

max-prop®

AUTOMATIC FEATHERING PROPELLERS



manufactured by:



max-prop®

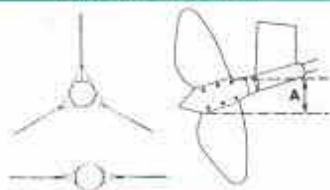
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MAX-PROP



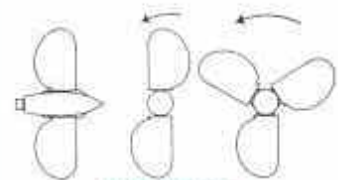
UNDER SAIL...

A Max-Prop feathers to a low drag shape. Compared to a folding propeller, the extra wetted surface of the Max-Prop blades is offset by the reduction of projected area, A. Available in two & three blades.



IN FORWARD...

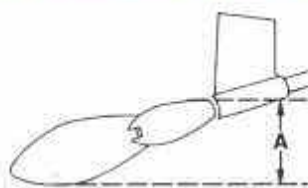
The torque of the prop shaft acting on the "differential" type design will open the blades in unison to the pre-set pitch at any throttle setting. This will provide maximum efficiency 96% of same size fixed prop plus eliminates the vibration problems of a folding prop.



IN REVERSE...

As in forward, the torque of the shaft will rotate the blades 180 degrees in less than 3/4 of a shaft rotation, presenting the same leading edge and pitch in reverse. This provides better directional control and 80% greater power than a comparable fixed blade propeller.

FOLDING PROP



UNDER SAIL...

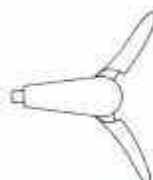
A folding propeller provides a low drag. The drag is directly proportional to the projected area, A.

Available only in two blades.



IN FORWARD...

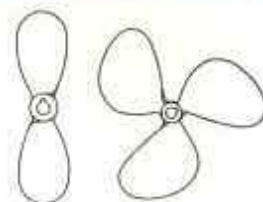
The blades will "slam" open and, if not perfectly aligned or true to each other, will cause vibration.



IN REVERSE...

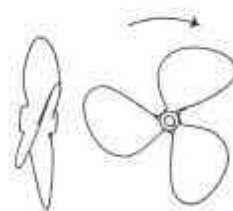
In that the blades will not open to the maximum diameter (and occasionally not at all), the reverse power is very poor (much less than a fixed blade prop).

FIXED BLADE



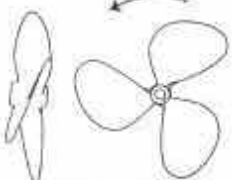
UNDER SAIL...

A fixed blade propeller induces a tremendous amount of drag reducing the boat's speed an average of 15%.



IN FORWARD...

A fixed blade propeller provides maximum efficiency as long as the pitch is correct.



IN REVERSE...

A fixed blade propeller works with the trailing edge as a leading edge, reducing its efficiency by 90%.

DRAG

One of the most important feature of the Max-Prop is that it feathers automatically with the forward momentum of the boat. Once feathered, it provides the least possible drag (similar to a folding prop) improving the vessel's sailing speed by an average of 15% above a conventional fixed blade propeller.

EFFICIENCY

In forward, the Max-Prop will offer 96% of the efficiency of a fixed blade propeller of the same diameter and pitch. The 4% loss in power can usually be eliminated by precisely matching the pitch of the Max-Prop to fit the boat and engine combination. In reverse, the Max-Prop provides 90% more power than a comparable fixed blade propeller. The Max-Prop utilizes the same leading edge in forward as it does in reverse giving the propeller the same thrust in both directions, whereas on a fixed blade propeller in reverse the trailing edge becomes the leading edge therefore reducing its efficiency by 90%.

RELIABILITY

The Max-Prop uses a "differential" type design so that the blades cannot fail to open in forward or reverse. This positive system eliminates the problems associated with a folding propeller and its use of centrifugal force to open the blades. In a recent survey of Seven Seas Cruising Association readers the Max-Prop received a perfect rating of no failures (one of only two products to receive such high praise). About 15,000 Max-Prop are in operation today!

