

中国民用航空局
CIVIL AVIATION ADMINISTRATION OF CHINA

型号认可证数据单
THE VALIDATION DATA SHEET

编号/No.: VTC0200E

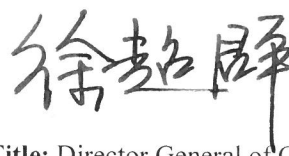
版次/Revision: 1

型号/Type:

ARRIUS 2F

ARRIUS 2R

批准人/Approved by: Xu Chaoqun



职务/Title: Director General of CAAC-AAD

日期/Date: 2018年3月30日

本数据单是型号认可证（编号：VTC0200E）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: VTC0200E), 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:

Safran Helicopter Engines
64510 Bordes
France

有效页清单/List of effective pages:

页数/Pages	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
版次/Revision	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

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	VTC0200E, 版次1, 2018年3月30日 No. VTC0190E, Revision 1, 30 March 2018	EASA.E.031, 第3版, 2016年10月24日颁发 EASA.E.031, Issue 03, 24 October 2016
历史 History	VTC0200E, 版次0, 2007年12月13日 No. VTC0200E, Revision 1, 13 December 2007	DGAC M22, 1997年1月22日颁发 DGAC M22, 22 January 1997

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:

欧洲航空安全局/EASA

4. 型号合格证持有人/Type Certificate Holder:

Safran Helicopter Engines
64510 Bordes
France

5. 双发延程飞行/ETOPS:

不适用/NA

6. CAAC专用要求/CAAC Special Requirements:

满足中国3号燃油 (GB6537-2006) 的要求
Compliance with requirement of P. R. China JET
Fuel No.3 (GB6537-2006)

第2部分 数据单

Section 2 DATA SHEET

I. 总则/General

1. 型号/型别/Type/Model/Variants

型别/Model	安装/Installation
ARRIUS 2F	单发直升机 Single-engine helicopters
ARRIUS 2R	

2. 型号合格证持有人/Type Certificate Holder

TURBOMECA
64511 Bordes Cedex
France
设计机构批准/DOA ref: EASA.21J.070

3. 制造商/Manufacturer

TURBOMECA
64511 Bordes Cedex
France

4. 申请日期/Date of Application

型别/Model	申请日期/Application Date
ARRIUS 2F	1994 年 11 月 29 日/29 November 1994
ARRIUS 2R	2013 年 04 月 04 日/04 April 2013

5. EASA 型号合格审定日期/EASA Type Certification Date

型别/Model	EASA 型号合格审定日期/EASA Type Certification Date	注/Note
ARRIUS 2F	1997 年 01 月 22 日/22 January 1997	(1)
ARRIUS 2R	2015 年 12 月 15 日/15 December 2015	

注(1): EASA 根据欧盟委员会规章(EU) 748/2012 第 3 款段 1(a)的授权, 在法国民航局 (DGAC) 对这些产品合格审定 (法国型号合格证编号 M19) 的基础上, 对上述型号进行的型号合格审定。

Note (1): EASA type certification for this model is granted in accordance with article 3 paragraph 1(a) of EU Commission Regulation (EU) 748/2012 based on the DGAC France certification of this product (French Type Certificate N° M22) which is hereby replaced.

II. 审定基础/Certification Basis

1. 确定适用适航要求的参照日期

Reference Date for Determining the Applicable Airworthiness Requirements

型别/Model	参照日期/Reference Date
ARRIUS 2F	1994 年 11 月 29 日/29 November 1994
ARRIUS 2R	2013 年 04 月 04 日/04 April 2013

