



BOLT Electric TRIM TAB SYSTEM

For Trailered Boats 17-28ft. (5-9m)



Owner's Manual with Instructions



BOLT Electric TRIM TAB SYSTEM

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Get Bennett Onboard and Adjust Your Attitude!

Congratulations on your investment in the most durable and reliable electric trim tab system in the world! Putting a set of Bennett trim tabs on your boat will give you better visibility, increased fuel efficiency, and a smoother, more comfortable ride for you and everyone onboard.

Increase visibility for a safer ride - Keeping your bow down at reduced speeds is important, especially in congested waters or foul weather. Bennett trim tabs enable you to plane at a much lower speed, operating your boat more safely.

Save money with better fuel efficiency - Getting up on plane quicker means your boat spends less time running inefficiently. Bennett trim tabs decrease engine laboring, dramatically improving your fuel economy and prolonging the life of the engine.

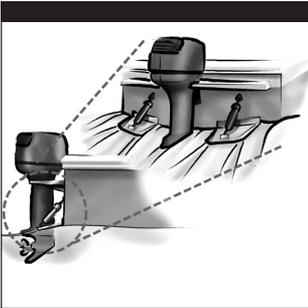
Maximize performance while smoothing out the ride - Bennett trim tabs enhance the operating economy of your boat by lifting the stern in proportion to speed, weight distribution, and fuel load changes.

LEGENDARY CUSTOMER SERVICE CONTINUES

Need help? Bennett's legendary customer service and support is a priceless perk to your new purchase! Our expert staff with over 50 years of trim tab experience is ready to assist with your installation, help with troubleshooting, or answer any of your questions.

How to Contact Us: Call us at 1-954-427-1400, Email: info@bennetttrimtabs.com, or go to: www.bennetttrimtabs.com/contactus.php and fill out the online form. Please allow 24 hours for online requests. **Office hours:** Mon-Fri, 8:00 a.m. to 5:00 p.m. EST.

HOW TRIM TABS WORK



All of Bennett's trim tabs attach to the bottom edge of the transom. When the helm control is pressed, the trim tabs move into position. Water-force on the trim tab creates upward pressure, raising the stern and lowering the bow. Properly sized trim tabs improve the performance of your boat in a wide range of weight, weather and water conditions.

In general, trim tabs operate in the reverse of what you may think. The port (left) trim tab controls the starboard (right) bow. Conversely, the starboard (right) trim tab controls the

port (left) bow. The helm control is wired so that all you have to do is press the control in the direction you want the bow to move. Don't worry about which trim tab is moving. The proper use of Bennett Trim Tabs becomes second nature after a short time.



How to Use Your Trim Tabs



GETTING AND STAYING TRIMMED Most boats “break over” (get on plane) at a particular speed. This speed is determined by weight distribution, water conditions, etc. Bennett’s trim tabs enable your boat to plane at speeds lower than natural planing speed. By pressing the control to the BOW DOWN position, your trim tabs move down. This will raise your stern and lower your bow, getting you up on plane faster, usually increasing your speed.

OPTIMUM ATTITUDE A good way to find your boat’s optimum attitude is to conduct this test. Run the boat lightly loaded, at full speed on flat water. Notice the bow in relation to the horizon. This should be your boat’s best running attitude. Properly sized trim tabs can be used to recreate this “optimum attitude” regardless of weight distribution, speed or water conditions.

GETTING USED TO THE “FEEL” OF YOUR TABS When learning to use your tabs, begin by pressing the helm control in half second bursts for gradual trimming. Be careful not to over-trim your boat. An over-trimmed boat will “plow” or “bow-steer”. If you over-trim the boat, simply press BOW UP and the bow of the boat will rise.

CORRECTING FOR A LIST

Bennett Trim Tabs may be operated individually so that you can correct for listing. Your control is designed so that you can use it “intuitively.” Do not think about what the trim tabs are doing, just concentrate on the bow. If the port bow is high, push the port side BOW DOWN direction. If the starboard bow is high, push the starboard side BOW DOWN direction. Press the control in half-second bursts to avoid over-trimming, allowing time between corrections for the boat to react.

TRIM TABS WITH POWER TRIM – GETTING OPTIMUM SPEED AND POWER

Using your trim tabs in conjunction with your power trim will give you increased speed and power.

