

Optimus 360 Configuration and Commissioning

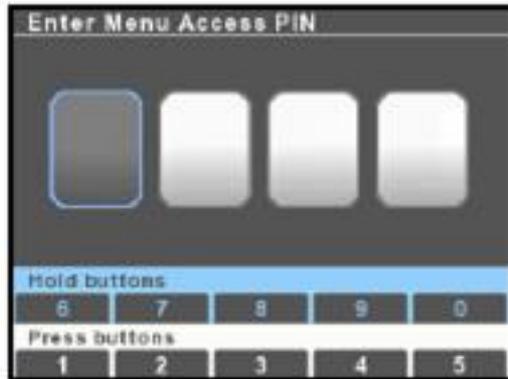


Figure D-5.

All setup and configuration tools are reached from the Dealer Menu, which authorized installers can access with a four digit PIN code (if you don't have a code contact SeaStar Solutions technical support). From the main run screen, press and hold **Menu** until you see the PIN entry screen.

Use the buttons to enter your four digit PIN code. Press the buttons briefly for digits 1-5, press and hold for digits 5-9.

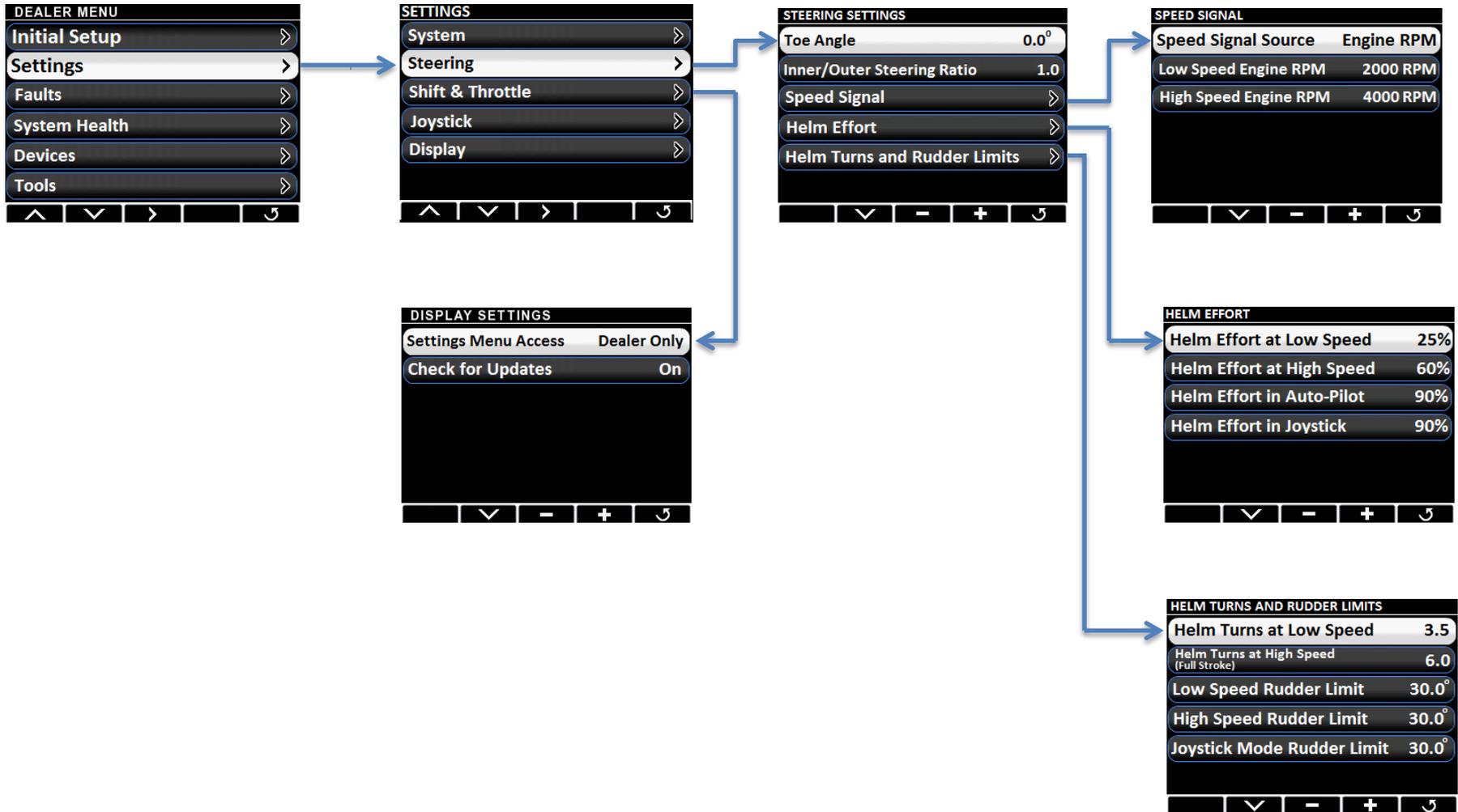
If you enter the code incorrectly you will exit the screen and be placed into the user menu. Press and hold **Menu** again to get back to the PIN entry screen.