2. 设计国 (EASA) 的审定基础/State of Design Authority (EASA) Certification Basis

2.1 适航标准/Airworthiness Standards

型别/Model	适航标准/Airworthiness Standards
ARRIUS 2F	JAR-E 第 9 次更改, 1994 年 10 月 21 日, 除了被 NPA-E-17 (1996 年 8 月 8 日黄页 E/96/1) 删除的第 4 节 JAR-E Change 9 dated 21st October 1994, except Section 4 which is deleted by NPA-E-17 (Orange Paper E/96/1 dated 08 August 1996)
ARRIUS 2R	CS-E 第 3 修正案, 2010 年 12 月 23 日, 除了: CS-E Amendment 3, dated 23rd December 2010, except: - CS-E 515, 离心压气机叶轮、动力涡轮盘、动力涡轮轴, 应用 JAR-E515 第 9 次更改, 由黄页 E/96/1 修订; CS-E 515, for the Centrifugal Compressor Impeller, the Power Turbine Disc, the Power Turbine Shaft where JAR-E515 Change 9, amended by Orange Paper E/96/1 is applied; - CS-E 650, JAR-E 第 9 次更改, 1994 年 10 月 21 日应用于整个发动机; CS-E 650 where JAR-E Change 9, dated 21st October 1994 for the whole engine is applied; - CS-E 850, JAR-E 第 9 次更改, 1994 年 10 月 21 日应用于整个发动机。 CS-E 850 where JAR-E Change 9, dated 21st October 1994 for the whole engine is applied.

2.2 专用条件/Special Conditions (SC)

型别/Model	专用条件/Special Conditions
ARRIUS 2F	无/None
ARRIUS 2R	无/None

2.3. 等效安全/Equivalent Safety Findings

型别/Model	等效安全/Equivalent Safety Findings
ARRIUS 2F	JAR-E840 – 压气机和涡轮转子完整性试验/Compressor and Turbine Rotor Integrity Tests
ARRIUS 2R	无/None

2.4. 偏离/Deviations

型别/Model	偏离/Deviations
ARRIUS 2F	JAR-E570 – 压气机和涡轮转子完整性试验/Compressor and Turbine Rotor Integrity Tests
ARRIUS 2R	无/None

2.5. 环境保护/Environmental Protection

型别/Model	环境保护/Environmental Protection
ARRIUS 2F	排放要求, ICAO 附件 16 卷 II, 第 II 部分, 修订版 2 (1993 年版本) Emissions requirement of ICAO Annex 16, Volume II, Part II, issue 2 (Edition 1993)
ARRIUS 2R	CS-34 第 1 修正案, 2013 年 1 月 29 日, 根据 CS-E1010, 燃油通气 CS-34 Amendment 1, dated 29th January 2013 in accordance with CS-E1010 Fuel Venting 环保要求, ICAO 附件 16 卷 II, 第 II 部分, 第 2 章, 第 7 修正案, 2011 年 11 月 17 日生效 Environmental protection requirements of ICAO Annex 16, Volume II, Part II, Chapter 2 Amendment 7 effective 17th November 2011

III. 技术特性/Technical Characteristics

1. 型号设计定义/Type Design Definition

型别/Model	件号/Part Number
ARRIUS 2F	P/N 0 319 00 800 0
ARRIUS 2R	P/N R 319 00 900 0

2. 描述/Description

2.1. ARRIUS 2F

ARRIUS 2F 发动机是用于单发直升机的涡轴发动机。该发动机包括环形进气道、单级涡轮驱动的 1 级离心压气机、环形回流式燃烧室和通过前部减速齿轮箱驱动的单级自由动力涡轮。减速齿轮单元还包括了燃气发生器驱动的附件齿轮箱和滑油箱。液压机械式燃油控制系统。

The **ARRIUS 2F** engine is a turboshaft engine intended for powering single-engine helicopters. The engine consists of an annular air intake, a centrifugal compressor driven by a single stage turbine, an annular reverse flow combustion chamber, and a single stage free power turbine with through shaft driving a reduction gearbox located at the front. The reduction gear unit also includes the accessory gearbox driven by the gas generator and an oil tank. The fuel control system is Hydro Mechanical.

2.2. ARRIUS 2R

ARRIUS 2R 发动机是用于单发直升机的涡轴发动机。该发动机包括环形进气道、单级涡轮驱动的 1 级离心压气机、环形回流式燃烧室和通过前部减速齿轮箱驱动的单级自由涡轮。减速齿轮单元还包括了燃气发生器驱动的附件齿轮箱。主发电机控制系统由双通道数字式发动机控制组件（ECU），双通道电子作动器和燃油计量活门组成。备用的发动机控制系统由辅助计量活门、辅助电子作动器和相同的 ECU 组成。

The **ARRIUS 2R** is a turboshaft engine intended for powering single-engine helicopters. It consists of an annular air intake, a single stage centrifugal compressor driven by a single stage gas generator turbine, an annular reverse flow combustion chamber, a single stage free turbine with a through shaft driving a reduction gearbox located at the front. The reduction gear unit also includes the accessory gearbox driven by the gas generator. Primary Engine Control System consists of a dual-channel digital Engine Control Unit (ECU), a dual-channel electric actuator and a fuel metering valve. There is also a Back-up Engine Control System consisting of an auxiliary metering valve, an auxiliary electric actuator and the same ECU.

