5 5. Dry Weight 6 6. Ratings 6 7. Control System 6 8. Fluids (Fuel, Oil, Coolant, Additives) 6 9. Aircraft Accessory Drives 6 10. Maximum Permissible Air Bleed Extraction 6 11. Temperature Limits 7 3. Pressure Limits 7 3. Pressure Limits 7 3. Oil Pressure 7 3. Oil capacity, consumption limit 7 7 3. 2 Oil Pressure 7 9 I. Acronyms and Abbreviations 9 10. Change Record 9 9	3.1. Airworthiness Standards	5
3.3. Equivalent Safety Findings 5 3.4. Deviations 5 3.5. Environmental Protection 5 III. Technical Characteristics 5 1. Type Design Definition 5 2. Description 5 3. Equipment 5 3. Equipment 5 4. Dimensions 5 5. Dry Weight 6 6. Ratings 6 7. Control System 6 8. Fluids (Fuel, Oil, Coolant, Additives) 6 9. Aircraft Accessory Drives 6 10. Maximum Permissible Air Bleed Extraction 6 11. Temperature Limits 6 2. Speed Limits 7 3. Pressure Limits 7 3. Oil Pressure 7 3. Oil capacity, consumption limit 7 7 3. Oil capacity, consumption limit 7 7 4. Oil capacity, consumption limit 7 7 9 1. Acronyms and Abbreviations 8 9 1. Change Record 9	3.2. Special Conditions (SC)	5
3.4. Deviations 5 3.5. Environmental Protection 5 III. Technical Characteristics 5 1. Type Design Definition 5 2. Description 5 3. Equipment 5 4. Dimensions 5 5. Dry Weight 6 6. Ratings 6 7. Control System 6 8. Fluids (Fuel, Oil, Coolant, Additives) 6 9. Aircraft Accessory Drives 6 10. Maximum Permissible Air Bleed Extraction 6 10. Maximum Permissible Air Bleed Extraction 6 11. Temperature Limits 6 2. Speed Limits 7 3. Pressure Limits 7 3.1 Fuel Pressure 7 3.2 Oil Pressure 7 3.2 Oil Pressure 7 4. Oil capacity, consumption limit 7 V. Operating and Service Instructions 8 SECTION: ADMINISTRATIVE 9 I. Acronyms and Abbreviations 9 II. Change Record 9	3.3. Equivalent Safety Findings	5
3.5. Environmental Protection 5 III. Technical Characteristics 5 1. Type Design Definition 5 2. Description 5 3. Equipment 5 4. Dimensions 5 5. Dry Weight 6 6. Ratings 6 7. Control System 6 8. Fluids (Fuel, Oil, Coolant, Additives) 6 9. Aircraft Accessory Drives 6 10. Maximum Permissible Air Bleed Extraction 6 11. Temperature Limits 6 2. Speed Limits 7 3. Pressure Limits 7 3.1 Fuel Pressure 7 3.2 Oil Pressure 7 4. Oil capacity, consumption limit 7 V. Operating and Service Instructions 8 SECTION: ADMINISTRATIVE 9 I. Type Certificate Holder Record 9 II. Change Record 9	3.4. Deviations	5
III. Technical Characteristics 5 1. Type Design Definition 5 2. Description 5 3. Equipment 5 4. Dimensions 5 5. Dry Weight 6 6. Ratings 6 7. Control System 6 8. Fluids (Fuel, Oil, Coolant, Additives) 6 9. Aircraft Accessory Drives 6 10. Maximum Permissible Air Bleed Extraction 6 11. Temperature Limits 6 12. Speed Limits 7 3. Pressure Limits 7 3. I Fuel Pressure 7 3. I Fuel Pressure 7 3. I Fuel Pressure 7 3. Oil Pressure Limits 7 3. Oil Pressure 7 4. Oil capacity, consumption limit 7 V. Operating and Service Instructions 8 SECTION: ADMINISTRATIVE 9 I. Type Certificate Holder Record 9 III. Change Record 9	3.5. Environmental Protection	5
1. Type Design Definition 5 2. Description 5 3. Equipment 5 4. Dimensions 5 5. Dry Weight 6 6. Ratings 6 7. Control System 6 8. Fluids (Fuel, Oil, Coolant, Additives) 6 9. Aircraft Accessory Drives 6 10. Maximum Permissible Air Bleed Extraction 6 10. Maximum Permissible Air Bleed Extraction 6 10. Maximum Permissible Air Bleed Extraction 6 11. Temperature Limits 6 2. Speed Limits 7 3. Pressure Limits 7 3. I Fuel Pressure 7 3. Oil Pressure 7 3. Oil capacity, consumption limit 7 V. Operating and Service Instructions 8 VI. Notes 8 SECTION: ADMINISTRATIVE 9 I. Acronyms and Abbreviations 9 III. Change Record 9	III. Technical Characteristics	5
