Introduction

HS Aquaprop Propellers are high quality propellers for both the yachting and the professional industries. Besides the propellers quality, the choice of the right kind of propeller is crucial. The right propeller will deliver the optimum propulsion.

Calculations

Because choosing the right propeller is crucial for an efficient propulsion system, we specializes in propeller calculation. We can give you a solid, thorough advice on the right propeller in your specific situation .

Propellers Shapes & Sizes

We offer have a very wide range of propellers to choose from.
We offer propellers:

- In almost any kind and for every application imaginable, varying from standard propellers to propellers for displacement, sailing or plaining vessels up to custumized propellers for e.g. submarines.
- In diameters measuring from 5" up to almost 5 meters.
- In all known materials like Mn.Br, Ni.Al.Br. and stainless steel.
- With approval of various classi cation societies, e.g. LR, BV, ABS, DNV, GL etc.

These propellers are designed with CAD/CAM-technology and fabricated with CNC machines. This contributes to a higher efficiency, less vibrations, a lower noise level and less fuel consumption.

Free Rotation Of The Propeller

After the diameter of the propeller has been determined, it is very important to know whether this propeller can be fitted. To prevent vibration it is absolutely necessary to take into account certain clearances of the propeller. Clearance of the propeller needs to be 15% of the diamater of the propeller at the top and 4% at the bottom.

Efficiency Propellers

Type EP

They are made of manganese bronze (Mn.Br.). These propellers comply to the ISO 484/2 class II tolerances and are dynamically balanced. We always keep 3B and 4B propellers in common dimensions on stock, just to ensure you quick deliverance. In most situations Mn.Br. is a good material for propellers. But when it comes to alumin--ium vessels, we advise the use of a nickel aluminium bronze propeller. Manganese bronze contains up to 40% of zinc, which always causes galvanic problems when used with aluminium. Nickel aluminium bronze is free of zinc, so this will not cause any troubles. If there is a lot of cavitation, or if the engine is very powerful, we advise nickel aluminium bronze as well.

Propeller diam. inch - mm	Outside boss ØD1 x ØD2	Max. taper bore	Keyway w x d (mm)	Standard bore (tapered 1:10) Ø d1 x Ø d2 x L
10" - 254	35 x 38	25	6 x 3.0	25 x 19 x 60
11" - 279	35 x 38	25	6 x 3.0	25 x 19 x 60
12" - 305	38 x 40	30	6 x 3.0	25 x 19 x 60
13" - 330	40 x 46	30	6 x 3.0	25 x 19 x 60
14" - 356	40 x 46	30	6 x 3.0	25 x 19 x 60
15" - 381	40 x 46	30	6 x 3.0	25 x 19 x 60
16" - 406	45 x 50	35	8 x 4.0	30 x 22 x 80
17" - 432	45 x 50	35	8 x 4.0	30 x 22 x 80
18" - 457	53 x 60	40	8 x 4.0	30 x 22 x 80
19" - 483	53 x 60	40	10 x 4.0	35 x 26 x 90
20" - 508	53 x 60	40	10 x 4.0	35 x 26 x 90
21" - 533	60 x 67	45	10 x 4.0	35 x 26 x 90
22" - 559	60 x 67	45	12 x 5.0	40 x 30 x 100
23" - 584	70 x 75	50	12 x 5.0	40 x 28 x 120
24" - 610	70 x 75	50	12 x 5.0	40 x 28 x 120
25" - 635	75 x 86	60	14 x 5.0	45 x 33 x 120
26" - 660	75 x 86	60	14 x 5.0	50 x 38 x 120
27" - 686	85 x 95	65	14 x 5.0	50 x 36 x 140
28" - 711	85 x 95	65	14 x 5.0	50 x 36 x 140
30" - 762	98 x 108	70	16 x 5.0	60 x 45 x 150
32" - 813	98 x 108	70	16 x 5.0	60 x 45 x 150
34" - 864	98 x 108	70	16 x 5.0	60 x 44 x 160
36" - 914	118 x 130	90	18 x 5.5	70 x 54 x 160
38" - 965	118 x 130	90	18 x 5.5	70 x 52 x 180
40" - 1016	127 x 140	95	18 x 5.5	70 x 52 x 180

Custom Designed Propellers

Besides the mentioned EP propellers, we can also supply many other types. We supply propellers for special purposes,in various ISO tolerance classes and if necessary with certificates from the major classification societies. Below you can find some examples of commonly used propellers.

