CWD556 + KK01 WIRING DIAGRAM



INFORMATION IS SPECIFIC TO OUR PRODUCTS AND CAN CAUSE DAMAGE IF USED WITH NONE COMPATIBLE PRODUCTS SO PLEASE CHECK WITH YOUR SUPPLIER FOR COMPATIBILITY

These drawings are supplied as a guide no guarantees are implied or given. Caution when wiring and check with a qualified professional if unsure. It is your responsibility to check you have complied with your local legislation as to safety requirements for your country as machines can cause injury to users. By using these diagrams you agree to the above safety warning.

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Please Read Carefully Before Wiring Your Machine

CONDITIONS OF USE

Certain laws and regulations apply to your use of CNC machines and automated equipment and it is essential you comply with your local and any international regulations for construction and use of automated equipment.

These diagrams are a guide to wiring your machine and do not constitute advice or direction to complying with your legal obligations and any health and safety requirements you must comply with. It is crucial you understand the dangers and safety implications when automating your machine or system and special care must be taken when automating your spindle or other cutting tools or equipment and we are showing a simple setup which will be amended without notice to show the complexity of automating cutting tools, but you are again responsible for meeting and understanding your specific end customer use and or meeting all necessary safety regulations and these can and do change regularly so consult your local regulations and make sure you observe all safety regulations.

You are required and agree to maintain compliance with all applicable laws and regulations. You understand and agree that you are solely liable for compliance with such laws and regulations, and under no circumstances shall CNC4YOU Ltd. be responsible or held liable for such compliance. You understand that breach of such laws and regulations may result in both criminal and civil sanctions against you. In accordance with these terms and conditions for CNC4YOU Ltd. you agree to indemnify CNC4YOU Ltd. for any violation of such laws and regulations. If in doubt seek professional advice if you are unsure of your legal obligations.

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Before using any drawings or wiring diagrams please check on our website for latest version, all wiring diagrams should have a version number if not please contact us so we can amend and issue version information.

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Wiring Diagram for Power Supplies Switch Mode PSU's



Green/Yellow

⊥ (Earth)

(FG)

pressed this is recessed to help avoid accidentally turning power ON. Also Red off button is protruding making it easier to power down machine in an emergency situation. This can be very important as a normal mains switch will stay on and when power is returned either manually or automatically due to power outage being resumed machine could easily start moving without notice and if a simple spindle setup where spindle is turned on with a locked power switch spindle will restart without warning. This can be a real problem when using a Laptop as internal battery can allow Mach 3 or other software to still be running if suitable precautions aren't observed to stop software when power has been lost, this also applies to computers running from an UPS (uninterruptable power unit).

EMI / RFI filter will help prevent external mains noise causing noise in your system which can result in transients causing spurious steps or triggering limit switch or E-Stop signals, in very noisy environments or industrial premises it can help reduce transients capable of damaging your electronics. Noise generated by Plasma cutters etc. will require filtering to allow stable operation of your CNC or automated machinery.

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V-

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Product Code: 15V_1A_PSU

24 Volt 2 Amp PSU

Product Code: 24V_2A_PSU

X AXIS WIRING DIAGRAM

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Y AXIS WIRING DIAGRAM

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Z AXIS WIRING DIAGRAM

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A AXIS WIRING DIAGRAM

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BAXIS WIRING DIAGRAM

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TWIN X AXIS WIRING DIAGRAM CNC4YOU.co.uk



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INPUTS WIRING DIAGRAM E-STOP & LIMITS / HOMING



N/C Normall Closed Contact

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INPUTS WIRING DIAGRAM E-STOP & LIMITS / HOMING PROXIMITY SWITCH LJ12A3-4





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INPUTS WIRING DIAGRAM TOUCH PROBE





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RELAY BOARD WIRING

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DIP SWITCH CURRENT SETTING

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3.8 Amps Half Current 1/10th Microstep

Use this setting for 4Nm Stepper



4.3 Amps Half Current 1/10th Microstep

Use this setting for 3.1Nm Stepper

Please check CWD556 Datasheet for other options



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MACH 3 SOFTWARE SETUP

If you haven't already installed Mach3 software Download and install Mach3 software from the following link unless you are an experienced user please only download Lockdown Version.

http://www.machsupport.com/downloads.php

After download is complete please run or install software and follow all onscreen prompts once installation is complete please restart your PC to allow drivers to be registered.

