527F Enhanced Panel for 88HS Pendants
Installation Manual

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Kit parts list

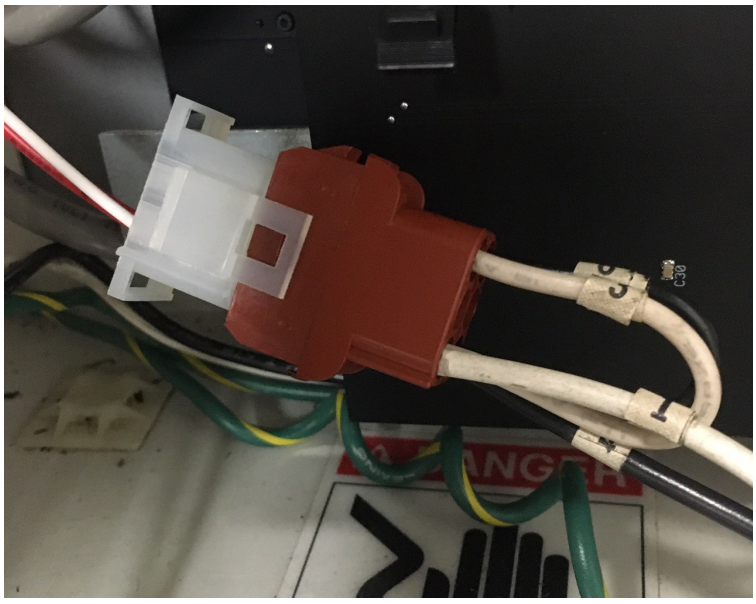
527F Enhanced Panel
White 14' CAT5 cable
Replacement Black knob (5)
Momentary push button Green
Momentary push button Red
E-stop push button (1 NO , 1 NC contact)
Din rail
120VAC receptacle adapter, din rail mounted
Spindle load meter controller board
5V power supply with dual mini-USB power connectors

Installation Instructions

Note: This installation manual is specific to the 88HS panels made on the legacy Fadal Machining Centers. Only qualified personnel should attempt the removal and installation of the kit.

Photograph the front of the pendant in addition to all of the individual internal components connected to the front panel of the CNC. Ensure that every connection inside the pendant is documented prior to installation of the 527F pendant replacement panel. This includes wire numbers connected to each device.

1. Disconnect power from the machine tool.



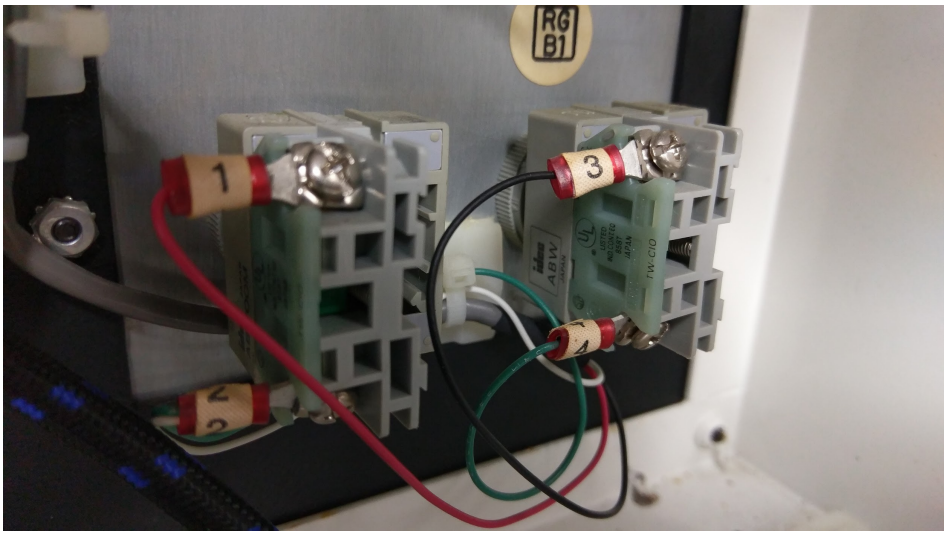
2. Disconnect the Molex power plug for the CRT screen shown above. Remove the coaxial cable attached to the CRT as well.

