

↗ DOMETIC STANDARD TRIM TAB SYSTEM



EN

Standard Trim Tab System

Operating and installation manual

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Please read this manually carefully before first use. Store it on your boat, or in a safe place, for future reference. If you sell your boat, hand over this manual along with it.

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1 Explanation of symbols



WARNING!

Safety instruction: Indicates a hazardous situation that, if not avoided, could result in death or serious injury.



CAUTION!

Safety instruction: Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.



NOTICE!

Indicates a situation that, if not avoided, can result in property damage.



NOTE

Supplementary information for operating the product.

2 General safety instructions

The manufacturer accepts no liability for damage in the following cases:

- Physical damage to the product.
- Damage due to incorrect installation or connection voltage.
- Alterations to the product.
- Use for purposes other than those described in the operating manual.

The CE declaration of conformity can be requested from the manufacturer (contact information on the back of this manual).

2.1 General safety

- Read and understand all instructions included with your system prior to use.
- Disconnect power from the actuators (with battery switches or circuit breaker) before working at the transom of the boat.
- Only use the trim tab system as intended.
- Do not use tabs as a boarding step.
- When lifting the boat, do not place the lifting straps or forks on the tabs or actuators.
- Do not push or pull on the tabs or actuators when putting the boat on or off a trailer.
- Do not tie off or secure anything to the actuators.
- See a marine technician for repairs if the trim tabs, actuators, or controller are modified, damaged or not working correctly.
- The controller and actuators are not user serviceable; do not attempt to disassemble.

2.2 Safe operation

- The trim tab actuators are powerful mechanical devices that can cause injury. Ensure no one is at risk of being injured before operating a tab when swimmers are in the water, or when operating the tabs on a trailer with people or children around.
- The trim tab system is not a toy. Do not allow children to operate the system.



WARNING!

Exercise sound judgment when using trim tabs in challenging sea conditions. In some cases the safest action is to run with tabs fully retracted.

3 Technical description

The Trim Tab System consists of three primary components: the actuators, the sheet metal tabs, and the dial controller. The dial controller is unique in the industry with smart function buttons and an intuitive dial control that makes roll adjustment simple and obvious.

The system operates on 12VDC and supports two actuators and up to two dial controllers.

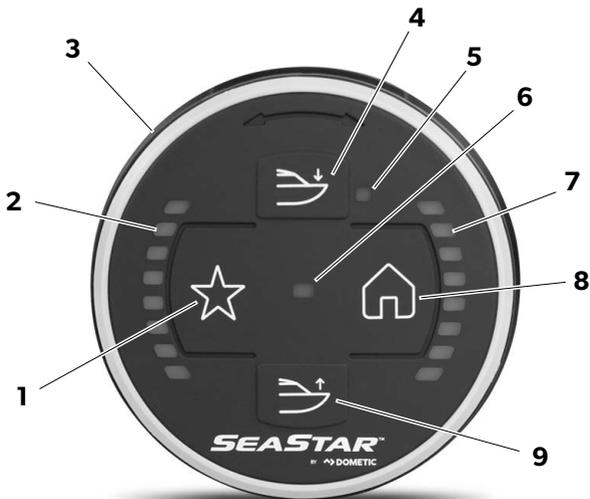
3.1 System components

No. in fig. 1	Description
1	Dial Controller
2	Transom bracket
3	Actuator
4	Trim tab

1



2

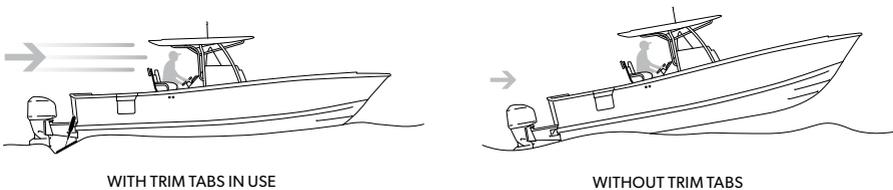


3.2 Controller operating and display elements

No. in fig. 2	Description
1	☆ Favorite button
2	☉ Port tab position indicator
3	↶ Control dial
4	⤴ Bow down button
5	☉ Auto Brightness ambient light sensor
6	☉ System status indicator
7	☉ Starboard tab position indicator
8	🏠 Home button
9	⤵ Bow up button

4 Trim tab principles of operation

Trim tabs are plates, installed in pairs, used to control the pitch and roll of a boat by directing water as it flows past the transom. They work by harnessing the hydrodynamic forces exerted by moving water, so the boat must be in motion for the tabs to have an effect.



When a tab is lowered, the directed water flow will exert an upward force at the stern of the boat. If both tabs are lowered at the same time the upward force at the stern will force the bow down (pitch control). If only one tab is lowered it will force the bow down on the opposite side, causing the boat to roll (roll control). The combination of pitch and roll is the boat's attitude.

By adjusting the boat's attitude, the boat operator can get on plane faster, stay on plane at lower speeds, increase top speed, correct a small list, improve ride quality and visibility, reduce porpoising, and improve fuel economy.

5 Using the system

5.1 Basic features and operation

The dash-mounted Dial Controller is designed for intuitive operation. The function of each interface feature is described below.

System Status Indicator	Displays the status of the trim tab system.	
	Steady green	System is ready
	Flashing cyan	The system has memorized the favorite position
	Flashing blue	System is in manual LED brightness adjustment mode
	Flashing yellow	Controller has a non-critical fault (see section 9)
	Flashing red	Controller has a critical fault (see section 9)

Tab Position Indicator LEDs Shows the position of port and starboard tabs. At full retraction a single LED is shown at the top. As the tabs are extended the LEDs will illuminate to show the tab position.

Bow Down Lowers both tabs simultaneously, causing the bow to drop. Press and hold until the desired pitch is achieved.



Bow Up Raises both tabs simultaneously, causing the bow to rise. Press and hold until the desired pitch is achieved.



Control Dial Rolls the boat in the direction of rotation. Rotating the dial to starboard (clockwise) will cause the port tab to lower and the starboard tab to raise, causing the boat to roll to starboard. Turning the dial to port (counterclockwise) will have the opposite effect.



Use this control with caution: turn one click at a time and wait a moment to see how the boat reacts before making further adjustments. While this control can be used to correct a list due to uneven loading, best practice is to load your boat as evenly as possible, and to keep passenger movement at a minimum while underway at high speeds. The relative positions of the tabs are maintained when using the Bow Down and Bow Up controls, so if you've used the roll control to correct for a list it will remain corrected as you alter the bow position.

Home



Press once to retract actuators to their fully retracted home position. Use this button when:

- you encounter difficult sea conditions and need to raise the bow,
- preparing to load the boat onto a trailer,
- preparing the boat for lifting.

Favorite



Press and hold the button for three seconds to save the current tab position. Press the button at any time to automatically return the tabs to this position.

Auto Brightness

The controller uses an ambient light sensor to automatically adjust the LED brightness. You can disable the automatic brightness control and adjust it manually if you prefer. See section 5.2.



CAUTION! Varying sea conditions

If sea conditions have changed since you last set a favorite position, use caution when recalling it.

5.1.1 Preparing to trailer or lift the boat

- Press the Home button.
- ✓ The actuators will retract. When both tab position indicators show only one LED the tabs are fully retracted.
- You are ready to trailer or lift the boat.



NOTICE! Material damage

Trailing or lifting the boat with the trim tabs extended may cause irreparable damage to the tabs and actuators.

5.1.2 Automatic retraction

The trim tabs will automatically retract to the home position:

- when the ignition is switched on,
- when the ignition is switched off*.

* Battery switches must remain on.

5.2 System configuration options

5.2.1 Manual LED brightness adjustment

By default, the LED brightness is controlled automatically with an ambient light sensor. If manual control is preferred, you can disable the automatic function (see section 8.6) and adjust it manually. To adjust manually:

- Press and hold both the Favorite and Home buttons together.
- ✓ The status LED and the starboard position indicator LEDs will flash blue to indicate you are in manual brightness mode. (If they do not flash, the auto-brightness function has not been disabled.)
- ✓ As you continue to hold the buttons, the brightness of the LEDs will cycle through the five available levels.
- Release the buttons at the desired level.

