

# Propeller Selection Guide



**EVINRUDE  
Johnson** |   
**GENUINE PARTS**

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# TABLE OF CONTENTS

<b>PROPELLERS: WHERE THE POWER MEETS THE WATER!</b> .....	<b>2</b>
<b>HOW DOES A PROPELLER WORK?</b> .....	<b>2</b>
<b>WHAT TO CONSIDER WHEN SHOPPING FOR A PROPELLER</b> .....	<b>3</b>
DIAMETER.....	3
PITCH.....	3
RAKE.....	3
CUP .....	4
VENTILATION/CAVITATION .....	4
MATERIAL) .....	5
BLADE COUNT.....	5
ROTATION.....	5
<b>MATCHING THE RIGHT PROPELLER TO YOUR BOAT AND OUTBOARD</b> .....	<b>6</b>
STEP ONE: PROPELLER STYLE .....	6
STEP TWO: PROPELLER SIZE .....	6
<b>THINGS TO REMEMBER</b> .....	<b>7</b>
<b>PROPELLER FAMILY DESCRIPTIONS</b> .....	<b>8</b>
REBEL.....	8
RAKER.....	8
RENEGADE BASS .....	8
CYCLONE .....	8
VIPER.....	9
ROGUE .....	9
SSP .....	9
HYDRUS .....	9
EVINRUDE/JOHNSON ALUMINUM PROPS .....	9
<b>PROPELLER HUB SYSTEMS</b> .....	<b>10</b>
HARDWARE CHART .....	12
<b>QUICK REFERENCE GUIDES</b> .....	<b>13</b>
<b>APPLICATION CHART</b> .....	<b>15</b>
<b>PROPELLER REFERENCE TABLES</b> .....	<b>16</b>
ELECTRIC MODELS-PLASTIC .....	16
ALUMINIM 4 DELUXE-8 HP PIN DRIVE, 2-STROKE .....	16
ALUMINUM 6 HP PIN DRIVE, 2-STROKE .....	16
ALUMINUM 9.5-10 HP PIN DRIVE, 2-STROKE .....	16
STAINLESS STEEL 9.9-15 HP SPLINE DRIVE, THRU-HUB EXHAUST .....	17
ALUMINUM 9.9-15 HP SPLINE DRIVE, THRU-HUB EXHAUST .....	17
ALUMINUM 15-25 HP PIN DRIVE.....	17
ALUMINUM 14-28 HP SPLIT GC SPLINE DRIVE .....	18
STAINLESS STEEL 15-35 HP, 2-STROKE THRU-HUB EXHAUST .....	18
ALUMINUM 15-35 HP, 2-STROKE THRU-HUB EXHAUST.....	18
STAINLESS STEEL 40-75 HP SMALL GEARCASE, 2-STROKE .....	19
ALUMINUM 40-75 HP SMALL GEARCASE, 2-STROKE.....	19
STAINLESS STEEL 40-140 HP, 2-STROKE 13 SPLINE .....	20
ALUMINUM 40-140 HP, 2-STROKE 13 SPLINE .....	20
STAINLESS STEEL V6 150-300 HP & 90-130 HP, 25" SHAFT, 2-STROKE .....	21
ALUMINUM V6 150-300 HP & 90-130 HP, 25" SHAFT, 2-STROKE .....	22

## PROPELLERS

### Where the Power Meets the Water!

Choosing the right propeller is the single most important decision you can make to get the best performance from your boat and outboard!

Propeller choice can affect boat top speed by as much as 5 to 10 MPH. It also has a direct effect on acceleration, cornering, pulling power, and fuel economy.

With some boats, you may need to change propellers for different activities, such as high speed cruising, water skiing, or carrying heavy loads. Using the wrong propeller in any of these applications will not only hurt performance, but could also cause engine damage.



#### Basic Propeller Terms

- **Leading Edge:** The edge of the blade closest to the boat.
- **Trailing Edge:** The edge of the blade farthest from the boat.
- **Blade Tip:** The point on the blade farthest from the hub. It separates the leading edge from the trailing edge.
- **Blade Root:** The area where the blade attaches to the hub.
- **Blade Back:** The side of the blade closest to the boat (low pressure side).
- **Blade Face:** The side of the blade opposite to the boat (high pressure side).

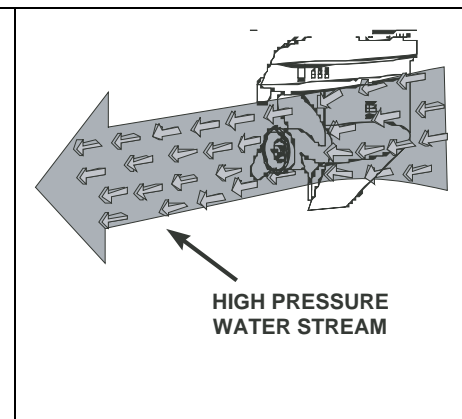
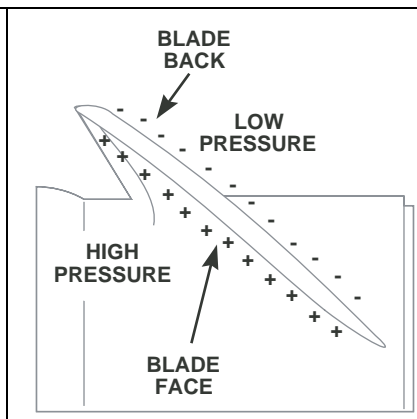
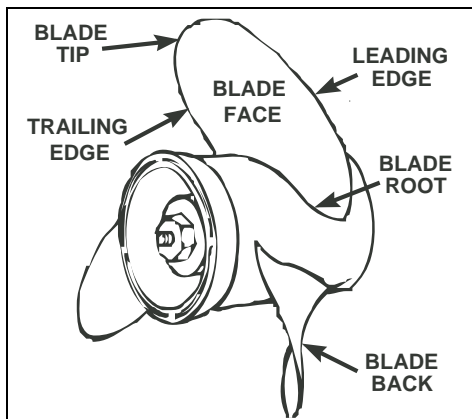
#### How Does a Propeller Work?

A propeller is a set of identical twisted blades, spaced evenly around a hub. Most propellers have a splined bushing in the hub that mounts on the outboard. The bushing attaches to the propeller with flexible rubber that acts like a shock absorber. If the propeller strikes something hard, the rubber helps protect against damage.

Newer propellers may use a multi-piece interchangeable hub system. Refer to Propeller Hub systems on Page 10.

Each propeller blade has two surfaces that displace water to move the boat. As the propeller rotates, the blade back creates a low pressure that helps pull the boat forward.

The blade face creates high pressure as it rotates. This pressure forces a stream of water away from the propeller. As the water is pushed to the rear, an equal force pushes the boat forward.



## What to Consider When Shopping for a Propeller

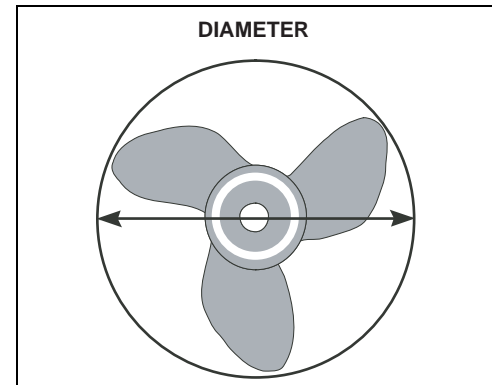
Several characteristics affect how a propeller will perform. Especially important are propeller diameter, pitch, rake, and cup. Most propellers are identified by their diameter and pitch. Look for a number like 14¾ X 21. The first number is the diameter, the second is the pitch.

In addition, it is important to understand the effects of ventilation, cavitation, materials, and other application variables on propeller performance.

**Diameter** is the width of the circle described by the tips of the rotating blades.

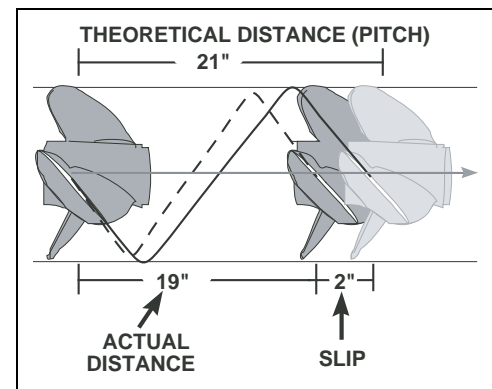
Propeller diameter determines the amount of power a propeller can apply to the water—how much load the propeller can push. Generally, heavy loads require larger diameter propellers while small, fast boats are more efficient with a smaller diameter.

However, diameter is not usually a critical option when choosing a propeller. Focus instead on propeller style and pitch.



**Pitch** is the theoretical distance a propeller will travel in one complete revolution. For example, a 14¾ X 21 propeller would ideally move 21 inches forward with each revolution. In practice, the actual distance travelled is less than the pitch because of “slip” which is necessary to produce thrust.

Lower pitched propellers are like the lower gears on a car or bicycle. They create less forward travel with each revolution. A low pitch allows engine RPM to build up quickly, which gives faster acceleration and more pulling power. This works well for heavy loads, but results in slower top speeds.



Higher pitched propellers are similar to high gears. They create more forward travel with each revolution. A high pitch puts more load on the engine, which reduces low speed pulling power and acceleration, but usually provides more top speed.

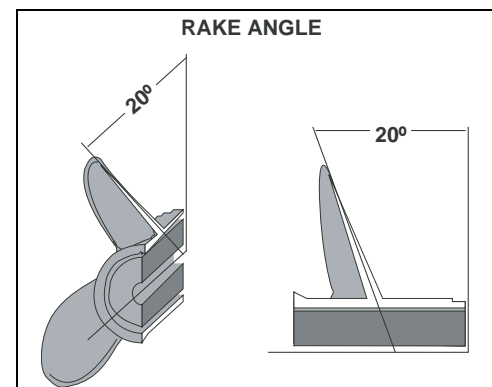
**Rake** is the angle the blade tip tilts away from the gearcase. The angle is measured on a line extending from the center of the hub through the center of the blade. Rake can be either flat or progressive. Progressive rake means that the rake angle increases with distance from the hub.

Most propellers have between 0° and 20° rake.

High rake propellers tend to lift the bow of the boat. On fast, light-weight, V-bottom boats, a high rake propeller should increase speed by reducing the amount of wetted hull surface.

When operated partially surfacing, high rake propellers reduce the amount of water being thrown off the blade by centrifugal force as the blade leaves the water. This allows high rake propellers to work more effectively in these applications.

Tunnel boats and other air entrapment type hulls may become unstable when using a high rake propeller. In these applications, a propeller with less bow lift would be a more appropriate selection.





**Cup** is the small curved lip added to the edges of some propellers. Cupping acts like a seal on the edge of the blade. It keeps water on the high pressure blade face from flowing around the trailing edge to the low pressure area on the blade back. This reduces ventilation and slipping, especially when operating in disturbed or aerated water.

Propellers with cup excel in sharp turns and applications where the engine is mounted higher than normal. Cupping also allows the outboard to be trimmed higher for more bow lift.

Cupping the tips of the blades increases the effective rake, adding to the bow lift capabilities of the propeller. Adding cup to the trailing edge of the blades has the effect of increasing pitch. As a result, you can expect a slight loss of engine speed (150-300 RPM) when cup is added. However, the additional cup may allow the propeller to work at a higher transom height. Raising the motor will reduce drag on the gearcase and will often recover the engine speed.

**Ventilation** is the result of air bubbles from surface air or exhaust gases being drawn into the blades. These pockets of air make a propeller lose its bite or thrust. Your RPM may climb wildly, yet you may not gain or lose speed. This is most common with high transom mountings, extreme trim settings, or sharp turns.

To help prevent ventilation, the outboard has an anti-ventilation plate directly above the propeller. For most applications, this plate should be within an inch above or below the bottom of the boat. On a high-performance boat, this rule does not necessarily apply. The anti-ventilation plate may be several inches above the boat bottom.

