

型号认可证数据单
THE VALIDATION DATA SHEET

编号/No.: VTC0367P

版次/Revision: 0

型号/Type:

4C1

批准人/Approved by:



职务/Title: Director General of CAAC-AAD

日期/Date: 2021 年 12 月 15 日

本数据单是型号认可证（编号：VTC0367P）的组成部分，它规定了符合中国民用航空局的适航要求所颁发此型号认可证的产品状态和限制。

This data sheet, which is a part of Validation Type Certificate (No: VTC0367P), prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the Chinese Civil Aviation Regulation.

型号认可证持有人/Validation of Type Certificate Holder:

Hartzell Propeller Inc.
Piqua, OH 45356

第1部分 概述

SECTION 1 GENERAL

1. CAAC认可数据单和型号合格证数据单/CAAC Validation Data Sheet and Type Certificate Data Sheet

	中国民用航空局认可数据单号、版次和颁发日期 CAAC Validation Data Sheet Number, Revision and issuance date	型号合格证数据单号、版次和颁发日期 Type Certificate Data Sheet Number, Revision and issuance date
当前 Current	VTC0367P, 版次0, 2021年12月15日; No. VTC0367P, Revision 0, Dec. 15, 2021	FAA TCDS No. P00019CH, 第0版, 2019年11月20日 FAA TCDS No. P00019CH, Revision 0, Nov. 20, 2019
历史 History	无 None	无 None

2. 类别/Category: 螺旋桨/Propeller
3. 认可当局/Validation Authority: 中国民用航空局/CAAC
审定当局/Certifying Authority: 美国联邦航空局/FAA
4. 型号合格证持有人:
Type Certificate Holder: Hartzell Propeller Inc.
Piqua, OH 45356
5. ETOPS: 不适用/NA
6. CAAC 专用要求/Special Requirements: 无/NONE

第2部分 数据单

SECTION 2 DATA SHEET

类型/Type: 恒速; 液压 (见注3和4) /Constant speed; hydraulic (see Notes 3 and 4).
 发动机轴/Engine Shaft: 特殊法兰 (见注1) /Special flange (see Note 1).
 桨毂材料/Hub Material: 铝合金/Aluminum Alloy
 桨叶材料/Blade Material: 见下表“备注”栏/See “Notes” column in table below
 桨叶数/Number of Blades: 四个/Four
 桨毂型号/Hub Model: 4C1 (见注1和注4) /4C1 (see Notes 1 and 4)

桨叶 (见注2) /	最大连续/ Maximum Continuous	起飞/ Take-Off	直径限制 (见注2) /	大约最大全重 (仅供参考) (见注3和注7) /	备注/ Note
Blade (See Note 2)			Diameter limits (See Note 2)	Approx. Max Wt. Complete (For Ref. Only.) (See Notes 3 and 7)	
	马力/ 转速/ HP RPM	马力/ 转速/ HP RPM			
桨毂型号: 4C1- () (430至919) (见注1) / Hub models: 4C1- () (430 through 919) (See Note 1)					
76C04-0至76C04-6/ 76C04-0 to 76C04-6	350 2700	350 2700	78.6英寸至72.6英寸 (-0 to -6) / 78.6" to 72.6" (-0 to -6)	61.8磅/ 61.8 lb.	碳纤维 复合材料/ Carbon Composite
审定基础: Certification Basis:	螺旋桨型号根据14CFR183部D分部ODA程序进行批准/ Propeller models are approved in accordance with Organization Designation Authorization procedures of 14 CFR Part 183 Subpart D. 型号合格证P00019CH颁发日期为2019年11月20日, 申请日期为2019年5月20日/ The TC number is P00019CH having issue date November 20, 2019, with application date May 20, 2019. 本型号许可符合2017年8月30日生效的美国14CFR35部35-1至35-10修正案。螺旋桨型号包括: 4C1- () / The certification basis for this Type Certificate is in accordance with 14 CFR Part 35 with amendments 35-1 through 35-10 effective August 30, 2017. Propellers model(s) include: 4C1- ()				
生产基础 Production Basis	生产许可证No.10/Production Certificate No. 10				

注1/ NOTE 1: 桨毂型号标识（见注4和注5）/Hub Model Designation （See Notes 4 and 5)

