DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

P55GL
Revision 14
Hartzell
( )HC-G3Y
August 25, 2014

TYPE CERTIFICATE DATA SHEET NO. P55GL

Propellers of models described herein conforming with this data sheet (which is part of Type Certificate No. P55GL) 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-G3YF-1, -2; EHC-G3YF-1, -2; PHC-G3YF-1, -2; HC-G3YR-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-G3YF-1, EHC-G3YF-1, PHC-G3YF-1							
7392-0 to 7392-10	350	2850	350	2850	75" to 65" (-0 to -10)	73.5 lb.	Aluminum Alloy
7663-0 to 7663-10	310	2850	310	2850	78" to 68" (-0 to -10)	70.0 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)	68.0 lb.	Aluminum Alloy
7693-0 to 7693-10	350	2700	350	2700	78" to 68" (-0 to -10)	74.0 lb.	Aluminum Alloy
8068+2 to 8068-10	350	2700	350	2700	84" to 72" (+2 to -10)	78.5 lb.	Aluminum Alloy
8068-2 to 8068-10	350	2700	310	2850	80" to 72" (-2 to -10)	78.5 lb.	Aluminum Alloy
8459-0 to 8459-14	400	2700	400	2700	86" to 72" (-0 to -14)	73.0 lb.	Aluminum Alloy
8465-0 to 8465-14	400	2700	400	2700	86" to 72" (-0 to -14)	75.0 lb.	Aluminum Alloy
8467-0 to 8467-14	400	2575	400	2575	86" to 72" (-0 to -14)	79.0 lb.	Aluminum Alloy
8468-0 to 8468-14	400	2625	400	2625	86" to 72" (-0 to -14)	76.0 lb.	Aluminum Alloy
8470-0 to 8470-14	400	2700	400	2700	86" to 72" (-0 to -14)	75.0 lb.	Aluminum Alloy

Blades (See Note 2)	Maximum Continuous HP	Maximum Continuous RPM	Takeoff HP	Takeoff RPM	Diameter Limits (See Note 10)	Approx. Max. Wt. Complete (For Reference Only) (See Notes 3 and 7)	Blade Construction (See Note 10)
8475-0 to 8475-14	400	2575	400	2575	86” to 72” (-0 to -14)	79.0 lb.	Aluminum Alloy
8477-0 to 8477-14	400	2575	400	2575	86” to 72” (-0 to -14)	82.0 lb.	Aluminum Alloy
Non-Counterweighted Propellers HC-G3YF-1							
7890	400	2700	400	2700	80"	66.0 lb.	Aramid Composite
Non-Counterweighted Propellers HC-G3YF-1, PHC-G3YF-1							
NG8301-0 to NG8301-10	350	2700	350	2700	85" to 75” (-0 to -10)	64.0 lb.	Carbon Composite
Counterweighted Propellers HC-G3YF-2, EHC-G3YF-2, PHC-G3YF-2							
C7663-0 to C7663-10	310	2850	310	2850	78” to 68” (-0 to -10)	79.0 lb.	Aluminum Alloy
C7666-0 to C7666-10	310	2700	310	2700	78” to 68” (-0 to -10)	86.0 lb.	Aluminum Alloy
C7691-0 to C7691-10	350	2850	350	2850	78” to 68” (-0 to -10)	77.0 lb.	Aluminum Alloy
C8459-0 to C8459-14	400	2700	400	2700	86” to 72” (-0 to -14)	82.0 lb.	Aluminum Alloy
C8465-0 to C8465-14	400	2700	400	2700	86” to 72” (-0 to -14)	84.0 lb.	Aluminum Alloy
C8467-0 to C8467-14	400	2575	400	2575	86” to 72” (-0 to -14)	88.0 lb.	Aluminum Alloy
C8468-0 to C8468-14	400	2625	400	2625	86” to 72” (-0 to -14)	85.0 lb.	Aluminum Alloy
C8470-0 to C8470-14	400	2700	400	2700	86” to 72” (-0 to -14)	84.0 lb.	Aluminum Alloy
C8475-0 to C8475-14	400	2575	400	2575	86” to 72” (-0 to -14)	88.0 lb.	Aluminum Alloy
C8477-0 to C8477-14	400	2575	400	2575	86” to 72” (-0 to -14)	91.0 lb.	Aluminum Alloy
Counterweighted Propellers HC-G3YR-4							
NC7893-0 to NC7893-10	350	2700	350	2700	80” to 70” (-0 to -10)	69.4 lb.	Carbon Composite

