

GENESIS | STORM™

SPECIALIZED TOP OFF & REPLENISHMENT MODULE

INSTALLATION AND USE



Congratulations on your purchase of the GENESIS | STORM™ Specialized Top Off and Replenishment Module! Please take a few moments to read and follow these installation instructions so you can fully enjoy your new system right out of the box. If you have any questions at all, please visit us at www.GenesisReefSystems.com, or email us at Support@GenesisReefSystems.com. We are always happy to hear from our customers!

The following items have been shipped with your system:

- (1) STORM™ Control Module
- (1) Level Sensor Harness with Two Level Sensors (2 Harnesses included with Pro System)
- (2) Level Sensor Vertical Members
- (4) Level Sensor Shrouds (6 included with Pro System)
- (4) Suction Cups
- (2) Mounting Screws
- (1) ROCv™ Replenishment Module (Pro System only)
- (2) Standalone Level Sensors (Pro System only)
- (1) Pump (Optional)

Installation

Your STORM™ Specialized Top Off & Replenishment Module's installation is very straightforward. Following this simple procedure will allow you to enjoy completely automated top off maintenance in no time.

1. Find a suitable mounting location for your STORM™ Control Module

- The Control Module must be located in an easily accessible, dry location protected from accidental splashes.
- The power cords and optional RENEW™ communication cable are approximately 6 feet in length, and level sensor cables are approximately 8 feet in length. Ensure that they will reach from the Control Module to their respective locations before permanently mounting the components. Extension harnesses for the level sensors, metering reservoirs, and communication cable are available if needed.

2. Mount the Control Module

- Ensure no electrical wires or plumbing reside behind or within the mounting area. Be very careful when drilling or driving screws into a blind mounting location!
- Using the supplied template as a guide, mark and drill two pilot holes as indicated.
- Insert wall anchors if necessary, following all directions provided with the anchors.
- Drive the mounting screws into the holes or anchors, leaving just less than 3/8" inch between the screw head and the mounting surface.
- Slip the Control Module onto the screws and gently pull down about 1/2" until fully seated. There should be no "play" between the Control Module and the mounting surface when properly secured.

3. Mount the Level Sensors

- The Level Sensor Shrouds are designed such that they can be used in many different configurations.
 - The Shroud Cover can be inserted onto the rear of the Shroud to create a hanger that is adjustable for tank lip widths as narrow as 1/2" or as wide as 2-1/4"
 - The shrouds will slide onto and secure themselves on any standard 1/2" PVC pipe, allowing them to be positioned at any height
 - The shrouds can be hung from one another using the T-shaped tabs and slots on the sides, allowing multiple sensors to be positioned on a single vertical member at slightly different heights.
- Placement of the Sensors
 - Two diagrams are provided in this manual to help you place your Level Sensors. Follow the diagram that corresponds to your preferred operating mode. Operating modes are explained later in this manual. Keep in mind that some of the Level Sensors shown in the diagrams are optional and therefore your STORM™ may not have some of the sensors included.

4. Connect the Components

NOTE: ALL WIRES SHOULD HAVE A DRIP LOOP TO PREVENT WATER FROM ENTERING THE CONTROL MODULE

- Follow the diagrams and plug your Level Sensors into the appropriate connectors on the STORM™ Control Module. Again please keep in mind that some of the Level Sensors shown may not have been included with your STORM™ system, depending on the model that you purchased.
- If using your STORM™ system with a RENEW™ automatic water change system (see our website for why you want to do this!), plug the communication harness supplied with the RENEW™ system into the center 6-pin receptacle on the back of the STORM™ Control Module, and plug the other end into the center 6-pin receptacle on the back of the RENEW™ Control Module.

5. Attach a segment of appropriately sized non-toxic tubing to a submersible pump and place the pump in the top off water bin

6. Route the tubing to the aquarium or sump

- The tubing should be secured such that the end of the tubing is just above the highest water level in the in the aquarium or sump, so that the water will run down the side of the tank as the water level drops. Doing so will improve water flow, reduce noise, and prevent water from siphoning back into the top off bin. Cut the tubing to length if necessary.

7. Plug the pump's power cord into the "TOP OFF PUMP" AC receptacle

- This receptacle is located on the bottom right of the Control Module.

8. Plug the Control Module's power cord into a GFCI-protected 110VAC outlet

Getting to know your STORM™ Specialized Top Off & Replenishment Module

1. After installing your system, plugging it in, and preparing your top off water, turn on the STORM™ system by using the power switch on the front face of the Control Module. When power is “ON,” the switch will illuminate. Several LED indicators and the display will illuminate when the power is on as well.
2. There are four user input buttons on the Control Module. Starting on the left and moving toward the right, the buttons are AUXILIARY MODE, PAUSE/RESET, and then INCREASE and DECREASE on the right. All are labeled accordingly.
3. Depressing the AUXILIARY MODE (AUX) button tells the system how to operate the auxiliary power outlet (the left-most outlet). Momentarily pressing the button will toggle the outlet on or off. If the “ON” indicator is illuminated, the outlet is energized and a peripheral device will receive power. If the “OFF” indicator is illuminated, no electricity is being delivered through the outlet, so the device will be turned off. Pressing and holding the AUX button for three seconds will change the auxiliary outlet’s mode to “ROCv™” to allow use with the optional ROCv™ module. When in ROCv™ mode, the system energizes and de-energizes the auxiliary outlet based the ROCv™ module’s Level Sensors’ input. Pressing the AUX button again while in ROCv™ mode will change the auxiliary mode to “OFF.”
4. The default operation of the STORM™ module is to monitor the Level Sensor input and turn the pump on and off accordingly. This operation can be suspended by pressing the PAUSE / RESET button once. The “MONITORING” and “TOPPING OFF” indicators will blink to acknowledge that the system is paused. Pressing the button again will resume normal operation. Pressing and holding the button for three seconds or longer will manually turn the pump on and will keep the pump running until the button is released.
5. The INCREASE and DECREASE buttons perform two functions depending upon whether they are depressed individually or simultaneously. Pressing either the INCREASE or DECREASE button individually will increment or decrement the number of seconds that the pump will stay on during a top off cycle. Pressing the INCREASE and DECREASE buttons at the same time will enter the STORM’s™ very useful Min-to-Max Setup mode, allowing the pump’s duration of operation to be set based on the minimum and maximum desired water levels. See more in the Operation section that follows.
6. The power switch can be used at any time to shut off your STORM™ system and is equipped with a thermal circuit breaker that will automatically shut down the system if it draws too much current.

