TYPE-CERTIFICATE DATA SHEET

No. EASA.P.058

for
HO-V123 series propellers

Type Certificate Holder
Hoffmann Propeller GmbH & Co. KG

Küpferlingstraße 9
83022 Rosenheim
Germany

For Models:
HO-V123F
HO-V123K
HO-V123K-KVT
HO-V123L

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I. General

1. Type / Model

HO-V123 / HO-V123F, HO-V123K, HO-V123K-KVT, HO-V123L

2. Type Certificate Holder

Hoffmann Propeller GmbH & Co. KG
Küpferlingstraße 9
83022 Rosenheim
Germany

Design Organisation Approval No.: EASA.21J.083.

3. Manufacturer

Hoffmann Propeller GmbH & Co. KG
(Formerly Hoffmann GmbH & Co. KG, formerly Hoffmann)

4. Date of Application

HO-V123F	26 July 1971
HO-V123K	28 March 1974
HO-V123K-KVT	27 June 2014
HO-V123L	23 September 1977

5. EASA Type Certification Date

HO-V123F	25 July 1973
HO-V123K	27 May 1974
HO-V123K-KVT	21 December 2017
HO-V123L	30 December 1977

II. Certification Basis

1. Reference Date for determining the applicable airworthiness requirements

HO-V123 (F,K,L): 26 July 1971
HO-V123K-KVT: 27 June 2014

2. EASA Certification Basis

2.1. Airworthiness Standards

HO-V123F, HO-V123K and HO-V123L:
14 CFR Part 35 with Amendments 1 through 2 effective 03 April 1967.

Note:
Application was made to EASA Member States before EASA was established. Refer to Commission Regulation (EU) No 748/2012.
These propeller models are EASA certified based on member states approvals prior to EASA existence.

HO-V123K-KVT:
CS-P Amendment 1 dated 16 November 2006 as issued by EASA Decision No 2006/09/R, except the requirements of Subpart D as allowed by CS-P 10(b) (See Note 3).

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 HO-V123 propeller models are defined by a main assembly drawing and associated parts list (or later approved revisions).

HO-V123F:	Drawing VP20-536, Rev. s, dated 30.06.2016
HO-V123K:	Drawing VP20-536, Rev. s, dated 30.06.2016
HO-V123K-KVT:	Drawing VP20-536-24, Rev. Initial, dated 26.04.2014
HO-V123L:	Drawing VP20-536, Rev. s, dated 30.06.2016

2. Description

The HO-V123 series propellers are three bladed “Constant Speed” propellers with hydraulically pitch change mechanism. The hub is made of forged aluminium alloy. The blades have a wood composite structure and are covered by a composite fibre laminate. The blades are equipped with a leading edge protection device.
Optional equipment includes spinner and blade de-icing.

3. Equipment

Spinner: All spinner must be approved as part of the aircraft installation regardless of manufacturer.
Governor: All governor must be approved as part of the aircraft installation regardless of manufacturer.
De-icing: All blade de-icing equipment must be approved as part of the aircraft installation regardless of manufacturer.

4. Dimensions

Propeller diameter from 142.0 cm to 205.0 cm. (See table of section III. 6.)

5. Weight

Propeller weight from 22.0 kg to 32.0 kg. (See table of section III. 6.)

6. Hub/ Blade Combinations

Hub Model	Wooden Blades	Maximum Continuous Power	Maximum Continuous Speed	Take Off Power	Take Off Speed	Diameter Limits	Blade Twist Limits 1) Min. - Max.	Approx. Max.Weight 2) (For Ref. Only)
		[kW]	[RPM]	[kW]	[RPM]	[cm]	[°]	[kg]
HO-V123F	185V	164	2800	164	2800	180 – 190	5 – 50	22.5
	180R	194	2700	194	2700	170 – 188	5 – 50	22.5
		156	2800	156	2800			
	180DT	213	2700	224	2850	170 – 188	5 – 50	22.5
		156	2800	156	2800			
	180BY	194	2700	194	2700	170 – 188	5 – 50	22.5
		156	2800	156	2800			
	200P	212	2000	212	2000	193 - 205	5 - 50	22.5
	200AH	224	2700	227	2800	190 - 200	5 – 50	24.0
	200DS	224	2700	227	2800	190 - 200	5 – 50	24.0
	200CQ	224	2700	227	2800	185 – 200	5 – 50	24.0
		212	2575	212	2575	185 – 205	5 – 50	24.0
	193DY	224	2600	224	2600	180 – 193	5 – 50	24.2
	152ER	160	2800	160	2800	142 – 162	5 – 50	22.0
	220GV	156	2700	156	2700	220	0 - 0	32.0
HO-V123K	180R	194	2700	194	2700	170 – 188	5 – 50	22.5
		156	2800	156	2800			
	180DT	213	2700	224	2850	170 – 188	5 – 50	22.5
		156	2800	156	2800			
	180BY	194	2700	194	2700	170 – 188	5 – 50	22.5
		156	2800	156	2800			
	200AH	224	2700	227	2800	190 - 200	5 – 50	24.0
	200DS	224	2700	227	2800	190 - 200	5 – 50	24.0
	193DY	224	2600	224	2600	180 - 193	5 - 50	24.2
	152ER	160	2800	160	2800	142 – 162	5 – 50	22.0
HO-V123L	180R	118	2700	118	2700	165 – 180	5 – 50	22.0
	180DT	118	2700	118	2700	165 – 180	5 – 50	22.0
	180BY	118	2700	118	2700	165 – 180	5 – 50	22.0
	152ER	160	2800	160	2800	142 – 162	5 – 50	21.5
HO-V123K-KVT	195MR	235	2700	235	2700	195	5 – 50	26.5

Notes:

1) Blade Twist Limit applies between the 20% radius station (r 0.2) and the 100% radius station (r 1.0).

