

型号认可证数据单
THE VALIDATION DATA SHEET

编号/No: VTC159P

版次/Revision: 0

型号/Type:

MTV-12-D

MTV-12-B

MTV-12-C

批准人/Approved By:



职务/Title: Director General of CAAC-AAD

日期/Data: 2021 年 11 月 4 日

本数据单是型号认可证(编号: VTC159P)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: VTC159P), 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	VTC159P, 版次0, 2021年11月4日 VTC159P, Revision 0, 4 Nov 2021	EASA TCDS No. P.013, Issue:2, 12 Oct 2017
历史 History	无型号认可证数据单 None	LBA No.32.130/67, Issue:6, 17 Oct 2002

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 0/Rev 0	CAAC于2005年2月3日颁发MTV-12()系列螺旋桨的型号认可证，未发布相应的VTCDS。 CAAC issued the VTC for the MTV-12() Series propellers on 3 February 2005 without CAAC VTCDS. 本次新增CAAC VTCDS，并在前述认可的基础上，依据申请增加螺旋桨的新叶片信息，修订了功率等级。 According to the application, this new CAAC VTCDS revises the power rating and adds the new blade information based on the above approval.	

2. 认可当局/Validation Authority:
审定当局/Certifying Authority:

中国民用航空局/CAAC
欧洲航空安全局/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/Not Applicable |
| 6. CAAC 专用要求/Special Requirements: | 无/None |

第 2 部分 数据 (型别: MTV-12-D, MTV-12-B, MTV-12-C)

SECTION 2 DATA (Models: MTV-12-D, MTV-12-B, MTV-12-C)

1. 产品型别和批准日期/Model and Approval Date

产品型别 Model	申请日期 Application Date	批准日期 Approval Date	类别 category
MTV-12-D	1988年08月05日/05 August 1988	1988年10月27日/27 October 1988	螺旋桨/Propeller
MTV-12-B	1989年05月03日/03 May 1989	1989年06月30日/30 June 1989	螺旋桨/Propeller
MTV-12-C	1989年05月03日/03 May 1989	1989年06月30日/30 June 1989	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-12-D MTV-12-B MTV-12-C	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; 以及 2003 年 10 月 24 日发布的针对复合材料桨叶螺旋桨的要求: CS-P 240、CS-P 370 和 CS-P 380。 14 CFR Part 35, as amended by 35-1 through 35-7, effective 28 December 1995. In addition, for propellers fitted with composite blades: CS-P 240, CS-P 370, and CS-P 380 initial issue, dated 24 October 2003. (见注释 12. see note 12.)
	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-12 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:

MTV-12-(*)和 MTV-12-(*)-C “恒定速度”:

MTV-12-(*) and MTV-12-(*)-C “Constant Speed”:

图纸编号P-199-1-(), 签发于1987年10月16日(*2)

Drawing No. P-199-1-() dated 16 October 1987 (*2)

说明/Note:

自2000年4月4日起, 编号为P-199-2-()和P-199-3-()的图纸已包含在P-199-1-A中。

Since 04 April 2000 Drawing No. P-199-2-() and P-199-3-() have been included in P-199-1-A.

零件清单号S-023-1-(), 签发于1987年7月26日(*2)

Parts List No. S-023-1-() dated 26 July 1987 (*2)

说明/Note:

自2000年4月4日起, 编号为S-023-2-()和S-023-3-()的零件清单已包含在S-023-1-A中。

Since 04 April 2000 Parts Lists No. S-023-2-() and S-023-3-() have been included in S-023-1-A.

MTV-12-(*1)-C-F “恒定速度, 顺桨”:

MTV-12-(*1)-C-F “Constant Speed, Feather”:

图纸编号P-551-(), 签发于1987年8月19日(*2)

Drawing No. P-551-() dated 19 August 1987 (*2)

备注/Note:

被签发于2000年7月13日(*2)编号为No. P-706-()的图纸代替

Replaced by: Drawing No. P-706-() dated 13 July 2000 (*2)

零件清单号S-078-(), 签发于1987年8月19日(*2)

Parts List No. S-078-() dated 19 August 1987(*2)

备注/Note:

被签发于2000年7月14日(*2)编号为S-122-()的零件清单代替

Replaced by: Parts List No. S-122-() dated 14 July 2000 (*2)

