TYPE-CERTIFICATE DATA SHEET

No. IM.P.188

for

(B)HC-L2YF, BHC-G2YF series propellers

Type Certificate Holder

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

For Models:
HC-L2YF-2
HC-L2YF-4
BHC-L2YF-1
BHC-L2YF-2
BHC-L2YF-4
BHC-G2YF-1

Intentionally left blank

TABLE OF CONTENTS

I. General

1. Type/ Model

(B)HC-L2YF, BHC-G2YF/ HC-L2YF-2, HC-L2YF-4, BHC-L2YF-1, BHC-L2YF-2, BHC-L2YF-4, BHC-G2YF-1

2. Manufacturer

Hartzell Propeller Inc.

3. Date of Application

HC-L2YF-2:	26 August 2002*
HC-L2YF-4:	26 August 2002*
BHC-L2YF-1:	26 August 2002*
BHC-L2YF-2:	26 August 2002*
BHC-L2YF-4:	26 August 2002*
BHC-G2YF-1:	26 August 2002*

*: The Date of Application was recorded in individual EASA Member States.

4. EASA Type Certification Reference Date

20 October 1971

5. EASA Certification Date

HC-L2YF-2:	08 November 2002*
HC-L2YF-4:	08 November 2002*
BHC-L2YF-1:	08 November 2002*
BHC-L2YF-2:	08 November 2002*
BHC-L2YF-4:	08 November 2002*
BHC-G2YF-1:	08 November 2002*

*: 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. P39EA.

2. EASA Certification Basis

2.1. Airworthiness Standards

BHC-L2YF-(1,2,4)* and HC-L2YF-(2,4)*:
14 CFR Part 35 with amendments 35-1 through 35-2 effective 01 February 1965.

BHC-G2YF-1*:
14 CFR Part 35 with amendments 35-1 through 35-9 effective 19 March 2013.

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

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 including a parts list (or later approved revisions).

HC-L2YF-2:	Drawing D-2271, rev AN dated 07.06.1972
HC-L2YF-4:	Drawing D-2265, rev Q dated 07.06.1972
BHC-L2YF-1:	Drawing D-2425, rev AS dated 18.10.1971
BHC-L2YF-2:	Drawing D-2271, rev AN dated 07.06.1972
BHC-L2YF-4:	Drawing D-2265, rev O dated 19.05.1972
BHC-G2YF-1:	Drawing D-2425, rev DD dated 20.01.2000

2. Description

The propeller is a 2-blade variable pitch propeller with a hydraulically operated blade pitch change mechanism providing the operation mode “Constant Speed”. The -1 and -4 models do not feather. The -2 models incorporate feathering and unfeathering features. Reversing is not applicable (See Note 4).
The hub is a two piece aluminium hub. Each blade is supported in the hub with a ball thrust bearing. Optional equipment includes spinner and deicing (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. Operating Limitations

Blades (See Note 2)	Max. Continous 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)	Blade Construction (See Note 10)
Non-Counterweighted Propellers - Hub models HC-L2YF-1, BHC-L2YF-1, BHC-G2YF-1					
7280+ 0,5 to 7280-7	186,4 2700	186,4 2700	184,2 to 165,1 (+10,5 to -7)	23,6	Aluminum Alloy
7663-0 to 7663-8	156,6 2800	156,6 2800	193,0 to 172,7 (-0 to -8)	21,3	Aluminum Alloy
7666-0 to 7666-8	134,2 2900 or 186,4 2700	134,2 2900 or 186,4 2700	193,0 to 172,7 (-0 to -8)	23,6	Aluminum Alloy
7681-0 to 7681-8	186,4 2700	186,4 2700	193,0 to 172,7 (-0 to -8)	23,6	Aluminum Alloy
8459-0 to 8459-18	193,9 2800	193,9 2800	213,4 to 167,6 (-0 to -18)	22,2	Aluminum Alloy
8465-0 to 8465-14	234,9 2575	234,9 2575	213,4 to 177,8 (-0 to -14)	23,1	Aluminum Alloy
8465-6 to 8465-14	193,9 2700	193,9 2700	198,1 to 177,8 (-6 to -14)	22,7	Aluminum Alloy

