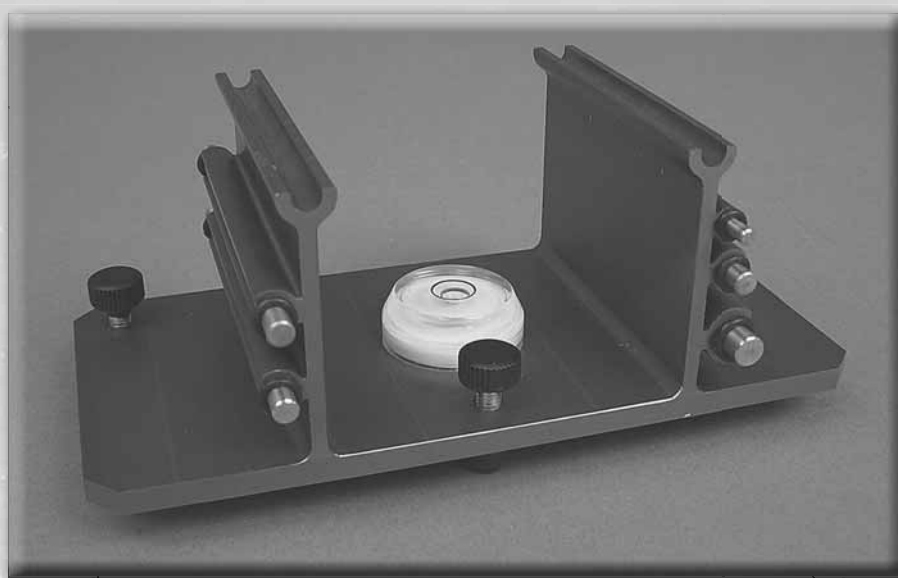


AQUACRAFT™

Models

GRIM RACER™ Precision Prop Balancer

HOW TO BALANCE AN RC BOAT PROPELLER USING YOUR PRECISION PROP BALANCER



WHY BALANCE AND SHARPEN YOUR PROPELLER?

Model boat propellers typically spin at the same RPM as the motor or engine. Any vibration that comes from the propeller can rob your boat of both power and speed. It can also ruin electronics and even break metal parts. It is always best to balance your propellers. Likewise a dull propeller can upset the handling of the boat.

TOOLS AND SUPPLIES YOU ARE GOING TO NEED:

Dust Mask	220 Wet/Dry Sandpaper
Eye Protection	Scratch Pad (red)
Small Round File	Felt Tip Pen
Small Flat File	

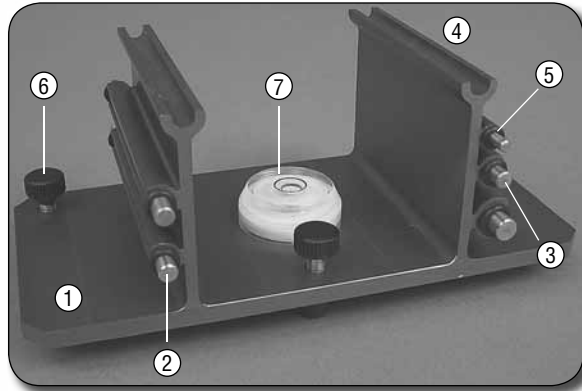
www.aquacraftmodels.com

WARNING:

Copper-beryllium can be dangerous to inhale. Please wear a dust mask when you are filing and sanding on your metal propeller.

