

型号认可证数据单

TYPE VALIDATION CERTIFICATE DATA SHEET

编号/No: VTC0204P

版次/Revision: 1

型号/Type:

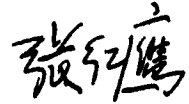
Hartzell 系列螺旋桨

PHC-J3Y1F-1/N7605 PHC-J3YF-1/N7605

PHC-J3YF-1/7694 PHC-J3YF-1/7392

PHC-J3YF-1/7693 PHC-J3YF-2()/()7663()

批准人/Approved By:



日期/Date: 2010-3-26

本数据单是型号认可证(编号: VTC0204P)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: VTC0204P), 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

有效页清单/List of effective pages :

页数/ Pages	1	2	3	4	5	6	7								
版次/Revision	1	1	1	1	1	1	1								

中国民用航空局
CIVIL AVIATION ADMINISTRATION OF CHINA

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	编号: VTC0204P; 版次: 1; 颁发日期: 2010年3月26日 No. VTC0204P; Revision 1; Date of Issue: 2010-3-26	编号: P36EA; 版次: 20; 颁发日期: 2009年12月22日 No. P36EA; Revision: 20; Date of Issue: 2009-12-22
历史 History	编号: VTC0204P; 版次: 0; 颁发日期: 2008年2月28日 No. VTC0204P; Revision 0; Date of Issue: 2008-2-28	编号: P36EA; 版次: 16; 颁发日期: 2007年2月2日 No. P36EA; Revision: 16; Date of Issue: 2007-2-2

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
Address: Piqua, OH 45356 U.S.A

5. 制造商/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/Section 2

A. 审定基础/Certification Basis

1. 适航标准/ Airworthiness Standards:

1965年2月11日生效的联邦航空规章第35部第35-1和35-2修正案/Federal Aviation Regulation Part 35 effective February 1, 1965, with Amendments 35-1 and 35-2 thereto;

型号合格证编号: P36EA于1971年3月11日在联邦航空规章第21部DOA程序批准下颁发, 申请日期为1971年2月5日/ Type Certificate no. P36EA issued March 1, 1971 under Delegated Option Authorization procedures of Part 21 of the Federal Aviation Regulations. Date of application for Type Certificate: February 5, 1971;

下面的型号由原审定基础批准/ The following models were approved to the original certification basis:

PHC-J3YF-1, 2

依据1990年8月18日生效的14 CFR第35部第1至第6修正案下述螺旋桨型号被添加、升级或修订/ 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:

PHC-J3YF-1, 2

下述螺旋桨型号依据1990年8月18日生效的14 CFR第35部第1至第6修正案和2001年10月3日颁布的鸟击和闪电防护专用条件 35-002-SC被添加/The following models added in accordance with 14 CFR Part 35 effective August 18, 1990 with amendments 35-1 through 35-6 and reference to special conditions 35-002-SC dated October 3, 2001 for bird impact and lightning strike qualification:

PHC-J3YF-1桨毂, 配带N7605与N7893叶片/ PHC-J3YF-1 hubs with N7605 and N7893 blade models

PHC-J3Y1F-1桨毂, 配带N7605叶片/ PHC-J3Y1F-1 hubs with N7605 blade model

依据2008年12月23日生效的14 CFR第35部第1至第8修正案35.15, 35.35(c), 35.36, 35.38, 35.41和35.43条款被添加、升级或修订/ The following models were added, updated or revised in accordance with 14 CFR Part 35 with amendments 35-1 through 35-8 effective December 23, 2008 using 14 CFR Part 21.101 for paragraphs 35.15, 35.35(c), 35.36, 35.38, 35.41 and 35.43:

PHC-J3YF-1

2. 专用条件/ Special Conditions (SC):

2001年10月3日颁布的鸟击和闪电防护专用条件35-002-SC: PHC-J3YF-1桨毂, 配带N7605与N7893叶片, PHC-J3Y1F-1桨毂, 配带N7605叶片/ special conditions 35-002-SC dated October 3, 2001 for bird impact and lightning strike qualification: PHC-J3YF-1 hubs with N7605 and N7893 blade models; PHC-J3Y1F-1 hubs with N7605 blade model

3. 等效安全项目/ 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

类型/Type: 恒速型; 液压 (见注3和4) / Constant speed; hydraulic (see Notes 3 and 4)

发动机轴/Engine Shaft: 专用安装 (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/See below

桨叶数/Number of blades: 三个/Three

毂型号/Hub models: PHC-J3YF-1, -2; PHC-J3Y1F-1

中国民用航空局
CIVIL AVIATION ADMINISTRATION OF CHINA

桨叶/Blades (见注2/See Note 2)	最大连续 马力 转数 HP RPM	起飞/Takeoff 马力 转数 HP RPM	直径限制/Diameter Limits (见注2/ See Note 2)	最大全重/Approx. Max. Wt. Complete (供参考/For Reference Only) (见注3和7/See Notes 3 and 7)	桨叶结构 Blade Construction (见注10/See Notes 10)
非配重螺旋桨/ Non-Counterweighted Propellers: PHC-J3YF-1					
N7605-0至N7605-10 N7605-0 to N7605-10	350	2700	350 2700	78英寸至68英寸 (-0至-10) 78" to 68" (-0 to -10)	62.5磅 62.5 lb 复合 Composite
7392-0至7392-10 7392-0 to 7392-10	350	2850	350 2850	75英寸至65英寸 (-0至-10) 75" to 65" (-0 to -10)	75.5磅 75.5 lb 铝合金 Aluminum Alloy
7693+2至7693-10 7693+2 to 7693-10	350	2700	350 2700	80英寸至68英寸 (+2至-10) 80" to 68" (+2 to -10)	77.0磅 77.0 lb 铝合金 Aluminum Alloy
7694-0至7694-10 7694-0 to 7694-10	310	2700	310 2700	78英寸至68英寸 (-0至-10) 78" to 68" (-0 to -10)	76.0磅 76.0 lb 铝合金 Aluminum Alloy
非配重螺旋桨/ Non-Counterweighted Propellers: PHC-J3Y1F-1					
N7605-0至N7605-10 N7605-0 to N7605-10	350	2700	350 2700	78英寸至68英寸 (-0至-10) 78" to 68" (-0 to -10)	57.7磅 57.7 lb 复合 Composite
配重螺旋桨/ Counterweighted Propellers: PHC-J3YF-2					
C7663-0至C7663-10 C7663-0 to C7663-10	350	2800	350 2800	78英寸至68英寸 (-0至-10) 78" to 68" (-0 to -10)	81.0磅 81.0 lb 铝合金 Aluminum Alloy

