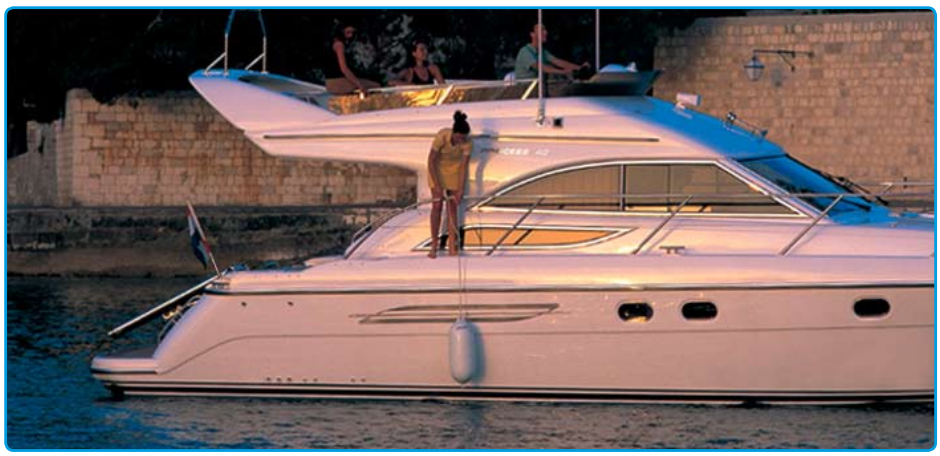
THRUSTER sizing

By definition, any thruster will to some extent do a job in any boat. The key is to ensure that the chosen thruster will do the job you want it to in your boat. This is one of two main factors deciding the right thruster size for each boat.

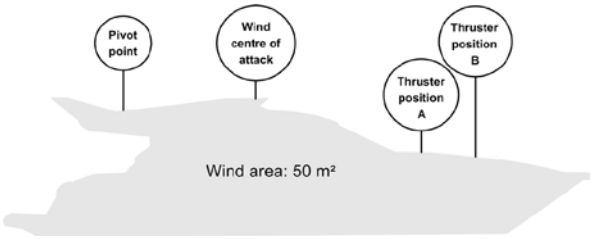
Today most pleasure craft over 35' have a bow thruster as standard equipment which normally will meet the expectations of most customers when using the boat under normal weather conditions. The sizes used by the boatbuilders will vary depending on the boat 's intended usage and price level. In today's production boats, the typical thruster will push the boat's bow against a direct sidewind of 21-23 knots.

Some custom built or very high end boats may have a high power bow thruster that pushes the bow against a direct sidewind of 24-26 knots.

For boatowners that use their boats in more demanding conditions or have for example a strong current in their local marina, or for other reasons require very high performance, many boatbuilders offer upgrades to a more powerful thruster system. While most pleasure crafts will have ample power in most conditions when the thruster can push the bow against a direct sidewind of 25-27 knots, this years addition of the "DC Power Control" product will allow for even more powerful DC electric thrusters to be used comfortably.



Thruster model	SE130/250T	SP170/250TC
Thruster position A	21,2 kn	23,9 kn
Thruster position B	22,4 kn	25,2 kn



The example above shows the different wind speeds that two different thruster installations can counter and the increased leverage gained when the thruster is positioned further forward.

The thruster's performance on a boat is basically determined by the boat's wind area, the wind area distribution and the thruster's tunnel position in the hull. By knowing these factors we can calculate the wind pressure on the boat and the centre point of this wind pressure. From these calculations we can determine what thrust is needed to counter the wind pressure with the given thruster position. The boat weight is normally not a major factor for most pleasure craft.

Charts

The charts shown here are general guidelines and your dealer will be able to give more detailed advice on the thruster size to use for your boat.

Example

If you have a 45'/13,5m boat, you have 4 thrusters to choose from within "normal" sizing.
If your boat does not have a lot of wind area and you use it mostly in good weather conditions, you can choose the least powerful thruster, the SE80 in a 185mm tunnel.
If you want to keep the ø185mm tunnel dia, but require more power, the SE100 is a good choice.
If you have room for a larger tunnel diameter, there are models in both ø215mm and ø250mm tunnels that are suitable for this boat size, so there are many options.

Please note that generally, a larger tunnel diameter will be more energy efficient and generate less noise.

Conclusion

The two main factors that decide correct thruster sizing are:

- boatowner's performance requirements

- boat size, type and shape