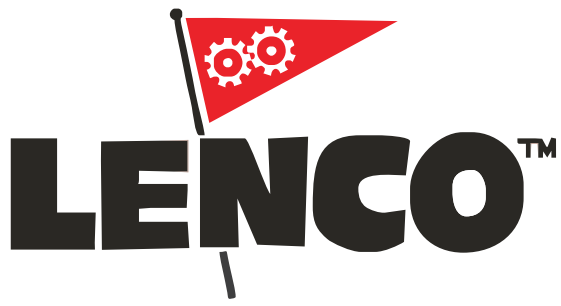


The world leader in
trim tab, electric propulsion system, & hatch lift innovation

An orange pennant flag is shown on a grey flagpole. The flag features a graphic of two interlocking gears, one larger than the other, in a lighter orange color. The text "OWNER'S MANUAL" is overlaid on the flag in a large, bold, black sans-serif font.

OWNER'S MANUAL

Troll'n Tabs
ELECTRIC PROPULSION



LEADING THE WAY IN
INNOVATION



Why Lenco?

**FASTER
STRONGER
EASIER TO INSTALL**

Congratulations on becoming the owner of the finest electronic propulsion system available!

- Instant Response for precise control
- Engineered for unsurpassed durability.
- Plug-and-Play connections and simple instructions ensure a quick and easy installation, so you can get back on the water in no time.

www.lencomarine.com

VISIT OUR WEBSITE FOR MORE INFORMATION, INTERACTIVE DEMOS,
TROUBLE SHOOTING GUIDES, AND MUCH MORE!

TABLE OF CONTENTS

Click on any box to jump to that section of the manual.

Return to this menu at any time using the "Return to Contents" link at the top left of every page.

1.0 General Information ...4

2.0 Wiring & Battery Information ...5

MECHANICAL INSTALLATION

3.0 Troll'n Tab Mechanical Installation ...6-8

MECHANICAL INSTALLATION - CONTROLLING DEVICES

3.1 Joy Ride Joystick ...9-11

3.2 Micro Ride Joystick ...12-13

3.3 Foot Pedal ...14-15

3.4 Wireless Remote ...16-17

3.5 Wireless Remote as 2nd station ...18

ELECTRICAL INSTALLATION

4.0 Troll'n Tab Electrical Installation ...19-20

ELECTRICAL INSTALLATION - CONTROLLING DEVICES

4.1 Joy Ride Joystick ...21-23

4.2 Micro Ride Joystick ...24-25

4.3 Foot Pedal ...26-27

4.4 Wireless Remote ...28-29

4.5 Wireless Remote as 2nd station ...30-31

5.0 Battery Bank & Battery Cable Installation ...32

6.0 Operational Instructions ...33

6.1 Joy Ride Joystick ...33-38

6.2 Micro Ride Joystick ...39-40

6.3 Foot Pedal ...41-44

6.4 Wireless Remote ...45-46

7.0 Maintenance ...47

8.0 Templates & Wiring Diagrams ...



Return to this page with one click!



Installation Templates

Back Plate Template ...34

Joystick & Rocker Switch ...35

Full Wiring Diagrams

JOY RIDE

24-Volt ...36

36-Volt ...37

MICRO RIDE

24-Volt ...38

36-Volt ...39

FOOT PEDAL

24-Volt ...40

36-Volt ...41

WIRELESS

24-Volt ...42

36-Volt ...43

How to Use This Manual

Review the following information carefully. These notices will alert you to potential dangers and important information.

The observance of **WARNINGS** and **CAUTIONS** alone does not eliminate the possibility of personal injury or product damage.

Your close attention to the performance of recommended service procedures and the practice of responsible personal safety are major accident prevention measures.

 **WARNING**

Failure to follow a safety WARNING can result in bodily injury.

 **CAUTION**

Failure to observe CAUTION instructions can result in failure or damage to the product or equipment.

 **INFORMATION**

Signifies important information about your Drive System.

 **NOTE**

Signifies a statement calling attention to general information about your Drive System.

General Information

Please read and retain this manual.

The information within describes the proper procedures for safely installing, operating and maintaining your Drive System.

The descriptions and specifications contained herein were in effect at the time this manual was approved for printing. Lenco Marine, whose policy is one of continual improvement, reserves the right to discontinue models at any time, to change specifications, designs, and methods of procedure without notice and without incurring obligation.

Safety and operating information that is practiced along with good common sense can help prevent personal injury and product damage.

 **WARNING**

DIGITAL MOTORS:
If the motor automatically throttles back, it indicates something may be wrong with the motor and it should be taken in for service.




 **WARNING**




DIGITAL MOTORS:
A slight voltage drain occurs when the trolling motor is continually connected to the battery for extended periods of time. To prevent battery drain when not in use for an extended period, disconnect the trolling motor from the power source.

 **CAUTION**

Disconnect the trolling motor from the battery (or batteries) before charging by turning the breaker/switch to the "off" position.

Safety Dos and DON'Ts

-  **Do not** allow children to operate the Drive System without adult supervision.
-  **Do not** modify the unit in any way or add accessories other than approved Lenco Marine accessories.
-  **Do not** power-wash the Drive System.

-  **Do** disconnect the power from the motors when replacing the prop, removing debris around the prop, charging batteries, putting your boat on a trailer or when the drive system is not in use.
-  **Do** make sure the motors are fully retracted in the stowed position when using a gasoline motor to move to another location, or when putting your boat on a trailer.
-  **Do** secure loose items on your boat before traveling at high speeds across the water.



WARNING

Batteries contain sulfuric acid which can cause severe burns. Avoid contact with skin, eyes, and clothing. The battery also produces hydrogen and oxygen gasses when being charged.

This explosive gas is released through the battery vents and may form an explosive atmosphere around the battery for several hours after it has been charged.

Electrical arcing or flames can ignite the gas and cause an explosion which may shatter the battery and could cause blindness or other serious personal and property damage.

Refer to your battery manufacturer's guidelines for charging instructions.



WARNING

Be sure all switches are in the OFF position before connecting the motor to the batteries. Electrical arcing near the battery could ignite hydrogen gas and cause the battery to explode.



WARNING

Avoid serious injury or death from a possible fire caused by a direct short- Do not jump-start an outboard motor using the trolling motor battery/batteries.



Wire & Cable Routing

- Route Drive System wire on the opposite side of the boat from other miscellaneous boat wiring (bow light wiring, spot light wiring, etc.).
- Transducer installation should be installed according to the manufacturer's specifications. To avoid interference, cables should be routed separately from the Drive System power cables.
- **IMPORTANT: Route the transducer cable down the opposite side of the boat from the Drive System power cables or actuator extension cables.**
- Sensitive electronics, depth finders in particular, should be connected directly to the main engine battery or house electrical system.



Isolating Grounds

Lenco Marine recommends isolating the Drive System battery/batteries from the main engine battery.

Electrolysis Issues – Using the engine starting battery as a source of power for any Electric Drive System may cause electrolysis on metallic parts.

- If you have followed the battery wiring and installation instructions in this manual and your boat continues to have electrolysis issues, you will need to separate the Drive System from any other boat electronics.
- Remove the engine starting battery from the wiring configuration of the boat and isolate power circuit for our Drive System.



Recommendations

- **Battery Type** – The recommended battery is a 12-volt Deep Cycle battery.
- **Circuit Protection** – Lenco Marine recommends installing two 50 amp manual-reset circuit breaker inline with the Drive System motors positive leads within (1.8 m) 72 inches of the battery(s).
- **Wire Size** – For optimum performance, Lenco Marine recommends the use of six (6) gauge (13 mm) wire if extending existing wire beyond the standard battery cable supplied with the product.



WARNING

The following instructions contain important safety information and should be followed carefully. Failure to do so may result in injury and will void warranty.



CAUTION

Please read through the instructions in their entirety prior to beginning installation!

Aluminum Installation Addendum

In the event you are installing Trolling Tabs on an **aluminum transom**, you must take precautions to properly isolate the stainless steel hinge from the aluminum.

Standard Aluminum Transom

When mounting the Trolling Tabs to an aluminum transom, we recommend you isolate the stainless steel hinge from the aluminum transom with a rubber barrier. This will provide adequate isolation and vibration dampening between the Digital Drive and aluminum transom. *(Proceed to step 2.)*

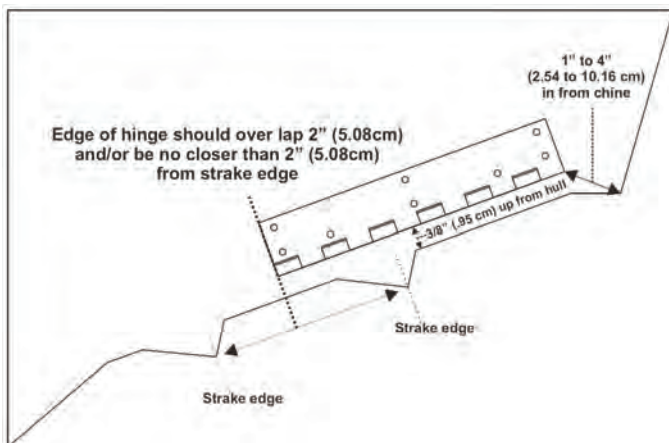


WARNING

Dissimilar metals, especially dissimilar metals left unprotected below the waterline, will cause galvanic corrosion problems to the least noble or "anodic" metal.

Isolation of dissimilar metals is a crucial step in the prevention of unwanted galvanic corrosion. Therefore, the stainless steel hinge on each Trolling Tab assembly **MUST** be isolated from an aluminum transom.

Fig. 3.1 A



Installation

- ① Determine where the Trolling Tabs will be installed.
 - If the installation is to be on a fiberglass transom proceed to step 2.
 - If the installation is to be on an aluminum transom refer to the **"Aluminum Installation Addendum"** to the left before continuing.



INFORMATION

The wider, or further apart, the Trolling Tabs are mounted the better they will operate.



CAUTION

The actuator should be mounted to the Trolling Tab lower bracket in the center hole of the bracket for an initial installation. *(See Fig. 3.1 B)*

- ② When laying out desired Trolling Tab location, hold the Tab against the transom with the bottom of the hinge 3/8" (.95 cm) from the bottom of the transom, approximately 1-4" (2.54 to 10.56 cm) in from the chine and level with the hull.

When mounting the hinge to the hull, make sure that the inside corner of the hinge is no closer that 2" (5.08 cm) to the left or right of any strake edge. In other words, the hinge edge should overlap or underlap any strake edge by 2" or more. This spacing recommendation is to help minimize spray. *(See Fig. 3.1 A)*

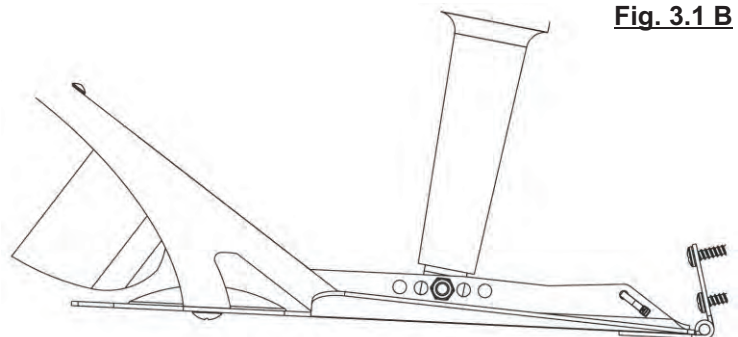
Transfer (trace) the screw hole pattern onto the transom for drilling,



INFORMATION

When drilling out the hole pattern for the **Trolling Tab hinge** you may drill through the transom, however the screws when installed with 3M 5200 adhesive caulking will seal the holes when installed. All supplied screws and fasteners are stainless steel. Do not use any other type of alloy.

Fig. 3.1 B



Continued on the next page...

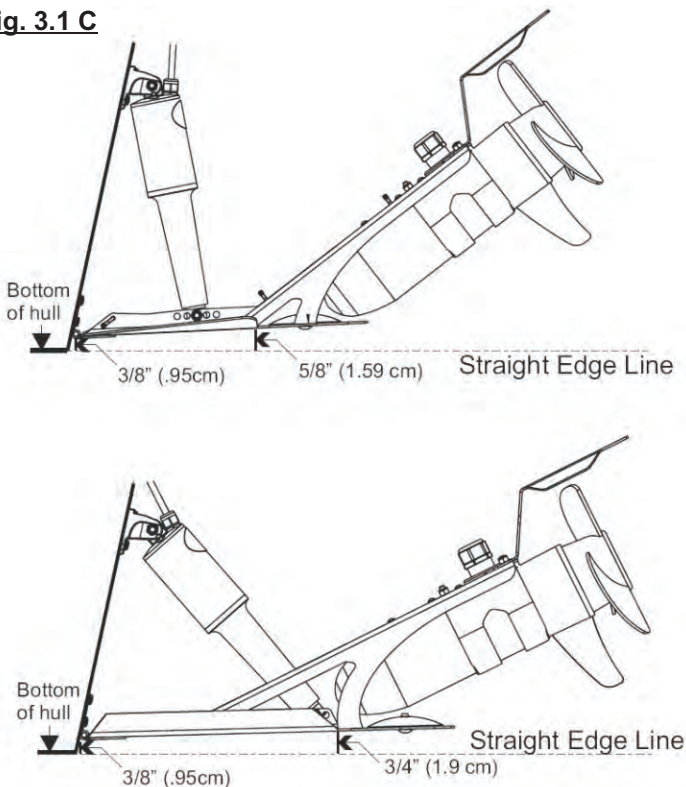
Installation Continued...

- ③ Using a 3/16" (.47 cm) drill bit, drill the previously marked hole locations to a depth of 1-1/4" (3.17 cm).
- ④ Mount the Trolling Tab hinge to the transom using the provided #14 x 1-1/4" (3.17 cm) stainless steel metal screws. We recommend using 3M 5200 adhesive caulking to bed the hinge and screws. **DO NOT OVER TIGHTEN.**
- ⑤ Attach the upper bracket to the actuator using the 5/16-18" x 1 3/4" Hex Head Bolt and 5/16-18" Hex Nut provided. Attach the actuator to the Trolling Tab lower bracket using the 5/16-18" x 2 1/4" Hex Head Bolt and 5/16-18" Hex Nut.
- ⑥ In order to properly position the upper bracket against the transom, you must lift the Trolling Tab so the trailing edge is approximately:
 - 5/8" (1.59 cm) for a 9"x12" Trolling Tab or
 - 3/4" (1.90 cm) for a 12"x12" Trolling Tab
 above a straight edge when held to the hull (see fig 3.1C)

When the Trolling Tab is at the appropriate level, transfer (trace) the outside shape of the upper bracket onto the transom.

The upper bracket should be marked where it lay's naturally against the transom to prevent binding during travel. (Do not adjust the upper bracket to the right or the left, as this will cause binding, instead just allow the bracket to come to rest in its natural position).

Fig. 3.1 C



- ⑦ Remove the actuator from the Trolling Tab lower bracket. Remove the upper mounting bracket from the actuator and align to the previously marked location to mark the upper screw hole locations and cable hole location.

i INFORMATION

When drilling out the hole pattern for the **upper bracket**, you may drill through the transom, however the screws when installed with 3M 5200 adhesive caulking will seal the holes when installed. All supplied screws and fasteners are stainless steel. Do not use any other type of alloy.

! WARNING

With some installations, fuel, water tanks and/or other systems may prevent the actuator cable from entering the hull through the upper mounting bracket. Be sure to check inside the hull before drilling any holes.

- ⑧ Using a 3/16" (.47 cm) drill bit, drill the previously marked screw holes to a depth of 2 1/2" (3.81 cm).
- ⑨ If all is clear, using the 3/8" (.95 cm) drill bit, drill the previously marked cable hole completely through the transom. If however, you are prevented from drilling a hole through the transom you may run the actuator leads through the splash well drains on either side of of the engine well, then into the rigging tubes with the other engine/steering control cables.

CAUTION

Be careful to avoid any sharp edges that may cause damage to the cables.

- ⑩ Insert the actuator cable through the appropriate hole in the upper mounting bracket until it reaches the actuator. Insert the actuator cable through the gland seal until it reaches the upper bracket. (See Fig 3.1 D)

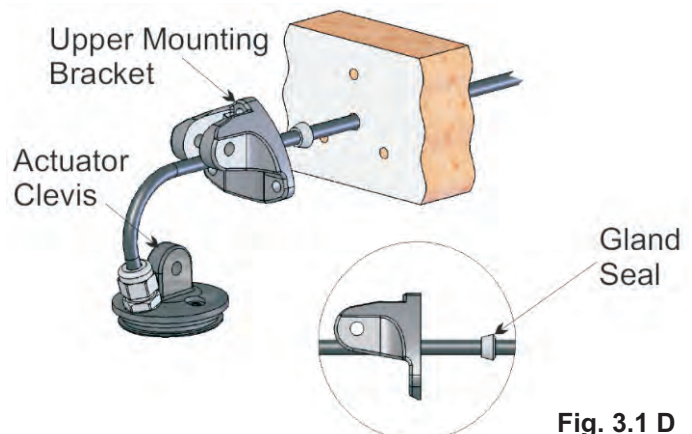


Fig. 3.1 D

Continued on the next page...

Installation Continued...

- 11** Next, insert the actuator cable through the transom. With the actuator loosely supported, start the provided #14 x 2-1/2" (3.17 cm) stainless steel metal screws through the upper bracket and into the transom. **MAKE SURE TO LEAVE THE SCREWS PARTIALLY INSTALLED.**
- 12** Insert the actuator clevis (mounting ear) into the top bracket and hold in the approximate installed location. Pass the actuator cable through the transom removing slack on the cable until it is snug.

Remove the actuator from the upper bracket and finish installing the previously started #14 x 2-1/2" (3.17 cm) stainless steel metal screws through the upper bracket and into the transom.
- 13** Reattach the actuator to the *upper bracket* using the 5/16-18" x 1-3/4" Hex Head Bolt and 5/16-18" Hex Nut Provided.
- 14** Reattach the actuator to the Trolling Tab *lower bracket* using the 5/16-18x2-1/4" Hex Head Bolt and 5/16-18" Hex Nut provided.
- 15** You can run the motor control leads through the splash well drains on either side of of the engine well, then into the rigging tubes with the other engine/steering control cables.
- 16** If running the actuators and motor control leads through the splash well drains is not an option...

 - You can drill a 3/8" (.95 cm) hole for the actuator leads and a 1/2" (1.27 cm) hole for the motor control leads in the transom 4" (10.16 cm) to 5" (12.70 cm) above the water line and insert the cables.
 - Cover the hole and cables with a clamshell vent sealed with 3M 5200 adhesive caulking for waterproof and finished installation.

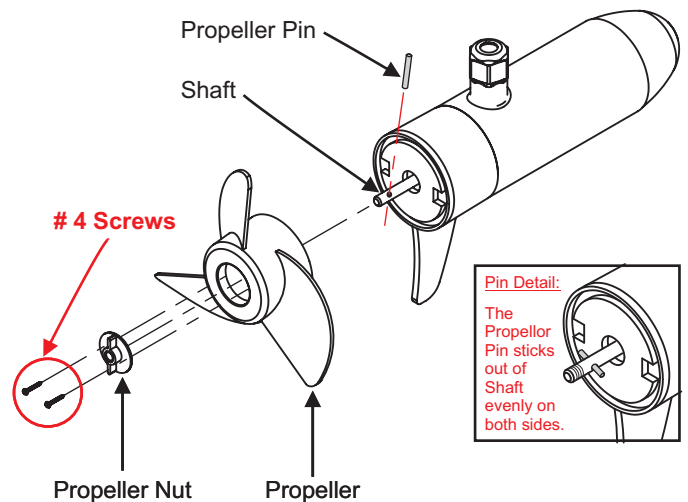
- 17** With the Trolling Tabs installed as described above, you are ready to connect the actuator wire contacts and the motor wire contacts into their connector housings.

 - Please refer to [Troll'n Tab Electrical Installation section 4.0](#) of this manual for proper wiring and installation instructions.

- 18** **Make sure the actuators are fully retracted before proceeding to the next step!** A 12V - 24V power source may be used to retract the actuator (ie. an electric drill battery). To utilize this option, contact the white wire to the negative battery terminal and the black wire to the positive battery terminal until the actuator is fully retracted.

- 19** To install the trolling motor propellers...

 - Insert the propeller pin through the trolling motor drive shaft. It should be even on both sides.
 - Place the prop onto the shaft and line up the back of the prop with the pin.
 - Use a nylon prop nut to secure the prop to the motor.
 - Drive the two #4 screws into each prop nut to secure. *See diagram below.*



Please see section [4.0 "Troll'n Tab Electrical Installation"](#) for details regarding proper electrical installations of Troll'n Tab System.

⚠ WARNING

Failure to properly secure the propeller nut with the two screws may result in lost propellers when reversing.

