

型号认可证数据单
THE VALIDATION DATA SHEET

编号/No.: VTC0228P

版次/Revision: 1

型号/Type:

MTV-21-A

MTV-21-D

MTV-21-F

批准人/Approved by:



职务/Title: Director General of CAAC-AAD

日期/Date: 2022 年 1 月 10 日

本数据单是型号认可证（编号：VTC0228P）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: VTC0228P), 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:

MT-Propeller Entwicklung GmbH
Flugplatzstraße 1
94348 Atting
Germany

设计机构批准号: EASA.21J.020

Design Organisation Approval No. EASA.21J.020

第 1 部分 概述

SECTION 1 GENERAL

1. 型号认可证数据单版次信息以及修订记录/ Revision and Change Record of the Validation of Type Certificate Data Sheet

数据单版次信息/Revision of the Data Sheet

	型号认可证数据单编号、版次和颁发日期 Validation of Type Certificate Data Sheet Number, Revision and issuance date	型号合格证数据单编号、版次和颁发日期 Type Certificate Data Sheet Number, Revision and issuance date
当前 Current	VTC0228P, 版次 1, 2022 年 1 月 10 日 VTC0228P, Revision 1, 10 January 2022	EASA TCDS No. P.101, Issue: 01, 31 Jan 2019
历史 History	VTC0228P, 版次 0, 2009 年 7 月 27 日 VTC0228P, Revision 0, 27 July 2009	LBA TCDS No.32.130/86, Issue: 5, 17 June 2004

注：上表中出口国局方型号合格证数据单信息仅供参考

Note: Above TCDS information of Certification Authority is only for reference

数据单修订记录/ Change Record of the VTCDS

版次/ Revision	相对上一版的修订记录 Change Record	备注 Remark
版次 1/Rev 1	1、修订了功率值 Amendment of Power Rating 起飞功率和最大连续功率：104 kW/140 HP -Max. take off and continuous Power: 104 kW/140 HP 起飞和最大连续螺旋桨转速：2279 rpm -Max. take off continuous Propeller Speed. 2279 rpm 最大直径：145 to 203 cm -Max. Diameter: 145 to 203 cm 2、额外桨叶类型：-64, -69, -80, -81, -90, -123, -140 Additional Blade Types: -64, -69, -80, -81, -90, -123, -140 3、额外桨叶类型：-122（在 2009 年发行的原版中国 TCDS 中，没有包含此型号的内容） Additional blade to be added: -122 (as same was missed to be included in original Chinese TCDS which was issued 2009)	

2. 认可当局/Validation Authority:

中国民用航空局/CAAC

审定当局/Certifying Authority:

欧盟航空安全局/EASA

3. 型号合格证持有人/Type Certificate Holder:

MT-Propeller Entwicklung GmbH

Flugplatzstraße 1

94348 Atting Germany

4. 生产制造商/Manufacturer

MT-Propeller Entwicklung GmbH

Flugplatzstraße 1

94348 Atting Germany

5. 双发延程飞行/ETOPS:

不适用/N/A

6. CAAC 专用要求/Special Requirements::

无/NONE

第 2 部分 数据 (型别: MTV-21-A, MTV-21-D, MTV-21-F)

SECTION 2 DATA (Models: MTV-21-A, MTV-21-D, MTV-21-F)

1. 产品型别和批准日期/Model and Approval Date

产品型别 Model	申请日期 Application Data	批准日期 Approval Date	类别 category
MTV-21-A	1988年02月23日/23 Feb 1988	1993年6月10日/10 June 1993	螺旋桨Propeller
MTV-21-D	1988年02月23日/23 Feb 1988	1993年6月10日/10 June 1993	螺旋桨Propeller
MTV-21-F	1988年02月23日/23 Feb 1988	1993年6月10日/10 June 1993	螺旋桨Propeller

2. 认可审定基础和生产依据/ Certification Basis and Production Basis

型别/model	审定基础和生产依据/ Certification Basis and Production Basis	
MTV-21-A MTV-21-D MTV-21-F	适航标准/Airworthiness standard	14 CFR 第 35 部, 35-1 至 35-7 修正案, 生效于 1995 年 12 月 28 日; 14 CFR Part 35, as amended by 35-1 through 35-7, effective 28 December 1995.
	专用条件/ Special Conditions	无/None
	等效安全/ ELOS	无/None
	豁免/ Exemption	无/None
	环保要求/Environmental Standards including Noise	不适用/Not applicable
	附件技术条件 /Additional Technical Requirement	无/None
	生产依据/Production Basis	无/None

3. 技术特性和使用限制/Technical Characteristics and Operational Limitations

3.1 型号设计定义/Type Design definition

MTV-21 螺旋桨型号由主装配图和相关零件清单定义:

The MTV-12 propeller model is defined by a main assembly drawing and associated parts list:

设计构型 Design Configuration	图纸编号 Assembly Drawing	零件清单 Parts List
MTV-21-(*) 恒定速度 Constant Speed	P-300-(x)	S-048-(x)
MTV-21-D恒定速度 Constant Speed	P-649-(x)	S-112-(x)
MTV-21-A-MF恒定速度 + 机械顺桨	P-443-(x)	S-062-(x)

Constant Speed+ Mechanical Feather		
MTV-21-A-C-F 恒定速度 + 顺桨 Constant Speed + Feather	P-439-(x)	S-058-(x)
MTV-21-A-C-R(M) 恒定速度 + 反桨 Constant Speed + Reverse (System Mühlbauer)	P-667-(x)	S-117-(x)
MTV-21-(**)-C-()-R(M) 恒定速度 + 顺桨 + 反桨 Constant Speed + Feather + Reverse (System Mühlbauer)	P-701-(x)	S-121-(x)
(*) : 型号 Flange types: A, F (**): 型号 Flange types: A, D, F		
注释/Notes: 1. 有三种桨毂法兰可用: Three versions of hub flanges are available: -A = Motorglider engines bolt 7/16" – 20 UNF -D = ARP-502, Type 1 -F = SAE No. 1, bolts 3/8" – 24 UNF 2. 在图纸编号和零件清单中, 后缀 (x) 表明修订状态。 In the assembly drawing number and the part list number, the suffix (x) indicates the revision status.		

3.2 描述/Description

2 桨叶可变距螺旋桨采用液压控制桨距, 提供了“恒速”, “顺桨”和“反桨”的操作模式。MTV-21-A 型可以选配机械顺桨功能, 铝合金桨毂木质复合结构叶片, 叶片前缘设有防蚀装置, 可选装螺帽和防冰装置。

2-blade variable pitch propeller with a hydraulically operated blade pitch change mechanism providing the operation mode “Constant Speed”, “Feather” and “Reverse”. The MTV-21-A model can be optionally equipped with a mechanically operated feather mechanism. The hub is milled out of aluminium alloy. The blades have a wood composite structure. The leading edge of the blade is equipped with an erosion protection device. Optional equipment includes spinner and ice protection.

3.3 装备/Equipment

桨帽/Spinner: 参见 MT 螺旋桨 13 号服务通告/refer to MT-Propeller Service Bulletin No. 13 (见注释 5/ see note 5.)

螺旋桨控制器/Governor: 参见 MT 螺旋桨 14 号服务通告/ refer to MT-Propeller Service Bulletin No. 14 (见注释 5/ see note 5.)

防冰装置/Ice Protection: 参见 MT 螺旋桨 15 号服务通告/refer to MT-Propeller Service Bulletin No. 15 (见注释 5/ see note 5.)

3.4 几何尺寸/Dimensions

螺旋桨直径/Blade diameter: 145 cm to 203 cm

3.5 重量/Weight

依据螺旋桨设计构型/Depending on Propeller-Design Configuration

恒定转速：约 10kg/“Constant Speed”: approx. 10 kg

恒定转速，顺桨：约 12kg /“Constant Speed, Feather”: approx. 12 kg

恒定转速，反桨：约 12kg/“Constant Speed, Reverse”: approx. 12 kg

恒定转速，顺桨，反桨：约 13.5kg/“Constant Speed, Feather, Reverse”: approx. 13,5 kg

3.6 桨毂/桨叶组合/Hub / Blade Combinations

对于 3.1 章节列出的所有设计构型，以下木质桨叶适用：

For all design configurations listed under III.1 the following wooden blades are applicable:

-03, -04, -05, -06, -07, -08, -09, -12, -16, -23, -28, -31, -49, -51, -64, -69, -80, -81, -90, -106, -112, -122, -123, -125, -129, -140, -312

3.7 控制系统/Control System

螺旋桨控制器详见 MT 螺旋桨 14 号服务通告。

Propeller governors as listed in MT-Propeller Service Bulletin No. 14.

3.8 适配发动机/Adaptation to Engine

通过螺旋桨名称中的字母来标识桨毂法兰（见注释 5）。

Hub flanges as identified by a letter-code in the propeller designation (see note 5.)

3.9 旋转方向/Direction of Rotation

旋转方向（顺着飞行方向看），由螺旋桨名称中的字母代码标识（见注释 1 和 2）

Direction of rotation (viewed in flight direction) as identified by a letter-code in the propeller designation (see note 1 and 2.)

