Gecko touchpad

Technical Integration Guide







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1. WARNING

⚠ WARNING: BEFORE INSTALLING OR CONNECTING THE UNIT, PLEASE READ THE FOLLOWING:

FAILURE TO COMPLY WITH THE FOLLOWING WARNINGS MAY SIGNIFICANTLY SHORTEN THE PRODUCT'S LIFETIME, AND LEAD TO FAILURES AS WELL AS HAZARDOUS CONDITIONS*. COMMON SENSE MUST ALWAYS PREVAIL WHEN EVALUATING THE INSTALLATION AND/OR USE OF ANY ELECTRONIC CONTROL IN A FINAL APPLICATION.

- RESPECT ENVIRONMENTAL CONDITIONS LISTED IN THE PROVIDED DOCUMENTATION.
- THIS UNIT MUST BE INSTALLED BY QUALIFIED PERSONNEL.
- ONLY QUALIFIED PERSONNEL ARE TO SERVICE THIS UNIT. THERE ARE NO USER SERVICEABLE PARTS INSIDE.
- THIS UNIT SHOULD BE INSTALLED ON A CLEAN FLAT SURFACE.
- THE GASKET ON THE BACK OF THE UNIT WILL PREVENT WATER INFILTRATION INSIDE, BEHIND THE MOUNTED SURFACE. IF THE GASKET IS DAMAGED, SEAL THE BACK OF THE UNIT WITH SILICONE TO AVOID ANY LEAKAGE BEHIND THE MOUNTED SURFACE. (USE "ELECTRONIC-GRADE". "NEUTRAL CURE" OR "NON-CORROSIVE" SILICONE; STANDARD SILICONE RELEASES ACETIC ACID DURING THE CURING PROCESS THAT CAN CAUSE CORROSION AND DAMAGES TO ELECTRINIC CIRCUITRY.)
- THIS UNIT MUST BE MOUNTED ON THE OUTSIDE EDGE OF THE SPA. SEE INSTALLATION SECTION FOR DETAILS.
- THE BACK OF THIS UNIT SHOULD NOT BE ENCLOSED IN A WAY THAT CAUSES WATER TO COLLECT. SEE INSTALLATION SECTION FOR DETAILS.
- *HAZARDOUS CONDITION:
    - A CONDITION THAT IS POTENTIALLY DAMAGING AND/OR DANGEROUS TO THE OPERATOR OR SURROUNDINGS.
    - THIS INCLUDES, BUT IS NOT LIMITED TO: FIRE, FLOODING OR OTHER WATER DAMAGE, DIELECTRIC BREAKDOWNS (PRESENCE OF HIGH VOLTAGE), ETC.

⚠ WARNING: KEYPAD CAN BECOME EXTREMELY HOT WHEN EXPOSED TO DIRECT SUNLIGHT AND CAUSE BURN HAZARD. TOUCH WITH CAUTION. COVER WHEN NOT IN USE.

MAINTENANCE

IF YOU HAVE PROBLEMS, DO NOT ATTEMPT TO REPAIR THE UNIT YOURSELF. RETURN IT TO YOUR DEALER OR SERVICE STATION FOR SERVICING.
KEEP THE SPA COVER CLOSED WHEN NOT IN USE TO PROTECT FROM UV, HEAT AND DEBRIS.

ACCESSORY PARTS

BE SURE TO USE ONLY THE SPECIFIED ACCESSORY PARTS. USE OF OTHER THAN DESIGNATED PARTS MAY DAMAGE THIS UNIT INTERNALLY OR MAY NOT SECURELY INSTALL THE UNIT IN PLACE. THIS MAY CAUSE PARTS TO BECOME LOOSE RESULTING IN HAZARDS OR PRODUCT FAILURE

DISPOSAL OF THE PRODUCT

THE APPLIANCE (OR THE PRODUCT) MUST BE DISPOSED OF SEPARATELY IN ACCORDANCE WITH THE LOCAL WASTE DISPOSAL LEGISLATION IN FORCE



2. Introduction

2.1. Purpose

The purpose of this Technical Integration Guide is to provide spa manufacturers, OEMs, integrators, and service personnel with the technical information required to successfully integrate, install, and service **Gecko touchpad.**

This guide consolidates the hardware requirements, installation guidelines, wiring information, troubleshooting information, and service instructions necessary for a successful product integration.

This document is the primary technical reference for the integration of **Gecko touchpad** into compatible spa systems.

2.2. Intended Audience

This document is intended for:

- OEM spa manufacturers
- Product integration engineers
- Production and assembly technicians
- Electrical installers
- Service technicians
- Technical support personnel

2.3. Scope

This Technical Integration Guide covers the complete hardware integration of **Gecko touchpad**, including:

- Technical specifications
- Integration requirements
- Installation guidelines
- Wiring and electrical connections
- Troubleshooting procedures
- Service and replacement procedures

Software applications, firmware release notes and mobile application documentation are covered in their respective product documentation when applicable.

3. Product Overview

3.1. Product Description

Gecko touchpad is the primary human-machine interface (HMI) for compatible **Gecko** spa control systems. It provides users with intuitive access to spa functions through a capacitive touchscreen.

The unit is designed for surface mounting on the spa topside, with a sealed front face and a vented rear enclosure to dissipate heat generated by the display electronics.

Gecko touchpad connects to a **Gecko smartbox**, the spa's central control unit, over the High-Speed (HS) bus, and relays user commands (pump activation, lighting, temperature set point, filtration, etc.) to the **smartbox** for execution. All user inputs and display updates are transported over this single link; no other communication interface (Wi-Fi, Bluetooth) is integrated into **Gecko touchpad** itself. Wireless connectivity and firmware updates are managed by **Gecko smartbox.**

A single **Gecko smartbox** can support one or more **Gecko touchpad** units, depending on the spa's control layout. Spa configuration is performed through **Gecko smartbox** and depends on the OEM application.

