TYPE-CERTIFICATE DATA SHEET

No. P.104

for Propeller
MTV-27 series

Type Certificate Holder
MT-Propeller Entwicklung GmbH

Flugplatzstraße 1
94348 Atting
Germany

For Models:
MTV-27-1

Intentionally left blank

TABLE OF CONTENTS

I. General

1. Type / Models

MTV-27 / MTV-27-1

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-27-1: 07 November 1997

5. EASA Type Certification Date

MTV-27-1: 28 March 2002
(see also note VI.4.)

II. Certification Basis

1. Reference Date for determining the applicable airworthiness requirements: 07 November 1997

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.

MTV-27-1	Wooden Blades: -02, -11, -14, -15, -18, -20, -21, -22, -25, -26, -27, -29, -33, -34, -35, -37, -42, -43, -45, -46, -50, -55, -58, -102, -103, -104, -109, -121	JAR-P Change 7 dated October 22, 1987, as amended by Amendment P/96/1 dated August 08, 1996

MTV-27-1	Wooden Blades: -61, -62, -63, -65, -66, -67	JAR-P Change 7 dated October 22, 1987, as amended by Amendment P/96/1 dated August 08, 1996 CS-P 390, CS-P 400 (Amendment 01 dated 16 November 2006)
MTV-27-1	Wooden Blades: -52, -87, -88, -89	JAR-P Change 7 dated October 22, 1987, as amended by Amendment P/96/1 dated August 08, 1996 CS-P 360, CS-P 380, CS-P 390, CS-P 400, CS-P 560 (Amendment 01 dated 16 November 2006)
MTV-27-1-N-C-F-J MTV-27-1-N-C-F-R(G)-J MTV-27-1-N-C-F-R(P)-J (Also identified as MTV-27-1-()-J in this TCDS)	Wooden Blades: -82, -83, -84	JAR-P Change 7 dated October 22, 1987, as amended by Amendment P/96/1 dated August 08, 1996 CS-P 360, CS-P 380, CS-P 390, CS-P 400, CS-P 560 (Amendment 01 dated 16 November 2006)

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-27-1 propeller model is defined by a main assembly drawing and associated parts list:

MTV-27-1-(*1) and MTV-27-1-(*1)-C “Constant Speed” and
MTV-27-1-(*1)-C-F “Constant Speed, Feather”:
Drawing No. P-565 dated 04 December 2001 (*2)
Parts List No. S-081 dated 04 December 2001 (*2)

MTV-27-1-(*1)-C-F-R(M) “Constant Speed, Feather, Reverse (System Mühlbauer)”:
Drawing No. P-557-A dated 04 December 2001 (*2)
Parts List No. S-080-A dated 04 December 2001 (*2)

MTV-27-1-(*1)-C-F-R(P) “Constant Speed, Feather, Reverse (System Pratt & Whitney)”:
Drawing No. P-467-D dated 13 February 2001 (*2)
Parts List No. S-051-B dated 04 December 2001 (*2)

MTV-27-1-E-C-F-R(G) “Constant Speed, Feather, Reverse (System Garrett)”:
Drawing No. P-635-E dated 07 December 2000 (*2)
Parts List No. S-109-C dated 04 December 2001 (*2)

MTV-27-1-E-C-F-R(W) “Constant Speed, Feather, Reverse (System Walter)”:
Drawing No. P-760-1 dated 03 December 2001 (*2)
Parts List No. S-141 dated 03 December 2001 (*2)

MTV-27-1-N-C-F-J “Constant Speed, Feather”:
Drawing No. P-1151-1 dated 09 February 2010 (*2)
Parts List No. S-184-1-A dated 26 August 2010 (*2)

MTV-27-1-N-C-F-R(G)-J “Constant Speed, Feather, Reverse (System Garrett)”:
Drawing No. P-1151-A dated 10 February 2010 (*2)
Parts List No. S-184-B dated 26 August 2010 (*2)

MTV-27-1-N-C-F-R(P)-J “Constant Speed, Feather, Reverse (System Pratt & Whitney)”:
Drawing No. P-1329 dated 25.07.2013 (*2)
Parts List No. S-200 dated 07.10.2013 (*2)

Note:

(*1) Three versions of hub flanges are available (refer to drawing):
- E = ARP 880
- N = BCD 5.125 in, twelve 9/16”-18 UNF studs, two dowels
- H = Similar to N except for dowel location

(*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-565 in P-565-A.

