DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

P35EA
Revision 16
Hartzell
HC-H3Y, PHC-H3Y
January 6, 2016

TYPE CERTIFICATE DATA SHEET NO. P35EA

Propellers of models described herein conforming with this data sheet (which is part of Type Certificate No. P35EA) 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	Aluminum Alloy
Blade material	See Below
Number of blades	Three
Hub models	HC-H3YF-1, -2, -3; PHC-H3YF-1, -2; HC-H3YN-2

Blades (See Note 2)	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)	Blade Construction
Non-Counterweighted Propellers HC-H3YF-1, PHC-H3YF-1							
7490-0 to 7490-10	350	2850	350	2850	76" to 66" (-0 to -10)	72.0 lb.	Aluminum Alloy
7691-0 to 7691-10	350	2850	350	2850	78" to 68" (-0 to -10)	77.0 lb.	Aluminum Alloy
7693-0 to 7693-10	350	2700	350	2700	78" to 68" (-0 to -10)	82.0 lb.	Aluminum Alloy
8068+2 to 8068-10	350	2700	350	2700	84" to 72" (+2 to -10)	81.0 lb.	Aluminum Alloy
8468-0 to 8468-14	400	2700	400	2700	86" to 72" (-0 to -14)	79.0 lb.	Aluminum Alloy
Counterweighted Propellers: PHC-H3YF-2							
C7453-0 to C7453-8	310	2800	310	2800	76" to 68" (-0 to -8)	85.0 lb.	Aluminum Alloy
Counterweighted Propellers: HC-H3YF-2; PHC-H3YF-2							
C7693-0 to C7693-10	400	2700	400	2700	78" to 68" (-0 to -10)	84.0 lb.	Aluminum Alloy
Counterweighted Propellers: HC-H3YF-2, -3; HC-H3YN-2							
C7479-2 to C7479-8	380	2900	380	2900	74" to 68" (-2 to -8)	88.0 lb.*	Aluminum Alloy
C7663-0 to C7663-10	310	2800	310	2800	78" to 68" (-0 to -10)	81.0 lb.*	Aluminum Alloy
C7666-0 to C7666-10	310	2700	310	2700	78" to 68" (-0 to -10)	85.0 lb.*	Aluminum Alloy
C8459-0 to C8459-14	310	2700	310	2700	86" to 72" (-0 to -14)	83.0 lb.*	Aluminum Alloy

Blades (See Note 2)	Maximum Continuous HP	RPM	Takeoff HP	RPM	Diameter Limits Construction	Approx. Max. Wt. Complete (For Reference Only) (See Notes 3 and 7)	Blade Construction
C8465-0 to C8465-14	310	2700	310	2700	86” to 72” (-0 to -14)	86.0 lb.*	Aluminum Alloy
C8467-0 to C8467-14	310	2575	310	2575	86” to 72” (-0 to -14)	90.0 lb.*	Aluminum Alloy
C8468-0 to C8468-14	310	2625	310	2625	86” to 72” (-0 to -14)	87.0 lb.*	Aluminum Alloy
C8470-0 to C8470-14	310	2700	310	2700	86” to 72” (-0 to -14)	86.0 lb.*	Aluminum Alloy
C8475+2 to C8475-0	435	2266	435	2266	88” to 86” (+2 to -0)	90.0 lb.*	Aluminum Alloy
C8475-0 to C8475-14	310 or 435	2575 or 2266	310 or 435	2575 or 2266	86” to 72” (-0 to -14)	90.0 lb.*	Aluminum Alloy
C8477-0 to C8477-14	310	2575	310	2575	86” to 72” (-0 to -14)	93.0 lb.*	Aluminum Alloy
C9684-12 to C9684-18	320	2200	320	2200	84” to 78” (-12 to -18)	93.0 lb.*	Aluminum Alloy

* Weights apply to -2 propellers only. Add 7 lbs. for -3 models.