3.2. Key Features

User Interface

- Capacitive touchscreen
- Responsive graphical interface
- Home button

System Integration

- Compatible with **Gecko smartbox**
- Automatic **touchpad** detection by **Gecko smartbox**
- Spa cover detector
- Screen adaptive brightness

Installation

- Topside face-out installation
- Available in 5.5", 9.35" and 10.25" display sizes

3.3. Available Models

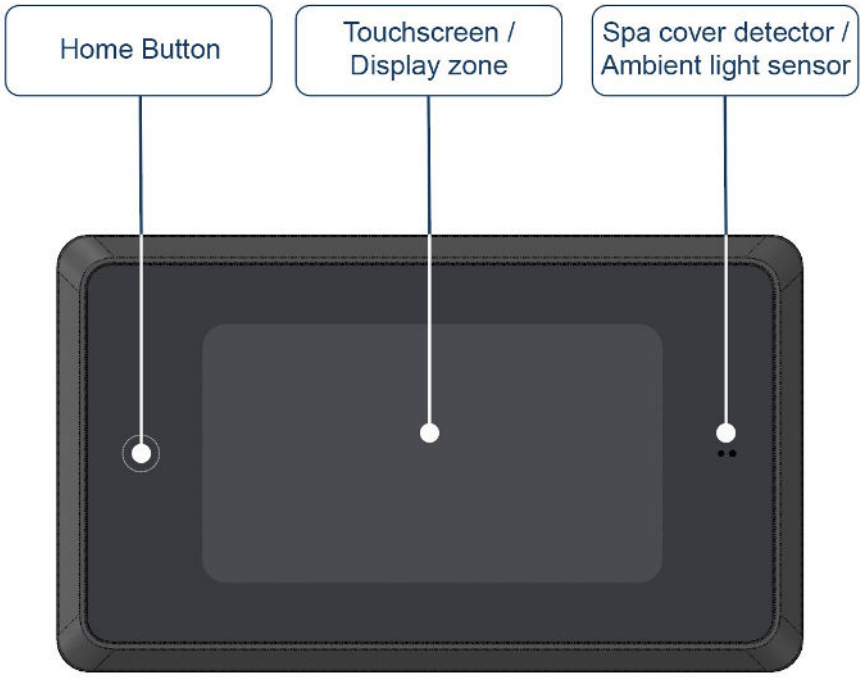
Gecko touchpad is available in three display sizes to accommodate different spa layouts while maintaining a common software platform and user experience.

Description	Screen Diagonal	Model	Part Number
Gecko touchpad 550	5.5 in	CI-C1-01	**2007-000003**
Gecko touchpad 935	9.35 in	CI-B1-01	**2007-000002**

3.4. External Components

The front face of **Gecko touchpad** integrates the following components:

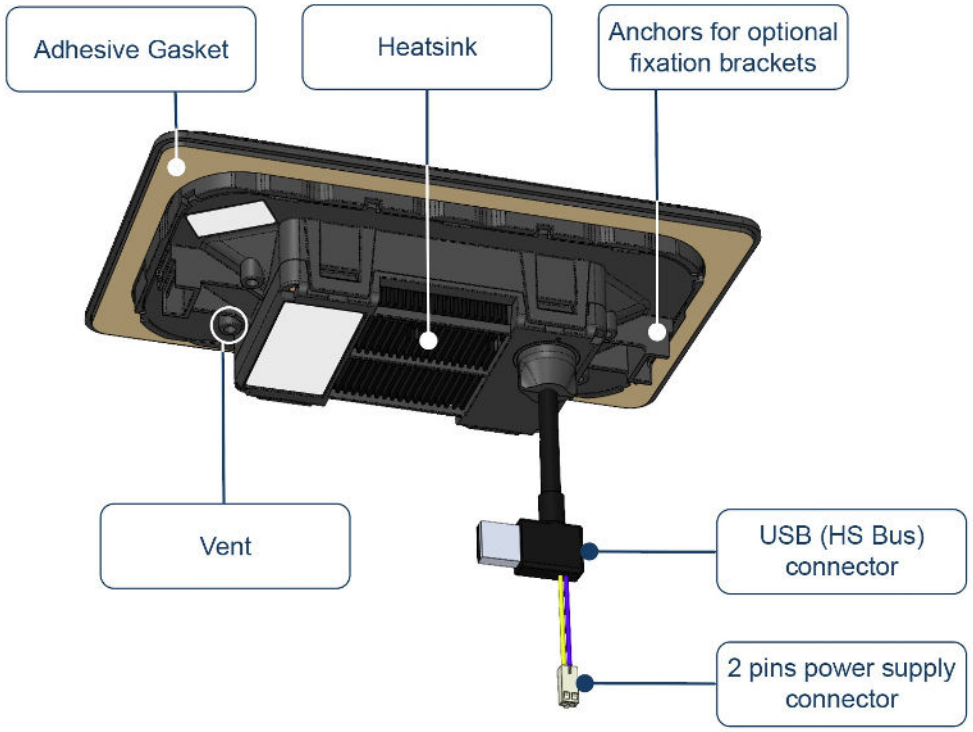
- Capacitive touchscreen: for all user interaction.
- Home button: returns to the main screen from any menu.
- Spa cover detector: detects when the spa cover is closed to adjust interface behaviour.
- Ambient light sensor: automatically adjusts display brightness.



3.5. Rear Components

The rear side of **Gecko touchpad** integrates the following components:

- Adhesive gasket: provides the waterproof seal on the mounting surface.
- Heatsink: passive cooling; require clear air space behind the unit.
- Mounting anchors: for the optional installation brackets, additional mechanical retention where required.
- Vent holes allowing the touchpad to breath
- USB connector (HS Bus communication): communication link to **Gecko smartbox**.
- 2-pins power supply connector: 12V power supply.



4. Technical Specifications

4.1. Environmental Specifications

Parameter	Gecko touchpad 550	Gecko touchpad 935	Gecko touchpad 1025
Operating temperature	-20°C to 65°C (-4°F to 149°F)		
Storage temperature	-30°C to 70°C (-22°F to 158°F)		
Water ingress protection	IPX5		

4.2. Physical Specifications

Parameter	Gecko touchpad 550	Gecko touchpad 935
Weight	1.2 lbs	1.7 lbs
Dimensions (W × H × D)	196 x 115 x 53 mm (7.72 x 4.52 x 2.09 in)	295 x 122 x 53 mm (11.63 x 4.82 x 2.09 in)

4.3. Electrical Specifications

Parameter	Gecko touchpad 550	Gecko touchpad 935
Power source	Supplied by the **Gecko smartbox**	
Input rating	12Vdc;400mA 5Vdc; 800mA	

4.4. Regulatory Certifications

Region	Gecko touchpad 550	Gecko touchpad 935
Canada	CSA C22.2 No. 218.1	
United States	UL 1563	
Europe	IEC 60335-2-60:2017 for use in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016, COR1:2016 EN IEC 60335-2-60:2023 + A11:2023 EN 60335-1:2012 + A11:2014 + A13:2017 + A1:2019 + A14:2019 + A2:2019 + A15:2021 + A16:2023 EN 62233:2008	
Australia / New Zealand	AS/NZS 60335.2.60:2018 AS/NZS 60335.1:2020+A1:2021	
EMI / EMC	FCC part 15 subpart B ICES-003 Issue 7 (2020) EN IEC 55014-1 (2021) EN IEC 55014-2 (2021)	

5. Installation Guidelines

5.1. Integration Requirements

Gecko touchpad must be installed on a rigid, accessible topside panel with sufficient clearance behind the unit for the heatsink and cabling. Review the location and mechanical requirements below before cutting the panel.

