

MARSKEEL NEWS SECTION

Announcing the MarsKeel Group: Design and Engineering Services

MarsKeel's experience in design, moulding techniques and metallurgical testing provides the customer with the most advanced and up-to-date information available today. Our commitment to technological advancements, along with constant testing and innovation, has earned us a worldwide reputation throughout the industry that is second to none. MarsKeel Technology™ is proud to be partnered with Ariston Technologies and Burke Design. We now provide, and offer our customers, state-of-the-art advanced design and engineering services.

- Design and analysis of keels- fins, bulbs, wings, trim tabs and attachments
- Mechanical systems design for canting and lifting keels
- First principles structural calculations and finite element analysis (FEA)
- Detailed construction drawings
- New construction, modifications and repairs
- Design compliance with regulatory body requirements (ABS, DNV, IMO, ISO, RINA, etc.)



Dave Fornaro of Ariston Technologies provides advanced engineering services to the marine industry. With over two decades of experience, Dave has worked on design teams for three America's Cups, three Volvo Ocean Races, and two Vendee Globe Races among other yachting programs. From fundamental structural and hydrodynamic research to detailed engineering and design, Ariston Technologies has an unsurpassed breadth and depth of knowledge to offer their clients.

Visit their website at www.aristontech.com



Steve Burke of Burke Design provides the very best in marine and composite engineering services. Clients across a range of industries rely on Burke Design for their expertise in structural and composite engineering, manufacturing, and project management for new construction, modifications and repairs. Their work results in fabricated parts that are strong, reliable, lightweight and cost-effective, significantly improving the performance of the finished product.



Contact Burke Design for prompt, professional, expert service - every time. Visit their website at www.burkecompositeengineering.com

MarsKeel Technology Awarded Exclusive Manufacturing Contract for Catalina Keels

MarsKeel Technology™ is pleased to announce the affiliation and exclusive manufacturing rights to supply all Catalina Keels to Catalina Yachts' expanded Largo, Florida production facilities. Catalina Yachts use only Lead Keels due to its superior qualities over Cast Iron keels. Lead is 40% denser by volume which means less wetted surface area, less drag and a lower Center of gravity. All of this equals more stability! Another benefit is the reduced maintenance with Lead Keels, whereas Iron requires yearly maintenance with respect to continuous rusting. For the Catalina Keels, produced by Marskeel, we use only 316 Grade Stainless Steel Keel Bolts for corrosion resistance and longevity along with our trademarked "MarsKeel Welded Stainless Steel Armature System"™ for superior strength. Catalina Yachts and MarsKeel Technology – The Sailor's Choice!



MarsKeel Technology Awarded Contract with Southern Wind Shipyard

MarsKeel Technology™ is very proud to announce our continuing association with Southern Wind Shipyard. We have been awarded the contract for the production of the SWS 94 #1 Keel. This keel is a combination of a fabricated high strength steel fin and a high accuracy cast lead bulb. The fin is also fully CNC machined after being fabricated to perfect the foil shape. The cast bulb will weigh approximately 36,000 lbs. and will be templated to ensure the accuracy of its shape. Delivery of the first keel is set for the summer of 2010. This is a state-of-the-art racer/cruiser designed by Reichel Pugh Yacht Design.

Southern Wind Shipyard was founded in 1991 by the Italian entrepreneur Willy Persico, the current Managing Director. Headquartered in Cape Town, South Africa, Southern Wind is one of the very few shipyards able to carry out nearly all of the construction in-house. Southern Wind Shipyard produces semi-custom composite sailing yachts based on the most advanced technologies. MarsKeel Technology™ has been the preferred supplier of keels for Southern Wind Shipyard since 2006 and has produced keels including the SWS 100 L Keel, SWS 100 T Keel and the SWS 110 T Keel. Visit the Southern Wind Shipyard Website at www.sws-yachts.com



1-800-381-KEEL



www.marskeel.com

GLOBAL LEADER IN KEEL TECHNOLOGY

Where Technology Meets Passion

MarsKeel Technology™ is the largest producer of custom and production keels in North America. We specialize in customized projects and incorporate many different metals into our cast fins and fabricated metal fins. We have lead keel and bulb casting capabilities in excess of 200,000 lbs. (91,000 kgs).

Our three decades of experience allows us to work closely with leading yacht designers, sharing our state-of-the-art techniques and incorporating them into the latest designs. We offer comprehensive service with on-site CAD Design consultation, pattern construction, custom one-off sand molding, production molding, welding and fabrication. We offer full CNC machining of keel fins and bulbs along with metallurgical testing. Our finishing and fairing division provides diverse solutions to suit our customers' needs.

At MarsKeel Technology™ we continue to embrace growth as we move into the future with the changing and challenging requirements of designers, builders, and the sailors themselves.

Our Production Capacity

Pattern Construction

- Production and Custom Patterns and Plugs produced from prints or IGES Files
- Patterns for High Production runs and one-off custom
 - Patterns on Match Plates for Iron, Stainless Steel and Bronze Castings
- Pattern Construction up 50 ft. in length and 16 ft. in height
 - CNC Machined part tooling and fixtures available

Molding Capabilities

- MarsKeel Lifetime Ceramicast Tooling System™ available for Production Keel Accounts
- One-off Custom Molding from our MarsKeel Accusand™
- In-house Molding Capacity for keels up to 200,000 lbs

Lead Alloy Casting

- Keel casting up to 200,000 lbs
- Production and Custom One-Off Castings
- Design Consultation for High Performance Custom keels
 - CNC Machined finishes
 - Custom Coating Applications
 - Total Project Management available

Ferrous and Non Ferrous Castings

- Lloyds Register Certified Foundry



Ferrous

- Up to 4500 lbs net cast weight
- Heat resistant stainless steels
- Corrosion resistant stainless steels
- Carbon, low alloy and tool steel

Non-Ferrous

- Up to 9000 lbs net cast weight
- Beryllium copper
- High conductivity copper
- Bronze
- Aluminum

Major Machining Available

CNC Turning

- 8 Units, 3-Axis Capability c/w Live Tooling
 - Maximum Swing: 38"
 - Between Centers: 165"
 - Bar Feeder: to 1.75" Dia.