Operation

Once you've installed and familiarized yourself with your STORM™ | Specialized Top Off & Replenishment Module, it's time to put it to work. Your STORM™ has multiple operating modes to choose from to suit your needs.

Operating Mode S1:

Operating Mode S1 allows longer periods between top off cycles and allows you to tailor the amount of water added. When the Aquarium/Sump Level Sensor detects a low water level it will turn the top off pump on for the specified number of seconds. If the Level Sensor still detects a low water level after the number of seconds specified, it will begin another cycle. However, if after this second attempt the water level is still below the Level Sensor, as a safety feature the system will suspend all top off functions. This mode should be used if you want to limit the number of top off cycles, if you want the pump to turn on for a specified duration, or if you would like to add a little "extra" water with each top off cycle.

Operating Mode S2:

Your STORM™ is shipped to you in Operating Mode S2. When initially powered on, the STORM™ automatically begins monitoring the sump level. Whenever the water level drops it will turn the top off pump on until the Aquarium/Sump Level Sensor detects the water level has risen back up to the optimal level that you have set. Instead of using the time set as the duration for the pump to be turned on, it uses the time you set as a "timeout" function. The system will turn the top off pump on until the optimal water level is achieved or until the pump has been on for the duration set, whichever comes first. If the pump has been on for the length of time specified but the Sensor has not detected that the water has reached the optimal level, the STORM™ will shut the pump off as a safety feature and alert the user that there is a problem. Operating Mode S2 maintains a very precise water level, and in order to do so it must cycle often, turning your top off pump on and off much more frequently than Operating Mode S1.

Operating Mode S3:

You may prefer to have your STORM™ add water until an exact water level is achieved. This is particularly useful in conjunction with a kalkwasser reactor, where a very low flow rate is needed. This operating mode requires unique placement of the Level Sensors, as shown in the diagrams included in this manual. When the lower Sump Min Sensor detects that it is time to top off, the STORM™ will turn on your top off pump and it will continue to run until the higher Sump Max Sensor detects that the water has risen to the desired level. It will then turn the pump off and resume monitoring the water level. It is important to note that this mode removes some redundancy since the top off bin's water level is no longer monitored for a low level (except for ROCv™ functions if present). It also does not utilize a "timeout" function as in Operating Modes S1 or S2 due to the extremely low flow rates needed for use with a kalk reactor.

Any operating mode can be used and is purely a matter of personal preference. In Operating Modes S1 and S2 your STORM™ monitors the water level in your top off bin. If it drops below the Top Off Bin Level Sensor, the STORM™ will temporarily suspend top off functions to prevent your pump from running dry. It will also let you know by flashing the "BIN LEVEL" indicator. When the water level in your top off bin rises above the Top Off Bin Level Sensor, the STORM™ will resume top off functions automatically. Operating Mode S3 does not monitor the water level in your top off bin, so it is important that you periodically check to ensure there is adequate top off water available.

Operating Mode Setup

To change operating modes, simultaneously depress and hold the AUXILIARY MODE and PAUSE / RESET buttons for five seconds. The display will show "S1", "S2", or "S3", depending on which mode you are currently using. To change the operating mode, release the AUX and PAUSE / RESET buttons and press the INCREASE or DECREASE button until the mode you choose to use is displayed. After making your choice, the selected mode will flash and Operation Mode Setup is automatically completed.

Manual Operation of Top Off Pump

You can manually turn the top off pump on by simply pressing and holding the PAUSE / RESET button. After holding for three seconds the pump will be turned on and will remain on until you release the PAUSE / RESET button. This is useful if your top off bin's water level was depleted and a significant amount of water evaporated from your sump while new water was being prepared. After releasing the PAUSE / RESET button, the STORM™ will resume monitoring the water level as usual.

Auxiliary Mode

If you have a Pro system or you've added a ROCv™ module, place the STORM™ in the ROCv™ auxiliary mode. The STORM™ will begin monitoring the ROCv's™ Level Sensors and will automatically start and stop the water supply to your reverse osmosis filter. Otherwise, simply press the AUX button to toggle the power to the auxiliary outlet on or off to control any peripherals that you have plugged in.

Min-to-Max Setup (S1 Mode)

You can manually adjust the operation of your STORM™ to raise the water level just the right amount in Operating Mode S1 by trial and error, but your STORM™ makes this task easier with its very useful Min-to-Max Setup mode. This mode allows you to easily set the maximum desired water level that you want your sump to be at after your STORM™ performs a top-off cycle. Let's assume the water level in your sump is just above or at the minimum desired level, and the "Aquarium / Sump" Level Sensor is at the desired water level:

1. Press both the INCREASE and DECREASE button simultaneously for three seconds. This enters the Min-to-Max Setup mode, and the display will indicate "P1"
2. When the water level evaporates enough to drop and trip your Float Sensor, the display will indicate "P2," but it will not automatically top off.
 - a. If your sump level is significantly higher than the Float Sensor's trip level, leave and check back periodically to see when the display indicates "P2."
 - b. If your sump level is very close to your desired minimum level, you can choose to advance to the next step immediately by pressing the Float Sensor downward until it advances to "P2"
3. When the display indicates "P2," press and release the PAUSE / RESET button. The STORM™ will add water back to the sump until the Level Sensor detects that the sump is at the minimum desired water level.
 - a. This adds any water back that has evaporated below your minimum water level while you were away.
 - b. If it is already at the minimum desired water level your STORM™ will automatically advance to the next step.
4. When the display reads "P3," press the PAUSE / RESET button again. This will initiate a top off cycle and the display will change to "P4." Keep an eye on the water level!
5. When the maximum desired water level is achieved, simply press the PAUSE / RESET button for a last time. You're done!

