TYPE-CERTIFICATE DATA SHEET

No. IM.P.123

for
2A1 series propellers

Type Certificate Holder
Hartzell Propeller Inc.

One Propeller Place
Piqua, OH 45356-2634
USA

For Model: 2A1-HP

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I. General

1. Type / Models

2A1 / 2A1-HP

2. Type Certificate Holder

Hartzell Propeller Inc.
One Propeller Place
Piqua, OH 45356-2634
USA

3. Manufacturer

Hartzell Propeller Inc.

4. Date of Application

2A1-HP: 09 April 2015

5. EASA Type Certification Date

2A1-HP: 24 July 2018

II. Certification Basis

1. State of Design Authority Certification Basis

Refer to FAA TCDS no. P00014CH.

2. Reference Date for determining the applicable airworthiness requirements

19 March 2013.

3. EASA Certification Basis

3.1. Airworthiness Standards

2A1-HP:
CS-P Amendment 1 dated 16 November 2006 as issued by EASA Decision No 2006/09/R, except the requirements of Subpart D as allowed by CS-P 10(b) (See Note 10a).

3.2. Special Conditions (SC)

None.

3.3. Equivalent Safety Findings (ESF)

None.

3.4. Deviations

None.

III. Technical Characteristics

1. Type Design Definition

The propeller type is defined by a propeller assembly drawing including a parts list (or later approved revisions).
2A1-HP: Drawing 105646, rev -, dated 01.03.2015

2. Description

The 2A1 propeller has two blades and a hydraulically operated variable pitch control with constant speed.
The model incorporate neither feathering nor reverse capability (See Note 4).
The hub is milled out of aluminium alloy. The blade material is composite.
Optional equipment includes spinner and propeller ice protection system.

3. Equipment

Spinner: See Note 7
Governor: See Note 3
Ice Protection: See Note 7

4. Dimensions

Diameters from 170,2 cm to 195,6 cm. (See Table of Section IV)

5. Weight

Depending on Propeller-Design Configuration. (See Table of Section IV)

6. Hub / Blade Combinations

Details are mentioned within Table of Section IV.

7. Control System

Propeller governor. (See Note 3)

8. Adaptation to Engine

Special flange. (See Note 1)

9. Direction of Rotation

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 Note 5)

IV. Operating Limitations

Blades (see Note 2)	Maximum Continuous kW	Maximum Continuous RPM (min^{-1})	Take Off kW	Take Off RPM (min^{-1})	Diameter Limits (cm) (see Note 2)	Approx. Max Wt. Complete (kg) (for reference only) (see Notes 3 and 7)	Blade Construction
Non-Counterweighted Propellers 2A1-HP(275 through 850) (See Note 1)							
75A01+2 to 75A01-8	74,6	2387	74,6	2387	195,6 to 170,2 (+2 to -8)	9,84	Composite

1. Approved Installations

See Hartzell Manual 159 for a list of approved applications.

2. Maximum Take Off Power and Speed

Details are mentioned within Table of Section IV.

3. Maximum Continuous Power and Speed

Details are mentioned within Table of Section IV.

4. Propeller Pitch Angle

The propeller has variable pitch capability. Pitch control is provided by a governor. (See Note 3)

