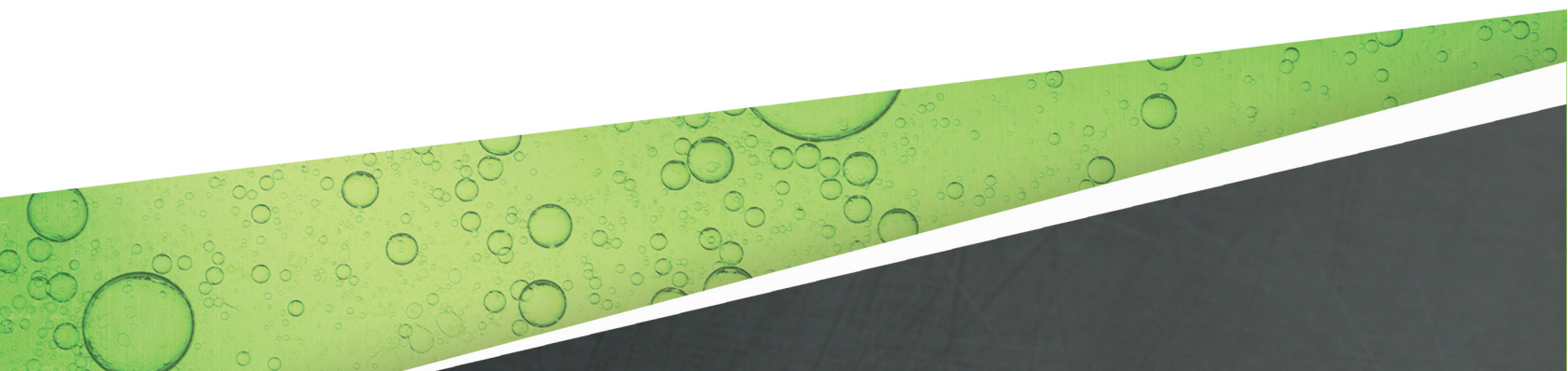


# **EVO™ 200 AND EVO™ 400 LCD DISPLAY**

## **INSTALLATION GUIDE**



The information in this publication is provided for reference only. While every effort has been made to ensure the reliability and accuracy of the information contained in this manual at the time of printing, we recommend that you refer to "franklinfueling.com" for the most current version of this manual. All product specifications, as well as the information contained in this publication, are subject to change without notice. Franklin Fueling Systems does not assume responsibility and expressly disclaims liability for loss, damage, or expense arising out of, or in any way connected with, installation, operation, use, or maintenance by using this manual. Franklin Fueling Systems assumes no responsibility for any infringement of patents or other rights of third parties that may result from use of this manual or the products. We make no warranty of any kind with regard to this material, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

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For technical assistance, please contact:

Franklin Fueling Systems  
3760 Marsh Rd.  
Madison, WI 53718  
USA

franklinfueling.com  
3760 Marsh Rd. • Madison, WI 53718, USA  
Tel: +1 608 838 8786 • Fax: +1 608 838 6433  
Tel: USA & Canada +1 800 225 9787 • Tel: UK +44 (0) 1473 243300  
Tel: Mex 001 800 738 7610 • Tel: DE +49 6571 105 308 • Tel: CN +86 10 8565 4566

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# Contents

- Introduction .....1
  - Questions and concerns .....1
  - Conventions used in this manual .....1
  - Operating precautions.....2
  - Other documentation .....3
  - Certified installer or service person .....3
  - Required equipment.....3
- Replacing the LCD Display.....5
  - Remove the cover .....5
  - Remove the LCD display .....6
  - Install the new LCD display .....9
  - Install the cover .....11



# Introduction

This manual contains instructions for replacing the LCD display on the Franklin Fueling Systems (FFS) EVO™ 200 and EVO™ 400 Automatic Tank Gauges (ATGs). You must follow all safety information, warnings, instructions, and other information in this manual. Please read this entire manual carefully. If you do not follow the instructions in this manual, the result could be faulty operation, equipment damage, injury, or death.