1. Adjust the trim tabs to achieve a planing attitude.
2. Use the power trim to position the prop path parallel to the water flow as indicated by increased RPM / Speed.
3. If necessary, re-adjust the trim tabs to “fine tune” the trim of your boat. In other words, use your trim tabs to trim the boat and your power trim to trim your prop.

Special Conditions and Safety

RUNNING IN ROUGH WATER

When running in a chop or heavy seas, press BOW DOWN on both tabs. This will bring the “V” of the hull in contact with the waves rather than having the waves pound the hull and your passengers.

FOLLOWING SEA

For maximum control and maneuverability in a following sea or when running in an inlet, make sure the trim tabs are fully retracted by pressing BOW UP on both tabs. This brings up the tabs, decreasing lift in the stern, allowing the bow to rise. If tabs are deployed, the bow may dig.

WINDY CHOP

To raise the windward side of the boat press BOW UP on that side. If this is not sufficient, press BOW DOWN on the leeward side of the boat. This allows the windward side of the boat to rise and minimizes spray. Do not overtrim when attempting this.

SHALLOW WATER / HOLE SHOT

To lift the stern and lower the bow, lower both tabs completely down by pressing BOW DOWN on both tabs. As you throttle up and speed increases, raise the tabs by pressing BOW UP on both tabs.

PORPOISING

Porpoising is a condition more common in faster boats. As speed increases, the bow repeatedly rises out of the water until gravity overcomes lift and the bow falls down. Press “Bow Down” in half second bursts. As the trim tabs deflect, the porpoising subsides and your speed should remain the same or decrease. Only a slight amount of trim tab deflection should be necessary.

SAFETY PRECAUTIONS

- Do not overtrim, particularly at high speeds as the bow will dig in and wave action may cause the boat to veer.
- While operating trim tabs, use caution. Improper use of trim tabs may cause accidents and/or injury.
- For best maneuverability, trim tabs should be fully retracted in a following sea, or when running in an inlet.

Bennett 's trim tabs have a significant effect on the operation and versatility of your boat. No one knows your boat better than you, so the best learning method is to spend time getting familiar with your boat's reaction to the trim tabs. Remember, practice makes perfect! As your experience increases, so will your enjoyment. Always operate your boat with safety first in mind.

Bringing 21st Century Technology to the NEW BOLT Electric

OVERVIEW

Bennett Marine invented the electric trim tab in 1960 and now, Bennett leads the way with a brand new electric trim tab system designed to outperform and outlast any electric system on the market.

Compared to other electric systems using old technologies designed over twenty years ago, the BOLT Electric combines cutting-edge technology with a robust and water-tight actuator. This new "superior by design" technology resolves the issues that older systems have with breaking apart and water intrusion caused by design flaws and marine growth.

What makes the BOLT Electric Better?

- Robust, water-tight, black nylon actuator provides trouble-free operation
- Main seal located high to protect against marine growth and water intrusion failures
- Installation is fast - no need to disassemble the upper hinge
- Wires are concealed and protected through the upper hinge - there are no wires exposed to harsh environments.
- Quieter operation than any other systems on the market - no more scaring the fish away!

MAINTENANCE

- Periodically, check electrical connections behind switch.
- Cold temperatures do not affect the trim tab system. No winterization is necessary.
- (SALTWATER ONLY) To deter electrolysis, a zinc anode should be attached to the top of each trim tab. Zinc must make direct contact with stainless steel. Do not paint zinc. Do not ground trim tabs to other underwater appendages.
- Paint trim tabs to discourage marine growth:
 1. Clean surface of all grease, oil, dirt.
 2. Apply two coats of epoxy metal primer.
 3. Apply two coats of anti-fouling paint.Actuator, including the piston, may be painted.
- Unpainted trim tabs may acquire an orange discoloration. THIS OXIDATION OF SURFACE CARBON MOLECULES IS NORMAL. The integrity of the stainless steel is not affected. Orange coating can be cleaned off, but may eventually return. **Note:** This discoloration should not be confused with the pitting and corrosion of electrolysis.

