

型号认可证数据单

TYPE VALIDATION CERTIFICATE DATA SHEET

编号/No: VTC0250E

版次/Revision: 0

型号/Type:

LTS101-700D-2

批准人/Approved By:

徐超群

日期/Date: 2010-12-2

本数据单是型号认可证(编号: VTC0250E)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: VTC0250E), 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:

Honeywell International Inc.

111 South 34th Street

Phoenix, AZ 85034

有效页清单/List of effective pages :

页数/ Pages	1	2	3	4	5	6	7	8	9	10					
版次/Revision	0	0	0	0	0	0	0	0	0	0					

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: VTC0250E; 版次: 0; 颁发日期: 2010年12月21日; No. VTC0250E; Revision 0; Date of Issue: 2010-12-2	编号: E5NE; 版次: 17; 颁发日期: 2006年9月5日 No. E5NE, Revision 17, Date of Issue: September 5, 2006
历史 History	无/None	无/None

2. 类别/Category: 发动机/ Engine

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: Honeywell International Inc.

Address: 111 South 34th Street, Phoenix, AZ 85034

5. 制造商/Manufacturer: Honeywell International Inc.

6. ETOPS: 不适用/NA

7. CAAC专用要求/CAAC Special Requirements: 3号燃油规范/No.3 Jet Fuel (GB 6537-2006, Chinese)

第2部分/Section 2

A. 审定基础/Certification Basis

1. 适航标准/Airworthiness Standards:

1965年2月3日生效的FAR 33部第1-5修正案

14 CFR part 33 effective February 1, 1965, as amended by 33-1, 33-2, 33-3, 33-4, and 33-5.

型号/Model

申请日期/Date of Application

型号合格证颁发日期/Type Certificate Issued

LTS101-700D-2

1999年6月30日/JUN 30, 1999

2004年2月13日/FEB 13, 2004

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: 1965年3月4日颁发的413号生产许可证, 2010年6月2日颁发413NM生产许可证/Production Certificate No. 413, issued March 4, 1965. Reissued Production Certificate No. 413NM to Honeywell International Inc. on Jun 2, 2010.

B. 技术特性/Technical Characteristics

型号/Model	LTS101-700D-2
型号/Type	轴向—离心流向, 自由涡轮, 涡轴。但级轴流和单级离心压气机。回流环形燃烧室。单级燃气涡轮。单级功率涡轮。 / Axial – centrifugal flow, free turbine, turboshaft. Single stage axial and single stage centrifugal compressor. Reverse flow annular combustor. Single stage gas generator turbine. Single stage power turbine.
额定功率 (See 注 1 / NOTE 1)	
海平面最大连续 / Maximum Continuous at sea level, hp.	650
海平面起飞 (5 分钟) Takeoff (5 minutes) at sea level, hp.	732
海平面 30 分钟 OEI / 30 minute OEI at sea level hp.	702
2 1/2 minute OEI 2 1/2 分钟 OEI / 2 1/2 minute OEI at sea level hp.	735

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I. 型别/MODELS: LTS101	-700D-2
减速比 / REDUCTION GEAR RATIO (输出轴与功率涡轮转速 Output Shaft Speed to Power Turbine Speed)	0.1654
燃油 / FUEL (见注 2 和 16 / See NOTE 2 and NOTE 16)	GB 6537-2006 No.3 Jet Fuel ASTM D1655 Jet A, A-1, & B, MIL-DTL-5624 Grades JP-4, JP-5, and JP-8 or equivalent
滑油/OIL (见注 3 / See NOTE 3)	MIL-PRF-7808 MIL-PRF-23699
主要尺寸 / PRINCIPAL DIMENSIONS	
标定长度 (英尺) Length, in. nominal	31.56
标定宽度 (英尺) Height, in. nominal	24.80
标定重量 (英尺) Width, in. nominal	19.37
重量 (净重) 磅 WEIGHT (Dry), lb. 最大 Maximum (包括必要的发动机附件, 但不包括起动机 includes essential engine accessories but excludes starter-generator)	271
重心位置(净重) / C.G. LOCATION (dry weight)	
发动机低安装座中心线后, 英寸 / Aft of engine centerline of lower mount pads, in.	5.610
低于发动机中心线, 英寸 / Below engine centerline, in.	1.880
发动机中心线左侧 (从后向前看) 英尺 / Left of engine centerline looking aft, in.	0.150

注 / NOTES

注 1 / NOTE 1.

