

CNC Cutting Controller

CC-S4C & CC-S4D & CC-S4E

Manual



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1.1 keys

Function key



Every key has its own function in the different menu.


Sometimes F8 is “confirm” key.

Edit key



Edit programs and revise settings.

Before input letters of U, V H, etc., press “shift” key.

When revise values, press , then press  to clear the latter value.

Press  to confirm and line feed.

When preview figures, X to zoom in, Y to zoom out, G to restore, direction keys to move.

Multi-function key



Every key has its own function in the different menu.

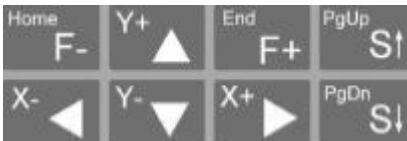
After press key, the function is high-light. Press again to cancel.

Switch key



Manually turn on and turn off external switches.

Direction key, speed adjustment key, torch up/down key



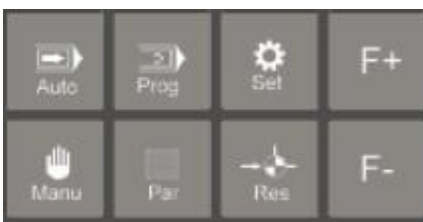
Direction keys are used to move the cursor, or move the torch in the manual mode.

F+/- are used to adjust the speed when the torch moves.

S are used to make the torch move up/down, or to pageup and pagedown when edit.



Start key and pause key



Shortcut key

Auto, Manu (manual), Prog (edit), Par (parameter), Set (Diagnose), Res (reset)

F+: speed up, F-: speed down

1.2 equipment test

Power on the machine, press any key of the controller to enter the working menu.

Stop	Auto	Prog G1226	Speed =01000 F* 100 %	
K1 Ignite				L1Kerf0.00
K2 Prehea				L2CSpd01000
K3 THC				L3MSpd01000
K4HigOxy				L4Continue
K5 Pierce				L5Simulate
K6 Close				Angle 0.00+0.00
				Scale 1.00
				Pierce No.000
				Preheat T100.00
				Machine X-0006.865
				Machine Y-0013.531
Pu Up	X: -0006.865			Tot
Pd Down	Y: -0013.531			Left
Figure	File	Parts	Para	Diag
Preview	Manual	Nest		