VERSATILITY

The Max-Prop offers the possibility of pitch adjustment without external controls. Changing the pitch is very simple; it is done by changing the setting of the gear inside the propeller (usually upon a haul out). The ability to adjust the pitch will help achieve the maximum efficiency from the engine without having to purchase a new propeller. On the new V.P. model the pitch is adjustable externally.

INSTALLATION AND MAINTENANCE

The Max-Prop will fit directly onto your existing shaft when the boat is hauled for installation. The Max-Prop will be matched to your specific shaft taper and can even be fitted on a Sail-Drive unit. The only required maintenance is to grease the propeller at least every other year (all the new Max-Props are fitted with grease fittings).

RACING

Worldwide, about 70% of the top racing boats have opted for the Max-Prop solution.

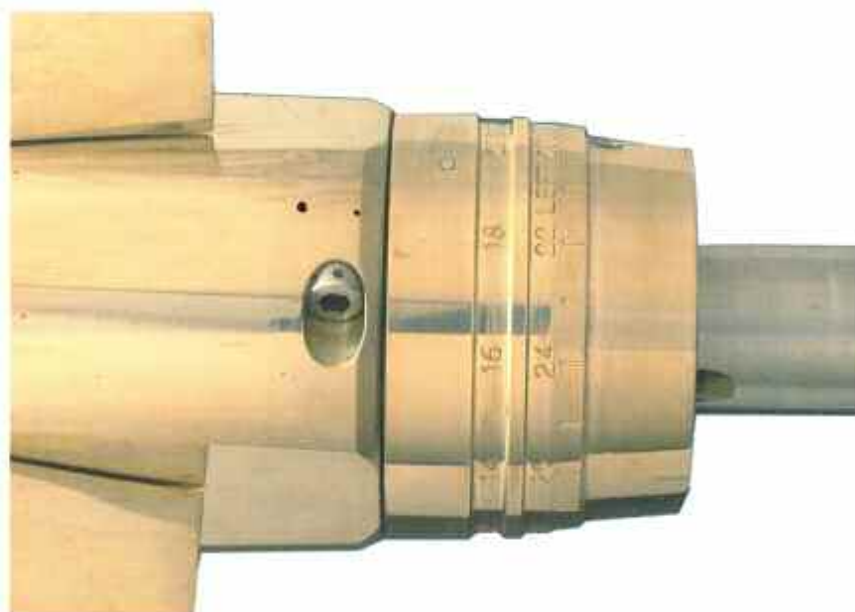
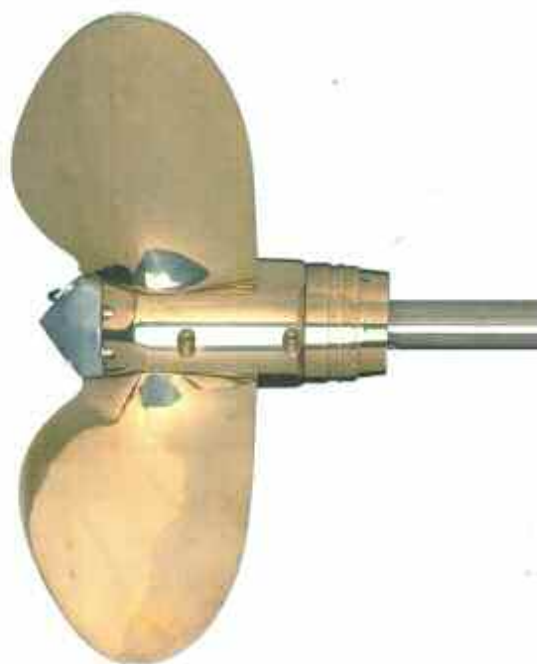
CRUISING

The two or the three blade Max-Prop is the propeller of choice for the cruising sailor. The combination of low drag, increased speed, outstanding backing power, safety and maneuvering, and fail safe design makes the Max-Prop the ideal cruising propeller.

THREE BLADE V.P.

Max-Prop's newest addition to its product line is the V.P. model. The Max-Prop V.P. is an enhancement of its highly successful "Three Blade Classic". The V.P. offers the unique feature of external pitch adjustment using a breakthrough patented system. This system allows for complete pitch adjustment by a diver without any tools.

