

Mechanical

Here are some instructions on how to do some light mechanical work.

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Removing the Computer from an X15-250 Control

Description of the problem:

It may be necessary for you to remove the PC from the control for repair or other reasons.

Solution:

To remove the computer from an X15-250 Control do the following:

NOTE: *Consider taking photos of your setup as you go so you can be sure to get things put back as they originally were

1. Remove the back panel on the control to be able to access the connections to the computer (your back panel may look a little different but concept is the same).



2. Unplug all cables going to the computer



3. Remove the screws around the monitor on the front



4. Slide the computer (with screen) out the front. NOTE: There is a foam type gasket around the frame of the monitor that seals pretty well and can make it difficult to get the computer out. You may need to work at it a bit, but if the front screws are out that should be all that is holding it in. Just be careful not to bend it or otherwise put too much pressure as the screen can crack).

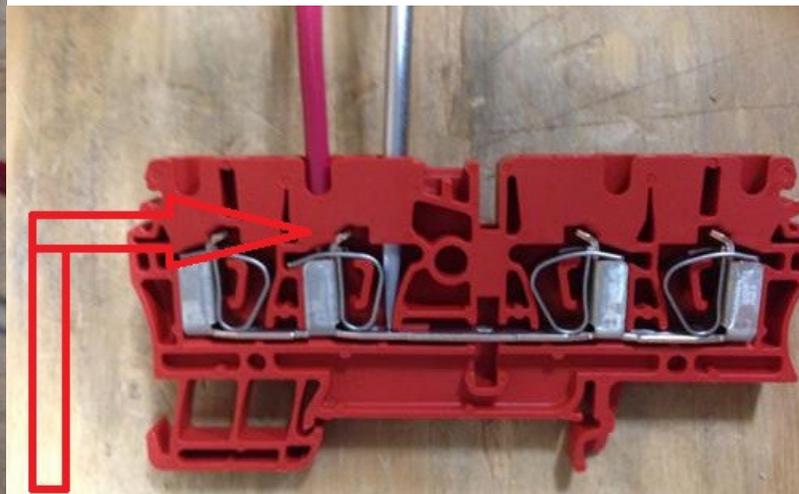
5. The screen is attached to the PC with screws along each side. Remove the screws and screen can be detached. NOTE: There are likely plastic/poly spacers between the monitor and PC frame. These will likely fall out of place when you remove the monitor. Taking photos first can help to know how they go back together.

**To access the internals of the computer remove the screws holding the back cover on the computer box. Remove it slowly and watch for the CPU fan wire and note where it is plugged into in case you need to remove it or it gets pulled off inadvertently.*

Keywords: replace control, swap control, remove computer, remove monitor

Terminal Block Usage How to connect wires

Use a small flat screwdriver to push back the metal clip. It will likely take a good bit of pressure and the proper angle to get it to slide into place. This opens up the pocket for the wire to go into. Once opened, insert the wire and be sure no insulation has entered into the metal. Remove the screwdriver to release the clip, allowing it to securely hold the wire in place.



Insulation should not go beyond this point.

Control On/Off Key Switch

If you do not have a key to turn the keyswitch for turning the computer on and off, there are some options:

1. It is just a momentary 2-wire switch. You could replace it with just about any such momentary 2 wire switch.
2. On the barrel of the key plug is a number. Most locksmiths should be able to get you a key if you provide that number.
3. You can purchase a replacement keyswitch and keys (but not just keys) from us. (approximately \$45 which includes s/h) P/N: **100105**

Each of these options except number one will be a little time consuming as it is not real easy to remove that key switch. There is a cable/connector to PC start on the computer so with option 1 you could leave the switch in place and just wire new switch into that plug.

There is a little switch in the back of the computer. Depending on your model it will be a little switch that you push down and looks similar to the top of a click pen. Other models it will be a rocker switch, but be careful because the power supply may have a rocker switch as well.

Keywords: 14201, Control Key

Helpful Parts & Software Links

In an effort to help our customers, the following information is being provided. While we do not recommend or endorse any of these specifically, we have found them to be helpful to some of our customers and list them to make your research starting point easier.