4. 使用限制/Operating Limitations**4.1 批准的安装/Approved Installations**

螺旋桨对特定飞机/发动机组合的适用性必须在飞机型号认证的范围内进行论证。

The suitability of a propeller for a given aircraft/engine combination must be demonstrated within the scope of the type certification of the aircraft.

最大起飞功率及转速/Maximum Take Off Power and Speed		
直径(cm) Diameter (cm)	最大起飞功率(kw) Max. Take-Off Power (kW)	最大起飞转速(rpm) Max. Take-Off Speed (rpm)
145 to 160	59	3400
145 to 160	64	3200
145 to 175	73.6	2750
145 to 180	85	2388
145 to 203	104	2279

最大连续功率及转速/Maximum Continuous Power and Speed		
直径(cm) Diameter (cm)	最大连续功率(kw) Max. Continuous Power(kW)	最大连续转速(rpm) Max. Continuous Speed (rpm)
145 to 160	68	3000
145 to 175	73.6	2750
145 to 180	73.5	2265
145 to 203	104	2279

4.2 螺旋桨桨距角/Propeller Pitch Angle

从-20°到+86°，在 75%半径点测量。

From -20° up to +86° measured at 75% radius station.

4.3 运行和服务说明/Operating and Service Instructions

手册/Manuals	文件编号/No
液压控制变桨距螺旋桨MTV-21-(), MTV-21-A-MF, MTV-21-A-C-F的运行和安装手册 Operation and Installation Manual for hydraulically controlled variable pitch propeller MTV-21-(), MTV-21-A-MF, MTV-21-A-C-F	编号: E-124 (*) No. E-124 (*)
液压控制变桨距可反桨螺旋桨的运行和安装手册; 反桨系统 (M) MTV-21-A-C-R(M), MTV-21-()-C-()-R(M) Operation and Installation Manual for reversible hydraulically controlled variable pitch propeller; Reverse-Systems (M) MTV-21-A-C-R(M), MTV-21-()-C-()-R(M)	编号: E-504 (*) No. E-504 (*)
持续适航说明/Instructions for Continued Airworthiness (ICA)	
液压控制变桨距螺旋桨MTV-21-(), MTV-21-A-MF, MTV-21-A-C-F的运行和安装手册 Operation and Installation Manual for hydraulically controlled variable pitch propeller MTV-21-(), MTV-21-A-MF, MTV-21-A-C-F	编号: E-124 (*) No. E-124 (*)
液压控制变桨距可反桨螺旋桨的运行和安装手册; 反桨系统 (M) MTV-21-A-C-R(M), MTV-21-()-C-()-R(M) Operation and Installation Manual for reversible hydraulically controlled variable pitch propeller; Reverse-Systems (M) MTV-21-A-C-R(M), MTV-21-()-C-()-R(M)	编号: E-504 (*) No. E-504 (*)
液压控制变桨距螺旋桨MTV-21-(), MTV-21-A-MF, MTV-21-A-C-F的大修手册和零件清单 Overhaul Manual and Parts List for hydraulically controlled variable pitch propeller MTV-21-(), MTV-21-A-MF, MTV-21-A-C-F	编号: E-220 (*) No. E-220 (*)
液压控制变桨距可反桨螺旋桨的大修手册及零件清单; 反桨系统 (M) MTV-21-A-C-R(M), MTV-21-()-C-()-R(M) Overhaul Manual and Parts List for reversible hydraulically controlled variable pitch propeller; Reverse-Systems (M) MTV-21-A-C-R(M), MTV-21-()-C-()-R(M)	编号: E-519 (*) No. E-519 (*)

(*)以及后续版本

(*) latest revision of

5. 注释/NOTE

注释 1/NOTE 1.

经 EASA 批准的关于持续适航说明中适航限制章节的内容发布于适用的《运行、安装和维护手册》文件中第 10.0 章“适航限制章节”内。该适航限制章节是空的，因为这些型号无需寿命限制。

The EASA approved Airworthiness Limitations Section of the Instructions for Continued Airworthiness is published in the applicable "Operation, Installation and Maintenance Manual" document, chapter 10.0 "Airworthiness Limitations Section". This ALS section is empty because no life limit is necessary for these models.

注释 2/NOTE 2.

该型螺旋桨的部分型别可包括一个起动桨距锁，其能够防止螺旋桨在低于给定螺旋桨转速的情况下顺桨。

Some models of this propeller can incorporate a start pitch lock which may prevent propeller feathering below a given propeller speed.

注释 3/NOTE 3.

制造商建议的大修间隔列在 MT 螺旋桨 1 号服务通告中。

The overhaul intervals recommended by the manufacturer are listed in MT-Propeller Service Bulletin No. 1.

