



# Converting Magnetic & True Bearings

# Introduction

**Most mariners need to think carefully to ensure they convert bearings from magnetic to true and vice-versa correctly.**

**This presentation shows you an easy foolproof way of getting it right everytime.**

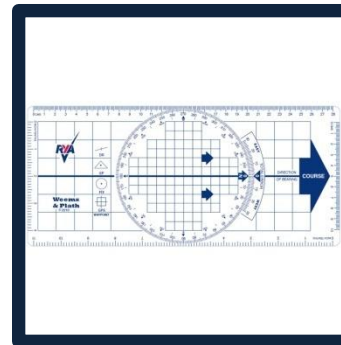


# You Will Need

**RYA Chart 3**



**RYA Chartplotter**



# True to Magnetic



# True to Magnetic

Lets say you have worked out a course to steer for your yacht of 240 degrees (T)

To convert it to a magnetic bearing

First, dial the course into your chartplotter





# True to Magnetic

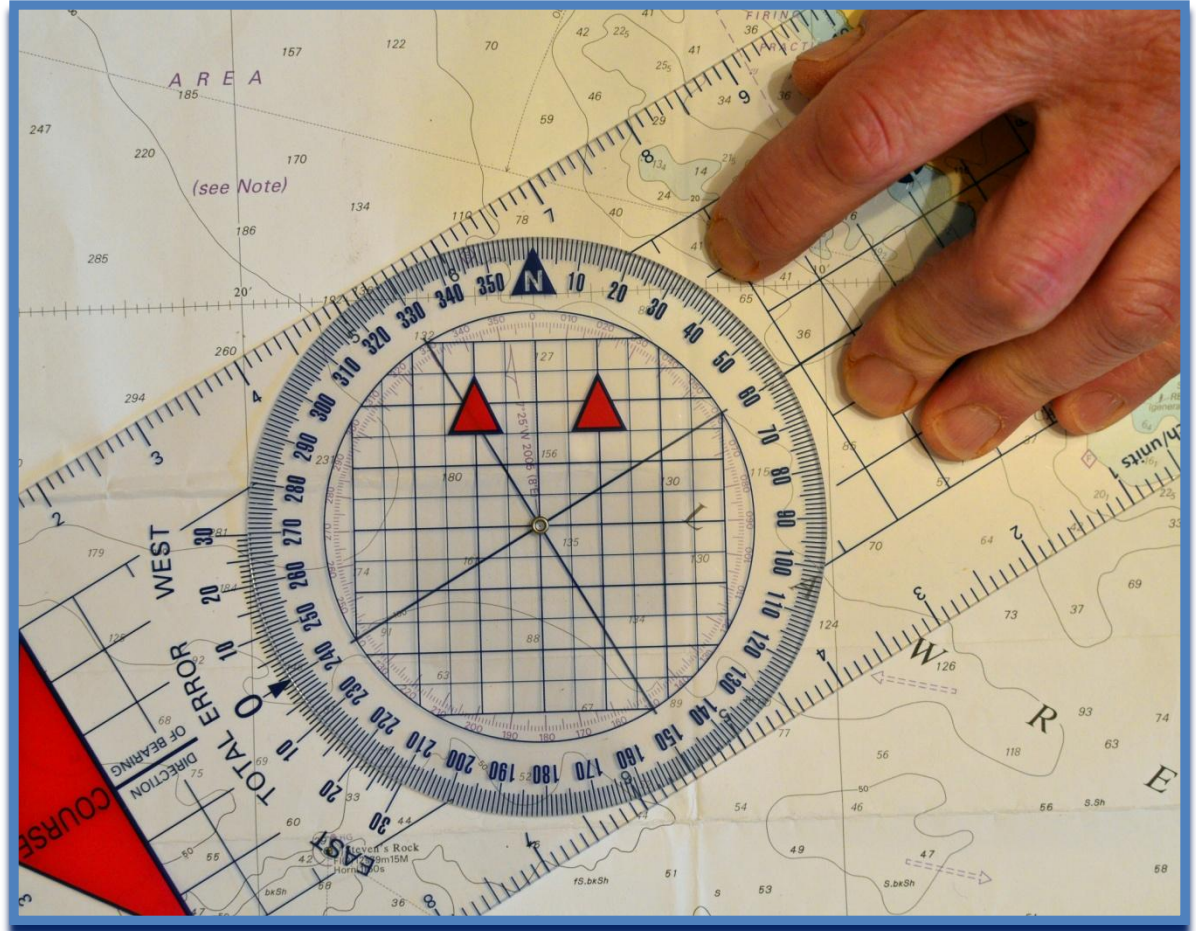
Now look on the chart and find the compass rose nearest to your position

