

LIMITED THREE-YEAR WARRANTY ON ENTIRE PRODUCT:

Entire Product

Johnson Outdoors Marine Electronics, Inc. warrants to the original purchaser that the purchaser's entire Minn Kota® product is free from defects in materials and workmanship appearing within three (3) years after the date of purchase. Johnson Outdoors Marine Electronics, Inc. will, at its option, either repair or replace, free of charge, any parts, found to be defective during the term of this warranty. Such repair or replacement shall be the sole and exclusive liability of Johnson Outdoors Marine Electronics, Inc. and the sole and exclusive remedy of the purchaser for breach of this warranty.

Terms Applicable to Warranty

This limited warranty does not apply to products used commercially nor do they cover normal wear and tear, blemishes that do not affect the operation of the product, or damage caused by accidents, abuse, alteration, modification, misuse or improper care or maintenance. The cost of normal maintenance or replacement parts which are not defective are the responsibility of the purchaser.

To obtain warranty service in the U.S., the product or part believed to be defective, and proof of original purchase (including the date of purchase), must be presented to a Minn Kota® Authorized Service Center or to Minn Kota®'s factory service center in Mankato, MN. Any charges incurred for service calls, transportation or shipping/freight to/from the Minn Kota® Authorized Service Center or factory, labor to haul out, remove, re-install or re-rig products removed for warranty service, or any other similar items

are the sole and exclusive responsibility of the purchaser. Products purchased outside of the U.S. (or parts of such products) must be returned prepaid with proof of purchase (including the date of purchase and serial number) to any Authorized Minn Kota® Service Center in the country of purchase. Warranty service can be arranged by contacting a Minn Kota® Authorized Service Center listed on the enclosed sheet, or by contacting the factory at 1-800-227-6433, 1-507-345-4623 or fax 1-800-527-4464. Note: Do not return your Minn Kota® product or parts to your retailer. Your retailer is not authorized to repair or replace them.

THERE ARE NO EXPRESS WARRANTIES OTHER THAN THIS LIMITED WARRANTY. IN NO EVENT SHALL ANY IMPLIED WARRANTIES, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE, EXTEND BEYOND THREE YEARS FROM THE DATE OF PURCHASE. IN NO EVENT SHALL JOHNSON OUTDOORS MARINE ELECTRONICS, INC. BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations and/or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other legal rights which vary from state to state.

ENVIRONMENTAL COMPLIANCE STATEMENT:

It is the intention of Johnson Outdoors Inc. to be a responsible corporate citizen, operating in compliance with known and applicable environmental regulations, and a good neighbor in the communities where we make or sell our products.

WEEE Directive:

EU Directive 2002/96/EC "Waste of Electrical and Electronic Equipment Directive (WEEE)" impacts most distributors, sellers, and manufacturers of consumer electronics in the European Union. The WEEE Directive requires the producer of consumer electronics to take responsibility for the management of waste from their products to achieve environmentally responsible disposal during the product life cycle.

WEEE compliance may not be required in your location for electrical & electronic equipment (EEE), nor may it be required for EEE designed and intended as fixed or temporary installation in transportation vehicles such as automobiles, aircraft, and boats. In some European Union member states, these vehicles are considered outside of the scope of the Directive, and EEE for those applications can be considered excluded from the WEEE Directive requirement.

This symbol (WEEE wheelie bin) on product indicates the product must not be disposed of with other household refuse. It must be disposed of and collected for recycling and recovery of waste EEE. Johnson Outdoors Inc. will mark all EEE products in accordance with the WEEE Directive. It is our goal to comply in the collection, treatment, recovery, and environmentally sound disposal of those products; however, these requirements do vary within European Union member states. For more information about where you should dispose of your waste equipment for recycling and recovery and/or your European Union member state requirements, please contact your dealer or distributor from which your product was purchased.



Table of Contents

General Trim Tab Operation2

System Functionality and Details3

Special Operating Conditions7

Trim Tab Selection8

Trim-N-Troll Selection11

Actuator Selection12

Installation *DEALER RECOMMENDED*13

Trim Tabs Installation – All Users15

Trim-N-Troll Motor Cable Routing18

Actuators Installation – All Users19

Control Module Installation23

Motor Control Unit (MCU) Installation – Trim-N-Troll Users Only24

Actuator Calibration Procedure26

Wiring Diagrams27

Indicator Switch Trim Tab System28

System Features29

Audio Modes32

Adding/Removing Remotes34

Battery Replacement34

Technical Assistance For Your Remote35

Frequently Asked Questions about the Remote35

FCC Disclaimer36

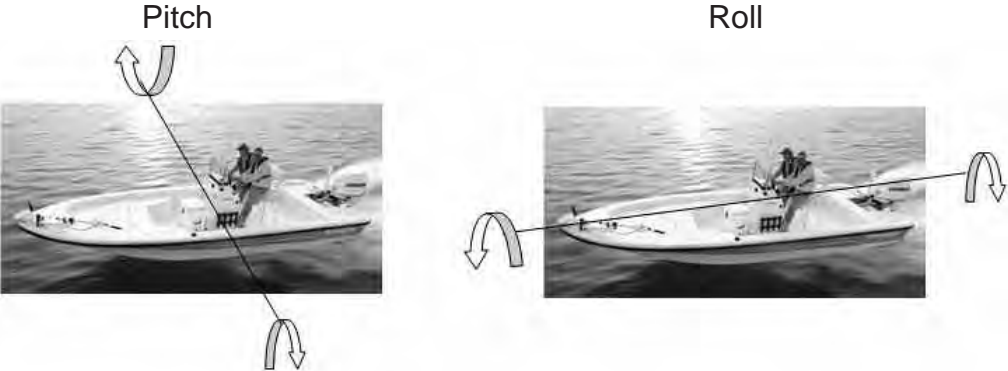
Basic Maintenance and General Care37

Trouble Shooting38

-----Congratulations on the purchase of your new Minn Kota Trim Tab or Trim-N-Troll system. At Minn Kota...everything we make, we make better...and we've done it again. By following the instructions in this manual, you will learn how to properly install and operate your new Trim Tab or Trim-N-Troll system for years of trouble free use. We encourage you to read this manual thoroughly in order to maximize your outdoor experience. ***Due to the complexity of this system, we highly recommend that you have a dealer install this system.***

General Trim Tab Operation

Trim Tabs on a boat function much like the “flaps” on the trailing edge of an airplane wing, providing lift and stabilization. If the Trim Tabs are deployed, while the boat is moving forward, the water rushing under the tabs generates lift at the stern. This action lifts the stern up and out of the water and in turn lowers the bow. Trim Tabs are designed to provide lift in 2 axis as illustrated below.



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Basic Switch



Indicator Switch



The dash-mounted controls represent the position of the bow (note the word “BOW” on all tab control switches). The right side of the switch controls the starboard side of the bow, while the left side of the switch controls the port side of the bow. This is opposite of how the Trim Tabs actually respond. The right side of the switch will cause the port Trim Tab to move, and the left side of the switch will cause the starboard Trim Tab to move. The system is thus designed to take the user’s mind off of what the tabs are doing and to *focus on what the BOW is doing*. This is the standard by which nearly all Trim Tab systems operate, and is very effective at simplifying their use.

For those who want to know the actual position of their Trim Tabs, Minn Kota offers a revolutionary indicator switch that gives the user real time position feedback on how their Trim Tabs are positioned. Along with all the functionality of the Basic Switch, the indicator switch also has an Auto Up and Auto Down feature that allows for a one touch full deploy or retract of your Trim Tabs.

System Functionality and Details

1. Trim Tabs with Position Indicator Switches



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The Position Indicator Switch has all the same functionality as the Basic Switch, with the additions of position feedback and the AUTO UP and AUTO DN buttons.

The AUTO UP and AUTO DN buttons refer to the actual position of the Trim Tabs. By pressing the AUTO UP button the actuators will fully retract such that the Trim Tabs are in the full up position, or zero degrees. Inversely, by pressing the AUTO DN button, the actuators will fully extend such that the Trim Tabs will be in their full down position, or 20 degrees.

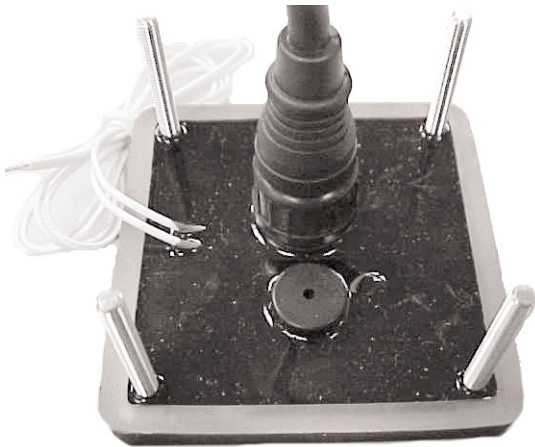
The AUTO UP and AUTO DN buttons only need to be pressed momentarily; they do not need to be held down continuously. Once the button has been pressed and the actuators begin to move, the button may be released and the function will continue automatically.

Once the Trim Tabs are in automatic motion, the pressing of any other button will cause this motion to stop until another button press is made.

The control system for the Minn Kota position indicator switch continually monitors the actuators and therefore knows the position of the Trim Tabs at all times. The port and starboard switch buttons correspond to bow control (right-side switch controls starboard bow; left-side switch controls port bow). The indicator lights correspond to actual tab position (right-side indicator lights indicate starboard Trim Tab position; left-side indicator lights indicate port Trim Tab position). When only the green indicator light is illuminated, the corresponding Trim Tab is fully retracted (full up position). As the Trim Tab begins to move down, the yellow indicator lights will begin to illuminate. Each successive yellow indicator light corresponds to approximately 2° of deployment. When all 10 yellow indicator lights are illuminated, the Trim Tab is fully deployed (approximately 20° down).

The Indicator Switch can be tied into your ignition system. On the back of the switch, there are two white wires that can be tied to 12V that is switched to the boats ignition system. (Switched = 12V would only be present when the ignition system is turned on)

****Please see the section “Wiring Diagrams” for details on making this connection.**
If connected to an active ignition system, the indicator lights on the position indicator switch will remain on at all times. When the ignition is turned off, the indicator lights will shut off after 30 minutes with no ignition signal or button activity.



Description of Problem	Step 1	Step 2	Step 3	Step 4	Step 5
One or more of the yellow position indicator lights on the switch will not shut off when the system is fully retracted.	Recalibrate the actuators. See page 24 for this procedure.	There may be a problem with the actuator(s). Please call MinnKota Customer Service for further assistance.			
The lights on the Indicator Switch never shut off.	If your switch is tied into your ignition, and the ignition is in the “on” position, the lights will remain on.	Turn your ignition off. The lights will shut off in 30 minutes.	If the previous actions do not correct the condition, please call MinnKota Customer Service.		
Occasionally, the lights on the Indicator Switch turn off.	The system has a 30 minute time out. After 30 minutes have passed with no button activity, and no ignition activity, the lights will shut off.	If the previous actions do not correct the condition, please call MinnKota Customer Service.			
Right after power is applied to the control module, the lights on the indicator switch flash 3x with a steady tone.	The system may have “forgotten” what length actuators are connected. Please recalibrate the actuators. Refer to page 24 for further instruction.				
After the second Indicator switch was installed, now neither one works.	Disconnect one at a time to see if they work independently. Be sure to plug each one into its intended position on the network when testing this.	Do they work independently? Next frame	If YES, then: Ensure you have switch #1 and switch #2. This can be verified by the decal on the back of the switch.	If NO, then: There could be a bad switch, cable, or t-splitter.	

Description of Problem	Step 1	Step 2	Step 3	Step 4	Step 5
Pressing the prop button on the remote emits a short beep, but the motors do not turn on.	Ensure that the system has been properly deployed into the trolling range.	When the motors are first deployed into troll range, the motors start at speed zero. Press the “+” button to speed up.	Bring the tabs back into trim range, re-deploy into troll range, and retry.	If the previous actions do not correct the condition, please call MinnKota Customer Service.	
When entering “remote learn mode” I never get the steady tone.	Something on the network may not be communicating. Check all network and power connections and retry.	If the previous actions do not correct the condition, please call MinnKota Customer Service.			
Trim N Troll system does not appear to respond to remote commands	Start by putting the system into audio mode 2 or 3. This will allow you to hear whether or not the commands are getting thru to the system. See page 30.	Ensure the MCU antenna is uncoiled and mounted in an area of the boat as far away from other electronics and metal as possible.	Ensure that the remote battery is in good condition.	If the previous actions do not correct the condition, please call MinnKota Customer Service.	
In Troll range: Motors turn off after 20 seconds, and the lights on the indicator switch flash and beep 3x on one or both sides.	This is a current limit alarm. Turn the trolling motors off and clear any debris from around the props. Retry.	There may be a problem with the lower unit(s). Please call MinnKota Customer Service for further assistance.			
In Trim range: The lights on the Indicator Switch flash and beep 3x on one or both sides	If the actuators were extending and reached the end of travel when this occurred, retract both tabs to the full up position. Now attempt to re-lower the tabs.	If the actuators had just started to move when this occurred, ensure there is nothing stopping the tab movement. Retry.	There may be a problem with the actuator(s). Please call MinnKota Customer Service for further assistance.		

It is recommended when using Trim-N-Troll, that all users connect the ignition wires to the boat’s ignition system. Doing this will prevent the user from accidentally deploying the trolling motors while under main engine power. If the system recognizes that the ignition is turned on while in Troll range, it will automatically retract the motors out of the troll range, and then go into the bottom of the trim range (20°).

For more details on Trim range vs. Troll range, see the section, “3. Trim-N-Troll”

2. Trim Tabs with Position Indicator Switches and Auxiliary Switches

Auxiliary Indicator Switches (or Fly Bridge switches) operate the same as the main indicator switch. All of the functions are exactly the same. However, the Auxiliary Switch requires the use of the Indicator Switch. Any of the buttons can be pressed on either the main or the Auxiliary Indicator Switch at any time. The Auxiliary Indicator Switch simply gives the operator the ability to control the Trim Tabs from either of two separate locations. Since the Trim Tab controls are typically mounted in close proximity to other boat controls (e.g. steering wheel, engine throttle, etc.) the Auxiliary Indicator Switch is typically used for applications involving a fly bridge or other secondary control situation.