*Available diameter
from 380 to 915 mm
for shafts 25 to 55 mm*



EXTERNAL PITCH ADJUSTMENT

- No tools required for pitch adjustment.
- Adjustable in or out of the water.
- Easier installation.

INCREASED MOTOR EFFICIENCY

- Finer pitch adjustment.
- Better fuel economy.
- Optimize motorsailing.

VERY LOW DRAG UNDER SAIL

- Comparable to the Classic Max-Prop

LEGENDARY MAX-PROP REVERSE

RELIABILITY

- New patented technology allows the pitch adjustment mechanism to be isolated from the propeller load under way and when shifting.

...All Swan's have been equipped with Max-Prop since the early eighties. The world's most famous builder would use nothing less!

SAILDRIIVE

With the worldwide acceptance and use of saildrive units, Max-Prop developed both a two and three blade which adapts to the spline of the drive unit with no modifications. The user will experience the same advantages as a classic Max-Prop, low drag, superior forward propulsion and unsurpassed reverse power.

The SD Max-Prop is adaptable to The Volvo, Yanmar or Bukh saildrive units.



TWO BLADE CLASSIC

The original two blade Max-Prop was designed in the early 70's for the high tech racing boat. Since proving itself in the racing arena, the two blade classic Max-Prop has earned its way into the mainstream market as a leader of low drag propellers. Today you will find the classic two blade Max-Prop equipped on a wide range of vessels from high tech maxi race boats to modest 25 foot daysailers. While satisfying the racer with low drag, its efficiency under power in both forward and reverse is sure to please all.

Recent Surveys by the "Seven Seas Cruising Association" show that the Max-Prop has an incredible 0% Failure rate.

*Available diameter
from 280 to 1120 mm
for shafts 19 to 65 mm*

- **VERY LOW DRAG**
- **PROVEN PERFORMANCE**
- **UNEQUALLED RELIABILITY**
- **OUTSTANDING REVERSE**
- **INTERNAL ADJUSTABLE PITCH**



THREE BLADE CLASSIC

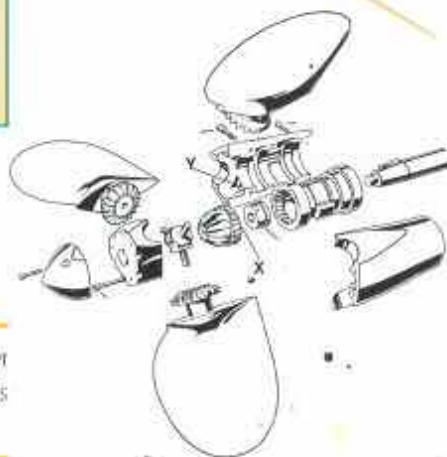
With the increased popularity of the cruising vessel, Max-Prop introduced in the early 80's its three blade classic model which soon became a must within the cruising community. The three blade Max-Prop will enhance a vessel's performance both under power and sail while helping to minimize bothersome vibrations. With its unsurpassed powering ability in both forward and reverse the three blade classic Max-Prop has become a legend among the sailing community. While standard equipment on some of the world's most famous yachts (Swan, Little Harbor, Hinckley, Alden, Baltic, etc.), the three blade classic is also a proven choice for the more modest common cruiser.

- **BEST FORWARD POWER**
- **REDUCES VIBRATIONS**
- **OUTSTANDING REVERSE**
- **UNEQUALLED RELIABILITY**
- **VERY LOW DRAG**
- **INTERNAL ADJUSTABLE PITCH**