CAUTION: The CRT may have high voltage present even when disconnected. Use extreme caution while handling the CRT assembly.

3. Remove the hardware securing the CRT screen to the front panel and support tray.

4. Carefully remove the CRT from the pendant while ensuring that no contact is made with any of the CRT internal components. The tray used to support the weight of the CRT is not needed with the 527F enhanced pendant. It must be removed in order to have sufficient clearance for the 527F enhanced pendant.

5. Disconnect power from the keyboard controller board. (1090 PCB). The 5V power wires typically have red insulation and the common insulation black. Remove the harness assemblies from the keyboard controller board. J1, J2, J3, J8 and J9. Disconnect the parallel port connection on J5. It will not be used with the new pendant face.

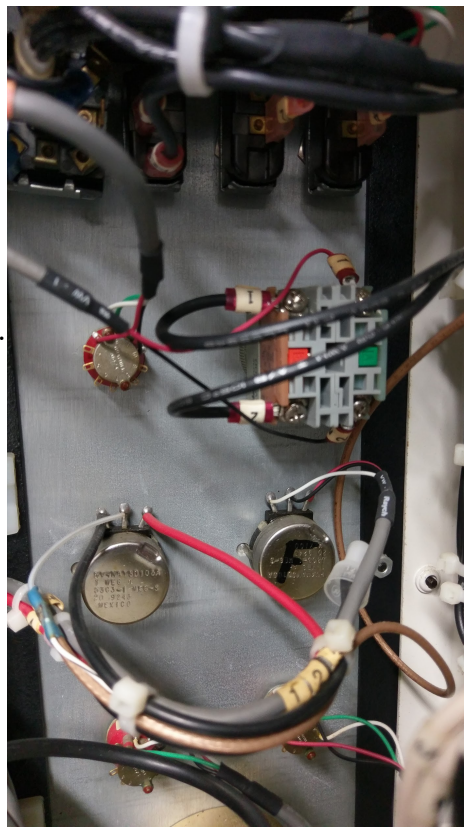


Note: If possible, do not disconnect individual wires all at once for the Slide Hold, Start push buttons, Jog Wheel,... It is recommended to pull the assemblies back and then re-wire one device at a time in order to prevent re-connection errors

6. Unscrew the push buttons used for Start and Slide Hold. Pull the switch assembly back into the pendant enclosure. Do the same for the Emergency Stop push button.

7. Several set screws secure the handle of the jog wheel to the shaft. They need to be loosened. Remove the hand wheel on the front of the panel. Once the handle is removed, several screws will be exposed that hold the MPG base assembly to the panel face. Remove these screws and pull the MPG away from the pendant face and lay it in the bottom of the cabinet.

8. Remove the knobs from all of the potentiometers and selector switches. Remove the nuts holding them and pull back the assemblies. Take note the washers used on each of the switches and potentiometers in the image above, the washer location can be behind or in front of the panel depending on how it locks onto the panel to prevent rotation.



9. Remove the spade connectors from the four toggle switches. Be sure that each wire set is documented prior to removal. They will go into the same position on the new panel.

10. Disconnect the spindle load meter connections. Some versions of the 88HS pendant have quick connects and other use spade terminals. They may need to be cut.