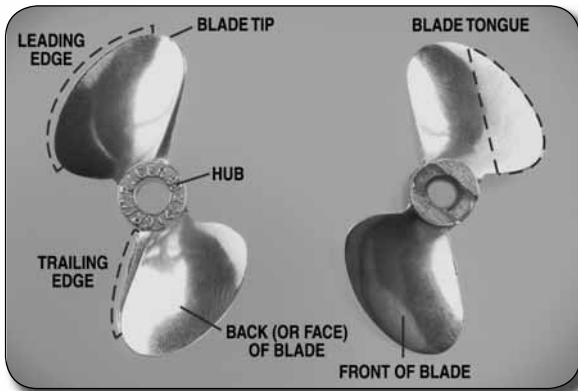
PARTS OF YOUR BALANCER

1. Balancer Base
2. Stationary Shafts
3. Balancing Shafts
4. Top rails

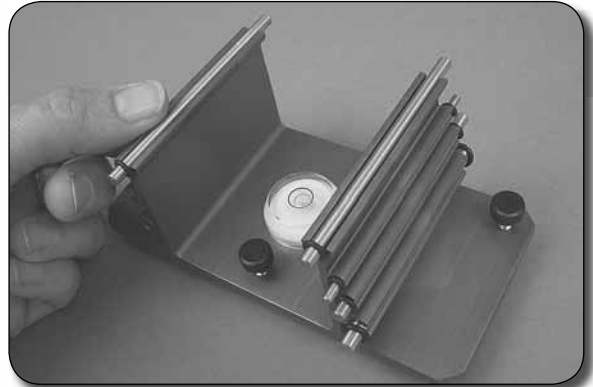
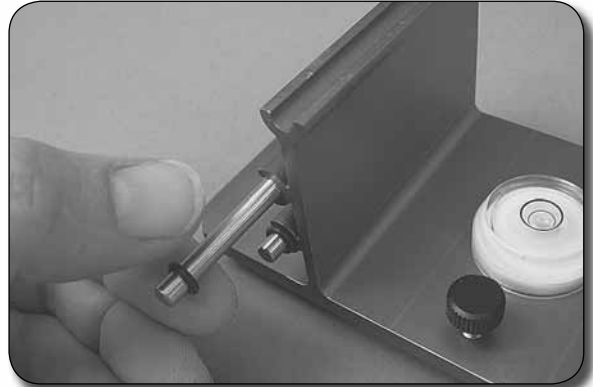


5. O-Ring Keepers
6. Thumb Level Adjusters
7. Bubble Level

PROPELLER IDENTIFICATION

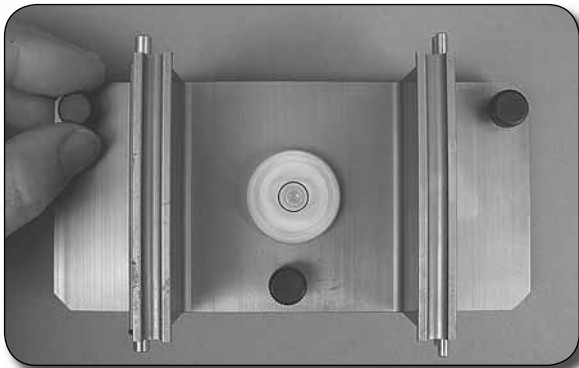


Review your propeller first by checking that it fits properly on the corresponding balancing shaft. If it is tight do not force it. The propeller should be just a tad loose on the balancing shaft. In some cases there might be a small casting burr in the hub of the propeller. If needed you can remove any burrs with a small round file. File off any larger casting flaws and/or irregularities on the blades or hub of the prop. Also take time to make sure the propeller properly fits the drive dog ears of your boat's prop shaft.

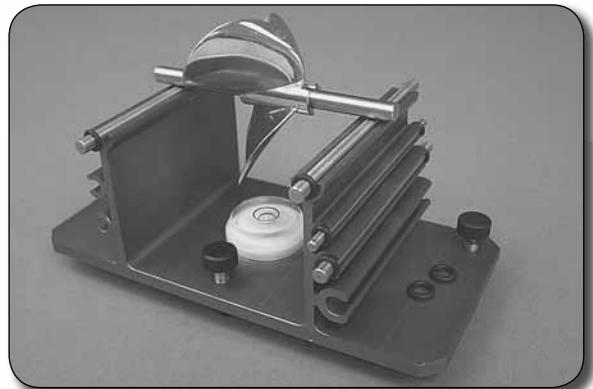


One at a time, remove the stationary shafts and carefully place them in the top rails. Once you have completed this the balancer is ready to use.

LET'S GET STARTED



Place the balancer on a sturdy surface. Looking from above the balancer rotate the thumb screws until the bubble in the bubble level is centered.



Place the propeller installed on your balancing shaft onto your balancer. The heavy side will be the area of the propeller that rotates below the center of the shaft.