**Please see the section “Wiring Diagrams” for details on making this connection.



Main Indicator Switch



Auxiliary Indicator Switch

One way to distinguish the difference between the two is when power is first turned on. Each Indicator Switch will show a flash pattern that will indicate which one is the main and which one is the auxiliary. 1 single flash of all LED’s indicates the Main Indicator Switch, and 2 flashes of all LED’s indicates the Auxiliary Indicator Switch. The backside of each switch also has a label that shows 2 different part numbers...
Main Indicator Switch = 299-4056
Auxiliary Indicator Switch = 299-4057

3. Trim-N-Troll



Indicator Switch (Key Pad)



Remote

The Trim Tab positions have been divided into two different “ranges”: the **trim range** and the **troll range**.
The trim range is defined to be from 0° to 20°, with 0° being the full up position, with 20° being fully deployed for the purpose of Trim Tab use only.
The troll range is defined to be from approximately 21° (just beyond trim range) to 30° down. This is for systems with Trim-N-Troll ONLY.

Indicator Switch Display Examples:



Port Trim Tab: 20° down
Starboard Trim Tab: 6° down



Both Trim Tabs 30° down
This is the bottom of Troll Range

This gives the operator a 20° range of operation for normal Trim Tab use and an additional 10° of operation when using the system for trolling.
When utilizing the trolling system, it is recommended that the Trim Tabs be fully deployed into the troll range (30°) for optimal performance, however the 10° range of operation within the troll range allows the user to raise or lower the motors within that 10° window for navigating shallow water conditions or avoiding submerged obstacles.

For reasons of safety, the system will not allow the trolling motors to turn on until they have been deployed into the troll range (21°-30°).

Description of Problem	Step 1	Step 2	Step 3	Step 4	Step 5
Trim N Troll Motors do not deploy after holding the deploy button for 2-3 seconds	Ensure that the proper voltage is connected securely to the Motor Control Unit (MCU). This will be either 24V or 36V depending on the requirements of the lower units.	Ensure that the Control Module is connected to 12V. This can partially verified by looking at the switch. Press a button on the switch, and if the switch lights up, this confirms power at the control module.	Ensure that the actuators have been properly calibrated. See page 24 for this procedure.	Ensure that the remote has been learned to the system. See page 33 for this procedure.	Ensure that the remote battery is in good condition.
Trim N Troll Motors do not deploy after holding the deploy button for 2-3 seconds. Continued from above...	Does the Indicator Switch emit a short beep if any of the other remote buttons are pressed? Next frame	If YES, then: -Remote is learned properly -MCU and Control Module are powered If NO, then Next Frame	Cycle power to the entire system. Disconnect, reconnect and try again.	If NO, then: -Follow steps 1-5 above. -If these do not resolve the issue, call MinnKota Customer Service	
While in normal trim range, pressing the deploy button creates a ~3 second steady beep from switch.	Your switch is connected to your ignition to prevent you from accidentally going into troll range while running. Turn the ignition off.	If the previous actions do not correct the condition, please call MinnKota Customer Service.			
While in troll range, I start the boat motor, and the trim tabs retract and the trolling motors shut off.	Your switch is connected to your ignition to prevent you from accidentally going into troll range while running. Turn the ignition off.	If the previous actions do not correct the condition, please call MinnKota Customer Service.			
Trim N Troll motors will not turn on.	Ensure that the system has been properly deployed into the trolling range.	When the motors are first deployed into troll range, the motors start at speed zero. Press the “+” button to speed up.	Ensure that the trolling motors are properly connected to the MCU.	Ensure that your marine batteries are fully charged.	

Trouble Shooting

To use the trouble shooting guide, find the appropriate description of your problem, and start with option #1. If this does not resolve the issue, move on to option #2, and so on. If you exhaust these options, please call Minn Kota Customer Service at 1-800-227-6433.

Description of Problem	Step 1	Step 2	Step 3	Step 4	Step 5
Actuators are not responding.	Inspect fuse at panel. Replace if necessary.	Check to see that the 12V battery source is fully charged and properly connected, +/-.	Check that all connections are tight, and made correctly. Color to color.	Cycle power to the entire system. Disconnect, reconnect and try again.	If the previous actions do not correct the condition, please call MinnKota Customer Service.
1 or more actuators have malfunctioned while under way and will not move.	Cycle power to the entire system. Disconnect, reconnect and try again.	Disconnect the green and yellow wire from the actuator, and apply 12V DC to these wires in order to retract the tabs. If the actuators move the wrong direction, reverse the green and the yellow wires on the 12V supply.	Temporarily disconnect the actuator from the lower mount at the trim tab by removing the stainless steel mounting pin.	Please contact MinnKota Customer Service for further assistance.	
Boat is responding opposite of switch action.	Remember that the keypad is designed to operate the BOW of the boat. If you press the starboard BOW DN button, the port trim tab will extend, moving the starboard bow down.	Check to see that the starboard actuator is connected to the starboard output wires on the control module, and that the port actuator is connected to the port output wires on the control module.	If the previous actions do not correct the condition, please call MinnKota Customer Service.		
Boat has excessive trailing spray since installing the trim tabs.	This is usually a result of the trim tabs being installed such that the leading edge of the tab is too close or even below the bottom line of the hull.	Verify that the lead edge of the trim tab is 3/8" to 1/2" above the bottom line of the hull. Making this adjustment should correct the problem.			

For details on controlling the motors using the remote, please see the section, "Remote Function".

The indicator lights on the switch correspond to actual tab position. As long as the switch is "awake", the green indicator lights will remain on.

The right-side indicator lights indicate starboard Trim Tab position; left-side indicator lights indicate port Trim Tab position. When only the green indicator light is illuminated, the corresponding Trim Tab is fully retracted (full up position). As the Trim Tab begins to move down, the yellow indicator lights will begin to illuminate. Each successive yellow indicator light corresponds to approximately 2° of deployment. When all 10 yellow indicator lights are illuminated, the Trim Tab is fully deployed (in the trim range), approximately 20° down.

When the remote is used to deploy the Trim Tabs into the troll range, the top 5 yellow indicator lights will turn off and the lower 5 yellow indicator lights will begin to turn on. The lower 5 yellow indicator lights are used to display the Trim Tab positions while in the troll range. Once again, each successive yellow indicator light corresponds to approximately 2° of deployment. When the lower 5 yellow indicator lights are illuminated, the Trim Tab is fully deployed (into the troll range), approximately 30° down.

Only the indicator switches can return the system to the trim range.

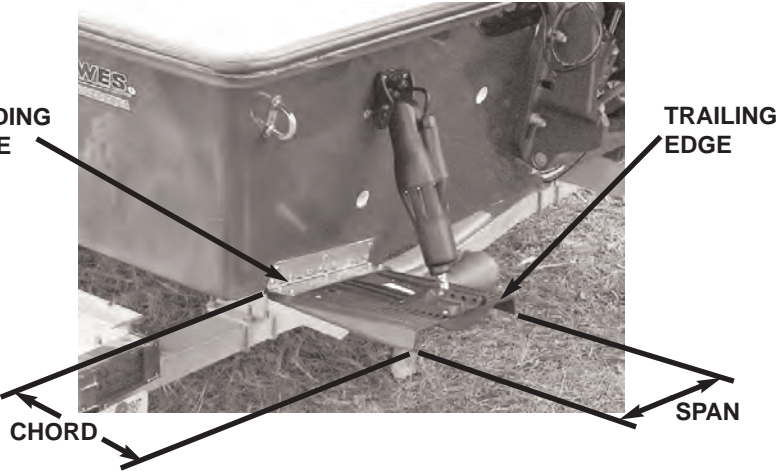
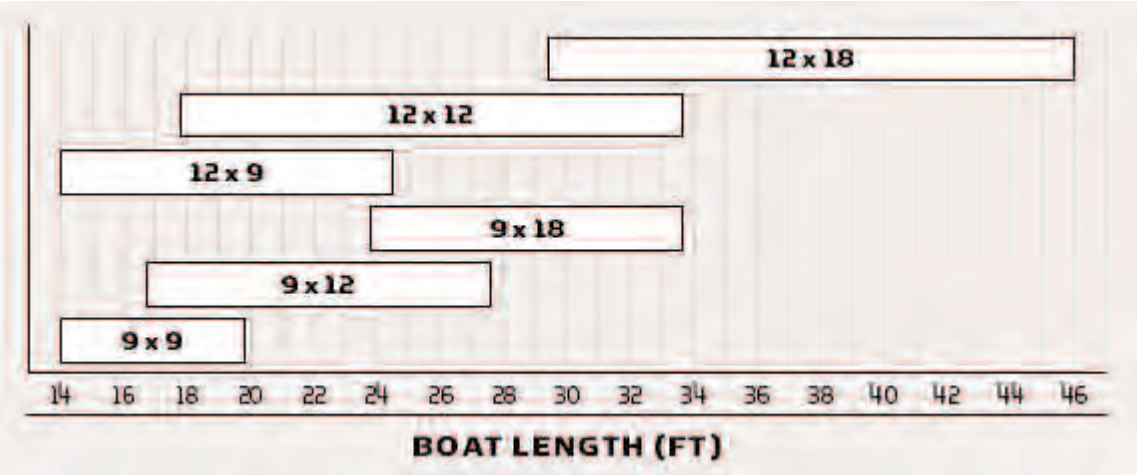
Special Operating Conditions

- HEAD SEA –
A head sea can create a very rough and difficult ride. By pressing BOW DN on both tabs, this will allow you to keep the bow of your boat down to help break up the impact from the incoming waves. Caution should be used so as not to over trim the boat, which could cause you to “spear” the incoming waves. The boat should only be trimmed enough to allow the hull of the boat to break up the incoming waves.
- FOLLOWING SEA -
Press BOW UP for both Trim Tabs to ensure they are fully retracted in this condition, to allow the bow to rise. Having the Trim Tabs deployed in this condition could cause the bow to “spear” into the next wave.
- WINDWARD SEA -
Raise the windward side of the bow by pressing BOW UP on that side, or the BOW DN on the leeward side. This will help to minimize spray. Be careful so as not to overtrim in this condition as the boat could potentially start to bow steer and make it difficult to control.
- PORPOISING -
Very much like a head sea, pressing BOW DN for both tabs will help to keep the bow of the boat down and stop the porpoising condition. Only a slight adjustment to the tabs should be required to eliminate a porpoising condition.
- LISTING -
To adjust for a listing condition, press BOW DN on the high side, or press BOW UP on the low side. This will raise or lower the tab on the appropriate side to level the boat.
- HOLE SHOT -
Lower both tabs completely by pressing BOW DN on both sides. Once the throttle is applied and the boat jumps onto plane, press BOW UP on both sides to achieve maximum speed, and optimize the ride.
- OFF PLANE -
When coming off plane at throttle back, or when cruising at slower speeds, pressing BOW DN on both sides will allow the boat to continue on plane longer, and improve visibility.

Trim Tab Selection

All boats vary in weight, length, speed, and performance, making the responsiveness of each boat unique. Therefore, it is very important that you take the time to familiarize yourself with your boat's performance and responsiveness to your new Minn Kota Trim Tabs. Minn Kota composite Trim Tabs have been specifically engineered for maximum lift, so the response will likely be faster, and more dramatic than other Trim Tabs you may have used in the past. Trim Tabs will have a dramatic impact on the performance of your boat. Therefore, proper selection is very important. The following chart is based on boat hull length, and will help provide initial guidance in Trim Tab selection.

*NOTE: This sizing chart is only intended to be a guide!



Basic Maintenance and General Care

As with any electrical marine product, a certain amount of basic maintenance will greatly improve its life expectancy. The Minn Kota Trim Tab system is designed to be largely maintenance free, but the following items are some things that you can do that will help maximize the performance and life of your product.

***Marine Growth** - Minn Kota Trim Tabs are made from a High Performance Engineered Polymer that are designed to be corrosion resistant. However, they are just as susceptible to under-water marine growth, such as barnacles, that can cover and damage your product. It is recommended, particularly in wet slip storage situations, that some type of bottom paint or anti-fouling paint be applied to all components below the water line *except* the stainless steel portion of the actuators.

***Cleaning** – Salt spray and sunlight can cause a white film build up on components over time. This is easily wiped clean with the use of any mild detergent or soap to remove this build up.
– For boats that are kept in a dry storage slip, particularly in a saltwater environment, it is always a good practice to rinse off any salt residue from the tabs and actuators prior to putting it into storage.

WARNING: THE USE OF HARSH CHEMICAL CLEANERS *except SUCH AS TOILET BOWL CLEANER OR “CLR” TYPE CLEANERS CAN DAMAGE OR DISCOLOR THE COMPOSITE MATERIALS.*
THIS COULD VOID THE MANUFACTURERS WARRANTY.

***Actuators** – When left extended, actuators can be subjected to unnecessary corrosive elements. Although the entire mechanism is designed to withstand a saltwater environment, it is suggested that when the actuators are not in use that they be fully retracted to protect them from these elements. This is also a good safety practice, as trailering and boat lifts can damage Trim Tabs and actuators that are left extended below the hull line.

***Connections** – The Minn Kota Trim Tabs system has completely sealed electronics to protect it from the environment. There are some in-line connectors that require the use of adhesive filled heat shrink during installation. It is a good idea to periodically inspect these connection points to ensure that they remain in good condition.

FCC Disclaimer

Compliance Statement (Part 15.29)

This device complies with part 15 of the FCC Rules and with RSS-210 of Industry Canada. Operation is subject to the following two conditions:

- 1. This device may not cause harmful interference, and
- 2. This device must accept any interference received, including interference that may cause undesired operation.

Warning (Part 15.21)

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Industry Canada Statement

The term "IC" before the certification/registration number only signifies that the Industry Canada technical specifications were met.

Ignition Protection – This system has been independently tested and is considered to be Ignition Protected per USCG regulations.

CE/C-tick – This system has been tested and approved for CE and C-tick product labeling.

Patents Pending – Multiple patents and patents pending apply to this system.

Composite Trim Tabs



Keep in mind that the final selection of the proper Trim Tab size, or Trim-N-Troll system will depend on several factors beyond hull length only. They include, but are not limited to: hull weight, cargo weight, top speed, hull design, engine power, boating conditions (offshore vs. shallow water, etc.).

