DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

P43GL
Revision 9
Hartzell
HC-M2Y
January 24, 2007

TYPE CERTIFICATE DATA SHEET NO. P43GL

Propellers of models described herein conforming with this data sheet (which is part of Type Certificate No. P43GL) 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-M2YR-1, HC-M2YR-2 (See Notes 1 and 4)

Blades (See Notes 2 & 6)	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 & 7)
Non-Counterweighted Blades - Hub models: All -1						
7280+ 1/2 to 7280-7	250	2700	250	2700	72-1/2" to 65" (+1/2 to -7)	54.0 lb.
7496-0 to 7496-6	250	2700	250	2700	74" to 68" (-0 to -6)	53.0 lb.
7497-0 to 7497-6	250	2700	250	2700	74" to 68" (-0 to -6)	54.8 lb.
7663-0 to 7663-8	210	2800	210	2800	76" to 68" (-0 to -8)	49.0 lb.
7666-0 to 7666-8	180 or 250	2900 or 2700	180 or 250	2900 or 2700	76" to 68" (-0 to -8)	54.0 lb.
7681-0 to 7681-8	250	2700	250	2700	76" to 68" (-0 to -8)	54.0 lb.
8459-0 to 8459-18	260	2800	260	2800	84" to 66" (-0 to -18)	51.0 lb.
8465-0 to 8465-14	315	2575	315	2575	84" to 70" (-0 to -14)	53.0 lb.
8465-6 to 8465-14	260	2700	260	2700	78" to 70" (-6 to -14)	52.0 lb.
8467-0 to 8467-12	285	2700	285	2700	84" to 72" (-0 to -12)	55.0 lb.
8468-0 to 8468-12	260	2700	260	2700	84" to 72" (-0 to -12)	53.0 lb.
8470-0 to 8470-8	260	2700	260	2700	84" to 76" (-0 to -8)	52.0 lb.
8475+2 to 8475-4	310	2700	310	2700	86" to 80" (+2 to -4)	55.0 lb.

Blades (See Notes 2 & 6)	Maximum Continuous HP	RPM	Takeoff HP	RPM	Diameter Limits (See Note 2)	Approx. Max. Wt. Complete (For Reference Only) (See Notes 3 & 7)
8475-4 to 8475-6	350	2700	350	2700	80” to 78” (-4 to -6)	54.0 lb.
8475-6 to 8475-14	310	2700	310 or 300	2700 2850	78” to 70” (-6 to -14)	53.0 lb.
8477-0 to 8477-12	260	2700	260	2700	84” to 72” (-0 to -12)	57.0 lb.
9587-0 to 9587-20	320 or 300	2200 2400	320 or 300	2200 2400	95” to 75” (-0 to -20)	53.0 lb.
Counterweighted Blades - Hub models: All -2						
C7280+ 1/2 to C7280-7	250	2700	250	2700	72-1/2” to 65” (+1/2 to -7)	58.0 lb.
C7663-0 to C7663-8	210	2800	210	2800	76” to 68” (-0 to -8)	53.0 lb.
C7666-0 to C7666-8	180 or 250	2900 2700	180 or 250	2900 2700	76” to 68” (-0 to -8)	58.0 lb.
C7681-0 to C7681-8	250	2700	250	2700	76” to 68” (-0 to -8)	58.0 lb.
C8459-0 to C8459-18	260	2800	260	2800	84” to 66” (-0 to -18)	55.0 lb.
C8465-0 to C8465-14	315	2575	315	2575	84” to 70” (-0 to -14)	57.0 lb.
C8465-6 to C8465-14	260	2700	260	2700	78” to 70” (-6 to -14)	56.0 lb.
C8467-0 to C8467-12	285	2700	285	2700	84” to 72” (-0 to -12)	59.0 lb.
C8468-0 to C8468-12	260	2700	260	2700	84” to 72” (-0 to -12)	57.0 lb.
C8470-0 to C8470-8	260	2700	260	2700	84” to 76” (-0 to -8)	56.0 lb.
C8475+2 to C8475-4	310	2700	310	2700	86” to 80” (+2 to -4)	59.0 lb.
C8475-4 to C8475-6	350	2700	350	2700	80” to 78” (-4 to -6)	58.0 lb.
C8475-6 to C8475-14	310	2700	310 or 300	2700 2850	78” to 70” (-6 to -14)	57.0 lb.
C8477-0 to C8477-12	260	2700	260	2700	84” to 72” (-0 to -12)	61.0 lb.
C9587-0 to C9587-20	320 or 300	2200 2400	320 or 300	2200 2400	95” to 75” (-0 to -20)	57.0 lb.

