

型号认可证数据单

TYPE VALIDATION CERTIFICATE DATA SHEET

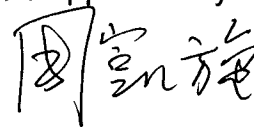
编号/No: VTC0208E

版次/Revision: 0

型号/Type:

CFE738-1-1B

批准人/Approved By:



日期/Date: 2008-3-6

本数据单是型号认可证(编号: VTC0208E)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: VTC0208E), 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:

CFE 公司,亚利桑那州凤凰城,34 大街南 111 号/CFE COMPANY,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					
版次/Revision	0	0	0	0	0	0	0	0	0					

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	VTC0208E、0、2008-03-06	No. E44NE, Revision 5, Date of Issue: February 1, 2008
历史 History	无 NONE	不适用 NA

2. 类别/Category: 发动机/ Engine

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:

CFE公司,亚利桑那州凤凰城,34大街南111号/CFE COMPANY,111 SOUTH 34TH STREET,PHOENIX,
AZ 85034.

5. 制造厂/Manufacturer:

CFE公司/CFE COMPANY

6. ETOPS:

不适用/NA

7. CAAC专用要求/CAAC Special Requirements:

明确中国3号喷气燃料使用条件。

Define the operation condition for the P.R.C. JET fuel No.3.

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第2部分/Section 2

型号/MODEL	CFE738-1-1B
形式/TYPE	涡轮风扇,单级风扇,五级轴流式压气机,单级离心式压气机,环形燃烧室,两级高压涡轮,三级低压涡轮 Turbofan, Single Stage Fan, Five Stage Axial Compressor, Single Stage Centrifugal Compressor, Annular Combustion Chamber, Two Stage High Pressure Turbine, Three Stage Low Pressure Turbine
额定值(见注 5) 海平面静态推力,磅 RATINGS (See NOTE 5) Sea Level Static Thrust, lb	
最大起飞(5 分钟) (见注 12,16 和 17) Maximum Takeoff (5 min.) (See NOTES 12, 16 & 17)	5937
正常起飞(5 分钟) (见注 12,16 和 17) Normal Takeoff (5 min.) (See NOTES 12, 16 & 17)	5918
最大连续(见注 12) Maximum Continuous (See NOTE 12)	5613
额定环境温度 Rating ambient temperature	
最大起飞/Maximum Takeoff 正常起飞/Normal Takeoff 最大连续/Maximum Continuous	100°F (37°C) 86°F (30°C) 86°F (30°C)
燃油控制/FUEL CONTROL	燃油控制和推力管理由全权限数字电子控制(FADEC)计算机系统控制。对于不同型号发动机和飞机安装,该系统的硬件和软件构型以及发动机相关燃油泵和液压机械组件由经批准的发动机设备清单控制。 Fuel control and power management are controlled by a Full Authority Digital Electronic Control (FADEC) computer based system. The hardware and software configurations of this system and the associated engine fuel pump and hydro mechanical unit are controlled by an approved engine equipment list for each specific engine model and aircraft application.
燃油/ FUEL	符合GE燃油规范No.D50TF2及现行有效版本的燃油。按照上述

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滑油/ OIL	规范具体经批准的燃油详见CFE738发动机安装手册 IM-7550。 No. 3 Jet Fuel 符合 GB6537-94 的3号喷气燃油和符合 GB6537-05的3A号喷气燃油符合General Electric公司喷气燃油规范D50TF2号。 Fuel conforming to General Electric Fuel Specification No. D50TF2 or current revision. See CFE738 Engine Installation Manual IM-7550 for specific fuels approved per the subject specifications. No. 3 Jet Fuel per GB6537-94 and No. 3A Jet Fuel per GB6537-05 is approved and conforms to the latest revision of General Electric Company jet fuel specification No. D50TF2 符合 GE 滑油规范 No.D50TF1 及现行有效版本或联信滑油规范 EMS53110 及现行有效版本的滑油。按照上述规范具体经批准的滑油详见 CFE738 发动机安装手册 IM-7550 Oil conforming to General Electric Specification No. D50TF1, or Allied Signal oil specification EMS53110, current revision. See CFE738 Engine Installation Manual IM-7550 for specific oils approved per the subject specifications.						
主尺寸/ PRINCIPAL DIMENSIONS	对于不同型号发动机,主尺寸参数列于经批准的安装图纸。 The Principal Dimensions are listed on the approved Installation Drawing for each engine model.						
最大干重,磅 WEIGHT (dry maximum), pounds	1325 磅(见注 14) 1325 pound(See NOTE 14)						
重心位置(英寸) CENTER OF GRAVITY LOCATION, (in)	对于不同型号发动机,重心位置列于经批准的安装图纸。 The Center of Gravity is listed on the approved Installation Drawing for each engine model.						
点火系统/IGNITION SYSTEM	该点火系统为双通道,持续点火,每个点火嘴有独立电路的电容性放电组件。经批准的发动机设备清单中确定了受控的点火系统部件。 The ignition system is a dual-channel, continuous duty, capacitive discharge unit with independent circuits to each igniter plug. The authorized ignition system components are controlled by the approved engine equipment list.						
审定基础(见注 13) CERTIFICATION BASIS (See NOTE 13)	1965 年 2 月 1 日生效的联邦航空规章第 33 部,第 1 至 1990 年 8 月 10 日 14 号修正案 FAR 33, effective February 1, 1965, as amended by 33-1 through 33-14, dated August 10, 1990. 型号合格证/Type Certificate <table><tr><td>型号/ Model</td><td>申请日期/Date of Application</td><td>E44NE 号颁发日期/No. E44NE Issued</td></tr><tr><td>CFE738-1-1B</td><td>March 16, 1990</td><td>December 17, 1993</td></tr></table>	型号/ Model	申请日期/Date of Application	E44NE 号颁发日期/No. E44NE Issued	CFE738-1-1B	March 16, 1990	December 17, 1993
型号/ Model	申请日期/Date of Application	E44NE 号颁发日期/No. E44NE Issued					
CFE738-1-1B	March 16, 1990	December 17, 1993					
生产基础	生产许可证 108 号于 1961 年 1 月 13 日颁发,以及在亚利桑那州						

