

CNC Control Modification Parts

Slide this nut over the small connector, then feed the connector through the PLC hole in back panel and slide nut back onto cable to tighten large connector after installation

This is "CNC PLC" connector. ZipLoader cab carries signals and power to "ZIP PLC" connector on ZipLoader cabinet.

To "PLC 12V" header on Connect Card (late Connect Card)

To screw at base of blue capacitor

To "PLC" on converter module (This connector fits through hole in back panel)

To mounting screw on connect card

To COM hdr on motherboard

To "PLC" 110VAC at TS1 on connect card (blk to "P" red to "N")

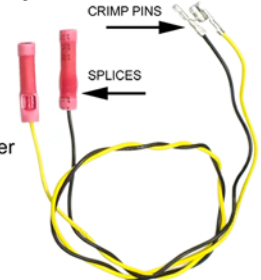


USB "Thumbdrive" with CNC files

For CNC with old-style Connect Card:

Cut blue connector off and splice this pair of wires on in its place.

Route crimp-pins to Auxiliary Power Supply connector and insert per instructions in text.



RS422 Converter

Loopback plugs for troubleshooting communication errors

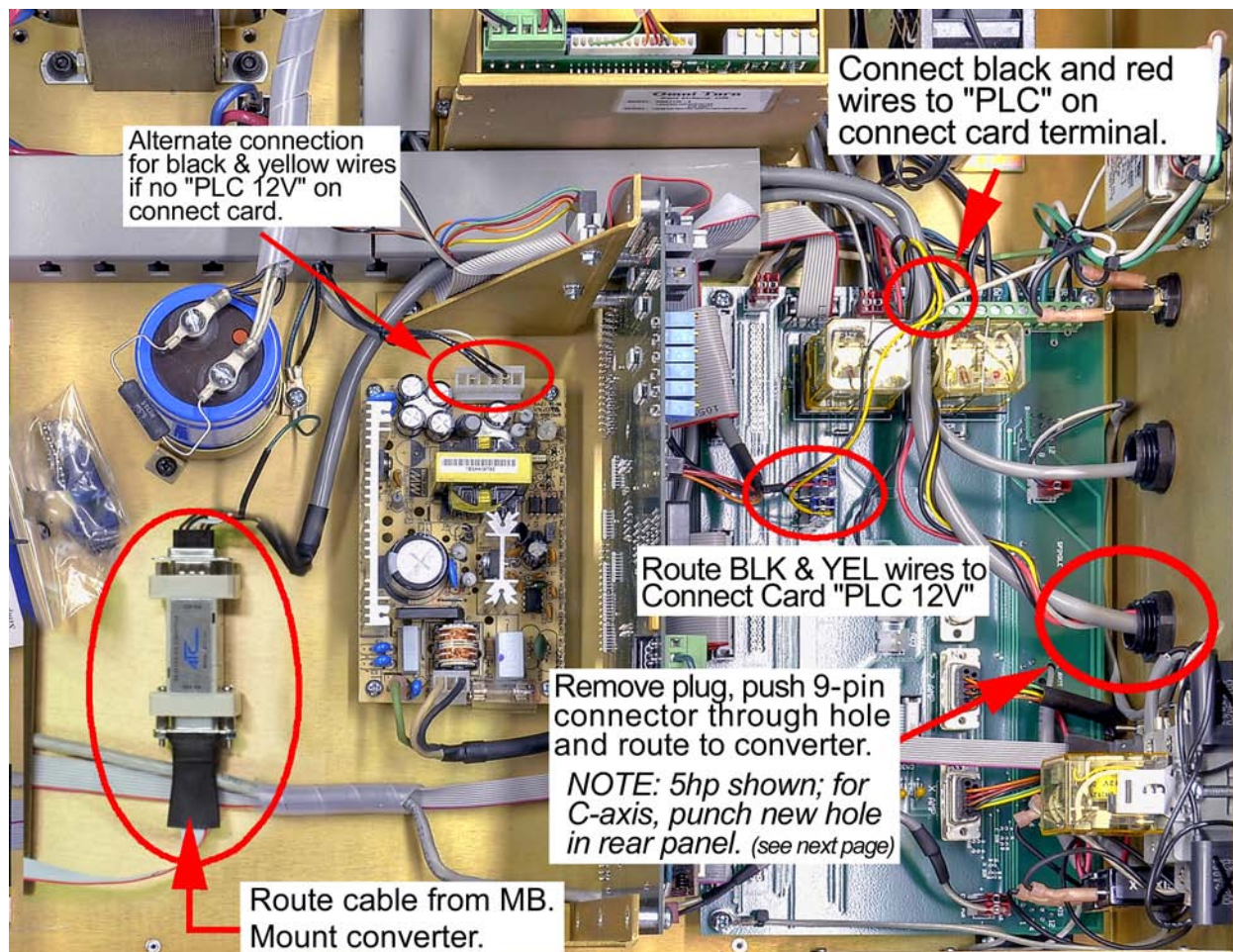


CNC Control Modification Summary

The general steps to install PLC option in the CNC Control are listed below.

More detailed instructions start on next page. See previous page for illustrated parts list.

1. Install special bulkhead connector in rear panel (must punch hole for C-Axis CNC); route cables to connect card (110vac), Auxiliary Power Supply (+12vdc) and RS422 Converter.
