

DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

P10NE Revision 26 Hartzell HC-D4, HC-E4 October 10, 2016
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TYPE CERTIFICATE DATA SHEET NO. P10NE

Propellers of models described herein conforming with this data sheet (which is part of Type Certificate No. P10NE) 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.

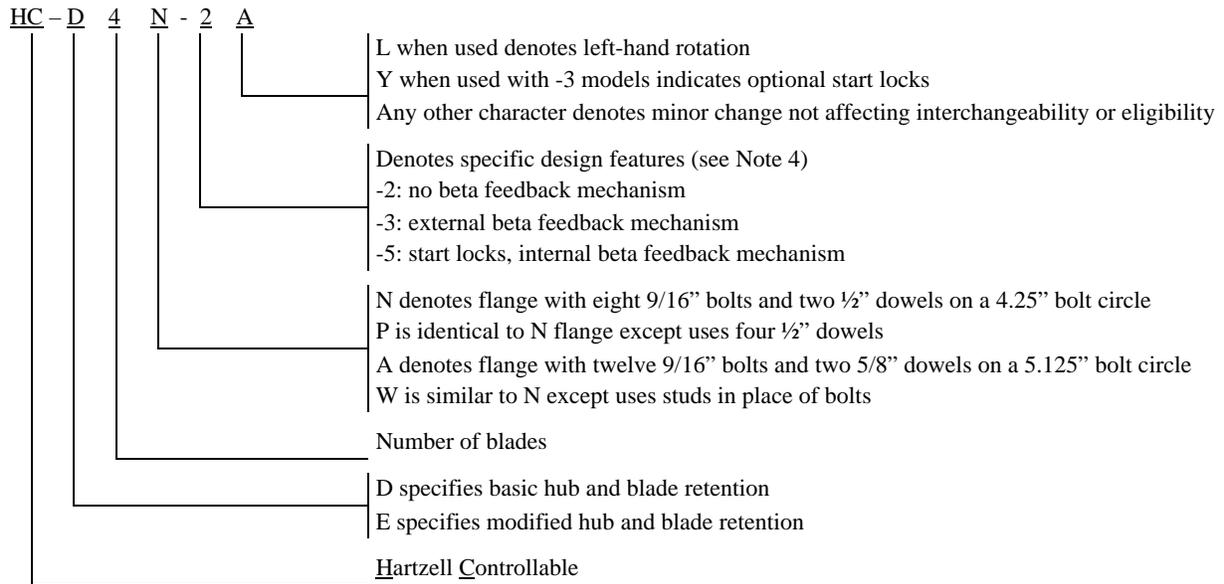
Type Certificate Holder	Hartzell Propeller Inc. Piqua, OH 45356
Type	Constant speed; hydraulic (see Notes 3 and 4)
Engine shaft	Special flange (see Note 1)
Hub material	Aluminum Alloy
Blade material	See below
Number of blades	Four
Hub models	HC-D4N-(2,3,5); HC-D4P-5; HC-E4N-(2,3,5); HC-E4A-(2,3); HC-E4P-(3,5), HC-E4W-(3,5)

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-D4N-(2,3)</u>							
D9383-0 to D9383-10	950	2000	950	2000	94" to 84" (-0 to -10)	152 lb.	Aluminum Alloy
D9512-0 to D9512-10	950	2040	950	2040	96" to 86" (-0 to -10)	152 lb.	Aluminum Alloy
<u>HC-D4N-3</u>							
D9083-0 to D9083-10	950	2000	950	2000	91" to 81" (-0 to -10)	145 lb.	Aluminum Alloy
D9290-0 to D9290-10	750	2200	750	2200	93" to 83" (-0 to -10)	136 lb.	Aluminum Alloy
D9510-0 to D9510-10	750	2200	750	2200	96" to 86" (-0 to -10)	146.5 lb.	Aluminum Alloy
D9511-0 to D9511-10	850	2200	850	2200	96" to 86" (-0 to -10)	152 lb.	Aluminum Alloy
D9515-0 to D9515-10	850	2000	850	2000	96" to 86" (-0 to -10)	152 lb.	Aluminum Alloy
<u>HC-D4N-5</u>							
D9327-0 to D9327-10	1100	2000	1100	2000	94" to 84" (-0 to -10)	151 lb.	Aluminum Alloy
D8501-0 To D8501-10	800	2000	800	2000	86" to 76" (-0 to -10)	130 lb.	Aluminum Alloy
<u>HC-D4P-5</u>							
D10541-0 to D10541-10	1000	1700	1000	1700	106" to 96" (-0 to -10)	165 lb.	Aluminum Alloy