SAFETY INFORMATION

- Take immediate action to correct any malfunction or failure of your trim tabs.
- Occasionally, check for loose or corroded wiring connections.
- Stepping on the trim tab may cause damage to the unit, or injury.
- Leaving the actuator extended when boat is not in use will not cause seal damage.
- REFER TO SAFETY PRECAUTIONS ON PAGE 6.

System Specifications

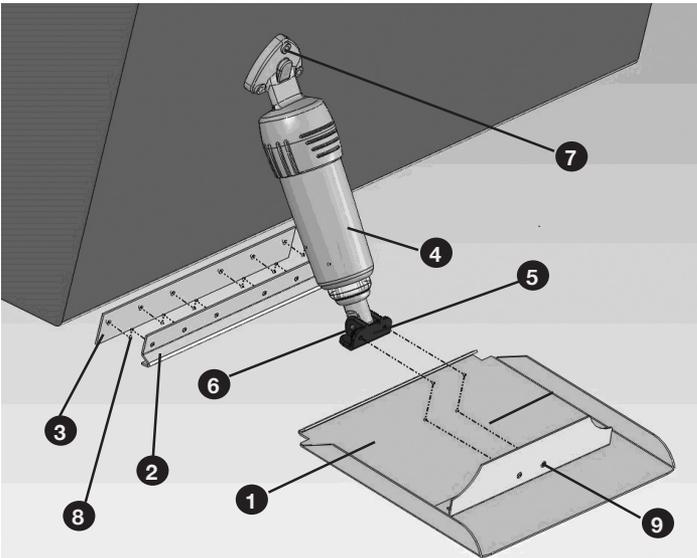
Trim Tab Planes & Mounting Plates:	Trim tab sizes vary. Stainless Steel, 304. Piano hinge, bottom mount, and transom mount available.	
Actuators:	Upper hinge material made of flexible nylon. Remainder of actuator is made of high impact fiberglass-filled nylon.	
Control Box:	Two types of control boxes with diagnostics: With ATR only, and with LED & ATR	
Helm Control:	Controls on 12 volt systems circuit breaker or use 20 amp in-line fuse. (3 types of controls).	
Wire Harness:	Wire colors and their functions:	
	Yellow	Motor reverse (retract)
	Blue	Motor forward (deploy)
	Black	Ground
	Orange	Power Lead - 12v

Please note:

The inability to synchronize two electric motors is an inherent design failure found in other systems. Therefore, we do not recommend installing two electric actuators per tab.

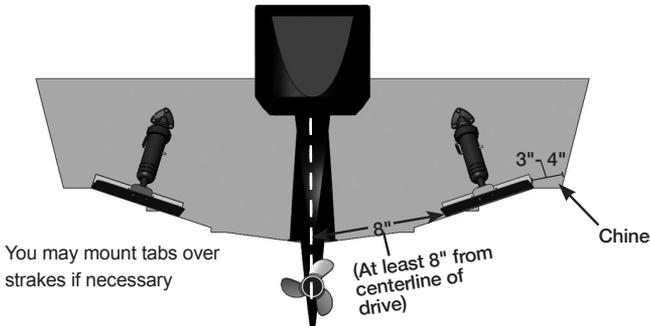
Parts List

PART	PART NO.
1 Trim Plane	Varies
2 Hinge Plate	Varies
3 Backing Plate	Varies
4 Complete Actuator	BEA 2000
5 Actuator Lower Hinge	A1113
6 Actuator Hinge Pin	A1115
7 Actuator Upper Hinge Screws (#14 x 1 1/2" screw)	H1174
8 Trim Tab Screws (#10 x 1 1/4" screw)	EH1071
9 Actuator Lower Hinge Screws (1/4-20 x 3/4" Phillips screw)	H1175



Installation Instructions - BOLT Electric

Standard "V" Hull Installation



Tools and Materials List

- | | | |
|---|--|---|
| <ul style="list-style-type: none">• Electric drill• 5/32" 3/8" & 3/16" drill bits• Tape measure | <ul style="list-style-type: none">• Phillips screwdriver• Marine epoxy• Straight edge• Marking pencil | <ul style="list-style-type: none">• 4' (1.22 m) level• 3M 5200 sealant or equivalent• 2" (5.08 cm) hole saw |
|---|--|---|