Installation Continued...

i After installing the control box and digital switch, you will connect the three cables and then be able to finish mounting the pod.
 (See section 4.1 for Joy Ride Electrical Installation)

B. Dash Mounting:

- Determine the mounting location for the joystick. The joystick will mount in dashes as thick as 7/8" (.875 inches).
- Ensure that the mounting location will not interfere with any existing wiring or structures in the boat.
- Use the enclosed [template](#) to drill four (4) 5/16" (.313 inch) holes for the mounting bolts and one large hole for the joystick.
- Insert the joystick into the dash. The joystick's back should face the bow (see image above).
- Mount the joystick so that the joystick back faces the bow of the boat. Place the three cables exiting the bottom of the joystick into the large hole and seat the joystick to the dash.
- Install the backing plate inside the dash and secure with the locking nuts provided.

3 CONTROL BOX MOUNTING

- The control box needs to be mounted in close proximity to the joystick so that the two inter-connecting cables have sufficient length to connect to the joystick cables while still allowing enough length to form a drip loop on each cable.
- The control box should be oriented so that the wires exit the bottom side of the control box after mounting.

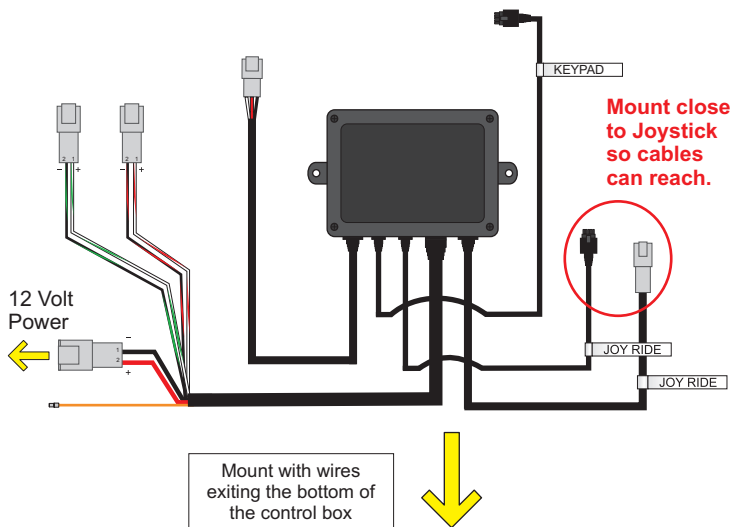


Fig. 3.1 C

- Install the control box by securing it to a bulkhead or other surface with two screws through the mounting flanges.

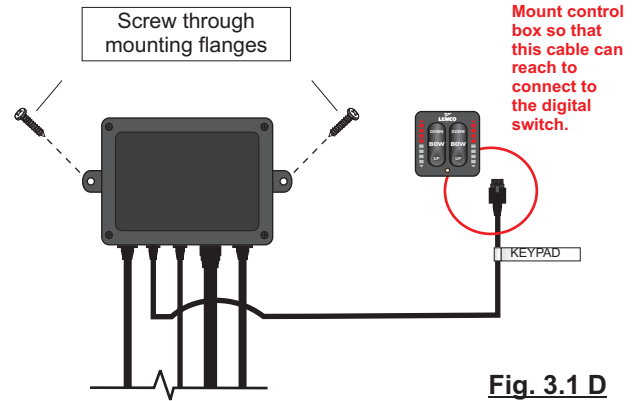


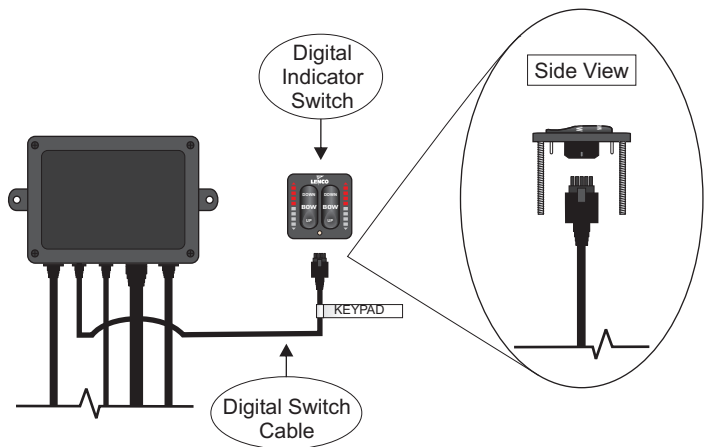
Fig. 3.1 D

- Ensure that installing the two screws will not damage any existing wiring, structures, or hoses prior to installation.
- Secure the cables with tie wraps approximately every 12 inches.

i Please see [section 4.1 "Joy Ride Electrical Installation"](#) and Wiring Diagrams for details regarding proper electrical installation procedures.

4 DIGITAL INDICATOR SWITCH MOUNTING

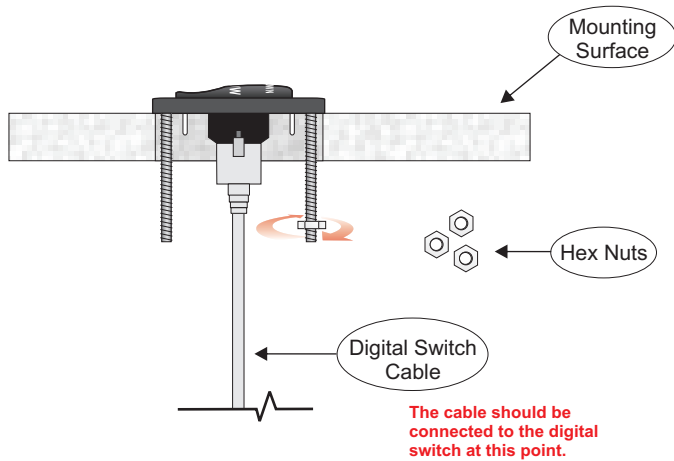
- The switch should be in close proximity to the main control box to allow the digital switch cable to connect to the back side of the switch.



Continued on the next page...

Installation Continued...

- Prior to installation: ensure that the mounting location will not interfere with any existing wiring, structures, or hoses prior to drilling the holes.
- Use the enclosed digital switch mounting [template](#) to drill four (4) 1/4" holes for the mounting bolts and one large hole (2") for cable access.
- Before seating the switch in the holes, connect the digital switch cable into the back of the digital switch. Line up the tabs (tabs will be on the same side for proper connection) as shown in the above "Side View" diagram.
- Align the switch with the pre-drilled holes and push firmly until it is fully seated.
- Screw on the 4 provided nylon hex nuts to complete the installation.





WARNING

The following instructions contain important safety information and should be followed carefully. Failure to do so may result in injury and will void warranty.



CAUTION

Please read through the instructions in their entirety prior to beginning installation!

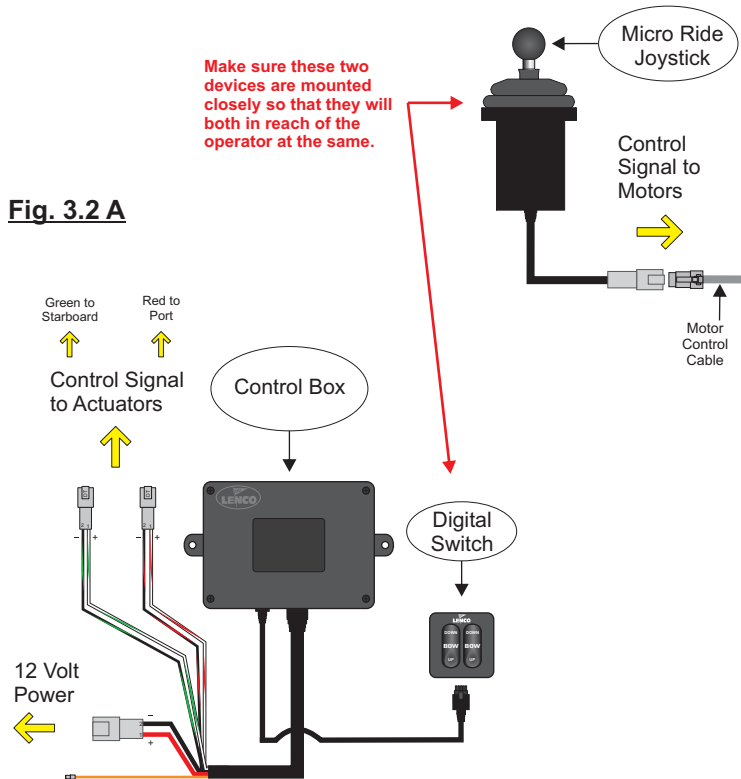
Micro Ride Installation

1 Micro Ride Installation Note:

The installation of the control electronics on a Micro Ride system consists of mounting the **joystick**, **digital switch**, and the **control box**. The joystick and the digital switch operate independently of each other.

However, these two items should be installed in close proximity to one another so the operator can reach both items during normal operations.

Mounting of the joystick can be accomplished by dash mounting or pod mounting. *(The pod is an accessory item that is purchased separately from the joystick.)*

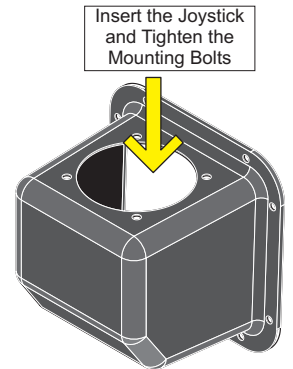


2 JOYSTICK MOUNTING

Install the joystick with either of the following two methods:

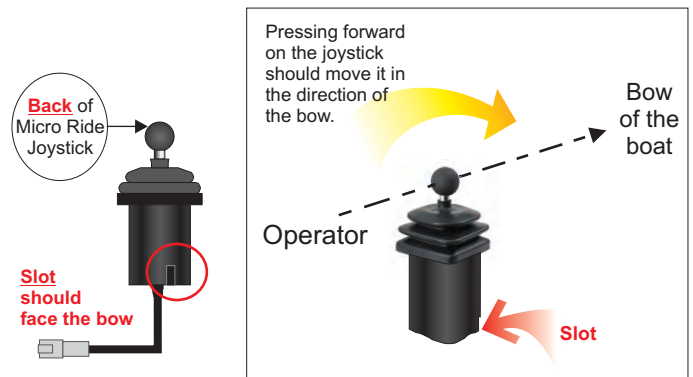
A. Pod Mounting:

- Determine the mounting location for the pod. Ensure that the mounting location won't interfere with any existing wiring, structures, or hoses in the boat when the mounting screws are installed.
- Ensure that the mounting location will provide sufficient clearance such that the joystick shaft can be moved freely throughout the full range of the shaft movement.



- After determining where the pod will be mounted, establish which side of the pod will be facing the bow of the boat.
- Insert the joystick into the pod. The joystick's back should face the bow. The back is designated by a small slot on the bottom of the joystick's base.

- Install with the back of the joystick facing the bow side of the pod.



- Add the metal backing plate to the inside of the pod so that the four joystick bolts go through the corresponding holes of the backing plate. Tighten 4 locking nuts to secure the joystick in the pod.

If necessary, drill a hole (after first verifying that it will not damage any existing wiring, structure or hoses in the boat) large enough to allow the motor cable to interconnect with the joystick cable inside the pod.

Continued on the next page...

Installation Continued...

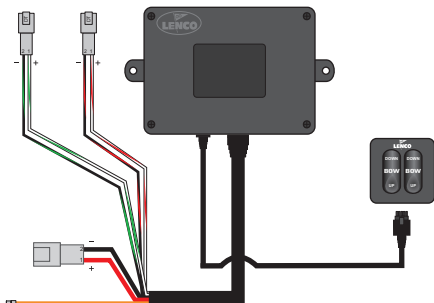
i After installing the control box and digital switch, you will connect the cable from the bottom of the joystick to the motor cable, then you will be able to finish mounting the pod.

B. Dash Mounting:

- Determine the mounting location for the joystick. The joystick will mount in dashes as thick as 7/8" (.875 inches).
- Ensure that the mounting location will not interfere with any existing wiring or structures in the boat.
- Use the enclosed [template](#) to drill four (4) 5/16" (.313 inch) holes for the mounting bolts and one large hole for the joystick.
- Insert the joystick into the dash. The joystick's back should face the bow (see image above).
- Mount the joystick so that the joystick back faces the bow of the boat. Place the cable exiting the bottom of the joystick into the large hole and seat the joystick to the dash.
- Install the backing plate inside the dash and secure with the locking nuts provided.

③ CONTROL BOX MOUNTING

- The trim tab control box needs to be mounted in close proximity to the digital switch so there will be sufficient length to connect the key pad cable, while allowing enough length to form a drip loop on the cable.
- The control box should be oriented so that the wires exit the bottom side of the control box after mounting.



Mount with wires exiting the bottom of the control box

Fig. 3.2 C

- Install the control box by securing it to a bulkhead or other surface with two screws through the mounting flanges.

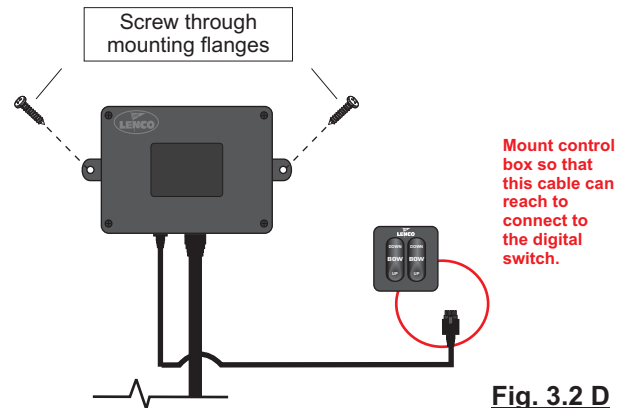


Fig. 3.2 D

- Ensure that installing the two screws will not damage any existing wiring, structures, or hoses prior to installation.
- Secure the cables with tie wraps approximately every 12 inches.

i Please see [section 4.2 "Micro Ride Electrical Installation"](#) and Wiring Diagrams for details regarding proper electrical installation procedures.



WARNING

The following instructions contain important safety information and should be followed carefully. Failure to do so may result in injury and will void warranty.



CAUTION

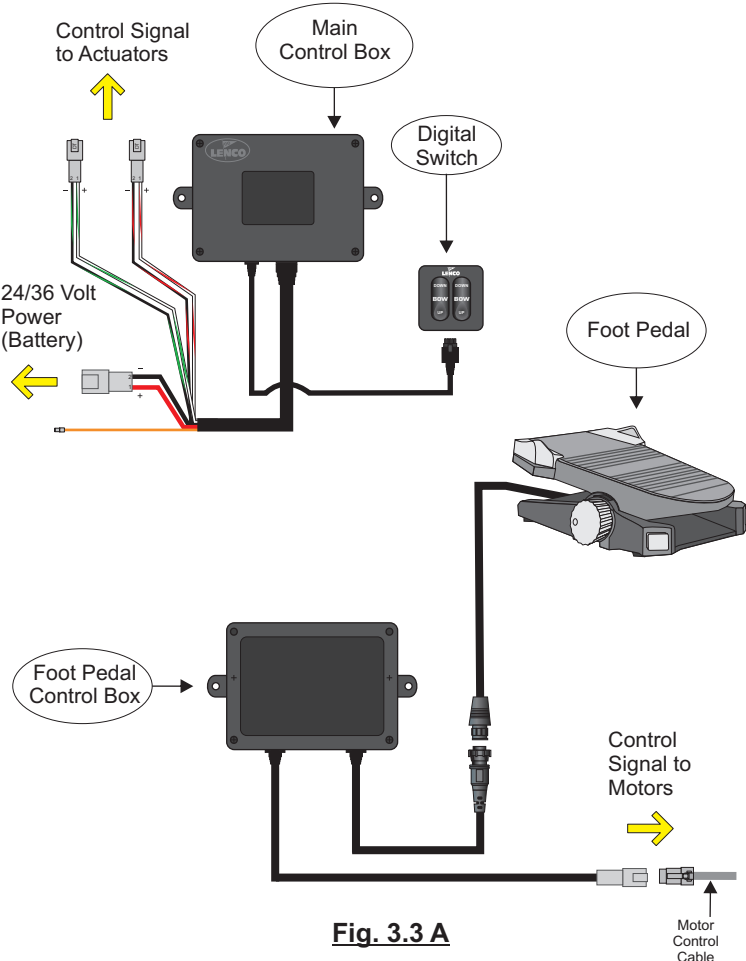
Please read through the instructions in their entirety prior to beginning installation!

Foot Pedal Installation

① Foot Pedal Installation Note:

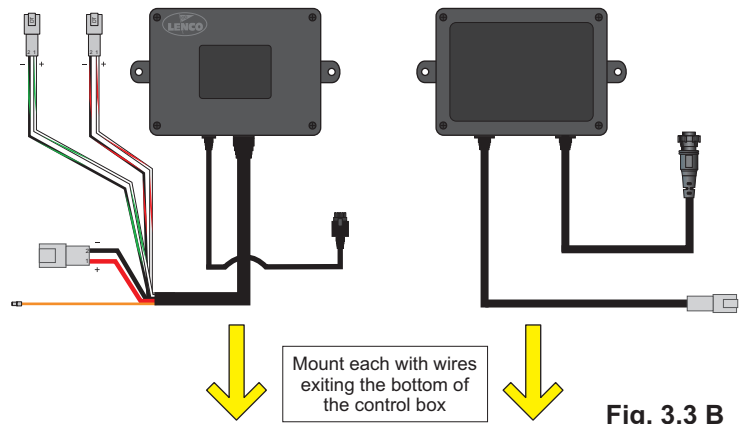
The installation of the control electronics on a Foot Pedal system consists of connecting the **foot pedal** and connecting & mounting the **digital switch** and the **two control boxes**.

The foot pedal and the digital switch operate independently of each other.

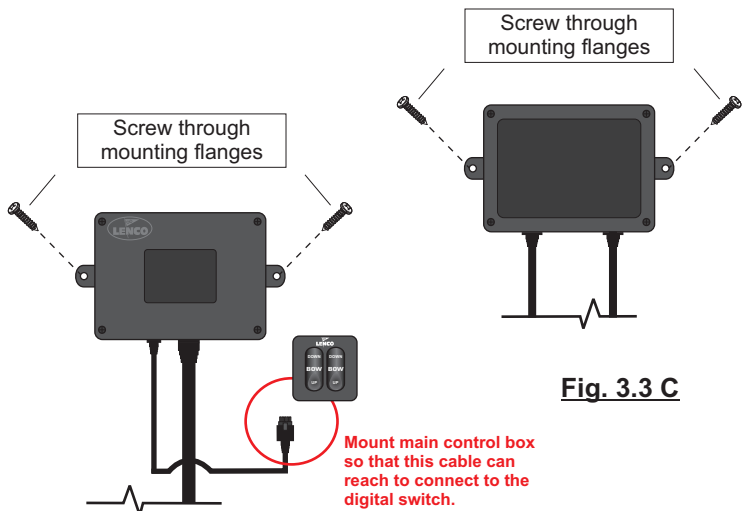


② CONTROL BOX MOUNTING

- The trim tab control box needs to be mounted in close proximity to the digital switch so there will be sufficient length to connect the key pad cable, while allowing enough length to form a drip loop on the cable.
- Each control box should be oriented so that the wires exit the bottom side of the control box after mounting.



- Install each control box by securing to a bulkhead or other surface with two screws through the mounting flanges.



- Ensure that installing the two screws will not damage any existing wiring, structures, or hoses prior to installation.
- Secure the cables with tie wraps approximately every 12 inches.



Please see [section 4.3 "Foot Pedal Electrical Installation"](#) and Wiring Diagrams for details regarding proper electrical installation procedures.

Continued on the next page...

Installation Continued...

③ DIGITAL SWITCH MOUNTING

- Mount the digital switch in a location that will allow the operator to reach both it and the foot pedal during normal operations.

The switch should also be in close proximity to the main control box to allow the digital switch cable to connect to the back side of the switch.

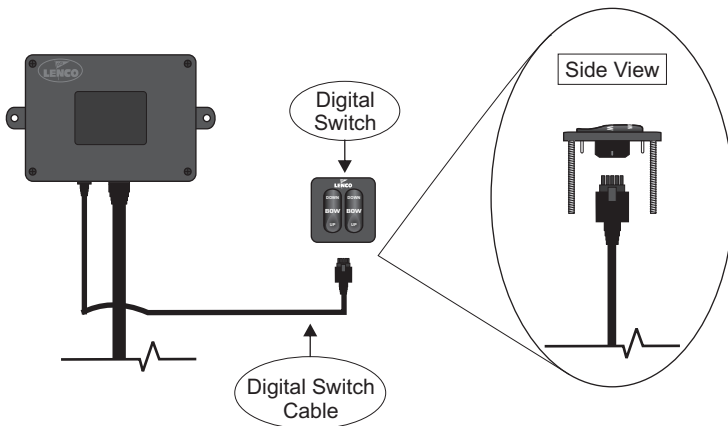


Fig. 3.3 D

- Prior to installation: ensure that the mounting location will not interfere with any existing wiring, structures, or hoses prior to drilling the holes.
- Use the enclosed digital switch mounting [template](#) to drill four (4) 1/4" holes for the mounting bolts and one large hole (2") for cable access.
- Before seating the switch in the holes, connect the digital switch cable into the back of the digital switch. Line up the tabs (tabs will be on the same side for proper connection) as shown in the above "Side View" diagram.
- Align the switch with the pre-drilled holes and push firmly until it is fully seated.
- Screw on the 4 provided nylon hex nuts to complete the installation.

