

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Controllable Pitch Propeller

with type designation(s)
Feathering Propeller series VP, GP, DF

Issued to
**S.P.W. GmbH Sail Propeller- und Wellenbau
Bremerhaven, Germany**

is found to comply with
**DNV GL rules for classification – Ships
DNV GL rules for classification – Yachts
DNV GL rules for classification – High speed and light craft**

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Issued at **Hamburg** on **2021-02-16**

for **DNV GL**

This Certificate is valid until **2026-02-15**.

DNV GL local station: **Hamburg – CMC North/East**

Approval Engineer: **Olaf Richter**

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**Olaf Drews
Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Product description

Feathering propellers

Application/Limitation

For sailing ship propulsion.

Type	Blades	Propeller diameter max. [mm]	Engine power max. [kW]	Propeller torque max. [Nm]	Propeller speed max. [rpm]
VP-64	2, 3	455	22	150	1400
VP-76	2, 3	560	55	375	1400
VP-104	3	660	82	653	1200
DF-80, GP-80	2, 3, 4	432	22	150	1400
DF-107, GP-107	2, 3, 4	508	59	402	1400
DF-112, GP-112	3, 4	635	88	700	1200
DF-128	3, 4	715	103	894	1100
DF-140	3, 4	762	132	1261	1000
DF-160	3	864	202	2030	950
DF-180	3	914	257	2727	900
DF-190	4	864	202	2030	950
DF-210	4	914	257	2727	900
DF-230	3	1016	308	3676	800
DF-260	4	1016	308	3676	800
DF-280	3	1270	404	5144	750
DF-310	4	1270	404	5144	750
DF-380	4	1575	550	12500	750

Type Approval documentation

Drw No	Rev	Title	Status
-	2020-11-21	Drawing list VP64	DI Discarded**
-	2020-11-21	Drawing list GP112	DI Discarded**
-	2010-01-19	Document List of VariProfile	DI Discarded**
-	-	DF-380 part list	DI Discarded**
-	-	Material data propeller hub	FI For Inf.
-	-	Propeller assembly	DI Discarded**
-	-	Variprofile Broschüre	DI Discarded**
-	2020-11-21	Drawing list VP76	DI Discarded**
-	-	Blade sections DF-xx 12-50"	AP Approved
-	-	Variprop brochure	DI Discarded**
-	-	Assembly drawings + blade sections DF-xx	AP Approved
Anode DF-380	01	Anode DF-380	DI Discarded**
Anode VP104-02	01	Anode VP-104	DI Discarded**
Anode VP64-02	04	Anode / VP-64	DI Discarded**
Anode VP76-02	02	Anode / VP-76	DI Discarded**
Anschlag 104-RH-04	06	Anschlag VP-104 3 Blatt	AP Approved
Anschlag VP64-04	08	Anschlag VP-64	AP Approved
Anschlag VP76-04	06	Anschlag v2.1 VP-76	AP Approved
Assembly DF-380-4bl-00	00	Assembly DF-380	AP Approved