## Questions and concerns

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In case of emergency, follow the procedures established by your facility. If you have questions or concerns about safety or need assistance, use the information below to contact FFS:

[franklinfueling.com](http://franklinfueling.com)

3760 Marsh Rd. • Madison, WI 53718, USA

Tel: +1 608 838 8786 • Fax: +1 608 838 6433

Tel: USA & Canada +1 800 225 9787 • Tel: UK +44 (0) 1473 243300

Tel: Mex 001 800 738 7610 • Tel: DE +49 6571 105 308 • Tel: CN +86 10 8565 4566

## Conventions used in this manual

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This manual includes safety precautions and other important information presented in the following format:

**NOTE:** This provides helpful supplementary information.

**IMPORTANT:** This provides instructions to avoid damaging hardware or a potential hazard to the environment, for example: fuel leakage from equipment that could harm the environment.

**⚠ CAUTION:** This indicates a potentially hazardous situation that could result in minor or moderate injury if not avoided. This may also be used to alert against unsafe practices.

**⚠ WARNING:** This indicates a potentially hazardous situation that could result in severe injury or death if not avoided.

**⚠ DANGER:** This indicates an imminently hazardous situation that will result in death if not avoided.

## Operating precautions

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FFS equipment is designed to be installed in areas where volatile liquids such as gasoline and diesel fuel are present. Working in such a hazardous environment presents a risk of severe injury or death if you do not follow standard industry practices and the instructions in this manual. Before you work with or install the equipment covered in this manual, or any related equipment, read this entire manual, particularly the following precautions:

**IMPORTANT:** To help prevent spillage from an underground storage tank, make sure the delivery equipment is well-maintained, that there is a proper connection, and that the fill adaptor is tight. Delivery personnel should inspect delivery elbows and hoses for damage and missing parts.

**⚠ CAUTION:** Use only original FFS parts. Substituting non-FFS parts could cause the device to fail, which could create a hazardous condition and/or harm the environment.

**⚠ WARNING:** Follow all codes that govern how you install and service this product and the entire system. Always lock out and tag electrical circuit breakers while installing or servicing this equipment and related equipment. A potentially lethal electrical shock hazard and the possibility of an explosion or fire from a spark can result if the electrical circuit breakers are accidentally turned on while you are installing or servicing this product. Refer to this manual (and documentation for related equipment) for complete installation and safety information.

**⚠ WARNING:** Before you enter a containment sump, check for the presence of hydrocarbon vapors. Inhaling these vapors can make you dizzy or unconscious, and if ignited, they can explode and cause serious injury or death. Containment sumps are designed to trap hazardous liquid spills and prevent environmental contamination, so they can accumulate dangerous amounts of hydrocarbon vapors. Check the atmosphere in the sump regularly while you are working in it. If vapors reach unsafe levels, exit the sump and ventilate it with fresh air before you resume working. Always have another person standing by for assistance.

**⚠ WARNING:** Follow all federal, state, and local laws governing the installation of this product and its associated systems. When no other regulations apply, follow NFPA codes 30, 30A, and 70 from the National Fire Protection Association. Failure to follow these codes could result in severe injury, death, serious property damage, and/or environmental contamination.

**⚠ WARNING:** Always secure the work area from moving vehicles. The equipment in this manual is usually mounted underground, so reduced visibility puts service personnel working on it in danger from moving vehicles that enter the work area. To help prevent this safety hazard, secure the area by using a service truck (or some other vehicle) to block access to the work area.

**⚠ WARNING:** All wiring must enter the console's enclosure through the designated knockouts. An explosion hazard may result if other openings are used. All wiring from probes to the console must be run in conduit separate from all other wiring. Failure to do so will create an explosion hazard.

**⚠ DANGER:** Make sure you check the installation location for potential ignition sources such as flames, sparks, radio waves, ionizing radiation, and ultrasound sonic waves. If you identify any potential ignition sources, you must make sure safety measure are implemented.