MTV-12-(*1)-C-F-R(M) “恒速、顺桨、反桨 (Muhlbauer系统)”:

MTV-12-(*1)-C-F-R(M) “Constant Speed, Feather, Reverse (System Muhlbauer)”:

图纸号P-482-(), 签发于1996年7月19日, 2份

Drawing No. P-482-() dated 19 July 1996 (*2)

零件清单号S-068-(), 签发于1996年10月14日, 2份

Parts List No. S-068-() dated 14 October 1996 (*2)

MTV-12-(*1)-C-R(M) “恒速、反桨 (Muhlbauer系统)”:

MTV-12-(*1)-C-R(M) “Constant Speed, Reverse (System Muhlbauer)”:

图纸号P-552-(), 签发于1987年8月19日(*2)

Drawing No. P-552-() dated 19 August 1987 (*2)

零件清单号S-079-(), 签发于1987年8月19日(*2)

Parts List No. S-079-() dated 19 August 1987 (*2)

备注/Note

(*1)有三种桨毂法兰可用 (参见图纸)

(*1) Three versions of hub flanges are available (refer to drawing):

- B = AS-127-D, SAE型号2, 1/2英寸螺栓

- B = AS-127-D, SAE No. 2 mod., 1/2 inch bolts

- C = AS-127-D, SAE型号2, 7/16英寸螺栓

- C = AS-127-D, SAE No. 2 mod., 7/16 inch bolts
- D = ARP-502, 型号 1
- D = ARP-502, Type 1

(*2) 或后续经批准的版本。后续修订版本中，图纸编号或零件清单编号包括用于标识版本号的相应字母，例如从P-199-1-A到P-199-1-B。

(*2) Or later approved revision. Following a revision, the Drawing No. or the Parts List No. includes the corresponding revision letter, e.g. from P-199-1-A to P-199-1-B.

3.2 发动机安装支座/ Adaptation to Engine

通过螺旋桨名称中的字母来标识桨毂法兰(见注释 1 和 2. see note 1 and 2.)。

Hub flanges as identified by a letter-code in the propeller designation (见注释 1 和 2. see note 1 and 2.)

3.3 桨毂材料/Hub Material

铝合金/ Aluminum Alloy

3.4 桨叶材料/Blade Material

3 叶片变桨距螺旋桨，带液压操作叶片变桨机制，提供“恒速”、“顺桨”和“反桨”操作模式。

3-blade variable pitch propeller with a hydraulically operated blade pitch change mechanism providing the operation mode “Constant Speed”, “Feather” and “Reverse”.

木质桨叶：分层木质结构，表面包覆复合纤维

Wooden blades: Laminated wood structure with a composite fibre cover;

复材桨叶/Composite blades:

500 系列：聚芳基酰胺纤维增强塑料设计（AFRP）；

Series -500: Aramid Fibra Reinforced Plastics design (AFRP);

600 系列：碳纤维强化塑料设计（CFRP）

Series -600: Carbon Fibre Reinforced Plastics design (CFRP).

叶片前缘装有防腐蚀装置，可选设备包括螺旋桨整流罩及防冰装置。

The leading edge of the blade is equipped with an erosion protection device. Optional equipment includes spinner and ice protection.

3.5 桨叶数量/ No. of Blades

3 片/Three

3.6 桨毂/桨叶组合 Hub / Blade Combinations

桨毂 Hub	木质桨叶 Wooden Blades	-17, -24, -30, -32, -36, -39, -40, -53, -54, -56, -57, -59, -86, -100, -101, -105, -113, -114, -115, -117, -118, -119, -130, -131, -301, -302
MTV-12-D MTV-12-B MTV-12-C	复材桨叶 Composite Blades	AFRP: -517, -556 CFRP: -617, -656

3.7 使用限制/Operating Limitations

最大起飞功率及转速/Maximum Take-Off Power and Speed		
最大起飞功率(kw)	最大起飞转速(kw)	直径(cm)
Max. Take-Off Power (kW)	Max. Take-Off Speed (rpm)	Diameter (cm)
168 kW	2800 rpm	152 to 192 cm
224 kW	2700 rpm	152 to 203 cm
221 kW	2340 rpm	152 to 210 cm

