

DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

P27EA
Revision 10
Hartzell
HC-F2Y
December 18, 2002

TYPE CERTIFICATE DATA SHEET NO. P27EA

Propellers of models described herein conforming with this data sheet (which is part of Type Certificate No. P27EA) 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	Aluminum Alloy
Number of blades	Two
Hub models	HC-F2YL-1,2, HC-F2YR-1,2 (see NOTES 1 and 4)

Blades (See NOTES 2 and 6)	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>Non-Counterweighted Propellers - Hub models HC-F2YR-1, HC-F2YR-2</u>						
7068-0 to 7068-10	300	2700	300	2700	70" to 60" (-0 to -10)	64.0 lb.*
7280+ 1/2 to 7280-7	250	2700	250	2700	72 1/2" to 65" (+1/2 to -7)	58.0 lb.*
7479-0 to 7479-6	380	2900	380	2900	74" to 68" (-0 to -6)	59.0 lb.*
7663-0 to 7663-8	210	2800	210	2800	76" to 68" (-0 to -8)	57.0 lb.*
7666-0 to 7666-8	180	2900 or 2700	180	2900 or 2700	76" to 68" (-0 to -8)	63.0 lb.*
7681-0 to 7681-8	250	2700	250	2700	76" to 68" (-0 to -8)	58.0 lb.*
7694-4 to 7694-10	310	2700	310	2700	72" to 66" (-4 to -10)	56.5 lb.*
8459-0 to 8459-18	260	2800	260	2800	84" to 66" (-0 to -18)	58.0 lb.*
8465-0 to 8465-14	315	2575	315	2575	84" to 70" (-0 to -14)	59.0 lb.*
8465-6 to 8465-14	260	2700	260	2700	78" to 70" (-6 to -14)	58.0 lb.*
8467-0 to 8467-12	285	2700	285	2700	84" to 72" (-0 to -12)	63.0 lb.*

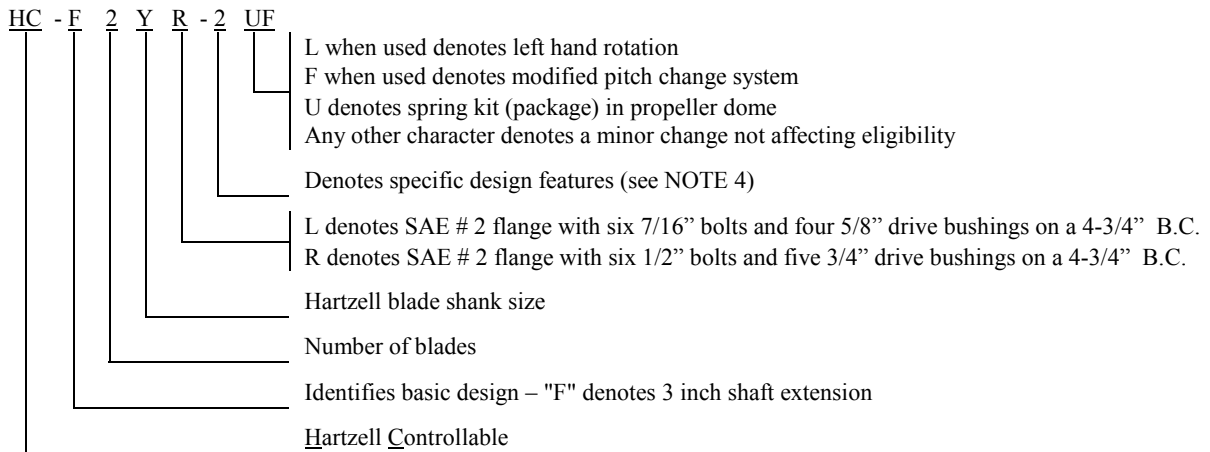
Blades (See NOTES 2 and 6)	Maximum Continuous		Takeoff		Diameter Limits (see NOTE 2)	Approx. Max. Wt. Complete (For Reference Only) (See NOTES 3 and 7)
	HP	RPM	HP	RPM		
8468-0 to 8468-12	260	2700	260	2700	84" to 72" (-0 to -12)	61.0 lb.*
8470-0 to 8470-8	260	2700	260	2700	84" to 76" (-0 to -8)	56.0 lb.*
8475-0 to 8475-4	310 or 260	2575  2700	310 or 260	2575  2700	84" to 80" (-0 to -4)	62.0 lb.*
8475-4 to 8475-6	350	2700	350	2700	80" to 78" (-4 to -6)	61.0 lb.*
8475-6 to 8475-14	310	2700	310	2700	78" to 70" (-6 to -14)	60.0 lb.*
8477-0 to 8477-12	260	2700	260	2700	84" to 72" (-0 to -12)	65.0 lb.*
<u>Non-Counterweighted Propellers: Hub Models HC-F2YL-1, HC-F2YL-2</u>						
7663-0 to 7663-10	160	2700	160	2700	76" to 66" (-0 to -10)	57.0 lb.*
7692-0 to 7692-8	180 or 250	2900  2700	180 or 250	2900  2700	76" to 68" (-0 to -8)	57.0 lb.*
8468-0 to 8468-14	160	2700	160	2700	84" to 70" (-0 to -14)	61.0 lb.*
<u>Counterweighted Propellers: Hub Models HC-F2YR-2</u>						
C7479-0 to C7479-6	380	2900	380	2900	74" to 68" (-0 to -6)	63.0 lb.
C7663-0 to C7663-8	210	2800	210	2800	76" to 68" (-0 to -8)	61.0 lb.
C7666-0 to C7666-8	180 or 250	2700  2700	180 or 250	2700  2700	76" to 68" (-0 to -8)	67.0 lb.
C7681-0 to C7681-8	250	2700	250	2700	76" to 68" (-0 to -8)	62.0 lb.
C8459-0 to C8459-12	260	2800	260	2800	84" to 72" (-0 to -12)	62.0 lb.
C8465-0 to C8465-14	315	2575	315	2575	84" to 70" (-0 to -14)	63.0 lb.
C8465-6 to C8465-14	260	2700	260	2700	78" to 70" (-6 to -14)	62.0 lb.
C8467-0 to C8467-12	285	2700	285	2700	84" to 72" (-0 to -12)	67.0 lb.
C8468-0 to C8468-12	260	2700	260	2700	84" to 72" (-0 to -12)	65.0 lb.

