

DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

P48GL
Revision 2
Hartzell
HC-D2V
HC-D2MV
November 14, 1997

TYPE CERTIFICATE DATA SHEET NO. P48GL

Propellers of models described herein conforming with this data sheet (which is part of Type Certificate No. P48GL) 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.

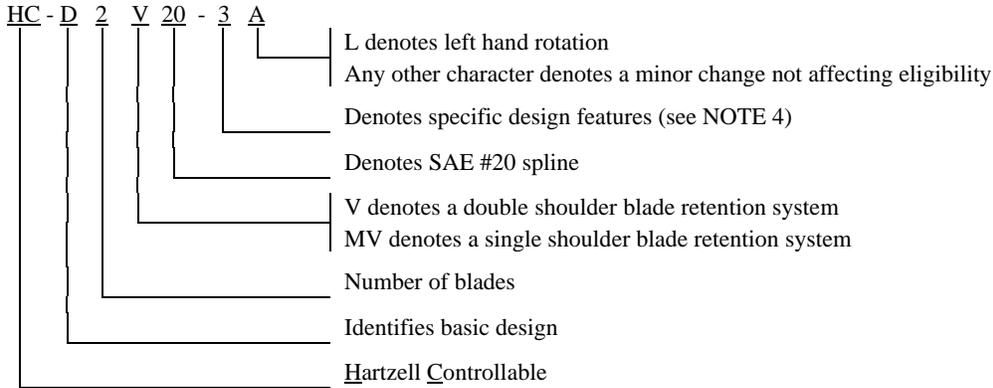
Type Certificate Holder	Hartzell Propeller Inc. Piqua, OH 45356
Type	Constant speed; hydraulic (see NOTES 3 and 4)
Engine Shaft	SAE # 20 Spline
Hub material	Alloy steel
Blade material	Aluminum alloy
Number of blades	Two
Hub models	HC-D2V20-(1,2,3,4,5,6,7,8,9), HC-D2MV20-(1,2,3,4,5,6,7,8,9) (see NOTES 1 and 4)

Blades (see NOTE 2)	Maximum Continuous		Takeoff		Diameter Limits (see NOTE 2)	Approx. Max. Wt. Complete (For Reference Only) (See NOTES 3 and 7)
	HP	RPM	HP	RPM		
V8433(-)0 to V8433(-)9	225	2600	225	2600	84" to 75" (-0 to -9)	69.0 lb.
V8833(-)0 to V8833(-)4	225	2600	225	2600	88" to 84" (-0 to -4)	75.0 lb.
	260	2180	260	2180		
V9333(-)0 to V9333(-)5	260	2180	260	2180	93" to 88" (-0 to -5)	79.0 lb.
V10133(-)0 to V10133(-)6	260	2180	260	2180	101" to 95" (-0 to -6)	76.0 lb.

Certification Basis:	( )D2V( ) models: FAR Part 35 with amendments 35-1 and 35-2 effective Feb. 1, 1965 ( )D2MV( ) models: FAR Part 35 with amendments 35-1 through 35-6 effective Aug. 18, 1990 Type Certificate No. P48GL issued June 21, 1976 under Delegated Option Authorization Procedures of Part 21 Subpart J of the Federal Aviation Regulations. Date of application for Type Certificate: June 16, 1976
Production Basis:	Production Certificate no. 10

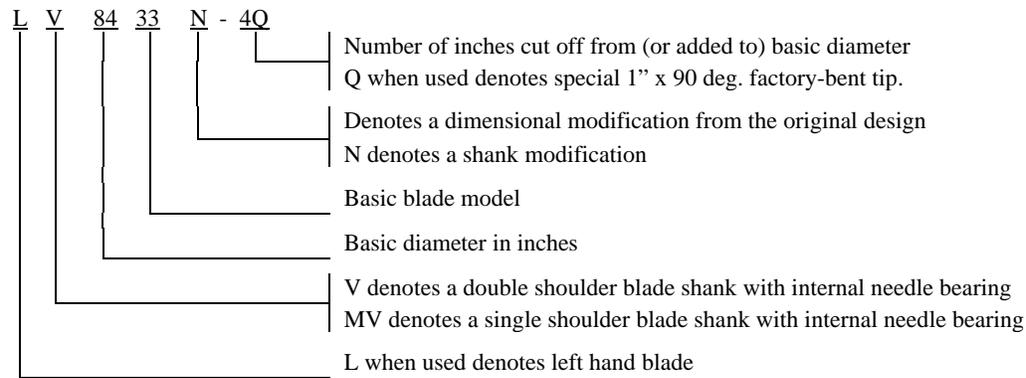
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NOTE 1. Hub Model Designation