All of these factors should be considered, especially when the sizing chart shows an overlap. For example, a boat longer than 34 feet could use 12 x 18 Trim Tabs. However, a 19-foot boat could use any one of four different Trim Tab sizes. To select the proper Trim Tab, consider the other factors. A light-weight shallow draft hull would likely be well suited for 9 x 9 Trim Tabs. A heavy deep-V hull with a large horsepower engine may be better suited for 12 x 9 or even 12 x 12 Trim Tabs.

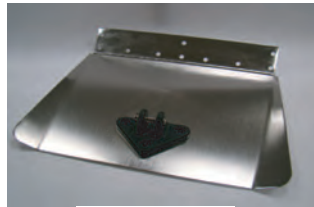
Trim Tab selection can also be influenced by transom design and available mounting space. For example, 12 x 9 Trim Tabs and 9 x 12 Trim Tabs offer similar performance. The 12 x 9 Trim Tabs would work well on shallower transoms that have a limited vertical working envelope. On the other hand, 9 x 12 Trim Tabs work well for boats that have more transom height available and might be limited on space outboard of the transom due to swim platforms or other obstacles.

Stainless Steel Trim Tabs

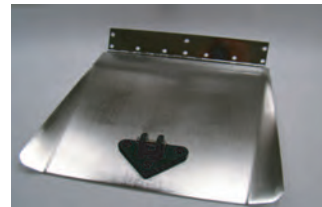
Standard Tabs



Tab 9x9
1863560

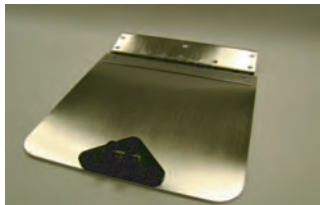


Tab 9x12
1863561

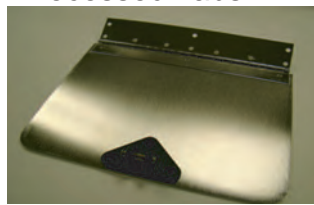


Tab 12x12
1863562

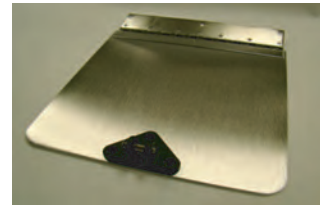
Recessed Tabs



Tab 9x9
1863570



Tab 9x12
1863571



Tab 12x12
1863572

Stainless steel trim tabs are available in 3 different sizes, 9x9, 12x9, and 12x12, and in 2 different configurations for transom mount applications and recessed applications. The same trim tab selection chart can be used as a reference for selecting what size trim tab to use.

1. Standard Mount Stainless Tabs

These trim tabs are designed to be mounted on hulls that have a flat transom. They are made from a 12awg (.10") electro polished stainless steel. They are not designed to be used on recessed mount applications.

2. Recess Mount Stainless Tabs

These trim tabs are designed to be mounted on hulls that have a recessed pocket molded directly into the transom. They are made from a 7awg (.18") electro polished stainless steel. They can be used on flat transoms as well for added strength and durability.

To learn the ID number of additional remotes, follow these steps:

1. Press and hold the **AUTO UP & AUTO DN** buttons until the indicator switch emits a continuous tone. Continue to hold these buttons.
2. Press any button on the remote (the receiver will beep 4 times confirming that it has learned the ID number of the remote and that the programming is valid and complete).

"Re-learning" the ID number of the same remote will not over-write previously learned remotes.

If the receiver has learned the ID number of ten remotes, learning an eleventh remote will erase or over-write the first learned remote.

To erase all stored remote ID numbers from the receiver:

1. Press and hold the **AUTO UP & AUTO DN** buttons for approximately 10 seconds.
2. Continue to hold these buttons down, and during this time the indicator switch will emit an audible warble sound which will then change back to a constant tone.
3. Once the tone has returned to a constant tone, the buttons may now be released. All stored ID numbers have now been erased.

Technical Assistance For Your Remote

Do not take your receiver or remote to your dealer or to a Minn Kota Authorized Service Center for repair or replacement. The remote has no field replaceable or user serviceable parts, other than battery replacement. For service or technical assistance call 1-800-227-6433 or send the receiver and remote(s) along with proof of purchase date to: Johnson Outdoors – Minn Kota Service, 121 Power Drive, Mankato, MN 56002-8129.

Frequently Asked Questions about the Remote

Q: Are there any on/off switches?

A: The Motor Control Unit is always powered up whenever the system is connected to the batteries. The remote automatically goes into a low-power "sleep mode" whenever there are no buttons being pressed.

Q: Does the remote float?

A: The remote will float by itself. (No keys attached)

Q: Can other Trim-N-Troll users control my Trim-N-Troll if they get too close?

A: No. Each remote has its own unique ID number. Your Trim-N-Troll Motor Control Unit will not respond to commands from other "unlearned" remotes.

Q: How many remote ID numbers can my Motor Control Unit learn?

A: 10

Q: What happens if my Motor Control Unit has 10 different ID numbers learned and I attempt to teach it another one?

A: The first remote ID number that was learned will be erased (first in, first out).

Q: How long will the battery in the remote last?

A: Under normal use and conditions the battery should last for at least two regular fishing seasons.

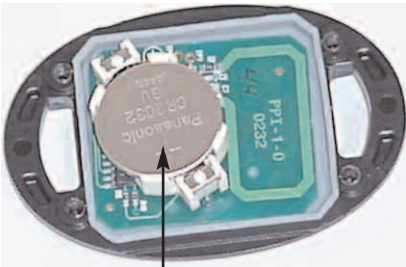
Q: Where can I purchase additional remotes?

A: Through any regular Minn Kota outlet.

Battery Replacement

The replacement battery must be a model CR2032 coin cell type. It is strongly recommended that a name brand battery be used.

To replace the battery, follow these steps:



BATTERY



ALIGNMENT PEG

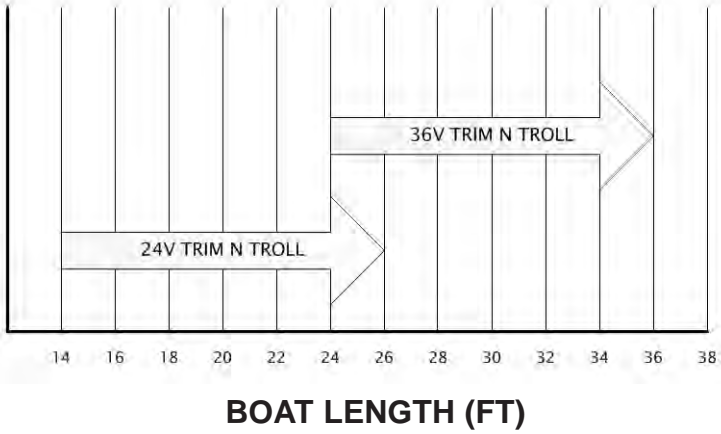
- 1) Temporarily ground yourself by touching a grounded metal object in order to discharge any static electricity on your body.
- 2) Remove the four screws on the back of the remote case.
- 3) Separate the case halves to access the circuit board.
- 4) Pull back the retaining fingers of the battery holder to remove the battery (underside of the circuit board).
- 5) Install the new battery with the positive (+) side of the battery facing up (away from the circuit board).
- 6) Reassemble the remote. Note that the alignment peg in the remote case must line up with the corresponding alignment hole in the circuit board. Also note that the keypad must be positioned so that the (5) buttons are over the end of the circuit board opposite from the alignment peg and hole. Reinstall the four case screws.

Adding/Removing Remotes

The Trim-N-Troll receiver in this kit has already “learned” the ID number of the remote with which it is packaged. The receiver must “learn” the ID number of any additional remote(s) that you intend to use. When the receiver learns the ID number of a remote, that ID number is retained in the receiver even when the power source is disconnected.

Trim-N-Troll Selection

*NOTE: This sizing chart is only intended to be a guide!



When selecting a Trim-N-Troll system for your boat, remember that the more thrust you have available, the more responsive your boat will be. However, you should also consider that the 36V Trim-N-Troll system will add more weight to your boat than the 24V system due to the weight of the trolling motors, and additional batteries, etc. If you are installing a new Minn Kota Trim-N-Troll system, it already includes the actuators that are required for your system. Before beginning your installation, you will want to verify that you have sufficient transom height available to complete the installation properly.

****IMPORTANT FOR ALL TRIM-N-TROLL USERS****
Minimum transom height requirement depends on Trim Tab size

Minimum Transom Height	Trim Tab Chord Dimension
16.75"	12"
17.75"	9"

Actuator Selection

(For non Trim-N-Troll users ONLY)

The most limiting factor in selecting the appropriate actuator size is the amount of vertical working height available on the transom. Before you begin installation, you should take a moment and measure the amount of vertical working space available on the transom of the boat.



Minn Kota offers 2 different sizes of actuators that will accommodate almost any hull configuration. They are commonly referred to as our “Standard Stroke Actuator” and our “Short Stroke Actuator”. The amount of transom space required will also depend on the “chord” dimension of the Trim Tab being used. The “chord” dimension is the distance from the leading edge of the Trim Tab to the trailing edge. Use the table below to see if the actuator size and tab chord length combination you have is appropriate for your transom.

Actuator Size	Stroke Length	Pin to Pin Dimension (Retracted)	Tab Chord Dimension	Minimum Transom Height
Std Stroke (1863755)	3.7"	11.4"	9"	15"
Std Stroke (1863755)	3.7"	11.4"	12"	12"
Short Stroke (1863750)	2.4"	10.2"	9"	13"
Short Stroke (1863750)	2.4"	10.2"	12"	11"

AUDIO PATTERN	CONDITION CAUSING IT	OCCURS IN WHICH AUDIO MODE
2-second long beep	Every time the receiver is powered up and there are no remote IDs learned.	All Audio Modes
Steady tone	Heard when executing the remote learn process.	All Audio Modes
4 beeps	After a remote button is pressed while the receiver learns the remote's ID.	All Audio Modes
10-second long warbling sound that transitions into a steady tone	Heard during the process used to clear all stored remote IDs. After the learn button is released, a 2-second long beep will be heard.	All Audio Modes
1 beep	Pressing the SPEED INCREASE (+) or SPEED DECREASE (-) button.	Modes 2 & 3
1 beep	Pressing the PROP ON/OFF button to turn the propeller ON.	Modes 2 & 3
1 beep	Pressing the DEPLOY button to either deploy the Trim-N-Troll motors, or to trim the motors within the trolling range.	Modes 2 & 3
1 beep	Pressing the RETURN TO CENTER button to synchronize both motors.	Modes 2 & 3
1 beep	Pressing the FWD/REV button to toggle into forward.	Modes 2 & 3
2 beeps	Pressing the PROP ON/OFF button to turn the propeller OFF.	Modes 2 & 3
2 beeps	Pressing the FWD/REV button to toggle into reverse.	Modes 2 & 3
Single “tick” every 1.5 seconds	When the propellers are active not including when the speed is set to “0.”	Mode 3
1 beep	Switching to Audio Mode 1 (pressing the SPEED INCREASE and SPEED DECREASE buttons simultaneously for 1 second).	All Audio Modes
2 beeps	Switching to Audio Mode 2 (pressing the SPEED INCREASE and SPEED DECREASE buttons simultaneously for 1 second).	All Audio Modes
3 beeps	Switching to Audio Mode 3 (pressing the SPEED INCREASE and SPEED DECREASE buttons simultaneously for 1 second).	All Audio Modes
1 chirp	Every time the receiver is powered up and there is at least one remote ID learned.	All Audio Modes
Long ring	Maximum steering, LEFT or RIGHT	Modes 2 & 3

Propellers ON/OFF

This button toggles the motors between on and off. The motors will alternate on/off each time the button is pressed. Holding the button down will have no further effect once the state is changed.

When the motors are turned off, they will come back on in whatever state you last turned them off *if* no other button presses have been made. The system will still receive and accept all commands from the remote, even if the props are turned off.

The only exception to this rule is when the user exits the trolling range and then comes back into trolling range. Anytime the system is initially put into the trolling range, the system will always default to props off with a prop speed of zero, and with a steering condition of straight ahead.

Remember that although the props can be turned down to speed zero, there is a difference between speed “0” and “OFF”.

Audio Modes

There are three audio modes available. The audible tones will be emitted from the indicator switch. The unit is factory pre-set to audio mode 2. To switch from one audio mode to another, press and hold both the + (*SPEED INCREASE*) and – (*SPEED DECREASE*) buttons on the remote for one second. The receiver will respond with 1, 2, or 3 audible beeps indicating the new receiver audio mode.

The three audio modes are:

Mode 1: No audible tones will be emitted as a result of pressing any single button on the remote.

Mode 2: A single beep tone is emitted every time a button is pressed.

Mode 3: Same as audio mode 2 plus the “propeller ON” audible tick every 1.5 seconds.

For further detail, see the chart below.

****NOTE:** These audio patterns are a result of commands being given by the remote transmitter. For other audio patterns not included here, please see the section “Troubleshooting”.

Installation

Due to the complexity of this system, we highly recommend that a dealer install this system.

Minn Kota Trim Tab and Trim-N-Troll systems are available to be purchased as individual modules. In some retail locations, Minn Kota Trim Tab and Trim-N-Troll systems are available as complete kits. Otherwise the modules are as follows:

1. Trim Tabs
2. Actuators (Standard or Short Stroke)
3. Switch (Basic or Indicator)
4. Trim-N-Troll (24V or 36V – Both include actuators)

****PLEASE NOTE****

The instructions herein are designed to explain a full installation of all modules, and makes the assumption that the installation is being performed on a new hull. These instructions will apply for all Minn Kota Trim Tab and Trim-N-Troll system components.