5.2.2 Roll sensitivity adjustment

The roll sensitivity refers to how much the tabs move for a given movement of the control dial. The default sensitivity will work for most users, but you can increase or decrease the sensitivity if desired. See section 8.6.

6 Tab and actuator installation



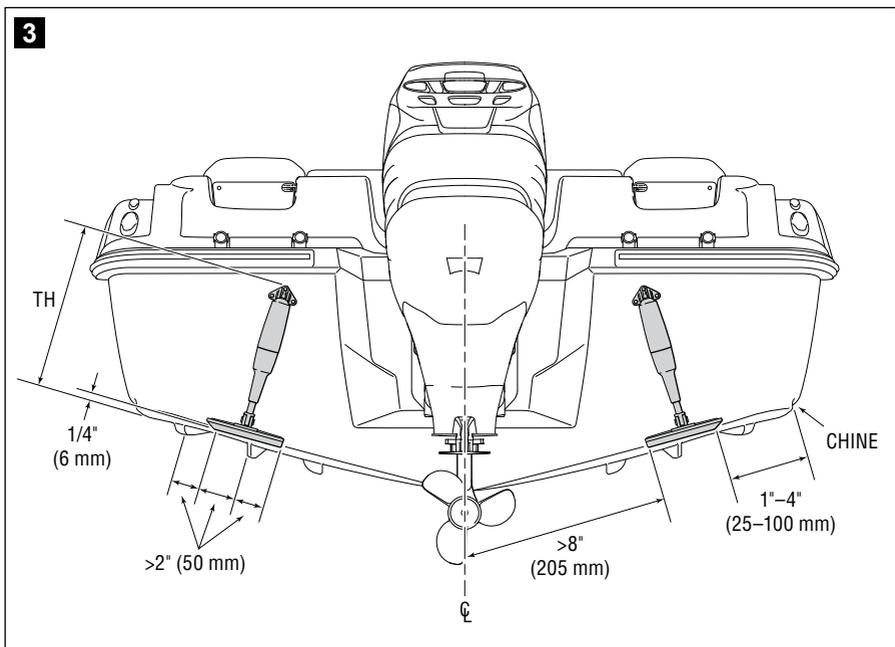
WARNING!

- Read the instructions thoroughly before beginning the installation.
- Before drilling holes in the hull, check that there is nothing in the hull that might be damaged, such as fuel or water tanks, electrical wiring, hydraulic steering hoses, etc.

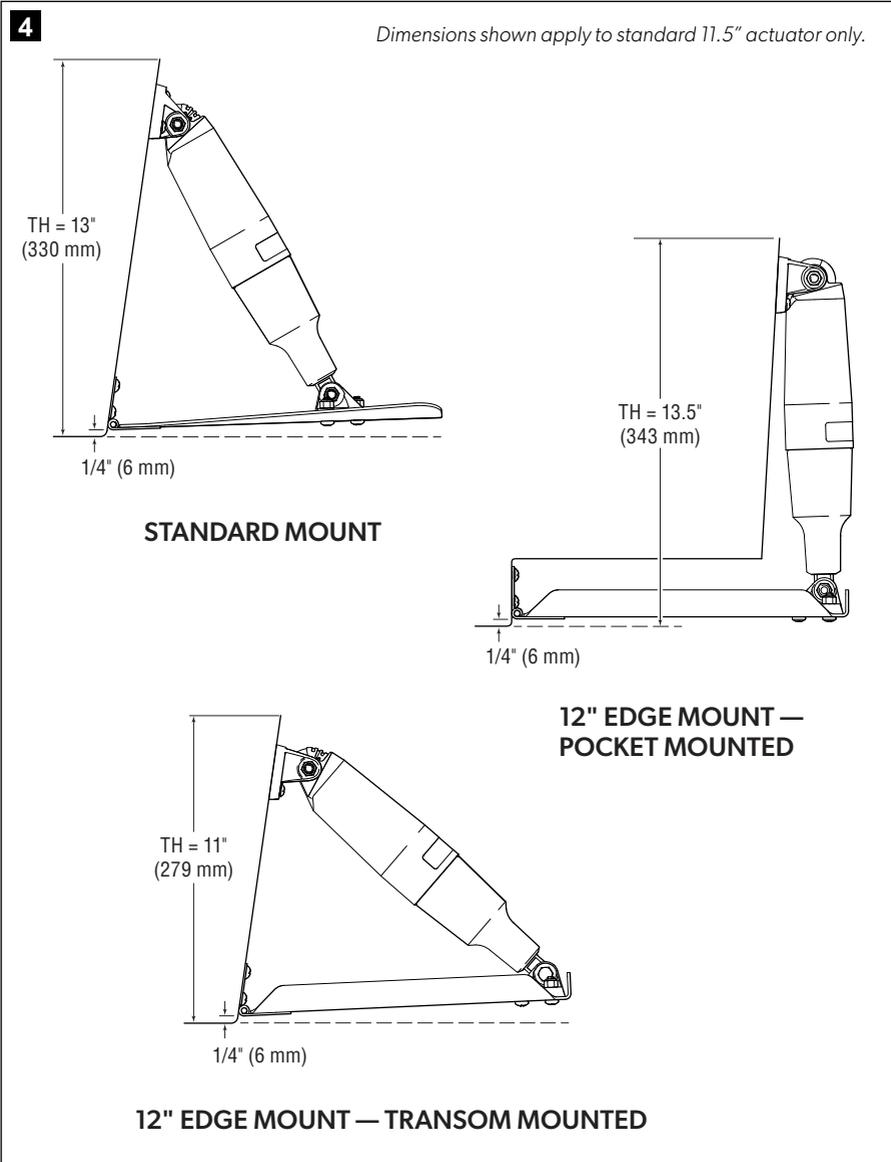
6.1 Planning

When deciding where to mount the tabs, there are several things to consider. Be sure you have considered all these items and perform a test fit before drilling any holes in the hull.

- The outboard edge of the tab should be inboard 1"-4" (25-100 mm) from the chine. The further outboard the tab, the more effective it is for controlling the side-to-side level of the boat.
- The edges of the tab should be at least 2" (51 mm) from a hull strake, if possible.
- To avoid interference with the engine, the tab must be at least 8" (205 mm) from the drive centerline.



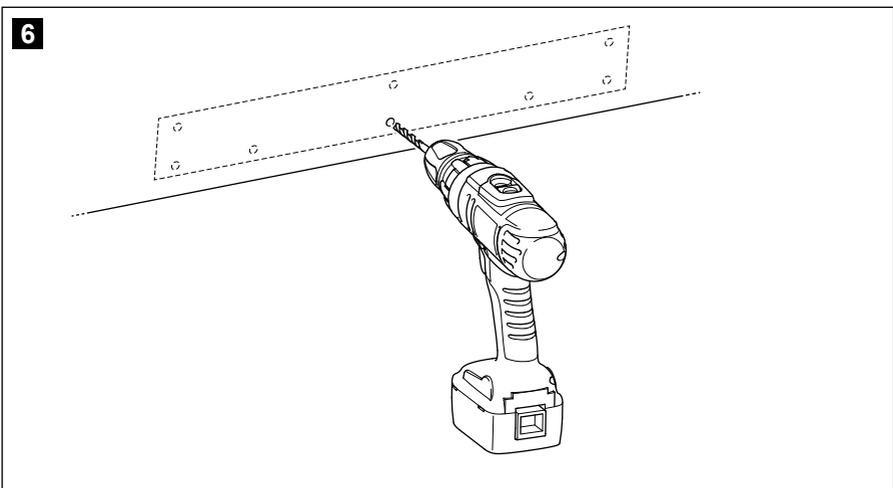
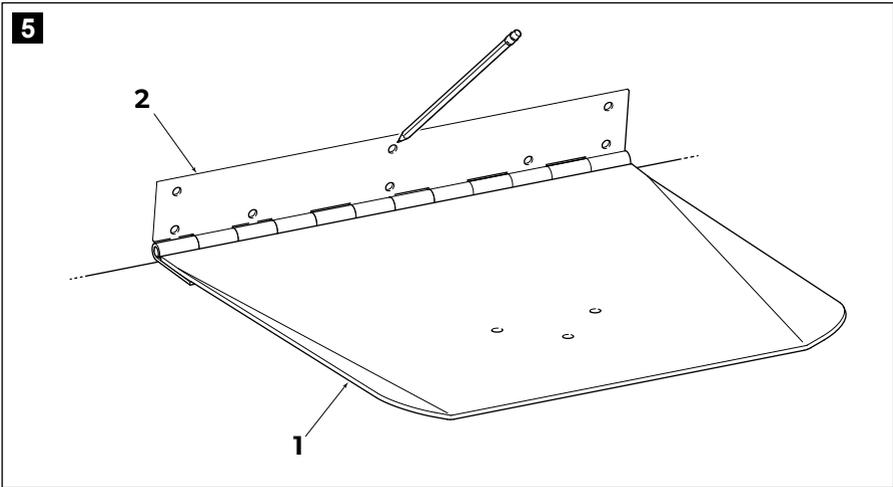
- There are different tab configurations available and they will have different transom height (TH) requirements as shown in figure 4. The actual transom height will vary with the angle of the transom, so the maximum value for TH is shown.