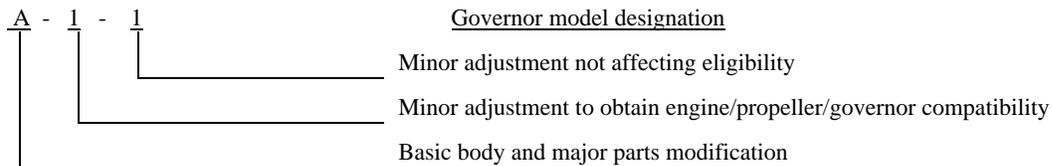
A "-10" following the hub serial number signifies the use of oversized pilot tubes in the hub spider.

NOTE 2: Blade Model Designation



NOTE 3. Pitch Control

- (a) The -7 and -8 models are approved with the Hartzell Hydro-Selective manual control. Refer to Hartzell Manual 100( ) for details.
- (b) Approved with Hartzell constant speed governors per drawing C-4772. Wt.: 3.75 lb. (see NOTE 7 (d))



Note: Some installations require a Tee drive adapter for the governor. Additional weight of the Hartzell model C-137 adapter is 2.5 lb. and of the Hartzell model C-253 adapter is 2.7 lb.

- NOTE 4. (a) Feathering The -9 model incorporates a snap action feathering feature and cannot be unfeathered in flight.  
(b) Reversing The -2, -3 and -5 models incorporated reversing when used with the appropriate controls.

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) Blades

- (1) Blades with an "N" suffix, such as (M)V8433N, are interchangeable with corresponding blades without the "N" suffix, provided that all blades in the same propeller are identical.
- (2) Blades with "M" prefix, such as MV8433N, can be substituted for corresponding blades without the "M" prefix provided that all blades in the same propeller are identical and that the hub model also contains the characters "MV". Blades without the "M" prefix cannot be substituted for those with the "M" prefix.

(b) Propellers

- (1) Propellers listed in this data sheet may replace corresponding propellers listed in Type Certificate Data Sheets P845, P46GL and P-917.
- (2) Propellers listed in T.C.D.S. nos. P-845, P46GL and P-917 may not replace propellers listed in this data sheet.
- (3) In the model designation HC-D2(V,MV)( ), the "D" may be substituted for propeller models with "1" in the same location and "V" or "MV" may be substituted for propeller models with "X" in the same location, however "X" models may not replace "V" or "MV" models.
- (4) In the model designation HC-D2(V,MV)( ), the "MV" may be substituted for "V", however "V" may not replace "MV".

NOTE 7. Accessories

(a) Propeller anti-icing

- (1) Aluminum alloy blades eligible with Goodrich Icx boots installed in accordance with Hartzell Special Instruction no. 59A. The maximum recommended boot length is 0.7 x blade radius measured from the center of the hub.
- (2) Approved with Hartzell fluid feed equipment on propeller models for which equipment is available.

(b) 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.

(c) Propeller spinner

- (1) Approved with Hartzell model D-164 spinner. Wt.: 3 lb.

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.

<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-D2V20	V8433(N)	TCM E-185	84	76	Dampened engine only. Do not exceed 2600 RPM at takeoff.
HC-D2V20	V8433(N)	TCM E-225 with two 5th order dampers or one 5th and one 6th order dampers.	84	82	Do not exceed 2600 RPM at takeoff.
HC-D2V20	V8433(N)	Franklin 6A8-215-B8F, -B9F	84	84	none
HC-D2V20	V8433(N)	LYC O-435-A, -C	78	75	none
HC-D2V20	V8433(N)	LYC O-435-A2, -C1	78	76	none
HC-D2V20	V8833(N)	Ranger 6-440-C5	88	88	Avoid continuous operation between 1250 and 1600 RPM and between 1950 and 2200 RPM.
HC-D2V20	V8833(N)	TCM E-225	88	86	Avoid continuous operation on the ground between 1400 and 1700 RPM and between 1900 and 2100 RPM. Avoid continuous operation on the ground and in flight between 2450 and 2550 RPM. Never exceed 2600 RPM.
HC-D2V20	V9333(N)	LYC GO-435-C2	93	91	Avoid continuous ground operation between 1675 and 2150 engine RPM
HC-D2V20	V9333(N)	LYC GO-435-C2	90	88	none

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 100( ).

END