注1/NOTE 1: 桨毂型号标识/Hub Model Designation

PHC-J3Y1F-1RF

P: 指示榫钉关于叶片插孔中心线的位置(从边缘安装面向桨毂看去)/Indicates dowel location with respect to centerline through blade sockets when viewing hub from flange mounting face

	榫钉栓/Dowel Pin	T/C 标记/Index Mark
空白/Blank:	90° & 270°,	30°, 顺时针/clockwise
P:	0° & 180°,	120°, 顺时针/clockwise

HC: 哈策尔公司管理产品/Hartzell Controllable

J: 表示3.25英寸整体轴延伸/J denotes a 3.25 inch integral shaft extension

3: 桨叶数/Number of blades

Y: 哈策尔桨叶柄尺寸/Hartzell blade shank size

1: 表示桨毂设计修改仅与数据单前面列出的叶片型号兼容/when used denotes hub design modification compatible only with blade models listed in the front of this Data Sheet

F: 安装边有6个1/2英寸螺栓和4英寸螺栓孔上的2个1/2英寸销子/F denotes special flange with six 1/2" bolts and two 1/2" dowels on a 4" bolt circle

1: 指特定的设计特性/ Denotes specific design features as:

-1: 非顺桨, 无配重, 调节器滑油压力增加桨距/non-feathering, no counterweights, governor oil pressure increases pitch

中国民用航空局
CIVIL AVIATION ADMINISTRATION OF CHINA

-2: 有配重, 顺桨, 调节器滑油压力减小桨距/feathering with counterweights, governor oil pressure decreases pitch

RF: F表示修改的桨距调节系统/F denotes modified pitch change system

L 表示左旋/L denotes left hand rotation

M表示21.6柱塞面积和大返回弹簧/ when used denotes 21.6 sq. in. piston area and large return spring

N表示与N桨叶柄兼容 (见注2) / N indicates compatibility with N shank blades (See NOTE 2)

R表示21.6柱塞面积/R when used denotes 21.6 sq. in. piston area

任何其它字母指不影响适用性的小改款型号/Any other character denotes minor change not affecting eligibility.

注2/NOTE 2: 叶片型号标识/Blade Model Designation

L C 76 63 D-3R

L: 指桨叶构型, 除标注外均为右旋, F之大桨距变化旋钮, H指右推进器, J指左旋, L指做推进器, N指复合型桨叶柄/ Denotes blade configuration: right-hand tractor unless otherwise noted, F denotes a large pitch change knob, H denotes right-hand pusher, J denote left-hand tractor, L denotes left-hand pusher, N denotes composite blade shank type

C: 指配重桨叶/ denotes counterweighted blades

76: 双叶片螺旋桨的基本直径, 加上2英寸即三叶片螺旋桨的基本直径/ Basic diameter for a two blade propeller. Add two inches for three blade propellers.

63: 基本叶片型号/ Basic blade model

D: D或F指自原设计的尺寸改装, B或K指除冰套, R指基本直径顶端圆角, S指基本直径平顶端*, 任何其他字母指无显著影响的小更改。/D or F denotes a dimensional modification from the original design, B or K denotes deicing boots, R when used denotes a rounded tip for the basic diameter, S when used denotes a square tip for the basic diameter*, any other character denotes a minor modification not affecting eligibility.

3R: 数字表示从基本直径减少或增加的英寸, Q指特殊的1英寸×90度顶端制造倒角, 不允许切掉, R指对于切割直径而言特定的顶端圆角, 该位置任何其他字母指顶端形状。/ Number when used indicates inches cut off from (or added to if +) basic diameter, Q when used denotes special 1" × 90 deg. factory-bent tip, No cutoff permitted, R when used denotes specifically rounded tip for cutoff diameter, any other character in this location denotes tip shape.

*: 桨叶可能包括顶端圆型或方型叶尖, 但也许在其型号中不标识“R”或“S”, 该字母是用于在相同直径时区别具有两个或多个叶尖形状, 特定的桨叶用“S”指外表面喷丸处理, 见注6。/ Blades may incorporate either round or square tips, yet may not be marked with an “R” or “S” in their model designation. This character is used to distinguish between two or more tip shapes available at the same diameter. Certain blades use “S” to denote shot peening of the exterior surface. (See NOTE 6)

注3/NOTE 3: 桨距控制/ Pitch Control

(a) 批准使用哈策尔调节器控制, 见图纸C-4770和C-4772/Approved with Hartzell governors per drawings C-4770 and C-4772 重量: 4.5磅/Wt: 4.5 lb 见注10/See Note 10

(b) “-2”型号带有配重叶片, 使用滑油减小桨距; “-1”型号不带有配重叶片, 使用滑油增加桨距 (见注4) / The -2 models have counterweighted blades and use oil to decrease pitch. The -1 models do not have counterweighted blades and use oil to increase pitch. (See NOTE 4)

(c) 最大调节器输出压力: 350 psi (适用所有螺旋桨) / Maximum governor output pressure: 350 psi for all propeller models

(d) 所有调节器都必须作为航空器安装的一部分被批准, 无论制造商如何, 见注10/ All governors must be approved as part of the aircraft installation regardless of manufacturer. See NOTE 10

注4/NOTE 4:

(a) 顺桨/feathering “-1”型 不具备此特性, “-2”型具备顺桨和非顺桨特性/ The -1 model does not feather. The -2 models incorporate feathering and unfeathering features.

