

型号认可证数据单
TYPE VALIDATION CERTIFICATE DATA SHEET

编号/No: VTC0205P

版次/Revision: 3

型号/Type:

HC-E5

批准人/Approved By:

徐超群

职务/Title: Director General of CAAC-AAD

日期/Date: 2020-02-17

本数据单是型号认可证(编号: VTC0205P)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 part of Validation of Type Certificate (No: VTC168P), prescribes condition and limitation 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 U.S.A

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	VTC0205P, 版次3, 2020年2月17日 VTC0205P, Revision 3, February 17, 2020	No.P20NE, 版次10, 2019年4月9日 No. P20NE, Revision 10, April 9, 2019
历史 History	VTC0205P, 版次2, 2016年4月7日 VTC0205P, Revision 2, April 7, 2016	No.P20NE, 版次6, 2015年7月20日 No. P20NE, Revision 6, July 20, 2015
	VTC0205P, 版次1, 2014年10月24日 VTC0205P, Revision 1, October 24, 2014	No.P20NE, 版次5, 2014年3月31日 No. P20NE, Revision 5, March 31, 2014
	VTC0205P; 版次: 0, 2008年2月28日; VTC0205P, Revision 0, February 28 2008	No. P20NE, 版次3, 2006年12月19日 No. P20NE, Revision 3, December 19, 2006

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:
 地址/Address: Hartzell Propeller Inc
 Piqua, OH 45356 U.S.A
5. 制造厂/Manufacturer: Hartzell Propeller Inc
6. ETOPS: 不适用/NA
7. CAAC 专用要求/CAAC Special Requirements: 无/NONE

第2部分 数据单

SECTION 2 DATA SHEET

A. 审定基础/Certification Basis

1. 适航标准/ Airworthiness Standards:

1980年10月14日生效的美国14CFR35部及其35-1至5修正案。

14 CFR Part 35 effective October 14, 1980 with amendments 1 through 5 thereto.

1989年12月18日根据联邦航空管理规定21部J分部DOA程序颁发型号合格证P20NE号。

Type Certificate No. P20NE issued December 18, 1989 under Delegation Option Authorization procedures of FAR Part 21 Subpart J.

型号合格证申请日期:1989年10月25日

Date of application for Type Certificate: October 25, 1989.

下列型号根据原审定基础批准:

Models approved to the original certification basis include the following:

HC-E5N-3

下列型号按照1990年8月18日生效的美国14CFR35部35-1至35-6修正案增加、更新或修订:

Models added, updated or revised in accordance with 14 CFR Part 35 effective August 18, 1990 with amendments 35-1 through 35-6 include the following:

HC-E5B-5

下列型号按照1990年8月18日生效的美国14CFR35部35-1至35-6修正案和2001年10月3日刊登在联邦公告(第66卷,第192期,NE24案卷号)上的第35-002-SC号专用条件于2004年10月29日批准:

The following model was approved October 29, 2004 to 14 CFR Part 35 effective August 18, 1990 with amendments 1 through 6 and Special Conditions no. 35-002-SC as published in the Federal Register Vol. 66, no. 192, Docket no. NE124 on October 3, 2001.

HC-E5A-2

下列型号按照2013年3月19日生效的美国14CFR35部35-1至35-9修正案增加、更新或修订:

The following models were added, updated or revised in accordance with 14 CFR Part 35 with amendments 35-1 through 35-9 effective March 19, 2013:

HC-E5N-3

2009年8月31日之后增加的型号按照14CFR183部D分部ODA程序批准:

Models added after August 31, 2009 are approved in accordance with Organization Designation Authorization procedures of 14 CFR Part 183 Subpart D:

下列型号按照2013年7月26日生效的美国14CFR35部35-1至35-9A修正案增加、更新或修订:

The following models were added, updated or revised in accordance with 14 CFR Part 35 with amendments 35-1 through 35-9A effective July 26, 2013:

HC-E5A-3

下列型号按照2017年8月30日生效的美国14CFR35部35-1至35-10修正案增加、更新或修订:

The following models were added, updated or revised in accordance with 14 CFR Part 35 with amendments 35-1 through 35-10 effective August 30, 2017:

