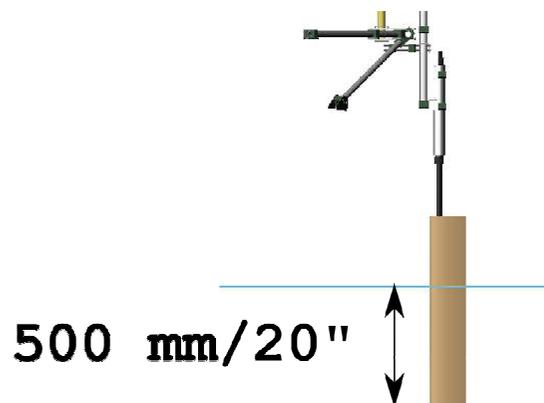


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087.1 AT HOME:

After mounting the depth of the pendulum rudder should be 500 mm or 20" under water at rest.

If this means that the mounting would be too high for your boat, mount it as high as you can and reduce the length of the pendulum rudder later on.

Mark your pendulum rudder with a marker to show the 500 mm/20" depth.



087.4 Assemble 4 sets of stepped hinges, 2 left, 2 right, using tube clamp halves, m6x50 mm screws, m6x18 mm washers (on both sides of the stepped hinges) and m6 nuts.



087.2 There is one long carbon fiber tube included with the kit as standard and you may have ordered a second one.

If you have one tube, cut it in half:

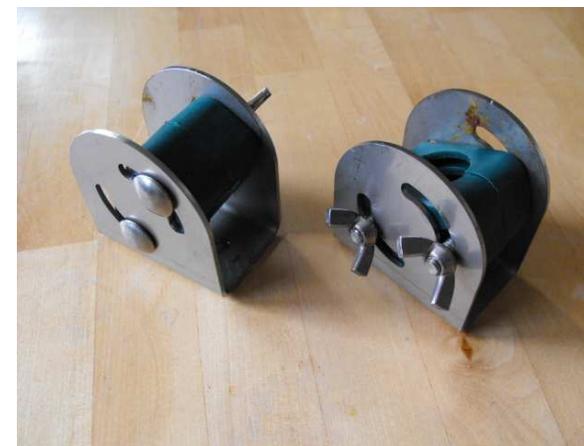
Put paper tape around the tube and mark around the circumference.

Then cut along the line, rotating the tube as soon as the blade goes through the tube wall.

DO NOT CUT THROUGH IN ONE GO! That will result in a very ugly

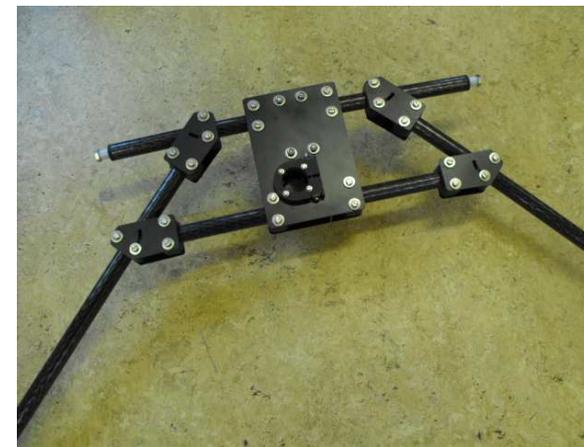


087.5 Add them to the vane base assembly



087.3 Add tube clamp halves, m6x50 mm mushroom head square neck bolts and wingnuts to 2 boat clamps.

Leave the 2 others unassembled for later



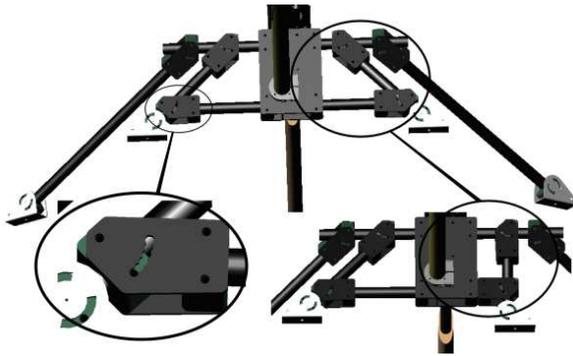
087.6 Add the mounting tubes for practice.

Choose the widest setting for a standard mounting...

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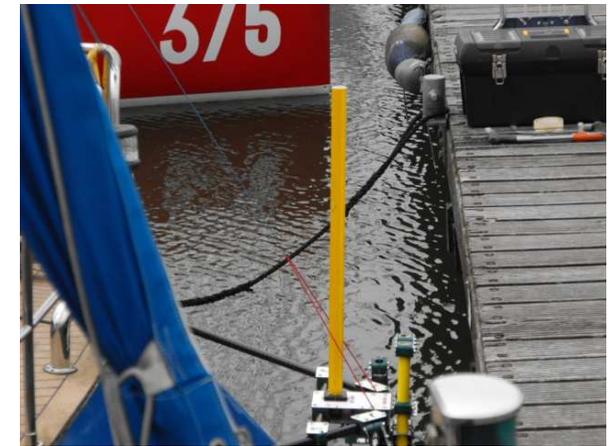


087.7 ...If that does not suit your situation, choose a narrower one. This may require you to shorten the 400 mm front carbon tube and/or reset its position in the vane base.

The stepped hinge can be set in 6 different positions. If that still does not suit your situation, file away the barriers between two settings.



087.8 AT THE BOAT  
Connect the two mounting tubes or the two full length ones to the system...



087.9 Suspend behind the boat, using a piece of string to get the vane mast vertical.



087.10 Check that the pendulum rudder is far enough behind the transom to move freely from side to side. ALSO CHECK if it does not touch any part of the boat BELOW THE WATER LINE!

