Installation, Compensation, and Maintenance Instructions

RITCHIE® Trek™

Compass Models

Made in U.S.A.

CAUTION:
All Magnetic Compasses are vulnerable to magnetic interference, which will produce errors, called deviation. It is the Owner/Operator and/or Helmsman's responsibility to make sure the compass is properly installed and compensated. Compensation is the act of correcting for deviation. Magnets (speakers, microphones etc.), ferrous metals (steel, iron, etc.) and current carrying devices are common causes of deviation. It is important to understand that magnetic compasses point toward Magnetic North. There is a difference between Magnetic North and True North, and that difference is called variation. Variation differs depending on your geographical location and can be determined by referring to a local chart.

Instructions

Please read the Instructions completely before beginning installation.

Selecting the Proper Location

The compass should be close enough to the helmsman and positioned below the helmsman's line of sight so it is easily read during normal operation.

You will need a flat and level surface (when the boat is on a level keel). Many boats have a curved mounting surface and if this is the case, a fairing block should be utilized to bring the compass to a level position.

Select a location that has no more that 20 degrees deviation on any of the four **cardinal points (N S E and W).** Most compasses have a built in compensation system that will correct for fixed deviation up to 20 degrees. It is important to realize that proper compensation is not possible when a compass is subjected to a magnetic field that is variable. Some shipboard devices can cause varying magnetic fields. Devices such as windshield wipers, high current carrying wire and even some steering wheels must be considered when selecting a location for your compass.

Testing Your Chosen Location

Use your compass to test a location. There are two brass rods near the bottom of the compass, which rotate 360 degrees; the slotted ends may be all that is visible. **These compensation rods are used to correct your compass for deviation**. When testing a location, you do not want pre-set corrections in your compass, so neutralize the comp-rods by setting the slots in a horizontal position.

Begin your test by holding the compass away from any possible interference and observing the compass reading. Then move the compass into position carefully, keeping it pointed in the same direction. If the compass reading is different without a change in direction you are observing deviation. You need to find a location that has less than 20 degrees of deviation on the 4 cardinal points if you intend to adjust your compass using the compensator rods.

After finding a location you should test for intermittent changes in the magnetic field. With the compass mounted temporarily in its intended position try moving the steering wheel, throttle controls or anything else that might cause deviation. It is also advised to turn electrical devices off and on. Please be advised that a changing magnetic field cannot be corrected with compensation and you will need to find another location for your compass.

Installation (all Models)

Mounting the Compass

Great care must be taken to mount the compass so that it is aligned with the keel of the boat. **An alignment error is a constant error on all headings caused by the compass not being pointed in the same direction as the boat**. One recommendation is to temporarily mount the compass using one fastener so if an alignment error is detected it is easily corrected. Masking tape can be used as a reference or to keep the compass steady during installation.

Due to variations in deck materials, mounting screws are not supplied. Use hardware that is suitable for your specific installation. SELECT MOUNTING HARDWARE THAT IS NON-MAGNETIC. Most quality stainless steel and solid brass fasteners can be used. If you are unsure test them with a magnet.

Specific model installation instructions are as follows:

TR-31, TR-31G, TR-31W Bracket Mounts
The universal bracket allows the TR-31's to be mounted on a wide variety of surfaces. Before attaching the bracket, it may be necessary to re-position or remove it. This is done by loosening or removing the clamping screw. The bracket can be attached to the mounting surface using the double-sided tape (provided) or two no-magnetic screws (not provided). To adhere the tape properly the surface must be clean, dry and warm (above 60 degrees F, 15 degrees C). If the mounting surface is not level, loosen the clamping screw and level the compass making sure to re-tighten the clamping screw.

TR-33, TR-33G, TR-33W Surface Mount
Separate the housings as instructed in the Light Replacement section of this manual. Using the base as a template, mount as instructed above (Mounting the Compass). The base can be attached to the mounting surface using the double-sided tape (provided) or two no-magnetic screws (not provided). To adhere the tape properly the surface must be clear, dry and warm (above 60 degrees F, 15 degrees C).