A: press switch keys to test gas valves and plasma power source

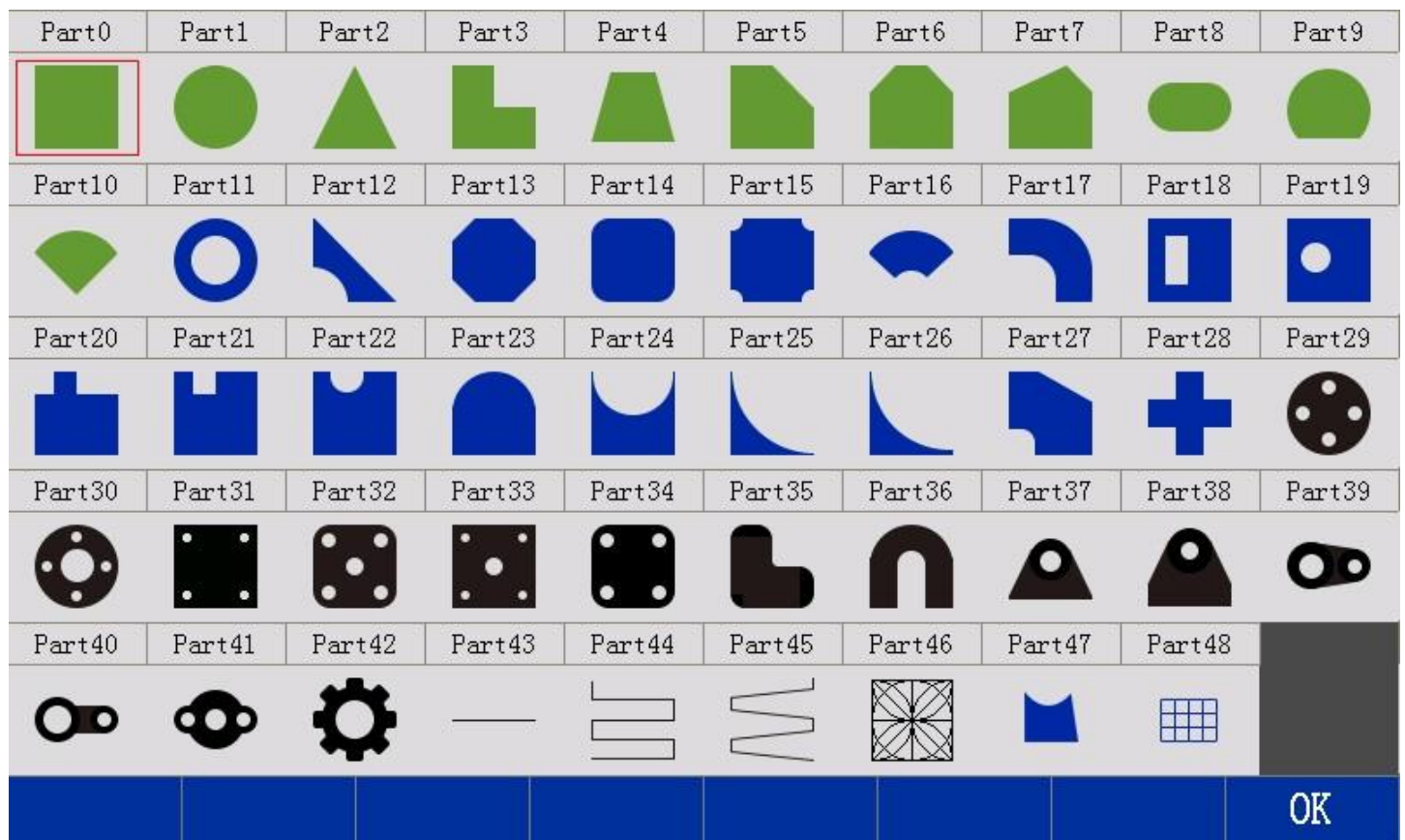
B: press PgUp and PgDn to test torch up/down

C: press direction keys to test axis movement

1.3 load parts

Load from figure library

In the working menu, press F1 Figure to enter library and choose a figure, then press Enter key to set parameters, then press F7 to submit.



(100.00,106.00) TK32.TXT

Entry Line

Exit Line

Size1

Size2

Size3

Size4

Size5

Size6

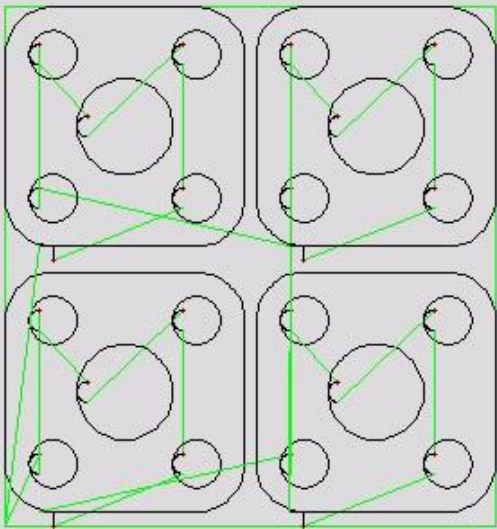
Size7

Parts	Hole	Rotate	Nest	Edit	Submit	Run
-------	------	--------	------	------	--------	-----

F1	Parts	Entry line and exit line are outside
F2	Hole	Entry line and exit line are inside
F3	Rotate	Set rotation angle
F4	Nest	Nest figure

F5	Edit	Parts code
F7	Submit	Refresh figure
F8	Run	Enter cutting interface

Press F4 to nest, then press F7 to submit and press F8 to the working menu.

(205.00, 217.00) 0.bmp


Line Qty
Column Qty
Line Gap
Column Gap
LineOffset
Safety Gap
G Submit

Parts
Hole
Rotate
Nest
Edit
Submit
Run

Load from disk

In the working menu, press F2 File, then choose controller disk or USB flash disk, then choose file and press Enter key to confirm.

