

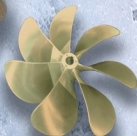
HI-TECH
since 1975



**HUNG SHEN
PROPELLER**

FPP • CPP & Shafting

宏昇螺旋槳





DNV and BSI are the world's leading classification societies for the offshore sector.

Classification Society



ABS



BV



CCS



CR



DNV



GL



KR



LR



NK



RINA



RS



CSD



Hung Shen Propeller CO., LTD



Cheng Cheng-I
President

Cheng-Chi Cheng

Hung Shen was founded in 1975. Our mission is to earn and maintain our client's continuing confidence by fulfilling their expectation in our products and services. Although we have the best design and manufacturing technology, we strive to maintain our leading position through continuing research and development. We feel it is our job to provide the best propellers to our customers. Hung Shen genuinely cares about our customers. Our customers' happiness has been the motivation behind our company for the past 32 years.



TAIWAN Ping Tung (Headquarter)



China Kun Shan (Main Plant)

For many years, Hung Shen has outstanding references when it comes to the quality of propeller on navy vessels. National Defense praised Hung Shen with a medal of Merits in 1999. In 2009, Hung Shen wins the 6th Annual Taiwan Yu-Shan Enterprise Award.



With decades of experiences and high technology design ability, Hung Shen can make the perfect combination and state-of-the-art propeller to meet individual's needs. Hung Shen is also capable of design and manufacture of shafting equipment for small to medium size ships. Our expertise is in engineering the optimum marine propulsion solution for each individual case.

Main Products FPP . CPP . Shafting



Research & Development

With decades of experience, we know how to design and manufacture the best propeller to match your vessel. Using the latest technology, together with our years of design expertise, we can develop the optimum state-of-the-art propeller to meet individual needs.

In order to optimize the performance of luxury yachts, ferries and warships, Hung Shen has developed a NEW Silent Propeller (NSP) series. The use of this 4 or 5 blade advanced propeller will reduce propeller induced vibration and noise levels dramatically. The new foil section, makes the blade sections much less sensitive to cavitation when operating in the non-uniform inflow common to yachts, ferries and warships. The NSP series reduces ship vibration level approximately 50% and cabin noise level approximately 3dB (A) for luxury yachts. At the same time, it increases the propeller efficiency for high-speed craft. The ship speed can be increased by approximately one knot for ships with maximum speed around 30 knots.



3-D CAD /CAM Workstation



To focus on vessel speed over 25 knots, Hung Shen has developed a new propeller series which out-performs previous propeller series.

We have performed a series of model propeller tests considering different expanded area ratios (0.75 & 1.0), number of blades (3, 4 & 5), inclined shaft angles (0, 6, 8 & 10 degrees) and cavitation numbers (atm, 1.0, 0.75, 0.6, 0.5, 0.45, & 0.4), and have formed a complete propeller series.



Prop. Water Test Tunnel

Hung Shen R&D Team



Mr. Wu
Director of R&D
More than 30 years of experience in Propeller and Shafting Design, Current Vice President



Dr. Kao
Manager of R&D
Ph.D. National Taiwan Ocean University
-Fluid Dynamics
-Propeller Induced Noise and Vibration

Prof. Kehr
Consulting from NTU
Dr.-Ing., Tech. University of Berlin, Germany
-Propeller Induced Noise
-Propeller Design



Prof. Hsin
Consulting from NTU
Ph.D. Massachusetts Institute of Tech. (MIT)
-Propeller Theory
-Fluid Dynamics



Manufacturing

FPP CNC Blade Milling

In order for a well-designed propeller to perform optimally, it has to be manufactured with high precision. Our propeller blades are manufactured with high precision CNC machines. The CNC manufacturing process fulfils the ISO484/2 Class S standards, and enables the propeller to obtain the best efficiency with minimum vibration and noise.



CPP CNC Blade and Flange Milling

We manufacture different types of Controllable Pitch Propellers(Mn-Bronze, Ni-Al Bronze, and Stainless Steel (CF-3). The processing precision achieves ISO Class S tolerance.





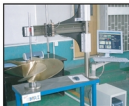
Quality Control

Hung Shen has obtained ISO-9001:2000 quality certification and is approved by ABS, BV, CR, DNV, GL, LR, NK and CSD. All Hung Shen propellers are manufactured under stringent quality control procedures and systems.



MRI Machine

- To provide the best quality for our all customers.
- To ensure that the manufacturing process is based on the optimal design.
- The report generated by the MRI software is a good reference for future repair of the propeller.
- According to the information measured from the MRI, we can assure our customers that the propeller will attain the design goals of high efficiency, low vibration, and low noise.



MRI Machine



Pitch Measurement Instrument
(Prop. Dia. 3600mm)



Spectroscopic Analyzer



Material Test



Dynamic Balancing Test



Dynamic Balancing Test



Key Seating Machine



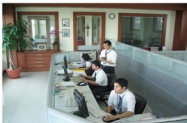
High Performance Pleasure Craft and Yacht
High Efficiency, Maximum Speed, Fast Planing Time and Maximum Comfort



Navy Vessels - Low Vibration, Low Noise and Minimum Cavitation

Fixed Pitch Propellers

Hung Shen has many years of experience in the design of fixed pitch propellers (FPP). Our propellers provide excellent fuel economy, low vibration/noise level and no harmful cavitation. They are individually designed for the specific vessels to deliver the optimum in propeller efficiency.



Workboats and Fishboats - High Power & Energy Saving



Keyless Prop

Dia 3000 mm, 3200 Kgs

Controllable Pitch Propellers

Controllable pitch propellers (CPP) are the ideal choice for commercial vessels with large gear ratios. CP propellers provide excellent maneuverability, thus saving ship time and tug costs. Our CP propellers guarantee superior propeller efficiency, reliability and minimum noise and vibration level. We have the capability to produce controllable pitch propellers up to 5.5 meters in diameter.

CPP CNC Blade and Flange Milling

We manufacture different types of CPP(Mn-Bronze, Ni-Al Bronze, and Stainless Steel (CF-3). The processing precision achieves ISO Class S tolerance.



Shafting



Shafting CNC Milling



Hung Shen is capable of the design and manufacture of shafting equipment for all boats and small to medium size ships. Our expertise is in engineering the optimum marine propulsion solution for each individual case.



Custom Propellers



27 knots

Navy Warship

The silent propellers designed and manufactured by Hung Shen have been installed on eleven Navy warships. The propellers were manufactured to ISO 484/2 Class "S" standards. The performance of the propellers has been verified as superior by the customer.



35 knots

Navy Patrol Vessel

The Navy triple-screw guided missile fast patrol boat has been equipped with propellers and shafting systems designed and delivered by Hung Shen. The propeller induced vibration and noise level have been found to be very low even at the maximum ship speed of 35 knots.



①



②



③

Offshore Patrol Vessels

Twin screw offshore patrol vessels, owned by the Navy, have been equipped with propellers designed and delivered by Hung Shen. The sea trial speed of the vessels was determined to be higher than the required specification. By using the new-foil section, the cavitation extension and its associated vibration and noise have been controlled very well. The performance of these propellers has gained the affirmation of the ship owners, ship builders, and ship designers.

- ① 720 Tons Coast Guard Vessel, 31Knots
- ② 600 Tons Custom Prevention Ship, 31 Knots
- ③ 720 Tons Coast Guard Vessel, 31Knots



①



②



③

Fishboat & Workboat

The silent propellers were installed on the Tuna Purse Seiner constructed by Ching-Fu Shipbuilding Company. The advanced propellers enable the ship to achieve a low underwater acoustic level while underway. Thus, the propellers not only increase the fish catch, but also reduce the noise and vibration level in the cabin.



Custom Propellers-Yachts



What is Custom Propellers?

Custom propellers are designed for specific vessels and engine combinations. They enable vessels to achieve their optimum performance. Both the lifting line theory and the lifting surface theory are used to design propellers with higher performance requirements.

For vessels with maximum speed over 25 knots, the custom propeller designs provides significant benefits in many areas such as efficiency, vibration / noise, and cavitation erosion. Custom propellers are designed first by using the propeller lifting line theory to optimize performance in accordance with custom's requirements: including the vessel speed, engine braked horsepower, effective horsepower curve, propeller diameter, number of blades, etc.

This lifting line theory is also used to develop the optimum expanded area ratio and chord length distribution to meet the cavitation requirements. Finally, a lifting surface theory is used to obtain camber and pitch distribution skew and blade thickness are optimized in the design for maximum performance.