A complete Minn Kota Trim Tab system includes the following:

- 2 Trim Tabs with Hinge and Lower Mount Bracket attached
- 2 12V Electric Actuators
- 1 Basic Switch –or- 1 Indicator Switch
- 1 Control Module
- Mounting hardware
 - Actuator upper mounting brackets
 - Upper and Lower actuator mounting pins and retention clips
 - Stainless steel hull screws
 - In Line connectors (for making actuator connections)

A complete Minn Kota Trim-N-Troll system includes the following:

- 2 Trim Tabs with Hinge and Lower Mount Bracket attached
- 2 12V long stroke electric actuators
 - included with the Trim-N-Troll kit
- 2 24V or 36V Lower Units
- 1 Indicator Switch w/ cabling
- 1 Power Module
- 1 Remote transmitter
- 1 Motor Control Unit
- Mounting hardware
 - Actuator upper mounting brackets
 - Upper and Lower actuator mounting pins and snap rings
 - Stainless steel hull screws
 - In Line connectors (for making actuator connections)

Trim Tabs Installation Tools:

Electric Drill w/ ½" chuck
½" (.500) Drill Bit
13/64" (.203) Drill Bit
#3 Phillips Driver Bit
11/32" Deep Socket Nut Driver
15/16" –or- adjustable wrench
2" Hole Saw
Measuring Tape
Permanent Marker
Long Straight Edge (recommend 3 feet)
Fish Tape
Wire Cutters/Strippers
Wire Terminal Crimper
Marine Sealant (recommend 3M 5200)
Heat Gun

Trim-N-Troll Installation Tools:

Electric Drill w/ ½" chuck
½" (.500) Drill Bit
13/64" (.203) Drill Bit
#3 Phillips Driver Bit
#2 Phillips Driver Bit
11/32" Deep Socket Nut Driver
1/8" Allen Wrench
5/32" Allen Wrench
1" Auger Bit or Hole Saw
Snap Ring Pliers
15/16" –or- adjustable wrench
2" Hole Saw
Measuring Tape
Permanent Marker
Long Straight Edge (recommend 3 feet)
Fish Tape
Wire Cutters/Strippers
Wire Terminal Crimper
Marine Sealant (recommend 3M 5200)
Heat Gun

****NOTE TO INSTALLER:** All Minn Kota Trim Tab systems are designed to be ABYC (American Boat and Yacht Council) compliant. Failure to follow these installation instructions or any modification of electrical components may adversely affect this compliance and possibly void the manufacturer's warranty. Please call Minn Kota customer service if you have questions relating to this or any other installation issues at 1-800-227-6433.

Installation

Prior to installing your new Trim Tab or Trim-N-Troll system:

- Read all installation instructions carefully and thoroughly.
- Check the contents of all bags and boxes to make sure all parts are included.
- Make sure there is adequate transom space for installing all components.

RETURN TO CENTER

A single press of this button will synchronize both motors to their previous condition of speed and direction. For example, if the motors are running at speed 5 in the forward direction, and a hard right turn is executed, pressing this button one time will synchronize both motors back to speed 5 in the forward direction. The same would be true in the reverse direction.

This is a useful tool for steering. Rather than having to keep track of how many times a steering button has been pressed and then compensating in the opposite direction, once a particular heading is selected, pressing the return to center button will select this new heading.

Keep in mind that the actual direction of the boat may vary due to other factors. Environmental conditions including wind, water current, uneven boat loading, etc. can effect the direction of the boat as well.

+ (SPEED INCREASE) and – (SPEED DECREASE)

These buttons incrementally adjust the speed of the boat in it's current condition. For example...

- Both motors are heading straight ahead at speed 5. Pressing either the +/- buttons will incrementally adjust the rate of both motors at the same time in the straight ahead direction.
- A boat is in a hard left turn at speed 5. Pressing either the +/- buttons will incrementally increase or decrease the rate of motors for the turn being executed.

The speed increments are from 0 to 10 with 10 being the fastest in the respective direction. *0 speed is not the same as props turned off.* Turn commands are still allowed with the speed set to 0.

Pressing both the (+) and the (-) buttons at the same time will change audio modes. See section "Audio Modes".

FOR/REV

This button toggles the motors between forward and reverse. The motors will change direction and maintain their last speed setting each time the button is pressed. Holding the button down will have no further effect once the transition is made.

If the boat is turning at the time, the motors will change direction such that the boat remains in approximately the same turning arc but in the opposite direction.

TROLL UP/DN

This button controls the Trim Tabs in the 21°-30° range (*troll range*). The actuators will move each time the button is pressed. The tabs will move while the UP/DN button is held and then stop when it is released.

Each time the button is pressed, the tabs will move in the opposite direction from the last button press.

To deploy the trolling tabs from the *trim range* into the *troll range*:

Press and hold the UP/DN button for approximately 2 to 3 seconds until the system begins to move. Once in motion, release the UP/DN button. The system will automatically deploy to the full down trolling position and then stop.

Pressing any button on the indicator switch while the tabs are deploying into the troll range will effectively cancel the deploy command and the indicator switch button will now have priority.

While in the *troll range*, you may trim the tabs within the troll range using the TROLL UP/DN button on the remote, and the system will monitor the position of the tabs. When the upper position (21°) is achieved, the software will stop driving the actuator and sound an audible signal. When the lower position (30°) is achieved, the software will stop driving the actuator and sound the same signal.

Only the Remote will be able to extend the tabs to the 21°-30° position (*troll range*). In order to retract the Trim Tabs out of the troll range and return them to the trim range, the indicator switch must be used.

STEER LEFT and STEER RIGHT

Steering the boat is accomplished by variations in the relative speeds of both motors. The system will address steering commands without the operator having to concentrate on what each individual motor is doing, rather simply by focusing on what the boat is doing. The system receives commands from the remote and operates the motors accordingly.

Pressing the RIGHT button turns the boat toward starboard. Pressing the LEFT button turns the boat toward port. The system has a total of 35 steering increments, with 17 to the left (port), 1 on center (straight), and 17 to the right (starboard). This gives the user the ability to make both slight and hard steering adjustments.

A short ½ second tap of either steering button will give an incremental adjustment to that side. To make hard steering adjustments, holding either steering button down will cause the system to make a rapid adjustment to that side. If audio mode 2 or 3 is turned on, you will get a ring tone from the indicator switch when a maximum turning condition is achieved.

Pre-Installation Comments:

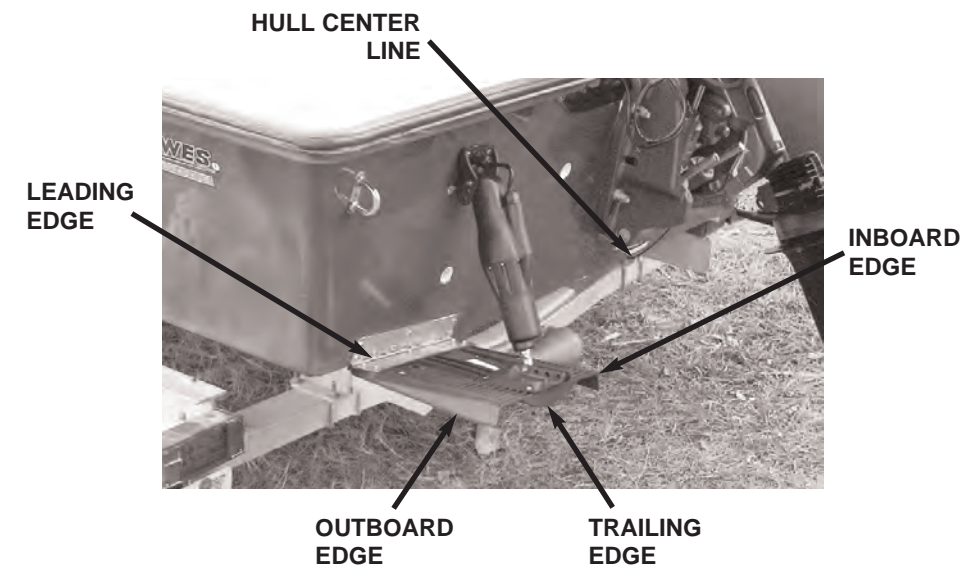
- Select suitable locations for mounting the Trim Tabs and actuators. All Trim Tabs are most effective when they are installed as far outboard as possible. It is perfectly acceptable for Trim Tabs to be installed across the chine of a hull. Special care needs to be taken to ensure the Trim Tabs are out of the way of other components on the boat (engines, out drives, rudders, trolling motors, depth finder transducers, drain plugs, swim platforms, tie down straps, trailer rollers, bunks, boat lifts, etc.). Make sure that the actuators will be able to operate through their entire stroke and that all other boat equipment (motors, rudders, etc.) can function without interference.

FORKLIFT WARNING: ALWAYS RETRACT TRIM TABS FULLY BEFORE MOVING BOAT WITH A FORKLIFT. FAILURE TO DO SO MAY RESULT IN DAMAGE TO TRIM TABS AND ASSOCIATED COMPONENTS, AND WILL VOID THE WARRANTY.

Before drilling into or through the transom, make sure that the bilge is ventilated and completely free of gasoline and fumes. Drilling into a hull contaminated with gasoline or fumes can cause a dangerous explosion. Also, make sure there is sufficient clearance between drilling locations and all boat equipment including engines, fuel tanks, fuel lines, wiring, and other accessories.

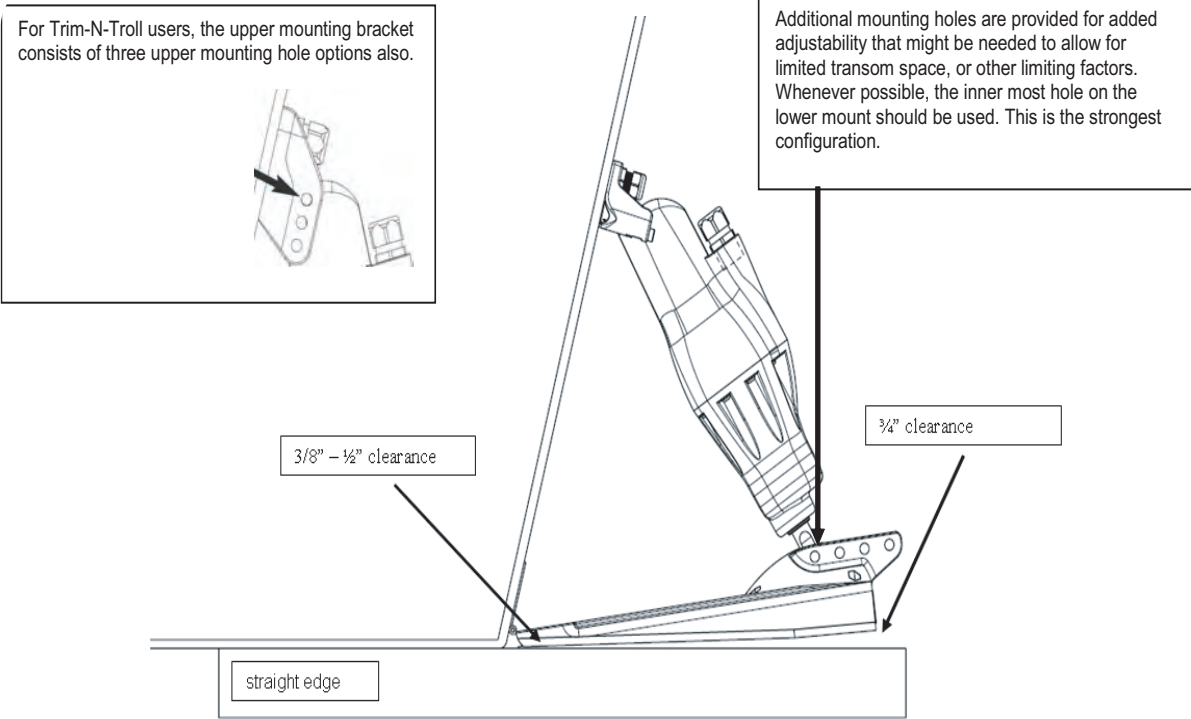
Trim Tabs Installation – All Users

Familiarize yourself with the following drawing. It shows the proper location of the Trim Tab and actuator location on the boat's transom. The "leading edge" of the Trim Tab refers to the edge that attaches to the hull via the hinge. The "trailing edge" refers to the rear most edge of the Trim Tab. The "inboard edge" refers to the edge of the Trim Tab closest to the hull center line. The "outboard edge" refers to the edge of the Trim Tab farthest away from the hull center line.



Trim Tabs Installation – Continued

1. Place the hinge against the hull as far outboard as possible, in line with the main bottom running surface of the hull. The bottom leading edge of the Trim Tab must be (IMPORTANT!!) 3/8" to 1/2" up from the bottom line of the hull. Mark the hole locations for the hinge. Use a straight edge to verify the correct vertical positioning of the Trim Tab. Do this for both sides.
****NOTE:** Measure to ensure that the spacing of the Trim Tabs on both sides of the hull is equal. "Measure Twice...Cut Once!"
2. **Before drilling** – verify proper position of Trim Tab leading edge and sufficient transom height availability for upper mounting bracket.
 - a. **Trim Tab Hinge Location:** The lower surface of the Trim Tab leading edge should be 3/8" – 1/2" up from the bottom line of the hull. This is important in order to prevent undesirable spray patterns.
 - b. **Upper Mounting Bracket Location:** To verify, place a long straight edge against the under-side of the hull and the under-side of the Trim Tab. The upper mounting bracket and actuator should be mounted in such a way to provide 3/4" clearance between the straight edge and the trailing edge of the Trim Tab.



Remote Function

The Minn Kota Trim-N-Troll system is controlled by using the remote shown below. This system has been designed to be as intuitive as possible, in order to allow the user to focus on what the boat is doing. The details herein are for the users benefit, but the value of "playing around" with the Trim-N-Troll system should not be under estimated. By familiarizing yourself with the various features and capabilities of this system and spending time on the water, you will become more adept at controlling your boat with this trolling system.

