

VARIPROFILE[®]
Feathering Propeller



Manual for the
Feathering Propeller VP-64 and VP-76

2- and 3-blade model

Formular-Nr. 125 Rev.-Nr.: 04 08.04.2021

made by

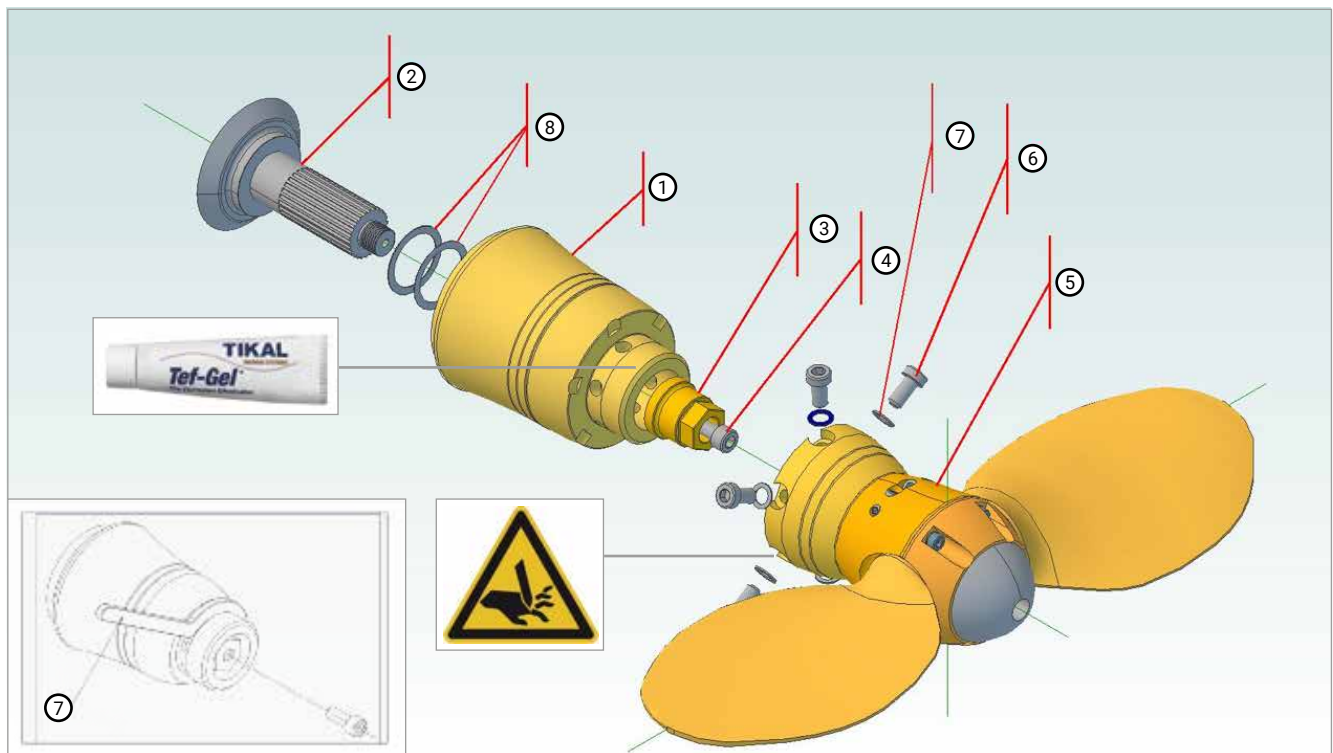
SPW GmbH
SAIL PROPELLER- UND WELLENBAU



Installation on a saildrive.....	Seite 3
Installation on a shaft.....	Seite 4
Pitch Adjustment	Seite 5
Pitch adjustment table.....	Seite 6
Operation & Servicing.....	Seite 7
Removal instructions	Seite 8
Torque settings for the prop-nut	Seite 9
DNV-GL Aproval Certificate Feathering Propeller 2021	Seite 10
Note.....	Seite 14

