

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

P16EA Revision 10
Hartzell HC-92W, BHC-92W March 8, 2005

TYPE CERTIFICATE DATA SHEET NO. P16EA

Propellers of models described herein conforming with this data sheet (which is part of Type Certificate No. P16EA) 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-92WK-1, -2, -8; HC-92WF-3, -5, -8; BHC-92WF-1, -3, -5; (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-92WK-1, -8</u>						
W8447-0 to W8447-14	300	2800	300	2800	84" to 70" (-0 to -14)	73.0 lb.
W8447A-8 to W 8447A-14	250	2800	250	2800	76" to 70" (-8 to -14)	72.0 lb.
W8847-0 to W8847-6	280	2600	280	2600	88" to 82" (-0 to -6)	78.0 lb.
W9349-0 to W9349-15	280	2400	280	2400	92 5/8" to 77 5/8" (-0 to -15)	82.0 lb.
W9350-0 to W9350-4.6	280	2400	280	2400	92 5/8" to 88" (-0 to -4.6)	82.0 lb.
W9350-4.6 to W9350-15	300	2600	300	2600	88" to 77 5/8" (-4.6 to -15)	81.0 lb.
W9591-0 to W9591-10	300	2200	300	2200	95" to 85" (-0 to -10)	66.0 lb. (for -8D)

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 BHC-92WF-1, HC-92WK-2, HC-92WF-3, BHC-92WF-3, HC-92WF-5, BHC-92WF-5</u>						
W8447-0 to W8447-14	300	2800	300	2800	84" to 70" (-0 to -14)	74.0 lb.
W8447A-8 to W8447A-14	250	2800	250	2800	76" to 70" (-8 to -14)	72.0 lb.
W8447-12A to W8447-16A	250	2800	250	2800	72" to 68" (-12 to -16)	72.0 lb.
W8447A-12A to W8447A-16A	250	2800	250	2800	72" to 68" (-12 to -16)	72.0 lb.

Certification Basis: CAR 14 effective December 15, 1956 with Amendment 14-1 thereto.
Type Certificate No. P16EA issued April 3, 1964.

Models approved to the original certification basis include HC-92WK-1, -2, -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 February 1, 1965 with amendment 35-1 include the following: HC-92WF-3, BHC-92WF-3

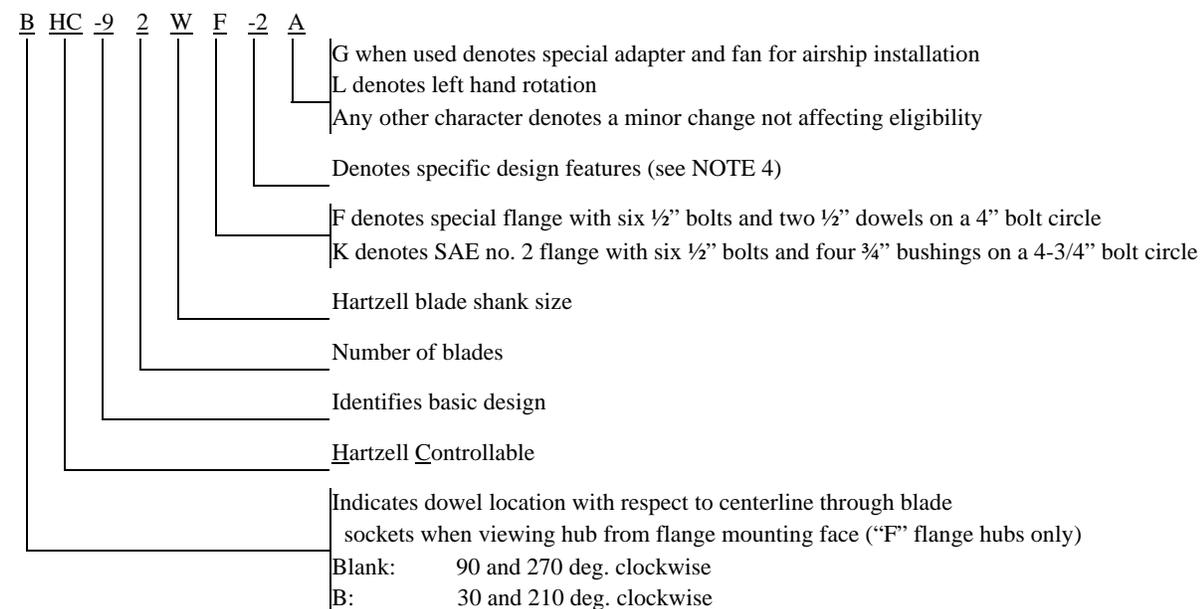
Models added, updated or revised in accordance with 14 CFR Part 35 effective April 3, 1967 with amendments 35-1 and 35-2 include the following: HC-92WK-1, -8, HC-92WF-5, -8, BHC-92WF-5

