DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

P42GL
Revision 8
Hartzell
HC-I2Y, BHC-I2Y
January 6, 2016

# TYPE CERTIFICATE DATA SHEET NO. P42GL

Propellers of models described herein conforming with this data sheet (which is part of Type Certificate No. P42GL) 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.

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|---|---|
| Type Certificate Holder | Hartzell Propeller Inc.<br>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-I2YF-1, -4; BHC-I2YF-1, -4; HC-I2YR-1 (See Notes 1 and 4) |

| 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-I2YF-1; BHC-I2YF-1; HC-I2YR-1 | | | | | | | |
| 7280+1/2 to 7280-7 | 250 | 2700 | 250 | 2700 | 72 1/2" to 65" (+1/2 to -7) | 54 lb. | Aluminum Alloy |
| 7663-0 to 7663-8 | 210 | 2800 | 210 | 2800 | 76" to 68" (-0 to -8) | 49 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) | 54 lb. | Aluminum Alloy |
| 7681-0 to 7681-8 | 250 | 2700 | 250 | 2700 | 76" to 68" (-0 to -8) | 54 lb. | Aluminum Alloy |
| 8074-0 to 8074-10 | 350 | 2500 | 350 | 2500 | 80" to 70" (-0 to -10) | 58 lb. | Aluminum Alloy |
| 8459-0 to 8459-18 | 260 | 2800 | 260 | 2800 | 84" to 66" (-0 to -18) | 51 lb. | Aluminum Alloy |
| 8465-0 to 8465-14 | 315 | 2575 | 315 | 2575 | 84" to 70" (-0 to -14) | 53 lb. | Aluminum Alloy |
| 8465-6 to 8465-14 | 260 | 2700 | 260 | 2700 | 78" to 70" (-6 to -14) | 52 lb. | Aluminum Alloy |
| 8467-0 to 8467-12 | 285 | 2700 | 285 | 2700 | 84" to 72" (-0 to -12) | 55 lb. | Aluminum Alloy |
| 8468-0 to 8468-12 | 260 | 2700 | 260 | 2700 | 84" to 72" (-0 to -12) | 53 lb. | Aluminum Alloy |
| 8470-0 to 8470-8 | 260 | 2700 | 260 | 2700 | 84" to 76" (-0 to -8) | 52 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) |
|---|---|---|---|---|---|---|---|
| | | | Non-Counterweighted Propellers HC-I2YF-1; BHC-I2YF-1; HC-I2YR-1 (cont.) | | | | |
| 8475-0 to 8475-4 | 310 or 260 | 2575 or 2700 | 310 or 260 | 2575 or 2700 | 84” to 80” (-0 to -4) | 55 lb. | Aluminum Alloy |
| 8475-4 to 8475-6 | 350 | 2700 | 350 | 2700 | 80” to 78” (-4 to -6) | 54 lb. | Aluminum Alloy |
| 8475-6 to 8475-14 | 310 | 2700 | 310 or 300 | 2700 or 2850 | 78" to 70" (-6 to -14) | 53 lb. | Aluminum Alloy |
| 8477-0 to 8477-12 | 260 | 2700 | 260 | 2700 | 84” to 72” (-0 to -12) | 52 lb. | Aluminum Alloy |
| 9587-0 to 9587-20 | 320 or 300 | 2200 or 2400 | 320 or 300 | 2200 or 2400 | 95” to 75” (-0 to -20) | 50 lb. | Aluminum Alloy |
| | | | Non-Counterweighted Propellers HC-I2YR-1 | | | | |
| 7605-0 to 7605-10 | 215 | 2700 | 215 | 2700 | 76” to 66” (-0 to -10) | 46 lb. | Composite |
| | | | Counterweighted Propellers HC-I2YF-4; BHC-I2YF-4 | | | | |
| C7663-0 to C7663-8 | 210 | 2800 | 210 | 2800 | 76” to 68” (-0 to -8) | 53 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) | 58 lb. | Aluminum Alloy |
| C7681-0 to C7681-8 | 250 | 2700 | 250 | 2700 | 76” to 68” (-0 to -8) | 58 lb. | Aluminum Alloy |
| C8074-0 to C8074-10 | 350 | 2500 | 350 | 2500 | 80" to 70" (-0 to -10) | 62 lb. | Aluminum Alloy |
| C8459-0 to C8459-12 | 260 | 2800 | 260 | 2800 | 84” to 72” (-0 to -12) | 55 lb. | Aluminum Alloy |
| C8465-0 to C8465-14 | 315 | 2575 | 315 | 2575 | 84” to 70” (-0 to -14) | 57 lb. | Aluminum Alloy |
| C8465-6 to C8465-14 | 260 | 2700 | 260 | 2700 | 78” to 70” (-6 to -14) | 56 lb. | Aluminum Alloy |
| C8467-0 to C8467-12 | 285 | 2700 | 285 | 2700 | 84” to 72” (-0 to -12) | 59 lb. | Aluminum Alloy |
| C8468-0 to C8468-12 | 260 | 2700 | 260 | 2700 | 84" to 72" (-0 to -12) | 57 lb. | Aluminum Alloy |
| C8470-0 to C8470-8 | 260 | 2700 | 260 | 2700 | 84” to 76” (-0 to -8) | 56 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) | 59 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) |
|---|---|---|---|---|---|---|---|
| Counterweighted Propellers HC-I2YF-4; BHC-I2YF-4 (cont.) | | | | | | | |
| C8475-4 to C8475-6 | 350 | 2700 | 350 | 2700 | 80” to 78” (-4 to -6) | 58 lb. | Aluminum Alloy |
| C8475-6 to C8475-14 | 310 | 2700 | 310 or 300 | 2700 2850 | 78" to 70" (-6 to -14) | 57 lb. | Aluminum Alloy |
| C8477-0 to C8477-12 | 260 | 2700 | 260 | 2700 | 84” to 72” (-0 to -12) | 56 lb. | Aluminum Alloy |
| C9587-0 to C9587-20 | 320 or 300 | 2200 2400 | 320 or 300 | 2200 2400 | 95” to 75” (-0 to -20) | 54 lb. | Aluminum Alloy |

