

I. General

1. Type / Models:

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

2. Type Certificate Holder:

Hartzell Propeller Inc.
Piqua, OH 45356
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 Certification Reference Date:

29 January 1964

6. EASA 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. **FAA Certification Basis:** Refer to FAA TCDS no. P15EA.

2. **EASA Certification Basis:**

2.1 **Airworthiness Standards:**

HC-B3TN-3:

14 CFR Part 35 with amendments 35-1 through 35-8 effective 23 December 2008.

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.

2.2 **Special Condition:** None

2.3 **Equivalent Safety Findings:** None

2.4 **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:

See Table of Section IV.

7. Control System:

Propeller governors: 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 propeller designation. (See Note 5)

IV. Operational Limits

Blade material: Aluminium Alloy

Blades (See Note 2)	Max. Continuous kW - rpm (min ⁻¹)	Take Off kW - rpm (min ⁻¹)	Diameter Limits (cm) (See Note 2)	Approx. Max. Wt. Complete (kg) (See Notes 3,7)
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HC-B3TN-2, HC-B3TN-3, HC-B3TN-5, HC-B3TN-7

T10172()-0 to T10172()-21	372,8 2200	410,1 2200	257,5 to 204,2 (-0 to -21)	47,6 *
T10173()+1 to T10173()-25	507,1 2200	507,1 2200	260,0 to 194,0 (+1 to -25)	47,6 *
T10173()-8 to T10173()-12	559,3 2200	559,3 2200	237,2 to 227,0 (-8 to -12)	47,6 *

Blades (See Note 2)	Max. Continuous kW - rpm (min ⁻¹)		Take Off kW - rpm (min ⁻¹)		Diameter Limits (cm) (See Note 2)	Approx. Max. Wt. Complete (kg) (See Notes 3,7)
T10173A-0 to T10173A-21	559,3	2000	559,3	2000	257,5 to 204,2 (-0 to -21)	49,0 *
T10173D-0 to T10173D-21	633,8	2000	633,8	2000	257,5 to 204,2 (-0 to -21)	49,9 *
T10176()+1 to T10176()-21	507,1	2200	507,1	2200	260,0 to 204,2 (+1 to -21)	47,6 *
T10178()-0 to T10178()-21	559,3	2200	596,6	2200	257,5 to 204,2 (-0 to -21)	51,0 **
	633,8	2000	745,7	2000		
T10282()+6 to T10282()-16	540,6	1591	578,6	1591	274,3 to 218,4 (+6 to -16)	51,3 **
T10282()+6 to T10282()+4	540,6	1591	578,6	1591	274,3 to 269,2 (+6 to +4)	51,3 **
	447,4	2000	447,4	2000		
T10282()+4 to T10282()-0	559,3	2200	559,3	2200	269,2 to 259,1 (+4 to -0)	51,3 **
	447,4	2000	447,4	2000		
T10282()-0 to T10282()-21	559,3	2200	596,6	2200	259,1 to 205,7 (-0 to -21)	51,0 **
	633,8	2000	745,7	2000		
T10282()-21 to T10282()-30	559,3	2200	559,3	2200	205,7 to 182,9 (-21 to -30)	51,0 **
T10282N()-0 to T10282N()-21	559,3	2200	596,6	2200	259,1 to 205,7 (-0 to -21)	51,0 **
	633,8	2000	745,7	2000		
T10573()-3 to T10573()-24	559,3	2200	596,6	2200	259,1 to 205,7 (-3 to -24)	51,0 **
	626,4	2000	745,7	2000		
T10673()-0 to T10673()-20	540,6	1591	578,6	1591	269,2 to 218,4 (-0 to -20)	52,6 **
T10876()-0 to T10876()-20	611,5	1591	611,5	1591	275,3 to 224,5 (-0 to -20)	52,6 **
<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
<u>HC-B3TN-3</u>						
T10290N()+2 to T10290N()-0	633,8	2000	633,8	2000	264,2 to 259,1 (+2 to -0)	61,2
T10890C()-2 to T10890C()-10	648,8	1900	648,8	1900	269,2 to 248,9 (-2 to -10)	63,0
T10891()-2 to T10891()-10	648,8	1900	648,8	1900	269,2 to 248,9 (-2 to -10)	63,5
<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

Blades (See Note 2)	Max. Continuous kW - rpm (min ⁻¹)	Take Off kW - rpm (min ⁻¹)	Diameter Limits (cm) (See Note 2)	Approx. Max. Wt. Complete (kg) (See Notes 3,7)
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HC-B3TF -7

T9212()-0 to T9212()-10	335,6	2180	335,6	2180	233,7 to 208,3 (-0 to -10)	53,5
T10172()-0 to T10172()-21	335,6	2180	335,6	2180	257,5 to 204,2 (-0 to -21)	52,2
T10173()+1 to T10173()-31	335,6	2180	335,6	2180	260,0 to 70 3/8" (+1 to -31)	52,2
T10173F()+1 to T10173F()-31	335,6	2180	335,6	2180	260,0 to 70 3/8" (+1 to -31)	52,2
T10176()+1 to T10176()-21	335,6	2180	335,6	2180	260,0 to 204,2 (+1 to -21)	52,2
T10178()-0 to T10178()-21	335,6	2180	335,6	2180	257,5 to 204,2 (-0 to -21)	57,6
T10282()+6 to T10282()-21	335,6	2180	335,6	2180	274,3 to 205,7 (+6 to -21)	57,8
T10282()-21 to T10282()-30	335,6	2180	335,6	2180	205,7 to 182,9 (-21 to -30)	57,8

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

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

1. Maximum Take Off Power and Speed:

See Table of Section IV.

