



## **I. General**

### **1. Type/Variants**

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

### **2. Type Certificate Holder**

MT-Propeller Entwicklung GmbH  
Flugplatzstraße 1  
94348 Atting  
Germany

### **3. Manufacturer**

MT-Propeller Entwicklung GmbH

### **4. Date of Application**

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

### **5. Reference Date for determination of the applicable requirements**

05 August 1988

### **6. Certification Date**

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

Note: EASA Type Certification of the MTV-12 propeller has been covered previously by German Type Certificate No. 32.130/67

## **II. Certification Basis**

### **1. Airworthiness Standards**

FAR 35 Amdt. 35-7 effective December 28, 1995

Note: Initial type certification was based on airworthiness standard FAR 35 Amdt 35-5, effective 14 October 1980.  
Update of type certification to airworthiness standard FAR 35 Amdt. 35-6 was made on application of MT-Propeller, dated 04 December 1996.

Update of type certification to airworthiness standard FAR 35 Amdt. 35-7 was made on application of MT-Propeller, dated 23 July 2002.  
Propellers fitted with full composite blades in addition have been shown to comply CS-P 240, 370 and 380

### **III. Technical Characteristics**

#### **1. Type Design Definition**

The MTV-12 propeller model covers the following design configurations, and each one being defined by a main assembly drawing and an appropriate Parts List. The propeller variant is defined by the hub version installed, and which fits on a certain engine propeller flange.

Design Configuration "Constant Speed"

MTV-12-(\*1) and MTV-12-(\*1)-C

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.

Design Configuration "Constant Speed, Feather"

MTV-12-(\*1)-C-F

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)

Design Configuration "Constant Speed, Reverse (System Mühlbauer)"

MTV-12-(\*1)-C-R(M)

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

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

Design Configuration "Constant Speed, Feather, Reverse (System Mühlbauer)"

MTV-12-(\*1)-C-F-R(M)

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

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

Note:

- (\*1) optionally different versions of hub flange available
- B: AS-127-D, SAE No. 2 mod., 1/2 inch bolts
  - C: AS-127-D, SAE No. 2, 7/16 inch bolts
  - D: ARP-502, Type 1

- (\*2) Effective is the declared issue or a later approved revision.  
At a revision, the Drawing No. or the Parts List No. will be completed with the current revision letter, e.g. from P-199-1 in P-199-1-A

## 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 aluminum alloy.

Blade material (optional):

- Wood composite blades: Laminated wood composite structure with epoxy-fiber glass cover
- Full composite blades:
  - Series -500: AFRP design (Aramid Fiber Reinforced Plastics)
  - Series -600: CFRP design (Carbon Fiber Reinforced Plastics)

The leading edge of the blades are equipped with an erosion protection device. Optionally the propeller may have installed a spinner and ice protection equipment.

## 3. Equipment

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

## 4. Dimensions

Propeller-Diameter: 152 cm to 203 cm

Note: The propeller type certification is valid for any MTV-12 propeller model with a diameter covered by the declared diameter range.  
Individual propeller diameter is determined particularly by the demands of the aircraft on which the propeller will be installed.

## 5. Weights

Propeller-Design Configuration

- "Constant Speed": approx. 20 kg
- "Constant Speed, Reverse": approx. 23 kg
- "Constant Speed, Feather": approx. 25 kg
- "Constant Speed, Feather, Reverse": approx. 28 kg

## 6. Hub/Blade-Combinations

Hub	Blade-Type
MTV-12-( )	wood blades: -17, -24, -30, -32, -36, -39, -40, -53, -54, -56, -57, -59, -100, -101, -105, -113, -114, -115, -117, -118, -119, -130, -301, AFRP blades: -517, -556 CFRP blades: -617, -656

## 7. Control System

Hydraulically operating governors corresponding to the data of MT-Propeller Service Bulletin No. 14.

