

TrimSync Installation & Operating Instructions

Mounting the Device

The unit should be mounted in a dry area away from sources of heat. Mounting the unit near the trim pumps will reduce wiring complications. A paper template is included to assist in drilling the mounting holes.

The unit should be mounted with the wires facing either down or to the side. Mounting the enclosure with the wiring facing up could lead to water intrusion and will void the warranty. Any attempt to open the enclosure will also void the warranty.

Power & Ground Connections

- Connect the RED wire to a 12 Volt power source that can support at least 10 Amps. TrimSync will automatically power down after being idle for one hour and can be connected to a constant 12 Volt power source. Always use the supplied fuse holder and do not connect the unit directly to the battery. **Remove the inline fuse until step one of the calibration procedure has been performed.**
- Connect the BLACK to the engine block or other suitable source of ground. Do not connect to a green bond wire.

Trim Solenoid Connections

Each drive/outboard has a separate trim pump that has two solenoids (figure 1), one for UP and one for DOWN. TrimSync will be configured from the factory for either twin or triple engines. It is important to identify the appropriate UP & DOWN solenoids for each engine. TrimSync must be connected to positive (+) side of the solenoid activation terminal. This would be one of the two smaller terminals at the bottom of the solenoid. Use a test light to locate which solenoid terminal has 12 volts when the trim button is pressed and make note of the direction (UP / DOWN) and position (PORT or STARBOARD) for each solenoid. TrimSync must only be connected to the solenoid terminal that has + 12 Volts when the trim pump is activated and 0 Volts when at rest. Typically, this would *not* be a black wire.

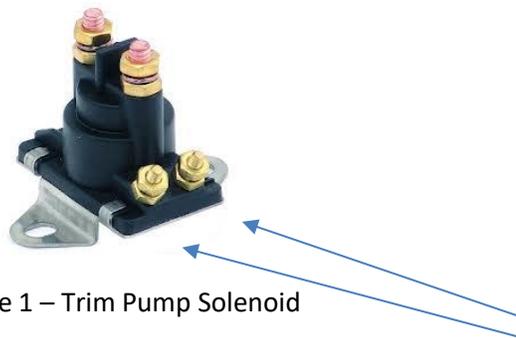


Figure 1 – Trim Pump Solenoid

- PORT Trim Pump Solenoid Connections
 - Locate the PORT trim pump UP solenoid and connect the PURPLE from the TrimSync harness to the solenoid activation terminal.
 - Locate the PORT trim pump DOWN solenoid and connect the ORANGE from the TrimSync harness to the solenoid activation terminal.
- STARBOARD Trim Pump Solenoid Connections
 - Locate the STARBOARD trim pump UP solenoid and connect the WHITE from the TrimSync harness to the solenoid activation terminal.
 - Locate the STARBOARD trim pump DOWN solenoid and connect the BLUE from the TrimSync harness to the solenoid activation terminal.



Trim Sensor Wiring

Boats with Three-Wire Senders

For boats with three-wire trim senders TrimSync is supplied with factory connectors for each drive. TrimSync will be connected in line with the trim sensors and the factory display/indicator (if equipped) functionality will be retained.

Sterndrives

- Locate the trim wires inside the engine compartment where they pass through the transom assembly.
- Unplug the connector at the end of this wire and plug in the appropriately colored TrimSync wire/connector. The colors below reference the middle wire on each of the wiring harnesses.
 - PORT – Brown
 - STARBOARD – Grey

Outboards

- Under the engine's cowling near the front on the starboard side locate the trim wire connectors where they plug into the engine's wiring harness. There will be three insulated bullet connectors.
- Unplug each connector and identify the three wires that lead to the engine harness. Only one will have a female bullet connector. Use electrical tape to cover the ends of the black wire that has a male terminal and the wire with the female terminal. These are the power and ground for the trim sender and we will be using TrimSync as the power source.
- For the PORT engine route, the supplied harness with the RED/BROWN/BLACK wires and bullet connectors through the wiring duct, and into the cowling.
 - Make the following connections
 - Connect the RED wire with the female bullet to the only male wire that leads to the sender.
 - Connect the BLACK wire with the male bullet to the black wire leading to the sender.
 - Connect one BROWN wire to the only remaining trims sender wire and the other BROWN wire to the remaining engine harness wire.
- For the STARBOARD engine route, the supplied harness with the RED/GRAY/BLACK wires and bullet connectors through the wiring duct, and into the cowling.
 - Make the following connections
 - Connect the RED wire with the female bullet to the only male wire that leads to the sender.
 - Connect the BLACK wire with the male bullet to the black wire leading to the sender.
 - Connect one GRAY wire to the only remaining trims sender wire and the other GRAY wire to the remaining engine harness wire.