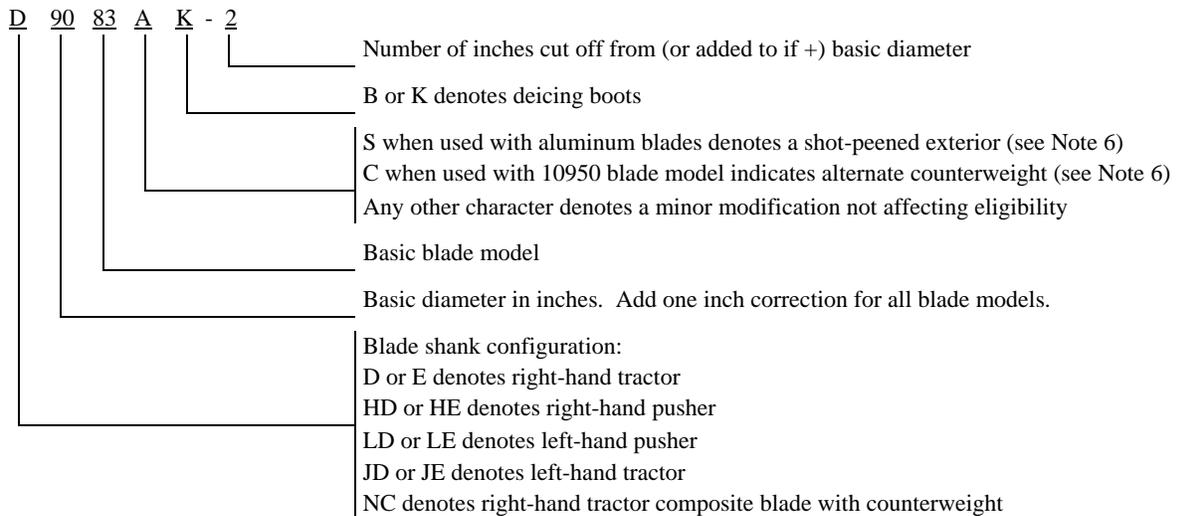
Blades (see Note 2)	Maximum Continuous		Takeoff		Diameter Limits (See Note 10)	Approx. Max. Wt. Complete (For Reference Only) (see Notes 3 and 7)	Blade Construction (See Note 10)
	HP	RPM	HP	RPM			
<u>HC-E4P-5</u>							
E11990	1000	1540	1000	1540	120"	132 lb.	Aramid Composite
<u>HC-E4A-3</u>							
E10477-0 to E10477-10	1200	1700	1200	1700	105" to 95" (-0 to -10)	160 lb.	Aluminum Alloy
E10478-0 to E10478-10	1200	1700	1200	1700	105" to 95" (-0 to -10)	168.5 lb.	Aluminum Alloy
E10950	1400	1735	1400	1735	110"	132 lb.	Aramid Composite
<u>HC-E4A-2</u>							
E9612-0 to E9612-10	1300	2000	1300	2000	97" to 87" (-0 to -10)	155 lb.	Aluminum Alloy
E9673-0 to E9673-10	1600	2000	1600	2000	97" to 87" (-0 to -10)	155 lb.	Aluminum Alloy
<u>HC-E4N-(2,3,5); HC-E4A-(2,3); HC-E4P-,5</u>							
D9390-0 to D9390-10	950	2000	950	2000	94" to 84" (-0 to -10)	145 lb.	Aluminum Alloy
<u>HC-E4N-(3,5); HC-E4A-3; HC-E4P-5</u>							
D9391-0 to D9391-10	950	2000	950	2000	94" to 84" (-0 to -10)	145 lb.	Aluminum Alloy
<u>HC-E4N-3</u>							
E8190	750	2200	750	2200	81.75"	120 lb.	Aramid Composite
D8292-0 to D8292-6	800 or 680	2000 2200	800 or 680	2000 2200	82.5" to 76.5" (-0 to -6)	121 lb.	Aluminum Alloy
D8990-0 to D8990-10	750	2200	750	2200	90" to 80" (-0 to -10)	142 lb.	Aluminum Alloy
E9083-0 to E9083-10	950	2000	950	2000	91" to 81" (-0 to -10)	145 lb.	Aluminum Alloy
D9290-0 to D9290-10	750	2200	750	2200	93" to 83" (-0 to -10)	136 lb.	Aluminum Alloy
D9511-0 to D9511-10	850	2200	850	2200	96" to 86" (-0 to -10)	152 lb.	Aluminum Alloy
D9900-0 to D9900-10	900	2000	900	2000	100" to 90" (-0 to -10)	145 lb.	Aluminum Alloy
NC9208+2 to NC9208-10	850	2000	850	2000	95" to 83" (+2 to -10)	115 lb.	Carbon Composite

