



**CONTESSA 32 CLASS ASSOCIATION TECHNICAL PAPER**

**FITTING AND USING A WINDPILOT WIND VANE SELF STEERING SYSTEM**



*This document and the information contained therein remains the property of the Contessa 32 Class Association. The document may not be reproduced or the contents transmitted to any third party without the express consent of the Contessa 32 Class Association. In the absence of any specific provision, this document has consultative status only. It does not constitute a contract between the Contessa 32 Class Association and any other party. Furthermore, the Contessa 32 Class Association does not accept liability for the contents of the document, although it has used reasonable endeavors to ensure accuracy in the information provided*

*The Contessa 32 Class Association does not accept liability for any damage to yourself or your property following the use of information in this document. If you are unsure about any of the activities or procedures in this document please contact a trained professional.*

*Working in and around boatyards can be dangerous, please ensure you follow the safety guidelines of any products used and wear appropriate protective clothing when necessary.*

## DOCUMENT INFORMATION

<b>Technical Paper Name</b>	Fitting and Using a Windpilot wind vane self steering system
<b>Original Contributor</b>	Mark Wisdich "Star-ven" & George Isted "Concerto"
<b>Edited by</b>	George Isted
<b>Date of Original Creation</b>	Jan 2010

## OVERVIEW

There are very few people in this world that enjoy helming for hours on end let alone days so for those of us that like to sail short-handed a self-steering system of some description is essential. To achieve this many Contessas are fitted with electric autopilots such as the Raymarine ST2000/SPX1 or Simrad tiller-pilots however these can consume a significant amount of power.

Autopilot power usage is fine for coastal cruising but if sights are set of sailing further it may be necessary to consider a "power-budget". A second consideration is that the ST2000 is a little under-rated for a Contessa 32 and on a long trip in potentially heavy weather we suspect it would not be up to the job. Finally, as with all things electrical on a boat, there is the potential for water ingress and this is far from uncommon with tiller pilots.

## CHOOSING A SYSTEM

There are two main types of wind vane self steering systems available and there are strengths and weaknesses for both. Having researched the options our preference was for a servo-pendulum type system as it can be argued that it is ultimately more powerful and perhaps more tolerant of poor boat balance. The alternative is a purely wind-powered system where the wind vane can either control a secondary rudder, as is the case with the very popular "Hydrovane", or have lines running to the main rudder.

In a Servo-pendulum system the wind vane controls the angle of a blade being trailed through the water, when off-course the wind vane is blown over and changes the angle of this trailing blade. When angled the blade swings out to port or starboard (depending on the angle) and attached to the top of the swinging blade are control lines that run to the main tiller of the boat. Once back on-course the wind vane returns to its normal upright position and the blade in the water becomes central again. It all sounds complicated on paper but in reality, when you see it working, the system all makes sense and it's a beautifully efficient design. Manufacturers of servo-pendulum systems include Windpilot, Aries and Monitor.

The downsides of using a wind vane self steering system is the cost of purchase, which is significantly more than an electric autopilot. In addition the installation can take some thinking about and once installed you will have added some weight just where it is not wanted – at the extreme end of the boat. With the weight issue in mind my preferred choice was the WindPilot Pacific as it is lighter than both main competitors and has an excellent reputation. Even lighter than the Windpilot and somewhat cheaper is the Navik system marketed by Plastimo but I have heard reports of it being a little too lightly built and obtaining spares can be difficult.

## FITTING INSTRUCTIONS

The first thing that should be done is brew a cup of tea and read the standard fitting instructions, these are very good and should get you most of the way there. There are also a selection of photographs on the WindPilot website that are a handy guide. The notes below should be treated as an addition to the standard instructions and covers any peculiarities that the Contessa offers up

Start the process by reversing into a marina berth so that you can work on the stern directly from the pontoon. It is possible to fit the system with the boat out of the water but it is easier to do when on the water as the waterline level is obvious and you are not wobbling around at the top of a ladder with a heavy lump of aluminum. It is also worth making sure that the boat is in cruising trim so that the waterline you are working to is realistic.

Ideally, once fitted, the clamp that holds the servo blade should be a little above the waterline and it is worth remembering that the waterline will be a little higher when sailing along. If buying a new windpilot direct from Germany it should be supplied ready to fit a Contessa but even so for "Star-Ven" it was necessary to attach it at the highest point possible. The picture below shows the WindPilot fitted, ideally it would be better to mount approximately 50-75mm higher than this but that is not possible.



When looking and feeling inside the stern locker you will find the step (or shelf) that is built into the top of the hull, the deck is bonded onto this when built. It is possible to carefully measure from this shelf down to the bottom of the transom and also measure up to the taffrail (remembering to add the thickness of the deck). Using these measurements you can work out with reasonable accuracy where this shelf is when drilling through from the outside. We specifically won't give you any measurements here as these may vary slightly from one boat to another.

