COMANDO DA AERONÁUTICA
DEPARTAMENTO DE PESQUISAS E DESENVOLVIMENTO
CENTRO TÉCNICO AEROESPACIAL

TYPE CERTIFICATE DATA SHEET Nº EM-9308

Type Certificate Holder:

PRATT & WHITNEY CANADA INC.
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CANADA

EM-9308-02

Sheet 01

PRATT & WHITNEY CANADA

PW305, PW305A, PW305B, PW306A, PW306C

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Engines of models described herein conforming to this data sheet, which is part of Type Certificate No. 9308, meet the minimum standards for use in certificated aircraft in accordance with pertinent aircraft data sheets and applicable portions of the Brazilian Aeronautical Regulations provided they are installed, operated, and maintained as prescribed by the approved manufacturer's manuals and other instructions.

MODEL PW305, PW305A. PW305B, PW306A, PW306C

TYPE Twin-spool axial flow turbofan propulsion engine incorporating a single-stage fan, multi-stage axial-centrifugal compressor, annular combustor, two-stage high pressure turbine, and three-stage low pressure turbine.

RATINGS		PW305	PW305A	PW305B	PW306A	PW306C
	kN (lb)					
(See Notes 4 and 5)	Normal takeoff (5 minutes)	23.24 (5 225)	20.81 (4 679)	23.15 (5 204)	26.87 (6 040)	25.67 (5 770)
	Maximum takeoff (5 minutes)	23.24 (5 225)	20.81 (4 679)	23.42 (5 266)	26.87 (6 040)	25.67 (5 770)
	Maximum continuos	21.13 (4 750)	20.81 (4 679)	19.94 (4 483)	26.87 (6 040)	25.67 (5 770)

ENGINE CONTROL SYSTEM

The Electronic Engine Control System conforms to the lightning test defined by the SAE AE4L committee report, AE4L-87-3, using level 4 Waveforms. For installation requirements, refer to the Installation Manual. About the software contained in the Electronic Engine Control see Note 15.

FUEL TYPE

For PW305, PW305A, PW305B: Refer to Pratt & Whitney Canada (PWC) Service Bulletin 24004 or Maintenance Manual 30B1401.
For PW306A: Refer to Maintenance Manual 30B1412.
For PW306C: Refer to Maintenance Manual 30B4422.

OIL, LUBRICATION

For PW305, PW305A, and PW305B: Refer to PWC Service Bulletin 24001 or Maintenance Manual 30B1401.
For PW306A: Refer to Maintenance Manual 30B1412.
For PW306B: Refer to Maintenance Manual 30B4132.
For PW306C: Refer to Maintenance Manual 30B4422.

TEMPERATURE LIMITS

Fuel and oil temperatures see Notes 6 and 7.

PRESSURE LIMITS

Fuel and oil pressures see Notes 6 and 7.

EQUIPMENT/COMPONENTS

Fuel pump; fuel filter and electrical impending bypass indicator; control system-dual channel FADEC with dedicated power source; and provision for fuel flowmeter are standard equipment as shown in the Approved Parts List. Required equipment also includes a chip detector or other metallic debris-detecting device. For output drive specification, accessory drives, principal dimensions, weights, inertias, and center of gravity (CG) locations, refer to the Installation Manual. For additional information, refer to the Installation Manual or to the Parts List.

IMPORT REQUIREMENTS

Each engine imported separately and/or spare parts must be accompanied by an Airworthiness Certificate for Export and/or an Airworthiness Approval Tag, respectively, issued by Canadian Air Transportation Administration (or a third country authority, in case of used engine imported from such country) attesting that the particular engine and/or parts were submitted to the governmental quality control before delivery and are in conformity with the CTA approved type design. The CTA type design corresponds to the Canadian Air Transportation Administration approved type design, as stated in CTA Reports V.33-0530-0, V.33-0351-0, V.33-0532-0 and V.33-0533-0, corresponding respectively to PW305, PW305A, PW305B and PW306 (A and C) engine models.

CERTIFICATION BASIS

Brazilian Type Certificate Nº 9308 based on the RBHA 33 (Brazilian Requirements for Aeronautical Certification), which endorses the FAR 33 effective 01 February 1965, and Amendments 33-1 to 33-11.