2. Connect black & red wire to "PLC" stations on Connect Card terminal strip.
3. Connect blue plug on black & yellow wires to "PLC 12V" on connect card (new-style) OR insert black & yellow wires into existing Auxiliary Power Supply output connector.
4. Route 10-pin ribbon cable from serial port on computer; connect cable to RS422 Converter and stick it to chassis. **NOTE:** Location of serial port on computer depends on type of motherboard: see pages 5-8 for different motherboards used through the years.



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Install PLC Connector

CNC controls equipped for standard 5hp spindle drive have plugged hole next to Operator's Station connector on back panel (see photo at right). C-Axis CNC control uses this hole, so additional hole must be punched at far right of rear panel to accommodate PLC.

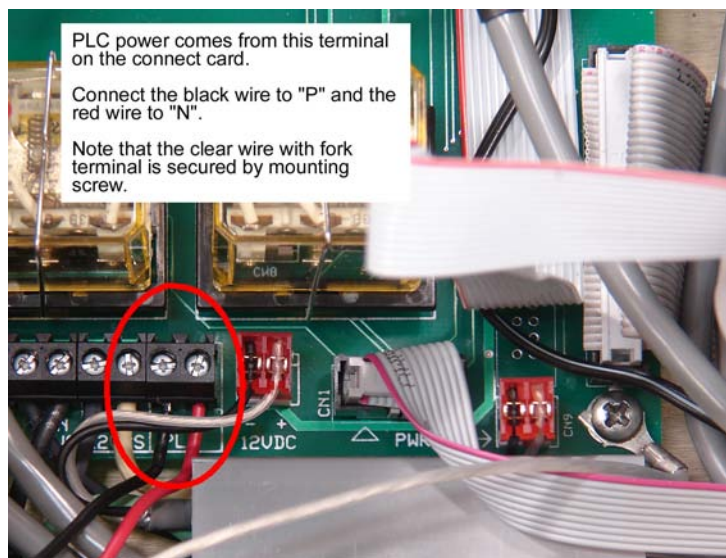
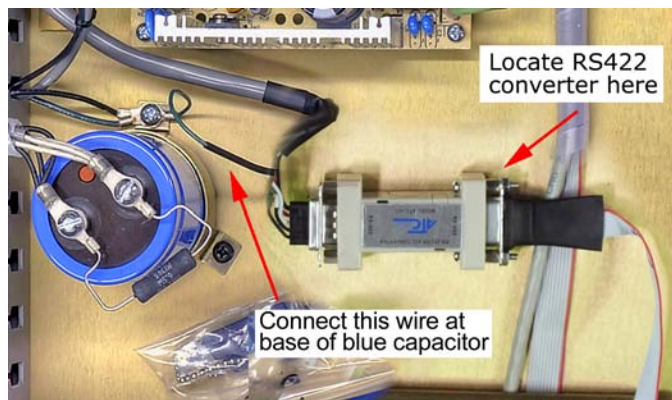
1. Remove plug (5hp) or punch 1/2" knock-out (7/8" dia) hole (C-Axis) in rear panel.
2. Push all cables through the nut that secures the connector to the panel. The 25-pin connector does fit, but the nut must be squeezed hard to 'oval' it for clearance.
3. Route the cables to their final locations per overall picture on previous page.