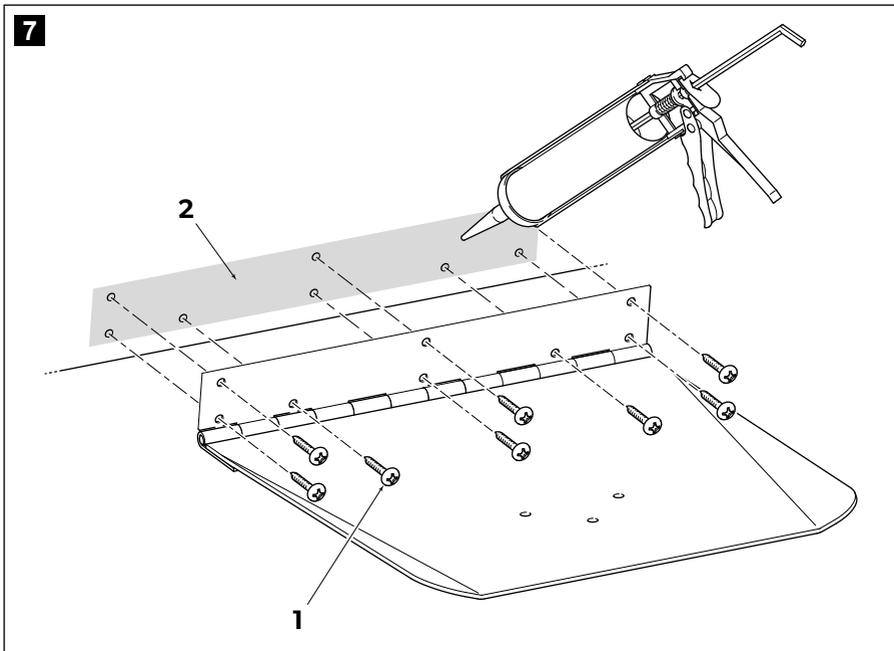
- There must be space behind the transom for the actuator harness to enter the boat in a dry location away from sources of heat.

6.2 Tab installation — standard and edge mount tabs

- ▶ Position the tab (fig 5 item 1) so that the hinge plate (fig 5 item 2) is approximately 1/4" (6 mm) up from the bottom of the hull and parallel to the hull. See also figure 3.
- ▶ If mounting in a pocket, center the tab in the pocket.
- ▶ Mark the hinge hole pattern on the transom as shown in figure 5.
- ▶ Drill holes in the transom at the marked locations with a 3/16" (4.8 mm) drill bit to a depth of 1-1/4" (32 mm) as shown in figure 6.



- ▶ Liberally apply marine grade adhesive caulking (fig 7 item 2) at the interface between the hinge and transom, the drilled holes, and the supplied fasteners (fig 7 item 1) to ensure a watertight seal.
- ▶ Install the screws through the hinge plate and into the transom. The screws are designed to work in both fiberglass and aluminum hulls. We recommend tightening these screws by hand. Do not overtighten.



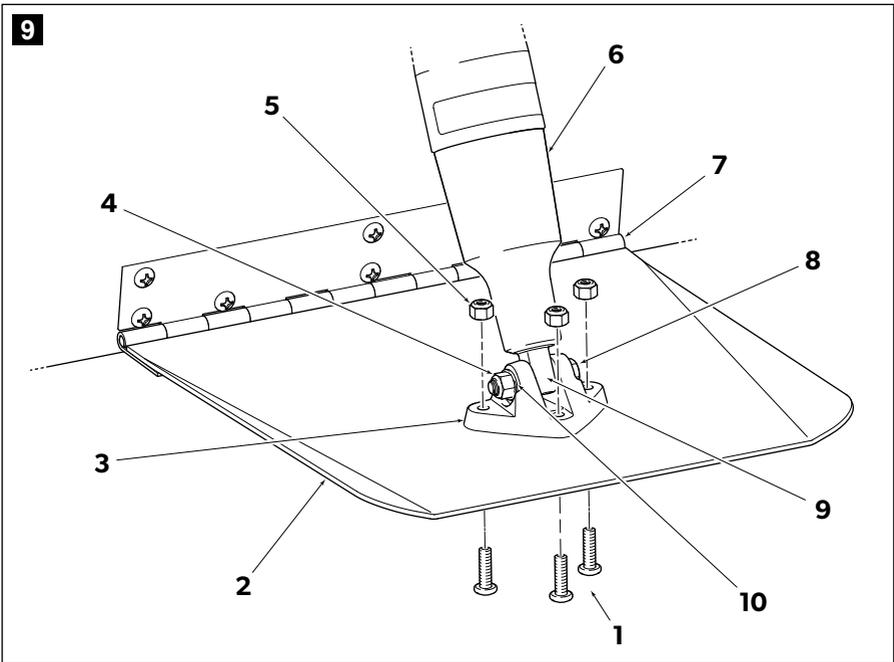
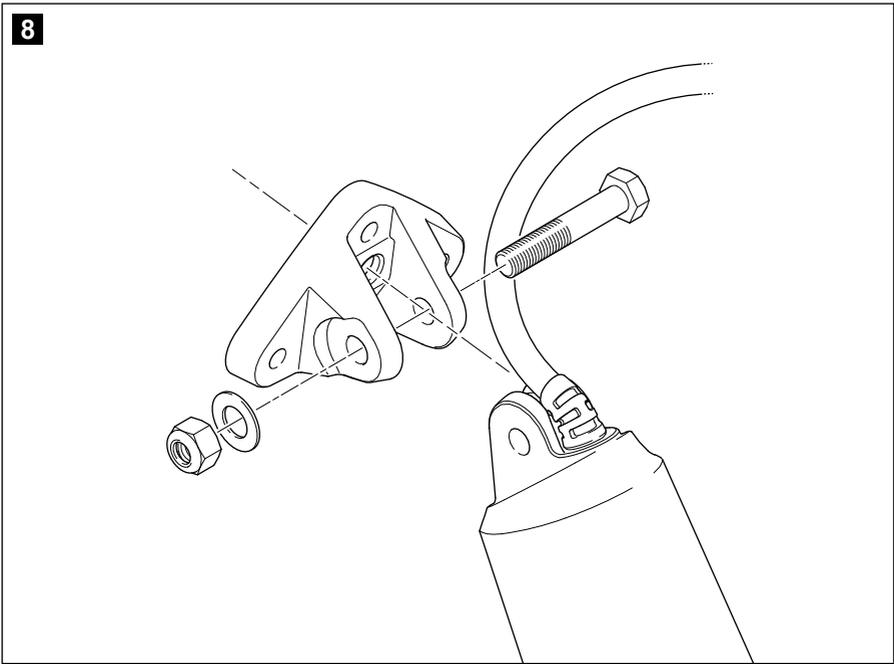
NOTICE! Potential damage to hull

Do not overtighten the screws, because you may strip the hull material.

6.3 Actuator installation — standard and edge mount tabs

The first step is to mark and drill the holes for the transom mounting bracket and the harness entry into the hull. You'll use the transom bracket itself, installed to the actuator, as your template.