Calibration

WARNING - DO NOT OPERATE THE BOAT UNTIL THE CALIBRATION IS COMPLETE

Before you re-install the inline fuse, the trim senders need to be checked to make sure they are properly indexed. **Do not press the BOTH button until the following procedure is followed in its entirety. A red LED indicates that there is a fault, or the calibration procedure was not properly performed.**

The calibration process must be followed in the exact order below:

1. Move the drives/engines to their full DOWN position. **Make sure the inline fuse is removed**

Trim Sender Indexing – STERNDRIVES ONLY

- a. Follow the manufacturers procedure to confirm the senders are properly indexed by removing each trim sender and confirming that alignment marks on the housing are in line with index on center hex drive. For Bravo HP transom assemblies, the raised index mark on the hex shaft must be aligned with the groove in the link arm.
 - b. Reinstall the senders but do not tighten the mounting screws.
 - c. Install the inline fuse for TrimSync. When powered up for the first time the green LED will be flashing to indicate that the unit is connected correctly but has not been calibrated. Please see the troubleshooting section if the green LED is not flashing.
 - d. To ensure accurate positioning of the drives connect a digital volt meter to the single gray (starboard) or Brown (port) wire on the capped connector of the trim sender wiring harness. Adjust the trim sender so that the voltage for both drives is between 0.500 and 0.600 volts and +/- 0.09 volts of each other. Once completed replace the protective caps on the connectors.
2. If it hasn't been done yet, install the inline fuse for TrimSync. When powered up for the first time the green LED will be flashing to indicate that the unit is connected correctly but has not been calibrated. Please see the troubleshooting section if the green LED is not flashing.
 3. With both drives/engines still in their full DOWN position press the BOTH-DOWN button for at least one second. The green LED will stop flashing for 20 seconds and then begin flashing again to indicate that full DOWN positions have been recorded.
 4. Move each drive/engine to the full UP position one at a time. Do **not** use the BOTH button but you can move them each a little at a time to keep them from being too far out of alignment and risk binding. Pause at least one second in-between each move.
 5. With the drives/engines in their full UP position press the BOTH-UP button for at least one second but not more than three. The LED will now be solid green and the systems is calibrated and operational.