## Other documentation

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The *EVO™ 200 and EVO™ 400 Automatic Tank Gauges Installation Guide*, the *EVO™ 200 and EVO™ 400 Automatic Tank Gauges Operation Guide*, and the *EVO™ 200 and EVO™ 400 Automatic Tank Gauges Programming Guide* are useful manuals you may need. To download these manuals, go to: [www.franklinfueling.com>Products>Fuel Management Systems>Automatic Tank Gauges>EVO™ 200 & EVO™ 400>Downloads>Manuals](http://www.franklinfueling.com>Products>Fuel Management Systems>Automatic Tank Gauges>EVO™ 200 & EVO™ 400>Downloads>Manuals). Alternatively, you can click the following link, and go to the "Manuals" heading:

<http://www.franklinfueling.com/americas/fms/featured/27308/en/evo-200-evo-400#Downloads>

## Certified installer or service person

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The equipment described in this manual should be serviced only by an FFS-certified technician, installer, or service person. Only an FFS-certified technician, installer, or service person is allowed to access both the user interface keypad and internal areas of an EVO™ 200 or EVO™ 400 ATG. **If your EVO™ 200 or EVO™ 400 ATG is serviced by someone who is not an FFS-certified technician, installer, or service person, your warranty will be void.**

## Required equipment

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- LCD display cover (only for upgrading to an LCD display)
- LCD display assembly (includes the display in its holder)
- Grounding clip
- 2-pin stacker
- Smooth jaw, needle nose pliers
- Grounding strap

Intentionally Blank



# Replacing the LCD Display

**NOTE:** If you are upgrading your EVO™ 200 or EVO™ 400 ATG to have an LCD display, you will receive a new cover that has an opening for the display.

**IMPORTANT:** Make sure you wear a grounding strap during this entire procedure. If you do not, your EVO™ 200 or EVO™ 400 ATG could be permanently, severely damaged, and your warranty could be voided.

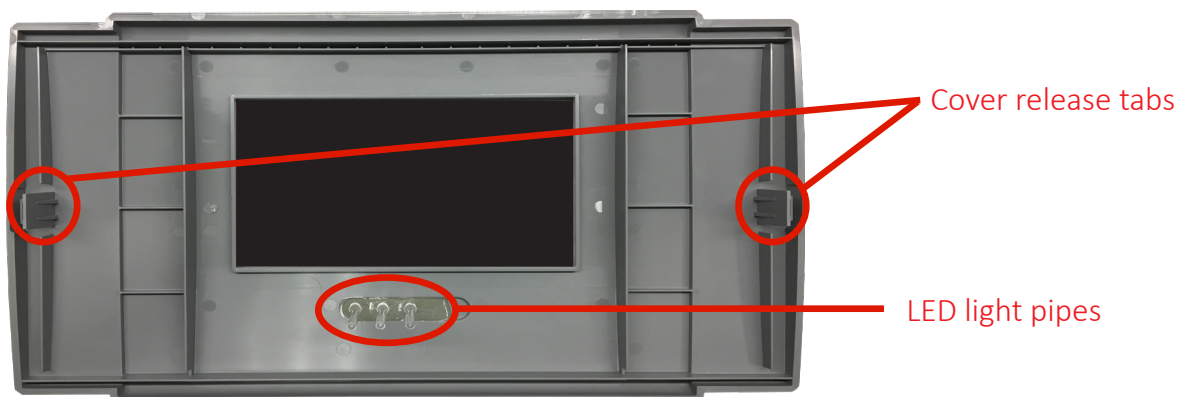
**IMPORTANT:** Lift the cover away carefully to help avoid damaging the LED light pipes.

**⚠ WARNING:** Your ATG has more than one power connection point. To avoid equipment damage and a shock hazard, make sure all power connection points to the ATG are disconnected before you begin servicing your ATG. Also, always perform a proper lockout/tagout (LOTO) procedure to prevent accidental energization of your ATG while you are servicing it.