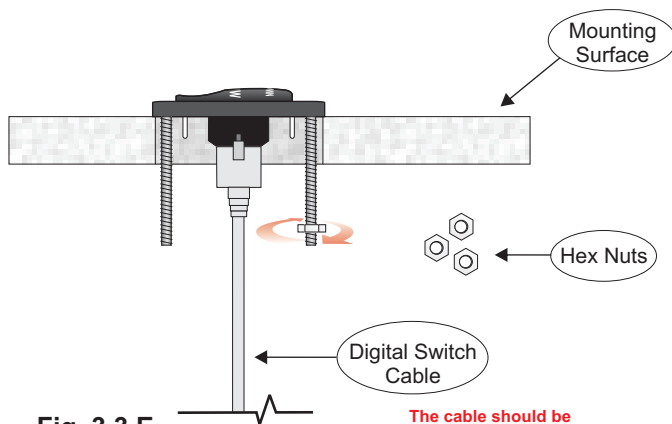


Fig. 3.3 E

The cable should be connected to the digital switch at this point.

! WARNING

The following instructions contain important safety information and should be followed carefully. Failure to do so may result in injury and will void warranty.

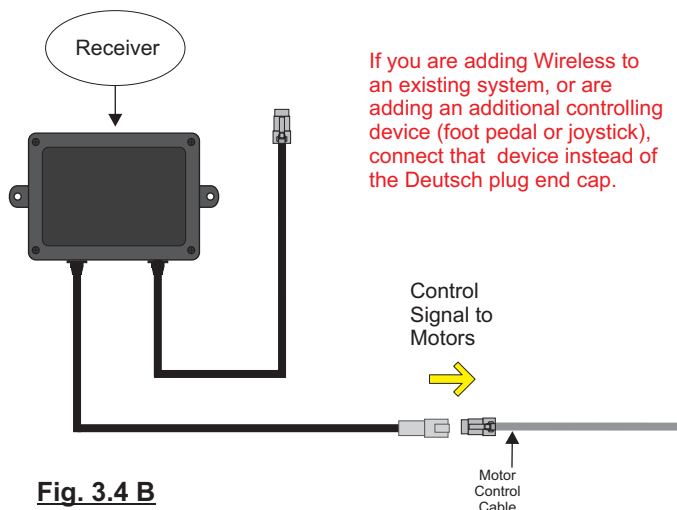
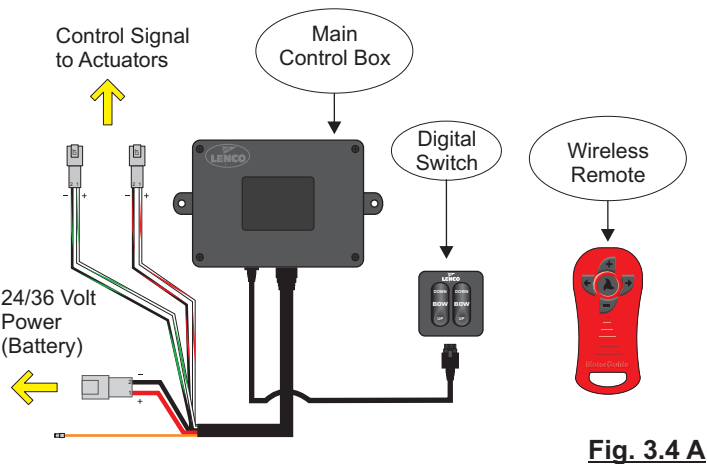
CAUTION

Please read through the instructions in their entirety prior to beginning installation!

Wireless System Connections

1 Wireless System Installation Note:
The installation of the control electronics on a Wireless Control system consists of connecting & mounting the **digital switch**, the **control box** and the **receiver**.

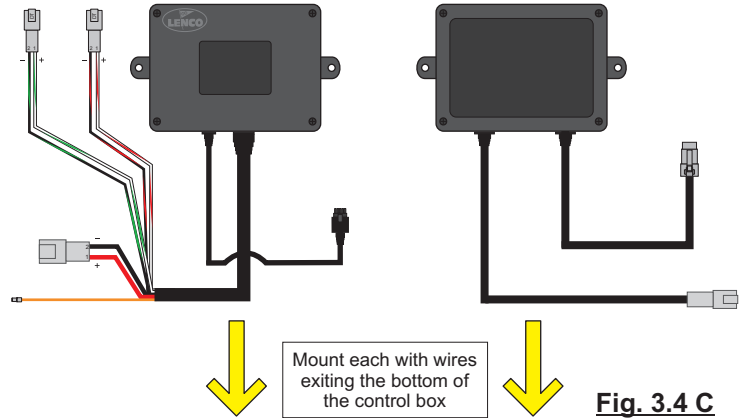
The final step will include programming the receiver to work with your keyfob. (This will be covered in Section 6.4 Wireless Remote Operation Instructions.)



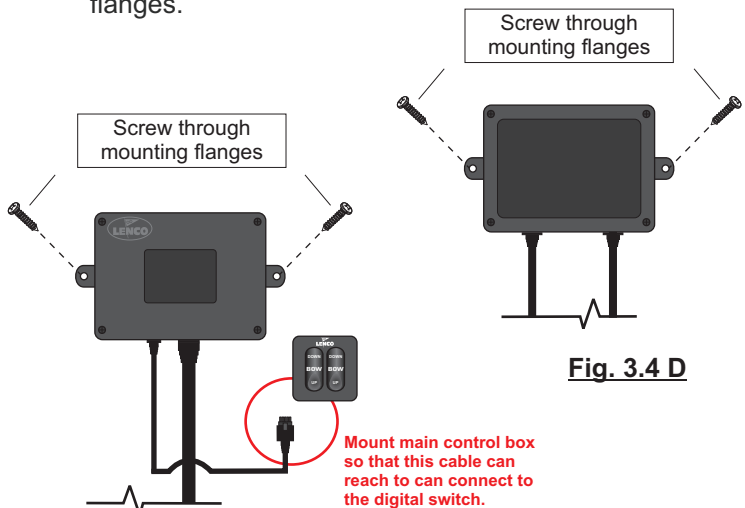
If you are adding Wireless to an existing system, or are adding an additional controlling device (foot pedal or joystick), connect that device instead of the Deutsch plug end cap.

2 CONTROL BOX MOUNTING

- Each control box should be oriented so that the wires exit the bottom side of the control box after mounting.



- Install each control box by securing to a bulkhead or other surface with two screws through the mounting flanges.



- Ensure that installing the two screws will not damage any existing wiring, structures, or hoses prior to installation.
- Secure the cables with tie wraps approximately every 12 inches.

i Please see [section 4.4 "Wireless Remote Electrical Installation"](#) and Wiring Diagrams for details regarding proper electrical installation

Continued on the next page...

Installation Continued...

③ DIGITAL SWITCH MOUNTING

- The digital switch should be mounted in close proximity to the main control box to allow the digital switch cable to connect to the back side of the switch.

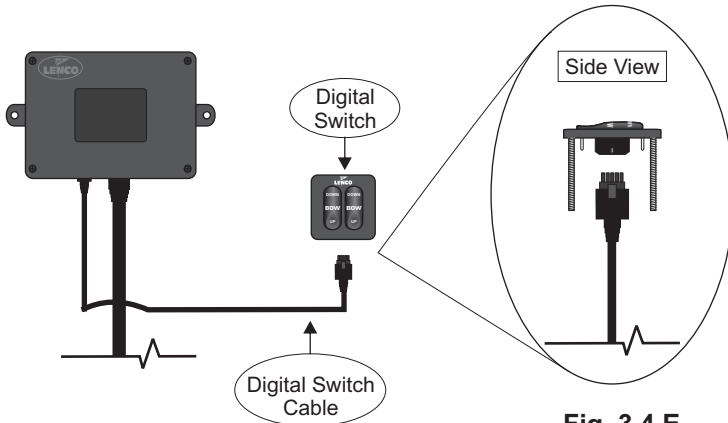


Fig. 3.4 E

- Prior to installation: ensure that the mounting location will not interfere with any existing wiring, structures, or hoses prior to drilling the holes.
- Use the enclosed digital switch mounting [template](#) to drill four (4) 1/4" holes for the mounting bolts and one large hole (2") for cable access.
- Before seating the switch in the holes, connect the digital switch cable into the back of the digital switch. Line up the tabs (tabs will be on the same side for proper connection) as shown in the above "Side View" diagram.
- Align the switch with the pre-drilled holes and push firmly until it is fully seated.
- Screw on the 4 provided nylon hex nuts to complete the installation.

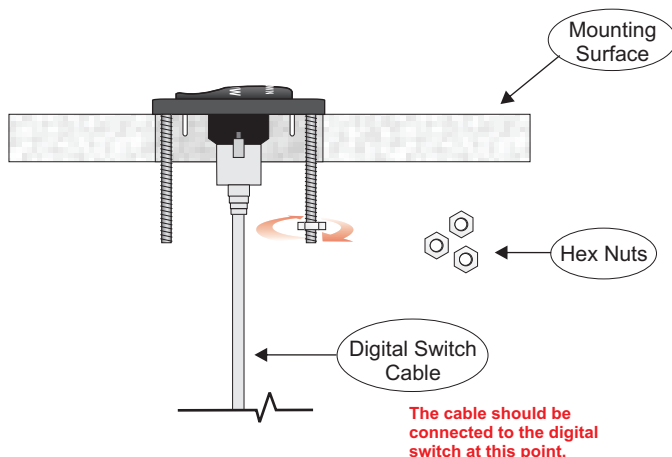


Fig. 3.4 F



WARNING

The following instructions contain important safety information and should be followed carefully. Failure to do so may result in injury and will void warranty.



CAUTION

Please read through the instructions in their entirety prior to beginning installation!

Wireless 2nd Station Installation

- ① **Wireless 2nd Station Installation Note:**
The installation of the control electronics on a 2nd Station Wireless Control system consists of connecting & mounting the receiver.

The final step will include programming the receiver to work with your keyfob. (This will be covered in Section 6.4 Wireless Remote Operation Instructions.)

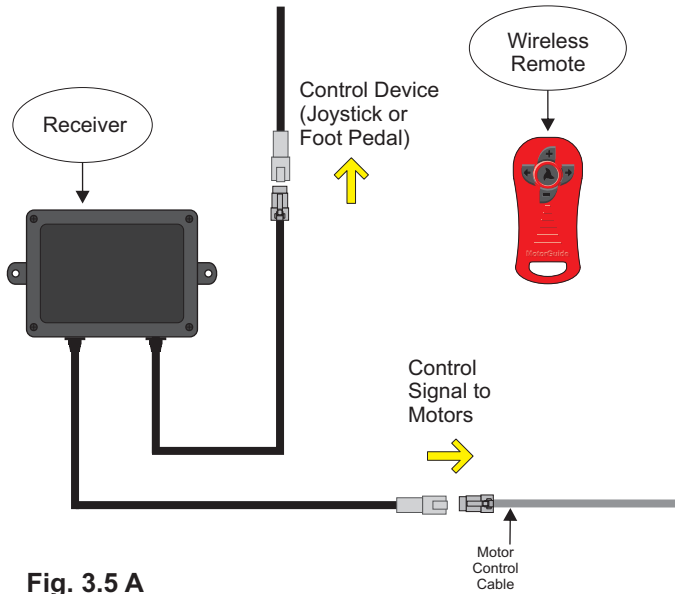


Fig. 3.5 A

The way the receiver will be connected and integrated into the existing system will depend on the type of controller you already have - be it a Joy Ride joystick, Micro Ride Joystick, or a Foot Pedal.

Please see [section 6.4 "Wireless Remote Operations"](#) and Wiring Diagrams for details regarding proper electrical installation procedures.

② **CONTROL BOX MOUNTING**

- The control box should be oriented so that the wires exit the bottom side of the control box after mounting.

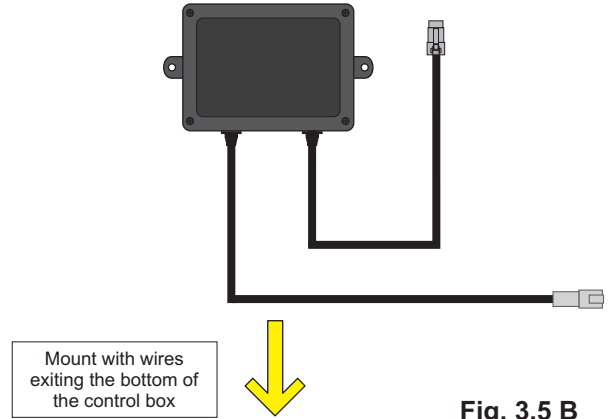


Fig. 3.5 B

- Install the control box by securing it to a bulkhead or other surface with two screws through the mounting flanges.

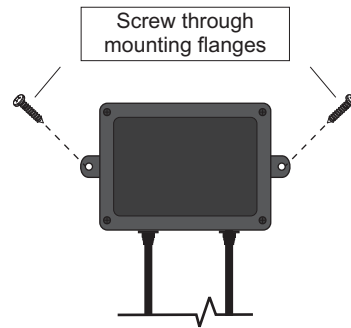


Fig. 3.5 C

- Ensure that installing the two screws will not damage any existing wiring, structures, or hoses prior to installation.
- Secure the cables with tie wraps approximately every 12 inches.

After installing the receiver, you will connect both the motor control cable, and the primary controller (Joystick or Foot Pedal) to the two Deutsch connectors.

([See section 4.5 for Wireless 2nd - Elect Install](#))



WARNING

The following instructions contain important safety information and should be followed carefully. Failure to do so may result in injury and will void warranty.



CAUTION

Please read through the instructions in their entirety prior to beginning installation!

Digital Drive Installation

1 Troll'n Tab Installation Note:

There are three sets of electrical connections on the digital drive system: the **actuator lead** connections, the **motor control** connections and the **power cable** connections. (See Fig. 4.0 A)

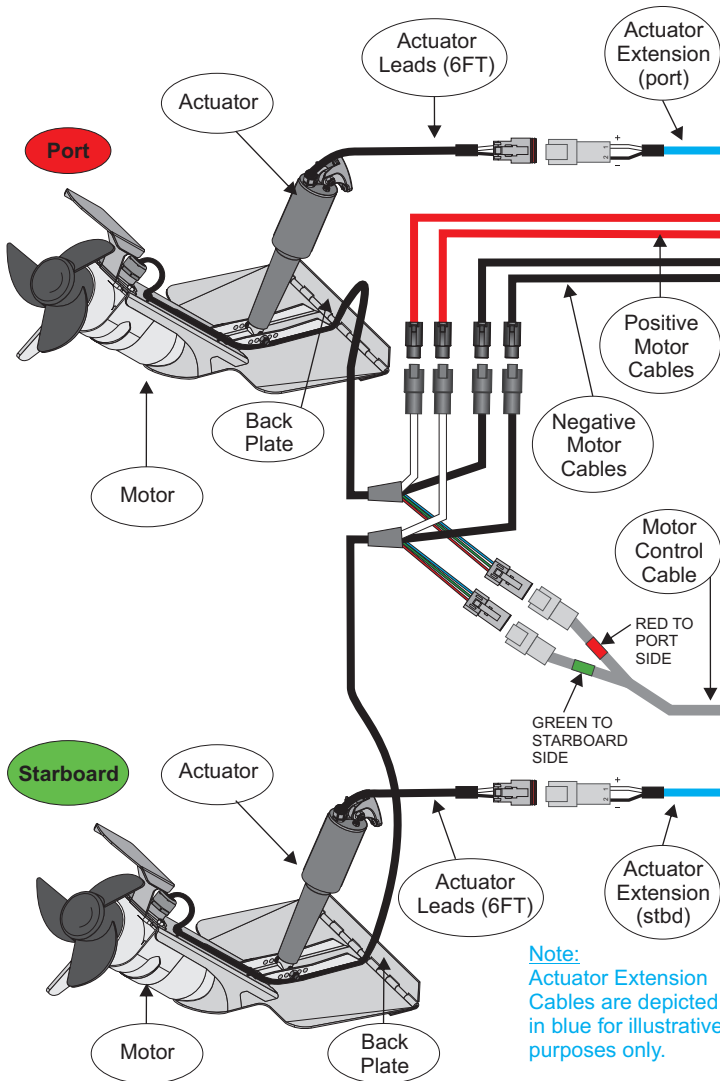


Fig. 4.0 A

2 ACTUATOR LEAD CONNECTIONS

These connections originate from the **control box** (Joy Ride system) or the **rocker switch** (Micro Ride, Foot Pedal, or Wireless System).

They can be identified on both as two sets of black and white wires. On the control box, however, they are further distinguished by red and green striping. (See Fig. 4.0 B)

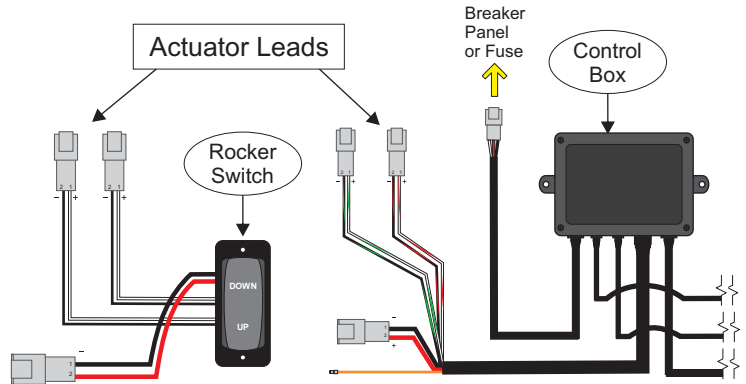


Fig. 4.0 B

Each actuator lead should be connected to the corresponding connector on the cable coming from each actuator. (See Fig. 4.0 C)

If the control box or rocker switch is located within 6 feet of the actuators, you can connect the actuator leads directly to the actuator connections.

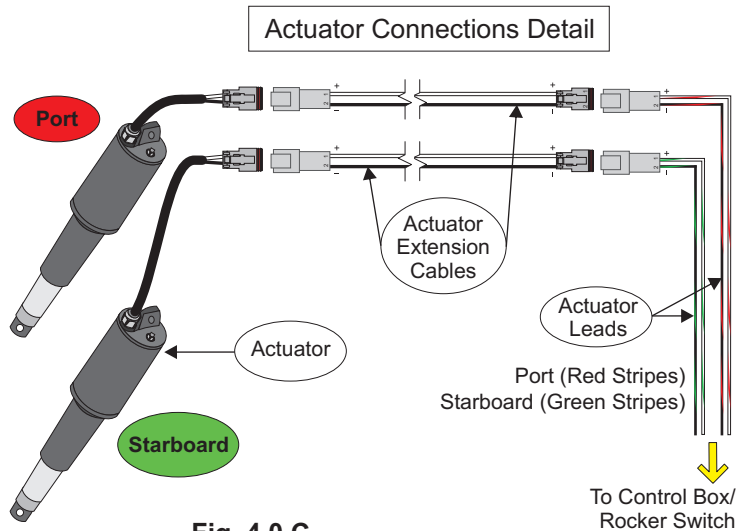


Fig. 4.0 C

For those situations where the control box or rocker switch is located further than six feet away, actuator extension cables will need to be used in order to connect the actuator leads to the actuator connections. (See Fig. 4.0 C)

Continued on the next page...

Installation Continued...

③ MOTOR CONTROL CABLE CONNECTION

The motor control cable connection provides power to the controller so it can send data back to the motors regarding speed and direction.

The motor control cable has a single 6-pin Deutsch plug on one end which connects to the joystick. The other end splits in two and has 3-pin Deutsch plug connections which go to each motor. (See Fig. 4.0 D)

- Connect the 3-pin Deutsch plug with the red marker to the 3-pin Deutsch plug on the port motor.
- Connect the 3-pin Deutsch plug with the green marker to the 3-pin Deutsch plug on the starboard motor. (Always plug the motor control cable into the controller before plugging the split ends into either motor.)