F1	CNC Disk	Files in controller disk
F2	USB Disk	Files in USB flash disk
F3	Preview	Preview figure of file
F4	Search	Input file name to search
F5	Build	Build a folder
F6	Copy	Copy selected files to USB flash disk

F7	Edit	Edit interface of file
F8	Select	Select file
File Manage		
Name		Info Select
System Volume Information		
GrapLib		
CC-S4C-S4D-S4E Manual.docx		2843166
CCS4.ZUPD		526112
Space 0.947G Used 0.003G Item 4		Right Arrow:Enter, Left Arrow:Exit
		TK20.TXT (110.00, 90.00)
CNCDisk	USBDisk	Preview Search Build Copy Edit Select

Note

1. The format of USB flash disk is FAT32.
2. Select several files to copy or delete at the same time.
3. Choose folder, press right arrow key to enter, press left arrow key to exit.

1.4 parts menu

In the working menu, press F3 Parts

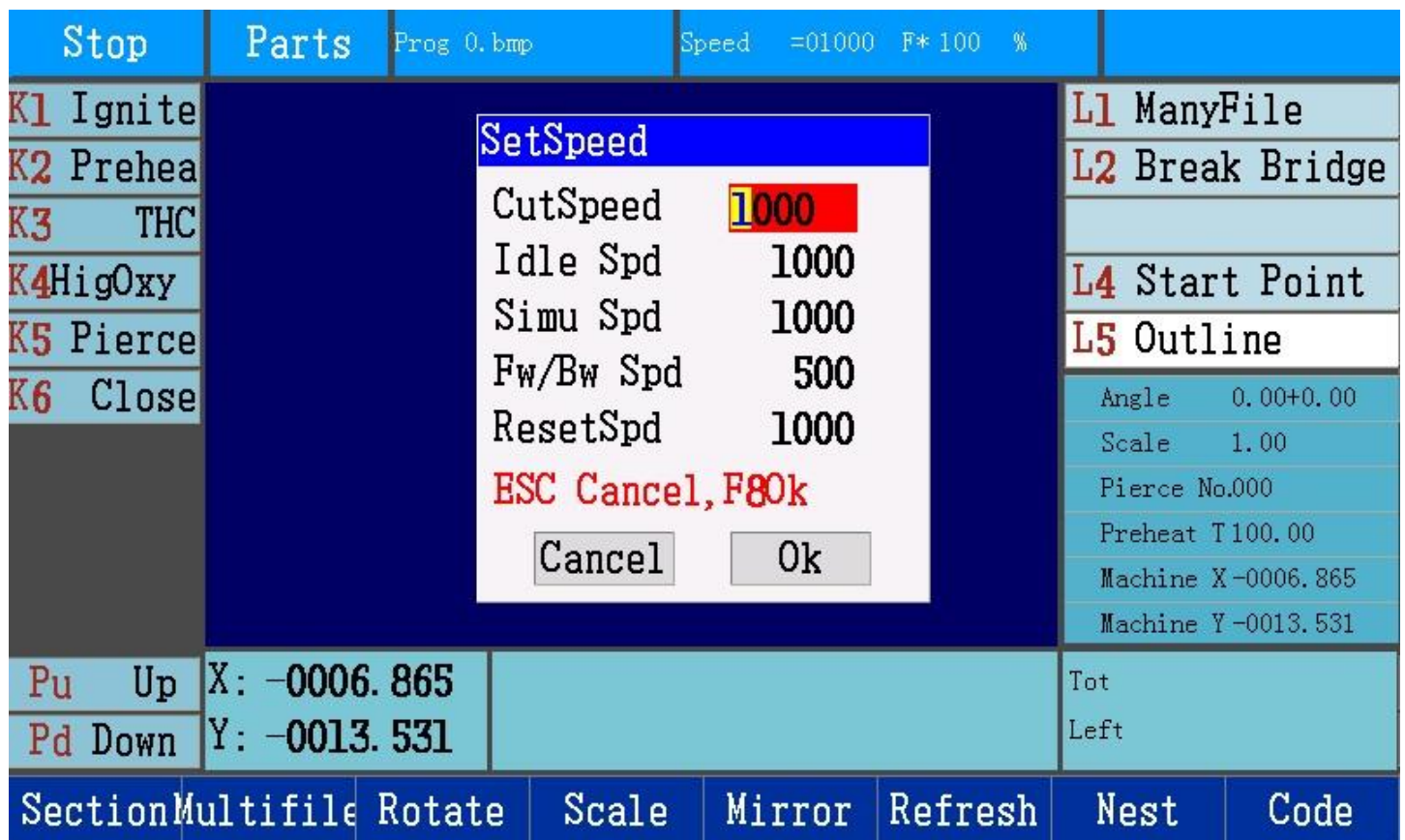
F1	Section	Cut from designated position (choose different pierce point, line number and drill point)
F2	Multi-file	
F3	Rotate	Set rotation angle