This design process is carried out using a specialized computer program which can simulate the vessel's performance using different reduction gear ratios and sized propellers.

Custom Surface Piercing Propellers





Standard Propellers for Medium Speed Vessels

Efficiency Propeller EP-3B

The EP-3B series is designed for optimum efficiency, particularly for craft with operating speed less than 25 knots. This type of propeller has high damage resistance due to the relatively thick leading edge. They are widely used by pilot boats, general pleasure crafts, police launches, patrol boats and similar vessels.

Efficiency Propeller EP-4B

The EP-4B series has similar characteristics with the EP-3B series, except that EP-4B provides lower vibration levels than EP-3B due to the increased blade area and number of blades. Thus, it is suitable for higher performance pleasure craft.

Efficiency Propeller EP-5B

The EP-5B series has larger expanded area ratio than that of the EP-4B and EP-3B series. This type of propeller is suitable for high power vessels and for vessels in which the noise and vibration in the cabin are critical.



EP-3B



EP-4B



EP-5B



Stainless Steel



EP-3B
Dia 10" ~ 50"
E.A.R. 0.55
Up to 28 Knots



EP-4B
Dia 10" ~ 50"
E.A.R. 0.68
Up to 28 Knots



EP-5B
Dia 17" ~ 50"
E.A.R. 0.85
Up to 32 Knots

| Diameter | | Hub Dimensions (Inches) | | | Standard Taper Bore (Inches) | | 3 blades E.A.R. 0.55 lbs | 4 blades E.A.R. 0.68 lbs | 5 blades E.A.R. 0.85 lbs |
|----------|------|-------------------------|-------------|---------|------------------------------|------------|--------------------------------|--------------------------------|--------------------------------|
| inches | mm | aft end | forward end | length | max bore | pilot bore | | | |
| 10 | 254 | 1-1/2 | 1-5/8 | 2-1/4 | 1 | 3/4 | 3.1 | | |
| 11 | 279 | 1-1/2 | 1-5/8 | 2-1/4 | 1 | 3/4 | 4.2 | | |
| 12 | 305 | 1-5/8 | 1-3/4 | 2-3/8 | 1-1/8 | 7/8 | 5.1 | | |
| 13 | 330 | 1-5/8 | 1-13/16 | 2-3/4 | 1-1/4 | 1 | 7 | | |
| 14 | 356 | 1-7/8 | 2 | 2-3/4 | 1-1/4 | 1 | 9 | | |
| 15 | 381 | 1-7/8 | 2 | 2-3/4 | 1-1/4 | 1 | 10 | | |
| 16 | 406 | 2-1/8 | 2-3/8 | 3-1/4 | 1-3/8 | 1-1/8 | 12 | | |
| 17 | 432 | 2-1/8 | 2-3/8 | 3-1/4 | 1-3/8 | 1-1/4 | 14 | 15 | 18 |
| 18 | 457 | 2-3/8 | 2-5/8 | 3-1/4 | 1-1/2 | 1-1/4 | 16 | 18 | 22 |
| 19 | 483 | 2-3/8 | 2-5/8 | 3-3/4 | 1-1/2 | 1-1/4 | 19 | 21 | 25 |
| 20 | 508 | 2-3/8 | 2-5/8 | 3-3/4 | 1-1/2 | 1-1/4 | 21 | 25 | 30 |
| 21 | 533 | 2-3/4 | 3 | 4-1/8 | 1-3/4 | 1-3/8 | 27 | 30 | 37 |
| 22 | 559 | 2-3/4 | 3 | 4-1/8 | 1-3/4 | 1-3/8 | 30 | 32 | 39 |
| 23 | 584 | 3 | 3-1/4 | 4-1/2 | 2 | 1-1/2 | 35 | 38 | 45 |
| 24 | 610 | 3 | 3-1/4 | 4-1/2 | 2 | 1-1/2 | 38 | 42 | 55 |
| 25 | 635 | 3-3/8 | 3-3/4 | 4-7/8 | 2-1/4 | 1-3/4 | 42 | 47 | 59 |
| 26 | 660 | 3-3/8 | 3-3/4 | 4-7/8 | 2-1/4 | 1-3/4 | 48 | 54 | 64 |
| 28 | 711 | 3-3/4 | 4-1/8 | 5-3/4 | 2-1/2 | 2 | 60 | 68 | 81 |
| 30 | 762 | 4-1/4 | 4-5/8 | 6 | 3 | 2 | 78 | 87 | 102 |
| 32 | 813 | 4-1/4 | 4-5/8 | 6 | 3 | 2 | 88 | 98 | 118 |
| 34 | 864 | 4-1/4 | 4-5/8 | 6-1/2 | 3 | 2-1/4 | 104 | 115 | 138 |
| 36 | 914 | 4-5/8 | 5-1/8 | 8 | 3-1/2 | 2-3/4 | 127 | 140 | 169 |
| 38 | 965 | 4-5/8 | 5-1/8 | 8 | 3-1/2 | 2-3/4 | 142 | 159 | 190 |
| 40 | 1016 | 5 | 5-1/2 | 9 | 3-3/4 | 3 | 170 | 189 | 225 |
| 42 | 1067 | 5-3/8 | 6 | 10-7/16 | 4 | 3 | 208 | 230 | 270 |
| 44 | 1118 | 5-7/16 | 6-3/16 | 11 | 4 | 3 | 236 | 262 | 308 |
| 46 | 1168 | 5-5/8 | 6-1/4 | 11-7/8 | 4 | 3 | 270 | 298 | 350 |
| 48 | 1219 | 6 | 6-7/8 | 12-1/2 | 4-1/2 | 3-1/2 | 294 | 330 | 394 |
| 50 | 1270 | 6 | 6-7/8 | 12-1/2 | 4-1/2 | 3-1/2 | 365 | 391 | 447 |



Standard KCA Propellers for High Speed Vessels

KCA Series Propeller KCA-3B

The KCA-3B series is a conventional propeller that has relatively good efficiency for operating speeds lower than 25 knots. However, the vibration and noise induced by this type of propeller for medium and high shaft inclinations is marginal.

KCA Series Propeller KCA-4B & KCA-5B

The KCA-4B & 5B series are designed with wider blades to control cavitation on the blade surface, and have good efficiency for operating speed lower than 30 knots. The vibration level induced by this series is lower than that of the KCA-3B series.



KCA-3B
Dia 20" ~ 50"
E. A. R. 0.55 ~ 0.80
Up to 32 Knots



KCA-4B
Dia 20" ~ 50"
E. A. R. 0.85 ~ 1.0
Up to 32 Knots



KCA-5B
Dia 20" ~ 50"
E. A. R. 0.80 ~ 1.0
Up to 34 Knots



KCA-3B



KCA-4B



KCA-5B

| Diameter | | Hub Dimensions (Inches) | | | Standard Taper Bore (Inches) | | 3 blades E.A.R. 0.65 Lbs | 4 & 5 blades E.A.R. 0.85 Lbs |
|----------|------|----------------------------|----------------|--------|---------------------------------|---------------|--------------------------------|------------------------------------|
| inches | mm | aft end | forward end | length | max bore | pilot bore | | |
| 20 | 508 | 2-1/2 | 2-3/4 | 4-1/2 | 1-1/2 | 1-1/4 | 32 | 39 |
| 21 | 533 | 2-3/4 | 3 | 5-1/4 | 1-3/4 | 1-3/8 | 37 | 44 |
| 22 | 559 | 2-3/4 | 3 | 5-1/4 | 1-3/4 | 1-3/8 | 39 | 46 |
| 23 | 584 | 3 | 3-3/8 | 6 | 2 | 1-1/2 | 45 | 55 |
| 24 | 610 | 3 | 3-3/8 | 6 | 2 | 1-1/2 | 49 | 64 |
| 25 | 635 | 3-3/8 | 3-7/8 | 6-3/4 | 2-1/4 | 1-3/4 | 54 | 69 |
| 26 | 660 | 3-3/8 | 3-7/8 | 6-3/4 | 2-1/4 | 1-3/4 | 61 | 75 |
| 28 | 711 | 3-3/4 | 4-1/4 | 7-1/2 | 2-1/2 | 2 | 74 | 92 |
| 30 | 762 | 4-1/4 | 4-7/8 | 9 | 3 | 2-1/4 | 95 | 116 |
| 32 | 813 | 4-1/4 | 4-7/8 | 9 | 3 | 2-1/4 | 107 | 136 |
| 34 | 864 | 4-5/8 | 5-3/8 | 10-1/2 | 3-1/2 | 2-1/2 | 133 | 165 |
| 36 | 914 | 4-5/8 | 5-3/8 | 10-1/2 | 3-1/2 | 2-1/2 | 152 | 190 |
| 38 | 965 | 4-7/8 | 5-5/8 | 11-1/4 | 3-3/4 | 2-3/4 | 177 | 222 |
| 40 | 1016 | 5-1/8 | 5-7/8 | 12 | 4 | 3 | 205 | 258 |
| 42 | 1067 | 5-1/8 | 5-7/8 | 12 | 4 | 3 | 231 | 293 |
| 44 | 1118 | 5-1/8 | 5-7/8 | 12 | 4 | 3 | 264 | 332 |
| 46 | 1168 | 5-1/8 | 5-7/8 | 12 | 4 | 3 | 294 | 375 |
| 48 | 1219 | 6 | 6-7/8 | 11-1/4 | 4-1/2 | 3-1/2 | 345 | 438 |
| 50 | 1270 | 6 | 6-7/8 | 11-1/4 | 4-1/2 | 3-1/2 | 378 | 489 |

