DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

P36EA
Revision 22
Hartzell
HC-J3Y, PHC-J3Y
November 17, 2011

TYPE CERTIFICATE DATA SHEET NO. P36EA

Propellers of models described herein conforming with this data sheet (which is part of Type Certificate No. P36EA) 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-J3YF-1, -2; PHC-J3YF-1, -2; HC-J3Y1F-1; PHC-J3Y1F-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 HC-J3YF-1, PHC-J3YF-1							
7391-0 to 7391-10	350	2700	350	2700	75" to 65" (-0 to -10)	80.2 lb.	Aluminum Alloy
7392-0 to 7392-10	350	2850	350	2850	75" to 65" (-0 to -10)	75.5 lb.	Aluminum Alloy
7479-2 to 7479-8	380	2900	380	2900	74" to 68" (-2 to -8)	78.0 lb.	Aluminum Alloy
7498-0 to 7498-10	350	2700	350	2700	76" to 66" (-0 to -10)	72.5 lb.	Aluminum Alloy
N7605-0 to N7605-10	350	2700	350	2700	78" to 68" (-0 to -10)	62.5 lb.	Composite
7663-0 to 7663-10	350	2800	350	2800	78" to 68" (-0 to -10)	73.0 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)	71.0 lb.	Aluminum Alloy
7691+2 to 7691-0	350	2700	350	2700	80" to 78" (+2 to -0)	71.0 lb.	Aluminum Alloy
7693+2 to 7693-10	350	2700	350 or 330	2700 or 2850	80" to 68" (+2 to -10)	77.0 lb.	Aluminum Alloy
7694-0 to 7694-10	310	2700	310	2700	78" to 68" (-0 to -10)	76.0 lb.	Aluminum Alloy
N7893-0 to N7893-10	350	2700	350	2700	80" to 70" (-0 to -10)	63.0 lb	Composite
8068+2 to 8068-10	350	2700	350	2700	84" to 72" (+2 to -10)	81.0 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)
8068-2 to 8068-10	350	2700	310	2850	80” to 72” (-2 to -10)	81.0 lb.	Aluminum Alloy
8459-0 to 8459-14	400	2700	400	2700	86” to 72” (-0 to -14)	75.0 lb.	Aluminum Alloy
8465-0 to 8465-14	400	2700	400	2700	86” to 72” (-0 to -14)	78.0 lb.	Aluminum Alloy
8467-0 to 8467-14	400	2575	400	2575	86” to 72” (-0 to -14)	82.0 lb.	Aluminum Alloy
8468-0 to 8468-14	400	2700	400	2700	86” to 72” (-0 to -14)	79.0 lb.	Aluminum Alloy
8468-6 to 8468-14	310	2850	310	2850	80” to 72” (-6 to -14)	79.0 lb.	Aluminum Alloy
8470-0 to 8470-14	400	2700	400	2700	86” to 72” (-0 to -14)	78.0 lb.	Aluminum Alloy
8475+2 to 8475-14	435	2266	435	2266	88” to 72” (+2 to -14)	82.0 lb.	Aluminum Alloy
8475-0 to 8475-14	400	2650	400	2650	86” to 72” (-0 to -14)	78.0 lb.	Aluminum Alloy
8477-0 to 8477-14	400	2575	400	2575	86” to 72” (-0 to -14)	81.0 lb.	Aluminum Alloy
Non-Counterweighted Propellers HC-J3Y1F-1, PHC-J3Y1F-1							
N7605-0 to N7605-10	350	2700	350	2700	78” to 68” (-0 to -10)	57.7 lb.	Composite
Counterweighted Propellers HC-J3YF-2, PHC-J3YF-2							
C7391-0 to C7391-10	350	2700	350	2700	75” to 65” (-0 to -10)	90.7 lb.	Aluminum Alloy
C7479-2 to C7479-8	380	2900	380	2900	74” to 68” (-2 to -8)	86.0 lb.	Aluminum Alloy
C7663-0 to C7663-10	350	2800	350	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
C7691-0 to C7691-10	350	2850	350	2850	78” to 68” (-0 to -10)	79.0 lb.	Aluminum Alloy
C8459-0 to C8459-14	400	2700	400	2700	86” to 72” (-0 to -14)	83.0 lb.	Aluminum Alloy
C8465-0 to C8465-14	400	2700	400	2700	86” to 72” (-0 to -14)	86.0 lb.	Aluminum Alloy
C8467-0 to C8467-14	400	2575	400	2575	86” to 72” (-0 to -14)	90.0 lb.	Aluminum Alloy
C8468-0 to C8468-14	400	2700	400	2700	86” to 72” (-0 to -14)	87.0 lb.	Aluminum Alloy
C8468-6 to C8468-14	310	2850	310	2850	80” to 72” (-6 to -14)	87.0 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)
C8470-0 to C8470-14	400	2700	400	2700	86” to 72” (-0 to -14)	86.0 lb.	Aluminum Alloy
C8475+2 to C8475-14	435	2266	435	2266	88” to 72” (+2 to -14)	90.0 lb.	Aluminum Alloy
C8475-0 to C8475-14	400	2650	400	2650	86” to 72” (-0 to -14)	90.0 lb.	Aluminum Alloy
C8477-0 to C8477-14	400	2575	400	2575	86” to 72” (-0 to -14)	93.0 lb.	Aluminum Alloy

Certification Basis: 14 CFR Part 35 effective February 1, 1965 with amendments 35-1 and 35-2 thereto.
Type Certificate No. P36EA issued March 1, 1971 under Delegated Option Authorization procedures of 14 CFR Part 21 Subpart J.