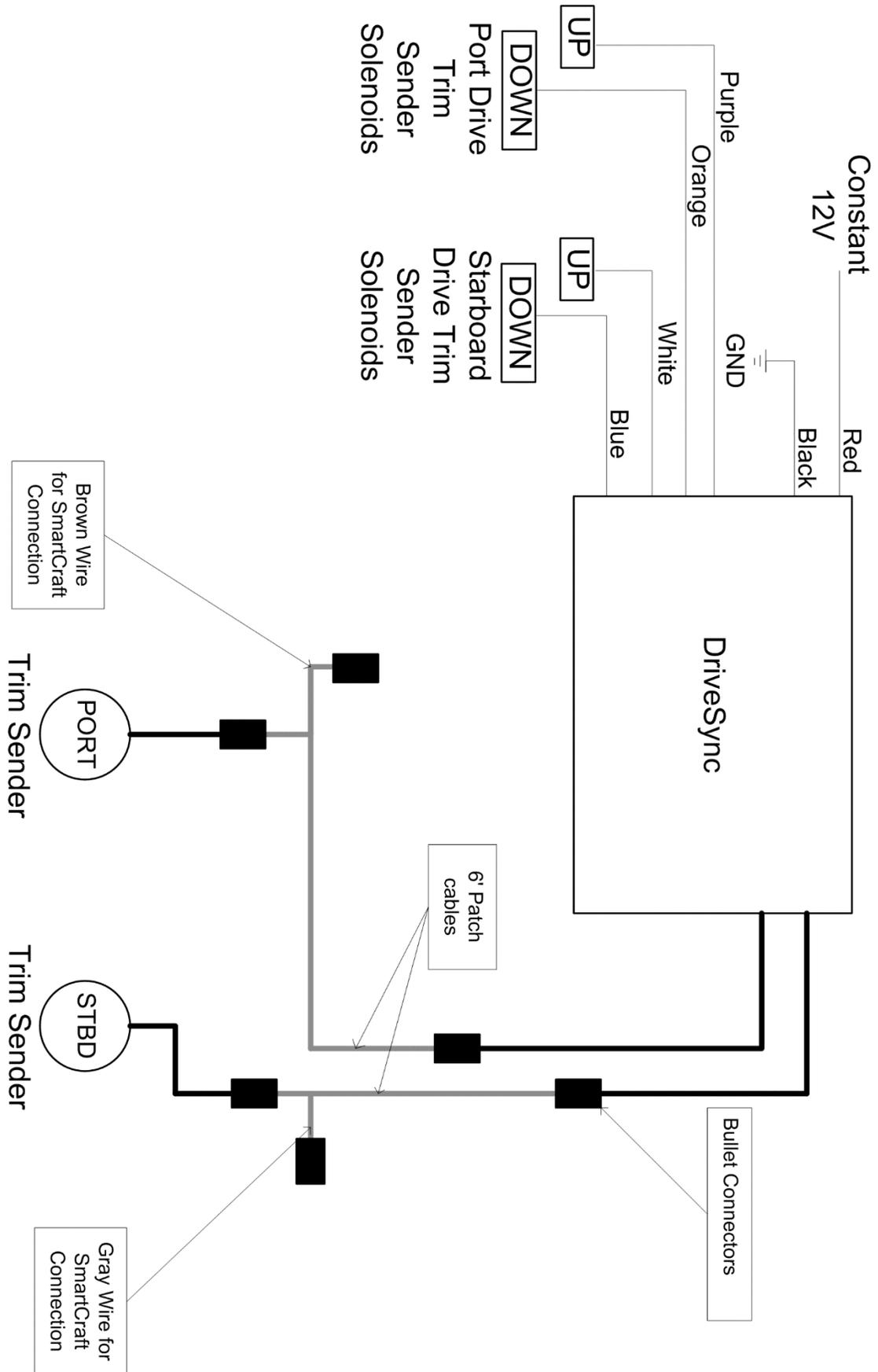
Once the calibration is complete it will not need to be repeated unless the boat experiences a mechanical or electrical issue that impacts the drive trim system. In the event of a such a repair (i.e. removing/replacing a trim sender) then the operator can force a calibration by holding the BOTH/ALL UP button for four seconds after the drives reach their full UP position. The LED will turn from solid green to flashing green and the unit will not attempt any corrections until the calibration process is performed again.