Installation on a saildrive

- » See that the spacer supplied with your saildrive is mounted.
- » Make sure your anode has good contact with the saildrive.
- » Mount the hub (1) on the splined shaft (2) and apply a small drop of loctite "low" to the thread of the nut (3). Tighten the nut (3) while countering the hub with the hook wrench (7). **(See the torque specification for nut (3) in the installation instruction of your saildrive)**
After installation, check that the hub does not move axial on the saildrive shaft. If so, fit one or more of the different spacer disc (8) between the forward end of the prop and the saildrive disc to reduce it. The spacer discs are delivered with the prop.
- » Apply a small drop of loctite "low" to the thread of the set-screw (4) and tighten (17 Nm / 15 Ft.lb) to secure the prop nut (3).
- » Slightly paint the thread of the propeller hub (1) with the enclosed TIKAL Tef gel to enable a later easy disassembly
- » Now screw the blade assembly (5) clockwise onto the large thread of hub (1) until you fit the prop strongly onto the hub (1). **Do not use Loctite on the thread of the blade assembly (5)!**
- » Take care that the set screws (6) are plane with housing while set the 6 off screws tighten.
- » Apply a small drop of loctite "medium" to each thread of the 6 off set screws (6) and tighten (20 Nm / 15 Ft.lb) together with washer (7).
- » Make sure that the set screw holes for set screw (6) are aligned with the borings of the hub.
- » Check the function and see that the blade movement is free.



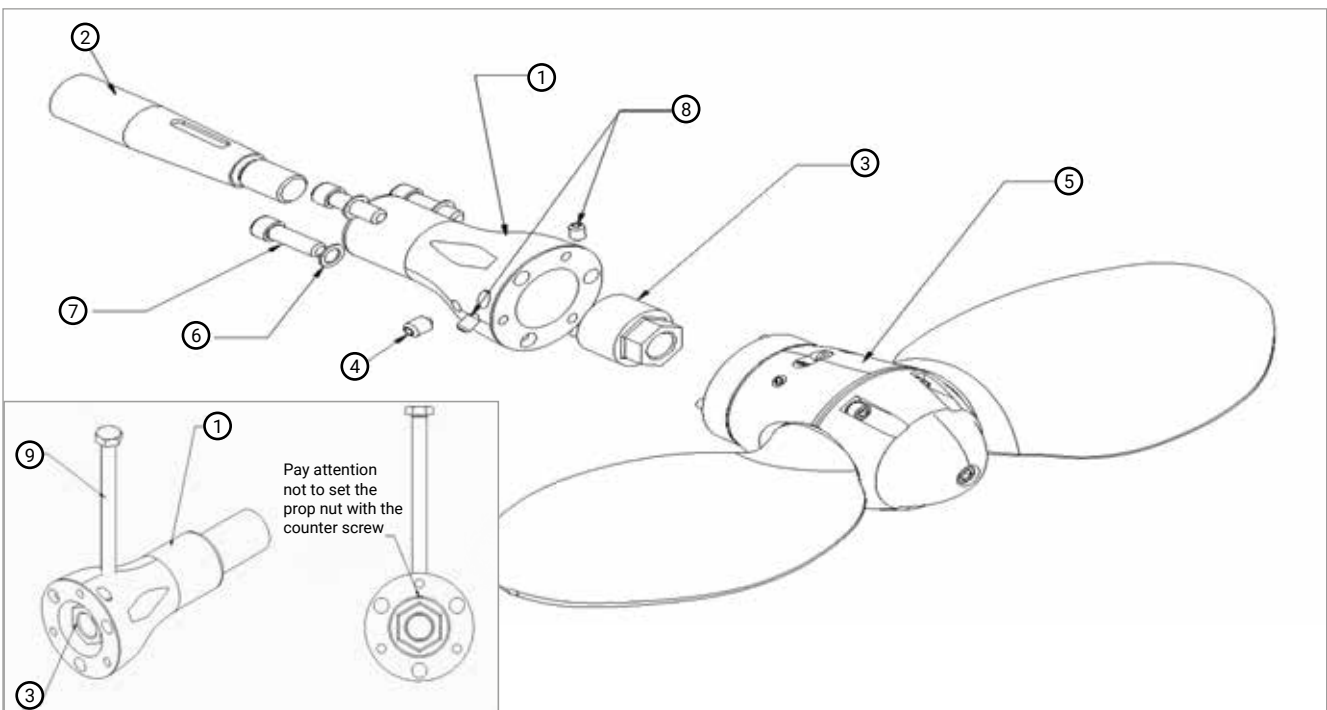
- | | | |
|---------------|---|---|
| 1. Hub | 4. Set-Screw M8x20 | 7. Hook Wrench 45-50 |
| 2. shaft | 5. Blade assembly | 8. Spacer-Disc
1 off -0,5 & 2 off - 0,25mm
(Only use if needed) |
| 3. Nut (SW24) | 6. Set-Screw M8x16 and
washer dia. 8 (7) | |