Place your licence file in the following folder if default installation has been used or select folder location you have selected on installation. C:\Mach3 is default location

Open Mach 3 software and you should see a screen similar to the one below but with your licence name or Demo either way you can setup and run Mach3 but in Demo mode you are restricted to 500 lines for milling.

Mach3 CNC Licensed To: CNC4YOU Serial:10121000	
File Config Function Cfg's View Wizards Operator PlugIn Control Help	Close
Program Run Alt-1 MDI Alt2 ToolPath Alt4 Offsets and Probing Alt6 Settings Alt6 Diagnosti	cs Alt-7 Mill->G15 G80 G10 G17 G40 G21 G90 G94 G54 G4
(Made using CamBam - http://www.cambam.co.uk.) (Rear Panel 305x280x133 7/6/2011 8:38:49 PM.) (T3: 3.0) G21 G90 G64 G40 G0 Z3.0 (T3: 3.0) T3 M6 (Profile1) C17	0.0000 Scale +1.0000 scale +1.0000 +1.0000 +1.0000 +1.0000 0.0000 Radius 0.0000 Radius 0.0000 Radius Machine Soft Limits Limits
File: C:\Documents and Settings\Administrator\My Documents\CAMBAM\3	Wizards Last Wizard Regen. Display Jog Wizards Construint Compath Mode Follow
Edit G-Code Rewind Ctrl-W Single BLK Alt-N Close G-Code Feed Hold Load G-Code Stop Set Next Line Line O Flood Ctrl-F Dwell Dwell CV Mode Remember Return Elapsed 00:00 Jog Oli/OFF Ctrl-Alt-J	Feed Rate Spindle Speed OverRidden FRO % 100 FRO 100 Spindle Speed 101 FRO 102 FRO 103 FRO 104 FRO
History Clear Status: Profile22	Profile: CNC4YOU

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Along the top Menu Bar place your mouse on the Config and click to highlight the dropdown menu as shown in the picture below. Move your mouse down until you are over the Ports and Pins option and press right mouse button to select.



Notes





The following screen should appear this has information as to your port address chosen operating frequency etc. that you can customise Mach3 to your machine the guidelines are pertinant to Cnc4you products but couls be used with caution as a general guide.

Under most circumstance these general default setting are adiquate for most machine types but further information on using this screen can be found in the Mach3 documentation but unless you have specific requirements these can be left as default settings.

🛞 Mach3 CNC Licensed To: CNC4YOU Serial:10121000	. . .
File Config Function Cfg's View Wizards Operator PlugIn Control Help	
Program Run Alt-1 MDI Alt2 ToolPath Alt4 Offsets and Probing Alt5 Settings Alt6 Diagnostics Alt-7 Mill->G15 G80 G17	7 G40 G21 G90 G94 G54 G49 G9
R Zero +0.0000 +1.0000 F Zero +0.0000 Scale +1.0000 Engine Configuration Ports & Pins	Tool:0
(Made using CamBi (Rear Panel 305x26 (T3: 3.0) G21 G90 G64 G40 (0 Z3.0) (T3: 3.0) T3 M6 (Profile1) 2177 Port Setup and Axis Selection Motor Outputs Input Signals Encoder/MPG's Spindle Setup Mill Options	Display Jog Mode Follow Spindle Speed Spindle CW F5 SRO 9 100
Stop Line OK Cancel	Apply M O
Safe Z On/Off Z Inhibit Remember Return 800.00 G-Codes M-Codes +0.000 Jog ON/OFF Ctrl-Alt-J Units/Min 0.00	S-ov 0 Spindle Speed
History Clear Status: Initialization Macro Called on reset. Profile: CNC4YOU	
Start 🕺 🚱 Mach3 CNC Licensed 🔯 PAGE2.docx - Micros	🔊 🔞 🔎 🍡 🌒 🔩 🕵 🧐 😓 16:20

Notes_____



On inset menu along the top menu selection please click on Motor output to open motor configuration settings as shown below.

On the left hand side you will see Axis names corresponding to your name and the following values as shown below should be entered. These settings are for our HG06 or HG07 breakout boards and as shown are the settings for a three Axis machine.

To use fourth or fifth Axis please go to second column marked Enable and place your mouse on the A Axis and click mouse button to change red X to green tick to enable this axis follow same procedure for B Axis. Once you have entered these values please press **Apply** to set these values.

