

DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

P-892 Revision 20 Hartzell HC-92Z, BHC-92Z March 28, 2006
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TYPE CERTIFICATE DATA SHEET NO. P-892

Propellers of models described herein conforming with this data sheet (which is part of Type Certificate No. P-892) 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	Alloy steel
Blade material	Aluminum alloy
Number of blades	Two
Hub models	HC-92ZF-1, -2, -6; HC-92ZK-1, -2, -6, -8; HC-92ZL-2; BHC-92ZF-1, -3, -8 (see NOTES 1 and 4)

Blades (see NOTE 2)	Maximum Continuous		Takeoff		Diameter Limits (see NOTE 2)	Approx. Max. Wt. Complete* (For Reference Only) (see NOTES 3 and 7)
	HP	RPM	HP	RPM		
<u>HUB MODELS HC-92ZF-1, -2, -6; HC-92ZK-1; BHC-92ZF-1, -3, -8</u>						
8447-0 to 8447-6	280	2800	280	2800	84" to 78" (-0 to -6)	73.0 lb.
8847-0 to 8847-6	280	2600	280	2600	88" to 82" (-0 to -6)	78.0 lb.
9349-0 to 9349-15	280	2400	280	2400	92 5/8" to 77 5/8" (-0 to -15)	82.0 lb.
9350-0 to 9350-5	280	2400	280	2400	92 5/8" to 87 5/8" (-0 to -5)	82.0 lb.
9350-5 to 9350-15	280	2600	280	2600	87 5/8" to 77 5/8" (-5 to -15)	81.0 lb.
<u>HUB MODEL HC-92ZL-2</u>						
8447-0 to 8447-6	180	2800	180	2800	84" to 78" (-0 to -6)	73.0 lb.
8447-8 to 8447-14	180	2700	180	2700	76" to 70" (-0 to -14)	72.0 lb.

Blades (see NOTE 2)	Maximum Continuous		Takeoff		Diameter Limits (see NOTE 2)	Approx. Max. Wt. Complete* (For Reference Only) (see NOTES 3 and 7)
	HP	RPM	HP	RPM		
<u>HUB MODELS HC-92ZK -2, -6, -8</u>						
8447-8 to 8447-14	250	2800	250	2800	76" to 70" (-8 to -14)	72.0 lb.
8447A-8 to 8447A-14	250	2800	250	2800	76" to 70" (-8 to -14)	72.0 lb.
8447-12A to 8447-16A	250	2800	250	2800	72" to 68" (-12 to -16)	72.0 lb.
8447A-12A to 8447A-16A	250	2800	250	2800	72" to 68" (-12 to -16)	72.0 lb.

\* Weights apply to -2 and -3 hub models. Subtract 8 lb. for -1 hubs, 6 lb. for -6 hubs and 9 lb. for -8 hubs.

Certification Basis: CAR 14 effective May 18, 1954 with Amendments 14-1 and 14-2.  
Type Certificate No. P-892 issued July 22, 1955.

Models approved to the original certification basis include the following:  
HC-92ZF-1, -2, -6; HC-92ZK-1, -2, -6, -8; HC-92ZL-2; BHC-92ZF-1, -8

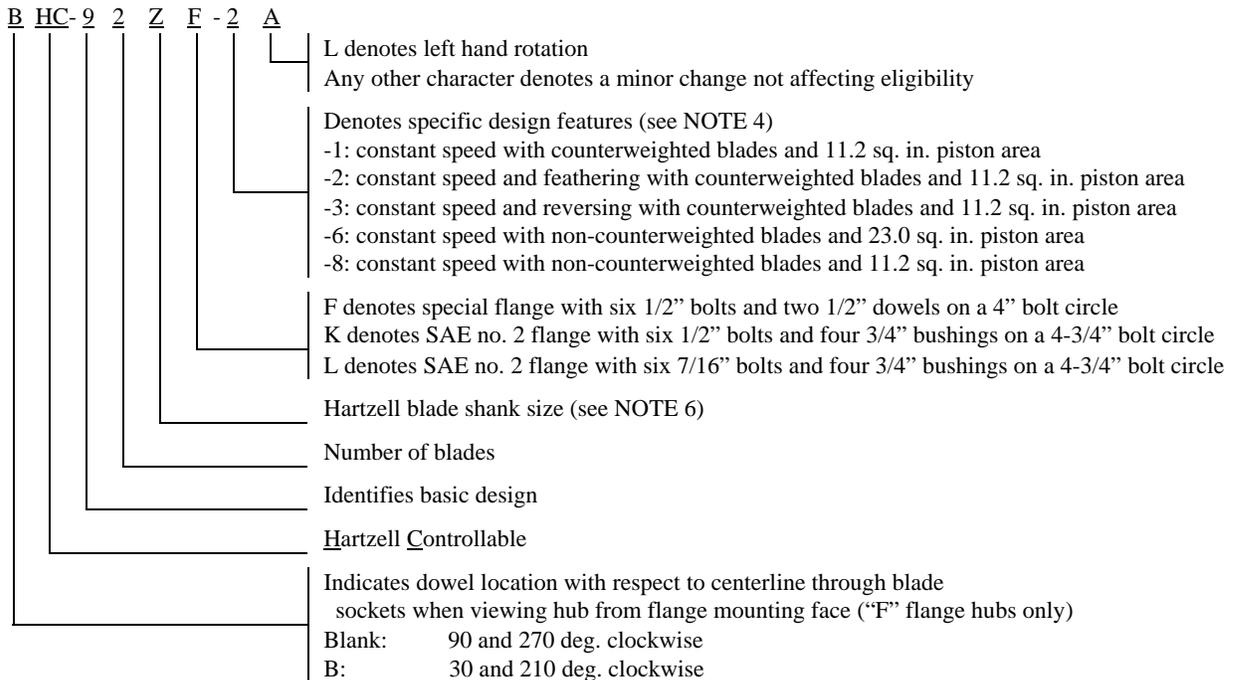
The following models were approved under Delegated Option Authorization Procedures of 14 CFR Part 21, Subpart J.