## Remove the cover

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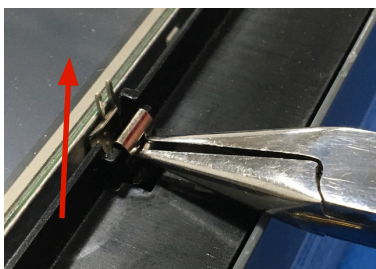
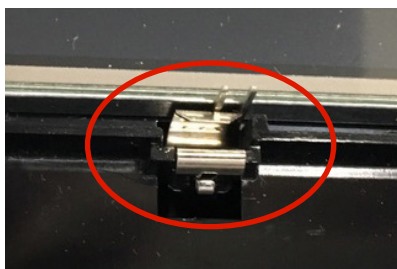
1. Locate and turn off the circuit breaker (probably at the power panel) for the ATG.
2. Press the cover release tabs inward, and then lift the cover straight away from the ATG with both hands.



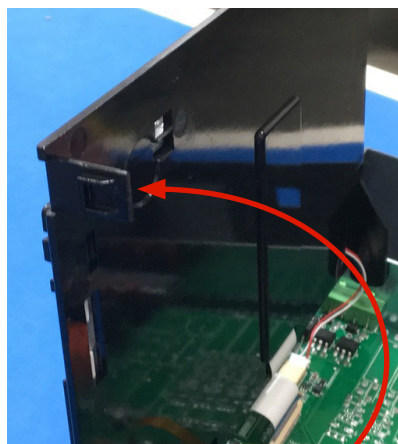
## Remove the LCD display

**NOTE:** Keep the grounding clip you remove in the following step. You can use it as a spare, if necessary.

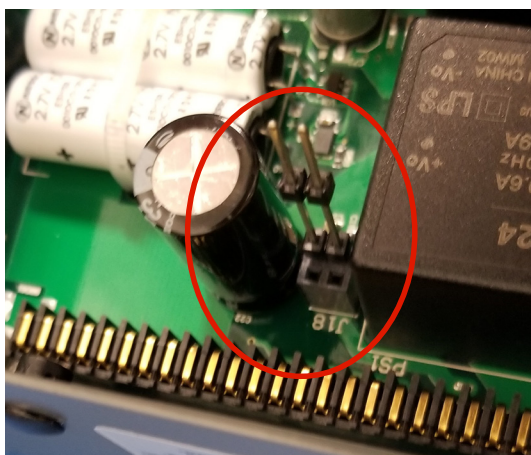
1. Grasp the clip side of the grounding clip with smooth jaw, needle nose pliers, and gently pull up until the clip is free.



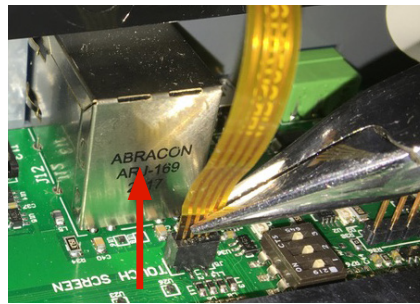
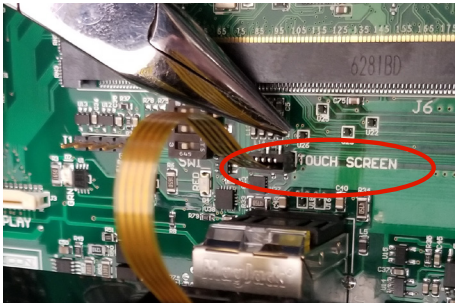
2. Press in one of the side tabs on the display until it is disengaged, and then press in the other side tab. Flip the LCD display up when both side tabs are disengaged.



3. Gently grasp the 2-pin stacker display ground with your fingers or smooth jaw, needle nose pliers, and then gently pull straight up out of the J18 connector. If the stacker is bent, discard it. If it is not bent, save it as a spare part.