(b) 反桨/Reversing 不适用/Not applicable

注5/NOTE 5: 左向型号/ Left -Hand Models

左向型号螺旋桨型号的批准版本与右向型号所列的级别和直径相同（见注1和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 (See Notes 1 and 2).

注6/NOTE 6: 互换性/ Interchangeability

(a) 调节器/Governors

型号命名中带有后缀“Z”的Hartzell调节器可以与相应的不带“Z”后缀的调节器相互换。比如，F-6-24Z可替换F-6-24，反之同样有效/ 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.

(b) 桨叶/Blades

喷丸叶片可以成对或者单独替换非喷丸叶片（见注2）/ Shot-peened blades may replace non shot-peened blades either individually or as a set (See NOTE 2)

(c) 防冰系统/Ice Protection System

参见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/NOTE 7: 附件/ Accessories

(a) 螺旋桨防冰系统（防冰系统附加重量）/ Propeller ice protection system (weight of ice protection equipment extra)

(1) 本数据单上的螺旋桨型号批准使用Hartzell 159()手册或其它Hartzell型号设计数据中已有的防冰设备/ Propeller models listed in this data sheet are approved for use with propeller ice protection equipment listed in Hartzell Manual159() or in other Hartzell type design data.

(2) 不论厂家如何，所有的螺旋桨防冰设备均要作为航空器的一部分进行批准（见注10）/All propeller ice protection equipment must be approved as part of the aircraft installation regardless of manufacturer (See NOTE 10).

(b) 螺旋桨螺旋器（螺旋器附加重量）/ Propeller spinner (weight of spinner extra)

(1) 当使用Hartzell型号设计数据上本厂或其他生产商制造的螺旋器时获得批准/ Approved with Hartzell and other manufacturers' spinners when listed on Hartzell type design data.

(2) 不论厂家如何，所有的螺旋器均要作为航空器的一部分进行批准（见注10）/All propeller spinners 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/NOTE 9: 特别限制/ Special limits

螺旋桨-发动机联接表/Table of propeller – Engine Combinations

正常范畴单机牵引使用时批准/Approved Vibrationwise for Use on Normal Category Single Engine Tractor Aircraft

从振动观点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，因为以下数据包括了出于修理目各直径减小的许可值/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.

下述的发动机型号均符合型号合格证设计，除非特别声明。任何工况下改变发动机功率造成对发动机或机身的修改将潜在增加螺旋桨应力，并不在批准范围。这些改动包括但不限于增加涡轮增压器、提升压力、增大压缩比和转速，改变点火时间和电子点火，调整全权限数字发动机控制，调节进气或排气等。同样，对于曲轴平衡重/组件质量或硬度的任何改变均不被批准 / 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

中国民用航空局
CIVIL AVIATION ADMINISTRATION OF CHINA

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 turbosupercharger, 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.

桨毂模型 Hub Model	桨叶模型 Blade Model	发动机模型 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
不适用/Not applicable					

注10/NOTE 10: 特别声明/ Special Notes

螺旋桨安装必须作为飞机型号合格证的一部分被批准, 并符合相关飞行器适航要求/Propeller installation must be approved as part of the aircraft Type Certificate and demonstrate compliance with the applicable aircraft airworthiness requirements.

螺旋桨型号包括桨毂和叶片。大部分螺旋桨型号包括附加符号以表明小变化和注1、注2中解释的特征。参照航空器型号合格证数据单确定适用安装的特别螺旋桨型号/ 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.

带有复合叶片的螺旋桨必须在批准安装于任何航空器之前, 评估抗鸟击的能力。Hartzell 公司必须基于航空器构造和运行工况进行试验或分析来确定鸟击的潜在危害/ 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 impact.

注11/NOTE 11: 报废时间/Retirement Time

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

(1) 适用时, 适航限制在113()、115N、117()或145()号Hartzell手册中已有说明/Airworthiness limitations, if any, are specified in Hartzell Manuals 113(), 115N, 117() or 145().

注12/NOTE 12: 特别说明/ Special Notes

(a) 对于超速和过扭限制, 参见202()号Hartzell手册/ Refer to Hartzell Manual no. 202() for overspeed and overtorque limits.

(b) 对于大修间隔, 参见Hartzell服务信函HC-SL-61-61()/Refer to Hartzell Service Letter HC-SL-61-61() for overhaul periods.

结束

END

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Hartzell 系列螺旋桨
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PHC-J3YF-1/7693 PHC-J3YF-2()/()7663()
批准人/Approved By:

日期/Date: 2010-3-26

本数据单是型号认可证(编号: VTC0204P)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: VTC0204P), 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

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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
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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
Address: 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/Section 2

A. 审定基础/Certification Basis

1. 适航标准/ Airworthiness Standards:

1965年2月1日生效的联邦航空规章第35部第35-1和35-2修正案/Federal Aviation Regulation Part 35 effective February 1, 1965, with Amendments 35-1 and 35-2 thereto;

型号合格证编号: P36EA于1971年3月1日在联邦航空规章第21部DOA程序批准下颁发, 申请日期为1971年2月5日/ Type Certificate no. P36EA issued March 1, 1971 under Delegated Option Authorization procedures of Part 21 of the Federal Aviation Regulations. Date of application for Type Certificate: February 5, 1971;

下面的型号由原审定基础批准/ The following models were approved to the original certification basis:

PHC-J3YF-1, 2

依据1990年8月18日生效的14 CFR第35部第1至第6修正案下述螺旋桨型号被添加、升级或修订/ 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:

PHC-J3YF-1, 2

下述螺旋桨型号依据1990年8月18日生效的14 CFR第35部第1至第6修正案和2001年10月3日颁布的鸟击和闪电防护专用条件35-002-SC被添加/The following models added in accordance with 14 CFR Part 35 effective August 18, 1990 with amendments 35-1 through 35-6 and reference to special conditions 35-002-SC dated October 3, 2001 for bird impact and lightning strike qualification:

PHC-J3YF-1桨毂, 配带N7605与N7893叶片/ PHC-J3YF-1 hubs with N7605 and N7893 blade models

PHC-J3Y1F-1桨毂, 配带N7605叶片/ PHC-J3Y1F-1 hubs with N7605 blade model

依据2008年12月23日生效的14 CFR第35部第1至第8修正案35.15, 35.35(c), 35.36, 35.38, 35.41和35.43条款被添加、升级或修订/ The following models were added, updated or revised in accordance with 14 CFR Part 35 with amendments 35-1 through 35-8 effective December 23, 2008 using 14 CFR Part 21.101 for paragraphs 35.15, 35.35(c), 35.36, 35.38, 35.41 and 35.43:

PHC-J3YF-1

2. 专用条件/ Special Conditions (SC):

2001年10月3日颁布的鸟击和闪电防护专用条件35-002-SC: PHC-J3YF-1桨毂, 配带N7605与N7893叶片, PHC-J3Y1F-1桨毂, 配带N7605叶片/ special conditions 35-002-SC dated October 3, 2001 for bird impact and lightning strike qualification: PHC-J3YF-1 hubs with N7605 and N7893 blade models; PHC-J3Y1F-1 hubs with N7605 blade model

3. 等效安全项目/ 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

类型/Type: 恒速型; 液压 (见注3和4) / Constant speed; hydraulic (see Notes 3 and 4)

发动机轴/Engine Shaft: 专用安装 (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/See below

桨叶数/Number of blades: 三个/Three

毂型号/Hub models: PHC-J3YF-1, -2; PHC-J3Y1F-1

中国民用航空局
CIVIL AVIATION ADMINISTRATION OF CHINA

桨叶/Blades (见注2/See Note 2)	最大连续 Maximum Continuous 马力 HP 转数 RPM	起飞/Takeoff 马力 HP 转数 RPM	直径限制/Diameter Limits (见注2/ See Note 2)	最大全重/Approx. Max. Wt. Complete (供参考/For Reference Only) (见注3和7/See Notes 3 and 7)	桨叶结构 Blade Construction (见注10/See Notes 10)
非配重螺旋桨/ Non-Counterweighted Propellers: PHC-J3YF-1					
N7605-0至N7605-10 N7605-0 to N7605-10	350 2700	350 2700	78英寸至68英寸 (-0至-10) 78" to 68" (-0 to -10)	62.5磅 62.5 lb	复合 Composite
7392-0至7392-10 7392-0 to 7392-10	350 2850	350 2850	75英寸至65英寸 (-0至-10) 75" to 65" (-0 to -10)	75.5磅 75.5 lb	铝合金 Aluminum Alloy
7693+2至7693-10 7693+2 to 7693-10	350 2700	350 2700	80英寸至68英寸 (+2至-10) 80" to 68" (+2 to -10)	77.0磅 77.0 lb	铝合金 Aluminum Alloy
7694-0至7694-10 7694-0 to 7694-10	310 2700	310 2700	78英寸至68英寸 (-0至-10) 78" to 68" (-0 to -10)	76.0磅 76.0 lb	铝合金 Aluminum Alloy
非配重螺旋桨/ Non-Counterweighted Propellers: PHC-J3Y1F-1					
N7605-0至N7605-10 N7605-0 to N7605-10	350 2700	350 2700	78英寸至68英寸 (-0至-10) 78" to 68" (-0 to -10)	57.7磅 57.7 lb	复合 Composite
配重螺旋桨/ Counterweighted Propellers: PHC-J3YF-2					
C7663-0至C7663-10 C7663-0 to C7663-10	350 2800	350 2800	78英寸至68英寸 (-0至-10) 78" to 68" (-0 to -10)	81.0磅 81.0 lb	铝合金 Aluminum Alloy

注1/NOTE 1: 桨毂型号标识/Hub Model Designation

PHC-J3Y1F-1RF

P: 指示榫钉关于叶片插孔中心线的位置(从边缘安装面向桨毂看去)/Indicates dowel location with respect to centerline through blade sockets when viewing hub from flange mounting face

	榫钉栓/Dowel Pin	T/C 标记/Index Mark
空白/Blank:	90° & 270°,	30°, 顺时针/clockwise
P:	0° & 180°,	120°, 顺时针/clockwise

HC: 哈策尔公司管理产品/Hartzell Controllable

J: 表示3.25英寸整体轴延伸/J denotes a 3.25 inch integral shaft extension

3: 桨叶数/Number of blades

Y: 哈策尔桨叶柄尺寸/Hartzell blade shank size

I: 表示桨毂设计修改仅与数据单前面列出的叶片型号兼容/when used denotes hub design modification compatible only with blade models listed in the front of this Data Sheet

F: 安装边有6个1/2英寸螺栓和4英寸螺栓孔上的2个1/2英寸销子/F denotes special flange with six 1/2" bolts and two 1/2" dowels on a 4" bolt circle

1: 指特定的设计特性/ Denotes specific design features as:

-1: 非顺桨, 无配重, 调节器滑油压力增加桨距/non-feathering, no counterweights, governor oil pressure increases pitch

中国民用航空局
CIVIL AVIATION ADMINISTRATION OF CHINA

-2: 有配重, 顺桨, 调节器滑油压力减小桨距/feathering with counterweights, governor oil pressure decreases pitch

RF: F表示修改的桨距调节系统/F denotes modified pitch change system

L表示左旋/L denotes left hand rotation

M表示21.6柱塞面积和大返回弹簧/ when used denotes 21.6 sq. in. piston area and large return spring

N表示与N桨叶柄兼容(见注2)/N indicates compatibility with N shank blades (See NOTE 2)

R表示21.6柱塞面积/R when used denotes 21.6 sq. in. piston area

任何其它字母指不影响适用性的小改款型号/Any other character denotes minor change not affecting eligibility.