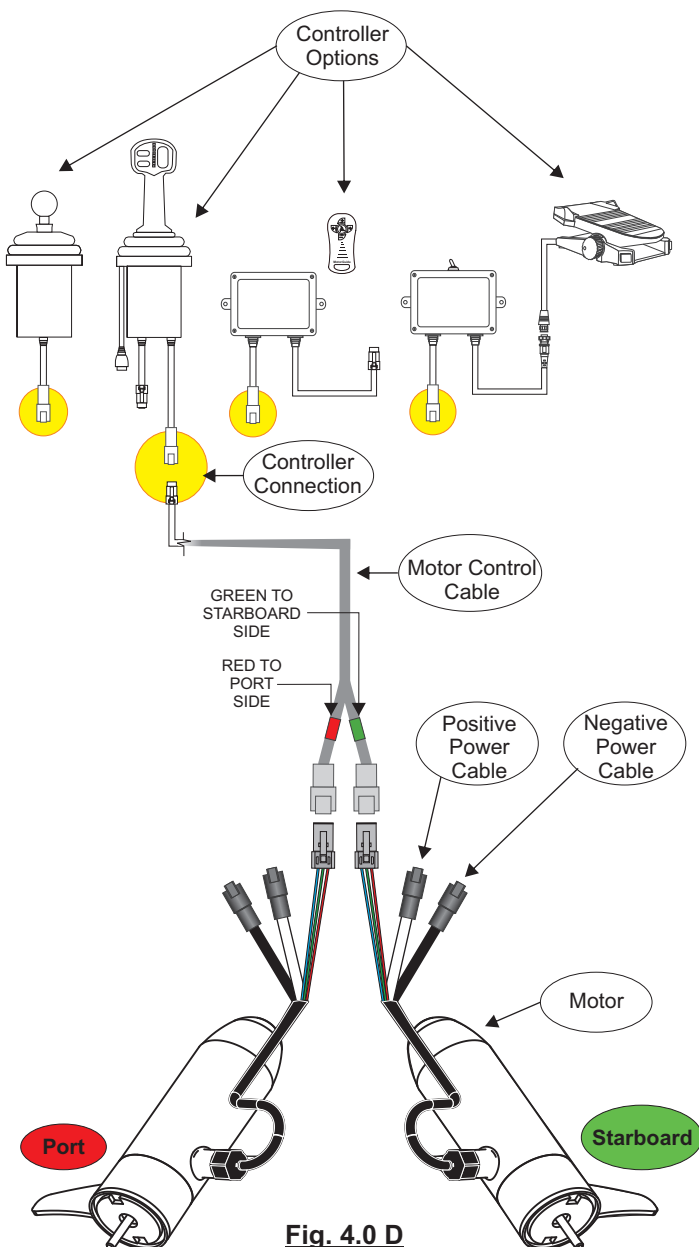


Fig. 4.0 D

⚠ WARNING

The power connections should always be the last connection made when installing the system.

Power connections should only be made while the power is OFF.

④ POWER CABLE CONNECTIONS

The Power Cable connections provide 24V or 36V power directly to the port and starboard motors.

- Using a 2 FT or 10 FT Battery Cable Kit, connect the kit's negative motor cables (black) to the negative power cables (black) coming from the port and starboard motors. (See Fig. 4.0 E)
- Connect the kit's positive motor cables (red) to the positive power cables (white) coming from the port and starboard motors. (See Fig. 4.0 E)

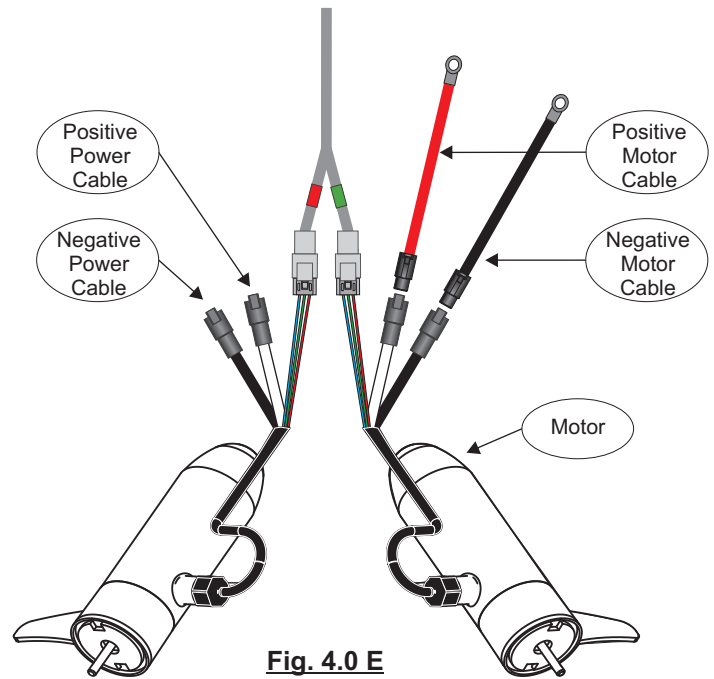


Fig. 4.0 E



Please see [section 5.0 "Battery Bank and Battery Cable Kit Installation"](#) and Wiring Diagrams for details regarding proper electrical installation procedures for each voltage setup.



WARNING

The following instructions contain important safety information and should be followed carefully. Failure to do so may result in injury and will void warranty.



CAUTION

Please read through the instructions in their entirety prior to beginning installation!

Joy Ride Joystick Connections

1 Joy Ride Connections Note:
There is only one electrical connection on the Joy Ride joystick between the electric motors and joystick: the **motor control cable** connection.
(See Fig. 4.1 A)

The motor control cable connection carries the motor direction and speed commands from the Joystick to the Port and Starboard motors.

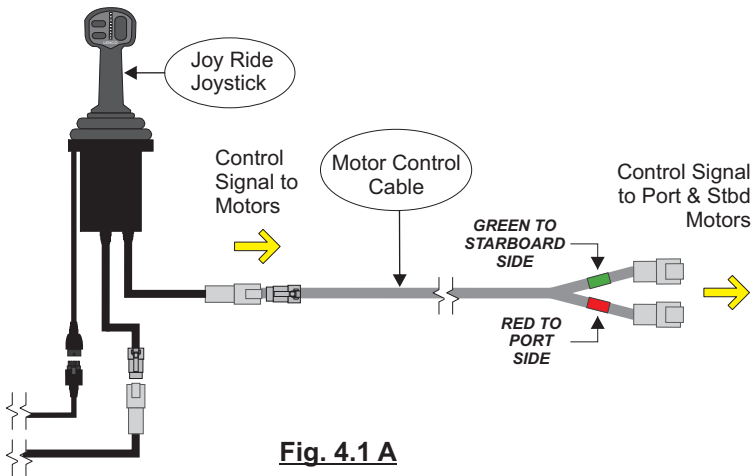


Fig. 4.1 A

The motor control cable has a single 6-pin Deutsch plug on one end which connects to the joystick. The other end splits in two and has 3-pin Deutsch plug connections which go to each motor. (See Fig. 4.1 A)

2 MOTOR CONTROL CABLE CONNECTION

- Connect the single 6-pin Deutsch plug on the control cable to the mating 6-pin Deutsch plug on the joystick.
- If the joystick is being pod mounted then this connection should be stowed inside the pod.
- Connect each 3-pin Deutsch plug to their corresponding motors.



The split cable ends are marked with red and green. Red is for the port motor (left side, when facing the bow), and green is for starboard (right side, when facing the bow).



Always connect the joystick to the motor control cable before plugging the cable into either motor.

3 Control Box Connections Note:
There are six electrical connections (seven, if you account for there being two actuator connections, one for each motor) on the Joy Ride TNT Control Box.

They are as follows: the **digital switch** connection, the two **Joy Ride joystick** connections, the **actuator** connections, the **activation cable** connection, the **battery meter cable** connection and finally, the **power cable** connection. (See Fig. 4.1 B)



WARNING

The power connections should always be the last connection made when installing the system. Power connections should be made while the power is OFF.

Continued on the next page...

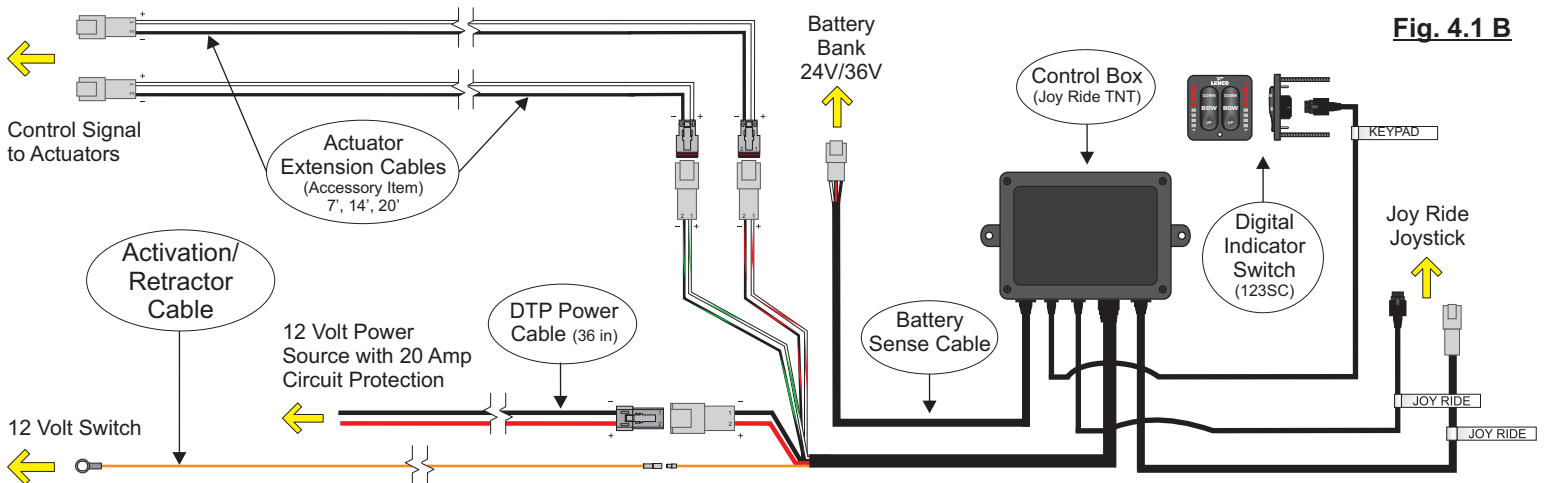


Fig. 4.1 B

Installation Continued...

i CONTROL BOX CONNECTIONS

Refer to Fig 4.1 B for the following steps.

4 DIGITAL SWITCH CONNECTION

- Plug the 10-pin rectangular connector on the digital switch cable to the back of the digital switch.
- If you need to unplug the switch, you **MUST** depress the latching mechanism and pull straight back. Failing to fully depress the latching mechanism will potentially damage the digital switch.

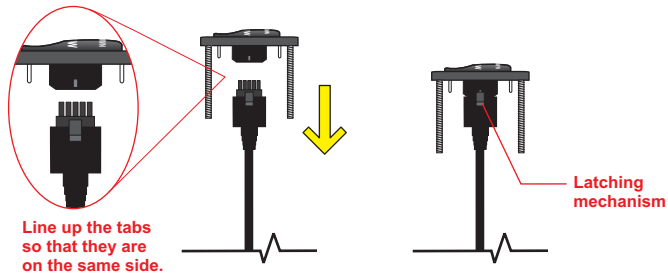


Fig. 4.1 C

5 JOY RIDE JOYSTICK CONNECTIONS

These two cables connect the Joy Ride Joystick to the Joy Ride TNT Control Box and allow data to flow between both devices.

- Plug the male 10-pin rectangular connector labeled "Joy Ride" into the female 10-pin rectangular connector coming from the Joy Ride Joystick.
- Plug the female 6-pin Deutsch connector labeled "Joy Ride" into the male 6-pin Deutsch connector coming from the Joy Ride Joystick.

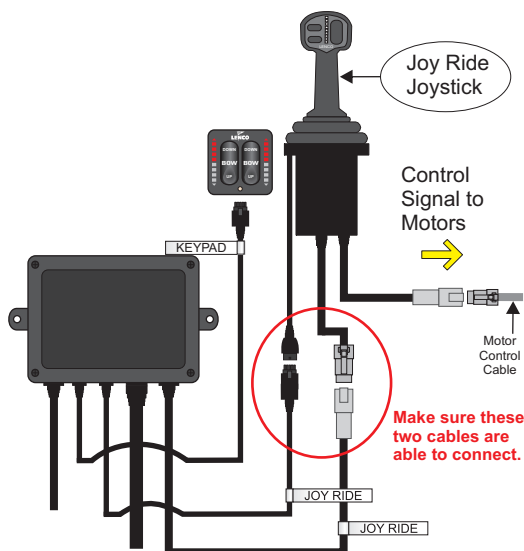


Fig. 4.1 D

6 ACTUATOR CONNECTIONS

Like the split end of the motor control cable (see previous page), the actuator cables & actuator leads (control box) are also color-coded. The control box's actuator lead wires are traced with red and green.

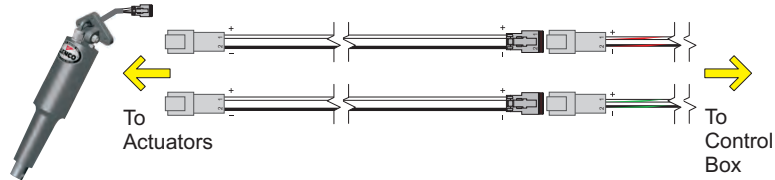


Fig. 4.1 E

- Plug the set of identical 2-pin Deutsch Plugs into their corresponding connectors coming from each actuator. Match the port actuator to the red leads and the starboard actuator to the green leads.
- You may need actuator extension cables if the distance between the control box and the actuators is more than 6 ft. (Available in 7ft, 14ft, 20ft, 26ft, & 32ft)

7 ACTIVATION CABLE

This cable, when connected to an on/off switch allows you to manually turn your Joy Ride system on or off. The switch also activates the retractor feature when the switch is turned to the off position.

- The activation cable is the thin orange wire. One end has a *bullet connector* that matches the lead coming from the control box. Plug the bullet connectors together.
- The other end of the orange cable terminates with a *ring terminal*. Connect this end to a non-engine switch that is connected to the 12 volt house battery.

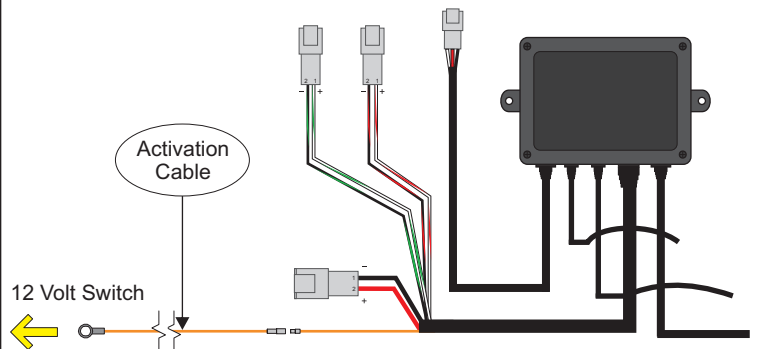


Fig. 4.1 F

Continued on the next page...

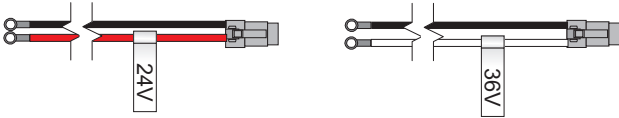
Installation Continued...

8 BATTERY SENSE CABLE

This cable provides battery voltage data to the Battery Level Indicator Display located on the joystick key pad.

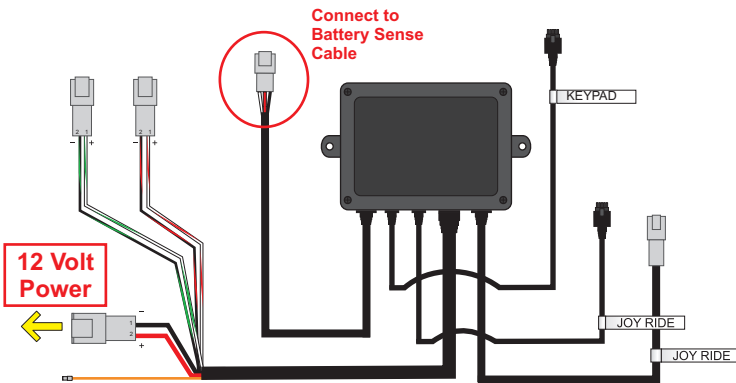
There are two different battery sense cables: one is made for 24 volt systems (its wires are red and black), and the other is made for 36 volt systems (its wires are black and white).

Fig. 4.1 G



- Select the right cable (to match voltage) for your system. The cables are also labeled with tags.
- Connect the 3-pin Deutsch Plug on the cable to the matching lead exiting the control box. (the lead has red, black, and white wires)

Fig. 4.1 H



9 POWER CABLE

- Connect the 2-pin Deutsch Plug of the battery cable (red & black wires) to the matching Deutsch Plug coming from the control box. (See Fig. 4.1 B)
- The (124SSR) control box's power connections should be connected to the **house or cranking battery** of the boat. (**12 volt source**)



It is recommended that the battery cable connection is not made to the batteries that supply power to the trolling motors.

The reason for this is to allow for trim tab control when the batteries for the trolling motors are depleted or removed.



CAUTION

The power cables should be connected to a 12 volt source only!



WARNING

The following instructions contain important safety information and should be followed carefully. Failure to do so may result in injury and will void warranty.



CAUTION

Please read through the instructions in their entirety prior to beginning installation!

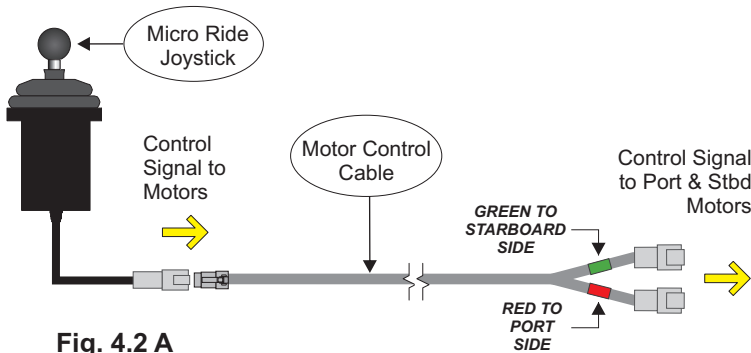
Micro Ride Joystick Connections

1 Micro Ride Connections Note:

There is only one electrical connection on the Micro Ride joystick: the **motor control cable** connection. (See Fig. 4.2 A)

The motor control cable connection carries the motor direction and speed commands from the Joystick to the Port and Starboard motors.

The motor control cable has a single 6-pin Deutsch plug on one end which connects to the joystick. The other end splits in two and has 3-pin Deutsch plug connections which go to each motor. (See Fig. 4.2 A)



2 MOTOR CONTROL CABLE CONNECTION

- Connect the single 6-pin Deutsch plug on the control cable to the mating 6-pin Deutsch plug on the joystick.
- If the joystick is being pod mounted then this connection should be stowed inside the pod.
- Connect each 3-pin Deutsch plug to their corresponding motors.



The split cable ends are marked with red and green. Red is for the port motor (left side, when facing the bow), and green is for starboard (right side, when facing the bow).



Always connect the joystick to the motor control cable before plugging the cable into either motor.

3 Control Box Connections Note:

There are four electrical connections (five, if you account for there being two actuator connections, one for each motor) on the main (124SSR) control box.

They are as follows: the **digital switch** connection, the **actuator** connections, the **activation/retractor cable** connection and finally, the **power cable** connection. (See Fig. 4.2 B)

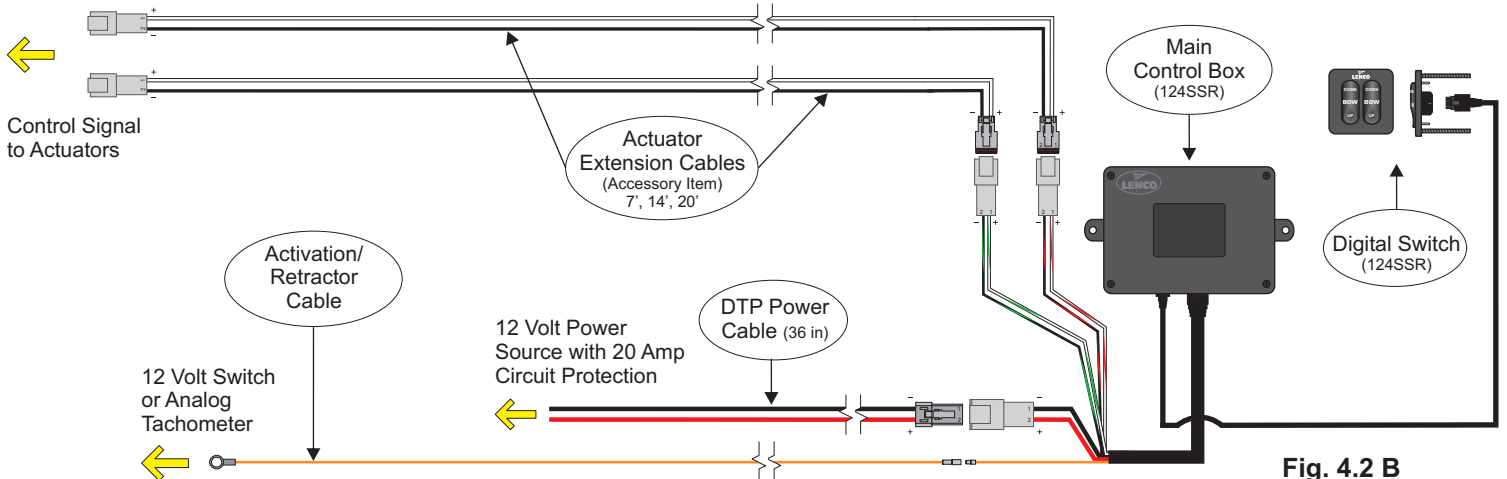


WARNING

The power connections should always be the last connection made when installing the system.