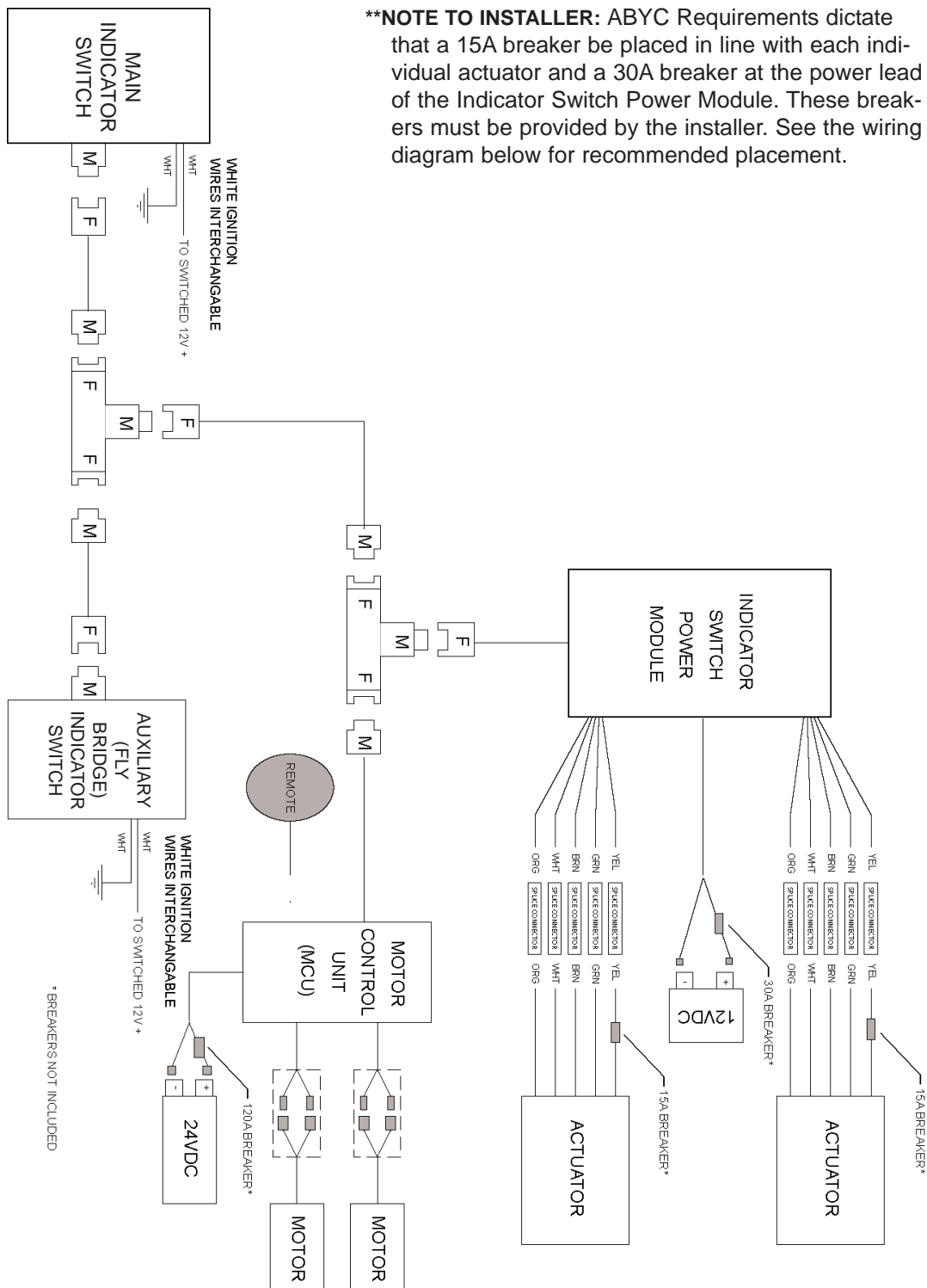
- There are 2 very important things to remember regarding the Trim-N-Troll remote.
1. The remote is the only way to deploy the system into the troll range.
 2. The remote cannot be used to get out of troll range.



System Features

BUTTON FUNCTION DETAILS - ****TIP-**It is helpful to have the audible mode turned on so that the indicator switch will give audible feedback confirming that the commands have been received. See the section "Audio Modes".

Audio Mode # 2 or Audio Mode # 3.



Indicator Switch Trim Tab System

3. Drill marked hinge holes using the 13/64" drill bit.
4. Place a bead of marine sealant around the hull side of the hinge leaf and inside the drilled holes, and attach the hinge to the hull using 1 1/4" stainless steel hull screws. (DO NOT SUBSTITUTE SCREWS PROVIDED!!)
- *NOTE: Use of marine sealant applies to both composite and stainless steel trim tabs.
5. Wipe off excess marine sealant using mineral spirits or acetone.



Trim-N-Troll Users Only - Motor Installation – TIP: THIS IS EASIEST TO DO ONCE THE TRIM TAB IS ALREADY ATTACHED TO THE TRANSOM.

1. Remove the lower mounting bracket from the Trim Tabs, using a 1/8" allen wrench to removing the 4 nuts and bolts from the tab as shown in the illustration below.



2. Support the Trim Tab from below, and align the 4 holes by placing the trolling motor on the recess of the Trim Tab. Using a 5/32" allen wrench, use the #10-24 x 3/4" long socket head cap screws and #10-24 nylock nuts, to attach the trolling motors to the Trim Tabs.

****NOTE****Recommended torque settings for these fasteners are 40 in/lbs each.



3. After the next step, you will align the upper mounting brackets for the actuators.

Trim-N-Troll Motor Cable Routing

- 1. Determine the best location on the transom to place the bulkhead fitting. This will be used to route the motor cables thru the transom, while maintaining a water tight seal.



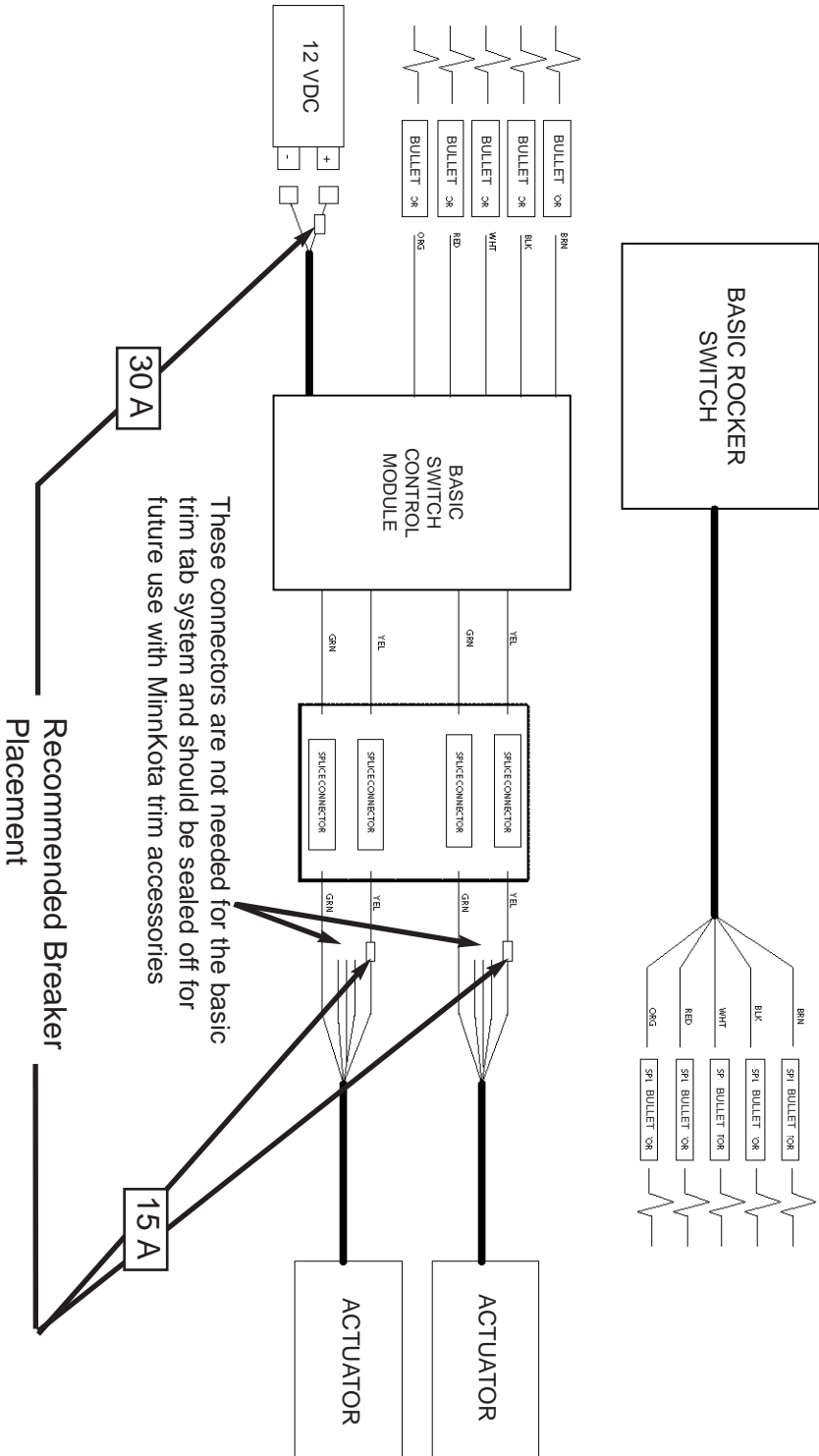
- 2. Ensure that the desired location is away from all obstacles, such as wiring, plumbing, fuel lines, etc. before drilling. Drill a 1" hole in the desired location.
- 3. Drill 3 pilot holes using a 1/8" drill first.
- 4. Apply a light bead of Marine Sealant around the underside of the flange, and place into the 1" drilled hole.
- 5. Fasten the bulkhead to the hull using Marine Sealant and three of the #8 x 3/4" screws in the pilot holes.
- 6. Thread the water tight fitting onto the cable, and insert the cable and the fitting into the bulkhead.
- 7. Tighten both the body and the compression nut on the fitting using a 15/16" wrench. The seal should be visibly closed around the outer diameter of the motor cable.

CAUTION BE SURE TO LEAVE ENOUGH CABLE OUTSIDE OF THE HULL TO ALLOW THE ACTUATORS TO FULLY EXTEND WITHOUT PULLING EXCESSIVELY ON THE MOTOR CABLES. FAILURE TO DO SO COULD DAMAGE THE MOTOR CABLES OR THE ACTUATORS.

Wiring Diagrams

****NOTE TO INSTALLER:** ABYC Requirements dictate that a 15A breaker be placed in line with each individual actuator and a 30A breaker at the power lead of the Basic Switch Control Module. These breakers must be provided by the installer. See the wiring diagram below for recommended placement.

Basic Switch Trim Tab System



For Indicator Switch and Trim-N-Troll Users ONLY

Actuator Calibration Procedure

****IMPORTANT**** This procedure is only necessary for those using the indicator switch. Perform this procedure **after** completing the installation of all Trim Tab and Trim-N-Troll modules. You **MUST** verify that there are no obstructions that could prevent the actuators from fully extending **BEFORE** starting this procedure!! Damage resulting from failure to do so will void the manufacturers warranty!!

The Minn Kota system is designed to use several different lengths of actuators, but the system needs to be “taught” what length actuators are connected before the system will function properly.

To calibrate the actuators...

- 1. Be sure the actuators are fully retracted, and that there are no obstacles in the way of the Trim Tabs. The actuators will automatically extend and retract fully during this procedure.
- 2. Press and hold all 4 UP/DN buttons for approximately 3 seconds, until all of the LED’s on the switch start flashing. Release the buttons.



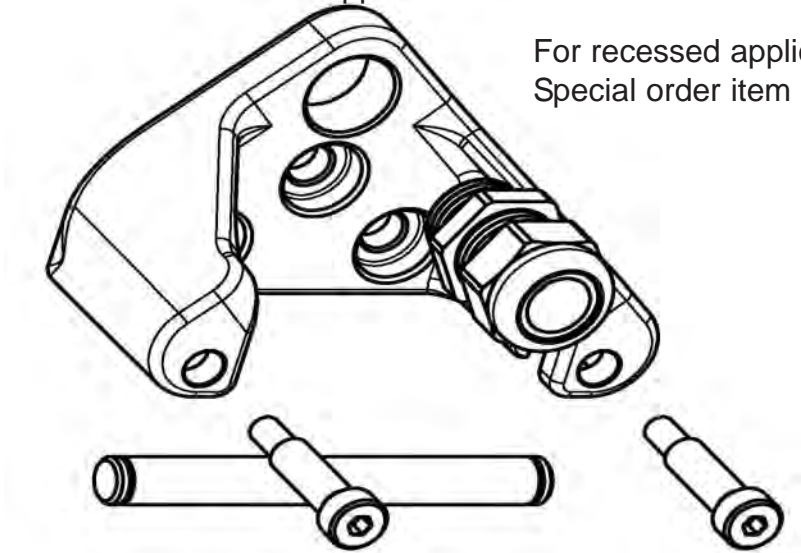
- 3. Allow the system to finish...this could take several seconds to complete. *NOTE: Pressing any other button during this procedure will cancel the calibration cycle, and the process will need to be done again.*
- 4. Once finished the LED’s will stop flashing, and the system will now “remember” what length actuators you have connected to the system.

Actuators Installation – All Users

- 1. Minn Kota Actuator upper mounting brackets come with water tight fittings and o-rings. Assemble the water tight fittings and o-rings to the upper mount brackets before proceeding.

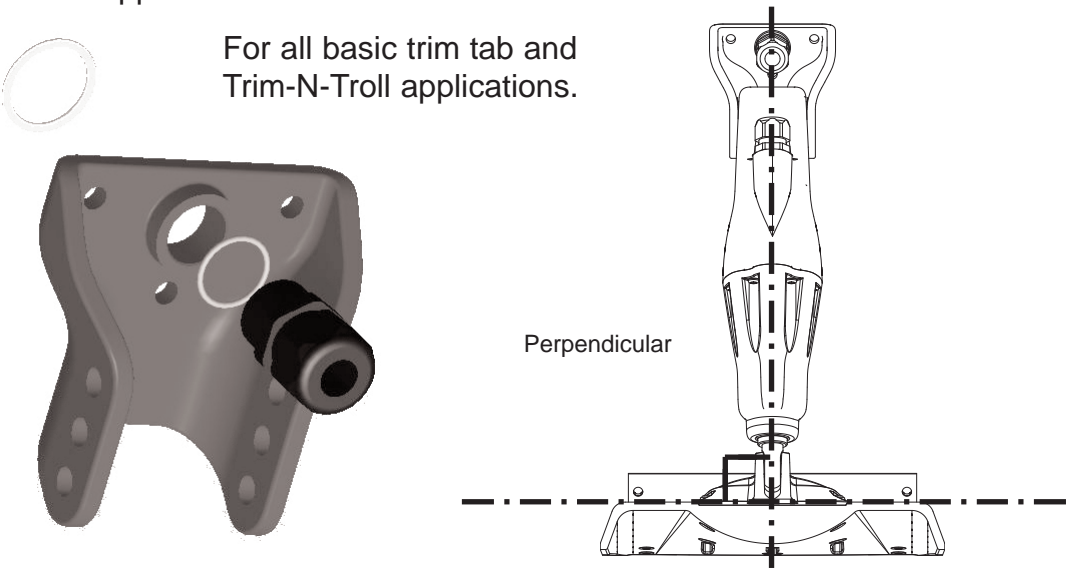
Recessed Trim Tab Upper Mount

For recessed applications only.
Special order item not included.