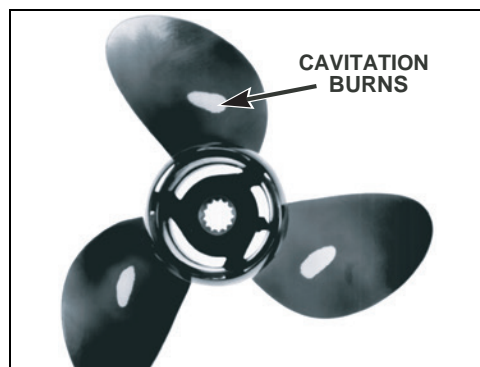
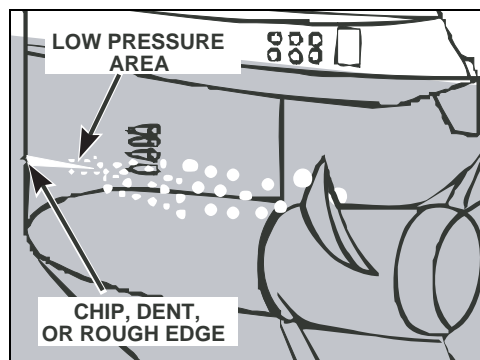
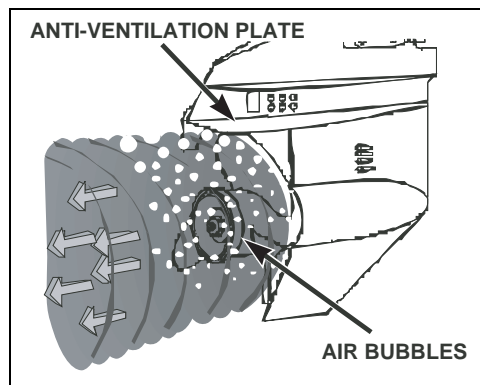
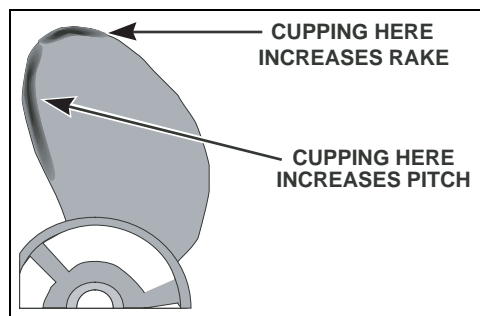
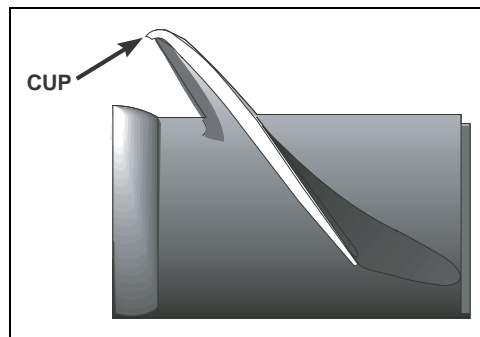
Water testing is the best way to determine the correct engine mounting height.

Cupped or high performance propellers help minimize ventilation.

**Cavitation** is caused by a disturbance of the water flow in front of the propeller. An irregularity in the boat bottom or gearcase, a misplaced transducer or speedometer pickup, or even a loose rivet can cause this problem.

Cavitation begins when a disturbance creates a low-pressure area in the water flow. As speed increases, the low pressure intensifies enough to vaporize (boil) some of the surrounding water. When the vapor bubbles approach a high pressure area, they collapse, releasing energy and causing damage.

The results of cavitation usually appear as burned areas on the gearcase or propeller blades. If the damage is substantial, performance is lost and the propeller should be replaced. In addition, the cause of the disturbance should be repaired to prevent further problems.



**Material**—Aluminum propellers provide a good balance of cost, performance, and durability for most applications.

Stainless steel propellers offer improved performance, fuel economy, and durability. Because stainless steel is five times stronger than aluminum, it is much less susceptible to damage from striking underwater objects.

However, the main advantage of stainless steel is in performance. Because of its strength, stainless propeller blades can be cast much thinner, which reduces drag. Stainless steel blades are also stiffer, which increases efficiency.

Composite and plastic propellers are generally used for emergency situations.

**Blade Count**—Theoretically, the fewer number of blades a propeller has, the more efficient it will be. But as the number of blades is increased, vibration is decreased. For most applications, three blade propellers provide the best balance between efficiency and smoothness.

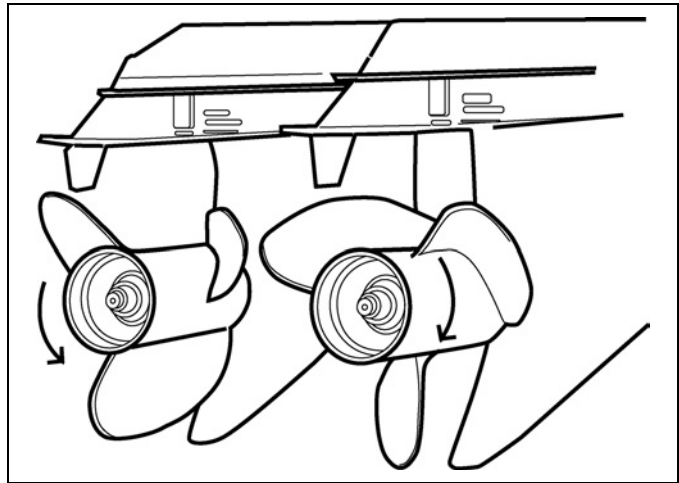
However, *BRP/Evinrude* engineers have created a series of four blade propellers that provide increased efficiency and a superior grip on the water. The result is improved acceleration and better cornering in all water conditions.

In addition, when operated in a surfacing application, a four blade propeller keeps more blades in the water for maximum thrust and efficiency.

**Rotation**—Right-hand propellers are considered standard rotation propellers. To move the boat forward, the propeller rotates in a right-hand (clockwise) direction as viewed from the rear.

Left-hand propellers are considered counter-rotation propellers. To move the boat forward, the propeller rotates in a left-hand (counterclockwise) direction as viewed from the rear. Left-hand propellers must **ONLY** be used on an outboard equipped with a counter-rotation gearcase.

In a dual-outboard installation, the use of both right-hand and left-hand propellers balances the torque created by the rotation of the propellers. This helps to reduce the effort needed in steering and also helps to keep the boat level from side to side.



**⚠ WARNING**

**For dual-outboard installations, always check to be sure propellers are installed on the correct engines before aggressively operating the boat.**

## Matching the Right Propeller to Your Boat and Outboard

**Step One:** Choose the propeller type designed for the way the boat will be used:

- Fishing, skiing, cruising, commercial, racing, etc?
- How many people will be on board?
- Is the water shallow, or are there rocks or other underwater objects?
- Will the boat be used for multiple purposes?

Use the propeller family descriptions in the following pages as a guide. For example, a Rebel™ propeller could be a good choice for a large, offshore boat. In contrast, a Raker® propeller provides bow lift, for increased top speed, on small, fast boats.

**Step Two:** Find the correct sized propeller for your specific outboard, boat, and load combination.

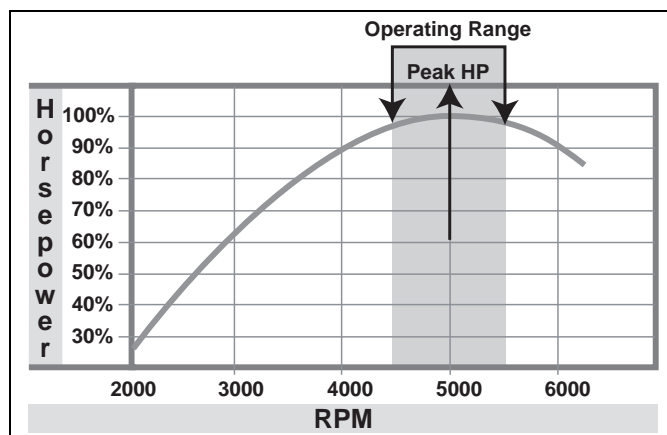
When selecting a propeller, start with the propeller charts in the following pages. These charts group all of the propellers designed for a particular outboard and provide detailed information such as pitch, diameter, style, and the number of blades.

To complete the selection process, you must perform a water test. During this running test, you will determine the best combination of engine mounting height, propeller style, and propeller pitch.

All *Evinrude* and *Johnson* outboards have a recommended full throttle operating range. This means that, at full throttle, engine RPM must never be below or above this range. These specifications can be found in the **Operator's Guide**.

The propeller provides the load that controls engine RPM. Reducing propeller pitch size will increase engine RPM at full throttle. Increasing propeller pitch size will decrease engine RPM at full throttle.

You have the correct propeller pitch when the engine runs at the midpoint of the full throttle operating RPM range with the normal, expected load in the boat. This is usually the point of peak horsepower. Choosing the correct propeller pitch for a given boat and application will ensure long engine life, along with best overall fuel economy and performance.



When you have a selection of propellers ready for testing:

1. Use an accurate tachometer to measure RPM and an accurate speedometer to measure boat speed.
2. Testing should be performed with the typical load—number of people, gear, water in live wells, etc.
3. Make sure that every test is with an identical setup.
4. Test each propeller at wide open throttle (WOT).
5. Engines should be tested at their optimum trim angle. This is the highest trim position the engine can be run without excessive ventilation, either in a straight line or in turns.
6. If the RPM is too low at WOT, try a reduced pitch and retest.
7. If the RPM is too high at WOT, test a propeller with more pitch. One pitch size usually results in a change of 200-300 RPM.
8. If the boat will be used for two applications, like water skiing and cruising, it may be necessary to test propellers for each type of use.

**Step Three:** Adjust the engine mounting height for peak performance.

The ideal engine mounting height provides the fastest boat speed without sacrificing acceleration, maneuverability, or engine water pressure. It is achieved by a trial and error method.

1. Start with the outboard's anti-ventilation plate even with the bottom of the boat.
2. Raise the outboard one mounting hole at a time until engine performance is no longer acceptable. Then, lower the outboard back down one hole.

Optimum engine height is affected by propeller style, diameter, and pitch. As you raise the engine, you may need to experiment with a variety of propellers to maximize performance.

### Things to Remember

Check full throttle RPM often. It is possible that the propeller pitch size may have to change as the boating application or load changes.

- Adding or removing people can significantly change the power requirements placed on the engine.
- Changes in atmospheric pressure, temperature, and humidity all affect engine performance, which directly affects propeller performance.
- Salt water is more buoyant than fresh water; this may cause some hulls to run faster when moving from a fresh water to salt water location.
- The accumulation of marine growth or dirt—moss, barnacles, lime deposits, etc—is a major cause of poor boat performance.



### Rebel™ - Offshore and Cruising

The Rebel™ propeller is designed and engineered to deliver improved midrange cruising and top end performance on V6 Evinrude® E-TEC®. Large diameter and efficient blade contour provide faster speeds at lower RPMs to deliver significant improvement in fuel economy. Your customers will get more miles to the gallon and a longer cruising range. Standard rotation and counter rotation models are available from 15 to 25 inch pitch. Use the Rebel™ propeller on offshore boats, large runabouts, and even large pontoon boats to make them perform to their maximum potential.

- High polish stainless steel
- Designed and engineered for efficient midrange cruising
- Improved fuel economy with longer cruising range
- Use on offshore boats, large runabout, and pontoon boats.

**REBEL**



### Raker® & Raker II® - Bass and High Performance

Looking to plane fast - and run faster? The Raker II® prop is specially designed for building up engine RPMs and getting you on plane faster. A great prop in surfacing conditions, especially when the boat is running over 50 mph. Perfect for bass boats and high performance boats. The Raker® propeller utilizes vent holes in the outer exhaust hub to allow exhaust gases to ventilate the blade area. This allows the engine to build up RPMs and get the boat on plane faster. At higher speeds, the water rushing past the hub blocks these vent holes, preventing them from ventilating the blades. **V6 Raker II® 22, 24, 26, & 28 use the TBX™ hub system.**

- Fast, Fast, Fast...
- Custom cupped high rake blades provide superior bow lift and exceptional top end speed
- Special vent holes for powerful acceleration
- V4 & V6 engines

**RAKER II®**



### Cyclone™ - 4-Blade Offshore Cruising and Runabouts

When you need a prop that can hold course straight and true in all water conditions, trust the Cyclone™ prop to maintain compass headings and stay hooked up in big water. Designed for heavier and twin-engine boats as well as runabouts. **Cyclone™ uses the TBX™ hub system.**

- Ultimate performance 4-blade offshore and runabout propeller
- Stays on plane with minimum RPM
- Tracks true in all water conditions
- Less vibrations and improved fuel economy
- V6 engines

**CYCLONE™**



### Viper™ - Runabouts and General Recreation

If you want speed, you want the Viper™ prop. It's longer swept blades and a larger diameter give this prop a better grip on the water faster acceleration, and greater top end speed. Excellent on any recreational boat, from runabouts and cruisers to deck boats.

- Versatile 3-blade performance
- Custom high luster finish
- Balance of speed and durability
- V4 & V6 engines

**VIPER™**



### Rogue™

The new Rogue™ propeller for the 20" shaft, 40 through 115 hp Evinrude® E-TEC® provides faster acceleration and faster top speeds in stern heavy boats. Flats boat operators will appreciate this propellers ability to lift the transom and accelerate cleaner in shallower water.

- Stainless steel 4-blade design
- Polished, high luster finish
- Carry a 3 year limited warranty
- Available in 13, 15, 17, 19, and 21 inch pitch sizes

**ROGUE™**



### SSP Prop - General Purpose and Durability

Since stainless steel is five times stronger than aluminum, the SSP can be designed and cast with thinner blades...blades that are cupped to provide better performance.

This versatile prop is an ideal upgrade replacement for aluminum propellers and provides greater performance for water skiing. If a customer has an aluminum propeller, a "direct pitch" replacement (same pitch and diameter) is recommended when upgrading to an SSP.