Super Trust Propellers

Type KCA

KCA propellers are designed for higher speeds and rpm. They have a large blade area that solves cavitation problems. They are especially suited for high outputs on relatively small propeller diameters. KCA propellers are made of manganese bronze.

Propeller diam. inch - mm	Outside boss ØD1 x ØD2	Max. taper bore	Keyway w x d (mm)	Standard bore (tapered 1:10) Ø d1 x Ø d2 x L
16" - 406	45 x 50	35	8 x 4.0	30 x 22 x 80
17" - 432	45 x 50	35	8 x 4.0	30 x 22 x 80
18" - 457	53 x 60	40	8 x 4.0	30 x 22 x 80
19" - 483	53 x 60	40	10 x 4.0	35 x 26 x 90
20" - 508	53 x 60	40	10 x 4.0	35 x 26 x 90
21" - 533	60 x 67	45	10 x 4.0	35 x 26 x 90
22" - 559	60 x 67	45	12 x 5.0	40 x 30 x 100
23" - 584	70 x 75	50	12 x 5.0	40 x 28 x 120
24" - 610	70 x 75	50	12 x 5.0	40 x 28 x 120
25" - 635	75 x 86	60	14 x 5.0	45 x 33 x 120
26" - 660	75 x 86	60	14 x 5.0	50 x 38 x 120
27" - 686	85 x 95	65	14 x 5.0	50 x 36 x 140
28" - 711	85 x 95	65	14 x 5.0	50 x 36 x 140

Highly Skewed Propellers

Type HSP

HSP propellers are designed to reduce vibration and noise. They offer an unsurpassed level of comfort.

Type	HSP-3B	HSP-4B	HSP-4B
Diameter	(406 mm – 1016 mm)	(406 mm – 2438 mm)	(406 mm – 2438 mm)
Blade area ratio	D.A.R. 45%	D.A.R. 60%	D.A.R. 75%

Variprofile Feathering Propellers

Introduction

Ideal for sailing yachts up to 140 hp (=103 kW, 3-blade propeller). As soon as the engine turns off, the water flow automatically rotates the blades into the feathered position. This reduces the drag and increases the speed. Variprofile feathering propellers increase the stopping power. Compared to a Fixed blade propeller the stopping power is 30-40% higher.

Advantages

- Light weight and slim shape.
- Minimal turbulence, so the yacht responds better on the directions of the rudder.
- Separate external pitch adjustments for forward and reverse.
- Easy mounting with interchangeable hub.
- Made of Ni.Br.Al.
- Dynamically balanced blades for smooth running.

Variprofile 2-Blade Feathering Propeller

Diameter (inch - mm)	Max. diam. shaft (mm)	Hub	Power max. (kW)	Built-in length (mm)	Weight (kg)
13 - 330	30	VP-64	33	243	4.25
14 - 356	30	VP-64	33	246	4.80
15 - 381	30	VP-64	33	251	5.20
16 - 406	30	VP-64	33	255	5.70
17 - 432	30	VP-64	33	257	6.20
18 - 457	30	VP-64	33	261	6.70
17 - 432	35	VP-76	56	363	8.30
18 - 457	35	VP-76	56	367	8.80
19 - 483	35	VP-76	56	370	9.20
20 - 508	35	VP-76	56	373	10.00
21 - 533	35	VP-76	56	377	10.30
22 - 559	35	VP-76	56	381	10.80