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| Certification Basis: | 14 CFR Part 35 with amendments 35-1 through 35-2 effective April 3, 1967.<br>Type Certificate No. P42GL issued April 2, 1973 under Delegated Option Authorization provisions of 14 CFR Part 21 Subpart J.<br><br>Date of application for Type Certificate: February 9, 1973.<br><br>The following models were included under the original certification basis:<br>HC-I2YF-1, -4; BHC-I2YF-1, -4<br><br>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:<br>HC-I2YR-1<br><br>Models added after August 31, 2009 are approved in accordance with Organization Designation Authorization procedures of 14 CFR Part 183 Subpart D<br><br>The following models were added, updated or revised in accordance with 14 CFR Part 35 with amendments 35-1 through 35-9 effective March 19, 2013:<br>HC-I2YR-1 |
| Production Basis: | Production Certificate no. 10 |

Note 1: Hub Model Designation (See Notes 4 and 6)

B HC - I 2 Y F - 1 AF

- AF: B when used denotes modified cylinder, spring, pitch change rod and low pitch stop; F when used denotes modified pitch change system; L denotes left hand rotation; 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; -4: non-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; R denotes SAE #2 flange with six 1/2" bolts and five 3/4" drive bushings on a 4-3/4" bolt circle
- Y: Hartzell blade shank size
- 2: Number of blades
- I: Identifies basic design. "I" denotes a 2.00 inch integral shaft extension
- 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 |

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

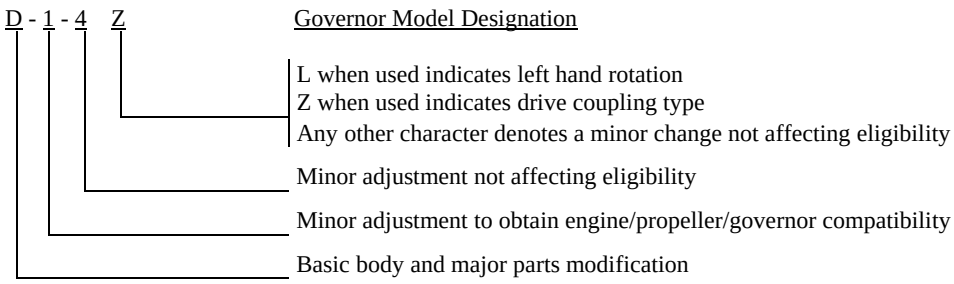
L C 76 66 D - 3R

- 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 in inches
- 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 or NG denotes Carbon composite construction

* 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 and 10)

(a) Approved with Hartzell governors per drawings C-4770 and C-4771. Wt.: 4.5 lb.




(b) The -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.

(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 Not applicable

Reversing Not applicable

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

(a) Blades

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

(b) Propellers

(1) "F" after hub model number and preceding blade model number denotes large pitch change knob. These propellers are interchangeable with propellers that do not have the "F" designation.

(2) Propellers with the letter "B" following the hub model may replace those without the letter "B".

(c) Governors

(1) 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 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-I2YF | F8459A | Continental IO-360-A, -B, -C, -D, E | 80 | 80 | Avoid continuous operation between 2400 and 2700 RPM |

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 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 recommended overhaul periods.

END