

# GLOBE MASTER SERIES

**INSTRUCTIONS**  
for all **MODELS**

**RITCHIE**

## DESCRIPTION

All Globe Master compasses are internally gimballed fore and aft and athwartship providing an unusually steady dial and assuring a vertical lubber line under all conditions.

To assure maximum performance and accuracy from any magnetic compass, a mounting area must be selected which is as free as possible from local magnetic influence, particularly of a moving nature, such as a steering wheel with a steel core. The effect of such a constantly moving, highly magnetic material is impossible to overcome by compensation. All electrical components such as wind indicators, meters, tachometers, gas detectors and particularly hailleurs should be kept as far away from the compass area as possible. Consideration should also be given to magnetic material in the cabin adjacent to the compass for a magnetic field can penetrate wood and fiberglass.

If the surface of the mounting area is curved or angled; a fairing block should be made to go between the compass and the surface to give the instrument a level position.

## ALIGNMENT AND INSTALLATION

Due to the variations in bulkhead and deck materials, attaching screws are not supplied. Use through bolts with washers and nuts if possible, otherwise use self-threading screws suitable to the deck material. **ALL FASTENERS MUST BE NON MAGNETIC.**

Place the compass on the selected mounting area to make sure that there is sufficient room for it. A mounting template for use in alignment and the location of various holes is provided where required. In use, the template is taped to the deck securely on the mounting area with the center line parallel to the keel and pointing forward as in Fig. 1. For a flush mount model, cut out the mounting hole and insert the compass with the long lubber line forward and in line with the center line. If the compass is a deck model, simply place the compass on the circle indicated on the template and have the long lubber line forward and in line with the center line.

The compass may be attached to the deck at this time, but it is preferable to tape the compass firmly in place deferring drilling the attachment and light wire holes until after compensation as this allows for more exact adjustment.

If a template is not provided, determine and mark the center point of the mounting area. Through this point draw a center line parallel to the keel as in Fig. 1 and extend it fore and aft and extend it a few inches beyond the compass area. For deck models, draw a circle around the center point having a diameter equal to the outside diameter of the compass base. The compass will be seated within this circle.

Specific individual installation instructions where necessary are as follows:

### FD-500 and FD-600:

Remove the protective hood and the compass from the mounting flange by removing the two slotted screws located in the bezel. Do not disturb the phillips head screws as they secure the fluid sealing gasket. The cast bronze mounting flange may now be positioned on the mounting area, properly aligned and attached to the deck. Note that the mounting holes in the flange are slotted to allow for compensation realignment. A bedding compound may be used to seal the base flange if desired.

### SP-5:

This compass is designed for use on sailboats having pedestal steering equipment. Mounting holes on the adapter plate supplied with this instrument are compatible with Edson steering unit # 335 AC and Yacht Specialty units 101 and 104. Mount the white finished adapter plate directly on the pedestal top. The pedestal manufacturer usually provides mounting screws, but if they are missing, be sure to use non-magnetic fasteners. Place the compass on a flat surface and remove the black plastic lamp housing which is held in place by two slotted head screws. This allows the lamp housing and the polished stainless steel housing to be lifted off in preparation for mounting the compass unit. The light wire should now be installed through the 1/4" hole located on the aluminum inner housing or through the light wire hole located in the lower flange and attached to the 12 volt source. The compass may now be placed on the white adapter plate with the long lubber line forward and attached to it with the four screws provided. After adjusting the compass, hold the plastic lamp housing in one hand and feed it through the stainless steel binnacle from the bottom up through the top opening. This will allow the binnacle and lamp housing to be lowered simultaneously over the compass unit. Make sure that the light wire is fitted into the slot provided in the binnacle top. The two lamp housing screws may be secured at this time.

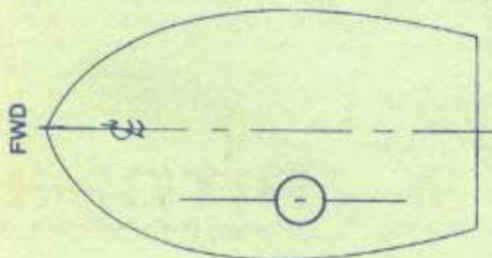


Fig. 1

**SB-510:**

Unless the bulkhead is of very heavy material, a backing block should be used to support the weight of the bracket and compass.