3. 设备/Equipment

3.1. ARRIUS 2F

发动机的设备在适用的型号设计定义中规定。

Engine equipment is specified by the applicable Type Design Definition.

起动发电机由航空器制造商提供。

Starter-generator has to be supplied by the aircraft manufacturer.

3.2. ARRIUS 2R

发动机的设备在适用的型号设计定义中规定。

Engine equipment is specified by the applicable Type Design Definition.

起动发电机和航空器飞轮组件由航空器制造商提供。

Starter-generator and aircraft free wheel unit have to be supplied by the aircraft manufacturer.

4. 尺寸/Dimensions

型别/Model	总长/Overall Length (m)	总高/Overall Height (m)	总宽/Overall Width (m)
ARRIUS 2F	1.168	0.674	0.488
ARRIUS 2R	0.934	0.676	0.553

5. 干重/Dry Weight

型别/Model	干重/Dry Weight (kg)
ARRIUS 2F	104
ARRIUS 2R	119.9

6. 额定值/Ratings

额定值- 功率(千瓦) Ratings – Power (kW)	最大持续 时间 Maximum duration	ARRIUS 2F				ARRIUS 2R	
		不带/without Tf39 (*)		带有/with Tf39 (*)			
		带扭矩和燃油流量限制 With torque and fuel flow limitations	不带扭矩和燃油流量限制 Without torque and fuel flow limitations	带扭矩和燃油流量限制 With torque and fuel flow limitations	不带扭矩和燃油流量限制 Without torque and fuel flow limitations	带扭矩和燃油流量限制 With torque and fuel flow limitations	不带扭矩和燃油流量限制 Without torque and fuel flow limitations
起飞 Take-Off	5 分钟 5minutes	322	376	376	376	352	377
最大连续 Maximum Continuous	无限制 unlimited	322	335	335	335	323	343

ARRIUS 2F:

上述规定的性能参数值是相应于以下条件定义的最小值:

The performance values specified above correspond to minimum values defined under the following conditions:

- 海平面国际标准大气, 试车台上/ISA conditions at sea level, on test bed

- 发动机配备试车台空气流量测量进气室和试车台排气喷射管

Engine equipped with a test bed air flow measurement intake plenum and a test bed exhaust jet pipe

- 没有引气/No air bleed
- 除发动机运转必要的以外没有任何附件提取功率
No power drawn by any accessories other than those required for engine operation
- 功率输出转速/Power off-take speed = 6 000 rpm constant
- 常用燃油热值/Usual Fuel Heating Value = 43 136 kJ/kg
- 替代燃油热值/Alternative Fuel Heating Value = 43 500 kJ/kg
- * 见 VI 节注 4/See note 4 paragraph VI.

ARRIUS 2R:

上述规定的性能参数值是相应于以下条件定义的最小值:

The performance values specified above correspond to minimum values defined under the following conditions:

- 发动机进口平面 1 处既没有压力降低也没有加热和涡流（基准平面定义见安装/使用手册 §2.2 节
Neither pressure drop nor heating, nor swirl, at engine inlet plane 1 (see Installation / Operating Manual §2.2 for reference plane definition)
- 性能计算使用的大气湿度：湿度混合比=0.0069（海平面 15°C 时为 65%）
Atmospheric humidity used for performance calculation: Humidity Mixing Ratio = 0.0069 (65% at sea level 15°C)
- 发动机配备试车台空气流量测量进气室和试车台排气喷射管
Engine equipped with a test bed air flow measurement intake plenum and a test bed exhaust jet pipe
- 试验台排气管平面 7 的下游没有背压/No back pressure downstream of the test bed exhaust pipe plane 7
- 没有引气/No air bleed
- 没有电功率提取/No electrical power off-take
- 除发动机运转必要的以外没有任何附件提取功率
No power drawn by any accessories other than those required for engine operation
- 输出轴转速 Output shaft rotation speed 100% = 5 610 rpm constant
- 燃油热值/Fuel Heating Value = 43 136 kJ/kg
- 没有燃油流量限制/No fuel flow limit

7. 控制系统/Control System

型别/Model	控制系统/Control System
ARRIUS 2F	液压机械，带有手动备用模式 Hydro Mechanic with manual backup mode
ARRIUS 2R	带有辅助燃油计量备用控制的双通道电子发动机控制系统 Dual-channel electronic engine control system with auxiliary fuel metering back-up control

8. 液体（燃油、滑油、冷却剂、添加剂）/Fluids (Fuel, Oil, Coolant, Additives)

参见适用的安装使用手册/Refer to applicable Installation / Operating Manual.