Power connections should only be made while the power is OFF.

Continued on the next page...



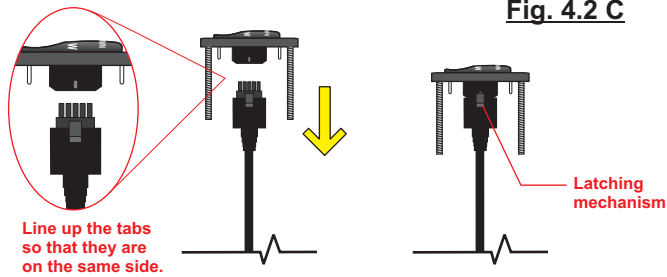
Installation Continued...

i CONTROL BOX CONNECTIONS

Refer to Fig 4.2 B for the following steps.

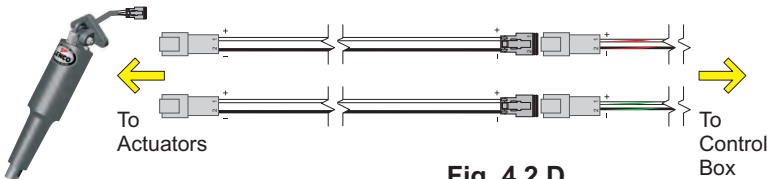
④ DIGITAL SWITCH CONNECTION

- Plug the 10-pin rectangular connector on the digital switch cable to the back of the digital switch.
- If you need to unplug the switch, simply depress the latching mechanism and pull straight back.



⑤ ACTUATOR CONNECTIONS

Like the split end of the motor control cable (see previous page), the actuator cables & actuator leads (control box) are also color-coded. The control box's actuator lead wires are traced with red and green.



- Plug the set of identical 10-pin Deutsch Plugs into their corresponding connectors coming from each actuator. Match red to red (port) & green to green (starboard).
- You may need actuator extension cables if the distance between the control box and the actuators is more than 6 ft. (Available in 7ft, 14ft, 20ft, 26ft, & 32ft)

⑥ ACTIVATION/RETRACTOR CABLE

This cable, when connected to an on/off switch allows you to manually retract your Troll'n Tab system with flip of a switch.

- The activation/battery meter cable is the thin orange wire. One end has a *bullet connector* that matches the lead coming from the control box. Plug the bullet connectors together.
- The other end of the orange cable terminates with a *ring terminal*. Connect this end to a non-engine switch that is connected to the house battery.

⑦ POWER CABLE

- Connect the 6-pin Deutsch Plug of the battery cable (red & black wires) to the matching Deutsch Plug on the lead (red & black wires) coming from the control box.
- The (124SSR) control box's power connections should be connected to the house or cranking battery of the boat. (12 volt source)



It is recommended that the battery cable connection is not made to the batteries that supply power to the trolling motors.

The reason for this is to allow for trim tab control when the batteries for the trolling motors are depleted or removed.



CAUTION

The power cables should be connected to a 12 volt source only!



WARNING

The following instructions contain important safety information and should be followed carefully. Failure to do so may result in injury and will void warranty.



CAUTION

Please read through the instructions in their entirety prior to beginning installation!

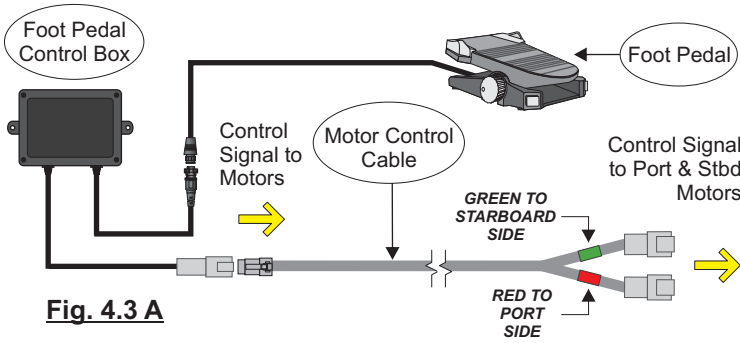
Foot Pedal Connections

① Foot Pedal Connections Note:

There are two electrical connections to be made for the installation of the Foot Pedal. The foot pedal to the **foot pedal control box** connection and the **motor control cable** connection. (See Fig. 4.3 A)

The motor control cable connection provides power to the controller so it can send data back to the motors regarding speed and direction.

The motor control cable has a single 6-pin Deutsch plug on one end which connects to the foot pedal control box (Which, in turn, connects to the foot pedal). The other end splits in two and has 3-pin Deutsch plug connections which go to each motor. (See Fig. 4.3 A)



② MOTOR CONTROL CABLE CONNECTION

- Plug the foot pedal connector to the matching connector on the foot pedal control box.
- Connect the single 6-pin Deutsch plug on the control box to the mating 6-pin Deutsch plug on the motor control cable.
- Connect each 3-pin Deutsch plug on the other end of the motor control cable to their corresponding motors.



The split cable ends are marked with red and green to distinguish this. Red is for the port side (left side, when facing the bow), and green is for starboard (right side).



Always connect the foot pedal & foot pedal control box to the motor control cable before plugging the cable into either motor.

③ Control Box Connections Note:

There are four electrical connections (five, if you account for there being two actuator connections, one for each motor) on the main (124SSR) control box.

They are as follows: the **digital switch** connection, the **actuator** connections, the **activation/battery meter cable** connection and finally, the **power cable** connection. (See Fig. 4.3 B)

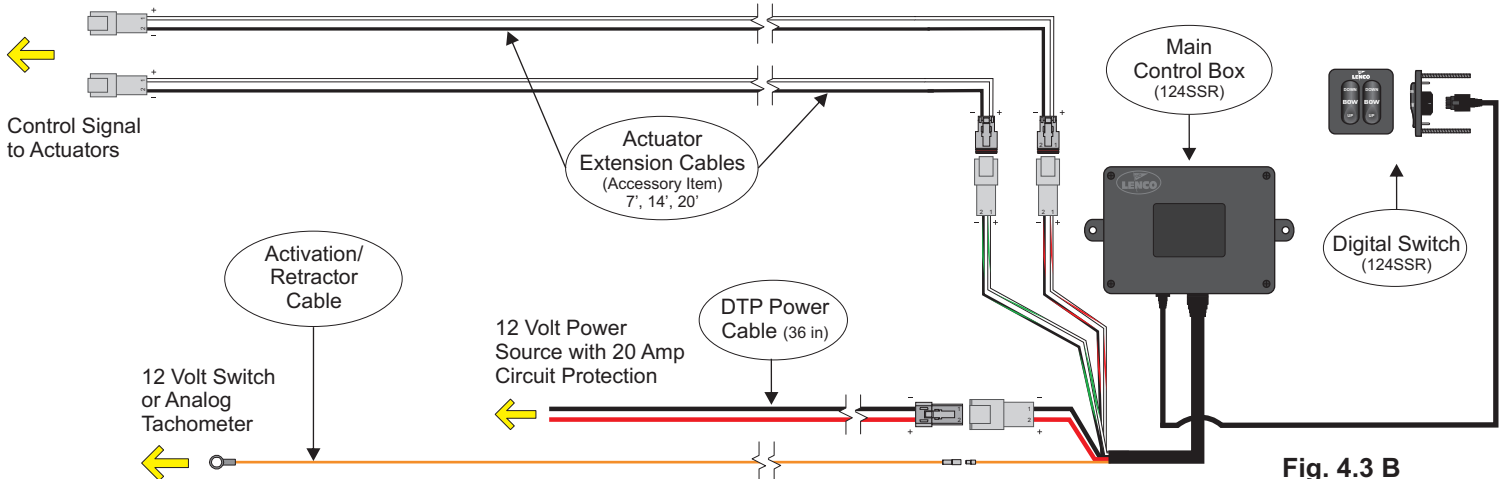


WARNING

The power connections should always be the last connection made when installing the system.

Power connections should only be made while the power is OFF.

Continued on the next page...



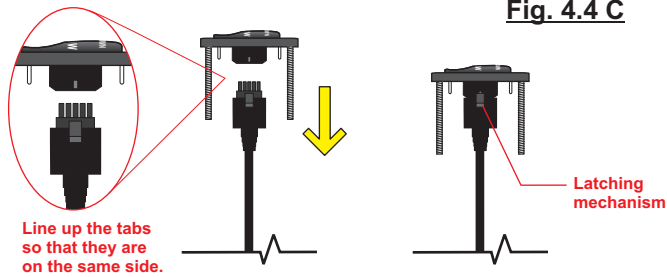
Installation Continued...

i CONTROL BOX CONNECTIONS

Refer to Fig 4.3 B for the following steps.

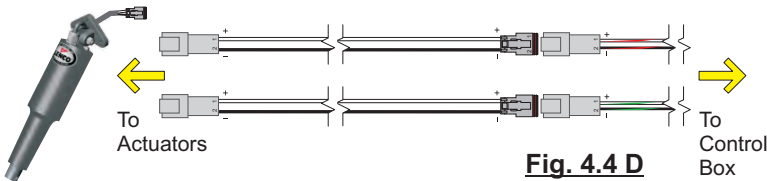
④ DIGITAL SWITCH CONNECTION

- Plug the 10-pin rectangular connector on the digital switch cable to the back of the digital switch.
- If you need to unplug the switch, simply depress the latching mechanism and pull straight back.



⑤ ACTUATOR CONNECTIONS

Like the split end of the motor control cable (see previous page), the actuator cables & actuator leads (control box) are also color-coded. The control box's actuator lead wires are traced with red and green.



- Plug the set of identical 10-pin Deutsch Plugs into their corresponding connectors coming from each actuator. Match red to red (port) & green to green (starboard).
- You may need actuator extension cables if the distance between the control box and the actuators is more than 6 ft. (Available in 7ft, 14ft, 20ft, 26ft, & 32ft)

⑥ ACTIVATION/RETRACTOR CABLE

This cable, when connected to an on/off switch allows you to manually retract your Troll'n Tab system with flip of a switch.

- The activation/battery meter cable is the thin orange wire. One end has a *bullet connector* that matches the lead coming from the control box. Plug the bullet connectors together.
- The other end of the orange cable terminates with a *ring terminal*. Connect this end to a non-engine switch that is connected to the house battery.

⑦ POWER CABLE

- Connect the 6-pin Deutsch Plug of the battery cable (red & black wires) to the matching Deutsch Plug on the lead (red & black wires) coming from the control box.
- The (124SSR) control box's power connections should be connected to the house or cranking battery of the boat. (12 volt source)

i It is recommended that the battery cable connection is not made to the batteries that supply power to the trolling motors.

The reason for this is to allow for trim tab control when the batteries for the trolling motors are depleted or removed.



CAUTION

The power cables should be connected to a 12 volt source only!

WARNING

The following instructions contain important safety information and should be followed carefully. Failure to do so may result in injury and will void warranty.

CAUTION

Please read through the instructions in their entirety prior to beginning installation!

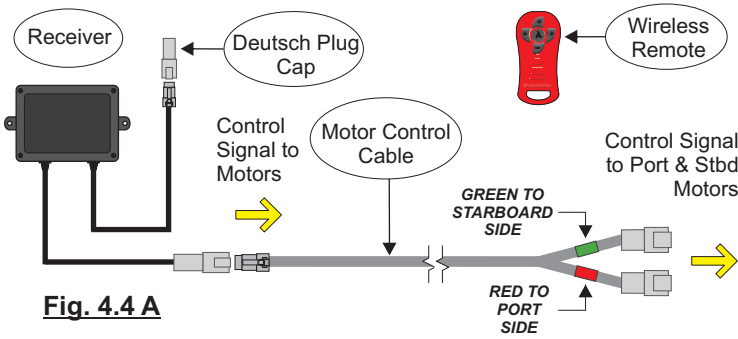
Wireless System Connections

1 Wireless System Connections Note:

There is only one electrical connection on the Wireless System: the **motor control cable** connection. (See Fig. 4.4 A)

The motor control cable connection provides power to the controller so it can send data back to the motors regarding speed and direction.

The motor control cable has a single 6-pin Deutsch plug on one end which connects to the foot pedal control box (Which, in turn, connects to the foot pedal). The other end splits in two and has 3-pin Deutsch plug connections which go to each motor. (See Fig. 4.4 A)



2 MOTOR CONTROL CABLE CONNECTION

- Make sure the Deutsch plug end cap is connected to the receiver's other connection before proceeding.
- Connect the single 6-pin Deutsch plug on the control box to the mating 6-pin Deutsch plug on the motor control cable.
- Connect each 3-pin Deutsch plug on the other end of the motor control cable to their corresponding motors.

i The split cable ends are marked with red and green to distinguish this. Red is for the port side (left side, when facing the bow), and green is for starboard (right side).

! Always connect the receiver to the motor control cable before plugging the cable into either motor.

3 Control Box Connections Note:

There are four electrical connections (five, if you account for there being two actuator connections, one for each motor) on the main (124SSR) control box.

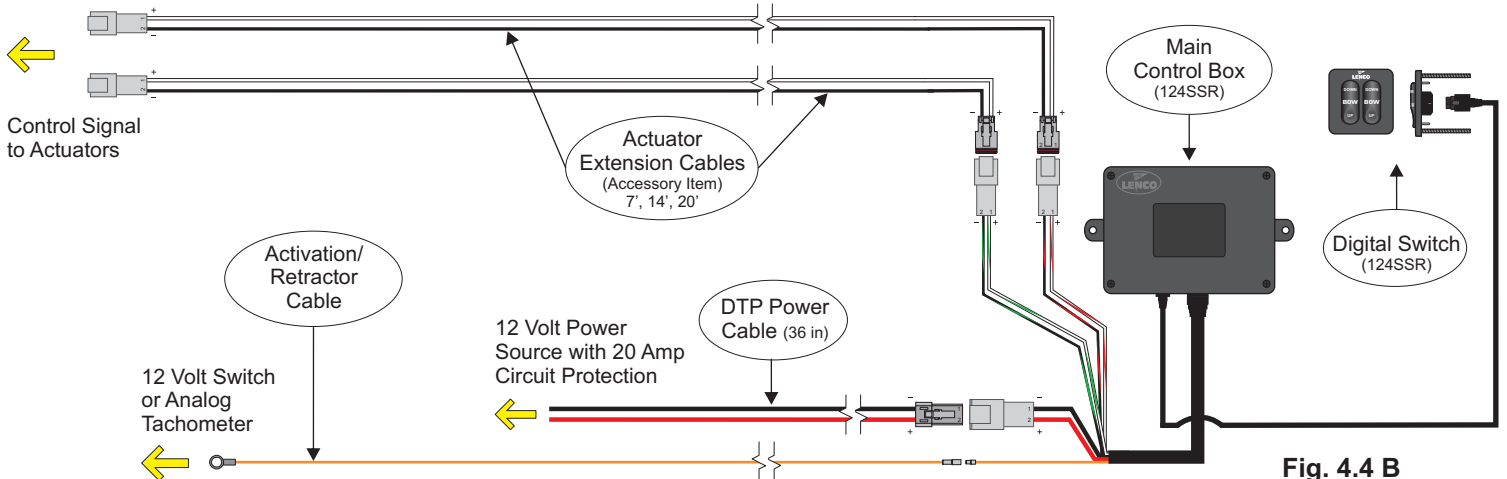
They are as follows: the **digital switch** connection, the **actuator** connections, the **activation/battery meter cable** connection and finally, the **power cable** connection. (See Fig. 4.2 B)

WARNING

The power connections should always be the last connection made when installing the system.

Power connections should only be made while the power is OFF.

Continued on the next page...



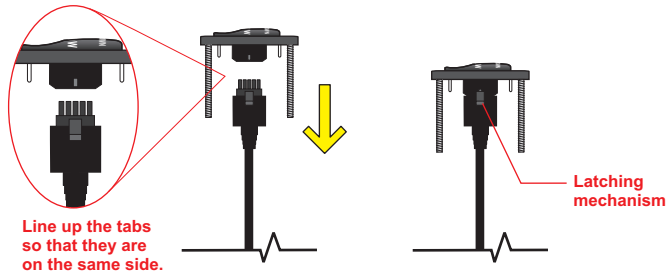
Installation Continued...

i CONTROL BOX CONNECTIONS

Refer to Fig 4.3 B for the following steps.

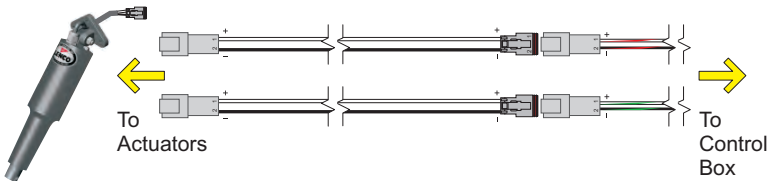
④ DIGITAL SWITCH CONNECTION

- Plug the 10-pin rectangular connector on the digital switch cable to the back of the digital switch.
- If you need to unplug the switch, simply depress the latching mechanism and pull straight back.



⑤ ACTUATOR CONNECTIONS

Like the split end of the motor control cable (see previous page), the actuator cables & actuator leads (control box) are also color-coded. The control box's actuator lead wires are traced with red and green.



- Plug the set of identical 10-pin Deutsch Plugs into their corresponding connectors coming from each actuator. Match red to red (port) & green to green (starboard).
- You may need actuator extension cables if the distance between the control box and the actuators is more than 6 ft. (Available in 7ft, 14ft, 20ft, 26ft, & 32ft)

⑥ ACTIVATION/RETRACTOR CABLE

This cable, when connected to an on/off switch allows you to manually retract your Troll'n Tab system with flip of a switch.

- The activation/battery meter cable is the thin orange wire. One end has a *bullet connector* that matches the lead coming from the control box. Plug the bullet connectors together.
- The other end of the orange cable terminates with a *ring terminal*. Connect this end to a non-engine switch that is connected to the house battery.

⑦ POWER CABLE

- Connect the 6-pin Deutsch Plug of the battery cable (red & black wires) to the matching Deutsch Plug on the lead (red & black wires) coming from the control box.
- The (124SSR) control box's power connections should be connected to the house or cranking battery of the boat. (12 volt source)



It is recommended that the battery cable connection is not made to the batteries that supply power to the trolling motors.

The reason for this is to allow for trim tab control when the batteries for the trolling motors are depleted or removed.



CAUTION

The power cables should be connected to a 12 volt source only!

WARNING

The following instructions contain important safety information and should be followed carefully. Failure to do so may result in injury and will void warranty.

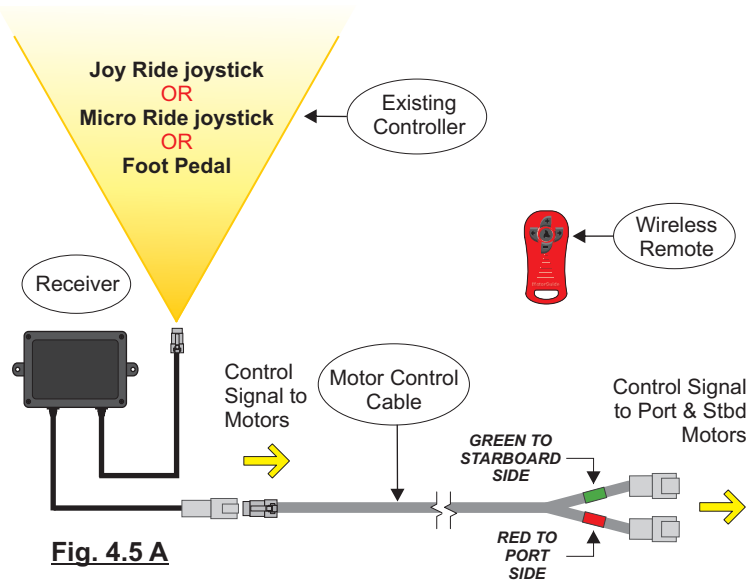
CAUTION

Please read through the instructions in their entirety prior to beginning installation!

Wireless 2nd Station Connections

1 Wireless 2nd Station Connections Note:
As the wireless system is being added as an auxiliary controlling device, the only thing you will need to do is connect the wireless receiver.