CNC Horizontal Mills

- 5 Units, 5 axis.
 - Max. Spindle Dia: 6" (152.4 mm)
 - Max. Travel: 110" x 360"
 - Max. Table Size: 96" x 320"
- Equipped with Gun-Drilling attachment

Conventional Turning

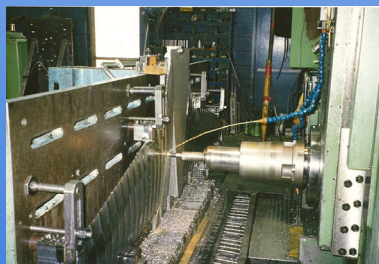
- 4 Units
 - Max. Swing: 50"
 - Between centers: 360"

Fabrication Available

- CWB Approved, to CSA Standard W47.1 in Division 3.
- Custom Fabrications in Steel, Stainless Steel and Aluminum
 - Welding processes, MIG, TIG and Stick

Plate Forming and Straightening Available

- Plate Shear, 20' long x 1.25".
- Bending Forming, 1000 ton x 24", 800 ton x 31'
 - Plate Rolling, largest is 16' x 22.5"





THE EVEN KEEL

Where Technology Meets Passion

Fall / Winter 2009



As shown here, the SWS 110's two dissimilar keel parts are dry fitted before final fin fairing at MarsKeel

MARSKEEL TECHNOLOGY AND FARR YACHT DESIGN UNITE!

Once again MarsKeel Technology™ and Farr Yacht Design have united to create the newest keel produced for Southern Wind Shipyard. This technological creation is for their newest and largest semi-custom composite sailing yacht, the SWS 110, which is being produced in South Africa for launch in 2009.

This amazing T-Keel design by Farr Yacht Design, partnered with MarsKeel's structural engineering, is comprised of a custom high-strength fabricated fin, weighing in at 7,647 lbs., married to a cast lead bulb design weighing in at 60,810 lbs.

The total weight rounds out to be 68,457 lbs. for this amazing 110 footer with a total displacement of just under 170,000 lbs. (77,000 kg).

The custom fabricated fin is constructed of an A-36 engineered steel fabrication with pre-formed port and starboard shell halves, utilizing a 1000 ton press to achieve the pre finished shape. MarsKeel's hallmark process has been

used on the SWS 100 and dozens of other large fabricated keel fins constructed from designs created worldwide.

Vertical engineered horizontal and vertical stiffeners are welded in place along with custom machined top and base plates. The custom machined top plate of the fin, which marries keel to hull, is predrilled to incorporate the High Strength 2205 stainless steel bolts for attachment.

Once the fin is internally and externally welded by our certified welding staff it goes to final inspection and is air-tight tested. The fairing process is comprised of a 5 step finishing process. The fin is high-pressure bead blasted and primed with self-etching metal primer. Three coats of Interprotect 2000 are then applied, and the fin is faired utilizing our Epoxy Based fairing compound. Then 6 coats of Interprotect 2000E Epoxy Based primer are applied up to the recommended 10 mil. minimum thickness.

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The keel is shipped in two separate ocean-going shipping containers in custom made cradles for each – one containing the lead bulb the other the fin due to weight and size restrictions.

Our technological advancements in design and construction have secured the confidence of builders worldwide – vastly expanding our global marketplace within the past number of years.

MarsKeel is currently working with a number of internationally acclaimed designers and builders in Europe on many other custom and semi-custom yachts around the globe.



ABOUT US: OUR PEOPLE, OUR PASSION

For 30 years, MarsKeel Technology™ has united our passion for sailing with our vast technical experience, supplying quality keels to builders and sailors worldwide. MarsKeel Technology™ is the largest producer of custom and production keels in North America, supplying keels to just about every builder on the continent. We supply internationally to the United Kingdom, South Africa, South America and many other countries abroad.

Our commitment to technological advancements and staff dedication has earned us a reputation throughout the industry with designers and builders that is second to none.

With over 100 million pounds of castings over three decades, our casting experience and metallurgical knowledge places MarsKeel Technology™ as the worldwide industry leader.

Our Technical and Design Staff: Over 100 Years of Combined Passion and Experience

Kevin Milne

Founder and President

With over 30 years of Metallurgical Casting experience, extensive knowledge of Keel Design and marine industry experience.

Paul Freudiger

Operation Manager and Technical Sales Advisor

Over 30 years of Metallurgical knowledge of Ferrous and Non- Ferrous metals, including project management and sales coordination.

Bill Souter

Technical Keel Sales and Design

With 20 years of marine experience in the sailboat industry and design relating to keel manufacturing specializing in structural CAD systems.

James Izzard

Plant and Production Manager

Combined experience of production management and specialized metal casting technology spanning over 20 years. Production Analysis Specialist and personnel coordination.

Dave Nuell

Casting Production Foreman

Over 15 years of hands-on Lead Casting experience with extensive overall production knowledge specializing in technical mold set up, melt processes and custom casting procedures.

Ken Fowler

Custom Pattern Construction and Design

Over 20 years of marine experience relating to pattern production, core design and internal molding set up procedures. CAD analysis and technical reading from IGES developed files.