Getting Started - Important Please Read

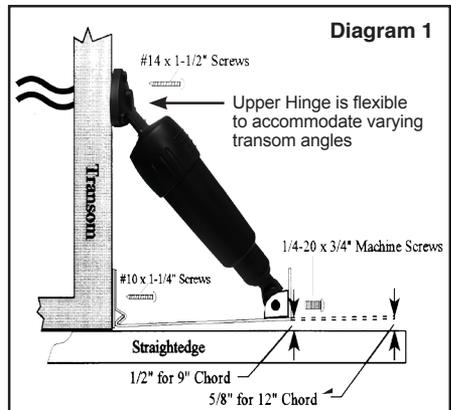
Please read through the instructions prior to installation. If you have any questions about your BOLT system, please contact: Bennett Client Services at 954-427-1400 (8 a.m. to 5 p.m. EST) or Email: info@BennettTrimTabs.com.

Be sure to check for any obstructions. Also, before starting installation and drilling any holes, verify that there are no mounting restrictions inside or outside the transom. Choose a location about 3-4" from the chine (side of the hull). Hold the tab up to the very bottom of the transom (flush with hull bottom), and hold the actuator on the trim tab. Then set the actuator upper hinge against the transom. Verify this for both sides so that the actuators will not center on any obstruction. If they do, reposition tabs slightly inboard or outboard.

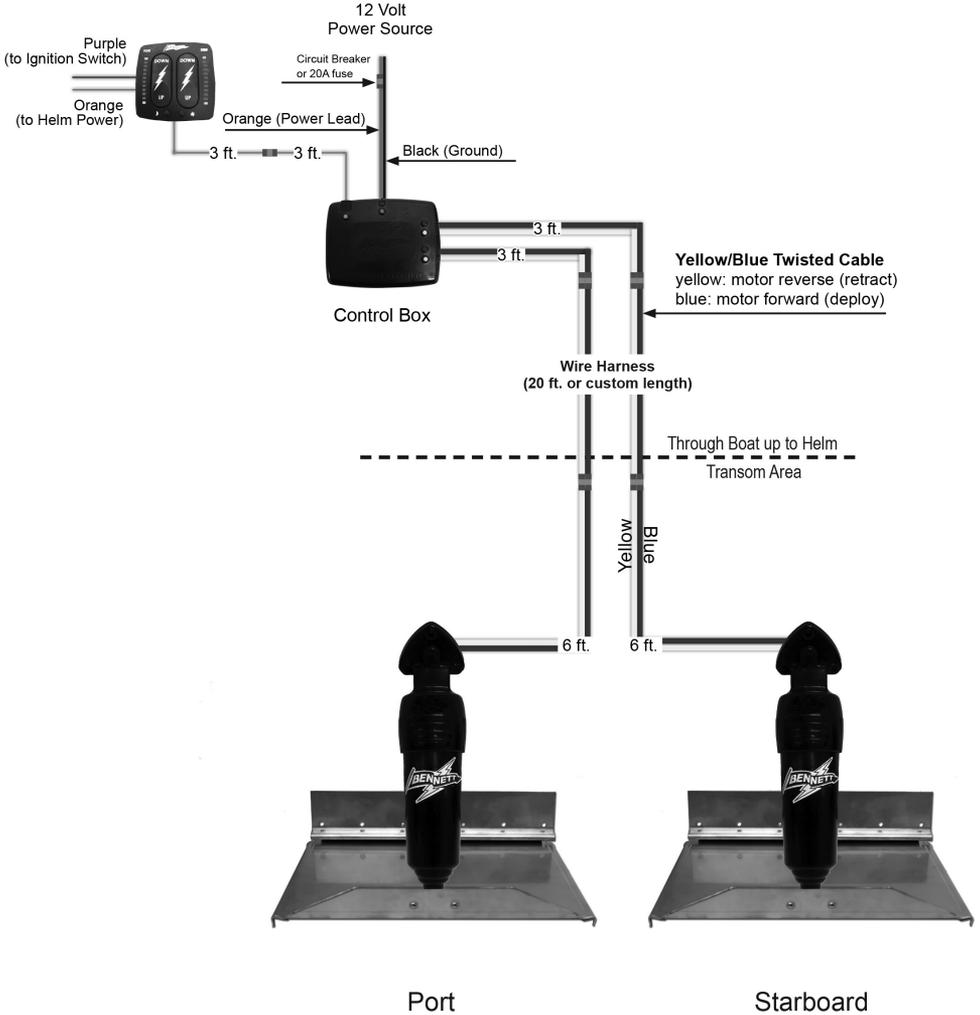
You are now ready to install the BOLT Electromechanical Trim Tab System.

