



AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL - BRASIL

TYPE CERTIFICATE DATA SHEET Nº EH-9804

Type Certificate Holder:

HARTZELL PROPELLER INC.
 One Propeller Place
 Piqua, Ohio - OH 45356
USA

EH-9804-05

Sheet 01

HARTZELL

PHC-J3Y

HC-J3Y

27 February 2009

Propellers of models described herein conforming with this data sheet, which is part of Type Certificate No. 9804, 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.

TYPE	Constant speed; hydraulic (see NOTE 3 and 4)
ENGINE SHAFT	Special flange: See Note 1
HUB MATERIAL	Aluminum alloy.
BLADE MATERIAL	See below.
NUMBER OF BLADES	Three
HUB ELIGIBLE	HC-J3YF-1, -2; PHC-J3YF-1, -2; HC-J3Y1F-1; PHC-J3Y1F-1

Blade Eligible (See Notes 2)	Max. Continuous Power		Takeoff power		Diameter Limits (see NOTE 2)	Approx. Max. Weight Complete see notes 3 and 7		Blade Construction
	kW (hp)	rpm	kW (hp)	rpm		kg	lb	

Non-Counterweighted Propellers: PHC-J3YF-1, HC-J3YF-1

7391-0 to 7391-10	261 (350)	2 700	261 (350)	2 700	1.91 (75) to 1.65 (65) (-0 to -10)	36.38	80.2	Aluminum Alloy
7392-0 to 7392-10	261 (350)	2 850	261 (350)	2 850	1.91 (75) to 1.65 (65) (-0 to -10)	34.25	75.5	Aluminum Alloy
7479-2 to 7479-8	283 (380)	2 900	283 (380)	2 900	1.88 (74) to 1.73 (68) (-2 to -8)	35.38	78.0	Aluminum Alloy

Blade Eligible (See Notes 2)	Max. Continuous Power		Takeoff power		Diameter Limits (see NOTE 2) m (in)	Approx. Max. Weight Complete see notes 3 and 7		Blade Construction
	kW (hp)	rpm	kW (hp)	rpm		kg	lb	
7498-0 to 7498-10	261 (350)	2 700	261 (350)	2 700	1.93 (76) to 1.68 (66) (-0 to -10)	32.89	72.5	Aluminum Alloy
N7605-0 to N7605-10	261 (350)	2 700	261 (350)	2 700	1.98 (78) to 1.73 (68) (-0 to -10)	28.35	62.5	Composite
7663-0 to 7663-10	261 (350)	2 800	261 (350)	2 800	1.98 (78) to 1.73 (68) (-0 to -10)	33.11	73.0	Aluminum Alloy
7666-0 to 7666-10	231 (310)	2 700	231 (310)	2 700	1.98 (78) to 1.73 (68) (-0 to -10)	34.93	77.0	Aluminum Alloy
7691-0 to 7691-10	261 (350)	2 850	261 (350)	2 850	1.98 (78) to 1.73 (68) (-0 to -10)	32.21	71.0	Aluminum Alloy
7691+2 to 7691-0	261 (350)	2 700	261 (350)	2 700	2.03 (80) to 1.98 (78) (+2 to -0)	32.21	71.0	Aluminum Alloy
7693+2 to 7693-10	261 (350)	2 700	261 (350)	2 700	2.03 (80) to 1.73 (68) (+2 to -10)	34.93	77.0	Aluminum Alloy
7694-0 to 7694-10	231 (310)	2 700	231 (310)	2 700	1.98 (78) to 1.73 (68) (-0 to -10)	34.47	76.0	Aluminum Alloy
N7893-0 to N7893-10	261 (350)	2 700	261 (350)	2 700	2.03 (80) to 1.78 (70) (-0 to -10)	28.58	63.0	Composite
8068+2 to 8068-10	261 (350)	2 700	261 (350)	2 700	2.13 (84) to 1.83 (72) (+2 to -10)	36.74	81.0	Aluminum Alloy
8068-2 to 8068-10	261 (350)	2 700	261 (350)	2 700	2.03 (80) to 1.83 (72) (-2 to -10)	36.74	81.0	Aluminum Alloy
8459-0 to 8459-14	298 (400)	2 700	298 (400)	2 700	2.18 (86) to 1.83 (72) (-0 to -14)	34.02	75.0	Aluminum Alloy
8465-0 to 8465-14	298 (400)	2 700	298 (400)	2 700	2.18 (86) to 1.83 (72) (-0 to -14)	35.38	78.0	Aluminum Alloy
8467-0 to 8467-14	298 (400)	2 575	298 (400)	2 575	2.18 (86) to 1.83 (72) (-0 to -14)	37.20	82.0	Aluminum Alloy
8468-0 to 8468-14	298 (400)	2 700	298 (400)	2 700	2.18 (86) to 1.83 (72) (-0 to -14)	35.83	79	Aluminum Alloy
8468-6 to 8468-14	231 (310)	2 850	231 (310)	2 850	2.03 (80) to 1.83 (72) (-6 to -14)	35.83	79	Aluminum Alloy

