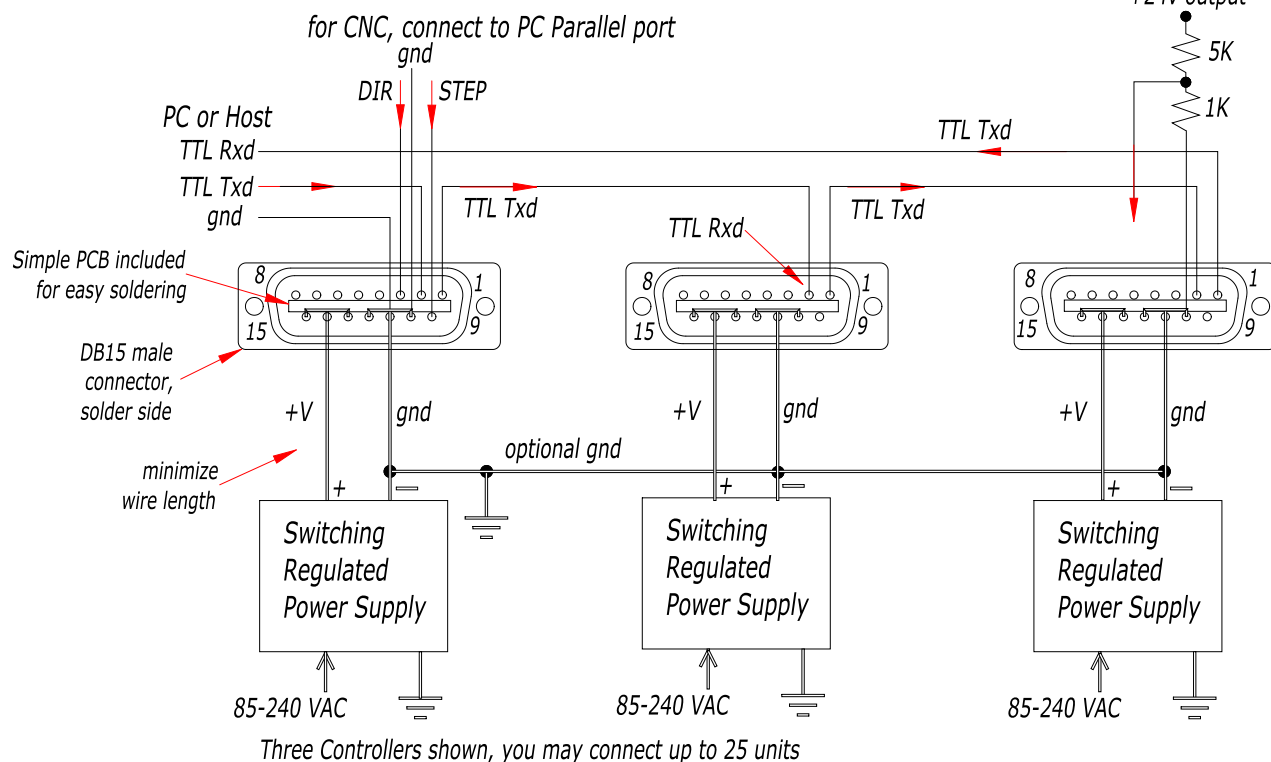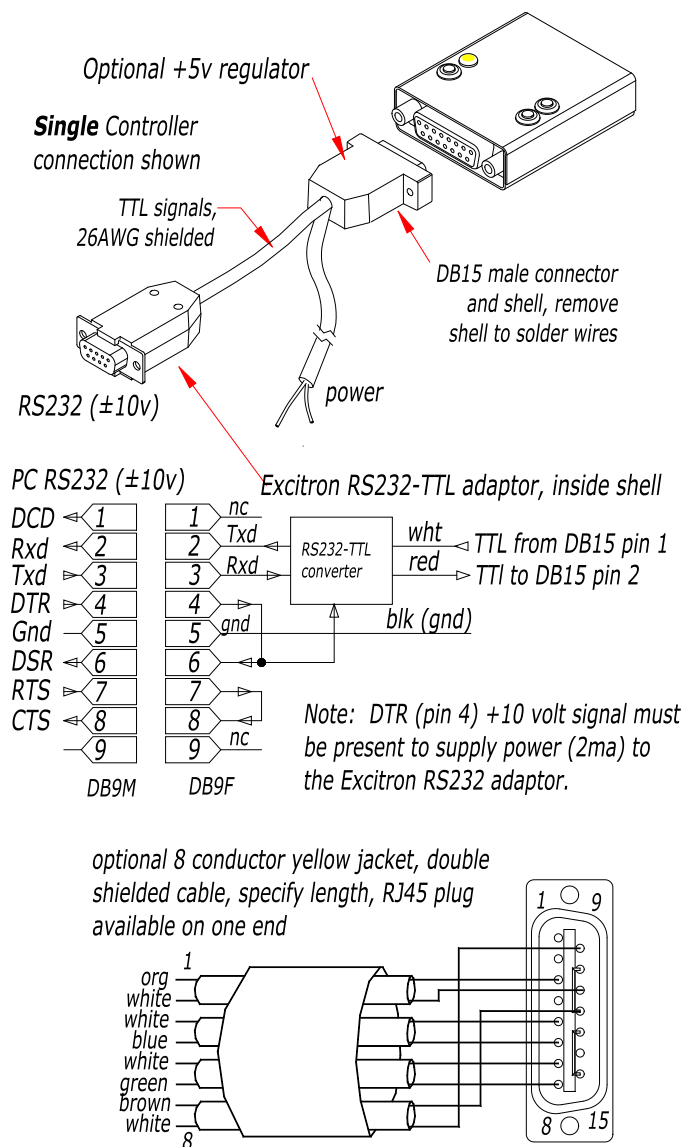Various connections are shown here. Excitron Controllers have a DB15 or 8 or 10 pin header connectors. Other serial port interfaces such as USB and RS485 are available. See the CNC DB25 Diagram for step/dir Driver Mode.