Date of application for Type Certificate: February 5, 1971.

The following models were approved to the original certification basis:
HC-J3YF-1,2; PHC-J3YF-1,2

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-J3YF-1,2; PHC-J3YF-1,2

The following models added in accordance with 14 CFR Part 35 effective August 18, 1990 with amendments 35-1 through 35-6 and reference to special conditions 35-002-SC dated October 3, 2001 for bird impact and lightning strike qualification:
HC-J3YF-1 and PHC-J3YF-1 hubs with N7605 and N7893 blade models

HC-J3Y1F-1 and PHC-J3Y1F-1 hubs with N7605 blade model

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), 35.36, 35.38, 35.41 and 35.43.
HC-J3YF-1 and PHC-J3YF-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.
HC-J3YF-1; PHC-J3YF-1; HC-J3Y1F-1; PHC-J3Y1F-1

Production Basis: Production Certificate no. 10

NOTE 1: Hub Model Designation

P HC - J 3 Y 1 F - 1 RF

- RF: F when used denotes modified pitch change system; L denotes left hand rotation; M when used denotes 21.6 sq. in. piston area and large return spring; 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 (See NOTE 4); -1: non-feathering, no counterweights, governor oil pressure increases pitch; -2: feathering with counterweights, governor oil pressure decreases pitch
- F: F denotes special flange with six 1/2" bolts and two 1/2" dowels on a 4" bolt circle
- 1: 1 when used denotes hub design modification compatible only with blade models listed in the front of this Data Sheet
- Y: Hartzell blade shank size
- 3: Number of blades
- J: J denotes a 3.25 inch integral shaft extension
- HC: Hartzell Controllable
- P: Indicates dowel location with respect to centerline through blade sockets when viewing hub from flange mounting face

	Dowel Pin	T/C (Index mark)
Blank	90 & 270 deg.	30 deg. Clockwise
P:	0 & 180 deg.	120 deg. Clockwise

NOTE 2: Blade Model Designation

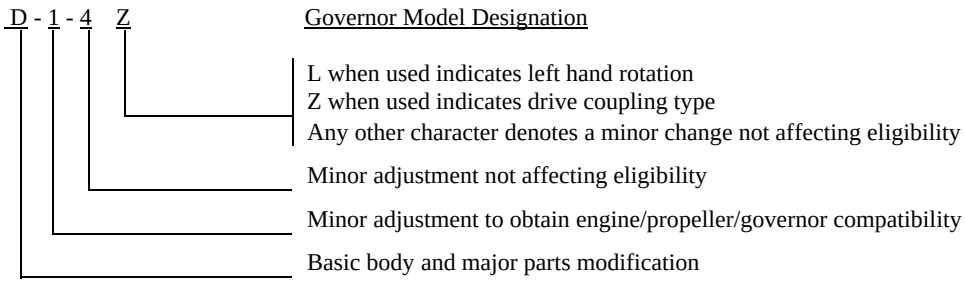
L C 76 63 D - 3R

- 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; C when used with N7605 blades denotes material modification (See NOTE 6); 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
- 63: Basic blade model
- 76: Basic diameter for a two blade propeller. Add two inches for three blade propellers.
- C: Denotes counterweighted blades
- L: 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. (See NOTE 6)

NOTE 3: Pitch Control

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



(b) The -2 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 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) 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

(1) Shot-peened blades may replace non shot-peened blades either individually or as a set (See NOTE 2)

(2) N7605C( ) blades may replace N7605( ) blades either individually or as a set. N7605( ) blades may not replace N7605C( ) blades.

(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
HC-J3YF PHC-J3YF	F7391D	TCM IO-550-N, -P, -R TCM IOF-550-N, -P, -R	75	72	none
HC-J3YF	7663	TCM IO-520-A, -J, TCM TSIO-520-A, -C, -H	76	74	none
PHC-J3YF	7663	TCM IO-520-B, -C, TCM TSIO-520-B, -D	76	74	none
PHC-J3YF	F7663	TCM TSIO-360-GB, -LB, -MB	76	74	none
PHC-J3YF	F7663-2Q	TCM TSIO-520-R, -C, -H, -M, -P, -AF, -CE	76	76	none
PHC-J3YF	F7691( )	TCM IO-520-A, -B, -BA, -BB, -C, -CB, -D, -E, -F, -J, -K, -L, -M, -MB	78	77	Do not exceed 20 inches MP below 2200 RPM
PHC-J3YF	F7691( )	TCM IO-550-A, -B, -C, -D, -F, -G, -L	78	77	Do not exceed 20 inches MP below 2200 RPM
HC-J3YF PHC-J3YF	F7693( )	TCM IO-550-A, -B, -C, -D, -E, -F, -G, -L, -N, -P, -R, TCM TSIO-550-B, -C, -E	78	75	none
HC-J3YF PHC-J3YF	F7693(D)F( )	TCM TSIO-520-C, G, M, P, R, AF	80	76	none
PHC-J3YF	F8068	TCM IO-520-A, -J IO-550-D, -E, -F, -L TSIO-520-C, -G, -H, -M, -R, -P, -AF, -CE	82	78	none
PHC-J3YF	F8068-2	TCM IO-520-D, -E, -F, -L	80	78	none
PHC-J3YF	F8468	TCM TSIO-520-L, -LB	80	76	none
PHC-J3YF	F8468A( )	TCM TSIO-520-C, -G, -H, -M, -N, -P, -R, -T, -AF	80	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 impact.

NOTE 11: Retirement Time

(a) Life Limits and Mandatory Inspections

(1) Airworthiness limitations, if any, are specified in Hartzell Manuals 113( ), 115N, 117( ) 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