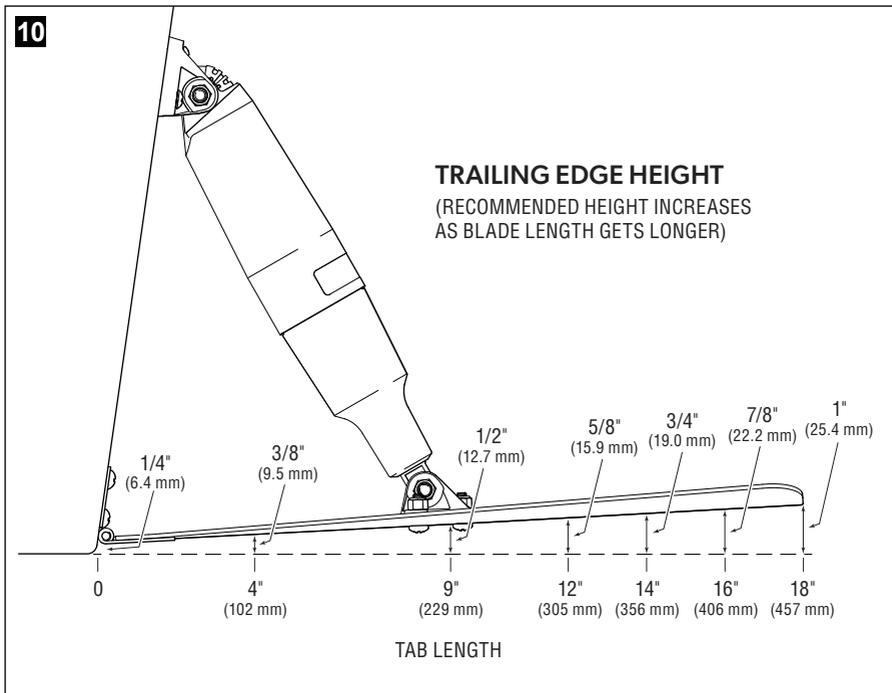
- ▶ Loosely assemble the transom bracket to the actuator as shown in figure 8. Insert the actuator mounting clevis into the bracket and install the pivot bolt in the bracket and loosely fasten the washer and nut. Do not route the harness through the bracket just yet.



- ▶ Rotate the actuator shaft (fig 9 item 9) clockwise until travel stops. The shaft can safely be forced to continue rotating clockwise to align the mounting holes at each end of the actuator. The actuator should come in this position out of the box, so adjustment may not be necessary.
- ▶ Insert the pivot bolt (fig 9 item 8) through the foot bracket and the actuator shaft. Install the washer and nut (fig 9 item 10 and item 4) and tighten to 30–40 in-lbs. Check that the actuator shaft pivots freely. Loosen the nut slightly if necessary. A small amount of resistance to movement is acceptable, but it must not bind or require more than a few pounds of force to move.
- ▶ Install the foot bracket (fig 9 item 3) to the tab (fig 9 item 2) using the supplied screws (fig 9 item 1) and nuts (fig 9 item 5). Insert the screws from the bottom of the tab. Torque the foot bracket fasteners (fig 9 item 1 and item 5) to 60–70 in-lbs.

**NOTE**

If a 10" or 12" actuator is being installed, install screws into the threaded inserts in the foot brackets provided.



- ▶ Lift the tab into the running position as shown in figure 10. To ensure the tabs do not drag when retracted, they must be tilted up from the hull level. The longer the tab, the greater the height above the hull level at the trailing edge of the tab. You will need a long straight edge, such as a carpenter's level, and a helper for this step.
- ▶ Once the tab angle is correct, position the transom bracket flush against the hull. Ensure that it lays naturally against the hull, with no force to the side.



NOTICE! Actuator wear

Misalignment will cause accelerated wear of the actuator.

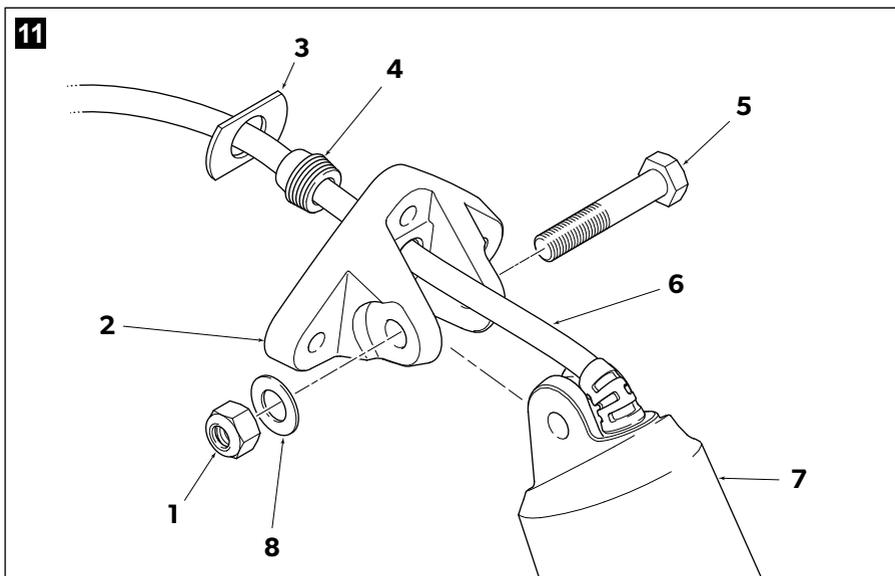
- ▶ Trace the outline of the mounting bracket (fig 11 item 2) on the hull.
- ▶ Remove the bracket from the actuator, line it up with the traced outline, and mark the mounting holes and the harness hole.
- ▶ Drill the mounting holes with a 3/16" (4.8 mm) drill bit to a depth of 1-1/4" (32 mm).
- ▶ Drill a 3/8" (9.5 mm) hole through the transom for the wiring harness.



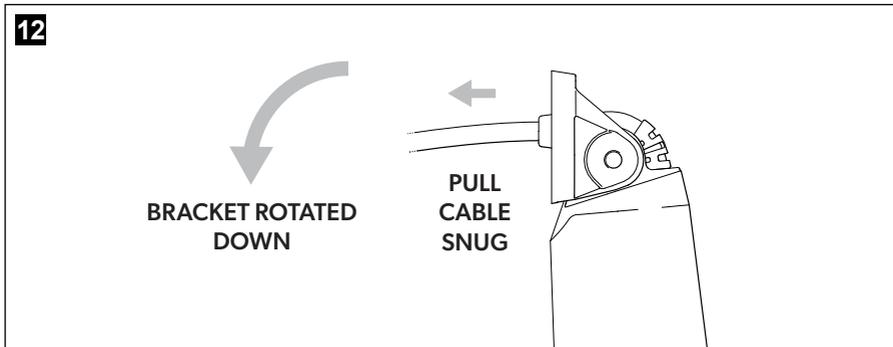
NOTICE! Potential damage

Ensure there is nothing behind the hull that could be damaged by drilling the hole through the hull for the cable.

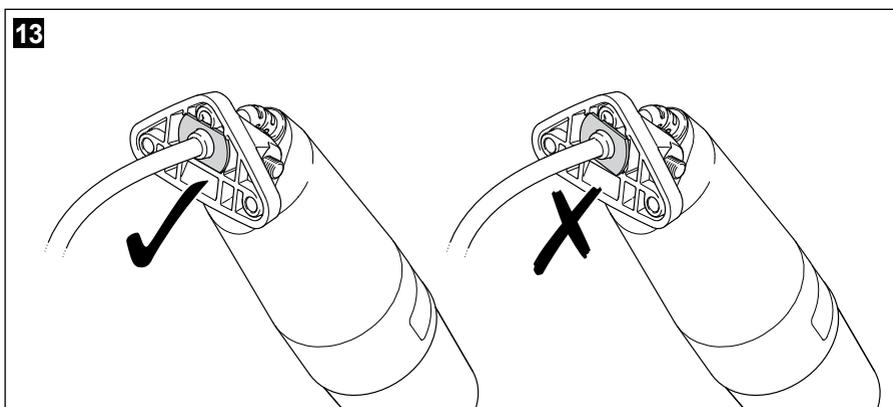
Now that the holes are drilled, you're ready to mount the actuator to the hull.



