Franklin Fueling Systems

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EVO™ 200 AND EVO™ 400 INPUT BOARD

REPLACEMENT 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.

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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Introduction

This manual contains instructions for replacing the input board 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

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
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

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

NOTE: Provides helpful supplementary information.

IMPORTANT: 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**: 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**: Indicates a potentially hazardous situation that could result in severe injury or death if not avoided.

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

Operating precautions

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:

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

Certified installer or service person

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 the 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 tools

- Needle nose pliers
- Grounding strap
- Phillips screwdriver
- 1/4" (6 mm) nut driver
- 5/16" (8 mm) nut driver
- 5/16" (8 mm) wrenches (2)

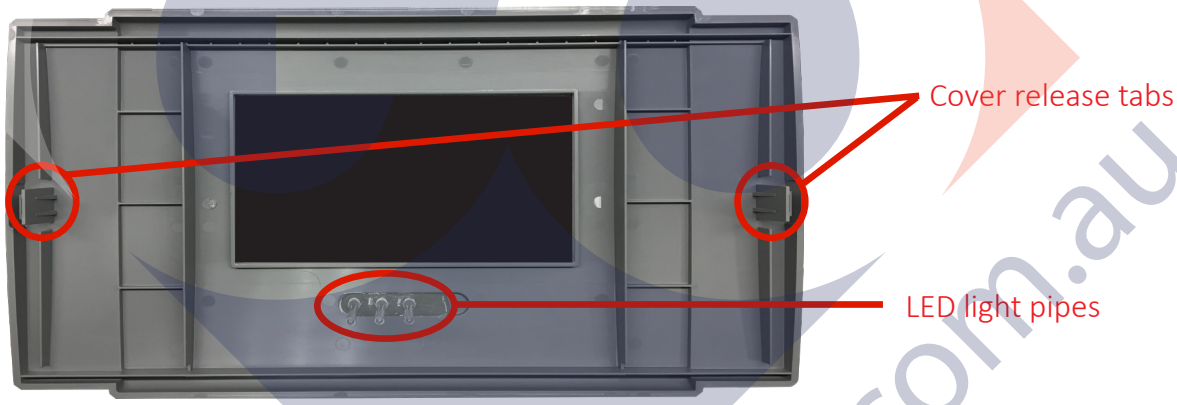
Replacing the Input Board

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.

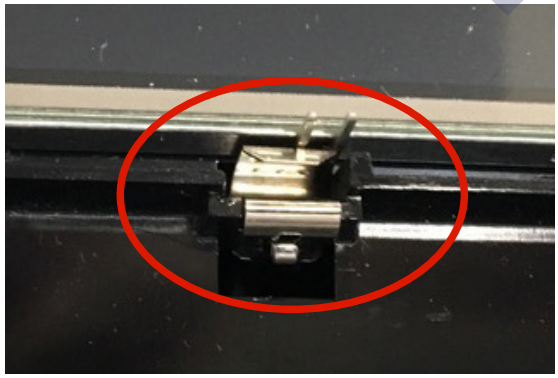
⚠ **WARNING**: Your ATG has more than one power connection point. To avoid equipment damage and a shock hazard, make sure all power connection points to the ATG are disconnected before you begin servicing your ATG. Also, always perform a proper lockout/tagout (LOTO) procedure to prevent accidental energization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

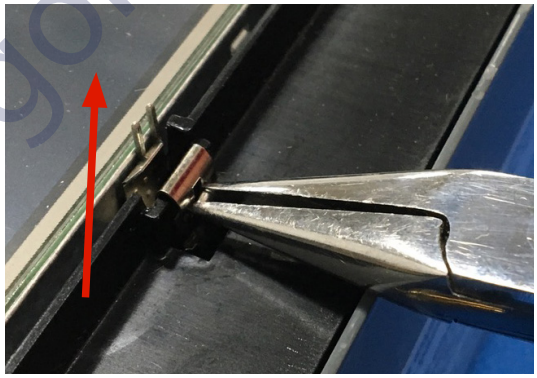
1. Press the cover release tabs inward, and then lift the cover straight away from the ATG with both hands.