Blade Eligible (See Notes 2)	Max. Continuous Power		Takeoff power		Diameter Limits (see NOTE 2) m (in)	Approx. Max. Weight Complete see notes 3 and 7		Blade Construction
	kW (hp)	rpm	kW (hp)	rpm		kg	lb	
8470-0 to 8470-14	298 (400)	2 700	298 (400)	2 700	2.18 (86) to 1.83 (72) (-0 to -14)	35.38	78.0	Aluminum Alloy
8475+2 to 8475-14	324 (435)	2 266	324 (435)	2 266	2.24 (88) to 1.83 (72) (-0 to -14)	37.20	82.0	Aluminum Alloy
8475-0 to 8470-14	298 (400)	2 650	298 (400)	2 650	2.18 (86) to 1.83 (72) (-0 to -14)	35.38	78.0	Aluminum Alloy
8477-0 to 8477-14	298 (400)	2 575	298 (400)	2 575	2.18 (86) to 1.83 (72) (-0 to -14)	36.74	81.0	Aluminum Alloy
<u>Non-Counterweighted Propellers: PHC-J3Y1F-1, HC-J3Y1F-1</u>								
N7605-0 to N7605-10	261 (350)	2 700	261 (350)	2 700	1.98 (78) to 1.73 (68) (-0 to -10)	26.17	57.7	Composite
<u>Counterweighted Propellers: PHC-J3YF-2, HC-J3YF-2</u>								
C7391-0 to C7391-10	261 (350)	2 700	261 (350)	2 700	1.91 (75) to 1.65 (65) (-0 to -10)	41.14	90.7	Aluminum Alloy
C7479-2 to C7479-8	283 (380)	2 900	283 (380)	2 900	1.88 (74) to 1.73 (68) (-2 to -8)	39.01	86.0	Aluminum Alloy
C7663-0 to C7663-10	261 (350)	2 800	261 (350)	2 800	1.98 (78) to 1.73 (68) (-0 to -10)	36.74	81	Aluminum Alloy
C7666-0 to C7666-10	231 (310)	2 700	231 (310)	2 700	1.98 (78) to 1.73 (68) (-0 to -10)	38.56	85.0	Aluminum Alloy
C7691-0 to C7691-10	261 (350)	2 850	261 (350)	2 850	1.98 (78) to 1.73 (68) (-0 to -10)	35.83	79.0	Aluminum Alloy
C8459-0 to C8459-14	298 (400)	2 700	298 (400)	2 700	2.18 (86) to 1.83 (72) (-0 to -14)	37.65	83.0	Aluminum Alloy
C8465-0 to C8465-14	298 (400)	2 700	298 (400)	2 700	2.18 (86) to 1.83 (72) (-0 to -14)	39.01	86.0	Aluminum Alloy
C8467-0 to C8467-14	298 (400)	2 575	298 (400)	2 575	2.18 (86) to 1.83 (72) (-0 to -14)	40.82	90.0	Aluminum Alloy
C8468-0 to C8468-14	298 (400)	2 700	298 (400)	2 700	2.18 (86) to 1.83 (72) (-0 to -14)	39.46	87.0	Aluminum Alloy

