

VARIPROP

FEATHERING PROPELLERS



SAILING WITHOUT BRAKES

Experience Grand Performance Made in Germany

Photo: Ekkhard Eiben



A PRODUCT OF

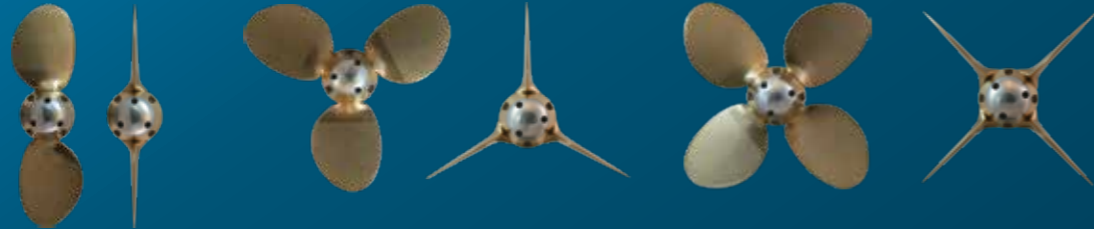
SPW GmbH
SAIL PROPELLER- UND WELLENBAU



THE VARIPROP LINEUP

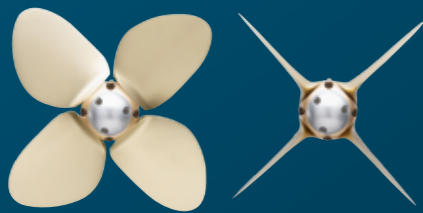


VARIPROP GP



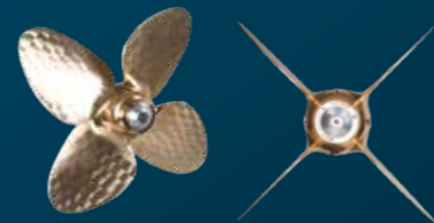
GP as in Grand Performance or as in Gawn Profile – the GP line is an enhancement of the world-renowned VARIPROP types. It is geared towards maximum performance. **More on pages 6 & 7**

VARIPROP Blue Water



The propeller for Blue Water conditons. Ocean sailing has high demands on the sailor as well as the material. The Blue Water impresses with excellent quality and provides high thrust when needed. **More on page 8**

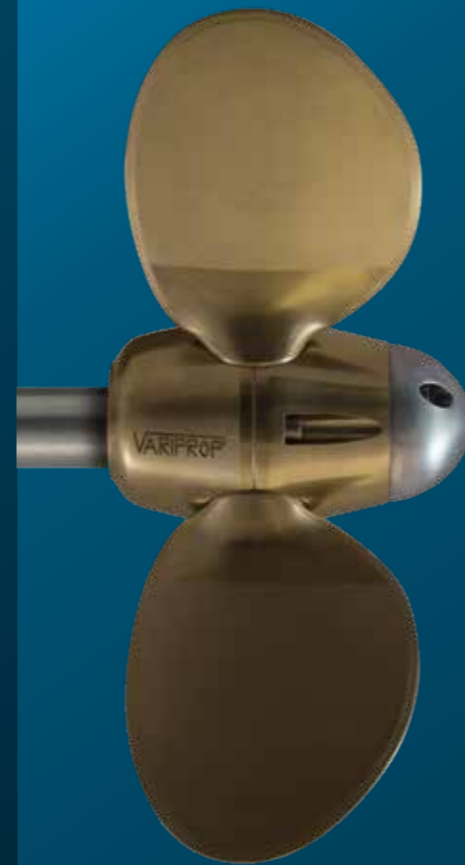
VARIPROP XLS



XLS = Extra large and Extra Strong: Special requirements call for special solutions – XLS probably is the best automatic feathering propeller for Tall ships and Super yachts worldwide. **More on page 9**

VARIPROP PROPELLERS ARE IDEAL – FOR SAILDRIVES AND SHAFT SYSTEMS FOR MARINE DIESELS AS WELL FOR ELECTRIC DRIVES.