Mount RS422 Converter

Double-sided tape is used to affix RS422 converter to the control chassis. Locate the converter as shown at right, peel off the backing and stick it to the chassis.

Route black wire with terminal to one of the screws that mount the blue servo power supply capacitor. This is the shield wire for the communications cable.



Connect 110vac Wires

1. The "PLC" terminals are at end of Connect Card terminal board as shown at left.
2. Loosen the locking screws, insert the wires and re-tighten.
3. The black wire should go to "P" and the red wire to "N".

These wires supply power to the PLC.

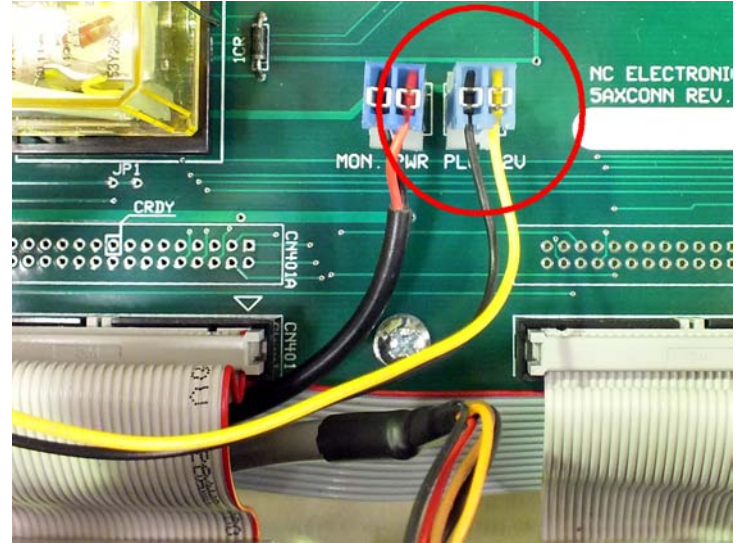
**Route Black & Yellow wire to
“PLC 12V” header**

“New-style” Connect Card

Plug blue connector into “PLC 12V” header on Connect Card as shown at right.



If your G4 CNC has the old-style Connect Card, there is no “PLC 12V” header available, so you must cut off the blue connector, and use the butt-splices on black & yellow pair of wires provided with crimp-pins to plug into auxiliary power supply as shown below.



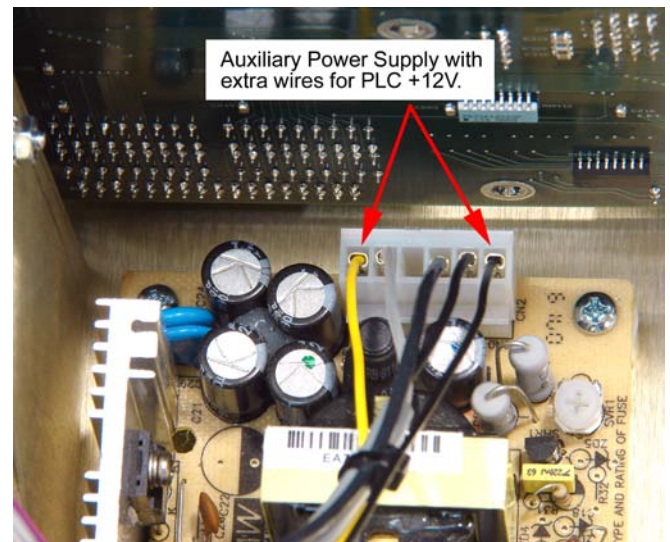
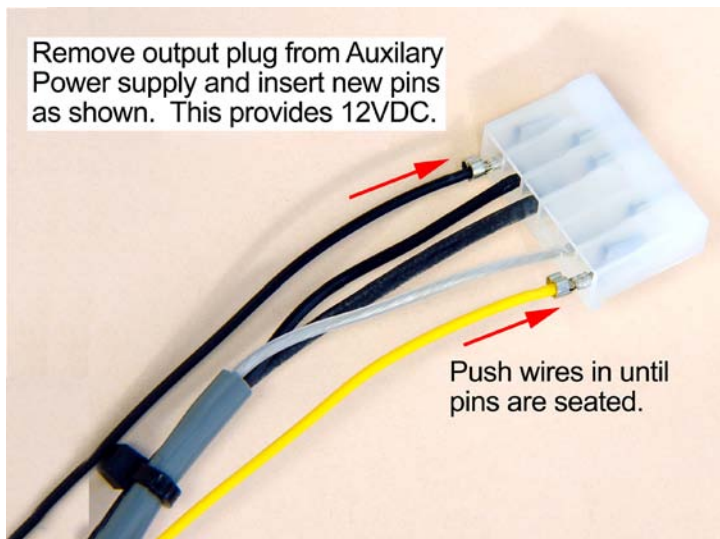
For “old-style” Connect Card without “PLC 12V” header