C8468-6 to C8468-14	231 (310)	2 700	231 (310)	2 700	2.03 (80) to 1.83 (72) (-6 to -14)	39.46	87.0	Aluminum Alloy
Blade Eligible (See Notes 2)	Max. Continuous Power		Takeoff power		Diameter Limits (see NOTE 2) m (in)	Approx. Max. Weight Complete see notes 3 and 7 kg lb		Blade Construction
	kW (hp)	rpm	kW (hp)	rpm				
C8470-0 to C8470-14	298 (400)	2 700	298 (400)	2 700	2.18 (86) to 1.83 (72) (-0 to -14)	39.01	86.0	Aluminum Alloy
C8475+2 to C8475-14	324 (435)	2 266	324 (435)	2 266	2.24 (88) to 1.83 (72) (+2 to -14)	40.82	90.0	Aluminum Alloy
C8475-0 to C8475-14	298 (400)	2 650	298 (400)	2 650	2.18 (86) to 1.83 (72) (-0 to -14)	40.82	90.0	Aluminum Alloy
C8477-0 to C8477-14	298 (400)	2 575	298 (400)	2 575	2.18 (86) to 1.83 (72) (-0 to -14)	42.18	93.0	Aluminum Alloy

CERTIFICATION BASIS

Brazilian Type Certificate No. 9804 based on the RBHA (Brazilian Requirements for Aeronautical Certification), which endorses the FAR 35 effective 18 August 1990 with amendments 35-1 and 35-6.

Following models added in accordance with RBHA (Brazilian Requirements for Aeronautical Certification) which endorses the FAR 35 effective 18 August 1990 with amendments 35-1 through 35-6 and reference to special conditions 35-002-SC dated 03 October 2001 for bird impact and lightning strike qualification:
HC-J3YF-1 and PHC-J3YF-1 hubs with N7605 and N7893 blade models

HC-J3YF-1 and PHC-J3YF-1 hubs with N7605 blade model

TYPE CERTIFICATION

<u>Model</u>	<u>Application</u>	<u>Issued TC</u>
PHC-J3Y	06 February 1995	23 September 1998
HC-J3Y	19 January 2007	15 June 2007

PRODUCTION BASIS

Not Applicable.

IMPORT REQUIREMENTS

Each propeller imported separately and/or spare parts must be accompanied by an Airworthiness Certificate for Export and/or an Airworthiness Approval Tag, respectively, issued by FAA, attesting that the particular propeller and/or parts were submitted to the governmental quality control before delivery and are in conformity with the ANAC approved type design.

NOTES:

- NOTE 1** Hub model Designation P HC - J 3 Y F - 1 RE, where:
- P Indicates dowel location with respect do centerline through blade sockets when viewing hub flange mounting face
- | | <u>Dowel Pin</u> | <u>T/C</u> |
|--------|------------------|--------------------|
| Blank: | 90 and 270 deg. | 30 deg. Clockwise |
| P: | 0 and 180 deg. | 120 deg. Clockwise |
- HC Hartzell Controllable
- J J denotes a 82.55 mm (3.25 in) integral shaft extension
- 3 Number of blades
- Y Hartzell blade shank size
- F F denotes special flange with six ½” bolts and two ½” dowels on a 101.6 mm (4 in) bolt circle
- 1 Denotes specific design features (see NOTE 4)
- 1: Non-feathering, no counterweight, governor oil pressure increases pitch
- 2: Feathering with counterweight, governor oil pressure decreases pitch
- RE F... when used denotes modified pitch change system
- L... denotes left hand rotation
- M... when used denotes 139.4 cm² (21.6 sq. in.) piston area and large return spring
- N... indicates compatibility with N shank blades (see NOTE 2)
- R... when used denotes 139.4 cm² (21.6 sq. in) piston area
- Any other character denotes a minor change not affecting eligibility
- NOTE 2** Blade Model Designation L C 76 63 D - 3R , where:
- L Denotes blades configuration: right-hand tractor unless otherwise noded
- F... denotes a large pitch change knob
- J... denotes left-hand tractor
- L or H... denotes left-hand pusher or right-hand pusher respectively
- N... denotes composite blade shank type
- C Denotes counterweighted blades
- 76 Basic diameter for a two blades propeller. Add two inches for three blade propellers
- 63 Basic Model
- D D or F... denotes a dimensional modification from the original design
- B or K... denotes deicing boots
- R... when used denotes a rounded tip for the basic diameter
- S... when used denotes a square tip for the basic diameter*
- Any other character denotes a minor modification no effecting eligibility
- 3R Number of inches cut off from basic diameter
- Q when used denotes special 25.4 mm (1 in) x 90 deg. Factory-bent tip. No cut off permitted
- R when used denotes specifically rounded tip for cutoff diameter.
- Any other character in this location denotes tip shape.
- * Blades may incorporate either round or square tips, yet may not be marked with an “R” or “S” in their model designation. This character is used to distinguish between two or more tip shapes available at the same diameter. Certain blades use “S” to denote shot peening of the exterior surface. (See NOTE 6)