发动机额定功率是在以下条件下, 基于经校准的台架而来: Engine ratings are based on calibrated stand performance under the following conditions:

59°F 和 29.92 in. Hg 的静态海平面状态/

Static sea level standard conditions at 59°F and 29.92 in. Hg.

无引气, 无管路损失, 无功率提取/

No airbleed, no duct losses, no external power extraction.

排气构型见相应发动机安装说明或手册

Exhaust configuration as specified in the applicable engine Installation Instructions or Manual.

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注 2 / NOTE 2. 如果燃油根据相应的安装要求进入发动机，发动机可以在相应安装说明或手册规定的燃油污染水平下正常工作。

Engines will operate satisfactorily with fuel contaminated to the levels specified in the applicable engine Installation Instructions or Manual provided the fuel is introduced to the engine in accordance with the installation requirements.

注 3 / NOTE 3. 不允许混用这些滑油 / Mixing of these oils is prohibited.

注 4 / NOTE 4. 最大允许燃气发生器工作速度 Maximum permissible gas generator operating speeds (r.p.m.):

LTS101	-700D-2					
瞬态/ Transient	51,313					
2-1/2 分钟 OEI /2-1/2 Minute OEI	不适用					
30 分钟 OEI /30 Minute OEI	不适用					
起飞/ Takeoff	51,026					
最大连续/Maximum Continuous	50,164					
5 分钟功率/ 5 Minute Part Power	不适用					

注 5 / NOTE 5. 最大允许功率涡轮输出轴扭矩 Maximum permissible power turbine output shaft torque (ft.-lb.):

LTS101	-700D-2					
瞬态/ Transient	725**					
2-1/2 分钟 OEI /2-1/2 Minute OEI	不适用					
30 分钟 OEI /30 Minute OEI	不适用					
起飞/Takeoff	618					
最大连续/ Maximum Continuous	567					
5 分钟功率/5 Minute Part Power	不适用					
无载荷（自动运转）/ No Load (Autorotation)	0					

** 时间限制：超过起飞扭矩限制 30 秒 / Time limit: 30 seconds above Takeoff torque limit.

注 6 / NOTE 6. 最大允许输出轴转速 Maximum permissible output shaft speeds (r.p.m.):

LTS101	-700D-2					
瞬态/ Transient	7,404***					
2-1/2 分钟 OEI /2-1/2 Minute OEI	不适用					
30 分钟 OEI /30 Minute OEI	不适用					
起飞/Takeoff	6,780					

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最大连续/ Maximum Continuous	6,780					
5 分钟功率/5 Minute Part Power	不适用					
无载荷 (自动运转) /No Load (Autorotation)	6,780					

***时间限制: 超过 6,780 r.p.m 5 秒 / Time Limit: 5 seconds above 6,780 r.p.m.

注 7 / NOTE 7.

最大允许温度 / Maximum permissible temperatures:

经安装在燃烧室壳体的热电偶测得:

Measured gas temperature °F (°C) as measured by thermocouples mounted in the combustor housing:

LTS101	-700D-2					
起动/Starting	1731*** (944)					
瞬态/Transient	1731*** (944)					
2-1/2 分钟 OEI/2-1/2 Minute OEI	不适用					
30 分钟/OEI30 Minute OEI	不适用					
起飞/Takeoff	1694*** (923)					
最大连续 /Maximum Continuous	1635 (890)					
5 分钟功率 /5 Minute Part Power	不适用					

*** 对于 LTS101-700D-2, 测量的起动和瞬态温度不能超过起飞温度 30 秒 / For the LTS101-700D-2, the starting and transient measured gas temperatures must not exceed the takeoff measured gas temperature for more than 30 seconds.