Installation Instructions - BOLT Electric

1. Position the Tab. Using the backing plate, choose a location 3-4" from the chine. Maintain a minimum of 8" from the centerline of your drive unit to the closest edge of the trim tab. Align the bottom of the backing plate, as per the diagram 1 below (1/2" negative angle for 9" chord; 5/8" negative angle for 12" chord; 1" negative angle for 16" chord). The hole pattern on the backing plate should be closer to the bottom edge of the backing plate.
2. Mark the Pilot Holes. Using the backing plate as a template, mark the pilot hole locations. Make sure the tabs can be mounted in the same location on both sides.
3. Drill the Mounting Plate Holes, using a 5/32" drill bit.
4. Install Tab and Hinge Assembly. Dip #10 x 1 1/4" screws in marine epoxy before inserting into pilot holes. Run the screws in 3/4 of their length. Slide trim tab between backing plate and hinge plate. Now, tighten the screws.
5. Attach Actuator to Trim Tab. Secure lower hinge with included 1/4-20 x 3/4" Phillips Head machine screws.
6. Set Final Actuator Position. Use a straight edge under the trim tab to make sure the correct negative angle for your size of tab is achieved. This is important to ensure correct actuator placement.
7. Mark Actuator Position on Transom. Using the template, mark the three upper hinge hole centers and the center hole on the transom.
8. Drill Actuator Holes. Use a 3/16" drill bit to drill the three holes. Use a 3/4" drill bit to drill the center hole.
9. Mount Actuator to Transom. Pass through the yellow & blue wires, removing any slack on the wire through the hole. Apply marine sealant in and around pilot holes. Secure upper hinge to transom with included #14 x 1 1/2" screws.
10. Repeat Steps 1 through 9 for the opposite side of the boat.



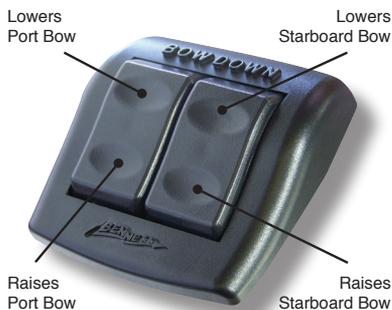
Wiring Diagram for BCN & BCI



BOLT Electric Rocker Switch/Controls

BRC - BOLT Rocker Switch Control

The basic operation of the rocker switch control is based on the direction you want the bow to move. To lower the starboard bow, press the right (starboard) top portion of the rocker switch. This lowers the port bow. To lower the port bow, press the left (port) top portion of the rocker switch. This lowers the starboard tab.



Rocker Switch Control

BCN - BOLT Control - With No Indication

The BOLT Control with Built-in Diagnostics and Auto Tab Retraction (ATR) is an upgrade to the basic Rocker Switch Control. It combines functionality with the auto tab retraction feature, just turn off your ignition switch and your tabs automatically retract.



BOLT Rocker Control with Built-in Diagnostics and Auto Tab Retraction (ATR)

BCI - BOLT Control - With Indication

The BOLT Control with Built-In Diagnostics, Indication and Auto Tab Retraction combines three features into one. It's water resistant, highly accurate and features variable intensity LEDs for day or night.