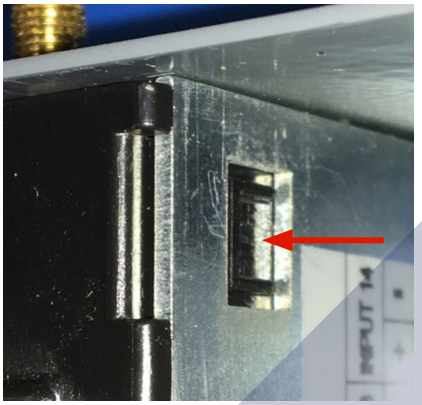
IMPORTANT: Put the grounding clip you remove in the following step in a safe place. You will use it at the end of this procedure.

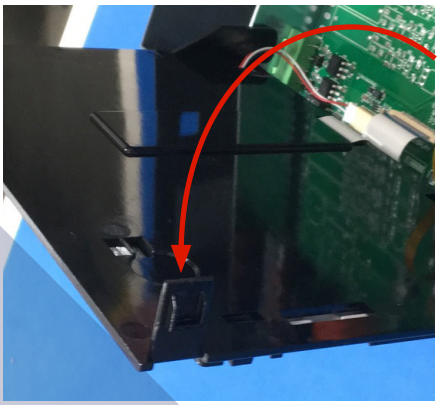
2. Grasp the clip side of the grounding clip with needle nose pliers, and gently pull up until the clip is free.





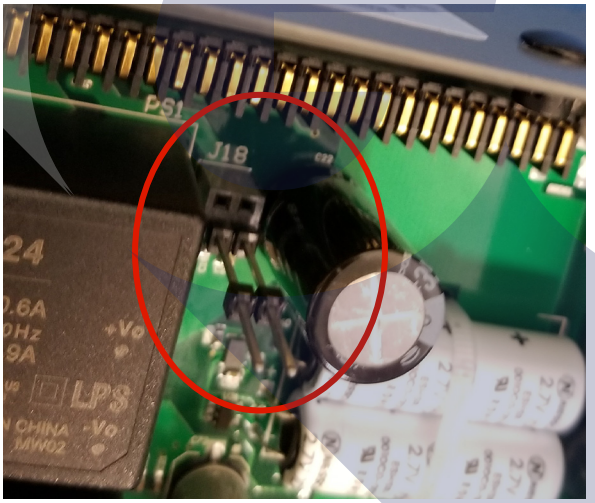
3. Press in one of the side tabs on the display until it is disengaged, and then press in the other side tab. Flip the LCD display down when both side tabs are disengaged.



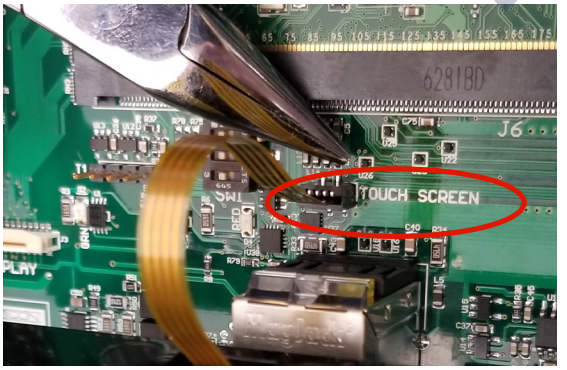


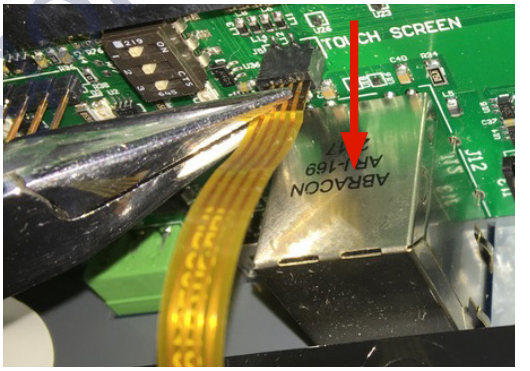
IMPORTANT: Put the 2-pin stacker display ground you remove in the following step in a safe place. You will use it at the end of this procedure.