Blades (See NOTES 2 and 6)	Maximum Continuous		Takeoff		Diameter Limits (see NOTE 2)	Approx. Max. Wt. Complete (For Reference Only) (See NOTES 3 and 7)
	HP	RPM	HP	RPM		
C8470-0 to C8470-8	260	2700	260	2700	84" to 76" (-0 to -8)	60.0 lb.
C8475-0 to C8475-4	310 or 260	2575  2700	310 or 260	2575  2700	84" to 80" (-0 to -4)	66.0 lb.
C8475-4 to C8475-6	350	2700	350	2700	80" to 78" (-4 to -6)	65.0 lb.
C8475-6 to C8475-14	310 or 300	2700  2850	310 or 300	2700  2850	78" to 70" (-6 to -14)	64.0 lb.
C8477-0 to C8477-12	260	2700	260	2700	84" to 72" (-0 to -12)	69.0 lb.
<u>Counterweighted Propellers: Hub Models HC-F2YL-2</u>						
C7663-0 to C7663-10	160	2700	160	2700	76" to 66" (-0 to -10)	61.0 lb.
C7692-0 to C7692-8	180 or 250	2900  2700	180 or 250	2900  2700	76" to 68" (-0 to -8)	61.0 lb.

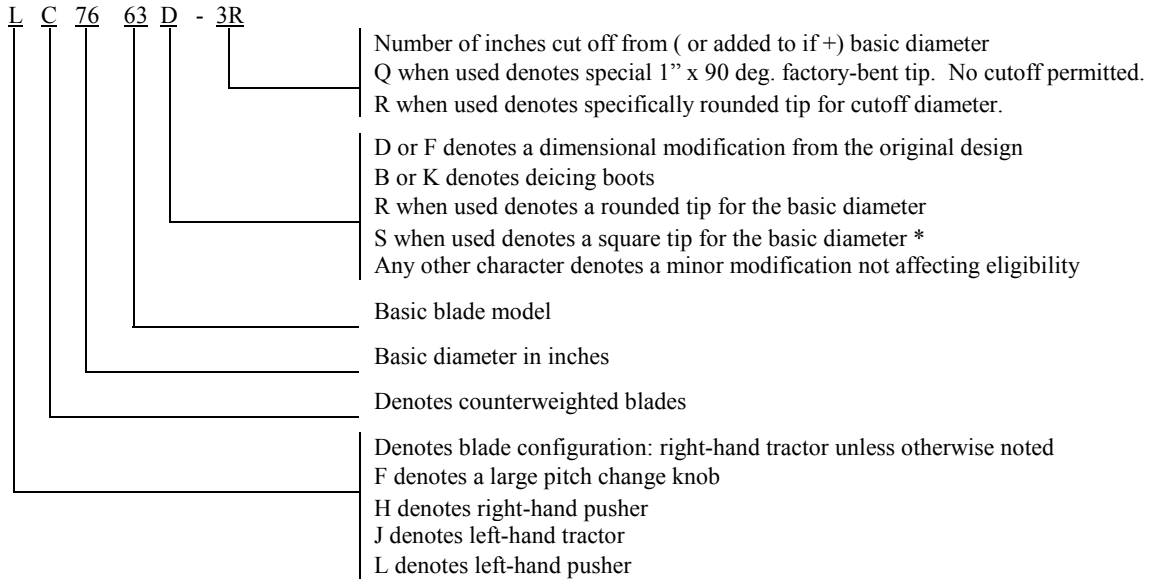
\* Weights shown are for non-counterweighted -2 models only. Subtract 3 lb. for -1 model.