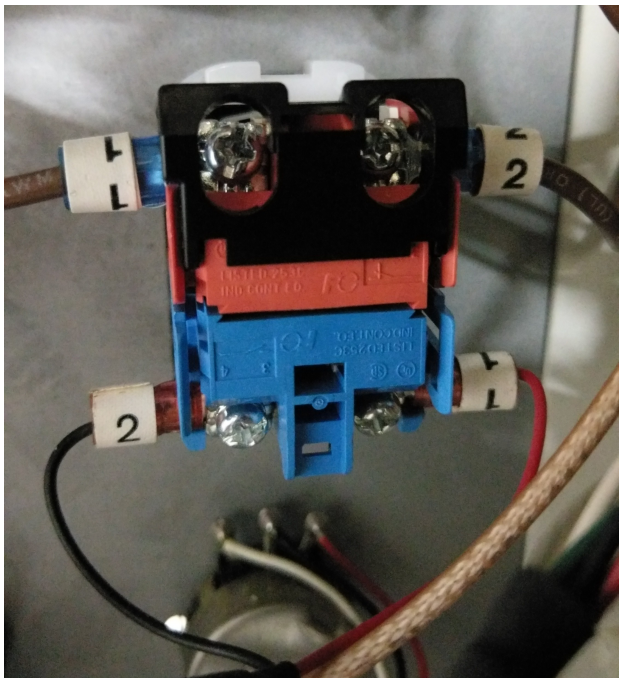
11. The key lock is removed front the front. There are two options to remove the key lock. The first involves de-soldering the wire then re-soldering them afterwards. The preferred method is to free the cable from the loom by cutting the wire ties so that the cable can be removed from the loom. The two wires of the key lock switch cable are inserted into the keyboard connector at the other end. These pins and easy be removed by pushing lightly into the rectangular slot on the connector while simultaneously pulling the pin out. With the cable free, it can now be pulled out the front of the panel. The key lock will be placed down and to the right of the keyboard. If there is a power light, cut the wires. It will not be used on the new panel.

12. The front panel should be ready for removal. Remove the 8 screws that secure the pendant face to the front panel. Carefully remove the original panel face and set to the side.

NOTE: The panel WILL NOT fit into the enclosure if inserted horizontally due to interference with the LCD back plate.

13. The 527F enhanced panel is ready for insertion. The panel should be tilted with the top end angled towards the enclosure. Slide the top end of the panel so the LCD bracket clears the enclosure lip and then angle the bottom portion for a flush fit. Secure the new panel with the 8 screws.

14. The din rail receptacle should now be mounted. Remove one of the nuts from the pendant handle. Slide the din rail over the exposed screw and secure with the nut. The power wires used for the CRT will be cut and re-connected using the terminal blocks of the DIN rail mount receptacle. Snap the receptacle into the DIN rail and find an appropriate place in the power cable to cut. Ensure that there is enough length to reach the receptacle AND for the Molex plug to reach the monitor for the new LCD. The black wires should be connected to the L terminal block of the receptacle and the white wires should be connected to the N terminal block. Snap the receptacle into the DIN rail. The spindle load meter video card can also snap into the same DIN rail. An additional DIN rail is supplied if the user wishes to mount it elsewhere.



15. The Emergency stop circuit has two sets of wires numbered 1 and 2. The red terminal block of the 527F panel are NC contacts. These are used for the 120VAC E-stop circuit. These are the larger wires of the pair. Remove them from the old E-stop switch and move them to the red (NC) E-Stop switch terminals of the new E-stop switch. The smaller wires labeled 1 and 2 carry low voltage. They should be moved to the blue (NO) terminals. The installer should verify that the NO and NC contacts and the wires associated with them follow from the old push button to the new one using a Fluke meter or similar continuity test.

16. Remove the Start push button wires from the assembly and re-connect to the new Start push button terminals. Do the same for the Slide Hold push button wires.

17. Insert all of the selector switches and potentiometers in the same location as they were previously. Ensure the alignment holes are used to prevent them from moving during operation. Some of these devices will need to have the washers moved from the rear to the front in order to achieve the proper spacing for the knobs. Attach the black knobs included with the kit.

18. Attach the jog wheel using the same screws that were used in the original pendant. Re-attach the jog wheel handle and secure with the set screws.

19. Connect the Molex connector used to power the CRT to the one provided for the LCD monitor. Attach the 527F HDMI cable to the LCD monitor as well.