4. Gently grasp the 2-pin stacker display ground with your fingers or needle nose pliers, and gently pull it straight up out of the J18 connector. If the stacker is bent, use the information in "Questions and concerns" to contact FFS Technical Support for assistance.



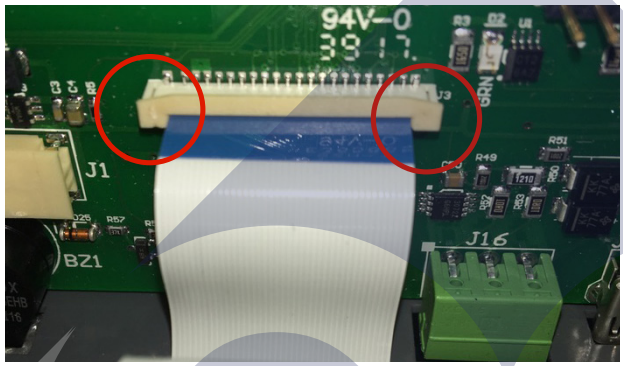
5. Remove the 4-pin ribbon cable from the TOUCH SCREEN connector on the main circuit board.

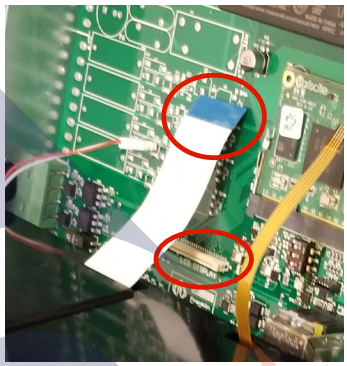




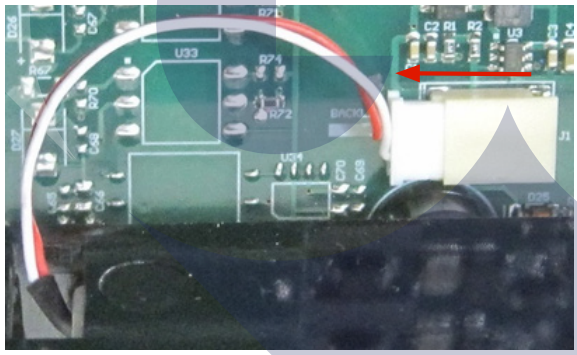
IMPORTANT: In the following step, your large, white ribbon cable connector may not have the latches shown. Be extremely careful and gentle when you remove this cable. The connector is very delicate. If you break it, you must replace the entire main circuit board.

6. 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.



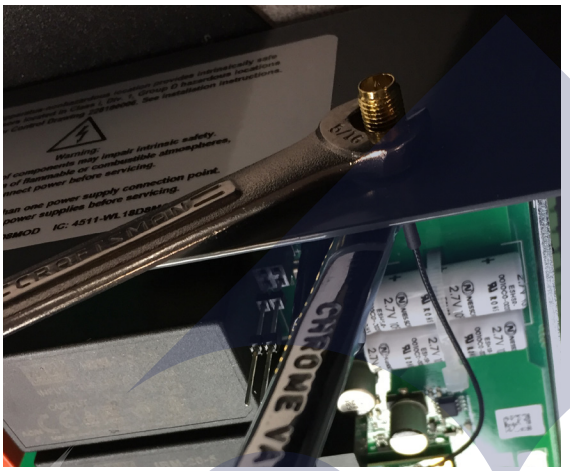


7. Remove the 2-pin backlight cable from the BACKLIGHT connector.



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

9. Pivot the display assembly until the other hinge tab is disengaged, and then lift out the display assembly.
10. Remove the WiFi antenna (if present).
11. Use two 5/16" (8 mm) wrenches to remove the WiFi antenna connector.



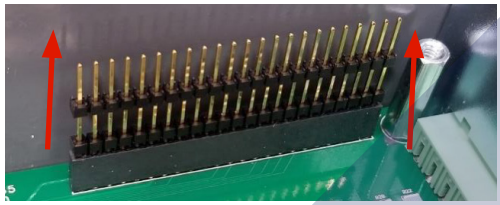
12. Use a Phillips screwdriver to remove the Phillips screws in each of the four corners of the main board.
13. Use a 5/16" (8 mm) nut driver to remove the two nuts on the left (intrinsically safe) side of the guard.

