



AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL - BRASIL

TYPE CERTIFICATE DATA SHEET Nº EM-2010T06

Type Certificate Holder:

PRATT & WHITNEY AIRCRAFT
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East Hartford, Connecticut - CT 06108
USA

EM-2010T06-00

Sheet 01

PRATT & WHITNEY
AIRCRAFT

JFTD12A-4A,
JFTD12A-5A

09 September 2010

Engines of models described herein conforming with this data sheet, which is part of Type Certificate No. 2010T06, 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.

I - MODEL JFTD12A-4A, JFTD12A-5A

TYPE Free turbine drive. Nine stage axial compressor and eight can-annular combustion chambers and two stage gas generator turbine plus two stage free turbine.

RATINGS (See Note 2)	At nominal free turbine operating speed of 9000rpm	JFTD12A-4A	JFTD12A-5A
	Max. continuous at sea level, hp:	4 000	4 430
	Takeoff at sea level (5 min), hp:	4 500	4 800
	30 minute OEI rating at sea level, hp:	4 500	4 800

ENGINE LIMITATIONS	Free Turbine Inlet GasTemp. °C (°F)	JFTD12A-4A	JFTD12A-4A
	Maximum for acceleration	688 (1 270)	720 (1 328)
	Takeoff (5 min)	688 (1 270)	720 (1 328)
	Maximum continuous	655 (1 211)	675 (1 247)
	30 minute OEI rating	688 (1 270)	720 (1 328)
	Starting (5 seconds)	525 (977)	--
	Engine Rotors Speed Limitations (rpm)	Free Turbine	Gas Generator
Takeoff	9 500	16 700	
30 minute OEI rating	9 500	16 700	
Maximum continuous	9 500	16 700	
Transient (30 seconds)	9 600	#	
OIL TEMPERATURE		JFTD12A-4A	JFTD12A-5A
	Maximum , °C (°F)	121 (250)	--
	Minimum (for starting and ground idle)	-40 (-40)	--
ENGINE WEIGHT	Kg (lb) (Dry, including basic components and sensors required for engine operation and monitoring)	417.3 (920.0)	424.1 (935.0)
PRINCIPAL DIMENSIONS	Length, cm (in) - max., with nose cone	271.8 (107.0)	--
	Diameter, cm (in) - maximum	76.2 (30.0)	--
	Radial projection - maximum	56.6 (22.3)	--
C.G. LOCATION	Aft of rear flange of diffuser case, cm (in)	41.4 (16.3)	40.9 (16.1)
	Below engine center line, cm (in)	3.3 (1.3)	--
MAXIMUM ACCESSORY TEMPERATURE	The engine compartment shall be ventilated as necessary to keep the air temperature surrounding accessory components from exceeding the limits defined in the Section 9 of the P&WA JT12 Commercial Installation Handbook.		

LEGEND: "--" Same as preceding model; "#" Not applicable

ELECTRICAL SYSTEM	Refer to Section 7 of the P&WA JT12 Commercial Installation Handbook.	
FUEL	<p>Fuel Pressure At inlet to engine system pump, 7.5 psi above absolute fuel vapor pressure or 1.5 psi below fuel tank pressure, whichever is higher, with a maximum of 50 psi above absolute ambient atmosphere pressure.</p> <p>Fuel type JP-1, JP-4 and JP-5 type conforming to P&WA Specification No. 522 and later revision, may be used separately or mixed in any portions without adversely affecting the engine operation or power output. No fuel control adjustment is required when switching fuel types. Phillips PFA-55MB anti-icing additive at the use concentration not in excess of 0.15% by volume is approved for use in fuels conforming to P&WA Specification No. 522 and later revisions.</p>	
FUEL SYSTEM	Refer to Section 6 of the P&WA JT12 Commercial Installation Handbook.	
OIL	<p>Oil Pressure At ground idle – 20 psi minimum Operating range – 45 to 55 psi.</p> <p>Oil Type P&WA Turbojet Engines Service Bulletin No. 238 lists approved brand oils.</p>	
LUBRICATION	Oil Tank Capacity	
	Total capacity (liters)	6.43
	U.S. gallons	1.70
	Usable (liters)	2.84
	U.S. gallons	0.75
	Unusable (liters)	1.13
	U.S. gallons	0.30
	Expansion (liters)	2.46
	U.S. gallons	0.65
LUBRICATION SYSTEM	Refer to Section 8 of the P&WA JT12 Commercial Installation Handbook.	

LEGEND: "--" Same as preceding model; "#" Not applicable

AIR BLEED

The maximum permissible air bleed extraction is as follows:

Percent of primary engine airflow:

- Idle to maximum continuous: 2.0%
- Maximum continuous to takeoff: 2.0%.

Refer to Section 12 of the P&WA JT12 Commercial Installation Handbook.

