



TYPE-CERTIFICATE DATA SHEET

No. EASA.IM.P.126

for Propeller
HC-B3T series propellers

Type Certificate Holder
Hartzell Propeller Inc.

One Propeller Place
Piqua, OH 45356-2634
USA

For Models:
HC-B3TN-2
HC-B3TN-3
HC-B3TN-5
HC-B3TN-7
HC-B3TF-7



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I. General

1. Type / Model

HC-B3T / HC-B3TN-2, HC-B3TN-3, HC-B3TN-5, HC-B3TN-7, HC-B3TF-7

2. Type Certificate Holder

Hartzell Propeller Inc.
One Propeller Place
Piqua, OH 45356-2634
USA

3. Manufacturer

Hartzell Propeller Inc.

4. Date of Application

HC-B3TN-2:	Before 1977*
HC-B3TN-3:	Before 1977*
HC-B3TN-5:	Before 1977*
HC-B3TN-7:	Before 1977*
HC-B3TF-7:	Before 1977*

*: The exact Date of Application was not recorded in individual EASA Member States.

5. EASA Type Certification Date

HC-B3TN-2:	03 October 1977*
HC-B3TN-3:	03 October 1977*
HC-B3TN-5:	03 October 1977*
HC-B3TN-7:	03 October 1977*
HC-B3TF-7:	03 October 1977*

*: The EASA Certification Date has been taken over from individual EASA Member States.

II. Certification Basis

1. State of Design Authority Certification Basis

Refer to FAA TCDS no. P15EA.

2. Reference Date for determining the applicable airworthiness requirements

29 January 1964



3. EASA Certification Basis

3.1. Airworthiness Standards

HC-B3TN-3:

14 CFR Part 35 with amendments 35-1 through 35-10 effective 30 August 2017.

HC-B3TN-2, HC-B3TN-5, HC-B3TN-7:

14 CFR Part 35 with amendments 35-1 through 35-6 effective 01 August 1990.

HC-B3TF-7:

14 CFR Part 35 with amendments 35-1 through 35-5 effective 14 October 1980.

Note 1:

Application was made to EASA Member States before EASA was established. Refer to Commission Regulation (EU) No 748/2012.

Note 2:

The above mentioned propeller models are EASA certified based on member states approvals prior to EASA existence. The original and updated FAA certification basis as indicated above had been taken over from the FAA TCDS.

3.2. Special Conditions (SC)

None.

3.3. Equivalent Safety Findings (ESF)

None.

3.4. Deviations

None.

III. Technical Characteristics

1. Type Design Definition

The propeller type is defined by a propeller assembly drawing that includes a parts list. The earliest applicable drawing revision is shown below:

HC-B3TN-2	Drawing D-1490 dated 28 January 1964
HC-B3TN-3	Drawing D-3000 dated 28 January 1964
HC-B3TN-5	Drawing D-3050 dated 11 February 1966
HC-B3TN-7	Drawing E-3040 dated 13 July 1967
HC-B3TF-7	Drawing D-3660 dated 21 January 1976



2. Description

The propeller is a 3-blade variable pitch propeller with a hydraulically operated blade pitch change mechanism providing the operation mode "Constant Speed". The -3, -5 and -7 models incorporate feathering and reversing features. The -2 model do not reverse (See Notes 1 and 4).

The hub is a single piece steel hub. Each blade is supported in the hub using a two-piece steel clamp. The blade material is aluminum alloy. Optional equipment includes spinner and ice protection (See Note 7).

3. Equipment

Spinner: See Note 7
Governor: See Note 3
Ice Protection: See Note 7

4. Dimensions

See Table of Section IV

5. Weight

Depending on Propeller-Design Configuration. (See Table of Section IV)

6. Hub / Blade Combinations

Details are mentioned within Table of Section IV.

7. Control System

Propeller governor. (See Note 3)

8. Adaptation to Engine

Special flange. (See Note 1)

9. Direction of Rotation

Direction of rotation (viewed in flight direction) as identified by a letter-code in the hub model designation. (See Note 5)