HC-E5A-31

2. 专用条件/ Special Conditions (SC): 如上/as described above

3. 等效安全/ Equivalent Safety Findings (ESF): 无/none

4. 偏离/Deviations: 无/none

5. 环境标准/Environmental Standards: 无/none

6. 生产基础/Production Basis: 生产许可证第10号/Production Certificate no.10

B. 技术特性/Technical Characteristics

型号:恒速型: 液压 (见注3和4)	Type: Constant speed; hydraulic (See Notes 3 and 4).
发动机轴:专用安装 (见注1)	Engine shaft: Special flange (See Note 1).
毂材料:铝合金	Hub material: Aluminum Alloy.
桨叶材料:见以下	Blade material: See Below.
桨叶数:五个	Number of blades: Five
桨毂型号/ Hub models:	HC-E5A-2,-3,-31; HC-E5B-5; HC-E5N-3

桨叶 (见注2)	最大连续 马力 转数		马力	起飞 转数	直径限制 (见注2)	大约最大全重（供参考） (见注 3和7)	桨叶结构 (见注 10)
HC-E5N-3							
E8218-0 至 E8218-10	850	2200	850	2200	85 英寸 至 75 英寸 (-0 至 -10)	179 磅	铝合金
E8492-0 至 E8492-10	950	2000	950	2000	86.5 英寸 至 76.5 英寸 (-0 至 -10)	184 磅	铝合金
NC8834-0 至 NC8834-10	950	2000	950	2000	91 英寸 至 81 英寸 (-0 至 -10)	152 磅	碳纤维复合材料
HC-E5B-5							
E12902	1645	1390	1645	1390	132 英寸	168 磅	芳纶复合材料

HC-E5A-2							
E9193	1650	2000	1650	2000	94英寸	175 磅	碳纤维复合材料
HC-E5A-3, HC-E5A-31							
NC10245-0 至 NC10245-10	1200	1700	1200	1700	105 英寸 至 95 英寸 (-0 至 -10)	153 磅	碳纤维复合材料
Blades (see Note 2)	Maximum Continuous		Takeoff		Diameter Limits (see Note 2)	Approx. Max. Wt. Complete (For Reference Only) (See Notes 3and 7)	Blade Construction (See Note 10)
	HP	RPM	HP	RPM			
HC-E5N-3							
E8218-0 to E8218-10	850	2200	850	2200	85” to 75” (-0 to -10)	179 lb.	Aluminum Alloy
E8492-0 to E8492-10	950	2000	950	2000	86.5” to 76.5” (-0 to -10)	184 lb.	Aluminum Alloy
NC8834-0 to NC8834-10	950	2000	950	2000	91” to 81” (-0 to -10)	152 lb.	Carbon Composite
HC-E5B-5							
E12902	1645	1390	1645	1390	132”	168 lb.	Aramid Composite
HC-E5A-2							
E9193	1650	2000	1650	2000	94”	175 lb.	Carbon Composite
HC-E5A-3, HC-E5A-31							
NC10245-0 to NC10245-10	1200	1700	1200	1700	105” to 95” (-0 to -10)	153 lb.	Carbon Composite

C. 注释/Notes

1. 桨毂型号标识 (见注4和5) / Hub Model Designation (See Notes 4 and 5)

HC - E 5 N - 3 A

L: 左旋 任何其它字母指不影响交换性或合格性的微小改动

指特定的设计特性（见注4）

-2: 无beta反馈机构

-3: 流体-机械接口的外部beta反馈机构

-31: 电气接口的外部beta反馈机构

-5: 内部beta反馈机构

N: 安装边4.25英寸螺栓孔上有8个9/16英寸螺栓和两个1/2英寸销子

A: 安装边5.125英寸螺栓孔上有12个9/16英寸螺栓和两个5/8英寸销子

B: 除定位销位置外与A相似

桨叶数

基本设计

哈策尔公司管理产品

HC - E 5 N - 3 A

L when used denotes left-hand rotation

Any other character denotes minor change not affecting interchangeability or eligibility

Denotes specific design features (see Note 4)

-2: no beta feedback mechanism

-3: external beta feedback mechanism with hydro-mechanical interface

-31: external beta feedback mechanism with electrical interface

5: internal beta feedback mechanism

N denotes flange with eight 9/16" bolts and two 1/2" dowels on a 4.25 bolt circle