瞬态限制不能用于正常起飞时增加功率的操作 / The transient limits are not to be used for increased power operation during normal takeoff.

部件最大允许温度: Maximum permissible component temperatures:

LTS101	-700D-2					
燃气发生器转速控制 / Gas Generator Speed Control	250					
点火激励箱 / Ignition Exciter Box	250					
进口流量作动器 / Inlet Flow Actuator	410					
热电偶组件 / Thermocouple Harness	不适用					
电气组件 / Electrical Harness	不适用					
动力涡轮控制器 / Power Turbine Governor	280					

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热电偶连接盒 / Thermocouple Junction Block	450					
防冰阀门 / Anti-Icing Valve	450					
扭矩限制器/Torque Limiter /	不适用					
燃油总管/Fuel Manifold /	不适用					
动力涡轮超转脱开机构/Power Turbine Overspeed Trip (1)	160					
燃油计量组件/Fuel Metering Unit	不适用					
EFCS 发电机/EFCS Alternator	不适用					
电子控制计算机 /Electronic Control Computer	不适用					
MGT 瞬态补偿器 /MGT Transient Compensator	不适用					

(1) 区域温度限制 250°F 是对安装于附件安装座并标有“Alternator”的机械功率涡轮超转行程系统 / Zone temperature limit of 250°F is for mechanical power turbine overspeed trip system mounted on the accessory pad marked “Alternator”. All other engine models utilize an electronic overspeed system with a 160°F limit for the aircraft-control box.

注 8 / NOTE 8.

燃油压力限制和滑油压力和温度限制 / Fuel pressure limits and oil pressure and temperature limits:

燃油系统可以不借助外力，提供吸油能力 / The fuel system provides suction lift capability without any external assistance. 详见安装手册 / See the applicable engine Installation Instructions for further details.

滑油压力和温度限制（使用位于滑油滤出口的发动机滑油温度传感器测量）Oil pressure and temperature (as measured by engine oil temperature bulb located at oil filter discharge) limits:

	发动机型号	规定的范围	状况
滑油压力 工 作 中 / during operation	-700D-2.	80-100 psig	最大连续或者更高，滑油温度高于 150°F (65°C) Max. continuous and above with oil temperature greater than 150°F (65°C)
最低滑油压力 Minimum oil pressure	-700D-2	20 psig	飞行慢车，滑油进口温度高于 50°F (10°C) / Flight idle, oil inlet temperature greater than 50°F (10°C)
	-700D-2	50 psig	飞行慢车，滑油进口温度等于或低 于 50°F (10°C) / Flight idle, oil inlet temperature at or below 50°F (10°C)

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最大瞬态滑油压力 (冷滑油) Maximum transient oil pressure (cold oil)	-700D-2	350 psig (尖峰 spikes) 120 psig	在滑油暖机从 50°F (10°C) 到 150°F (65°C) / During oil warm up from 50°F (10°C) to 150°F (65°C)
最大滑油进口温度 / Maximum oil inlet temperature	-700D-2	210°F (99°C)	环境温度低于 100°F (38°C) / Ambient temperature less than 100°F (38°C)
	-700D-2	230°F** (110°C)	环境温度等于或高于 100°F (38°C) / Ambient temperature at or above 100°F (38°C)

注 9 / NOTE 9.

附件驱动规定: Accessory drive provisions:

LTS101	-700D-2					
起动机发电机安装座型号 / Starter Generator Pad Type	AND20001 Modified (3)					
转向 (面向安装座) Rotation (viewing pad)	CW					
齿轮比 Gear Ratio(1)	0.2512					
最大扭矩 / Maximum Torque (in-lb) 起动 / Starting 瞬态 / Transient 最大连续 / Maximum continuous	500 150(5) 71(6)					
附件安装座型号 / Accessory Pad Type	不适用					
转向 (面向安装座) Rotation (viewing pad)	不适用					
齿轮比 Gear Ratio(2)	不适用					
最大扭矩 / Maximum Torque (in-lb) 起动 / Starting 最大连续 / Maximum continuous	不适用 不适用					
备份安装座型号 / Spare Pad Type	不适用					
转向 (面向安装座) Rotation (viewing pad)	不适用					
齿轮比 Gear Ratio(2)	不适用					