KCA propellers are manufactured by CNC



Standard Propellers for High Speed Vessels

NEW R&D Low Vibration & Low Noise

New Vanguard Propeller NVP-4B & NVP-5B

The NVP series is a high performance propeller using new-foil section, which is less sensitive to the change of angle of attack due to the propeller operating at inclined shaft condition. Thus, this type of propeller can control cavitation extension on the blade surface very well and avoid the phenomena of serious thrust breakdown. As a result, it can significantly reduce the vibration and noise induced by propeller cavitation.

The NVP series is suitable for use on planning craft, including high performance yachts, patrol boats and high speed passenger vessels. The NVP series has better acceleration performance and exceptional water gripping capability; the boat will hold its planning speed better in extreme maneuvering and during sharp turns.



NVP-4B



NVP-5B



NVP-4B
Dia. 17" ~ 50"
E.A.R. 0.69 0.85
Up to 34 Knots



NVP-5B
Dia. 22" ~ 50"
E.A.R. 0.86 1.06
Up to 36 Knots

| Diameter | | Hub Dimensions (inches) | | | Standard Taper Bore (inches) | | 4 blades | | 5 blades | |
|----------|------|----------------------------|-------------|--------|---------------------------------|------------|--------------------|--------------------|--------------------|--------------------|
| inches | mm | aft end | forward end | length | max bore | pilot bore | D.A.R. 0.69 Lbs | D.A.R. 0.85 Lbs | D.A.R. 0.86 Lbs | D.A.R. 1.06 Lbs |
| 17 | 432 | 2-1/4 | 2-1/2 | 4-1/8 | 1-3/8 | 1-1/4 | 27 | 33 | | |
| 18 | 457 | 2-1/2 | 2-3/4 | 4-1/2 | 1-1/2 | 1-1/4 | 30 | 37 | | |
| 19 | 483 | 2-1/2 | 2-3/4 | 4-1/2 | 1-1/2 | 1-1/4 | 34 | 41 | | |
| 20 | 508 | 2-1/2 | 2-3/4 | 4-1/2 | 1-1/2 | 1-1/4 | 37 | 44 | | |
| 21 | 533 | 2-3/4 | 3 | 5-1/4 | 1-3/4 | 1-3/8 | 42 | 50 | | |
| 22 | 559 | 2-3/4 | 3 | 5-1/4 | 1-3/4 | 1-3/8 | 43 | 52 | 53 | 64 |
| 23 | 584 | 3 | 3-3/8 | 6 | 2 | 1-1/2 | 52 | 62 | 63 | 76 |
| 24 | 610 | 3 | 3-3/8 | 6 | 2 | 1-1/2 | 60 | 73 | 74 | 89 |
| 25 | 635 | 3-3/8 | 3-7/8 | 6-3/4 | 2-1/4 | 1-3/4 | 65 | 79 | 79 | 95 |
| 26 | 660 | 3-3/8 | 3-7/8 | 6-3/4 | 2-1/4 | 1-3/4 | 71 | 85 | 87 | 104 |
| 28 | 711 | 3-3/4 | 4-1/4 | 7-1/2 | 2-1/2 | 2 | 87 | 104 | 106 | 127 |
| 30 | 762 | 4-1/4 | 4-7/8 | 9 | 3 | 2-1/4 | 110 | 131 | 134 | 161 |
| 32 | 813 | 4-1/4 | 4-7/8 | 9 | 3 | 2-1/4 | 129 | 155 | 157 | 188 |
| 34 | 864 | 4-5/8 | 5-3/8 | 10-1/2 | 3-1/2 | 2-1/2 | 156 | 187 | 190 | 227 |
| 36 | 914 | 4-5/8 | 5-3/8 | 10-1/2 | 3-1/2 | 2-1/2 | 180 | 215 | 219 | 262 |
| 38 | 965 | 4-7/8 | 5-5/8 | 11-1/4 | 3-3/4 | 2-3/4 | 210 | 252 | 256 | 307 |
| 40 | 1016 | 5-1/8 | 5-7/8 | 12 | 4 | 3 | 244 | 292 | 298 | 357 |
| 42 | 1067 | 5-1/8 | 5-7/8 | 12 | 4 | 3 | 277 | 332 | 338 | 405 |
| 44 | 1118 | 5-1/8 | 5-7/8 | 12 | 4 | 3 | 314 | 376 | 383 | 459 |
| 46 | 1168 | 5-1/8 | 5-7/8 | 12 | 4 | 3 | 354 | 425 | 433 | 519 |
| 48 | 1219 | 6 | 6-7/8 | 11-1/4 | 4-1/2 | 3-1/2 | 414 | 496 | 505 | 604 |
| 50 | 1270 | 6 | 6-7/8 | 11-1/4 | 4-1/2 | 3-1/2 | 462 | 554 | 564 | 676 |

NVP propellers are manufactured by CNC



Custom Propellers for High Speed Vessels

NEW R&D Low Vibration & Low Noise

New Silent Propeller NSP- 4B, 5B, 6B & 7B

In order to optimize the performance of luxury yachts and patrol boats, Hung Shen Propeller has developed NEW SILENT PROPELLER Series, based on results of a 10-year propeller research project for high-speed crafts using new-foil blade section. This makes the blade section much less sensitive to cavitation when operating at inclined shaft conditions common to yachts. The NSP Series incorporates the following product features:

- 4B, 5B, 6B and 7B.
- 0.7 ~1.2 blade area ratio. (approx)
- Optimized variable pitch distribution.
- Non-linear blade skew of 18 ~ 36 degrees.
- Advanced new-foil section
- Average for the high-speed craft (over 25 knots), NSP increases the speed more than 1 knot when compared to KCA. □



NSP-4B
Dia. 20" ~ 50"
E.A.R. 0.7~1.1
Up to 36 Knots



NSP-5B
Dia. 24" ~ 50"
E.A.R. 0.7~1.1
Up to 38 Knots



NSP-6B
Dia. 24" ~ 50"
E.A.R. 0.7~1.2
Up to 40 Knots



NSP-7B
Dia. 24" ~ 50"
E.A.R. 0.7~1.2
Up to 42 Knots

This figure compares the performance between KCA and NSP at 2400 rpm engine revolution. From these results, it can be seen very clearly that the vibration levels of the first blade rate (1BR) and second blade rate (2BR) induced by standard KCA series propellers are about three times as high as that of NSP series propellers. This research project was performed by the National Taiwan Ocean University (NTOU).

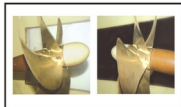
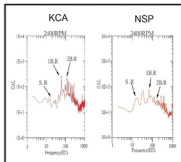
The cavitation characteristics on the blade back at position 90 degrees and on the blade face at position 270 degrees, for a 5 bladed NSP propeller operating at its design condition (cavitation number 0.75, 8 degrees shaft angle) is demonstrated in the cavitation tunnel.



NSP-4B



NSP-5B



NSP propellers are manufactured by CNC



Custom Super Series Propellers for Super High Speed Vessels

NEW R&D

Super Series Propeller SSP-3B, SSP-4B & SSP-5B

The SSP series is designed for use on high speed planning craft. By using new foil sections, the pressure distribution on the blade is not sensitive to the change of the angle of attack. Both the efficiency and the cavitation characteristics of the SSP series are better than Newton-Rader sections operating on an inclined shaft. In addition, the new foil sections help to eliminate erosion due to root cavitation.