Once you have entered the correct code you will go directly to the Dealer Menu. You won't need to enter the code again unless you cycle system power.

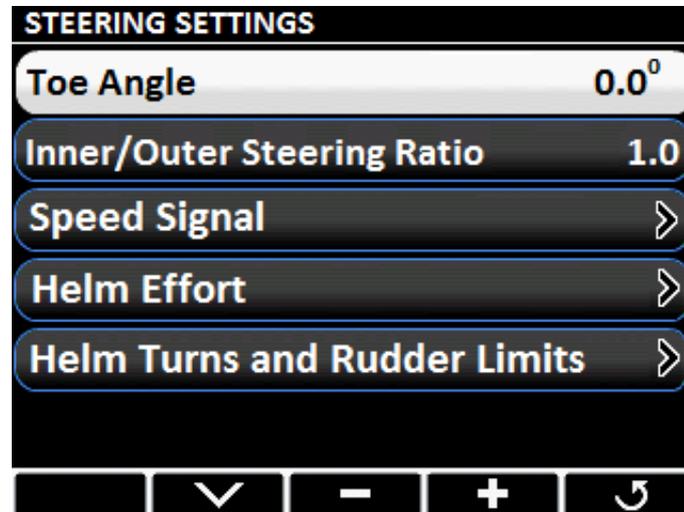
NOTICE

The Dealer Menu can be unlocked when faults are active. Faults are suppressed during setup and system updates.

Optimus 360 Steering Settings – Color CANtrak



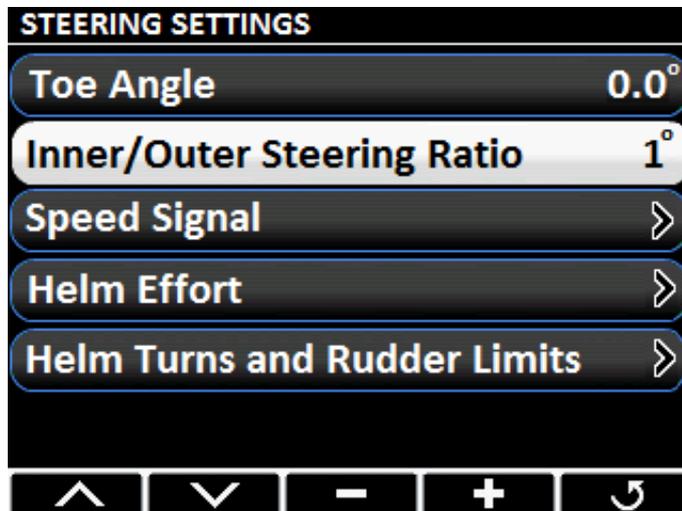
Optimus 360 Steering Settings – Toe Angle



The Optimus 360 system allows the operator of twin engine vessels to adjust the Toe Angle dynamically through the Color CANTrak display. Triple and quad engine applications will require tie bar adjustments to be made after the Toe Angle feature is changed therefore changing the value while under way will prove to be ineffective.

A positive value will toe the engines out (gear cases farther apart at front edge). Adjustments can be made in tenths of a degree with a range of -5 to 5.

Optimus 360 Steering Settings – Inner/Outer Steering Ratio



Similar to Ackerman compensation on road vehicles, the Optimus 360 system allows the operator to steer the inner engine more than the outer engine in a turn. This allows a flatter turn for Catamaran and multi-hull vessels. The parameter change automatically compensates for the steering ratio between the inner and outer engines.

The higher the value, the less the outer engine will turn. e.g. A value of 2.0 will deliver 15 degrees of steering at the outer engine when the inner engine is steered at 30 degrees. Adjustments can be made in tenths of a degree with a range of 1 to 3.

