

型号认可证数据单

TYPE VALIDATION CERTIFICATE DATA SHEET

编号/No: VTC0156P

版次/Revision: 1

型号/Type:

Hartzell 系列螺旋桨

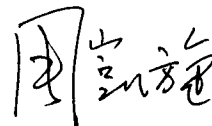
HC-C2YK-1BF/F8477-4

HC-C2YK-2CUF/FC8477-4

HC-C2YK/F7495S

HC-C2YR-2C(L)EUF/F(J)C7666A-2R

批准人/Approved By:



日期/Date: 2008-2-28

本数据单是型号认可证(编号: VTC0156P)的组成部分, 它规定了符合中国民用航空总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: VTC0156P), 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

注: HC-C2YK-1BF/F8477-4, HC-C2YK-2CUF/FC8477-4 经 VTC095P 批准。

NOTE: HC-C2YK-1BF/F8477-4, HC-C2YK-2CUF/FC8477-4 are approved by VTC095P.

有效页清单/List of effective pages:

页数/ Pages	1	2	3	4	5	6	7	8	9	10	11				
版次/Revision	1	1	1	1	1	1	1	1	1	1	1				

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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

	中国民用航空总局认可数据单号、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	VTC0156P、1、2008-2-28	No.P-920、29、Date of Issue:Jan.24,2007
历史 History	无 NONE	不适用 NA

2. 类别/Category: 螺旋桨/ Propeller

3. 认可当局/Validation Authority: 中国民用航空总局/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:

1956年12月15日生效的美国民用航空规章CAR14部。

1961年7月24日美国颁发的型号合格证P920号。1976年9月27日之后，根据美国14CFR21部J分部委任规定批准增加型号。

1959年3月24日申请型号合格证。

下列型号包含在初始审定基础内：

HC-C2YK-(1, 2); HC-C2YR-(1, 2)

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

HC-C2YK-(1, 2, 4); HC-C2YR-(1, 2, 4)

Civil Air Regulations Part 14 effective December 15, 1956

Type Certificate No. P-920 issued July 24, 1961. Models added on or after September 27, 1967 were approved under Delegated Option Authorization provisions of 14 CFR Part 21 Subpart J.

Date of application for Type Certificate: March 24, 1959.

The following models were included under the original certification basis:

HC-C2YK-(1, 2); HC-C2YR-(1, 2)

The following models were added, updated or revised in accordance with 14 CFR Part 35 with amendments 35-1 through 35-6 effective August 1, 1990:

HC-C2YK-(1, 2, 4); HC-C2YR-(1, 2, 4)

2. 专用条件/Special Conditions (SC): 无/none

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

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).

毂材料为铝合金。Hub material Aluminum Alloy.

桨叶材料见以下。Blade material See Below.

桨叶数：两个。Number of blades Two.

毂型号HC-C2YK-1, -2; HC-C2YR-1, -2 (见注1 和 4)。Hub models HC-C2YK-1, -2; HC-C2YR-1, -2 (See Notes 1 and 4).

桨叶 (见注2)	最大连续 马力 转数(RPM)	起飞 马力 转数(RPM)	直径限制 (见注2)	最大全重(供参考) (见注3和7)	桨叶结构 (见注10)
非配重桨叶 - 毂型号：所有-1和-2					
7495-0 至7495-6	250 2700	250 2700	74英寸至68英寸 (-0至-6)	50.0磅	铝合金

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8477-0 至8477-4	310 2575 或 260 2700	310 2575 或 260 2700	84英寸至80英寸 (-0至-4)	54.0磅	铝合金
8477-4 至8477-6	350 2700	350 2700	80英寸至78英寸 (-4至-6)	53.0磅	铝合金
配重桨叶 - 毂型号: 所有-2和-4					
C7666-0 至C7666-8	180 2850 或 250 2700	180 2850 或 250 2700	76英寸至68英寸 (-0至-8)	55.0磅	铝合金
C8477-0 至C8477-4	310 2575 或 260 2700	310 2575 或 260 2700	84英寸至80英寸 (-0至-4)	58.0磅	铝合金
C8477-4 至C8477-6	350 2700	350 2700	80英寸至78英寸 (-4至-6)	57.0磅	铝合金