Variprofile 3-Blade Feathering Propeller

Diameter (inch - mm)	Max. diam. shaft (mm)	Hub	Power max. (kW)	Built-in length (mm)	Weight (kg)
13 - 330	30	VP-64	33	243	4.5
14 - 356	30	VP-64	33	246	5.0
15 - 381	30	VP-64	33	251	5.5
16 - 406	30	VP-64	33	255	6.0
17 - 432	30	VP-64	33	257	6.5
18 - 457	30	VP-64	33	261	7.0
17 - 432	35	VP-76	56	363	9.0
18 - 457	35	VP-76	56	367	9.5
19 - 483	35	VP-76	56	370	10.0
20 - 508	35	VP-76	56	373	10.5
21 - 533	35	VP-76	56	377	11.0
22 - 559	35	VP-76	56	381	11.5
20 - 508	45	VP-104	103	345	16.0
21 - 533	45	VP-104	103	349	19.5
22 - 559	45	VP-104	103	353	20.0
23 - 584	45	VP-104	103	357	20.5
24 - 609	45	VP-104	103	361	21.5
25 - 635	45	VP-104	103	366	22.0
26 - 659	45	VP-104	103	374	23.0

Variprop Feathering Propellers

Introduction

Variprop is an user-friendly superior feathering propeller, made of durable Ni.Br.Al. Available for sailing yachts up to 180 HP (132 kW). As soon as the engine is turned off, the water flow rotates the blades. This reduces the drag to nothing, and increases the speed. Variprop propellers cause little turbulence and therefore optimize the rudder effect. Within less than one shaft rotation the propeller blade turns 180°. The thrust in reverse is equal to forward. This is approximately 30-40% better than with fixed propeller blades. This improves the stopping power. The blades are dynamically balanced, so they run smooth, quiet and without vibration. Rope cutters can be mounted close to the blades.

Advantages

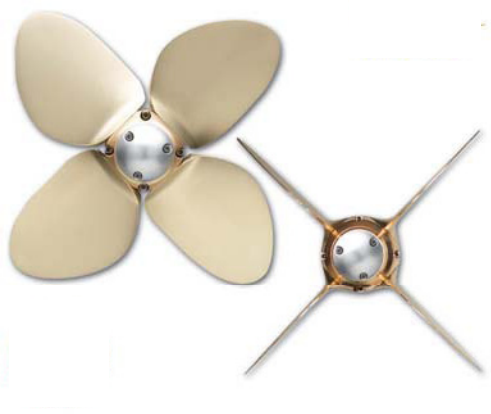
- Independently adjustable external pitch control of reverse and forward thrust.
- Patented SoftStop shock absorbing multidisc brake. This dramatically reduces shock loads, unpleasant operating noises and wear.
- Gears are 35-50% larger than competing propellers to extend the service life
- Easy mounting as the propeller will be supplied fully assembled
- Short built-in length, so they can be built in to almost every sailing yacht
- Germanischer Lloyd approval

Variprop 2-Blade Feathering Propeller

Diameter (inch - mm)	Max. diam. shaft (mm)	Hub	Power (kW)	Built-in length (mm)	Weigth ± (kg)
12 - 305	25	DF-80	22	155	4.8
13 - 330	25	DF-80	22	155	5.0
14 - 356	25	DF-80	22	155	5.5
15 - 381	25	DF-80	22	155	6.0
16 - 406	25	DF-80	22	155	6.5
17 - 432	25	DF-80	22	155	7.0
15 - 381	35	DF-107	59	170	8.0
16 - 406	35	DF-107	59	170	8.5
17 - 432	35	DF-107	59	170	9.5
18 - 457	35	DF-107	59	170	10.5
19 - 483	35	DF-107	59	170	11.5