IV. Operating Limitations

Blades (see Note 2)	Maximum Continuous		Take-Off		Diameter Limits (cm) (see Note 2)	Approx. Max Wt. Complete (kg) (see Notes 3 and 7)	Blade Constr.
	kW	RPM (min ⁻¹)	kW	RPM (min ⁻¹)			
<u>HC-B3TN-2, HC-B3TN-3, HC-B3TN-5, HC-B3TN-7</u>							
T10172()-0 to T10172()-21	372,8	2200	410,1	2200	257,5 to 204,2 (-0 to -21)	47,6 *	Aluminium Alloy
T10173()+1 to T10173()-25	507,1	2200	507,1	2200	260,0 to 194,0 (+1 to -25)	47,6 *	Aluminium Alloy
T10173()-8 to T10173()-12	559,3	2200	559,3	2200	237,2 to 227,0 (-8 to -12)	47,6 *	Aluminium Alloy
T10173A-0 to T10173A-21	559,3	2000	559,3	2000	257,5 to 204,2 (-0 to -21)	49,0 *	Aluminium Alloy
T10173D-0 to T10173D-21	633,8	2000	633,8	2000	257,5 to 204,2 (-0 to -21)	49,9 *	Aluminium Alloy
T10176()+1 to T10176()-21	507,1	2200	507,1	2200	260,0 to 204,2 (+1 to -21)	47,6 *	Aluminium Alloy
T10178()-0 to T10178()-21	559,3 or 633,8	2200 or 2000	596,6 or 745,7	2200 or 2000	257,5 to 204,2 (-0 to -21)	51,0 **	Aluminium Alloy
T10282()+6 to T10282()-16	540,6	1591	578,6	1591	274,3 to 218,4 (+6 to -16)	51,3 **	Aluminium Alloy
T10282()+6 to T10282()+4	540,6 or 447,4	1591 or 2000	578,6 or 447,4	1591 or 2000	274,3 to 269,2 (+6 to +4)	51,3 **	Aluminium Alloy
T10282()+4 to T10282()-0	559,3 or 447,4	2200 or 2000	559,3 or 447,4	2200 or 2000	269,2 to 259,1 (+4 to -0)	51,3 **	Aluminium Alloy
T10282()-0 to T10282()-21	559,3 or 633,8	2200 or 2000	596,6 or 745,7	2200 or 2000	259,1 to 205,7 (-0 to -21)	51,0 **	Aluminium Alloy
T10282()-21 to T10282()-30	559,3	2200	559,3	2200	205,7 to 182,9 (-21 to -30)	51,0 **	Aluminium Alloy
T10282N()-0 to T10282N()-21	559,3 or 633,8	2200 or 2000	596,6 or 745,7	2200 or 2000	259,1 to 205,7 (-0 to -21)	51,0 **	Aluminium Alloy
T10573()-3 to T10573()-24	559,3 or 626,4	2200 or 2000	596,6 or 745,7	2200 or 2000	259,1 to 205,7 (-3 to -24)	51,0 **	Aluminium Alloy
T10673()-0 to T10673()-20	540,6	1591	578,6	1591	269,2 to 218,4 (-0 to -20)	52,6 **	Aluminium Alloy



Blades (see Note 2)	Maximum Continuous		Take-Off		Diameter Limits (cm) (see Note 2)	Approx. Max Wt. Complete (kg) (see Notes 3 and 7)	Blade Constr.
	kW	RPM (min ⁻¹)	kW	RPM (min ⁻¹)			
T10876()-0 to T10876()-20	611,5	1591	611,5	1591	275,3 to 224,5 (-0 to -20)	52,6 **	Aluminium Alloy
<u>HC-B3TN-3, HC-B3TN-5</u>							
T10290N()-0 to T10290N()-10	633,8	2000	745,7	2000	259,1 to 233,7 (-0 to -10)	61,2	Aluminium Alloy
<u>HC-B3TN-3</u>							
T9212-0 to T9212-10	335,6	2200	335,6	2200	233,7 to 208,3 (-0 to -10)	53,61	Aluminium Alloy
T10290N()+2 to T10290N()-0	633,8	2000	633,8	2000	264,2 to 259,1 (+2 to -0)	61,2	Aluminium Alloy
T10890C()-2 to T10890C()-10	648,8	1900	648,8	1900	269,2 to 248,9 (-2 to -10)	63,0	Aluminium Alloy
T10891()-2 to T10891()-10	648,8	1900	648,8	1900	269,2 to 248,9 (-2 to -10)	63,5	Aluminium Alloy
<u>HC-B3TN-5</u>							
T10290N()+2 to T10290N()-0	559,3	2000	559,3	2000	264,2 to 259,1 (+2 to -0)	61,2	Aluminium Alloy
<u>HC-B3TF-7</u>							
T9212()-0 to T9212()-10	335,6	2180	335,6	2180	233,7 to 208,3 (-0 to -10)	53,5	Aluminium Alloy
T10172()-0 to T10172()-21	335,6	2180	335,6	2180	257,5 to 204,2 (-0 to -21)	52,2	Aluminium Alloy
T10173()+1 to T10173()-31	335,6	2180	335,6	2180	260,0 to 178,75 (+1 to -31)	52,2	Aluminium Alloy
T10176()+1 to T10176()-21	335,6	2180	335,6	2180	260,0 to 204,2 (+1 to -21)	52,2	Aluminium Alloy
T10178()-0 to T10178()-21	335,6	2180	335,6	2180	257,5 to 204,2 (-0 to -21)	57,6	Aluminium Alloy
T10282()+6 to T10282()-21	335,6	2180	335,6	2180	274,3 to 205,7 (+6 to -21)	57,8	Aluminium Alloy
T10282()-21 to T10282()-30	335,6	2180	335,6	2180	205,7 to 182,9 (-21 to -30)	57,8	Aluminium Alloy

* : for HC-B3TN-3, -5, -7 models add 6,57 kg.