- Fast planing 3-blade versatile prop
- Ideal upgrade from aluminum
- Cupped blades provide superior performance



### Hydrus® - Pontoon and Work Boats

A high-thrust prop designed and manufactured to meet the specific performance needs of pontoon boats and work boats. This three-blade prop provides an oversized blade area for maximum thrust and stability (it will keep its grip even when most of the weight is near the bow) and aggressive cupping for tight, balanced turning. The result? A high-thrust prop that bites the water and hangs on tight.

- Aggressive cupping holds tight in turns
- Big blade area for high reverse thrust
- Special blade contour delivers maximum thrust in any water condition

**HYDRUS™**



### Evinrude®/Johnson® Aluminum™ Props

- **More Performance for the Money!** Evinrude®/Johnson® props are cast with a custom aluminum alloy to give them greater strength and longer life than ordinary propellers. Many of the Evinrude®/Johnson® outboards are speed cupped for better top end performance. Special baked-on corrosion-resistant paint gives added protection against salt water and galvanic corrosion.

- Precision casting provides greater strength and longer life
- Baked-on corrosion-resistant paint gives added protection
- Engineered to match the power curve of your outboard for superior performance

**ALUMINUM™**



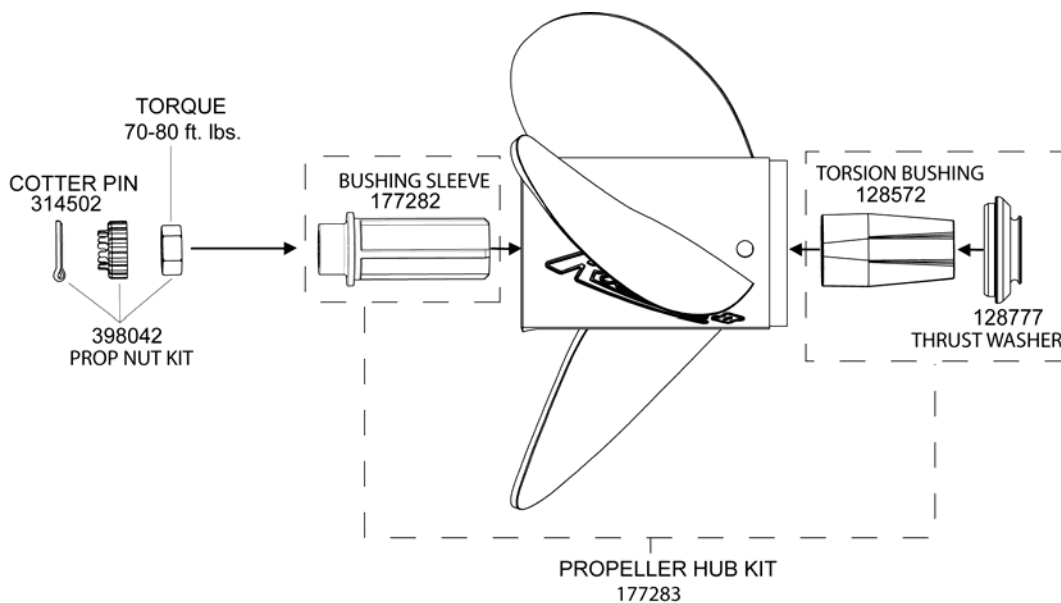
### TBX™ Propeller Hub System

For Evinrude®/Johnson® Introducing the TBX™ Multiple Piece Propeller Hub System from Evinrude®/Johnson® Genuine Parts. The TBX™ prop hub system adds a new level of durability and reliability to the Raker II®, Renegade® Bass, and Cyclone™ propellers. TBX™ is designed to flex and cushion shock loads to help protect the lower unit drivetrain. The patented torsion sleeve and drive spline withstand extreme temperatures especially in high performance applications.

A TBX™ prop hub kit comes with the propeller and the multi-piece design slips together keeping the installation simple. Replacement parts are available in kits or separately.

Look for the TBX™ designation in the V6 prop chart to determine availability.

TBX™ Propeller Hub Kit P/N 177283 for Evinrude®/Johnson® Outboards

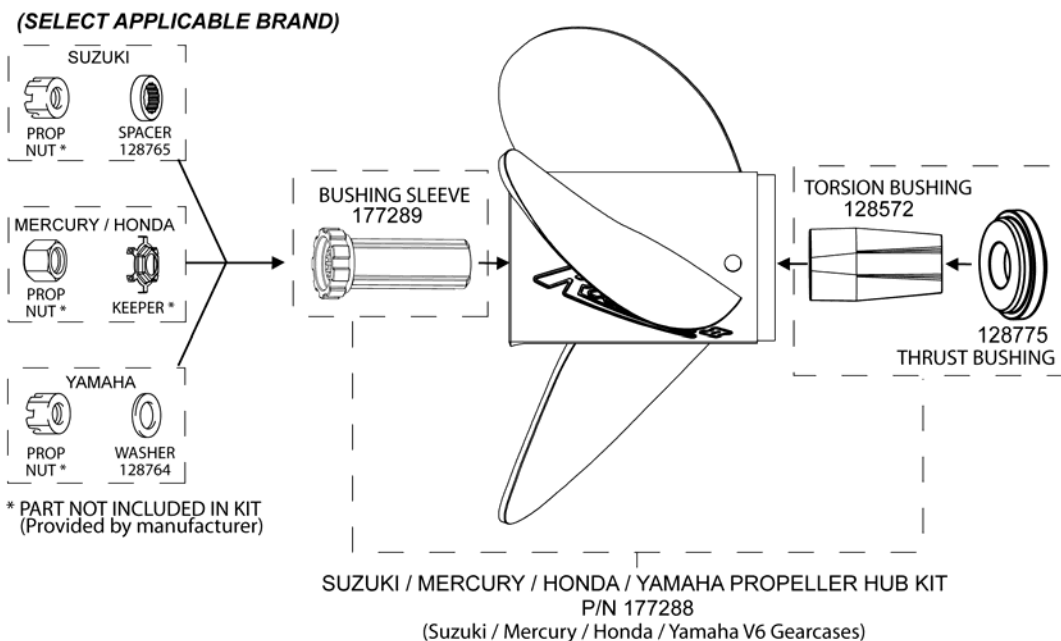


### TBX™ Competitor Propeller Hub System

**We DARE You to Try Our Props on Competitor Outboards!** Our interchangeable TBX™ hub kit is designed to fit Mercury®, Yamaha®, Honda®, and Suzuki® V6 outboard engines.

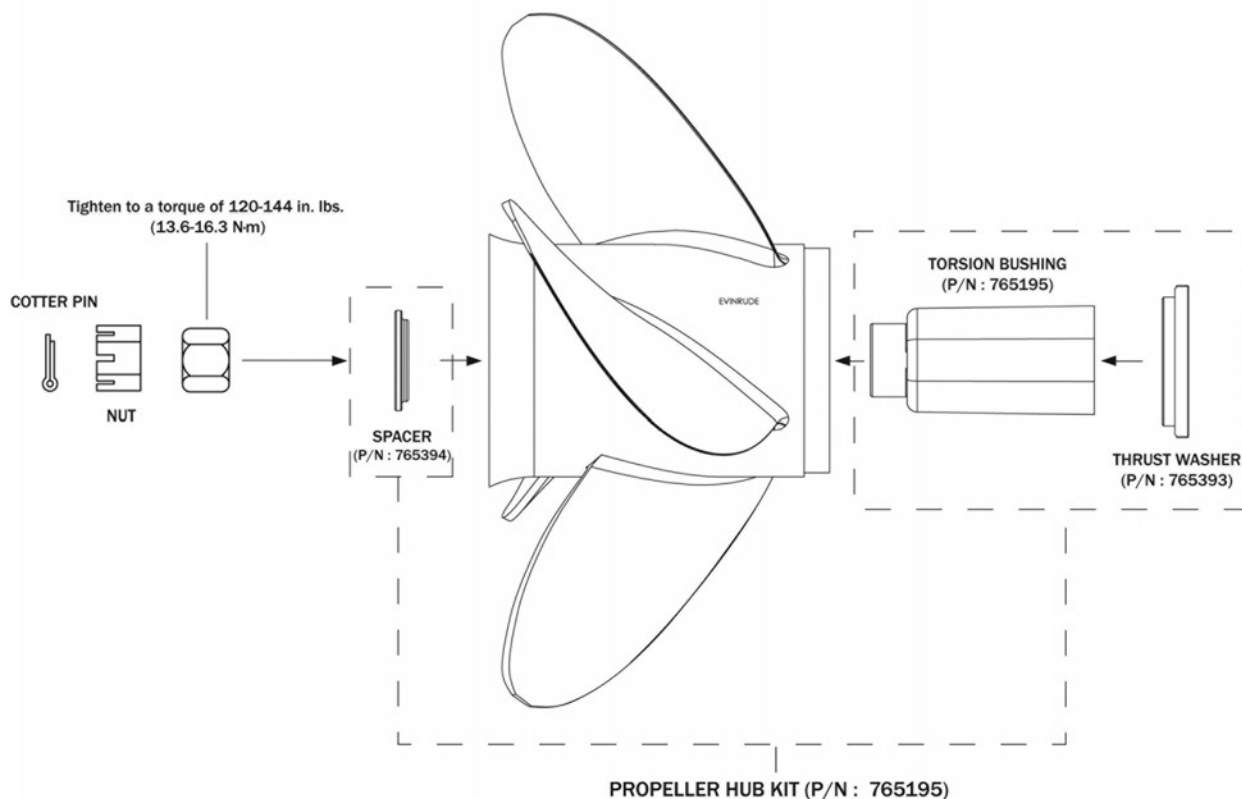
This kit lets you install a Raker II® TBX™, Renegade® Bass TBX™, and Cyclone™ TBX™ propellers on competitor outboards.

TBX™ Propeller Hub Kit P/N 177288 for competitor outboards available July 2009.



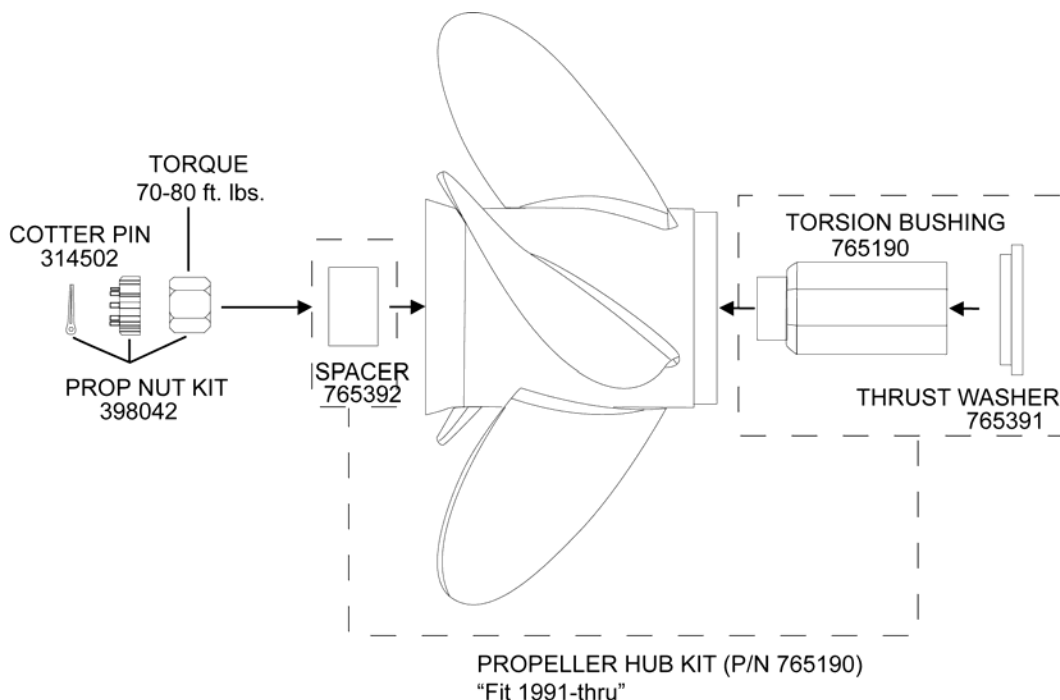
### Aluminum Propeller Interchangeable V4 Hub System

For Evinrude®/Johnson® each propeller includes a hub kit of P/N 765195 for a V4, fitting an Evinrude®/Johnson® outboard. Each hub kit includes the rubber torsion bushing, thrust washer, spacer and instructions. Accessory hub kits are required to install the propeller on competitive brands of engines. Select the accessory hub kit for competitive engines from the listing in this section.



### Aluminum Propeller Interchangeable V6 Hub System

For Evinrude®/Johnson® each propeller includes a hub kit of P/N 765190 for a V6, fitting an Evinrude®/Johnson® outboard. Each hub kit includes the rubber torsion bushing, thrust washer, spacer and instructions. Accessory hub kits are required to install the propeller on competitive brands of engines. Select the accessory hub kit for competitive engines from the listing in this section.