Simple Serial Bus provides a daisy chain "network" to connect multiple Controllers. The PC is the Master and each FTFc15 must be set to a slave address. You must first set the address for each Controller **before** connecting this daisy chain. The transmit pin of each Controller is tied to the Receive pin of the next Controller. See the Excitron Controller User's Manual for protocol details. In case you forget the slave address, pushing Sw1 & Sw2 manual switches (if available) will cause the slave address to be displayed. Then type '@' to stop the message.

Note for DB15 type Controllers! all signals are TTL (+5v). Maximum allowable voltage is +5.5, minimum is -0.5. Do not connect RS232 (±10v) signals directly to TTL. For interface to RS232 PCs, use FTFw-RS232-TTL Adaptor, which translates the ±10v to +5v logic. The power ground provides the signal ground for the serial port ground. Serial communications may fail unless your PC is grounded. USB and RS232 Controllers have built-in circuitry for direct connection to the appropriate PC port.

Optional +5v regulator

Single Controller connection shown

TTL signals, 26AWG shielded

DB15 male connector and shell, remove shell to solder wires

RS232 (±10v)

power

The +5v regulator option gives you up to 30ma for externally powering devices, and additional noise immunity on the Controller input pins. This regulator option is assembled inside the DB15 male connector.

You may connect PLC +24 volt outputs to the Controller input pins with a resistor ladder as shown:

+24v output

5K

1K

PC RS232 (±10v)

Excitron RS232-TTL adaptor, inside shell

DB9M			DB9F
DCD	1	1	nc
Rxd	2	2	Txd
Txd	3	3	Rxd
DTR	4	4	
Gnd	5	5	gnd
DSR	6	6	
RTS	7	7	
CTS	8	8	
	9	9	nc