IN E-DRIVES, THE VARIPROP CAN ALSO BE USED TO REGENERATE AND RECHARGE BATTERIES. FOR FURTHER INFORMATION ON THIS, PLEASE CONTACT US.



HIGH-END PROPELLER WITH HISTORY

Every success story starts with a future-oriented idea: SPW aimed to design a user-friendly, high-quality feathering propeller with blades which feathers easy into the sailing position. This was more than 30 years ago. Meanwhile, the VARIPROP has been developed to be one of the most modern propellers of its kind through continuous innovations by the SPW engineers.

Our motivation: What are the best sailing profiles for when the aerofoil shape does not continue under water? The VARIPROP blades automatically balance themselves into the position with the least drag. This is what creates optimal sailing characteristics for your yacht

Sailing is perfected by the VARIPROP!



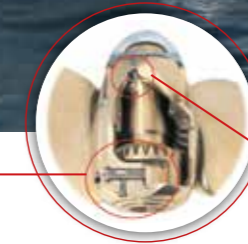


This is what makes a VARIPROP feathering propeller so advantageous for yacht owners:

- + **15 – 20 % higher sailing speed:** The water current turns the blades into the feathering position when the engine is turned off
- + **No disturbing propeller turbulences:** Your yacht sails significantly more stable and smoother at the rudder, so you are able to sail close-hauled.
- + **Optimal thrust when motoring ahead as well as astern:** When shifting to reverse, the leading edge of the propeller blades is turned by 180°. Consequently, the efficiency rate is the same in both directions – without the obstructive "prop walk" (paddle wheel effect). If the paddle wheel effect is beneficial to you, the pitch in reverse can be adjusted accordingly. Individual manufacturing guaranteed!
- + **Improved stop performance:** This will ensure substantially more control when mooring in reverse.

VARIPROP: SIMPLY THE FINEST FEATHERING PROPELLER IN THE WORLD

External pitch adjustment (patented)



SoftStop™ Shock Absorber

Precision engineering: Superb German custom work instead of mass fabrication.

Every manufacturing process starts with an ingenious 3D-CAC-Design by SPW chief developer Jörg Adamczyk. Raguse & Voss from Bremerhaven – one of the most modern foundry in Germany - develop a highly precise pattern from the 3D-design using a 5-axis controlled milling machine. Thanks to computer simulation, the casting process in the mould can be precisely determined. The result: perfect propeller blade castings!

This is followed by state-of-the-art technology by SPW GmbH using computer-controlled CNC turning and milling technology.

Before SPW assembles the propellers, the VARIPROP GP blades are measured by precise laser measuring technology and precisely machined using robot technology. Only then are our propeller components ready for the final assembly.

Our guarantee: The assembly is done according to your individual order. Every VARIPROP is specifically calculated and manufactured for each customer and is then dynamically balanced by machine.

Quality checked with MRI and DNV-GL type approval (Det Norske Veritas – Germanischer Lloyd).

VARIPROP: Absolutely vibration-free! Absolutely great!

Individual Calculation for Your Yacht

A good propeller is only as good as its calculation! Especially the propeller technology, which is often referred to as the supreme discipline in shipbuilding, requires a lot of experience! Our staff in the distribution department, as well as at boat shows worldwide, have a sound knowledge of propeller technology, which requires good training and is also complemented by their own experience as water sports enthusiasts. This affinity is important to us. Numerous data, such as the overall length of the vessel, the engine data, the yacht's displacement need to be gathered in order to calculate the propeller individually for the vessel. Not only the diameter and pitch, but also the blade profile, number of blades and much more need to be precisely determined to achieve maximum efficiency, smooth running and effectiveness.

Patented Pitch Control

Forward and reverse pitches can be changed independently of one another in just seconds, even underwater. This allows custom fine tuning according to your boating habits. In order to optimise pitch, you do not need to disassemble your VARIPROP. This can be done while the propeller is mounted on your boat. Comprehensive instructions and necessary tools are provided with every VARIPROP.

SoftStop™ Shock Absorber

A shock absorbing multidisc brake (patented) built into the VARIPROP hub reduces unpleasant shifting noises. Consequently, the end stops of the propeller are protected from wear.