**Propeller Hub System - TBX™**

P/N	Description	Pack qty
177283	TBX™ bushing kit (POP) - Evinrude®/Johnson® outboards V6	1
177288	TBX™ bushing kit (POP) - competitive outboards V6	1

**Propeller Hub System-Aluminum Interchangeable Chart**

Application	Spline	Year	P/N
Evinrude®/Johnson® V4 45-75 HP, large gearcase 4¼"	13	1968-current	765195
Evinrude®/Johnson® V4 85-140 HP	13	1969-current	765195
Evinrude®/Johnson® 90-140 HP, large gearcase	15	1991-current	765190
Force® 75-150 HP	15	1995-current	765192
Honda® 75-150 HP	15	1995-1998	765192
Honda® BF 135 HP, 150 HP, 200 & 225 HP	15	2003-current	765192
Mercury®/Mariner®/MerCruiser® 60 HP Bigfoot	15		765192
Mercury®/Mariner®/MerCruiser® 70-140 HP (except 135 HP), XR-4, XR-6	15	1961-current	765192
Mercury®/Mariner®/MerCruiser® 135 HP	15	1987-current	765192
Mercury®/Mariner®/MerCruiser® 150-300 HP	15	1978-current	765192
Yamaha® 80-140 HP	15	1978-1983	765192
Yamaha® 150-175 HP	15	1978-1983	765192
Yamaha® 115 HP, FS115 (4-stroke), 130 HP	15	1984-current	765193
Yamaha® 150-130 HP	15	1984-current	765193
Yamaha® Sterndrives	15	1989-1993	765193
OMC Cobra® SX	19	1994-current	765194
Volvo® SX Sterndrives	19	1994-current	765194
Honda® 75-90 HP	15	1999-current	765196
Honda® 115-130 HP	15	1999-current	765196
Nissan®/Tohatsu® 90-140 HP	15	1987-current	765197
Mercury®/Mariner®/MerCruiser® 225 EFI (4-stroke) manufactured by Yamaha®	15		765198
Evinrude®/Johnson® 90, 115 HP (4-stroke)	15	2003-current	765199
Suzuki® DF90, DF115 (4-stroke)	15	2001-current	765199
Suzuki® DF140 (4-stroke)	15	2001-current	765200

**Propeller Quick Reference Guide, 15H.O. - 130 HP**

15H.O.-30 HP Evinrude® E-TEC®, 2-Stroke					
P/N	Type	Blades	Diameter	Pitch	Notes
5008225	Aluminum	4	11"	7"	15H.O. High Thrust
765048	Aluminum	3	11"	9"	General Purpose and Economy
765049	Aluminum	3	10 1/2"	11"	
765135	Aluminum	4	10.2"	11"	
765050	Aluminum	3	10.3"	12"	
765136	Aluminum	4	10.1"	12"	
778863	Aluminum	3	10.3"	13"	
765137	Aluminum	4	10"	13"	
765138	Aluminum	4	10"	14"	
763486	Aluminum	3	10"	15"	
765139	Aluminum	4	10"	15"	
765176	SSP	3	10"	11"	Durability and General Purpose
765174	SSP	4	10"	11"	
765177	SSP	3	10"	12"	
765175	SSP	4	10"	12"	
765178	SSP	3	10"	13"	
765179	SSP	3	10"	14"	
765180	SSP	3	10"	15"	
40-130 HP Evinrude® E-TEC® (Excludes 25" Models)					
P/N	Type	Blades	Diameter	Pitch	Notes
763300	Aluminum™	3	14"	9"	General Purpose and Economy
763301	Aluminum™	3	14"	11"	
765181	Aluminum™	3	13 3/4"	13"	
765182	Aluminum™	3	13 1/2"	15"	
765183	Aluminum™	3	13 1/4"	17"	
765184	Aluminum™	3	13.2"	19"	
765185	Aluminum™	3	13.2"	21"	
177201	Hydrus™ Aluminum	3	13 7/8"	9"	Pontoon boats, High Reverse Thrust
177202	Hydrus™ Aluminum	3	13 7/8"	11"	
177203	Hydrus™ Aluminum	3	13 7/8"	13"	
763957	SSP	3	13 3/4"	13"	Durability and General Purpose
763950	SSP	3	13 1/2"	15"	
763951	SSP	3	13 1/4"	17"	
763952	SSP	3	13"	19"	
763929	Viper™	3	13 7/8"	15"	Swept blade design, General use, Bow Lifter
763930	Viper™	3	13 7/8"	17"	
763931	Viper™	3	13 7/8"	19"	
763932	Viper™	3	13 7/8"	21"	
763953	Raker®	3	13 1/2"	18"	High Performance Bow Lifter
763954	Raker®	3	13 1/2"	20"	
763956	Raker®	3	13 1/2"	24"	
763964	Rogue™	4	13 1/2"	13"	Flat Boats and Runabouts
763965	Rogue™	4	13 1/4"	15"	
763966	Rogue™	4	13"	17"	
763967	Rogue™	4	13"	19"	
763968	Rogue™	4	13"	21"	

**Note: All Evinrude®/Johnson® Propellers have a 3-Year Limited Warranty!**



**Propeller Quick Reference Guide, 150 - 300 HP**

150 - 300 HPEvinrude® E-TEC®, 25" Models - 90, 115, 130 E-TEC®						
Right Hand Standard Rotation	Left Hand Counter Rotation	Type	Blades	Diameter	Pitch	Notes
763453		Aluminum	3	15 1/2"	13"	General Purpose and Economy
765186		Aluminum	3	15"	15"	
765187		Aluminum	3	14 7/8"	17"	
765188		Aluminum	3	14 1/2"	19"	
765189		Aluminum	3	14.3"	21"	
763470		Aluminum	3	14 1/4"	23"	
763959		SSP TBX™	3	15 5/8"	11"	Durability and General Purpose
763960	763961	SSP TBX™	3	15 5/8"	13"	
763962	763963	SSP TBX™	3	15"	15"	
763910	763911	Viper™ TBX™	3	15"	14"	All-around General Purpose, Bow Lifter
763912	763913	Viper™ TBX™	3	14 3/4"	16"	
763914	763915	Viper™ TBX™	3	14 3/4"	17"	
763916	763917	Viper™ TBX™	3	14 3/4"	18"	
763918	763919	Viper™ TBX™	3	14 3/4"	19"	
763920	763921	Viper™ TBX™	3	14 3/4"	20"	
763922	763923	Viper™ TBX™	3	14 1/2"	21"	
763924	763925	Viper™ TBX™	3	14 1/4"	22"	
763936	763937	Cyclone™ TBX™	4	14 1/2"	15"	Cruising and Transom Lift
763938	763939	Cyclone™ TBX™	4	14 1/4"	17"	
763940	763941	Cyclone™ TBX™	4	14 1/8"	18"	
763942	763943	Cyclone™ TBX™	4	14 1/8"	19"	
763944	763945	Cyclone™ TBX™	4	14"	20"	
763946	763947	Cyclone™ TBX™	4	14"	21"	
763948	763949	Cyclone™ TBX™	4	14"	23"	
177264		Raker II® TBX™	3	14 1/2"	22"	High Performance Bow Lifter
177265		Raker II® TBX™	3	14 1/2"	24"	
177309 (Big Bass - special vent holes)		Raker II® TBX™	3	14 1/2"	24"	
177299		Raker II® TBX™	3	14 1/2"	25"	
177266		Raker II® TBX™	3	14 1/2"	26"	
177267		Raker II® TBX™	3	14 1/2"	28"	
763984	763985	Rebel TBX™	3	15 3/4"	15"	
763986	763987	Rebel TBX™	3	15 1/2"	17"	
763988	763989	Rebel TBX™	3	15 3/8"	18"	
763990	763991	Rebel TBX™	3	15 1/4"	19"	
763992	763993	Rebel TBX™	3	15 1/8"	20"	
763994	763995	Rebel TBX™	3	15"	21"	
763996	763997	Rebel TBX™	3	14 7/8"	22"	
763998	763999	Rebel TBX™	3	14 3/4"	23"	
764000	764001	Rebel TBX™	3	14 1/2"	25"	
763933		Renegade™ Bass	4	13 1/2"	23"	

**Note: All Evinrude®/Johnson® Propellers have a 3-Year Limited Warranty!**

## Propeller Selection - Application/Boat Type

Which Propeller is Right for You?

### Application Chart, Propeller - Purpose of Use

Propeller type and style	Purpose of Application
Aluminum - 3 blade	General purpose, good balance between cost and performance, lowest cost, good value, least durable
Hydrus™ - 3 blade, aluminum	Pontoon boats, work boats, high forward and reverse thrust, aggressive cupping to reduce ventilation in turns, 40 - 90 HP engine
SSP - 3 blade, stainless steel	Upgrade from aluminum, general purpose, improved durability, cupped blades, limited pitch size
Rogue™ - 4 blade, stainless steel	Improved bite in turbulent / rough water, good transom lift, strong acceleration, cupped blades, minimize vibration and reduce slip, In-line and V4 engines
Raker® - 3 blade, stainless steel	60 mph plus, bass boats, bow lift, vent holes for strong acceleration, aggressive cupping to run elevated transom heights and high trim
Viper™ - 3 blade, stainless steel	Most popular - general recreation use, good bow lift, strong acceleration and top speed over SSP, wide selection of pitch and rotation
Rebel™ - 3 blade, stainless steel	Improved mid range fuel economy, strong acceleration, large diameter for greater thrust, cupped blades, V6 engines, bow heavy boats
Cyclone™ - 4 blade, stainless steel	Improved bite in turbulent / rough water, less vibration, transom lift, strong acceleration, cupped blades to reduce slip, V6 engines

### Application Chart, Propeller-Engine to Propeller Style

Engine Type	Propeller Styles							
	Aluminum	Hydrus®	SSP	Rogue™	Raker®	Viper™	Rebel™	Cyclone™
I2 40-60 HP	•	•	•	•	•	•		
I3 75-90 HP*	•	•	•	•	•	•		
V4 115-130 HP	•	•	•	•	•	•		
V6 150-300 HP	•		•		•	•	•	•
Rotation - Standard RH	•	•	•	•	•	•	•	•
Rotation - Counter LH			•			•	•	•

### Application Chart, Propeller-Boat Type to Propeller Style

Boat Type	Propeller Styles							
	Aluminum	Hydrus®	SSP	Rogue™	Raker®	Viper™	Rebel™	Cyclone™
Runabout - Fiberglass	•		•	•		•		•
Runabout - Aluminum	•		•	•		•		•
Deck Boat	•					•	•	•
Flats Boat	•			•		•		•
Bay Boat	•			•		•	•	•
Multi-Species Boat - Aluminum	•					•		•
Multi-Species Boat - Fiberglass					•	•	•	•
Bass Boat					•			
Sport Runabout 150 HP+					•			
Offshore - small, single engine	•			•		•	•	•
Offshore - multiple engine						•	•	•
Pontoon - twin log	•	•	•	•		•	•	
Pontoon - triple log						•	•	

**Electric Models-Plastic Propellers**

- Evinrude®/Johnson® plastic propellers for electric models.
- Point of Purchase Packaged
- 116063, 116437, 116438 - retained by nut on the propshaft
- See Service Bulletins 2148, 2240, 2303 for electric outboards



116063

RH P/N	LH P/N	Description	Blades	Dia.	Pitch
115827		Electric, 1992-1995	2	8 3/4"	3.8"
116437		Electric, 1996 thru	2	8 3/4"	4"
124709		Electric, 1982-1995	2	8 3/4"	4"
126583		Electric, 1991 thru	2	8 3/4"	4"
116438		Electric, 1996 thru, High Thrust	2	12 1/2"	4"
331707		Electric, 1986-1995	2	12 1/2"	4"

**Aluminum 4 Deluxe-8 HP Pin Drive, 2-Stroke**

- 4 & 4.5 HP, 1980 - 1986
- 6 / 7.5 / 8 HP, 1980 - 2005
- 7 HP Commercial, 1991 - 2000



RH P/N	LH P/N	Description	Blades	Dia.	Pitch
778796		Aluminum	3	8"	7"

**Aluminum 6 HP Pin Drive, 2-Stroke**

- 1966 - 1979



RH P/N	LH P/N	Description	Blades	Dia.	Pitch
763745		Aluminum	2	8"	7 1/4"
763588		Aluminum	3	8 1/4"	8"
763586		Aluminum	3	8 1/4"	9"

**Aluminum 9.5-10 HP Pin Drive, 2-Stroke**

- 9.5 HP, 1964 - 1973
- 10 HP, 1958 - 1963



RH P/N	LH P/N	Description	Blades	Dia.	Pitch
763588		Aluminum	3	8 1/4"	8"
763586		Aluminum	3	8 1/4"	9"

**Stainless Steel 9.9-15 HP Spline Drive, Thru-hub Exhaust**

**13 Spline**

- 9.9 / 15 HP 2-Stroke, 1974 - 2005
- 8 HP 4-Stroke, 1996 - 2005
- 9.5 / 15 HP 4-Stroke, 1995 - 2001

RH P/N	LH P/N	Description	Blades	Dia.	Pitch
763892		Stainless Steel	3	9 1/4"	9"