Certification Basis:	14 CFR Part 35 with amendments 35-1 through 35-4 effective May 2, 1977. Type Certificate No. P55GL issued March 31, 1978 under Delegated Option Authorization provisions of 14 CFR Part 21 Subpart J. Date of application for Type Certificate: January 12, 1978. The following models were included under the original certification basis: HC-G3YF-1; HC-G3YF-2, EHC-G3YF-2 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-G3YF-(1,2); HC-G3YF-(1,2), EHC-G3YF-(1,2) 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-G3YF-(1,2); HC-G3YF-(1,2), EHC-G3YF-(1,2) 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-G3YR-4 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: HC-G3YF-1, PHC-G3YF-1
Production Basis:	Production Certificate no. 10

Note 1: Hub Model Designation (See Notes 4 and 5)

E HC - G 3 Y F - 1 RF

RF
- F when used denotes modified pitch change system
- L denotes left hand rotation
- N indicates compatibility with N shank blades (See NOTE 2)
- R when used denotes large piston area
- U when used denotes spring kit (package) in propeller dome
- 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
- -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

3 — Number of blades

G — Identifies basic design. “G” denotes a 1.00 inch integral shaft extension

HC — Hartzell Controllable

E — Indicates dowel location with respect to centerline through blade sockets when viewing hub from flange mounting face

	Dowel Pin	T/C
Blank	90 & 270 deg.	30 deg. Clockwise
E:	0 & 180 deg.	240 deg. Clockwise
P:	0 & 180 deg.	120 deg. Clockwise

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 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 or NG denotes Carbon composite construction
  No prefix is used for Aramid composite blades

* 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, C-4771 and C-4772. Wt.: 4.5 lb.

D - 1 - 4 Z Governor Model Designation

- Z: L when used indicates left hand rotation
  Z when used indicates drive coupling type
  Any other character denotes a minor change not affecting eligibility
- 4: Minor adjustment not affecting eligibility
- 1: Minor adjustment to obtain engine/propeller/governor compatibility
- D: Basic body and major parts modification

(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.

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

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 (See Notes 2 and 3)

(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

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

(c) 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
EHC-G3YF	7663	TCM IO-520-E	77	74	none
PHC-G3YF	F7691( )	TCM IO-520-D TCM IO-550-D	78	77	Do not exceed 20 in. manifold pressure below 2200 RPM
PHC-G3YF	F7691	TCM IO-520-A, -B, -BA, -BB, -C, -CB, -D, -E, -F, -J, -K, -L, -M, -MB TCM IO-550-A, -B, -C, -D, -F, -G, -L, -N, -P, -R	78	77	Do not exceed 20 in. manifold pressure below 2200 RPM
PHC-G3YF	F7691( )	TCM O-470-A, -J, -K, -L, -R, -S, -U	78	77	none
PHC-G3YF	F7693F	TCM IO-550-B	78	75	none
PHC-G3YF	F8068	TCM IO-470-D, E, F, M, S IO-520-A, J IO-550-D, E, F, L TSIO-520-C, H	82	78	none
PHC-G3YF	F8068-2	TCM IO-520-D, E, F, L	80	78	none
PHC-G3YF	F8468A( )	TCM O-470-K, -L TCM IO-470-F	80	77	none
PHC-G3YF	F8468A-( )R	TCM O-470-A (S/N 41000 & up), -J, -K, -L, -R, -S, -U	80	77	none
PHC-G3YF	F8468A( )	TCM IO-520-D TCM IO-550-D	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 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