9. 航空器附件传动装置/Aircraft Accessory Drives

型号/Model	转向 Rotation direction	起动机-发电机输出/Starter-generator Output				
		转速 Rotation speed (rpm)	过载最大扭矩 Maximum torque in overload (N.m)	最大静悬臂力矩 Maximum static overhang (N.m)	保险轴断裂扭矩 Fuse shaft breakaway torque (N.m)	最大连续机械功率 Maximum Continuous Mechanical Power (kW)
ARRIUS 2F	CW	12 334	25	25	77	5.7
ARRIUS 2R	CW	12 334	25	25	95	6.9

100% N1 转速时/At 100% N1

更多详细信息见安装手册/For further details, see Installation Manual

附加说明/Additional note:

发动机转子的转向是从发电机后部看过去的旋转方向。

The rotation direction of the engine rotors is indicated with respect to viewing the engine from its rear end.

10. 最大允许引气/Maximum Permissible Air Bleed Extraction

起飞, 地面国际标准大气条件下/At Take-off, at ISA conditions on ground:

型号/Model	最大允许引气/Maximum Permissible Air Bleed Extraction	
ARRIUS 2F	使用两个引气活门/Two ports used	
	一个活门最大气流 On one port maximum air flow	70 g/s
	另外一个活门最大气流 On the other port maximum air flow	40 g/s 带/with Tf39 (*)
	最大总引气流量 Maximum total bleed air flow	70 g/s 不带/without Tf39 (*) 110 g/s 带/with Tf39 (*)
ARRIUS 2R	使用两个引气活门/Two ports used	
	一个活门最大气流 On one port maximum air flow	70 g/s
	最大总引气流量 Maximum total bleed air flow	80 g/s 两个活门引气 80 g/s on the two ports

(*): 见 VI 节注 4/see note 4 paragraph VI

IV. 使用限制/Operating Limitations

1. 温度限值/Temperature Limits

1.1. 燃气发生器排气温度 (T45) 限值/Gas Generator Exhaust Temperature (T45) Limits

起动时 T45/T45 on start-up (°C)	ARRIUS 2F	ARRIUS 2R
无限制时间/For an unlimited duration	800	800
最大超温/Maximum overtemperature (< 10 sec)	870	870

飞行中 T45/T45 in-flight (°C)	ARRIUS 2F	ARRIUS 2R
起飞/Take-off	870	865
最大连续/Maximum continuous	830	829
最大无意超温/Maximum inadvertent overtemperature	900 (< 5 sec)	882 (< 20 sec)

1.2. 燃油温度/Fuel Temperature

最大温度/Maximum temperature: 参见安装手册 6.1.1.1 章/see Installation Manual Chapter 6.1.1.1

发动机起动最低温度/Minimum temperature for engine starting:
参见安装手册 6.1.1.1 章/see Installation Manual Chapter 6.1.1.1

正常和限制使用燃油的定义参见安装手册 6.1.1.1 章
For definition of normal and restricted use fuels, see Installation Manual Chapter 6.1.1.1

使用防冰添加剂的燃油温度/Use of anti-icing additive for fuel temperature:
< -15°C for ARRIUS 2F
< -20°C for ARRIUS 2R

1.3 滑油温度/Oil temperature

发动机起动最小滑油温度/Minimum oil temperature for engine starting:

ARRIUS 2F/For ARRIUS 2F

对于粘度为 5 mm²/s 和 3,9 mm²/s 的滑油/For 5 mm²/s and 3,9 mm²/s oil: -30°C
对于粘度为 3 mm²/s 的滑油/For 3 mm²/s oil: -50°C

ARRIUS 2R/For ARRIUS 2R

对于粘度为 5 mm²/s 和 4 mm²/s 的滑油/For 5 mm²/s and 4 mm²/s oil: -30°C
对于粘度为 3 mm²/s 的滑油/For 3 mm²/s oil: -50°C

基于功率使用动粘度的最低滑油温度:

Minimum oil temperature depending on kinematic viscosity for power application:

ARRIUS 2F/For ARRIUS 2F

对于粘度为 5 mm²/s 和 3,9 mm²/s 的滑油/For 5 mm²/s and 3,9 mm²/s oil:

+10°C 瞬态/in transient condition

+50°C 连续运行/in continuous operation

对于粘度为 3 mm²/s 的滑油/For 3 mm²/s oil:

+0°C 瞬态/in transient condition

+50°C 连续运行/in continuous operation

ARRIUS 2R/For ARRIUS 2R

对于粘度为 5 mm²/s 和 4 mm²/s 的滑油/For 5 mm²/s and 4 mm²/s oil:

+10°C 瞬态/in transient condition

+50°C 连续运行/in continuous operation

对于粘度为 3 mm²/s 的滑油/For 3 mm²/s oil:

+0°C 瞬态/in transient condition

+50°C 连续运行/in continuous operation

2. 速度限值/Speed Limits

2.1. 燃气发生器转速/Gas Generator Speed (N1)

100% N1 = 54 117 rpm

最小稳定 N1 转速/Minimum stabilised N1 speed	ARRIUS 2F	ARRIUS 2R
最小稳定 N1 转速/Minimum stabilised N1 speed	63% (34 094 rpm)	

最大稳定 N1 转速/Maximum stabilised N1 speed	ARRIUS 2F	ARRIUS 2R
起飞/Take-off	101.2% (54 768 rpm)	101.4% (54 872 rpm)
最大连续/Maximum continuous	99.7% (53 956 rpm)	99.9% (54 066 rpm)

瞬态转速/Transient speeds	ARRIUS 2F	ARRIUS 2R
最大无意超速 Maximum inadvertent overspeed (< 20 sec)	103.6% (56 065 rpm)	

2.2. 动力涡轮转速/Power Turbine Speed (N2)

ARRIUS 2F 100% N2 = 44 009 rpm for ARRIUS 2F

ARRIUS 2R 100% N2 = 42 014 rpm for ARRIUS 2R

飞行模式最大 N2 转速	ARRIUS 2F	ARRIUS 2R
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Maximum N2 speed Flight mode		
连续/Continuous	104% (45 770 rpm)	105% (44 114 rpm)
最大无意瞬态超速 Maximum inadvertent transient overspeed (< 20 sec)	110% (48 410 rpm)	112% (47 055 rpm)

飞行模式最小 N2 转速 Minimum N2 speed Flight mode	ARRIUS 2F	ARRIUS 2R
连续/Continuous	92% (40 488 rpm)	94% (39 493 rpm)
最大无意瞬态超速 Maximum inadvertent transient overspeed (< 20 sec)	90% (39 608 rpm)	92% (38 653 rpm)

3. 推力/扭矩限值/Thrust / Torque Limits

最大扭矩/Maximum torque (N.m)	ARRIUS 2F	ARRIUS 2R
起飞/Take-off	650	600
最大连续/Maximum Continuous	600	550
最大无意超扭/Maximum inadvertent overtorque	752 (< 20 s)	660 (< 5 s)

4. 压力限值/Pressure Limits

4.1. 燃油压力/Fuel Pressure

参见适用安装/使用手册的 6.1.1.1 章/Refer to applicable Installation / Operating Manual Chapter 6.1.1.1.

对于 ARRIUS 2R/For ARRIUS 2R:

- 起动或在 2000 米高度以上重新点火时，起动泵是必需的。保持相对压力等于或高于 25 kPa。
Within starting or relight phase and above 2000m altitude, a prime pump is necessary. This shall maintain a relative pressure equal to or greater than 25 kPa.
- 燃油系统最大进口压力为 110 kPa，相对于大气压力。
The maximum fuel system inlet pressure is 110 kPa relative to atmospheric pressure.

4.2. 滑油压力/Oil Pressure

滑油压力（压差）/Oil Pressure (differential)	ARRIUS 2F	ARRIUS 2R
最小/Minimum (kPa)	170	* 见安装手册/See Installation Manual

最大/Maximum (kPa)	1500	1500
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* ARRIUS 2R 的最小滑油压力是 N1 的函数。参见安装手册。

The Minimum Oil Pressure for the ARRIUS 2R is a function of N1. Refer to the Installation Manual.