**Aluminum 9.9-15 HP Spline Drive, Thru-hub Exhaust**

**13 Spline**

- 9.9 / 15 HP 2-Stroke, 1974 - 2005
- 8 HP 4-Stroke, 1996 - 2005
- 9.5 / 15 HP 4-Stroke, 1995 - 2001



RH P/N	LH P/N	Description	Blades	Dia.	Pitch
763456		Aluminum	3	9 1/4"	7"
763457		Aluminum	3	9 1/4"	8"
763458		Aluminum	3	9 1/4"	9"
778772		Aluminum	3	9 1/4"	10"
778773		Aluminum	3	9 1/4"	11"

**Aluminum 15-25 HP Pin Drive**

**2-Stroke**

- 10 HP, 1956
- 15 & 18 HP, 1957 - 1973
- 20 HP, 1969 - 1973
- 25 HP, 1967 - 1977
- 28 HP, 1964

RH P/N	LH P/N	Description	Blades	Dia.	Pitch
763587		Aluminum	3	9"	9"
763583		Aluminum	3	9"	10"

**Aluminum 14-28 HP Split GC Spline Drive**

**13 Spline, 2-Stroke**

- 14 HP, 1988 - 1989
- 25 HP, 1978 - 1984
- 25 HP Commercial, 1978 - 1981 & 1994 thru
- 28 HP, 1986 thru



RH P/N	LH P/N	Description	Blades	Dia.	Pitch
763585		Aluminum	3	9"	9"
763589		Aluminum	3	9"	10"
763584		Aluminum	3	9 1/4"	11"
763590		Aluminum	3	9 1/4"	12"

**Stainless Steel 15H.O.-35 HP, 2-Stroke Thru-hub Exhaust****14 Spline**

- 15H.O. Evinrude® E-TEC®
- 20 & 25 HP, 1984 thru
- 25 HP Commercial, 1993 - 2005
- 30 HP, 1984 thru
- 35 HP, 1984 - 2005
- 25 - 30 HP Evinrude® E-TEC®, 2009 thru

RH P/N	LH P/N	Description	Blades	Dia.	Pitch
765176		Stainless Steel	3	10"	11"
765174		Stainless Steel	4	10"	11"
765177		Stainless Steel	3	10"	12"
765175		Stainless Steel	4	10"	12"
765178		Stainless Steel	3	10"	13"
765179		Stainless Steel	3	10"	14"
765180		Stainless Steel	3	10"	15"

**Aluminum 15H.O.-35 HP, 2-Stroke Thru-hub Exhaust****14 Spline**

- 15H.O. Evinrude® E-TEC®
- 20 & 25 HP, 1984 thru
- 25 HP Commercial, 1993 - 2005
- 30 HP, 1984 thru
- 35 HP, 1984 - 2005
- 25 - 30 HP Evinrude® E-TEC®, 2009 thru



RH P/N	LH P/N	Description	Blades	Dia.	Pitch
765048		Aluminum	3	11"	9"
765049		Aluminum	3	10 1/2"	11"
765050		Aluminum	3	10 1/2"	12"
778863		Aluminum	3	10.3"	13"
763486		Aluminum	3	10"	15"
5008225		Aluminum 15H.O. High thrust	4	11"	7"
765135		Aluminum	4	10.2"	11"
765136		Aluminum	4	10.1"	12"
765137		Aluminum	4	10"	13"
765138		Aluminum	4	10"	14"
765139		Aluminum	4	10"	15"

### Stainless Steel 40-75 HP Small Gearcase, 2-Stroke

#### 14 Spline, 2-Cylinder and 3-Cylinder

- 40 HP, 1985 - 2005
- 48 HP, 1987 thru
- 50 HP, 1975 - 2005
- 55 HP, 1976 - 1979
- 65 HP, 1980 - 1985
- 75 HP, 1975 - 1985
- Sprint, 1986 - 1992
- Formula E, 1986 - 1992

RH P/N	LH P/N	Description	Blades	Dia.	Pitch
763896		Stainless Steel Polished	3	12 1/2"	13"
763897		Stainless Steel Polished	3	12 1/4"	15"
763898		Stainless Steel Polished	3	12"	17"

### Aluminum 40-75 HP Small Gearcase, 2-Stroke

#### 14 Spline, 2-Cylinder and 3-Cylinder

- 40 HP, 1985 - 2005
- 48 HP, 1987 thru
- 50 HP, 1975 - 2005
- 55 HP, 1976 - 1979
- 65 HP, 1980 - 1985
- 75 HP, 1975 - 1985
- Sprint, 1986 - 1992
- Formula E, 1986 - 1992



RH P/N	LH P/N	Description	Blades	Dia.	Pitch
776807		Hydrus®	3	12 1/2"	9"
775713		Hydrus®	3	12 1/2"	13"
763488		Aluminum	3	13"	11"
763461		Aluminum	3	12 1/2"	13"
778774		Aluminum	3	12 1/4"	15"
763462		Aluminum	3	12"	17"



**Stainless Steel 40-140 HP, 2-Stroke 13 Spline**

- 40/ 50/ 60 HP, Evinrude® E-TEC®, 2004 thru
- 45 HP Commercial, 1986 thru
- 50 HP & 50 HP Commercial, 1971 - 1974
- 55 HP Commercial, 1980 thru
- 55 HP, 1968 - 1969
- 60 HP, 1970 - 1971 & 1986 - 1996
- 65 HP & 65 HP Commercial, 1972 - 1973

- 70 HP, 1974 - 2001
- 75/ 90/ 115 HP, Evinrude® E-TEC®, 2004 thru
- 75 HP, 1975 - 1984 & 2004 thru
- 85 HP, 1969 - 1980 & 1991 - 1995
- 88 HP, 1981 thru
- 90 HP, 1981 thru
- 100 HP, 1979 - 1980 & 1988 thru

- 110 HP, 1986 - 1989
- 115 & 115 H.O. HP, 1973 thru
- 120 HP, 1986 - 1994
- 130 HP Evinrude® E-TEC®, 2009 - 2010
- 125 HP, 1971 - 1972
- 135 HP, 1973 - 1976
- 140 HP, 1977 - 1984 & 1986 - 1994



Viper™

RH P/N	LH P/N	Description	Blades	Dia.	Pitch
763957		Stainless Steel Polished with Rubber hub	3	13 3/4"	13"
763950		Stainless Steel Polished with Rubber hub	3	13 1/2"	15"
763951		Stainless Steel Polished with Rubber hub	3	13 1/4"	17"
763952		Stainless Steel Polished with Rubber hub	3	13"	19"
763929		Viper™ with Rubber hub	3	13 7/8"	15"
763930		Viper™ with Rubber hub	3	13 7/8"	17"
763931		Viper™ with Rubber hub	3	13 7/8"	19"
763932		Viper™ with Rubber hub	3	13 7/8"	21"
763964		Rogue™ with Rubber hub	4	13 1/2"	13"
763965		Rogue™ with Rubber hub	4	13 1/4"	15"
763966		Rogue™ with Rubber hub	4	13"	17"
763967		Rogue™ with Rubber hub	4	13"	19"
763968		Rogue™ with Rubber hub	4	13"	21"
763953		Raker® with Rubber hub	3	13 1/2"	18"
763954		Raker® with Rubber hub	3	13 1/2"	20"
763956		Raker® with Rubber hub	3	13 1/2"	24"

**Aluminum 40-140 HP, 2-Stroke 13 Spline**

- 40/ 50/ 60 HP, Evinrude® E-TEC®, 2004 thru
- 45 HP Commercial, 1986 thru
- 50 HP & 50 HP Commercial, 1971 - 1974
- 55 HP Commercial, 1980 thru
- 55 HP, 1968 - 1969
- 60 HP, 1970 - 1971 & 1986 - 1996
- 65 HP & 65 HP Commercial, 1972 - 1973

- 70 HP, 1974 - 2001
- 75/ 90/ 115 HP, Evinrude® E-TEC®, 2004 thru
- 75 HP, 1975 - 1984 & 2004 thru
- 85 HP, 1969 - 1980 & 1991 - 1995
- 88 HP, 1981 thru
- 90 HP, 1981 thru
- 100 HP, 1979 - 1980 & 1988 thru

- 110 HP, 1986 - 1989
- 115 & 115 H.O. HP, 1973 thru
- 120 HP, 1986 - 1994
- 125 HP, 1971 - 1972
- 130 HP Evinrude® E-TEC®, 2009 - 2010
- 135 HP, 1973 - 1976
- 140 HP, 1977 - 1984 & 1986 - 1994



RH P/N	LH P/N	Description	Blades	Dia.	Pitch
177201		Hydrus® with Rubber hub [see service bulletin 2005-01(P)]	3	13 7/8"	9"
177202		Hydrus® with Rubber hub [see service bulletin 2005-01(P)]	3	13 7/8"	11"
177203		Hydrus® with Rubber hub [see service bulletin 2005-01(P)]	3	13 7/8"	13"
763300		Aluminum with Rubber hub	3	14"	9"
763301		Aluminum with Rubber hub	3	14"	11"
765181		Aluminum with Interchangeable hub	3	13 3/4"	13"
765182		Aluminum with Interchangeable hub	3	13 1/2"	15"
765183		Aluminum with Interchangeable hub	3	13 1/4"	17"
765184		Aluminum with Interchangeable hub	3	13.2"	19"
765185		Aluminum with Interchangeable hub	3	13.2"	21"

**Stainless Steel V6 150-300 HP & 90-130 HP, 25" Shaft, 2-Stroke**

**15 Spline**

- 90 & 115 HP Evinrude® E-TEC®, 25" Shaft, 2004 thru
- 100 HP, 2004 thru
- 100 HP Commercial, 1984 thru
- 120 & 140 HP, 1985
- 130 HP, 1995 - 1996
- 130 HP Evinrude® E-TEC®, 2009 - 2010
- 135 HP, 200 thru
- 140 HP (25"), 1989 thru
- 150 & 155 HP Commercial, 1978 thru
- 150-300 HP, Evinrude® E-TEC®, 2004 thru
- 175 HP, 1977 thru
- 185 HP, 1984 - 1985
- 200 HP, 1976 thru
- 225 HP, 1986 thru
- 235 HP, 1978 - 1985
- 2.6 liter, 1984 - 1985
- 250 HP, 1991 thru
- 275 HP, 1986 - 1988
- 300 HP, 1988 thru
- 3.6 liter, 1986 - 1987



Raker II®

RH P/N	LH P/N	Description	Blades	Dia.	Pitch
763959		Stainless Steel Polished with Interchangeable hub	3	15 5/8"	11"
763960	763961	Stainless Steel Polished with Interchangeable hub	3	15 5/8"	13"
763962	763963	Stainless Steel Polished with Interchangeable hub	3	15"	15"
763910	763911	Viper™ TBX™ with Interchangeable hub	3	15"	14"
763912	763913	Viper™ TBX™ with Interchangeable hub	3	14 3/4"	16"
763914	763915	Viper™ TBX™ with Interchangeable hub	3	14 3/4"	17"
763916	763917	Viper™ TBX™ with Interchangeable hub	3	14 3/4"	18"
763918	763919	Viper™ TBX™ with Interchangeable hub	3	14 3/4"	19"
763920	763921	Viper™ TBX™ with Interchangeable hub	3	14 3/4"	20"
763922	763923	Viper™ TBX™ with Interchangeable hub	3	14 1/2"	21"
763924	763925	Viper™ TBX™ with Interchangeable hub	3	14 1/4"	22"
763936	763937	Cyclone™ TBX™ with Interchangeable hub	4	14 1/2"	15"
763938	763939	Cyclone™ TBX™ with Interchangeable hub	4	14 1/4"	17"
763940	763941	Cyclone™ TBX™ with Interchangeable hub	4	14 1/8"	18"
763942	763943	Cyclone™ TBX™ with Interchangeable hub	4	14 1/8"	19"
763944	763945	Cyclone™ TBX™ with Interchangeable hub	4	14"	20"
763946	763946	Cyclone™ TBX™ with Interchangeable hub	4	14"	21"
763948	763949	Cyclone™ TBX™ with Interchangeable hub	4	14"	23"
763984	763985	Rebel™ TBX™ with Interchangeable hub	3	15 3/4"	15"
763986	763987	Rebel™ TBX™ with Interchangeable hub	3	15 1/2"	17"
763988	763989	Rebel™ TBX™ with Interchangeable hub	3	15 3/8"	18"
763990	763991	Rebel™ TBX™ with Interchangeable hub	3	15 1/4"	19"
763992	763993	Rebel™ TBX™ with Interchangeable hub	3	15 1/8"	20"
763994	763995	Rebel™ TBX™ with Interchangeable hub	3	15"	21"
763996	763997	Rebel™ TBX™ with Interchangeable hub	3	14 7/8"	22"
763998	763999	Rebel™ TBX™ with Interchangeable hub	3	14 3/4"	23"
764000	764001	Rebel™ TBX™ with Interchangeable hub	3	14 1/2"	25"
177264		Raker II® TBX™ with Interchangeable hub	3	14 1/2"	22"
177265		Raker II® TBX™ with Interchangeable hub	3	14 1/2"	24"
177309		Raker II® TBX™ Big Bass with Interchangeable hub (see service bulletin 2009-04S) Includes special vent holes in prop hub	3	14 1/2"	24"
177299		Raker II® TBX™ with Interchangeable hub	3	14 1/2"	25"
177266		Raker II® TBX™ with Interchangeable hub	3	14 1/2"	26"
177267		Raker II® TBX™ with Interchangeable hub	3	14 1/2"	28"
763933		Renegade® Bass TBX™ with Interchangeable hub	4	13 1/2"	23"