5.1.1. Environmental Consideration

Do not install **Gecko touchpad** near heat sources or in direct sunlight;

The enclosure must always remain vented at the rear. Avoid airtight shipping or storage packaging, which can trap moisture and cause condensation inside the unit.

Do not install the unit in contact with thermal insulation.

5.1.2. Water Intrusion Protection

Gecko touchpad is rated IPX5 against water jets when installed in an approved orientation with the gasket and seal intact. This rating applies only to the front face; the rear enclosure and connectors must remain protected from direct water exposure inside the spa cabinet.

If the sealing gasket is damaged, reseal the unit using an electronic-grade, neutral-cure, non-corrosive silicone sealant.

Do not install the unit where water can accumulate behind the enclosure.

Avoid airtight packaging or enclosures around the unit, this can cause condensation from trapped humidity.

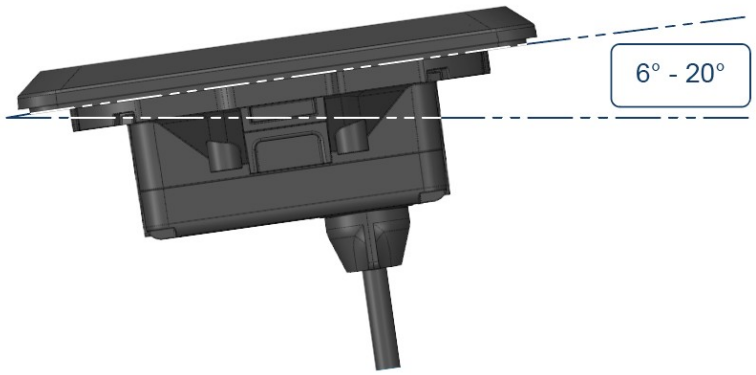
Do not block the ventilation openings located on the rear of the enclosure.

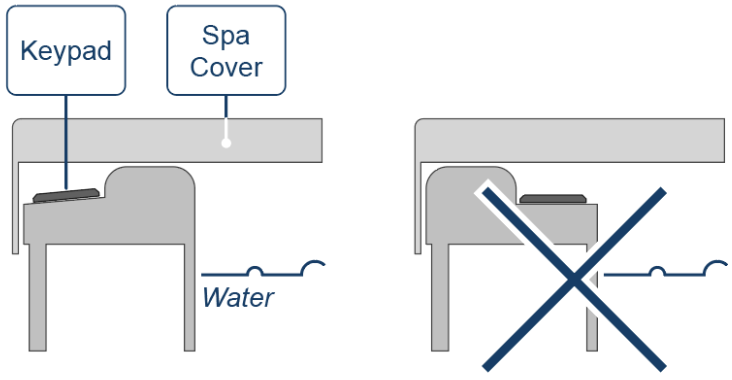
5.1.3. Approved Orientations

Install **Gecko touchpad** only in an approved topside orientation as shown in the mechanical drawings. Installing the unit in an unapproved orientation invalidates the IPX5 water rating and the UL conditions of acceptability.

The **Gecko touchpad** must be installed face-out. Face-in installation is not authorized.

Mount the panel at an angle between 6° and 20° from horizontal so water drains away from the surface instead of pooling against the display.