The wireless receiver will be connected as an intermediary device between the **existing controller** and the **motor control cable**. (See Fig. 4.5 A)



Installation will vary slightly depending on what controller you will be pairing with your new wireless system. Therefore, instructions and diagrams will be organized according to the controller you already have installed.

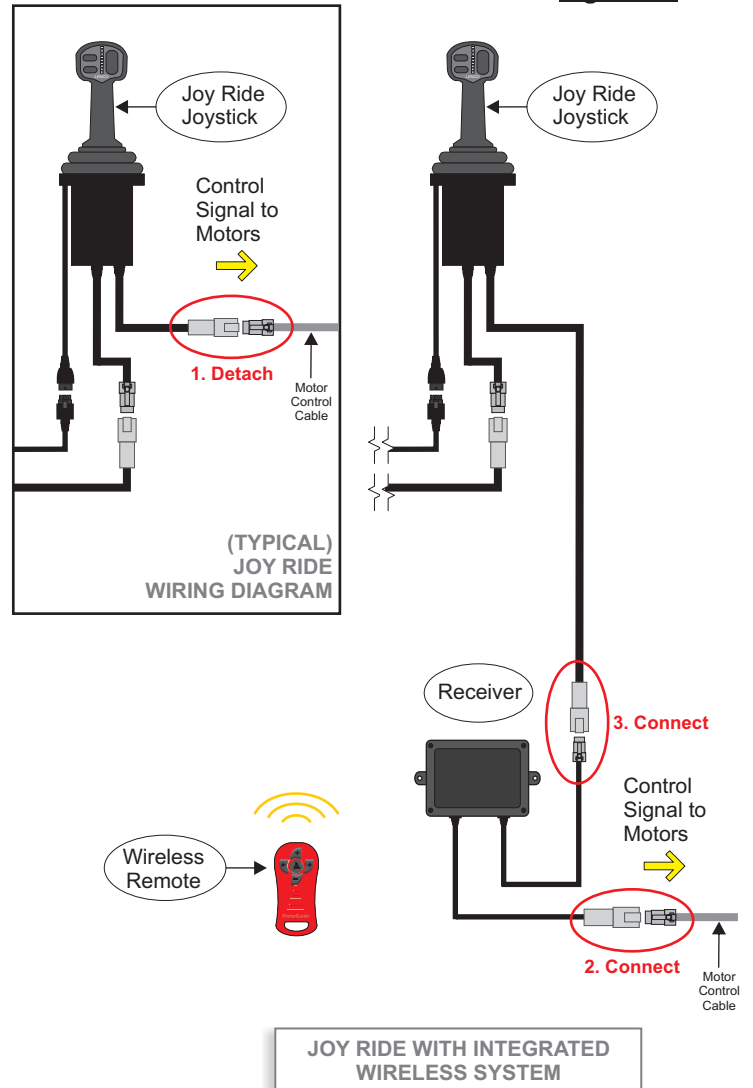
Proceed to the heading that matches your existing controller type.

i Keep in mind, the final step in installation will include programming the receiver to work with your keyfob. (This will be covered in [section 6.4 "Wireless Remote Operations"](#))

2 CONTROLLERS
Follow the instructions to integrate the wireless system.

- A. Joy Ride Connection:**
- If your joystick is pod mounted, you will have to detach the pod, change the electrical connections as listed below, then re-mount pod (see section 3.1 Mechanical Installation for mounting details.)
 - Detach the motor control cable (gray Deutsch plug at the base of the joystick) and connect it to the wireless receiver.
 - Connect the remaining plug on the wireless receiver to the joystick where the motor control cable was previously connected.

Fig. 4.5 B



Continued on the next page...

- NOTE:** Diagrams are for illustrative purposes only.
- Cables may or may not be as long as represented, and are depicted in favor of clarity vs real spec length.
 - Likewise, connectors and other parts may vary in size.

Installation Continued...

CONTROLLERS CONT..

Follow the instructions to integrate the wireless system.

B. Micro Ride Connection:

- If your joystick is pod mounted, you will have to detach the pod, change the electrical connections as listed below, then re-mount pod (see section 3.2 Mechanical Installation for mounting details.)
- Detach the motor control cable from the joystick and connect it to the wireless receiver.
- Connect the remaining plug on the wireless receiver to the joystick.

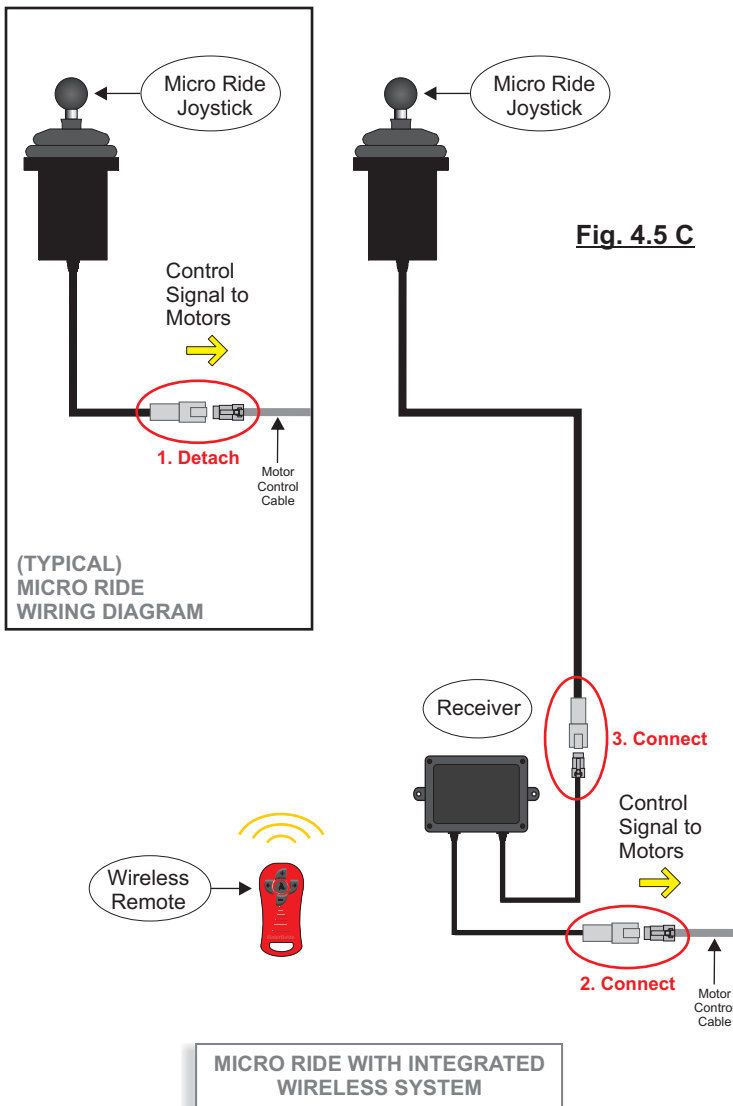


Fig. 4.5 C

C. Foot Pedal Connection:

- Detach the motor control cable from the foot pedal control box. (This connection has gray Deutsch plugs)
- Connect the motor control cable to the wireless receiver.
- Connect the remaining Deutsch plug on the wireless receiver to the matching plug on the foot pedal control box.

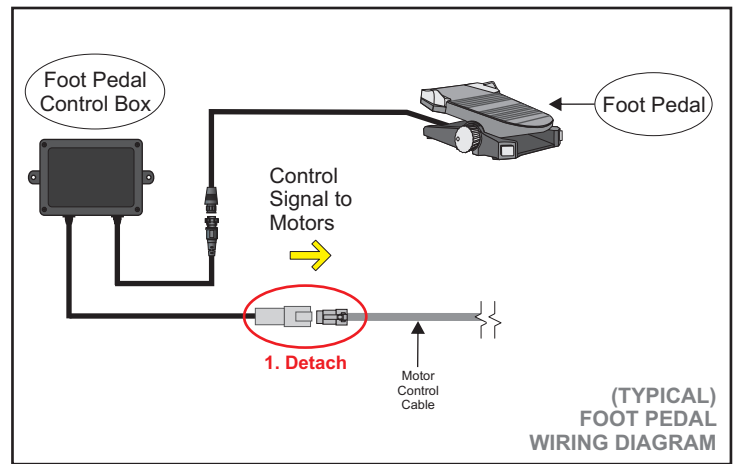
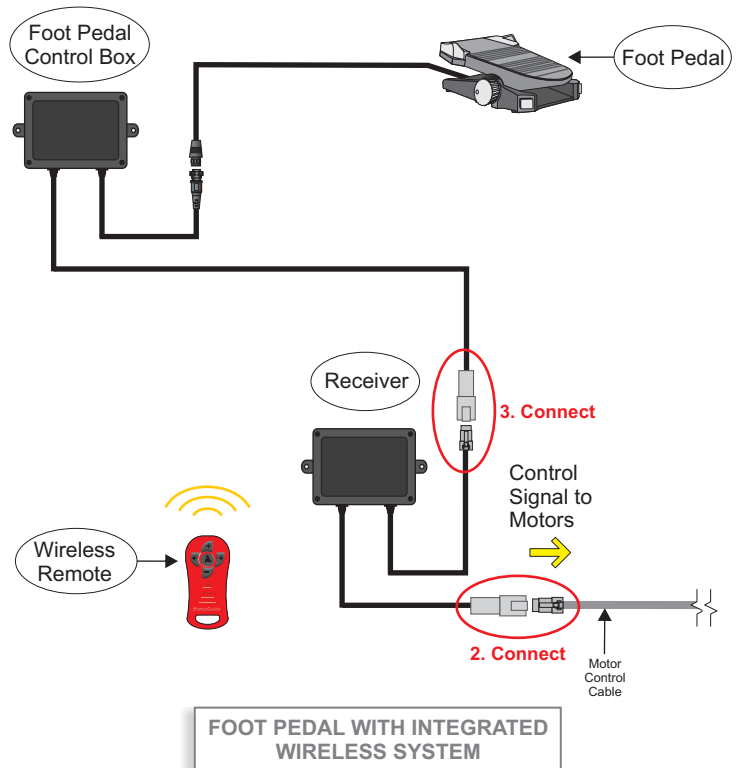
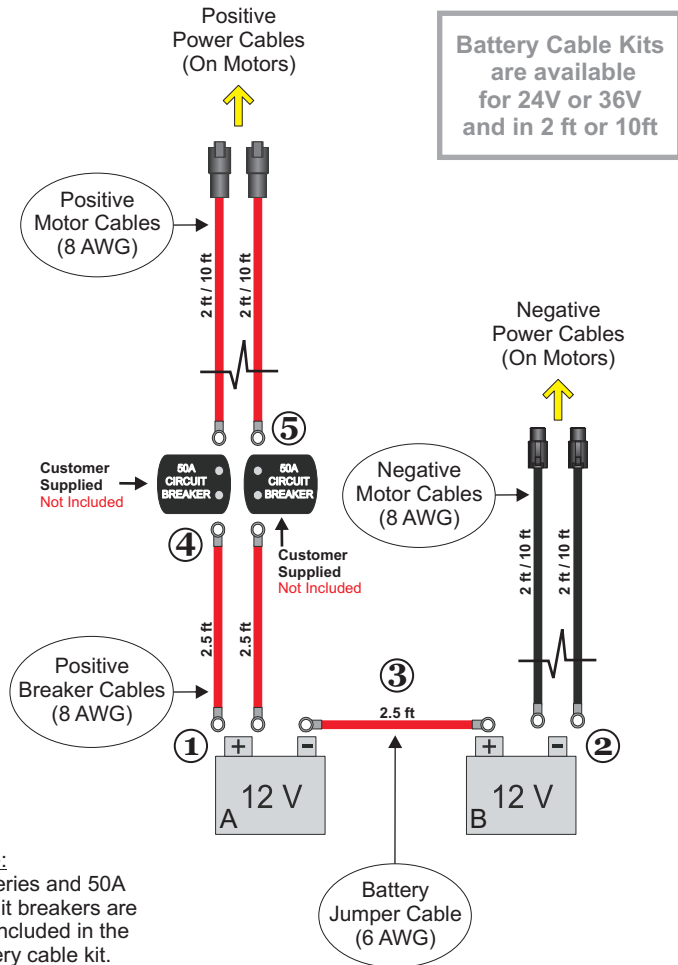


Fig. 4.5 D



NOTE: Diagrams are for illustrative purposes only.
 ▪ Cables may or may not be as long as represented, and are depicted in favor of clarity vs real spec length.
 ▪ Likewise, connectors and other parts may vary in size.

24 Volt System

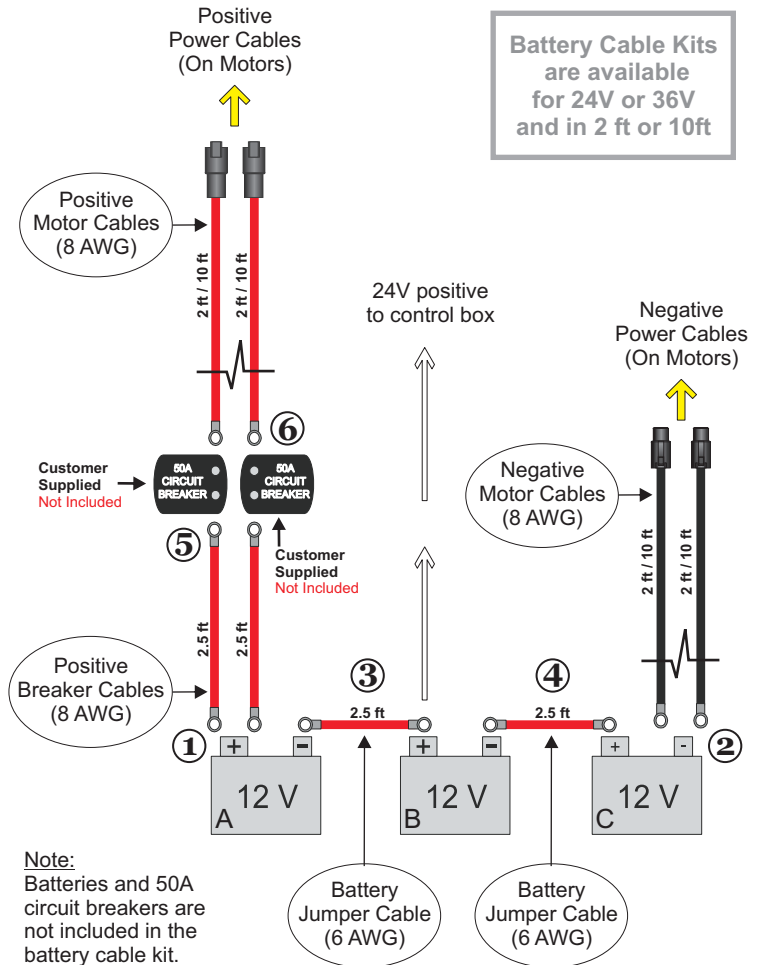


Note:
Batteries and 50A circuit breakers are not included in the battery cable kit.

- ① Connect the ring terminals on the Positive Breaker Cables (red) to the positive (+) post on battery A.
- ② Connect the ring terminals on the Negative Motor Cables (black) to the negative (-) post on battery B.
- ③ Connect one ring terminal on the Battery Jumper Cable (red) to the negative (-) post on battery A.
 - Connect the other ring terminal on the Battery Jumper Cable (red) to the positive (+) post on battery B.
- ④ Install two 50 amp circuit breakers in line with the positive side of battery A.
 - Connect the ring terminals on the Positive Breaker Cables (red) to the posts on the battery side of the 50 amp circuit breakers.
- ⑤ Connect the ring terminals on the Positive Motor Cables (red) to the posts on the load side of each of the 50 amp circuit breakers.

Note Regarding both 24V and 36V:
Connecting the battery Bank should be the last step when installing your system.

36 Volt System



Note:
Batteries and 50A circuit breakers are not included in the battery cable kit.

- ① Connect the ring terminals on the Positive Breaker Cables (red) to the positive (+) post on battery A.
- ② Connect the ring terminals on the Negative Motor Cables (black) to the negative (-) post on battery C.
- ③ Connect one ring terminal on the Battery Jumper Cable (red) to the negative (-) post on battery A.
 - Connect the other ring terminal on the Battery Jumper Cable (red) to the positive (+) post on battery B.
- ④ Connect one ring terminal on the second Battery Jumper Cable (red) to the negative (-) post on battery B.
 - Connect the other ring terminal on the Battery Jumper Cable (red) to the positive (+) post on battery C.
- ⑤ Install two 50 amp circuit breakers in line with the positive side of battery A.
 - Connect the ring terminals on the Positive Breaker Cables (red) to the posts on the battery side of the 50 amp circuit breakers.
- ⑥ Connect the ring terminals on the Positive Motor Cables (red) to the posts on the load side of each of the 50 amp circuit breakers.



WARNING

The following instructions contain important safety information and should be followed carefully. Failure to do so may result in injury and will void warranty.



CAUTION

Please read through the instructions in their entirety prior to beginning installation!

Joy Ride Controls

① JOYSTICK OPERATION

The Joy Ride joystick provides 360 degree steering and variable speed control for the Troll'n Tab system. The operator can control steering, speed, and direction of travel (i.e. forward or reverse) by moving the joystick from its naturally centered position.

DIRECTION CONTROL

- **Forward** - Pushing the joystick straight forward, toward the bow of the vessel, will cause the vessel to move in a forward direction. (See figure 6.1 A)
- **Reverse** - Pulling the joystick toward the stern (the back) of the vessel will cause the vessel to move in a reverse direction.

STEERING CONTROL

- A **slight correction** in the direction the vessel is traveling is accomplished by pushing the joystick towards the desired travel direction (forward or reverse) while also tilting to the right or left.
- For **sharp turns**, push the joystick to the 3 o'clock position to turn to starboard (right) or the 9 o'clock position to turn to the port (left). (See fig. 6.1 A)

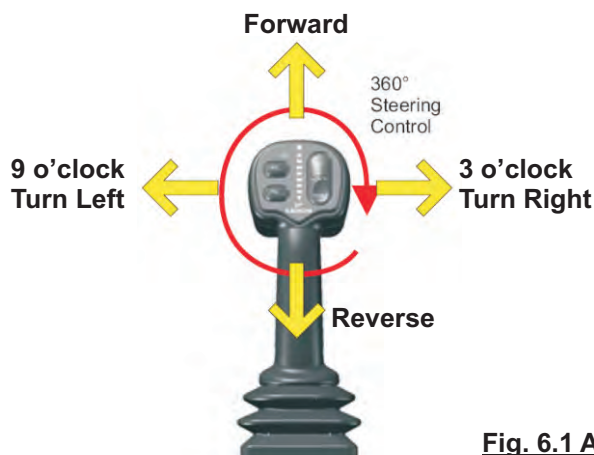


Fig. 6.1 A

SPEED CONTROL

The further the joystick is pushed from its center position the faster the speed will become. (For example: maximum forward speed is obtained by pushing the joystick to its maximum forward position.)

② JOY RIDE JOYSTICK KEYPAD FEATURES

In addition to steering, the joystick provides the following features: **Power On Self Test**, **Motor Position Indication**, **Motor Lock Out Position**, **Cruise Control**, **Battery Meter Indicator** and **Automatic Stowage**.

A. Power On Self Test:

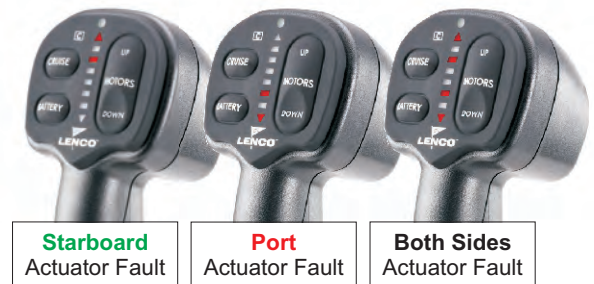
When the system is powered up, it automatically performs a quick test which validates that the connections to the actuators (that raise and lower the motors) are good.

The Self Test, displayed on the LED strip at the center of the joystick's keypad, is indicated by a series of 3 red LED lights that run down and then up the keypad. The series of 3 LEDs reduces to 2 LEDs and then to a single LED at either extreme of the keypad's LED strip. This marks the test's completion and a result will be displayed on the LEDs directly afterwards.

- If the system **PASSES** the self test, the topmost, triangular LED will be red and normal operation will begin immediately.



- If the system **FAILS**, then a pattern of every other LED will be illuminated along the strip.



Note: See the 123LED Self-Check overview at the end of this section to obtain additional description of LED failure codes.

B. Motor Position Indication:

On the right side of the joystick's keypad is a rocker switch labeled MOTORS which allows you to control the movement of the motors into and out of the water. (See fig. 6.2 A)

Continued on the next page...

Joy Ride Controls Cont...

