TYPE-CERTIFICATE DATA SHEET

No. P.093

for Propeller
MTV-5

Type Certificate Holder
MT-Propeller Entwicklung GmbH

Flugplatzstraße 1
94348 Atting
Germany

For Models:
MTV-5-1

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I. General

1. Type / Models
MTV-5 / MTV-5-1

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-5-1: 17 March 1998

5. EASA Type Certification Date
MTV-5-1: 27 September 2001

II. Certification Basis

1. Reference Date for determining the applicable airworthiness requirements
17 March 1998

2. EASA Certification Basis

2.1. Airworthiness Standards
JAR-P Change 7 dated 22 October 1987 as amended by Amendment P/96/1 dated 08 August 1996, except JAR-P 210 “Endurance Tests” and JAR-P 220 “Functional Tests”
CS-P Amendment 1 dated 16 November 2006 paragraphs CS-P 380 “Lightning Strike”, CS-P 390 “Endurance Test”, CS-P 400 “Functional Test”, CS-P 560 “Flight Functional Tests”

Note:
First 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. They were amended in EASA Type Certificate Data Sheet No. P.093 issue 1.

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-5-1 propeller model is defined by a main assembly drawing and associated parts list:

MTV-5-1-(*1) “Constant Speed”:
Drawing No. P-293-A dated 20 July 2000 (*2)
Parts List No. S-041-A dated 20 July 2000 (*2)

MTV-5-1-(*1)-C-F “Constant Speed and Feather”:
Drawing No. P-582-A dated 19 July 2000 (*2)
Parts List No. S-089-A dated 18 July 2000 (*2)

MTV-5-1-(*1)-C-R(M) “Constant Speed and Reverse (System Mühlbauer)”:
Drawing No. P-588-A dated 21 July 2000 (*2)
Parts List No. S-092-A dated 20 July 2000 (*2)

MTV-5-1-(*1)-C-F-R(M) “Constant Speed, Feather, and Reverse (System Mühlbauer)”:
Drawing No. P-583-A dated 20 July 2000 (*2)
Parts List No. S-091-A dated 20 July 2000 (*2)

MTV-5-1-E-C-F-R(P) “Constant Speed, Feather, and Reverse (System Pratt & Whitney)”:
Drawing No. P-584-B dated 15 December 1999 (*2)
Parts List No. S-095-A dated 26 July 2000 (*2)

MTV-5-1-D-C-F-R(A) “Constant Speed, Feather, and Reverse (System Allison)”:
Drawing No. P-647-( ) dated 07 September 1999 (*2)
Parts List No. S-113-( ) dated 26 July 2000 (*2)

Note:

(*1) Three versions of hub flange are available:
- B = AS-127-D, SAE No. 2 mod., 1/2 inch bolts
- D = ARP-502, Type 1
- E = ARP-880, 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-293-A to P-293-B.

2. Description

5-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 blades have a laminated wood structure with a composite fibre cover. The leading edge of the blades is protected by a stainless steel erosion protection sheath.
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: 140 cm to 220 cm

5. Weight

Approximate, depending on propeller-design configuration
"Constant Speed": 34 kg
"Constant Speed, Feather": 39 kg
"Constant Speed, Reverse (M)": 41 kg
"Constant Speed, Feather, Reverse (M)": 44 kg
"Constant Speed, Feather, Reverse (P)": 45 kg
"Constant Speed, Feather, Reverse (A)": 43 kg

6. Hub / Blade Combinations

Hub	Blades
MTV-5-1	-17, -24, -30, -32, -36, -39, -40, -53, -54, -56, -57, -59, -100, -101, -105, -113, -114, -115, -117, -118, -119, -130, -301

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 in the propeller designation (refer to note VI.6)

9. Direction of Rotation

Direction of rotation (viewed in flight direction) as identified by a letter-code in the propeller designation (refer to note VI.6)

IV. Operating Limitations

1. Approved Installations

This propeller has been tested for endurance on piston and turbine engines. Propeller/engine/aircraft combinations that have been demonstrated to comply with the requirements of JAR-P 60(b), 160(b), 190, and 220, or CS-P 530, 550, and 560 are listed in MT-Propeller Service Bulletin No. 16.

2. Maximum Take Off Power and Speed

	Diameter			
	140 to 220 cm	140 to 200 cm		
Engine	Piston and Turbine Engine	Piston Engine		
Max. Take Off Power	410 kW	261 kW		
Max. Take Off Speed	2200 rpm	2500 rpm		

3. Maximum Continuous Power and Speed

	Diameter			
	140 to 220 cm	140 to 200 cm		
Engine	Piston and Turbine Engine	Piston Engine		
Max. Continuous Power	410 kW Piston and Turbine Engine	261 kW Piston Engine		
Max. Continuous Speed	2200 rpm	2500 rpm		

4. Propeller Pitch Angle
From -20° up to +82° measured at 75% radius station

V. Operating and Service Instructions

Operation and Installation Manual for Hydraulically Controlled Variable Pitch Propellers (Constant Speed) MTV-5-( )	No. E-124 Issue 29 Nov. 2001 (*)
Operation and Installation Manual for Reversible Hydraulically Controlled Variable Pitch Propellers (Constant Speed) MTV-5-( )-R(M)	No. E-504 Issue 12 Apr 2000 (*)
Operation and Installation Manual for Reversible Hydraulically Controlled Variable Pitch Propellers (Constant Speed) MTV-5-( )-R(A),(P)	No. E-610 Issue 29 Sep. 1999 (*)

Overhaul Manual and Parts List for Hydraulically Controlled Variable Pitch Propellers (Constant Speed) MTV-5-( )	No. E-220 Issue 29 Nov. 2001 (*)
Overhaul Manual and Parts List for Hydraulically Controlled Variable Pitch Propellers (Constant Speed) with Reverse Thrust Capability (Dual Piston-System) MTV-5-( )-R(M)	No. E-519 Issue 10 Oct. 2000 (*)
Overhaul Manual and Parts List for Hydraulically Controlled Variable Pitch Propellers (Constant Speed) with Reverse Thrust Capability (PT6/TPE-331/C250B)) MTV-5-( )-R(A), (P)	No. E-680 Issue 17 Sep. 2014 (*)
Standard Practices Manual	No. E-808 Issue 20 Feb. 2014 (*)
Overhaul Manual Composite Blades (**)	No. E-1290 Issue 10 Sep. 2014 (*)
Service Bulletins, Service Letters, Service Instructions	as published by MT-propeller

(*) or later approved revision
(**) also applicable to wooden blades

VI. Notes

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

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

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

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

5. EASA Type Certificate and Type Certificate Data Sheet No.P.093 replace LBA-Germany Type Certificate and Type Certificate Data Sheet No. 32.130/103

6. Propeller designation system:

					Hub						/			Blade				
MT	V	-	5	-	1	( )	( )	( )	( )	( )	( )	/	( )	( )	220	-	54	( )
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
- D = ARP-502, Type 1
- E = ARP-880, 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 feather position possible
- R = reverse position allowed

8 Letter code for reversing system:
- A = System Allison
- M = System Mühlbauer
- P = System Pratt & Whitney

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 Direction of rotation:
- 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

Issue	Date	Changes	TC issue
Issue 01	06 May 2015	Initial Issue	Initial Issue, 06 May 2015

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