TYPE-CERTIFICATE DATA SHEET

No. P.013

for Propeller
MTV-12 series

Type Certificate Holder
MT-Propeller Entwicklung GmbH

Flugplatzstraße 1
94348 Atting
Germany

For Models:
MTV-12-B
MTV-12-C
MTV-12-D

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I. General

1. Type / Models

MTV-12 / MTV-12-B, MTV-12-C, MTV-12-D

2. Type Certificate Holder

MT-Propeller Entwicklung GmbH
Flugplatzstraße 1
94348 Atting
Germany

Design Organisation Approval No.: EASA.21J.020

3. Manufacturer

MT-Propeller Entwicklung GmbH

4. Date of Application

MTV-12-B: 03 May 1989
MTV-12-C: 03 May 1989
MTV-12-D: 05 August 1988

5. EASA Type Certification Date

MTV-12-B: 30 June 1989
MTV-12-C: 30 June 1989
MTV-12-D: 27 October 1988

II. Certification Basis

1. Reference Date for determining the applicable airworthiness requirements:

05 August 1988

2. EASA Certification Basis

2.1. Airworthiness Standards

Note:
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.
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).
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).

MTV-12-B, MTV-12-C, MTV-12-D	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

2.2. Special Conditions (SC):

None

2.3. Equivalent Safety Findings (ESF):

None

2.4. Deviations:

None

III. Technical Characteristics

1. Type Design Definition

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

MTV-12-(*1) and MTV-12-(*1)-C “Constant Speed”:
Drawing No. P-199-1-() dated 16 October 1987 (*2)
Parts List No. S-023-1-() dated 26 July 1987 (*2)
Note:
Since 04 April 2000 Drawing No. P-199-2-() and P-199-3-() as well as Parts Lists No. S-023-2-() and S-023-3-() have been included in P-199-1-A and S-023-1-A.

MTV-12-(*1)-C-F “Constant Speed, Feather”:
Drawing No. P-551-() dated 19 August 1987 (*2)
Parts List No. S-078-() dated 19 August 1987 (*2)
Replaced by:
Drawing No. P-706-() dated 13 July 2000 (*2)
Parts List No. S-122-() dated 14 July 2000 (*2)

MTV-12-(*1)-C-R(M) “Constant Speed, Reverse (System Mühlbauer)”:
Drawing No. P-552-() dated 19 August 1987 (*2)
Parts List No. S-079-() dated 19 August 1987 (*2)

MTV-12-(*1)-C-F-R(M) “Constant Speed, Feather, Reverse (System Mühlbauer)”:
Drawing No. P-482-() dated 19 July 1996 (*2)
Parts List No. S-068-() dated 14 October 1996 (*2)

Note:

(*1) Three versions of hub flanges are available (refer to drawing):
- B = AS-127-D, SAE No. 2 mod., 1/2 inch bolts
- C = AS-127-D, SAE No. 2 mod., 7/16 inch bolts
- D = ARP-502, Type 1

(*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.

2. Description

3-blade variable pitch propeller with a hydraulically operated blade pitch change mechanism providing the operation mode “Constant Speed”, “Feather” and “Reverse”. The hub is milled out of aluminium alloy. The blade materials are:

- Wooden blades: Laminated wood structure with a composite fibre cover;
- Composite blades: Series -500: Aramid Fibre Reinforced Plastics design (AFRP);
  Series -600: Carbon Fibre Reinforced Plastics design (CFRP).

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

3. Equipment

Spinner: refer to MT-Propeller Service Bulletin No. 13
Governor: refer to MT-Propeller Service Bulletin No. 14
Ice Protection: refer to MT-Propeller Service Bulletin No. 15

4. Dimensions

Propeller diameter: 152 cm to 210 cm

5. Weight

Depending on Propeller-Design Configuration

“Constant Speed”:	approx. 20 kg
“Constant Speed, Feather”:	approx. 25 kg
“Constant Speed, Reverse”:	approx. 23 kg
“Constant Speed, Feather, Reverse”:	approx. 28 kg

6. Hub / Blade Combinations

MTV-12-B MTV-12-C MTV-12-D	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
	Composite Blades	AFRP: -517, -556 CFRP: -617, -656

7. Control System

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

8. Adaptation to Engine

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

9. Direction of Rotation

Direction of rotation (viewed in flight direction) as identified by a letter-code in the propeller designation (see VI.5.)