- **Motors Down:** Pressing DOWN on the switch will cause both motors to lower. In the bottommost motor position, only the bottom LED is illuminated.
- **Motors Up:** Pressing UP on the rocker switch will cause both motors to rise. In the topmost motor position, only the top LED is illuminated.
- **Motor Position LED Sequence:** As the motors begin to move down from the highest motor position, the second from the top LED will illuminate followed by the third LED from the top.

Once three LEDs are illuminated then the group of three LEDs move down the LED strip until the bottom three LEDs are lit.

Further lowering of the motors will cause the third from the bottom LED to extinguish followed by the extinguishing of the second from the bottom LED until such time that only the bottommost LED is lit, which indicates that the motors have been fully lowered.

C. Motor Lock Out Position:

When the motors are fully raised they cannot be turned on for safety reasons. The motors must be lowered until the display has illuminated the third, fourth and fifth LED from the top of the LED strip before **motor lock out** is disengaged and the motors will respond to movement of the joystick.



Motor Lock Out: Disengaged

Illuminated LEDs higher up than those in the image to the left would indicate Motor Lock Out.

Lower motors with the MOTORS rocker switch (press "down") to enable motors to turn on.

- Whenever the motors are raised above this position the motors will stop turning without regard for the joystick position.
- If the motors are running in *cruise control mode*, and the motors are raised above the lockout position, then the motors will stop running and the cruise control mode will be cancelled.

D. Cruise Control:

On the upper left hand side of the joystick keypad is a button labeled CRUISE. Immediately above this switch is the symbol **C**. This is the *cruise control indicator* and it will illuminate with a green color whenever the cruise control is active.

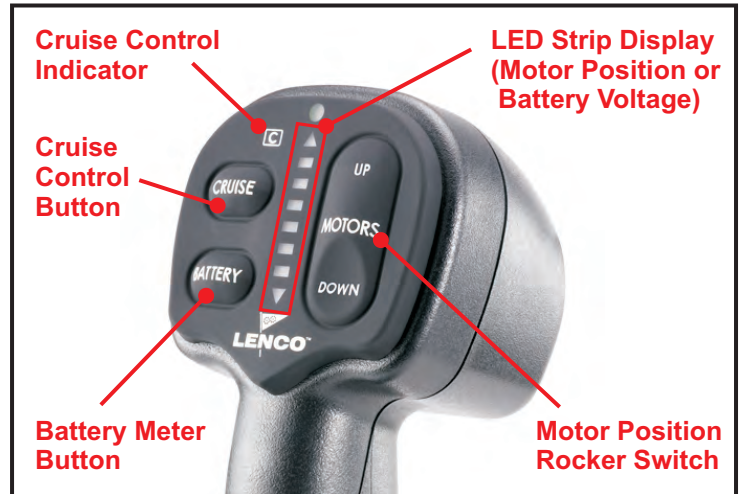


Fig. 6.2 A

ENGAGE CRUISE CONTROL

Cruise control can be activated by moving the joystick to obtain the desired speed, steering, and direction and then pressing and holding the CRUISE button until the cruise indication illuminates.

- Once the cruise indication is illuminated, the joystick should be released allowing it to return to its normally centered position.
- The joystick must be released and returned to the center position within 2 seconds or the cruise activation will be *cancelled*. If this occurs, simply press the CRUISE button again and when the cruise indicator illuminates, release the joystick.



Cruise Control: Engaged

CANCEL CRUISE CONTROL

Once you are in cruise control mode (the **C** is illuminated green), there are three ways of cancelling it.

1. Press the CRUISE button while cruise control is engaged.
2. Move the joystick away from its naturally centered position while cruise control is engaged.
3. Raise the motors above the *motor lock out* position while cruise control is engaged.

Continued on the next page...

Joy Ride Controls Cont...

E. Battery Meter Indicator:

On the lower left hand side of the joystick keypad is a button labeled BATTERY. Pressing and holding this button will give you a visual indication of the battery voltage on the LED strip. When the button is released, the LED strip will resume its standard display of motor position.

The battery voltage indication is displayed with multicolor LEDs ranging from green at the top to red at the bottom, with a gradual color change in-between.



- **Full Charge:** When all of the LEDs, including the uppermost (triangular) LED, are illuminated the batteries are fully charged.
- **Partially Drained:** As the battery voltage declines, the LEDs will begin to extinguish from the top towards the bottom, one at a time.
- **Low Battery Warning:** When only the last LED on the bottom (red and triangular) is illuminated, the voltage is low. When the voltage drops below the amount indicated by that LED, the LED will begin to **blink** to warn the operator that the battery voltage is very low.

LOAD

The battery meter works under any load condition, though the voltage will register less while under LOAD. (Load is any operation of the motors either in or out of the water.) It is not unusual for the battery voltage to drop under load. A typical drop might be the loss of one LED being lit.

F. Automatic Stowage:

Whenever the Activation/Retractor switch is turned off, the tabs will fully retract (the motors will stop running at this point regardless of joystick commands). The tabs will not operate from the Digital Switch until Activation/Retractor switch is turned on.

i INFORMATION

Joy Ride, Wireless Remote & Motor Lock Out: When a Joy Ride system has a Wireless second station installed, the Motor Lock Out responds a little bit differently than previously described.

The joystick will still be ineffectual once motors are in the lock out position; however, the Wireless Remote can override the motor lock out position.

Trim Tab Controls in Joy Ride System

123 LED DIGITAL SWITCH

The 123 LED Digital Switch controls the movement of the trim tabs when the boat is under main power.

TRIM TAB OPERATION

- **Activation:** The Activation/Retractor switch can be any On/Off Marine Grade Switch (rocker or toggle) and is supplied by the installer. Turning the switch “On” wakes up the Troll’n Tab System. immediately upon wake up, the system performs a Self-Check diagnostics.

Note: Please see the 123 LED Self-Check overview at the end of this section.

Example of a Rocker Style On/Off Switch



On Position: System Wake Up and Self-Check.

Off Position: Trim tabs will fully retract and system goes into sleep mode.

- **Retractor:** Turning “Off” the Activation/Retractor switch will cause the tabs to retract to their upmost position and the Joy Ride System will go into sleep mode.

Note: The Electric Drives will continue to draw a minimal amount of current from your trolling batteries until they are disconnected from the batteries.

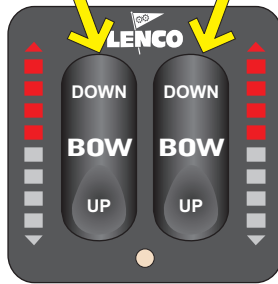
Continued on the next page...

Trim Tab Controls in Joy Ride System Cont...

- **Trim Tab Operation:** The operation of the 123 LED Digital Switch is based on the position of the bow. To lower the starboard bow, press the right (starboard) side of the switch where it reads DOWN. This lowers the port tab and forces the star board bow down. To lower the port bow, press the left (port) side of the switch where it reads DOWN. This lowers the starboard tab.

To lower the port bow, press port "DOWN".

To lower the stbd bow, press stbd "DOWN".



- **LED Trim Tab Position Indicators:** The 123 LED Digital Switch includes two rows of LEDs that display the position of each trim tab in 10% increments. When the DOWN buttons are pressed the LEDs are illuminating the further the tab goes down. When the UP buttons are pressed the LEDs go out as the tabs move up.

LEDs illuminate in 10% increments to display the position of each tab.

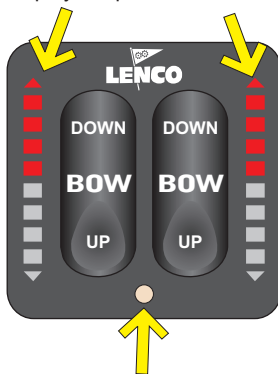


Photo eye reads ambient light and adjusts the intensity of the LEDs for optimum viewing in all light conditions.

Continued on the next page...

Self-Check in Joy Ride Troll'n Tab System

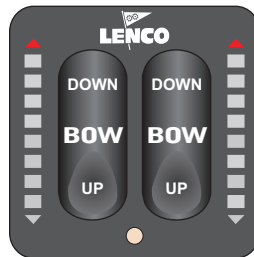
WHAT IS SELF-CHECK?

Self-Check is a diagnostics feature that is performed immediately after powering up your trim tab system. Once the diagnostic test is completed, a "Good" or "Fault" reading is displayed on the key pad LEDs.

HOW DOES IT WORK?

Both actuators are retracted for approximately 30 milliseconds at start up and a current measurement is performed on each actuator. The current measurement is then compared to a predetermined minimum limit. If the current reading exceeds the minimum limit, the LEDs will display the following reading:

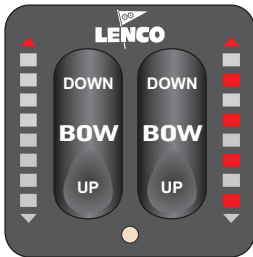
GOOD READING



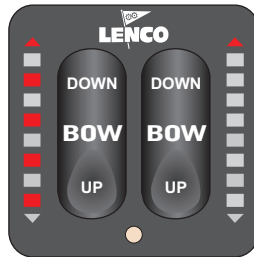
ACTUATOR FAULT READINGS

If the current level pull by the port or starboard actuator does not reach the predetermined minimum level, the LEDs on the key pad will display the following reading:

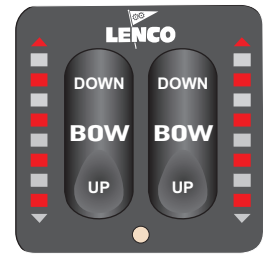
PORT SIDE FAULT



STBD SIDE FAULT



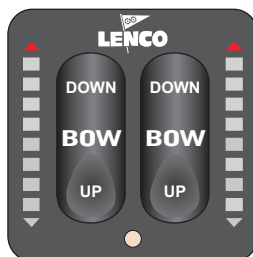
BOTH SIDE FAULT



POWER FAULT READINGS

If no LEDs illuminate on the key pad, then the trim tab system is experiencing a Power Fault. During a Power Fault, the key pad will display the following reading:

POWER FAULT

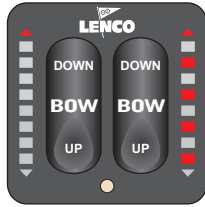


Continued on the next page...

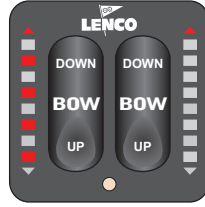
Self-Check in Joy Ride Troll'n Tab System

If the key pad indicates any of the following Actuator Fault Readings, take the following steps to trouble shoot the problem:

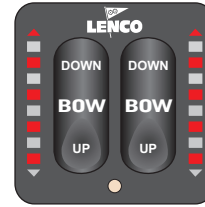
PORT SIDE FAULT



STBD SIDE FAULT



BOTH SIDE FAULT



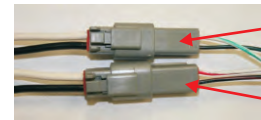
Step 1: Check to make sure that the Deutsch Connectors are firmly attached. If the connection is loose, firmly press the two connectors together and run Self Check again.

Step 2: If fault reading continues, disconnect the Deutsch Connectors and remove the orange wedge. Remove the wire leads from the connector by depressing the small latches inside the connector housing.

Step 3: Once the wires are removed from the housing, touch the white wire leads to a Positive (+) 12V Battery Terminal and the black wire leads to a Negative (-) 12V Battery Terminal. The actuator should extend while connected to the battery. Reverse the polarity of the wire leads to the battery terminals and the actuator should retract.

Step 4: If the actuator does not extend and retract, replace the actuator. If the actuator extends and retracts properly, reassemble the connector taking care to properly seat the wire leads in the connector housing.

Step 5: Attach the port and starboard connectors to the system and run the Self Check again. If the fault reading continues, contact Lenco's technical service at: info@lencomarine.com



White/Green-Black /Green Stbd Deutsch Connection.

White/Red-Black/Red Port Deutsch Connection.



Remove the orange wedge by lift the wedge from the connector with a small flat head screw driver or Deutsch connector tool.



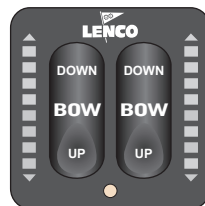
Remove the wire leads from the connector by depressing the small latch inside the connector housing.



Extend the Actuator: White Terminal to Positive (+) Battery Terminal. Black Terminal to Negative (-) Battery Terminal.

POWER FAULT READINGS

If the key pad indicates the following Power Fault Reading, take the following steps to trouble shoot the problem:



Step 1: Check the 20Amp fuse or circuit breaker.

Step 2: Verify the Orange wire is connected to a 12V source or Engine Tach Signal.

Step 3: Check the keypad connection.

Step 4: Verify that the power connection is firmly attached and that 12 volts is available.

20 Amp Fuse



Orange Wire Connection



Key Pad Connection



Power Wire Connection





WARNING

The following instructions contain important safety information and should be followed carefully. Failure to do so may result in injury and will void warranty.



CAUTION

Please read through the instructions in their entirety prior to beginning installation!

Micro Ride Controls

JOYSTICK OPERATION

The Micro Ride joystick provides 360 degree steering and variable speed control for the Digital Drive system. The operator can control steering, speed, and direction of travel (i.e. forward or reverse) by moving the joystick from its naturally centered position.

DIRECTION CONTROL

- **Forward** - Pushing the joystick straight forward, toward the bow of the vessel, will cause the vessel to move in a forward direction. (See figure 6.2 A)
- **Reverse** - Pulling the joystick toward the stern (the back) of the vessel will cause the vessel to move in a reverse direction.

STEERING CONTROL

- A **slight correction** in the direction the vessel is traveling is accomplished by pushing the joystick towards the desired travel direction (forward or reverse) while also tilting to the right or left.
- For **sharp turns**, push the joystick to the 3 o'clock position to turn to starboard (right) or the 9 o'clock position to turn to the port (left). (See fig. 6.2 A)

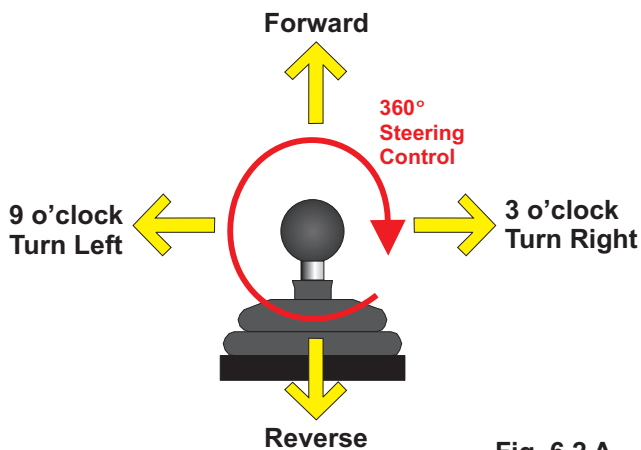


Fig. 6.2 A

SPEED CONTROL

The further the joystick is pushed from its center position the faster the speed will become. (For example: maximum forward speed is obtained by pushing the joystick to its maximum forward position.)

Trim Tab Controls in Micro Ride System

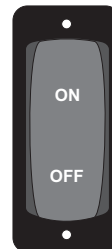
124 DIGITAL SWITCH

The 124 Digital Switch controls both the movement of the trim tabs when the boat is under main power and deploys the two electric drives when the operator is ready to troll.

TRIM TAB OPERATION

- The Activation/Retractor switch can be any on/off switch (rocker or toggle) and is supplied by the installer. Turning the switch "On" activates the Retractor feature. The trim tabs will operate even if the switch is in the "Off" position, but the retractor feature will not work. The tabs will retract to their upmost position when the switch is turned "Off".

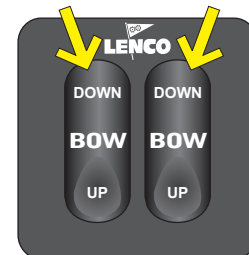
Example of a Rocker Style On/Off Switch



- On Position: Retractor feature is activated.
- Off Position: Trim tabs will fully retract.

- The operation of the Digital Switch is based on the position of the bow. To lower the starboard bow, press the right (starboard) side of the switch where it reads DOWN. This lowers the port tab and forces the star board bow down. To lower the port bow, press the left (port) side of the switch where it reads DOWN. This lowers the starboard tab.

To lower the port bow, press port "DOWN". To lower the stbd bow, press stbd "DOWN".

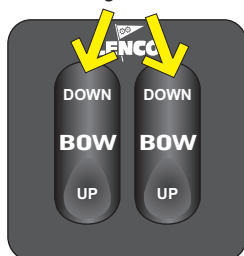


Continued on the next page...

Deploying Electric Drives with Digital Switch

- The Electric Drives are deployed using the Digital Switch. Press both sides of the Digital Switch where it reads DOWN. Continue to press the DOWN buttons until the Electric Drives are fully submerged and are at least horizontal to the boat's running surface.

Press and hold the DOWN button until the motors are submerged and are at least horizontal to the boat's running surface.



Operation of Trolling Motors

To position the motors for trolling use, press **DOWN** on the Digital Switch until Electric Drives are fully submerged and are at least horizontal to the hulls running surface.

To begin use with the trolling motors, turn the control box **ON** by flipping the single toggle switch. When the system is activated, you may operate the motors with the foot control.

Direction

The Trollin' Tab trolling motor systems maneuver the boat by controlling the direction and the amount of thrust from each of the trolling motors.

The system has 2 different modes: **Constant** for continued motion or **Momentary** for temporary, user-controlled motion.

LEFT

Pressing down on the heel of the foot pedal will steer the boat to the left. When the heel is pressed down, the starboard motor thrusts forward and the port motor thrusts in reverse.

RIGHT

Pressing down on the toe of the foot pedal steers the boat to the right. When the toe is pressed down, the port motor thrusts forward and the starboard motor thrusts in reverse.

NOTE:

The amount of thrust and the direction of thrust gradually change from one motor to the other the further the foot pedal is pressed down.

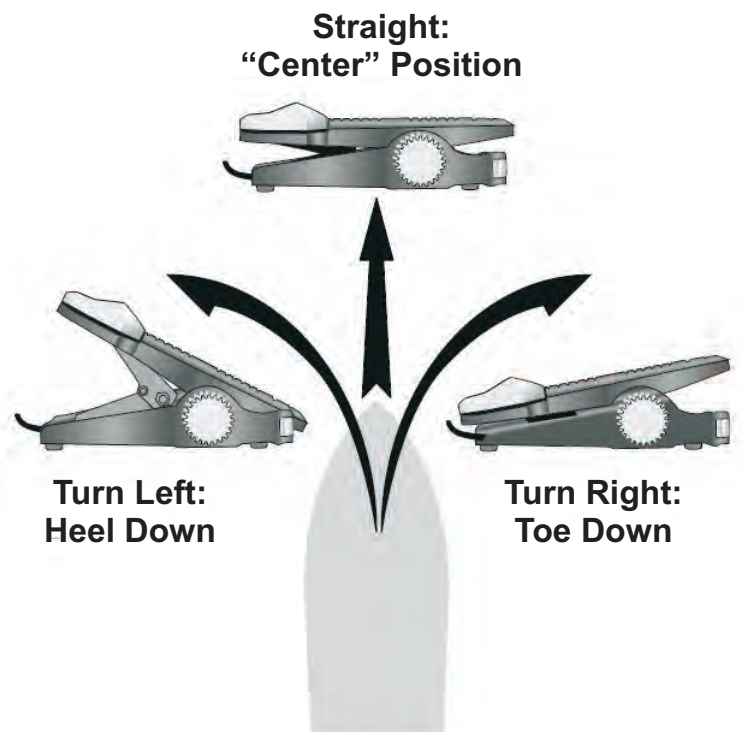
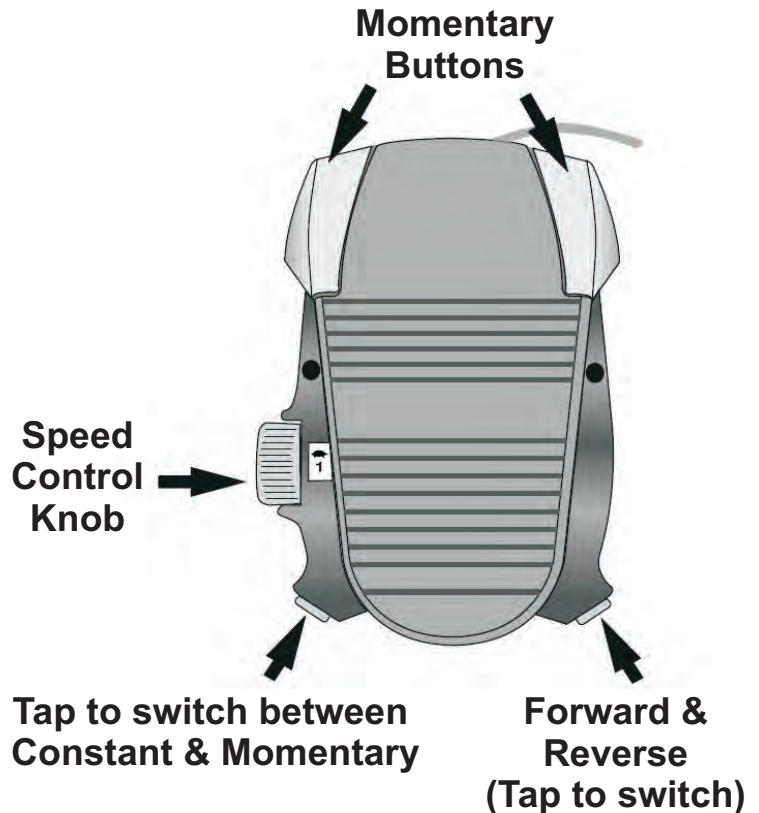
When the foot pedal is pressed down all the way to either the toe or heel, the trolling motors are at equal thrust levels and opposite direction: one motor pushing forward, the other in reverse.

