



STEERING WHEEL BEARINGS GUARANTEED FOR LIFE

The finest control knobs deliver maneuverability and comfort for the life of a boat's steering wheel. Schmitt and Ongaro designs and manufactures its products so that their beauty is not only external, but internal as well – where it counts. Schmitt & Ongaro offers two styles of bearings in their control knobs, either a flange bearing set or a ball bearing set.

In contrast to the superior flange bearings offered by Schmitt & Ongaro, others in the industry use an inexpensive injected molded nylon flange bearing in their steering wheel knobs. The injection molded bearings lack the necessary dimensional control, requiring the knob bearing to have more clearance around the knob spindle. This results in a loose fitting knob that will rattle and feel unstable in use. If the clearance using these inferior bearings is smaller, resulting in a tighter fit, the knob can seize on the spindle when the nylon material absorbs moisture and swells. Nylon can absorb more than 5% of its weight in moisture upon saturation and nylon is particularly prone to this property in hot and humid climates, such as southern Florida.

Fortunately, the flange bearings used by Schmitt & Ongaro are not subject to these pitfalls. Their bearings are precision machined to hold the dimensions of the bearings to tight tolerances, ensuring a perfect fit for effortless wheel movement. Furthermore, they are made of Delrin, a

marine-grade engineered plastic, which is selected for use in a bearing for its self-lubricating properties, and is ideal for a marine application as it does not substantially absorb moisture. Delrin absorbs less than 1% of its weight in moisture upon saturation. This combination of precision machining and material selection allows Schmitt & Ongaro's flange bearing to perform well even in extreme weather conditions.

For those desiring a steering wheel control knob with the smoothest feel and the fastest spin, Schmitt & Ongaro offers control knobs utilizing ball bearings, which is an upgrade from the flange bearings. Again, Schmitt & Ongaro sets a higher standard for materials and performance. Other manufacturers choose to use stainless steel material for the ball bearings. While stainless steel is a superb material, it does not offer the corrosion free property demanded by Schmitt & Ongaro for their control knob bearings. One weakness of stainless steel bearings occurs when a manufacturer may choose not to passivate or electro-polish their bearings, making them prone to oxidation. In addition, wear on the surfaces of the ball bearing and contact stresses within the bearing between the balls and the race can lead to small fissures, which are then subject to crevice corrosion.

The ball bearings used by Schmitt & Ongaro in their control knobs are made of glass balls and Delrin races. The glass balls are hard, very smooth, resistant to wear, and will not corrode. The combination of glass balls and Delrin races provide extraordinarily fluid, fast spinning action, while having the durability to last a boat's lifetime and not being subject to corrosion.

Schmitt and Ongaro's new FX and Elite line of Vision steering wheels are outfitted with the finest quality components; the Vision FX model with the Delrin precision flange bearing, and the Vision Elite model with the enhanced glass ball bearings and Delrin races. Both models offer customers smooth quiet turning and corrosion-free operation, just another example of Schmitt & Ongaro's commitment to building a premier product. Schmitt & Ongaro warrants all of its stainless steel steering wheels for the lifetime of the original owner against material defects, workmanship or corrosion.

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