Certification Basis:	14 CFR Part 35 effective April 3, 1967 with amendments 35-1 and 35-2 thereto. Type Certificate No. P43GL issued May 2, 1973 under Delegated Option Authorization provisions of 14 CFR Part 21 Subpart J. Date of application for Type Certificate: March 21, 1973.
	The following models were included under the original certification basis: HC-M2YR-1
	The following models were added, updated or revised in accordance with 14 CFR Part 35 with amendments 35-1 through 35-5 effective October 14, 1980: HC-M2YR-2
	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: HC-M2YR-1
Production Basis:	Production Certificate no. 10

NOTE 1: Hub Model Designation (See Notes 4, 5 and 6)

HC - M 2 Y R - 1 BF

- BF
  - B denotes modified pitch change system
  - F denotes modified pitch change knob
  - L when used denotes left hand rotation
  - P when used denotes a hub unit with a “B” suffix serial number
  - U denotes feather assist spring assembly kit installed within cylinder
  - 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
- R denotes SAE # 2 flange with six 1/2” bolts and five 3/4” drive bushings on a 4-3/4” B.C.
- Y Hartzell blade shank size
- 2 Number of blades
- M Identifies basic design - “M” denotes 2.5625 inch shaft extension
- HC Hartzell Controllable

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

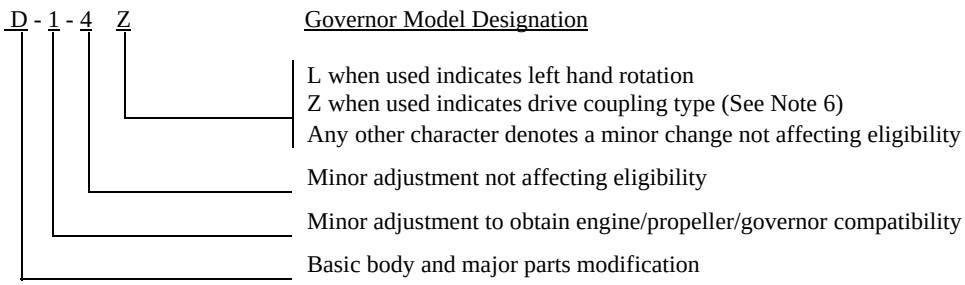
L C 76 66 D - 3R

- 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 *
- 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 or template
- 76 Basic diameter in inches
- C Denotes counterweighted blades
- L
  - Denotes type of blade:
  - No prefix denotes right-hand tractor
  - F prefix when used denotes large pitch change knob
  - J prefix denotes left-hand tractor
  - L prefix denotes left-hand pusher

* 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 (See Note 10)

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



(b) The -1 models do not have counterweighted blades and use oil to increase pitch. The -2 models have counterweighted blades and use oil to decrease 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: (a) Feathering The -1 model does 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)

Propeller models containing a "P" suffix, for example HC-M2YR-1BFP, may replace corresponding models without the "P" suffix, for example HC-M2YR-1BF. Propeller models without the "P" suffix may not replace those containing the "P" suffix. (See Note 1)

(b) Blades

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

(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.

(d) 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 anti-icing (weight of anti-icing system extra)

(1) Approved with fluid feed boots listed on Hartzell approved type design data when installed in accordance with Hartzell specification H-S-2 or Hartzell Manual no. 133( ).

(2) Approved with fluid feed equipment listed in Hartzell approved type design data on propeller models for which equipment is available.

(b) Propeller deicing (weight of deicing equipment extra)

(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 the specific kit number is listed on Hartzell type design data and installed in accordance with Goodrich Report no. ATA 30-60-07.

(3) Approved with ice protection equipment when listed on Hartzell type design data.

(c) Propeller spinner (weight of spinner extra)

(1) Approved with Hartzell and other manufacturer's spinners when listed on Hartzell type design data.

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-M2YR-1BFP	F7497	LYC O-360-A1A, -A1C, -A1D, -A1F, -A1G, -A1H, -A1P	74	72	none
HC-M2YR-1BFP	F7497	LYC IO-360-A1B6, -A1B6D, -A1D6, -A1D6D, -C1C6, -C1D6, -C1E6, -C1E6D	74	72	none
HC-M2YR	F7666	LYC IO-360-A1B6, -A1B6D, -A1D6, -C1D6, -C1E6	76	75	Avoid continuous operation between 2100 and 2350 RPM
HC-M2YR	F7666	LYC IO-360-A1B6, -A1B6D, -A1D6, -C1D6, -C1E6	74	73	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( ) 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