Blades (see Note 2)	Maximum Continuous		Takeoff		Diameter Limits (see Note 2)	Approx. Max. Wt. Complete (For Reference Only) (see Notes 3 and 7)	Blade Construction (See Note 10)
	HP	RPM	HP	RPM			

Non-Counterweighted Blades - Hub models: all -1 and -2

7495-0 to 7495-6	250	2700	250	2700	74" to 68" (-0 to -6)	50.0 lb.	Aluminum Alloy
8477-0 to 8477-4	310 or 260	2575 or 2700	310 or 260	2575 or 2700	84" to 80" (-0 to -4)	54.0 lb.	Aluminum Alloy
8477-4 to 8477-6	350	2700	350	2700	80" to 78" (-4 to -6)	53.0 lb.	Aluminum Alloy

Counterweighted Blades - Hub models: all -2 and -4

C7666-0 to C7666-8	180 or 250	2850 or 2700	180 or 250	2850 or 2700	76" to 68" (-0 to -8)	55.0 lb.	Aluminum Alloy
C8477-0 to C8477-4	310 or 260	2575 or 2700	310 or 260	2575 or 2700	84" to 80" (-0 to -4)	58.0 lb.	Aluminum Alloy
C8477-4 to C8477-6	350	2700	350	2700	80" to 78" (-4 to -6)	57.0 lb.	Aluminum Alloy

注/NOTE:

1. 桨毂型号标识 (见注2、4、5和6)

<u>B</u>	<u>HC</u>	-	<u>C</u>	<u>2</u>	<u>Y</u>	<u>F</u>	-	<u>1</u>	<u>RAF</u>	
										B指改装的桨距变化系统
										C指螺旋器排布
										F指改装的桨距变化旋钮
										G指Hartzell阻尼系统
										H指螺旋器安装包
										L指左旋
										N指与N桨叶柄兼容
										P指毂组件序号具有“B”缀
										R指大柱塞面积
										U指缸体内装有顺桨辅助弹簧组件
										任何其他字母指无显著影响的小更改
										指如下特定的设计特性:
										-1: 非顺桨, 无配重, 调节器滑油压力增加桨距
										-2: 有或无配重顺桨, 调节器滑油压力减小桨距
										-4: 非顺桨, 配重, 调节器滑油压力减小桨距
										F: 具有6个1/2英寸螺栓和4英寸螺栓孔有两个1/2英寸销子的特殊安装边
										K: 具有6个1/2英寸螺栓和4-3/4英寸螺栓孔有四个3/4英寸驱动衬套的SAE#2安装边
										L: 具有6个7/16英寸螺栓和4-3/4英寸螺栓孔有四个5/8英寸驱动衬套的SAE#2安装边
										R: 具有6个1/2英寸螺栓和4-3/4英寸螺栓孔有五个3/4英寸驱动衬套的SAE#2安装边
										Hartzell 桨叶柄尺寸
										桨叶数
										表示基本设计 - C指无整体轴延伸
										Hartzell Controllable
										指当白安装面向毂看时通过桨叶座至中心线的销子位置
										空白: 90和270度, 顺时针
										B: 30和210度, 顺时针
										C: 150和330度, 顺时针
										D: 60和240度, 顺时针

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Note 1: Hub Model Designation (See Notes 2, 4, 5 and 6)