The following parameters were evaluated as part of the model testing:

- 3, 4 and 5 blades
- 1.0, 1.2, 1.4, 1.6 and 1.8 pitch/diameter ratios
- atm, 1.5, 1.0, 0.75, 0.6, 0.5, 0.45 and 0.4 cavitation numbers
- 0 and 24 degree skew angles
- 0.75 and 1.00 EAR (Expanded Area Ratio)
- 0, 6, 8, and 10 degree shaft angles

In addition to the shaft thrust and torque, the normal forces at the inclined shaft conditions were also measured. The actual efficiency of the propellers for inclined shaft conditions were thus measured.

The SSP series has better acceleration performance, and has an exceptional water gripping capability; the boat will hold its planning speed in extreme maneuvering and during sharp turns. SSP series propellers have been installed on many high speed craft since 1998 and have been operating very successfully in 30 to 45 knot applications.



SSP-3B



SSP-4B



SSP-5B



SSP-3B
Dia. 22" - 50"
E.A.R. 0.7-1.0
Up to 45 Knots



SSP-4B
Dia. 22" - 50"
E.A.R. 0.7-1.2
Up to 45 Knots



SSP-5B
Dia. 24" - 50"
E.A.R. 0.7-1.2
Up to 45 Knots

CAD/CAM Workstation



Twin Screw

120 Tons Triple Screw
Passenger Boat,
Custom Super Series
Propellers, 40 Knots



120 Tons
Custom Super Series
Propellers 34.5 Knots



SSP propellers are manufactured by CNC



Custom Surface Piercing Propellers

**Excellent Speed Propeller
Accelerating Smooth Propeller**

**ESP- 4B
ASP- 5B & 6B**

Both the ESP and ASP series were designed for use on very high speed craft, when both propeller revolutions and advance speed are high. Both the ASP-5B and ASP-6B series provide high efficiency and smooth operation. In addition, the ASP-6B series also provides excellent acceleration performance for overcoming hump resistance.



Speed 50 Knots



ESP-4B



ASP-5B



ESP-4B
Dia. 18" ~ 50"
E.A.R. 0.7~0.85
Up to 50 Knots



ASP-5B
Dia. 18" ~ 50"
E.A.R. 0.9~1.0
Up to 50 Knots



ASP-6B
Dia. 18" ~ 50"
E.A.R. 1.0~1.15
Up to 50 Knots



Stainless Steel ASP-6B



ASP-6B

ESP & ASP propellers are manufactured by CNC



Standard Propellers for Ski Boats

Inboard Ski Propeller ISP-3B and ISP-4B

Ski propellers are designed to be used for high horsepower and very high shaft rotation conditions. The ISP-3B and 4B propellers provide low vibration and high performance. All Ski propellers are cast in Ni-Al Bronze, with propellers diameter from 12 to 15 inches.



ISP-3B



ISP-4B

| Diameter | | Hub Dimensions (Inches) | | | Standard Taper Bore (Inches) | | 3 Blades EAR: 0.55 Lbs | 4 Blades EAR: 0.62 Lbs |
|----------|-----|----------------------------|----------------|--------|---------------------------------|---------------|------------------------------|------------------------------|
| inches | mm | aft end | forward end | length | max bore | pilot bore | | |
| 12 | 305 | 1-9/16 | 1-3/4 | 2-3/8 | 1-1/8 | 7/8 | 5.1 | 6.1 |
| 13 | 330 | 1-9/16 | 1-3/4 | 2-3/4 | 1-1/8 | 1 | 7 | 8.2 |
| 14 | 356 | 1-3/4 | 2 | 2-3/4 | 1-1/8 | 1 | 9 | 9.8 |
| 15 | 381 | 1-3/4 | 2 | 2-3/4 | 1-1/8 | 1 | 10 | 11 |



Standard Propellers for Medium & High Speed Vessels



NEP-3B



NEPC-3B



SSP-3B

NEO Efficiency Propeller NEP-3B

The Neo-EP series was specially designed for the Japanese market. The Neo-EP propellers are used on Japanese vessels where the highest propulsive efficiency is desired. Due to the high efficiency, the Neo-EP series is very popular in the Japanese market.

NEO Efficiency Propeller Camber NEPC-3B

This propeller is similar to the NEP series except that the blade sections are slightly curved which effectively increases the blade camber. This design provides all the advantages of our standard series, plus the additional camber provides an increase in performance.

Super Series Propeller SSP-3B (with small E.A.R.)

The SSP series is designed for use on high speed craft. By using new foil-sections, the pressure distribution on the blade is not sensitive to the change of the angle of attack. Propellers from this series have been installed on many high speed crafts and have operated at 30 to 45 knots very successfully under inclined shaft conditions.



NEP-3B
Dia. 600mm~1200mm
E.A.R. 0.40 0.45 0.50
Up to 30 Knots



NEPC-3B
Dia. 600mm~1200mm
E.A.R. 0.40 0.45 0.50
Up to 32 Knots



SSP-3B
Dia. 600mm~1200mm
E.A.R. 0.50~1.0
Up to 45 Knots



| Diameter | | Hub Dimensions (Inches) | | | Standard Taper Bore (Inches) | | 3 blades | | |
|----------|--------|----------------------------|----------------|--------|---------------------------------|---------------|-----------------|-----------------|-----------------|
| mm | inches | aft end | forward end | length | max bore | pilot bore | EAR-0.40 lbs | EAR-0.45 lbs | EAR-0.50 lbs |
| 600 | 23.62 | 65 | 80 | 110 | 50 | 35 | 26 | 29 | 32 |
| 620 | 24.41 | 65 | 80 | 110 | 50 | 35 | 28 | 31 | 34 |
| 640 | 25.20 | 75 | 90 | 120 | 55 | 45 | 32 | 36 | 39 |
| 660 | 25.98 | 75 | 90 | 120 | 55 | 45 | 34 | 38 | 42 |
| 680 | 26.77 | 75 | 90 | 120 | 55 | 45 | 37 | 41 | 46 |
| 700 | 27.56 | 85 | 100 | 130 | 60 | 45 | 43 | 48 | 53 |
| 720 | 28.35 | 85 | 100 | 130 | 60 | 45 | 46 | 52 | 57 |
| 740 | 29.13 | 85 | 100 | 130 | 60 | 45 | 49 | 55 | 60 |
| 760 | 29.92 | 85 | 100 | 130 | 60 | 45 | 52 | 58 | 64 |
| 780 | 30.71 | 95 | 110 | 140 | 65 | 50 | 59 | 66 | 73 |
| 800 | 31.50 | 95 | 110 | 140 | 65 | 50 | 62 | 69 | 76 |
| 820 | 32.28 | 95 | 110 | 140 | 65 | 50 | 66 | 74 | 81 |
| 840 | 33.07 | 95 | 110 | 140 | 65 | 50 | 70 | 78 | 86 |
| 860 | 33.86 | 95 | 110 | 150 | 70 | 50 | 74 | 83 | 91 |
| 880 | 34.65 | 95 | 110 | 150 | 70 | 50 | 79 | 89 | 97 |
| 900 | 35.43 | 95 | 110 | 150 | 70 | 50 | 83 | 93 | 102 |
| 920 | 36.22 | 95 | 110 | 150 | 70 | 50 | 88 | 99 | 108 |
| 940 | 37.01 | 110 | 130 | 160 | 75 | 55 | 101 | 113 | 124 |
| 960 | 37.80 | 110 | 130 | 160 | 75 | 55 | 106 | 119 | 130 |
| 980 | 38.58 | 110 | 130 | 160 | 75 | 55 | 111 | 124 | 137 |
| 1000 | 39.37 | 110 | 130 | 160 | 75 | 55 | 117 | 131 | 144 |
| 1020 | 40.16 | 110 | 130 | 170 | 80 | 55 | 123 | 138 | 151 |
| 1040 | 40.94 | 110 | 130 | 170 | 80 | 55 | 129 | 145 | 159 |
| 1060 | 41.73 | 110 | 130 | 170 | 80 | 55 | 135 | 151 | 166 |
| 1080 | 42.52 | 110 | 130 | 170 | 80 | 55 | 142 | 159 | 175 |
| 1100 | 43.31 | 130 | 150 | 185 | 85 | 60 | 162 | 181 | 199 |
| 1120 | 44.09 | 130 | 150 | 185 | 85 | 60 | 169 | 189 | 208 |
| 1140 | 44.88 | 130 | 150 | 185 | 85 | 60 | 176 | 197 | 217 |
| 1160 | 45.67 | 130 | 150 | 185 | 85 | 60 | 184 | 206 | 226 |
| 1180 | 46.46 | 130 | 150 | 200 | 90 | 65 | 192 | 215 | 236 |
| 1200 | 47.24 | 130 | 150 | 200 | 90 | 65 | 200 | 224 | 246 |

* size up to 1500 mm

NEP, NEPC and SSP propellers are manufactured by CNC



Standard Propellers for Displacement Vessels



HTP-3B



HTP-4B

Heavy Thrust Propeller HTP-3B, HTP-4B & HTP-5B

The Heavy Thrust HTP-3B series are designed for displacement vessels, such as general fishing vessels and workboats. This series have a semi-elliptical blade outline, constant pitch and standard ogival blade sections. This series is designed without any skew for maximum reverse performance.