注2/NOTE 2: 叶片型号标识/Blade Model Designation

L C 76 63 D-3R

L: 指桨叶构型, 除标注外均为右旋, F之大桨距变化旋钮, H指右推进器, J指左旋, L指左推进器, N指复合型桨叶柄/ Denotes blade configuration: right-hand tractor unless otherwise noted, F denotes a large pitch change knob, H denotes right-hand pusher, J denote left-hand tractor, L denotes left-hand pusher, N denotes composite blade shank type

C: 指配重桨叶/ denotes counterweighted blades

76: 双叶片螺旋桨的基本直径, 加上2英寸即三叶片螺旋桨的基本直径/ Basic diameter for a two blade propeller. Add two inches for three blade propellers.

63: 基本叶片型号/ Basic blade model

D: D或F指自原设计的尺寸改装, B或K指除冰套, R指基本直径顶端圆角, S指基本直径平顶端*, 任何其他字母指无显著影响的小更改。/D or F denotes a dimensional modification from the original design, B or K denotes deicing boots, R when used denotes a rounded tip for the basic diameter, S when used denotes a square tip for the basic diameter*, any other character denotes a minor modification not affecting eligibility.

3R: 数字表示从基本直径减少或增加的英寸, Q指特殊的1英寸×90度顶端制造倒角, 不允许切掉, R指对于切割直径而言特定的顶端圆角, 该位置任何其他字母指顶端形状。/ Number when used indicates inches cut off from (or added to if +) basic diameter, Q when used denotes special 1" × 90 deg. factory-bent tip, No cutoff permitted, R when used denotes specifically rounded tip for cutoff diameter, any other character in this location denotes tip shape.

*: 桨叶可能包括顶端圆型或方型叶尖, 但也许在其型号中不标识“R”或“S”, 该字母是用于在相同直径时区别具有两个或多个叶尖形状, 特定的桨叶用“S”指外表面喷丸处理, 见注6。/ Blades may incorporate either round or square tips, yet may not be marked with an “R” or “S” in their model designation. This character is used to distinguish between two or more tip shapes available at the same diameter. Certain blades use “S” to denote shot peening of the exterior surface. (See NOTE 6)

注3/NOTE 3: 桨距控制/ Pitch Control

(a) 批准使用哈策尔调节器控制, 见图C-4770和C-4772/Approved with Hartzell governors per drawings C-4770 and C-4772 重量: 4.5磅/Wt: 4.5 lb 见注10/See Note 10

(b) “-2”型号带有配重叶片, 使用滑油减小桨距; “-1”型号不带有配重叶片, 使用滑油增加桨距(见注4)/ The -2 models have counterweighted blades and use oil to decrease pitch. The -1 models do not have counterweighted blades and use oil to increase pitch. (See NOTE 4)

(c) 最大调节器输出压力: 350 psi (适用所有螺旋桨)/ Maximum governor output pressure: 350 psi for all propeller models

(d) 所有调节器都必须作为航空器安装的一部分被批准, 无论制造商如何, 见注10/ All governors must be approved as part of the aircraft installation regardless of manufacturer. See NOTE 10

注4/NOTE 4:

(a) 顺桨/feathering “-1”型不具备此特性, “-2”型具备顺桨和非顺桨特性/ The -1 model does not feather. The -2 models incorporate feathering and unfeathering features.

(b) 反桨/Reversing 不适用/Not applicable

注5/NOTE 5: 左向型号/ Left -Hand Models

左向型号螺旋桨型号的批准版本与右向型号所列的级别和直径相同（见注1和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 (See Notes 1 and 2).

注6/NOTE 6: 互换性/ Interchangeability

(a) 调节器/Governors

型号命名中带有后缀“Z”的Hartzell调节器可以与相应的不带“Z”后缀的调节器相互换。比如，F-6-24Z可替换F-6-24，反之同样有效/ 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.

(b) 桨叶/Blades

喷丸叶片可以成对或者单独替换非喷丸叶片（见注2）/ Shot-peened blades may replace non shot-peened blades either individually or as a set (See NOTE 2)

(c) 防冰系统/Ice Protection System

参见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/NOTE 7: 附件/ Accessories

(a) 螺旋桨防冰系统（防冰系统附加重量）/ Propeller ice protection system (weight of ice protection equipment extra)

(1) 本数据单上的螺旋桨型号批准使用Hartzell 159()手册或其它Hartzell型号设计数据中已有的防冰设备/ Propeller models listed in this data sheet are approved for use with propeller ice protection equipment listed in Hartzell Manual159() or in other Hartzell type design data.

(2) 不论厂家如何，所有的螺旋桨防冰设备均要作为航空器的一部分进行批准（见注10）/All propeller ice protection equipment must be approved as part of the aircraft installation regardless of manufacturer (See NOTE 10).

(b) 螺旋桨螺旋器（螺旋器附加重量）/ Propeller spinner (weight of spinner extra)

(1) 当使用Hartzell型号设计数据上本厂或其他生产商制造的螺旋器时获得批准/ Approved with Hartzell and other manufacturers' spinners when listed on Hartzell type design data.

(2) 不论厂家如何，所有的螺旋器均要作为航空器的一部分进行批准（见注10）/All propeller spinners 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/NOTE 9: 特别限制/ Special limits

螺旋桨-发动机联接表/Table of propeller – Engine Combinations

正常范畴单机牵引使用时批准/Approved Vibrationwise for Use on Normal Category Single Engine Tractor Aircraft

从振动观点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，因为以下数据包括了出于修理目各直径减小的许可值/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.

下述的发动机型号均符合型号合格证设计，除非特别声明。任何工况下改变发动机功率造成对发动机或机身的修改将潜在增加螺旋桨应力，并不在批准范围。这些改动包括但不限于增加涡轮增压器、提升压力、增大压缩比和转速，改变点火时间和电子点火，调整全权限数字发动机控制，调节进气或排气等。同样，对于曲轴平衡重/组件质量或硬度的任何改变均不被批准 / 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

中国民用航空局
CIVIL AVIATION ADMINISTRATION OF CHINA

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 turbosupercharger, 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.

