



**AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL - BRASIL**

**TYPE CERTIFICATE DATA SHEET Nº EH-9107**

Type Certificate Holder:

**HARTZELL PROPELLER INC.**

One Propeller Place  
Piqua, Ohio - OH 45356-2634

**USA**

EH-9107-04

Sheet 01

HARTZELL

HC-E4A

HC-E4N

HC-D4N

September 2006

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Propellers of models described herein conforming with this data sheet, which is part of Type Certificate No. 9107, 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.

<b>TYPE</b>	Constant speed, hydraulic (See Notes 3 & 4)
<b>ENGINE SHAFT</b>	Special flange (See Note 1)
<b>HUB MATERIAL</b>	Aluminum alloy
<b>BLADE MATERIAL</b>	See below
<b>NUMBER OF BLADES</b>	Four

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*Pawel*

**HUB ELIGIBLE**

HC-E4A-3, HC-E4N-3 and HC-D4N-3

Blade Eligible (See Note 2)	Max. Continuous Power hp (rpm)	Take off power hp (rpm)	Diameter Limits (See Note 2) m (in)	Approx. Max. Weight Compl. (See Notes 3 and 7) Kg (lb)	Blade Construction
<u>Hub Model HC-E4N-3</u>					
E9083-0 to E9083-10	950 (2 000)	950 (2 000)	2.31 (91) to 2.06 (8)1 (-0 to -10)	65.77 (145.0)	Aluminum alloy
D8990-0 to D8990-10	750 (2 200)	750 (2 200)	2.29 (90) to 2.03 (80) (-0 to -10)	64.41 (142.0)	Aluminum alloy
E8501-0 to E8501-10	800 (2 000) or 680 (2 200)	800 (2 000) or 680 (2 200)	2.18 (86) to 1.93 (76) (-0 to -10)	58.97 (130.0)	Aluminum alloy
<u>Hub Model HC-E4A-3</u>					
E10477-0 to E10477-10	1 200 (1 700)	1 200 (1 700)	2,67 (105) to 2.41 (95) (-0 to -10)	72.57 (160.0)	Aluminum alloy
E10950	1 400 (1 700)	1 400 (1 700)	2.76 (110)	59.87 (132)	Aramid Composite
<u>Hub Model HC-D4N-3</u>					
D9290-0 to D9290-10	750 (2 200)	750 (2 200)	2.36 (93) to 2.11 (83)	61.69 (136)	Aluminum alloy

**CERTIFICATION BASIS**

RBHA 35 (Brazilian Requirements for Aeronautical Certification), which endorses the FAR Part 35 amendments 1 through 5 effective on 14 October 1980 originally. (Model HC-D4N-3)  
Updated to RBHA 35 (Brazilian Requirements for Aeronautical Certification), which endorses the FAR 35 amendments 35-1 through 35-6 effective on 18 August 1990. (Model HC-E4N-3 and HC-E4A-3)

**TYPE CERTIFICATION**

<u>Model</u>	<u>Application</u>	<u>Issued TC</u>
HC-E4N-3	28 September 1990	29 October 1991
HC-E4A-3	01 May 1996	07 March 1997
HC-D4N-3	10 March 2005	05 May 2005

**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 - HC -D 4 N -2 A , where:

- HC Hartzell Controllable  
 D D specifies basic hub and blade retention  
 E specifies modified hub and blade retention  
 4 Number of blades  
 N N denotes special flange with eight 9/16" bolts and two 1/2" dowels on a 4-1/4" bolt circle  
 P is identical to N flange except uses four 1/2" dowels  
 A denotes special flange with twelve 9/16" bolts and two 5/8" dowels on a 5-1/8" bolt circle  
 W is similar to N except uses studs in place of bolts.  
 2 Denotes specific design feature (See Note 4)  
 -2: no beta feedback mechanism  
 -3: external beta feedback mechanism  
 -4: start locks, internal beta feedback mechanism  
 A Any other character when used denotes a minor change not affecting interchangeability or eligibility  
 L when used denoted left-hand rotation  
 Y when used with -3 models indicates optional start locks

**NOTE 2**

Blade Model Designation - D 90 83 A K -2, where:

- D Blade shank configuration: D or E denotes right hand tractor  
 HD or HE denotes right hand pusher  
 LD or LE denotes left hand pusher  
 JD or JE denotes left hand tractor  
 90 Basic diameter in inches (Add 1 inch correction for all blade models)  
 83 Blade basic model  
 A S when used with aluminum blades denotes a shot-peened exterior (see Note 6).  
 C when used with 10950 blade model indicates alternate counterweight (see Note 6)  
 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 (+) basic diameter

- NOTE 3** Pitch Control: Approved with the following governors:  
Maximum output pressure:  
HC-E4A-(2,3) models: 700 psig  
HC-(D,E)4(N,P,W)-(2,5) models : 610 psig  
HC-(D,E)4(N,P,W)-3 models: 500 psi  
(a) All propeller models have counterweighted blades and use governor oil to decrease pitch. (See Note 4).  
(b) All governors and propeller control system must be approved as part of the aircraft installation regardless of manufacturer. (see Note 10)
- NOTE 4** (a) Feathering: The -2, -3, and -5 models incorporate feathering and unfeathering features.  
(b) Reversing: The -3 and -5 models are approved for installation as reversing propeller with appropriate reversing controls.
- NOTE 5** Left-hand Model: The left hand version of an approved model propeller is approved at the same rating and diameter as listed for right hand model (See Notes 1 & 2).
- NOTE 6** Interchangeability:  
(a) Shot-peened blades may replace non shot-peened blades either individually or as a set. (See NOTE 2)  
(b) Refer to 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 spinners when listed on Hartzell type design data)  
(b) Propeller deicing. (weight of deicing equipment extra)  
(1) Approved with BF Goodrich electrical deicing kit 5EXXXX-X, 7EXXXX-X, 77-XXX, 65-XXX or 67-XXX when installed in accordance with BF Goodrich Report no. ATA 30-60-07, BF Goodrich Drawing no. 7E1284; Beech Installation Drawing no. 50T-389045.  
(2) Approved with Safeway deice equipment when installed in accordance with Safeway Installation Manual no. 6927 or E-5735-14 and Hartzell Manual 133() for aluminum blades or Manual 135() for composite blades, and associated STC or PMA documents.  
(3) Approved with ice protection equipment when listed on Hartzell type design data.
- NOTE 8** Shank Fairings: Not applicable.
- NOTE 9** Special Limits: Not Applicable
- NOTE 10** Propeller installation must be approved as part of the aircraft Type Certificate and demonstrate with the applicable aircraft airworthiness requirements.  
Propellers model listed herein consist of basic hub and blade models. Most propeller models include additional characters do denote minor change and specific features as explained in NOTE 1 and 2. Refer to the aircraft Type Certificate Data Sheet or "Especificação de Aeronave" (EA) 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 type aircraft. Hartzell propeller must perform test and/or analyses based on aircraft configuration and operating conditions to determine the potential hazard as a result of bird strike.

**NOTE 11**    Retirement Time:

## (a) Life Limits and Mandatory Inspections

- (1) Airworthiness limitations, if any, are specified in Hartzell Manuals 141(),142(), 143(), or 156().

**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.



**CLÁUDIO PASSOS SIMÃO**  
Gerente Geral, Certificação de Produtos Aeronáuticos  
(Manager, Aeronautical Products Certification)

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