BOLT Rocker Control with Built-in Diagnostics, Indication and ATR

Installation Instructions - BRC

BRC BOLT Rocker Control



1. Before you drill any holes, read the entire instructions.
2. Using the template on the last page, mark the locations for the 3/16" holes and the 2" center hole.
3. Check carefully to make sure there are no obstructions behind the console before drilling any holes.
4. Using a 2" hole-saw, cut the center hole. Use a 3/16" drill for the four mounting stud holes.
5. Unsnap the bezel from the control plate.
6. Remove four (4) #8 screws from the hardware bag and insert into the holes on each corner of the control plate.
7. Place the control plate onto the console, feeding the pre-connected wires through the 2" center hole while inserting the screws into each of the four holes.
8. Once the control plate is properly seated, screw down the four (4) #8 screws (do not over-tighten) and snap the bezel back onto the plate assembly.
9. Take the left (port) yellow/blue twisted cable with waterproof connector and connect into the left (port) **actuator** yellow/blue 20 ft. twisted wiring harness with waterproof connector. (If not long enough an extension can be ordered).
10. Take the right (starboard) yellow/blue twisted cable with waterproof connector and connect into the right (starboard) **actuator** yellow/blue 20 ft. twisted wiring harness with waterproof connector. (If not long enough an extension can be ordered).
11. Plug the left (port) yellow/blue 20ft. twisted cable to the left (port) connector on the BRC Rocker Control
12. Plug the right (starboard) yellow/blue 20ft. twisted cable to the right (starboard) connector on the BRC Rocker Control
13. Connect the orange and black wires with waterproof connector to a 12v power and ground source.

Installation Instructions - BCN

BCN BOLT Control with No Indication



1. Before you drill any holes, read the entire instructions.
2. Using the template on the last page, mark the locations for the 3/16" holes and the 2" center hole.
3. Check carefully to make sure there are no obstructions behind the console before drilling any holes.
4. Using a 2" hole-saw, cut the center hole. Use a 3/16" drill for the four mounting stud holes.
5. Use a small bead of sealant around perimeter of the display to seal. Place the helm display keypad onto the console, feeding the pre-connected wires through the 2" center hole while inserting the screws into each of the four holes.
6. Once the control plate is properly seated, use the 4 white nylon thumb nuts provided to secure the display.
7. Mount the BCN Control Box under the helm using the mounting hardware (2 screws provided) to secure it in place.
8. Plug the 3 ft. wire harness on the display to the 3 ft. wire harness on to the BCN - Control Box (If not long enough an extension can be ordered.)
9. Plug the (2) 20 ft. wire harnesses into the port and starboard actuators at one end. Then plug the other end of the (2) 20 ft. wire harnesses to the port and starboard plugs on the BCN Control Box. (If not long enough an extension can be ordered).
10. Connect the orange wire with waterproof connector to power source at the helm. Use care to avoid overtightening of boat's electronics or gauges.
11. Connect the purple wire to the ignition switch (or any 12V circuit that turns ON and OFF with ignition) for auto tab retraction. This wire is used to initiate Auto Tab Retraction (ATR) when the ignition is switched to the OFF position. If ATR is not desired, this connection may be omitted.
12. Attach power cable and ground cable on the BCN Control Box. Attach the black wire to 12V negative ground and the orange wire with an in-line 20 amp fuse to 12V positive source. Can be connected to a breaker or bus bar. Power source must be capable of supporting 20 amps and properly fused.

Installation Instructions - BCI

BCI BOLT Control with Indication



1. Before you drill any holes, read the entire instructions.
2. Using the template on the last page, mark the locations for the 3/16" holes and the 2" center hole.
3. Check carefully to make sure there are no obstructions behind the console before drilling any holes.
4. Using a 2" hole-saw, cut the center hole. Use a 3/16" drill for the four mounting stud holes.
5. Use a small bead of sealant around perimeter of the display to seal. Place the helm display keypad onto the console, feeding the pre-connected wires through the 2" center hole while inserting the screws into each of the four holes.
6. Once the control plate is properly seated, use the 4 white nylon thumb nuts provided to secure the display.
7. Mount the BCI Control Box under the helm using the mounting hardware (2 screws provided) to secure it in place.
8. Plug the 3 ft. wire harness on the display to the 3 ft. wire harness on to the BCI - Control Box (If not long enough an extension can be ordered.)
9. Plug the (2) 20 ft. wire harnesses into the port and starboard actuators at one end. Then plug the other end of the (2) 20 ft. wire harnesses to the port and starboard plugs on the BCI Control Box. (If not long enough an extension can be ordered).
10. Connect the orange wire with waterproof connector to power source at the helm. Use care to avoid overtightening of boat's electronics or gauges.
11. Connect the purple wire to the ignition switch (or any 12V circuit that turns ON and OFF with ignition) for auto tab retraction. This wire is used to initiate Auto Tab Retraction (ATR) when the ignition is switched to the OFF position. If ATR is not desired, this connection may be omitted.
12. Attach power cable and ground cable on the BCI Control Box. Attach the black wire to 12V negative ground and the orange wire with an in-line 20 amp fuse to 12V positive source. Can be connected to a breaker or bus bar. Power source must be capable of supporting 20 amps and properly fused.