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最大扭矩 / Maximum Torque (in-lb)						
起动 / Starting	不适用					
最大连续 / Maximum continuous	不适用					

- 注 10 / NOTE 10 如果进气系统设计符合 Honeywell International Inc.器材号 4-201-080-01LTS101, 且燃气发生器最低转速不低于 38,294 r.p.m, -700D-2 满足 CAAC 有管结冰条件下工作的要求。The LTS101 -700D-2 engine models meet the CAAC requirements for operation in icing conditions provided that the induction system design conforms to Honeywell International Inc. Kit Number 4-201-080-01, and a minimum of 38,294 r.p.m gas generator speed is maintained.
- 注 11 / NOTE 11. 发动机为进行试验, 以评估吸鸟和冰球。应在批准发动机安装前, 评估直升机进气道和发动机组合的吸鸟和冰球特性。
These engines have not been tested to evaluate the effects of bird and ice ball ingestion. The bird and ice ball ingestion characteristics of the airframe air inlet and engine combination are to evaluated prior to approval of the engine installation.
- 注 12 / NOTE 12. 如果安装发动机进口颗粒分离器, 则可以满足 CAAC29.1461 高能转子包容的要求。
If equipped, the engine inlet air particle separator scavenge blower assembly meets the CAAC requirements of § 29.1461 for high energy rotor containment.
- 注 13 / NOTE 13. 最大允许空气提取为静态标准海平面下用户引气口进口空气流量的 5%。
Maximum permissible air bleed extraction is 5% of inlet airflow at the designed customer bleed port at standard sea level static conditions.
- 注 14 / NOTE 14. 某些发动机部件是限寿件。这些限寿件列于 CAAC 批准的服务通告 LT 101-71-00-0002 中。
Certain engine parts are life limited. These limits are listed in CAAC approved Honeywell International Inc. Service Bulletin Number LT 101-71-00-0002.
- 注 15 / NOTE 15. 发动机起动机扭矩和速度要求见相应发动机安装说明或手册。
Engine starter torque and speed requirements are specified in the applicable engine Installation Instructions or Manual.
- 注 16 / NOTE 16. 批准的燃油和燃油添加剂见相应发动机安装说明或手册。
Approved type fuels and fuel additives are specified in the applicable engine Installation Instructions or Manual.
- 注 17 / NOTE 17. 100%输出轴转速是 6120 r.p.m。
100% output shaft speed for the LTS101-700D-2 is 6120 r.p.m.
- 注 18 / NOTE 18. 100%功率涡轮轴转速是 37,000 r.p.m。
100% power turbine shaft speed for -700D-2 is 37,000 r.p.m.

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- 注 19 / NOTE 19. 100%燃气发生器转速是 47,870 r.p.m
100% gas generator speed equals 47,870 r.p.m. for all engine models.
- 注 20 / NOTE 20. 发动机安装必须根据相应发动机安装说明或手册采用控制系统稳定蓄电器
The installation for all engine models must incorporate a control system stability accumulator(s) in accordance with the applicable engine Installation Instructions or Manual.
- 注 21 / NOTE 21. 发动机维护要求见 CAAC 批准的服务通告 LT 101-71-00-0001
Engine maintenance program requirements are defined in CAAC approved Honeywell International Inc. Service Bulletin Number LT 101-71-00-0001.
- 注 22 / NOTE 22. 删除 Deleted (Revision 15).
- NOTE 23. -700D-2 发动机装有发动机吸油系统，可以满足 FAR33.67 第 6 修正案的要求。
The -700D-2 engine models are equipped with a suction feed fuel system meeting the FAA requirements of § 33.67, Amendment 6.
- NOTE 24. 删除 Deleted (Revision 16).
- NOTE 25. 删除 Deleted (Revision 16).

...END....