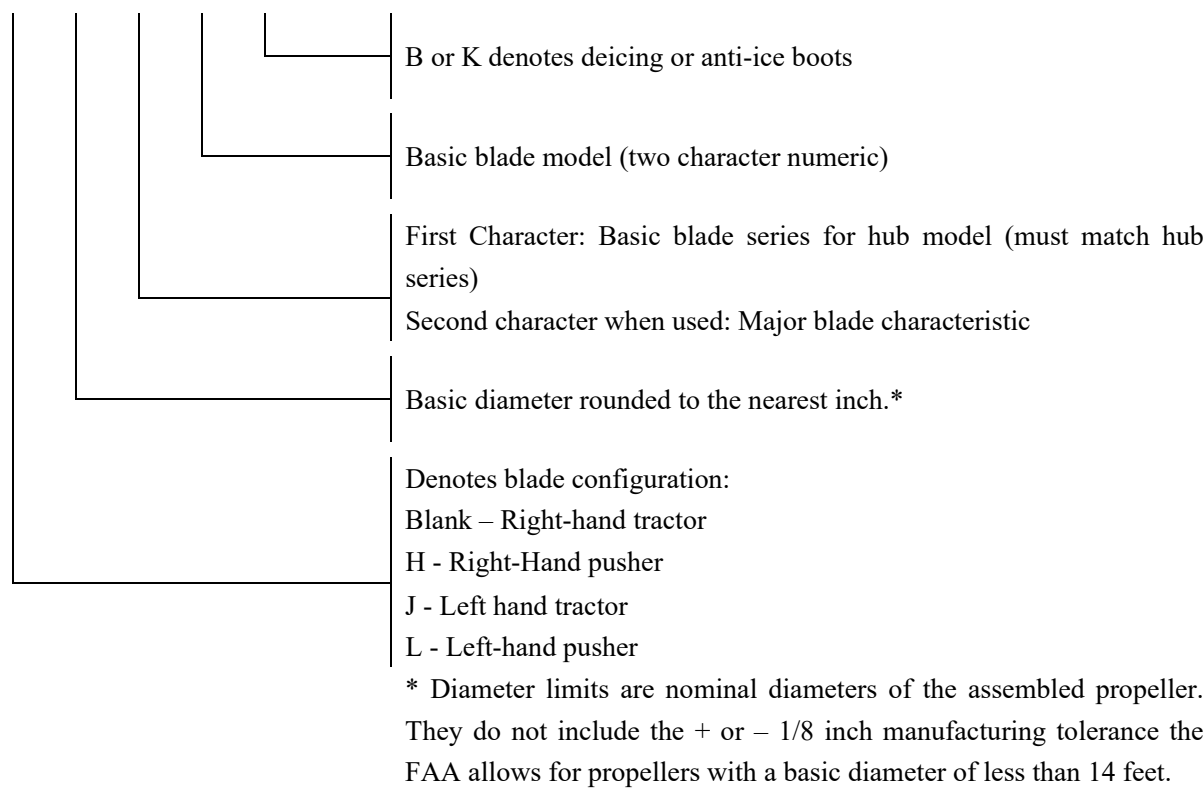
<u>4</u>	<u>C</u>	<u>1 -</u>	<u>L</u>	<u>675</u>	<u>A1</u>	一个或多个包含字母和数字的桨毂描述符号（第一个字符必须是字母） L 代表螺旋桨左旋 任何字母字符是指不影响合格性的微小改变 任何数字字符是指不影响合格性的微小改变 桨毂连接: 发动机安装法兰和桨叶中心线的距离（英寸） （隐含小数点在第一位数字后面） 例如: 675 = 6.75 英寸 安装法兰盘: 第一个字符代表安装法兰盘类型: F代表在安装边4英寸螺栓圆周上有6个1/2英寸螺栓和2个1/2英寸销钉的法兰 L代表在安装边4-3/4英寸螺栓圆周上有6个7/16英寸螺栓和4个5/8英寸衬套的SAE #2法兰 R代表在安装边4-3/4英寸螺栓圆周上有6个3/4英寸螺栓和5个3/4英寸衬套的SAE #2法兰 操作形式（见注3和注4） 1 - 恒速，滑油增加桨矩，没有桨叶配重 预加载类型: 基础桨毂系列 (C) 桨叶数量
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<u>4</u>	<u>C</u>	<u>1 -</u>	<u>L</u>	<u>675</u>	<u>A1</u>	One or more alphanumeric hub descriptor (first character must be alpha) L when used denotes left-hand rotation Any alpha character listed here denotes a minor change not affecting eligibility Any numeric character indicates minor configuration change not affecting eligibility Extension : Distance in inches from engine mounting flange to blade centerline (implied decimal after first digit) Example: 675 = 6.75 inches Mounting flange :
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				First character is mounting flange type F: flange with six 1/2" bolts and two 1/2" dowels on a 4" bolt circle L: SAE #2 flange with six 7/16" bolts and four 5/8" drive bushings on a 4-3/4" bolt circle R: SAE #2 flange with six 1/2" bolts and five 3/4" bushings on a 4-3/4" bolt circle
				Operating Mode : (See Notes 3 and 4) 1 – Constant speed, oil to increase pitch, no blade counterweights
				Preload type : Basic hub series (C)
				Number of blades