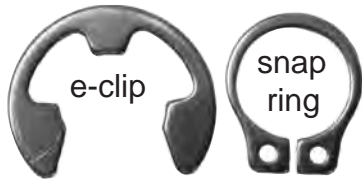


Standard Upper Mount

For all basic trim tab and Trim-N-Troll applications.

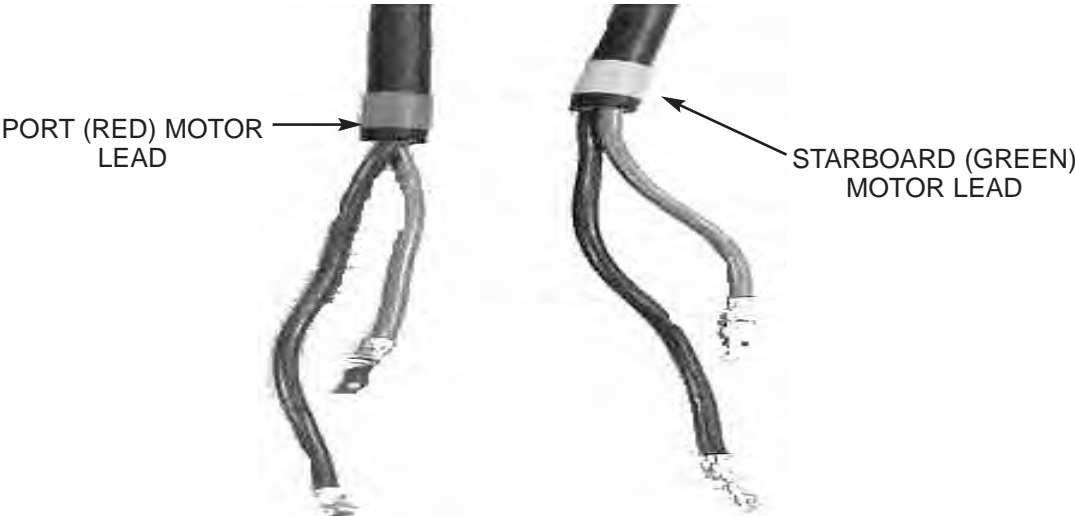


2. Attach the actuators to the Trim Tab lower mounting brackets (or Trim-N-Troll Motors) using the short mounting pins and e-clips*.
*Trim-N-Troll users must use snap rings to attach the actuators to motors.
Attach the upper mounting brackets to the actuators using (Trim-N-Troll) the long mount pins and e-clips or (Trim Tabs) the long mount pins and shoulder bolts.



****NOTE TO INSTALLER:** For a Lenco Marine retrofit, use the lower mount and pin already attached to the Lenco Marine Trim Tab.

3. (This step may require 2 people). Allow the flat surface of the upper mounting bracket to rest against the transom. Raise the Trim Tab and actuator up so that the trailing edge of the Trim Tab is approximately 3/4" above the hull bottom (use the straight edge to determine this, as described above). Mark the location of the upper mounting bracket and its 3 mounting holes. Drill these holes using the 13/64" drill bit.
****Be sure that the actuator is perpendicular (90 degrees) to the tab!**
4. Next, remove the actuator from the upper mount bracket and, using the upper mount as a template, mark the location of the thru-hull cable termination location, and drill this hole using a 1/2" drill bit.
5. Place a bead of marine sealant on the back of the upper mounting bracket and in the screw holes only. *Do not put sealant inside the cable termination hole!* Align the bracket and attach using the 1 1/4" stainless steel hull screws.
6. Re-attach the actuator to the upper mount bracket using the hardware provided, and feed the actuator cable thru the water tight fitting on the upper mount into the transom. Using an adjustable wrench tighten the fitting so that the rubber gasket is visibly closed around the cable.
7. For wiring and connection information, see the section "Wiring Diagrams".
8. If you are using the indicator switch version, your actuators will need to be calibrated. See instructions on page 26.



****NOTE: VERIFY MOTORS ARE CONNECTED PROPERLY BEFORE SHRINKING THE CONNECTIONS!**

4. Motor Connections: Motor leads from the MCU are marked with port (red) and starboard (green) indicator bands.
5. Place a piece of adhesive filled heat shrink over the motor lead conductors and make the appropriate connections.
6. Slide the heat shrink in place over the connections and seal in place using a heat gun.
7. Connect the Motor Control Unit to the Control Module and the switch by using the t-connector that is included in the kit.



8. Uncoil the antenna to the Motor Control Unit and route it such that it is as far away from other electronics and metal as possible. Mount the antenna in a location where the responsiveness from the remote is the best.

****REMINDER:** Minn Kota Trim Tab systems are designed to be ABYC (American Boat and Yacht Council) compliant. Failure to follow these installation instructions or any modification of electrical components may adversely affect this compliance and possibly void the manufacturer's warranty. Please call Minn Kota customer service if you have questions relating to this or any other installation issues at 1-800-227-6433.

1. Place the Control Module as far back as possible in the stern of the boat, such that you have access to 12V DC. #8x3/4 stainless screws have been provided for mounting the control module.
2. Place an adhesive filled connector splice over each of the wires. Make all connections corresponding to the appropriate wire colors. ****NOTE**** Connectors will need to be crimped onto each end of the leads.
3. One wire at a time, seal each adhesive filled connector splice in place using a heat gun.
4. **Indicator Switch Users Only:** Connect the 25' network cable from the rocker switch to the network cable on the control module. Do not over tighten!
5. Connect the battery leads to 12V DC. We recommend running the ground wire (- BLACK) directly to the battery, and the positive wire (+ RED) to a maximum 30A breaker. See the section "Wiring Diagrams" for further information.

****NOTE TO INSTALLER:** It is recommended that dielectric grease be used on the terminal posts of the battery to aid in preventing corrosion build up.

Motor Control Unit (MCU) Installation – Trim-N-Troll Users Only

BOAT RIGGING AND MOTOR INSTALLATION:

An over-current protection device (circuit breaker or fuse) must be used with this system. Coast Guard requirements dictate that each ungrounded current-carrying conductor must be protected by a manually reset, trip-free circuit breaker or fuse. The type (voltage and current rating) of the fuse or circuit breaker must be sized accordingly to the trolling motor used. The following breaker sizes are recommended guidelines:

System	Voltage	Recommended circuit breaker rating
Trim & Troll 24V	24-volt	120A @ 24VDC
Trim & Troll 36V	36-volt	100A @ 36VDC

The appropriate wire size needed to connect your Trim & Troll System to the trolling motor batteries varies depending on the length of cable needed and voltage of the motor. For additional information, please consult appropriate ABYC (American Boat and Yacht Council) and Coast Guard requirements.

Reference:
United States Code of Federal Regulations: 33 CFR 183 – Boats and Associated Equipment
ABYC E-11: AC and DC Electrical Systems on Boats

Pre Installation Comments:

- When installing the MCU, it is recommended that it's location be in the same relative location as the control module. These 2 units are part of the network and must be connected to each other. Therefore cabling is provided on these units so that the installation can be done with the units in close proximity to one another. ****NOTE:** If more cabling is required, please contact Minn Kota Customer Service.
- It is also good to consider for maximum antenna effectiveness, installing these in a location where the antenna can be mounted away from other electronics and metal.
1. Determine best location that is nearest the control module, and within 42" of a 24V or 36V battery source, depending upon which motors you have.
 2. Mount the MCU using the #8x3/4 stainless screws have been provided for mounting the MCU.
 3. Connect battery leads to 24V or 36V depending on which motors you have. A circuit protection device (referenced above) must be used in this connection.

Actuator Retrofitting - Lenco Marine

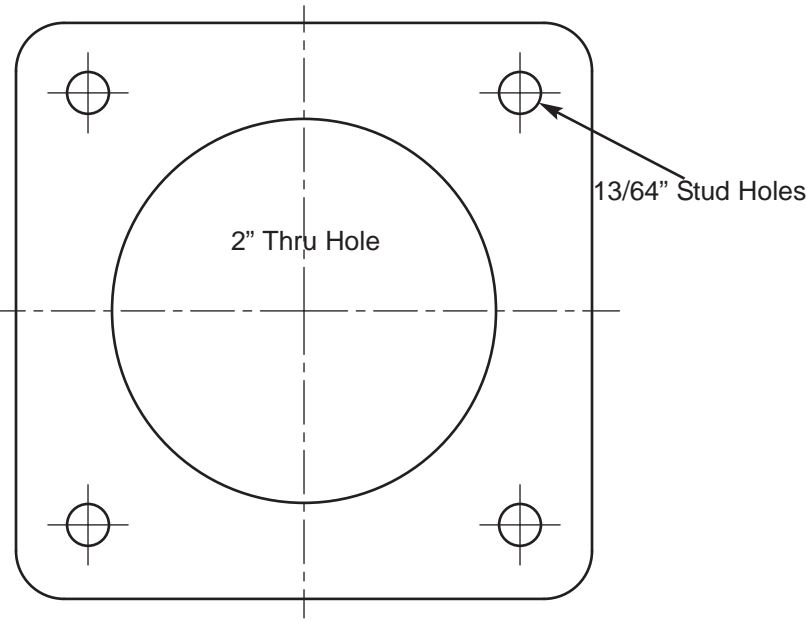
For retrofitting Lenco Marine actuators with Minn Kota actuators, please follow steps 1 thru 7 above, for the mechanical assembly. Your Minn Kota actuators will require the Minn Kota upper mount bracket as described above, but will still utilize the lower mount and pin on Lenco Marine Trim Tabs.

For information on wiring the Lenco Marine switch system to Minn Kota actuators, please see the section "Wiring Diagrams".

Rocker Switch Installation – Basic and Indicator Version

1. Select a suitable location for the control switch. Typically this is within easy reach of the engine throttle. You will need to be able to drill a 2" diameter hole through the boats mounting surface (directly beneath the control switch) for the cable to drop thru. See switch cut-out template. Drill holes accordingly.
****NOTE TO INSTALLER:** This mounting pattern is identical to the Lenco Marine pattern, and should not require drilling any additional holes.
2. Place the soft rocker switch into position. Be sure to thread the 25' cable thru first on the basic version. The indicator version will plug-in, and thread on from the back side of the switch. Once in position, place the plastic washers and nuts on the mounting studs behind the mounting surface. Use an 11/32 deep socket nut driver to tighten these. **DO NOT OVER TIGHTEN!!**
****NOTE TO INSTALLER:** All Minn Kota soft rocker switches are completely sealed against the environment, and it is not necessary to apply any additional sealant to protect the switch from water intrusion.
3. Fish the 25' of cable to the rear of the boat. This is where the cable will be connected to the control module.

Illustration is not to scale.
Scaled cut-out available
on removable insert.



BASIC SWITCH



25' CABLE TO CONTROL MODULE

INDICATOR SWITCH

25' NETWORK CABLE TO CONTROL MODULE



****NOTE:** Additional network extension cables are available through Minn Kota Customer Service. These are compatible with Indicator Switch and Indicator Switch compatible modules only! They do not work with the basic switch version.

277-3230 – 5' Network Extension Cable
277-3231 – 10' Network Extension Cable
277-3232 – 25' Network Extension Cable

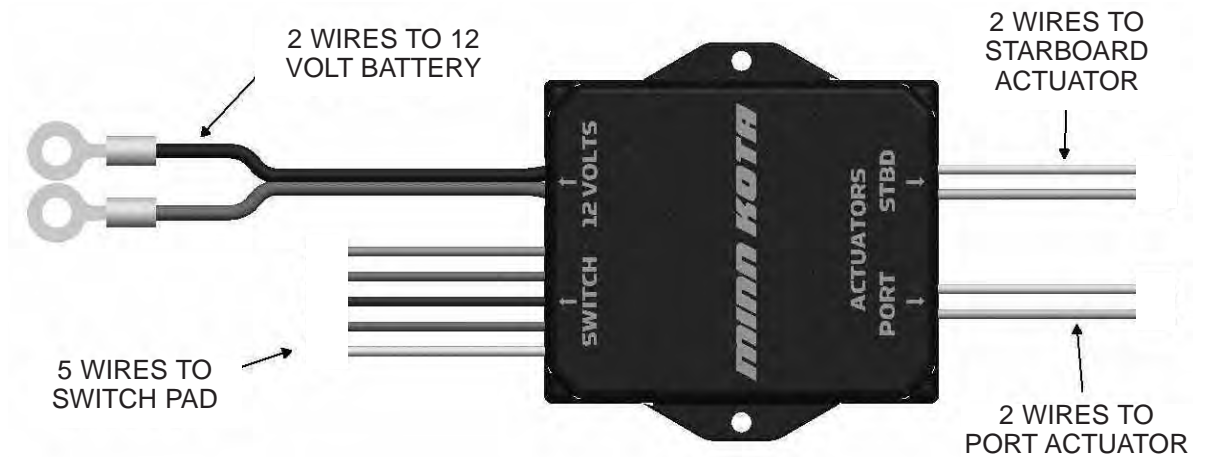
Control Module Installation

Pre-Installation Comments:

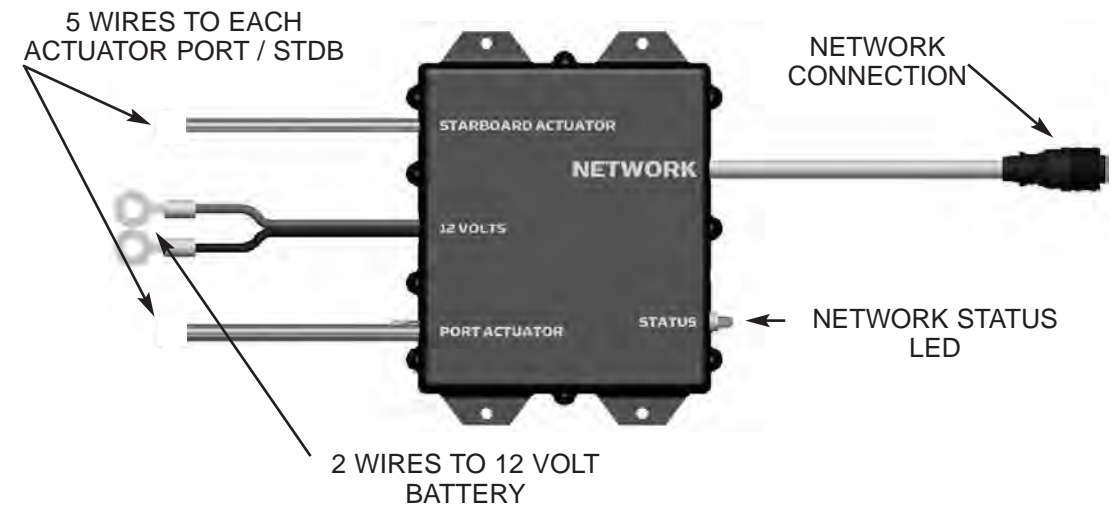
****NOTE to Trim-N-Troll Users** – Please see pre-installation comments for the Motor Control Unit (MCU) before proceeding.

