User's Guide

Evinrude® iDock Joystick Steering System

EVINRUDE® E-TEC®

BRP

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Safety Notice

Before working on any part of the outboard, read the SAFETY INFORMATION section in this guide.

This publication is written for qualified, factory-trained technicians who are already familiar with the use of *Evinrude* Special Tools. The included information is not a substitute for work experience. It is an organized guide for reference, repair, and/or maintenance.

The following symbols and/or signal words may be used in this document:

⚠ DANGER
Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING
Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION
Indicates a hazardous situation which, if not avoided, could result in minor or moderate personal injury.

NOTICE
Indicates an instruction which, if not followed, could severely damage engine components or other property.

These safety alert signal words mean:

ATTENTION!
BECOME ALERT!
YOUR SAFETY IS INVOLVED!

IMPORTANT: Identifies information that controls correct assembly and operation of the product.

ENVIRONMENTAL NOTE:
A note which provides tips and behaviors related to protecting the environment.

DO NOT perform any work until you have read and understood these instructions completely.

Strictly adhere to torque wrench tightening specifications.

Should removal of any locking fastener (lock tabs, lock nuts, or patch screws) be required, always replace with a new component.

When replacement parts are required, use *Evinrude Genuine Parts* or parts with equivalent characteristics, including type, strength and material. Use of substandard parts could result in injury or product malfunction.

Always wear EYE PROTECTION AND APPROPRIATE GLOVES when using power tools.

The engine must be OFF when performing this work unless otherwise specified.

Always be aware of moving parts such as flywheels, propellers, etc.

Some components may be HOT. Always wait for engine to cool down before performing any work.

If you use procedures or service tools that are not recommended in this manual, YOU ALONE must decide if your actions might cause injury or damage the outboard.

This document may be translated into other languages. In the event of any discrepancy, the English version shall prevail.

Safety Information

⚠ WARNING

The safety information provided here is intended to inform you of the dangers that may be present before, during, and after installation. It is critical to read and understand this information.

Failure to comply with any warning, notice or caution may lead to loss of steering control resulting in a collision or ejection from the boat, possibly resulting in property damage, injury, or death.

Only operate the boat if all components are in proper working condition. Safe operation depends upon proper installation and maintenance of the system, and the common sense, safe judgment, knowledge, and expertise of the operator. Every installer and operator of the steering system should know the following requirements before installing or operating the steering system. If you have any questions regarding any of these warnings, contact the dealer that installed the system.

Prior to every use:

1. Verify immediate steering response when turning steering wheel(s).
2. Inspect all steering hoses, fittings, and electrical harnesses for wear, kinks, or leaks.
3. Check for binding, loose, worn or leaking steering or shift/throttle control components.
4. Verify that proper shift and throttle response is available for all control handles.

During use:

1. Wear a Coast Guard-approved PFD with the ignition lanyard attached at all times.
2. Only allow those who are familiar with the operation of the steering system operate the boat.
3. If boat is equipped with multiple helms, ensure that only one is used at a time.
4. Know and adhere to all applicable federal, state, and municipal laws and regulations that govern boating in your area.

Abbreviations

The following abbreviations are used in this manual:

ABYC	American Boat & Yacht Council
AUX	Auxiliary
BAT	Battery
CAN	Controller Area Network
CAN Bus	Controller Area Network (data) bus. (A harness of wires that carry digital signals and power between electronic modules)
ENG	Engine
EPS	Electronic Power Steering
FT-LB	Foot Pounds
GND	Ground
HI	CAN High Signal
IN-LB	Inch Pounds
LED	Light Emitting Diode
LO	CAN Low Signal
MPH	Miles Per Hour
NA	Not Applicable or Not Available
N/C	No Connection
Nm	Newton Meters
NMEA	National Marine Electronics Association
NMEA 2000®	NMEA standard for marine electronics and wiring related to CAN bus.
PSM	Pressure Sensor Module
PFD	Personal Flotation Device
RPM	Revolutions Per Minute
STBD	Starboard (right when facing forward)
SW	Switch
WOT	Wide Open Throttle

Note: Some abbreviations not listed here may be found in their respective sections.

iDock Overview

This new iDock system is used on twin engine installations for both single and second station configurations.