High-Strength NiBrAl Bronze

NiBrAl bronze is the best material for propeller manufacturing. It is called Ice Class in professional shipping and has excellent bearing properties. This is why our VARIPROP bearings are made out of NiBrAl bronze in the most sensitive sections, especially where parts move while shifting from ahead to reverse and vice versa during manoeuvres. Meaning: Our propellers last forever! Expensive spare parts become unnecessary.

Pitch setting is done by SPW

Your VARIPROP is delivered ready for use.

All that is left for you to do is unpack, install and enjoy sailing.

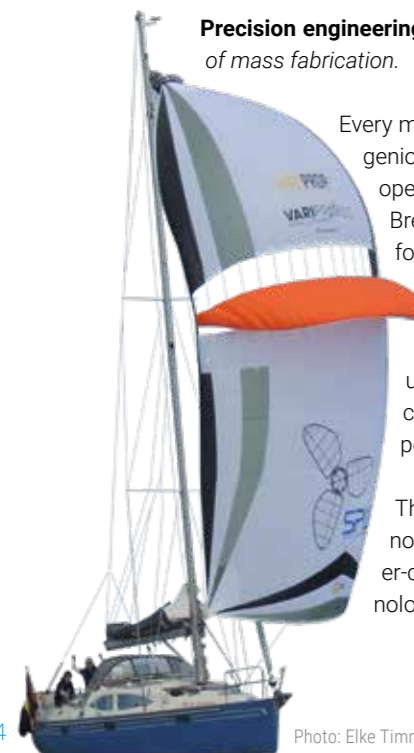


Photo: Elke Timmermann



GP = GRAND PERFORMANCE

Globally unique with GAWN blade profile: With the VARIPROP Grand Performance we present a new generation of automatic feathering propellers for sailing yachts.

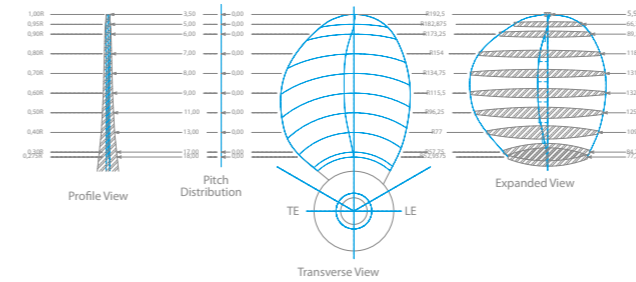
The symmetric high-tech GAWN blade profile is primarily used for high performance fixed pitch propellers in motor boats, for rudder profiles, as well as in the aviation industry. From now on, it can also be found in the new generation of the VARIPROP GP.

Thanks to the GAWN profile, the newcomer on the market persuades with smooth, energy-efficient running. It is possible to decrease the average fuel consumption by up to 10% due to higher thrust, depending on the number of propeller blades.

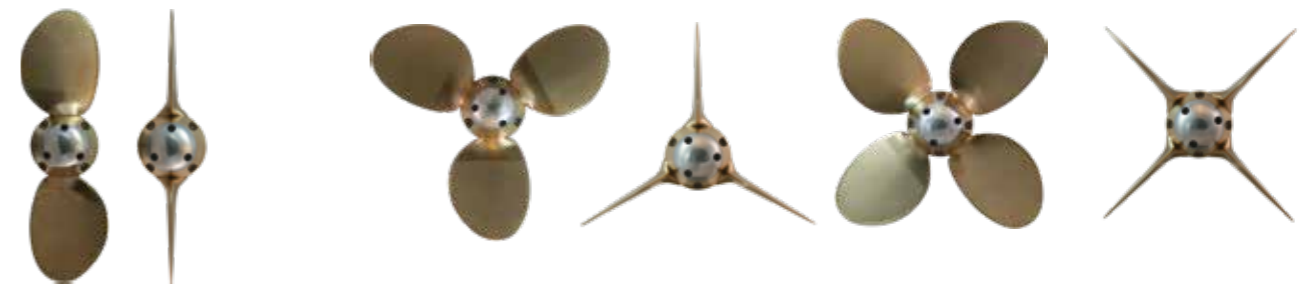
Or the other way around: The VARIPROP GP allows you to achieve a longer Etmaal distance. **That is climate friendly: Lower fuel consumption means less CO₂ emissions!**



SPW manager Claudia Adamczyk on board of the "Miss Sophie": Mrs Adamczyk took the chance to test the new VARIPROP GP herself. The propeller surpassed expectations by far on a sailing trip with her husband and chief developer Jörg Adamczyk.