桨毂模型 Hub Model	桨叶模型 Blade Model	发动机模型 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
不适用/Not applicable					

注10/NOTE 10: 特别声明/ Special Notes

螺旋桨安装必须作为飞机型号合格证的一部分被批准, 并符合相关飞行器适航要求/Propeller installation must be approved as part of the aircraft Type Certificate and demonstrate compliance with the applicable aircraft airworthiness requirements.

螺旋桨型号包括桨毂和叶片。大部分螺旋桨型号包括附加符号以表明小变化和注1、注2中解释的特征。参照航空器型号合格证数据单确定适用安装的特别螺旋桨型号/ 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.

带有复合叶片的螺旋桨必须在批准安装于任何航空器之前, 评估抗鸟击的能力。Hartzell 公司必须基于航空器构造和运行工况进行试验或分析来确定鸟击的潜在危害/ 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 impact.

注11/NOTE 11: 报废时间/Retirement Time

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

(1) 适用时, 适航限制在113()、115N、117()或145()号Hartzell手册中已有说明/Airworthiness limitations, if any, are specified in Hartzell Manuals 113(), 115N, 117() or 145().

注12/NOTE 12: 特别说明/ Special Notes

(a) 对于超速和过扭限制, 参见202()号Hartzell手册/ Refer to Hartzell Manual no. 202() for overspeed and overtorque limits.

(b) 对于大修间隔, 参见Hartzell服务信函HC-SL-61-61()/Refer to Hartzell Service Letter HC-SL-61-61() for overhaul periods.

结束

END

型号认可证数据单

TYPE VALIDATION CERTIFICATE DATA SHEET

编号/No: VTC0204P

版次/Revision: 1

型号/Type:

Hartzell 系列螺旋桨

PHC-J3Y1F-1/N7605 PHC-J3YF-1/N7605

PHC-J3YF-1/7694 PHC-J3YF-1/7392

PHC-J3YF-1/7693 PHC-J3YF-2()/()7663()

批准人/Approved By:

日期/Date: 2010-3-26

本数据单是型号认可证(编号: VTC0204P)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: VTC0204P), 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

有效页清单/List of effective pages :

页数/ Pages	1	2	3	4	5	6	7								
版次/Revision	1	1	1	1	1	1	1								

中国民用航空局
CIVIL AVIATION ADMINISTRATION OF CHINA

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	编号: VTC0204P; 版次: 1; 颁发日期: 2010年3月26日 No. VTC0204P; Revision 1; Date of Issue: 2010-3-26	编号: P36EA; 版次: 20; 颁发日期: 2009年12月22日 No. P36EA; Revision: 20; Date of Issue: 2009-12-22
历史 History	编号: VTC0204P; 版次: 0; 颁发日期: 2008年2月28日 No. VTC0204P; Revision 0; Date of Issue: 2008-2-28	编号: P36EA; 版次: 16; 颁发日期: 2007年2月2日 No. P36EA; Revision: 16; Date of Issue: 2007-2-2

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
Address: 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/Section 2

A. 审定基础/Certification Basis

1. 适航标准/ Airworthiness Standards:

1965年2月1日生效的联邦航空规章第35部第35-1和35-2修正案/Federal Aviation Regulation Part 35 effective February 1, 1965, with Amendments 35-1 and 35-2 thereto;

型号合格证编号: P36EA于1971年3月1日在联邦航空规章第21部DOA程序批准下颁发, 申请日期为1971年2月5日/ Type Certificate no. P36EA issued March 1, 1971 under Delegated Option Authorization procedures of Part 21 of the Federal Aviation Regulations. Date of application for Type Certificate: February 5, 1971;

下面的型号由原审定基础批准/ The following models were approved to the original certification basis:

PHC-J3YF-1, 2

依据1990年8月18日生效的14 CFR第35部第1至第6修正案下述螺旋桨型号被添加、升级或修订/ 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:

PHC-J3YF-1, 2

下述螺旋桨型号依据1990年8月18日生效的14 CFR第35部第1至第6修正案和2001年10月3日颁布的鸟击和闪电防护专用条件 35-002-SC被添加/The following models added in accordance with 14 CFR Part 35 effective August 18, 1990 with amendments 35-1 through 35-6 and reference to special conditions 35-002-SC dated October 3, 2001 for bird impact and lightning strike qualification:

PHC-J3YF-1桨毂, 配带N7605与N7893叶片/ PHC-J3YF-1 hubs with N7605 and N7893 blade models

PHC-J3Y1F-1桨毂, 配带N7605叶片/ PHC-J3Y1F-1 hubs with N7605 blade model

依据2008年12月23日生效的14 CFR第35部第1至第8修正案35.15, 35.35(c), 35.36, 35.38, 35.41和35.43条款被添加、升级或修订/ The following models were added, updated or revised in accordance with 14 CFR Part 35 with amendments 35-1 through 35-8 effective December 23, 2008 using 14 CFR Part 21.101 for paragraphs 35.15, 35.35(c), 35.36, 35.38, 35.41 and 35.43:

PHC-J3YF-1

2. 专用条件/ Special Conditions (SC):

2001年10月3日颁布的鸟击和闪电防护专用条件35-002-SC: PHC-J3YF-1桨毂, 配带N7605与N7893叶片, PHC-J3Y1F-1桨毂, 配带N7605叶片/ special conditions 35-002-SC dated October 3, 2001 for bird impact and lightning strike qualification: PHC-J3YF-1 hubs with N7605 and N7893 blade models; PHC-J3Y1F-1 hubs with N7605 blade model

3. 等效安全项目/ Equivalent Safety Findings (ESF): 无/n one

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

类型/Type: 恒速型; 液压 (见注3和4) / Constant speed; hydraulic (see Notes 3 and 4)

发动机轴/Engine Shaft: 专用安装 (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/See below