2. Description 5 3. Equipment 5 4. Dimensions 5 5. Dry Weight 6 6. Ratings 6 7. Control System 6 8. Fluids (Fuel, Oil, Coolant, Additives) 6 9. Aircraft Accessory Drives 6 10. Maximum Permissible Air Bleed Extraction 6 10. Maximum Permissible Air Bleed Extraction 6 11. Temperature Limits 6 2. Speed Limits 7 3. Pressure Limits 7 3. I Fuel Pressure 7 3. I Fuel Pressure 7 3. Oil Capacity, consumption limit 7 7. Operating and Service Instructions 8 VI. Notes 8 SECTION: ADMINISTRATIVE 9 I. Acronyms and Abbreviations 9 II. Change Record 9	1. Type Design Definition	5
3. Equipment	2. Description	5
4. Dimensions 5 5. Dry Weight 6 6. Ratings 6 7. Control System 6 8. Fluids (Fuel, Oil, Coolant, Additives) 6 9. Aircraft Accessory Drives 6 10. Maximum Permissible Air Bleed Extraction 6 11. Temperature Limitations 6 12. Speed Limits 7 3. Pressure Limits 7 3. Pressure Limits 7 3. Oil Pressure 7 3. Oil capacity, consumption limit 7 V. Operating and Service Instructions 8 VI. Notes 8 SECTION: ADMINISTRATIVE 9 I. Acronyms and Abbreviations 9 II. Change Record 9	3. Equipment	5
5. Dry Weight 6 6. Ratings 6 7. Control System 6 8. Fluids (Fuel, Oil, Coolant, Additives) 6 9. Aircraft Accessory Drives 6 10. Maximum Permissible Air Bleed Extraction 6 11. Maximum Permissible Air Bleed Extraction 6 12. Operating Limitations 6 13. Preperature Limits 6 14. Temperature Limits 7 3. Pressure Limits 7 3. Pressure Limits 7 3.1 Fuel Pressure 7 3.2 Oil Pressure 7 4. Oil capacity, consumption limit 7 V. Operating and Service Instructions 8 VI. Notes 8 SECTION: ADMINISTRATIVE 9 I. Acronyms and Abbreviations 9 II. Type Certificate Holder Record 9 III. Change Record 9	4. Dimensions	5
6. Ratings67. Control System68. Fluids (Fuel, Oil, Coolant, Additives)69. Aircraft Accessory Drives610. Maximum Permissible Air Bleed Extraction610. Maximum Permissible Air Bleed Extraction610. Maximum Permissible Air Bleed Extraction611. Temperature Limits612. Speed Limits73. Pressure Limits73. Pressure Limits73.1 Fuel Pressure73.2 Oil Pressure74. Oil capacity, consumption limit7V. Operating and Service Instructions8VI. Notes8SECTION: ADMINISTRATIVE9I. Acronyms and Abbreviations9II. Type Certificate Holder Record9III. Change Record9	5. Dry Weight	6
7. Control System68. Fluids (Fuel, Oil, Coolant, Additives)69. Aircraft Accessory Drives610. Maximum Permissible Air Bleed Extraction610. Maximum Permissible Air Bleed Extraction610. Maximum Permissible Air Bleed Extraction611. Temperature Limits62. Speed Limits73. Pressure Limits73. Pressure Limits73.1 Fuel Pressure73.2 Oil Pressure74. Oil capacity, consumption limit7V. Operating and Service Instructions8VI. Notes8SECTION: ADMINISTRATIVE9I. Acronyms and Abbreviations9II. Type Certificate Holder Record9III. Change Record9	6. Ratings	6
8. Fluids (Fuel, Oil, Coolant, Additives) 6 9. Aircraft Accessory Drives 6 10. Maximum Permissible Air Bleed Extraction 6 IV. Operating Limitations 6 1. Temperature Limits 6 2. Speed Limits 7 3. Pressure Limits 7 3.1 Fuel Pressure 7 3.2 Oil Pressure 7 4. Oil capacity, consumption limit 7 V. Operating and Service Instructions 8 VI. Notes 8 SECTION: ADMINISTRATIVE 9 I. Acronyms and Abbreviations 9 II. Type Certificate Holder Record 9 III. Change Record 9	7. Control System	6