Optimus 360 Steering Settings – Speed Signal



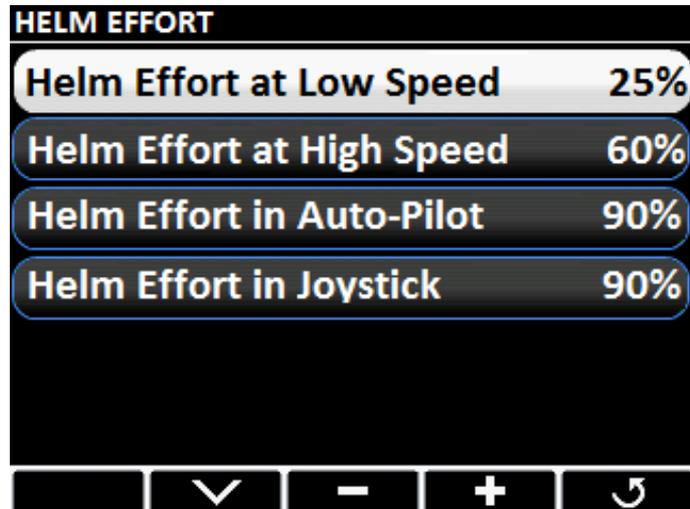
A key feature of the Optimus 360 steering system is the adjustable steering effort and number of turns. In order for the features to work the system needs to read the engine RPM via a gateway or analog signal. In the "Speed Signal" setting, engine RPM will be selected as the default value.

Low Speed Engine RPM sets the engine RPM that marks the upper boundary of low speed. Typically this is the RPM where the boat begins to plane.

High Speed Engine RPM is where the operator would like the maximum number of turns and steering effort to occur. Typically this value is close to the maximum engine RPM.

If engine RPM is not available, simply select "unavailable" in the Speed Signal parameter section. You will see the Low and High Speed Engine RPM disappear and the steering effort and number of turns feature will not be active and default parameters will be in effect.

Optimus 360 Steering Settings – Helm Effort



HELM EFFORT	
Helm Effort at Low Speed	25%
Helm Effort at High Speed	60%
Helm Effort in Auto-Pilot	90%
Helm Effort in Joystick	90%

The Optimus 360 steering system allows the user to define a Helm Effort for an optimal feel while operating their vessel.

There are four parameters that can be set; Low Speed, High Speed, Auto-Pilot and Joystick. The transition between Low and High Speed Effort will be based on engine RPM. Typically you would like a lower percent at low speed (less effort) and a higher percent (firmer feel) at high speed. The value is a percentage of maximum effort (steering locked). Auto-pilot settings are typically left at default (90%) which will give the operator a locked feel and also the ability to steer the boat in the event of collision avoidance or course correction. Joystick settings are typically left at default (90%). This will give the operator the feel of a locked helm while in joystick mode.

Adjustments can be made in percent increments with a range of 0 to 100.

Optimus 360 Steering Settings – Helm Turns and Rudder Limits

HELM TURNS AND RUDDER LIMITS	
Helm Turns at Low Speed	3.5
Helm Turns at High Speed (Full Stroke)	6.0
Low Speed Rudder Limit	30.0°
High Speed Rudder Limit	30.0°
Joystick Mode Rudder Limit	30.0°

Navigation icons: [Back] [Down Arrow] [Minus] [Plus] [Refresh]

The Optimus 360 steering system allows the user to define Helm Turns at Low and High Speed. This gives the operator the ability to get a faster lock to lock steering condition from idle speed to a designated low speed engine RPM. The lower number of turns equals greater steering sensitivity.

Low Speed Rudder Limit is used to restrict the travel of outboard engines in installations where there is interference at high steering angles. Adjustments can be made in tenths of a degree with a range between 15 to 30 degrees.

High Speed Rudder Limit is used to limit the maximum steering angle when the vessel is at high speeds. It can restrict the operator from overly aggressive and potentially unsafe maneuvers. Adjustments can be made in tenths of a degree with a range between 10 to 30 degrees.

Joystick Mode Rudder Limit is used to limit the maximum joystick steering angle while in joystick mode. Limiting this value can have a negative effect on user corrections while joystick maneuvering.

Optimus 360 Steering Settings

A key feature of Optimus EPS is the adjustable steering effort and number of turns. Both of these parameters are set for low and high speed operation, and the system smoothly transitions them as boat speed changes. Figure 7-12 shows how these parameters change with speed.