The HTP-4B series has a larger blade area ratio than the HTP-3B series. Thus, it is more suitable for high power applications, such as tug boats and push boats. These propellers are available in Mn-Bronze or Ni-Al Bronze from 20 inches to 120 inches diameters.



HTP-3B
Dia 20" ~ 60"
E.A.R. 0.50
Dia 62" ~ 96"
E.A.R. 0.46
Up to 16 Knots.



HTP-4B
Dia 20" ~ 60"
E.A.R. 0.70 ~ 0.90
Dia 62" ~ 120"
E.A.R. 0.62 ~ 0.90
Up to 16 Knots.



HTP-5B
Dia 50" ~ 120"
E.A.R. 0.70 ~ 0.90
Up to 16 Knots.

| Diameter | | Hub Dimensions (Inches) | | | Standard Tape Hole (Inches) | | 3 Blades dia. to 60" E.A.R. 0.50 dia. 62"~96" E.A.R. 0.46 Lbs | 4 Blades dia. to 60" E.A.R. 0.70 dia. 62"~96" E.A.R. 0.82 Lbs |
|----------|------|----------------------------|----------------|--------|--------------------------------|---------------|--|--|
| inches | mm | aft end | forward end | length | max hole | pilot hole | | |
| 20 | 508 | 2-1/8 | 2-7/16 | 3-3/4 | 1-3/8 | 1-1/4 | 20 | 24 |
| 21 | 533 | 2-7/16 | 2-13/16 | 4-1/8 | 1-1/2 | 1-3/8 | 23 | 30 |
| 22 | 559 | 2-7/16 | 2-13/16 | 4-1/8 | 1-1/2 | 1-3/8 | 26 | 34 |
| 23 | 584 | 2-13/16 | 2-3/16 | 4-1/2 | 1-3/4 | 1-1/2 | 32 | 40 |
| 24 | 610 | 2-13/16 | 2-3/16 | 4-1/2 | 1-3/4 | 1-1/2 | 35 | 43 |
| 25 | 635 | 3-3/16 | 3-5/8 | 5-1/4 | 2 | 1-3/4 | 40 | 50 |
| 26 | 660 | 3-3/16 | 3-5/8 | 5-1/4 | 2 | 1-3/4 | 46 | 56 |
| 28 | 711 | 3-1/2 | 4 | 5-1/4 | 2-3/4 | 1-3/4 | 57 | 70 |
| 30 | 762 | 3-13/16 | 4-3/8 | 6 | 2-1/2 | 2 | 72 | 89 |
| 32 | 813 | 4-1/4 | 4-13/16 | 6 | 3 | 2 | 100 | 123 |
| 34 | 864 | 4-7/16 | 5-1/16 | 6-3/4 | 3-1/4 | 2-1/4 | 116 | 145 |
| 36 | 914 | 4-3/4 | 5-1/2 | 7 | 3-1/2 | 2-1/2 | 138 | 172 |
| 38 | 965 | 5-1/16 | 5-13/16 | 7-1/4 | 3-3/4 | 2-1/2 | 162 | 200 |
| 40 | 1016 | 5-1/16 | 5-13/16 | 7-3/4 | 3-3/4 | 2-3/4 | 180 | 228 |
| 42 | 1067 | 5-1/4 | 6 | 8 | 3-3/4 | 2-3/4 | 213 | 275 |
| 44 | 1118 | 5-1/4 | 6 | 8 | 3-3/4 | 2-3/4 | 235 | 302 |
| 46 | 1168 | 6 | 6-3/4 | 10 | 4 | 3 | 288 | 361 |
| 48 | 1219 | 6 | 6-3/4 | 10 | 4 | 3 | 312 | 395 |
| 50 | 1270 | 6-9/16 | 7-3/8 | 10-3/4 | 4-1/2 | 3 | 366 | 450 |
| 52 | 1321 | 6-9/16 | 7-3/8 | 10-3/4 | 4-1/2 | 3 | 393 | 491 |
| 54 | 1372 | 6-9/16 | 7-3/8 | 10-3/4 | 4-1/2 | 3 | 425 | 531 |
| 56 | 1423 | 7-5/8 | 8-3/8 | 11-1/2 | 5 | 3-1/4 | 492 | 621 |
| 58 | 1474 | 7-5/8 | 8-3/8 | 11-1/2 | 5 | 3-1/4 | 537 | 665 |
| 60 | 1525 | 7-5/8 | 8-3/8 | 12 | 5 | 3-1/2 | 582 | 715 |
| 62 | 1576 | 9 | 10 | 13-1/4 | 6 | 4 | 742 | 918 |
| 64 | 1627 | 9 | 10 | 13-1/4 | 6 | 4 | 786 | 970 |
| 66 | 1678 | 9 | 10 | 13-1/4 | 6 | 4 | 835 | 1030 |
| 68 | 1729 | 10-1/2 | 11-3/4 | 14-1/2 | 7 | 5 | 994 | 1230 |
| 70 | 1780 | 10-1/2 | 11-3/4 | 14-1/2 | 7 | 5 | 1045 | 1275 |
| 72 | 1831 | 10-1/2 | 11-3/4 | 14-1/2 | 7 | 5 | 1100 | 1352 |
| 74 | 1882 | 10-1/2 | 11-3/4 | 14-1/2 | 7 | 6 | 1165 | 1445 |
| 76 | 1933 | 10-1/2 | 11-3/4 | 14-1/2 | 7 | 6 | 1238 | 1532 |
| 78 | 1984 | 10-1/2 | 11-3/4 | 14-1/2 | 7 | 6 | 1309 | 1638 |
| 80 | 2035 | 11-1/8 | 12-1/2 | 17 | 7-1/2 | 6 | 1503 | 1846 |
| 82 | 2086 | 11-1/8 | 12-1/2 | 17 | 7-1/2 | 6 | 1586 | 1957 |
| 84 | 2137 | 11-1/8 | 12-1/2 | 17 | 7-1/2 | 6 | 1663 | 2071 |
| 86 | 2188 | 11-1/8 | 12-1/2 | 17 | 7-1/2 | 6 | 1758 | 2185 |
| 88 | 2239 | 11-1/8 | 12-1/2 | 17 | 7-1/2 | 6 | 1853 | 2308 |
| 90 | 2290 | 11-7/8 | 13-1/4 | 18-1/4 | 8 | 6 | 2059 | 2563 |
| 92 | 2341 | 11-7/8 | 13-1/4 | 18-1/4 | 8 | 6 | 2153 | 2690 |
| 94 | 2392 | 11-7/8 | 13-1/4 | 18-1/4 | 8 | 6 | 2264 | 2835 |
| 96 | 2443 | 11-7/8 | 13-1/4 | 18-1/4 | 8 | 6 | 2278 | 2879 |

* size up to 120 inches



Stainless Steel



Standard Propellers for Medium Speed Vessels

Highly Skewed Propeller HSP-3B

The HSP-3B series is designed for achieving low vibration and low noise. This Highly Skewed propeller can reduce stern vibration by 40% and reduce the noise in the cabin, thus improving the living quality of crews onboard. The HSP series is usually supplied in Ni-Al Bronze.

Highly Skewed Propeller HSP-4B & HSP-5B

The HSP-4B and HSP-5B series have similar characteristic as the HSP-3B series. These propellers are designed for those customers who prefer to have very low vibration and noise in the cabin. The HSP-5B series have a larger blade area than either the HSP-3B or HSP-4B series. Thus, the HSP-5B series are more suitable for high power applications. These propellers are available in Ni-Al Bronze, from 30 inches to 120 inches diameters.