2. Maximum Continuous Power and Speed:

See Table of Section IV.

3. Propeller Pitch Angle:

See Note 3.

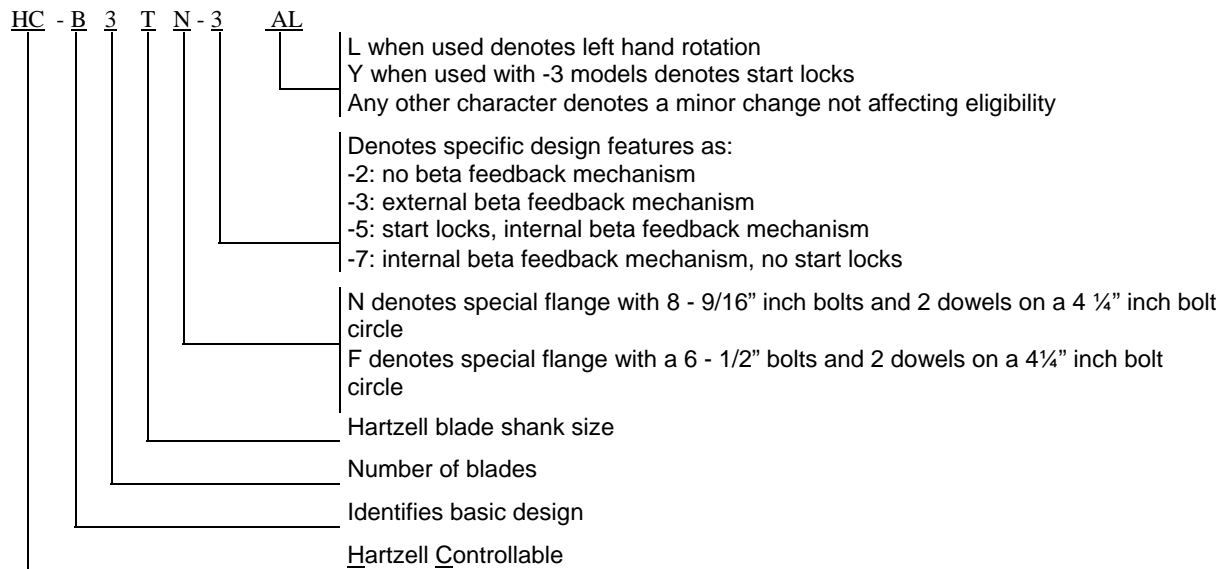
V. Operating and Service Instructions

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

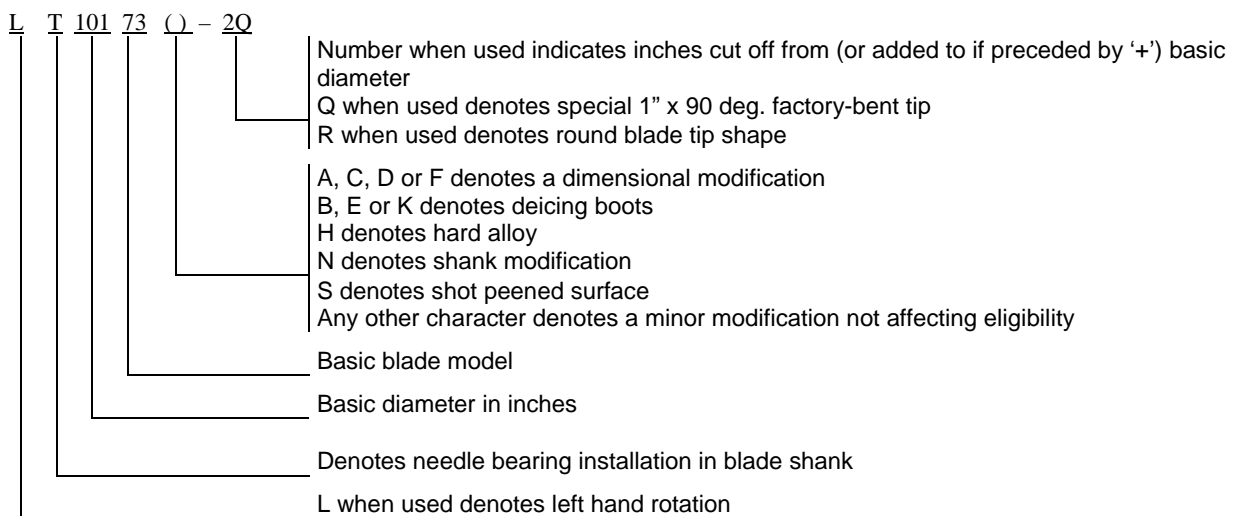
*: or later approved revision

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 Maintenance Manual 118() or Service Letter 61().
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.