IMPORTANT: In the following step, make sure you gently lift the main board and place it in a safe location. You will need to reinstall it later in this procedure.

14. Gently pull the top of the main board forward to disengage it from the input board, and then lift the main board up to remove it from your ATG.

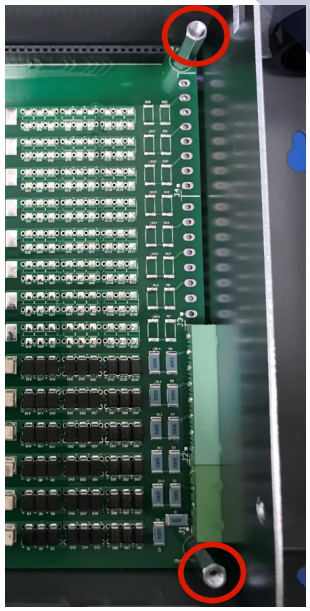
IMPORTANT: In the following step, make sure you gently remove the 23-pin board stacker to avoid deforming it.

15. Use both hands to gently pull the 23-pin board stacker strait up. You must lift both sides of the stacker evenly to avoid deforming it. Place the stacker in a safe location when you have removed it. You will need to reinstall it later in this procedure.



16. Remove the two Phillips head screws on the input board.

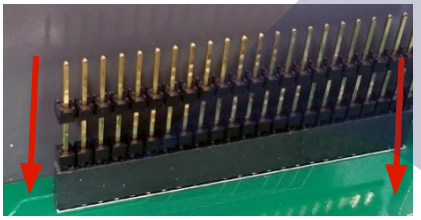
17. Use a 1/4" (6 mm) nut driver to remove the two standoffs on the input board.



18. Lift the input board out of the console.
19. Lower the new input board gently into the console so that the holes for the standoffs and Phillips screws are aligned. Start securing the board from the lower left screw, which is smaller in diameter and serves as a pilot hole. Make sure the gap between the bottom of the board and enclosure is even when you install the second screw and standoffs. This helps make sure the connectors for stacker on the top and bottom boards are aligned.

IMPORTANT: In the following step, gently install the 23-pin board stacker to avoid deforming it.

20. Use both hands to carefully install the 23-pin board stacker you removed from the old input board. Make sure it is perpendicular to the new input board and inserted correctly into its connector so that it is not shifted to one side (i.e. no pins are hanging off).

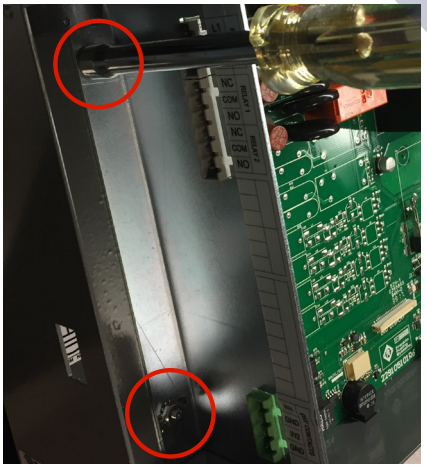


NOTE: In the following steps, use the main board you removed earlier in this procedure.

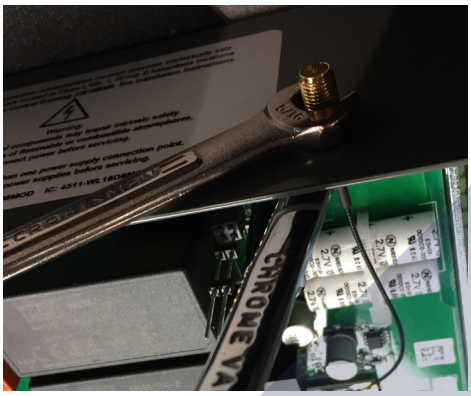
21. Insert the connectors located on the bottom of the main board into the openings on the bottom side of the enclosure. Make sure that the bottom edge of the board is evenly resting on the enclosure wall. Gently push the top of the board into the enclosure until it meets the pins of the 23-pin board stacker. If the board and a stacker are not aligned, you will feel a hard stop. Do not push any further, otherwise, you may damage the stacker. Take the board out, and make sure that the stacker is inserted correctly so it is perpendicular to the board. If the board and a stacker are aligned correctly, you will feel a soft "springy" resistance. Gently press the board all the way to engage the 23-pin board stacker and the connector.
22. Push the board to the right partition (or guard), and use a Phillips screwdriver to insert and tighten the Phillips screws in each of the four corners of the main board.