HSP-3B



HSP-4B



HSP-3B
Dia 20" - 80"
E.A.R. 0.45
Up to 18 Knots



HSP-4B
Dia 20" - 120"
E.A.R. 0.60
Up to 18 Knots



HSP-5B
Dia 30" - 120"
E.A.R. 0.75
Up to 18 Knots



HSP-5B

| Diameter | | Hub Dimensions (Inches) | | | Standard Taper Bore (Inches) | | 3 blades EAR: 0.45 Lbs | 4 blades EAR: 0.60 Lbs | 5 blades EAR: 0.75 Lbs |
|----------|------|----------------------------|----------------|--------|---------------------------------|---------------|------------------------------|------------------------------|------------------------------|
| inches | mm | aft end | forward end | length | max bore | pilot bore | | | |
| 20 | 508 | 55 | 65 | 100 | 35 | 20 | 17 | 22 | |
| 21 | 533 | 65 | 75 | 110 | 40 | 25 | 20 | 26 | |
| 22 | 559 | 65 | 75 | 110 | 40 | 25 | 23 | 30 | |
| 23 | 584 | 70 | 80 | 120 | 50 | 35 | 27 | 35 | |
| 24 | 610 | 70 | 80 | 120 | 50 | 35 | 32 | 42 | |
| 25 | 635 | 85 | 95 | 120 | 55 | 40 | 39 | 51 | |
| 26 | 660 | 85 | 95 | 120 | 60 | 45 | 41 | 54 | |
| 27 | 686 | 90 | 105 | 140 | 65 | 45 | 49 | 64 | |
| 28 | 711 | 90 | 105 | 140 | 65 | 45 | 52 | 69 | |
| 30 | 762 | 100 | 120 | 150 | 70 | 55 | 66 | 87 | 106 |
| 32 | 813 | 100 | 120 | 150 | 75 | 55 | 78 | 102 | 124 |
| 34 | 864 | 115 | 130 | 160 | 85 | 55 | 94 | 124 | 151 |
| 36 | 914 | 120 | 140 | 160 | 95 | 65 | 109 | 143 | 174 |
| 38 | 965 | 130 | 150 | 180 | 95 | 65 | 132 | 174 | 212 |
| 40 | 1016 | 130 | 150 | 180 | 95 | 65 | 150 | 198 | 242 |
| 42 | 1067 | 140 | 160 | 180 | 95 | 65 | 176 | 231 | 282 |
| 44 | 1118 | 140 | 160 | 180 | 95 | 65 | 197 | 259 | 316 |
| 46 | 1168 | 155 | 175 | 185 | 100 | 70 | 230 | 302 | 368 |
| 48 | 1219 | 155 | 175 | 205 | 100 | 70 | 260 | 342 | 417 |
| 50 | 1270 | 170 | 190 | 230 | 115 | 80 | 301 | 396 | 483 |
| 52 | 1321 | 170 | 190 | 240 | 115 | 80 | 334 | 439 | 536 |
| 54 | 1372 | 170 | 190 | 250 | 115 | 90 | 366 | 482 | 588 |
| 56 | 1422 | 200 | 215 | 260 | 125 | 90 | 431 | 567 | 692 |
| 58 | 1473 | 200 | 215 | 275 | 125 | 100 | 471 | 620 | 756 |
| 60 | 1524 | 200 | 215 | 295 | 125 | 100 | 518 | 682 | 832 |
| 62 | 1575 | 230 | 255 | 295 | 150 | 100 | 604 | 795 | 970 |
| 64 | 1626 | 230 | 255 | 305 | 150 | 110 | 651 | 856 | 1044 |
| 66 | 1676 | 230 | 255 | 305 | 150 | 110 | 698 | 919 | 1121 |
| 68 | 1727 | 270 | 300 | 345 | 180 | 120 | 836 | 1100 | 1342 |
| 70 | 1778 | 270 | 300 | 345 | 180 | 120 | 891 | 1172 | 1430 |
| 72 | 1829 | 270 | 300 | 365 | 180 | 130 | 957 | 1259 | 1536 |
| 74 | 1880 | 270 | 300 | 365 | 180 | 150 | 1005 | 1325 | 1614 |
| 76 | 1930 | 270 | 300 | 365 | 180 | 150 | 1069 | 1407 | 1717 |
| 78 | 1980 | 270 | 300 | 365 | 180 | 150 | 1137 | 1496 | 1825 |
| 80 | 2030 | 285 | 320 | 430 | 190 | 150 | 1290 | 1697 | 2070 |

* size up to 120 inches



Standard Propellers for Displacement Vessels

Neo-Ability Propeller NAP-3B

The NAP-3B series is designed to give high performance and optimum maneuverability on all types of displacement vessels. The blade's thick foil sections and generous hub dimensions provide special strength and damage resistance. The NAP series incorporates 10 degrees of rake and a small amount of skew.

Neo-Ability Propeller NAP-4B & NAP-5B

The NAP-4B & NAP-5B series are designed for fishing boats and workboats. This series provides minimum fuel consumption and great efficiency. Due to the increased blade area and number of blades the NAP-5B provides the lowest vibration and noise levels.



NAP-3B



NAP-4B



NAP-3B
Dia. 20" - 80"
E.A.R. 0.45
Up to 18 Knots



NAP-4B
Dia. 20" - 120"
E.A.R. 0.50 0.60
Up to 18 Knots



NAP-5B
Dia. 30" - 120"
E.A.R. 0.75
Up to 18 Knots

| Diameter | | Hub Dimensions (Inches) | | | Standard Taper Bore (Inches) | | 3 blades | 4 blades | 5 blades |
|----------|------|-------------------------|-------------|--------|------------------------------|------------|-----------------|-----------------|-----------------|
| inches | mm | aft end | forward end | length | max bore | pilot bore | E.A.R. 0.45 Lbs | E.A.R. 0.50 Lbs | E.A.R. 0.75 Lbs |
| 20 | 508 | 55 | 65 | 100 | 35 | 20 | 17 | 18 | 22 |
| 21 | 533 | 65 | 75 | 110 | 40 | 25 | 20 | 22 | 26 |
| 22 | 559 | 65 | 75 | 110 | 40 | 25 | 23 | 25 | 30 |
| 23 | 584 | 70 | 80 | 120 | 50 | 35 | 27 | 29 | 35 |
| 24 | 610 | 70 | 80 | 120 | 50 | 35 | 32 | 35 | 42 |
| 25 | 635 | 85 | 95 | 120 | 55 | 40 | 39 | 42 | 51 |
| 26 | 660 | 85 | 95 | 120 | 60 | 45 | 41 | 45 | 54 |
| 27 | 686 | 90 | 105 | 140 | 65 | 45 | 49 | 53 | 64 |
| 28 | 711 | 90 | 105 | 140 | 65 | 45 | 52 | 57 | 69 |
| 30 | 762 | 100 | 120 | 150 | 70 | 55 | 66 | 72 | 87 |
| 32 | 813 | 100 | 120 | 150 | 75 | 55 | 78 | 85 | 102 |
| 34 | 864 | 115 | 130 | 160 | 85 | 55 | 94 | 103 | 124 |
| 36 | 914 | 120 | 140 | 160 | 95 | 65 | 109 | 119 | 143 |
| 38 | 965 | 130 | 150 | 180 | 95 | 65 | 132 | 145 | 174 |
| 40 | 1016 | 130 | 150 | 180 | 95 | 65 | 150 | 165 | 198 |
| 42 | 1067 | 140 | 160 | 180 | 95 | 65 | 176 | 192 | 231 |
| 44 | 1118 | 140 | 160 | 180 | 95 | 65 | 197 | 216 | 259 |
| 46 | 1168 | 155 | 175 | 185 | 100 | 70 | 230 | 252 | 302 |
| 48 | 1219 | 155 | 175 | 205 | 100 | 70 | 260 | 285 | 342 |
| 50 | 1270 | 170 | 190 | 230 | 115 | 80 | 301 | 330 | 396 |
| 52 | 1321 | 170 | 190 | 240 | 115 | 80 | 334 | 366 | 439 |
| 54 | 1372 | 170 | 190 | 250 | 115 | 90 | 366 | 402 | 482 |
| 56 | 1422 | 200 | 215 | 260 | 125 | 90 | 431 | 472 | 567 |
| 58 | 1473 | 200 | 215 | 275 | 125 | 100 | 471 | 516 | 620 |
| 60 | 1524 | 200 | 215 | 295 | 125 | 100 | 518 | 568 | 682 |
| 62 | 1575 | 230 | 255 | 295 | 150 | 100 | 604 | 662 | 795 |
| 64 | 1626 | 230 | 255 | 305 | 150 | 110 | 651 | 713 | 856 |
| 66 | 1676 | 230 | 255 | 305 | 150 | 110 | 698 | 766 | 919 |
| 68 | 1727 | 270 | 300 | 345 | 180 | 120 | 836 | 916 | 1100 |
| 70 | 1778 | 270 | 300 | 345 | 180 | 120 | 891 | 976 | 1172 |
| 72 | 1829 | 270 | 300 | 365 | 180 | 130 | 957 | 1049 | 1259 |
| 74 | 1880 | 270 | 300 | 365 | 180 | 150 | 1008 | 1102 | 1323 |
| 76 | 1930 | 270 | 300 | 365 | 180 | 150 | 1069 | 1172 | 1407 |
| 78 | 1980 | 270 | 300 | 365 | 180 | 150 | 1137 | 1246 | 1496 |
| 80 | 2030 | 285 | 320 | 430 | 190 | 150 | 1290 | 1414 | 1697 |