A denotes flange with twelve 9/16" bolts and two 5/8" dowels on a 5.125 bolt circle

B is similar to A except for dowel position

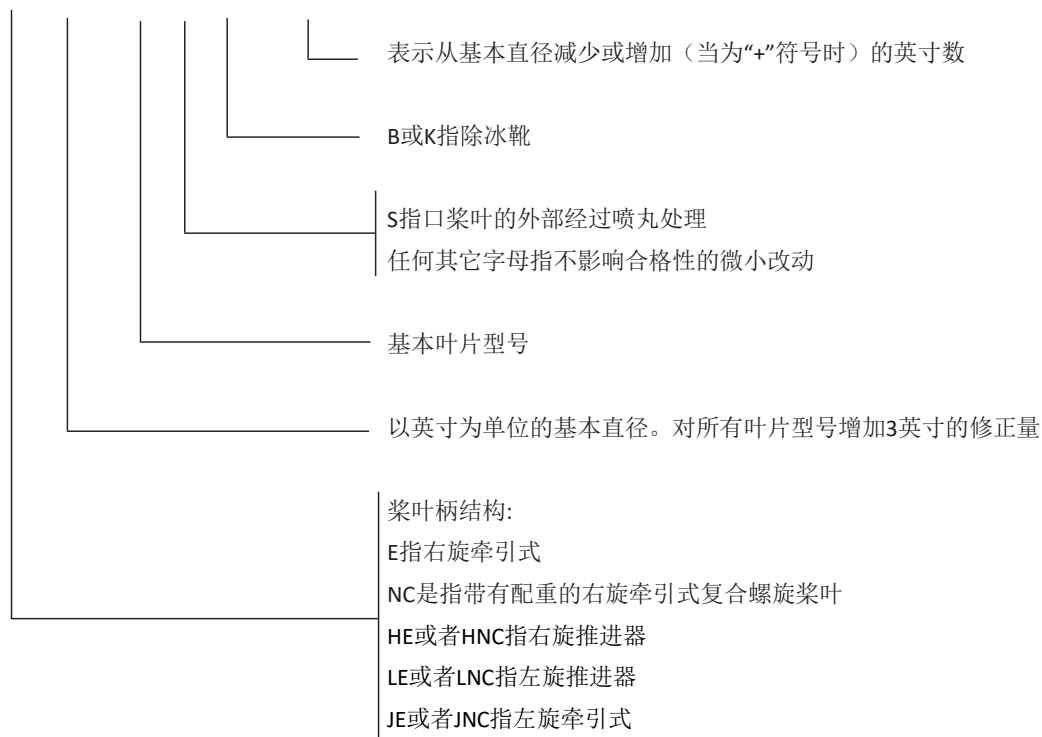
Number of blades

Identifies basic design

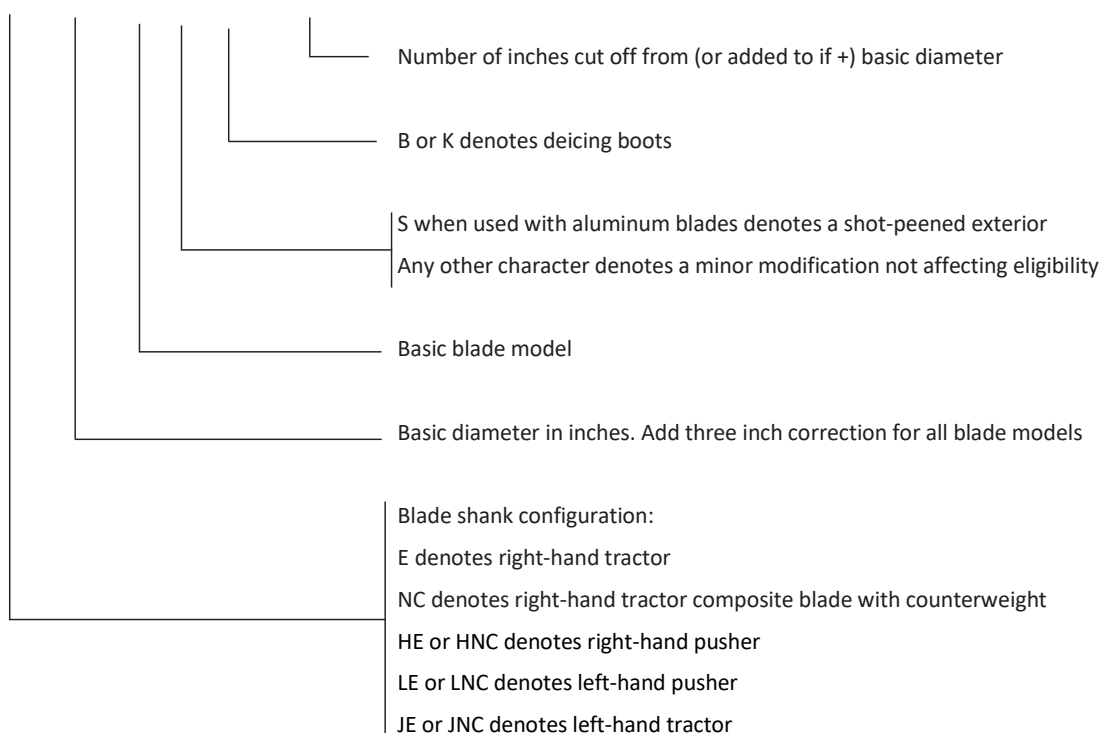
Hartzell Controllable

2. 桨叶的型号标识（见注5和6）/ Blade Model Designation (See Notes 4 and 5)

E 82 18 A K - 2



E 82 18 A K - 2



3. 桨距控制(桨距控制附加重量)(见注4和10)/ Pitch Control (weight of pitch control extra)
(See Notes 4 and 10)

- (a) 最大输出压力/ Maximum output pressure: 700 psig
- (b) 所有型号螺旋桨具有配重桨叶和使用调节器滑油减小桨距。

All propeller models have counterweighted blades and use governor oil to decrease pitch.

- (c) 带有E9193桨叶的HC-E5A-2型号螺旋桨的控制器是发动机型号设计的一部分。当带有E9193桨叶的HC-E5A-2型号螺旋桨安装在Pratt & Whitney PT6A-68B发动机上时,该型号螺旋桨符合螺旋桨适航要求。任何影响或可能影响螺旋桨审定的针对包括控制系统在内的发动机的更改,都必须证明与已经更改的发动机(包括其控制系统)配套使用的螺旋桨仍符合审定基础。同时,当螺旋桨的更改导致发动机的更改时,也必须证明已更改的发动机仍然符合发动机审定基础。HC-E5A-2型号螺旋桨的最大输出压力:700 psig

The Hartzell propeller model HC-E5A-2 with E9193 blades is controlled by an integrated control system, which is part of the engine type design. The propeller model HC-E5A-2 with E9193 blades complies with the propeller airworthiness requirements when used with the Pratt & Whitney PT6A-68B engine only. Any change to the engine, including its control system, which affects or may affect the propeller approval must be substantiated