9. Aircraft Accessory Drives 6 10. Maximum Permissible Air Bleed Extraction 6 IV. Operating Limitations 6 1. Temperature Limits 6 2. Speed Limits 7 3. Pressure Limits 7 3.1 Fuel Pressure 7 3.2 Oil Pressure 7 4. Oil capacity, consumption limit 7 V. Operating and Service Instructions 8 VI. Notes 8 SECTION: ADMINISTRATIVE 9 I. Type Certificate Holder Record 9 III. Change Record 9	8. Fluids (Fuel, Oil, Coolant, Additives)	6
10. Maximum Permissible Air Bleed Extraction6IV. Operating Limitations61. Temperature Limits62. Speed Limits73. Pressure Limits73.1 Fuel Pressure73.2 Oil Pressure74. Oil capacity, consumption limit7V. Operating and Service Instructions8VI. Notes8SECTION: ADMINISTRATIVE9I. Type Certificate Holder Record9III. Change Record9	9. Aircraft Accessory Drives	6
IV. Operating Limitations 6 1. Temperature Limits 6 2. Speed Limits 7 3. Pressure Limits 7 3.1 Fuel Pressure 7 3.2 Oil Pressure 7 4. Oil capacity, consumption limit 7 V. Operating and Service Instructions 8 VI. Notes 8 SECTION: ADMINISTRATIVE 9 I. Acronyms and Abbreviations 9 II. Type Certificate Holder Record 9 III. Change Record 9	10. Maximum Permissible Air Bleed Extraction	6
1. Temperature Limits 6 2. Speed Limits 7 3. Pressure Limits 7 3.1 Fuel Pressure 7 3.2 Oil Pressure 7 4. Oil capacity, consumption limit 7 V. Operating and Service Instructions 8 VI. Notes 8 SECTION: ADMINISTRATIVE 9 I. Acronyms and Abbreviations 9 II. Type Certificate Holder Record 9 III. Change Record 9	IV. Operating Limitations	6
2. Speed Limits73. Pressure Limits73.1 Fuel Pressure73.2 Oil Pressure74. Oil capacity, consumption limit7V. Operating and Service Instructions8VI. Notes8SECTION: ADMINISTRATIVE9I. Acronyms and Abbreviations9II. Type Certificate Holder Record9III. Change Record9	1. Temperature Limits	6
3. Pressure Limits 7 3.1 Fuel Pressure 7 3.2 Oil Pressure 7 4. Oil capacity, consumption limit 7 V. Operating and Service Instructions 8 VI. Notes 8 SECTION: ADMINISTRATIVE 9 I. Acronyms and Abbreviations 9 II. Type Certificate Holder Record 9 III. Change Record 9	2. Speed Limits	7
3.1 Fuel Pressure73.2 Oil Pressure74. Oil capacity, consumption limit7V. Operating and Service Instructions8VI. Notes8SECTION: ADMINISTRATIVE9I. Acronyms and Abbreviations9II. Type Certificate Holder Record9III. Change Record9	3. Pressure Limits	7
3.2 Oil Pressure 7 4. Oil capacity, consumption limit 7 V. Operating and Service Instructions 8 VI. Notes 8 SECTION: ADMINISTRATIVE 9 I. Acronyms and Abbreviations 9 II. Type Certificate Holder Record 9 III. Change Record 9	3.1 Fuel Pressure	7
4. Oil capacity, consumption limit	3.2 Oil Pressure	7
V. Operating and Service Instructions	4. Oil capacity, consumption limit	7
VI. Notes 8 SECTION: ADMINISTRATIVE 9 I. Acronyms and Abbreviations 9 II. Type Certificate Holder Record 9 III. Change Record 9	V. Operating and Service Instructions	8
SECTION: ADMINISTRATIVE	VI. Notes	8
I. Acronyms and Abbreviations	SECTION: ADMINISTRATIVE	9
II. Type Certificate Holder Record9 III. Change Record	I. Acronyms and Abbreviations	9
III. Change Record9	II. Type Certificate Holder Record	9
	III. Change Record	9

