



AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL - BRASIL

TYPE CERTIFICATE DATA SHEET Nº EH-2009T05

Type Certificate Holder:

HARTZELL PROPELLER INC.

One Propeller place

Piqua, OH 45356

USA

EH-2009T05-00

Sheet 01

HARTZELL

HC-E5

27 May 2009

Propellers of models described herein conforming with this data sheet, which is part of Type Certificate No. 2009T05, 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 notes 3 and 4)

ENGINE SHAFT Special flange (see note 1)

HUB MATERIAL Aluminum Alloy

BLADE MATERIAL See below

NUMBER OF BLADES Five (5)

HUB ELIGIBLE HC-E5A-2; HC-E5B-5; HC-E5N-3

Blade Eligible (See Note 2)	Max. Continuous Power		Takeoff power		Diameter Limits (See Note 2)		Approx. Max. Weight Compl. (See Notes 3 and 7)		Blade Construction (see Note 10)
	hp	rpm	hp	rpm	m	(in)	Kg	lb	
	<u>Hub Model HC-E5N-3</u>								
E8218-0 to E8218-10	850	2200	850	2200	2.16 to 1.91 (85 to 75)		81.19	179	Aluminum Alloy
	<u>Hub model HC-E5B-5</u>								
E12902	1 645	1 390	1 645	1 390	3.35 (132)		76.20	168	Aramid Composite
	<u>Hub model HC-E5A-2</u>								
E9193	1 650	2 000	1 650	2 000	2.39 (94)		79.38	175	Carbon Composite

CERTIFICATION BASIS

Brazilian Type Certificate No.2009T05 based on the RBHA 21.29 and RBHA 35, which endorses the 14 CFR Part 35 effective 18 August 1990 with the following amendments:

For HC-E5N-3 amendment 35-1 through 35-5.

For HC-E5B-5 amendment 35-1 through 35-6.

For HC-E5A-2 Amendment 35-1 through 35-6 and Special Conditions No. 35-002-SC as published in Federal Register Vol. 66 No. 192, Docket No. NE124 on 03 October 2001.

TYPE CERTIFICATION

Model
HC-E5

Application
24 April 2009

Issued TC
27 May 2009

PRODUCTION BASIS

FAA production certificate no. 10

IMPORT REQUIREMENTS

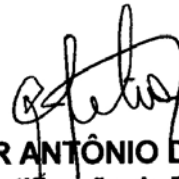
Each propeller imported separately and/or spare parts must be accompanied by an Airworthiness Certificate for Export and/or an Airworthiness Approval Tag, respectively, issued by FAA, attesting that the particular propeller and/or parts were submitted to the governmental quality control before delivery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

NOTES:

- NOTE 1** Hub model Designation HC - E 5 N - 3 A (See Notes 4 and 5)
HC – Hartzell Controllable.
- E – Identifies basic design.
- 5 – Number of blades
- N – N denotes flange with eight 9/16" bolts and two 1/2" dowels on a 4.25" bolt circle.
A denotes flange with twelve 9/16" bolts and two 5/8" dowels on a 5.125" bolt circle
B is identical to A except for dowel position
- 3 – Denotes specific design features
-2: no beta feedback mechanism
-3: external beta feedback mechanism
-5: internal beta feedback mechanism
- A – L when used denotes left hand rotation
Character when used denotes a minor change not affecting interchangeability or eligibility
- NOTE 2** Blade Model Designation E 82 18 A K-2 (See Notes 5 and 6)
- E - Blade Shank configuration:
E denotes right-hand tractor
HE denotes right-hand pusher
LE denotes left-hand pusher
JE denotes left-hand tractor
- 82 - Basic diameter in inches. Add three inches correction for all blade models
- 18 - Basic model or template
- A - S when used with aluminum blades denotes a shot-peened exterior
Any other character denotes a minor modification not affecting eligibility
- K - B or K denotes deicing boots
- 2 Number of inches cut off from (or added to if +) basic diameter
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- NOTE 3** Pitch control (weight of pitch control extra) (see Notes 4 and 10):
- (a) Maximum output pressure: 700 psig
 - (b) All propeller models have counterweighted blades and use governor oil to decrease pitch.
 - (c) The Hartzell propeller model HC-E5A-2 with E9193 blades is controlled by an integrated system which is part of the engine type design. The propeller model HC-E5A-2 with E9193 blades complies with the propeller airworthiness requirements when used with the Pratt & Whitney PT6A-68B engine only. Any change to the engine, including its control system, which affects or may affect the propeller approval must be substantiated to demonstrate that the propeller as integrated with the changed engine, including its control system, still complies with the propeller Certification Basis. Also, any change to the engine resulting from a change to the propeller must be substantiated to demonstrate that the change still complies with the engine certification basis. Maximum output pressure for the HC-E5A-2 propeller model: 700 psig.
 - (d) All governors and propeller control system must be approved as part of the aircraft installation regardless of manufacturer.
- NOTE 4** Feathering The -2, -3 and -5 models incorporate feathering and unfeathering features.
Reversing (a) The -3 and -5 models are approved for installation as reversing propellers with appropriate reversing controls.
(b) The -2 models do not reverse.
- 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 (see Note 2)
- (a) Shot-peened blades may replace non shot-peened blades either individually or as a set.
 - (b) Refer to the Hartzell Service Letter HC-SL-30-260 for ice protection system component interchangeability.
- NOTE 7** Accessories
- (a) Propeller spinner (weight of spinner extra).
Approved with Hartzell and other manufacturers' spinners when listed on Hartzell type design data.
 - (b) Propeller deicing (weight of deicing equipment extra)
 - (1) Approved with Goodrich electrical deicing kit 5E-XXXX-X, 7E-XXXX-X, 77-XXX, 67-XXX or 65-XXX when the specific kit number is installed on Hartzell type design data and installed in accordance with Goodrich Report no. ATA 30-60-07.
 - (2) Approved with Safeway deice equipment when installed in accordance with Safeway Installation Manual, Hartzell Manual 133() for aluminum blades or Manual 135 () for composite blades, and associated STC or PMA documentation.
 - (3) Approved with ice protection equipment when listed on Hartzell type design data.
 - (c) Propeller Pulley Drive. (weight of pulley drive extra)
 - (1) Propeller model HC-E5A-2 with blade model E9193 is approved with Pilatus Aircraft Ltd. Air conditioning system pulley drive P/N 521.55.21.002.
- NOTE 8** Shank Fairings: Not applicable
- NOTE 9** Special Limits: Not applicable
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- 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 to denote minor changes and specific features as explained in Notes 1 and 2. Refer to the aircraft Type Certificate Data Sheet or STC for the specific propeller model applicable to the installation. Propellers with composite blades must be evaluated for bird impact resistance prior to approval on any 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 a bird strike.
- NOTE 11** Retirement time
(a) Life limits and Mandatory inspections
(1) Airworthiness limitations, if any, are specified in Hartzell Manual 158().
- 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.



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