You can see it is showing variation of approx. 7 degrees West



# True to Magnetic

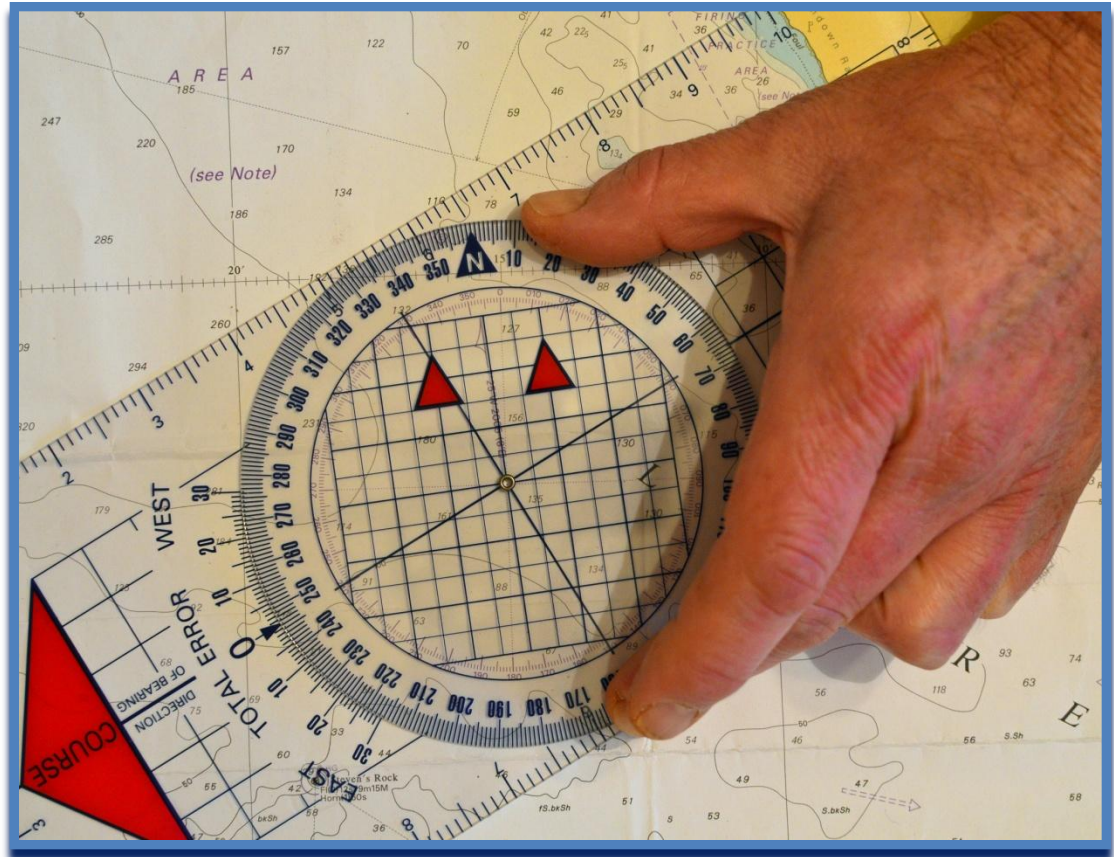
Next, put the chart plotter over the compass rose ensuring it is dead centre and aligned to the **TRUE NORTH** line on the compass rose