** : for HC-B3TN-3, -5, -7 models add 4,53 kg.



1. Approved Installations

The propeller is initially intended for use on Cessna 206 aircraft. (See Note 10)

2. Maximum Take Off Power and Speed

Details are mentioned within Table of Section IV.

3. Maximum Continuous Power and Speed

Details are mentioned within Table of Section IV.

4. Propeller Pitch Angle

See Note 3

V. Operating and Service Instructions

Instruction for continued airworthiness (ICA):

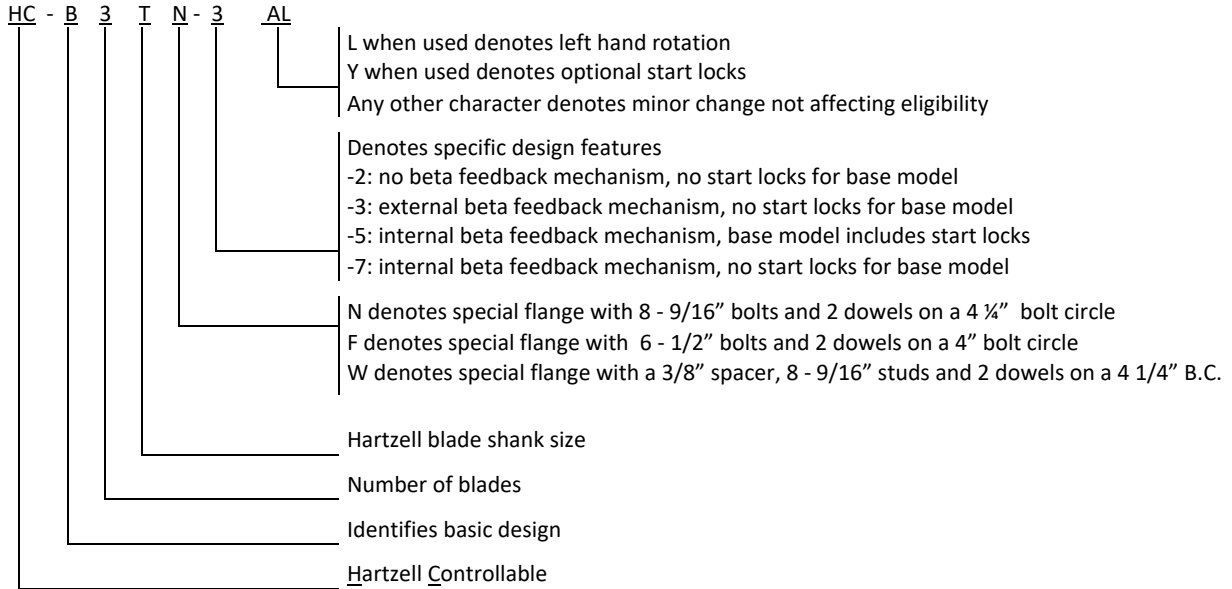
Steel Hub Turbine Propeller Maintenance Manual	Hartzell Manuals 118F*
Standard Practices Manual	Hartzell Manual 202A*
Owner's Manual and Logbook	Hartzell Manual 139*
Aluminum Blade Overhaul Manual	Hartzell Manual 133C*
Metal Spinner Maintenance Manual	Hartzell Manual 127*
Service Bulletins	