The number of seconds it took to raise the water level from the minimum desired level to your ideal water level is automatically stored. The next time the water level drops to the Level Sensor, the pump will be turned on and will run for the same amount of time, thereby adding the same amount of water to your aquarium or sump. If there is ever a need to adjust the number of seconds manually, simply press the INCREASE or DECREASE buttons individually to add or remove a few seconds from the cycle.

Interrupting and Resuming the Top Off and Auxiliary Functions

If you ever need to suspend the top off function of your STORM™ system, simply press and release the PAUSE / RESET button. The "MONITORING" and "TOPPING OFF" indicators will blink to indicate that the top off function is paused. To resume, simply press and release the button again. Note that pausing the top off function will NOT affect the auxiliary mode. In order to suspend the auxiliary functions, simply depress and release the AUX button until the "OFF" indicator is illuminated.

Interaction with the Genesis | RENEW™ Automatic Water Change System

Your STORM™ can be connected to a Genesis | RENEW™ Automatic Water Change System to allow both units to be installed in an aquarium system and work together without manually disabling the STORM™. The STORM™ will not attempt to top off the sump or aquarium any time the RENEW™ unit is actively performing a water change cycle. This prevents the STORM™ from attempting to replace the waste saltwater removed by the RENEW™ system with fresh water. Doing so would adversely affect salinity in a saltwater aquarium and could eventually result in overflowing the sump in either a freshwater or saltwater aquarium. When the top off functions have been disabled by the RENEW™ system, the LED indicator on the lower right of the STORM's™ Control Module will illuminate to indicate that they have been suspended, and the "MONITORING" indicator will not be illuminated.

STORM™ Indicators and their Meanings

The indicators on the STORM™ are designed to let the user know at a quick glance what function the Auxiliary Mode is set to perform, the set maximum duration for a top off sequence, and whether the STORM™ has detected any unusual conditions that need to be addressed. Below is a list of the indicators and details of their behavior.

AUXILIARY MODE ON	When illuminated, the Auxiliary Power Receptacle is energized and any device plugged into the outlet will receive power.
AUXILIARY MODE OFF	- When solidly illuminated, the OFF indicator denotes that the Auxiliary Power Receptacle is not energized, and any device plugged into the outlet will not receive power. - When the OFF indicator is flashing, it indicates that the Auxiliary Mode had been set to “ON” by the user, but the STORM™ has de-energized the Auxiliary Power Outlet because the water level in the top off bin has risen to either the ROCv™ Max Sensor or Failsafe Sensor 2, or these sensors have been closed by another means. After addressing the issue either press the Mode button to set the Auxiliary Mode to “ON” or cycle power to the unit using the red power switch.
AUXILIARY MODE ROCv™	When illuminated, the ROCv™ Mode indicator denotes that the unit will monitor the water level in the top off bin and will control the production of water through your reverse osmosis filter.
ROCv™ VALVE OPEN	Solidly illuminated: The STORM™ is refilling the top off bin and operation is proceeding normally. Flashing: The STORM™ has detected that the water level in the top off bin has risen to Failsafe Sensor 2, or Failsafe Sensor 2 has been closed by another means. This is an issue which needs to be addressed because the rising water level in the top off bin should trigger the ROCv™ Max Sensor first, instructing the STORM™ to stop the production of water through the reverse osmosis filter. Address the issue and cycle power to the unit using the red power switch.
ROCv™ MONITORING	Solidly illuminated: The STORM™ is monitoring the water levels in the top off bin and is waiting for the water level to drop to the ROCv™ Min Sensor before refilling the top off bin. Operation is proceeding normally. Flashing: When the ROCv™ Monitoring indicator is flashing, the STORM™ has detected that the water level in the top off bin has risen to Failsafe Sensor 2, or Failsafe Sensor 2 has been closed by another means. This is an issue which needs to be addressed because the rising water level in the top off bin should trigger the ROCv™ Max Sensor first, instructing the STORM™ to stop the production of water through the reverse osmosis filter. Address the issue and cycle power to the unit using the red power switch.
MONITORING	Solidly illuminated: The STORM™ is monitoring the water levels in the sump and is waiting for the water level to drop to the Sump Sensor before starting a top off cycle. Operation is proceeding normally. Flashing: there are two possible reasons for this indicator to flash, as follows: - The user has intentionally paused the top off functions by pressing the yellow PAUSE/RESET button. When ready to resume normal monitoring of the sump level, press the PAUSE/RESET button a second time. - The STORM™ has detected that the water level in the sump has risen to Failsafe Sensor 1, or Failsafe Sensor 1 has been closed by another means. Address the issue and press the yellow PAUSE/RESET button to resume operation.
SUMP LEVEL	Solidly illuminated: The water level in the sump is at or above the Sump Sensor. Operation is proceeding normally. Flashing: The water level in the sump is below the Sump Sensor, and a top off cycle is in process. Not illuminated (S3 Operating Mode only): The water level is below the Sump Min Sensor and a top off cycle is in process.
BIN LEVEL	Solidly illuminated: The water level in the top off bin is above the Top Off Bin Sensor. Operation is proceeding normally. Flashing: The water level in the top off bin is below the Top Off Bin Sensor and no top off cycles can occur. As soon as the water level in the top off bin rises above the Top Off Bin Sensor, top off cycles will resume automatically and this indicator will change to be solidly illuminated. If using the ROCv™ to automatically refill the top off bin, the user needs to take no action. If no ROCv™ is being utilized the top off bin must be manually refilled by the user. Not illuminated (S3 Operating Mode only): The water level in the sump is below the Sump Max Sensor. This is normal unless the sump is fully topped off.
TOPPING OFF	When this indicator is illuminated, the pump is turned on and a top off cycle is being performed.
ALPHANUMERIC DISPLAY	The alphanumeric display indicates the maximum allowable time for a top off cycle.. During an active top off cycle, the display will count down the remaining time in which the cycle must complete. If the STORM™ is set to “S3” Operating Mode, the display will show two dashes.
RENEW™ DETECTED	When illuminated, the STORM™ recognizes that a RENEW™ Automatic Water Change System is connected and powered on.
RENEW™ SUSPENDING	This indicator illuminates when the RENEW™ is actively performing a water exchange cycle. When this indicator is illuminated the STORM™ will not perform top off functions, but will instead wait until the exchange cycle is complete.
MONITORING, SUMP LEVEL, BIN LEVEL, AND TOPPING OFF INDICATORS ARE ALL FLASHING	If all four of these indicators are flashing a top off cycle has timed out. This may be due to simply having the maximum duration set too low, which can be resolved by setting a longer maximum duration and pressing the yellow PAUSE/RESET button to resume normal operation. Other reasons for a top off cycle not completing within the time set may include a jammed pump impeller, a clogged pump intake screen, kinked or clogged tubing, or any other condition that causes a low flow rate from the pump in the top off bin. After addressing the issue, press the yellow PAUSE/RESET button to resume normal monitoring and top off functions.