最大连续功率及转速/Maximum Continuous Power and Speed		
最大起飞功率(kw)	最大起飞转速(kw)	直径(cm)
Max. Take-Off Power (kW)	Max. Take-Off Speed (rpm)	Diameter (cm)
168 kW	2800 rpm	152 to 192 cm
224 kW	2700 rpm	152 to 203 cm
202 kW	2340 rpm	152 to 210 cm

3.8 尺寸 Dimensions

螺旋桨直径:152厘米到210厘米

Propeller diameter: 152 cm to 210 cm

3.9 重量 Weight

取决于螺旋桨设计构型:

Depending on Propeller-Design Configuration:

“恒定速度”约为 20 千克;

“Constant Speed: approx. 20 kg

“恒定速度, 顺桨”约为 25 千克;

“Constant Speed, Feather”: approx. 25 kg

“恒定速度, 反桨”约为 23 千克;

“Constant Speed, Reverse”: approx. 23 kg

“恒定速度, 顺桨, 反桨”约为 28 千克;

“Constant Speed, Feather, Reverse”: approx. 28 kg

3.10 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

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

4. 批准的技术资料/Approved Technical Documents

型别/Model	批准的技术资料/Approved Technical Documents	文件编号/No
MTV-12-B MTV-12-C MTV-12-D	手册Manuals	
	液压控制变桨距螺旋桨MTV-12- (), MTV-12- () -C, MTV-12- () -C-F的运行和安装手册 Operation and Installation Manual for hydraulically controlled variable pitch propeller MTV-12- (), MTV-12- () -C, MTV-12- () -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-12- () -C-R (M), MTV-12- () -C-F-R (M) Operation and Installation Manual for reversible hydraulically controlled variable pitch propeller; Reverse-Systems (M) MTV-12- () -C-R(M), MTV-12- () -C-F-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-12- (), MTV-12- () -C, MTV-12- () -C-F的运行和安装手册 Operation and Installation Manual for hydraulically controlled variable pitch propeller MTV-12- (), MTV-12- () -C, MTV-12- () -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-12- () -C-R (M), MTV-12- () -C-F-R (M) Operation and Installation Manual for reversible hydraulically controlled variable pitch propeller; Reverse-Systems (M) MTV-12- () -C-R(M), MTV-12- () -C-F-R(M)	编号: E-504 (*) No. E-504 (*)
	液压控制变桨距螺旋桨MTV-12- (), MTV-12- () -C, MTV-12- () -C-F的大修手册和零件清单 Overhaul Manual and Parts List for hydraulically controlled variable pitch propeller MTV-12- (), MTV-12- () -C, MTV-12- () -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-12- () -C-R (M), MTV-12- () -C-F-R (M) Overhaul Manual and Parts List for reversible hydraulically controlled variable pitch propeller; Reverse-Systems (M) MTV-12- () -C-R(M), MTV-12- () -C-F-R(M)	编号: E-519 (*) No. E-519 (*)
	复材叶片大修手册 (同时适用于木质桨叶) Overhaul Manual for Composite Blades (also applicable to wooden blades)	编号: E-1290 (*) No. E-1290 (*)
	标准操作手册 Standard Practice Manual	编号: E-808 (*) No. E-808 (*)

(*)以及后续版本
(*) latest revision of

注释 1/NOTE 1.

Hub									/	Blade						
MT	V	-	12	-	()	()	()	()	()	/	()	()	203	-	56	()
1	2	3	4	5	6	7	8	9	/	1	2	3	4	5		

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:
 - B = AS-127-D, SAE 型号 2 , 1/2 英寸螺栓
 - B = AS-127-D, SAE No. 2 mod., 1/2 inch bolts
 - C = AS-127-D, SAE 型号 2, 7/16 英寸螺栓
 - C = AS-127-D, SAE No. 2 mod., 7/16 inch bolts
 - D = ARP-502, 型号 1
 - D = ARP-502, Type 1
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=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
 - 空白表示可能无顺桨位置
 - blank = no feather position possible
 - F=允许顺桨位置
 - F = feather position allowed
7. 反桨的字母代码 Letter code for reverse provision:
 - 空白表示可能无反桨位置
 - blank = no reverse position possible

- R=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= Muhlbauer 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

