ANAC
AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL

TYPE CERTIFICATE DATA SHEET Nº EH-2015T05

Type Certificate Holder:

HARTZELL PROPELLER INC.
One Propeller Place
Piqua, Ohio - OH 45356-2634
USA

EH-2015T05
Sheet 01
HARTZELL
2A1

13 July 2015

Propellers of models described herein conforming with this data sheet, which is part of Type Certificate No. 2015T05, meet the minimum standards for use in certificated aircraft in accordance with pertinent aircraft data sheets and applicable portions of the Brazilian Aeronautical Regulations provided they are installed, operated, and maintained as prescribed by the approved manufacturer's manuals and other approved instructions.

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 ELIGIBLE 2A1-HP (See Notes 1 and 4)

Blade Eligible (See Note 2)	Maximum Continuous hp (rpm)	Takeoff hp (rpm)	Diameter Limits (See Note 2) m (in)	Approx. Max. Wt. Complete (For reference only) (See Notes 3 and 7) kg (lb)	Blade Construction (See Note 10)
Non-Counterweighted Propellers 2A1-HP (375 through 724) (See Note 1)					
75A01+2 To 75A01-8	100 (2387)	100 (2387)	1.96 to 1.70 +0,05 to –0,20 (77 to 67) (+2 to -8)	9.8 (21.7)	Composite

CERTIFICATION BASIS RBAC 35 (Brazilian Requirements for Aeronautical Certification), which endorses under RBAC 21.29 Amendment 1 effective on 01 December 2011, 14 CFR Part 35 Amendments -1 through -9, effective on 19 March 2013 originally.
(Models 2A1-HP).

TYPE CERTFICATION

Model	Application	Issued TC
2A1-HP	09 April 2015	28 May 2015

PRODUCTION BASIS Not Applicable.

IMPORT REQUIREMENTS Each propeller imported separately and/or spare parts must be accompanied by an Export Airworthiness Approval, issued by FAA, attesting that the particular propeller and/or parts were submitted to the governmental quality control before delivery and are in conformity with the ANAC approved type design.

NOTES

NOTE 1 Hub model Designation - 2 [1] A [2] 1 [3] -HP [4] 275 [5] A1 [6] , where:

[1] 2 Number of Blades
[2] A Basic hub series
[3] 1 Pitch Control System (See Notes 3 and 4)
1: Oil to increase pitch, non-counterweighted blades
[4]-HP Mounting flange bolt pattern for engine compatibility (H)
Second character when used indicates flange index with respect to blade centerline (P)
[5] 275 Distance in inches from mounting flange to blade centerline (implied decimal after first digit)
[6] A1 Two character alphanumeric hub descriptor (first character must be alpha)
L – when used indicates left hand rotation
Any other alpha character indicates a minor change not affecting eligibility
Numeric character indicates a minor configuration change not affecting eligibility

NOTE 2 Blade Model Designation - H 76 AW 06 B -3R , where
[1] [2] [3] [4] [5] [6]

[1] Denotes blade configuration: blank indicates right-hand tractor
H denotes right-hand pusher
J denotes left-hand tractor
L denotes left-hand pusher
[2] Blade diameter in inches*
[3] One or two alpha characters:
First character is basic blade series. Must match hub series. (See Note 1)
Second character when used indicates a major blade characteristic
[4] Basic blade model
[5] B or K when used indicates deicing boots
R when used denotes a rounded tip for the basic diameter
Any other character denotes a minor modification not affecting eligibility
[6] Number when used indicates inches cut off from (or added to if +) basic diameter
R when used denotes specifically rounded tip for cutoff diameter
Any other character in this location denotes tip shape

* Diameter limits are nominal diameters of the assembled propeller. They do not include the +/- 3,17 mm (one eighth inch) manufacturing tolerance the FAA allows for propellers with basic diameter less than 4,27 m (14 feet).

NOTE 3 Pitch Control

(a) Approved with Hartzell governors per drawing C-4770. Wt.: 2.4 kg (4.5 lb) (See Note 10)

Governor Model Designation - D -1 -4 Z , where
[1] [2] [3] [4]

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

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

(c) Maximum governor output pressure: 350 psi for all propeller models.

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

NOTE 4 (a) Feathering: Not applicable.

(b) Reversing: Not applicable.

NOTE 5 Left-hand Model:

The left hand version of an approved model propeller is approved at the same rating and diameter as listed for right-hand model (See Notes 1 and 2).

NOTE 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.

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 engine 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 m (in)	Min. Dia m (in)	Placards
Not applicable.					

NOTE 10 Propeller installation must be approved as part of the aircraft Type Certificate and demonstrate compliance with the applicable aircraft airworthiness requirements.

Propellers model 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 or "Especificação de Aeronave" (EA) 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 test and/or analyses based on aircraft configuration and operating conditions to determine the potential hazard as a result of a bird impact.

NOTE 11 Special Limits:

(a) Life Limits and Mandatory Inspections

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

The propeller CMACO must evaluate the propeller installation for each new aircraft installation to assess possible changes in the airworthiness limitations.

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.

Nelson Eisaku Nagamine
General Manager - Acting
Aeronautical Product Certification Branch

MÁRIO IGAWA
General Manager, Aeronautical Product Certification