B	HC	-C	2	Y	E	-1	RAF	
								B denotes modified pitch change system
								C denotes spinner arrangement
								F denotes modified pitch change knob
								G denotes Hartzell damper system
								H denotes spinner mounting kit
								L when used denotes left hand rotation
								N indicates compatibility with N shank blades
								P when used denotes a hub unit with a "B" suffix serial number
								R when used denotes a large piston area
								U denotes feather assist spring assembly kit installed within cylinder
								Any other character denotes a minor change not affecting eligibility
								Denotes specific design features as:
								-1: non-feathering, no counterweights, governor oil pressure increases pitch
								-2: feathering with or without counterweights, governor oil pressure decreases pitch
								-4: non-feathering, counterweights, governor oil pressure decreases pitch
								F: special flange with six 1/2" bolts and two 1/2" dowels on a 4" bolt circle
								K: SAE # 2 flange with six 1/2" bolts and four 3/4" drive bushings on a 4-3/4" 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" drive bushings on a 4-3/4" bolt circle
								Hartzell blade shank size
								Number of blades
								Identifies basic design - C denotes no integral shaft extension
								Hartzell Controllable
								Indicates dowel location with respect to centerline through blade sockets when viewing hub from flange mounting face
								Blank: 90 & 270 deg. clockwise
								B: 30 & 210 deg. clockwise
								C: 150 & 330 deg. clockwise
								D: 60 & 240 deg. clockwise

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2. 桨叶的型号标识 (见注6)

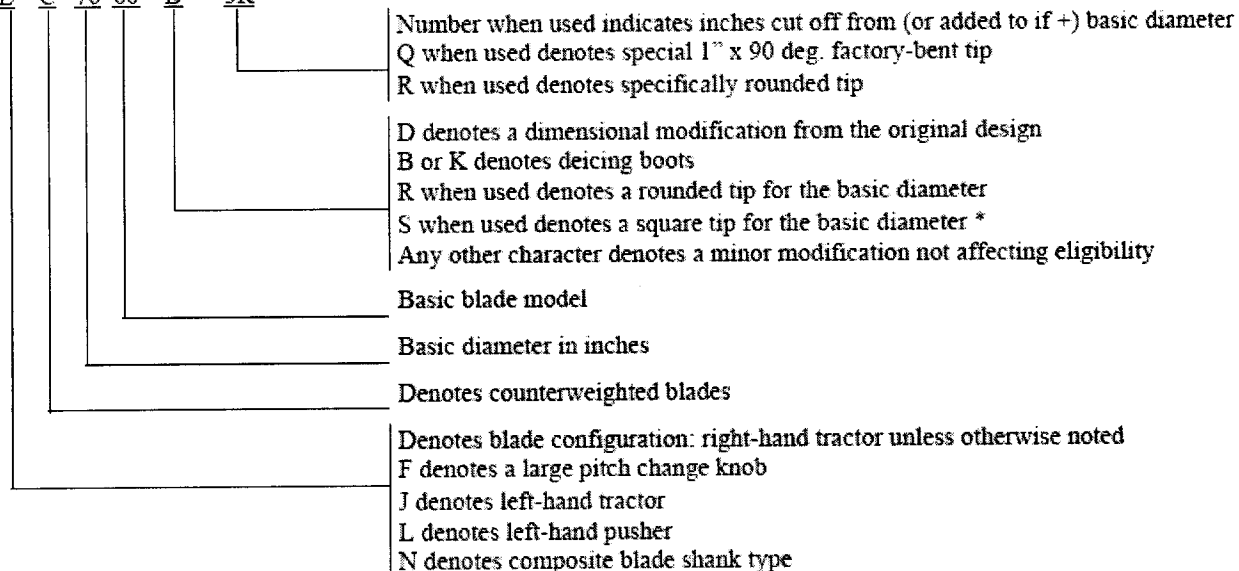
L C 76 66 D - 3R



* 桨叶可能是顶端倒圆或平型, 可能在其型号中不被标识“R”或“S”。该字母曾在相同直径时用于区别具有两个或多个顶端平型。特定的桨叶使用“S”指外表面喷丸处理。

Note 2: Blade Model Designation (See Note 6)

L C 76 66 D - 3R



* 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.