注释 4/NOTE 4.

EASA 型号合格证及型号合格证数据单（编号 P.101）取代了 LBA 德国型号合格证及型号合格证数据单（编号 32.130/86）。

EASA Type Certificate and Type Certificate Data Sheet No. P.101 replace LBA-Germany Type Certificate and Type Certificate Data Sheet No. 32.130/86.

注释 5/NOTE 5.

螺旋桨命名/Propeller Designation

Hub									/	Blade						
MT	V	-	21	-	()	()	()	()	()	/	()	()	200	-	15	()
1	2	3	4	5	6	7	8	9	/	1	2	3	4	5		

桨毂/Hub

1. MT-Propeller 公司/MT-Propeller Entwicklung GmbH
2. 变桨距螺旋桨/Variable pitch propeller
3. 螺旋桨型号标识/Identification of propeller type
4. 法兰型号的字母代码/ Letter code for flange type:
 - A 表示电动滑翔机，7/16 英寸螺栓– 20 UNF
 - A = Motorglider engines bolt 7/16" – 20 UNF
 - D 表示 ARP-502，型号 1
 - D = ARP-502, Type 1

- F 表示 SAE 型号 1, 3/8 英寸螺栓– 24 UNF
 - F = SAE No. 1, bolts 3/8” – 24 UNF
5. 配重的字母代码/Letter code for counterweights:
- 空白表示无或小配重, 用于减小桨距
 - blank = no or small counterweights for pitch change forces to decrease pitch
 - C 表示用于变桨矩的配重, 用于增加桨距
 - C = counterweights for pitch change forces to increase pitch
6. 顺桨的字母代码/Letter code for feather provision
- 空白表示无顺桨位置的可能
 - blank = no feather position possible
 - F 表示允许顺桨位置 (液压)
 - F = feather position allowed (hydraulically)
 - MF 表示允许顺桨位置 (机械)
 - MF= feather position allowed (mechanically)
7. 反桨规定的字母代码/Letter code for reverse provision:
- 空白表示无反桨位置的可能
 - blank = no reverse position possible
 - R 表示允许反桨位置
 - R = reverse position allowed
8. 反桨系统的字母代码/Letter code for reversing system:
- M 表示 Mühlbauer 系统
 - M = System Mühlbauer
9. 桨毂设计变更的字母代码/letter code for hub design changes:
- 小写字母表示不影响可互换性的变更
 - small letter for changes which do not affect interchangeability
 - 大写字母表示影响可互换性的变更
 - capital letter for changes which affect interchangeability

桨叶/ Blade

1. 桨距变化销位置的字母代码/Letter code for position of pitch change pin:
- 空白表示当变距力为减小桨距的桨距变化销位置
 - blank=pin position for pitch change forces to decrease pitch
 - C 表示当变距力为增加桨距的桨距变化销位置
 - C=pin position for pitch change forces to increase pitch

- CF 表示允许顺桨的桨距变化销位置，变距力为增加桨距
- CF = pin position to allow feather; pitch change forces to increase pitch

- CR 表示允许反桨的桨距变化销位置，变距力为增加桨距
- CR = pin position to allow reverse; pitch change forces to increase pitch

- CFR 表示顺桨和反桨的桨距变化销位置，变距力为增加桨距
- CFR = pin position to feather and reverse; pitch change forces to increase pitch

2. 旋转和安装方向的字母代码

- Letter code for direction of rotation and installation:

空白表示右牵引器

- blank = right-hand tractor

- RD 表示右推进器

- RD = right-hand pusher

- L 表示左牵引器

- L = left-hand tractor

- LD 表示左推进器

- LD = left-hand pusher

3. 螺旋桨直径 (cm) / Propeller diameter in cm;

4. 桨叶设计的标识/ Identification of blade design;

5. 桨叶设计变更的字母代码/ Letter code for blade design changes:

小写字母表示不影响桨叶组可互换性的变更

- small letter for changes which do not affect interchangeability of blade set

大写字母表示影响桨叶组可互换性的变更

- capital letter for changes which affect interchangeability of blade set

注释 6/NOTE 6.

桨距控制。控制系统 Cotrol System:

Propeller governors as listed in MT-Propeller Service Bulletin No. 14.

螺旋桨调速器在 MT 螺旋桨 14 号服务通告中列出。

在 SB No.13、14 和 15 的设备清单中不包括批准的型号设计定义，任何供应商的相关螺旋桨设备都必须作为飞机安装的一部分被批准。

The equipment listed in SBs No.13, 14 and 15 is not included in the certified Type Design. Related propeller equipment must be approved as part of the aircraft installation regardless of manufacture.

----结束----

----END----