The *iDock* system consists of a hydraulic steering helm, hydraulic hoses, hydraulic fluid, an electronic joystick directional control, network wiring, a control module, and an hydraulic steering manifold assembly on each outboard

The control module monitors and controls the steering system. The *EMM* monitors the control module, stores fault codes and activates the engine monitor should a fault code be generated.

As the steering wheel is turned hydraulic fluid in the helm begins moving through the steering system.

The *iDock* pressure sensor signals the control module of an increase in hydraulic pressure in the direction of the turn. The control module then detects a pressure differential between the two pressure sensors and turns ON the steering pump providing steering assistance.

The control module monitors *iDock* Pressure Sensor (APS) voltage.

The control module also monitors the steering position sensor. As the outboard approaches the steering system stop, the control module turns OFF the steering pump to maximize system efficiency.

When the joystick is activated, the mode valve locks out hydraulic fluid from the helm enabling the joystick to control direction.

Joystick inputs control operation of the direction valve. The direction valve reverses the flow of hydraulic fluid through the steering manifold, depending on joystick inputs, and turn the outboards to port or starboard.

iDock Systems Equipped With Autopilot

IMPORTANT: Auto pilot systems are approved for use with the *Evinrude iDock* system. Follow the manufacturer's instructions when installing the auto-pilot system.

IMPORTANT: The auto-pilot system must be disabled when the *Evinrude iDock* system is in use.

IMPORTANT: If using an autopilot system with the *Evinrude iDock* system, plumb the autopilot pump between the Pressure Sensor Module and the Alignment Valve as seen in the image below.

IMPORTANT: Do not use rudder feedback systems. It is recommended to use an auto-pilot system that is sized for an 8.9 cu. in. cylinder.

iDock System Use

⚠ WARNING

Improper installation can result in loss of steering control and severe personal injury. Ensure proper installation of the *iDock* System has been achieved before conducting any sea trial or before starting the calibration procedure.