For the installation of the Control Modules, it is recommended that the control module be located as close as possible to the transom of the boat, and within 36" of a 12V battery source. **The Control Module electronics are completely sealed internally and are designed for wet environments.** Therefore it can, and should be mounted as close as possible to the transom of the boat. The cabling lengths provided with this system are designed for the layout described. (See illustration on page 14.)

BASIC SWITCH CONTROL MODULE



INDICATOR SWITCH CONTROL MODULE



In the U.S.A., replacement parts may be ordered directly from MINN KOTA Parts Dept., 121 Power Drive Mankato, Minnesota 56002-8129. Be sure to provide the MODEL and SERIAL numbers of your product when ordering parts. Please use the correct part numbers from the parts list. Payment for any parts ordered from the MINN KOTA parts department, may be by cash, personal check, Discover Card, MasterCard or VISA. To order, call 1-800-227-6433 or FAX 1-800-527-4464.

Aux É.-U., les pièces de rechange peuvent être commandées directement chez MINN KOTA Parts Dept., 121 Power Drive, Mankato, Minnesota 56002-8129. Assurez-vous de fournir les numéros de modèle et série de votre produit quand vous commandez des pièces. Veuillez utiliser les numéros de pièce corrects de la liste de pièces. Les pièces commandées du département de pièces de MINN KOTA peuvent être payées en argent liquide, par chèque personnel, carte de crédit DISCOVER, MasterCard ou VISA. Pour commander, composez le 1-800-227-6433 ou par télécopie le 1-800-527-4464 (É.-U.).

Item	P/N	Description	Qty	Item	P/N	Description	Qty
5	2374613	O-ring, upper mount	1	87	2996517	Indicator Switch control module	1
6	2371924	Bracket, recessed upper mount (special order item not included)	1	90	2996519	Motor control unit	1
7	2372917	Strain relief	1	91	2370734	Network splitter	1
8	2373429	Shoulder screw	2	92	2994025	Remote transmitter	1
9	2372640	Pin, upper mount	1	100	2397234	Motor Assembly 80#	1
10	2371906	Bracket, standard upper mount	1		2397251	Motor Assembly 101#	1
12	2374619	Bulkhead	1	105	2374630	Fitting, NPT 1/2"	1
15	2373490	Screw 1/4 - 14 x 1 1/4	9	110	421-333	Brush end housing	1
20	2374631	O-ring, Sealcon	1	115	992-010	Spring Washer	2
25	2374630	Fitting - NPT 1/2"	1	120	990-045	Thrust spacer	1
30	2263006	E-ring, 5/16 ss	4	125	2-600-233	Brush plate assembly	1
31	2373020	Snap-ring, 5/16ss	2	130	975-041	Spring, brush, torsion	2
35	2372640	Pin, upper mount	1	135	186-094	Brush	2
40	2992801	Actuator assembly, standard	1	140	830-029	Screw, brush plate	2
	2992805	Actuator assembly, short	1	145	140-010	Bearing	1
41	2992800	Actuator assembly, long	1	150	2-100-233	Armature assembly 80#	1
50	2262665	Pin, lower mount	1		2-100-230	Armature assembly 101#	1
55	2371908	Mount, lower	1	155	990-051	Washer, steel	1
60	2778700	Tab, 9x9 assembly [55-75]	1	160	990-045	Washer, nylatron	1
	2778701	Tab, 9x12 assembly [55-75]	1	165	701-043	O-ring, housing	2
	2778702	Tab, 9x18 assembly [55-75]	1	170	2-200-333	Center housing 80#	1
	2778710	Tab, 12x9 assembly [55-75]	1		2-200-330	Center housing 101#	1
	2778711	Tab, 12x12 assembly [55-75]	1	175	2-300-341	Plain end housing	1
	2778712	Tab, 12x18 assembly [55-75]	1	180	701-009	O-ring- thru-bolts	2
65	2371800	Hinge, 9" [included in 60]	1	185	830-095	Thru-bolt 80#	2
	2371801	Hinge, 12" [included in 60]	1		830-098	Thru-bolt 101#	2
	2371802	Hinge, 18" [included in 60]	1	190	836-001	Plug, pipe	1
70	2333101	Nut, 10-24 Nylock	as required	200	1378132	Propeller kit	1
75	2373406	Screw, 10-24 x 5/8	as required	205	2331160	Propeller W. Wedge 2	1
76	2373423	Screw, 10-24 X 3/4 SHCS	4	210	2091701	Washer - prop, large	1
■	1863700	Trim tab rocker switch kit [80-81]		215	2198401	Anode, Nut	1
80	2994042	Soft rocker switch assembly	1				
81	2994077	Basic switch control module	1	220	2370739	Adhesive filled butsplice 18-22 ga	6
85	2994056	Indicator switch assembly	1	225	2370738	Adhesive filled butsplice 14-16 ga	4
	2994057	Auxiliary switch assembly	1				
86	2373230	Network extension cable, 5'	1	■	2994885	Switch mounting hardware (NOT SHOWN)	1
	2373231	Network extension cable, 10'	1				
	2373232	Network extension cable, 25'	1				

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Trim Tab Schematic
Schéma du compensateur
de dérive

This page provides MinnKota® WEEE compliance disassembly instructions. For more information about where you should dispose of your waste equipment for recycling and recovery and/or your European Union member state requirements, please contact your dealer or distributor from which your product was purchased.

Tools required but not limited to: Flat Head screw driver, Phillips screw driver, Socket set, Pliers, wire Cutters..

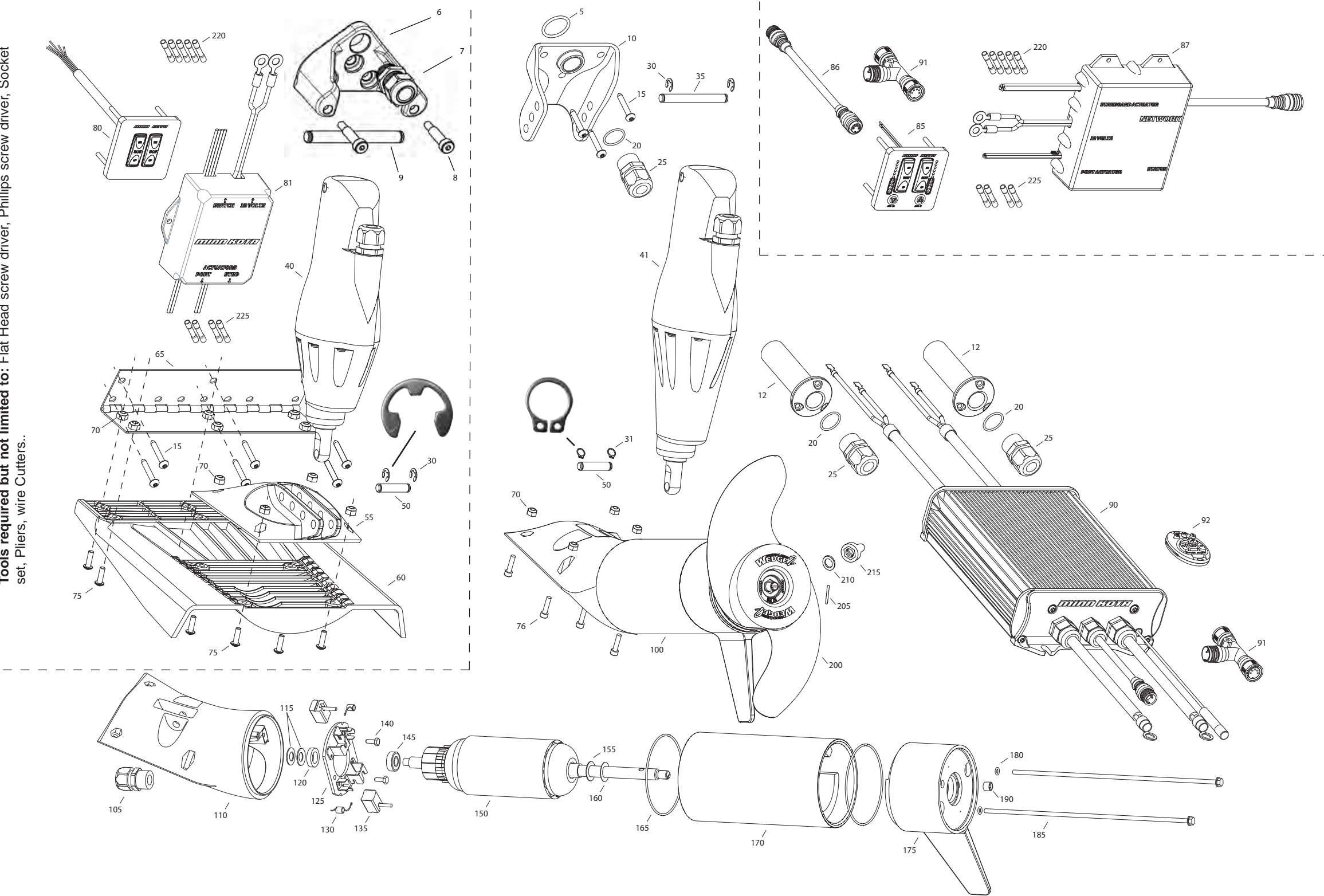
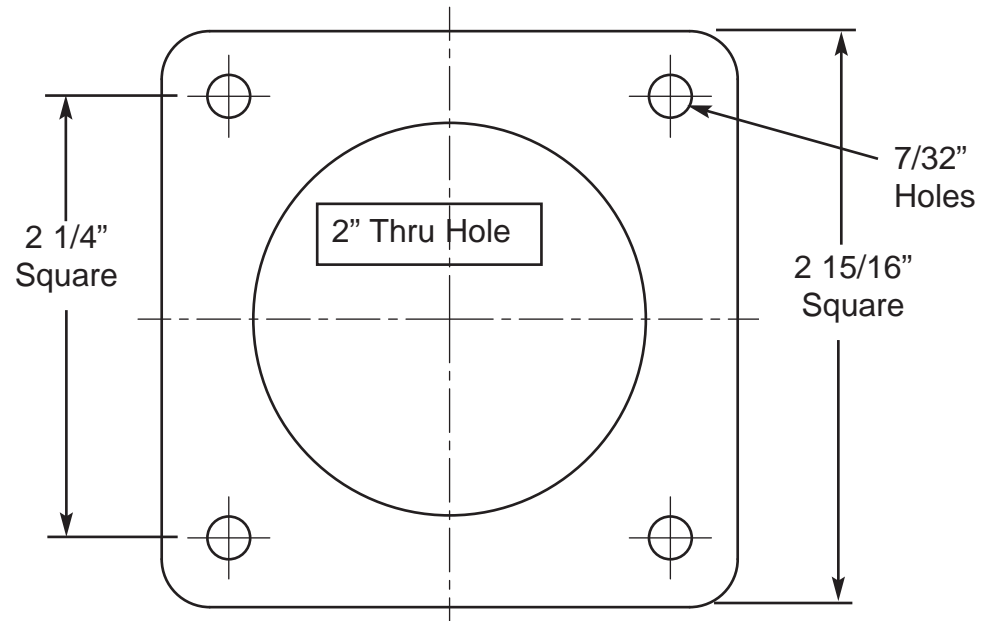


Illustration is to scale.



Cut out, tape in location, and mark center of holes with marker or center punch.

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PART NO.