IV. Operating Limitations

1. Approved Installations

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

2. Maximum Take-Off Power and Speed

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

3. Maximum Continuous Power and Speed

Max. Cont. Power (kW)	Max. Cont. 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

4. Propeller Pitch Angle

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

V. Operating and Service Instructions

Manuals	
Operation and Installation Manual for hydraulically controlled variable pitch propeller MTV-12-( ), MTV-12-( )-C, MTV-12-( )-C-F	No. E-124 (*)
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)	No. E-504 (*)

Instructions for Continued Airworthiness (ICA)	
Operation and Installation Manual for hydraulically controlled variable pitch propeller MTV-12-( ), MTV-12-( )-C, MTV-12-( )-C-F	No. E-124 (*)
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)	No. E-504 (*)
Overhaul Manual and Parts List for hydraulically controlled variable pitch propeller MTV-12-( ), MTV-12-( )-C, MTV-12-( )-C-F	No. E-220 (*)
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)	No. E-519 (*)
Overhaul Manual for Composite Blades (also applicable to wooden blades)	No. E-1290 (*)
Standard Practice Manual	No. E-808 (*)
Service Bulletins, Service Letters, Service Instructions	As published by MT-Propeller

(*) latest revision of

VI. Notes

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

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

4. 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. Propeller designation system:

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

Hub

1 MT-Propeller Entwicklung GmbH

2 Variable pitch propeller

3 Identification of propeller type

4 Letter code for flange type:
- B = AS-127-D, SAE No. 2 mod., 1/2 inch bolts
- C = AS-127-D, SAE No. 2 mod., 7/16 inch bolts
- D = ARP-502, Type 1

5 Letter code for counterweights:
- blank = no or small counterweights for pitch change forces to decrease pitch
- C = counterweights for pitch change forces to increase pitch

6 Letter code for feather provision:
- blank = no feather position possible
- F = feather position allowed

7 Letter code for reverse provision:
- blank = no reverse position possible
- R = reverse position allowed

8 Letter code for reversing system:
- M = System Mühlbauer

9 Letter code for hub design changes:
- small letter for changes which do not affect interchangeability
- capital letter for changes which affect interchangeability

Blade

1 Letter code for position of pitch change pin:
- blank = pin position for pitch change forces to decrease pitch
- C = pin position for pitch change forces to increase pitch
- CF = pin position to allow feather; pitch change forces to increase pitch
- CR = pin position to allow reverse; pitch change forces to increase pitch
- CFR = pin position to feather and reverse; pitch change forces to increase pitch

2 Letter code for direction of rotation and installation:
- blank = right-hand tractor
- RD = right-hand pusher
- L = left-hand tractor
- LD = left-hand pusher

3 Propeller diameter in cm

4 Identification of blade design

5 Letter code for blade design changes:
- small letter for changes which do not affect interchangeability of blade set
- capital letter for changes which affect interchangeability of blade set

SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

n/a

II. Type Certificate Holder Record

n/a

III. Change Record

TCDS Issue	Date	Changes	TC Issue Date
Issue 01	08 November 2005	Initial EASA issue. Introduction of wooden blades -54, -130, and composite blades -517, -556, -617, -656. Update of the certification basis (LBA project M412-MTP-02/8).	Initial Issue, 08 November 2005
Issue 02	12 October 2017 (replace 28 September 2017 issue)	Introduction of take-off power rating 221 kW / 2340 rpm / 152 to 210 cm and maximum continuous power rating 202 kW / 2340 rpm / 152 to 210 cm. Introduction of wooden blades -54, -86, -130, -131, and -302 (certificate 10063271 rev. 1).	08 November 2005

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