# True to Magnetic

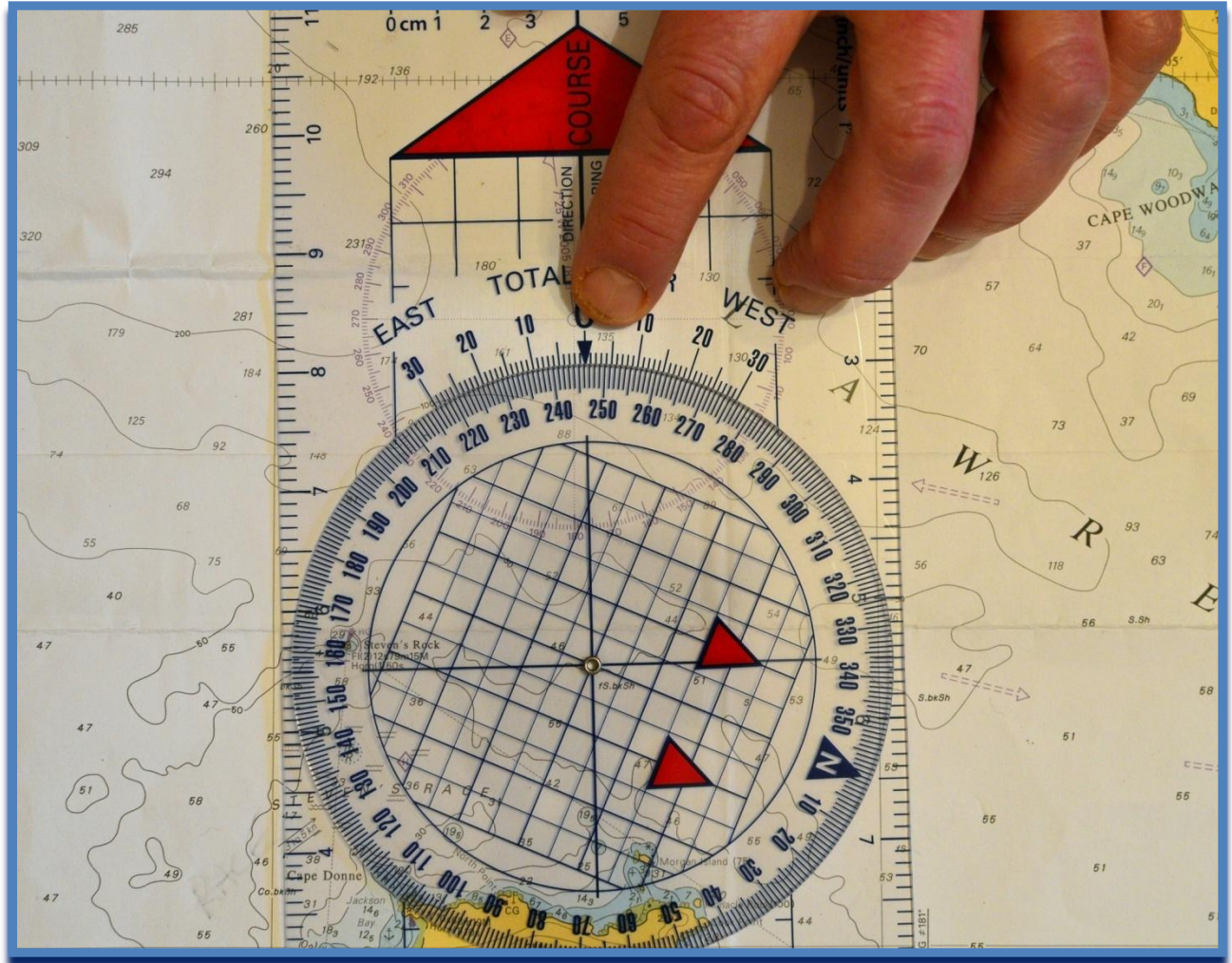
Now twist the rose on the chartplotter around until the north lines up with the **PURPLE MAGNETIC NORTH** line on the rose on the chart