REVISIONS

REV.	ECN NO.	DESCRIPTION	BY	DATE	APP'D BY

ASSUMES 15° TRANSOM

18.0

10.0

25.5

only can use
long actuator

Retracted length: 13"
EXTENDED length: 18.125"
total stroke : 5.125"

JOHNSON
OUTDOORS
THE BEST OF BOTH WORLDS

4

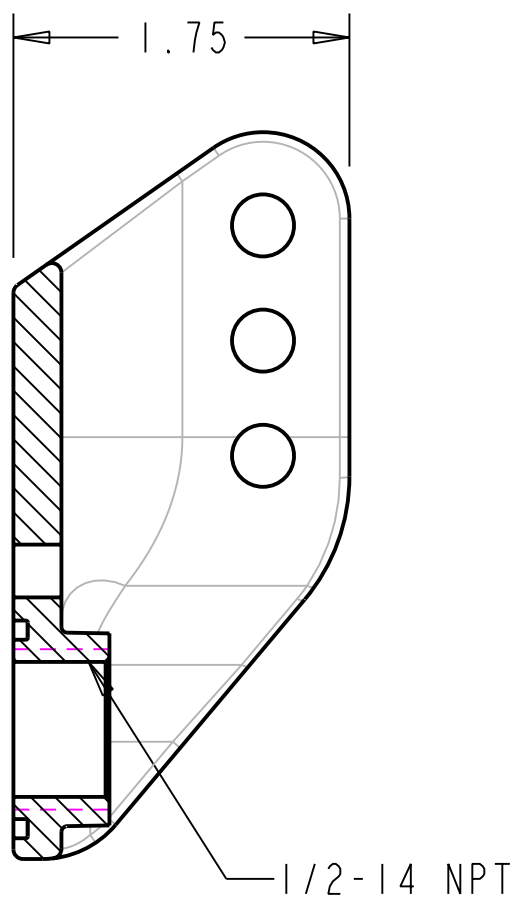
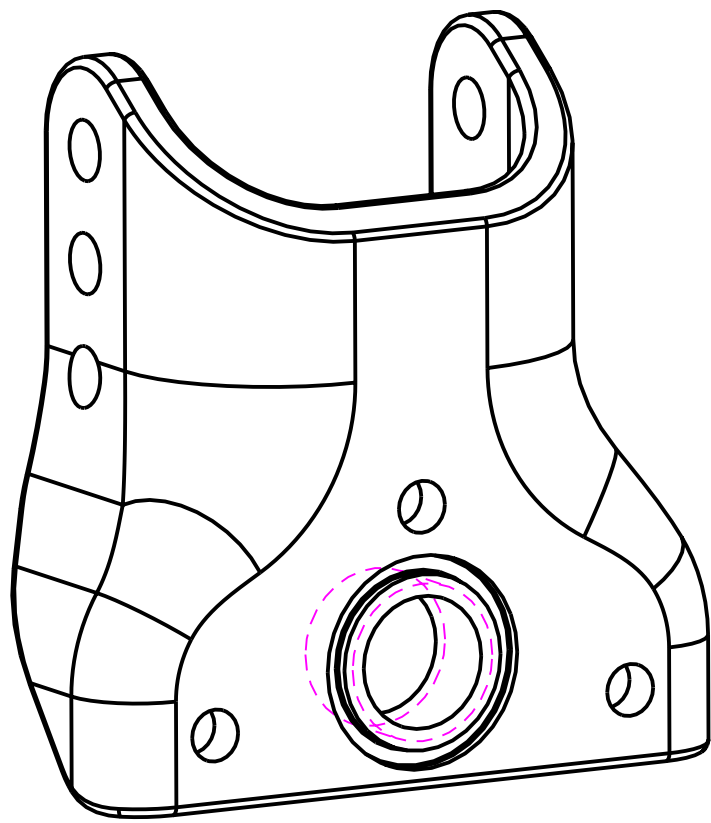
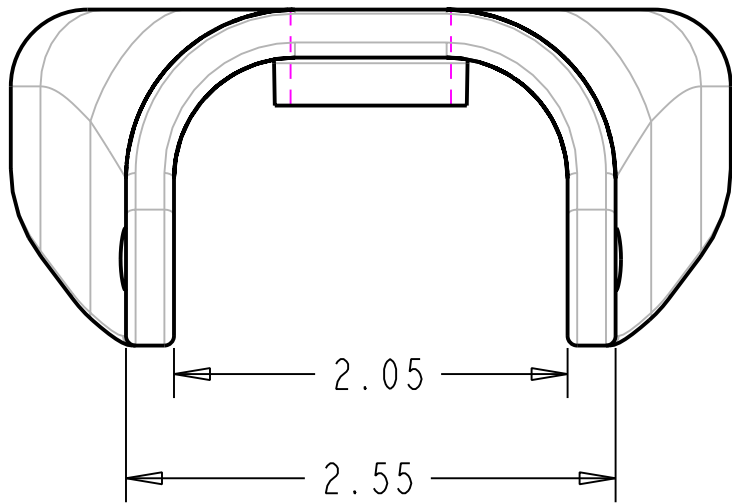
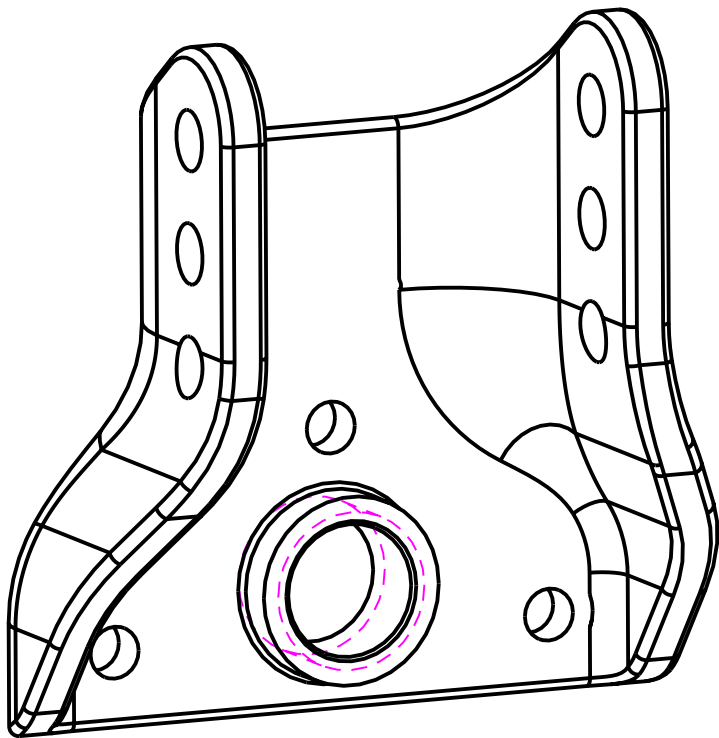
3

2

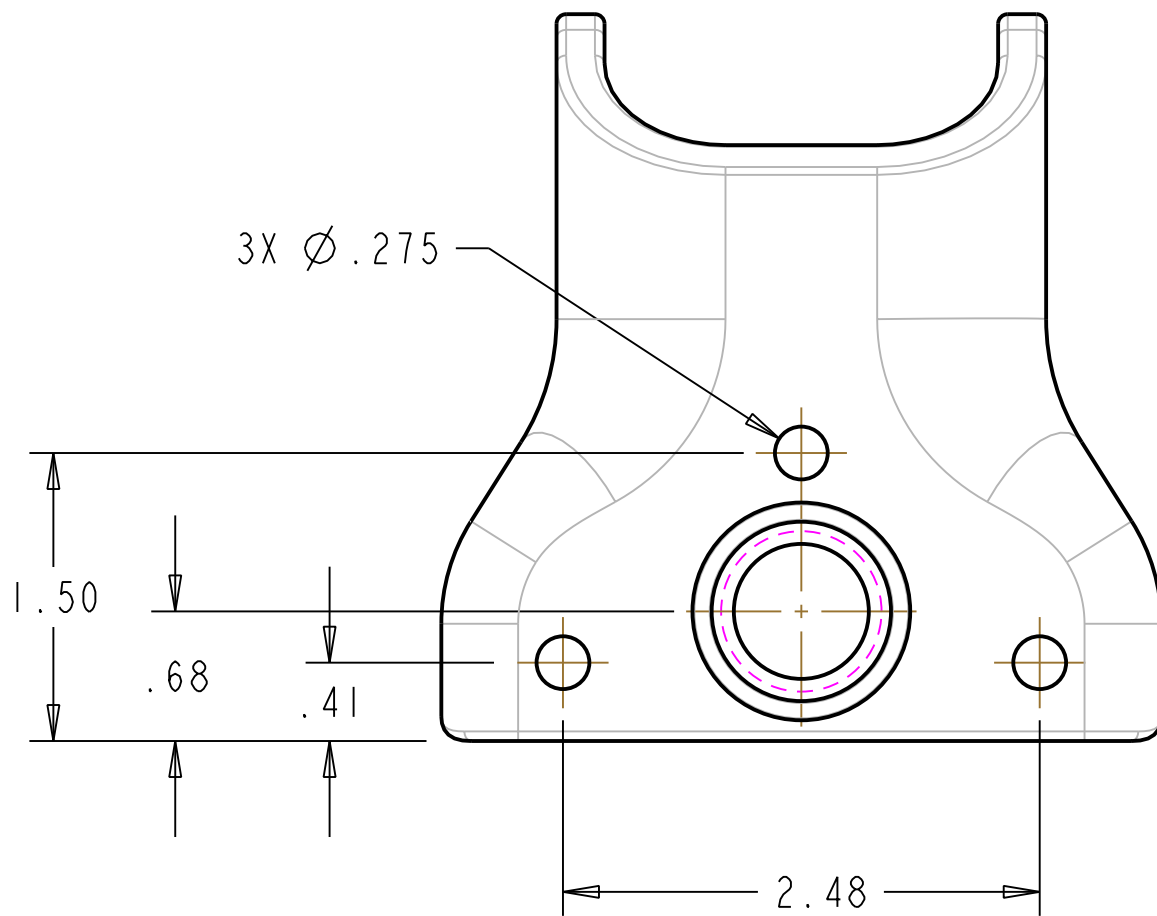
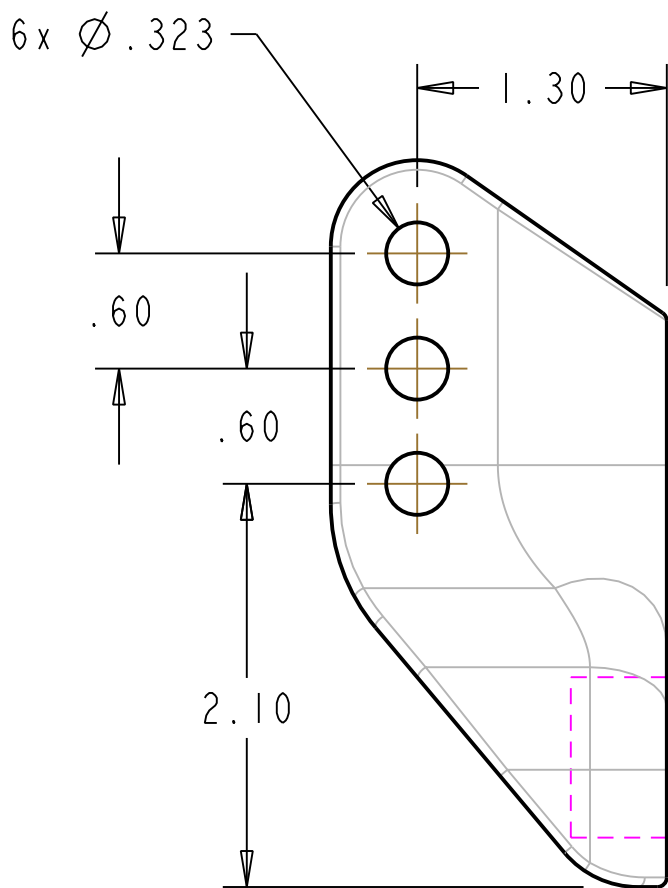
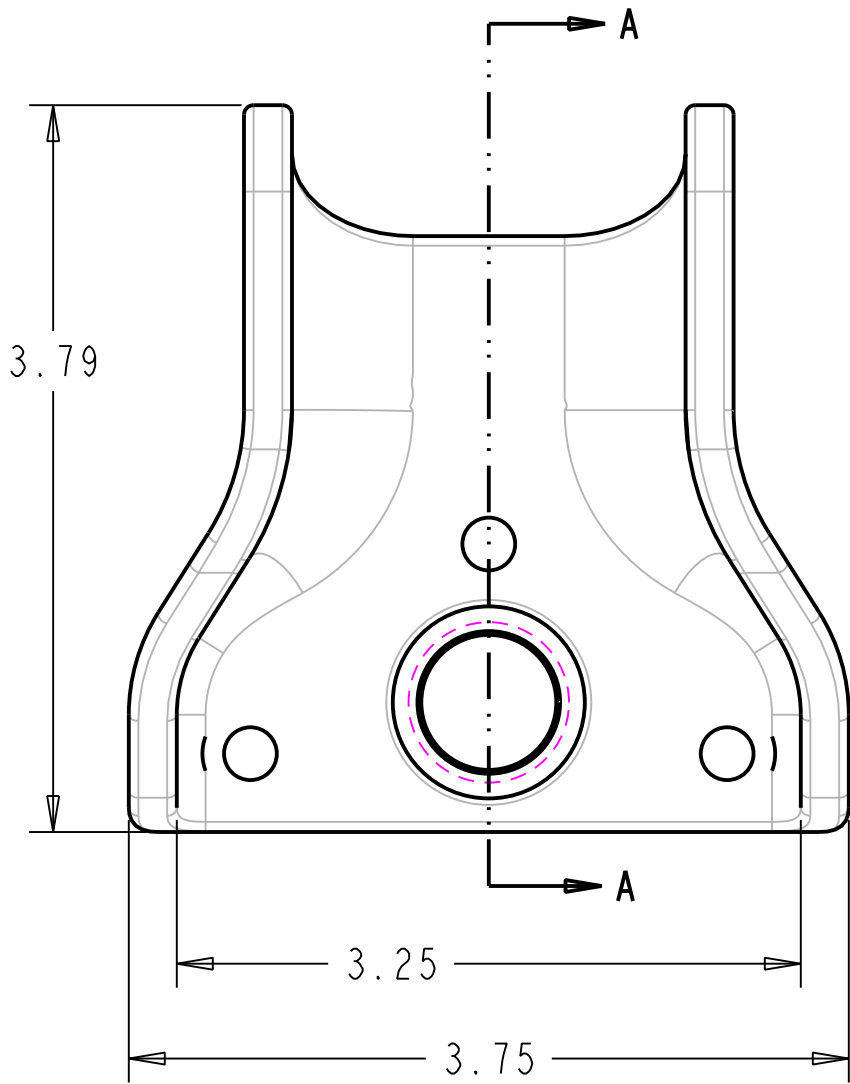
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PART NO:

REVISIONS				
REV.	ECN NO.	DESCRIPTION	BY	DATE
A			MLK	3-20-08

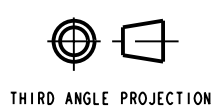


SECTION A-A



TOLERANCES:
UNLESS OTHERWISE SPECIFIED
.XXXX ±.0010
.XXX ±.005
.XX ±.010
.X ±.015
FRACTIONAL ± 1/64
ANGULAR DIMENSIONS ± 0° 30'

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DRAWN BY:
DATE:
APP'VD BY:
DATE:
CHECKED BY:
DATE:

FINISH: NONE	PART NAME: UPPER MOUNT TEMPLATE	C SIZE
MATERIAL:	RELEASED ECN* PART NO.: UPPER_MOUNT_TEMPLATE	REV.: A
SCALE: X=X	SHEET 1 OF 1	U/M: IN.

4

3

2

1