注2/ Note 2: 桨叶型号标识（见注5和注6）/ Blade Model Designation (See Notes 5 and 6)

<u>H</u>	<u>76</u>	<u>C</u>	<u>-</u>	<u>04</u>	<u>B</u>	<u>-</u>	<u>2R</u>	数字代表从基础直径上去掉（“-”）或加上（“+”）的英寸数值 R代表特别加工的直径减少的圆形桨叶梢 任何其它字母代表桨叶梢形状
								B或K代表除冰或防冰套
								基础桨叶型号（两个数字字符）
								第一个字符：与桨毂型号系列相配的基础桨叶型号系列 第二个字符：桨叶主要特性代码
								基础桨叶英寸直径（精确到个位）*
								代表桨叶构型： 没有字符-右转牵引式 H-右转推进式 J-左转牵引式 L-左转推进式
								*直径限制值指装配后螺旋桨的名义直径。不包括FAA允许的基本直径小于14英尺的螺旋桨的正负1/8英寸制造公差。
<u>H</u>	<u>76</u>	<u>C</u>	<u>-</u>	<u>04</u>	<u>B</u>	<u>-</u>	<u>2R</u>	Number of 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



注 3/ 桨距控制（桨距控制附加的重量）（见注 4 和注 10）/
NOTE 3: Pitch Control (weight of pitch control extra) (See Notes 4 and 10)

(a) 根据图纸 C-4770 和 C-4772 与 Hartzell 调速器一同批准。重量：4.5 磅（见注 10）/
Approved with Hartzell governors per drawings C-4770 and C-4772. Wt: 4.5 lb (See Note 10)

D	-	1	-	4	Z	调速器型号标识/ <u>Governor Model Designation</u>
						L代表左向旋转/ L when used indicates left hand rotation
						Z代表传动联轴节类型/ Z when used indicates drive coupling type
						其它字母代表不影响合格性的微小改动/ Any other character denotes a minor change not affecting eligibility
						不影响合格性的微小改动/ Minor adjustment not affecting eligibility
						为达到发动机/螺旋桨/调速器的匹配而做的微小改动/ Minor adjustment to obtain engine/propeller/governor compatibility
						产品和主要部件的基本改动/ Basic body and major parts modification

(b) 最大输出压力：350 psi/ Maximum output pressure: 350 psi

注 4/ NOTE 4: 顺桨/Feathering 不适用/Not applicable

反桨/Reversing 不适用/Not applicable

注 5/ NOTE 5: 左转向型号 (见注 1 和注 2) /Left-Hand Models (see Notes 1 and 2)

左转向和右转向螺旋桨型号所批准的额定功率和直径都是一样/

The left-hand version of an approved propeller model is approved at the same rating and diameter as listed for the right-hand model.

注 6/ 互换性/Interchangeability

NOTE 6:

(a) 螺旋桨/Propellers

不适用/Not applicable

(b) 调速器/Governors:

型号后缀带有“Z”的 Hartzell 调速器与相对应的型号后缀不带有“Z”的调速器可以互换。例如: F-6-24Z 可以替换 F-6-24, 反之亦然/

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) 桨叶/Blades

不适用/Not applicable

(d) 防冰系统/Ice Protection Systems

有关防冰系统部件的互换性, 请参阅 Hartzell 服务信函 HC-SL-30-260/

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

注 7/ 附件/Accessories

NOTE 7:

(a) 螺旋桨整流罩 (桨帽附加的重量) /Propeller spinner. (weight of spinner extra)

(1) 与列于型号设计数据单上的 Hartzell 和其它厂家的整流罩一同批准/

Approved with Hartzell and other manufacturers' spinners when listed on Hartzell type design data.

