EASA

TYPE-CERTIFICATE
DATA SHEET

Number: P.017
Issue: 01
Date: 12 December 2006
Type: MT-Propeller Entwicklung GmbH
      MTV-14 series propellers

Variants
MTV-14-B
MTV-14-D

List of effective Pages:

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<td>Issue</td>
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European Aviation Safety Agency

TYPE CERTIFICATE

EASA.P.017

This certificate, established in accordance with Regulations (EC) No 1592/2002 and (EC) No 1702/2003 and issued to

MT-Propeller Entwicklung GmbH

Flugplatzstraße 1
94348 Atting
Germany

certifies that the propeller type design listed below complies with the applicable Type Certification Basis and environmental protection requirements when operated within the conditions and limitations specified on the associated Type Certificate Data Sheet No. P.017

Model                  Date of issue
MTV-14-B               26 September 1991
MTV-14-D               26 September 1991

This certificate and its associated type-certificate data sheet, which is a part thereof, shall remain valid unless otherwise surrendered or revoked.

For the European Aviation Safety Agency,

12. 12. 2006

Klaus Böwing
Certification Manager Propulsion Certification Directorate
I. General

1. Type/Variants

MTV-14 / MTV-14-B, MTV-14-D

2. Type Certificate Holder

MT-Propeller Entwicklung GmbH
Flugplatzstraße 1
94348 Atting
Germany

Design Organisation Approval Nr.: EASA.21J.020

3. Manufacturer

MT-Propeller Entwicklung GmbH

4. Date of Application

MTV-14-B : 16 July 1991
MTV-14-D : 16 July 1991

5. Reference Date for determination of the applicable requirements

16 July 1991

6. Certification Date

MTV-14-B : 26 September 1991
MTV-14-D : 26 September 1991

Note: EASA Type Certification of the MTV-14 propeller has been covered previously by German Type Certificate No. 32.130/78

II. Certification Basis

1. Airworthiness Standards

<table>
<thead>
<tr>
<th>MTV-14 propellers fitted with wood-composite blades</th>
<th>MTV-14 propellers fitted with full composite blades</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAR 35 Amdt. 35-7 effective December 28, 1995</td>
<td>FAR 35 Amdt. 35-7 effective December 28, 1995 plus</td>
</tr>
<tr>
<td></td>
<td>CS-P 240, CS-P 360, CS-P 370, CS-P 380 effective October 24, 2003</td>
</tr>
</tbody>
</table>

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 28 January 1997. Update of type certification to airworthiness standard FAR 35 Amdt. 35-7 was made on application of MT-Propeller, dated 29. November 2004.
III. Technical Characteristics

1. Type Design Definition

The MTV-14 propeller model is defined by a main assembly drawing and associated parts list:

MTV-14-(*) and MTV-14-(*)-C
Design Configuration "Constant Speed"
Drawing No. P-223-( ) dated 13 October 1988 (*2)
Parts List No. S-032-( ) dated 17 July 1991 (*2)

MTV-14-(*)-C-F
Design Configuration "Constant Speed, Feather"
Drawing No. P-488-( ) dated 18 January 1996 (*2)
Parts List No. S-069-( ) dated 11 October 1996 (*2)

MTV-14-(*)-C-R(M)
Design Configuration "Constant Speed, Reverse (System Mühlbauer)"
Drawing No. P-568-( ) dated 07 January 1998 (*2)
Parts List No. S-086-( ) dated 21 April 1998 (*2)

MTV-14-(*)-C-F-R(M)
Design Configuration "Constant Speed, Feather, Reverse (System Mühlbauer)"
Drawing No. P-569-( ) dated 07 January 1998 (*2)
Parts List No. S-087-( ) dated 21 April 1998 (*2)

Note:
(*1) Two versions of hub flange are available:
- B = AS-127-D, SAE No. 2 mod., 1/2 inch bolts
- D = ARP-502, Type 1

(*2) After a revision, the Drawing No. or the Parts List No. will be completed with the current revision letter, e.g. from P-223-1 in P-223-1-A.

2. Description

4-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. The blade materials are:
1. wood-composite blades: Laminated wood structure with epoxy-fiber glass cover
2. -500 blade series: Aramid Fiber Reinforced Plastics (AFRP) design
3. -600 blade series: Carbon Fiber Reinforced Plastics (CFRP) design

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: 155 cm to 203 cm

Note: The propeller type certification is valid for any MTV-14 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. 25 kg
"Constant Speed, Reverse": approx. 28 kg
"Constant Speed, Feather": approx. 30 kg
"Constant Speed, Feather, Reverse": approx. 33 kg

6. Hub/Blade-Combinations

<table>
<thead>
<tr>
<th>Hub</th>
<th>Blades</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CFRP blades: -517, -556</td>
</tr>
<tr>
<td></td>
<td>AFRP blades: -617, -656</td>
</tr>
</tbody>
</table>

7. Control System


8. Adaptation to Engine

Hub flanges as identified by a letter in the propeller designation (refer to note VI.3)

9. Direction of Rotation

Direction of rotation (viewed in flight direction) as identified by a letter in the propeller designation (refer to note VI.3)
IV. Operational Limits

1. Maximum Take Off Power and Speed

<table>
<thead>
<tr>
<th>Diameter ≤195 cm</th>
<th>195 cm &lt; Diameter ≤ 203 cm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Take Off Power</td>
<td>261 kW</td>
</tr>
<tr>
<td>Maximum Take Off Speed</td>
<td>2700 rpm</td>
</tr>
<tr>
<td>Maximum Inadvertent Overspeed</td>
<td>-</td>
</tr>
</tbody>
</table>

2. Maximum Continuous Power and Speed

<table>
<thead>
<tr>
<th>Diameter ≤195 cm</th>
<th>195 cm &lt; Diameter ≤ 203 cm</th>
</tr>
</thead>
<tbody>
<tr>
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<td>261 kW</td>
</tr>
</tbody>
</table>

3. Propeller Pitch Angle

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

V. Operating and Service Instructions

<table>
<thead>
<tr>
<th>Operation and Installation Manual for hydraulically controlled variable pitch propeller</th>
<th>No. E-124 Issue 05 May 1991 (*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation and Installation Manual for hydraulic reverse propeller governor P-480( )</td>
<td>No. E-508; Issue 06 Sept. 1996 (*)</td>
</tr>
<tr>
<td>Operation and Installation Manual for hydraulic reversible propeller governor P-9( )(- )</td>
<td>E-1046 Issue 01 April 2004 (*)</td>
</tr>
<tr>
<td>Overhaul Manual and Parts List for hydraulically controlled variable pitch propeller</td>
<td>No. E-128 Issue 07 May 1991 was replaced by E-220 on 01 June 1998</td>
</tr>
<tr>
<td>Service Bulletins</td>
<td>as noted in the current List of Service Bulletins</td>
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</table>

(*) or 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

<table>
<thead>
<tr>
<th>Hub</th>
<th>Blade</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT</td>
<td>V - 14</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
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</tbody>
</table>

**Hub**

1 MT: MT-Propeller Entwicklung GmbH
2 V: 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-20 UNF bolts
   - D: ARP 502
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 feather 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 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. 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

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