Remove the compass from the bracket by removing the two slotted screws that hold it in place on the bezel ring. Place the two mounting pads on the brass bracket pins. The bracket may be mounted on either side of the cockpit or on the bulkhead. With the ring level, mark the position of the three drill holes in each pad. Place the compass back on the bracket and rotate it in such manner that two of the mounting holes in the bracket and bezel ring coincide when the long lubber line is forward.

**F-500, F-600, B-500, B-600 and SF-500:**

Gently lift up on the light bracket. This will allow you to slip out the lamp housing and pull the light wire out of the flange hole. In the case of SF-500, note that there are two wires. Prepare the deck opening and align and install as described in the first paragraph on this subject. Put the light wire back through the flange hole.

**DR-5:**

Remove the stainless steel screws located on the back side of the sunshade and lift off the plastic hood. Place the compass on the aligned position area with the long lubber line forward and the fore and aft screw slots on the base flange intersecting with the center line.

**YB-500 and YB-600:**

Remove the two hold-down screws on the YB-500 (there are four on the YB-600) that hold the compass to the bracket. Place the bracket in position on the mounting area in such manner that the longest side of the base is at 90° to the center line of the boat. Fasten the bracket to the area and attach the compass to the bracket. Attach the spheres as outlined in the paragraph on quadrantal correctors.

**B-453, B-463, C-453, C-463:**

If purchased without the built-in compensator, follow the alignment and installation procedure outlined in the first paragraph on this subject. If purchased with a built-in compensator, remove the four screws at the outside of the bottom flange and remove the case and capsule unit from the compensator ring at the base flange. Place the compensator unit on the aligned area. Use great care to have the fore and aft compensator rod parallel to the keel as in Fig. 1. Then proceed as in the first paragraph under installation. Note that the holes in the compensator ring are slotted to permit fine adjustment after compensating. For this reason the ring may be fastened to the deck when placed in position rather than taping in position. For those models having spheres, see the paragraph on quadrantal correctors.

**515, 615, D-515, D-615, 515-E, 615-E, D-515-E, D-615-E, D-5-S, D-6-S:**

Turn the thumb screw at the top of the case and lift off the hood assembly. Remove the two screws at the top flange and take out the compass unit. Place the cylinder base on the mounting area and align and install as covered in the first paragraph under this subject. The name plate on the cylinder base will be facing the stern. Replace the compass in the cylinder with the long lubber line forward. Replace the hood. For compasses supplied with spheres, see the paragraph on quadrantal correctors.

**COMPENSATION:**

A built-in compensator is supplied as standard equipment for many Globe Master compass models. If not supplied, the compensator unit may be purchased separately as an accessory. The unit consists of two sets of magnets fixed to two compensating rods with slotted ends for adjustment purposes. The slots should be horizontal at the beginning of the compensation procedure. A small, non-magnetic screwdriver is provided.

Before starting compensation, check the area around the compass to make sure that all material of a magnetic nature is secure and in its sea-going position.

Using known courses, charts, buoys or landmarks, compensate as follows: — 1. Head the boat north and note any error of the compass reading. Turn the athwartship compensator rod until the compass reads correctly on this heading. 2. Head east by your previously determined course. Observe any error and correct by turning the fore and aft compensator rod. 3. Head south. Note the number of degrees of error and correct for half of the amount. If, for example, on the known south course the compass reads 170°, turn the athwartship rod until the compass reads 175°. Head west and correct for half of the observed error as in step 3 above.



Ritchie compensators are designed to correct for deviation up to 20°. For greater deviation, deck magnets may be used to supplement the built-in correctors, but first check to determine if there is some magnetic influence nearby that could be moved out of the compass field. Deck magnets are available from marine dealers or direct from E. S. Ritchie & Sons, Inc. Deck magnets may, of course, be used exclusively if your compass is not equipped with built-in compensators.

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 for changes in deviation.

For compensation on boats with a steel hull or steel pilot house, see also the paragraph on quadrantal correctors.

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

**D-515, D-615, D-515-E, D-615-E, 515-E, 615-E, D-5-S, D-6-S, 515 and 615:**

All of the above Globe Master models are equipped with built-in compensators. The ends of the compensator rods are accessible for adjustment by removing the snap-in protective caps in the binnacle base. The compensator rods should be locked in position after all compensation work is completed. This is accomplished by tightening the two screws located inside the base of the cylinder. For D-5-S and D-6-S, see also the paragraph on quadrantal correctors.