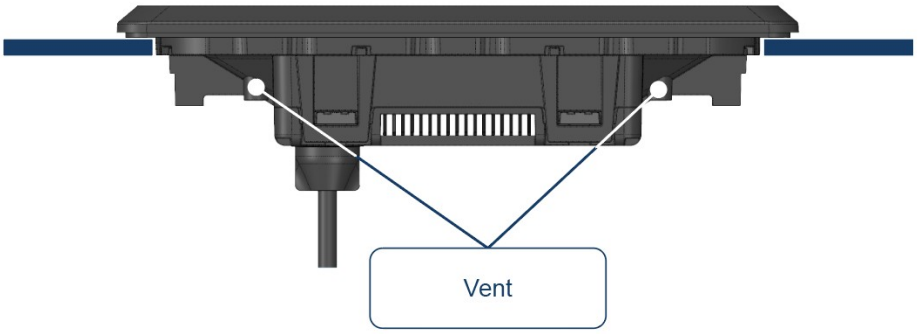


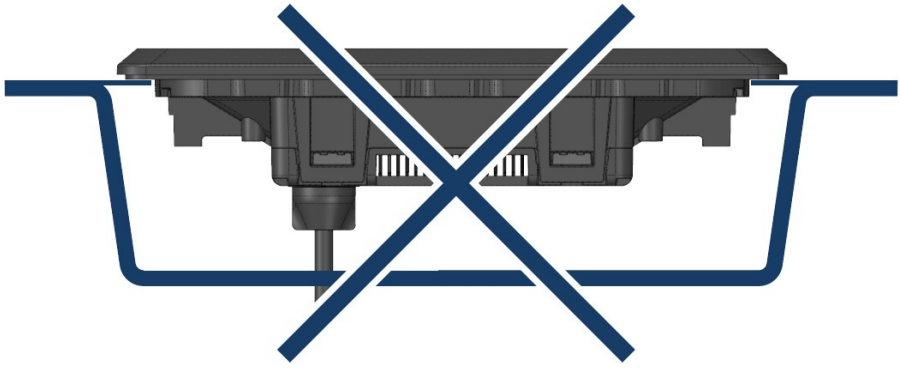


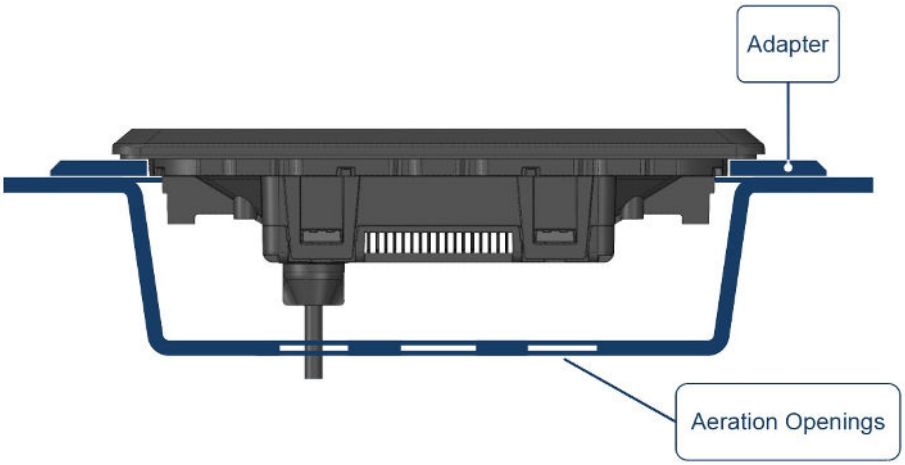
5.1.4. Installation Location

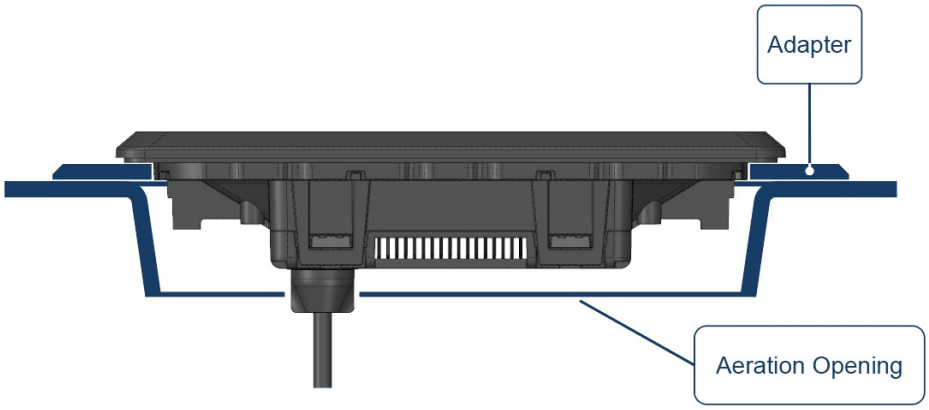
Accessibility - Mount the unit where the rear connections remain reachable during installation and servicing. Once installed and sealed, routine end-user operation requires no rear access.

Do not block the vent holes on the rear enclosure. The cabinet opening behind the unit must be an open cut-out, not a sealed recess. A molded recess requires an adapter plate to provide adequate bonding surface and aeration openings to preserve heatsink airflow.



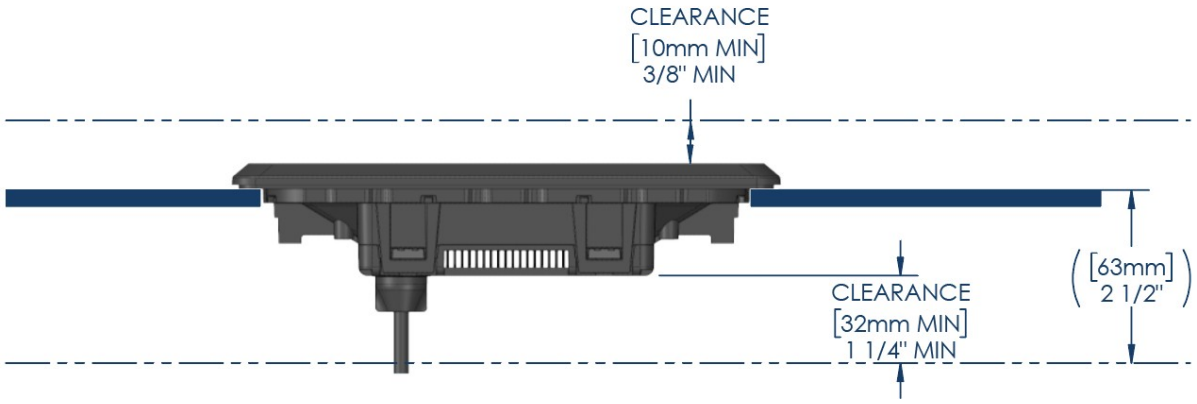



Adapter
Aeration Openings


Adapter
Aeration Opening

Maintain at least 1 cm (3/8”) of clearance between the glass surface and the spa cover when closed, to ensure reliable cover detection and touch response.

Preserve the minimum clearance behind the unit specified in the mechanical drawing so the heatsink fins have adequate aeration; where SPF (Sprayed Polyurethane Foam) is used for cabinet insulation, keep it clear of this space.



5.1.5. Wireless Communication Considerations

Gecko touchpad has no wireless communication capacity of its own; it communicates with **Gecko smartbox** over the wired HS bus.

The installation relies on **Gecko smartbox** for Wi-Fi/Bluetooth connectivity and automatic firmware updates, install **Gecko smartbox** with adequate clearance from metal enclosures that could shield its wireless signal.

5.2. Installation

5.2.1. Required Tools

- Cut-out template (see appendix);
- Robotic router (preferred);
    - Alternative tool options:
        - Oscillating tool;
        - Jig saw;
        - Hole saw, 1-7/8 in. or 1-1/2 in.
- Solvent wipe suited to the cabinet substrate, for surface preparation;
- Torque driver, for the optional mounting bracket thumbscrews.

5.2.2. Preparation

Cut the topside panel opening using the dimensions in the mechanical drawing.

- A robotic router with the cut-out template is the preferred method for a clean, repeatable edge.
- Where router access is not available, use a 1-7/8 in. or 1-1/2 in. hole saw to relieve the corners and an oscillating tool or jig saw to complete the straight edges.