WARNING:

Engage forward/reverse at idling RPM's only. Stop the engine immediately if any strange sounds or vibrations are noticed coming from the propeller. Check that the propeller works in both forward and reverse before starting each voyage. Do not start the the engine until the boat is in the water. Keep away from moving parts while handling the propeller, the blades are like knives, and can cause considerable damage. Do not attempt to come close to the propeller unless the engine is stopped.

Installation on a Shaft

- » mount the hub (1) on the shaft (2). Make sure the prop taper and keyway mate properly with shaft and key and the top of the key does not touch the hub! File key if necessary.
- » Fit the counter screw (9) into the thread for the setscrew. Pay attention not to set the prop nut with the counter screw!
- » apply a small drop of loctite "medium" to the threads of the nut (3) and tighten strongly 80 Nm / 60 Ft.lb), while blocking the hub with one hand against the counter screw.
- » after tightening the prop nut (3) remove the counter screw (9)
- » apply a small drop of loctite to the thread of the setscrew (4) and tighten (20 Nm / 15 Ft.lb.).
- » align the blade assembly (5) with the boring and pivot pins and push onto the hub (1).
- » mount the socket screws (7) with washers (6) and tighten (50 Nm / 37 Ft.lb). use loctite "medium" to secure the socket-screws (7).
- » apply a small drop of loctite "low" to the threads of the set screws (8) and tighten (10 Nm / 7 Ft.lb)
- » check the function and see that the blade movement is free.
- » make sure you have a shaft anode with good contact to the shaft.



1. Hub		4. Set-Screw or	M8x12 (VP-64) M8x16 (VP-76)	7. Socket Screws or	M8x25 (VP-64) M10x30 (VP-76)
2. Shaft		5. Blade assembly		8. Set-Screw or	M6x10 (VP-64) M8x12 (VP-76)
3. Nut or	SW24 (VP-64) SW30 (VP-76)	6. Washer \varnothing 10		9. Counter Screw	M8x120

WARNING:

Engage forward/reverse at idling RPM's only. Stop the engine immediately if any strange sounds or vibrations are noticed coming from the propeller. Check that the propeller works in both forward and reverse before starting each voyage. Do not start the the engine until the boat is in the water. Keep away from moving parts while handling the propeller, the blades are like knives, and can cause considerable damage. Do not attempt to come close to the propeller unless the engine is stopped.