Blades (See Note 2)	Max. Continous 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)	Blade Construction (See Note 10)
8467-0 to 8467-12	212,5 2700	212,5 2700	213,4 to 182,9 (-0 to -12)	24,0	Aluminum Alloy
8468-0 to 8468-12	193,9 2700	193,9 2700	213,4 to 182,9 (-0 to -12)	23,1	Aluminum Alloy
8470-0 to 8470-8	193,9 2700	193,9 2700	213,4 to 193,0 (-0 to -8)	22,7	Aluminum Alloy
8475-0 to 8475-4	231,2 2575 or 193,9 2700	231,2 2575 or 193,9 2700	213,4 to 203,2 (-0 to -4)	24,0	Aluminum Alloy
8475-4 to 8475-6	261,0 2700	261,0 2700	203,2 to 198,1 (-4 to -6)	23,6	Aluminum Alloy
8475-6 to 8475-14	231,2 2700	231,2 2700 or 223,7 2850	198,1 to 177,8 (-6 to -14)	23,1	Aluminum Alloy
8477-0 to 8477-12	193,9 2700	193,9 2700	213,4 to 182,9 (-0 to -12)	22,7	Aluminum Alloy
Non-Counterweighted Propellers - Hub model BHC-G2YF-1					
7694-0 to 7694-10	156,6 2800	156,6 2800	193,0 to 167,6 (-0 to -10)	22,7	Aluminum Alloy
Counterweighted Propellers - Hub models HC-L2YF-2, BHC-L2YF-2, HC-L2YF-4, BHC-L2YF-4					
C7663-0 to C7663-8	156,6 2800	156,6 2800	193,0 to 172,7 (-0 to -8)	23,1	Aluminum Alloy
C7666-0 to C7666-8	134,2 2850 or 186,4 2700	134,2 2850 or 186,4 2700	193,0 to 172,7 (-0 to -8)	25,4	Aluminum Alloy
C7681-0 to C7681-8	186,4 2700	186,4 2700	193,0 to 172,7 (-0 to -8)	25,4	Aluminum Alloy
C8459-0 to C8459-12	193,9 2800	193,9 2800	213,4 to 182,9 (-0 to -12)	24,0	Aluminum Alloy
C8465-0 to C8465-14	234,9 2575	234,9 2575	213,4 to 177,8 (-0 to -14)	25,0	Aluminum Alloy
C8465-6 to C8465-14	193,9 2700	193,9 2700	198,1 to 177,8 (-6 to -14)	24,5	Aluminum Alloy
C8467-0 to C8467-12	212,5 2700	212,5 2700	213,4 to 182,9 (-0 to -12)	25,9	Aluminum Alloy
C8468-0 to C8468-12	193,9 2700	193,9 2700	213,4 to 182,9 (-0 to -12)	25,0	Aluminum Alloy
C8470-0 to C8470-8	193,9 2700	193,9 2700	213,4 to 193,0 (-0 to -8)	24,5	Aluminum Alloy

Blades (See Note 2)	Max. Continous 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)	Blade Construction (See Note 10)
C8475-0 to C8475-4	231,2 2575 or 193,9 2700	231,2 2575 or 193,9 2700	213,4 to 203,2" (-0 to -4)	25,9	Aluminum Alloy
C8475-4 to C8475-6	261,0 2700	261,0 2700	203,2 to 198,1 (-4 to -6)	25,4	Aluminum Alloy
C8475-6 to C8475-14	231,2 2700	231,2 2700 or 223,7 2850	198,1 to 177,8 (-6 to -14)	25,0	Aluminum Alloy
C8477-0 to C8477-12	193,9 2700	193,9 2700	213,4 to 182,9 (-0 to -12)	24,5	Aluminum Alloy

Note: Weights shown are for L2Y models. Add 0,45 kg for G2Y models.