# True to Magnetic

You can now read off the converted magnetic bearing of 247 degrees



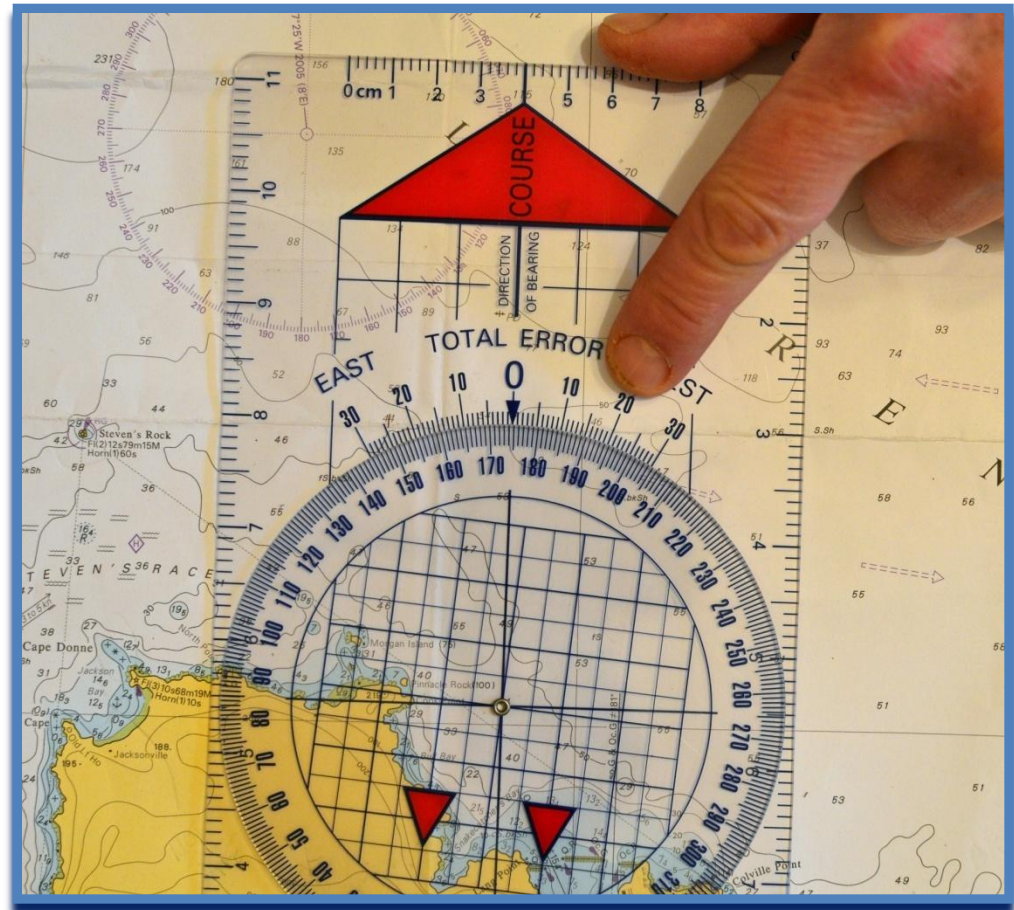
# Magnetic to True



# Magnetic to True

Lets say you are on a passage and want to plot a bearing of 175 degrees (M) you took with your hand-bearing compass of a lighthouse