YOUR VERY OWN ALLROUNDER



Variprop GP 2-Blade For Racer and Cruiser

- + For smaller sailing yachts with an engine power of 6-40 kW / 8-50 HP.
- + Very low drag, due to the number of blades.
- + Outstanding manoeuvrability, since each blade self-adjusts to the optimum pitch in reverse gear.

Variprop GP 3-Blade Ideal for Cruising Yachts

- + Smooth running, optimal standard propeller for every cruising yacht. The third blade achieves stable running characteristics while motoring and high thrust against rough seas.
- + Very low drag.
- + Just like the 2-blade, the 3-blade version makes for excellent manoeuvring. The third blade offers more security in narrow harbours or when mooring.

VARIPROP GP 4-Blade Pure Power for Offshore Sailors

- + Highest convenience on board and reliability in all kinds of weather! Very high thrust and smooth running even with the strain of heavy weather zones. The fourth blade minimises blades pressure and cavitation at the propeller blade with a greater engine output.
- + Very good sailing properties due to low drag.
- + Perfection of manoeuvres. This ensures a successful outcome of every harbour manoeuvre even in the most adverse wind conditions.

Enjoy your sailing trips with the top manoeuvring technology of the VARIPROP GP from the moment you set sail until you moor! All types are available with a hub diameter of 80 mm, 107 mm and 112 mm (DF-80, DF-107 and DF-112) *.

Please contact us – we will be happy to advise, which model is the perfect one for your boat and for your needs.

Photo: Constanze Wyneken, 2019



SY HOC equipped with VARIPROP 4 blade and the winner all over in Yardstick groups at the race „Bodensee Rund Regatta 2019“ the race trans lake Konstanz.

*Technical details and specifications can be found on page 11 of this brochure.

3- AND 4-BLADE POWER: THE VARIPROP „BLUE WATER“



„Power pack“ for Offshore Sailing Ships

The high seas require power and endurance. High strain on the propeller blades when motoring can lead to cavitation noise on the blades in the wave trough, where high thrust is necessary. Vapour bubbles are a consequence of cavitation that can cause an enormous loss of power.

The solution to this problem is called VARIPROP 4-Blade, currently the most modern 4-blade feathering propeller in the world. Its advantages: a significantly

larger blade surface, considerably less strain on the blades, remarkably higher thrust. This means a consistent performance in wind and waves! Moreover, the VARIPROP 4-Blade is perfectly suitable for installation in smaller apertures thanks to its smaller diameter.

Smooth running in wind and waves, great thrust, no vibrations! – **Choose the VARIPROP 4-Blade.** Too costly? Not at all: **The costs are lower than you would expect.**

„As a cruise and regatta sailor, I had the VARIPROP 3-Blade installed and switched to the 4-Blade in 2004. I have to say: The 4-Blade VARIPROP is a stunner. In wind and waves, when sailing doesn't work anymore, it is a genuine help. Even harbour or lock manoeuvres in extremely narrow spaces, even without bow and stern thrusters, can be carried out safely. During the 2019 season, I had the opportunity to become familiar with the 4-Blade VARIPROP GP. My test route went through the North Sea and the Baltic Sea to Bornholm. When motoring, the 4-Blade GP proved to be incredibly powerful. Diesel consumption decreased noticeably as well. I have been very satisfied with the SPW feathering propellers for 25 years.“

Knut Hays, owner of a Reinke 10S

XLS = EXTRA LARGE AND EXTRA STRONG



For tall ships and Superyachts!

Its remarkable solid is what makes the VARIPROP XLS stand out the most. Like the VARIPROP Blue Water, it offers a large blade surface for high thrust, excellent sailing properties thanks to low drag, as well as perfect handling during harbour manoeuvres.