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 blade is protected by a stainless steel or nickel 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: Wooden blades: 190 cm to 300 cm

5. Weight

Depending on Propeller-Design Configuration
Wooden blades:
"Constant Speed": approx. 55 kg
"Constant Speed, Feather": approx. 68 kg
"Constant Speed, Reverse": approx. 68 kg
"Constant Speed, Feather, Reverse": approx. 74 kg

6. Hub / Blade Combinations

Hub	Blades
MTV-27-1 except MTV-27-1-()-J	Wooden Blades: -02, -11, -14, -15, -18, -20, -21, -22, -25, -26, -27, -29, -33, -34, -35, -37, -42, -43, -45, -46, -50, -52, -55, -58, -61, -62, -63, -65, -66, -67, -87, -88, -89, -102, -103, -104, -109, -121
MTV-27-1-()-J	Wooden Blades: -82, -83, -84,

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 note VI.6.)

9. Direction of Rotation

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

IV. Operating Limitations

1. Approved Installations

Propeller/engine/aircraft combinations that have been demonstrated to comply with the requirements of JAR-P 60(b), 160(b), 190, and 220 are listed in MT-Propeller Service Bulletin No. 16.
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)
MTV-27-1 except MTV-27-1-()-J	634	2200	190 to 250
	671	1900	190 to 260
	858	2200	190 to 220
	858	1607	190 to 250
	954	2000	190 to 235
	954	1700	190 to 270
MTV-27-1-()-J	1231	2000	190 to 250
	1231	1568	190 to 300
	1268	1700	190 to 300

3. Maximum Continuous Power and Speed

	Max. Continuous Power (kW)	Max. Continuous Speed (rpm)	Diameter (cm)
MTV-27-1 except MTV-27-1-()-J	634	2200	190 to 250
	671	1900	190 to 260
	858	2200	190 to 220
	858	1607	190 to 250
	954	2000	190 to 235
	954	1700	190 to 270
MTV-27-1-()-J	1231	2000	190 to 250
	1231	1568	190 to 300
	1268	1700	190 to 300

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 (constant speed propeller) MTV-27-1-( ) and MTV-27-1-( )-C	No. E-124 (*)
Operation and Installation Manual for reversible hydraulically controlled variable pitch propeller (constant speed propeller); Reverse-Systems (M) MTV-27-1-( )-C-F-R(M)	No. E-504 (*)
Operation and Installation Manual for reversible hydraulically controlled variable pitch propeller (constant speed propeller); Reverse-Systems (G), (P), (W) MTV-27-1-E-C-F-R(G), MTV-27-1-( )-C-F-R(P), and MTV-27-1-E-C-F-R(W)	No. E-610 (*)
Operation and Installation Manual for reversible hydraulically controlled variable pitch propeller (constant speed propeller) for PT6A-67 – Series MTV-27-1-( )-C-F-R(P), and MTV-27-1-N-C-F-R(P)-J	No. E-1083 (*)
Operation, Installation and Maintenance Manual for reversible hydraulically controlled variable pitch propeller (constant speed propeller) MTV-27-1-N-C-F-J, MTV-27-1-N-C-F-R(G)-J, and MTV-27-1-N-C-F-R(P)-J	No. E-1922 (*)

Instructions for Continued Airworthiness (ICA)	
Operation and Installation Manual for hydraulically controlled variable pitch propeller (constant speed propeller) MTV-27-1-( ) and MTV-27-1-( )-C	No. E-124 (*)
Operation and Installation Manual for reversible hydraulically controlled variable pitch propeller (constant speed propeller); Reverse-Systems (M) MTV-27-1-( )-C-F-R(M)	No. E-504 (*)
Operation and Installation Manual for reversible hydraulically controlled variable pitch propeller (constant speed propeller); Reverse-Systems (G), (P), (W) MTV-27-1-E-C-F-R(G), MTV-27-1-( )-C-F-R(P), and MTV-27-1-E-C-F-R(W)	No. E-610 (*)
Operation and Installation Manual for reversible hydraulically controlled variable pitch propeller (constant speed propeller) for PT6A-67 – Series MTV-27-1-( )-C-F-R(P), and MTV-27-1-N-C-F-R(P)-J	No. E-1083 (*)
Operation, Installation and Maintenance Manual for reversible hydraulically controlled variable pitch propeller (constant speed propeller) MTV-27-1-N-C-F-J, MTV-27-1-N-C-F-R(G)-J, and MTV-27-1-N-C-F-R(P)-J	No. E-1922 (*)
Overhaul Manual and Parts List for hydraulically controlled variable pitch propeller MTV-27-1-( ) and MTV-27-1-( )-C	No. E-220 (*)
Overhaul Manual and Parts List for reversible hydraulically controlled variable pitch propeller; Reverse-Systems (M) MTV-27-1-( )-C-F-R(M)	No. E-519 (*)