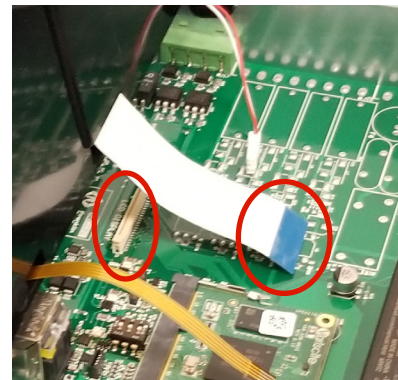
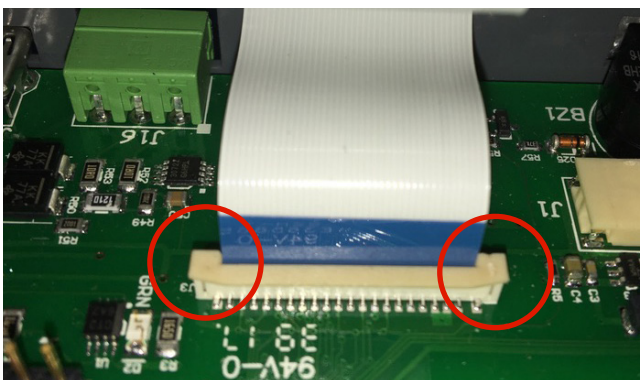


4. Remove the 4-pin ribbon cable from the TOUCH SCREEN connector on the main circuit board.

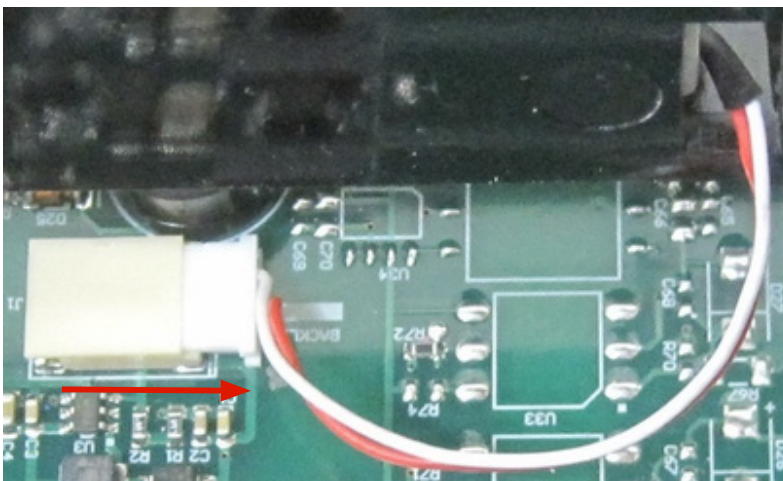


**IMPORTANT:** In the following step, your large, white ribbon cable connector may not have the latches shown. Be extremely careful and gentle when you remove this cable. The connector is very delicate. If you break it, you must replace the entire main circuit board.

5. Remove the large, white ribbon cable from the LCD DISPLAY connector on the main circuit board. If there are latches on the ends of the connector, very gently lift one of the latches on the side of the connector. (Use a fingernail or small screwdriver if necessary.) When this is done, release the other end latch, and then gently lift the large, white ribbon cable out of its connector.



6. Remove the 2-pin backlight cable from the BACKLIGHT connector.





7. Squeeze in one hinge tab on the display assembly until it is disengaged.



8. Pivot the display assembly until the other hinge tab is disengaged, and then lift out the display assembly.

# Install the new LCD display

**IMPORTANT:** Make sure you wear a grounding strap during this entire procedure. If you do not, your EVO™ 200 or EVO™ 400 ATG could be permanently, severely damaged, and your warranty could be voided.