⚠ CAUTION

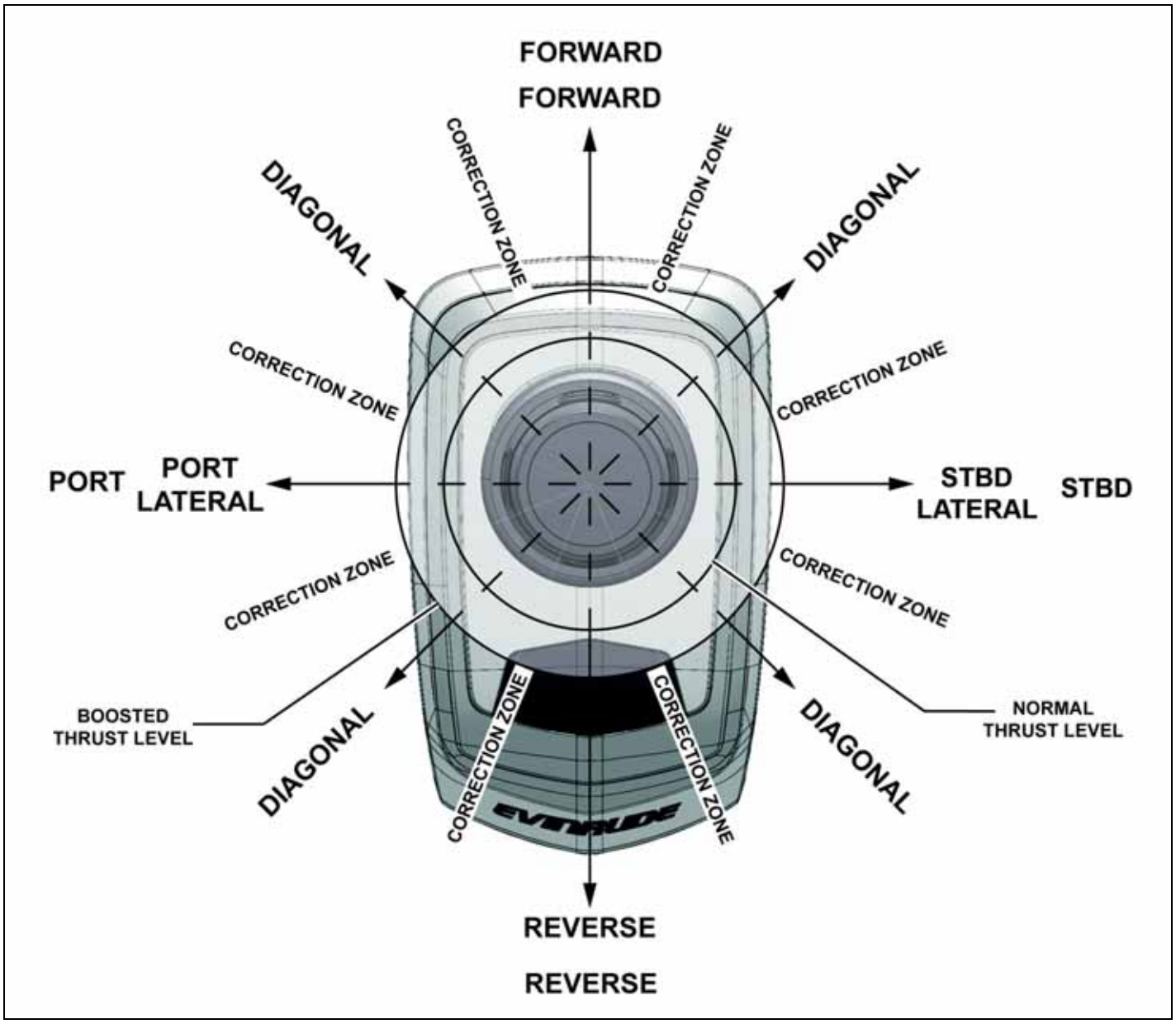
It is recommended to practice using the joystick in all operating ranges before starting the calibration procedure. Improper use of the joystick can result in machine damage or personal injury.

NOTICE

On boats where the engines violate the edges of the vessel when turned, be sure to have enough room around the docks so the engines do not hit the dock.

IMPORTANT: In strong currents or extremely windy conditions, the boat may not be able to overcome the yaw of the boat. If this happens, stop the movement of the boat, realign the vessel, and continue docking.

Refer to the image below for the operating ranges of the joystick before starting any joystick use.



Transferring To and From Joystick Mode

IMPORTANT: The auto-pilot system must be disabled when the *Evinrude iDock* system is in use.

To transfer to joystick mode, move the throttle control levers to the NEUTRAL position and push the power button on the joystick. The power button will be illuminated in blue when joystick mode is enabled.

To transfer out of joystick mode and back to binnacle control, push the RPM+ button on the binnacle. The LED lights on the binnacle will become illuminated when the binnacle is in control.

NOTE: The binnacle levers must be in the NEUTRAL position to transfer out of joystick mode.