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PRODUCTION BASIS	凤凰城的 CFE 公司授权下生产许可证 413 号于 1965 年 3 月 4 日颁发。 Production Certificate No. 108 issued January 13, 1961, and No. 413 issued March 4, 1965, under license from CFE Company, Phoenix, AZ.
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注 1/Note1. 针对发动机转子最大允许发动机工作转速如下:

Maximum permissible engine operating speeds for the engine rotors are as follows:

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低压转子(N1),rpm

Low pressure rotor (N1), rpm

最大起飞/正常起飞

9,400

Maximum Takeoff/Normal Takeoff

最大连续

9,400

Maximum continuous

高压转子(N2),rpm

High pressure rotor (N2), rpm

最大起飞/正常起飞

28,000

Maximum Takeoff/Normal Takeoff

最大连续

27,715

Maximum continuous

注 2/Note2. 最大允许温度如下:

Maximum permissible temperatures are as follows:

涡轮间温度 Inter turbine temperature (T4.5), °F (°C)

最大起飞(5 分钟)

1634°F (890°C)

Maximum Takeoff (5 min.)

正常起飞(5 分钟)

1587°F (864°C)

Normal Takeoff (5 min.)

最大连续

1582°F (861°C)

Maximum Continuous

滑油进口温度°F (°C)

Oil inlet temperature, °F (°C)

连续运转

280°F (138°C)

Continuous operation

瞬间运转(3 分钟)

280°F (138°C)-311°F (155°C)

Transient operation(3 minutes)

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燃油进口温度(发动机燃油泵进口)°F(°C) 135°F(57°C)
Fuel inlet temperature(at engine fuel pump inlet)°F(°C)

注 3/Note3. 燃油和滑油压力限制/Fuel and oil pressure limits

燃油泵进口压力:

Fuel pump inlet pressure:

最小/Minimum: 大于真气压 5PSI/5PSI above true vapor pressure
最大/Maximum: 50PSI

滑油压力/Oil Pressure:

最小(慢车)/Minimum(idle): 30PSI
正常运转范围/Normal Operating Range: 60-85PSI
瞬间(3 分钟)/Transient(3 min): 85-100PSI

注 4/Note4. 附件驱动的设备/ACCESSORY DRIVE PROVISIONS

附件驱动 Accessory Drive	安装类型 Pad Type	传动比(3) Speed Ratio(3)	转动方向 Rotation Facing Pad	最大扭矩/Maximum torque (英寸-磅/In-lb)			最大附件重量 Maximum Accessory Weight(lbs)	最大悬挂力矩 (磅-英寸) Maximum overhung moment (lb-in)
				静态 <u>Static</u>	连续 <u>Continuous</u>	过载(2) <u>Overload</u>		
交流发电机(D1) Alternator (D1)	AS468B- AV1Mod(1)	0.4418	CCW	1700	218	327	40	200
交流发电机(D2) Alternator (D2)	AS468B- AV1 Mod(1)	0.3666	CCW	1700	263	394	40	200
启动机(D3) Starter (D3)	AS468B- AV1 Mod(1)	0.5868	CCW	3900	1764(5)	2712(5)	25	150
液压泵(D4) Hydraulic Pump(D4)	AS961B-1 Mod(1)	0.3028	CCW	600	210	315	10	30
选装液压泵(D5) Optional Hyd. Pump(D5)	AS961B-1 Mod(1)	0.3666	CCW	1700	263	394	40	200

注/Notes:

(1)参考安装图中的设备安装定义以获取详细信息。

Refer to the application pad definition on the Installation Drawing for detailed information.

(2)每 4 小时间隔 5 分钟。

5 minutes per each 4 hour period.

(3)附件齿轮箱由高压轴驱动。

The accessory gearbox is driven from the High Pressure spool.

(4)发动机安装手册列出了交流发电机和液压泵最大同时马力提取。

The engine Installation Manual lists the maximum combined simultaneous horsepower extraction for the alternator

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and hydraulic pump drives.

(5)限于启动

Limited to starts.