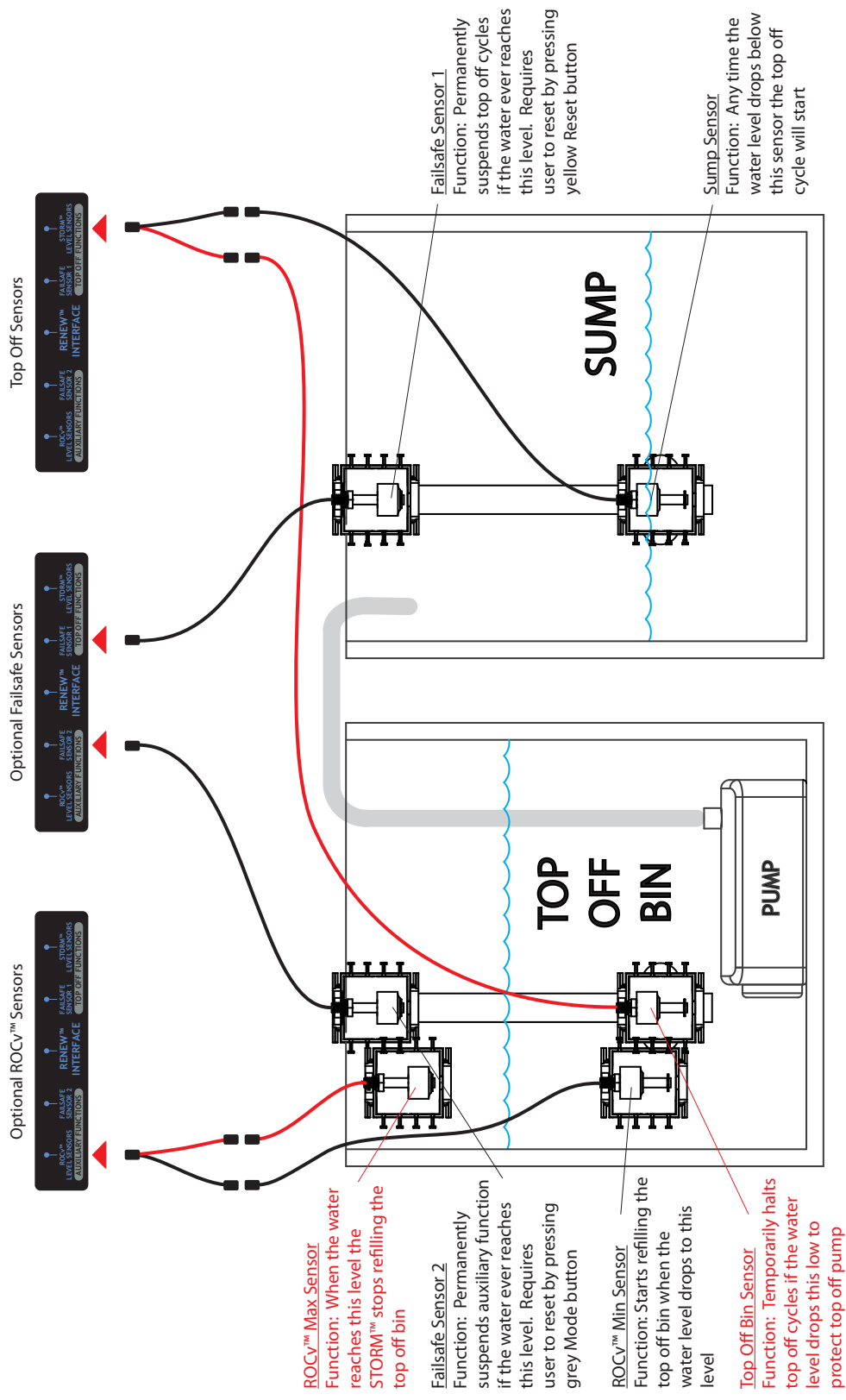
Troubleshooting

Your STORM™ Specialized Top Off & Replenishment Module is designed to provide years of reliable service. The following table describes some typical symptoms, reasons, and solutions to situations that you may encounter. If you still have difficulty or questions about your STORM™ system, please email us for further assistance at Support@GenesisReefSystems.com. Please have your system's serial number available when you call and provide it with any correspondence so we may better help you. The serial number can be found on the back of the Control Module.