First, dial in 175 degrees into your chartploter





# Magnetic to True

Now look on the chart and find the compass rose nearest to your position

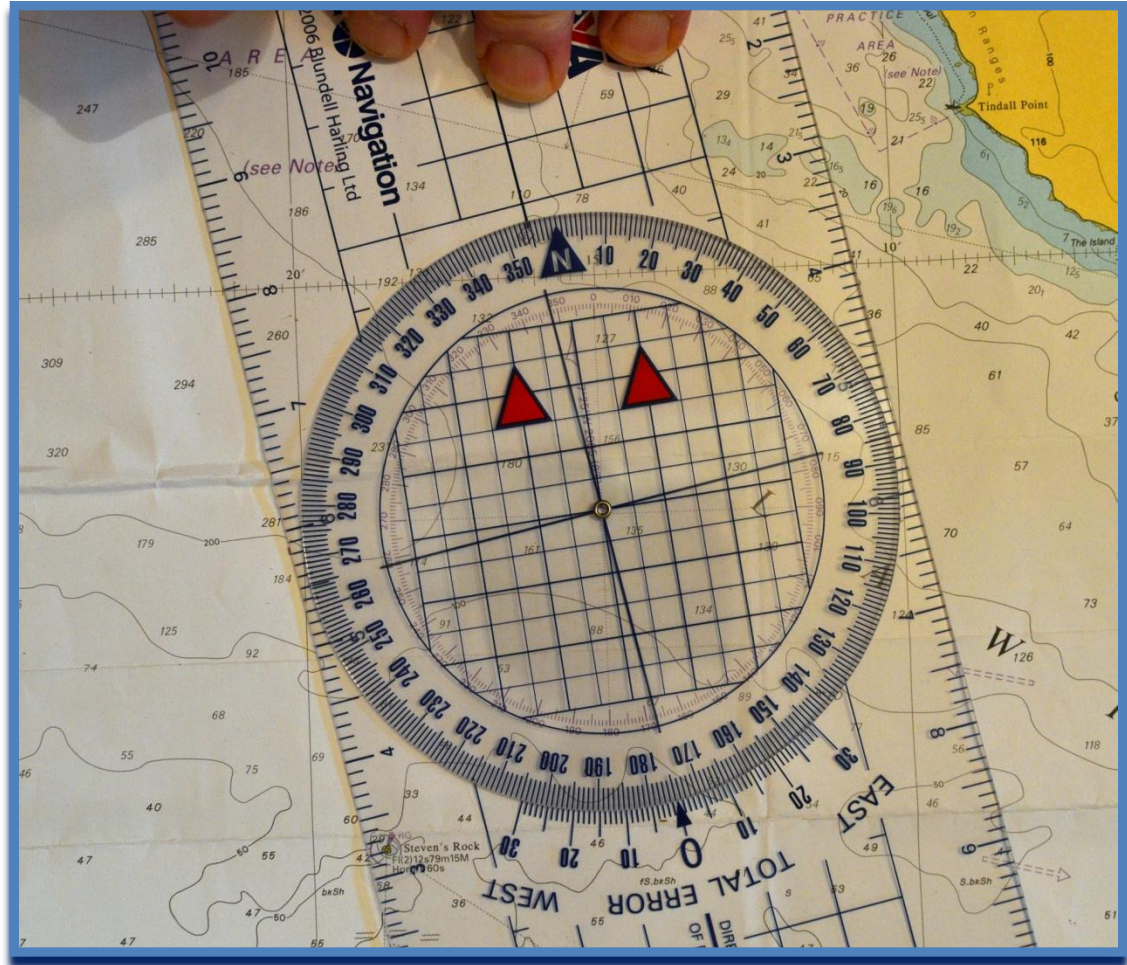
You can see it is showing variation of approx. 7 degrees West





