

# Harken's New Radial Winches

## The "Engine" of the Sailboat



Massimo Dell'Acqua has come from Harken's offices in Italy to the Toronto International Boat Show to appear in the Harken display at the Western Marine and Transat booth. He explained the many features of the new Radial winch line.

By ANDY ADAMS

You could say that winches are the engine of every large sailboat, helping the sailor to haul in far higher loads, far faster than their strength could normally manage and also trimming the sails by playing out sheet with control and precision...at least until the winch grinds or jams from salt or grit.

In the past, having to dismantle a winch was a task few sailors enjoyed and one that many would face with absolute dread should the winch need attention while out on the water. Disassembling a winch where every part is essential and where a tiny screw can vanish in the cockpit, or where a roller bearing can squirt overboard in a heartbeat, is something to avoid at all costs.

For most sailors, the good news is that winches are generally very reliable and long-lived. But, to do their job properly, they still need attention and that means taking them apart for

cleaning and lubrication – at least once in a while.

The new Radial line of winches from Harken addresses those issues and several more as well. Harken Technical Director, Andrea Merello has stated that, “We started from a blank sheet of paper addressing the needs of specific types of sailors.”

*A bit of quick background:* Harken entered the market in 1987 by adapting original Barbarossa designs to be Harken's standard line and adding a Grand Prix racing line as well. Grand Prix racers have always demanded constant innovation, but most sailors just wanted solid, efficient winches that would last for 30 years. Now, sailors and boat builders want all that and more; they want faster installations, easier maintenance and simpler upgrades.

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In only seconds, Massimo Dell'Acqua had dismantled one of his new Radial winches. The red and white rings are composite material in roller bearings for smooth action without grease.

The changing demographics of sailing are largely driving the need for this.

It used to be that the winches were spec'd out by the boat builder and they remained on the boat throughout its life, or until one failed and had to be replaced. Today, the baby boomer sailors are aging but they want to remain active and keep sailing. Today's new boat buyers may upgrade their standard winches before they ever take delivery but the dealer runs a risk if they order the boat that way.

Next, upgrading to electric winches is appealing, but that is a

cost-driven decision in many cases. The desirability of power winches for aging sailors is easy to understand but the retrofit can be difficult and, in some cases, requires major yacht surgery.

The reason Harken went to a blank sheet of paper was to design "from the deck up" with a few key ideas in mind: safety, long-lasting performance, streamlined installations and simple hydraulic and electric upgrades.

This January, Massimo Dell'Acqua, sales manager from Harken in Italy was on hand at the Toronto International Boat Show to talk about their new products and new processes.

Massimo explained to *Boating Industry Canada* that Harken's new line was designed with yacht builders in mind.

These days, there's a bigger focus on the time required to install the winches as well as the weight and ease of handling from a worker's point of view, plus the complexity of the assembly process. As Massimo explained, "About 85% of winches are OEM products." So, the boat builders were key design drivers.

He explained that the industry was looking for reduced installation time, reduced labour and that boat owners were asking for reduced wear on their lines.

Massimo explained that, "Grip is a compromise of friction and wear. In the process of designing the new Radial line, we tested more than 70 different types of ropes. We tested different case angles, dry and wet conditions and with the test winches on actual racing and cruising boats. It is a huge job to



An excellent safety feature of the new Harken winches in their self-tailing models is that the whole top cover remains stationary instead of rotating as on many other winches. This makes it much safer – less likely to pinch a finger when they are near the winch.

This cutaway drawing shows the mechanism clearly enough, but many of the best features are how these winches come apart and go back together so easily.





## [PROPULSION]

finalize grip.”

The final patented designs use slightly diagonal lines on the drum. These push the lines down to ease the lines and give the best control.

Safety was another important consideration. The new Radial models have a full steady top that remains steady and only the centre shaft turns. There is no way to pinch a finger in this design the way old designs can.

Talking about electric and hydraulic powered winches, Harken designed the Radial to accept an electric motor directly to the centre shaft of the manual winch. Some other designs mount the motor off centre acting on gears which really complicates retrofit. The manual Harken Radial winches can be upgraded to electric quickly and easily and both horizontal and vertical electric engines are available to accommodate the often oddly shaped under-deck spaces.

Builders can pre-drill a 3.00 in. [7.6 cm] shaft hole in the deck to simplify future conversion from manual to electric. Harken offers removable gaskets to seal the holes until upgrades are made.

Then, a standardized pattern for the mounting screws means these winches can be changed out and upgraded easily in the original mounting location. Harken has patented their install system. It allows quick installation without removing the drum and the socket by holding hex

head bolts captive in the base with a washer and top snap fit together to simplify maintenance and for mistake-free assembly. Alternatively, there is a more standard way to install these new Harken winches. If you chose not to use the captive hex head bolts, the base can also accept standard round head fasteners that just need to be loosened. They remain threaded in part-way so you can't lose one. Next, in a classic Harken design parameter, composite roller cages are used to reduce friction and require no grease. That reduces the odds of attracting and holding grit inside the winch. The only grease used is on the bottom.



While their old models had bases made of bronze, they are now aluminum which delivers the same strength with significantly less weight. That is good for weekend racers, makes these winches easier to handle and install and they are also easier to ship to the OEMs.

Massimo ended by explaining that the many features of their new Radial line are all guided by the concept of “Sailing made easy” and it seemed clear that the new Radial line delivers on that promise. He easily and quickly tore-down a Radial winch on the desk at the display booth and showed us how the parts re-assemble only one way so there's no chance of getting it back together incorrectly.

Emphasizing this ease of maintenance, he told us about a YouTube video with 8-year old Gabriel who dismantles and re-assembles a Radial winch for the camera. It's something any owner can do. Have a look: <http://www.youtube.com/watch?v=fmECmNhplqs>

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