I. General

1. Type/ Model/ Variants

Type: PW617F Models: PW617F-E, PW617F1-E

2. Type Certificate Holder

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

3. Manufacturer

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

4. Date of Application

PW617F-E: January 10, 2006

PW617F1-E: March 7, 2016

5. EASA Type Certification Date

PW617F-E: April 23, 2009

PW617F1-E: May 19, 2017

II. Certification Basis

1. State of Design Authority Certification Basis

Transport Canada Certification Basis (see also Canadian TC No. E-37)

- 1.1. Airworthiness Standards: AWM Chapter 533 change 8
- 1.2. Airworthiness Manual, Chapter 516, Change 516-07, subchapter B "Aircraft Engine Emissions" which refers to ICAO Annex 16, Volume II

2. Reference Date for determining the applicable airworthiness requirements

November 9, 2005



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3. EASA Certification Basis

3.1. Airworthiness Standards

CS-E effective 24 October 2003

3.2. Special Conditions (SC)

none

3.3. Equivalent Safety Findings

none

3.4. Deviations

none

3.5. Environmental Protection

ICAO Annex 16, Volume II, Part II, Chapter 2 – Fuel Venting ICAO Annex 16, Volume II, Part III, Chapter 2 – Emissions

III. Technical Characteristics

1. Type Design Definition

The PW617F-E Engine Type Design is defined in PW617F-E Engine Assembly Drawing 35C3100 Rev. J and subsequent revisions.

The PW617F1-E Engine Type Design is defined in PW617F1-E Engine Assembly Drawing 35C6500 Rev. A and subsequent revisions.

2. Description

Two Spool Turbofan Engine consisting of a single front fan driven by a single stage fan turbine, 1 stage mixed flow and one stage centrifugal high pressure compressor driven by a single stage high pressure turbine; reverse flow combustor; accessory gearbox and dual channel Full Authority Digital Control System (FADEC).

3. Equipment

see Installation Manual

4. Dimensions

The maximum diameter of the engine is about 750 mm Engine length is about 1360 mm



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5. Dry Weight

172kg

6. Ratings

	PW617F-E	PW617F1-E
Take-off (see note 8):	809,6 daN	841,1 daN
Normal Take-off:	749,5 daN	768,6 daN
Max. Continuous:	710,8 daN	756,6 daN

7. Control System

The PW617F-E engines are equipped with a FADEC system EEC P/N 35C4812-01 or later approved standard. 35C3890 is the System Component Identification Drawing (SCID) which includes all elements of the control system.

The PW617F1-E engines are equipped with a FADEC system EEC P/N 35C6423-01 or later approved standard. 35C6426 is the System Component Identification Drawing (SCID) which includes all elements of the control system.

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

Approved fuel and oil types are listed in the Maintenance Manual.