On the transom it is necessary to find the centre of the boat and mark a line that is exactly horizontal, from this and using the measurements taken from the inside it should be possible to offer up the mounting bracket and mark the fitting holes.

You can see from the picture below the vinyl lettering has been removed, fortunately this was quite easy with the use of a hair-dryer, here you can see that the mounting holes have just been drilled. A very small pilot hole was made initially so it would be possible to check where this comes out from the inside before committing with the big drill-bits.



The main challenge when fitting the unit, apart from the bravery pills required to drill 4 holes in the stern of your Co32, is access to the holes through the stern locker. Make sure you have available as many assorted socket extensions as you can get hold of! Very long thin arms help too. The nuts inside the stern locker will need large penny washers as a minimum however large backing pads are not essential as there is not a great deal of pressure on the stern fittings as the main rudder still does the steering.

It is important to use a suitable chromate barrier paste such as Duralac between the Stainless bolts and the aluminum of the windpilot. (Star-Ven has had two spinnaker poles and a mainsheet track fail due to aluminum/stainless electrolytic corrosion). The alternative to Duralac that Windpilot recommends is Lanolin. Once the mount is bolted on and the Windpilot is fitted in position there is some adjustment available to ensure that the top tube (that the vane is attached to) is vertical. The easiest way to achieve this is to stand back and line it up with the side of a building (not to be done in the Italian town of Pisa).

With the Windpilot mounted on the transom the next task is to organise the lead of the control lines. If you purchased your Windpilot second hand and from a boat with wheel steering it is worth obtaining the proper chain and tiller fittings. You will also require an extension bar with lead blocks on each end, this bar attaches to the top of the transom fitting and allows a much better lead position.



From the blocks on the extension bar the steering lines need to run through blocks attached to the lower rung of the push-pit and then onto blocks sitting each side of the tiller. At least one Contessa owner has modified the seat-back at the aft of the cockpit so that the lines can run directly from the windpilot to the tiller turning blocks, this was achieved by cutting some large holes and glassing in tubes that the lines pass through.

It is worth buying a couple of very small carabinas for the control lines where they connect to the chain, alternatively connect the tiller turning blocks with carabinas. This makes it much quicker and easier to disconnect and clear away the steering lines when not required.

The photo below shows where to fit the tiller chain clip and routing of the lines.



### TIME FOR A SEA TRIAL!

As with the fitting instructions the information provided by Windpilot is very good, however below are some further observations....

Make sure that all lines are tight and you have a good idea of how the Windpilot should work. Fit the wind vane and make sure it isn't backwards - this is a very common error.

The key things to do are:

- 1) Get the boat sailing on a steady course before connecting the windpilot.
- 2) Get the vane pointing at the wind so the vane is upright with no force blowing it in either direction.
- 3) Check that the angular measurement on the windpilot corresponds with the angle of the apparent wind.
- 4) Connect the chain, using the links to compensate for any weather helm you may have
- 5) It should now be steering the yacht!

If the Windpilot isn't doing what you expect the questions to ask are?

- 1) Has the angle of the wind to the boat (the apparent wind angle) changed? Remember that if the wind speed changes the boat speed changes so the Windpilot course will change.
- 2) Is there any slack in the system?
- 3) If there is a moderate sea running, could you steer a better course? The windpilot will take a few seconds to get the boat back onto course if knocked off it by the waves, but the average course and VMG (velocity made

good) will often be very good.

4) Has the wind increased so there is much more weather helm? If so trim some sails.

But the most important point to remember is that despite the apparent initial complexity (and the many words above), once you have it on the boat it is a really easy bit of kit to use. We find that it only takes a couple of minutes to fit the wind vane and get it up and running when we are sailing and it steers a much better and more reliable course than our autohelm. The autohelm now only ever gets used for motoring in calm weather.

## SUPPLIERS AND ADDITIONAL INFORMATION

### **WINDPILOT.**

Email - [Peter@windpilot.com](mailto:Peter@windpilot.com)

Web - [www.windpilot.de](http://www.windpilot.de)

Address - Bandwikerstraße 39-41, D 22041 Hamburg, Germany

Phone +49 (0)40 652 52 44

If you would like any additional information about how to proceed with upgrades or repairs to your Contessa 32 an excellent forum is available on the Association website where you can post questions and draw on the collective knowledge of many owners.

Contessa 32 owners are in the very lucky position to be able to contact the original and current manufacturer of Contessa yachts, the team at Jeremy Rogers Yachts are extremely helpful and will offer free advice to owners as well as historical information about your particular Contessa. Jeremy Rogers Yachts can provide a range of spare parts and will carry out repairs both small and large, their contact details can be found on the Jeremy Rogers website.

NOTES