



RITCHIE®
NAVIGATION

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243 Oak Street, Pembroke, Massachusetts 02359

FOR NEW BOATERS, LEARNING COMPASS CONSTRUCTION ADDS VALUE

Most new boaters know the basics of how a compass works. But understanding what's inside provides the foundation to use this navigation tool to its maximum potential and adds value to the boating experience. Ritchie Navigation, the world's largest and oldest manufacturer of magnetic compasses, offers a brief overview of the inner workings and construction of a marine compass.

The most noticeable feature of a compass is its dial. Often called a card, it can be flat, where the viewer looks down on it, or dual-sided, such as Ritchie's CombiDial™, that can also be seen from the side. Typically, it has 30° directional numbers and 5° marks. This is protected under an impact- and scratch-resistant dome.

The numbers and marks are used in combination with lubber lines inside the dome. These are what the helmsman views to read the boat's heading. The one in the back is for when standing in front of the compass, those on the side set at 45° are useful for when steering from a side of the boat such as a sailor might.

Inside, the card sits on a bi-axis gimbal system. This keeps it level during pitch, roll and heel, and prevents the card from bottoming out. Ritchie uses hardened steel with a scientifically-matched triple-cup sapphire jewel. A fluid baffle enhances steady performance while a roller diaphragm allows for temperature and pressure changes.

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Many compasses include an integrated lighting system. Ritchie's NiteVu™ illumination uses low-wattage LEDs that run off a common 12V onboard power supply. Some models also have a built-in movable sun shield to reduce glare on the dome.

The housing is made from stainless steel, brass or a marine-grade polymer. Depending on the application, a compass can be mounted flush to a vertical or angled surface, on a vertical bulkhead or dash or on top of a binnacle. A bracket mount creates maximum adaptability.

Many new boats only offer a compass as an option and instead rely on a GPS connected to a multifunction display for navigation. But having one on board is crucial if electronics fail. It can also do something a GPS cannot: provide a highly accurate heading when stopped or moving slowly such as in fog. While compass installation is straightforward for a DIYer, it's important to take the time to adjust it for deviation. Ritchie offers a wealth of educational materials to assist the boat owner with this.

For over 160 years, Ritchie Navigation has guided generations of professional mariners and recreational boaters across virtually every navigable waterway. The company manufactures in the USA a wide range of compasses and related accessories.

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