

**COMANDO DA AERONÁUTICA
DEPARTAMENTO DE PESQUISAS E DESENVOLVIMENTO
CENTRO TÉCNICO AEROESPACIAL**

TYPE CERTIFICATE DATA SHEET Nº EM-2001T02

Type Certificate Holder:

PRATT&WHITNEY CANADA, INC.
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CANADA

EM-2001T02

Sheet 01

PRATT&WHITNEY
CANADA

PT6B-37A

June 2001

Engines of models described herein conforming with this data sheet, which is part of Type Certificate No.2001T02, 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 PT6B-37A.

TYPE A free-turbine turboshaft engine incorporating a multistage compressor with 3 axial and 1 centrifugal stage, a single stage compressor turbine, and a single stage power turbine.

RATINGS (See Note 4)

Shaft Horsepower kW (hp)	
Maximum continuous	619 (830)
Takeoff (5 min.)	671 (900)

DIMENSIONS	Length nominal, cm (in)	150.4 (59.15)
	Height nominal, cm (in)	90.4 (35.6)
	Width nominal, cm (in)	48.3 (19)
CENTER OF GRAVITY (DRY WEIGHT)	Below engine horizontal centerline cm (in)	6.99 (2.75)
	Aft of engine reference plane cm (in)	65.02 (25.597)
	Left of engine vertical centerline cm (in)	0.99 (0.39)
	with port mounted exhaust duct	0.79 (0.31)
	with starboard mounted exhaust duct	0.53 (0.21)
	with dual port exhaust	
WEIGHT	Engine - dry, kg (lb) (includes external engine accessories)	184.8 (407.5)
FUEL	Refer to Maintenance Manual P/N 3053102 for approved fuels.	
FUEL CONTROL	Electronic Control Unit:	Hamilton Standard Model 3050087
OIL, LUBRICATION	Refer to Maintenance Manual P/N 3053102 for approved oils.	
OIL CAPACITY	Refer to Installation Manuals.	
TEMPERATURE LIMITS	See Notes 2 and 5.	
PRESSURE LIMITS	See Note 5.	
AIR BLEED	See Note 10.	
IGNITION	Exciter	P&WC P/N 3014365 Bendix Type TGLN-28, P/N 10-381550-1
	Plug	P&WC P/N 3031213 or 3027280 Bendix P/N 10-390667-1 or Champion P/N CH30455.

IMPORT REQUIREMENTS Each engine imported separately and/or spare parts must be accompanied by an export airworthiness approval issued by Transport Canada (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.

CERTIFICATION BASIS	The Certification Basis for the engine are those indicated in the RBHA 33 which endorses the FAR 33 effective February 1, 1965, as amended by FAR 33-1 through 33-9, inclusive, including Canadian Special Requirements as contained in Transport Canada letter to Pratt & Whitney Canada, dated March 5, 1984, which is equivalent to FAR 33, Amendment 10 for the following paragraphs: 33.7, 33.14, 33.17, 33.19, 33.23, 33.27, 33.77, 33.87, 33.88, 33.90, and 33.94. The basis also includes FAR Part 33, paragraph 33.28 of Amendment 15 for the Digital Electronic Control.	Application 21 September 2000	Issued TC 12 June 2001
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NOTES

NOTE 1 Maximum Permissible Engine Operating Speeds (rpm)

Output Shaft

Maximum continuous	4 505
Takeoff (5 min.)	4 505
No load*	4 723
Transient (10 s)	4 810

Gas Generator

Maximum continuous	38 100
Takeoff (5 min.)	39 300
No load	#
Transient (30 s)	39 500

Power Turbine

Maximum continuous	34 027
Takeoff (5 min.)	34 027
No load*	35 678
Transient (10 s)	36 339

*This speed is permitted to output torques not exceeding 237 (175.0) N.m (lb.ft).