**Aluminum V6 150-300 HP & 90-130 HP, 25" Shaft, 2-Stroke**

**15 Spline**

- 90 & 115 HP Evinrude® E-TEC®, 25" Shaft, 2004 thru
- 100 HP, 2004 thru
- 100 HP Commercial, 1984 thru
- 120 & 140 HP, 1985
- 130 HP, 1995 - 1996
- 130 HP Evinrude® E-TEC®, 2009 - 2010
- 135 HP, 200 thru
- 140 HP (25"), 1989 thru
- 150 & 155 HP Commercial, 1978 thru
- 150-300 HP, Evinrude® E-TEC®, 2004 thru
- 175 HP, 1977 thru
- 185 HP, 1984 - 1985
- 200 HP, 1976 thru
- 225 HP, 1986 thru
- 235 HP, 1978 - 1985
- 2.6 liter, 1984 - 1985
- 250 HP, 1991 thru
- 275 HP, 1986 - 1988
- 300 HP, 1988 thru
- 3.6 liter, 1986 - 1987



- V6 Gearcase**
- Magnum
  - Lighting
  - Offshore

RH P/N	LH P/N	Description	Blades	Dia.	Pitch
763453		Aluminum with Rubber hub	3	15 1/2"	13"
765186		Aluminum with Interchangeable hub	3	15"	15"
765187		Aluminum with Interchangeable hub	3	14.8"	17"
765188		Aluminum with Interchangeable hub	3	14 1/2"	19"
765189		Aluminum with Interchangeable hub	3	14.3"	21"
763470		Aluminum with Rubber hub	3	14.2"	23"

**Notes**

# WHERE THE POWER MEETS THE WATER!



Choosing the right propeller is the single most important decision you can make to get the best performance from your boat and outboard! Propeller choice can affect boat top speed by as much as 5 to 10 MPH. It also has a direct effect on acceleration, cornering, pulling power, and fuel economy. With some boats, you may need to change propellers for different activities, such as high speed cruising, water skiing, or carrying heavy loads. Using the wrong propeller in any of these applications will not only hurt performance, but could also cause engine damage.

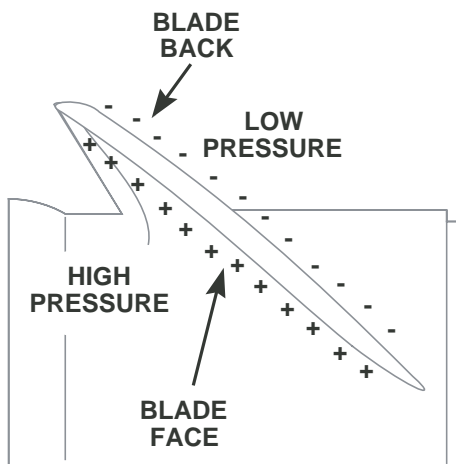






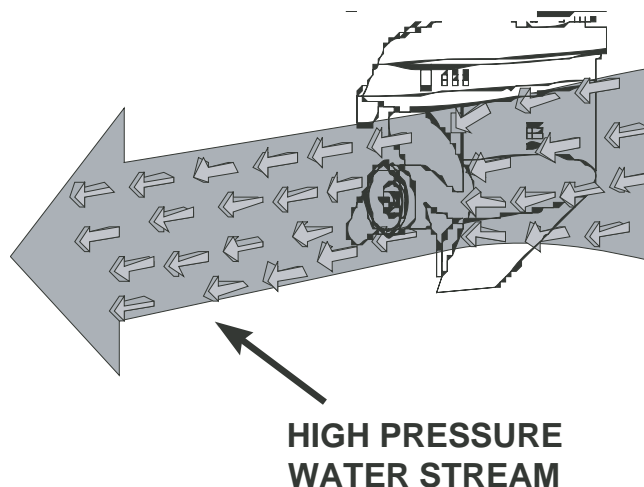
## BASIC PROPELLER TERMS

- A LEADING EDGE.** The edge of the blade closest to the boat.
- B TRAILING EDGE:** The edge of the blade farthest from the boat.
- C BLADE TIP:** The point on the blade farthest from the hub. It separates the leading edge from the trailing edge.
- D BLADE ROOT:** The area where the blade attaches to the hub.
- E BLADE BACK:** The side of the blade closest to the boat (low pressure side).
- F BLADE FACE:** The side of the blade opposite to the boat (high pressure side).



## HOW DOES A PROPELLER WORK?

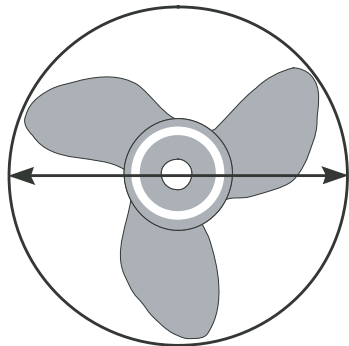
A propeller is a set of identical twisted blades, spaced evenly around a hub. Most propellers have a splined bushing in the hub that mounts on the outboard. The bushing attaches to the propeller with flexible rubber that acts like a shock absorber. If the propeller strikes something hard, the rubber helps protect against damage. Newer propellers may use a multi-piece interchangeable hub system. Refer to Propeller Hub Systems on Page 24. Each propeller blade has two surfaces that displace water to move the boat. As the propeller rotates, the blade back creates a low pressure that helps pull the boat forward. The blade face creates high pressure as it rotates. This pressure forces a stream of water away from the propeller. As the water is pushed to the rear, an equal force pushes the boat forward.



# WHAT TO CONSIDER WHEN SHOPPING FOR A PROP

Several characteristics affect how a propeller will perform. Especially important are propeller diameter, pitch, rake, and cup. Most propellers are identified by their diameter and pitch. Look for a number like 143/4 X 21. The first number is the diameter, the second is the pitch. In addition, it is important to understand the effects of ventilation, cavitation, materials, and other application variables on propeller performance.

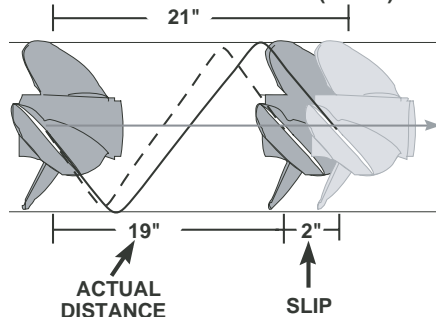
## DIAMETER



## DIAMETER

Diameter is the width of the circle described by the tips of the rotating blades. Propeller diameter determines the amount of power a propeller can apply to the water—how much load the propeller can push. Generally, heavy loads require larger diameter propellers while small, fast boats are more efficient with a smaller diameter. However, diameter is not usually a critical option when choosing a propeller. Focus instead on propeller style and pitch.

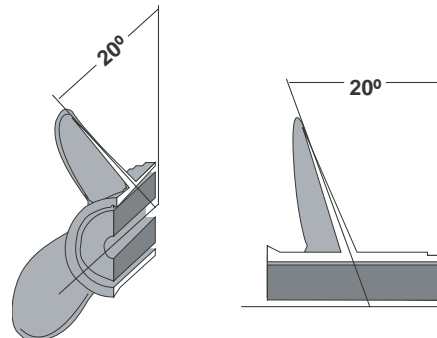
## THEORETICAL DISTANCE (PITCH)



## PITCH

Pitch is the theoretical distance a propeller will travel in one complete revolution. For example, a 14-1/2 X 21 propeller would ideally move 21 inches forward with each revolution. In practice, the actual distance travelled is less than the pitch because of "slip" which is necessary to produce thrust. Lower pitched propellers are like the lower gears on a car or bicycle. They create less forward travel with each revolution. A low pitch allows engine RPM to build up quickly, which gives faster acceleration and more pulling power. This works well for heavy loads, but results in slower top speeds. Higher pitched propellers are similar to high gears. They create more forward travel with each revolution. A high pitch puts more load on the engine, which reduces low speed pulling power and acceleration, but usually provides more top speed.

## RAKE ANGLE

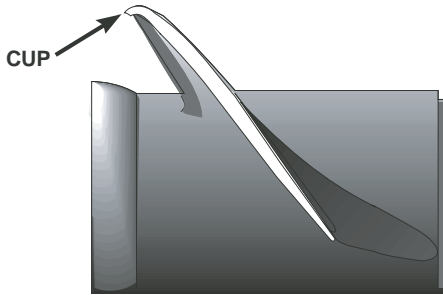


## RAKE

Rake is the angle the blade tip tilts away from the gearcase. The angle is measured on a line extending from the center of the hub through the center of the blade. Rake can be either flat or progressive. Progressive rake means that the rake angle increases with distance from the hub. Most propellers have between 0° and 20° rake. High rake propellers tend to lift the bow of the boat. On fast, lightweight, V-bottom boats, a high rake propeller should increase speed by reducing the amount of wetted hull surface. When operated partially surfacing, high rake propellers reduce the amount of water being thrown off the blade by centrifugal force as the blade leaves the water. This allows high rake propellers to work more effectively in these applications. Tunnel boats and other air entrapment type hulls may become unstable when using a high rake propeller. In these applications, a propeller with less bow lift would be a more appropriate selection.

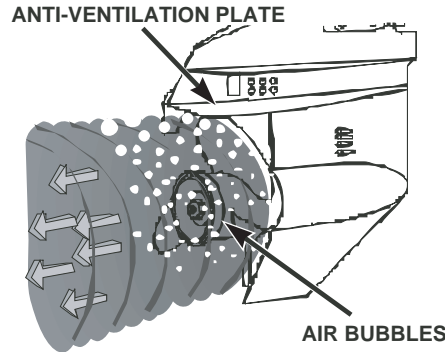
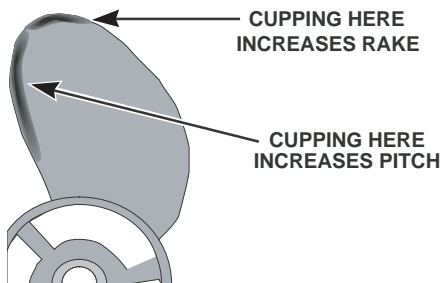






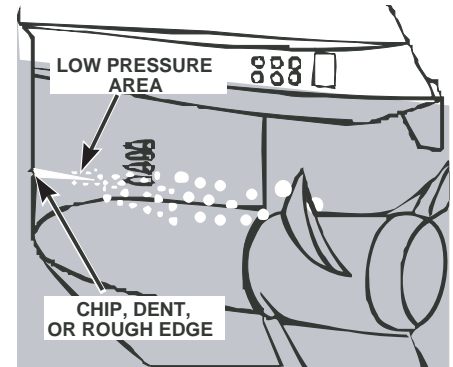
## CUP

Cup is the small curved lip added to the edges of some propellers. Cupping acts like a seal on the edge of the blade. It keeps water on the high pressure blade face from flowing around the trailing edge to the low pressure area on the blade back. This reduces ventilation and slipping, especially when operating in disturbed or aerated water. Propellers with cup excel in sharp turns and applications where the engine is mounted higher than normal. Cupping also allows the outboard to be trimmed higher for more bow lift. Cupping the tips of the blades increases the effective rake, adding to the bow lift capabilities of the propeller. Adding cup to the trailing edge of the blades has the effect of increasing pitch. As a result, you can expect a slight loss of engine speed (150-300 RPM) when cup is added. However, the additional cup may allow the propeller to work at a higher transom height. Raising the motor will reduce drag on the gearcase and will often recover the engine speed.



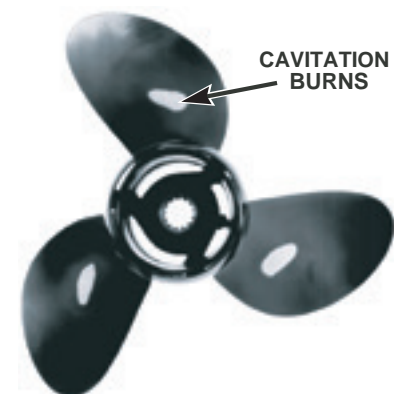
## VENTILATION

Ventilation is the result of air bubbles from surface air or exhaust gases being drawn into the blades. These pockets of air make a propeller lose its bite or thrust. Your RPM may climb wildly, yet you may not gain or lose speed. This is most common with high transom mountings, extreme trim settings, or sharp turns. To help prevent ventilation, the outboard has an anti-ventilation plate directly above the propeller. For most applications, this plate should be within an inch above or below the bottom of the boat. On a high-performance boat, this rule does not necessarily apply. The anti-ventilation plate may be several inches above the boat bottom. Water testing is the best way to determine the correct engine mounting height. Cupped or high performance propellers help minimize ventilation.