The construction and design of the VARIPROP XLS are in accordance with the propeller classifications for commercial shipping.

SPW is the only manufacturer of feathering propellers in the world to offer this model for a maximum engine output of up to 550 KW/750 HP. The VARIPROP XLS is available up to a size of 62" (almost 1.6 m in diameter).

The XLS model was designed for tall ships and super yachts that do not have a controllable pitch propeller system installed. It can easily be mounted on conventional shafts.

Unique Features of the VARIPROP XLS

- + **Independently adjustable external pitch adjustment (patented).** Forward and/or reverse pitch can be changed independently, even underwater.
- + **Solid shock absorber** than in the series propellers. A special durable plastic application (Diepothan 96 Shore A red) minimizes wear of the end stop even at high engine power and high torque.
- + **Special seals** between the shell and hub inert part and also hub inert part and blades prevent grease leakage. This protects the mechanical parts and significantly prolongs service intervals.
- + **The inner gears** are up to 50% larger and more robust and solid than that of other manufacturers.
- + **Fully assembled at delivery:** The XLS is to be mounted on the shaft just like a fixed pitch propeller. No disassembly.



Photo: Franco Pace

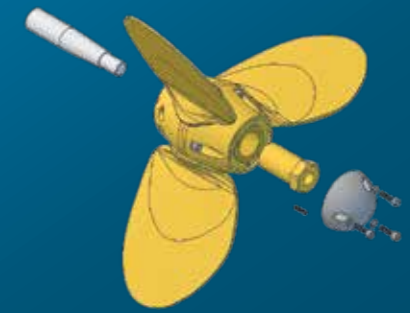


Photo: Sunreef Yachts



Easy Installation:

The VARIPROP is mounted on the taper of your shaft or saildrive spline just like a fixed pitch propeller. Fasten the propeller with the corresponding prop nut, tighten the nut and secure it with a set screw. Glue the prop nut into the thread with the supplied Loctite. Afterwards, install the zinc anode. Done.



BOATS USING THE VARIPROP

ALLURES
 AMEL
 BALTIC
 BAVARIA
 BENETEAU
 BIGA
 BRISTOL
 C&C YACHTS
 CATALINA
 COMFORTINA
 COMPROMIS
 CONTESSA
 CONTEST
 CS YACHTS
 DEHLER
 DUFOUR
 ELAN
 ETAP
 FAURBY
 FEELING
 FIRST
 GARCIA
 GRAND SOLEIL
 GRANADA
 HANSE
 HALBERG RASSY

HUNTER
 ISLAND PACKET
 J-BOATS
 JEANNEAU
 LAGOON
 LUFFE
 6 KR KREUZER
 MALÖ
 MAXI
 MOODY
 MORGAN
 NAJAD
 NAUTICAT
 NONSUCH
 OE
 OVNI
 PERRY CATAMARANS
 REINKE
 SALONA
 SCHIONNING CATAMARANS
 SIRIUS
 SOUTHERLY
 SPARKMAN AND STEVENS
 SUNBEAM
 SUNREEF CATAMARANS
 SWAN

SYDNEY YACHTS
 TARTAN
 TASMAN
 VAN DER STADT
 VANCOUVER
 VINDÖ
 WAUQUIEZ
 X-YACHTS
 ZEESBOOTE

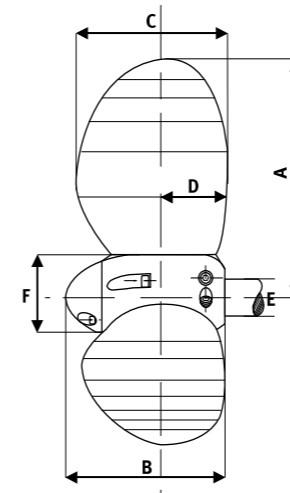
... AND MANY MORE

* 22. Hansecup 2019
 with the friendly support of HVG
 Hanse (Deutschland) Vertriebs GmbH & Co. KG
 Photos: Thomas Lange

Photo: Wilco Schipper



PROPELLER DIMENSIONS



All VARIPROPS are made from high-strength NiBrAl bronze - this ensures extreme longevity.