Blades (see Note 2)	Maximum Continuous		Takeoff		Diameter Limits (See Note 10)	Approx. Max. Wt. Complete (For Reference Only) (see Notes 3 and 7)	Blade Construction (See Note 10)
	HP	RPM	HP	RPM			
<u>HC-E4P-3</u>							
E10479-0 to E10479-8	1200	1700	1200	1700	105" to 97" (-0 to -8)	156 lb.	Aluminum Alloy
<u>HC-E4N-2</u>							
E9512-0 to E9512-10	950	2040	950	2040	96" to 86" (-0 to -10)	152 lb.	Aluminum Alloy
<u>HC-E4N-5</u>							
D9690-0 to D9690-10	950	2000	950	2000	97" to 87" (-0 to -10)	154 lb.	Aluminum Alloy
<u>HC-E4N-(2,3,5)</u>							
E8501-0 to E8501-10	800 or 680	2000 2200	800 or 680	2000 2200	86" to 76" (-0 to -10)	130 lb.	Aluminum Alloy
<u>HC-E4W-3</u>							
D8990-0 to D8990-10	777	2080	777	2080	90" to 80" (-0 to -10)	142 lb.	Aluminum Alloy
D9290-0 to D9290-10	750	2200	750	2200	93" to 83" (-0 to -10)	136 lb.	Aluminum Alloy
E9083-0 to E9083-10	950	2080	950	2080	91" to 81" (-0 to -10)	145 lb.	Aluminum Alloy
<u>HC-E4W-5</u>							
E10305-0 to E10305-10	1100	1591	1100	1591	104" to 94" (-0 to -10)	173 lb.	Aluminum Alloy
Certification Basis:	<p>14 CFR Part 35 effective October 14, 1980 with amendments 1 through 5 thereto. Type Certificate No. P10NE issued January 18, 1985 under Delegated Option Authorization procedures of 14 CFR Part 21 Subpart J.</p> <p>Models approved to the original certification basis include the following: HC-D4N-(2,3,5); HC-D4P-5; HC-E4N-3; HC-E4P-5</p> <p>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-D4N-5; HC-E4A-(2,3); HC-E4N-(2,3,5); HC-E4P-5; HC-E4W-(3,5)</p> <p>The following models were added, updated or revised in accordance with 14 CFR Part 35 with amendments 35-1 through 35-8 effective December 23, 2008, HC-E4N-3; HC-E4A-3; HC-D4N-3</p> <p>Models added after August 31, 2009 are approved in accordance with Organization Designation Authorization procedures of 14 CFR Part 183 Subpart D</p> <p>The following models were added, updated or revised in accordance with 14 CFR Part 35 with amendments 35-1 through 35-9 effective July 26, 2013: HC-E4A-2, HC-D4N-3, HC-E4W-3, HC-E4P-3</p> <p>The following models were added, updated or revised in accordance with 14 CFR Part 35 with amendments 35-1 through 35-9A effective July 26, 2013: HC-E4N-3</p>						
Production Basis:	Production Certificate no. 10						

Note 1: Hub Model Designation



Note 2: Blade Model Designation



Note 3: Pitch Control (weight of pitch control extra)

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) The Hartzell propeller model HC-E4A-2( ) is controlled by an integrated control system which is part of the engine type design. The propeller model HC-E4A-2 complies with the propeller airworthiness requirements when used with the Pratt & Whitney PT6A-68 series 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.
- (c) All governors and propeller control systems must be approved as part of the aircraft installation regardless of manufacturer. (See Note 10)

Note 4: Feathering The -2, -3 and -5 models incorporate feathering and unfeathering features.

Reversing The -3 and -5 models are approved for installation as reversing propellers with appropriate reversing controls.

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 the right-hand model. (see Notes 1 and 2)

Note 6: Interchangeability

- (a) Shot-peened blades may replace non shot-peened blades either individually or as a set. (see Note 2)
- (b) E10950(CB) blades may replace E10950PB blades models either in pairs or as a set. Opposing pairs of blades in the hub must have the same designation. (see Note 2)
- (c) E10950PCK blades may replace E10950PK blades models either in pairs or as a set. Opposing pairs of blades in the hub must have the same designation. (see Note 2)
- (d) 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, Goodrich drawing no. 7E1284 or 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) 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-E4A-2( ) used on Beechcraft Models 3000 and AT-6( ) uses containment ring P/N 133-910029-11 and air conditioning system drive pulley P/N 133-910029-7 or 133-1400-1.
  - (2) Propeller model HC-D4N-2( ) with blade model D9512( ) is approved with Pilatus Aircraft Ltd. air conditioning system pulley drive P/N PC-9-1401-1 and pulley centering ring P/N PC-9-1402-1.
  - (3) Propeller model HC-D4N-2( ) with blade model D9512( ) is approved with EADS PZL air conditioning system pulley drive P/N 837.76.610-08-0.

Note 8: Shank Fairings Not applicable.

Note 9: Special Limits Not applicable.

Note 10: The propeller installation must be approved as part of the aircraft type certificate to demonstrate compliance with the applicable aircraft airworthiness standards.

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( ) or 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 recommended overhaul periods.

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