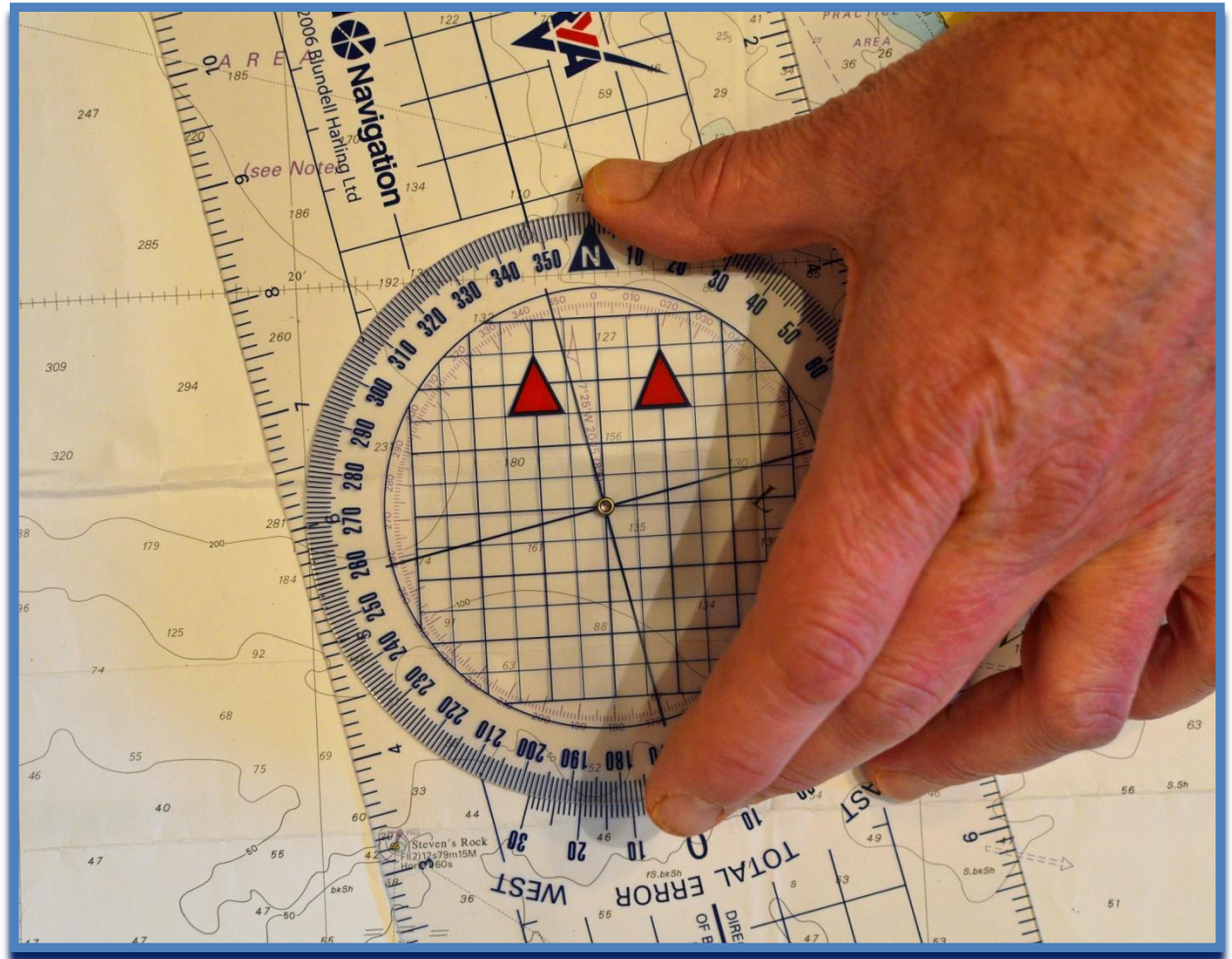
# Magnetic to True

Next, put the chart plotter over the compass rose ensuring it is dead centre and aligned to the **PURPLE MAGNETIC NORTH** line on the compass rose.