DF-80

Propeller Ø.		A	B	C	D	E		F	HP range	Prop. weight
inch	mm	mm	mm	mm	mm	mm	inch	mm	PS/kW	kg
12	305	152	155	105	60	20-25	3/4"-1"	ø 80	max. 6.5 to.	4.8
13	330	165		110						5
14	355	178		120						5.5
15	380	190		130						6
16	406	203	135	6.5						

DF-107

Propeller Ø.		A	B	C	D	E		F	HP range	Prop. weight
inch	mm	mm	mm	mm	mm	mm	inch	mm	PS/kW	kg
15	380	190	170	115	70	20-35	1"- 1 3/8"	ø 107	max. 14 to.	8
16	406	203		125						8.5
17	432	216		135						9.5
18	457	229		145						10.5
19	483	242		155						11.5
20	508	254	160	12						

DF-112

Propeller Ø.		A	B	C	D	E		F	HP range	Prop. weight
inch	mm	mm	mm	mm	mm	mm	inch	mm	PS/kw	kg
20	510	255	215	165	85	35-40	1 3/8" - 1 1/2"	ø 112	max. 20 to.	17
21	533	266		175						17.5
22	560	280		180						18
23	584	292		185						19
24	610	305		190						20

DF-140

Propeller Ø.		A	B	C	D	E		F	HP range	Prop. weight
inch	mm	mm	mm	mm	mm	mm	inch	mm	PS/kw	kg
24	610	305	256	195	112	max. ø 55	max. ø 2 1/4"	ø 140	max. 50 to.	26
26	660	330		210						28
28	715	356		230						32
30	762	381		250						39
32	813	406		275						40

Variprop XLS: All XLS dimensions can be found on our homepage www.spw-gmbh.de/en



The VARI-Family



VARIPROP
FEATHERING PROPELLERS

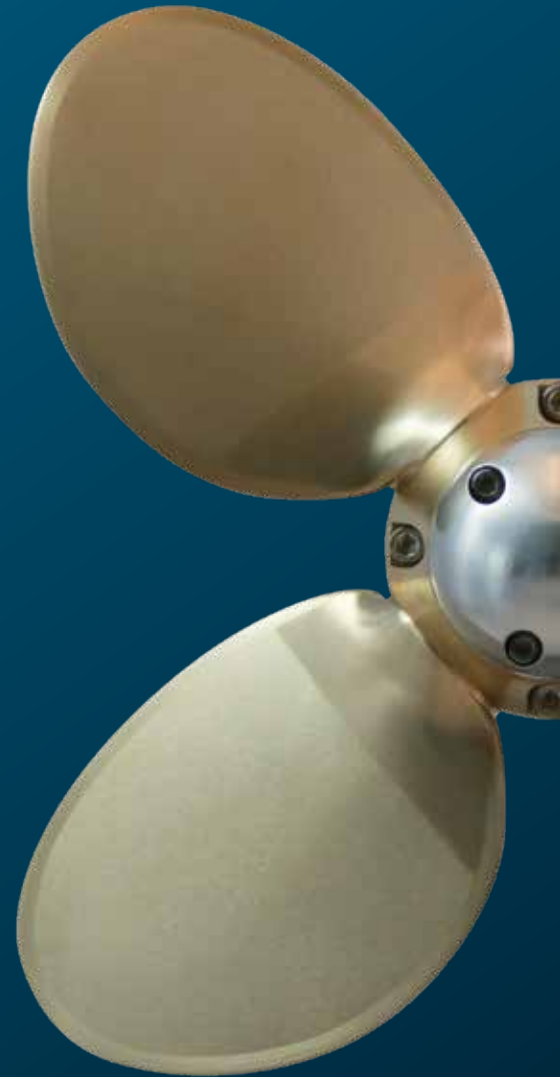


VARIPROFILE
Feathering Propeller



VARIFOLD
FOLDING PROPELLERS

YOU CAN PURCHASE
ANODES,
SERVICE PACKAGES
AND ALL OTHER
SPARE PARTS
FOR YOUR **VARIPROP**
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AT <https://shop.spw-gmbh.de>
AS WELL AS AT OUR
DISTRIBUTOR BELOW.



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