

DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

P20NE Revision 6 Hartzell HC-E5 July 20, 2015
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TYPE CERTIFICATE DATA SHEET NO. P20NE

Propellers of models described herein conforming with this data sheet (which is part of Type Certificate No. P20NE) and other approved data on file with the Federal Aviation Administration meet the minimum standards for use in certificated aircraft in accordance with pertinent aircraft data sheets and applicable portions of the Federal Aviation Regulations provided they are installed, operated and maintained as prescribed by the approved manufacturer's manuals and other approved instructions.

Type Certificate Holder	Hartzell Propeller Inc. Piqua, OH 45356
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
Hub models	HC-E5A-2,-3; HC-E5B-5; HC-E5N-3

Blades (see Note 2)	Maximum Continuous		Takeoff		Diameter Limits (see Note 2)	Approx. Max. Wt. Complete (For Reference Only) (See Notes 3 and 7)	Blade Construction (See Note 10)
	HP	RPM	HP	RPM			
<u>HC-E5N-3</u>							
E8218-0 to E8218-10	850	2200	850	2200	85" to 75" (-0 to -10)	179 lb.	Aluminum Alloy
E8492-0 to E8492-10	950	2000	950	2000	86.5" to 76.5" (-0 to -10)	184 lb.	Aluminum Alloy
NC8834-0 to NC8834-10	950	2000	950	2000	91" to 81" (-0 to -10)	152 lb.	Carbon Composite
<u>HC-E5B-5</u>							
E12902	1645	1390	1645	1390	132"	168 lb.	Aramid Composite
<u>HC-E5A-2</u>							
E9193	1650	2000	1650	2000	94"	175 lb.	Carbon Composite
<u>HC-E5A-3</u>							
NC10245-0 To NC10245-10	1200	1700	1200	1700	105" to 95" (-0 to -10)	153 lb.	Carbon Composite

Certification Basis: 14 CFR Part 35 effective October 14, 1980 with amendments 1 through 5.  
 Type Certificate No. P20NE issued December 18, 1989 under Delegation Option Authorization procedures of FAR Part 21 Subpart J.  
 Date of application for Type Certificate: October 25, 1989.

Models approved to the original certification basis include the following:  
 HC-E5N-3

Models added, updated or revised in accordance with 14 CFR Part 35 effective August 18, 1990 with amendments 35-1 through 35-6 include the following:  
 HC-E5B-5

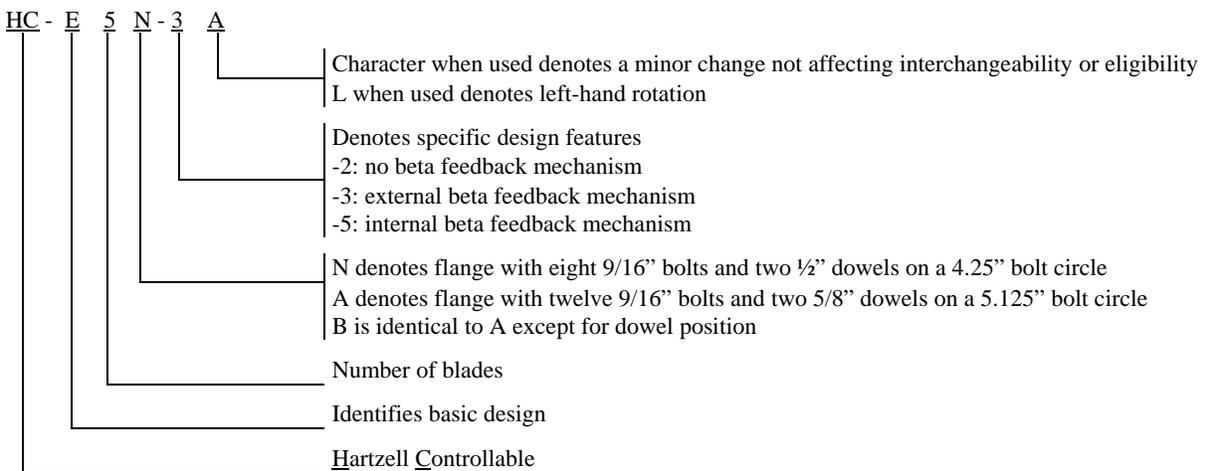
HC-E5A-2 approved October 29, 2004 to 14 CFR Part 35 effective August 18, 1990 with amendments 1 through 6 and Special Conditions no. 35-002-SC as published in the Federal Register Vol. 66, no. 192, Docket no. NE124 on October 3, 2001.