Now estimate where to cut the mounting tubes.



087.11 Add the boat clamps to both of the the ends of the tube using tube clamp halves, m6x50 mm mushroom head square neck bolts and m6 wing nuts.



087.12 Rotate the combined boat clamps so the point where it meets the transom is flush.

CHECK and re-check:

Is the height of the pendulum rudder OK?

Is the position centered?

Is the vane mast vertical?

Is the position of the holes you will need to drill accesible from the inside?

Then apply tape...

## Assembly manual



087.13 ...to both sides.



087.14 Mark the 2 small notches on each boat clamp



087.15 Slide the system away from the position and hold an unused boat clamp in the vacated spot....



087.16 ...Then mark the hole with a pencil



087.17 Also do this on the other side, then drill the holes in the marked position



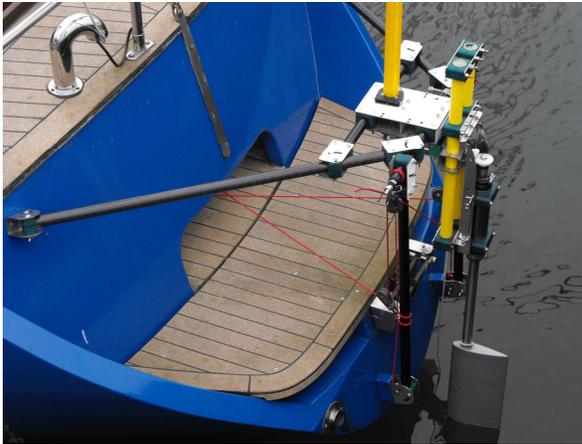
087.18 Connect the boat clamps to the transom with bolts and nuts (not included)

Then reconnect the system with the tube clamp halves and mushroom bolts and wing nuts.

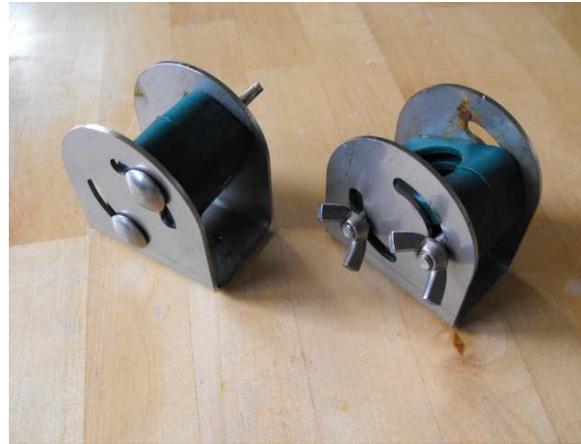
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087.19 We will now attach the bottom mounting tubes.



087.20 Assemble the second set of boat clamps with tube clamp halves, m6x50 mm mushroom head square neck bolts and wingnuts



087.21 add the remaining 2 mounting tubes to the assembled boat clamps



087.22 Connect the second set of stepped hinges to the 550 mm rear tube where there is room:

- outside the other stepped hinge for most mountings (as in picture)
- inside the other stepped hinge for other mountings

**NOTE:**

Watch picture closely.

- Angled part on the inside so the stepped hinge can be set to a different angle

30°-90°



087.23 ...The aim is to get the bottom mounting tubes at a 30-90 degree angle with the horizontal.

The stepped hinge clamps can be set to suit your preference:

- Use a wide setting for transom hung rudders
- use the parallel setting if you are using low guided steering lines as the blue boat in this manual
- use any other setting if applicable



087.24 Hold the boat clamp at the location where you want the bottom tubes to connect to the transom

Hold the other end next to the stepped hinge and ...



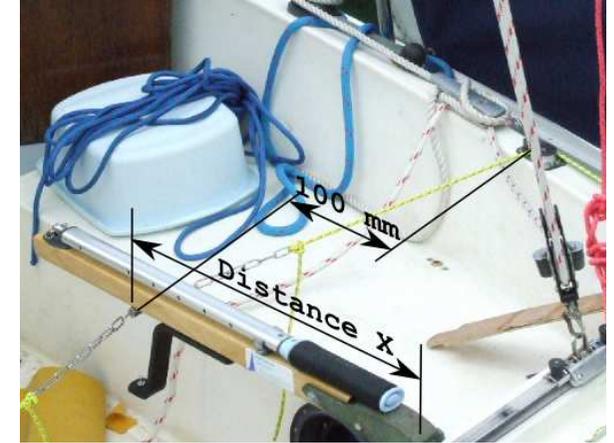
087.25 ...Mark the length the mounting tube needs to be and cut to this length as described earlier in this manual



087.26 connect the tube to the stepped hinge clamp and move the face of the boat clamp so it is flush with the transom.

Tape, mark, drill and connect to the transom as described earlier.

Check/tighten all the nuts and bolts in the mounted system.



087.27 SETTING UP THE STEERING LINES  
Connect the chain hook to the bottom of the tiller, at distance X is between 250 and 350 mm (10-14")  
Distance 100 mm (4") is about the minimum. Making it less may create too large forces, making it bigger may make less power available for steering.

If you want to experiment with positions first, it may be worth while with experimenting with tying guide blocks to parts of the boat or using clamps for temporary fixtures before drilling holes in the boat.



087.39 Tie a knot in a 750 mm/2' piece of string



087.40 Then tie that to the two blocks included with the kit.



087.40 Then tie to the end of the rear carbon tube.

This picture show it pointing down, most systems will require it to point UP.