If your Connect Card doesn't have the “PLC 12V” header, you must use the auxiliary power supply extension wires (supplied). Cut blue connector off the black and yellow wires and strip the wires about 1/4". Use the supplied butt-splices to connect these wires to the black and yellow pair which have the silver crimp-pins, matching the colors. Add the wires to the Auxiliary Power Supply Connector as shown below.

To modify auxiliary power supply connector:

Remove output connector from Auxiliary Power Supply and insert black and yellow wires into connector as shown below. Pins will 'click' when properly seated; verify seating by pulling on the wires.

If necessary to remove pin, use small screwdriver to lift flap on connector; pull wire out.

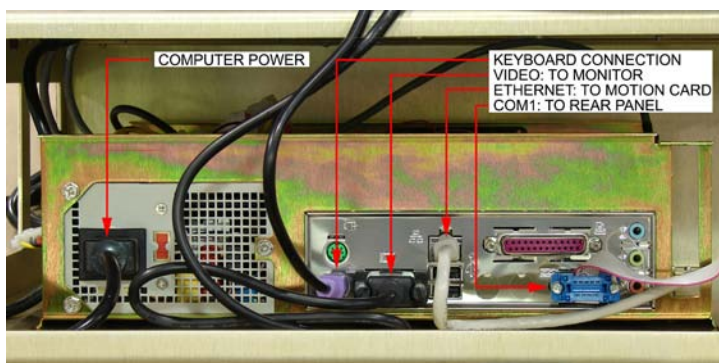


IMPORTANT! Verify which MotherBoard before routing ribbon cable

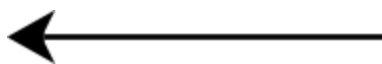
Epia ML MotherBoard
(Earliest G4 CNC's; floppy drive)



Connecting to Epia ML MotherBoard

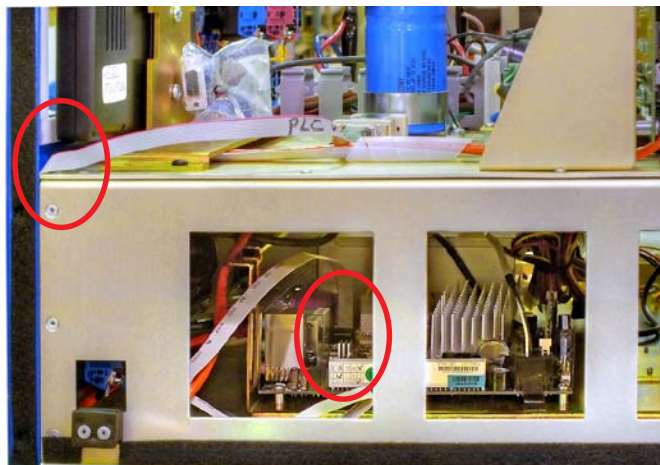
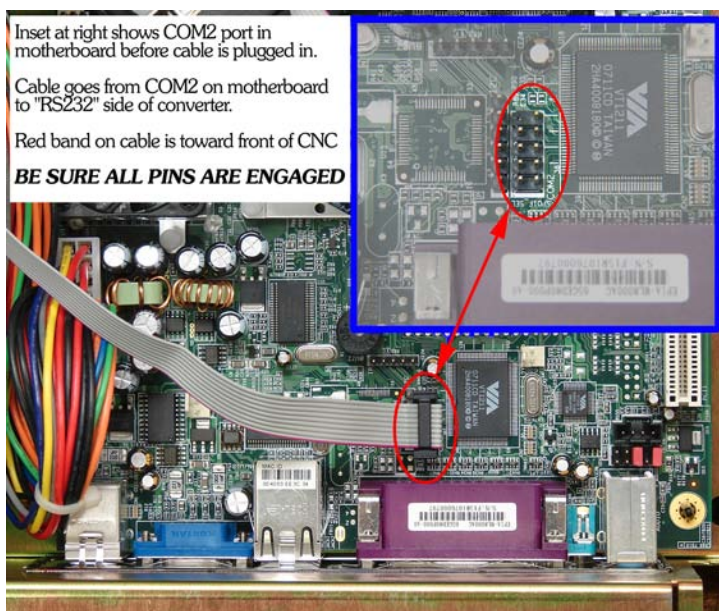