20. Insert the key lock switch and re-attach the wires depending on the method used to disconnect them.

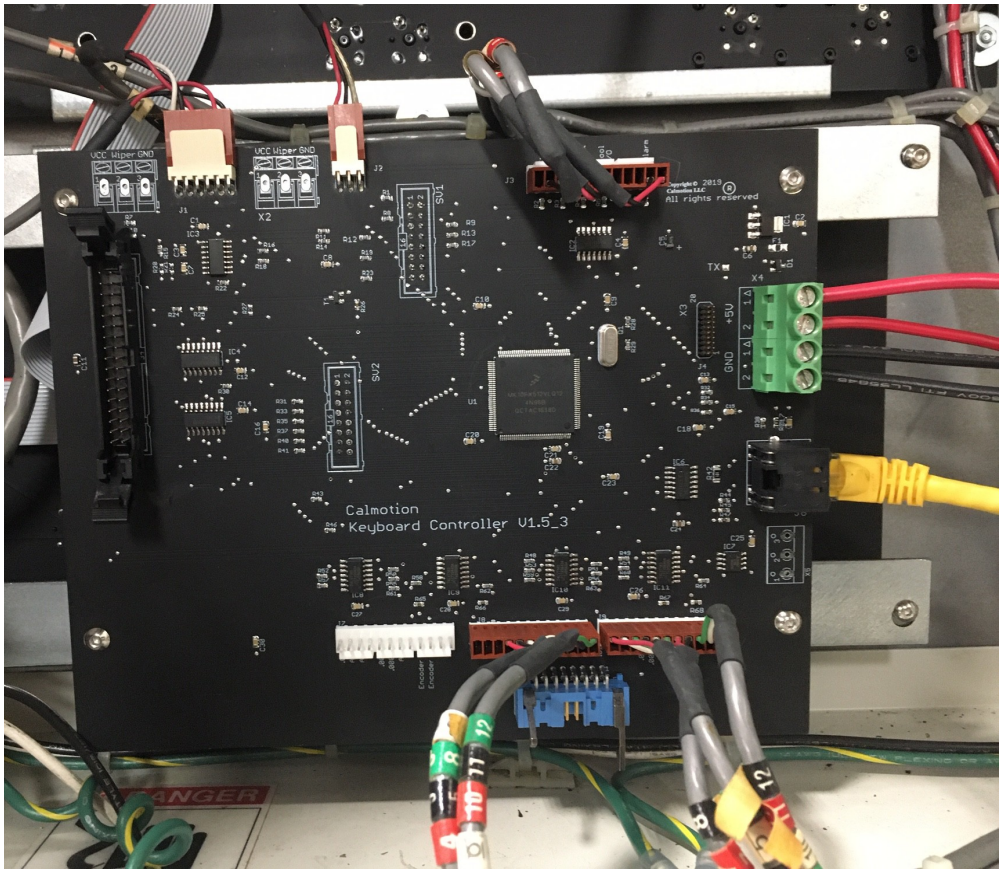


Illustration 1: temporary pic, to be replaced with white cable and rj-45 cover

21. Attach the keyboard controller headers to the Calmotion keyboard controller board. The locations are in the same place as the 1090 board. Connect the 5V and common wires to the Calmotion keyboard controller. The terminal block locations for 5V and common are the same. They are labeled on the controller board silkscreen. A white CAT5 cable is used to communicate between the CNC and the keyboard controller. It should be connected to the keyboard controller and routed to the rear cabinet. It connects to a RJ-45 connector on the main CPU board in slot 8. It has a white color coded cover on it for identification purposes. Do NOT connect the 34 pin parallel port connector from the legacy controller to the new one.

22. Splice together the spindle load meter wires to the white and black wires on the auxillary video controller board. Only the signal and common wires are used. The signal wire is white and the common is black.

23. Attach the short HDMI cable from the small LCD to the auxillary video controller board. The small LCD controller has a right angle HDMI connector for spacing purposes. Plug the 5V power adapter into the DIN rail 120VAC power receptacle. A dual mini-USB connector provided in the kit should be connected to the small LCD screen and the auxiliary screen controller.

24. Connect the spade terminal tabs in the same location from the old pendant to the appropriate toggle switches of the new panel.

25. With the E-Stop switch pressed in, apply power to the machine and verity operation.