EQUIPMENT

Equipment such as the Fuel Pump, Fuel-Oil Heater, Ignition Exciter, Ignition Plug, fuel and oil filters, oil system chip detector collector, are standard equipments as shown in the approved Engine Bill of Material. For output drive specification, accessory drives, principal dimensions, weights, inertias and C.G. locations, refer to Installation Handbook.

IMPORT REQUIREMENTS

Each engine imported separately and/or spare parts must be accompanied by an export airworthiness approvals issued by FAA (or a third country authority, in case of used engine imported from such country) attesting that the particular engine and/or parts were submitted for airworthiness authority inspection before delivery and are in conformity with the ANAC approved type design. The ANAC type design corresponds to the FAA approved type design, as stated in ANAC Report V33-1040-0.

CERTIFICATION BASIS

RBAC 33 (Brazilian Requirements for Civil Aviation), which endorses the 14 CFR Part 33, effective 01 February 1965, including Amendments 33-1 and 33-2.

<u>Model</u>	<u>Application</u>	<u>Issued TC</u>
JFTD12A-4A	13 May 2010	09 September 2010
JFTD12A-5A	13 May 2010	09 September 2010

PRODUCTION BASIS

FAA Production Certificate Number 2.

NOTES:**NOTE 1**

The engine ratings are based on static sea level conditions:

- Compressor inlet air (dry) 15°C (59°F);
- 760mm (29.92 in.)Hg;
- No accessory loads or air extraction;
- No anti-ice air flow;
- Free turbine gas temperature limits and engine rotor speed limits not exceeded.

NOTE 2 30-minute rating is authorized for emergency (OEI) use only.

NOTE 3 Power setting, power checks, and control of engine output in all operations is to be based upon P&WA engine carts referring to free turbine inlet section gas pressures. Pressure probes are included in the engine assembly for this reason.

NOTE 4 Accessory Drives

The following apply to the accessory drives, which are provided by the engine and included in the basic engine weight:

Drive	Rotation *	Speed Ratio to Turbine Shaft	Max. Torque (in.lb) Continuous	Max. Torque (in.lb) Static	Max. Overhang (in.lb)
Tachometer (Gas Generator)	CCW	0.264:1	7	50	#
Tachometer (Free Turbine)	CW	0.464:1	7	50	#
Starter-Generator **	CW	0.435:1	500	1 260	500
Fluid Power Pump	CW	0.263:1	600	2 700	350

(*) CW - Clockwise; CCW - Counterclockwise -- facing accessory pad.

(**) Above limits apply only to generator operation.

Maximum continuous starter torque: 1260 in.lb.

Engine starter drive shear section capable of withstanding a static torque up to 2520 in.lb.

NOTE 5 Certain engine parts are life limited. Life limits are listed in the FAA-approved P&W Aircraft JT12A and JFTD12A Overhaul Manual, P/N 435108, Table of Limits Section.

NOTE 6 The maximum continuous static power at sea level at -8.3°C (17°F) (JFTD12A-4A) and 3.3°C (38°F) (JFTD12A-5A) ambient temperature and below is 4,500 hp (JFTD12A-4A) and 4,800 hp (JFTD12A-5A) respectively. The engine Installation and Operating Manual should be consulted for variation in power between standard and -8.3°C (17°F) (JFTD12A-4A), and 3.3°C (38°F) (JFTD12A-5A).

NOTE 7 The engines meet ANAC requirements (that endorses FAA requirements) for operation in icing conditions, for adequate turbine disk integrity and rotor blade containment and do not require external armoring.

NOTE 8

Approved Publications and Instructions for Continued Airworthiness for JFTD12A engine models:

- JFTD12 Commercial Installation Handbook
- Maintenance Manual:
 - P/N 435107 for the JFTD12A-4A, -5A
- Overhaul Manual:
 - P/N 435108 for the JFTD12A-4A, -5A

NOTE 9

The JFTD12A engine models incorporate the following characteristics:

JFTD12A -4A Basic model.

JFTD12A -5A Similar to JFTD12A-4A except for increased takeoff and maximum continuous with the incorporation of improved engine parts.

NOTE 10

Additional equipment for JFTD12A-4A and -5A models:

	<u>Added Weight kg (lb)</u>
Oil tank	6.35 (14.0)
Fuel-Oil Cooler	4.53 (10.0) for -4A / 6.80 (15.0) for -5A
Fuel Heater	6.35 (14.0)
Inlet Bullet Nose Cone	1.36 (3.0)
Continuous Ignition System	2.50 (5.5)

NOTE 11

Service Bulletins, Overhaul and Maintenance Manuals, which are FAA-approved, are accepted by the ANAC and are considered ANAC-approved unless otherwise noted. These approvals pertain to the type design only.



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