桨叶数/Number of blades: 三个/Three

毂型号/Hub models: PHC-J3YF-1, -2; PHC-J3Y1F-1

中国民用航空局
CIVIL AVIATION ADMINISTRATION OF CHINA

桨叶/Blades (见注2/See Note 2)	最大连续 Maximum Continuous 马力 转数 HP RPM		起飞/Takeoff 马力 转数 HP RPM		直径限制/Diameter Limits (见注2/ See Note 2)	最大全重/Approx. Max. Wt. Complete (供参考/For Reference Only) (见注3和7/See Notes 3 and 7)	桨叶结构 Blade Construction (见注10/See Notes 10)
非配重螺旋桨/ Non-Counterweighted Propellers: PHC-J3YF-1							
N7605-0至N7605-10 N7605-0 to N7605-10	350	2700	350	2700	78英寸至68英寸 (-0至-10) 78" to 68" (-0 to -10)	62.5磅 62.5 lb	复合 Composite
7392-0至7392-10 7392-0 to 7392-10	350	2850	350	2850	75英寸至65英寸 (-0至-10) 75" to 65" (-0 to -10)	75.5磅 75.5 lb	铝合金 Aluminum Alloy
7693+2至7693-10 7693+2 to 7693-10	350	2700	350	2700	80英寸至68英寸 (+2至-10) 80" to 68" (+2 to -10)	77.0磅 77.0 lb	铝合金 Aluminum Alloy
7694-0至7694-10 7694-0 to 7694-10	310	2700	310	2700	78英寸至68英寸 (-0至-10) 78" to 68" (-0 to -10)	76.0磅 76.0 lb	铝合金 Aluminum Alloy
非配重螺旋桨/ Non-Counterweighted Propellers: PHC-J3Y1F-1							
N7605-0至N7605-10 N7605-0 to N7605-10	350	2700	350	2700	78英寸至68英寸 (-0至-10) 78" to 68" (-0 to -10)	57.7磅 57.7 lb	复合 Composite
配重螺旋桨/ Counterweighted Propellers: PHC-J3YF-2							
C7663-0至C7663-10 C7663-0 to C7663-10	350	2800	350	2800	78英寸至68英寸 (-0至-10) 78" to 68" (-0 to -10)	81.0磅 81.0 lb	铝合金 Aluminum Alloy

注1/NOTE 1: 桨毂型号标识/Hub Model Designation

PHC-J3Y1F-1RF

P: 指示榫钉关于叶片插孔中心线的位置(从边缘安装面向桨毂看去)/Indicates dowel location with respect to centerline through blade sockets when viewing hub from flange mounting face

	榫钉栓/Dowel Pin	T/C 标记/Index Mark
空白/Blank:	90° & 270°,	30°, 顺时针/clockwise
P:	0° & 180°,	120°, 顺时针/clockwise

HC: 哈策尔公司管理产品/ Hartzell Controllable

J: 表示3.25英寸整体轴延伸/ J denotes a 3.25 inch integral shaft extension

3: 桨叶数/Number of blades

Y: 哈策尔桨叶柄尺寸/Hartzell blade shank size

1: 表示桨毂设计修改仅与数据单前面列出的叶片型号兼容/ when used denotes hub design modification compatible only with blade models listed in the front of this Data Sheet

F: 安装边有6个1/2英寸螺栓和4英寸螺栓孔上的2个1/2英寸销子/F denotes special flange with six 1/2" bolts and two 1/2" dowels on a 4" bolt circle

1: 指特定的设计特性/ Denotes specific design features as:

-1: 非顺桨, 无配重, 调节器滑油压力增加桨距/non-feathering, no counterweights, governor oil pressure increases pitch

中国民用航空局
CIVIL AVIATION ADMINISTRATION OF CHINA

-2: 有配重, 顺桨, 调节器滑油压力减小桨距/feathering with counterweights, governor oil pressure decreases pitch

RF: F表示修改的桨距调节系统/F denotes modified pitch change system

L表示左旋/L denotes left hand rotation

M表示21.6柱塞面积和大返回弹簧/when used denotes 21.6 sq. in. piston area and large return spring

N表示与N桨叶柄兼容(见注2)/N indicates compatibility with N shank blades (See NOTE 2)

R表示21.6柱塞面积/R when used denotes 21.6 sq. in. piston area

任何其它字母指不影响适用性的小改款型号/Any other character denotes minor change not affecting eligibility.

注2/NOTE 2: 叶片型号标识/Blade Model Designation

LC 76 63 D-3R

L: 指桨叶构型, 除标注外均为右旋, F之大桨距变化旋钮, H指右推进器, J指左旋, L指左推进器, N指复合型桨叶柄/ Denotes blade configuration: right-hand tractor unless otherwise noted, F denotes a large pitch change knob, H denotes right-hand pusher, J denotes left-hand tractor, L denotes left-hand pusher, N denotes composite blade shank type

C: 指配重桨叶/ denotes counterweighted blades

76: 双叶片螺旋桨的基本直径, 加上2英寸即三叶片螺旋桨的基本直径/ Basic diameter for a two blade propeller. Add two inches for three blade propellers.

63: 基本叶片型号/ Basic blade model

D: D或F指自原设计的尺寸改装, B或K指除冰套, R指基本直径顶端圆角, S指基本直径平顶端*, 任何其他字母指无显著影响的小更改。/D or F denotes a dimensional modification from the original design, B or K denotes deicing boots, R when used denotes a rounded tip for the basic diameter, S when used denotes a square tip for the basic diameter*, any other character denotes a minor modification not affecting eligibility.

3R: 数字表示从基本直径减少或增加的英寸, Q指特殊的1英寸×90度顶端制造倒角, 不允许切掉, R指对于切割直径而言特定的顶端圆角, 该位置任何其他字母指顶端形状。/ Number when used indicates inches cut off from (or added to if +) basic diameter, Q when used denotes special 1" × 90 deg, factory-bent tip, No cutoff permitted, R when used denotes specifically rounded tip for cutoff diameter, any other character in this location denotes tip shape.

