DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

P41EA
Revision 11
Hartzell
EHC-L3Y
PHC-L3Y
January 6, 2016

TYPE CERTIFICATE DATA SHEET NO. P41EA

Propellers of models described herein conforming with this data sheet (which is part of Type Certificate No. P41EA) 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	EHC-L3YF-1, PHC-L3YF-1, PHC-L3Y1F-1

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 (See Note 10)
Hub models EHC-L3YF-1, PHC-L3YF-1							
7392-0 to 7392-10	350	2850	350	2850	75" to 65" (-0 to -10)	69.0 lb.	Aluminum Alloy
7663-0 to 7663-10	310	2800	310	2800	78" to 68" (-0 to -10)	70.0 lb.	Aluminum Alloy
7666-0 to 7666-10	310	2700	310	2700	78" to 68" (-0 to -10)	77.0 lb.	Aluminum Alloy
7691-0 to 7691-10	350	2850	350	2850	78" to 68" (-0 to -10)	68.0 lb.	Aluminum Alloy
8068+2 to 8068-10	350	2700	350	2700	84" to 72" (+2 to -10)	78.5 lb.	Aluminum Alloy
8068-2 to 8068-10	350	2700	310	2850	80" to 72" (-2 to -10)	78.5 lb.	Aluminum Alloy
8459-0 to 8459-14	400	2700	400	2700	86" to 72" (-0 to -14)	73.0 lb.	Aluminum Alloy
8465-0 to 8465-14	400	2700	400	2700	86" to 72" (-0 to -14)	75.0 lb.	Aluminum Alloy
8467-0 to 8467-14	400	2575	400	2575	86" to 72" (-0 to -14)	79.0 lb.	Aluminum Alloy
8468-0 to 8468-14	400	2625	400	2625	86" to 72" (-0 to -14)	76.0 lb.	Aluminum Alloy
8468-6 to 8468-14	310	2850	310	2850	80" to 72" (-6 to -14)	76.0 lb.	Aluminum Alloy
8470-0 to 8470-14	400	2700	400	2700	86" to 72" (-0 to -14)	75.0 lb.	Aluminum Alloy

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 (See Note 10)
8475-0 to 8475-14	400	2575	400	2575	86” to 72” (-0 to -14)	79.0 lb.	Aluminum Alloy
8477-0 to 8477-14	400	2575	400	2575	86” to 72” (-0 to -14)	82.0 lb.	Aluminum Alloy
			Hub models PHC-L3Y1F-1				
N7605+2 to N7605-10	350	2700	350	2700	80” to 68” (+2 to -10)	57.0 lb.	Composite

Certification Basis: 14 CFR Part 35 with amendments 35-1 and 35-2 effective April 1, 1967.
Type Certificate No. P41EA issued January 10, 1972 under Delegated Option Authorization provisions of 14 CFR Part 21 Subpart J.

Date of application for Type Certificate: October 20, 1971.

The following models were included under the original certification basis:
EHC-L3YF-1, PHC-L3YF-1

The following models were added, updated or revised in accordance with 14 CFR Part 35 with amendments 35-1 through 35-6 effective August 1, 1990:
EHC-L3YF-1, PHC-L3YF-1

The following models were added, updated or revised in accordance with 14 CFR Part 35 with amendments 35-1 through 35-8 effective December 23, 2008 using 14 CFR Part 21.101 for paragraphs 35.15, 35.35(c), 35.41 and 35.43:
PHC-L3Y1F-1

Production Basis: Production Certificate no. 10

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

E HC - L 3 Y 1 F - 1 RF

- RF: F when used denotes modified pitch change system; L when used denotes left hand rotation; N indicates compatibility with N shank blades (See Note 2); R when used denotes 21.6 sq. in. piston area; 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
- F denotes flange with six 1/2” bolts and two 1/2” dowels on a 4” bolt circle
- 1 when used denotes hub design modification compatible only with blade models listed in this data sheet
- Y: Hartzell blade shank size
- 3: Number of blades
- L: Identifies basic design. “L” denotes integral 0.5 inch shaft extension
- HC: Hartzell Controllable
- E: When used indicates Flange Angular Index with respect to #1 blade, viewed clockwise facing propeller flange

Prefix	Angular Index	Clocking Feature	Flange
E, P	0 and 180 degrees	Dowel Pins	F

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

FL 76 66 D - 3R

- 3R
  - 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
- 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 a three blade propeller.
- FL
  - Denotes blade configuration: right-hand tractor unless otherwise noted
  - F denotes a large pitch change knob
  - H denotes right-hand pusher
  - J denotes left-hand tractor
  - L denotes left-hand pusher
  - N denotes composite blade shank type

* 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. Wt.: 4.5 lb.

D - 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
- D — Basic body and major parts modification

(b) The -1 models do not have counterweighted blades and use oil to increase 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 models do not feather.
Reversing	Not applicable
Piston size	Piston area is 17.7 sq. in. except as noted in Note 1.

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 (See Note 10)

(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-L3YF	F7691	TCM IO-520-A, B, BA, BB, D, F, J, L	78	77	Do not exceed 20” manifold pressure below 2250 RPM
PHC-L3YF	F7691	TCM IO-550-B, D, F	78	77	Do not exceed 20” manifold pressure below 2250 RPM
PHC-L3YF	F8468R	TCM IO-470-C, J, K, L, N	80	77	none
PHC-L3YF	F8468-8Q	TCM IO-470-C, J, K, L, N	80	77	none
PHC-L3YF	F8468A( )	TCM IO-520-D	80	78	none
PHC-L3YF	F8468A( )	TCM IO-550-D	80	78	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.

Propellers with composite blades must be evaluated for bird impact resistance prior to approval on any type aircraft. Hartzell Propeller must perform tests and/or analyses based on aircraft configuration and operating conditions to determine the potential hazard as a result of a bird impact.

Note 11: Retirement Time

(a) Life Limits and Mandatory Inspections

(1) Airworthiness limitations, if any, are specified in Hartzell Manuals 113( ), 115N or 145( )

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