**DR-5 and SP-5:**

The compensating system on these two models is located at the base of the inside housing. Removal of the stainless steel outer housing is necessary to gain access to the slotted ends of the compensator rods.

**C-453, C-463, B-453, B-463:**

If these models are purchased with the built-in compensator, proceed as outlined in the paragraph on compensation in general, or in the case of B-453 and B-463, see also the paragraph on quadrantal correctors.

**F-500, F-600, FD-500, FD-600, SF-500, SB-510, YB-500, YB-600, B-500 and B-600:**

If your model of the above is equipped with built-in compensators, it will be noted that the compensating unit consists of compensating magnets fixed to two compensating rods with slotted ends located in a bronze cup secured to the bottom of the compass housing. Follow the instructions in the paragraph on compensation in general.

**QUADRANTAL CORRECTORS:**

Models YB-500, YB-600, B-453, B-463, D-5-S, and D-6-S are supplied with quadrantal correctors which consist of two soft iron spheres which bolt to the top of the bracket and slide along the length of the bracket for adjustment. These spheres are used only in correcting deviation errors peculiar to boats with steel hulls or a steel pilot house. The compass should be corrected first for errors found at the cardinal points: N-S-E-W, by using built-in compensators and/or deck magnets. After this has been done, the quadrantal correctors may be used to correct any errors at the inter-cardinal points, NE, SW, SE, NW. The amount of correction applied is controlled by moving either or both spheres along the slot of the bracket arm and then, securing them in position by tightening the brass nut under the arm to the hold-down bolt which is inserted downward through the sphere. Compensating for quadrantal error may be very difficult for the inexperienced and the services of a professional compass adjuster is recommended in most cases.

**LIGHTING:**

**D-515, D-615, C-453, C-463, FD-500, FD-600, F-500, F-600, B-500, B-600, B-453, B-463, YB-500, YB-600, D-5-S, D-6-S, 515 and 615:**

All of the above models take bayonet socket bulbs and are supplied with 12 volt bulb #53. If especially ordered, the following bulbs may be had: 6 volts #51, 24 and 32 volts No's. 1828. To replace the bulb, lift up gently on the top of the bracket and slide the housing out from under it. The cap may then be removed giving access to the bulb.

**515-E, 615-E, D-515-E, D-615-E, SB-510, SF-500 and SF-600:**

These compass models have two light housings attached to the bezel with two screws for each housing positioned adjacent to each of the 45° lubber lines. The bulbs are 12 volts with soldered pigtails.

**SP-5:**

The bulb is a 12 volt miniature #330. To replace, remove the two screws which hold the sunshade in place and lift off the sunshade. The bulb is then accessible by removing the lamp bracket which is held in place with two screws.

**DR-5:**

Supplied with 12 volt bayonet socket bulb #53 or on order with 6 volt #51, 24 and 32 volts No's. 1828. The bulbs are accessible by removing the sunshade.

Replacement bulbs are available from most marine dealers or directly from E. S. Ritchie & Sons, Inc., Pembroke, Mass.

#### **MAINTENANCE:**

Globe Master compasses require very little care. The plexiglass dome should be wiped carefully with a damp cloth to remove salt spray deposits and maintain clear vision. The same procedure should be applied to reduce corrosion and maintain appearance. If your model is chrome plated, we recommend the frequent application of any good paste wax to prevent premature deterioration of the finish. Conventional chrome plating creates a magnetic flux and, consequently, we must use a special method of plating which requires extra care in maintaining its appearance.

If a bubble forms under the dome, it indicates a faulty gasket or expansion chamber. Do not add fluid as it will serve as a temporary measure only and may increase the cost of repair. Only Ritchie special compass oil may be used in Ritchie compasses.

#### **GUARANTEE**

We guarantee all Ritchie products to be free of defects in workmanship or materials. If within one year of the purchase date an instrument fails to give satisfactory service it will be repaired or replaced without charge. This guarantee does not cover breakage through accident or misuse. Replacement or repair will be made if the instrument is returned to a Ritchie service station shown on the enclosed list or directly to the E. S. Ritchie and Sons Co., Inc., Oak Street, Pembroke, Mass. 02359, prepaid. Do not send via REA.