

John Deere Marine Help with Planning

Hull Types



JOHN DEERE

Determine Your Hull

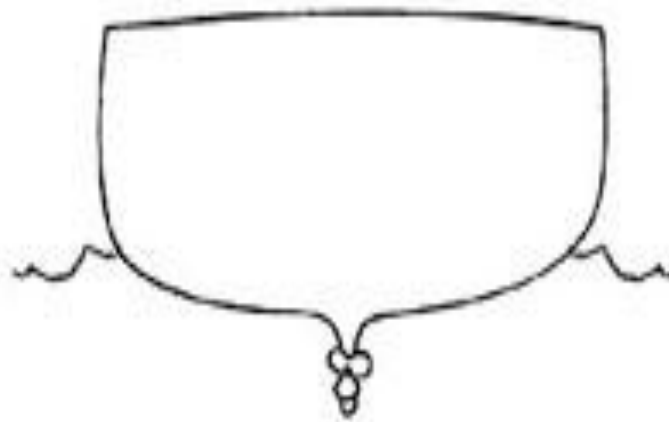
- Boats perform in the water based on the physical shape of the hull, and how it sits in the water. The two general types of hulls are displacement and planing. Other types of hull construction combine features of the displacement and planing hulls and are called semi-displacement or semi-planing.

Displacement Hull

- Displacement hulls push through the water as they have no hydrodynamic lift, or the boat does not rise out of the water as speed increases. The maximum speed of these hulls is typically between 1 and 1.5 times the square root of the boat length based on hull design. Some general characteristics of a displacement hull are:

Displacement Hull

- Rugged construction
- Easy to propel through the water at low speeds
- Large interior spaces



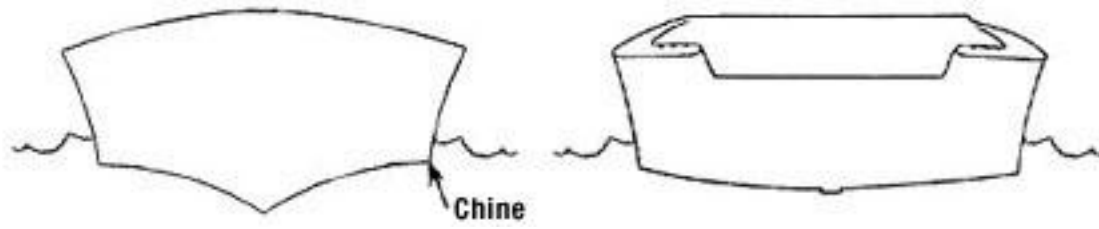
Planing Hull

- Planing hulls are designed to run on top of the water at high speeds. To achieve this they typically have a very flat stern. The hull design (shape) does not limit the maximum attainable speed but does affect the power required for it to get on plane (on top of the water). Some general characteristics of a planing hull are:

Planing Hull

- At high speeds in rough water the vessel will have a jarring ride as it pounds into waves and swells
- At high speeds, has a tendency to slide sideways in a turn
- Tends to roll at rest
- Inefficient at low speeds (takes more power to push through the water)

Planing Hull



Semi-displacement / Semi-planing Hulls

Semi-displacement or semi-planing hulls have features of both planing and displacement hulls. They have a maximum hull design speed. Exceeding this speed can result in erratic handling and unstable operation. There is not one hull design characteristic that differentiates semi-displacement from semi-planing hull. The greater the hydrodynamic lift and higher the hull design speed the more likely it will be referred to as a semi-planing hull. Some general characteristics of a semi-planing/displacement hull are:

Semi-displacement / Semi-planing Hulls

- Has a pronounced chine (angular break where the bottom joins the hull sides) forward
- Has versatility of combining speed with sea-worthiness
- Offers a degree of useable interior spaces