注 5/Note5. 发动机额定值基于下述条件下的校准试验标准性能:

Engine ratings are based on calibrated test stand performance under the following conditions:

59 °F, 29.92 英寸水银柱静态标准海平面。

Static sea level standard conditions of 59°F and 29.92 inches Hg.

无飞机附件负载或空气提取。

No aircraft accessory loads or air extraction.

无防冰,无进气畸变,无进气格栅损失和 100%冲压恢复。

No anti-icing; no inlet distortion; no inlet screen losses; and 100% ram recovery.

进气和排气系统的定义在发动机安装手册 IM-750 中。

Inlet and exhaust system as defined in the engine Installation Manual IM-7550.

燃油平均热值应低于 18,400BTU/磅,使用特定润滑油。

Specified fuel having an average lower heating value of 18,400 BTU/lb; specified lube oil.

注 6/Note6. 最大压气机引气量:

Maximum Compressor Bleed Air Extraction:

	核心气流量百分比/ Percent of Core Airflow
低压引气/Low Pressure Bleed	8.0
高压引气/High Pressure Bleed	5.5
低压和高压总引气/Total LP and HP Bleed	12.0

注 7/Note7. 按照经批准的数据和程序安装和运行,则该发动机满足在FAR25附录C中定义的结冰条件包线内运行的要求。

These engine models meet FAA requirements for operation in icing conditions within the envelope defined in FAR 25, Appendix C when installed and operated in accordance with approved data and instructions.

注 8/Note8. 最大允许进气畸变定义在发动机安装手册IM-7550中。

The maximum permissible inlet distortion is defined in the Engine Installation Manual IM-7550.

注 9/Note9. 经批准的发动机一般维护手册,报告编号72-06-03,适航限制章节中给出了关键转动部件的寿命限制。

Life limits, established for critical rotating components, are published in the approved engine Light Maintenance Manual, Report Number 72-06-03, Airworthiness Limitations Section.

注 10/Note10. 经批准的发动机一般维护手册,报告编号72-06-03,适航限制章节中给出了推荐的发动机检查间隔。

Recommended engine inspection intervals are published in the approved engine Light Maintenance Manual, Report Number 72-06-03.

注 11/Note11. 发动机运转时,必须观察发动机安装手册IM-750中确定的部件和附件的运转温度限制。
The operating temperature limits for specified components and accessories defined in the Engine Installation Manual IM-7550 must be observed when operating the installed engine.

注 12/Note12. 海平面静态最小额定推力随环境温度的线形变化如下,但是平台功率的环境温度在 59°F (15°C) 以下:
Sea level static minimum rated thrust varies linearly between ambient temperature points shown below, but is flat rated below 59°F (15°C).

	SLS/59°F (15°C)	SLS/86°F (30°C)	SLS/100°F (37°C)
最大起飞 Maximum Takeoff	5888	5918	5937
正常起飞 Normal Takeoff	5888	5918	5454
最大连续 Maximum Continuous	5613	5613	不适用/NA

注 13/Note13. 该型号发动机满足 1990 年 9 月 10 日生效的 FAR 34 部要求。
The engine model meets the requirements of FAR Part 34, original effective September 10, 1990.

注 14/Note14. 发动机重量包括所有发动机设备清单中定义的基本发动机所含部件的重量。基本发动机重量不包含发动机上安装的随FAR 25部审定的部件和选装设备的重量。
The engine weight includes all components of the basic engine as defined by the approved engine equipment list. Components that are certified as part of the aircraft under FAR Part 25 and other optional equipment which are mounted on the engine are not included in the basic engine weight.

注 15/Note15. 发动机安装手册IM-750和操作手册IM-8007中包含了FAA批准的发动机数据。
Engine Installation Manual IM-7550 and Operating Instructions IM-8007 contain additional FAA approved engine data.

注 16/Note16. CFE738-1-1B 发动机制定了正常起飞涡轮间温度(T4.5)限制以确保在正常起飞额定值下全降级发动机能在不超过最大起飞T4.5限制下达到最大起飞(APR)额定推力
The CFE738-1-1B engine normal takeoff inter turbine temperature (T4.5) limit has been established to assure that a fully degraded engine at the normal takeoff rating will achieve the maximum takeoff (APR) rated thrust without exceeding the maximum takeoff T4.5 limit.

注 17/Note17. 在正常起飞额定值的时间限制为五分钟,它包括在正常起飞额定值条件下所有累积时间
The time limit at the normal takeoff rating is five minutes and shall include any time accumulated above the normal takeoff rating.

注 18/Note18. 按型号合格证持有人的要求,本数据单对应型号合格证去除了CFE738-1型发动机,不存在CFE738-1这个型号。
The CFE738-1 engine model was removed from Type Certificate E44NE at the request

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of the type certificate holder. No CFE738-1 engine models are in existence.

注 19/Note19. CFE 报告No.CFE1229(33)-3确定了发动机控制系统的派遣和维护要求,其定义了不同构型和最大使用间隔。

Criteria pertaining to the dispatch and maintenance requirements for engine control systems are specified in CFE Report No. CFE1229 (33)-3, which defines the various configurations and maximum operating intervals.

结束
END