IMPORTANT: In the following two steps, do not overtighten the screws and bolts.

23. Make sure the guard that isolates the left area is tight against the main board, and use a 5/16" (8 mm) nut driver to insert and tighten the nuts that secure the guard.



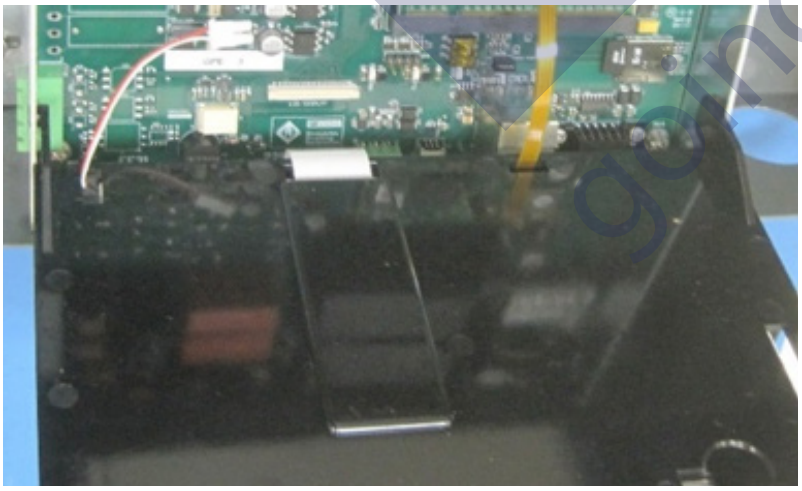
24. Use two 5/16" (8 mm) wrenches to install and tighten (do not overtighten) the WiFi antenna connector.



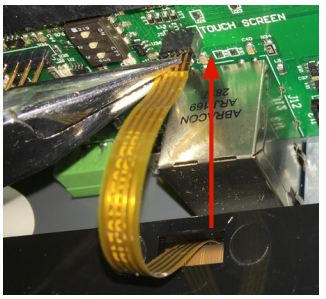
25. Reinstall the WiFi antenna (if you have one).

26. 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.

27. 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.

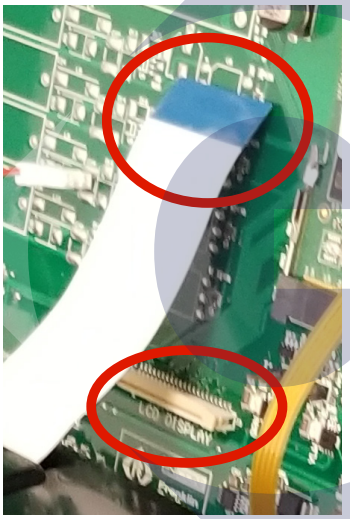


28. Connect the 4-pin ribbon cable to the TOUCH SCREEN connector.

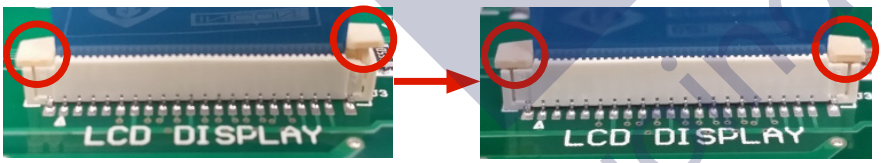


IMPORTANT: In the following step, your large, white ribbon cable connector may not have the latches shown. Be extremely careful and gentle when you connect this cable. The connector is very delicate. If you break it, you must replace the entire main circuit board.