The following models were added, updated or revised in accordance with 14 CFR Part 35 with amendments 35-1 through 35-9 effective March 19, 2013:  
 HC-E5N-3

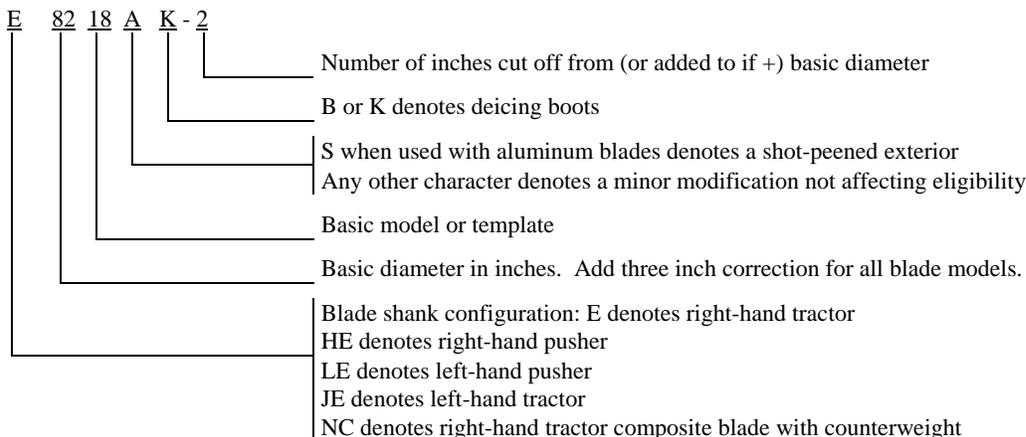
The following models were added, updated or revised in accordance with 14 CFR Part 35 with amendments 35-1 through 35-9 effective March 19, 2013:  
 HC-E5A-3

Production Basis: Production Certificate no. 10

Note 1: Hub Model Designation (See Notes 4 and 5)



Note 2: Blade Model Designation (See Notes 5 and 6)



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 control 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 changed engine 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 systems must be approved as part of the aircraft installation regardless of manufacturer.

Note 4: Feathering

- (a) 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 (see Notes 1 and 2)

The left-hand version of an approved propeller model is approved at the same rating and diameter as listed for the right-hand model.

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 Hartzell Service Letter HC-SL-30-260 for ice protection system component interchangeability.

Note 7: Accessories

- (a) Propeller spinner. (weight of spinner extra)
  - (1) Approved with Hartzell and other manufacturers' spinners when listed on Hartzell type design data.
  - (2) All propeller spinners must be approved as part of the aircraft installation regardless of manufacturer. (See NOTE 10)
- (b) Propeller deicing (weight of deicing equipment extra)
  - (1) Approved with Goodrich electrical deicing kit 5EXXXX-X, 7EXXXX-X, 65-XXX, 67-XXX, or 77-XXX when the specific kit number is listed 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) Propeller models listed in this data sheet are approved for use with propeller ice protection equipment listed in Hartzell Manual 159( ) or in other Hartzell type design data.
  - (4) All propeller ice protection equipment must be approved as part of the aircraft installation regardless of manufacturer. (See NOTE 10)
- (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.

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 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 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 Manuals 147 and 149.

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.

END