*Available diameter
from 280 to 1120 mm
for shafts 19 to 80 mm*

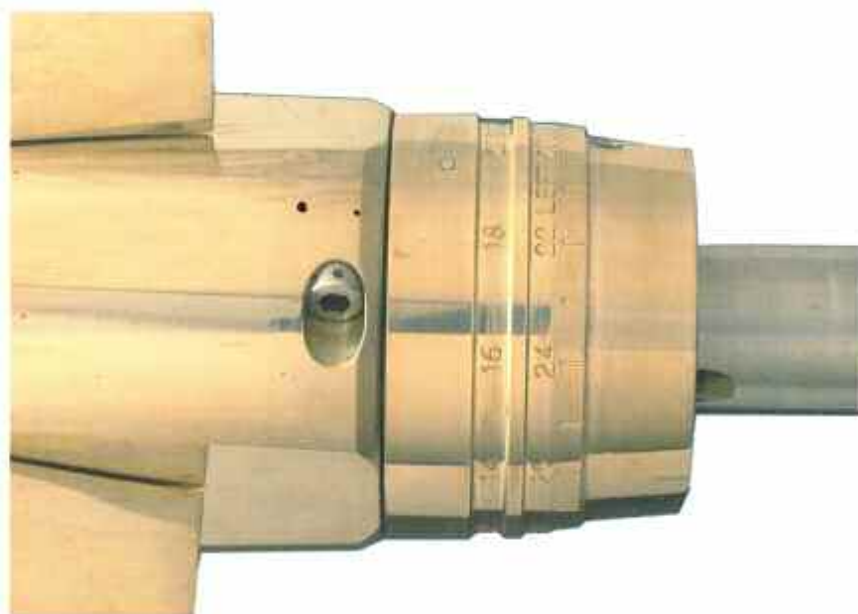
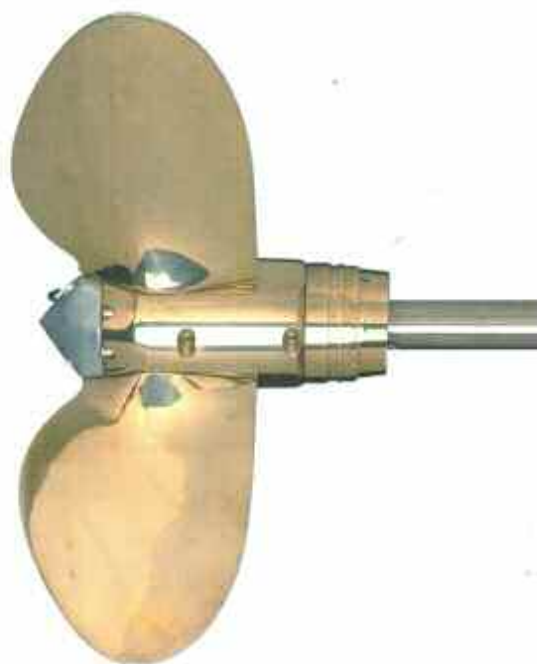
Bob Perry on Max-Prop: "I am always surprised by the number of sailors intent upon good sailing performance who are willing to accept less than maximum speed under sail as well as under power... in my mind the Max-Prop is the finest tool for the job..."



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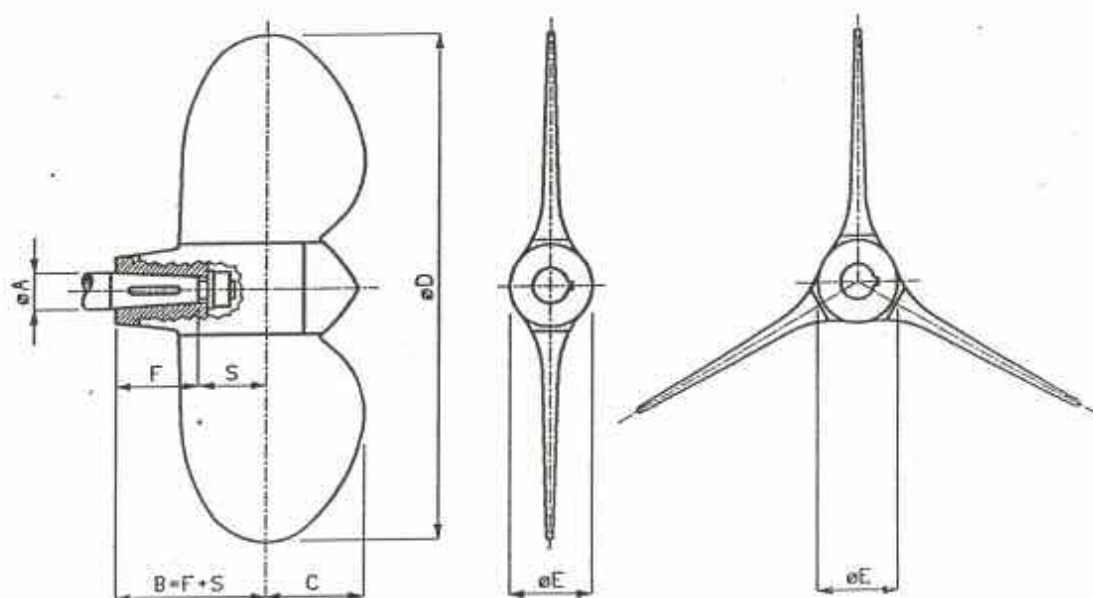
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MISURE DI INGOMBRO STANDARD (mm.) STANDARD SIZES (mm.)