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

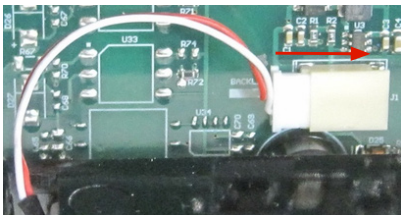


If there are latches on each side of the connector, make sure they are up when you connect the ribbon cable. Lock each side of the connector, alternating back and forth until both are seated properly. Gently tug the ribbon cable after you lock the latches to verify that the white ribbon cable is locked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

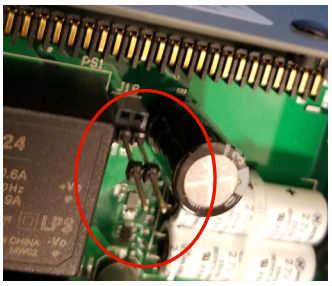


Improper seating Proper seating

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

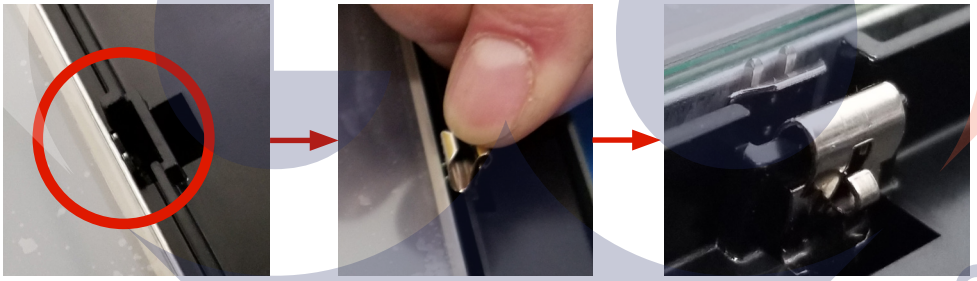


31. Insert the 2-pin stacker display ground (that you removed earlier) into the J-18 connector, Make sure you insert it into the holes that are closest to the center of the main circuit board.



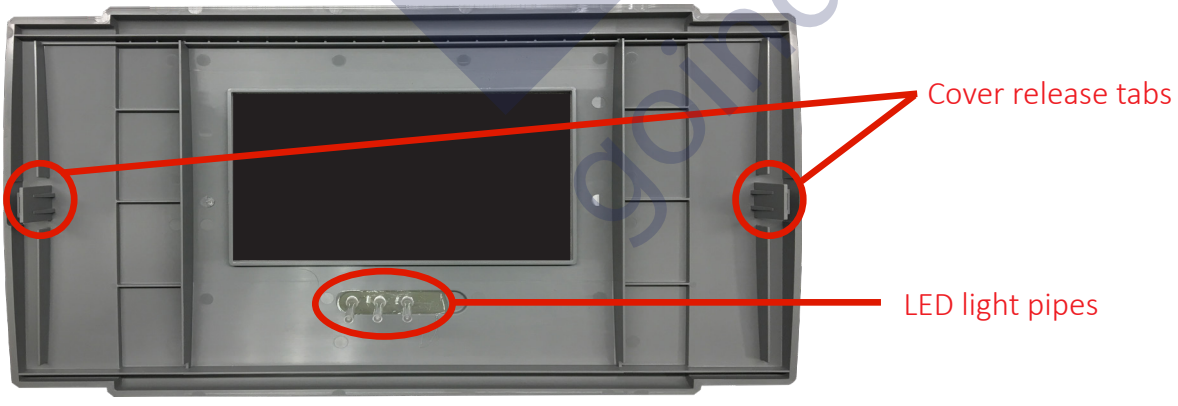
32. Flip the display up, and press in the latches on the display holder so that they click into their holes in the barriers.

    The 2-pin stacker protrudes through the hole in the display holder. Insert the grounding clip you removed earlier. This clip has a spring side and a clip side. Grasp the clip side of the grounding clip (you can use needle nose pliers), 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.



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

33. 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.



34. Turn on the circuit breaker for the ATG.

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