DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

P39EA
Revision 11
Hartzell
HC-L2Y, BHC-L2Y,
DHC-L2Y
HC-G2Y, BHC-G2Y
DHC-G2Y
November 1, 2016

TYPE CERTIFICATE DATA SHEET NO. P39EA

Propellers of models described herein conforming with this data sheet (which is part of Type Certificate No. P39EA) 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	Two
Hub models	HC-L2YF-(1, 2, 4); BHC-L2YF-(1, 2, 4); DHC-L2YF-1, HC-G2YR-1, HC-G2YF-1, BHC-G2YF-1, DHC-G2YF-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)
Non-Counterweighted Propellers - Hub models HC-L2YF-1, BHC-L2YF-1, BHC-G2YF-1							
7280+ 1/2 to 7280-7	250	2700	250	2700	72 1/2" to 65" (+1/2 to -7)	52.0 lb.	Aluminum Alloy
7663-0 to 7663-8	210	2800	210	2800	76" to 68" (-0 to -8)	47.0 lb.	Aluminum Alloy
7666-0 to 7666-8	180 or 250	2900 or 2700	180 or 250	2900 or 2700	76" to 68" (-0 to -8)	52.0 lb.	Aluminum Alloy
7681-0 to 7681-8	250	2700	250	2700	76" to 68" (-0 to -8)	52.0 lb.	Aluminum Alloy
8459-0 to 8459-18	260	2800	260	2800	84" to 66" (-0 to -18)	49.0 lb.	Aluminum Alloy
8465-0 to 8465-14	315	2575	315	2575	84" to 70" (-0 to -14)	51.0 lb.	Aluminum Alloy
8465-6 to 8465-14	260	2700	260	2700	78" to 70" (-6 to -14)	50.0 lb.	Aluminum Alloy
8467-0 to 8467-12	285	2700	285	2700	84" to 72" (-0 to -12)	53.0 lb.	Aluminum Alloy
8468-0 to 8468-12	260	2700	260	2700	84" to 72" (-0 to -12)	51.0 lb.	Aluminum Alloy
8470-0 to 8470-8	260	2700	260	2700	84" to 76" (-0 to -8)	50.0 lb.	Aluminum Alloy
8475-0 to 8475-4	310 or 260	2575 or 2700	310 or 260	2575 or 2700	84" to 80" (-0 to -4)	53.0 lb.	Aluminum Alloy

Blades (See NOTE 2)	Maximum Continuous HP	RPM	Takeoff HP	RPM	Diameter Limits (See NOTE 2)	Approx. Max. Wt. Complete (For Reference Only) (See NOTES 3 and 7)	Blade Construction (See NOTE 10)
8475-4 to 8475-6	350	2700	350	2700	80” to 78” (-4 to -6)	52.0 lb.	Aluminum Alloy
8475-6 to 8475-14	310	2700	310 or 300	2700 or 2850	78” to 70” (-6 to -14)	51.0 lb.	Aluminum Alloy
8477-0 to 8477-12	260	2700	260	2700	84” to 72” (-0 to -12)	50.0 lb.	Aluminum Alloy
Non-Counterweighted Propellers - Hub model HC-G2YR-1							
7894-0 to 7894-10	250	2700	250	2700	78” to 68” (-0 to -10)	55.0 lb.	Aluminum Alloy
Non-Counterweighted Propellers - Hub model BHC-G2YF-1							
7694-0 to 7694-10	210	2800	210	2800	76” to 66” (-0 to -10)	50.0 lb.	Aluminum Alloy
Non-Counterweighted Propellers - Hub models HC-G2YF-1, BHC-G2YF-1, DHC-G2YF-1, HC-L2YF-1, BHC-L2YF-1, DHC-L2YF-1							
8068+2 to 8068-8	285	2700	285	2700	82” to 72” (+2 to -8)	54.0 lb.	Aluminum Alloy
Counterweighted Propellers - Hub models HC-L2YF-2, BHC-L2YF-2, HC-L2YF-4, BHC-L2YF-4							
C7663-0 to C7663-8	210	2800	210	2800	76” to 68” (-0 to -8)	51.0 lb.	Aluminum Alloy
C7666-0 to C7666-8	180 or 250	2850 or 2700	180 or 250	2850 or 2700	76” to 68” (-0 to -8)	56.0 lb.	Aluminum Alloy
C7681-0 to C7681-8	250	2700	250	2700	76” to 68” (-0 to -8)	56.0 lb.	Aluminum Alloy
C8459-0 to C8459-12	260	2800	260	2800	84” to 72” (-0 to -12)	53.0 lb.	Aluminum Alloy
C8465-0 to C8465-14	315	2575	315	2575	84” to 70” (-0 to -14)	55.0 lb.	Aluminum Alloy
C8465-6 to C8465-14	260	2700	260	2700	78” to 70” (-6 to -14)	54.0 lb.	Aluminum Alloy
C8467-0 to C8467-12	285	2700	285	2700	84” to 72” (-0 to -12)	57.0 lb.	Aluminum Alloy
C8468-0 to C8468-12	260	2700	260	2700	84” to 72” (-0 to -12)	55.0 lb.	Aluminum Alloy
C8470-0 to C8470-8	260	2700	260	2700	84” to 76” (-0 to -8)	54.0 lb.	Aluminum Alloy
C8475-0 to C8475-4	310 or 260	2575 or 2700	310 or 260	2575 or 2700	84” to 80” (-0 to -4)	57.0 lb.	Aluminum Alloy
C8475-4 to C8475-6	350	2700	350	2700	80” to 78” (-4 to -6)	56.0 lb.	Aluminum Alloy
C8475-6 to C8475-14	310	2700	310 or 300	2700 or 2850	78” to 70” (-6 to -14)	55.0 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)
(Cont'd) Counterweighted Propellers - Hub models HC-L2YF-2, BHC-L2YF-2, HC-L2YF-4, BHC-L2YF-4							
C8477-0 to C8477-12	260	2700	260	2700	84" to 72" (-0 to -12)	54.0 lb.	Aluminum Alloy