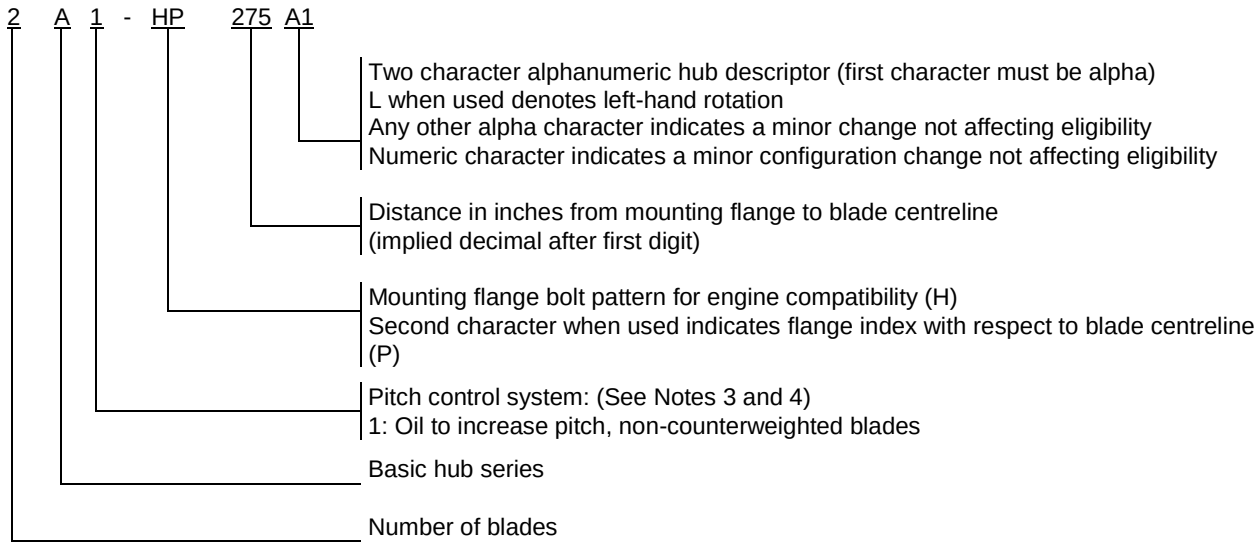
V. Operating and Service Instructions

Propeller Owner's Manual and Logbook (incl. Airworthiness Limitations, if any)	Hartzell Manual 411 (*)
Propeller Overhaul Manual	Hartzell Manual 401 (*)
Composite Blade Overhaul Manual	Hartzell Manual 135F (*)
Standard Practices Manual	Hartzell Manual 202A (*)
Metal Spinner Maintenance Manual	Hartzell Manual 127 (*)
Propeller Integration Manaul	Hartzell Manual 191 (*)
Service Bulletins	