Model	Application	Issued TC
PW305	23 Apr. 1993	13 Oct. 1993
PW305A	23 Apr. 1993	13 Oct. 1993
PW305B	23 Apr. 1993	13 Oct. 1993
PW306A	27 Feb. 2002	03 Jun. 2002
PW306C	03 Aug. 2005	20 Dec. 2005

NOTES:

NOTE 1 Engine Rotor Speed Limits rpm

	PW305	PW305A	PW305B	PW306A	PW306A
Low rotor speed (N1)(1) maximum	10 820 (02%)	10 820 (102%)	10 820 (102%)	11 138 (105%)	11 138 (105%)
High rotor speed (N2)(2) maximum	27 469 (102%)	27 469 (102%)	27 469 (102%)	28 277 (105%)	28 277 (105 %)
Minimum Flight Idle (N2)	Not applicable	17 500 (65 %)	17 500 (65 %)	17 500 (65%)	17 500 (65 %)

(1) 100% N1 = 10 608 rpm
(2) 100% N2 = 26 930 rpm

NOTE 2 Engine Interturbine Temperature Limits °C (°F)

	PW305	PW305A	PW305B	PW306A	PW306C
Normal takeoff (5 minutes)	760 (1 445)	760 (1 445)	760 (1 445)	890 (1 634)	920 (1 688)
Maximum takeoff (5 minutes)	785 (1 445)	785 (1 445)	785 (1 445)	Not Applicable	Not Applicable
Maximum continuous	785 (1 445)	785 (1 445)	785 (1 445)	920 (1 688)	920 (1 688)
Starting transient (2 seconds)	680 (1 256)	950 (1 742)	680 (1 256)	950 (1 742)	950 (1 742)

NOTE 3 Ambient Temperature Limits °C (°F)

	PW305	PW305A	PW305B	PW306A	PW306C
Normal takeoff	15.0 (59.0)	26.6 (79.8)	15.0 (59.0)	26.7 (80)	33 (91.4)
Maximum takeoff	22.0 (71.6)	33.9 (93.0)	23.5 (74.3)	31.7 (89)	Not Applicable
Maximum continuous	19.4 (66.9)	20.8 (69.4)	27.5 (81.5)	26.7 (80)	33 (91.4)

NOTE 4 The engine ratings are based on dry sea level static ICAO standard atmospheric conditions. No external accessory loads and no air bleed. The quoted ratings are obtained on a test stand with the specified fuel and oil, without intake ducting and utilizing the exhaust port and intake defined in the approved Installation Manual.

NOTE 5 Engine Airbleed Limits:
Refer to Section 2 of the Installation Manual.

NOTE 6 Engine Oil Temperature/Pressure Limits And Capacity
Refer to the Installation Manual. Usable capacity: PW305, PW305A, PW305B: 4.73 liters (1.04 imperial gallons, 1.25 U.S. gallons). PW306A, PW306C: 5.0 liters (1.10 imperial gallons, 1.32 U.S. gallons).

NOTE 7 Engine Fuel Limits:

Pressure	Temperature	Viscosity
Refer to the Installation Manual.	Refer the Installation Manual	Maximum for operation equals 12 centistoke

NOTE 8 Prior to issue of Transport Canada-approved Overhaul Manuals for the PW306C engine model, overhauls are not permitted. Engines may be returned to Pratt & Whitney Canada for re-manufacture to new production standard.

NOTE 9 The PW305 and PW306 series engines are approved for multiple-engine installations only.

NOTE 10 The PW305 and PW306 series engines meet Transport Canada and Brazilian equivalent requirements for operation in icing conditions. These engines also meet the requirements of Canadian Airworthiness Manual 533.27 and do not require external armoring.

NOTE 11 Life limits for critical rotating components are published in the airworthiness limitations section of each maintenance manual.

NOTE 12 The recommended engine operating time between overhauls and hot section inspections intervals are published in Chapter 5 of each Maintenance Manual.

NOTE 13 All models meet fuel venting requirements of RBHA 34, which endorses the FAR 34. The PW306 engines also comply with RBHA 34 Amendment 1 for exhaust emissions.

NOTE 14 The PW305, PWE305A, PW305B and PW306A engines include provisions for automatic power increase to Maximum Takeoff. For these engine models the limitations for Normal Takeoff are to ensure that the Maximum Takeoff limitations are not exceeded in the event of an automatic power increase to Maximum Takeoff Power. Refer to Table 2-1 in the Installation Manual.

NOTE 15 The software contained in the Electronic Engine Control System for the PW305 series engines has been designed, developed, tested, and documented in accordance with the provisions of Critical Category Level 1 of RTCA/DO178A. The software contained in the Electronic Engine Control System for the PW306 series engines has been designed, developed, tested, and documented in accordance with the provisions of Critical Category Level A of RTCA/DO178B

NOTE 16

MODEL	DESCRIPTION
PW305	Basic Model
PW305A	Similar to PW305 but with reduced thrust ratings and configuration changes to suit the aircraft installation.
PW305B	Similar to PW305 but with reduced thrust ratings and configuration changes to suit the aircraft installation.
PW306A	Similar to PW305 but with increased thrust ratings, redesigned fan and first stage high pressure compressor, and hot section modifications to accommodate increased gas path temperatures.
PW306C	Similar to PW306A but with reduced thrust ratings and configuration changes to suit the aircraft installation.

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