MAX-PROP "Classic"

OGIVA øE Spinner øE	øA	øD	S	C
63	20÷28	300÷540	50	72,5
70	28÷35	350÷640	55	81
83	35÷45	500÷800	68	94
100	45÷55	550÷1000	80	113
125	55÷68	700÷1100	99	145
160	68÷80	830÷1000	123	175

MAX-PROP "VP" (passo variabile - variable pitch)

OGIVA øE Spinner øE	øA	øD	S	C
70	25÷35	350÷640	59	81
83	35÷45	500÷800	72	94
100	45÷55	550÷1000	86	113

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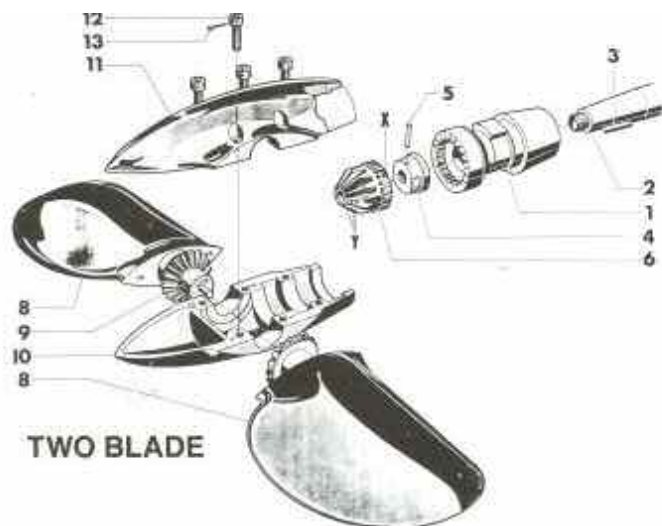
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TWO BLADE
THREE BLADE

MAX-PROP™

U.S. PATENT 4140434



TWO BLADE



THREE BLADE



DRAG

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EFFICIENCY

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In reverse: the Max-Prop provides 90% more power than a comparable fixed blade propeller. The Max-Prop utilizes the same leading edge in forward as it does in reverse giving the propeller the same thrust in both directions, whereas on a fixed blade propeller in reverse the trailing edge becomes the leading edge therefore reducing its efficiency by 50%.

