concept 2®

OARS AND SCULLS

For Concept2 Founders and brothers Peter and Dick Dreissigacker, rowing is a lifelong passion and engineering is a way of life. This drives Concept2's commitment to design and build the best racing oars in the world. Every oar is custom built and tested in our Vermont factory to live up to this commitment.

1975
Dreissigackers create carbon fiber oars

1976
Concept2 founded in a Vermont barn

1987
Ultralight Shaft

1991
Big Blade

1996
10cm Adjustable Handle

1997
Smoothie1

What Goes into a Concept2 Oar?

Innovation

Since bringing carbon fiber oars to the rowing community over 40 years ago, Concept2 has continued to revolutionize the sport of rowing with increasingly efficient oar designs. No design is released unless rigorous on- and off-water testing proves its ability to increase boat speed.

Performance

Top athletes around the world rely on Concept2. Our oars and sculls were in the hands of:

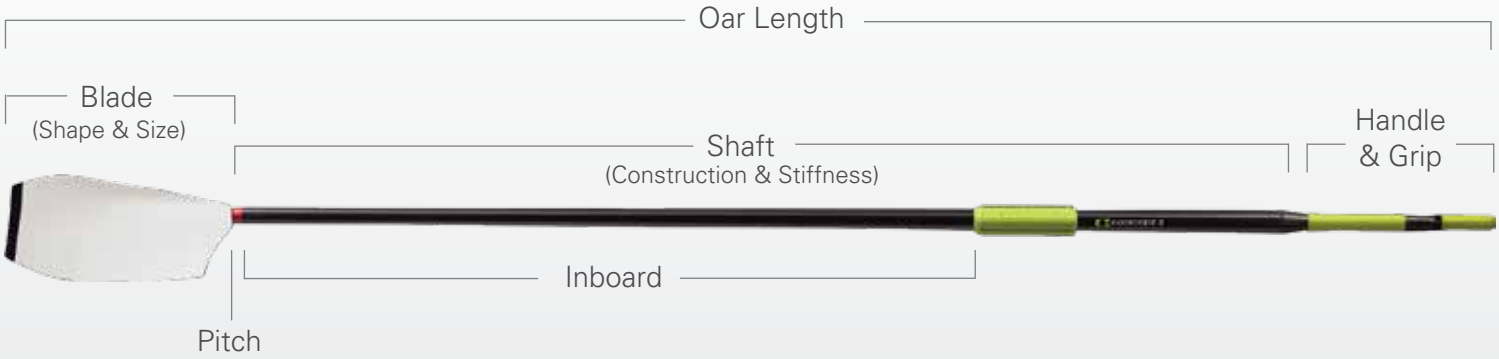
- 73% of athletes in the grand finals at the 2015 World Championships.
- 70% of all 2012 Olympic medalists in London.
- 2015 national collegiate champions at Ohio State, Bates College, University of Washington, and Cornell University.

Support

Every Concept2 oar is backed by our dedicated and knowledgeable support team. We strive to offer the best service in the industry both from our factory and in the field. We are here to help you get the most from your oars.

Choosing Your Oar Components

Every oar is custom built in our Vermont factory. This means you can select your oars from our standard specifications, or fully customize from our wide range of options. However unique your oar needs may be, if you want it, we will build it.



We recommend you use our Oar Order Form to help you keep track of the options you choose as you work through this brochure. Please reference this form when you call to place your order.


CANADA

Blades

Our blade designs have evolved with one purpose—to more efficiently convert the athlete's power into boat speed.

Here's what we know about blade design:

- A blade that slips less in the water loses less of the work generated at the handle by the athlete. In other words, it is more efficient.
- Changing the shape, curvature, and features at the tip will impact blade interaction with the water.
- As a blade becomes more effective it will generate more load and require a decrease in oar length.
- As blade designs have become more efficient, controlled testing has indicated improved performance speeds.

The following pages offer a comparison of our blade options.

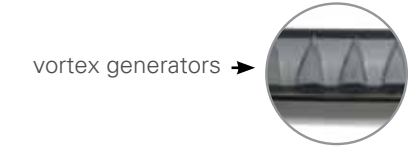
	Fat2	Smoothie2 Vortex Edge (VE)
		
Date of innovation	2006	2001
Description	Offers the greatest potential for increasing boat speed, based on our research and on water testing.	Offers many advantages of the Fat2, but with a slightly smaller surface area.
The feel	Greater efficiency gives a firm feel earlier in the drive; less resistance toward the finish.	Resistance is focused on the early part of the drive.
Vortex Edge	Standard	Standard
Tips for optimizing performance	Oar length should be 4–8 cm shorter than Smoothie2. More effective when rigged further through the pin.	Oar length should be 1–2 cm shorter than Smoothie2. More effective when rigged further through the pin.
Recommended for:	Competitive rowers looking for maximum efficiency, and willing to try a shorter and/or softer shaft to achieve it.	Competitive athletes who want good efficiency without the rigging changes that may be necessary to get the most from the Fat2.