Mach3 CNC Licensed	To: CNC4YOU Ser	rial: 1012100	0 otrol Help						🛛
Program Run Alt-1 MD	I Alt2 ToolPath A	It4 Offsets	and Probing A	lt5 Setting	s Alt6 Diag	nostics Alt-7	Mill->G15	G80 G17 G4	0 G21 G90 G94 G54 G49 G9
	Engine Configur	ation Ports	t Pins	R E F Zero	-	+0.00	00 ^{sca}	1.0000	ool:0
(Made using CamBa (Rear Papel 305x28	Port Setup and Axis	Selection Mo	otor Outputs Inp	out Signals Outp	ut Signals Enco	oder/MPG's Spi	indle Setup Mi	Il Options	
(T3:3.0) G21 G90 G64 G40	Signal	Enabled	Step Pin#	Dir Pin#	Dir LowActive	Step Low Ac	Step Port	Dir Port	2.5
G0 Z3.0 (T3:3.0)	X Axis	4	2	3	*	*	1	1	-
(Profile1)	Y Axis	4	4	5	×	*	1	1	_
	Z Axis	4	6	7	*	*	1	1	
File: C:\Documen	A Axis	# >*	8	9	«	« >	1	1	Display Jog Mode Follow
	B Axis	•• ¥	16	17	*	*	1	1	Epindle Epeed
Cycle Start	C Axis		0	0	×	*	1	1	spindle speed
Feed Hold <spc> Si Stop Line</spc>						OK	Can	cel Ann	Spindle CW F5 100
<alt-s> Ru</alt-s>		Dweir	CV MODE	Remem	ber Return		800		S-ov 0
Reset	G-Codes	Safe Z	On/Off Z Inhibit +0.000	Elapsed Jog 0	00:00 N/OFF Ctrl-Alt-J	Units/	Min 0 Rev 0	0.00	Spindle Speed
History Clear Stat	tus: Initializatio	on Macro Ca	alled on rese	et.		Profi	ile: CNC4	4YOU	

Notes



Place mouse over Input Signal tab and click mouse button to select the screen below will appear allowing you to set your inputs and some examples are shown for guidance purposes and a generic setup is shown. These Input Signals can be used for many purposes but a standard setup is shown below. Again you can select or deselect by placing the mouse over Enable lines and changing an X to a green tick will enable the signal, these values correspond to the above wiring diagram and for ease of use an Automatic Setup of Inputs can be clicked and on screen instructions followed for you setup environment. Once you have entered these values please press Apply to set these values.

Mach3 CNC Licensed	To: CNC4YOU Se	erial:101210	00						
File Config Function Crg's	view wizards Ope	erator Plugin (ontrol Help						
Program Run Alt-1 MD	I Alt2 ToolPath	Alt4 Offse	ts and Probing /	Alt5 Setting	s Alt6 Diagr	nostics Alt-7	Mill->G15	G80 G17 G4) G21 G90 G94 G54 G49 G9
			1		-	_	Scal	e	
				R Zero		+0.00		T	ool:0
						0.00		.0000	
				A Zero	-		OO Scal	e	
	Engine Configu	ration Por	ts & Pins						
	C Best Column and Au	in Colomban III	tatas Octavita Uni	out Signale Dute	a Canala Ì Eana	a	- alla Catala Ì Mill	Ontine	
(Made using CamBa (Rear Panel 305x28	Fort Setup and Ax	is Selection I	lotor Outputs	por orginals Outpi	it signais Enco	der/ WPGs Spi	ndie Setup Mili	Options	
(T3:3.0)	Signal	Enabled	Port #	Pin Number	Active Low	Emulated	HotKey	~	×- <u>65-</u> o' 🖤
G21 G90 G64 G40 G0 73 0	X ++	X	0	0	X	X	0		- I
(T3:3.0)	X	4	1	13	X	X	0		
T3 M6 (Drofiled)	X Home	4	1	13	X	X	0		
(Profile1)	Y ++	X	1	13	X	X	0	_	T T
	Y	4	1	13	X	X	0	_	
Filer	Y Home	4	1	13	X	X	0	_	Display
C:\Documen	2 ++	4 9	1	13	«	«	0	_	Mode Follow
	Z		1	12			0	_	
	A ++		0	15	* *	••••••••••••••••••••••••••••••••••••••	0	-	Spindle Speed
Cycle Start	Δ	2	0	0	2	2	0	~	000.0
C		Pins 10-13 and	d 15 are inputs. Or	nly these 5 pin num	bers may be used	on this screen			Spindle CW F5
					,,				
Feed Hold						Autom	nated Setup of In	puts	P 🔂 (Reset)
S									
Stop Line						ОК	Cano	el Appl	y M 0
		Dweir		Rememb	er Return		800	00	S-ov 0
	1	Safe 7	00/0#		00.00		000	.00	
Reset		Juic 2	Z Inhibit	Elapsed	00:00	Units/	Min 0.	.00	Spindle Speed
The set c	G-Codes	M-Codes	+0.000	Jog ON	/OFF Ctrl-Alt-J	Units/	Rev 0	.00	0
History Clear Sta	tus: Initializati	on Macro C	alled on res	et.		Profi	le: CNC4	YOU	
							and the second s		