Certification Basis:	14 CFR Part 35 effective February 1, 1965 with amendments 35-1 and 35-2 thereto. Type Certificate No. P35EA issued December 31, 1970 under Delegated Option Authorization procedures of 14 CFR Part 21 Subpart J. Date of application for Type Certificate: December 15, 1970 The following models were approved to the original certification basis: HC-H3YF-(2,3); HC-H3YN-2 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: HC-H3YF-(1,2,3); PHC-H3YF-(1,2); HC-H3YN-2
Production Basis:	Production Certificate no. 10

Note 1: Hub Model Designation (See Notes 4 and 5)

P HC - H 3 Y F - 1 RF

- RF: F when used denotes modified pitch change system; K when used with -2 models indicates specific flange mounting studs; L when used denotes left hand rotation; R when used denotes 21.6 sq. in. piston area; U denotes feather assist spring for -2 models; Any other character denotes a minor change not affecting eligibility
- 1: Denotes specific design features; -1: non-feathering, no counterweights, governor oil pressure increases pitch; -2: feathering with counterweights, governor oil pressure decreases pitch; -3: non-feathering and reversing with counterweights, governor oil pressure decreases pitch
- F: F denotes flange with six 1/2" bolts and two 1/2" dowels on a 4" bolt circle; N denotes flange with eight 9/16" bolts and two ½" dowels on a 4.24" bolt circle
- Y: Hartzell blade shank size
- 3: Number of blades
- H: 'H' denotes a 4.25 inch integral shaft extension
- HC: Hartzell Controllable
- P: When used indicates Flange Angular Index with respect to #1 blade, viewed clockwise facing propeller flange

Prefix	Angular Index	Clocking Feature	Flange
Blank	90 and 270 degrees	Dowel Pins	F, N
P	0 and 180 degrees	Dowel Pins	F

Note 2: Blade Model Designation (See Notes 5 and 6)

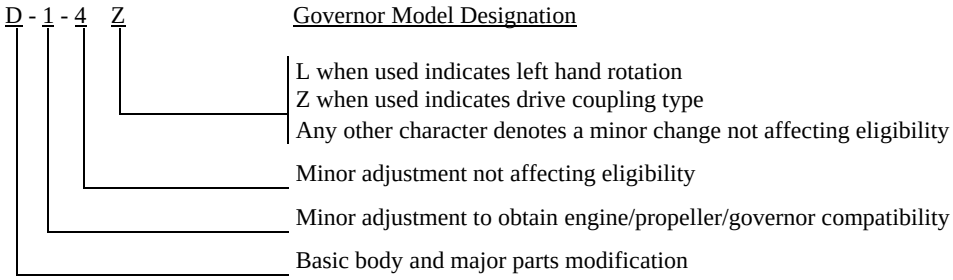
FL C 76 66 D - 3R

- 3R: Number of inches cut off from (or added to if +) basic diameter; Q when used denotes special 1" x 90 deg. factory-bent tip for cutoff diameter; R when used denotes specifically rounded tip for cutoff diameter.; Any other character in this location denotes tip shape
- D: D or F denotes a dimensional modification from the original design; B or K denotes deicing boots; R when used denotes a rounded tip for the basic diameter; S when used denotes a square tip for the basic diameter *; Any other character denotes a minor modification not affecting eligibility
- 66: Basic blade model
- 76: Basic diameter for a two blade propeller. Add two inches for three blade propellers. (Note: two inch correction does not apply to C9684 blade design)
- C: Denotes counterweighted blades
- FL: Denotes blade configuration: right-hand tractor unless otherwise noted; F denotes a large pitch change knob; J denotes left-hand tractor; L or H denotes left-hand pusher or right-hand pusher respectively

* 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.

Note 3: Pitch Control (See Notes 4, 6 and 10)

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



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

(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.

Note 4: Feathering The -1 and -3 models do not feather.
The -2 models incorporate feathering and unfeathering features.

Reversing The -3 models are eligible for installation as reversing propellers with appropriate reversing controls.

Note 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.

Note 6: Interchangeability (See Notes 2 and 3)

(a) 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.

(b) Blades

Shot-peened blades may replace non shot-peened blades either individually or as a set

(c) Ice protection systems

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

Note 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)

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
PHC-H3YF	F7490	TCM TSIO-550-B	76	75.5	Do not exceed 30 in. manifold pressure below 2500 RPM
PHC-H3YF	F7490	TCM IO-550-G	76	75.5	none
PHC-H3YF	F7691( )	TCM IO-520-A, -B, -BA, BB, -C, -CB, -D, -E, -F, -J, -K, -L, -M, -MB	78	77	Do not exceed 20 in. manifold pressure below 2200 RPM
PHC-H3YF	F7691( )	TCM IO-550-A, -B, -C, -D, -F, -G, -L	78	77	Do not exceed 20 in. manifold pressure below 2200 RPM
HC-H3YF PHC-H3YF	F7693( )	TCM IO-550-A, -B, -C, -D, -E, -F, -G, -L, -N, -P, -R, TCM TSIO-550-B, -C, -E	78	75	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 specified in Hartzell Manuals 113( ), 115N or 117( )

Note 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 overhaul periods.

END