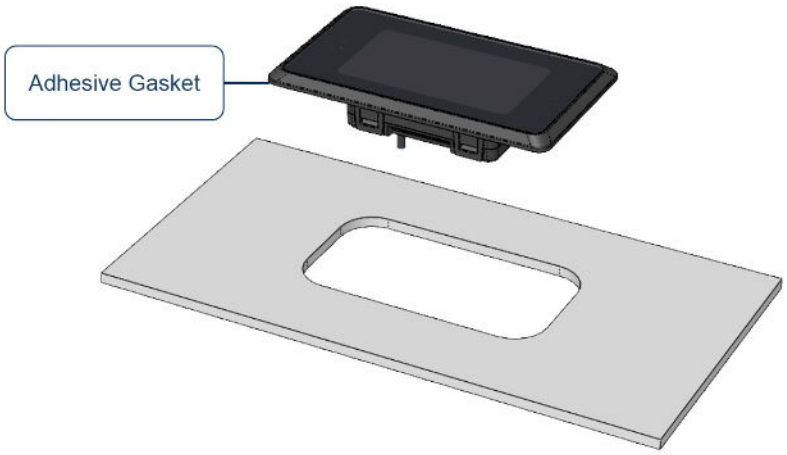
Cut-out to be free of burr. Clean the bonding surface so it is dry and free of dust, oil, or mold-release residue, and wipe it with a solvent suited to the cabinet substrate before mounting.

5.2.3. Mounting Procedure

1. Verify that the mounting surface is flat before installing the keypad.
2. Peel off the adhesive gasket liner from the back of the **touchpad**.
3. Align the unit in the cut-out and press it evenly against the panel.

Notes :

- Orientation marks on the top glass liner indicate the correct up/down alignment for the unit.
- The adhesive reaches approximately 50% of final strength after 20 minutes, 90% after 24 hours, and full strength after 72 hours. Avoid mechanical stress on the unit during this curing period.

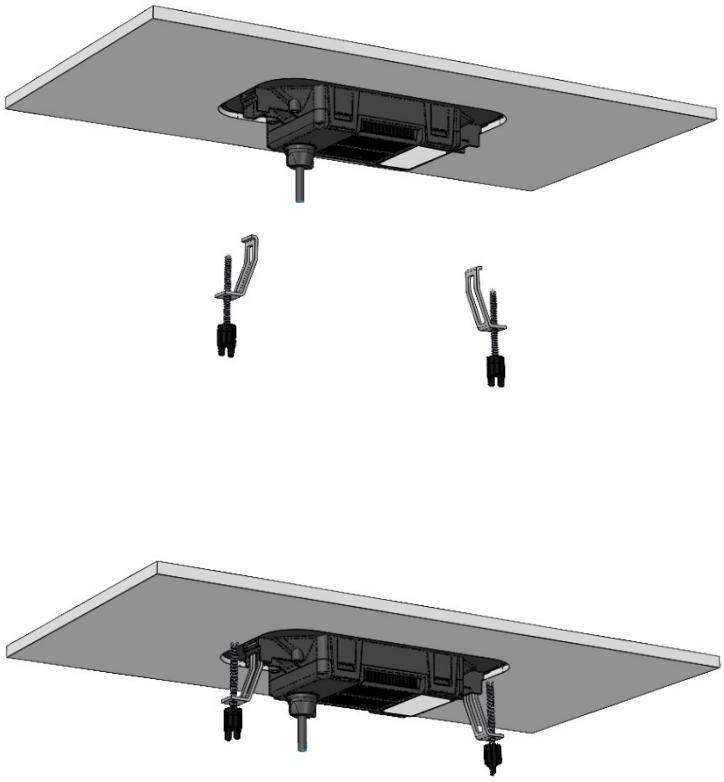


Optional mounting Brackets

The adhesive gasket provides enough strength for the **Gecko touchpad** fixation. Two optional mounting brackets with thumbscrews can be added to install the **touchpad** if desired. Install the mounting brackets on the anchors on the back of **touchpad** and fasten the thumbscrews. Recommended torque to secure the thumbscrews: 2-3 lbs/in (9-13Nm).

- Mounting Bracket part number: 9917-102245
- Thumbscrews part number: 9917-102246

Note: There is no need to replace the bracket if it bends slightly. An opening was created in the bracket, allowing it to bend if the thumbscrew is over torqued. This feature protects the keypad from damage and does not impact the performance of the bracket.



5.2.4. Alternate Mounting

Waterproof Sealing

The pre-applied adhesive gasket forms the primary waterproof seal between the unit and the panel. Where local building or manufacturing practice calls for an additional bead of sealant around the cut-out edge, use only electronic-grade, neutral-cure, non-corrosive silicone.

⚠ WARNING: Standard acetic-cure silicone releases acetic acid as it cures, which corrodes the internal electronics and voids the warranty.

Holesaw Pattern Cut-out

The cut-out can be made by drilling a pattern with the holesaw. Use the pattern drawing in the appendices section.

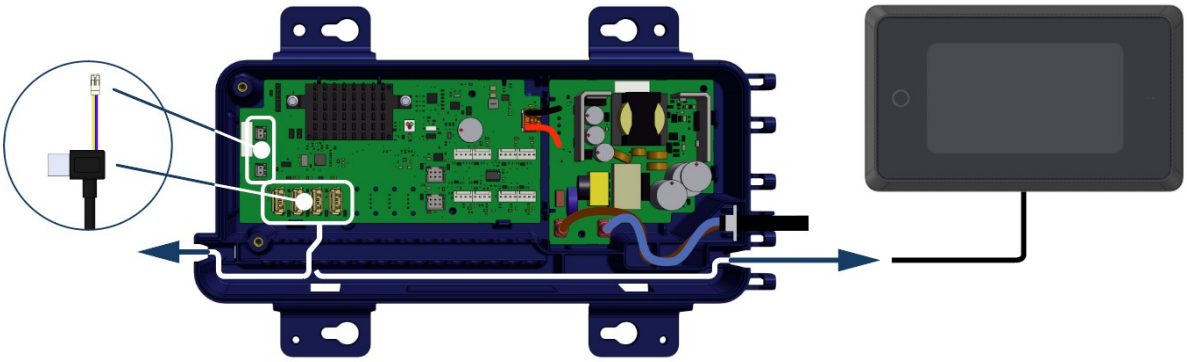
Note : this method being less precise, it may require using an **adapter plate** to install the keypad to provide adequate bonding surface.