Troubleshooting - BOLT Electric

The BOLT Electric Trim Tab system is built with the same rigid quality standards as all of the other Bennett product lines. Bennett stands behind its products, providing exceptional customer service and support.

Please feel free to call Bennett at (954) 427-1400 for assistance in troubleshooting your particular issue. Bennett Marine Customer Service is available Monday through Friday, 8:00 a.m. to 5:00 p.m. Eastern Standard Time (EST).

Below are some useful tips, for troubleshooting the BOLT Electric BCN and BCI systems:

1. If trim tabs do nothing ... no movement:
 - Inspect for blown fuse at the fuse panel. 20 amp fuse should be used.
 - Make sure that the control assembly has a solid ground.
 - Inspect for disconnected or corroded connections on the wires and wire connectors if helm key pad has no lights.
2. If one trim tab operates and the other one does not:
 - Inspect for disconnected or corroded yellow or blue wire connections for the side that is not working.
3. If trim tabs go down but will not retract:
 - Inspect for low voltage of the battery
 - Inspect for disconnected or corroded connections.
4. If the green light on the control diagnostics box is NOT lit:
 - Inspect connection between helm keypad and control box.
5. If the red light on the control diagnostics box is NOT lit:
 - Inspect connection between power source and control box.
6. If the blue light (port or starboard) on the control diagnostics box is NOT lit:
 - Inspect connection between the actuator and the control box for the side that is not working.
7. If the yellow light (port or starboard) on the control diagnostics box is NOT lit:
 - Inspect connection between the actuator and the control box for the side that is not working.

If the actuators still do not operate after following any of the steps above - STOP and call Bennett for further assistance at (954) 427-1400, Monday through Friday, 8:00 a.m. to 5:00 p.m. Eastern Standard Time (EST). Or email us anytime at Info@BennettTrimTabs.com.



Bennett Marine "No-Hassle" Warranty

Bennett's BOLT Actuator Systems in the United States carry a **five (5) year** limited warranty against manufacturing defects.

Bennett BOLT electronic controls carry a **three (3) year** limited warranty against manufacturing and workmanship defects.

PLEASE NOTE: Damage to the trim tabs due to electrolysis and damage to the electropolish finish of the trim tabs are not covered by warranty. No labor costs of replacement, haulout, or miscellaneous charges are covered. Contacting Bennett Marine first may save considerable time, trouble, and expense.

The foregoing is in lieu of any and all other warranties, expressed or implied, including any warranty of merchantability or fitness for a particular purpose. There are no other warranties which extend beyond that set forth above.

Warranty Return Procedure: We recommend that you contact us first to troubleshoot your system and determine the best solution. We take great pride in providing the best Customer Service possible to our customers and many issues are resolved over the phone. **Simply call (954) 427-1400 Monday through Friday, 8 a.m. to 5 p.m. Eastern Standard Time (EST) or send an email to info@BennettTrimTabs.com.**

Return Procedure for U.S. Customers: A Product Return Form must be filled out and returned with the faulty part. Go to www.BennettTrimTabs.com/warranty.php and download the form. Parts covered under warranty will be repaired or replaced without charge.