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On the far right you can scroll down to show other options available and here we show settings for Estop and Probe input if you are not setting up the probe at the moment just leave value blank or just fill as below and leave enable as ared X to leave it desected. Once you have entered these values please press Apply to set these values.

Mach3 CNC Licensed	To: CNC4YOU Ser	ial:101210							_ 🗆 🛛
File Config Function Cfg's	View Wizards Oper	ator PlugIn (Iontrol Help						
Program Run Alt-1 MD	Alt2 ToolPath A	t4 Offse	ts and Probing	Alt5 Setting	s Alt6 Diagr	nostics Alt-7	Mill->G15	G80 G17 G4	0 G21 G90 G94 G54 G49 G9
				R Zero E X	-	+0.00	00 Scal	е .0000	ool:0
				F Zero	-	. 0. 00	Scal	e	
	Engine Configura	ation Por	ts & Pins	A					
	(B. 10)	o 1.		aut Sienela I.O. i	in its	, and to a		o	
(Made using CamBa (Rear Panel 305y28	Port Setup and Axis	Selection I	viotor Outputs	put signals Outpi	ut Signals Enco	der/MPG's Spir	ndle Setup Mill	Options	
(T3:3.0)	Signal	Enabled	Port #	Pin Number	Active Low	Emulated	HotKey	~	Z- <u>6-</u> 0
G21 G90 G64 G40	Probe	4	1	12	4	X	0		
G0 Z3.0 (T3:30)	Index	X	0	0	X	X	0		
T3 M6	Limit Ovrd	X	0	0	×	X	0		
(Profile1)	EStop	4	1	15	X	X	0		*
1217	THC On	X	0	0	X	X	0		
land a	THC Up	X	0	0	X	X	0		
File: C:\Documen	THC Down	X	0	0	X	X	0		Display Jog
	OEM Trig #1	X	0	0	X	X	0		Mode Follow
	OEM Trig #2	X	0	0	×	×	0		
Cycle Start	OEM Trig #3	X	0	0	×	X	0		spinale Speed
<alt-r></alt-r>	OFM Trin #4	2	0	0	2	*	n		SRO %
		Pins 10-13 and	d 15 are inputs. Or	nly these 5 pin num	bers may be used	I on this screen			Spindle CW F5 100
Feed Hold						Autom	ated Setup of In	puts	🖡 🏦 (Reset)
<spc> Si</spc>									r – 🗸
Stop Line						ОК	Cano	el App	M O
		Dweir	CV WOUL	Rememb	er Return		800	00	S-ov 0
(1	Safe Z	Op/Off	Elanad	00.00		000		
Reset			Z Inhibit	Elapsed	00.00	Units/	Min 0.	.00	Spindle Speed
1.0000	G-Codes	M-Codes	+0.000	Jog Ol	I/OFF Ctrl-Alt-J	Units/	Rev 0	.00	0
	-					_			
History Clear Sta	tus: Initializatio	n Macro C	Called on res	et.		Profi	le: CNC4	YOU	

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Place mouse over Output Signal tab and click mouse button to select the screen below will appear allowing you to set your outputs. This page allows us to switch On and Off the on board relay under Mach3 control fill in value below if you want to use this function. Once you have entered these values please press Apply to set these values.