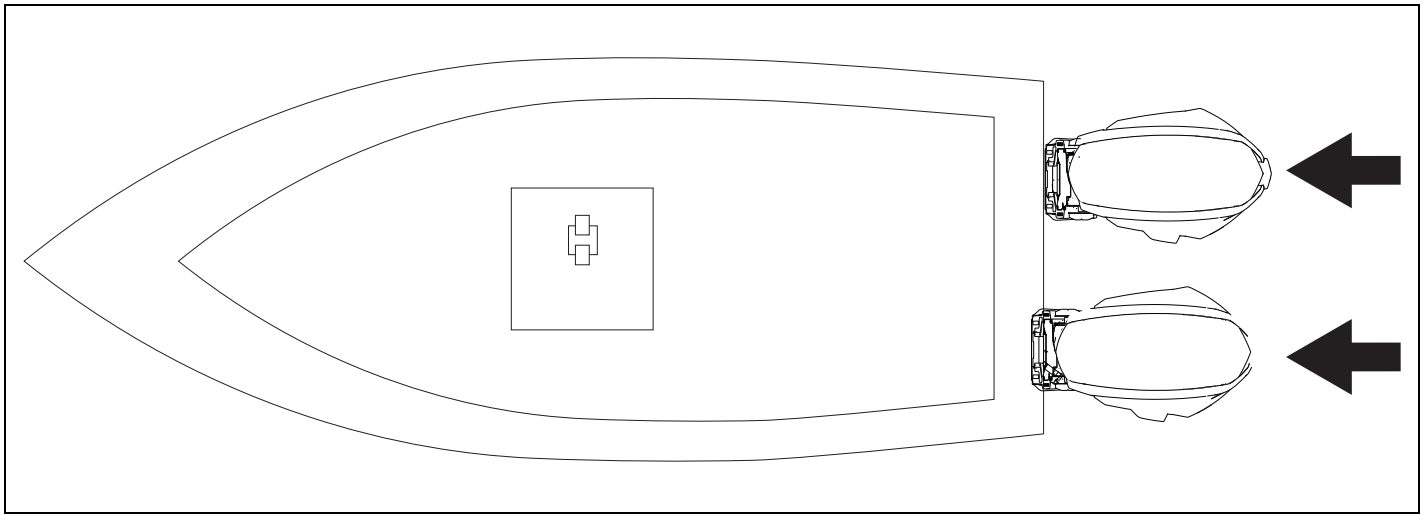
The above instructions also apply to transferring to and from second station joysticks.

Forward

While in joystick control, push the joystick forward to move the boat forward.

1. Joystick power button

When the joystick is pushed forward, both the port and the starboard engines will apply forward thrust.



To increase the movement, push the joystick harder (past the detent) in the forward direction.

To turn the boat to port while moving the boat forward, twist the joystick counterclockwise.

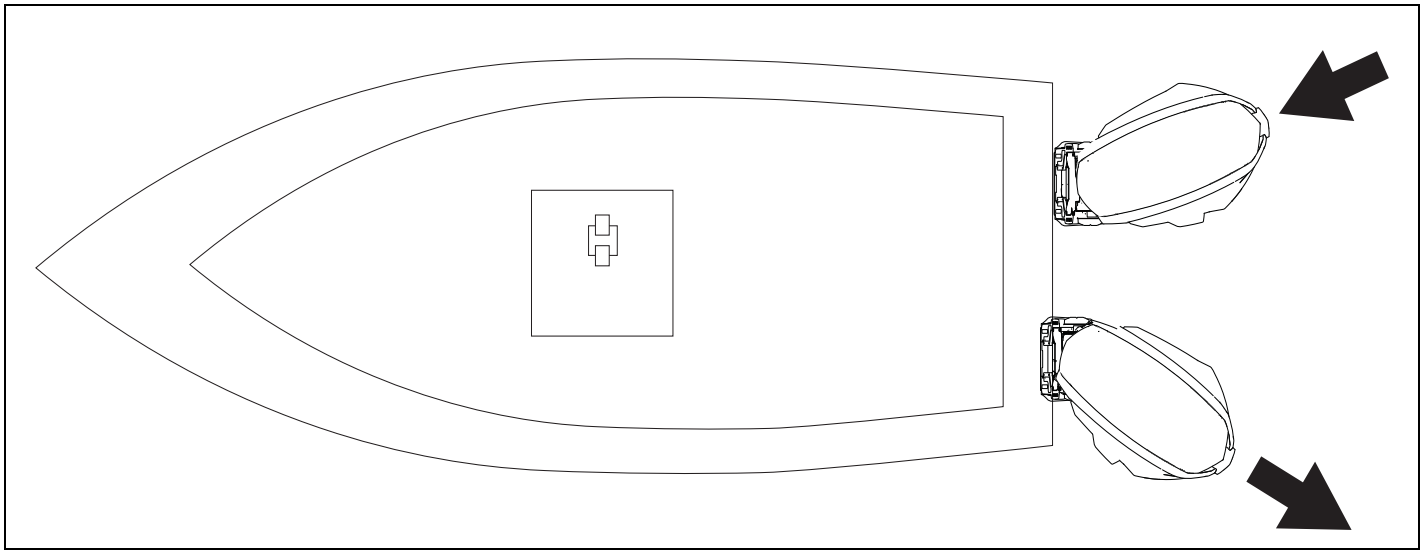
To turn the boat to starboard while moving forward, twist the joystick clockwise.