5.2.5. Cable Connection procedure

Gecko touchpad connects to **Gecko smartbox** using a single cable that provides High-Speed (HS) Bus communication and low-voltage power. Any available HS bus port on the **smartbox** may be used.

⚠ WARNING: As a general precaution, disconnect power before connecting or disconnecting any accessory, even though HS bus accessories are designed to support hot-swap connection.

1. Disconnect power to the spa system.
2. Route the **Gecko touchpad** cable through the spa cabinet's dedicated side channel to protect it from pinching and to keep it clear of moving components. Leave enough slack for the **Gecko smartbox** cover to close fully.
3. Remove the **Gecko smartbox** cover.
4. Connect the USB (HS Bus) connector and the 2-pin power connector to the appropriate connectors on **Gecko smartbox**.
5. Route the **Gecko touchpad** cable through the **Gecko smartbox** side channel and reinstall the **Gecko smartbox** cover, torquing the two cover screws to 8 in-lb (0.9 Nm) maximum.



5.2.6. Cleaning (end of procedure)

Clean the touchscreen with a soft, damp cloth and mild soap only. Do not use solvents, abrasive cleaners, or high-pressure water, which can damage the screen coating or compromise the seal.

⚠ WARNING: Do not use sharp tools or abrasive cleaning materials on the touchscreen surface.

⚠ WARNING: Do not clean the keypad with a high-pressure water spray.

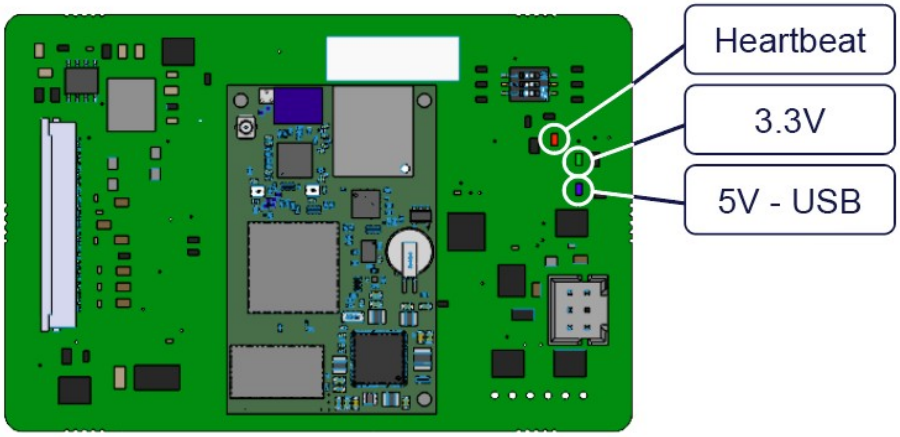
6. Troubleshooting and Service

6.1. Troubleshooting

Use the diagnostic LEDs to identify common fault conditions. (LEDs visible on the electronics when the back cover is removed).

Normal operation:

- Heartbeat red light is blinking ON and OFF.
- 3.3V Amber light is ON.
- 5V Blue light is ON.



Symptom	Possible Cause	Corrective Action
Heartbeat LED (red) always off	Operating system not running	Confirm the 3.3V and 5V LEDs are on solid; Confirm the unit is programmed with the correct software.
3.3V LED (amber) always off	3.3V power rail not powered	Confirm the 5V LED is on solid; Confirm the module and heatsink are properly connected and screwed on.
5V LED (blue, USB VBUS) always off	USB VBUS not powered	Confirm **Gecko smartbox** is powered on; Confirm the **touchpad** cable is properly connected to a USB port on smartbox.
Display backlight off / nothing displayed	Operating system not running, or 12V supply disconnected	Check the Heartbeat LED status; Confirm the 12V cable is properly connected to **Gecko smartbox**.
Detected control interface does not match the spa's configuration	Wrong **touchpad** model/CI installed for this spa specification	Verify the installed model (550 / 935, CI code) matches the spa's bill of materials; replace if mismatched.

6.2. Serviceable Parts

The complete **Gecko touchpad** unit is the only serviceable part. Refer to model list and specification section for part numbers by model.

Gecko touchpad contains no field-serviceable electronic components. Service is limited to full-unit replacement. No component-level repair is authorized. Replace the complete **Gecko touchpad** if a hardware failure is confirmed.

6.3. Replacement Procedure

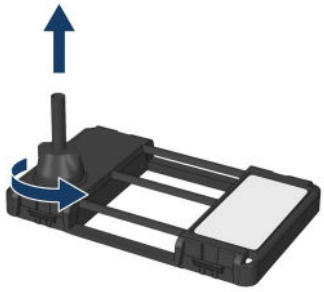
If the keypad needs to be replaced and the cable is not damaged, the cable can be disconnected from the old keypad and used on the new keypad to avoid routing a new cable in the spa. Follow the procedure for properly disconnect / connect the cable.

⚠️ WARNING: TURN OFF THE POWER BEFORE OPENING ANY DEVICE AND REPLACING THE UNIT.

Remove installed unit:

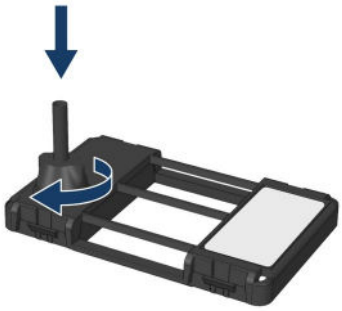
1. Remove the unit from the spa surface. Use adequate tooling to avoid damage to the spa shell surface. Clean remaining glue from spa shell bonding surface.
2. Unclip the **Gecko touchpad** back cover using a flathead screwdriver.
3. Pull the connector off the circuit board.
4. Rotate the strain relief 90° to unlock it.
5. Pull the connector and strain relief out through the cover.
6. Dispose of **Gecko touchpad** in accordance with applicable local regulations governing electronic equipment.





Install the replacement unit:

1. Insert the connector and strain relief through the back cover opening.
2. Rotate the strain relief 90° to lock it in place.
3. Plug the connector into the **Gecko touchpad** circuit board.
4. Press the back cover closed until all four clips engage.
5. Peel off the adhesive gasket liner from the back of the **touchpad**.
6. Align the unit in the cut-out and press it evenly against the panel.