to demonstrate that the propeller as integrated with the changed engine, including its control system, still complies with the propeller certification basis. Also, any change to the engine resulting from a change to the propeller must be substantiated to demonstrate that the changed engine still complies with the engine certification basis. Maximum output pressure for the HC-E5A-2 propeller model: 700 psig

- (d) HC-E5A-31 () 型号螺旋桨的控制器是发动机型号设计的一部分。当HC-E5A-31 () 型号螺旋桨安装在Pratt & Whitney PT6E-67XP系列发动机上时(其电子软件是基于Hartzell的动态仿真模型输入编写的), 该型号螺旋桨符合螺旋桨适航要求。任何影响或可能影响螺旋桨或航空器审定的针对包括控制系统在内的发动机或螺旋桨的更改,都必须证明与已经更改的发动机(包括其控制系统)配套使用的螺旋桨仍符合螺旋桨和发动机的审定基础。

Hartzell propeller model HC-E5A-31() is controlled by an integrated electronic system which is part of the engine type design. Propeller model HC-E5A-31() complies with the propeller airworthiness requirements when used only with the Pratt & Whitney PT6E-67XP series engine, whose electronic software is written based on inputs from Hartzell's dynamic simulation models. Any changes to the engine or propeller, including its control system, which affects or may affect the propeller or aircraft approval must be substantiated to demonstrate that the propeller as integrated with the engine, including its control system, still complies with the propeller and the engine certification basis.