Smoothie2	Big Blades
	
1997	1991
Similar to Smoothie2VE, but without the added efficiency of the Vortex Edge.	With its large asymmetric surface area, this breakthrough changed the shape of racing oar blades.
Less resistance early in drive.	Lacks the firm feel of our newer designs early in the drive. Vortex Edge may be added to increase efficiency.
N/A	Optional
Best oar length may be slightly shorter than for Big Blade.	We encourage you to compare with some of our newer blades.
Competitive crews who want efficiency but prefer a softer feel.	Crews who are familiar wth the Big Blade or want to match older sets of oars.

Vortex Edge

The Vortex Edge is standard on the Fat2 blade; it can be added to Smoothie2 or Big Blade to increase efficiency.

The triangular "vortex generators" on the back surface of the Vortex Edge tip act on the layer of water near the surface of the blade to decrease drag and increase lift.



The blade perimeter tapers towards the tip to promote additional vortex development along the blade edges, increasing efficiency as the angle of attack increases during the second phase of the drive.

An added feature of the Vortex Edge is protection to the edge of the blade, preventing damage from wear or impact.

Blade Color Options

Concept2 offers 52 blade colors in addition to our standard white. These colors are available at an additional cost and longer lead times may apply.

Colored blades are available as single, solid colors only. You will need to apply any additional designs or stripes using paint, decals, or adhesive vinyl.

Important: These colors are from the RAL international color standard. Due to individual computer monitor and printer limitations, these samples are approximations and may not accurately reflect the true color. Please contact our customer service team for additional information.

Shaft Construction Options

Skinny (Sweep and Scull)

Our newest high performance shaft, the Skinny, is a smaller diameter shaft that offers less wind resistance, different bending characteristics and softer flex options. Concept2 lab tests reveal the Skinny shaft reduces wind drag of the shaft by 25% for sculls and 50% for sweeps compared to a standard Ultralight shaft. Skinny shafts are made of high modulus carbon fiber to achieve the needed stiffness with the smaller diameter. Final oar weight is comparable to Ultralight shafts.

Low i (Scull Only)

The Low i shaft uses high modulus carbon fiber and a standard shaft diameter to achieve a lighter shaft. We use our lightest blade for the Low i scull to achieve overall weight reduction and extremely low swing weight—the weight at the blade that is felt each time the oar changes direction. Those rowing with higher stroke rates tend to benefit from using Low i sculls. These sculls are less resistant to impact damage than Ultralights.

Ultralight (Sweep and Scull)

The Ultralight is our standard lightweight, all-carbon fiber shaft that is most commonly used at all levels of rowing and racing today. Over the years, we have refined the construction of this shaft to be as durable as possible.


AUS

Oar Length

We know from riding a bike that things go better if you are in the right gear. The same is true for rowing.

The length of the oar, along with other variables like spread (distance from the centerline of the boat to the oarlock), blade size, blade type, inboard (distance from the handle end to the collar), catch angle, and so on, determine the boat gearing, or "rigging."

Our oars can be ordered in adjustable or fixed lengths to help you achieve a comfortable, effective rig.

- Our adjustable length handles (recommended) enable you to adjust the length of your oars within a 5cm range. Adjustable length makes it easy to share oars between boats, adjust oar lengths for different wind conditions, and to test different riggings.
- Fixed length oars should be ordered only if you are sure you will never want to change your sweep or scull length.

Guidelines

Achieving a comfortable, effective rig is the key to keeping the load reasonable and getting the most out of your oars. In general, we recommend setting your sweeps or sculls shorter when rowing:

- with more efficient blades, like the Fat2. (See table at right.)
- in a slower boat.
- with a narrower spread.
- with a longer reach/a greater catch angle.
- when you need less handle overlap while sculling.

Oar Length Recommendations

The following table outlines our typical oar length recommendations for sweep and scull. Custom lengths with 5cm ranges are also available.

Sweeps

Range	Fat2	Smoothie2 or Big Blade
Short	362–367 cm	367–372 cm
Medium	365–370 cm	370–375 cm
Long	368–373 cm	373–378 cm

Sculls

Range	Fat2	Smoothie2 or Big Blade
Medium	278–283 cm	284–289 cm
Long	280–285 cm	287–292 cm


SAMSUNG

Shaft Stiffness

A blade and shaft work as a system to create a perception of oar stiffness or "flex." We offer three different shaft constructions, each with various stiffness options, to help you optimize the feel and efficiency of the blade that you've chosen.

Options

Extra Soft (Skinny only)
A good choice for those who want the efficiency of the Fat2 blade but prefer a softer feel at the catch.

Soft
A good choice for smaller athletes, women, masters or anyone who prefers a softer feel; especially when assembled with the Fat2 blade.