To correct for over steering, let go of the joystick to allow the joystick to return to the center position or push the joystick aft.

Port

While in joystick control, move the joystick to the left to move the boat to port.

When the joystick is pushed to port, the port engine will provide forward thrust while the starboard engine will provide reverse thrust to walk the boat to port.



To increase the movement, push the joystick harder (past the detent) in the port/left direction.

To move the boat forward while moving to port, push the joystick forward.

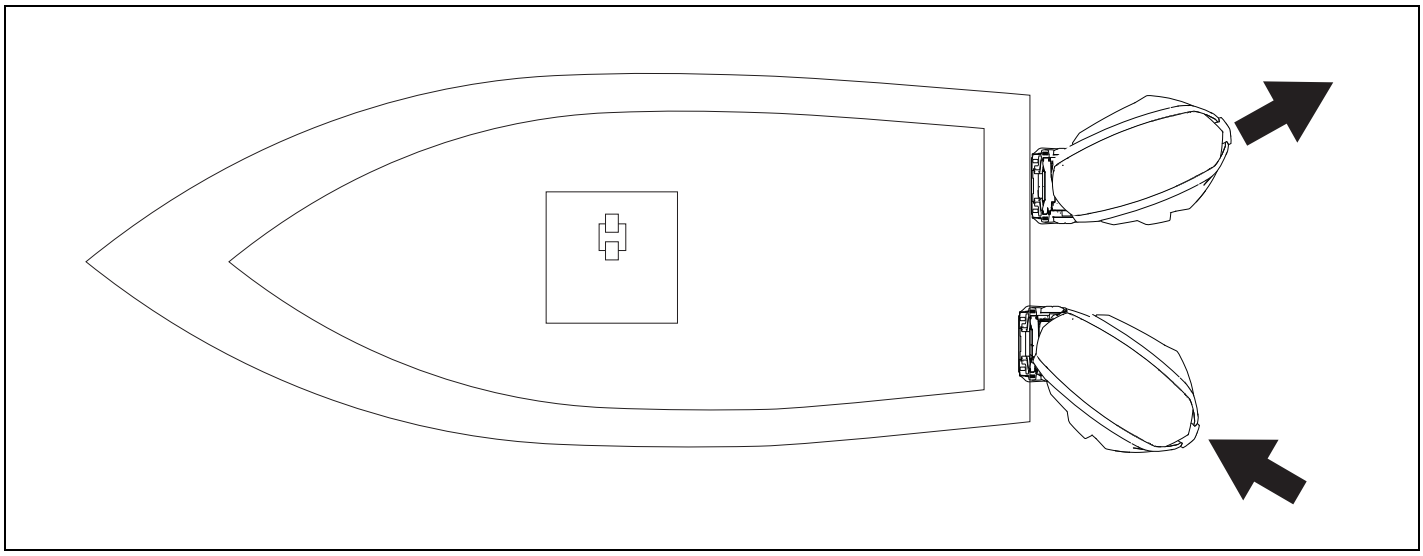
To move the boat aft while moving to port, push the joystick aft.

To correct for over steering, let go of the joystick to allow the joystick to return to the center position or push the joystick right.

Starboard

While in joystick control, move the joystick to the right to move the boat to starboard.

When the joystick is pushed to starboard, the port engine will provide reverse thrust while the starboard engine will provide forward thrust to walk the boat starboard.



To increase the movement, push the joystick harder (past the detent) in the starboard/right direction.

To move the boat forward while moving the boat to starboard, push the joystick forward.