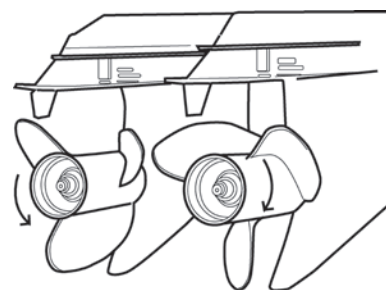


## CAVITATION

Cavitation is caused by a disturbance of the water flow in front of the propeller. An irregularity in the boat bottom or gearcase, a misplaced transducer or speedometer pickup, or even a loose rivet can cause this problem. Cavitation begins when a disturbance creates a low-pressure area in the water flow. As speed increases, the low pressure intensifies enough to vaporize (boil) some of the surrounding water. When the vapor bubbles approach a high pressure area, they collapse, releasing energy and causing damage. The results of cavitation usually appear as burned areas on the gearcase or propeller blades. If the damage is substantial, performance is lost and the propeller should be replaced. In addition, the cause of the disturbance should be repaired to prevent further problems.



# SELECT THE RIGHT PROPELLER FOR YOUR BOAT AND OUTBOARD



## MATERIAL

Aluminum propellers provide a good balance of cost, performance, and durability for most applications. Stainless steel propellers offer improved performance, fuel economy, and durability. Because stainless steel is five times stronger than aluminum, it is much less susceptible to damage from striking underwater objects. However, the main advantage of stainless steel is in performance. Because of its strength, stainless propeller blades can be cast much thinner, which reduces drag. Stainless steel blades are also stiffer, which increases efficiency. Composite and plastic propellers are generally used for emergency situations.

## BLADE COUNT

Theoretically, the fewer number of blades a propeller has, the more efficient it will be. But as the number of blades is increased, vibration is decreased. For most applications, three blade propellers provide the best balance between efficiency and smoothness. However, BRP/Evinrude engineers have created a series of four blade propellers that provide increased efficiency and a superior grip on the water. The result is improved acceleration and better cornering in all water conditions. In addition, when operated in a surfacing application, a four blade propeller keeps more blades in the water for maximum thrust and efficiency.

## ROTATION

Right-hand propellers are considered standard rotation propellers. To move the boat forward, the propeller rotates in a right-hand (clockwise) direction as viewed from the rear. Left-hand propellers are considered counter-rotation propellers. To move the boat forward, the propeller rotates in a left-hand (counterclockwise) direction as viewed from the rear. Left-hand propellers must ONLY be used on an outboard equipped with a counter-rotation gearcase. In a dual-outboard installation, the use of both right-hand and left-hand propellers balances the torque created by the rotation of the propellers. This helps to reduce the effort needed in steering and also helps to keep the boat level from side to side.

## WARNING

For dual-outboard installations, always check to be sure propellers are installed on the correct engines before aggressively operating the boat.



## STEP ONE

Choose the propeller type designed for the way the boat will be used:

- Fishing, skiing, cruising, commercial, racing, etc?
- How many people will be on board?
- Is the water shallow, or are there rocks or other underwater objects?
- Will the boat be used for multiple purposes?

Use the propeller family descriptions in the following pages as a guide. For example, a Rebel™ propeller could be a good choice for a large, offshore boat. In contrast, a Raker® propeller provides bow lift, for increased top speed, on small, fast boats.

## STEP TWO

Find the correct sized propeller for your specific outboard, boat, and load combination. When selecting a propeller, start with the propeller charts in the following pages. These charts group all of the propellers designed for a particular outboard and provide detailed information such as pitch, diameter, style, and the number of blades.

To complete the selection process, you must perform a water test. During this running test, you will determine the best combination of engine mounting height, propeller style, and propeller pitch.

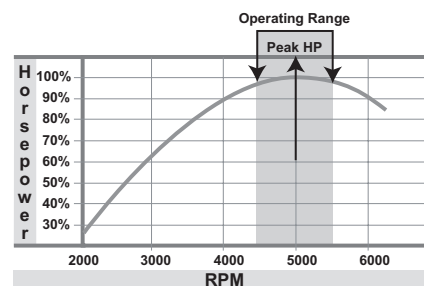
All Evinrude and Johnson outboards have a recommended full throttle operating range. This means that, at full throttle, engine RPM must never be below or above this range. These specifications can be found in the Operator's Guide.

The propeller provides the load that controls engine RPM. Reducing propeller pitch size will increase engine RPM at full throttle. Increasing propeller pitch size will decrease engine RPM at full throttle.

You have the correct propeller pitch when the engine runs at the midpoint of the full throttle operating RPM range with the normal, expected load in the boat. This is usually the point of peak horsepower. Choosing the correct propeller pitch for a given boat and application will ensure long engine life, along with best overall fuel economy and performance.

When you have a selection of propellers ready for testing:

1. Use an accurate tachometer to measure RPM and an accurate speedometer to measure boat speed.
2. Testing should be performed with the typical load—number of people, gear, water in live wells, etc.
3. Make sure that every test is with an identical setup.
4. Test each propeller at wide open throttle (WOT).
5. Engines should be tested at their optimum trim angle. This is the highest trim position the engine can be run without excessive ventilation, either in a straight line or in turns.
6. If the RPM is too low at WOT, try a reduced pitch and retest.
7. If the RPM is too high at WOT, test a propeller with more pitch. One pitch size usually results in a change of 200-300 RPM.
8. If the boat will be used for two applications, like water skiing and cruising, it may be necessary to test propellers for each type of use.



## STEP THREE

Adjust the engine mounting height for peak performance. The ideal engine mounting height provides the fastest boat speed without sacrificing acceleration, maneuverability, or engine water pressure. It is achieved by a trial and error method.

1. Start with the outboard's anti-ventilation plate even with the bottom of the boat.
2. Raise the outboard one mounting hole at a time until engine performance is no longer acceptable. Then, lower the outboard back down one hole. Optimum engine height is affected by propeller style, diameter, and pitch. As you raise the engine, you may need to experiment with a variety of propellers to maximize performance.

## THINGS TO REMEMBER

Check full throttle RPM often. It is possible that the propeller pitch size may have to change as the boating application or load changes.

- Adding or removing people can significantly change the power requirements placed on the engine.
- Changes in atmospheric pressure, temperature, and humidity all affect engine performance, which directly affects propeller performance.
- Salt water is more buoyant than fresh water; this may cause some hulls to run faster when moving from a fresh water to salt water location.
- The accumulation of marine growth or dirt—moss, barnacles, lime deposits, etc—is a major cause of poor boat performance.

# PROPELLER HUB SYSTEMS



## DID YOU KNOW EVINRUDE JOHNSON GENUINE PARTS HAS PROPELLERS TO FIT EVERY BRAND OF OUTBOARD ENGINE?

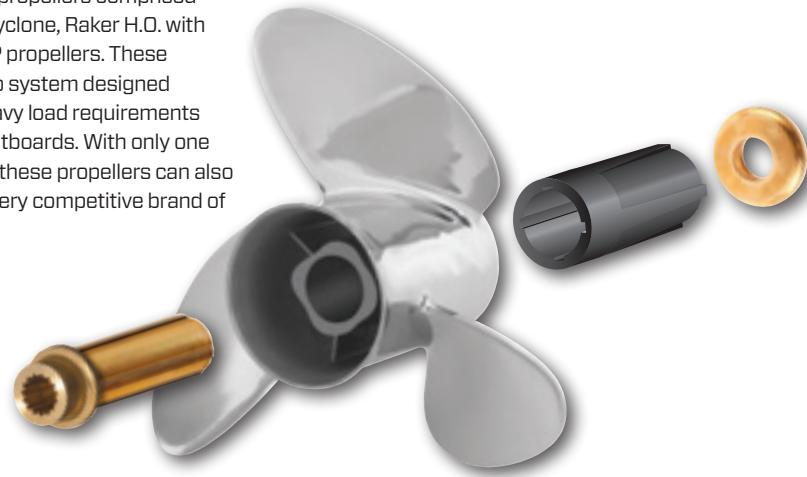
Evinrude and Johnson has been a leader in propeller performance for over 40 years. Since 1982 our engineers have laid claim to defining new levels of speed and performance with the legendary Raker and now the Raker II propellers. Since the Nineties, the Viper propeller has unleashed previously unknown performance in the everyday runabout. As an extra bonus every Evinrude Johnson propeller comes with a 3 year limited warranty.

Evinrude Johnson Genuine Parts has been expanding our propeller line to include a select group of V4 and V6 propellers with interchangeable hub systems.

The Evinrude Johnson interchangeable hub offering begins with V4 and V6 aluminum propellers, commonly referenced in the aftermarket as D Series and E Series. They use the "Aluminum Interchangeable Hub"

system and can be fitted with accessory hub kits designed to match the propeller shaft of all brands of outboard engines.

The expanded lineup continues into the V6, E Series stainless steel propellers comprised of SSP, Viper, Rebel, Cyclone, Raker H.O. with VVP and RX4 with VVP propellers. These props use the TBX hub system designed specifically for the heavy load requirements of high horsepower outboards. With only one additional TBX hub kit these propellers can also be fitted to virtually every competitive brand of V6 outboard engine.



## PROPELLER HUB SYSTEM - V6 STAINLESS STEEL PROPELLER INTERCHANGEABLE CHART

Description	P/N
Evinrude E-TEC G2 TBX™ bushing kit (POP) - PY2015 thru	767683
TBX™ bushing kit (POP) - Evinrude®/Johnson® outboards V6 (1997 thru 2015)	177283
TBX™ bushing kit (POP) - competitive outboards V6	177288

## PROPELLER HUB SYSTEM - ALUMINUM PROPELLER INTERCHANGEABLE CHART

Application	Spline	Year	P/N
Evinrude®/Johnson® V4 45-75 HP, large gearcase 4-1/4"	13	1968-current	765195
Evinrude®/Johnson® V4 85-140 HP	13	1969-current	765195
Evinrude®/Johnson® 90-140 HP, large gearcase	15	1991-current	765190
Force® 75-150 HP	15	1995-current	765192
Honda® 75-150 HP	15	1995-1998	765192
Honda® BF 135 HP, 150 HP, 200 & 225 HP	15	2003-current	765192
Mercury®/Mariner®/MerCruiser® 60 HP Bigfoot	15		765192
Mercury®/Mariner®/MerCruiser® 70-140 HP (except 135 HP), XR-4, XR-6	15	1961-current	765192
Mercury®/Mariner®/MerCruiser® 135 HP	15	1987-current	765192
Mercury®/Mariner®/MerCruiser® 150-300 HP	15	1978-current	765192
Yamaha® 80-140 HP	15	1978-1983	765192
Yamaha® 150-175 HP	15	1978-1983	765192
Yamaha® 115 HP, FS115 (4-stroke), 130 HP	15	1984-current	765193
Yamaha® 150-130 HP	15	1984-current	765193
Yamaha® Sterndrives	15	1989-1993	765193
OMC Cobra® SX	19	1994-current	765194
Volvo® SX Sterndrives	19	1994-current	765194
Honda® 75-90 HP	15	1999-current	765196
Honda® 115-130 HP	15	1999-current	765196
Nissan®/Tohatsu® 90-140 HP	15	1987-current	765197
Mercury®/Mariner®/MerCruiser® 225 EFI (4-stroke) manufactured by Yamaha®	15		765198
Evinrude®/Johnson® 90, 115 HP (4-stroke)	15	2003-current	765199
Suzuki® DF90, DF115 (4-stroke)	15	2001-current	765199
Suzuki® DF140 (4-stroke)	15	2001-current	765200

# FAMILY DESCRIPTIONS



The right propeller will increase fuel economy, top-end speed and even engine life. We've engineered Evinrude Johnson propellers for every application. And all of our props feature a 3-year limited warranty. The best propellers all have one thing in common: the legendary Evinrude Johnson name.