Models added, updated or revised in accordance with 14 CFR Part 35 effective August 18, 1990 with amendments 35-1 through 35-6 include the following: BHC-92WF-1

Date of application for Type Certificate: February 26, 1964.

Production Basis: Production Certificate no. 10

NOTE 1: Hub Model Designation



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) W8447-8 to -14, W8447A-8 to -14
 Group (b) W8447-12A to -16A, W8447A-12A to -16A
 Group (c) W8447-12R to -13R, W8447A-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 replace corresponding propellers listed in Type Certificate Data Sheet P-892 as indicated below. Propellers listed in P-892 are not approved to replace propellers listed in this data sheet. 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 P16EA</u>	<u>TCDS P-892</u>
HC-92WK-1D	HC-92ZK-1D
BHC-92WF-1D1	BHC-92ZF-1D1
HC-92WK-2B	HC-92ZK-2B
BHC-92WF-3	BHC-92ZF-3
BHC-92WF-3LG	BHC-92ZF-3LG
HC-92WK-8D	HC-92ZK-8D
HC-92WK-8L	HC-92ZK-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 spinners when listed on Hartzell type design data.

(d) Propeller Adapter

Propeller hub models with -3G or -3LG suffix incorporate a Hartzell pulley adapter P/N C-2987 and Cessna fan P/N 1457210 for use on a Goodyear Airship. Additional weight 21 lb. (When used, combination may be operated to 210 HP at 2800 RPM)

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 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-92WF	W8447	TCM TSIO-520 and IO-520 series, 7.5 to 1 compression ratio or less, 285 HP at 2700 RPM or less	82	81	none
HC-92WK	W8447-()A	LYC O-360-A1A, IO-360-B1A	72	70	none
HC-92WK	W8447-()R	LYC O-360-A1A, IO-360-B1A	72	71	none
HC-92WK	W8447A	LYC IO-360-A1A, -A1D	76	72	Avoid continuous operation between 2250 and 2500 RPM
HC-92WK	W8447-()R	LYC O-360 and IO-360 series engines, 8.5 to 1 compression ratio or less, 180 HP at 2700 RPM or less	72	71	none
HC-92WF	W8847	TCM IO-470 series, 8.6 to 1 compression ratio or less, four 6 th order dampers, 260 HP at 2625 RPM or less, "Z" engine dowel location	88	88	none
HC-92WK	W9349	LYC IO-540-A1A5, -B1A5, -B1C5, -E1A5, -E1B5, -G1A5, -G1B5, -G1C5, -G1D5, -G1E5, 280 HP at 2400 RPM	88	88	Do not exceed 23 in. Hg manifold pressure below 2350 RPM
HC-92WK	W9350	LYC IO-540-A1A5, -B1A5, -B1C5, -E1A5, -E1B5, -G1A5, -G1B5, -G1C5, -G1D5, -G1E5, 300 HP at 2600 RPM	88	88	Do not exceed 23 in. Hg manifold pressure below 2350 RPM

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