- Slide the mounting bracket (fig 11 item 2) over the actuator harness (fig 11 item 6) until you can mate it with the actuator (fig 11 item 7).
- Fit pivot bolt (fig 11 item 5) through the joint without installing the washer and nut (fig 11 item 8 and item 1).
- Grease the sealing grommet (fig 11 item 4) and slide it over the harness. Apply marine sealant to the sealing surface, then adjust it until it contacts the bracket.
- While the sealant is still pliable, adjust the slack in the harness by pulling it snug with the bracket rotated down as shown in figure 12.



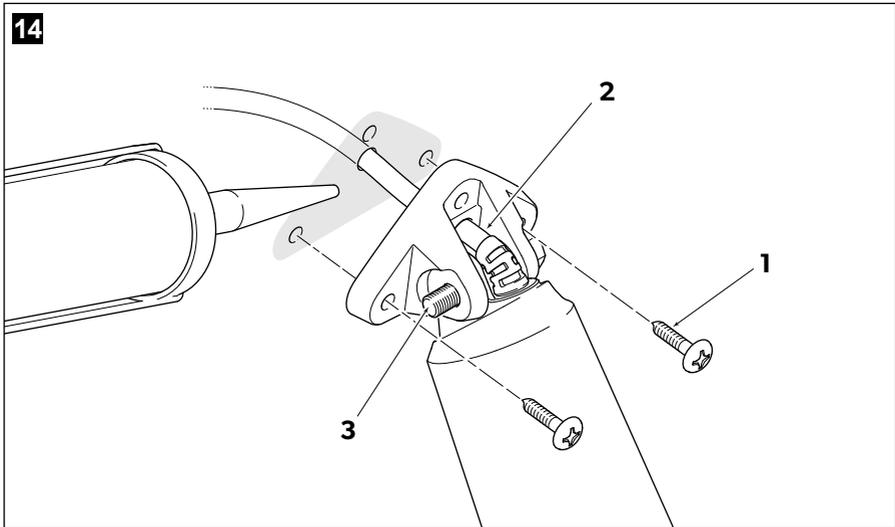
- Slide the harness compression plate (fig 11 item 3) over the harness until it fits in the recess in the rear of the bracket as shown in figure 13. Some sealant on the mating surfaces will help keep the compression plate in place during the following steps.



- Insert the harness into the hole in the hull and feed it through until the actuator bracket is almost at the hull.

- ▶ Liberally apply marine grade sealant to the bracket, grommet, mounting holes and to the harness entry.
- ▶ Double check that there is a small amount of slack in the harness between the bracket and the entry into the actuator (fig 14 item 2). Mate the bracket to the hull, and install the 2 screws (fig 14 item 1). Do not over-tighten the screws.

This is done to ensure the center screw does not damage the actuator harness during installation.



- ▶ When the bracket is fixed to the hull, remove the pivot bolt (fig 14 item 3) and lower the actuator to create clearance for the final screw, taking care not to pull the actuator harness out of the hull. Install the final screw, again taking care not to over-tighten. Reinstall pivot bolt, including the washer provided beneath the nut. Tighten nut to 30–40 in-lbs. Take care not to over-tighten.

7 Controller installation

The controller can be installed in a dash that is 1/4" to 1.5" thick and at any angle from horizontal to vertical. When determining where on the dash to place the trim tab controller, consider:

- are the buttons and indicator lights visible while operating the boat?
- is the dial accessible without interference from other dash components?
- is there enough clear space behind the dash? You will need at least 6" (155 mm) from the surface of the dash to any obstructions behind it.

Once you've determined the controller location:

- Tape the template (section 14) to the dash and mark the center point of the controller and the anti-rotation notch. The notch must be at the top.
- At the notch center point, drill a 1/8" diameter hole through the dash.
- At the controller center, cut a circular hole through the dash with a 2.5" (64 mm) hole saw. Take care to cut perpendicularly to the dash.



NOTICE! Potential damage

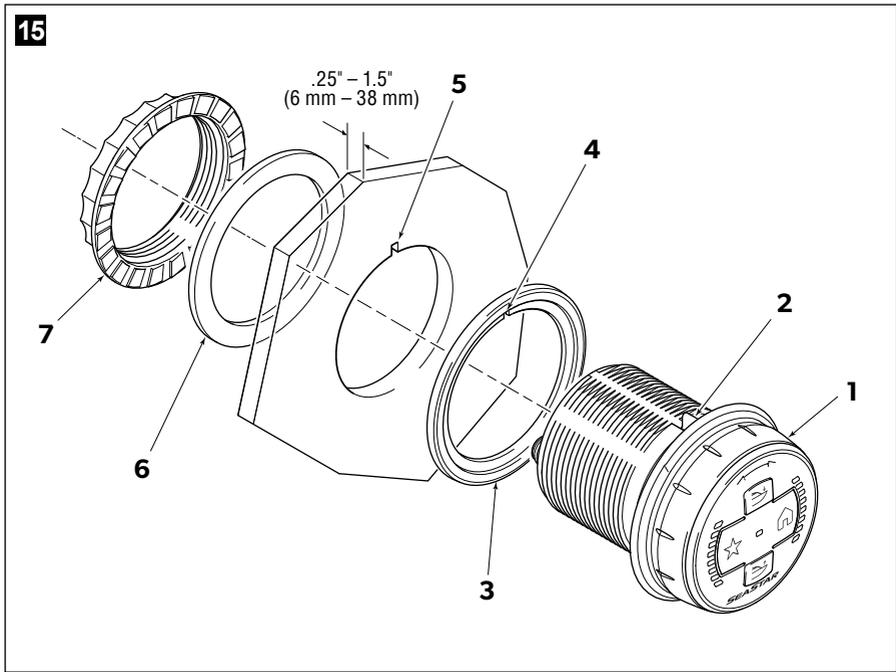
Check that there are no wires behind the dash before drilling holes.

- Use a saw or file to remove any remaining material between the large hole and the small hole to create the notch.
- Remove all rough edges and burrs from both front and rear surfaces of the dash.
- Remove the bezel nut (fig 15 item 7) and rear gasket (fig 15 item 6) from the controller (fig 15 item 1).
- Install the front gasket (fig 15 item 3) onto the controller with the notch (fig 15 item 4) aligned with the anti-rotation feature (fig 15 item 2) on the controller.
- Install the controller in the dash opening (fig 15 item 5). Make any adjustments necessary so that the front gasket fits flush and smooth with the dash surface.
- Place the rear gasket over the controller housing until it contacts the rear of the dash. Thread on the bezel nut and tighten securely by hand. Do not use a tool to tighten.



NOTE

If space is limited behind the dash, you may find it easier to connect the harness to the controller before installing it. See section 5 for harness information.



For installation of the controller into a location where pre-existing controller or rocker panel holes will still be visible, see "Trim Tab Cosmetic Controller Cover installation manual" (part # 682237).

8 Wiring and setup



NOTICE! This system is designed for use with 12VDC only.

