TYPE-CERTIFICATE DATA SHEET

No. IM.P.137

for Propeller
3C1-( ) series propellers

Type Certificate Holder
Hartzell Propeller Inc.

One Propeller Place
Piqua, OH 45356-2634
USA

For Model:
3C1-R919A1
3C1-L675A1

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I. General

1. Type / Models

3C1 / 3C1-R919A1, 3C1-L675A1

2. Type Certificate Holder

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

3. Manufacturer

Hartzell Propeller Inc.

4. Date of Application

3C1-( ): 18 August 2016

5. EASA Type Certification Date

3C1-( ): 03 March 2017

II. Certification Basis

1. State of Design Authority Certification Basis

Refer to FAA TCDS no. P00016CH.

2. Reference Date for determining the applicable airworthiness requirements

17 April 2014.

3. EASA Certification Basis

3.1. Airworthiness Standards

3C1-( ):
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).

3C1-R919A1:	Drawing 104300, rev A, dated 05 July 2016
3C1-L675A1:	Drawing 106247, rev -, dated 02 June 2016

2. Description

The 3C1 propeller has 3 blades and a hydraulically operated variable pitch control with constant speed.
The model has neither feathering nor reverse capability (See Notes 3 and 4).
The two-piece hub is milled out of aluminium alloy. The blade material is carbon composite.
Optional equipment includes spinner and ice protection.

3. Equipment

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

4. Dimensions

Diameters from 193,0 to 167,6 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

Direction of rotation (viewed in flight direction) as identified by a letter-code in the hub model designation. (See Note 1 and 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) (see Notes 3 and 7)	Blade Construction
Hub models: 3C1-L(430 through 919), 3C1-R(430 through 919) (See Note 1)							
76C03-0 to 76C03-10	212,5	2700	212,5	2700	193,0 to 167,6 (-0 to -10)	20,64	Carbon Composite

1. Approved Installations

The propeller is initially intended for use on a Cirrus SR20 aircraft. (See Note 10)

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)