Certification Basis:	FAR Part 35 effective February 1, 1965, with amendments 35-1 and 35-2 thereto. Type Certificate no. P27EA covering model HC-F2YR-2 with C7479 blades issued December 8, 1966. Propeller models HC-F2YR-1 and HC-F2YR-2 with non-counterweighted blades and model HC-F2YR-2 with counterweighted blades other than C7479 Type Certified April 15, 1969 under Delegated Option Authorization procedures of FAR 21, Subpart J. Date of application for Type Certificate: December 5, 1966.
Production Basis:	Production Certificate no. 10

NOTE 1. Hub Model Designation



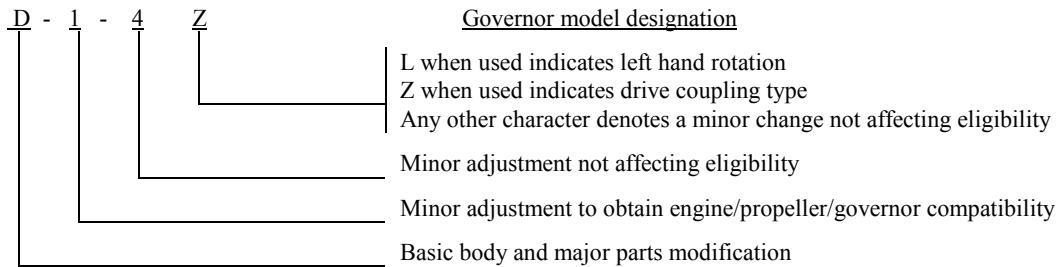
NOTE 2: Blade Model Designation



\* Blades may incorporate either round or square tips, yet may not be marked with an “R” or “S” in the 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

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



(b) Approved with Woodward model X210XXX or X210X-XXX. Wt.: 3.5 lb.

NOTE 4. (a) Feathering The -1 models do not feather. The -2 models incorporate feathering and unfeathering features.

(b) Reversing Not applicable

NOTE 5. Left-Hand Models

The left-hand version of an approved model propeller is approved at the same rating and diameter as listed for the right-hand model. See NOTES 1 and 2.

NOTE 6. Interchangeability

- (a) 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.
- (b) Blades  
Blades with provisions to attach counterweights (denoted by a “C” prefix) can replace non-counterweighted blades on feathering propellers (-2 suffix in hub model) only, providing the air charge is reduced to 80 psi at 70 deg. F. Attached decal specifying air charge must be changed accordingly.
- (c) 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 deicing
  - (1) 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.
  - (2) Approved with Goodrich electrical deicing kit 5EXXXX-X, 7EXXXX-X, 77-XXX, 67-XXX, or 65-XXX when installed in accordance with Goodrich Report no. ATA 30-60-07.
- (b) Propeller spinner  
Approved with Hartzell and other manufacturer's spinners when listed on Hartzell type design data. (weight of spinner extra)

NOTE 8. Shank Fairings Not applicableNOTE 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-F2YR	F7068	LYC IO-360-B1A, -B1B, -B1C, -B1D, -B1E, -B1F, -E1A, -F1A	68	67	Stabilized operation is prohibited above 25" manifold pressure between 2300-2500 RPM and below 15" manifold pressure above 2600 RPM.
HC-F2YR	F7068	LYC O-360-A1F6, -A1F6D, -A1G6, -A1G6D, -A1H6, -F1A6, -G1A6 LYC IO-360-A1B6, -A1B6D, -A1D6, -A1D6D, -B1F6, -C1C6, -C1D6, -C1E6, -C1E6D	68	66	none
HC-F2YL	7663	LYC O-320 series with 8.5:1 compression ratio, rated 160 HP at 2700 RPM or less	73	72	none
HC-F2YR	F7694-( )T	LYC IO-540-D4A5, -D4B5, -D4C5, -N1A5, -R1A5, -T4A5D, -T4B5(D), -T4C5D, -V4A5(D), -K1A5(D), -K1B5(D), -K1C5, -K1D5, -K1E5(D), -K1F5(D), -K1G5(D), -K1H5, -K1J5(D), -K1K5, -L1A5(D), -L1B5D, -L1C5, -AC1A5	72	70	Avoid continuous ground operation between 1750 and 2100 RPM. Do not operate above 24" manifold pressure at engine speeds below 2300 RPM.
HC-F2YR	F8468A-4R	LYC IO-540-J3A5D	80	78	none
HC-F2YR	F8468A	LYC IO-540-J1A5D	80	78	Avoid continuous operation below 2300 RPM above 25" Hg manifold pressure.
HC-F2YR	F8475D-4	LYC IO-540-K1A5	80	78	Do not exceed 23" Hg manifold pressure below 2250 RPM.

NOTE 10. Special Notes

Propeller installation must be approved as part of the aircraft Type Certificate and demonstrate compliance with the applicable aircraft airworthiness requirements.

NOTE 11. Retirement Time

## (a) Life Limits and Mandatory Inspections

- (1) Airworthiness limitations, if any, are specified in Hartzell Manuals 113( ) or 117( ).

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