Back Panel of Epia ML Mother Board



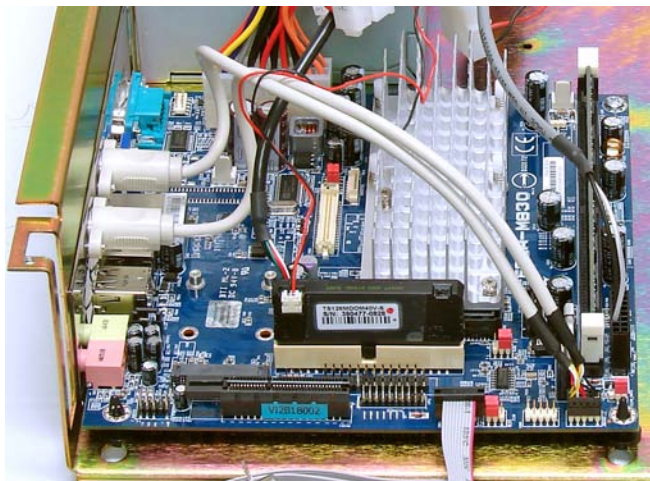
Route Ribbon Cable to COM2

The 10-pin ribbon cable from RS422 converter connects to COM2 port on computer motherboard: remove front panel, disconnect cables, and slide computer chassis out to access the COM2 port. ***Be sure that all pins are engaged***; it's easy to miss a row or column. route cable through space between front-panel and chassis (see below).

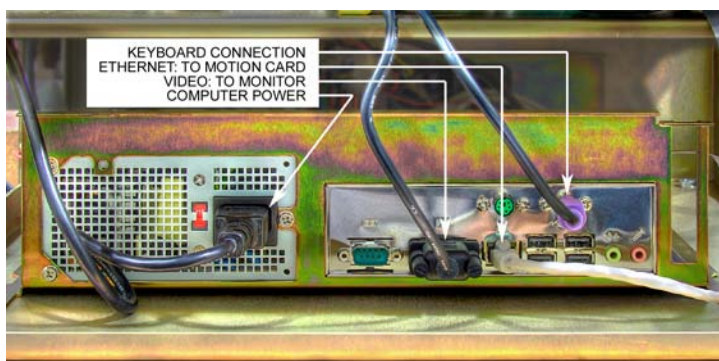


IMPORTANT! Verify which MotherBoard before routing ribbon cable

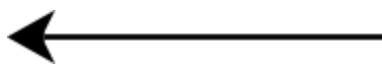
Epia M830 MotherBoard (Mid 2011 - late 2016; no floppy)