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- NOTE 3** Pitch Control
- (a) Approved with Hartzell governors per drawings C-4770 and C-4772. Weight: 2 kg (4.5 lb) (see NOTE 10)
- D -1 -4 Z, where:
- D Basic body and major part modification
- 1 Minor adjustment to obtain engine / propeller / governor compatibility
- 4 Minor adjustment not affecting eligibility
- L... when used indicates left hand rotation
- Z... when used indicates drive coupling type
- Any other character denotes a minor change not affecting eligibility
- (b) The -2 models have counterweighted blades and use oil to decrease pitch. The -1 models do not have counterweighted blades and use oil to increase pitch. (See NOTE 4)
- (c) Maximum governor output pressure: 350 psi for all propeller models
- (d) All governors must be approved as part of the aircraft installation regardless of manufacturer. (See NOTE 10)
- NOTE 4**
- (a) Feathering:
The -1 models do not feather.
The -2 models incorporate feathering and unfeathering features
- (b) Reversing:
Not applicable.
- NOTE 5** Left-Hand Models:
The left-hand version of an approved propeller model is approved at the same rating and diameter as listed for right-hand model. See NOTES 1 and 2.
- NOTE 6** Interchangeability:
- (a) Governors
Hartzell governors with a "Z" suffix in their model designation may be used interchangeably with corresponding governors without the "Z". For example, the F-6-24Z is replacement for the F-6-24 and F-6-24 is a replacement for the F-6-24Z.
- (b) Blades
Shot-peened blades may replace non shot-peened blades either individually or as a set (See NOTE 2).
- (c) Ice Protection Systems
Refer to Hartzell Service Letter HC-SL-30-260 for ice protection system component interchangeability.
- NOTE 7** Accessories: (See NOTE 10)
- (a) Propeller Ice Protection System (weight of Ice Protection equipment extra)
- (1) Propeller models listed in this data sheet are approved to use the ice protection equipment listed in Hartzel Manual 159 or in other Hartzel design data.
- (2) All propeller ice protection equipment must be approved as a part of aircraft installation regardless of manufacturer (see note 10).
- (b) Propeller Spinner (weight of spinners extra)
- (1) Approved with Hartzell and other manufacturers' spinners when listed on Hartzell type design data.
- (2) All propeller spinners must be approved as a part of aircraft installation regardless of manufacturer (see note 10).
- NOTE 8** Shank Fairings: Not Applicable.
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NOTE 9 Reserved

NOTE 10 Propeller installation must be approved as part of the aircraft Type Certificate and demonstrate compliance with the applicable aircraft airworthiness requirements.

Propeller models listed herein consist of basic hub and blade models. Most propeller models include additional characters do denote minor changes and specific features as explained in NOTES 1 and 2. Refer to the aircraft Type certificate Data Sheet for the specific propeller model applicable to the installation.

Propeller with composite blades must be evaluated for bird impact resistance prior to approval on any type aircraft. Hartzell Propeller must perform tests and/or analyses based on aircraft configuration and operating conditions to determine the potential hazard as a result of bird impact.

NOTE 11 Retirement Time

(a) Life Limits and Mandatory Inspections.

(1) Airworthiness limitations, if any, are specified in Hartzell Manuals 113() or 117().

NOTE 12 Special Notes:

(a) Refer to Hartzell Manual no. 202() for overspeed and overtorque limits.

(b) Refer to Hartzell Service Letter HC-SL-61-61() for overhaul periods.



ADEMIR ANTÔNIO DA SILVA

**Gerente-Geral de Certificação de Produto Aeronáutico
(Manager, Aeronautical Product Certification)**

Hélio Tarquinio Junior
Certificação de Produto Aeronáutico
Gerente Geral - Substituto