Models added, updated or revised in accordance with 14 CFR Part 35 effective April 3, 1967 with amendments 35-1 and 35-2 include the following: BHC-92ZF-3

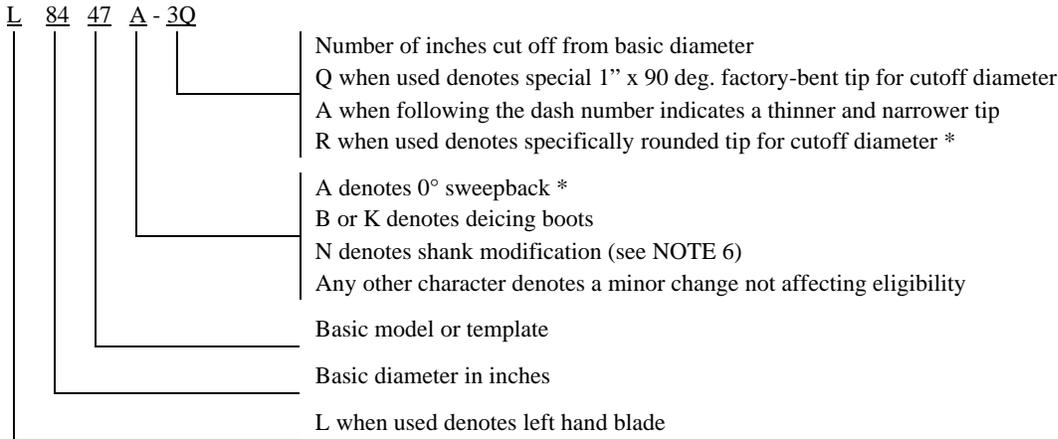
Date of application for Type Certificate: April 15, 1955.

Production Basis: Production Certificate no. 10

NOTE 1: Hub Model Designation



NOTE 2: Blade Model Designation

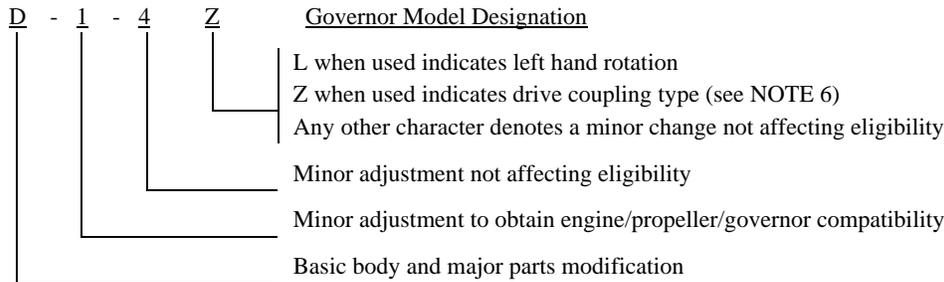


\* Some blades which use square or rounded tip shapes may not contain the letters "S" or "R" in their model designation. These characters are used to distinguish blades when two or more tip shapes are available at the same diameter. Blades identified with an "A" following the model designation denote 0° sweepback (otherwise sweepback is 1°).

Diameter limits shown are nominal diameters of the assembled propeller and do not include the ± 1/8 inch manufacturing tolerance permissible for propellers with basic diameter less than 14 feet.

NOTE 3: Pitch Control

(a) Approved with Hartzell governors per drawings C-4770 and C-4772. Wt.: 4.5 lb.