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3. 桨距控制 (见注4、6和10)

(a) 按C-4770、C-4771和C-4772图纸与Hartzell 调节器一同批准。重量: 4.5磅。

D - 1 - 4 Z 调节器型号说明

L指左旋
Z指驱动偶合型
任何其他字母指无显著影响的小更改
无显著影响的小调整
为获得发动机/螺旋桨调节器兼容的小调整
基体和重要改装零件

(b) -2和-4型为配重桨叶且用滑油减小桨距。-1型为无配重桨叶且用滑油增加桨距。

(c) 调节器最大输出压力: 对所有型号螺旋桨, 350PSI。

(d) 无论制造厂如何, 所有调节器必须作为航空器安装零件的一部分进行批准。

Note 3: Pitch Control (See Notes 4, 6 and 10)

(a) Approved with Hartzell governors per drawings C-4770, C-4771 and C-4772. Wt.: 4.5 lb.

D - 1 - 4 Z

Governor Model Designation

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

(b) The -2 and -4 models have counterweighted blades and use oil to decrease pitch. The -1 models do not have counterweighted blades and use oil to increase pitch.

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

(d) All governors must be approved as part of the aircraft installation regardless of manufacturer.

4.

(a) 顺桨: -1和-4型无顺桨。-2型具备顺桨和非顺桨特性。

(b) 反桨: 不适用

(c) 柱塞尺寸: -2R型不同于-2型, -2R型具备20.2平方英寸柱塞面积, -2型具备16.25平方英寸柱塞面积,

Note 4: (a) Feathering The -1 and -4 models do not feather. The -2 models incorporate feathering and unfeathering features.

(b) Reversing Not applicable

(c) Piston size The -2R model differs from the -2 model in that the -2R model has a piston area of 20.2 sq. in. and the -2 has a piston area of 16.25 sq. in.

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

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。

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1、2和3) / Interchangeability (see notes 1, 2 and 3)

(a) 桨叶/Blades

对于可顺桨的螺旋桨, 有配重的桨叶 (带“C”前缀) 仅可替换顺桨时没有配重的螺旋桨 (毅的型号带后缀-2或-2R), 且在70° F时将空气冲压减少至80 psi时, 附上的冲压说明标签必须更改。

喷丸桨叶可单个或整套替换非喷丸桨叶。

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Blades with counterweights(having " C" prefix)can replace non-counterweighted blades on feathering propellers(hub Model suffix -2 or -2R)only, provided the air charge is reduced to 80 psi at 70° F. Attached decal specifying air charge must be changed accordingly.

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

(b) 螺旋桨/Propellers

带有大变距旋钮的“F”型螺旋桨与相应的带标准变距系统的螺旋桨是可互换的。

“F” type propellers with large pitch change knobs are interchangeable with corresponding propellers with the standard pitch change system.

(c) 调节器/Governors

在Hartzell的型号标识中,带“Z”后缀的调节器与没带“Z”的互换。例如F-6-24Z与F-6-24是可互换的。

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.

(d) 防冰系统/Ice protection systems

对于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(见注10)/Accessories (see note 10)

(a) 螺旋桨防冰(防冰系统附加的重量)/Propeller anti-icing(weight of anti-icing system extra)

i) 批准使用根据Hartzell规范H-S-2或第133号手册安装的列于Hartzell型号设计数据单上的供液防冰带。

Approved with fluid feed boots listed on Hartzell approved type design data when installed in accordance with Hartzell specification H-S-2 or Hartzell Manual no.133().

ii)批准使用列于Hartzell型号设计数据单上且相关型号的螺旋桨有可用设备的供液设备。

Approved with fluid feed equipment listed in Hartzell approved type design data on propeller models for which equipment is available.

(b) 螺旋桨除冰(除冰设备附加的重量)/ Propeller deicing(weight of deicing equipment extra)

i)批准使用根据Goodyear Report No.AP-147(1961年10月23日)安装的Goodyear防冰罩(电螺旋桨除冰装置)。

Approved with Goodyear Ice Guards (electrical propeller deicer) when installed in accordance with instructions outlined in Goodyear Report no.AP-147 dated October 23,1961.

ii)批准使用列于在Hartzell型号设计数据单上相应包号且根据Goodrich Report no.ATA 30-60-07进行安装的Goodrich电除冰包5EXXXX-X, 7EXXXX-X, 77-XXX, 67-XXX或65-XXX。

Approved with Goodrich electrical deicing kit 5EXXXX-X,7EXXXX-X,77-XXX,67-XXX,or 65-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.

iii)批准使用列于Hartzell型号设计数据单上的防冰设备。

Approved with ice equipment when listed on Hartzell type design data.