* size up to 120 inches



NAP-5B



Standard Propellers for Medium Speed Vessels

NEW R&D

Thrust-Ability Propeller TAP-4B

The TAP-4B series is designed to give high efficiency, low vibration and better maneuverability on all types of displacement vessels, such as high performance fishing vessels and workboats. The TAP-4B series incorporates NACA blade sections, variable pitch distribution, 10 degrees of rake and little skew. The foil sections and generous hub dimensions provide good strength and damage resistance.



TAP-4B
Dia. 40"-120"
E.A.R. 0.60
Up to 18 Knots



TAP-4B

| Diameter | | Hub Dimensions (Inches) | | | Standard Tiger Bore (Inches) | | 4 Blades E.A.R. 0.60 Lbs |
|----------|------|-------------------------|-------------|--------|------------------------------|------------|--------------------------------|
| inches | mm | aft end | forward end | length | max bore | pilot bore | |
| 40 | 1016 | 130 | 150 | 180 | 95 | 65 | 198 |
| 42 | 1067 | 140 | 160 | 180 | 95 | 65 | 231 |
| 44 | 1118 | 140 | 160 | 180 | 95 | 65 | 259 |
| 46 | 1168 | 155 | 175 | 185 | 100 | 70 | 302 |
| 48 | 1219 | 155 | 175 | 205 | 100 | 70 | 342 |
| 50 | 1270 | 170 | 190 | 230 | 115 | 80 | 396 |
| 52 | 1321 | 170 | 190 | 240 | 115 | 80 | 439 |
| 54 | 1372 | 170 | 190 | 250 | 115 | 90 | 482 |
| 56 | 1422 | 200 | 215 | 260 | 125 | 90 | 567 |
| 58 | 1473 | 200 | 215 | 275 | 125 | 100 | 620 |
| 60 | 1524 | 200 | 215 | 295 | 125 | 100 | 682 |
| 62 | 1575 | 230 | 255 | 295 | 150 | 100 | 795 |
| 64 | 1626 | 230 | 255 | 305 | 150 | 110 | 856 |
| 66 | 1676 | 230 | 255 | 305 | 150 | 110 | 919 |
| 68 | 1727 | 270 | 300 | 345 | 180 | 120 | 1100 |
| 70 | 1778 | 270 | 300 | 345 | 180 | 120 | 1172 |
| 72 | 1829 | 270 | 300 | 365 | 180 | 130 | 1259 |
| 74 | 1880 | 270 | 300 | 365 | 180 | 150 | 1323 |
| 76 | 1930 | 270 | 300 | 365 | 180 | 150 | 1407 |
| 78 | 1980 | 270 | 300 | 365 | 180 | 150 | 1496 |
| 80 | 2030 | 285 | 320 | 430 | 190 | 150 | 1697 |

* size up to 120 inches

Sail Boat Propellers

Thrust Propeller TP-2B

Skewed Sail Boat Propeller SSBP-2B

Sail Boat Propeller SBP-2B

NEO Efficiency Propeller NEP-3B (see page 15)



TP-2B



SSBP-2B



SBP-2B



NEP-3B

| Diameter | | Hub Dimensions (Inches) | | | Standard Tiger Bore (Inches) | | 2 Blades E.A.R. 0.30 Lbs | 3 Blades E.A.R. 0.45 Lbs |
|----------|-----|-------------------------|-------------|--------|------------------------------|------------|--------------------------------|--------------------------------|
| inches | mm | aft end | forward end | length | max bore | pilot bore | | |
| 10 | 254 | 1-7/16 | 1-5/8 | 2-1/4 | 7/8 | 3/4 | 2 | 2.2 |
| 11 | 279 | 1-7/16 | 1-5/8 | 2-1/4 | 7/8 | 3/4 | 2.4 | 2.64 |
| 12 | 305 | 1-9/16 | 1-3/4 | 2-3/8 | 1-1/8 | 7/8 | 3.1 | 3.3 |
| 13 | 330 | 1-9/16 | 1-3/4 | 2-3/4 | 1-1/8 | 1 | 3.5 | 3.96 |
| 14 | 356 | 1-3/4 | 2 | 2-3/4 | 1-1/8 | 1 | 4.8 | 5.06 |
| 15 | 381 | 1-3/4 | 2 | 2-3/4 | 1-1/8 | 1 | 5.5 | 5.94 |
| 16 | 406 | 1-15/16 | 2-3/16 | 3-1/4 | 1-1/4 | 1-1/8 | 6.8 | 7.48 |
| 17 | 432 | 2 | 2-5/16 | 3-1/4 | 1-3/8 | 1-1/8 | 8.1 | 8.58 |
| 18 | 457 | 2 | 2-5/16 | 3-1/4 | 1-3/8 | 1-1/8 | 9.2 | 9.68 |
| 20 | 508 | 2-1/8 | 2-3/16 | 3-3/4 | 1-3/8 | 1-1/4 | 11.9 | 12.76 |



Standard and Custom Propellers for Displacement Vessels

Kaplan Propeller KP-3B & KP-4B

The KP-3B and KP-4B series are specially designed with large tip chord lengths for operation in a duct. In this application it can develop substantially higher thrust than a conventional propeller.

Custom Skewed Kaplan Propeller SKP-4B & SKP-5B

The SKP-4B and SKP-5B series have a skewed Kaplan blade to reduce vibration and provide all the advantages of our standard KP series. This propeller is typically manufactured in manganese bronze. It can also be supplied in Ni-Al Bronze, in applications where fatigue strength and erosion are a concern.



KP-3B
Dia 10"-85"
E.A.R. 0.55
Up to 15 Knots



KP-4B
Dia 16"-120"
E.A.R. 0.55 0.70
Up to 15 Knots



Custom SKP-4B
Dia 40"-120"
E.A.R. 0.55 0.70
Up to 17 Knots



Custom SKP-5B



Custom Stainless Steel Propellers
(Dia 3000 mm, 3200 Kgs)



Custom SKP-4B
(Variable pitch distribution)

NEW R&D

Advantage Propeller AD-3B, AD-4B & AD-5B

ADVANTAGE series propellers outperform conventional three and four blade propellers providing good fuel economy, low vibration and no harmful cavitation in both design and off design conditions.

ADVANTAGE propellers available in manganese bronze, nickel-aluminum bronze and stainless steel (CF-3) are a product of state of the art engineering incorporating

- Five blades
- Optimized pitch distribution
- Non-linear blade skew
- Advanced technology blade sections
- Low Vibration and low noise



ADVANTAGE series propellers are custom engineered for specific vessels to deliver the optimum in propeller efficiency. ADVANTAGE propellers produce substantial reductions in noise level, and propeller induced vibration level both thru the hull (Surface force induced) and up the shaft line (Bearing force induced) .