5. 滑油容量, 消耗限值/Oil Capacity, Consumption Limit

	ARRIUS 2F	ARRIUS 2R
最大滑油箱容积/Maximum oil tank volume (l)	4.9	参见 VI 节注 5 see note 5 paragraph VI
最小滑油箱容积/Minimum oil tank volume (l)	3	
消耗限值/Consumption limit (l/h)	0.3	0.3

参见安装使用手册/Refer to Installation / Operational Manual

6. 安装假设/Installation Assumptions

参见安装使用手册/Refer to Installation / Operational Manual

7. 限时签派/Time Limited Dispatch

发动机没有被批准限时签派（对于 ARRIUS 2R，根据 CS-E1030）。

The engines have not been approved for Time Limited Dispatch (in accordance with CS-E1030 for ARRIUS 2R).

V. 操作和服务指令/Operating and Service Instructions

手册/Manuals

文件/Documents	ARRIUS 2F	ARRIUS 2R
安装使用手册 Installation and Operating Manual (1)	X 319 L6 001 2	X 319 R5 003 2

性能手册/Performance Brochure	没有/Without Tf39 (2) 常用燃油/Usual fuels: X 319 L6 002 9 替代燃油/Alternative fuels: X 319 L6 004 2 带有/With Tf39 (2) 常用燃油/Usual fuels: X 319 L6 005 9 替代燃油 Alternative fuels: X 319 L6 006 9	X 319 R5 001 2
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持续适航文件/Instructions for Continued Airworthiness (ICA)

文件/Documents	ARRIUS 2F	ARRIUS 2R
维修手册/Maintenance Manual	X 319 L6 301 2	X 319 R5 460 2
修理手册/Repair Manual	X 319 L6 500 2	X 319 R5 500 2
服务信函和服务通告/Service Letters and Service Bulletins	由 Safran Helicopter Engines 发布 As published by Safran Helicopter Engines	

注/Note (1) 操作指令在安装手册中给出/Operating Instructions are provided in Installation Manual.

注/Note (2) 参见 VI 节注 4/see note 4 paragraph VI.

VI. 注释/Notes

1. ARRIUS 2F 发动机仅被批准安装到能够防止外来物 (JAR-E790 (c) 和 JAR-E800 定义) 进入发动机进气道的旋翼机上。

The ARRIUS 2F is approved to be fitted to rotorcraft only where the installation precludes ingestion of foreign objects (as defined in JAR-E790 (c) and JAR-E800) from entering the engine inlet.

2. ARRIUS 2F (没有航空器进气道) 满足在 JAR29 的附件 C 定义的包线内的结冰条件下运行的要求。

The ARRIUS 2F (without the aircraft air inlet) meet the JAR requirement for operation in icing conditions within the envelope defined in JAR29 Appendix C.

3. EASA 批准的持续适航文件中的适航限制章节发布在适用的“发动机维修手册，第 5 章，适航限制”。

The EASA approved Airworthiness Limitations Section of the Instructions of Airworthiness is published in the applicable “Engine Maintenance Manual, Chapter 5, “Airworthiness Limitations”.

4. Tf39 是非重大的设计大改，目的是调整燃油控制组件的最大流量，以避免使用 JP4 燃油时的扭矩限制。Tf39 改装的结果是最大空气提取可以增加至 110 g/s 流速 (地面标准条件下的起飞功率)

Tf39 is a major non-significant modification. The purpose of this modification is to adjust the Fuel Control Unit maximum flow in order to avoid torque limitations when operating with JP4 fuel. A consequence is that the

maximum air flow extracted can be increased up to flow rate of 110 g/s (at Take-off power rating under standard ground conditions) when Tf39 is embodied.

5. 对于 ARRIUS 2R, 滑油箱不是型号设计的一部分, 由航空器厂商提供, 考虑安装手册 (第 11、12 章) 描述的滑油箱安装条件。

For ARRIUS 2R, the oil tank is not part of the type design, it shall be supplied by aircraft manufacturer taking into account the conditions for installation of the oil tank as described in the Installation Manual (Chapter 11 and 12).

6. ARRIUS 2R 发动机仅被批准安装到能够防止雹和鸟 (JAR-E790 (a)(d)和 JAR-E800 定义) 进入发动机进气道的旋翼机上。

The ARRIUS 2R is approved to be fitted to rotorcraft only where the installation precludes ingestion of hailstone and birds (as defined in CS-E 790 (a)(d) and CS-E 800) from entering the engine inlet.

-结束-

-END-