注释 2/NOTE 2.**桨叶型号命名/ Blade Model Designation**

1. 桨距变化销位置的代号 Letter code for position of pitch change pin:
- 空白表示桨距变化销位置，用于减小桨距
- blank=pin position for pitch change forces to decrease pitch
- C 表示桨距变化销位置，用于增加桨距
- C=pin position for pitch change forces to increase pitch
- CF 表示允许顺桨的销位置，用于增加桨距
- CF = pin position to allow feather; pitch change forces to increase pitch
- CR 表示允许反桨的销位置，用于增加桨距
- CR = pin position to allow reverse; pitch change forces to increase pitch
- CFR 表示顺桨和反桨的销位置，用于增加桨距
- 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（厘米） 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可互换性的变更
-capital letter for changes which affect interchangeability of blade set

注释 3/NOTE 3. 桨距控制/Pitch Control

Propeller governors as listed in MT-Propeller Service Bulletin No. 14.
螺旋桨调速器在 MT-Propeller 服务公告 14 中列出。

注释 4/NOTE 4. 不适用/Not applicable.

注释 5/NOTE 5. 不适用/Not applicable.

注释 6/NOTE 6. 不适用/Not applicable.

注释 7/NOTE 7. 附件/Accessories.

螺旋桨整流罩: 见 MT-Propeller 服务公告 13;
Spinner: refer to MT-Propeller Service Bulletin No. 13

调速器: 见 MT-Propeller 服务公告 14;
Governor: refer to MT-Propeller Service Bulletin No. 14

防冰: 见 MT-Propeller 服务公告 15;
Ice Protection: refer to MT-Propeller Service Bulletin No. 15

注释 8/NOTE 8. 不适用/Not applicable.

注释 9/NOTE 9. 经批准的安装/Approved Installations

螺旋桨对于给定飞机/发动机组合的适用性须在飞机型号合格审定中表明。
The suitability of a propeller for a given aircraft/engine combination must be demonstrated within the scope of the type certification of the aircraft.

注释 10/NOTE 10. 不适用/Not applicable.

注释 11/NOTE 11. 为满足航空器适航要求, 螺旋桨在航空器上装机应作为航空器型号合格证的一部分被批准。 Special Notes. Aircraft installation must be approved as part of the aircraft type certificate upon compliance with the applicable aircraft airworthiness requirements.

注释 12/NOTE 12. 特别说明/Special Note

1. 适用的“运行、安装和维修手册”已包含在 EASA 批准的持续适航文件第 10.0 章“适航限制章节”中。进场与着陆 (ALS) 部分留白, 因为 MTV-12() 型号无寿命限制。
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.

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.

3. 制造商建议的大修间隔在 MT-Propeller 服务公告 1 中列出

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

4. EASA 型号合格证及型号合格证数据清单编号 P.013 取代了 LBA 德国型号合格证及型号合格证数据清单编号 32.130/67。

EASA Type Certificate and Type Certificate Data Sheet No. P.013 replace LBA-Germany Type Certificate and Type Certificate Data Sheet No. 32.130/67.

5. 在欧洲航空安全局成立之前，申请人已向德国民用航空局提出型号合格审定申请。适用的适航标准是依据申请时德国民用航空局的规定制定的。初始适航标准为 14 CFR 第 35 部分修正案 35-5，生效于 1980 年 10 月 14 日。

Application was made to LBA-Germany before EASA was established. The applicable airworthiness standards were established in accordance with the rule in Germany at the time of application. Initial airworthiness standard was 14 CFR Part 35 Amendment 35-5, effective 14 October 1980.

1997 年 8 月 28 日更新为 14 CFR 14 章第 35 部分 35-6 修正案，该修正案生效于 1990 年 8 月 18 日（对应的德国民用航空局型号合格证数据清单编号为 32.130/67，第 04 版）。Update to 14 CFR Part 35 Amendment 35-6, effective 18 August 1990, was made on 28 August 1997 (LBA-Germany Type Certificate Data Sheet No. 32.130/67 issue 04).

2005 年 11 月 08 日更新为 14 CFR 14 章第 35 部分修正案 35-7，该修正案生效于 1995 年 12 月 28 日（对应的欧洲航空安全局型号合格证数据清单编号为 P.013，第 01 版）。Update to 14 CFR Part 35 Amendment 35-7, effective 28 December 1995, was made on 08 November 2005 (EASA Type Certificate Data Sheet P.013 issue 01).

----完----

----END----