## REBEL® TBX™ OFFSHORE & CRUISING

- V6 – Standard & Counter Rotation
- Use on offshore boats, large runabout, & pontoon boats
- Designed & engineered for efficient midrange cruising
- Improved fuel economy with longer cruising range
- TBX interchangeable hub system



## ROGUE™ SMALL RUNABOUTS & FLATS BOATS

- Provides extra stern lift
- Stays on plane w/minimum RPM
- Custom high luster finish
- 40HP-130HP w/shock absorbing rubber hub



## RAKER® H.O. BASS & HIGH PERFORMANCE

- Fast, Fast, Fast...
- Custom cupped high rake blades
- Superior bow lift
- Exceptional top end speed
- Vented hub for faster acceleration
- V6 Raker II use the TBX hub system



## VIPER™ TBX™ RUNABOUTS & GENERAL RECREATION

- V6 – Standard & Counter Rotation
- V4 – Standard Rotation
- Versatile 3-blade performance
- Excellent balance of speed and durability
- V6 sizes use the TBX™ hub system
- 40HP-130HP w/shock absorbing rubber hub



## HYDRUS™ PONTOON PONTOON BOATS

- Ideal upgrade from aluminum
- Fast planing 3-blade versatile prop
- Cupped blades
- V6 sizes use the TBX™ hub system
- 40HP-130HP w/shock absorbing rubber hub



## CYCLONE™ TBX™ OFFSHORE CRUISING & RUNABOUTS

- V6 – Standard & Counter Rotation
- Enhanced performance propeller
- Stays on plane with minimum RPM
- Less vibration and improved fuel economy
- TBX interchangeable hub system



## SSP® TBX™ GENERAL PURPOSE & DURABILITY

- Ideal upgrade from aluminum
- Fast planing 3-blade versatile prop
- Cupped blades
- V6 sizes use the TBX™ hub system
- 40HP-130HP w/shock absorbing rubber hub



## ALUMINUM GENERAL PURPOSE & ECONOMY

- Sizes for 40HP through 300HP
- Lowest cost and good value
- Precision casting provides great strength and long life
- Cupped blades
- Includes custom interchangeable hub system



## RX4® TRACTION & ROUGH WATER

The RX4 is a no compromises 4 blade propeller. RX4 masters the power curve of the Evinrude® E-TEC® G2™ engine. It is optimized for traction and rough water performance with industry leading speed, acceleration, and fuel economy. It delivers superior bow lift on larger boats and does not slip in turns.

- Variable Vent Porting
- Every propeller is hand finished and precision gauged for quality and consistency.
- Available in right hand rotation sizes 18, 20, 22, 24, 25 and 26 pitch.
- Available in left hand rotation sizes 18, 20, 22, 24 pitch.



## FAMILY APPLICATION CHART

Engine Type	Aluminum	Hydrus	SSP	Rogue	RX4	Raker	Viper	Rebel	Cyclone
I2 40-60 HP	•	•	•	•		•	•		
I3 75-90 HP*	•	•	•	•		•	•		
V4 115-130 HP	•	•	•	•		•	•		
V6 150-300 HP	•	•	•	•	•	•	•	•	•
Rotation - Standard RH	•	•	•	•	•	•	•	•	•
Rotation - Counter LH			•		•		•	•	•
Boat Type	Aluminum	Hydrus	SSP	Rogue	RX4	Raker	Viper	Rebel	Cyclone
Runabout - Fiberglass	•		•	•	•		•		•
Runabout - Aluminum	•		•	•	•		•		•
Deck Boat	•				•		•	•	•
Flats Boat	•			•			•		•
Bay Boat	•			•			•	•	•
Multi-Species Boat - Aluminum	•				•		•		•
Multi-Species Boat - Fiberglass					•	•	•	•	•
Bass Boat					•	•			•
Sport Runabout 150 HP+					•	•			•
Offshore - small, single engine	•			•			•	•	•
Offshore - multiple engine					•		•	•	•
Pontoon - twin log	•	•	•	•			•	•	•
Pontoon - triple log					•		•	•	•



# QUICK REFERENCE GUIDE



All aluminum propellers fitting 40-140HP 2-stroke, 13 spline and V6 aluminum propellers, 15 spline are packaged with Aluminum Interchangeable Hub kit. All V6 stainless steel propellers are packaged with the Evinrude / Johnson TBX hub kit. Refer to the Interchangeable hub kit chart to order kits to fit competitors outboards.

All Evinrude®/Johnson® Propellers have a 3-Year Limited Warranty!

## 15H.O.-30 HP EVINRUDE® E-TEC®

P/N	Material/Family	Blade Count	Diameter	Pitch	Notes
5008225	Aluminum	4	11"	7"	15H.O. High Thrust
765048	Aluminum	3	11"	9"	General Purpose and Economy
765049	Aluminum	3	10 1/2"	11"	General Purpose and Economy
765135	Aluminum	4	10.2"	11"	General Purpose and Economy
765050	Aluminum	3	10.3"	12"	General Purpose and Economy
765136	Aluminum	4	10.1"	12"	General Purpose and Economy
778863	Aluminum	3	10.3"	13"	General Purpose and Economy
765137	Aluminum	4	10"	13"	General Purpose and Economy
765138	Aluminum	4	10"	14"	General Purpose and Economy
763486	Aluminum	3	10"	15"	General Purpose and Economy
765139	Aluminum	4	10"	15"	General Purpose and Economy
765176	SSP	3	10"	11"	Durability and General Purpose
765174	SSP	4	10"	11"	Durability and General Purpose
765177	SSP	3	10"	12"	Durability and General Purpose
765175	SSP	4	10"	12"	Durability and General Purpose
765178	SSP	3	10"	13"	Durability and General Purpose
766153	SSP	4	10"	13"	Durability and General Purpose
765179	SSP	3	10"	14"	Durability and General Purpose
765180	SSP	3	10"	15"	Durability and General Purpose

## 40-130 HP EVINRUDE® E-TEC® (EXCLUDES 25" MODELS)

P/N	Material/Family	Blade Count	Diameter	Pitch	Notes
763300	Aluminum	3	14"	9"	General Purpose and Economy
763301	Aluminum	3	14"	11"	General Purpose and Economy
765181	Aluminum	3	13 3/4"	13"	General Purpose and Economy
765182	Aluminum	3	13 1/2"	15"	General Purpose and Economy
765183	Aluminum	3	13 1/4"	17"	General Purpose and Economy
765184	Aluminum	3	13.2"	19"	General Purpose and Economy
765185	Aluminum	3	13.2"	21"	General Purpose and Economy
177201	Hydrus™ Aluminum	3	13 7/8"	9"	Pontoon boats, High Reverse Thrust
177202	Hydrus™ Aluminum	3	13 7/8"	11"	Pontoon boats, High Reverse Thrust
177203	Hydrus™ Aluminum	3	13 7/8"	13"	Pontoon boats, High Reverse Thrust
763957	SSP	3	13 3/4"	13"	Durability and General PurposE
763950	SSP	3	13 1/2"	15"	Durability and General PurposE
763951	SSP	3	13 1/4"	17"	Durability and General PurposE
763952	SSP	3	13"	19"	Durability and General PurposE
763929	Viper™	3	13 7/8"	15"	Swept blade design, General use, Bow Lifter
763930	Viper™	3	13 7/8"	17"	Swept blade design, General use, Bow Lifter
763931	Viper™	3	13 7/8"	19"	Swept blade design, General use, Bow Lifter
763932	Viper™	3	13 7/8"	21"	Swept blade design, General use, Bow Lifter
763953	Raker®	3	13 1/2"	18"	High Performance Bow Lifter
763954	Raker®	3	13 1/2"	20"	High Performance Bow Lifter
763956	Raker®	3	13 1/2"	24"	High Performance Bow Lifter
763964	Rogue™	4	13 1/2"	13"	Flat Boats and Runabouts
763965	Rogue™	4	13 1/4"	15"	Flat Boats and Runabouts
763966	Rogue™	4	13"	17"	Flat Boats and Runabouts
763967	Rogue™	4	13"	19"	Flat Boats and Runabouts
763968	Rogue™	4	13"	21"	Flat Boats and Runabouts

# QUICK REFERENCE GUIDE



## 150 - 300 HP EVINRUDE® E-TEC®, 25" MODELS - 90, 115, 130 EVINRUDE® E-TEC®

Right Hand (Standard Rotation)	Left Hand (Counter Rotation)	Material/ Family	Blade Count	Diameter	Pitch	Notes
767620		Aluminum	3	15 1/2"	11"	General Purpose and Economy
763453		Aluminum	3	15 1/2"	13"	General Purpose and Economy
765186		Aluminum	3	15"	15"	General Purpose and Economy
765187		Aluminum	3	14 7/8"	17"	General Purpose and Economy
765188		Aluminum	3	14 1/2"	19"	General Purpose and Economy
765189		Aluminum	3	14.3"	21"	General Purpose and Economy
763470		Aluminum	3	14 1/4"	23"	General Purpose and Economy
763959		SSP TBX™	3	15 5/8"	11"	Durability and General Purpose
763960	763961	SSP TBX™	3	15 5/8"	13"	Durability and General Purpose
763962	763963	SSP TBX™	3	15"	15"	Durability and General Purpose
763910	763911	Viper™ TBX™	3	15"	14"	All-around General Purpose, Bow Lifter
763912	763913	Viper™ TBX™	3	14 3/4"	16"	All-around General Purpose, Bow Lifter
763914	763915	Viper™ TBX™	3	14 3/4"	17"	All-around General Purpose, Bow Lifter
763916	763917	Viper™ TBX™	3	14 3/4"	18"	All-around General Purpose, Bow Lifter
763918	763919	Viper™ TBX™	3	14 3/4"	19"	All-around General Purpose, Bow Lifter
763920	763921	Viper™ TBX™	3	14 3/4"	20"	All-around General Purpose, Bow Lifter
763922	763923	Viper™ TBX™	3	14 1/2"	21"	All-around General Purpose, Bow Lifter
763924	763925	Viper™ TBX™	3	14 1/4"	22"	All-around General Purpose, Bow Lifter
763936	763937	Cyclone™ TBX™	4	14 1/2"	15"	Cruising and Transom Lift
763938	763939	Cyclone™ TBX™	4	14 1/4"	17"	Cruising and Transom Lift
763940	763941	Cyclone™ TBX™	4	14 1/8"	18"	Cruising and Transom Lift
763942	763943	Cyclone™ TBX™	4	14 1/8"	19"	Cruising and Transom Lift
763944	763945	Cyclone™ TBX™	4	14"	20"	Cruising and Transom Lift
763946	763947	Cyclone™ TBX™	4	14"	21"	Cruising and Transom Lift
763948	763949	Cyclone™ TBX™	4	14"	23"	Cruising and Transom Lift
177264		Raker II® TBX™	3	14 1/2"	22"	High Performance Bow Lifter
177265		Raker II® TBX™	3	4 1/2"	24"	High Performance Bow Lifter
177299		Raker II® TBX™	3	14 1/2"	25"	High Performance Bow Lifter
177266		Raker II® TBX™	3	14 1/2"	26"	High Performance Bow Lifter
177267		Raker II® TBX™	3	14 1/2"	28"	High Performance Bow Lifter
763984	763985	Rebel TBX™	3	15 3/4"	15"	Faster Cruising Speeds & Improved Fuel Economy
763986	763987	Rebel TBX™	3	15 1/2"	17"	Faster Cruising Speeds & Improved Fuel Economy
763988	763989	Rebel TBX™	3	15 3/8"	18"	Faster Cruising Speeds & Improved Fuel Economy
763990	763991	Rebel TBX™	3	15 1/4"	19"	Faster Cruising Speeds & Improved Fuel Economy
763992	763993	Rebel TBX™	3	15 1/8"	20"	Faster Cruising Speeds & Improved Fuel Economy
763994	763995	Rebel TBX™	3	15"	21"	Faster Cruising Speeds & Improved Fuel Economy
763996	763997	Rebel TBX™	3	14 7/8"	22"	Faster Cruising Speeds & Improved Fuel Economy
763998	763999	Rebel TBX™	3	14 3/4"	23"	Faster Cruising Speeds & Improved Fuel Economy
764000	764001	Rebel TBX™	3	14 1/2"	25"	Faster Cruising Speeds & Improved Fuel Economy
<b>RAKER II® NO VENT PORTS (NO TBX™ HUB KIT)</b>						
177333		Raker II®	3	14 1/2"	22"	Maximize speed & reduce acceleration ventilation
177334		Raker II®	3	14 1/2"	24"	Maximize speed & reduce acceleration ventilation
177335		Raker II®	3	14 1/2"	25"	Maximize speed & reduce acceleration ventilation
177336		Raker II®	3	14 1/2"	26"	Maximize speed & reduce acceleration ventilation
177337		Raker II®	3	14 1/2"	28"	Maximize speed & reduce acceleration ventilation
<b>RAKER® H.O. WITH VARIABLE VENT PORTS (NO TBX™ HUB)</b>						
177304		Raker® H.O.	3	14 1/2"	22"	Maximize speed and optimize acceleration
177305		Raker® H.O.	3	14 1/2"	24"	Maximize speed and optimize acceleration
177308		Raker® H.O.	3	14 1/2"	25"	Maximize speed and optimize acceleration
177306		Raker® H.O.	3	14 1/2"	26"	Maximize speed and optimize acceleration
177307		Raker® H.O.	3	14 1/2"	28"	Maximize speed and optimize acceleration
<b>RX4™ WITH VARIABLE VENT PORTS (NO TBX™ HUB)</b>						
177320	177321	Rx4™	4	15"	18"	
177322	177323	Rx4™	4	15"	20"	
177324	177325	Rx4™	4	15"	22"	For optimal mid-range fuel economy, roughwater bite and bow lift - offshore, inshore, pontoon, runabouts
177326	177327	Rx4™	4	15"	24"	
177328		Rx4™	4	15"	25"	
177330		Rx4™	4	15"	26"	

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