Connecting to Epia M830 MotherBoard



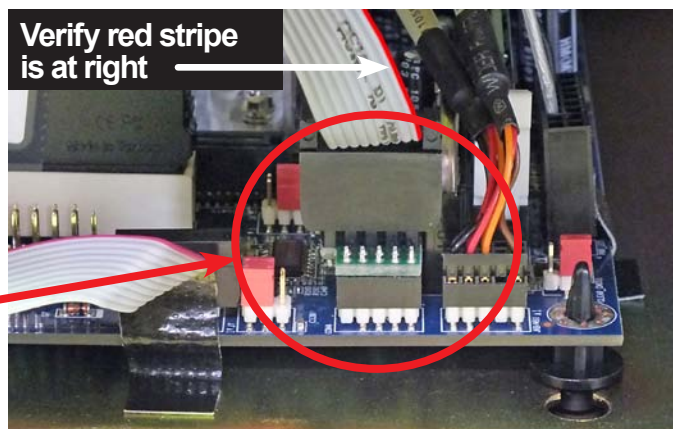
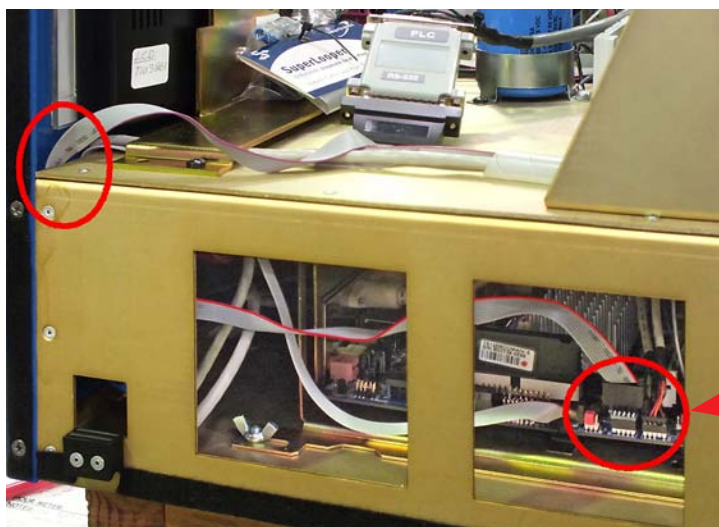
Back Panel of M830 Mother Board



Route Ribbon Cable to COM4

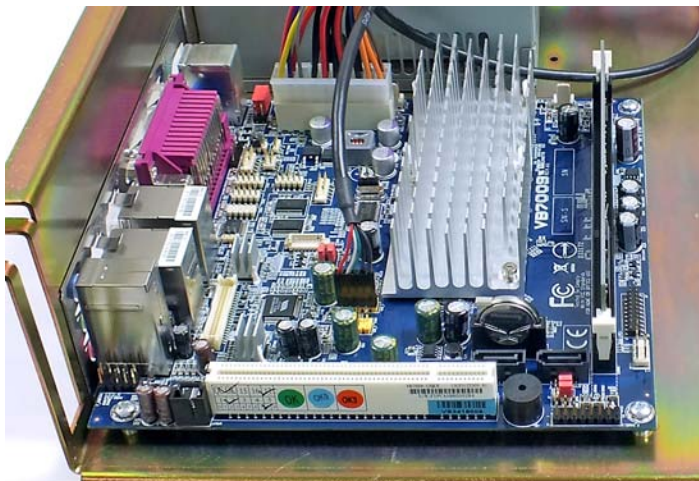
The 10-pin ribbon cable from RS422 converter connects to COM4 port on motherboard using adapter*: route cable through space between front-panel and chassis (below left) and connect to motherboard as shown below. **Be sure that all pins are engaged;** it's easy to miss a row or a column.

*Some kits may include fine-pitch cable to fit COM4 port without adapter



IMPORTANT! Verify which MotherBoard before routing ribbon cable

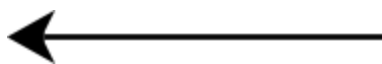
VB7009 MotherBoard (Current G4 CNC's)