Pitch Adjustment

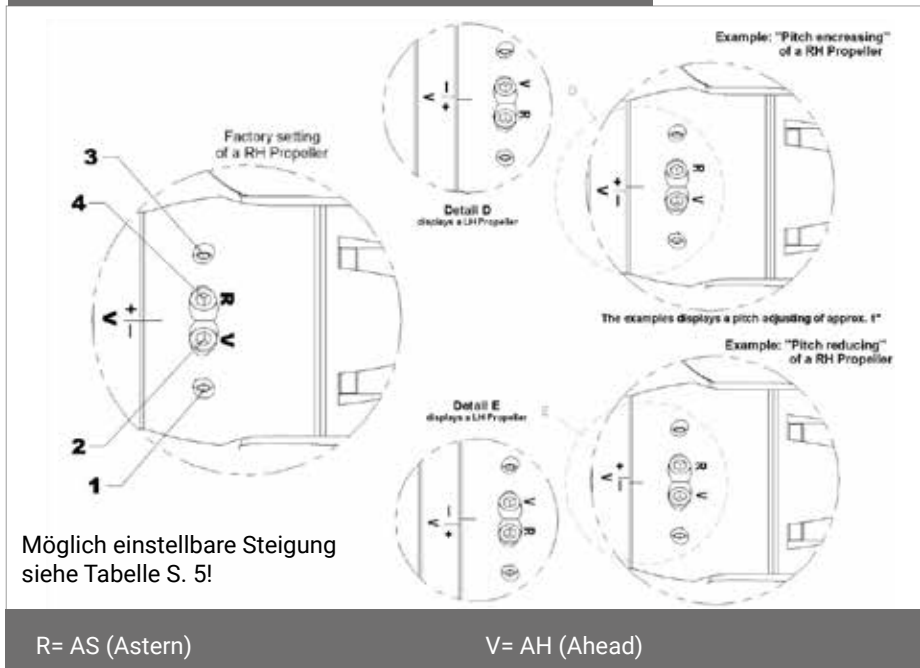
In general the pitch settings are done in the factory and are ready set for your boat and engine. Should it be necessary to adjust the pitch it is very simple on the VARIPROFILE, and can be done in or out of the water in a matter of few minutes.

Possible reasons for pitch adjusting might be:

- » If the engine does not reach the desired RPM reduce the forward pitch.
- » If the engine exceeds the desired RPM increase the forward pitch.
- » If the prop walk in astern is too strong reduce reverse pitch.

Possible adjustment range see pitch sheet at page 6.

Example below is showing a RH display
LH lettering is marked to Detail "D" & "E"



Marked lettering of a LH Propeller

It is quite possible to set the pitch continuously variable and independently for forward and reverse. The turning of the adjusting screws (2) & (4) in Figure "Example" by half a revolution changes the pitch approx. 1". That means a quarter turn (90°) changes the pitch by 1/2" and a one full turn by 2" etc. For a check of pitch adjustments there are markings on the hub rotating flange. To return to original factory pitch settings, line up "V" resp. "R" markings on the hub face. (see example beside)

A. Adjusting the forward pitch:

1. Remove the set screw (1) (3 mm allen key).
Under water: only 2 turns loosen.
2. Turn the adjusting screw (2) which is marked as "AH" or "V" with the 4 mm Allen-key as follows:

2a. Increasing of pitch:

- » Turn the adjusting screw (2) clockwise. (see "NOTE" and page 8)
- » Secure set screw (1) with LOCTITE low (pink)
Lock set screw (1) 3 Nm / 2 Ft.lb.



2b. Reducing of pitch:

- » Turn the adjusting screw (2) anti-clockwise. (see "NOTE" and page 8)
- » Secure set screw (1) with LOCTITE low (pink)
Lock set screw (1) 3 Nm / 2 Ft.lb.



B. Adjusting the reverse pitch:

1. Remove the set screw (3) (3 mm allen key).
Under water: only 2 turns loosen.
2. Turn the adjusting screw (4) which is marked as "AS" or "R" with the 4 mm Allen-key as follows:

2a. Increasing of pitch:

- » Turn the adjusting screw (4) anti-clockwise. (see "NOTE" and page 8)
- » Secure set screw (3) with LOCTITE low (pink)
Lock set screw (1) 3 Nm / 2 Ft.lb.



2b. Reducing of pitch:

- » Turn the adjusting screw (4) clockwise. (see "NOTE" and page 8)
- » Secure set screw (3) with LOCTITE low (pink).
Lock set screw (1) 3 Nm / 2 Ft.lb.



NOTE: It is quite possible to set the pitch continuously variable and independently for forward and reverse. Turning of the adjusting screws (2) & (4) by half a revolution (180°) changes the pitch approx. 1". This will change the engine revolution by approx. 200.