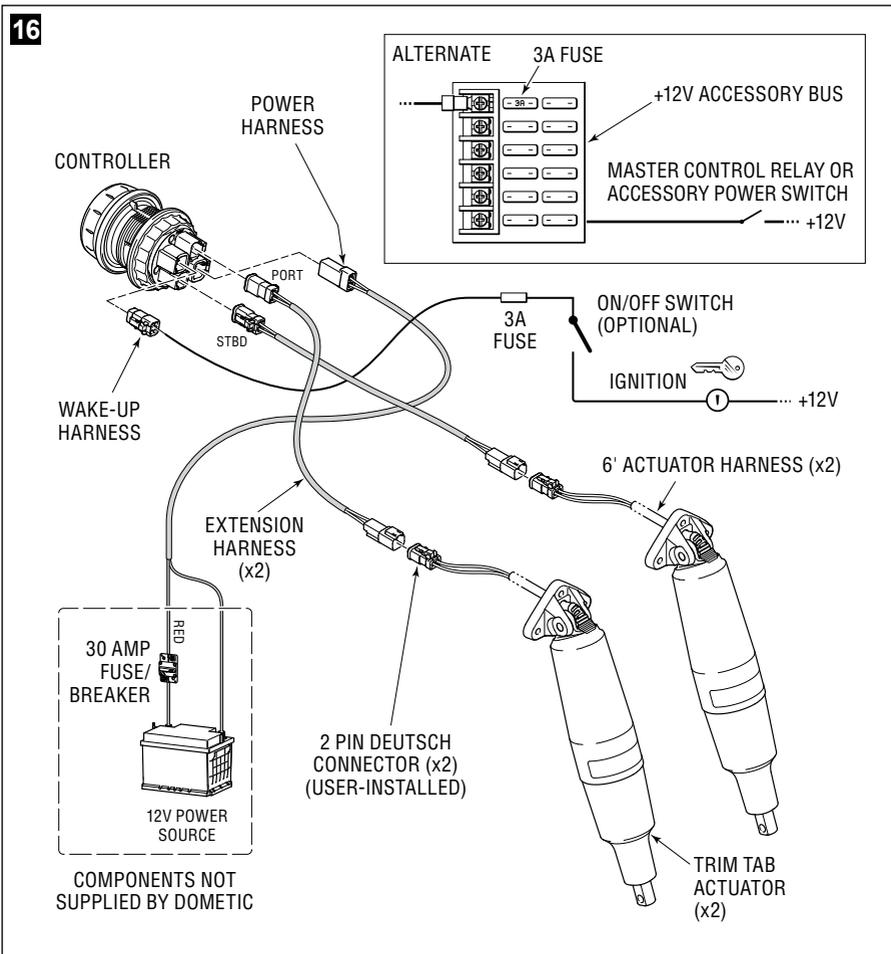
It is not compatible with 24VDC. Connecting to 24VDC will damage the electrical components



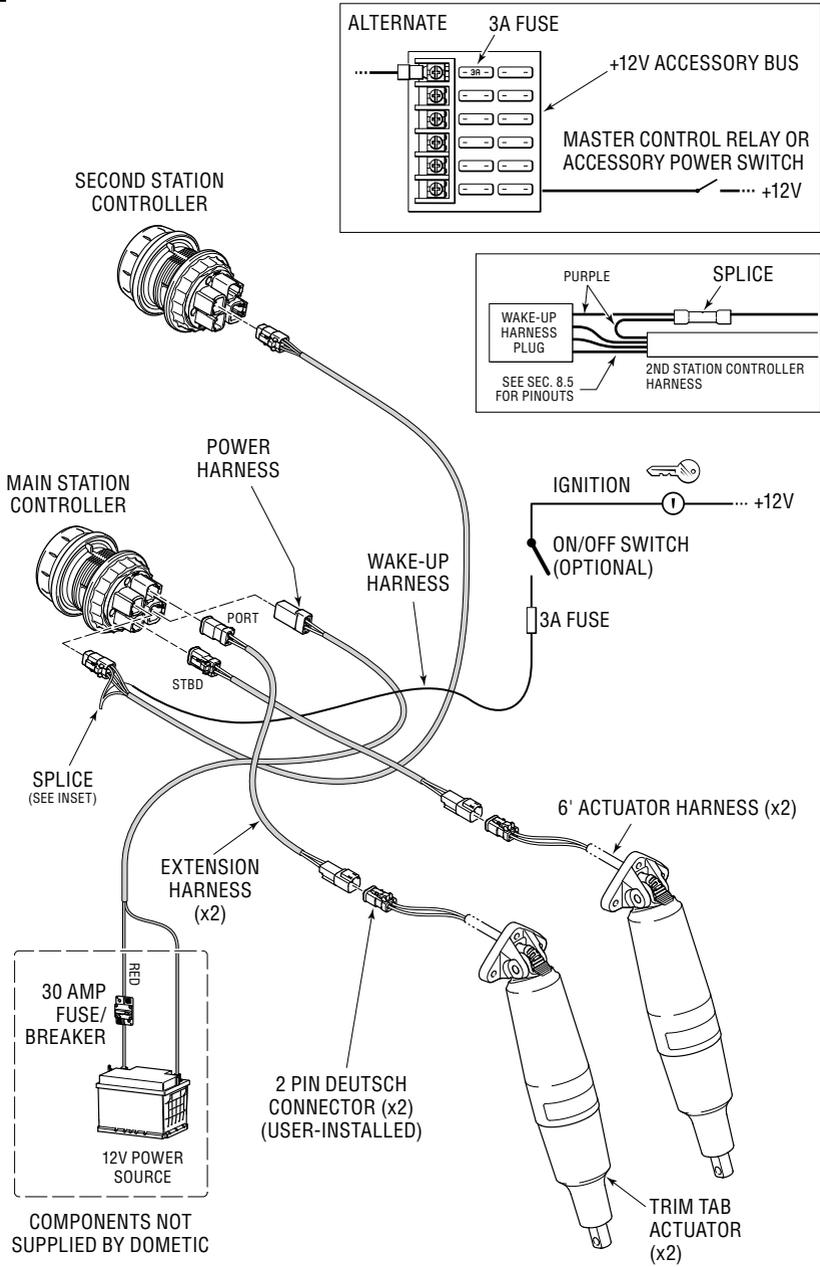
WARNING!

All parts of the electrical installation must comply with relevant ABYC or ISO standards. Harnesses and wiring must be rated for 105°C and comply with the latest revisions of SAE J1128 or ISO 6722.

Wiring diagrams



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8.1 Install connectors on actuator harnesses

The actuators come with a 6' (1.8m) harness with two conductors, red and black. The conductors are fitted with crimped terminals, but the connectors must be installed after the harness has been routed into the boat and sealed.

To install the connectors:

- ▶ Look at the connector and find the pin ID molded into the connector. The red wire goes into pin 1 and the black wire into pin 2.
- ▶ Grip the wire just behind the crimped contact barrel and hold the connector with the grommet facing you.
- ▶ Push the contact straight into the grommet until you feel a positive stop.
- ✓ You will hear a click and the contact will lock into place. A tug on the wire will confirm that it is properly secured.
- ▶ When both contacts are inserted, install the locking wedge from the pin side. Press it firmly until you hear a click.

If the wire needs to be removed:

- ▶ Remove the locking wedge.
- ▶ Gently pry on the inner lock tab and pull the wire out the back (wire side) of the connector until the terminal and wire is removed from the connector.

8.2 Connect actuators to controller

The actuators connect to the controller with extension harnesses, listed in table 8-1. The harnesses have a male end (no seal) and a female end (with seal). The female end connects to the controller in the smaller 2-pin receptacles marked 'PORT' and 'STBD.'

- ▶ Mark the harnesses 'port' and 'starboard' before installation so you don't mix them up.
- ▶ Route the harnesses so they are dry, away from sources of heat, protected from mechanical damage, and properly secured.
- ▶ Connect the harnesses to the actuators. Press the connector halves together until you hear a click and the lock engages.
- ▶ Plug the harnesses into the controller. Ensure the port and starboard actuators are plugged into the correct receptacles, and that the connector lock engages.
- ▶ Strain-relieve the connections at both ends.



CAUTION!

Use only one extension harness per actuator. Maximum length is 30'.

Actuator Extension Harnesses

Part no.	Length, ft (m)	Part no.	Length, ft (m)
CM20049	12 (3.6)	CM20051	24 (7.3)
CM20050	20 (6.1)	CM20052	30 (9.1)

Table 8-1.

8.3 Connect ignition source

The purple wire on the wake-up harness (CM20047) is used to wake up the trim tab system when the engine ignition or an accessory power switch is on. The tabs will not operate unless this wire is connected to a 12V source. Once the system is woken up the tabs will retract automatically when power is switched off to the wire (if main power is connected).

Option 1 - Engine ignition (preferred)

To turn the trim tab system on and off with the engine ignition, switch the source through the engine ignition switch as shown in the wiring diagrams. For multi-engine applications you will need one or more Dual Ignition Kits (HA1201) to ensure that the trim tab system is powered when any of the engines are running. The number of kits you will require is one less than the number of engines on the boat.

Option 2 — Accessory bus

If you have a 12V accessory bus that is switched on with a master control relay, accessory power switch, or battery switch, you can connect the purple ignition wire to it.



NOTE:

If the accessory bus does not switch off with engine ignition you will lose the automatic tab retraction on ignition-off feature.