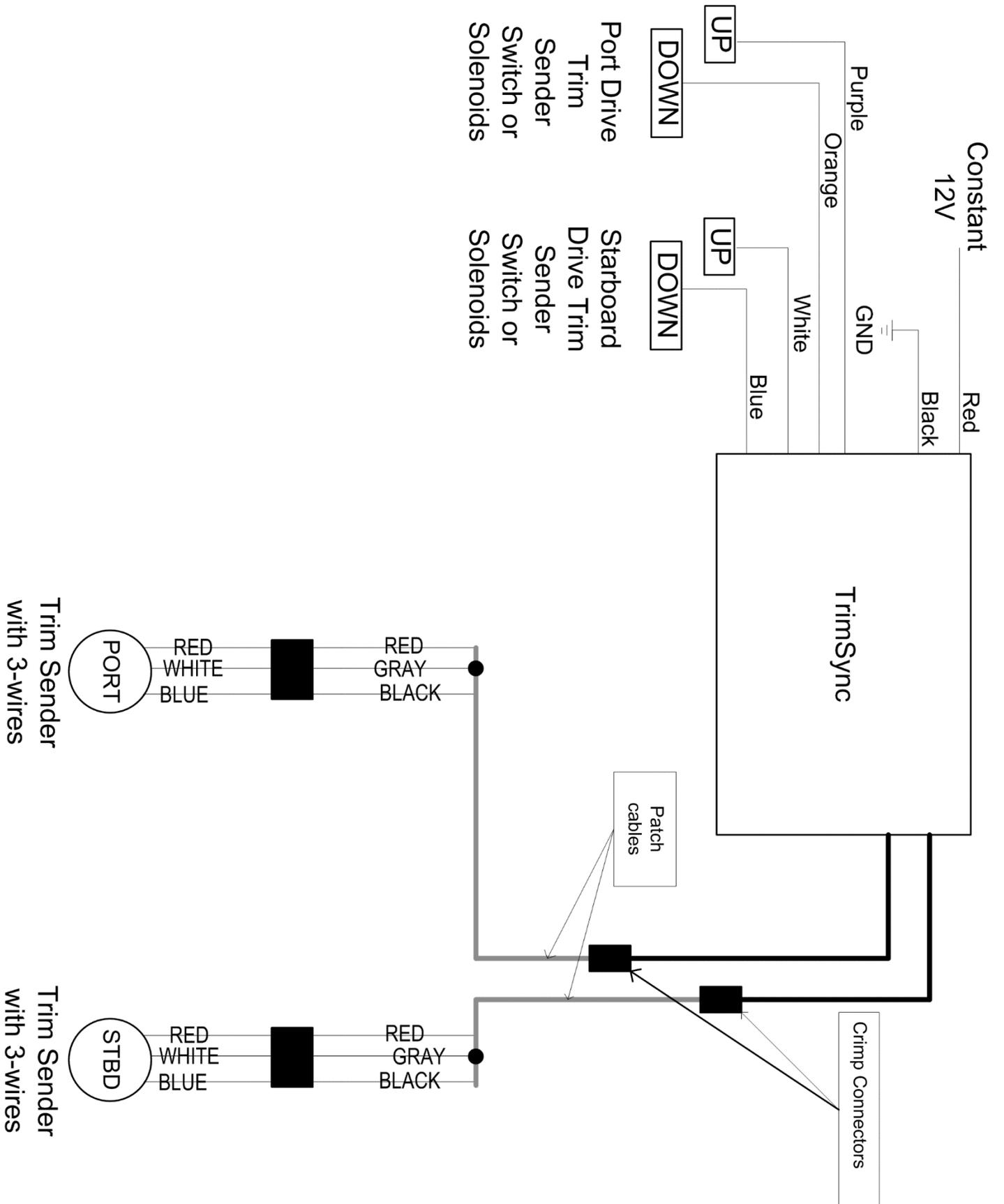
Operation

Once calibrated and the green LED is illuminated TrimSync will monitor the position of each drive and determine if a correction is required after the BOTH button is pressed and released. TrimSync will always correct the slowest moving drive/engine to match the position of the fastest one. For example, if the operator pressed the BOTH DOWN button and the port side stops lower than the starboard one, TrimSync will lower the starboard side to match it.

- TrimSync will not attempt a correction when the drive/engine is near the upper or lower limit of its travel.
- If the operator moves a single drive/engine, then no corrections will be made until the next time the BOTH button is pressed.
- In the case of any fault the LED will turn red and TrimSync will stop making any corrections. Manual trim function will continue to operate with no impact.
- Keep in mind that the mechanical indicators are not as accurate as TrimSync, so it is highly likely that the indicators for each drive will not be perfectly matched every time you hit the BOTH button. TrimSync does not rely on the mechanical indicators and is more accurate so verify the physical position of the drives before assuming there is a fault.



Sterndrive Wiring Diagram



Outboard Wiring Diagram



Troubleshooting

If the unit will not calibrate then it is likely that the trim senders are not properly indexed. Manually indexing the senders will be required using the following procedure:

1. Move the drives to their full DOWN position
2. For the Port drive, locate the capped off connector that has a single brown wire where TrimSync is connected to the trim sender. If the boat is equipped with SmartCraft then there will be a harness connected instead of the cap. Remove the harness.
3. Install a digital VOM meter with the positive side on the brown wire and the negative to a suitable ground. Set the meter to read 0-5 volts.
4. Remove the trim sender.
5. Supply power to TrimSync. It will not matter if the LED is red.
6. With the grey hex facing you, slowly rotate the trim sender counter-clockwise until you see a voltage reading of 0.5-0.6.
7. Continue turning counter-clockwise until the reading reaches greater than 2.0 volts.
8. If the voltage does not rise steadily between your two readings, then keep rotating the hex until you find another spot that will give you the 0.5-0.6 volts. The sender does not have windings 360 degrees, so we are looking for the section that is wired. The total sweep will be approximately 40 degrees.
9. Once the proper sweep is found move the hex back to the 0.5-0.6-volt position and re-install it.
10. Repeat the above process using the grey wire on the starboard side.
11. To force a recalibration, move the drives in their full UP position then press and hold the both UP button for until the green light begins flashing which will also record the full up position.
12. To complete the calibration process, move each drive to the full DOWN position one at a time. Do **not** use the BOTH / ALL button but you can move them each a little at a time to keep them from being too far out of alignment and risk binding. Pause at least one second in-between each move.

LED Indicator	Operation / Condition
Constant Green	Normal operation
Flashing Green	Calibration required
Constant Red	Drive(s) did not move during a correction. Could be failed trim sender or pump. Power cycle will reset the error.
Flashing Red	Down range exceeded or no signal from both trim senders.