Pitch adjustment table

VP-64 RH and LH

	Prop.-ø	pitch min. tolerance:±0.3"	pitch max. tolerance:±0.3"
2 blade ahead (V)	13"	7.5"	12"
	14"	8"	13"
	15"	9"	14"
	16"	9.5"	15"
	17"	10"	15.5"
	18"	10.5"	16"
2 blade astern (R)	13"	7"	12"
	14"	8"	13"
	15"	9"	14"
	16"	10"	15"
	17"	10.5"	16.5"
	18"	11"	17"

	Prop.-ø	pitch min. tolerance:±0.3"	pitch max. tolerance:±0.3"
3 blade ahead (V)	13"	7"	12"
	14"	7.5"	12.5"
	15"	8"	13"
	16"	9"	14"
	17"	9.5"	14.5"
	18"	10"	15"
3 blade astern (R)	13"	6.5"	11.5"
	14"	7"	12"
	15"	8"	13"
	16"	9"	14"
	17"	9.5"	14.5"
	18"	10"	15"

VP-76 RH

	Prop.-ø	pitch min. tolerance:±0.3"	pitch max. tolerance:±0.3"
2 blade ahead (V)	17"	11"	17"
	18"	11.5"	18"
	19"	12.5"	18"
	20"	12.5"	19"
	21"	13"	19"
	22"	14"	20"
2 blade astern (R)	17"	9"	15"
	18"	10"	16"
	19"	11"	17.5"
	20"	11"	17.5"
	21"	12"	18.5"
	22"	13"	19.5"

	Prop.-ø	pitch min. tolerance:±0.3"	pitch max. tolerance:±0.3"
3 blade ahead (V)	17"	11.5"	17"
	18"	12"	18"
	19"	13"	19"
	20"	13"	19"
	21"	13.5"	20"
	22"	14.5"	21"
3 blade astern (R)	17"	10"	16"
	18"	10"	16.5"
	19"	11"	17"
	20"	12"	18"
	21"	13"	19"
	22"	14"	20"

VP-76 LH

	Prop.-ø	pitch min. tolerance:±0.3"	pitch max. tolerance:±0.3"
2 blade ahead (V)	17"	10.5"	17"
	18"	11.5"	18"
	19"	11.5"	18"
	20"	12"	19"
	21"	12.5"	19"
	22"	13"	19"
2 blade astern (R)	17"	8"	14.5"
	18"	9"	15"
	19"	10"	16"
	20"	10"	16.5"
	21"	11"	17"
	22"	12"	18"

	Prop.-ø	pitch min. tolerance:±0.3"	pitch max. tolerance:±0.3"
3 blade ahead (V)	17"	11.5"	17"
	18"	12"	18"
	19"	13"	19"
	20"	13"	19"
	21"	13.5"	20"
	22"	14.5"	20"
3 blade astern (R)	17"	8"	14"
	18"	9"	15"
	19"	10"	16.5"
	20"	11"	17"
	21"	12"	18"
	22"	12"	18"

The VARIPROFILE feathers automatically when the shaft rotation is stopped. After engine start-up and shifting into gear the blades will engage in either forward or reverse.

THE BEST WAY TO FEATHER THE PROPELLER IN THE SAILPOSITION IS:

VARIPROFILE sailposition with mechanical gear-box:

- » Power at 2 to 3 knots in forward.
- » **Stop the engine** and engage the transmission in reverse to stop the freewheeling of the shaft.

VARIPROFILE sailposition with hydraulic transmission:

- » Power at 3 to 4 knots in forward.
- » Stop the engine while still engaged in forward. The remaining oil pressure of the transmission will stop spinning the shaft to feather the blades in the sailposition.

If the propeller is not feathered in the sailposition the shaft will freewheel like with a fixed propeller. In that case start the engine again and repeat the steps above. Once the prop is feathered, you may remain in gear or shift into neutral.

DO NOT stop the engine while it turns in reverse. In this case the blades will stay in the reverse position and will not feather. You can actually use this feature to drive a shaft generator.

TROUBLE SHOOTING: If the propeller does not work in forward or reverse go systematically through the points below:

- » Check low idle of the engine. It should be 900 to 1000 rpm in idle.
- » Check shifting movement of the transmission lever. Make sure that the shifting travel is not too short. The amount of lever travel, as measured at the pivot point of the actuating lever, between the neutral position and end positions for forward and reverse can be found in the owners manual of your transmission. A larger amount of lever travel is in no way detrimental.
- » Check the clutch discs of the transmission. They could be worn out.