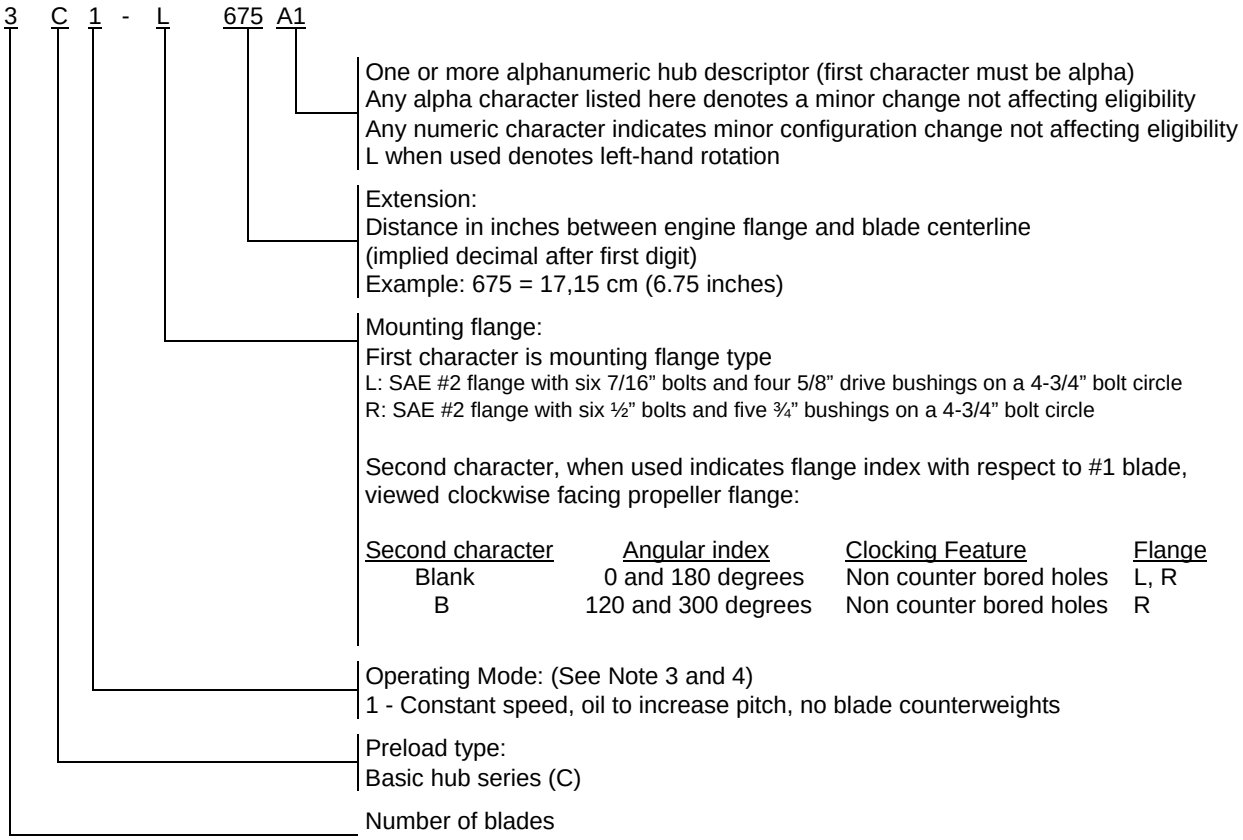
V. Operating and Service Instructions

Propeller Owner's Manual and Logbook (incl. Airworthiness Limitations, if any)	Hartzell Manual 480 (*)
Propeller Overhaul Manual	Hartzell Manual 490 (*)
Composite Blade Overhaul Manual	Hartzell Manual 135F (*)
Standard Practices Manual	Hartzell Manaul 202A (*)
Metal Spinner Maintenance Manual	Hartzell Manaul 127 (*)
Service Bulletins	

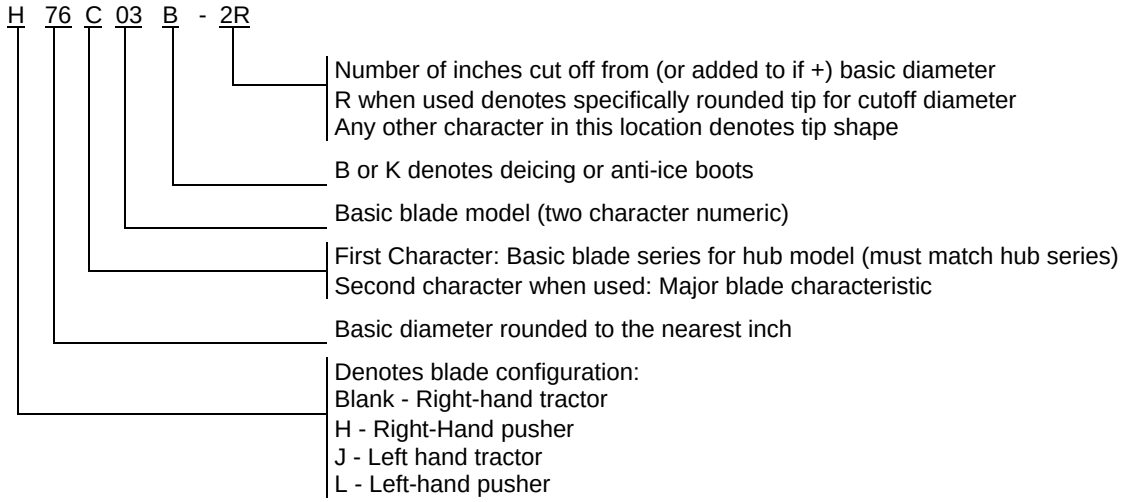
(*): or later approved revision

VI. Notes

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

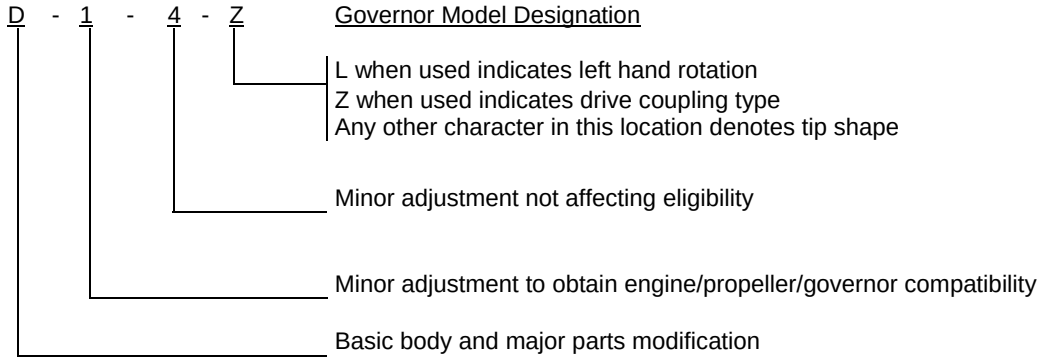


2. Blade Model Designation: (See Notes 5 and 6)



3. Pitch Control: (weight of pitch control extra) (See Notes 4 and 10)

(a) Approved with Hartzell governors per drawings C-4770 and C-4772. Wt: 2,04 kg (4.5 lb) (See Note 10).



(b) Maximum output pressure: 2413,16 kPa (350 psig)

(c) The 3C1 models use governor oil to increase pitch and do not have counterweighted blades (See Note 4)

(c) All governors and propeller control systems 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:

(a) 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)

(b) 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)

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

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 480.

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	03 March 2017	Initial Issue	03 March 2017

-END-