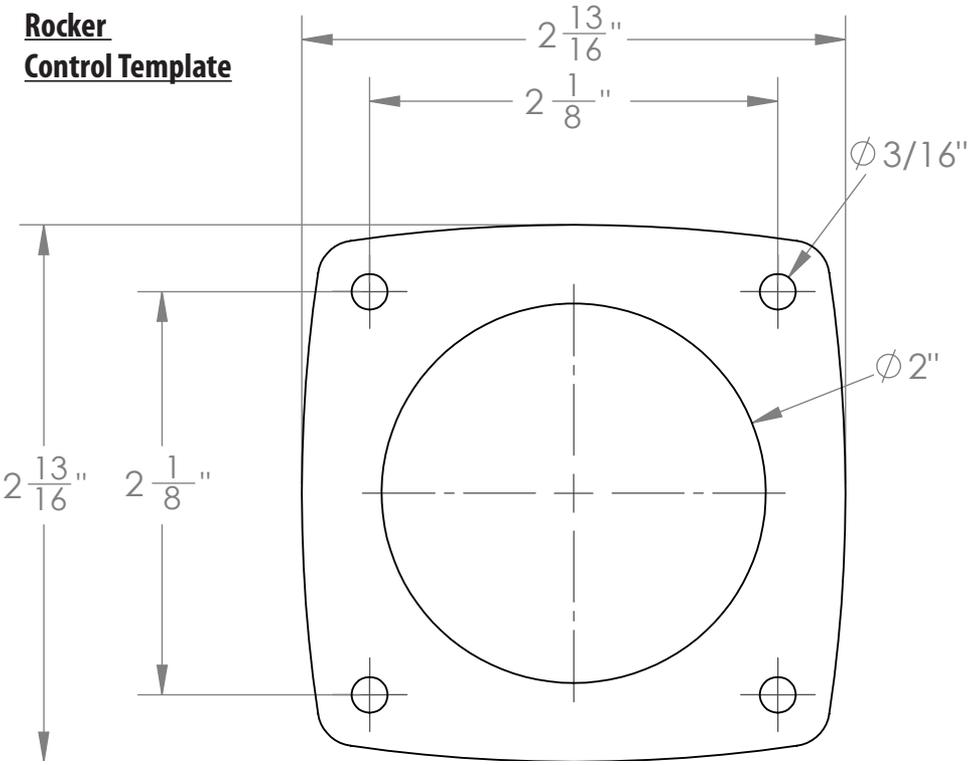
Return Procedure for Customers Outside the U.S.: Please contact your local Bennett Marine distributor for warranty and return procedures in your respective country.



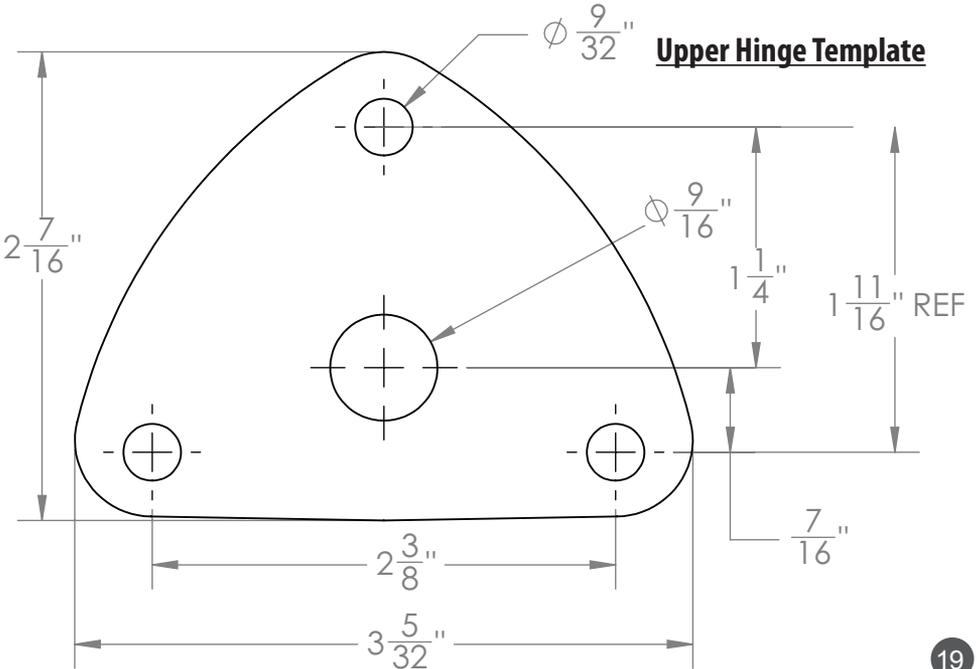
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**Rocker
Control Template**



Upper Hinge Template





Bennett Marine, Inc.

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M-F 8am to 5pm (EST)



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