# Magnetic to True

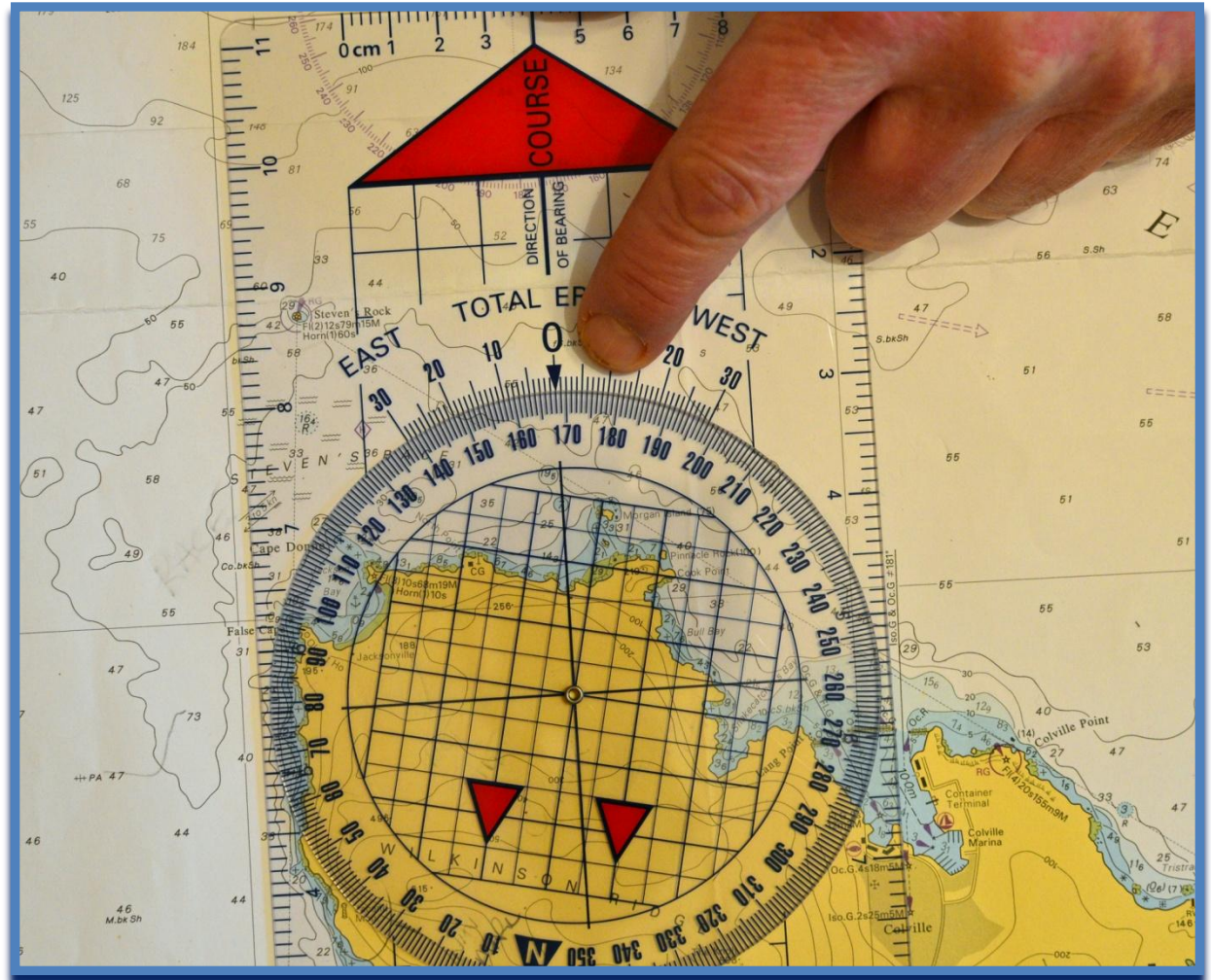
Now twist the rose on the chartplotter around until the north lines up with the TRUE NORTH line on the compass rose on the chart





# Magnetic to True

You can read off the converted true bearing of 168 degrees



# Considerations

Always use the compass rose on the chart nearest to your position

Check the date of the chart and ensure it is reasonably up to date

If old, check the annual deviation figure to see if there has been a **substantial change in the variation figure** you intend to use





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## Further Reading



We highly recommend Tim Bartlett's  
**RYA Navigation Handbook (G6)**

You can buy a copy of this book by visiting our on-line shop

[www.penguinsailing.com](http://www.penguinsailing.com)