Variprop 3-Blade Feathering Propeller

Diameter (inch - mm)	Max. diam. shaft (mm)	Hub	Power (kW)	Built-in length (mm)	Weigth ± (kg)
12 - 305	25	DF-80	22	155	4.8
13 - 330	25	DF-80	22	155	5.0
14 - 356	25	DF-80	22	155	5.5
15 - 381	25	DF-80	22	155	6.0
16 - 406	25	DF-80	22	155	6.5
17 - 432	25	DF-80	22	155	7.0
15 - 381	35	DF-107	59	170	8.0
16 - 406	35	DF-107	59	170	8.5
17 - 432	35	DF-107	59	170	9.5
18 - 457	35	DF-107	59	170	10.5
19 - 483	35	DF-107	59	170	11.5
20 - 508	40	DF-112	88	215	17.0
21 - 533	40	DF-112	88	215	17.5
22 - 559	40	DF-112	88	215	18.0
23 - 584	40	DF-112	88	215	19.0
24 - 609	40	DF-112	88	215	20.0
24 - 609	50	DF-128	103	245	26.0
26 - 659	50	DF-128	103	245	26.5
28 - 711	50	DF-128	103	245	27.0
24 - 609	55	DF-140	132	256	26.0
26 - 659	55	DF-140	132	256	28.0
28 - 711	55	DF-140	132	256	32.0
30 - 762	55	DF-140	132	256	39.0
32 - 813	55	DF-140	132	256	40.0



Variprop 4-Blade Feathering Propeller

Diameter (inch - mm)	Max. diam. shaft (mm)	Hub	Power (kW)	Built-in length (mm)	Weigth ± (kg)
12 - 305	25	DF-80	22	155	4.8
13 - 330	25	DF-80	22	155	5.0
14 - 356	25	DF-80	22	155	5.5
15 - 381	25	DF-80	22	155	6.0
16 - 406	25	DF-80	22	155	6.5
17 - 432	25	DF-80	22	155	7.0
15 - 381	35	DF-107	59	170	8.0
16 - 406	35	DF-107	59	170	8.5
17 - 432	35	DF-107	59	170	9.5
18 - 457	35	DF-107	59	170	10.5
19 - 483	35	DF-107	59	170	11.5
20 - 508	40	DF-112	88	215	17.0
21 - 533	40	DF-112	88	215	17.5
22 - 559	40	DF-112	88	215	18.0
23 - 584	40	DF-112	88	215	19.0
24 - 609	40	DF-112	88	215	20.0
24 - 609	50	DF-128	103	245	26.0
26 - 659	50	DF-128	103	245	26.5
28 - 711	50	DF-128	103	245	27.0
24 - 609	55	DF-140	132	256	26.0
26 - 659	55	DF-140	132	256	28.0
28 - 711	55	DF-140	132	256	32.0
30 - 762	55	DF-140	132	256	39.0
32 - 813	55	DF-140	132	256	40.0

Folding Propellers

Introduction

Flex-o-Fold propellers reduce the resistance while sailing, giving the boat more speed. The folding propeller unfolds automatically when the shaft starts revolving, as a result of centrifugal force. All blades, which open in synchronisation, are intersepted by strong polyurethane shock absorbers. During sailing, when the engine is not running, the blades close as a result of the water pressure. This results in a propeller that gives as little resistance as possible.

Flex-o-Fold propellers consist of parts that are individually balanced, giving more flexibility in selecting the correct propeller. This means that the blades can be replaced, without the need for replacing the complete propeller. All blades fit the hub which means that it is also possible to fit blades with another diameters or different pitches on the existing hub.

The Flex-o-Fold propellers are manufactured from Nickel Aluminium Bronze (for strength and corrosion resistance) and 82% copper (for anti-fouling). The pivot pins are of Cr-Ni-Mo authentic stainless steel (ANC4) and are secured by especially designed, patented locking bolts. Flex-o-Fold propellers are available with 2 or 3 blades. Specially for 3-blade Flex-o-Fold propellers hub caps made of zinc are available for electrolytic protection.

Flex-O-Fold Type FP-2B and FP-3B

The two-blade Flex-O-Fold is available in diameters from 12" up to 17". The three-blade propeller is available in diameters from 15" up to 22". A zinc propeller hub cap is available on request for the three-blade Flex-O-Fold propellers.

Diameter (inch-mm)	Pitch (inches)
12" - 305 only RH	7" up to 10"
13" - 330	8" up to 11"
14" - 356	9" up to 12"
15" - 381	9" up to 13"
16" - 406	10" up to 14"
17" - 432	11" up to 15"
18" - 457	12" up to 16"
20" - 508	14" up to 17"
22" - 559	13" up to 18"