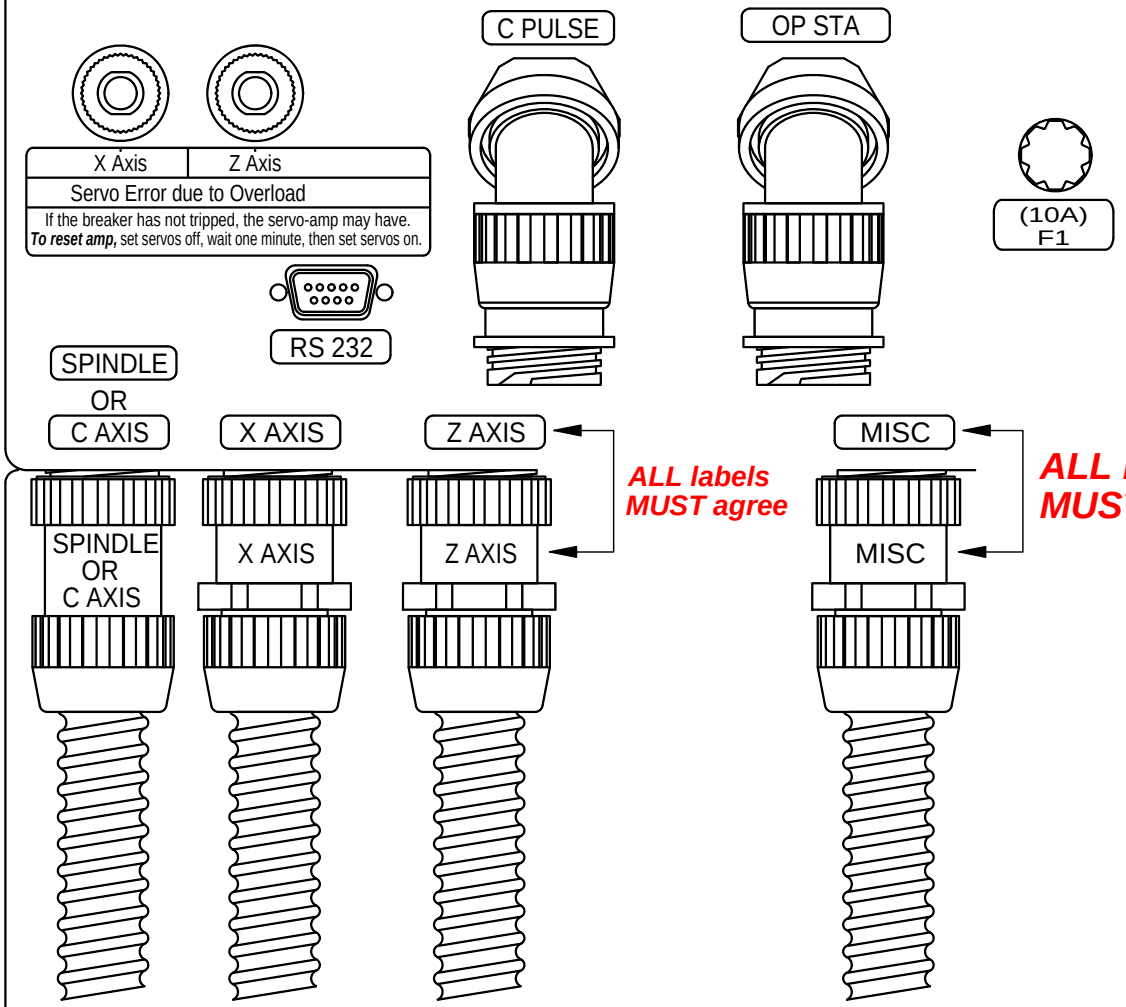
Packing List for G4 Inverter

Parts	Express Box:	Included
	OmniTurn Programming & Service Manual	
	Installation Instructions	
	Resistor capacitor pack	
	5" jumper	
	2" jumper	
	USB flash drive	

