DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

P-907
Revision 18
Hartzell
HC-B3Z
December 22, 2014

TYPE CERTIFICATE DATA SHEET NO. P-907

Propellers of models described herein conforming with this data sheet (which is part of Type Certificate No. P-907) 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	SAE spline or special flange (See NOTE 1)
Hub material	Alloy Steel
Blade material	Aluminum Alloy
Number of blades	Three
Hub models	HC-B3Z20-1, -2; HC-B3Z22-7; HC-B3Z30-2; HC-B3ZF-2 (See NOTES 1, 3 and 4)

Blades (See NOTES 2 & 6)	Maximum Continuous HP	Maximum Continuous RPM	Takeoff HP	Takeoff RPM	Diameter Limits (See NOTE 2)	Approx. Max. Wt. Complete (For Reference Only) (See NOTES 3 and 7)
Hub Models HC-B3Z20-1, -2						
9349-0 to 9349-13	390	2330	420	2330	93" to 80" (-0 to -13)	105 lb.
9350-0 to 9350-13	390	2330	420	2330	93" to 80" (-0 to -13)	105 lb.
10151-0 to 10151-11	390	2180	400	2180	101" to 90" (-0 to -11)	108 lb.
10151C-0 to 10151C-11	390	2180	400	2180	101" to 90" (-0 to -11)	108 lb.
10152-5 1/2 to 10152-13	450	2300	450	2300	95 1/2" to 88" (-5 1/2 to -13)	119 lb.
10160-6 to 10160-12	450	2300	450	2300	95" to 89" (-6 to -12)	120 lb.
11451-4 to 11451-14	390	1700	390	1700	110" to 100" (-4 to -14)	122 lb.
Hub Model HC-B3Z30-2						
9349+1/2 to 9349-13	390	2330	420	2330	93 1/2" to 80" (+1/2 to -13)	105 lb.
9350+1/2 to 9350-13	390	2330	420	2330	93 1/2" to 80" (+1/2 to -13)	105 lb.
10151-0 to 10151-11	390	2180	400	2180	101" to 90" (-0 to -11)	108 lb.
10152-5 1/2 to 10152-11	450	2300	450	2300	95 1/2" to 90" (-5 1/2 to -11)	120 lb.
10160-6 to 10160-11	468	2400	468	2400	95" to 90" (-6 to -11)	121 lb.

Blades (See NOTES 2 & 6)	Maximum Continuous HP	Maximum Continuous RPM	Takeoff HP	Takeoff RPM	Diameter Limits (See NOTE 2)	Approx. Max. Wt. Complete (For Reference Only) (See NOTES 3 and 7)
			Hub Model HC-B3ZF-2			
9349-0 to 9349-13	300	2070	340	2140	93” to 80” (-0 to -13)	105 lb.
9350-0 to 9350-13	300	2070	340	2140	93” to 80” (-0 to -13)	105 lb.
10151-0 to 10151-11	300	2070	340	2140	101” to 90” (-0 to -11)	108 lb.
10151C-0 to 10151C-11	300	2070	340	2140	101” to 90” (-0 to -11)	108 lb.
10152-5 1/2 to 10152-13	300	2070	340	2140	95 1/2” to 88” (-5 1/2 to -13)	119 lb.
			Hub Model HC-B3Z22-7			
8447-0 to 8447-6	420	2600	420	2600	84” to 78” (-0 to -6)	95 lb.
8847-0 to 8847-6	420	2600	420	2600	84” to 78” (-0 to -6)	97 lb.
9349-0 to 9349-13	390	2330	420	2330	93” to 80” (-0 to -13)	100 lb.
9350-0 to 9350-13	390	2330	420	2330	93” to 80” (-0 to -13)	100 lb.
10151-0 to 10151-11	390	2180	400	2180	101” to 90” (-0 to -11)	103 lb.
10151C-0 to 10151C-11	390	2180	400	2180	101” to 90” (-0 to -11)	103 lb.
10152-5 1/2 to 10152-13	450	2300	450	2300	95 1/2” to 88” (-5 1/2 to -13)	114 lb.
10160-6 to 10160-11	450	2300	450	2300	95” to 90” (-6 to -11)	115 lb.
11451-4 to 11451-14	390	1700	390	1700	110” to 100” (-4 to -14)	117 lb.

Certification Basis: Civil Air Regulations Part 14 effective December 15, 1956.
Type Certificate no. P-907 issued October 7, 1958.

Date of application for Type Certificate: May 16, 1958.

The following models were included under the original certification basis:
HC-B3Z30-2; HC-B3Z20-(1,2); HC-B3ZF-2

The following models were added, updated or revised in accordance with 14 CFR Part 35 with amendment 35-1 effective February1, 1965:
HC-B3Z22-7

The following models were added, updated or revised under Delegated Option Authorization procedures of 14 CFR Part 21 Subpart J in accordance with 14 CFR Part 35 with amendments 35-1 through 35-6 effective August 18, 1990:
HC-B3Z20-(1,2)

Production Basis: Production Certificate no. 10

NOTE 1: Hub Model Designation

HC - B 3 Z 30 - 2 D

- D: L when used denotes left hand rotation; Any other character denotes a minor change not affecting eligibility
- 2: Denotes specific design features (See NOTE 4); -1: non-feathering with counterweights and spring, governor pressure increases pitch; -2: feathering with counterweights, governor pressure decreases pitch; -7 non-feathering with counterweights and no spring, governor pressure decreases pitch
- 30: 20 denotes SAE no. 20 spline; 22 denotes French no. 22 spline; 30 denotes SAE no. 30 spline; F denotes flange with six 1/2" bolts and two 1/2" dowels on a 4" bolt circle
- Z: Hartzell blade shank size
- 3: Number of blades
- B: Identifies basic design (See NOTE 6)
- HC: Hartzell Controllable