2) Weight differences to basic design:

HO-V123( )1-( )-( ): +1.5kg

HO-V123( )2-( )-( ): +2.5kg

HO-V123( )( )-V-( ): +1.5kg (Not applicable for the HO-V123K-KVT)

7. Control System

Standard hydraulically propeller Governor with a maximum pressure of 23 bar can be used. All governor must be approved as part of the aircraft installation.

8. Adaptation to Engine

Hub flanges as identified by a letter code in the propeller designation (see VI.2).

9. Direction of Rotation

Direction of rotation (viewed in flight direction) as identified by a letter code in the propeller designation (see VI.2).

IV. Operating Limitations

1. Approved Installations

The HO-V123K-KVT propeller model is intended for the use in an Extra 300 acrobatic aircraft powered by a Lycoming AEIO-580 engine.
The HO-V123F-DR/220GV propeller model is only certified for the use in the Zeppelin LZ N07 Airship.
The general 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

Details are mentioned within Table of Section III.6.

2. Maximum Continuous Power and Speed

Details are mentioned within Table of Section III.6.

3. Propeller Pitch Angle

The HO-V123 propeller models have variable pitch capability. Pitch control is provided by a governor.
Measured at 75% radius station:
HO-V123K-KVT-(): From +5° up to +50°
HO-V123()-()-(): From +5° up to +50°
HO-V123()-R()-(): From -15° up to +50° (reversible propeller)
HO-V123()-S()-(): From +5° up to +90° (fathering propeller)

V. Operating and Service Instructions

Manuals	
Operation and Maintenance Manual	E888 (*)
Components and Maintenance Manual	E890 (*)
Composite Propeller Blade Instruction Manual	E573 (*)

(*): or later approved revision

Instructions for Continued Airworthiness (ICA)	
Operation and Maintenance Manual	E888 (*)
Components and Maintenance Manual	E890 (*)
Service Bulletins, Service Letters, Service Advisories and Service Instructions	

(*): or later approved revision

VI. Notes

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

2. Propeller Designation System
   Example:

		Hub											Blade						
HO	-	V	12	3	F	( )	-	( )	-	( )	/	( )	( )	185	V	( )	-	( )	( )	±	( )
1		2	3	4	5	6		7		8		9	10	11	12	13		14	15		16

Hub:
- 1 Hoffmann Propeller GmbH & Co.KG
- 2 V: Variable pitch propeller
- 3 Identification of basic propeller model
- 4 Number of blades
- 5 Letter code of propeller flange
  - F: ARP 502 Type 1
  - K: AS 127D (SAE 2 Mod) 3/4” bushings 1/2” -20 UNF bolts
  - L: AS 127D (SAE 2 Mod) 5/8” bushings 7/16” -20 UNF bolts
- 6 Number for hub extension from blade axis to flange
  - Blank: 135 mm
  - 1: 195 mm
  - 2: 250 mm
- 7 Letter code of the pitch change method
  - Blank:: Oil pressure to increase pitch
  - F: Oil pressure to increase pitch, supported by counterweights
  - S: Oil pressure to decrease pitch. Counterweights to increase pitch up to feathering
  - V: Oil pressure to decrease pitch and counterweights to increase pitch
  - K: Pitch change cylinder on the front of the hub
  - D: Dual acting hydraulic system
  - R: Reversible
  - T: Reinforced spring
- 8 Minor changes which do not affect interchangeability

Blade: 9 Letter code for direction of rotation
- Blank: Right-hand tractor
- D: Right-hand pusher
- L: Left-hand tractor
- LD: Left-hand pusher
- V: Changed position of the pitch change pin

10 Type of erosion shield
- Blank: Type “A” or “B” erosion shield
- C: PU erosion shield

11 Propeller diameter in cm

12 Identification of blade design

13 Identification of blade twist

14 Special equipment
- B: Electrical de-icing

15 Material of blade:
- Blank: Compreg scarfed with lighter wood
- P: Compreg

16 Decrease (-) or increase (+) of basic diameter in cm

3. The propeller model HO-V123K-KVT has been certified in accordance with CS-P subparts A, B and C. Compliance with the requirements of Subpart D, which is specific to each aircraft installation, has not yet been demonstrated.

4. The suitability of a propeller for a certain aircraft/engine combination must be demonstrated within the scope of the type certification of the aircraft.
   Propeller models listed herein consist of basic hub and blade models. Most propeller models include additional characters to denote minor changes and specific features as explained in Note 2.

5. The overhaul intervals recommended by the manufacturer are listed in Hoffmann Propeller Service Bulletin SB E1().

6. EASA Type Certificate and Type Certificate Data Sheet No. P.058 replace LBA-Germany Type Certificate and Type Certificate Data Sheet No. 32.130/17.

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	21 December 2017	Initial Issue of the EASA TCDS P.058 to replace the LBA-Germany TCDS 32.130/17. HO-V123K-KVT propeller model with blade 195MR has been added.	21 December 2017

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