Overhaul Manual and Parts List for reversible hydraulically controlled variable pitch propeller; Reverse-Systems (G), (P), (W) MTV-27-1-E-C-F-R(G), MTV-27-1-( )-C-F-R(P), and MTV-27-1-E-C-F-R(W)	No. E-680 (*)
Overhaul Manual for Composite Blades (also applicable to wooden blades)	No. E-1290 (*)
Overhaul Manual for Metal Blades	No. E-809 (*)
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. The overhaul intervals recommended by the manufacturer are listed in MT-Propeller Service Bulletin No. 1.

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

4. In accordance with JAR-P 10(c), the MTV-27-2-( )-C-F-R(P)/( )265-417 propeller has received a Preliminary Approval under reference P-EASA.P.C.01007. The full compliance of this propeller has yet to be demonstrated with JAR-P 60(b), JAR-P 160(b), JAR-P 190, and JAR-P 220. The MTV-27-2 propeller model is defined by a main assembly drawing and associated parts list:

MTV-27-2-(*1)-C-F-R(P) "Constant Speed, Feather, Reverse (System Pratt & Whitney)":
Drawing No. P-955-A dated 15 February 2006 (*2)
Parts List No. S-164-A dated 16 February 2006 (*2)

Note:

(*1) Three versions of hub flanges are available:
- E = ARP 880
- N = BCD 5.125 in, twelve 9/16"-18 UNF studs, two dowels
- H = Similar to N except for dowel location

(*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-955-A in P-955-B.

The MTV-27-2 propeller ratings are:

	Diameter (cm)	Max. Take-Off Power Max. Continuous (kW)	Max. Take-Off Speed Max. Continuous (rpm)
MTV-27-2-()	190 to 265	954	1700

5. EASA Type Certificate and Type Certificate Data Sheet No. P.104 replace LBA-Germany Type Certificate and Type Certificate Data Sheet No. 32.130/102.

6. Propeller designation system:

					Hub								/				Blade					
MT	V	-	27	-	(1 or 2)	( )	( )	( )	( )	( )	( )	/	( )	( )	250	-	103	( )				
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:
- E = ARP 880
- N = BCD 5.125 in, twelve 9/16”-18 UNF studs, two dowels
- H = Similar to N except for dowel location

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:
- G = System Garrett
- M = System Mühlbauer
- P = System Pratt & Whitney
- W = System Walter

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	06 Nov. 2007	Initial issue following approval P-EASA.P.C.01007: a) MTV-27-1 except MTV-27-1-()-J: Approval of wooden blades -61, -62, -63, -65, -66, -67 – Approval of power rating 954 kW / 1700 rpm / 190 to 270 cm diameter for all wooden blades. b) MTV-27-2: Preliminary approval with metallic blades -417 for 954 kW / 1700 rpm / 190 to 265 cm diameter power rating.	Initial Issue, 06 Nov. 2007
Issue 02	06 Sep. 2010	Introduction of MTV-27-1-N-C-F-J and MTV-27-1-N-C-F-R(G)-J (certificate 10031691) with: a) Increased blade retention bearing diameter from 130 mm to 145 mm. b) -82, -83, -84 wooden blades. c) Power rating 1231 kW / 1568 rpm / 190 to 300 cm diameter for -82, -83, -84 wooden blades. d) Power rating 1231 kW / 2000 rpm / 190 to 250 cm diameter for -82, -83, -84 wooden blades.	06 Nov. 2007
Issue 03	21 Dec. 2011	MTV-27-1 except MTV-27-1-()-J (certificate 10037780): a) Approval of -52 wooden blades. b) Approval of power rating 634 kW / 2200 rpm / 190 to 250 cm diameter for all wooden blades.	06 Nov. 2007
Issue 04	17 Nov. 2014	Certificate 10051212: a) Addition of Hub MTV-27-1-N-C-F-R(P)-J. b) Addition of Wooden Blades -87, -88, -89 for MTV-27-1 except MTV-27-1-()-J.	06 Nov. 2007
Issue 05	22 Feb. 2018	a) MTV-27-1 except MTV-27-1-()-J: Approval of power rating 671 kW / 1900 rpm / 190 to 260 cm diameter for all wooden blades (certificate 10064749). b) Previous note 5 is moved to § IV.1. “Approved Installations”.	06 Nov. 2007

-END-