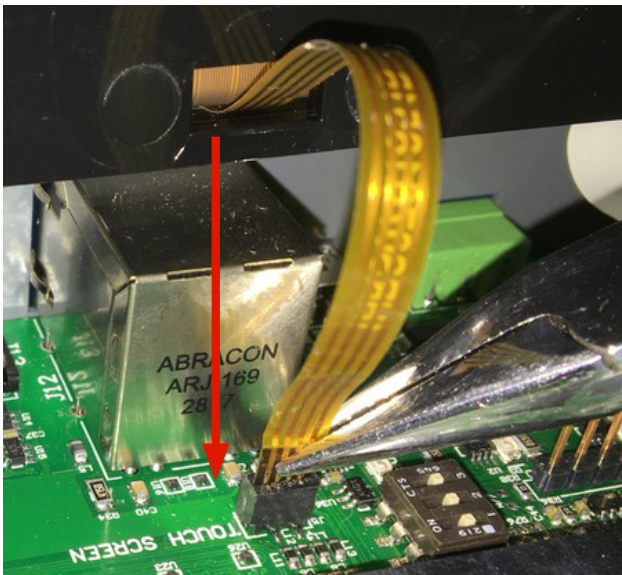
1. Insert the left or right hinge tab on the replacement LCD display assembly in its corresponding hinge hole. Make sure the opposite hinge pin remains aligned with its hinge hole.



2. Slide the other hinge pin towards its hinge hole until the pin is inserted in the hole, and then rotate the display so that it is upright.

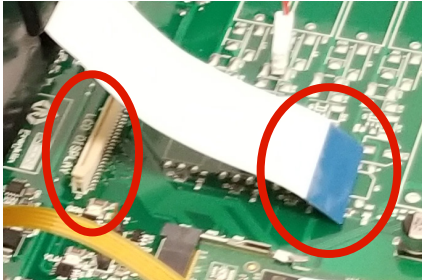


3. Connect the 4-pin ribbon cable to the TOUCH SCREEN connector.

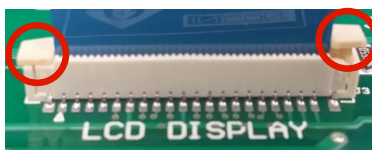


**IMPORTANT:** In the following step, your large, white ribbon cable connector may not have the latches shown. Be extremely careful and gentle when you connect this cable. The connector is very delicate. If you break it, you must replace the entire main circuit board.

4. Connect the white ribbon cable to the LCD DISPLAY connector.



If there are latches on each side of the connector, make sure they are up when you connect the ribbon cable. Lock each side of the connector, alternating back and forth until both are seated properly. Gently tug the ribbon cable after you lock the latches to verify that the white ribbon cable is locked in place.