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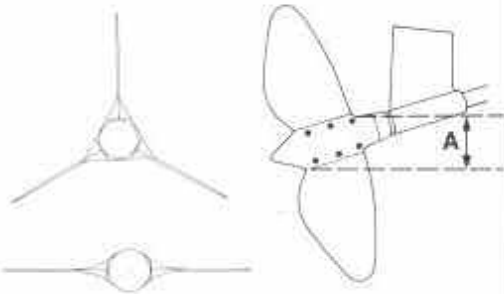
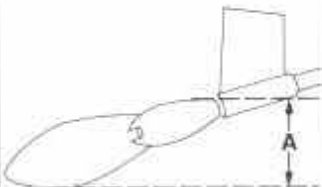
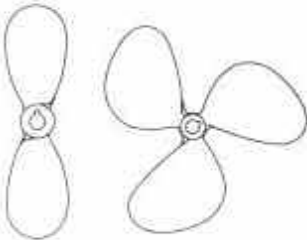
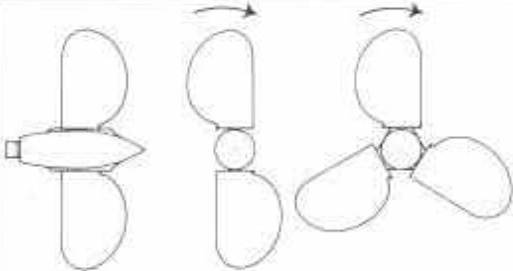
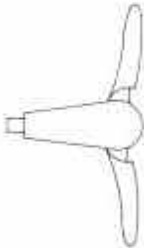
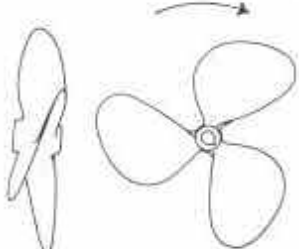
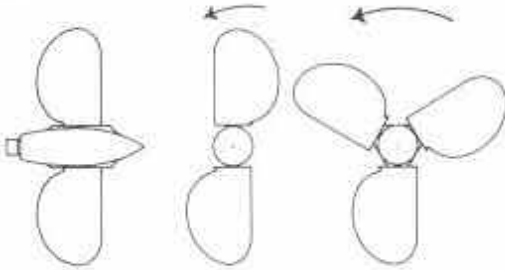
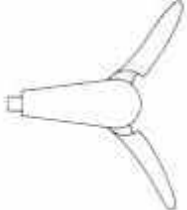
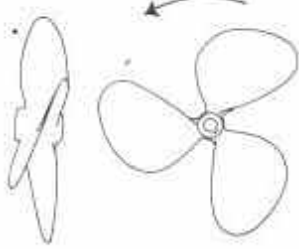
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Worldwide, about 70% of the top racing boats have opted for the Max-Prop solution.

