

IS YOUR COMPASS CORRECT?

I must admit, when I bought my boat there was no deviation card, and checking the compasses came pretty far down the to-do list. They seemed 'about right' after all. The good news is that your old compass won't have got any less accurate over time. What will have changed, however, is the addition of chartplotters, instrument heads, radios and speakers, all of which can knock your compass significantly off course, particularly if they are within one metre of the compass. Also, dangling binoculars, phones and other gadgets from your steering binnacle can add significant error. Be aware of heeling error too. If your keel is cast iron, as mine is, there's a chance it could induce compass error. You can check this by steering toward a fixed object, sheeting out to keep the boat upright, then sheeting in to induce heel, and watching if the compass moves.

Plastimo advise that correction is carried out by a professional, but it's perfectly doable yourself, with a bit of care.

QUICK COMPASS CHECKS

A professional compass adjuster working on a ship will use a tug to swing the stern of the ship around a fixed buoy and compare the steering compass to a series of transits to establish compass deviation. This isn't easy to do by yourself in a yacht, but there are simple, if marginally less accurate, ways to check. You'll need a hand bearing compass, a notebook, and access to your compass's correction screws. In the case of my Contest 101, this is a removable insert that slots beneath the compass, for which I need to remove the surrounding flange.



How to...

A quick guide to checking and adjusting your compass

**1 PICK A LANDMARK**

Find a landmark at least three miles distant. Close to slack water, motor round slowly in a circle, checking the bearing of the object on a hand bearing compass. If it remains the same, you are free from interference and can proceed with checking your deviation. Don't worry about the bearing changing. One degree over one mile is roughly 30m. At three miles you have 90m either side of your starting point before the compass will move one degree. If you are six miles distant, you'll have 180m either side to play with. As you're working between two magnetic compasses, you don't need to worry about magnetic variation.

2 SLOW CIRCLES

Motor in a slow circle again. Every 30° of course change, check the bearing of the object and check if the bearing to the landmark has changed. Make a note of any difference for each bearing. Repeat the process, turning the boat in the opposite direction to check your observations.

**3 HANDBEARING COMPASS**

An alternative to this process is to simply compare your hand bearing compass to your steering compass. Stand on the centerline and sight the slot in the mast with your hand bearing compass. Run the boat along a course N, S, E and W and compare the difference to the main compass.

4 FINDING DEVIATION

If your compass is accurate within 7°, it's best to leave it as it is and to draw a deviation card to factor in any error. If your error is between 7° and 20°, you can correct the error using the compensating magnets or insert, and then repeat the process, drawing a deviation card if necessary. If the error is more than 20°, it's time to identify what's causing the deviation.

5 CORRECT THE ERROR

Compass correction magnets work on the cardinal compass points. Run the boat on a northerly course by hand bearing compass and then turn the North-South correcting screw until the steering compass points north. Then steer an easterly course and do the same with the East-West screw. Next, steer a southerly course. If there is still deviation, adjust the screw to reduce this error by half. On a westerly course, again correct the screw to reduce the error by half. Repeat this process until you have eliminated as much error as possible on all cardinal points.

**6 DEVIATION CARD**

Once you've done this, you'll need to redo your deviation card. Mark up your compass error every 30°, and then draw a line between each of these points to give you a deviation curve. You'll need to take this error into account every time you move from True to Magnetic.