(c) 螺旋桨整流罩(整流罩的附加重量)/Propeller spinner(weight of spinner extra)

i)批准使用列于Hartzell型号设计数据单上的Hartzell和其他厂家的整流罩。

Approved with Hartzell and other manufacturer' s spinners when listed on Hartzell approved type design data.

ii)螺旋桨减震器C-1576/Propeller Damper C-1576

批准使用在Hartzell螺旋桨型号HC-C2Y (), Wt:8.0lb。

Approved for use with Hartzell Propeller model HC-C2Y (),Wt:8.0lb.

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

9. 特别限制/Special Limits:

螺旋桨-发动机组合表

批准的用于正常类单发驱动飞机情况

基于振动确定的最大和最小螺旋桨直径见下表。该数据考虑了维修包括可容许的直径缩减的状况,直径不允许缩减到所列值以下。

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除非另有规定，下表中发动机型号构型列在发动机型号合格证上。在任何运行有可能增加螺旋桨应力的改变发动机动力的发动机或机身的改装是不允许的。这样的改装包括但不限于涡轮增压器或涡轮标准器、加大增压压力、增加压缩比、增加RPM、改变点火时间、电子点火、全权发动机数控（FADEC）、调节进气或排气。另外，不允许改变机轴/配重组件的质量或强度。

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 turbocharge 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.

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)	标牌/Placards
HC-C2YK	8477	LYC O-540-A4A5, -A4B5, -A4C5, -A4D5, -E4A5, -E4B5, -E4C5	84	76	无/none
HC-C2YK	8477	LYC O-540-G1A5	84	83	无/none
HC-C2YK	8477	LYC IO-540-C4B5, -C4C5, -D4A5, -D4B5	84	76	无/none
HC-C2YK	8477	LYC IO-540-V4A5, -V4A5D, -T4A5D, T4B5D, -T4C5D	84	76	无/none
HC-C2YK	8477	LYC IO-540-K1A5, -K1B5, -K1C5, -K1D5, -L1A5, -M1A5	80	80	不得超过23英寸总管压力低于 2200RPM Do not exceed 23 inches Manifold pressure below 2200 RPM.
HC-C2YK	F8477-4	LYC TIO-540-ABQAD	80	78	无/none
HC-C2YR	F7666A	LYC O-360-C1E,C1F	76	72	避免转数持续运行在2000至2350之间 Avoid continuous operation between 2000 and 2350 RPM
HC-C2YR	F7666A- () R	LYC TO-360-E1A6D	74	72	无/none
HC-C2YR	F7666A	LYC TO-360-C1C	74	72 1/2	避免转数持续运行在2000至2350之间 Avoid continuous operation between 2000 and 2350 RPM
HC-C2YR	F7666A	LYC TO-360-C1A6D	76	75	发动机转速在2400RPM以下时，不得在36 英寸总压以上运行/Do not operate above 36inches manifold pressure at engine speeds below 2400RPM

10.

安装螺旋桨的批准必须作为飞机型号合格证的一部分，且符合适用的飞机适航要求。

螺旋桨型号包括基本桨毂和桨叶型号，多数螺旋桨型号包括附加符号以表明小改变化和注1和2中解释的特征，参照航空器型号合格证数据单确定适用于安装的审定特定螺旋桨型号。

带复合桨叶的螺旋桨批准装在任何型号航空器之前，必须评价抗鸟击的能力。Hartzell螺旋桨必须完成测试和/或基于飞机构型和运行条件的分析，以确定鸟击潜在的危害。

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 change 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

i)如有适航性限制，均列在Hartzell手册113（）或117（）里。

Airworthiness limitations, if any, are specified in Hartzell Manuals 113() or 117().

12. 特别提示/Special Notes

(a) 超速和超扭限制见Hartzell手册第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