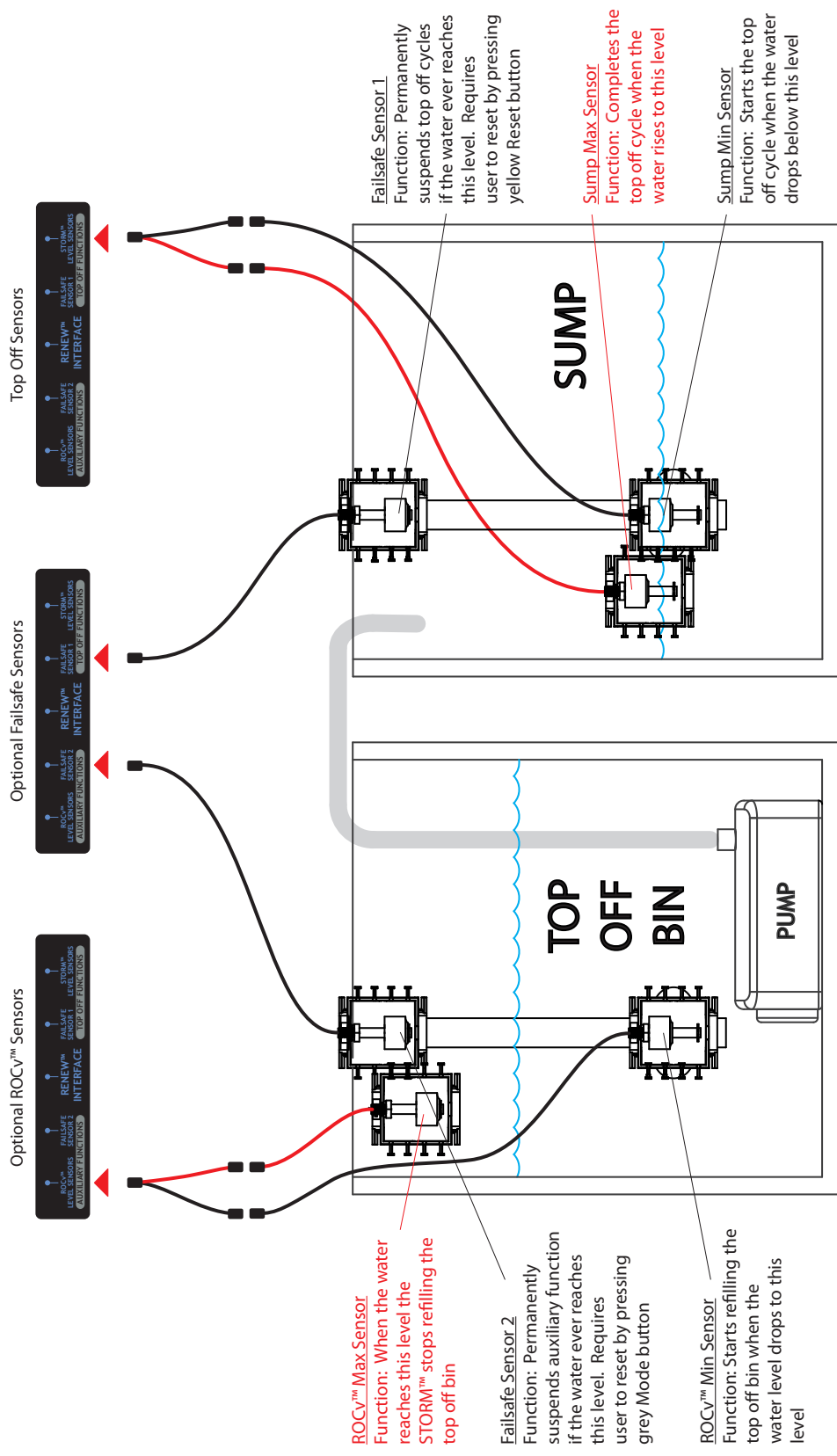
Symptom	Possible Reason	Solution
No indicators are illuminated on Control Module and pushing any button produces no result	1. No Power 2. Unit is not turned ON	1. Ensure Control Module is firmly plugged into 110VAC receptacle. Check electrical supply's breaker or fuse 2. Make sure Power Button is in the ON position
The "Monitoring," "Sump Level," and/or "Bin Level" LED indicators blink and system halts normal function	1. Top off supply water level is too low 2. Sump level is too high (only detected if Failsafe switches are present) 2. Level Sensors are not plugged in 4. Stuck or faulty Level Sensor	1. Refill supply water bin. 2. Decrease length of time that the pump stays on during a top off cycle 2. Check Level Sensor connections on Control Module 4. Manually slide float along sensor shaft; if no change after pressing the PAUSE / RESET button, replace Level Sensor
The "Monitoring" LED indicator blinks and system does not top off sump	1. The system is paused	1. Press the PAUSE / RESET button
The "Topping Off" LED indicator blinks and the system will not top off	1. The STORM™ performed two consecutive top off cycles in S1 Mode and did not detect a level increase in the aquarium or sump	1. Ensure the water transfer tube is still attached to the pump and that the end of the tubing has not fallen out of the aquarium or sump. Ensure that the pump is not clogged or otherwise damaged. Press PAUSE / RESET to resume.
The RENEW™ "Detected" and "Suspending" indicators are illuminated and the system will not top off	1. The RENEW™ Automatic Water Change System is performing a water change cycle.	1. The STORM™ system will top off the aquarium or sump if necessary after the RENEW's™ cycle is complete.
The AUXILIARY MODE "OFF" indicator is flashing and AUXILIARY MODE cannot be set to "ON"	1. The "ROCv™ Max" Level Sensor or Failsafe Sensor 2 detects that the water level in the top off bin is at or exceeding the maximum set volume	2. This is normal operation. The STORM™ monitors the "ROCv™ Max" sensor regardless of what auxiliary mode the STORM™ is set to. This prevents a potential overflow if the auxiliary mode is inadvertently left in the "ON" state.