8.4 Power

The system power connects to the main station dial controller with the power harness (CM20048) supplied with your kit. The power harness is 6' (1.8m) long, so the power source must be near the main helm station, within reach of the harness. The preferred source is a battery or battery switch, but you may use a panelboard or a busbar provided it is supplied with wire sized according to table 8-2. If you do not have a power source within reach, refer to section 8.4.1.

**NOTICE!**

The trim tab system requires a robust power source. Voltage drop from undersized conductors may cause faults in the trim tab controller.

In operation the system will momentarily draw up to 30A under heavy load. The system must be protected with a properly rated fuse or breaker. It is important that power supply wires are correctly sized for the load according to ABYC or ISO requirements.

**WARNING!**

Panelboards or busbars must be supplied with a conductor and circuit protection device appropriately sized for all loads that may be connected to it.

To connect to a power source at the helm:

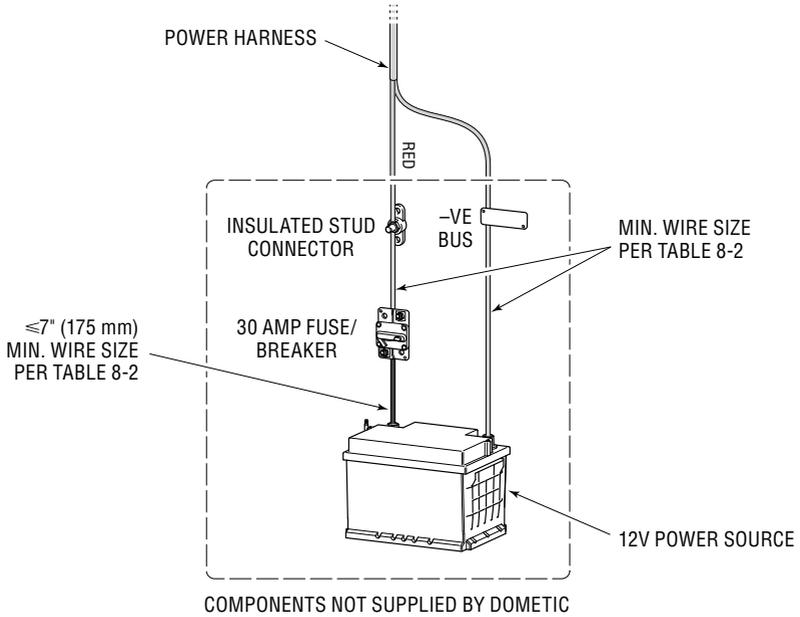
- ▶ Install a 30A fuse or circuit breaker within 7" (200 mm where ISO applies) of the power source as required by ABYC standards. Use minimum 10AWG wire between the power source and the fuse/breaker.
- ▶ Connect the harness red wire to the fuse/breaker.
- ▶ Connect the harness black wire to the battery negative terminal or negative bus.
- ▶ Plug the harness connector into the large 2-pin receptacle on the controller. Insert the connector until the lock engages.

8.4.1 No power source at helm

If there is no DC power source of suitable capacity within the harness length of the dial controller you will need to create one. One possibility is illustrated in figure **18** and described below.

- ▶ Install an insulated stud connector within reach of the power harness.
- ▶ Install a 30A fuse or circuit breaker within 7" (200 mm where ISO applies) of an available power source as required by ABYC standards. Use wire size shown in table 8-2.
- ▶ Use red wire of the size shown in table 8-2 to connect the breaker to the insulated stud connector. Take care to route and secure the wire properly.
- ▶ If there is no negative bus available, install one and connect to the battery negative with black wire of the size shown in table 8-2.
- ▶ Connect the actuator harness as described in the previous section.

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Total length of wire from power source to power harness connection and back to source	Recommended wire size AWG (mm ²)*
< 25' (7.6m)	12 (4)
< 40' (12.2m)	10 (6)
< 60' (18.3m)	8 (10)
< 100' (30.5m)	6 (16)

Table 8-2. *Based on 10% voltage drop per ABYC E-11.

8.5 Connecting a second dial controller

The second station dial controller connects to the main controller with a 30' (9.1m) harness (CM20055). At one end of the harness is a four-pin connector, at the other are three terminated leads and one partially stripped purple wire. The connector end of the harness will go to the second station controller.

At the second station:

- Route the CM20055 harness from the second station to the main station in a way that protects it from water, sources of heat, and mechanical damage.
- Plug the harness into the mating receptacle on the second station controller until the lock engages.

At the main station:

- Unplug the wake-up harness (see section 8.3) from the main station controller and remove the locking wedge from the connector.
- Insert the terminated leads of the CM20055 harness into the wake-up harness connector according to the pin locations in table 8-3 below. The leads install in the same way as the actuator harness connectors (section 8.1).
- Re-install the locking wedge into the connector and plug it in to the controller.
- Splice the purple wire into the ignition source connection (section 8.3) as shown in the wiring diagram (figure 17).

Wire color	Function	Pin ID (molded into connector)
Blue	CAN High	1
Black	Ground	2
White	CAN Low	4

Table 8-3.

8.6 System setup

The Trim Tab System has the following configuration settings:

- Actuator stroke length
- Roll sensitivity
- Auto-brightness disable.



NOTE:

Unless you are using a 4.25" stroke actuator, these steps are all optional and do not need to be adjusted for the system to work.

To enter setup mode:

- ▶ Key on the ignition.
- ▶ Simultaneously press and hold the Bow Down and Bow Up buttons for five seconds.
- ✓ The status LED will alternate blue and magenta.
- ✓ The port LEDs are all off, indicating that you are in step 0.

Press the Home button at any time to exit setup mode. The current parameter will not be saved, but previously saved parameters are not affected.

8.6.1 Step 0 — Actuator length

The default actuator stroke length is 2.25". If you are using a 4.25" stroke actuator you will need to adjust this setting.

- ✓ One starboard LED will be illuminated to indicate the default actuator length.
- ▶ If you are using a 4.25" stroke actuator, rotate the dial clockwise until two LEDs are illuminated.
- ▶ Press Favorite to save the parameter and move to the next step.
- ✓ One port LED illuminates to indicate you are now in Step 1.

If you change the actuator length you will need to cycle power to the trim tab system before operating it. If you are finished with setup you can do this now. Otherwise, wait until you've completed the setup.

8.6.2 Step 1 — Roll sensitivity

The roll sensitivity refers to how much the tabs move for a given movement of the control dial. Increasing the sensitivity will increase tab movement. You can adjust the sensitivity from 1 (least sensitive) to 3 (most sensitive) as follows.

- ✓ The number of starboard LEDs corresponding to the sensitivity setting will illuminate. The default is 2.
- Rotate the dial clockwise to increase sensitivity, or counterclockwise to decrease sensitivity.
- Press Favorite to save the parameter and move to the next step.
- ✓ Two port LEDs illuminate to indicate you are now in Step 2.

8.6.3 Step 2 — Auto-brightness disable

By default, the LED brightness is controlled automatically with an ambient light sensor. If manual control is preferred, you can disable the automatic function.

- ✓ One starboard LED will be illuminated when Auto-brightness is enabled.
- Rotate the dial clockwise until two starboard LEDs are illuminated. This will disable the function.
- Press Favorite to save the parameter and exit setup mode.
- ✓ The status LED will illuminate steady green to indicate the system is ready.

If you changed the actuator length in Step 0, cycle power to the system now.

9 Faults and troubleshooting

9.1 Fault types

Non-critical system-level faults

A flashing yellow status LED indicates a fault that does not affect the actuators. An example is a faulty dial sensor. The trim tabs would still be operable using the bow up and bow down buttons, but the dial would not work.

Critical system-level faults

A flashing red status LED indicates a critical fault that will prevent one or both actuators from operating but is not caused by the actuators.

Conditions that can cause a critical fault include:

- low or high battery voltage (these will reset automatically if the voltage condition is corrected).
- excessive voltage drop when the actuators are under high load, usually caused by undersized power supply wires.

Actuator faults

When the status LED is flashing red, a flashing tab position LED indicates an actuator fault. The LED corresponding to the last known position will flash.

Conditions that can cause an actuator fault include:

- an actuator harness is unplugged, corroded, or otherwise not making a connection.
- a short circuit in the actuator or harness.
- a mechanical fault in the actuator.