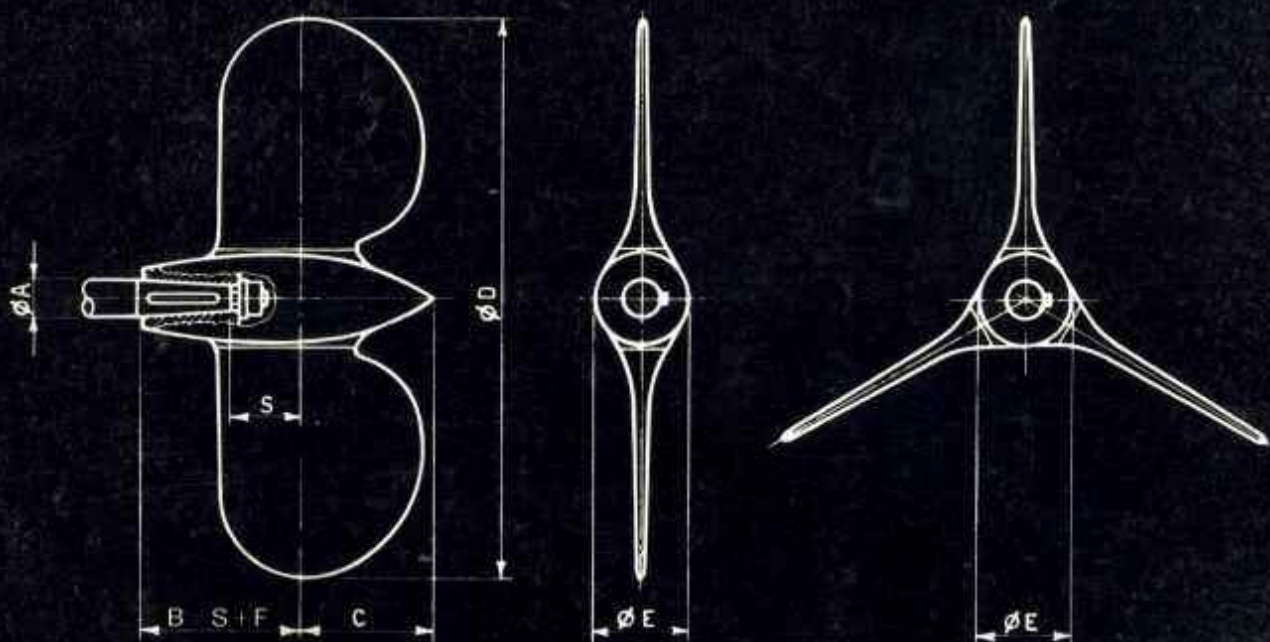
CRUISING

The two or the three blade Max-Prop is the propeller of choice for the cruising sailor. The combination of low drag (increased speed), outstanding backing power (safety and maneuvering), and fail safe design makes the Max-Prop an ideal cruising propeller.

The comparative features of the "MAX-PROP"

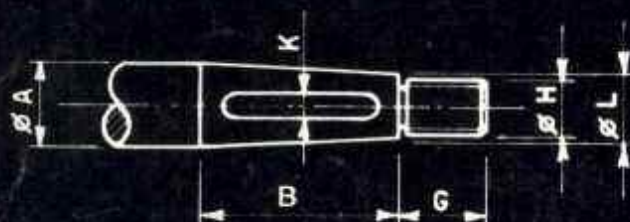
MAX-PROP	FOLDING PROP	FIXED BLADE
 <p>UNDER SAIL. . . a Max-Prop feathers to a low drag shape. Compared to a folding propeller, the extra wetted surface of the Max-Prop blades is offset by the reduction of projected area: A. Available in two & three blades!!</p>	 <p>UNDER SAIL. . . a folding propeller provides a low drag. The drag is directly proportional to the projected area: A. Available only in two blades.</p>	 <p>UNDER SAIL. . . a fixed blade propeller induces a tremendous amount of drag, reducing the boat speed an average of 15%.</p>
 <p>IN FORWARD. . . The torque of the prop shaft acting on the "differential" type design will open the blades in unison to the pre-set pitch at any throttle setting. This will provide maximum efficiency (95% of same size fixed prop) plus eliminate the vibration problems of a folding prop.</p>	 <p>IN FORWARD. . . The blades will "slam" open and, if not perfectly aligned or true to each other, will cause vibration.</p>	 <p>IN FORWARD. . . a fixed blade propeller provides maximum efficiency as long as the pitch is correct.</p>
 <p>IN REVERSE. . . As in forward, the torque of the shaft will rotate the blades 180 degrees in less than 1/4 of a shaft rotation, presenting the same leading edge and pitch in reverse. This provides better directional control and 50% greater power than a comparable fixed blade propeller.</p>	 <p>IN REVERSE... In that the blades will not open to the maximum diameter (and occasionally not at all), the reverse power is very poor (much less than a fixed blade prop).</p>	 <p>IN REVERSE. . . a fixed blade propeller works with the trailing edge as a leading edge, reducing its efficiency by 50%.</p>

In summary, with a "MAX-PROP" propeller, there is no need to sacrifice motoring efficiency for the sake of low drag.



Hub Diameter ϕE	Shaft Diameter ϕA	Prop Diameter ϕD	S	C	B
63 mm	1/2" to 1 1/8"	11" to 21"	1.96"	3.93"	This is determined by the shaft taper length.
70 mm	1 1/8" to 1 3/8"	14" to 25"	2.16"	4.33"	
83 mm	1 3/8" to 1 3/4"	19" to 32"	2.67"	4.72"	
100 mm	1 3/4" to 2"	21" to 44"	3.14"	5.11"	
125 mm	2" to 2 1/2"	25" to 44"	3.75"	6"	
160 mm	2 1/2" to 3"	28" to 44"	4.72"	7"	

AVAILABLE FOR SAIL-DRIVE UNITS!



A = SHAFT DIAMETER

B = TAPER LENGTH

L = TAPER SMALL END

K = KEYWAY WIDTH

H = THREADS DIAMETER & PITCH

In that each propeller is bored to order, it is important to indicate the precise shaft taper dimensions UNLESS it is a U.S. Standard (S.A.E.) taper. In this case, all that is necessary is the "A" dimension.

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