Product Use	Many factors beyond Genesis Reef Systems' control and uniquely within the user's knowledge and control can affect the use and performance of a Genesis Reef Systems product in a particular application. Given the variety of factors that can affect the use and performance of a Genesis Reef Systems product, the user is solely responsible for evaluating the Genesis Reef Systems product and determining whether it is fit for a particular purpose and suitable for the user's method of application.
Limited Warranty	Genesis Reef Systems warrants for 6 months from the date of purchase that Genesis Reef Systems products will be free of defects in material and manufacture. Genesis Reef Systems makes no other warranties, express or implied, including but not limited to, any implied warranty of merchantability or fitness for a particular purpose. This limited warranty does not cover damage resulting from use or misuse of a Genesis Reef Systems product, workmanship in application, or application or storage not in accordance with Genesis Reef Systems recommended procedures. This warranty does not apply to products not directly manufactured by Genesis Reef Systems or consumable items that may degrade as part of normal use.
Limitation of Remedies and Liability	If the Genesis Reef Systems product is proved to be defective within the warranty period stated above the exclusive remedy, at Genesis Reef Systems' option, shall be to refund the purchase price of or to repair or replace the defective Genesis Reef Systems product. Genesis Reef Systems shall not otherwise be liable for loss or damages, whether direct, indirect, special, incidental, or consequential, regardless of legal theory asserted, including negligence, warranty, or strict liability.