NOTE: It is possible that you will not have a single heavy blade but rather an entire side of the propeller that rests below the center of the balancing shaft. In other words your propeller will sit on the balancer with the blades resting horizontally but still be out of balance.



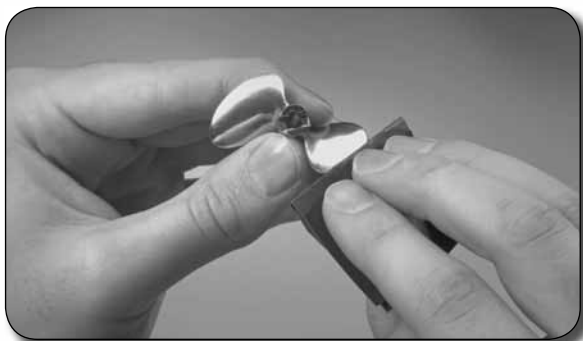
Grimracer says: Think of your propeller as being a round disk. Any area of the propeller that sits below the center of the balancing shaft and returns to this spot is the heavy side of the propeller, regardless of the position of the blades. When you have your propeller properly balanced, it will not return to any one single position.

Place a mark on the heavy side of the propeller. Remember, this might mean you have to mark the tongue of one blade and the tip of the other. I like to cover the heavy side of the propeller with marker. The marker helps identify where we need to remove the material.

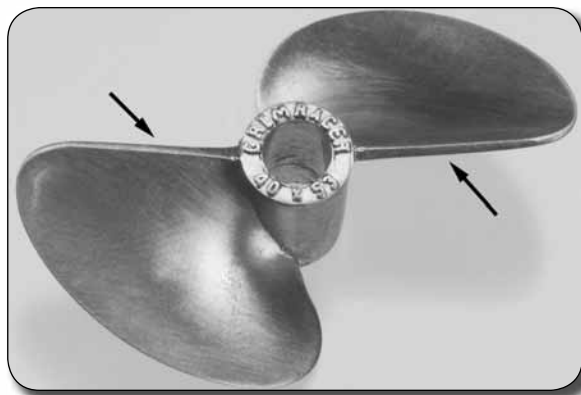
Important: It is best to file only on the front of the blades which is the side of the propeller that is notched to fit the drive dog. You might have to do some clean up on the face but all the balancing should be done on the front of the blades, never on the face. Only remove small amounts of material at a time. Check the balance often and file as needed. When the propeller no longer finds a heavy side on the prop balancer, your propeller is ready to sharpen.



Use a flat file and work your way from the trailing edge to the tongue. Care has to be taken not to roll the leading edge of the propeller as you sharpen. Work slowly and take your time.



After you have a good, sharp leading edge, fold over a piece of 220 grit sandpaper and work the leading edge to a razor sharp edge.



It is important that you do not sharpen the trailing edge of the propeller. Instead, use a file to square it off as shown in the picture.

FINISHING THE PROPELLER

Using a scratch pad, buff the entire prop down until all the shine is off the blades. Be careful as you are working as the propeller is now VERY sharp.



Grimracer says: I recommend a satin finish on the prop. A shiny propeller can cavitate more than one with a brushed satin finish. A satin finish can really help your boat accelerate out of the turns, giving YOU an advantage over your competition.



Your propeller is now ready for use.

ORDERING REPLACEMENT PARTS

To order replacement parts for the GrimRacer Precision Prop Balancer, use the order numbers in the replacement parts list that follows. Replacement parts can be purchased from your local hobby shop or by mail order. If you need assistance locating a dealer to purchase parts, visit www.aquacraftmodels.com and click on "Where to buy". If you are missing parts, contact Hobbico Product Support at:

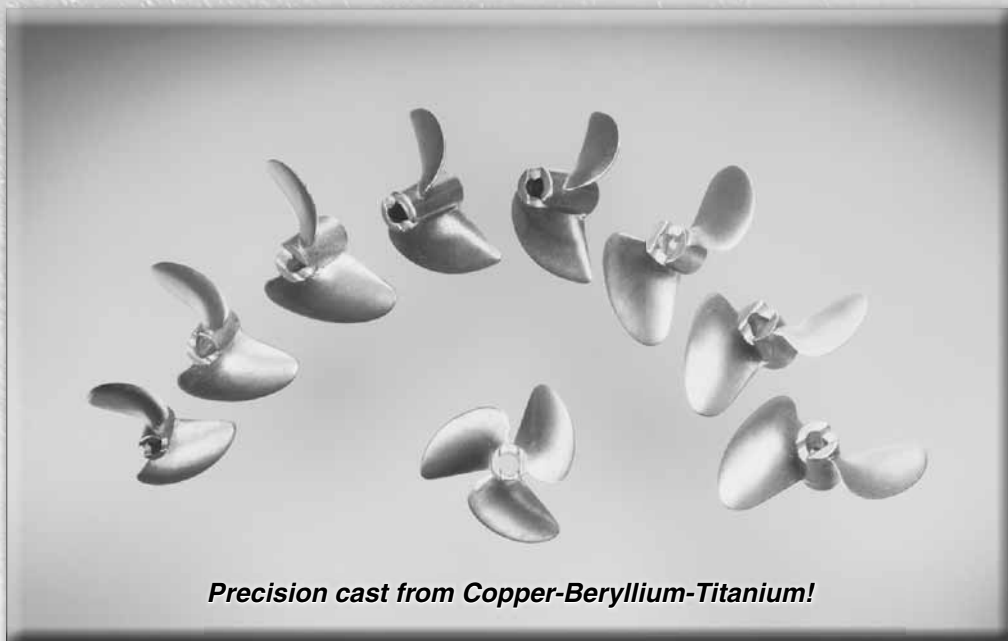
Phone: 217.398.8970

Fax: 217.398.7721

E-mail: boatsupport@greatplanes.com

AQUB6100	BALANCE SHAFT 1/8"
AQUB6101	BALANCE SHAFT 3/16"
AQUB6102	BALANCE SHAFT 1/4"
AQUB6909	O-RING KEEPERS
AQUB9039	THUMB LEVEL AJUSTERS

GRIMRACER™ HIGH-PERFORMANCE METAL-PROPELLERS



Precision cast from Copper-Beryllium-Titanium!

Stock Number	Description	Type	Diameter	Pitch	Bore
AQUB9700	36 x 55	2-Blade	36mm	55mm	1/8"
AQUB9715	40 x 53	2-Blade	40mm	53mm	3/16"
AQUB9720	40 x 52	3-Blade	40mm	52mm	3/16"
AQUB9725	42 x 55	2-Blade	42mm	55mm	3/16"
AQUB9755	L38 x 55 Lifter	2-Blade High Lift	38mm	55mm	3/16"
AQUB9758	L38 x 63 Lifter	2-Blade High Lift	38mm	63mm	3/16"
AQUB9763	L42 x 66 Lifter	2-Blade High Lift	42mm	66mm	3/16"
AQUB9765	L44 x 66 Lifter	2-Blade High Lift	44mm	66mm	3/16"
AQUB9768	L45 x 68 Lifter	2-Blade High Lift	45mm	68mm	3/16"
AQUB9785	65 x 100	2-Blade	65mm	100mm	1/4"
AQUB9787	67 x 105	3-Blade	67mm	105mm	1/4"

Boat	Prop	AquaCraft #	Octura Equivalent	Prather Equivalent
Rio 51	65x100	AQUB9785†		265
	67x105/3	AQUB9787†		270/275
Miss Vegas	36x55	AQUB9700*	Y535	N/A
	40x53	AQUB9715	440	215
Top Speed 2	40x52/3	AQUB9720	440	220
	42x55	AQUB9725		230
	40x53	AQUB9715	440	215
SuperVee 27 Brushless	40x52/3	AQUB9720*	440/3	220
	42x55	AQUB9725		230
	40x53	AQUB9715*	440	215
SuperVee 27 Nitro	40x52/3	AQUB9720	440/3	220
	42x55	AQUB9725		230

*Bold part number denotes propeller with handling characteristics similar to those of the stock prop.

†AQUB9785 and AQUB9787 are for all 23cc-30cc gas powered boats.

Visit www.aquacraftmodels.com for additional prop sizes.