Note: Weights shown are for L2Y models. Add 1 lb. for G2Y models

Certification Basis:	14 CFR Part 35 effective February 1, 1965 with amendments 35-1 and 35-2 thereto. Type Certificate No. P39EA issued November 18, 1971 under Delegated Option Authorization procedures of 14 CFR Part 21 Subpart J. Date of application for Type Certificate: October 20, 1971. The following models were approved to the original certification basis: BHC-L2YF-(1,2,4), HC-L2YF-(2,4) Models added, updated or revised in accordance with 14 CFR Part 35 effective August 1, 1990 with amendments 35-1 through 35-6 include the following: BHC-G2YF-1 Models added after August 31, 2009 are approved in accordance with Organization Designation Authorization procedures of 14 CFR Part 183 Subpart D The following models were added, updated or revised in accordance with 14 CFR Part 35 with amendments 35-1 through 35-9A effective July 26, 2013. HC-G2YR-1, BHC-G2YF-1, DHC-G2YF-1, HC-L2YF-1, DHC-L2YF-1
Production Basis:	Production Certificate no. 10

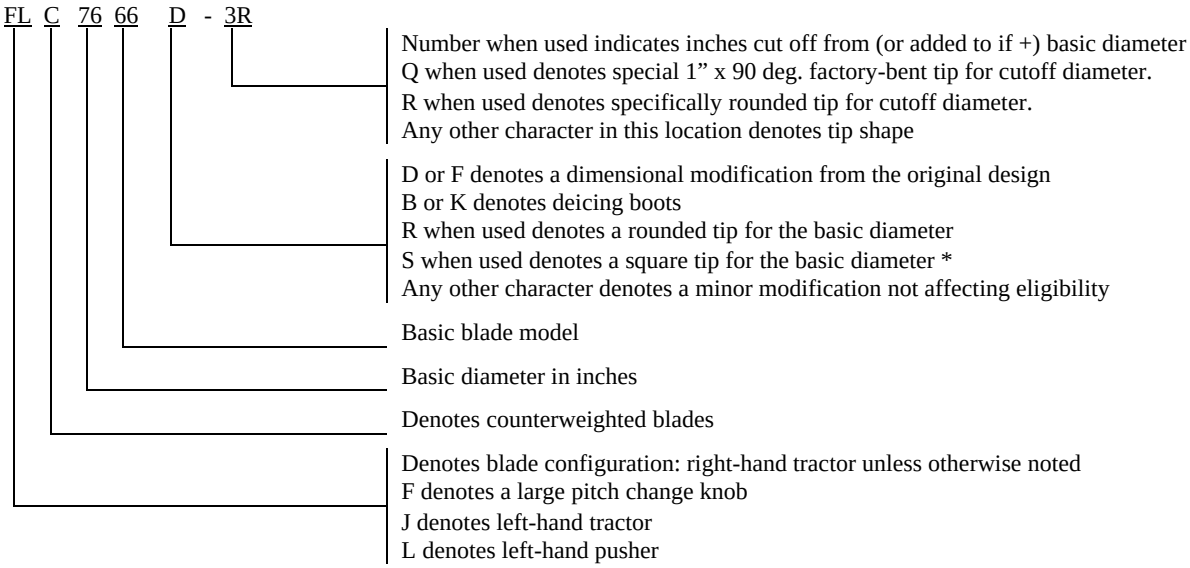
NOTE 1: Hub Model Designation

B HC - L 2 Y F - 1 BF

- BF: L when used denotes left hand rotation; B and F denote modified pitch change system; Any other character denotes a minor change not affecting eligibility
- 1: Denotes specific design features (See NOTE 4)
  -1: non-feathering, no counterweights, governor oil pressure to increase pitch
  -2: feathering, counterweighted blades, governor oil pressure to decrease pitch
  -4: non-feathering, counterweighted blades, governor oil pressure to decrease pitch
- F: F denotes special flange with six 1/2" bolts and two 1/2" dowels on a 4" bolt circle; R denotes SAE # 2 flange with six 1/2" bolts and five 3/4" bushings on a 4-3/4" bolt circle
- Y: Hartzell blade shank size
- 2: Number of blades
- L: Identifies basic design - L denotes a 0.5 inch integral shaft extension. G denotes 1.0 inch.
- HC: Hartzell Controllable
- B: 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
Blank	0 and 180 degrees	Non counter bored hole	R