9. Aircraft Accessory Drives

see Installation Manual, Chapters 1.2, 2,7, 2.11

10. Maximum Permissible Air Bleed Extraction

Refer to Installation Manual, Section 2.12

IV. Operating Limitations

1. Temperature Limits

Interturbine Temperature [°C]:

	PW617F-E	PW617F1-E
Take-off	845	845
Normal	830	830
Take-off		
Max. Cont.	830	830
Starting	950	950
Maximum		
Inadvertent		
Overtemp.		
(20sec.)	862	862



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Fuel Temperatures: refer to section 7.3 of Installation Manual

The minimum fuel inlet temperature for starting is that equivalent to a fuel viscosity of 12 centistokes, provided the fuel inlet temperature is at least $9^{\circ}F$ ($5^{\circ}C$) warmer than the specification freeze point. A fuel viscosity of 12 centistokes typically equates to $-40^{\circ}F$ ($-40^{\circ}C$) for kerosene ty pe fuels and $-65.2^{\circ}F$ ($-54^{\circ}C$) for wide cut type fuels.

Oil Temperatures: refer to Table 2-1 (PW617F-E) and Table 2-2 (PW617F1-E of Installation Manual) -40°C for starting / ground idle 14°C to 130°C for T/O and max. continuous

2. Speed Limits

Permissible Rotational Speeds [min⁻¹]:

	PW617F-E	PW617F1-E
N1	19845	19845
	(100%)	(100%)
Transient(20s)	20043	20043
	(101%)	(101%)
N2	40200	40676
	(100,4%)	(101,6%)
Maximum		
Inadvertent	40840	41316
Overspeed (20s)	(102%)	(103,2%)

3. Pressure Limits

3.1 Fuel Pressure

Refer to Installation Manual, Section 7.2 43kPa above true vapour pressure or 14kPa above ambient whichever is greater at FMU inlet

3.2 Oil Pressure

Refer to Installation Manual, Table 2-1 (PW617F-E) and Table 2-2 (PW617F1-E)

4. Oil capacity, consumption limit

Max. allowable oil consumption: 54,4 g/h Total oil capacity: 3,79 L Usable oil capacity: 0,89 L



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V. Operating and Service Instructions

	PW617F-E / PW617F1-E
1. Line Maintenance Manual:	P/N 3072696
2. Maintenance Manual:	P/N 3072162
3. Overhaul Manual:	P/N 3072163
4. Installation Manual:	ER 6331 ¹⁾
5. Airworthiness Limitations Manu	al: P/N 3072699

VI. Notes

- 1. The Critical Parts Life Limits are included in the Airworthiness Limitations Manual P/N 3072699.
- 2. The engine ratings are based on dry sea level static ICAO standard atmospheric conditions, no external accessory loads and no airbleed. The quoted ratings are obtainable on a test stand with the specified fuel and oil, and using the exhaust duct and intake bellmouth specified in the Intallation Manual.
- 3. The Engines are approved for multiple engine installation only.
- 4. HIRF and Lightning conformance and installation requirements are provided in Section 8.3 of the Installation Manual.
- 5. The software contained in the Electronic Engine Control has been designed, developed, tested and documented in accordance with the provisions of the Critical Category, Level A of RTCA/DO178B
- 6. The engines are not approved for operation with a Thrust Reverser.
- 7. The Electronic Control Unit has not been fire tested and therefore must not be installed in a designated fire zone.
- 8. The take-off ratings that are normally limited to 5 minutes duration may be used for up to 10 minutes for OEI operations without adverse effects upon engine airworthiness. Such operations are anticipated on an infrequent basis and no limits or special inspections have been imposed.
- 9. The PW617F-E and PW617F1-E Electronic Controls are approved with Time Limited Dispatch (TLD). Aircraft considerations are contained in the Installation Manual. The dispatch criteria and time limits are contained in the Airworthiness Limitations Manual P/N 3072699.
- 10. The engines include provisions for automatic power increase. The limitations stated for normal takeoff are to ensure that the maximum take-off limitations are not exceeded in the event of an automatic power increase to maximum take-off power. Normal Take-off is the thrust normally set for take-off during everyday engine operation. The total time during which take-off thrust may be used is limited to five minutes per flight. Refer to Installation Manual.
- 11. Refer to Section 1 of the Installation Manual for Safety Analysis assumptions.

1) covers the Operating Instructions



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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	23 April 2009	Initial Issue	Initial Issue, 23 April 2009
Issue 02	19 May 2017	Model PW617F1-E added	lssue 02, 19 May 2017

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