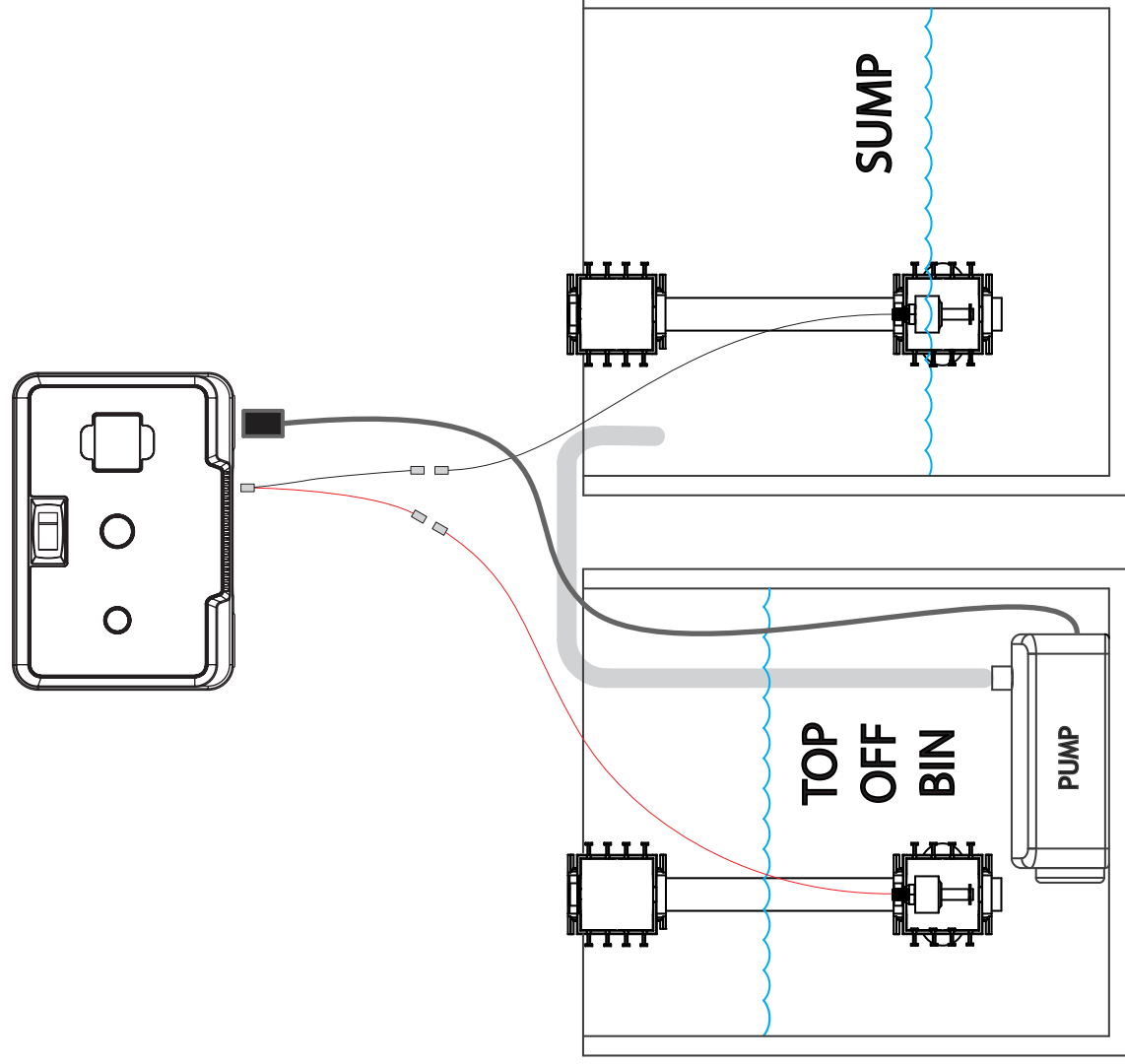
S1 & S2 Modes: Sensor Placement



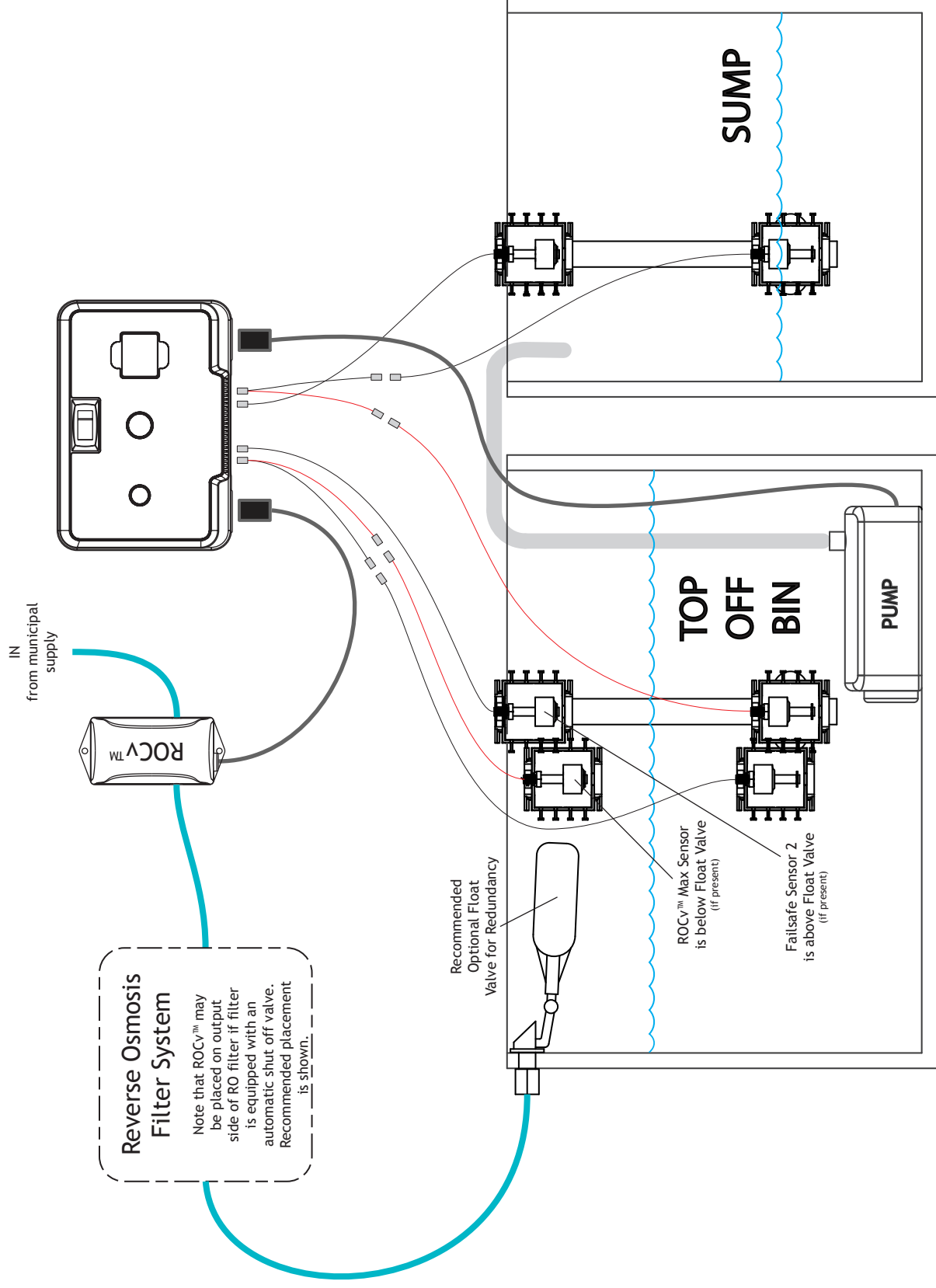
S3 Mode: Sensor Placement

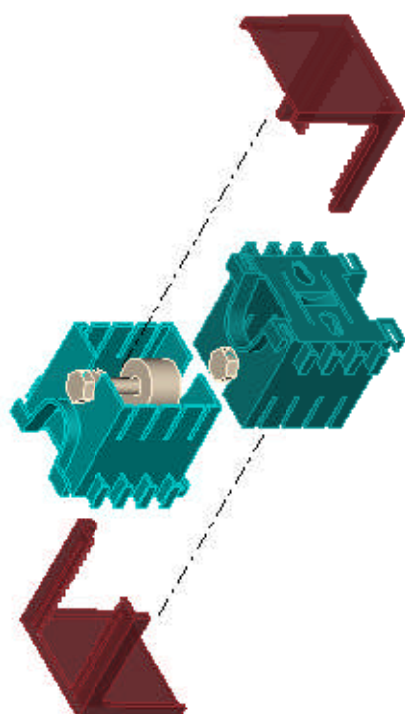
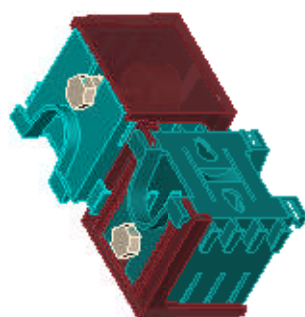
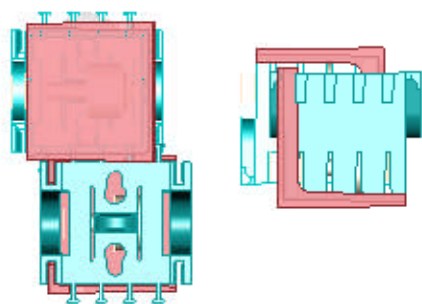
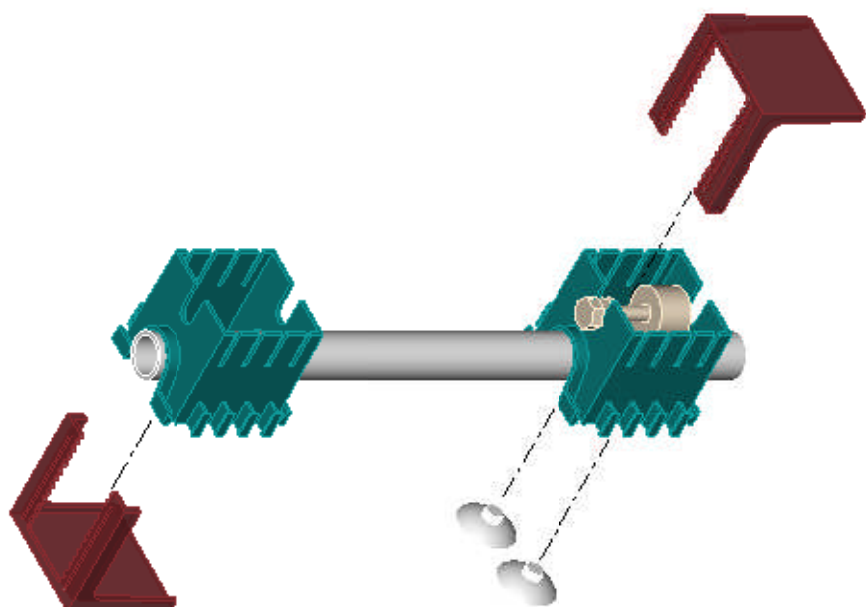
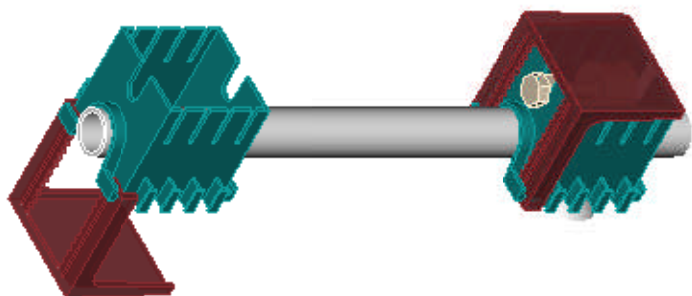
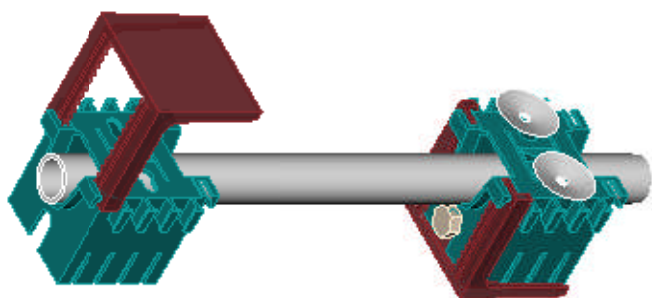