Medium
A good choice for use with the Big Blade, Smoothie2 Plain Edge and Smoothie2 Vortex Edge.

- Ultralight shafts with Medium flex have been our most popular shaft and will meet the needs of most rowers.
- The Fat2 blade on a Medium flex shaft has been used successfully by crews that are accustomed to a pronounced, firm "lock-on" at the catch.
- This is the stiffest option available for the Skinny construction.

Stiff (Ultralight and Low i only)
Appropriate for those who have a preference for the stiffest shaft.

Handle Options

We offer composite and wooden handles for our sweeps and sculls.

Composite Handles

Our carbon fiber composite handle is the lightest handle we offer. It is available for sweep and scull as either a part of our Length Adjustment System (recommended) or Fixed Length.

Length Adjustment System

Our Length Adjustment System features a bonded composite handle with a structural outside grip that is capable of a 5cm range of length adjustment.

- Simple three-step process adjusts oar length.
- The grip is keyed to the handle to prevent rotation.
- Continuous choice of settings over the entire 5cm range. Each turn of the adjusting screw changes the length 0.25cm.
- Oars are marked at the handle to indicate overall length in centimeters.
- Worn grips or damaged parts are easily replaced.
- The composite handle is bonded to the shaft and will not loosen with use.

Fixed Length

Fixed length handles are available in one size for sweep and in two sizes for scull: narrow or medium. Fixed length composite handles are not available for the Skinny shaft.

Wood Handles

Our traditional basswood handle is available for fixed length oars only:

- Sweep: Small (39mm), medium (42mm) or large (45mm)
- Scull: Narrow and medium

We also offer a wood veneer grip for sweep oars, giving the feel of wood with the versatility of the adjustable handle.

Grip Options

Your options for grips will depend on the handle and shaft you have chosen, and whether you are ordering Ultralight sweeps, Skinny sweeps or sculls. See order form for diameters.

Smooth Green Rubber

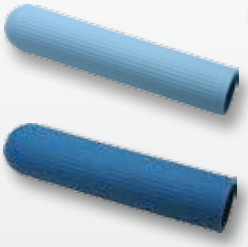
- Firm, smooth texture
- Most durable, easy to clean

Contoured Orange Rubber

- Radial finger sized contours and brushed texture
- Firm, durable material

Microfiber Suede

- Soft, suede-like texture
- Adhesive-backed synthetic suede grip layer
- Easy and inexpensive to replace; no tools required
- Requires more frequent replacement than our other grip options



Ice Blue and Azure Blue Rubber

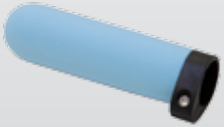
- Firm feel with longitudinal ribs
- Easy to clean

Wood Veneer

- Real mahogany
- Surface can be sanded carefully for more texture
- Additional charges apply

Black Rubber

- Firm, rubber texture
- Durable, does not show dirt



Blue Cellular Foam

- Soft feel with a firm, sponge-like texture
- Requires more frequent cleaning to retain grip properties

Bare Core with No Grip

We offer this option for people who wish to supply their own grip.

Replacement Grips

Replacements grips are available to purchase if you need to replace existing grips on sweeps or sculls.

Q. Why are there additional grip options for the outside hand of Skinny sweeps?

A. If you have chosen our Length Adjustment System on a Skinny shaft, more grip options are available to you for the outside hand because our scull core fits the composite handle for the Skinny shaft. Note: For the inside grip you will need to choose either smooth green rubber, microfiber suede, blue cellular or wood veneer.

Grips for Sweeps and Sculls - Availability Chart

	UL Sweep		Skinny Sweep	Scull (UL, Skinny and Low i)	
Grip	Adjustable	Fixed	Adjustable	Adjustable	Fixed (UL & Low i only)
Smooth green rubber	yes	yes	yes	yes	no
Microfiber suede	yes	no	yes	no	no
Wood veneer*	yes	no	yes	no	no
Blue Cellular	yes	yes	yes	yes	no
Orange Contoured	no	no	yes, outside grip only	yes	no
Ice Blue or Azure Blue	no	no	yes, outside grip only	yes	yes
Black Rubber	no	no	yes, outside grip only	yes	yes
None/bare core	yes	no	yes	yes	no

*Additional charges apply.

Also from Concept2

Many of our oar components and spare parts are available to purchase in our online shop. If you don't find what you're looking for, give us a call. We stock both current production and older style parts, so we're happy to help keep your equipment in fine working order.

Common repairs are demonstrated in our online video library. Find them at concept2.com/service.

Scull Case

Collars

Oarlocks and Bushings

C.L.A.M.s

Oar Carrier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OARS AND SCULLS
Concept2 CTS travels to several regattas each year to assist regatta competitors with any oar service needs. Visit concept2.com/oars for a calendar of events. We hope to see you soon!
concept2.com/oars | 800.245.5676
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