Connecting to VB7009 MotherBoard

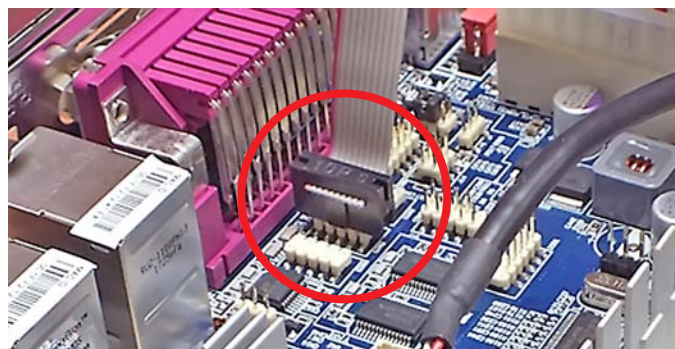
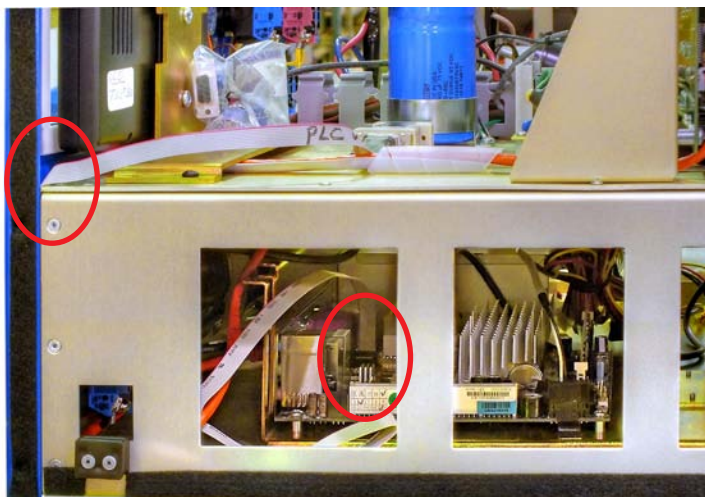


Back Panel of VB7009 Mother Board



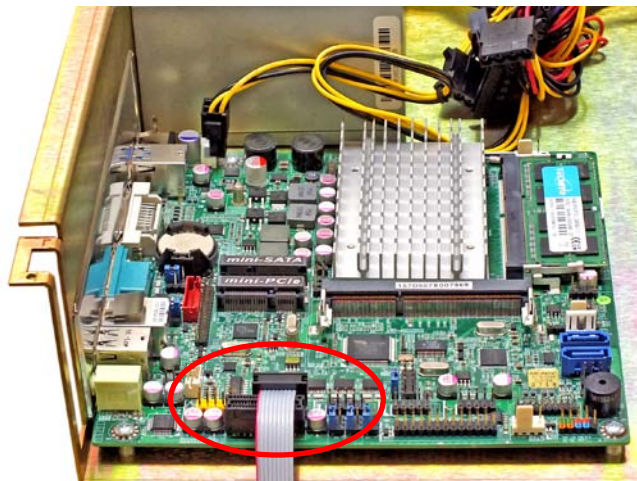
Route Ribbon Cable to COM3

The 10-pin ribbon cable from RS422 converter connects to COM3 port on motherboard: route cable through space between front-panel and chassis (below left) and connect to motherboard as shown below. **Be sure that all pins are engaged;** it's easy to miss a row a row or column.

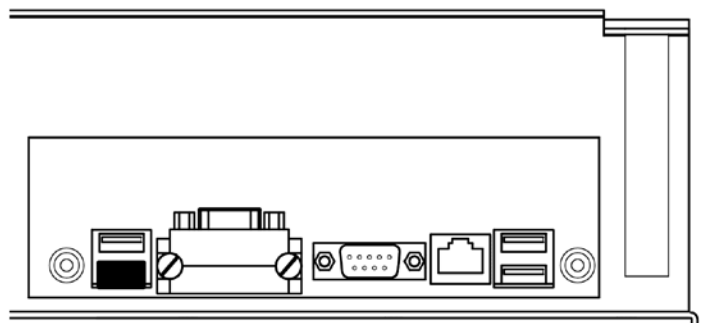


IMPORTANT! Verify which MotherBoard before routing ribbon cable

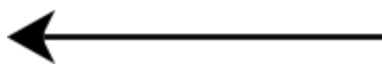
JetWay MotherBoard (Latest G4 CNC's)



Connecting to JetWay MotherBoard



Back Panel of JetWay Mother Board



Route Ribbon Cable to COM2

The 10-pin ribbon cable from RS422 converter connects to COM2 port on computer motherboard: remove front panel, disconnect cables, and slide computer chassis out to access the COM2 port. **Be sure that all pins are engaged**; it's easy to miss a row a row or column. route cable through space between front-panel and chassis (see below).