(2) 所有螺旋桨整流罩必须作为航空器安装的一部分被批准, 无论制造商是哪一家 (见注 10) /

All propeller spinners must be approved as part of the aircraft installation regardless of manufacturer. (See NOTE 10)

(b) 螺旋桨防冰系统 (防冰装置附加的重量) /

Propeller ice protection system (weight of ice protection equipment extra)

- (1) 本数据单所列的螺旋桨型号被批准与 Hartzell 159() 手册或其它 Hartzell 型号设计数据文件中所列的防冰设备一同使用/

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) 所有生产厂家提供的螺旋桨防冰设备必须作为飞机整体安装的一部分被批准 (见注 10) /

All propeller ice protection equipment must be approved as part of the aircraft installation regardless of manufacturer. (See NOTE 10)

注 8/ NOTE 8: 叶柄整流罩/Shank Fairings 不适用/Not applicable

注 9/ 特别限制/Special Limits

NOTE 9:

从振动考虑被批准使用在单发通用类飞机上的螺旋桨-发动机匹配表/

Table of Propeller - Engine Combinations

Approved Vibrationwise for Use on Normal Category Single Engine Tractor Aircraft

从振动考虑确定的最大与最小螺旋桨直径见下表。不允许比最小直径值小的情况发生, 因为最小直径数值已经考虑了由于修理而造成的可接受尺寸减少的情况。

下列发动机型号来自发动机型号合格证上的构型 (除非另有说明)。任何发动机或飞机结构的更改, 如果致使在飞机运行的任何阶段下列发动机的动力发生改变, 有可能会增加对螺旋桨的压力, 且不在此清单批准范围内。此类更改包括 (但不限于) 增加涡轮增压器或涡轮稳压器, 增加增压压力, 增加压缩比, 增加转速, 改变点火器正时、电子点火器、发动机全权限数字控制器 (FADEC), 或者调节进气或排气。同时, 对于曲轴、配重的质量或刚度的更改也不在此表的批准范围内/

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 turbnormalizer, 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.

桨毂型号/ Hub Model	桨叶型号/ Blade Model	发动机型号/ Engine Model	最大直径 (英寸) / Max. Dia. (inches)	最小直径 (英寸) / Min. Dia. (inches)	注意事项/ Placards
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注 10/ 螺旋桨必须作为飞机型号合格证的一部分获得批准, 并符合相关的飞机适航要求/

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

此数据单所列的螺旋桨型号包括桨毂和桨叶的基础型号。大多数螺旋桨型号包括附加字母以表明注 1 和 2 中所解释的小改动和特定性能。参照航空器型号合格证数据单以确定适用的螺旋桨的具体型号/

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.

带复合材料桨叶的螺旋桨在批准安装在任何型号航空器之前，必须评价其抗鸟击能力。Hartzell 螺旋桨公司必须基于飞机构型和运行条件完成相关测试和/或分析，以确定当受到鸟击时产生的潜在危害/

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 strike.

注 11/ NOTE 11: 特别限制/Special Limits

(a) 使用寿命和强制检查/ Life Limits and Mandatory Inspections

(1) 如果有适航限制，则参考 Hartzell 手册 480/

Airworthiness limitations, if any, are specified in Hartzell Manual 480.

螺旋桨证书管理飞机认证办公室（CMACO）必须就螺旋桨的每一次新的飞机应用的安装进行评估，以确定适航限制是否有任何可能的更改/

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

注 12/ NOTE 12: 特别提示/Special Notes

(a) 有关超速和超扭限制，参见 Hartzell 手册第 202()/

Refer to Hartzell Manual no. 202() for overspeed and overtorque limits.

(b) 有关螺旋桨大修周期，请参考 Hartzell 服务信函 HC-SL-61-61()/

Refer to Hartzell Service Letter HC-SL-61-61() for overhaul periods.

…结束…

…END…