Assembly Exploded_VP76-2bl-04	06	Assembly VP-76 v3.0/GL	AP Approved
Assembly FlgDF-380-50-00	00	Flügel DF-380	FI For Inf.
Assembly_Exploded VP-104-3bl-03	03	Assembly VP-104	AP Approved
Assembly_Exploded-GP-107-3bl	-	Assembly_Exploded GP-107-3blade-19	AP Approved
Assembly_VP64-04_exploded-01	12	Assembly VP-64 v3.0/GL	AP Approved
Assembly-1 DF-380-50-00 sh.1	00	Assembly DF-380	AP Approved
Assembly-2 DF-380-50-00 sh.2	00	Assembly DF-380	AP Approved
Assembly-3 DF-380-50-00 sh.3	00	Assembly DF-380	AP Approved
Assembly-GP-80-3bl	-	Assembly_Exploded-GP-80-3bl	AP Approved
Connect-plate-05	07a	Connecting Plate v3.0/GL VP-64	AP Approved
Connect-plate-VP104-04	04/GL	Connecting Plate VP-104	AP Approved
Connect-plate-VP76-05	07a	Connecting plate v3.0/GL VP-76	AP Approved
DF380_Flg-62-00-flat	2008-07-09	DF380_Flg-62-00 VariProp symm. section	AP Approved
DIN 913 - M30 x 120	00	Steigungsverstellungsschraube DF-380	FI For Inf.
FlgDF_schnitt-380-62-00	-	Flügelschnitt DF-380/48-62"	AP Approved
FlgDF-80GP-16	01	Flügel DF-80&107-GP/Serie	AP Approved
FlgGP-112-20-06a-flat	01	Flügel DF-112SE Vers.GP	AP Approved
FlgGP-112-20-06a-flat	-	Flügel DF-112_GP	AP Approved
FlgSchnitt-GP-112-20_24-01	2020-02-13	Flügelkontur DF-112 / dia. 20-24"	AP Approved
FlgVerzGP-112-01	01	Flügel-Zahnrad GP-112	AP Approved
Flg-VP104-Schnitt-26-00	00	Flügelschnitt VP-104 26"	AP Approved
Flg-VP104-Schnitt-26-01	00	Flügelschnitt VP-104 26"	AP Approved
GearAc_1818-04aRH	07	Nabenverzahnung VP-64 v3.0/GL	AP Approved
GearAc_2424-04RH	04	Nabenverzahnung VP-76 v3.0	AP Approved
GearAc_2727-03RH	03	Nabenverzahnung VP-104	AP Approved
GearPas_1818-02aLH	06	Flügelverzahnung VP-64 v3.0/GL	AP Approved
GearPas_2424-03LH	05	Flügelverzahnung VP-76 v3.0	AP Approved
GearPas_2727-01LH	03a	Flügelverzahnung VP-104	AP Approved
Geob104-3bl-00	01	VP-104 3 Blatt Gehäuse Oberteil	AP Approved
Geob112_GP-3bl	00	DF-112_GP 3 Blatt Gehäuse Oberteil	AP Approved
Geob112_GP-4bl	00	DF-112_GP 4 Blatt Gehäuse Oberteil	AP Approved
Geob380-4bl-01	01	Gehäuse-Oberteil 4 Blatt DF-380	AP Approved
Geob64-2bl-02	06	VP-64 2 Blatt Gehäuse Oberteil	AP Approved
Geob64-3bl-02	07	VP-64 3 Blatt Gehäuse Oberteil	AP Approved
Geob76-2bl-01	07	VP-76 2 Blatt Gehäuse Oberteil	AP Approved
Geob76-3bl-01	05	VP-76 3 Blatt Gehäuse Oberteil	AP Approved
Geut104-3bl-02	03	VP-104 3 Blatt Gehäuse Unterteil	AP Approved
Geut112_GP-3bl	00	DF-112_GP 3 Blatt Gehäuse Unterteil	AP Approved
Geut112_GP-4bl	00	DF-112_GP 4 Blatt Gehäuse Unterteil	AP Approved
Geut112_SD-4bl	00	DF-112_SD 4 Blatt Gehäuse Unterteil SD	AP Approved
Geut112-3bl	01a	DF-112_GP/SD 3 Blatt Gehäuse Untert. SD	AP Approved
Geut380-4bl-Sundin	01	Gehäuse-Unterteil 4 Blatt DF-380	AP Approved
Geut64-2bl-01	06a	VP-64 2 Blatt Gehäuse Unterteil	AP Approved
Geut64-3bl-01	07a	VP-64 3 Blatt Gehäuse Unterteil	AP Approved
Geut76-2bl-01	06a	VP-76 2 Blatt Gehäuse Unterteil	AP Approved
Geut76-3bl-01	05a	VP-76 3 Blatt Gehäuse Unterteil	AP Approved
GP112-20_24-01	2020-02-13	Flügelkontur DF-112 / dia. 20-24"	AP Approved
GP112-20-06a_DNV	01	Assembly_Exploded_GP-112-3bl	AP Approved
GP112-24-01	2020-11-19	Flügelkontur DF-112 / dia. 24"	AP Approved
Hub-25_VP64-04a	06a	Hub-25 VP-64	AP Approved

Job Id: **262.1-034406-1**
Certificate No: **TAM000017G**

Hub-30_VP64-03	05a	Hub-30 VP-64	AP Approved
Hub-30_VP76-02	04a	Hub-30 VP-76	AP Approved
Hub-45_VP104-02	02/GL	Hub-45 VP-104	AP Approved
Kappe DF-380-00	01	Kappe DF-380	FI For Inf.
Nabe DF-380-01	01	Nabe DF-380	AP Approved
NabeDF112-02	04	Nabe DF-112	AP Approved
PropNut DF-380-00	00	Prop.-Nut DF-380	FI For Inf.
Puller DF-380-00	00	Abzieher f. DF-380	DI Discarded**
VP104_Flg-20-01_flat	2009-02-11	Blade VP-104 20"	AP Approved
VP104_Flg-26-01_flat	2009-04-15	Blade VP-104 26"	AP Approved
VP64_Flg-13-03_flat	2008-05-16	Blade VP-64 13"	AP Approved
VP64_Flg-18-03_flat	2008-05-16	Blade VP-64 18"	AP Approved
VP76_Flg-17-01_flat	2008-06-10	Blade VP-76 17"	AP Approved
VP76_Flg-22-01_flat	2008-06-25	Blade VP-76 22"	AP Approved

Tests carried out

None.

Marking of product

Manufacturer's name or trademark. Type number designation.

Periodical assessment

For retention of the Type Approval, a DNV GL surveyor shall perform an assessment after 2 years and after 3.5 years to verify that the conditions of the type approval are complied with. A renewal assessment will be performed at renewal of the certificate.

The objective of the Periodical Assessment is to verify that the conditions for the Type Approval are not altered since the Type Approval Certificate was issued. The main scope of the Periodical Assessment will normally include:

- Verification of the Type Approval applicant's production and quality system w.r.t. ensuring continued consistent production of the Type Approved products at the Type Approval applicant's own premises and at other companies that are given the responsibility for manufacturing of the products
- Review of the Type Approval documentation and that this is still used as basis for the production
- Review of possible changes to the design, the material and the performance of the product
- Verification of the product marking

In cases where the Type Approved product is manufactured at other companies, the Periodical Assessment shall verify that the Type Approval applicant has a quality control system for consistent production at their licensees/subcontractors. Furthermore Periodical Assessment shall be carried out randomly at these companies.

When a Type Approved product is manufactured at other companies, the Type Approval applicant takes the sole responsibility for the conformity of the product to the applicable requirements.

END OF CERTIFICATE.