	**Op Station Extension cable** Connected to Op Sta - back of CNC control	
	**Ethernet loop-back test plug** Located inside of CNC control On back of LCD	
	**MISC. PLUG** Pre-connected to MISC. on back of control Must save this plug- store inside CNC control	

CAUTION! Check ALL cables *BEFORE POWER ON!*



g4_CNC_label_warning.dcd

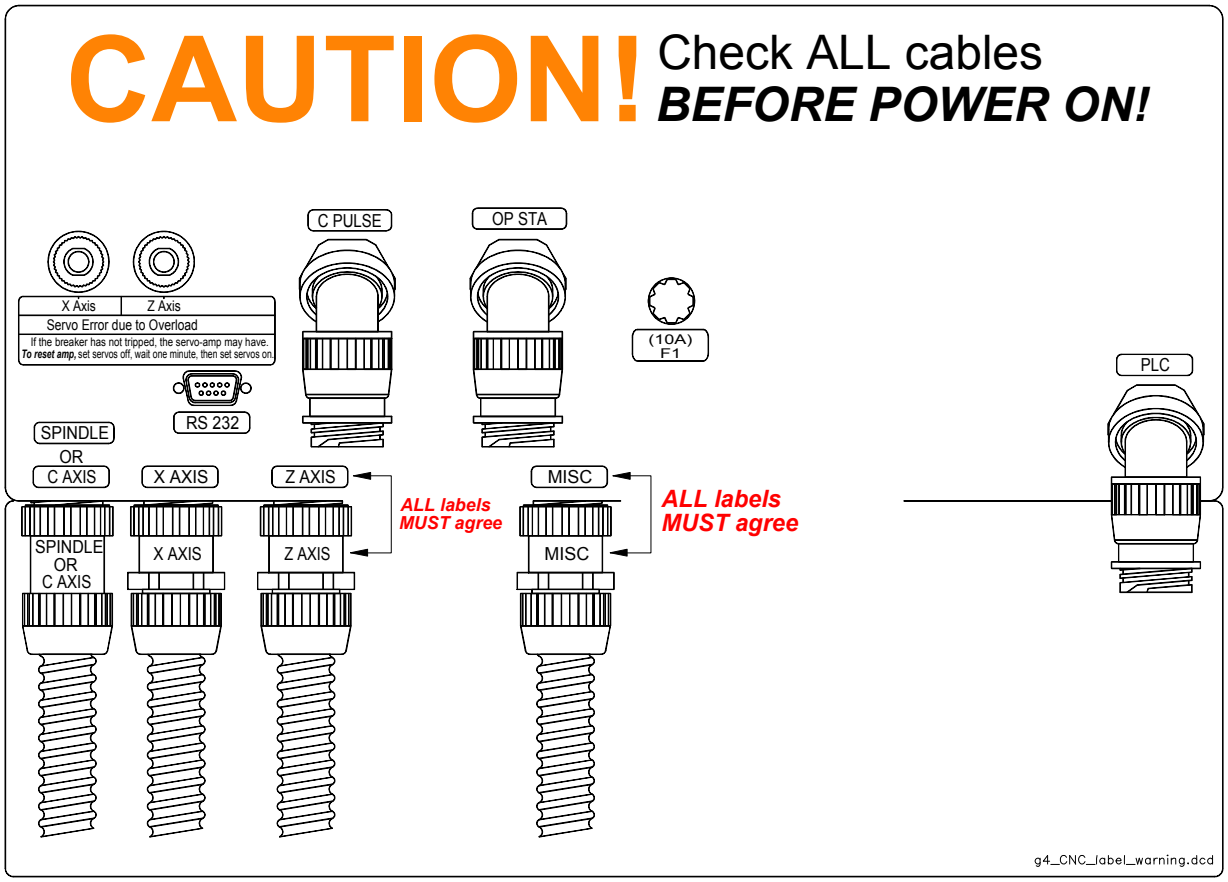
Be Careful!