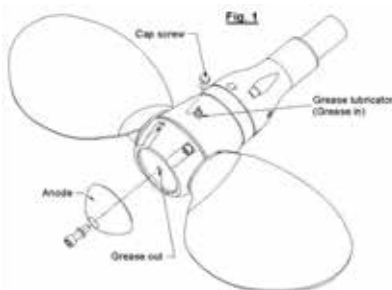
WARNING: It is important to follow the instructions below carefully so as to avoid excessive load and shock to the gears, shortening their life.

- » When going from ahead to astern or the opposite, it is necessary to idle down and shift at low rpm's (max .1200rpm) between gears to allow smooth reversing of rotation without binding. This will substantially lengthen the service life of your propeller gears.
- » When going from ahead to astern or the opposite, you can hear the turning-noise of the feathering blades. This is normal and not a problem or a defect of your VARIPROFILE.
- » The propeller body must always be completely filled with a high viscosity grease. We recommend synthetic grease typ TW.2 GEL or mineral multi-purpose grease EP/SAL
- » The propeller must be protected from electrolytic corrosion by fitting the usual zinc anodes on the shaft plus the prop anode. We recommend the replacement of the anode once a year.
- » If you want to protect your VARIPROFILE with Antifouling, use only Antifouling which needs a primer first. Otherwise chemical interaction and decomposition could occur. Our recommendation is Velox TF plus including a primer (offers also protection against electrolyses), available from your VARIPROFILE distributor.

SERVICING

The VARIPROFILE needs to be greased a minimum of once a year with the special EP/SAL lubricant available from your VARIPROFILE dealer. The VARIPROFILE body should always be completely filled with a high viscosity grease of a hydrophobic nature. Remove the cap screw and screw in the lubricating nipple which is supplied with the tools. Further remove the zinc anode! With each pump of the grease gun rotate the propeller from forward stop to reverse stop to allow the grease to work through the propeller. Stop to pump when enough grease comes out of the anode drill hole on top of the prop (Fig.1).

Factory supplied special grease EP/SAL is recommended and available from your VARIPROFILE distributor. Avoid regular white grease (sterntube-grease) !



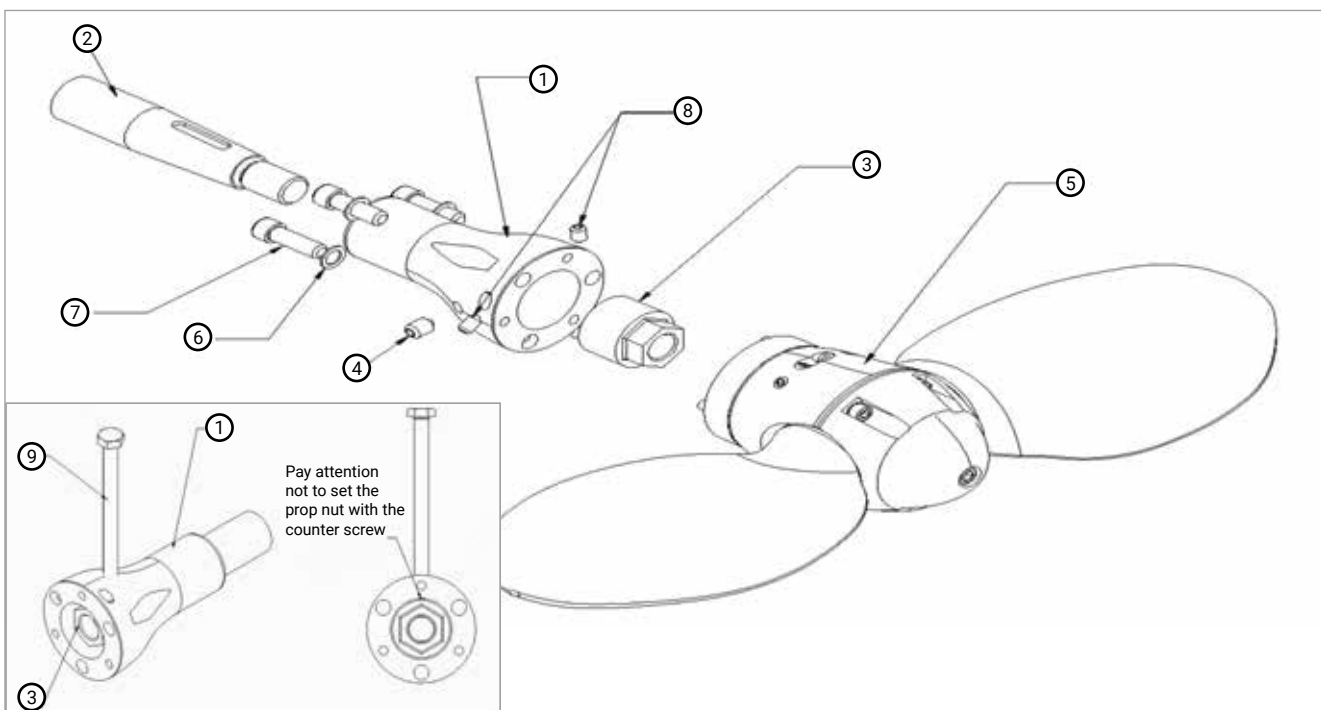
Never dismantle the VARIPROFILE yourself!