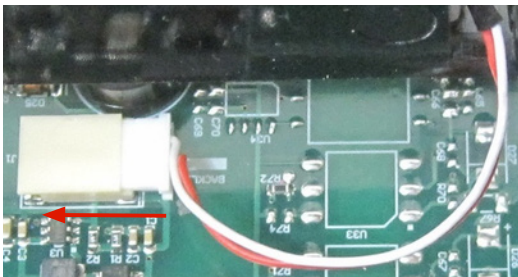


Improper seating

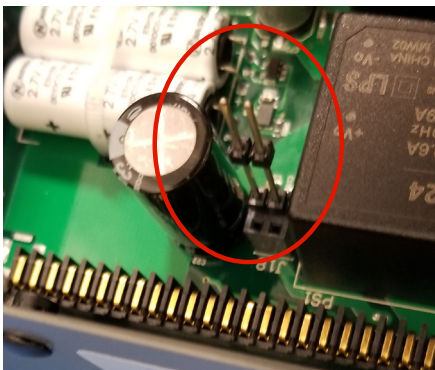


Proper seating

5. Connect the backlight power cable to the 2-pin BACKLIGHT connector.

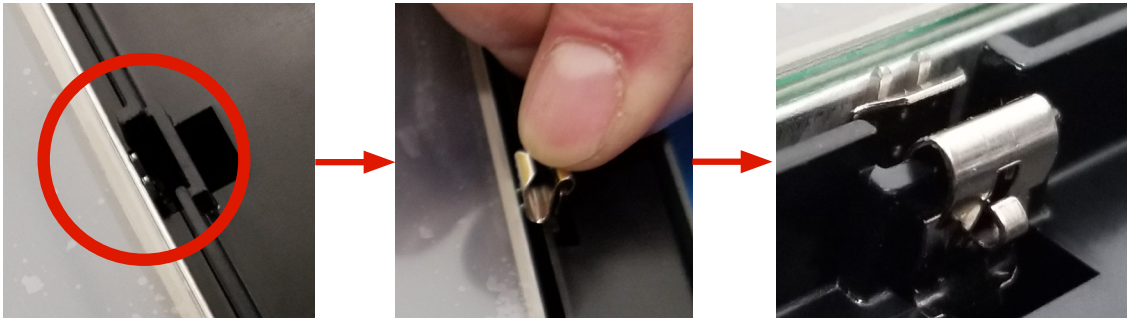


6. Insert the new 2-pin stacker display ground (that was included in your LCD display kit) in the J-18 connector. Make sure you insert it in the holes that are closest to the center of the main circuit board.



7. Rotate the display down, and press in the latches on the display holder so that they click into their holes in the barriers.

The 2-pin stacker protrudes through the hole in the display holder. Insert the new grounding clip that was included in your LCD display kit. This clip has a spring side and a clip side. Use smooth jaw, needle nose pliers to grasp the clip side of the grounding clip and seat it in the hole in the display holder where the 2-pin stacker protrudes. The spring side of the clip should hold the stacker against the display. You may need to push the grounding clip into the hole to seat it properly.

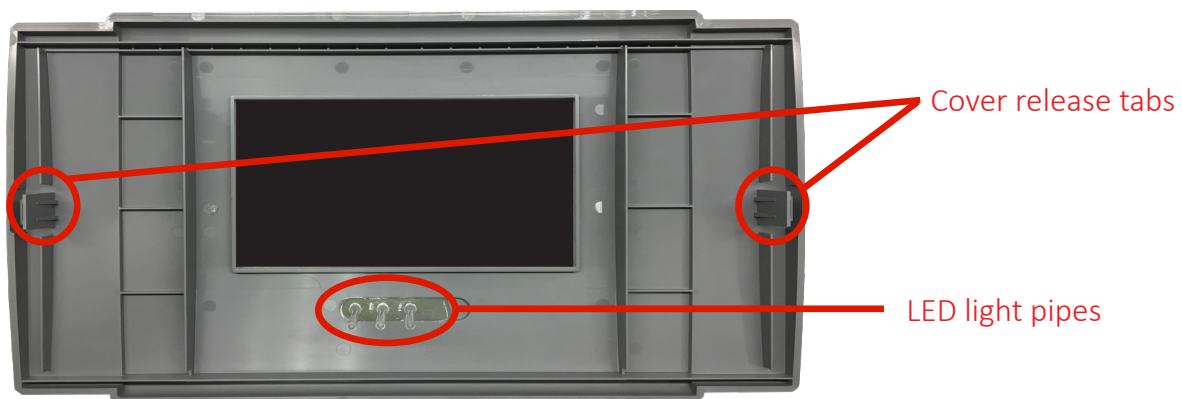


## Install the cover

**NOTE:** If you are upgrading your EVO™ 200 or EVO™ 400 ATG to have an LCD display, you will receive a new cover that has an opening for the display. Make sure you install that cover.

**IMPORTANT:** In the following step, be careful when you lower the cover onto the ATG in order to avoid damaging the LED light pipes.

1. Lower the cover straight onto the ATG so that the LED light pipes are not bent or broken. Lower the cover until the release tabs click into their holes in the sides of the ATG.



2. Turn on the circuit breaker for the ATG.

