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# **Type Acceptance Report**

**TAR 21/21B/2**

**MT-Propeller MTV-12 Series**

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## Executive Summary

New Zealand Type Acceptance has been granted to the MTV-12 Series based on validation of EASA Type Certificate number P.013. There are no special requirements for import.

Applicability is limited to the Models and/or serial numbers detailed in Section 2, which are now eligible for installation on a NZ-registered aircraft. Additional variants or serial numbers approved under the foreign type certificate can become type accepted after supply of the applicable documentation, in accordance with the provisions of NZCAR §21.43(b).

NOTE: The information in this report is correct as at the date of issue. The report is only updated when an application is received to revise the Type Acceptance Certificate. For details on the current type certificate holder and any specific technical data, refer to the latest State-of-Design Type Certificate Data Sheet.

## 1. Introduction

This report details the basis on which Type Acceptance Certificate No. 21/21B/2 was granted in the Standard Category in accordance with NZCAR Part 21 Subpart B.

Specifically the report aims to:

- (a) Specify the foreign type certificate and associated airworthiness design standard used for type acceptance of the model(s) in New Zealand; and
- (b) Identify any special conditions for import applicable to any model(s) covered by the Type Acceptance Certificate.

The report also notes the status of all propeller models included under the State-of-Design type certificate which have been granted type acceptance in New Zealand. Models covered by the type acceptance certificate issued under Part 21B at Amendment 6 or later are listed in Section 2 of this report. The history of the MTV-12 Series propeller type acceptance in New Zealand under EASA type certificate P.013 is listed in Appendix 1.

## 2. Product Certification Details

### (a) State-of-Design Type and Production Certificates:

Manufacturer: MT-Propeller Entwicklung GmbH

Type Certificate: EASA P.013

Issued by: European Aviation Safety Agency

Production Approval: EASA DE.21G.0008

### (b) Models Covered by the Part 21B Type Acceptance Certificate:

(i) **Models:** MTV-12-B

MTV-12-C

MTV-12-D

### 3. Application Details and Background Information

There have been examples of the MTV-12 propeller in New Zealand prior to Part 21B at Amendment 6, when there was no provision for separate type acceptance of products and engines and propellers were included with the aircraft validation. With the revision of the Diamond DA40 and DA42 series type acceptance certificates the opportunity was taken to issue a separate report for the MTV-12 Series, and to update to the latest format. The application was from the manufacturer dated July 15, 2020.

Type Acceptance Certificate No. 21/21B/2 was granted on 19 August 2020 to the MTV-12 Series based on validation of EASA Type Certificate P.013. Specific applicability is limited to the coverage provided by the operating documentation supplied. (Major modifications in the form of additional flange types or blades do not require further validation if they are covered by the same Instructions for Continued Airworthiness listed in this report.) There are no special requirements for import into New Zealand.

The MTV-12 propeller was originally approved under LBA type certificate No. 32.130/67.

The MTV-12 is a 3-blade variable pitch propeller with hydraulically operated pitch change mechanism which provides for “Constant Speed”, “Feather” and “Reverse” modes. The hub is forged and milled aluminium and the blades are either laminated wood with composite covering, or full composite construction (Series -500 or -600). It is intended for installation on engines in the maximum take-off power range from 225 to 295 shp. Details of the different models are shown below:

Design Configuration	Assembly Drawing:	Issue Date:	Parts List:	Issue Date:
MTV-12-(*)-C “Constant Speed”	P-199-1-	16.10.1987	S-023-1-	26.07.1987
MTV-12-(*)-C-F “Constant Speed and Feather”	P-706-(x)	13.07.2000	S-122-(x)	14.07.2000
MTV-12-(*)-C-R(M) “Constant Speed + Reverse (System Mühlbauer)”	P-552-(x)	19.08.1987	S-079-(x)	19.08.1987
MTV-12-(*)-C-F-R(M) “Constant Speed + Feather + Reverse (System Mühlbauer)”	P-482-(x)	19.07.1996	S-068-(x)	14.10.1996

(\*) : Flange types:

- 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

The following blades are applicable for the above listed design configurations for 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

The following blades are applicable for the above listed design configurations for Wooden blades:  
AFRP: -517, -556  
CFRP: -617, -656

#### 4. NZCAR §21.43 Data Requirements

The type data requirements of NZCAR Part 21B Para §21.43 have been satisfied by supply of the following documents, or were already held by the CAA:

(1) State-of-Design Type certificate:

EASA Type Certificate Number P.013

EASA Type Certificate Data Sheet no. P.013 at Issue 02 dated 12 October 2017

– Model MTV-12-D approved 27 October 1988

– Model MTV-12-B approved 30 June 1989

– Model MTV-12-C approved 30 June 1989

(2) Airworthiness design requirements:

(i) *Airworthiness Design Standards:*

The certification basis of the MTV-12-B/C/D Series is FAR Part 35, including Amendments 35-1 through 35-7, effective 28 December 1995. In addition for propellers fitted with composite blades three paragraphs of CS-P at initial issue dated 24 October 2003 were applied, as noted on the TCDS. This is an acceptable certification basis in accordance with CAR Part 21B paragraph §21.41, because FAR Part 35 is the basic design standard for propellers called up under CAR Part 21 Appendix C, and CS-P is an acceptable alternative standard under Advisory Circular 21-1. There are no non-compliances and no additional special conditions have been prescribed by the Director under §21.23.

(ii) *Special Conditions:*

Nil

(iii) *Equivalent Level of Safety Findings:*

Nil

(iv) *Airworthiness Limitations:*

See Chapter 10.0 Airworthiness Limitations Section in the applicable Operation Installation and Maintenance Manual. (In this case there are no life limits.)

Propeller TBO is specified in Service Bulletin No.1

(3) Aircraft Noise and Engine Emission Standards:

(i) *Environmental Standard:*

Nil

(ii) *Compliance Listing:*

Not Applicable

(4) Certification Compliance Listing:

MZ-Liste (Compliance Checklist) MTV-12-D dated 26.07.1988

MZ-Liste (Compliance Checklist) MTV-12-B, -C dated 03.05.1989

MZ-Liste (Compliance Checklist) MTV-12-()-C-F-R(M) dated 03.12.1996

Report E-567 – Musterprüfungen (Type Investigations) – MTV-12-()-C-()-R(M)

Report E-695 – Musterprüfungen (Type Investigations) – Further Blade Types

Report E-800 – MTV-12 Type Investigations – Full Composite Blades

Report E-819 – MTV-12 Type Investigations – Extension of Operating Limitation and Propeller Diameter

MT-Propeller Compliance Checklist Document E-3063 – MTV-12 Certification of additional maximum take off and continuous power and speed rating

(5) Flight Manual: Not Applicable

(6) Operating Data for Propeller:

(i) *Maintenance Manual:*

E-124 – Operation and Installation Manual – Hydraulically Controlled Variable Pitch Propeller (Constant Speed Propeller)

E-504 – Operation and Installation Manual – Reversible Hydraulically Controlled Variable Pitch Propeller (Constant Speed Propeller) – (M)

E-1290 – Composite Blade Overhaul Manual

E-808 – Standard Practice Manual

(ii) *Current service Information:*

Service Bulletins and Service Letters

(iii) *Illustrated Parts Catalogue:*

E-220 – Overhaul Manual and Parts List – Hydraulically Controlled Variable Pitch Propeller (Constant Speed Propeller)

E-519 – Overhaul Manual and Parts List – Reversible Hydraulically Controlled Variable Pitch Propeller (Dual-Piston-System) (Constant Speed Propeller) (M)

(7) Agreement from manufacturer to supply updates of data in (5), and (6):

CAA 2171 Form from MT-Propeller Certification Engineering dated 08.07.2014

Technical Publications are available on the website at [www.mt-propeller.com](http://www.mt-propeller.com)

## Attachments

The following documents form attachments to this report:

Copy of EASA Type Certificate Data Sheet Number P.013

## Sign off

A blue ink signature of David Gill is written over a circular blue stamp of the Civil Aviation Authority of New Zealand. The stamp contains the text 'CIVIL AVIATION AUTHORITY OF NEW ZEALAND' and the number '0853'.

.....  
David Gill  
Team Leader Aircraft Inspection

A blue ink signature of Tim Dutton is written over a circular blue stamp of the Civil Aviation Authority of New Zealand. The stamp contains the text 'CIVIL AVIATION AUTHORITY OF NEW ZEALAND' and the number '5614'.

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Checked – Tim Dutton  
Flight Test Engineer

## Appendix 1

### List of Type Accepted Variants:

<i>Model:</i>	<i>Applicant:</i>	<i>CAA Work Request:</i>	<i>Date Granted:</i>
MTV-12-B/180-17()	Diamond Aircraft Industries GmbH	3/21B/34	25 July 2003
MTV-12-C/175-17	J A Evans (LBA STC SA 0643)	8/21HA/464	2 October 2008
MTV-12-B-C-F(L)183-59b	Diamond Aircraft Industries, Inc.	10/21B/3	9 Sept. 2009
MTV-12-B/183-59	Costruzioni Aeronautiche Tecnam Srl	18/21B/26	17 May 2018
MTV-12 Series	MT-Propeller Entwicklung GmbH	21/21B/3	19 August 2020