Before you disconnect your old control, check to make sure that each cable is marked with the socket that it is connected to (X Axis, Z Axis, Spindle, Misc, and C Axis if applicable). If the original markings are not legible, make labels with masking tape or something similar and mark the cables as you remove them so that you will be sure you know where they belong. Plugging cables into the wrong sockets on the new control can cause serious damage, which will not be covered by warranty.

Make sure that the jumpers on the electrical panel are installed on the correct terminals. Terminal 1 is at the top of the terminal strip, and terminal 30 is at the bottom.

Be sure to disconnect your Operator's Station (palm box) from the main electrical cabinet and plug it into the Op. Sta. connector on the back of the control using the provided extension cable.

Do not turn the new control on until you are certain that each cable is in its proper socket and each jumper is on the correct terminals. If you have any doubts, call us at 541/332-7004 before turning the control on.



Installing the G4 control on an Inverter Machine

Connect the operator's station

NOTE: If no operator's station (palm box) skip to Cabling Changes (below) then goto page 4 for further instructions.

1. Unplug the palm box (operator's station) from the electrical cabinet.
2. Plug the operator's station into the extension cable provided.
3. Plug the extension cable into the OP STA connector on the back of the control.

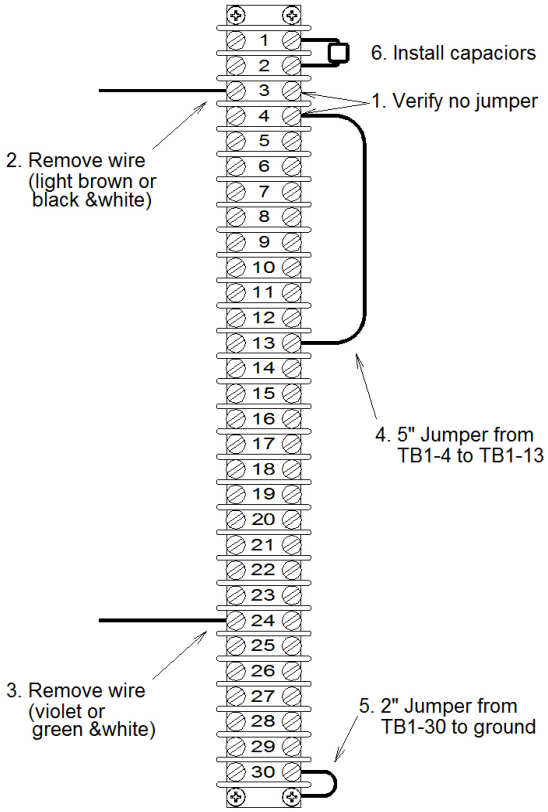
Note: You will not be able to turn the servos on if the Operator's Station is not connected.

Cabling Changes:

1. Shut off all power to the machine.
2. Make sure that the markings on all the cables connected to the original control are legible. If any of the cables are not clearly marked, label them with masking tape or some other convenient method. Unplug the cables from the control.
3. Remove the control, along with its wedge-shaped mount, from the top of the machine by removing the 4 cap screws that hold the mount to the top of the machine.
4. Transfer the mount to the new control and mount the new control to the top of the machine.

Preparing the electrical box *(TB1 at right)*

1. If TB1-3 and TB1-4 are jumpered together, remove the jumper.
2. Remove the light brown* wire that runs from TB1-3 to the misc. connector and tape it up.
   **On the oldest machines this wire is black & white*
3. Remove the violet* wire that runs from TB1-24 to the misc. connector and tape it up.
   **On the oldest machines this wire is green & white*
4. Run the 5" jumper provided from TB1-13 to TB1-4.
5. Run the 2" jumper provided from TB1-30 to chassis ground. The mounting screw next to TB1-30 is a good ground.
6. Install the pair of capacitors provided on TB1-1 & TB1-2. Do not remove the existing wires. The existing capacitor is unnecessary, but it can remain in place.



Installing the control

The new control goes on exactly the same as the old one, except that the spindle encoder plugs into the 1st connector on the left instead of the 2nd from the right. *(See "Caution" label on previous page).*

Changes in G4 Control Compared to G3

Most of the commands and functions of the G4 control are the same, and accessed by the same keystrokes, as the G3. The display has been redesigned to present more information and present the information more clearly and consistently. Listed below are the highlights.