TRACKING

To track in a straight line, the foot pedal has a center position which is calibrated to match both the amount of thrust *and* the direction of each motor.

In "Center" position, the foot pedal may not be perfectly level. This is normal. The pedal may appear tilted while achieving a straight tracking line.

Foot Pedal Functions



Continued on the next page...

Speed

The speed of the motor can be adjusted to the desired speed by rolling the speed control knob on the left side of the foot pedal.

This is a variable speed system so it offers a full range of thrust levels, labeled 1 through 10.

Position 1 is the lowest thrust level. It is marked on the knob along with a **turtle**, and offers the slowest speed.

Position 10 offers maximum thrust. It is accompanied by a **rabbit**, and offers the highest speed.

Use your foot to roll the speed control knob to the desired setting.

Momentary Mode

When the main control box is turned on, the foot pedal begins in the Momentary Mode.

Each time one of the gray momentary buttons is pressed, the motors activate; when released the motors stop. When activated, the motors run at the speed controlled by the setting of the speed control knob.

Constant Mode

To put the foot pedal into Constant Mode, press the small gray button on the left at the base of the foot pedal one time (Press once again to go back to Momentary Mode).

Constant mode allows the motors to run constantly, at the speed selected on the speed control knob.

Constant Mode Steering Adjustments

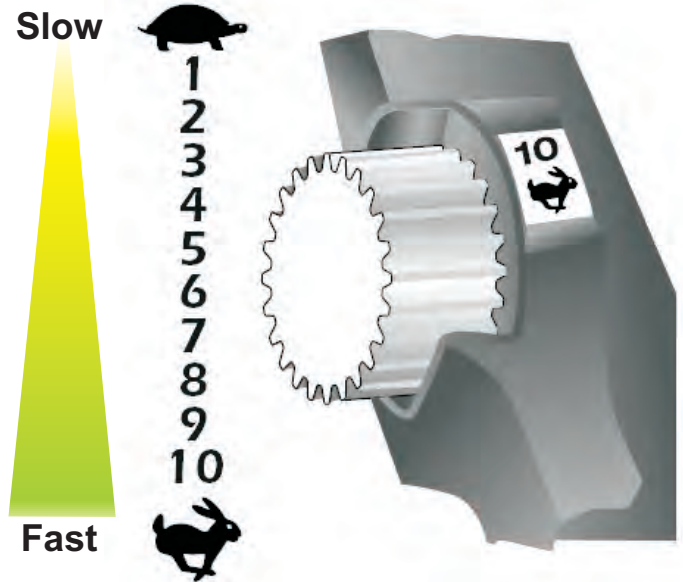
When the foot pedal is set in Constant Mode, it is possible to make small directional adjustments using the two momentary buttons (near the toe-end of the foot pedal).

Press either the right or the left gray momentary button one time and the boat will track 5 percent in that direction.

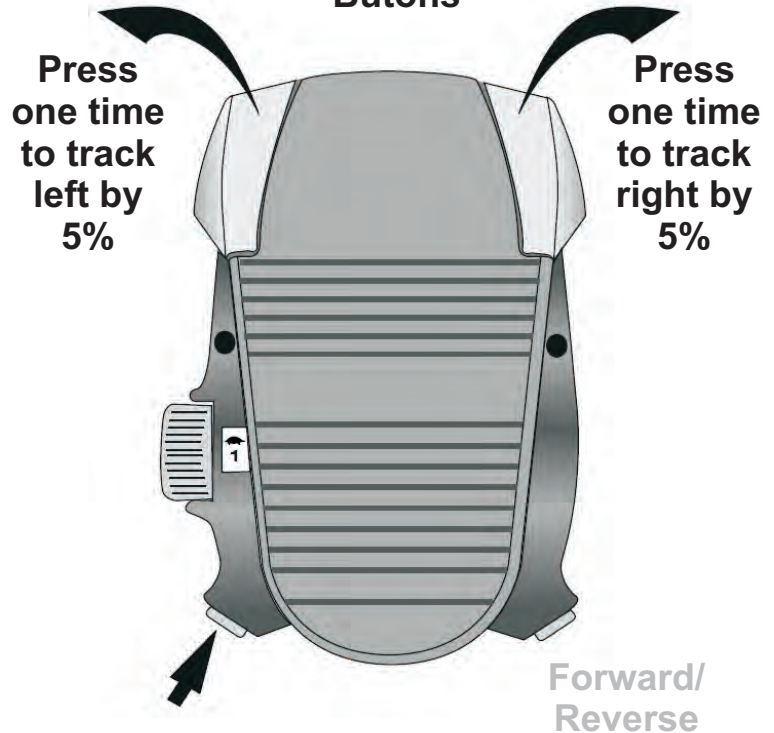
If one of the momentary buttons is **pressed and held down**, the boat will continue to track further in that direction until the button is released or the opposite button is pressed.

Foot Pedal Functions Cont...

Speed Control Knob



Momentary Buttons



Set in Constant Mode to use Momentary Buttons for small adjustments

Continued on the next page...

Forward and Reverse

When the main control box is turned ON, the foot pedal begins in Forward.

To set the foot control in Reverse, press the small gray button on the right at the base of the foot control one time. (See the image to the right) This setting is most effective and (and most frequently used) when the foot pedal is set at the "Center" position.

Reverse is helpful for backing out of tight areas and maneuvering away from obstructions.

Calibration

The foot pedal comes pre-calibrated; however, the time may come when re-calibration would benefit the performance and response of your drive system.

FOOT PEDAL CALIBRATION PROCEDURE:

The control box must be installed and have power in order to execute Calibration sequence.

STEP 1

- o Pivot foot pedal to the **toe down** position. (See the calibration images to the right.)
- o Hold down both Momentary Buttons (the 2 grey buttons on the toe of the foot pedal) and turn the control box ON. The motors will temporarily start running.
- o After the motors have stopped rotating, release the Momentary Buttons.
- o Press the Constant/Momentary Button (The grey button at the base of the foot pedal, on the left.)

STEP 2

- o Pivot foot pedal to the **heel down** position.
- o Press the Constant/Momentary Button.

STEP 3

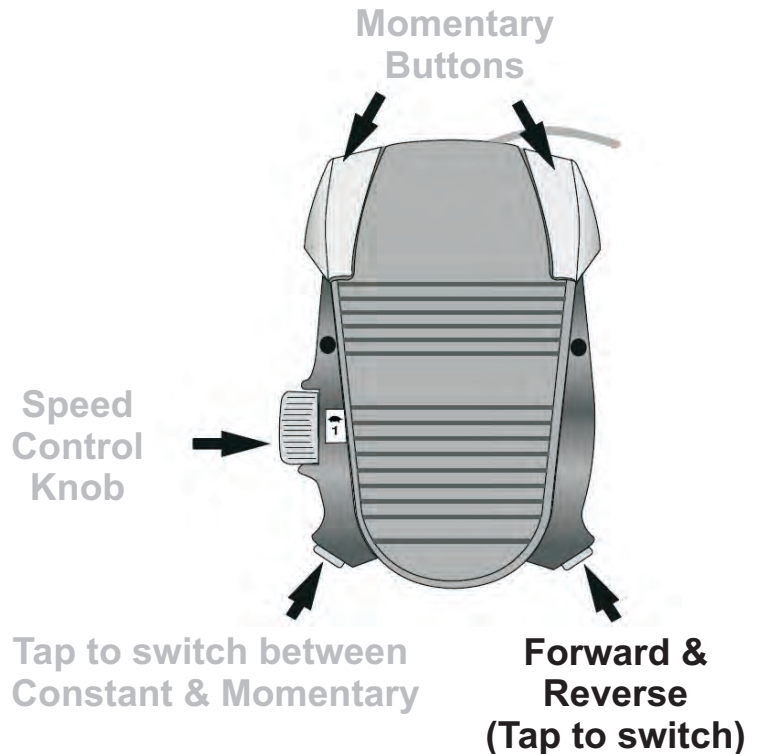
- o Pivot foot pedal to the "**Center**" position. (Feel for the detent – pedal will catch and lock into place.)
- o Press the Constant/Momentary Button. Wait 15 seconds.

STEP 4

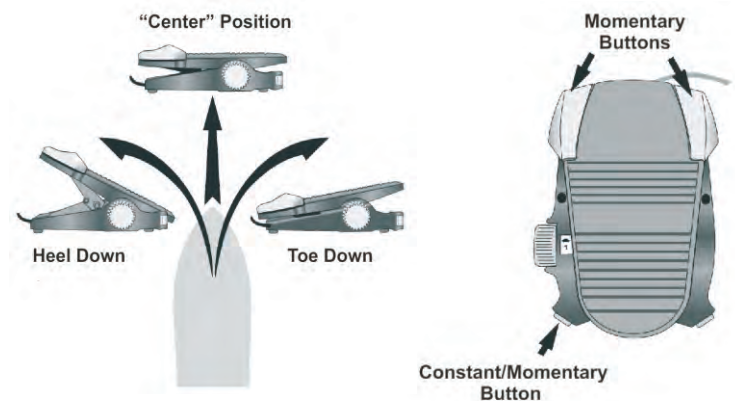
Test system with foot pedal:

- o Run the system in Constant Mode by pressing the Constant/Momentary Button.
- o When the foot pedal in "Center" position (feel for the detent) both propellers should be rotating at the same speed and in the same direction.

Foot Pedal Functions Cont...



Calibration



On the Water...

Lenco Marine would like your first experience with your new Troll'n Tab system to be enjoyable.

Please take your time and walk through the previously mentioned settings and functions. You will learn how to calibrate the motors in the Momentary, Constant and straight ahead positions to maximize the system's full potential.



For the Troll'n Tab system, it is advised that you make sure that the control box is switched OFF after use.

Continued on the next page...

TRIM TAB CONTROL IN FOOT PEDAL SYSTEM

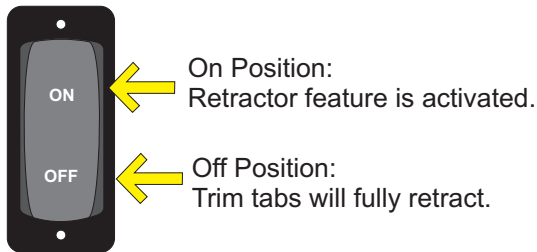
124 DIGITAL SWITCH

The 124 Digital Switch controls both the movement of the trim tabs when the boat is under main power and deploys the two electric drives when the operator is ready to troll.

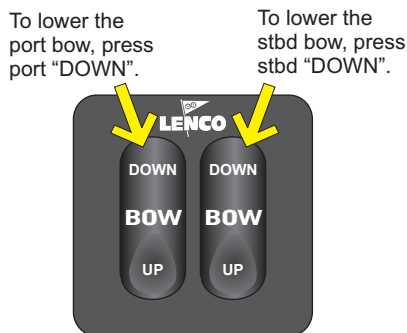
TRIM TAB OPERATION

- The Activation/Retractor switch can be any on/off switch (rocker or toggle) and is supplied by the installer. Turning the switch “On” activates the Retractor feature. The trim tabs will operate even if the switch is in the “Off” position, but the retractor feature will not work. Once the switch is turned “On”, the tabs will retract to their upmost position when the switch is turned “Off”.

Example of a
Rocker Style
On/Off Switch



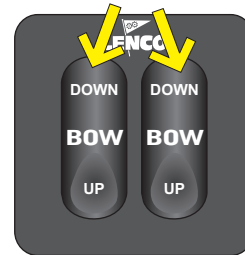
- The operation of the Digital Switch is based on the position of the bow. To lower the starboard bow, press the right (starboard) side of the switch where it reads DOWN. This lowers the port tab and forces the star board bow down. To lower the port bow, press the left (port) side of the switch where it reads DOWN. This lowers the starboard tab.



Deploying Electric Drives with Digital Switch

- The Electric Drives are deployed using the Digital Switch. Press both sides of the Digital Switch where it reads DOWN. Continue to press the DOWN buttons until the Electric Drives are fully submerged and are at least horizontal to the boat’s running surface.

Press and hold the DOWN button until the motors are submerged and are at least horizontal to the boat’s running surface.



Wireless Remote Functions

The Wireless Remote has 3 types of functions: serial number commands, single button commands, and two button commands. Serial number commands allow you to program the remote to work with your system. The single and two button commands are for controlling & operation of the trolling motors on the Troll'n Tab system.

Serial Number Commands

As a safety feature, the receiver will only respond to commands from keyfobs that have been loaded into its memory. Serial numbers can only be loaded or erased within the **first 10 seconds** after the receiver has been turned on.

- The receiver will store up to 4 serial numbers. (Meaning a maximum of 4 different keyfobs)
- Once the 4 serial numbers have been loaded from 4 keyfobs, loading the serial number of an *additional* keyfob will cause a previously loaded keyfob's # to be removed from the list in the receiver's memory.

-Press Buttons Simultaneously-



LOAD SERIAL #

Press the top (+) and bottom (-) buttons at the same time, within 10 seconds of giving the receiver power.

- A High Frequency beep will confirm the newly added, or a previously added, serial number.
- A Low Frequency beep indicates that the number did not take. Try loading the number again.

ERASE ALL SERIAL #s

Press the top (+), bottom (-), left (←) and right (→) buttons all at the same time, and within 10 seconds of giving the receiver power.

Single Button Commands

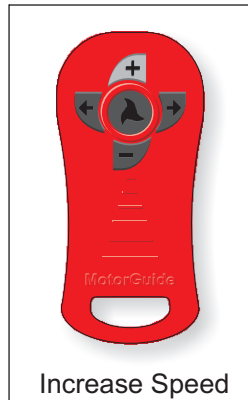


When the receiver has power, the motors will also have power. However, the system will be in OFF mode.

Pushing and holding the () button will turn the system ON and will cause the motors to turn.

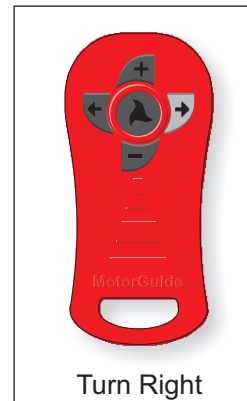
SPEED SETTINGS

Speed settings are retained in the receiver's memory when the motors are OFF as long as the receiver has power.



When the motors are turned back ON, the modified settings will take effect.

However, steering will automatically return to center.



TURNS and speed settings adjust in 5 percent increments with each push of a button.

When held down, settings will adjust rapidly until reaching max.

Two Button Commands

-Press Both Buttons Simultaneously-



TRIM TAB CONTROL IN WIRELESS SYSTEM

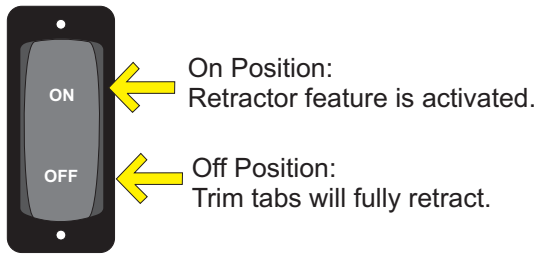
124 DIGITAL SWITCH IN WIRELESS SYSTEM

The 124 Digital Switch controls both the movement of the trim tabs when the boat is under main power and deploys the two electric drives when the operator is ready to troll.

TRIM TAB OPERATION

- The Activation/Retractor switch can be any on/off switch (rocker or toggle) and is supplied by the installer. Turning the switch "On" activates the Retractor feature. The trim tabs will operate even if the switch is in the "Off" position, but the retractor feature will not work. The tabs will retract to their upmost position when the switch is turned "Off".

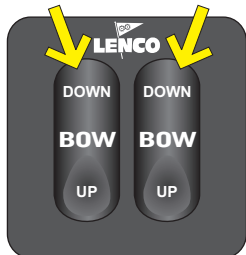
Example of a Rocker Style On/Off Switch



- The operation of the Digital Switch is based on the position of the bow. To lower the starboard bow, press the right (starboard) side of the switch where it reads DOWN. This lowers the port tab and forces the star board bow down. To lower the port bow, press the left (port) side of the switch where it reads DOWN. This lowers the starboard tab.

To lower the port bow, press port "DOWN".

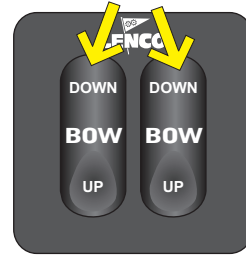
To lower the stbd bow, press stbd "DOWN".



Deploying Electric Drives with Digital Switch

- The Electric Drives are deployed using the Digital Switch. Press both sides of the Digital Switch where it reads DOWN. Continue to press the DOWN buttons until the Electric Drives are fully submerged and are at least horizontal to the boat's running surface.

Press and hold the DOWN button until the motors are submerged and are at least horizontal to the boat's running surface.





CAUTION

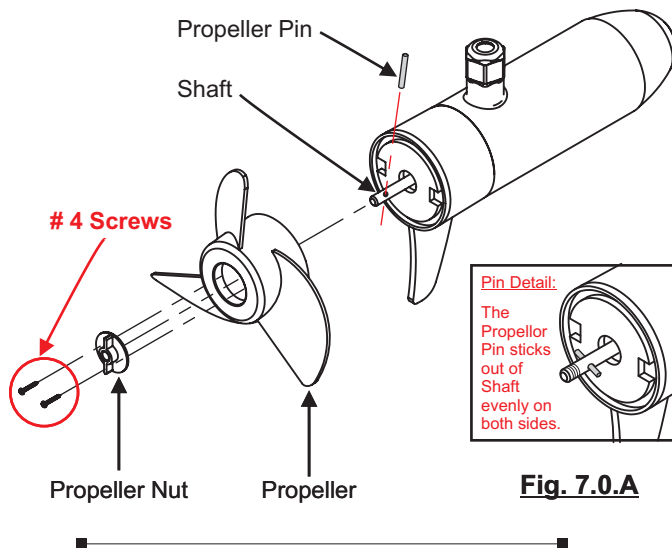
Make sure the motor is disconnected from the battery before replacing the propeller.



CAUTION

Do not strike a bent prop pin with a hammer to remove the pin. This may cause damage to the armature, which is not covered by warranty. MotorGuide recommends using pliers.

Replacing the Propeller



- ① Using a phillips head screw driver, remove the # 4 screws from the propeller nut. (See Fig. 7.0.A)
- ② While holding the propeller blade, use a prop wrench to loosen and remove the propeller nut.
- ③ Pull the propeller straight off. If the prop is stuck, grasp one blade with one hand and tap lightly on the backside of the opposite blade with a rubber mallet. If necessary, repeat the procedure on all blades until the propeller comes off.
- ④ If the propeller pin is bent, replace it.
- ⑤ Align the new propeller with the propeller pin.
- ⑥ Reinstall the propeller nut and tighten securely with your fingers. Tighten another 1/4 turn using a prop wrench.
- ⑦ Drive the two #4 screws into each propeller nut to secure.



WARNING

Failure to properly secure the propeller nut with the two screws on each propeller may result in lost props when reversing.

Customer Responsibility

The motor/mount warranty does not cover items that have been subjected to operator abuse or negligence. To receive full value from the warranty, you must maintain the motor/mount as instructed in this manual.

- Check behind the propeller after each use to ensure weeds, fishing line or other debris are not wrapped around the propeller or the propeller shaft.
- Check the tightness of the battery lead connections.
- Periodically inspect for loose or corroded wiring connections.
- Thoroughly rinse your trolling motor with freshwater after each use in saltwater.
- Periodically make a visual inspection for tightness of all nuts, bolts and screws.
- Before or after use, periodically check the prop nut for tightness.

Battery

Recharge your batteries after each use. Follow the battery manufacturer's recommendations for battery maintenance. Have your batteries tested annually to ensure quality of operation.

Saltwater Use

Corrosion on the metal components of the trolling motors occurs when two or more metals that are dissimilar are brought into electrical contact underwater.

The use of a *sacrificial anode* causes all of the other metals on the trolling motor to become the cathodes. The anode will corrode and the trolling motor will not.

Maintenance: If excessive corrosion occurs, replace the sacrificial anode.