UPS / Surge Protector:

*NOTE: the important thing is that the unit have AVR (automatic voltage regulation)

<http://amzn.com/B0038ZTZ3W>

APC BR1000G Back-UPS Pro 8-outlet Uninterruptible Power Supply (UPS)

<http://a.co/g1XibG9>

CyberPower AVR750U

Limit Switches:

<https://www.mcmaster.com/#large-object-limit-switches/=15329im>

<http://www.digikey.com/product-search/en/switches/snap-action-limit-switches/1114207>

https://www.automationdirect.com/adc/Overview/Catalog/Sensors_-z-_Encoders/Limit_Switches

Proxy switch (not recommended to use as a limit switch): [https://www.automationdirect.com/adc/Shopping/Catalog/Sensors_-z-_Encoders/Inductive_Proximity_Sensors/12mm_Round_Industrial_Automation/Standard_Sensing_\(12mm\)/PBM-AP-1H](https://www.automationdirect.com/adc/Shopping/Catalog/Sensors_-z-_Encoders/Inductive_Proximity_Sensors/12mm_Round_Industrial_Automation/Standard_Sensing_(12mm)/PBM-AP-1H)

Operator Panel Jog Buttons:

<http://www.newark.com/itw-switches/59-211/switch-square-black/dp/06WX7471>

Pulley suppliers:

<https://www.mcmaster.com/#timing-belt-pulleys/=1a3iblp>

<https://www.mscdirect.com/browse/tn/Motion-Control-Fluid-Power/Chains-Belts-Pulleys-Sprockets/Sheaves-Pulleys/Timing-Belt-Pulleys?navid=12104960>

<https://www.rw-america.com/products/precision-couplings/elastomer-couplings/>

Heating Control:

For operating in a cold environment you may need to put a heater in such as: 060210-00 (or smaller unit 060110-00)

Tachometer:

<https://www.amazon.com/Digital-Photo-Laser-Tachometer-Contact/dp/B001N4QY66/>

<http://a.co/dCDXxY2>

Engraving Software:

Here is a recommended software from one of our customers that does serial engraving:

serial number engraving software from 2Linc.com

As I have told ya before I have no prior CNC experience before purchasing Mach Motion and building my own Bridgeport series 2 cnc. I found this engraving software for \$400.00. It loaded in 5 minutes and took about an hour to learn how to use it by watching their video tutorial. The only changes I had to make was the spindle RPM, cutter feed and plunge feed. I cant tell ya enuf how easy this was.

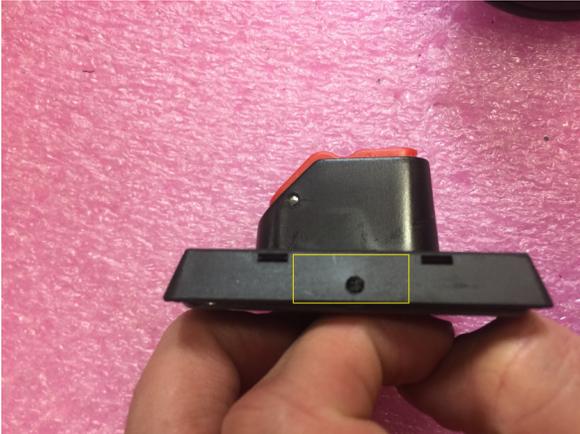
Keywords: 10164, 16140, mcmaster carr, digikey, automation direct,

Open Electrical Cabinet With Power ON

Here are the steps to open the electrical cabinet without having to shut down power:

⚠ DANGER: High Voltage Present. Death or Serious Injury Can Occur.

1. You will need a small allen wrench or a small screw driver.
2. Locate the small push pin located near the OFF labeling of the door switch.
3. Push in the pin with the tool while pulling the handle towards you.
 - Note: Do not turn the switch to off. This technique should allow you to defeat the interlock so you can open the door with the switch in the ON position.



Keywords: bypass, enclosure, override