NOTE 2: Blade Model Designation

L 101 52 B - 5 ½ R

- 5 ½ R: Number when used indicates inches cut off from (or added to if +) basic diameter; Q when used denotes special 1" x 90 deg. factory-bent tip. No cutoff permitted.; R when used denotes specifically rounded tip for cutoff diameter.; Any other character in this location denotes tip shape
- B: B or K when used denotes deicing boots; C when used denotes a blade twist modification; N denotes shank modification (see NOTE 6); R when used denotes a rounded tip for the basic diameter; Any other character denotes a minor modification not affecting eligibility
- 52: Basic model or template
- 101: Basic diameter in inches
- L: L when used denotes left-hand blades

NOTE 3: Pitch Control

(a) Approved with Hartzell governors per drawings C-4772. Wt.: 4.5 to 6 lb. (see NOTE 10)

B - 1 - 4 Z — Governor Model Designation

- Z: L when used indicates left hand rotation; Z when used indicates drive coupling type; Any other character denotes a minor change not affecting eligibility
- 4: Minor adjustment not affecting eligibility
- 1: Minor adjustment to obtain engine/propeller/governor compatibility
- B: Basic body and major parts modification

(b) The -1, -2 and -7 models have counterweighted blades and use oil to decrease pitch. (See NOTE 4)

(c) Maximum governor output pressure: 350 psi for all propeller models

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

NOTE 4: Feathering — The -1 and -7 models do not feather. The -2 models incorporate feathering and unfeathering features.

Reversing — Not applicable

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) Blades

(1) Only blades listed in the same group of the following listed groups are sufficiently similar aero-dynamically and vibrationwise to permit interchangeability in the same diameter without a flight test. Group (A): 9349, 9350

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

For example: Blades without the "N" suffix may be replaced by "N" suffix blades.
Blades with the "N" suffix may only be replaced by "N" suffix blades

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

(b) Propellers

Propeller models listed in this data sheet may replace, but not be replaced by, corresponding propeller models listed in Type Certificate Data Sheet no. P-891. Propeller models listed in this data sheet are interchangeable with corresponding propeller models listed in Type Certificate Data Sheet no. P2EA. Refer to the following tables (read across same row):

Prop models on TCDS P-891	may be replaced by	Corresponding models on TCDS P-907
HC-93Z20-1		HC-B3Z20-1
HC-93Z20-2		HC-B3Z20-2
HC-93Z30-2		HC-B3Z30-2
HC-93ZF-2		HC-B3ZF-2

Prop models on TCDS P-907	are interchangeable with	Corresponding models on TCDS P2EA
HC-B3Z20-2		HC-B3W20-2
HC-B3Z30-2		HC-B3W30-2
HC-B2ZF-2		HC-B3WF-2

(c) Governors (See NOTE 3)

(1) 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.

(2) The Hartzell B-0 is the only model which is interchangeable with the Hamilton Standard 1M12 or 1Q12. Other Hartzell models are not interchangeable with any Hamilton Standard model without modification of the latter.

(d) Ice Protection Systems

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

NOTE 7: Accessories (See NOTE 10)

(a) Propeller ice protection system (weight of ice protection system 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)

NOTE 8: Shank Fairings Not applicable.

NOTE 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. (inches)	Min. Dia. (inches)	Placards
HC-B3Z20	9349	Lycoming R-680-E3A	88	82	none
HC-B3Z20	9349	Lycoming R-680-E3B	88	88	none
HC-B3Z30	9349	Lycoming IGO-540-B1A Lycoming IGSO-540-B1A	93 ½	86	none
HC-B3Z20	9350	Lycoming R-680-E3A	88	82	none
HC-B3Z20	9350	Lycoming R-680-E3B	88	88	none
HC-B3Z30	9350	Lycoming IGO-540-B1A Lycoming IGSO-540-B1A	93 ½	93 ½	none
HC-B3Z20	10151	Lycoming GO-480-G1A6, -G1D6	101	95	none
HC-B3Z20 HC-B3ZF	10151	Lycoming GSO-480 series with five 3rd order and one 6th order dampers; 7.3:1 compression ratio; 340 HP @ 3400 RPM or less	93	90	none

Hub Model	Blade Model	Engine Model	Max. Dia. (inches)	Min. Dia. (inches)	Placards
HC-B3Z20	10151	Lycoming IGSO-480 series with five 3rd order and one 6th order dampers; 7.3:1 compression ratio; 340 HP @ 3400 RPM or less	93	90	none
HC-B3Z30	10151	Lycoming IGSO-540-A1A, -A1E, -A1H, -B1A	93 ½	90 ½	none
HC-B3Z20	10151C	Lycoming GO-480-F2D6, -G1D6	101	95	none
HC-B3Z30	10152-5 ½	P&WA R-985 with one 4 ½ order and one 9th order crankshaft dampers	95 ½	95 ½	none
HC-B3Z30	10152-7 ½	P&WA R-985 with one 4 ½ order and one 9th order crankshaft dampers	93 ½	93 ½	Avoid continuous operation between 1600 and 1850 RPM
HC-B3Z30	10160-6	P&WA R-985 with one 4 ½ order and one 9th order crankshaft dampers	95	95	Avoid continuous operation between 1600 and 1800 RPM
HC-B3Z20	10160-8	Jacobs R-755A2	93	93	none

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.

NOTE 11: Retirement Time

(a) Life Limits and Mandatory Inspections

(1) Airworthiness limitations, if any, are stated in Hartzell Manuals 108( ), 114( ) or Service Letter 61( ).

NOTE 12: Special Notes

Refer to Hartzell Manual no. 202( ) for overspeed and overtorque limits.

END