B	30 and 210 degrees	Dowel Pins	F
D	60 and 240 degrees	Dowel Pins	F

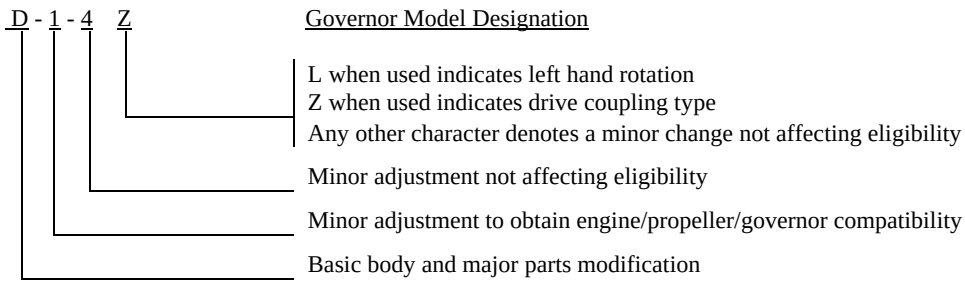
NOTE 2: Blade Model Designation



* 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. (See NOTE 6)

NOTE 3: Pitch Control

(a) Approved with Hartzell governors per drawings C-4770, C-4771 and C-4772. Wt.: 4.5 lb. (See NOTE 10)



(b) The -2 and -4 models have counterweighted blades and use oil to decrease pitch. The -1 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 The -1 and -4 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) Shot-peened blades may replace non shot-peened blades either individually or as a set (See NOTE 2)

(b) Propellers

"F" type propellers with large pitch change knobs are interchangeable with corresponding propellers with the standard pitch change system. (See NOTES 1 and 2)

(c) Ice Protection Systems

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

(d) 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.

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
BHC-L2YF	7663	Continental O-300-E	72	70	none
BHC-L2YF	7663	Continental IO-360-A, -B, -C, -D, -E	76	72	none
HC-L2YF	8459	Franklin 6A-350-C1, -C2	80	76	none
HC-L2YF BHC-L2YF	8468	Continental O-470-R	84	80	none
HC-L2YF BHC-L2YF	8468	Continental IO-470-E	84	83	Avoid continuous operation between 2100 and 2225 RPM
HC-L2YF	8468	Continental IO-470-E, -D, -F, -G, -H, -M, -N, -R, -S	82	80	none
BHC-L2YF	F8468AR	Continental IO-470-C, -J, -K, -L, -N	84	84	none
BHC-L2YF	8468R	Continental IO-520-BA	84	84	none
HC-L2YF	8475	Continental IO-520-A, -J Continental TSIO-520-A, -C, -H	80	77	none
HC-L2YF	8475	Continental IO-520-D, -E, -F Continental TSIO-520-C	78	77	none
BHC-L2YF	8475	Continental IO-520-B, -C Continental TSIO-520-B, -D	80	77	none
BHC-L2YF	8475	Continental TSIO-520-E	78	77	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 strike.

NOTE 11: Retirement Time

(a) Life Limits and Mandatory Inspections

(1) Airworthiness limitations, if any, are specified in Hartzell Manuals 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