RS232-TTL converter

wht — TTL from DB15 pin 1
red — TTl to DB15 pin 2

blk (gnd)

Note: DTR (pin 4) +10 volt signal must be present to supply power (2ma) to the Excitron RS232 adaptor.

for CNC, connect to PC Parallel port

gnd

DIR   STEP

PC or Host
TTL Rxd
TTL Txd
gnd

TTL Txd

TTL Rxd

TTL Txd   TTL Txd

TTL Rxd

Simple PCB included for easy soldering

DB15 male connector, solder side

minimize wire length

+V   gnd   +V   gnd   +V   gnd

optional gnd

Switching Regulated Power Supply

Switching Regulated Power Supply

Switching Regulated Power Supply

85-240 VAC   85-240 VAC   85-240 VAC

Three Controllers shown, you may connect up to 25 units

optional 8 conductor yellow jacket, double shielded cable, specify length, RJ45 plug available on one end

1   9

org
white
white
blue
white
green
brown
white

8   15

10A-TTL and 100A-TTL Controllers are provided with a 18" heavy duty jacketed 18 AWG 2 conductor power cable; 12" length when ordered with our 24 volt 72W encapsulated power supply. White is +V; black is ground. Heavy currents may require additional wires for good grounding. Cut this cable to the shortest reasonable length; this reduces electrical noise spikes and possile missed motor steps. Smaller motor/controllers are provided with 18" long with red +V and black ground wires. All controllers supplied with matching connectors If the power supply and/or RS232-TTL adaptor is ordered with your controller, then all wires are soldered and tested for you.

Warning--motors can cause severe injury.   Specifications subject to change without notice.   *Faster Than Fast!* ®   07/11/2007   www.excitron.com   100%   1/1   Rev A
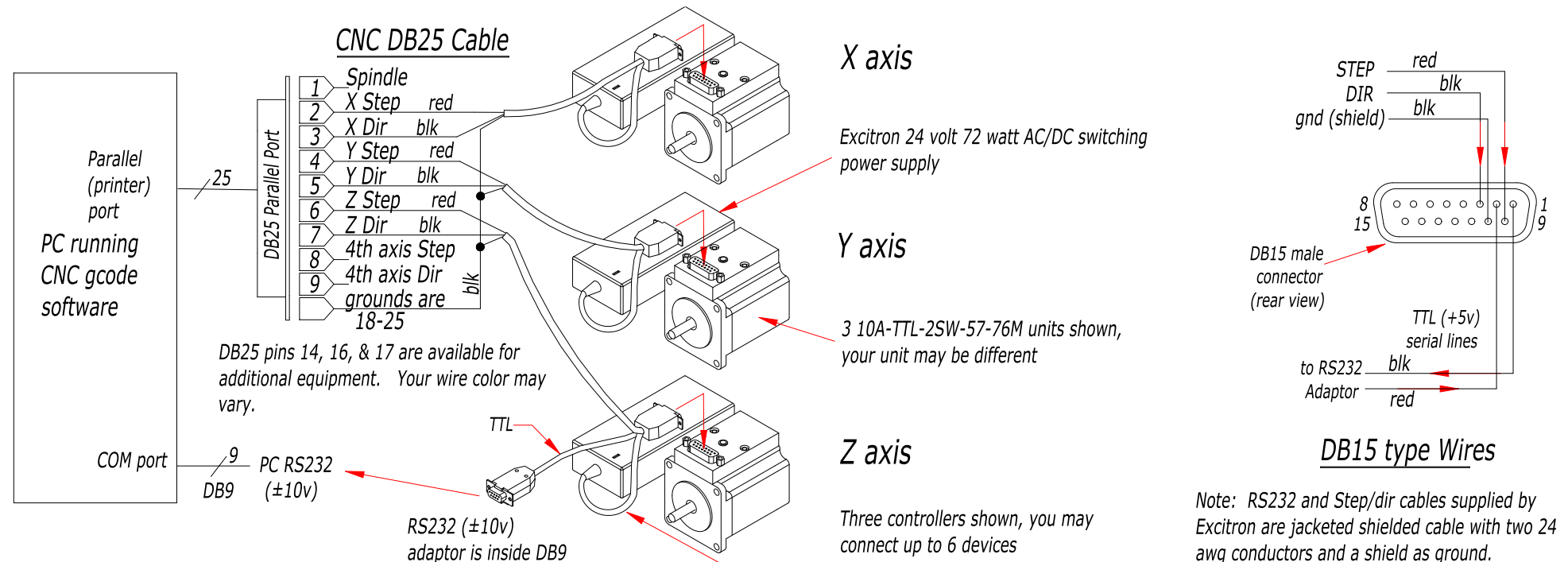
CNC DB25 Cable:

This cable provides an easy connection for the PC parallel port CNC step/dir pins. Up to 6 axis can be connected, depending on your CNC program. All PC CNC programs output **step** and **direction** signals to the PC parallel DB25 connector, and the Controller accepts **step** and **direction** when in Driver Mode. You may use a DB25 extension cable (25 stranded wires, shielded) between your PC and the CNC DB25 cable. Other equipment may be connected by soldering wires to the DB25 socket pins.

Power Supply Cable:

Best configuration is shown--AC/DC power supply close to tbe Controller, to reduce electrical nise. Then only the inexpensive AC power cord flexes during movement.
IMPORTANT! DO NOT run AC cables near any DC or signal cables!

Serial Port Setup:

1. If you want to change the Controller's full/half step, brake, or torque (these are not changed by your CNC program), then run Hyperterminal or any serial program, which uses the PC serial COM port connected to the Controller, if it has an RS232-TTL Adapter.
2. Type '@' to put the Controller into Command Mode, change full/half step, brake, or torque, then save your changes to Motion Profile #01 using the 'U' 01 command. Then set for Driver Mode by typing 'c' then 'd'. When in Driver Mode, the Controller will echo serial characters, but will not respond to them, except the '@' which stops Driver Mode and puts it back into Command Mode.
3. See Controller Connections for additional information.

CNC DB25 Cable

Parallel (printer) port

PC running CNC gcode software

25

DB25 Parallel Port

Pin		
1	Spindle	
2	X Step	red
3	X Dir	blk
4	Y Step	red
5	Y Dir	blk
6	Z Step	red
7	Z Dir	blk
8	4th axis Step	
9	4th axis Dir	
	grounds are	blk
	18-25	

DB25 pins 14, 16, & 17 are available for additional equipment. Your wire color may vary.

COM port

9
DB9

PC RS232 (±10v)

TTL

RS232 (±10v) adaptor is inside DB9

X axis

Excitron 24 volt 72 watt AC/DC switching power supply

Y axis

3 10A-TTL-2SW-57-76M units shown, your unit may be different

Z axis

Three controllers shown, you may connect up to 6 devices

DC Power supply wires:
white is +24 Vdc, outer strands are ground. Keep as short as possible.

STEP   red
DIR   blk
gnd (shield)   blk

8
15

1
9

DB15 male connector (rear view)

TTL (+5v) serial lines

to RS232   blk
Adaptor   red

DB15 type Wires

Note: RS232 and Step/dir cables supplied by Excitron are jacketed shielded cable with two 24 awg conductors and a shield as ground.

CNC Setup:

1. Simply plug each motor/controller into the appropriate DB15 male connector, and plug the DB25 connector into your PC's Printer Port (DB25).
2. Run your PC CNC software program, and configure the printer port outputs to match the step and direction signals to the particular parallel port pin. The most logical pin configuration is shown here. If your program has Enable outputs, ignore them for use with the motor/controllers. Also change the CNC program configuration for the: number of motor steps per inch (or mm); maximum velocity; acceleration; and possibly other values.

CNC DB25 Diagram