9.1.1 Fault recovery

In the event of a fault you are unable to quickly identify and correct you will usually need to take your boat to a marine technician for diagnosis and repair. If you are on the water, experience and judgment may suggest that you return to port immediately, especially if conditions are changing. A tab position that has the boat in a good running attitude now may be a poor tab position if the wind changes.

If the tabs are stuck in a position that gives the boat a poor running attitude, the best response is to slow down. The slower the boat moves the less effect the tabs have on attitude.

9.2 Troubleshooting

Problem	Cause	Remedy
The system status LED is off.	The ignition is not on.	Turn on the ignition.
	Circuit breaker or fuse has tripped.	Reset breaker or replace fuse.
	The controller is not receiving a wakeup signal.	Check the ignition sensing wire.
The system status LED is flashing yellow.	A system-level fault is causing loss of some functionality.	Have the system inspected by a marine technician.
	If one or both tab position indicators are off, the tab(s) have failed to home correctly.	Try pressing the Home button again.
The system status LED is flashing red.	Battery voltage is too high or too low.	Check battery voltage. The system will recover when voltage is within range (see specifications).
	Voltage drop at high actuator load is causing a fault.	Check that the power source is adequate. See section 8.4.
	An open or short circuit has been detected at the affected actuator(s).	Check the actuator harness connections at the controller and actuators. If connections are ok, contact a marine technician.
When turning dial, boat rolls in the opposite direction.	Actuator harnesses plugged in incorrectly.	Check that the port actuator is plugged into the controller receptacle marked "Port".
When pressing Bow Down, the bow goes up, and vice versa.	Wires are reversed into both actuator power harness connectors.	Make sure the red wire goes into pin 1 on the 2-pin connector.
When pressing Bow Up or Bow Down the boat rolls.	Wires are reversed into one of the actuator power harness connectors.	Make sure the red wire goes into pin 1 on the 2-pin connector.

10 Maintenance and cleaning



NOTICE! Material damage

- Do not use acetone, or cleaners containing ammonia, acids, or any other corrosive ingredients.
- Some products formulated for cleaning fiberglass hulls are known to aggressively corrode stainless steel shafts. If using a hull cleaner, avoid overspray on to the actuators. Rinse off any overspray immediately with fresh, clean water.
- Do not use sharp or hard objects to clean the controller. Damage to the keypad membrane may occur.
- The controller bezel has a drain hole at the bottom. Do not spray with water from below.

Whenever the boat is out of the water:

- Rinse the tabs and actuators with clean, fresh water. Avoid hitting the actuator with high pressure spray from a pressure washer.
- Remove any marine growth such as weeds, barnacles, and shellfish from the tabs and actuators.
- Inspect tabs and actuators for damage, corrosion, or anything that might impair function.
- Check the condition of zinc anodes, if present, and replace if necessary.
- Inspect the electrical harness for wear or damage.



NOTICE! Corrosion

- The stainless steel tabs are corrosion resistant, but not corrosion proof.
- Properly installed zinc anodes will help prevent galvanic and stray current corrosion.
- Some minor corrosion on the tabs may still occur and is not a warrantable defect.

Controller:

- Clean the controller occasionally with a damp cloth.



NOTE: Invasive species

Do your part to protect our waterways from invasive species. If trailering your boat to a different body of water than you normally boat in:

- Thoroughly inspect trim tabs and actuators for any weeds and shellfish.
- Many boat builders mount the trim tabs in hull pockets that can easily hide invasive species. Be sure to check these recesses.

11 Warranty

The following is an excerpt from the complete SeaStar Solutions warranty policy, available in our product catalogue or on our website:

www.seastarsolutions.com/support-2/warranty-2/seastar-solutions-warranty

We warrant to the original retail purchaser that **Marine Canada Acquisition Inc. DBA SEASTAR SOLUTIONS** (herein forward referred to as SeaStar Solutions) products have been manufactured free from defects in materials and workmanship. This warranty is effective for two years from date of purchase, except where **SeaStar Solutions** products are used commercially or in any rental or income producing activity, in which case this warranty is limited to one year from the date of purchase for hydraulic products and ninety days for mechanical and electrical products.

We will provide replacement product without charge for any **SeaStar Solutions** product covered by this warranty, which is returned (freight prepaid) within the warranty period to the dealer from whom such products were purchased, or to us at the appropriate address. In any such case, **SeaStar Solutions** products found to be defective and covered by this warranty will be replaced or repaired at **SeaStar Solutions'** option, and returned to the customer.

11.1 Return goods procedure

Contact our warranty department at Lit-tech_web@dometic.com for instructions.

11.2 Technical support

Phone: 1.877.663.8396

email: Lit-tech_web@dometic.com

Hours: Monday to Friday 7:30 am — 4:30 pm CST

12 Disposal

Dometic cares about the life cycle environmental impact of our products. Please help us by recycling packaging materials and properly disposing of our products at the end of their useful life.

The actuators and controller are electro-mechanical components. They contain no materials known to be hazardous. The actuators contain a mix of recyclable metal parts, recyclable copper wiring, and non-recyclable plastic components.

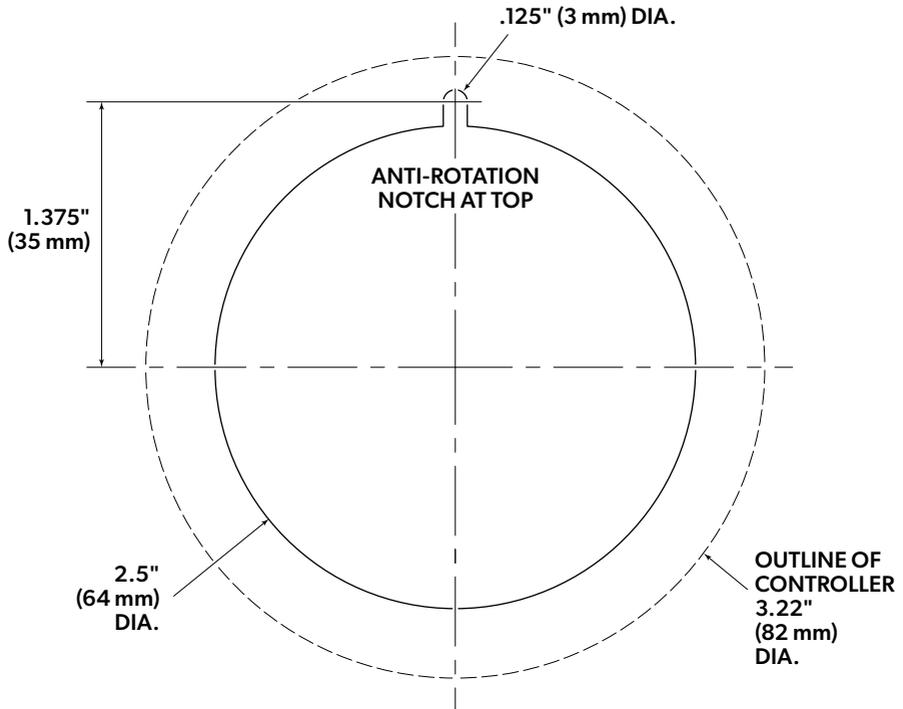
- ▶ Place the packaging in the appropriate recycling waste bins whenever possible.
- ▶ At end-of-life, contact your local authorities for guidance regarding the appropriate disposal of electronic and mixed metal/electronic waste.

13 Technical data

Connection voltage	12V DC nominal (9/16V min/max per SAE J1455)
Current draw at load	5.0A at 300 lbf (1340 N) 9.0A at 600 lbf (2680 N)
Maximum static load, tension	1000lbf (4.4 kN)
Maximum static load, compression	1000lbf (4.4 kN)
Weight, actuator	2.25" stroke: 3.6 lb (1.6 kg) 4.25" stroke: 3.9 lb (1.8 kg)
Weight, controller	.5 lb (.24 kg)
Weight, tab	Varies with tab, approximately .036 lb/square inch (2.54 g/square cm) of tab, exclusive of brackets and hinges

Table 10-1.

14 Installation template



NOTE

If this template has been downloaded electronically or copied from another document, please verify all template dimensions before use.



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