*: or later approved revision

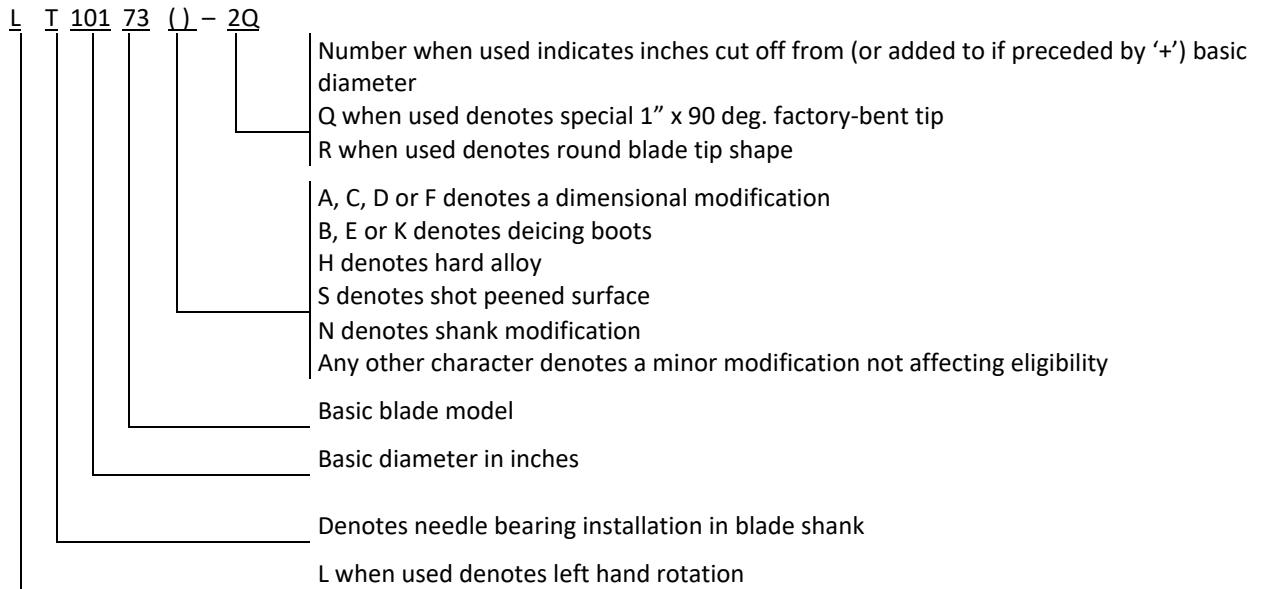


VI. Notes

1. **Hub Model Designation:** (See Notes 4, 5 and 6)



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



3. **Pitch Control:** (weight of pitch control extra) (See Notes 4 and 10)

- (a) All models have counterweighted blades and use governor oil to decrease pitch.



- (b) All governors and propeller control systems must be approved as part of the aircraft installation regardless of manufacturer.
- (c) HC-B3TF-7 models used on Rolls-Royce (Allison) 250-B17 series engines require the Hartzell C-3630() beta valve. (See Note 6)
- (d) Maximum control pressure for all models: 3447,38 kPa

4. Feathering:

- (a) The -2, -3, -5 and -7 models incorporate feathering and unfeathering features

Reversing

- (a) The -3, -5 and -7 models are approved for installation as reversing propellers with reversing controls.
- (b) The -2 models do not reverse.

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.

6. Interchangeability: (See Notes 1 and 2)

- (a) Blades with the suffix "N" in the basic model number may replace those without an "N" either individually or as a set. Likewise, blades with the suffix "S" in the basic model number may replace those without an "S" either individually or as a set. When the aircraft Type Certificate or Supplemental Type Certificate specifies blades with the letters "N" or "S" in the basic model number, those characters must be retained in all replacement blade models.

For example: Blades with neither "N" nor "S" may be replaced by "N", "S" or "NS" blades,
"N" blades may be replaced by "NS" blades,
"S" blades may be replaced by "NS" blades.

- (b) Hard and soft alloy blades of the same model designation are interchangeable
- (c) Propeller model HC-B3TN-5M(L) may replace models HC-B3TN-5C(L), -5E or -5G.
Propeller model HC-B3TN-5E may replace model HC-B3TN-5C.
Propeller model HC-B3TN-5NL may replace HC-B3TN-5DL or -5FL.
Propeller model HC-B3TN-5P may replace HC-B3TN-5K.
- (d) Refer to Hartzell Service Letter HC-SL-30-260 for ice protection system component interchangeability
- (e) Hartzell beta valves C-3630, C-3630-1 and C-3630-2 are interchangeable.

7. Accessories:

- (a) Propeller ice protection system (weight of ice protection equipment extra)



- (1) Propeller models listed in this data sheet are approved for use with propeller ice protection equipment listed in Hartzell Manual 159 or in Hartzell type design data.
- (2) All propeller ice protection equipment must be approved as part of the aircraft installation regardless of manufacturer. (See Note 10)

(b) 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)

8. Shank Fairings: Not applicable.

9. Special Limits: Not applicable

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.

11. Retirement Time:

- (a) Life limits and mandatory inspections. Airworthiness limitations, if any, are specified in Hartzell Owner's Manual 139.

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.

13. EASA Type Certificate and Type Certificate Data Sheet No. IM.P.126 replace the associated Type Certificates and Type Certificate Data Sheets of the EASA Member States.



SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

None.

II. Type Certificate Holder Record

N/A.

III. Change Record

Issue	Date	Changes	TC issue
Issue 01	05 July 2013	Initial Issue	05 July 2013
Issue 02	23 April 2021	Add new blade model T9212 to HC-B3TN-3 (EASA Major Change Approval 10076299), and various additional corrections.	

-END-