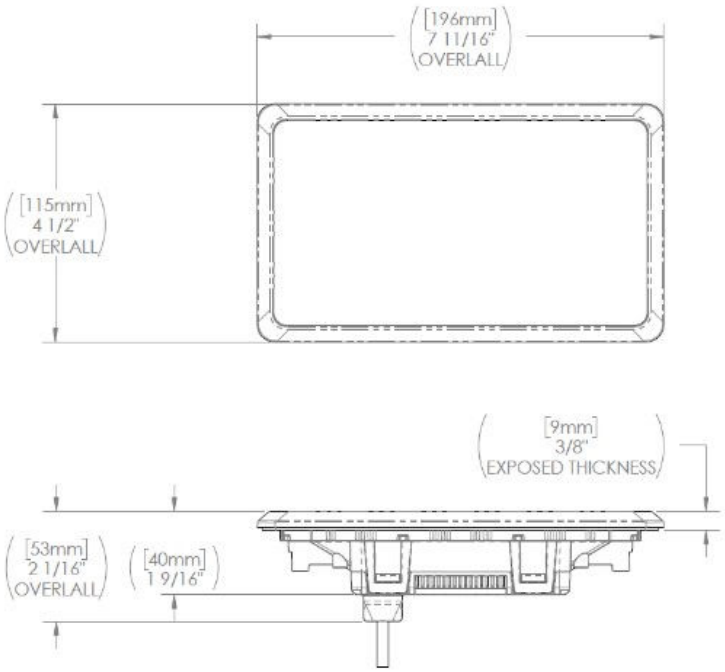


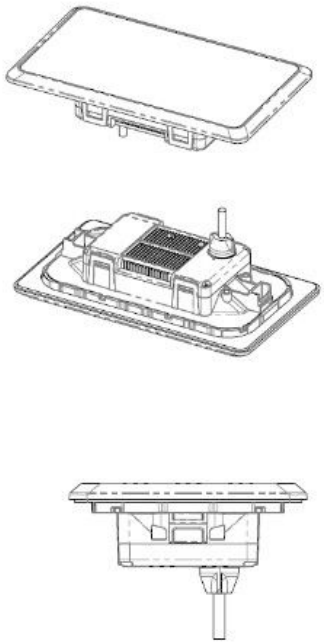
After replacement, turn the power back ON and verify that **Gecko smartbox** automatically detects the new **Gecko touchpad**.