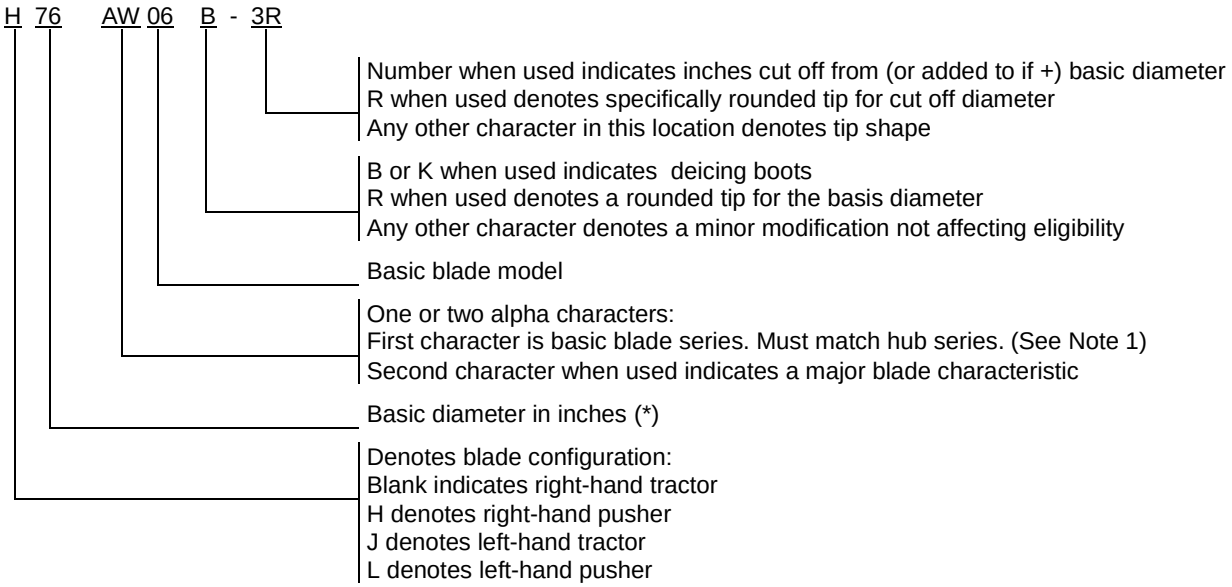
(*): or later approved revision

VI. Notes

1. Hub Model Designation:



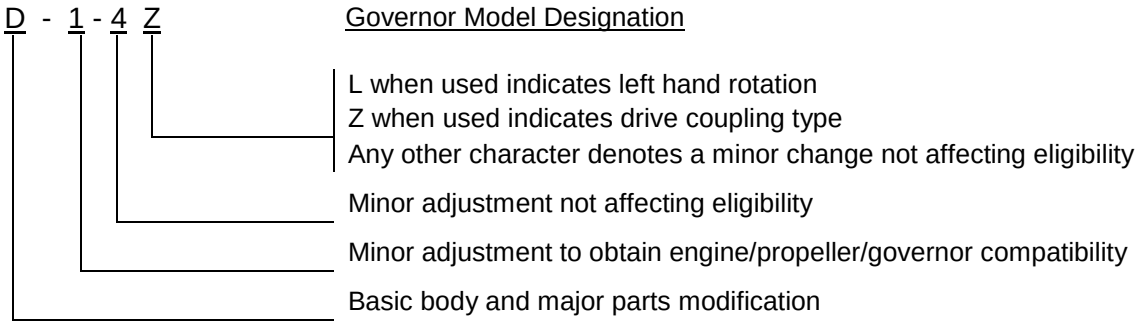
2. Blade Model Designation: (See Notes 5 and 6)



(*): Diameter limits are nominal diameters of the assembled propeller. They do not include the +/- 0,32 cm (one eight inch) manufacturing tolerance the FAA allows for propellers with basic diameter less than 426,72 cm (14 feet).

3. Pitch Control:

(a) Approved with Hartzell governors per drawing C-4770. Wt.: 2,04 kg. (See Note 10)



(b) The 2A1 models use oil to increase pitch and do not have counterweighted blades. (See Note 4)

(c) Maximum governor output pressure: 2413,16 kPa for all propeller models

(d) All governors must be approved as part of the aircraft installation regardless of manufacturer. (See Note 10)

4. Feathering: Not applicable

Reversing: Not applicable

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.

6. Interchangeability:

(a) Propellers

Not applicable

(b) 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.

(c) Blades

Not applicable

(d) Ice Protection Systems

Refer to Hartzell Service Letter HC-SL-30-260 for ice protection system component interchangeability.

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)

8. Shank Fairings: Not applicable.

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. (cm)	Min. Dia. (cm)	Placards

Not applicable.

10. The suitability of a propeller for a certain aircraft/engine combination must be demonstrated within the scope of the type certification of the aircraft.

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.

10a. This propeller has been certificated in accordance with CS-P subparts A, B and C. Compliance with the requirements of Subpart D, which is specific to each aircraft installation, has not yet been demonstrated.

11. Special Limits:

(a) Life Limits and Mandatory Inspections

(1) Airworthiness limitations, if any, are specified in Hartzell Manual 411.

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.

13. The EASA approved Airworthiness Limitations Section of the Instructions for Continued Airworthiness is published in the applicable Propeller Owner's Manual, chapter 5 "Airworthiness Limitations".

SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

None.

II. Type Certificate Holder Record

N/A.

III. Change Record

Issue	Date	Changes	TC issue
Issue 01	24 July 2018	Initial Issue	24 July 2018

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