Light Replacement
Separate the two housings; by holding the compass in your hands (unless attached to the deck), use thumbs to press firmly one of the "PRESS TO OPEN" pads, then press the other. Push the Upper Housing towards the front of the compass to remove it. Remove the capsule to access the light. (On the TR-31 models, first move the bracket out of the way)

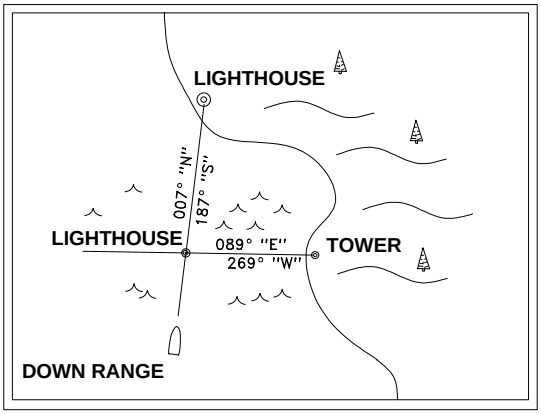
Reassembly
Center the capsule in the lower housing. Align the centering key in the bottom housing (above the Ritchie Logo) with the corresponding keyway in the upper housing. Holding pressure on the upper and lower housing, apply pressure evenly starting in the front and working back on the left and right until it snaps together.

Night Light Wiring (all Models)
All models are supplied with a 12-volt night lighting system. To connect lights to a 6 or 24-volt system, alternate bulbs are available. Contact the factory with your model and serial number for a part number and price.
Tel. 781-826-5131 Fax. 781-826-7336 E-mail service@ritchienavigation.com

Lights should be wired to an appropriately fused 12-volt circuit in your electrical system (i.e. running light circuit). Connect one wire to ground and one to positive, observing polarity is not necessary with Trek compasses.

Compensation
A built-in correcting magnet system consists of two sets of magnets fixed to two adjusting rods with slotted ends. The slots should be horizontal before starting the adjusting procedure. A small non-magnetic screwdriver is provided for this purpose.
Before starting compensation, make sure you have a suitable location (see Testing Your Chosen Location).

Marine compensation
Step One. With the compass in its intended position, but not finally secured, (see Mounting the Compass) select a course on your chart using two fixed aids that are within ten degrees (10°) of the North/South line. Try to select this course so that you can maneuver your boat "down range" of the marks selected (See example).



EXAMPLE

Step Two. From a position down range of the North/South marks, and keeping the marks lined up, run the boat visually along the Northerly course selected. Turn the port/starboard compensator (slot is facing starboard) until the compass reads correctly.

Step Three. Simply repeat steps 1 & 2, except this time, using an East/West course and the fore/aft compensator (slot is facing aft).

Step Four. Check compass alignment by running the boat in a Southerly direction, again keeping the mark

lined up. If the compass is not correct at this time, there is an alignment error. To correct, rotate the compass itself to remove one half of this error. Repeat steps 1, 2 & 4 until your North/South line is correct then repeat step 3.

Step Five. Install remaining fastener (s) if not all ready done, taking care not to disturb alignment.

Automotive compensation
Use a large parking area to compensate. Place objects at North, South, East and West to aid in compensation.

A small non-magnetic screwdriver is provided for adjusting purposes. When making adjustments, have vehicle engine running and accessories in normal operation condition. With slotted ends in neutral position, adjust as follows.

1. Head North. Turn the side corrector until compass reads north.
2. Head East. Turn front corrector until compass reads east.
3. Head South. Turn side corrector and correct for ½ of error if any observed.

ALL Models
If you feel that the deviation on your boat is of an unusual nature, the services of a professional compass adjuster will be a wise investment.

To assure accuracy on all headings, check for deviation every thirty degrees and record any deviation on a deviation card. We recommend checking at the start of each boating season, and any time new equipment is added near the compass, for deviation.

Maintenance
Protect your compass from the sun when not using your boat. Strong sunlight may decrease the life of your compass.

Ritchie compasses require very little care. To remove salt spray deposits or dirt, rinse the entire compass with clean, fresh water and wipe carefully with a damp cloth. **Important Note: Never Use Chemical or Abrasive Cleaners.**

Night Lighting Systems
Ritchie's night-lights are designed to last for years of use. If you need to replace one, contact the factory with your model and serial number for a part number and price. Tel. 781-826-5131 Fax. 781-826-7336 E-mail service@ritchienavigation.com

Warranty:
We warrant all Ritchie Magnetic Marine Compasses to be free of defects in workmanship or materials. If within three years of purchase date, a compass fails to give satisfactory service, it will be repaired or replaced without charge. This warranty does not cover breakage through accident or misuse. Replacement or repair will be made if the instrument is returned prepaid to a Ritchie Service Station or directly to E.S. Ritchie & Sons, Inc., 243 Oak Street, Pembroke, MA 02359.