(b) The -1, -2 and -3 models have counterweighted blades and use oil to decrease pitch. The -6 and -8 models do not have counterweighted blades and use oil to increase 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 and Reversing

(a) Feathering The -2 model incorporates feathering and unfeathering features. The -1, -3, -6 and -8 models do not feather.

(b) Reversing The -3 model is approved for installation as a reversing propeller 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) Blades

- (1) 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.

- (2) Only blades listed in the same groups of the following listed groups are sufficiently similar aerodynamically and vibrationwise to permit interchangeability in the same diameter without a flight test.

Group (a)       8447(N)-8 to -14, 8447A(N)-8 to -14  
 Group (b)       8447(N)-12A to -16A, 8447A(N)-12A to -16A  
 Group (c)       8447(N)-12R to -16R, 8447A(N)-12R to -13R

## (b) 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 and 1Q12. Other Hartzell models are not interchangeable with any Hamilton Standard model without modification of the latter.

## (c) Propellers       (See NOTES 1 and 2)

- (1) The following propeller models may be replaced by corresponding propellers listed in Type Certificate Data Sheet P16EA as indicated below. Propellers listed in this data sheet are not approved to replace propellers listed in P16EA. For example (B)HC-92W( ) models using blades with a “W” prefix may replace corresponding (B)HC-92Z( ) models using blades with no prefix.

<u>TCDS P-892</u>	<u>TCDS P16EA</u>
HC-92ZK-1D	HC-92WK-1D
BHC-92ZF-1D1	BHC-92WF-1D1
HC-92ZK-2B	HC-92WK-2B
BHC-92ZF-3	BHC-92WF-3
BHC-92ZF-3LG	BHC-92WF-3LG
HC-92ZK-8D	HC-92WK-8D
HC-92ZK-8L	HC-92WK-8L

NOTE 7: Accessories

- (a) Propeller anti-icing (weight of anti-icing system extra)
  - (1) Approved with fluid feed boots listed on Hartzell approved type design data when installed in accordance with Hartzell specification H-S-2 or Hartzell Manual no. 133( ).
  - (2) Approved with Hartzell fluid feed equipment on propeller models for which equipment is available.
- (b) Propeller deicing (weight of deicing system extra)
  - (1) Approved with Goodrich electrical deicing kit 5EXXXX, 7EXXXX, 77-XXX, 67-XXX or 65-XXX when installed in accordance with Goodrich Report no. ATA 30-60-07.
  - (2) Approved with Goodyear Ice Guards (electrical propeller deicer) when installed in accordance with instructions outlined in Goodyear Report no. AP-147 dated October 23, 1961.
  - (3) Approved with ice protection equipment when listed on Hartzell type design data.
- (c) Propeller spinner (weight of spinner extra)
  - Approved with Hartzell and other manufacturers' spinners when listed on approved type design data.

NOTE 8: Shank Fairings Not ApplicableNOTE 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 turbnormalizer, 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.

<u>Hub Model</u>	<u>Blade Model</u>	<u>Engine Model</u>	<u>Max. Dia. (inches)</u>	<u>Min. Dia. (inches)</u>	<u>Placards</u>
HC-92Z	8447-( )R 8447A-( )R	LYC O-360 and IO-360 series, 8.5:1 compression ratio or less, 180 HP at 2700 RPM or less	72	71	Do not exceed 23 inches manifold pressure below 2300 RPM
HC-92Z	8447-( )A 8447A-( )A	LYC O-360 and IO-360 series, 8.5:1 compression ratio or less, 180 HP at 2700 RPM or less	72	70	Do not exceed 23 inches manifold pressure below 2300 RPM
HC-92Z	8447A-( )	LYC O-360-A1A, -A1D	76	72	Avoid continuous operation between 2250 and 2500 RPM
BHC-92Z	8447	TCM IO-470-J	84	82	none

<u>Hub Model</u>	<u>Blade Model</u>	<u>Engine Model</u>	<u>Max. Dia. (inches)</u>	<u>Min. Dia. (inches)</u>	<u>Placards</u>
HC-92Z	8447	LYC O-540 series, two 6 <sup>th</sup> order dampers, 8.5:1 compression ratio or less, 250 HP at 2575 RPM or less	84	82	none
BHC-92Z	8847	TCM O-470-B, -M	88	88	none
HC-92Z	8847	TCM IO-470 series, 8.6:1 compression ratio or less, 260 HP at 2625 RPM or less. Centerline of blades 60° and 240° clockwise from no. 1 crankthrow facing engine from propeller end.	88	88	none
HC-92Z	8847	LYC O-540-A1A5	88	88	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 or STC 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 specified in Hartzell Manuals 105( ), 110( ), 114( ), 119( ) or Service Letter 61( ).

NOTE 12: Special Notes

Refer to Manual 202( ) for overspeed and overtorque limits.

END