- (e) 无论制造商是哪一家,所有调节器和螺旋桨控制系统必须作为航空器安装的一部分获得批准。

All governors and propeller control systems must be approved as part of the aircraft installation regardless of manufacturer.

4. 顺桨 / Feathering:

(a) -2,-3和-5型号具备顺桨和非顺桨特性。/ The -2, -3 and -5 models incorporate feathering and unfeathering features.

反桨 / Reversing:

(a) -3和-5型号作为带有反转控制系统的反转螺旋桨被批准。/ The -3 and -5 models are approved for installation as reversing propellers with reversing controls.

(b) -2型号不具备反桨特性。/ The -2 models do not reverse.

5. 左向型号（见注1和2）/ Left-Hand Models (See Notes 1 and 2)

已被批准的螺旋桨的左向型号和右向型号的批准级别和直径相同。

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. 互换性（见注2）/ Interchangeability (See Note 2)

(a) 表面经过喷丸处理的桨叶可单个或整套替换非喷丸处理的桨叶。

Shot-peened blades may replace non shot-peened blades either individually or as a set

(b) 防冰系统部件的互换性,参考Hartzell服务信函HC-SL-30-260。

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

7. 附件/ Accessories

(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 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) 螺旋桨除冰(除冰系统附加的重量)/ Propeller Deicing (weight of deicing equipment extra)

(1) 与列在Hartzell型号设计数据单上并按Goodrich报告号ATA 30-60-07进行安装的Goodrich 电除冰器材安装包5EXXXX-X、7EXXXX-X、65-XXX、67-XXX或77-XXX一同批准。

Approved with Goodrich electrical deicing kit 5EXXXX-X, 7EXXXX-X, 65-XXX, 67-XXX, or 77-XXX when the specific kit number is listed on Hartzell type design data and installed in accordance with Goodrich Report No. ATA 30-60-07.

(2) 与按照Safeway 安装手册和针对口桨叶的Hartzell 133()手册或针对复合材料桨叶的135()手册以及相关STC或PMA文件安装的 Safeway 除冰设备一同

批准。

Approved with Safeway deice equipment when installed in accordance with Safeway Installation Manual, Hartzell Manual 133() for aluminum blades or Manual 135() for composite blades, and associated STC or PMA documentation.

- (3) 本数据单所列的螺旋桨型号被批准与HARTZELL手册159() 或其它HARTZELL型号设计数据单中列明的除冰保护产品一起使用。

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.

- (4) 所有螺旋桨除冰保护产品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 ice protection equipment must be approved as part of the aircraft installation regardless of manufacturer. (See Note 10)

- (c) 螺旋桨皮带传动装置(皮带传动装置附加重量)/ Propeller Pulley Drive. (weight of pulley drive extra)

- (1) HC-E5A-2 / E9193 型号螺旋桨被批准和Pilatus Aircraft Ltd的空调系统皮带传动装置P/N 521.55.21.002 一同使用。

Propeller model HC-E5A-2 with blade model E9193 is approved with Pilatus Aircraft Ltd. air conditioning system pulley drive P/N 521.55.21.002.

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

9. 特别限制:不适用 / Special Limits: Not applicable.

10. 螺旋桨安装的批准必须作为飞机型号合格证的一部分来证明其符合所适用的飞机的适航要求。

此表所列的螺旋桨型号包括基本桨毂和桨叶型号。多数螺旋桨型号使用附加字符以表明注1和注2中所解释的微小改变和特定特性。参照航空器型号合格证数据单以确定适用于安装的特定螺旋桨型号。

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。

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

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.

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.

11. .报废时间 /Retirement Time

(a) 寿命限制和强制检查 /Life Limits and Mandatory Inspections

如果有适航限制,则参考Hartzell手册147和149。

Airworthiness limitations, if any, are specified in Hartzell Manual 147 and 149.

12. .特别提示/Special Notes

(a) 超速和超扭限制见Hartzell手册202 ()。

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

(b) 大修周期参考Hartzell服务信函HC-SL-61-61()。

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

结束

.... END....