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

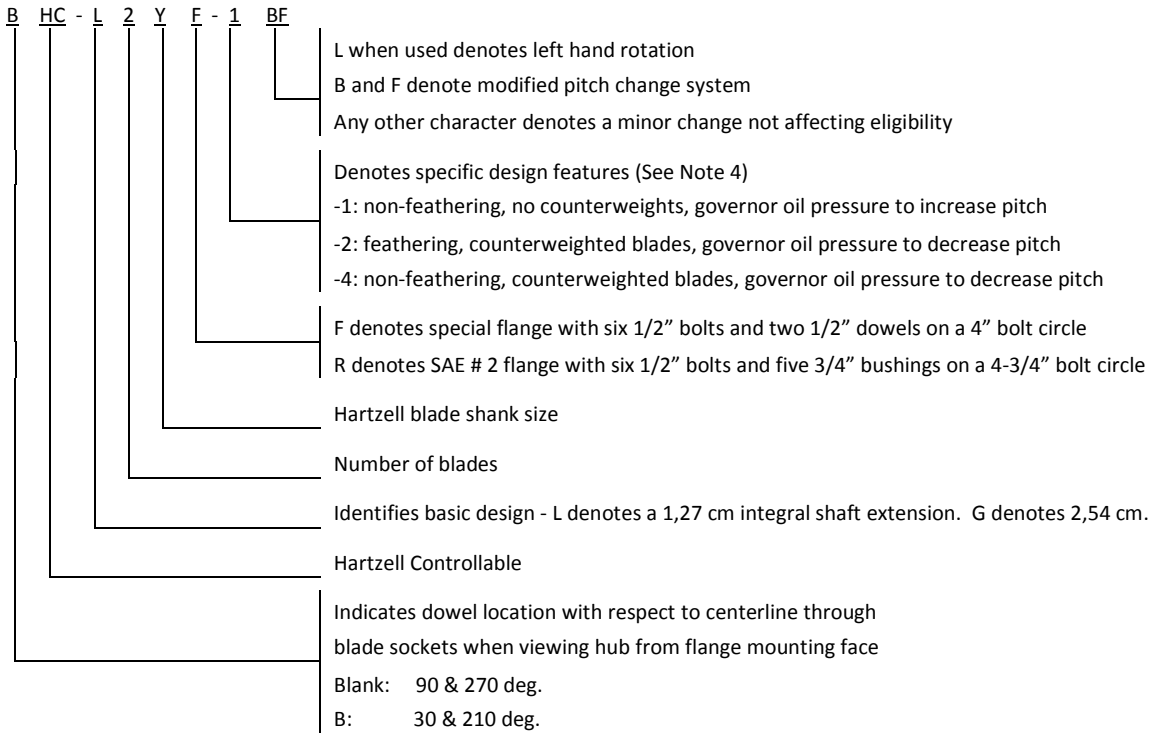
V. Operating and Service Instructions

Integration Manual	Hartzell Manual 191*
Standard Practices Manual	Hartzell Manual 202A*
Propeller Owner's Manual and Logbook	Hartzell Manual 115N*
Aluminium Bade Overhaul Manual	Harzell Manual 133C*
Metal Spinner Maintenance Manual	Hartzell Manual 127*
Propeller Maintenance Manual	Hartzell Manual 113B*, 117D*
Service Bulletins	

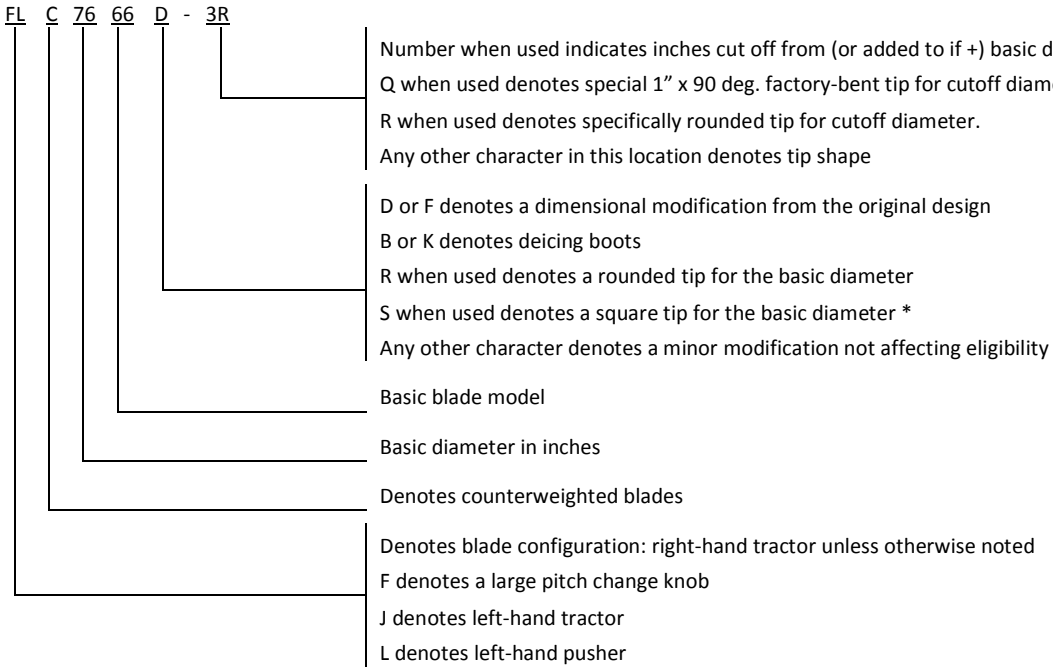
*: or later approved revision

VI. Notes

1. Hub Model Designation:



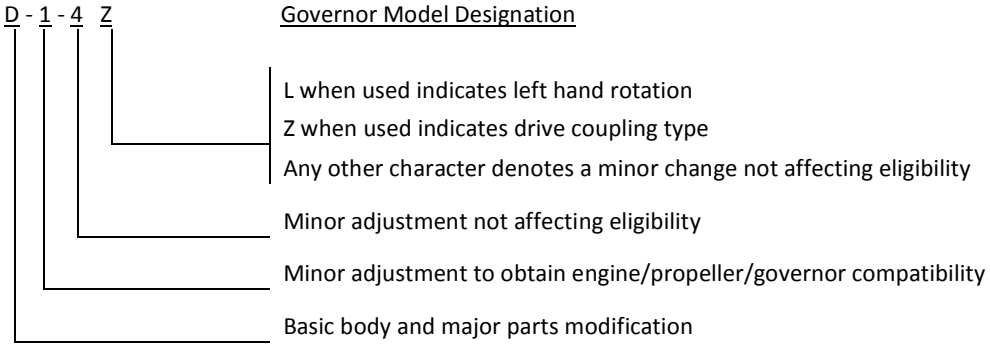
2. Blade Model Designation:



*: Blades may incorporate either round or square tips, yet may not be marked with an "R" or "S" in their model designation. This character is used to distinguish between two or more tip shapes available at the same diameter. Certain blades use "S" to denote shot peening of the exterior surface. (See Note 6)

3. Pitch Control:

(a) Approved with Hartzell governors per drawings C-4770, C-4771 and C-4772. Wt.: 2,04 kg. (See Note 10)



(b) The -2 and -4 models have counterweighted blades and use oil to decrease pitch. The -1 models do not have counterweighted blades and use oil to increase pitch. (See Note 4)

(c) Maximum governor output pressure: 2413,16 kPa for all propeller models

(d) All governors must be approved as part of the aircraft installation regardless of manufacturer. (See Note 10)

4. Feathering:

The -1 and -4 models do not feather.

The -2 models incorporate feathering and unfeathering features.

Reversing:

Not applicable.

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)

6. Interchangeability:

(a) Blades

(1) Shot-peened blades may replace non shot-peened blades either individually or as a set (See Note 2)

(b) Propellers

"F" type propellers with large pitch change knobs are interchangeable with corresponding propellers with the standard pitch change system. (See Notes 1 and 2)

(c) Ice Protection Systems

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

(d) Governors

Hartzell governors with a "Z" suffix in their model designation may be used interchangeably with corresponding governors without the "Z". For example, the F-6-24Z is a replacement for the F-6-24 and the F-6-24 is a replacement for the F-6-24Z.

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 other 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:

Table of Propeller - Engine Combinations

Approved Vibrationwise for Use on Normal Category Single Engine Tractor Aircraft

The maximum and minimum propeller diameters that can be used from a vibration standpoint are shown below. No reduction below the minimum diameter listed is permissible, since this figure includes the diameter reduction allowable for repair purposes.

The engine models listed below are the configurations on the engine type certificate unless specifically stated otherwise. Modifications to the engine or airframe that alter the power of the engine models listed below during any phase of operation have the potential to increase propeller stresses and are not approved by this list. Such modifications include, but are not limited to, the addition of a turbocharger or turbonormalizer, increased boost pressure, increased compression ratio, increased RPM, altered ignition timing, electronic ignition, full authority digital engine controls (FADEC), or tuned induction or exhaust. Also, any change to the mass or stiffness of the crankshaft/counterweight assembly is not approved by this list.

Hub Model	Blade Model	Engine Model	Max.Dia. (cm)	Min. Dia. (cm)	Placards
BHC-L2YF	7663	Continental O-300-E	182,9	177,8	none
BHC-L2YF	7663	Continental IO-360-A, -B, -C, -D, -E	193,0	182,9	none
HC-L2YF	8459	Franklin 6A-350-C1, -C2	203,2	193,0	none

HC-L2YF BHC-L2YF	8468	Continental O-470-R	213,4	203,2	none
HC-L2YF BHC-L2YF	8468	Continental IO-470-E	213,4	210,8	Avoid continuous operation between 2100 and 2225 RPM
HC-L2YF	8468	Continental IO-470-E, -D, -F, -G, -H, -M, -N, -R, -S	208,3	203,2	none
BHC-L2YF	F8468AR	Continental IO-470-C, -J, -K, -L, -N	213,4	213,4	none
BHC-L2YF	8468R	Continental IO-520-BA	213,4	213,4	none
HC-L2YF	8475	Continental IO-520-A, -J Continental TSIO-520-A, -C, -H	203,2	195,6	none
HC-L2YF	8475	Continental IO-520-D, -E, -F Continental TSIO-520-C	198,1	195,6	none
BHC-L2YF	8475	Continental IO-520-B, -C Continental TSIO-520-B, -D	203,2	195,6	none
BHC-L2YF	8475	Continental TSIO-520-E	198,1	195,6	none

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.

11. Retirement Time:

(a) Life Limits and Mandatory Inspections

(1) Airworthiness limitations, if any, are specified in Hartzell Manuals 115N or 145( ).

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.125 replace the associated Type Certificates and Type Certificate Data Sheets of the EASA Member States.

SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

N/A

II. Type Certificate Holder Record

N/A

III. Change Record

Issue	Date	Changes	TC issue
Issue 01	04 November 2015	Initial Issue	04 November 2015

-END-