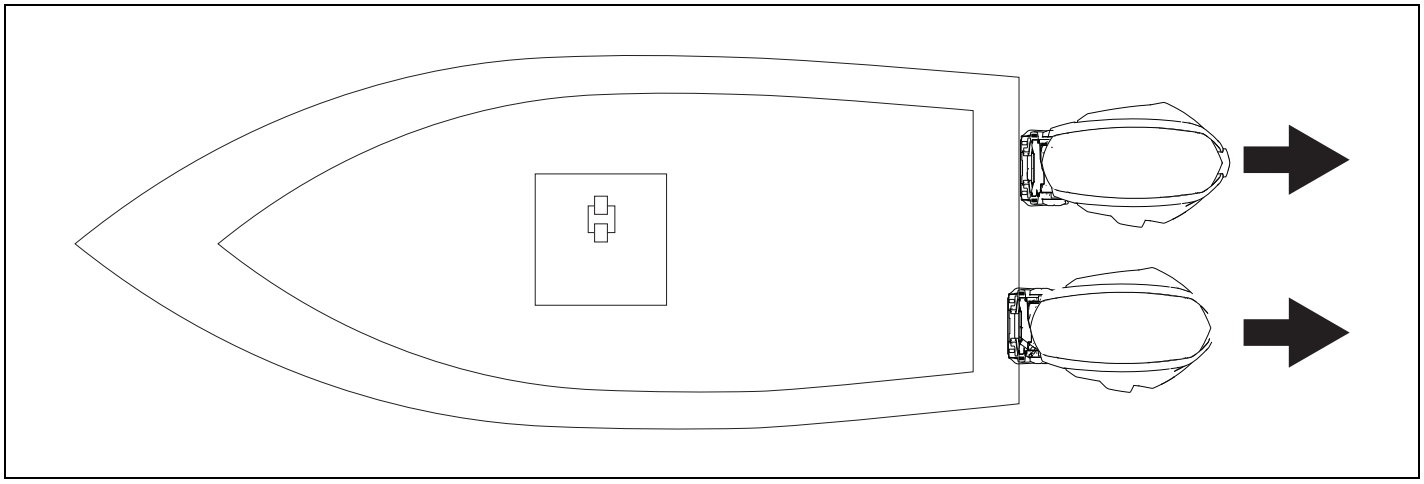
To move the boat aft while moving in a starboard direction, push the joystick aft.

To correct for over steering, let go of the joystick to allow the joystick to return to the center position or push the joystick right.

Aft

While in joystick control, move the joystick back to move the boat aft.

When the joystick is pushed aft, both the port and starboard engines will provide reverse thrust to move the vessel aft.



To increase the movement, push the joystick harder (past the detent) in the aft direction.

To turn the boat to port while moving the boat aft, twist the joystick counterclockwise.

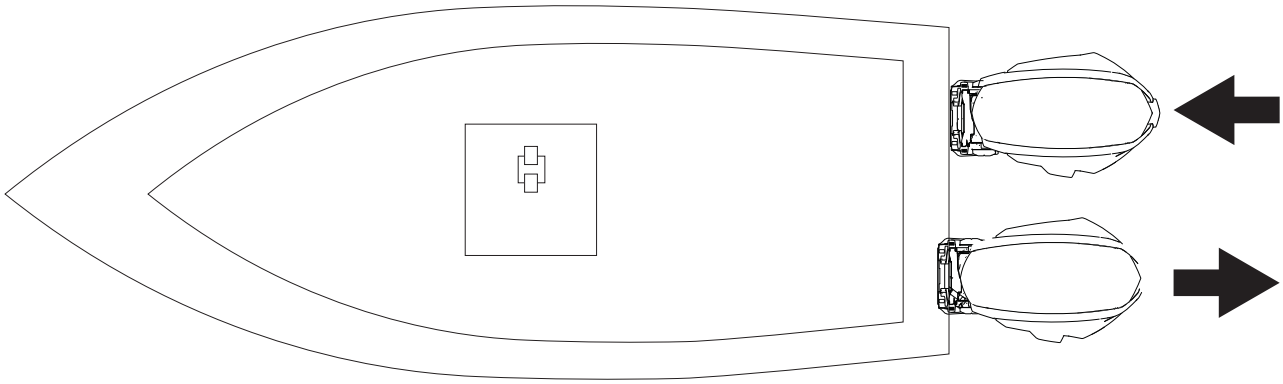
To turn the boat to starboard while moving aft, twist the joystick clockwise.