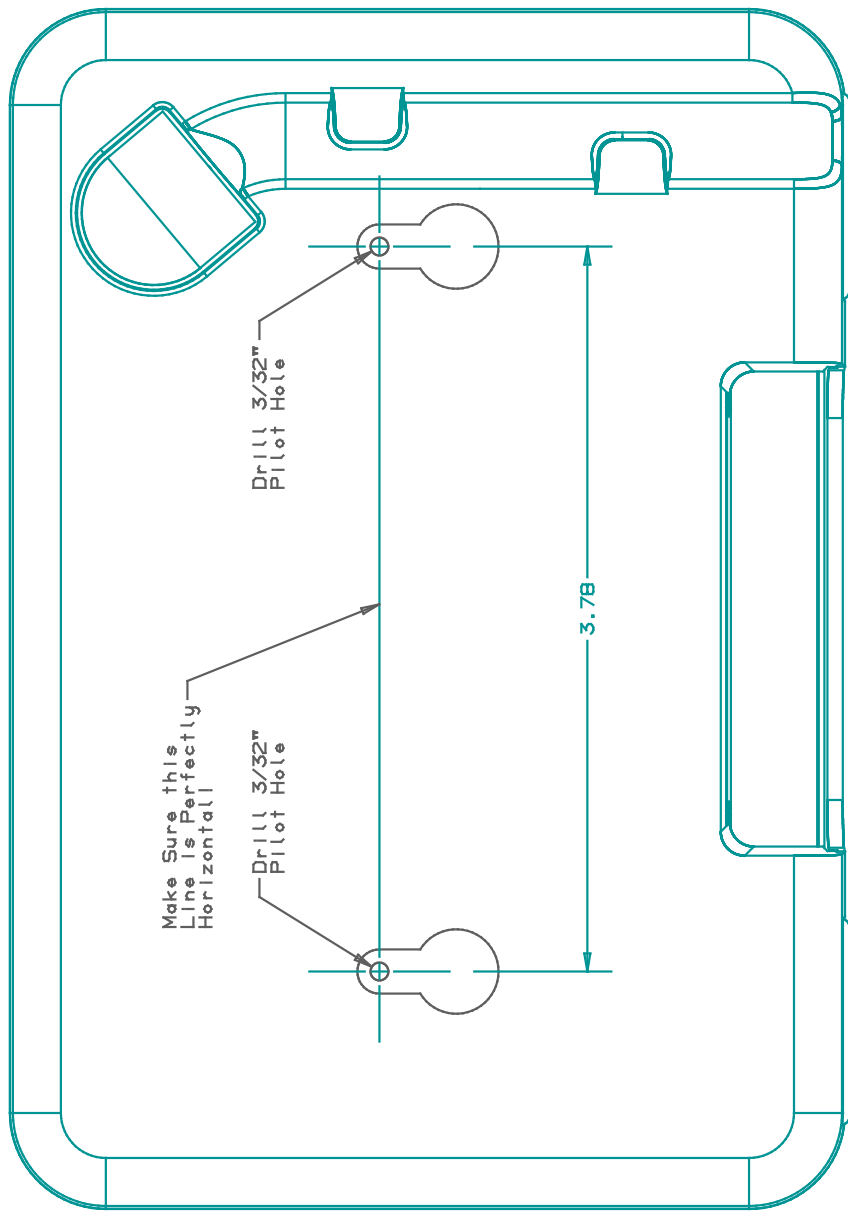
STORM™ Basic System Layout



STORM™ Pro System Layout







Measure this Line Before
Drilling. It Should Measure
Exactly .6" in Length

Obstructions Must be No Closer than
This Line to Allow for Cables