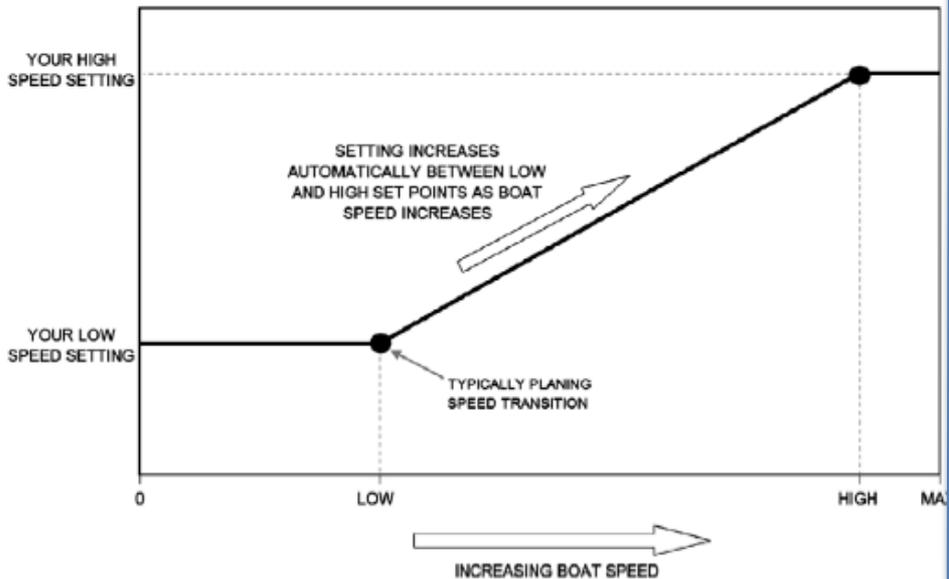


Figure 7-12

2.2 Available Steering Settings

Note: The valid range for some parameters is dynamic, and the range shown may not always apply.

SUB-MENU	PARAMETER NAME	DESCRIPTION	RANGE	DEFAULT VALUE
	Toe Angle	Sets the static toe angle of the engines (or outdrives/rudders). A positive value will toe the engines out (gear cases farther apart at front edge).	-1.5 to 1.5	0
	Inner/Outer Steering Ratio	This parameter can make the inner engine (or outdrive/rudder) turn more than the outer engine in a turn. The higher the value the less the outer engine will turn. E.g. A value of 2.0 will deliver 15 degrees of steering at the outer engine when the inner engine is steered at 30 degrees.	1 to 3	1
Speed Signal	Speed Signal	Sets how the boat speed is determined. Except in rare cases you should leave this as the default value.		Engine RPM
	Low Speed Engine RPM	Sets the engine RPM that marks the upper boundary of low speed. This is typically the RPM at which the boat begins to plane. See figure 7-12 in Book 50.	0 to 2500	1500
	High Speed Engine RPM	Sets the engine RPM that marks the lower boundary of high speed. Typically close to maximum RPM. See figure 7-12 in Book 50.	500 to 6000	4000
	Low Speed Throttle Cmd	Sets the throttle percentage that marks the upper boundary of low speed. Used when Speed Signal is set to Throttle Cmd.	0 to 35	30
	High Speed Throttle Cmd	Sets the throttle percentage that marks the lower boundary of high speed. Used when Speed Signal is set to Throttle Cmd.	45 to 100	60
Helm Effort	Helm Effort at Low Speed	Sets the helm effort when the vessel is running at low speed. The value is a percentage of maximum effort (steering locked).	1 to 100	40
	Helm Effort at High Speed	Sets the helm effort when the vessel is running at high speed.	1 to 100	60
	Helm Effort in Autopilot	Sets the helm effort when the vessel is running in autopilot. Set it high enough to prevent accidental movement of the helm.	20 to 100	90
	Helm Effort in Joystick Mode	Sets the helm effort when the vessel is running in joystick mode.	20 to 100	90
Helm Turns and Rudder Limits	Helm Turns at Low Speed (Full Stroke)	Sets the number of turns for full stroke of the steering cylinder(s) when the vessel is running at low speed.	3.5 to 8.5	5
	Helm Turns at High Speed (Full Stroke)	Sets the number of turns for full stroke of the steering cylinder(s) when the vessel is running at high speed.	3.5 to 8.5	5
	Low Speed Rudder Limit (Formerly Max Steering Angle)	This parameter is most often used to restrict the travel of outboard engines in installations where there is interference at high steering angles. See section 7.3.1 of Book 50 for additional information.	15 to 'Hardstop Rudder Angle' (See 1.2.2)	30
	High Speed Rudder Limit	This parameter can be used to limit the maximum steering angle when the vessel is at high speed. It can restrict the operator from overly aggressive and potentially unsafe maneuvers.	10 to 'Low Speed Rudder Limit'	30
	Joystick Mode Rudder Limit (Formerly Max Joystick Angle)	Used only in Optimus 360 systems, this parameter limits the maximum steering angle in joystick mode in the event there is some interference.	0 to 30	30

Table 1 – Steering Settings

Optimus 360 Settings Access – Color CANtrak

User Permissions

The ability to adjust steering effort and helm turns is limited to those with access to the Dealer Menu, but they can be made available to the user.

On the display, navigate to **Dealer Menu > Settings > Display**. Press **+** to toggle the setting. You will be prompted to save the setting on exit.