To correct for over steering aft, let go of the joystick to allow the joystick to return to the center position or push the joystick forward.

Port Spin

While in joystick control, twist the joystick counterclockwise to spin the boat to port.

When the joystick is turned counterclockwise, the port engine will provide reverse thrust and the starboard engine will provide forward thrust to spin the boat to port.



To increase the movement, twist the joystick further counterclockwise.

To move the boat forward while in a port spin, move the joystick forward.

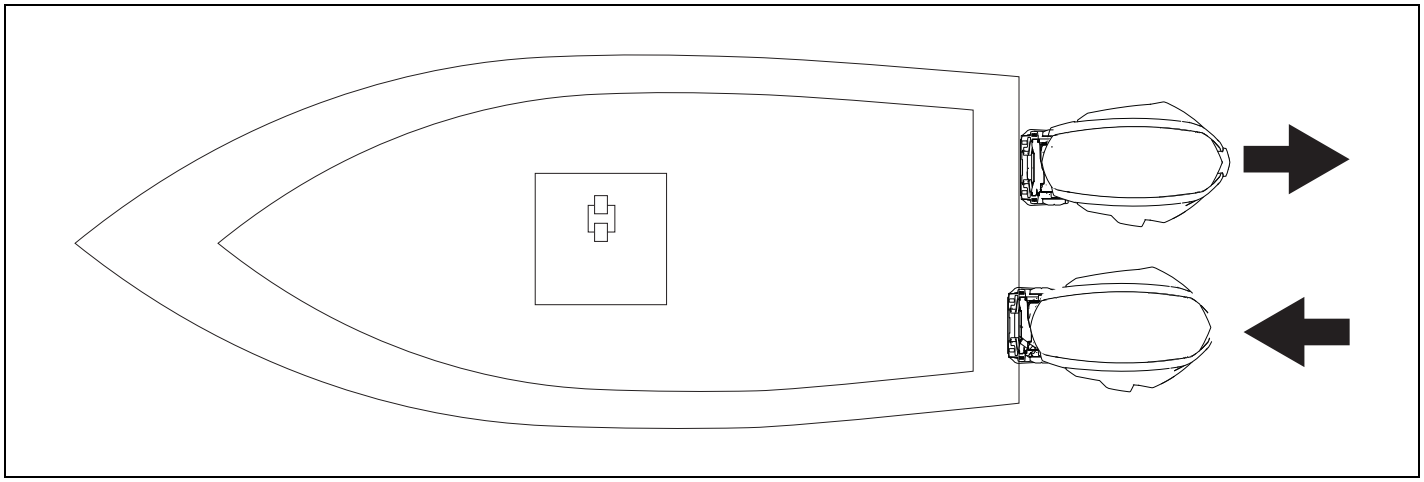
To move the boat aft while in a port spin, move the joystick aft.

To correct for over steering in a port spin, let go of the joystick to allow the joystick to return to the center position or twist the joystick clockwise.

Starboard Spin

While in joystick control, twist the joystick clockwise to spin the boat to starboard.

When the joystick is turned clockwise, the port engine will provide forward thrust while the starboard engine will provide reverse thrust to spin the vessel starboard.



To increase the movement, twist the joystick further clockwise.

To move the boat forward while in a starboard spin, move the joystick forward.

To move the boat aft while in a starboard spin, move the joystick aft.

To correct for over steering in a starboard spin, let go of the joystick to allow the joystick to return to the center position or twist the joystick counterclockwise.

Using the Steering Lock

Steer the outboard to center. Slide the steering lock device over the bracket as shown.

NOTE: The alignment valve may need to be opened to allow both engines to be centered.

Install two quick release pins through the holes on each side of the stern bracket.

1. Quick release pin (STARBOARD side shown)

Remove the quick release pins and the steering lock device BEFORE turning the key switch ON.

NOTICE
If the trailering lock is not used during trailering or mooring, damage to the side covers can occur.

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