NOTE 2 Maximum Permissible Interturbine Temperatures °C (°F)

Maximum continuous	755 (1 391)
Takeoff (5 min.)	810 (1 490)
Starting (5 s)	940 (1 724)
Transient (5 s)	860 (1 580)

NOTE 3 Maximum Permissible Output Torque, N.m (lb.ft)

Maximum continuous	1 352 (997)
Takeoff (5 min.)	1 463 (1 080)
No load	0
Transient (10 s)	1 558 (1 150)

NOTE 4 Engine ratings are based on static sea level standard conditions of (dry) inlet air at 15 °C (59 °F) and 760 mm (29.92 in.) Hg with no external accessory loads and no airbleed. The quoted ratings are obtainable on a test stand with the specified fuel and oil, without intake ducting and using the exhaust port defined in the Installation Manual.

NOTE 5 Fuel And Oil Pressure and Temperature Limits:*Fuel Pressure*

Inlet head boost pump is required. Minimum pressure at the inlet to the engine driven fuel pump must be such that the vapor/liquid ratio of the fuel does not exceed 0.2. Maximum wet lift: 182.9 cm (72 in); maximum dry lift: 182.9 cm (72 in).

Oil Pressure

The following limits apply at gas generator speed above 27 000 rpm, below 27 000 rpm gas generator speed, the minimum oil pressure is 40 psig.

Normal Range: 80-110 psig maximum

No Load: 40 psig minimum

Starting: 300 psig maximum

Oil Temperature

Normal Range: 10-115 °C (50-239 °F)

Starting minimum: -40 °C (-40 °F)

NOTE 6 Accessory Drive Provisions

	<i>Rotation</i>	<i>Speed Ratio</i>	<i>Maximum Torque</i>		<i>Maximum Overhang Moment</i> <i>N.m (lb.in)</i>
			<i>Continuous</i>	<i>Static</i>	
Starter-generator	cw	0.2931*	230 (170)	2 167(1 600)	339 (250)
Hydraulic Pumps	ccw	0.20412*	203 (150)	1 084 (800)	34 (25)
AGB tachometer	ccw	0.1121*	9.5 (7)	136 (100)	13.5 (10)
Optional accessory drive	ccw	0.1019*	81 (60)	1 084(800)	34 (25)
Aircraft accessory drive	cw	0.32075*	183 (135)	1 084(800)	34 (25)
RGB tachometer	ccw	0.1269**	9.5 (7)	136 (100)	13.5 (10)

cw - clockwise ccw – counterclockwise

* Gas Generator Speed (Ng) 100% = 38 060 rpm

** Power Turbine Speed (Np) 100% = 33 036 rpm

- NOTE 7** The engines meet the requirements of RBHA/FAR 33.68 for operation in icing conditions as defined in RBHA/FAR 25, Appendix C, provided that the intake system conforms with the P&WC Installation Manual Instructions for inertial separation of snow and icing particles.
- NOTE 8** Overhaul Manual P/N 3053103.
- NOTE 9** Maintenance Manual P/N 3053102.
- NOTE 10** External airbleed shall not exceed 5.25% of inlet airflow. No airbleed is permissible during the starting cycle.
- NOTE 11** The lightning protection requirement and the maximum allowable electromagnetic interference for the Electronic Engine Control System are specified in the P&WC Installation Manual, Chapter 7.
- NOTE 12** The engine electronic control software meets "Flight Critical" category level A of RTCA/DO-178B.
- NOTE 13** Life limits for critical rotating components are published in P&WC Maintenance Manual P/N 3053102 or approved revisions.
- NOTE 14** Engine and accessory time between overhaul (TBO) and engine time between inspections (TBI) are published in P&WC Maintenance Manual P/N 3053102 or approved revisions.
- NOTE 15** Foreign object ingestion protection. The engine has demonstrated the ingestion requirements of RBHA/FAR 33.77 provided that the intake system conforms with the P&WC Installation Manual Instructions
- NOTE 16** The PT6B-37A engines meet the fuel venting requirements of FAR 34, effective September 10, 1990.
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NOTE 17 Maximum permissible operating temperatures of engine and airframe mounted components are specified in the P&WC Installation Manual.

NOTE 18 The PT6B-37A engine includes an integral oil tank.

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