*: 桨叶可能包括顶端圆型或方型叶尖, 但也许在其型号中不标识“R”或“S”, 该字母是用于在相同直径时区别具有两个或多个叶尖形状, 特定的桨叶用“S”指外表面喷丸处理, 见注6。/ Blades may incorporate either round or square tips, yet may not be marked with an “R” or “S” in their model designation. This character is used to distinguish between two or more tip shapes available at the same diameter. Certain blades use “S” to denote shot peening of the exterior surface. (See NOTE 6)

注3/NOTE 3: 桨距控制/ Pitch Control

(a) 批准使用哈策尔调节器控制, 见图纸C-4770和C-4772/Approved with Hartzell governors per drawings C-4770 and C-4772 重量: 4.5磅/Wt: 4.5 lb 见注10/See Note 10

(b) “-2”型号带有配重叶片, 使用滑油减小桨距; “-1”型号不带有配重叶片, 使用滑油增加桨距(见注4)/ The -2 models have counterweighted blades and use oil to decrease pitch. The -1 models do not have counterweighted blades and use oil to increase pitch. (See NOTE 4)

(c) 最大调节器输出压力: 350 psi (适用所有螺旋桨)/ Maximum governor output pressure: 350 psi for all propeller models

(d) 所有调节器都必须作为航空器安装的一部分被批准, 无论制造商如何, 见注10/ All governors must be approved as part of the aircraft installation regardless of manufacturer. See NOTE 10

注4/NOTE 4:

(a) 顺桨/feathering “-1”型不具备此特性, “-2”型具备顺桨和非顺桨特性/ The -1 model does not feather. The -2 models incorporate feathering and unfeathering features.

(b) 反桨/Reversing 不适用/Not applicable

注5/NOTE 5: 左向型号/ Left -Hand Models

左向型号螺旋桨型号的批准版本与右向型号所列的级别和直径相同（见注1和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 (See Notes 1 and 2).

注6/NOTE 6: 互换性/ Interchangeability

(a) 调节器/Governors

型号命名中带有后缀“Z”的Hartzell调节器可以与相应的不带“Z”后缀的调节器相互换。比如，F-6-24Z可替换F-6-24，反之同样有效/ 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.

(b) 桨叶/Blades

喷丸叶片可以成对或者单独替换非喷丸叶片（见注2）/ Shot-peened blades may replace non shot-peened blades either individually or as a set (See NOTE 2)

(c) 防冰系统/Ice Protection System

参见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/NOTE 7: 附件/ Accessories

(a) 螺旋桨防冰系统（防冰系统附加重量）/ Propeller ice protection system (weight of ice protection equipment extra)

(1) 本数据单上的螺旋桨型号批准使用Hartzell 159()手册或其它Hartzell型号设计数据中已有的防冰设备/ Propeller models listed in this data sheet are approved for use with propeller ice protection equipment listed in Hartzell Manual159() or in other Hartzell type design data.

(2) 不论厂家如何，所有的螺旋桨防冰设备均要作为航空器的一部分进行批准（见注10）/All propeller ice protection equipment must be approved as part of the aircraft installation regardless of manufacturer (See NOTE 10).

(b) 螺旋桨螺旋器（螺旋器附加重量）/ Propeller spinner (weight of spinner extra)

(1) 当使用Hartzell型号设计数据上本厂或其他生产商制造的螺旋器时获得批准/ Approved with Hartzell and other manufacturers' spinners when listed on Hartzell type design data.

(2) 不论厂家如何，所有的螺旋器均要作为航空器的一部分进行批准（见注10）/All propeller spinners 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/NOTE 9: 特别限制/ Special limits

螺旋桨-发动机联接表/ Table of propeller – Engine Combinations

正常范畴单机牵引使用时批准/ Approved Vibrationwise for Use on Normal Category Single Engine Tractor Aircraft

从振动观点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，因为以下数据包括了出于修理目各直径减小的许可值/ 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.

下述的发动机型号均符合型号合格证设计，除非特别声明。任何工况下改变发动机功率造成对发动机或机身的修改将潜在增加螺旋桨应力，并不在批准范围。这些改动包括但不限于增加涡轮增压器、提升压力、增大压缩比和转速，改变点火时间和电子点火，调整全权限数字发动机控制，调节进气或排气等。同样，对于曲轴平衡重/组件质量或硬度的任何改变均不被批准 / 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

中国民用航空局
CIVIL AVIATION ADMINISTRATION OF CHINA

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.

桨毂模型 Hub Model	桨叶模型 Blade Model	发动机模型 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
不适用/Not applicable					

注10/NOTE 10: 特别声明/ Special Notes

螺旋桨安装必须作为飞机型号合格证的一部分被批准, 并符合相关飞行器适航要求/Propeller installation must be approved as part of the aircraft Type Certificate and demonstrate compliance with the applicable aircraft airworthiness requirements.

螺旋桨型号包括桨毂和叶片。大部分螺旋桨型号包括附加符号以表明小变化和注1、注2中解释的特征。参照航空器型号合格证数据单确定适用安装的特别螺旋桨型号/ 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.

带有复合叶片的螺旋桨必须在批准安装于任何航空器之前, 评估抗鸟击的能力。Hartzell 公司必须基于航空器构造和运行工况进行试验或分析来确定鸟击的潜在危害/ 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 impact.

注11/NOTE 11: 报废时间/Retirement Time

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

(1) 适用时, 适航限制在113()、115N、117()或145()号Hartzell手册中已有说明/Airworthiness limitations, if any, are specified in Hartzell Manuals 113(), 115N, 117() or 145().

注12/NOTE 12: 特别说明/ Special Notes

(a) 对于超速和过扭限制, 参见202()号Hartzell手册/ Refer to Hartzell Manual no. 202() for overspeed and overtorque limits.

(b) 对于大修间隔, 参见Hartzell服务信函HC-SL-61-61()/Refer to Hartzell Service Letter HC-SL-61-61() for overhaul periods.

结束

END