Jog Mode

The Position display now reflects tool selection. When a tool is selected (by pressing "T" and entering the number, just as on the old control) the coordinates displayed are those associated with the selected tool (work coordinates), and the X value is the diameter value rather than the distance from home. To put the display back into machine coordinate mode, select tool 0.

Manual Data Input (MDI) is now a part of Jog mode, rather than a separate mode of its own. MDI mode allows basic operations such as the exercising of M functions and simple positioning moves. Canned cycles such as threading or drill cycles are not supported in MDI.

On machines equipped with a C axis, the *C axis is enabled in Jog mode by pressing Alt-C.* The C axis will home itself when it is enabled. The C axis can be jogged the same as X or Z and pressing Alt-H with the C axis enabled will set the current position as C axis home position. After setting this position, M19 will index the C axis to this position whether in Jog or Automatic mode. When C axis is enabled, pressing Alt-C again will disable it.

Auto Mode is entered by pressing A from Jog Mode. It is no longer necessary to press Esc to get out of Jog mode. If no program has been selected, a file-picking screen will come up and you must choose or create a part program before going to Auto.

Auto Mode

A distance-to-go display has been added in the upper left corner of the screen. Previous, current and next program lines are displayed. The active tool number is also displayed.

Tool offsets can be adjusted at program stops or anytime the machine is not in cycle.

Sequence Search now presents a list of the tool calls in the order in which they appear in the program. When you select a search point from this list, you will be prompted with a list of the M-functions which will be enabled. Pressing Cycle Start will turn these functions on, and program execution will begin in Single Block mode. Note that PLC (user-defined) m-functions are not recognized by sequence search mode. If there is only one tool in the program, sequence search is pointless, so no search points will be displayed.

To copy all program files to G4 CNC from a USB stick

Current versions of the G4 CNC have no floppy drive; you must first copy your program files from your backup floppy disk to a USB stick using your desktop computer equipped with floppy drive.

If your backup is not current, put a blank floppy disk in your old control, turn it on, then press 'Y' at the "Do you want to backup your files" prompt.

Plug in the USB stick with your user programs *before* you turn on the CNC. If the CNC is on, turn it off, then install the stick.

Turn the control on: at the "OmniTurn CNC" screen, press and hold the Ctrl key, then press the "C" key (Ctrl-C). (Ctrl key is at extreme lower-left corner of keyboard).

You should see the prompt **`K:\CNC>`** Type **`C:`** then press Enter.

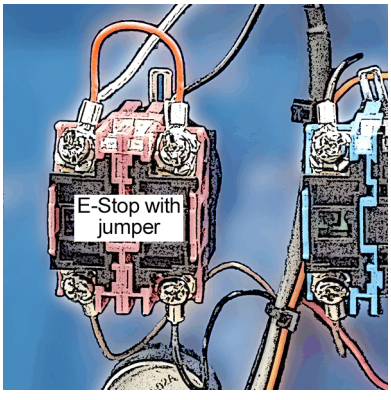
You should now see the prompt **`C:\RUNFILES>`**. Type **`CD\PROGRAMS`** and Enter.
Note that '\' (backslash) is NOT the '/' under the '?'.

You should now see the **`C:\PROGRAMS>`** prompt. At this prompt, type **`COPY D:\*.*`** then press Enter. All your files will be copied into the new CNC.

After the files have been copied, set the CNC *off*, wait a few seconds, then *on* to reboot.

No Operator's Station (Palm Box)

The G4 CNC has dual cycle-start buttons, so operator safety is enhanced by requiring both hands to be out of the cutting area in order to start the cycle. In order to operate without Operator's Station installed, a 'jumper' must be added to the E-Stop switch on the CNC. The picture at the right illustrates jumper installation.



The Operator's Station can provide more convenient, waist-level, two-handed operation, with additional collet open and close buttons plus another e-stop switch. Available from stock for $395. Part number 998-00-000.