Mach3 CNC Licensed	To: CNC4YOU Serial	10121000	tele				
File Coning Function Cigs	view wizarus Operator	Mugan Control in	neip		1		
Program Run Alt-1 MD	I Alt2 ToolPath Alt4	Offsets and Pi	robing Alt5 Set	tings Alt6 Diagnos	tics Alt-7 Mill->G	615 G80 G17 G4	40 G21 G90 G94 G54 G49 G9
	Engine Configuratio	n Ports & Pin		+	0.0000	Scale +1.0000	Tool:0
(Made using ComPr	Port Setup and Avis Set	ection Motor Outr	oute Lloout Signale	Output Signals Encoder	/MPG's Í Spindle Setur	Mill Ontione	
(Rear Panel 305x28		ection 1 motor out	Jura L Impor Signala		And a philate setab)
(T3:3.0)	Signal	Enabled	Port #	Pin Number	Active Low	~	A-KS0'
G21 G90 G64 G40 G0 Z3 0	Digit Trig	×	0	0	×		
(T3:3.0)	Enable 1	×	0	0	×		
T3 M6	Enable2	X	0	0	X		
(Profile1)	Enable3	X	0	0	X		T T
	Enable4	X	0	0	X		
	Enable5	X	0	0	X		
File: C:\Documen	Enable6	X	0	0	X		Display Jog
	Output #1	4	1	14	4		Mode
	Output #2	X	0	0	X		Contradio Concerd
Cycle Start	Output #3	X	0	0	X		spinale speed
<alt-r></alt-r>	Output #4	X	0	0	X	~	SRO %
Feed Hold <spc></spc>	Pin	s 2 - 9 , 1, 14, 16, an	d 17 are output pins. №	lo other pin numbers sho	uld be used.		Spindle CW15 100
Stop Line <alt-s> D.</alt-s>					ОК	Cancel Ap	ply M O
Reset	G-Codes M-	Safe Z On/ Z Inh Codes +0.(Off Dibit DOO	ember Return 00:00 ng ON/OFF Ctrl-Alt-J	Units/Min Units/Rev	800.00 0.00 0.00	S-ov 0 Spindle Speed
History Clear Stat	tus: Initialization I	Macro Called o	on reset.		Profile: CI	NC4YOU	

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Place mouse over Spindle Setup tab and click mouse button to select the screen below will appear allowing you to set your Spindle settings. If the previous settings have been entered for outputs then we can set our spindle to switch on automatically and also turn off under Mach3 control.

Make sure Disable Spindle Relays is unchecked and at least M3 Clockwise is set to output# 1 as shown below. CW Delay Spin UP is set to 6 seconds in this example which will Mach3 wait 6 seconds before starting to cut to allow spindle to be upto speed, this value will vary with your own setup so please set correspondingly. CW Delay Spind DOWN is set to value to allow spinle to come to a stop. Immediate Relay off before delay check box is ticked to switch relay off before delay starts rather than after. Once you have entered these values please press Apply to set these values.

Mach3 CNC Licensed 1	Fo: CNC4YOU Serial: 10121000
Program Run Alt-1 MDI	Alt2 ToolPath Alt4 Offsets and Probing Alt5 Settings Alt6 Diagnostics Alt.7 Mill->G15 G80 G17 G40 G21 G90 G94 G54 G49 G9
	R Zero +0.0000 5cale F Zero +0.0000 Scale Engine Configuration Ports & Pins X
(Made using CamBa (Rear Panel 305x26 (T3:3:0) G21 G90 G64 G40 G0 Z3.0 (T3:3:0) T3 M6 (Profile1) C217 File: C:\Documen	Port Setup and Axis Selection Motor Outputs Input Signals Output Signals Encoder//MPG's Spindle Setup Mill Options Relay Control
Feed Hold <\$pc> Stop <alt-s> Rt</alt-s>	Max ADC Count 16380 Immediate Relay off before delay 100 Max ADC Count 16380 Immediate Relay off before delay 100 OK Cancel Apply M 0 OWEIT CV MODE Remember Return 800.00 S-ov 0
Reset	Safe Z On/Off Elapsed O0:00 Units/Min O.00 Spindle Speed G-Codes M-Codes +0.000 Jog ON/OFF Ctrl-Ait-J Units/Rev 0.00 0
History Clear Stat	Initialization Macro Called on reset. Profile: CNC4YOU

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