Disassembly and reassembly require special tools and technical know-how only available at the factory or their approved service centres.

Removal instructions

DO NOT DISMANTLE THE PROPELLER UNIT (5)!

- » Remove the blade assembly (5) from the hub (1).
- » Therefore remove first the 3 off Set-Screws (8).
- » Now you can remove the Socket Screws (7). Take care that the prop will not fall off after removing all Socket Screws!
- » Dismount the blade assembly (5) from the hub (1).
- » Remove the Set-Screw (4) completely and screw into the same hole (M8) the Counter Screw (9). Pay attention not to set the prop nut with the counter screw!
- » now remove the prop nut (3) while blocking the hub with one hand against the counter screw.
- » align the puller with the socket screws (7) of the hub (1) and tighten (20 Nm / 15 Ft.lb).
- » do not tighten the set screws (8)!
- » tighten the extractor screw clockwise strongly, while holding by hand the counter screw (9).
- » you can now remove the hub from the shaft.



1. Hub		4. Set-Screw or	M8x12 (VP-64) M8x16 (VP-76)	7. Socket Screws or	M8x25 (VP-64) M10x30 (VP-76)
2. Shaft		5. Blade assembly		8. Set-Screw or	M6x10 (VP-64) M8x12 (VP-76)
3. Nut or	SW24 (VP-64) SW30 (VP-76)	6. Washer ϕ 10		9. Counter Screw	M8x120

It is recommended to only use the special puller available from your VARIPROFILE dealer.

Torque settings for the prop-nut

Standard – thread	
M 14 x 2 UNC 1/2 "-13	40 Nm 30 ft/lb
M 16 x 2 BSW 5/8 " – 11 UNC 5/8 " - 11	60 Nm 45 ft/lb
M 16 x 2 Yanmar Saildrive SD 20 & SD 31	60 Nm / 45 ft/lb
M 20 x 2,5 BSW 3/4 " – 10 UNC 3/4 " - 10	125 Nm / 95 ft/lb
UNC 7/8 "-9	160 Nm 115 ft/lb
M 24 x 3 BSW 1 " - 8 UNC 1 " - 8	210 Nm 155 ft/lb
M 27 x 3	315Nm 230 ft/lb
M 30 x 3,5 UNC 1 1/8" - 7	350 Nm 255 ft/lb

Fine – thread	
M 14 x 1,5 BSF 1/2 "- 16	40 Nm 30 ft/lb
M 16 x 1,5 BSF 5/8 " – 14 UNC 5/8 " - 18	70 Nm 50 ft/lb
M 20 x 1,5 BSF 3/4 " – 12 UNC 3/4 " - 16	135 Nm 100 ft/lb
M 20 x 2 Yanmar Saildrive SD 40 & SD 50	100 Nm / 75 ft/lb
M 24 x 2 BSF 1 " - 10 UNF 1 " - 12	225 Nm 165 ft/lb
M 30 x 2	430 Nm 315 ft/lb

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**

.....
**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.

Die VARI-Family



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www.variprofile.com



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