Hub Bore Dimension

Propeller Hub Taper 1:16

(unit: in)

| Standard Taper | Dia. Small End(A) | | Hub Length(B) | Nominal Keyway(D) | |
|----------------|-------------------|-------|---------------|-------------------|----------|
| | | | | Width(C) | Depth(D) |
| 3/4" | 0.608 | 0.610 | 2-1/4" | 3/16" | 3-32" |
| 7/8" | 0.710 | 0.712 | 2-5/8" | 1/4" | 1/8" |
| 1" | 0.811 | 0.813 | 3" | 1/4" | 1/8" |
| 1-1/8" | 0.913 | 0.915 | 3-3/8" | 1/4" | 1/8" |
| 1-1/4" | 1.015 | 1.017 | 3-3/4" | 5/16" | 5/32" |
| 1-3/8" | 1.116 | 1.118 | 4-1/8" | 5/16" | 5/32" |
| 1-1/2" | 1.218 | 1.220 | 4-1/2" | 3/8" | 3/16" |
| 1-3/4" | 1.421 | 1.423 | 5-1/4" | 7/16" | 7/32" |
| 2" | 1.624 | 1.626 | 6" | 1/2" | 1/4" |
| 2-1/4" | 1.827 | 1.829 | 6-3/4" | 9/16" | 9/32" |
| 2-1/2" | 2.030 | 2.032 | 7-1/2" | 5/8" | 5/16" |
| 2-3/4" | 2.233 | 2.235 | 8-1/4" | 5/8" | 5/16" |
| 3" | 2.437 | 2.439 | 9" | 3/4" | 5/16" |
| 3-1/4" | 2.640 | 2.642 | 9-3/4" | 3/4" | 5/16" |
| 3-1/2" | 2.843 | 2.845 | 10-1/2" | 7/8" | 5/16" |
| 3-3/4" | 3.046 | 3.048 | 11-1/4" | 7/8" | 5/16" |
| 4" | 3.249 | 3.251 | 12" | 1" | 5/16" |
| 4-1/2" | 3.796 | 3.798 | 11-1/4" | 1-1/8" | 3/8" |
| 5" | 4.218 | 4.220 | 12-1/2" | 1-1/4" | 7/16" |
| 5-1/2" | 4.640 | 4.642 | 13-3/4" | 1-1/4" | 7/16" |
| 6" | 4.749 | 4.751 | 15" | 1-3/8" | 1/2" |
| 6-1/2" | 5.145 | 5.147 | 16-1/4" | 1-3/8" | 1/2" |
| 7" | 5.541 | 5.543 | 17-1/2" | 1-1/2" | 9/16" |
| 7-1/2" | 5.937 | 5.939 | 18-3/4" | 1-1/2" | 9/16" |
| 8" | 6.332 | 6.334 | 20" | 1-3/4" | 9/16" |

SAE Standard Tapers

NOTES:

1. Shafts and bores to 6" and diameter have taper of 3/4" ft. on the diameter 1/16" inch. 1 degree 47'23" angle with centerline.
2. Shafts and bores 6" and larger have taper of 1/8" on diameter.
3. For intermediate size, refer to SEA Handbook or contact us.
4. Propeller hub length generally is less than maximum "B".
5. Oversea specification on request.

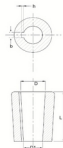


Taper 1:16

Propeller Hub Taper 1 : 10 ISO 4566:1992(E)

(unit: mm)

| Shaft Dia. | Big Dia. D | Small Dia. D1 | Length L | Keyway | |
|------------|------------|---------------|----------|--------|------|
| | | | | b | h |
| 20 | 20 | 15 | 50 | 6 | 3 |
| 25 | 25 | 19 | 60 | 6 | 3 |
| 30 | 30 | 22 | 80 | 8 | 4 |
| 35 | 35 | 26 | 90 | 10 | 4 |
| 40 | 40 | 30 | 100 | 12 | 4 |
| 45 | 45 | 34 | 110 | 14 | 5.5 |
| 50 | 50 | 38 | 120 | 14 | 5.5 |
| 55 | 55 | 42 | 130 | 16 | 5.5 |
| 60 | 60 | 46 | 140 | 16 | 5.5 |
| 65 | 65 | 50 | 150 | 18 | 5.5 |
| 70 | 70 | 54 | 160 | 18 | 5.5 |
| 75 | 74.5 | 57.5 | 170 | 20 | 6 |
| 80 | 79.5 | 61.5 | 180 | 20 | 6 |
| 85 | 84.5 | 65.5 | 190 | 22 | 7 |
| 90 | 89.5 | 69.5 | 200 | 22 | 7 |
| 95 | 94.5 | 73.5 | 210 | 25 | 7 |
| 100 | 99 | 77 | 220 | 25 | 7 |
| 110 | 109 | 85 | 240 | 28 | 7.5 |
| 120 | 119 | 93 | 260 | 32 | 8.5 |
| 130 | 129 | 101 | 280 | 36 | 9.5 |
| 140 | 139 | 109 | 300 | 36 | 9.5 |
| 150 | 149 | 117 | 320 | 36 | 9.5 |
| 160 | 159 | 125 | 340 | 40 | 10.5 |



Taper 1:10

PROPELLER ORDER SHEET



CLIENT DATA

| | | |
|----------|-------|----------|
| Client : | | |
| Phone : | Fax : | E-mail : |
| Date : | | |

VESSEL DATA

| | |
|---|--|
| Hull Number : | |
| Hull Type : <input type="checkbox"/> planing <input type="checkbox"/> semi-planing <input type="checkbox"/> semi-displacement <input type="checkbox"/> displacement | |
| Hull Condition : <input type="checkbox"/> New Hull <input type="checkbox"/> Old Hull | |
| Bottom Design : <input type="checkbox"/> Open <input type="checkbox"/> Tunnel | |
| Hull Material : <input type="checkbox"/> Steel <input type="checkbox"/> Aluminium <input type="checkbox"/> Wood <input type="checkbox"/> Fiberglass | |
| Overall Length (LOA) : | |
| Loaded Waterline Length (LWL) : | |
| Beam : | |
| Maximum Chine Breadth : | |
| Draft : | |
| Light Loaded Displacement : | |
| Full Loaded Displacement : | |
| Deadrise Angle At Midship : | |
| LCG Distance From Stern : | |
| Deep From Waterline To Shaft Center : | |
| Shaft Angle : | |
| Maximum Propeller Diameter : _____ , Tip clearance _____ | |
| Stabilizing Fin : <input type="checkbox"/> With <input type="checkbox"/> Without | |

MAIN ENGINE DATA

| | |
|--|--|
| Manufacturer : | |
| Model : | |
| Brake Horsepower : _____ HP <input type="checkbox"/> PS <input type="checkbox"/> KW | |
| Engine RPM at BHP Output : | |
| Gear Reduction Ratio : | |
| Number of Engines : <input type="checkbox"/> Single <input type="checkbox"/> Twin <input type="checkbox"/> Triple <input type="checkbox"/> Quadruple | |
| Expected Speed : _____ knots. (at _____ Tons Displacement) | |
| Expected Speed is Obtained by : <input type="checkbox"/> Sea Trial <input type="checkbox"/> Calculating <input type="checkbox"/> Others | |

PROPELLER DATA

| | |
|---|--|
| Diameter : _____ inches (_____ mm) | |
| Pitch : _____ inches (_____ mm) | |
| Expanded Area Ratio : | |
| Number of Blade : <input type="checkbox"/> 2-Blade <input type="checkbox"/> 3-Blade <input type="checkbox"/> 4-Blade <input type="checkbox"/> 5-Blade <input type="checkbox"/> 6-Blade <input type="checkbox"/> 7-Blade | |
| Direction of Rotation : <input type="checkbox"/> RH <input type="checkbox"/> LH | |
| Propeller Series : <input type="checkbox"/> EP <input type="checkbox"/> KCA <input type="checkbox"/> NVP <input type="checkbox"/> NSP <input type="checkbox"/> SSP <input type="checkbox"/> ESP <input type="checkbox"/> ASP <input type="checkbox"/> Other | |
| Material : <input type="checkbox"/> Mn-Bronze <input type="checkbox"/> Ni-Al Bronze <input type="checkbox"/> Stainless Steel | |

| |
|------------|
| Comments : |
|------------|



HUNG SHEN PROPELLER CO., LTD.

No. 408 Ma Tsu Rd., 932 Shin Yuan Shiang, Ping Tung Hsien, Taiwan R.O.C.
 Tel / +886 8 869-0111 Fax / +886 8 869-0333
 E-mail : info@hungshenprop.com Website: www.hungshenprop.com

Sale Market

Major Export Destinations



HUNG SHEN PROPELLER CO., LTD.

No. 408 Ma Tsu Road, 932 Shin Yuan Shiang,
Ping Tung Hsien, Taiwan, R.O.C.

Tel: 886-8-869-0111 Fax: 886-8-869-0333

info@hungshenprop.com www.hungshenprop.com