## 8. Adaptation to Engine

Hub flanges corresponding to the particular letter in the propeller designation (see chapter VI. 4.)

## 9. Sense of Rotation

Sense of rotation (viewed in flight direction) corresponding to the particular letter in the propeller designation (see chapter VI. 4.)

## IV. Operational Limits

### 1. Propeller Speed

max. 2800 min<sup>-1</sup>

### 2. Driving Power

max. 168 kW for a propeller-diameter/ -speed of max. 192 cm / 2800 min<sup>-1</sup>  
max. 224 kW for a propeller-diameter/ -speed of max. 203 cm / 2700 min<sup>-1</sup>

### 3. Propeller Pitch Angle

from -20° up to +86°

## V. Operating and Service Instructions

Operation and Installation Manual for hydraulically controlled variable pitch propeller	No. E-124 Issue 01 July 1988 (*)
Operation and Installation Manual for reversible hydraulically controlled variable pitch propeller; Reverse-Systems (M)	No. E-504, Issue 21 May 1997 (*)
Operation and Installation Manual for hydraulic reverse propeller governor P-480 ( )	No. E-508, Issue 06 Sept. 1996 (*)
Operation and Installation Manual for hydraulic reversible propeller governor P-9( )-( )-( )	E-1046 Issue 01 April 2004 (*)
Overhaul Manual and Parts List for hydraulically controlled variable pitch propeller since 01 June 1998 replaced by Overhaul Manual and Parts List for hydraulically controlled variable pitch propeller	No. E-128 Issue 20 July 1988  No. E-220 Issue 01 June 1998 (*)

Overhaul Manual and Parts List for reversible hydraulically controlled variable pitch propeller; Reverse-Systems (M)	No. E-519 Issue 04 April 1997 (*)
Service Bulletins	as noted in the current List of Service Bulletins

(\*) effective is the declared issue or a later approved revision

## VI. Notes

1. The suitability of a propeller for a certain aircraft/engine-combination must be demonstrated within the scope of the type certification of the aircraft.
2. The overhaul intervals recommended by the manufacturer are listed in MT-Propeller Service Bulletin No. 1.
3. 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: MT-Propeller Entwicklung GmbH
- 2 V: Variable Pitch Propeller
- 3 No. of propeller model
- 4 code letter for flange type
  - B: AS-127-D, SAE No. 2 mod., 1/2 inch-20 UNF bolts
  - C: AS-127-D, SAE No. 2, 7/16 inch-20 UNF bolts
  - D: ARP 502
- 5 code letter for counterweights
  - blank: no or small counterweights for pitch change forces to decrease pitch
  - C: counterweights for pitch change forces to increase pitch
- 6 code letter for feather provision
  - blank: no feather position possible
  - F: feather position installed
- 7 code letter for reverse provision
  - blank: no feather position possible
  - R: reverse position installed
- 8 code letter for reverse system
  - M: System Mühlbauer

- 9 code letter for design changes
- small letter for changes which do not affect interchangeability
  - capital letter for changes which restrict or exclude interchangeability

### Blade

- 1 code letter for position of pitch change pin
- blank: pitch change pin position for pitch change forces to decrease pitch
  - C: pitch change pin position for pitch change forces to increase pitch
  - CF: pitch change pin position for feather position; pitch change forces to increase pitch
  - CR: pitch change pin position for reverse position; pitch change forces to increase pitch
  - CFR: pitch change pin position for feather and reverse position; pitch change forces to increase pitch
- 2 code letter for blade design and installation
- blank: right-hand tractor
  - RD: right-hand pusher
  - L: left-hand tractor
  - LD: left-hand pusher
- 3 propeller diameter in cm
- 4 No. of blade type (contains design configuration and aerodynamic data) according to the certified hub/blade-combinations
- 5 code letter for design changes
- small letter for changes which do not affect interchangeability of blade set
  - capital letter for changes which restrict or exclude interchangeability of blade set