7. Appendices

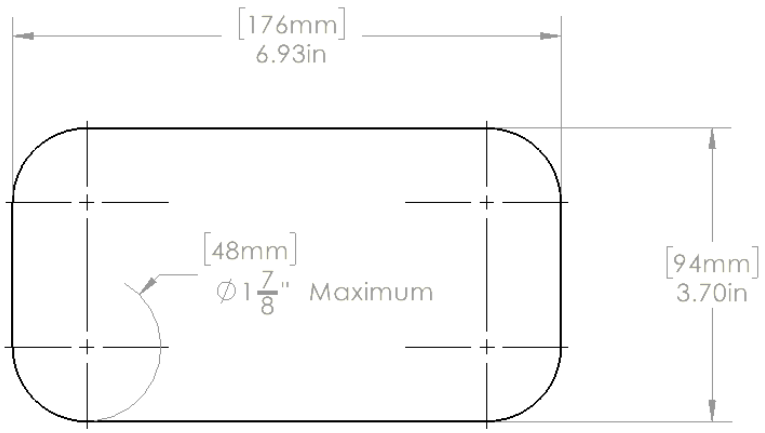
Appendix A – Mechanical Drawings

Gecko Touchpad 550 – Dimensions



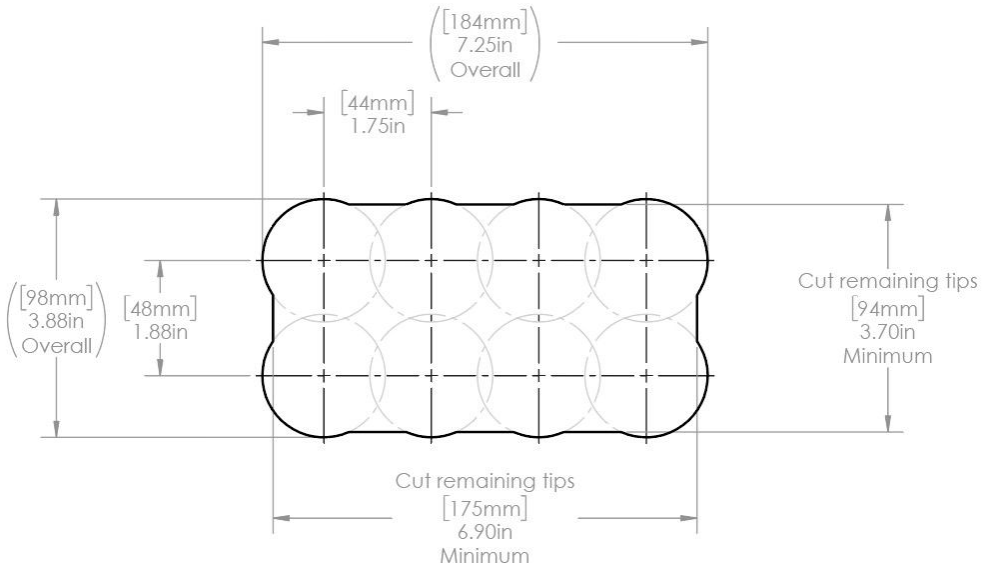


Gecko Touchpad 550 – Recommended Cut-out template

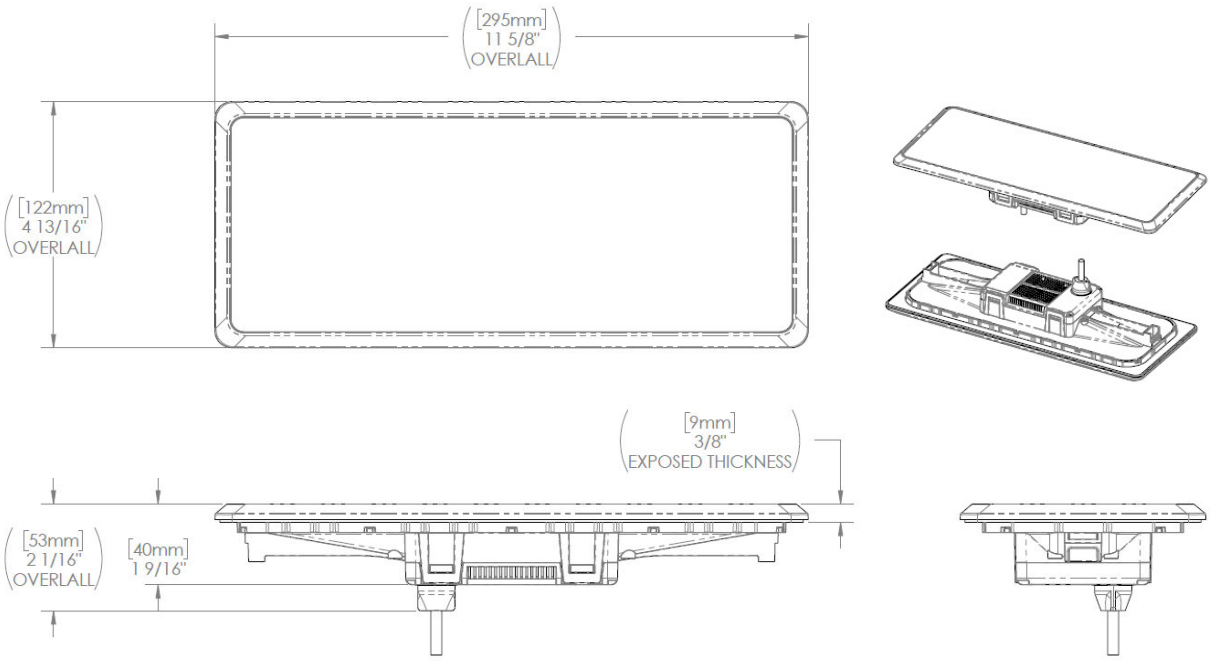


Gecko Touchpad 550 – Alternative Holesaw Pattern Cut-out template

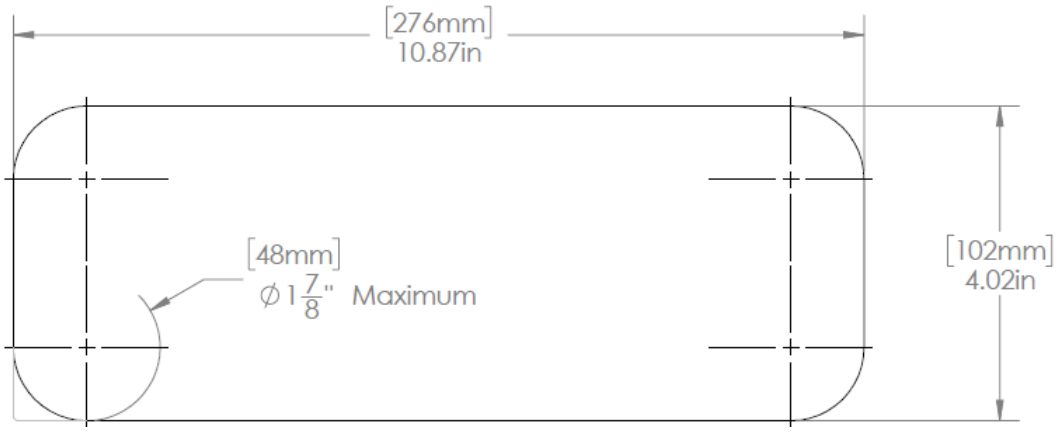
Note this method being less precise, it may require using an adapter plate to install the keypad to provide adequate bonding surface.



Gecko Touchpad 935 – Dimensions

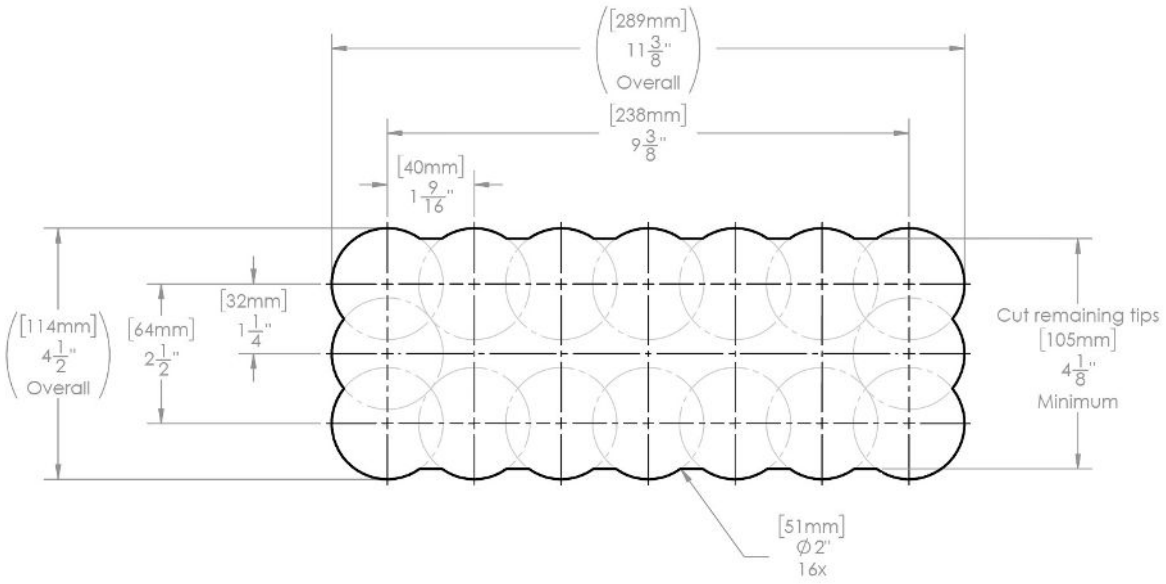


Gecko Touchpad 935 – Recommended Cut-out template



Gecko Touchpad 935 – Alternative Holesaw Pattern Cut-out template

Note this method being less precise, it may require using an adapter plate to install the keypad to provide adequate bonding surface.



Appendix B – CAD Drawings

3D CAD models are available to validate the fit of **Gecko touchpad** within the spa design. The following files are available:

- **Touchpad 550**
- **Touchpad 935**

Appendix C – Revision History

Part number	Version	Date	Details	Author
	A	June 2026	First release.	Nancy Gagnon
	V3b1	September 2026	Rmv 1025	Mathieu R.