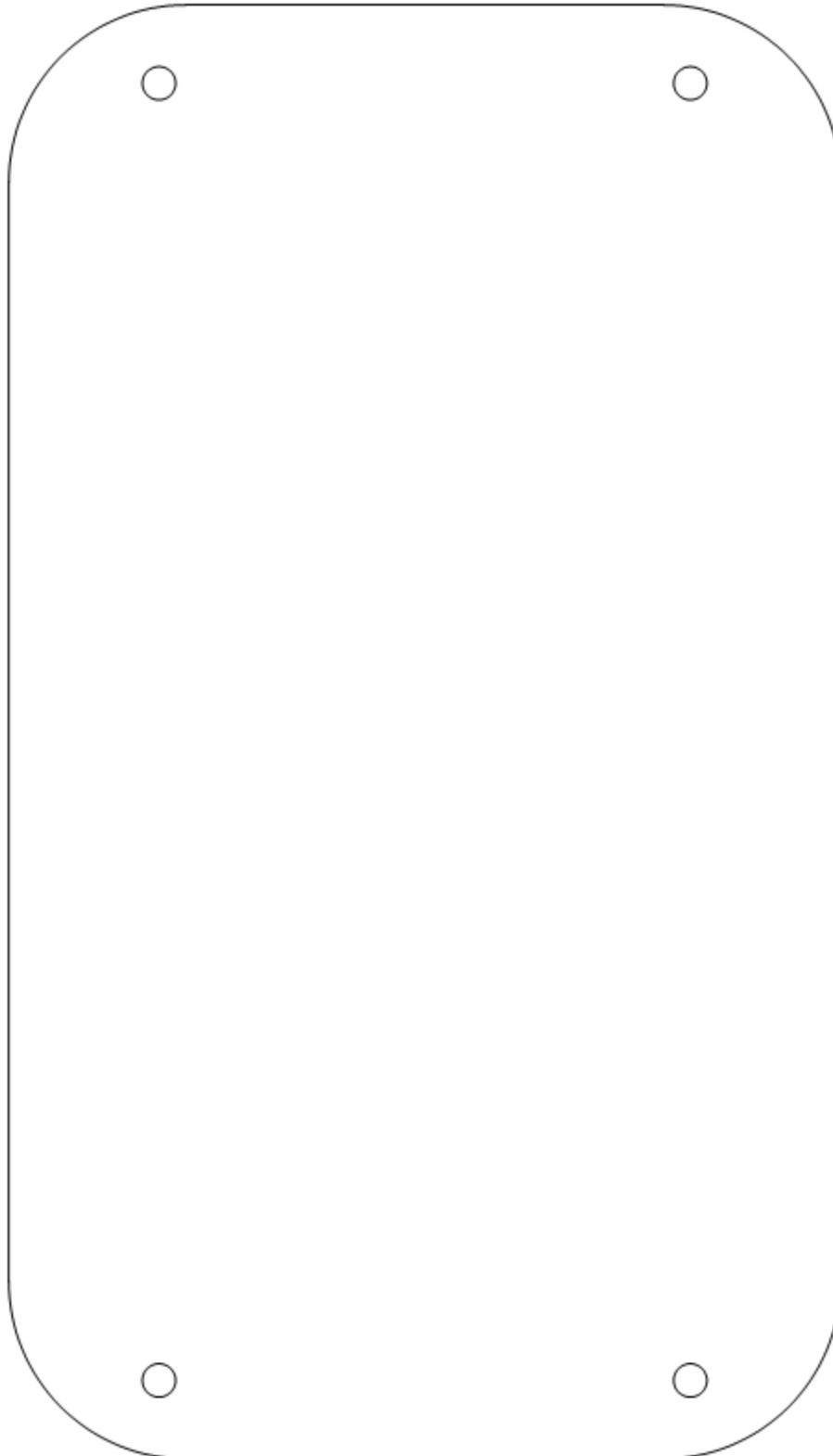
Manufacturer Warranty

THE MANUFACTURER OF THIS PRODUCT HAS PROVIDED YOU, THE END USER AND BUYER WITH A ONE YEAR WARRANTY FOR PRODUCT DEFECTS NOT OTHERWISE CAUSED BY YOU. THIS WARRANTY IS IN LIEU OF ALL WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THOSE OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE NOT EXPRESSLY SET FORTH HEREIN AND IS, IN FACT THE ONLY WARRANTY OFFERED BY THE MANUFACTURER. MANUFACTURER SHALL IN NO WAY BE LIABLE FOR ANY LOSSES, TIME EXPENSES, INCONVENIENCE, OR INCIDENTAL, SPECIAL, PUNITIVE AND/OR CONSEQUENTIAL DAMAGES. THE PARTY'S EXPRESSLY AGREE THAT MANUFACTURER SHALL ONLY BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF THE PRODUCT TO THE EXTENT IT IS FOUND TO BE DEFECTIVE IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THIS WARRANTY. BUYER WAIVES ANY RIGHT TO CLAIM ANY OTHER LOSSES OR CLAIMS FOR DAMAGES. THIS WARRANTY DOES NOT COVER AND SPECIFICALLY EXCLUDES WATER DAMAGE AND/OR FAULTY INSTALLATION. IN ADDITION, IF THE PRODUCT IS OPENED AND/OR THE SEAL TO THE PRODUCT IS OTHERWISE BROKEN, THE WARRANTY SHALL BE VOID AND OF NO EFFECT.

THE BUYER'S PURCHASE OF THE PRODUCT, AGREEMENT, AND WARRANTY SHALL BE GOVERNED BY AND CONSTRUED UNDER THE LAWS OF THE STATE OF ILLINOIS AND ANY DISPUTES UNDER THIS AGREEMENT SHALL BE LITIGATED EXCLUSIVELY IN FEDERAL OR STATE COURTS LOCATED IN COOK COUNTY, ILLINOIS. THE SELLER SHALL BE ENTITLED TO RECOVER FROM BUYER ITS REASONABLE COSTS AND ATTORNEYS' FEES RELATED TO ANY LAWSUIT OR CLAIM BY AND/OR BETWEEN BUYER AND SELLER.



Drive Sync Mounting Template





TrimSync

TrimSync

Operating a multi-engine offshore powerboat can be a little overwhelming at times. That's probably why offshore racing is the only motorsport that requires two drivers. Most offshore boats have a trim button built into the throttle lever handle. We all know that the drives / outboards rarely stay perfectly even using just the BOTH/ALL button on the throttles. Having them offset can impact handling, and can be dangerous at high speeds. So, after a couple of moves we are all reaching to the individual buttons to try and even them out. Over and over again...



TrimSync monitors the trim for twin and triple engine boats, so when the operator presses the BOTH/ALL button, it will automatically adjust the drives / outboards to be in perfect alignment, *every time*. You will never have to worry about how accurate your mechanical trim indicators are because TrimSync will always move the slowest drive / outboard to match the others. TrimSync is compatible with all LED and electronic trim indicators. In

addition, NMEA output is an optional feature for interfacing with digital displays. There are no extra buttons or complicated operating instructions, just push the BOTH button and TrimSync does the rest!

TrimSync Race Edition

TrimSync Race Edition adds the ability to recall two preprogrammed trim positions at the push of a button. Now you can recall your optimum trim settings without having to monitor the indicators. For example, use one preset for your maximum trim and the other for neutral so you can focus on driving and reduce the chance of being over-trimmed at high speeds.

Just drive!

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