F4	Scale	Set scale
F5	Mirror	X mirror, Y mirror and XY mirror
F6	Refresh	Refresh and preview shape
F7	Nest	Nest shape
F8	Code	Code of shape
L2	Breaking bridge	When cut, pause at the connection position, restart, automatically skip the length to cut
L4	Start point	Choose cutting start point
L5	Outline	Move along maximum rectangle outline of shape

Stop	Parts	Prog 0.bmp	Speed =01000 F* 100 %	
K1 Ignite				L1 ManyFile
K2 Prehea				L2 Break Bridge
K3 THC				
K4 HigOxy				L4 Start Point
K5 Pierce				L5 Outline
K6 Close				Angle 0.00+0.00
				Scale 1.00
				Pierce No.000
				Preheat T100.00
				Machine X-0006.865
				Machine Y-0013.531
Pu Up	X: -0006.865			Tot
Pd Down	Y: -0013.531			Left
Section	Multifile	Rotate	Scale	Mirror
			Refresh	Nest
				Code

1.5 set cutting mode

In working menu, press 0 key to set more parameters about speed.



1.6 general menu

In the working menu, firstly press F4 Para, then press F1 General

Speed limit	Maximum speed of manual movement
Flame cutting speed limit	Maximum cutting speed of flame mode
Plasma cutting speed limit	Maximum cutting speed of plasma mode
Backward/forward speed	Designated speed of moving backward/forward
Angle Of Speed Adjustment	When included angle is bigger than the value, speed down in advance
Corner speed limit	Maximum speed at corner
Cutting mode	Choose plasma cutting or flame cutting

Speed Limit	<input type="text" value="1000"/>	mm/min
Flame Cutting Speed Limit	<input type="text" value="1000"/>	mm/min
Plasma Cutting Speed Limit	<input type="text" value="1000"/>	mm/min
Back/Forward Speed	<input type="text" value="500"/>	mm/min
Angle Of Speed Adjustment	<input type="text" value="30"/>	degree
Corner Speed Limit	<input type="text" value="500"/>	mm/min
Cutting Mode	Flame <input checked="" type="radio"/> Plasma <input type="radio"/>	

[PgUp] [PgDn] choose areas

Range: 20 < pa < 90000

max. speed in manual mode and idle run

General	Flame	Plasma		System	Machine	Advance	Save
---------	-------	--------	--	--------	---------	---------	------

1.7 flame menu

In the working menu, firstly press F4 Para, then press F2 Flame

Ignition Time	<input type="text" value="0.5"/>	s	Ignitor	<input type="radio"/>
Preheat Time	<input type="text" value="100.0"/>	s	Use High Preheat Oxygen	<input type="radio"/>
Pierce Time	<input type="text" value="0.5"/>	s	Keep High Preheat When Cut	<input type="radio"/>
Move Pierce Time	<input type="text" value="0.0"/>	s	Torch Up Then Open Cut Oxygen	<input type="radio"/>
Torch Up Time	<input type="text" value="1.0"/>	s	Not Close Output After Cut	<input type="radio"/>
Torch Down Time	<input type="text" value="0.8"/>	s		
Pierce Up Time	<input type="text" value="1.0"/>	s		
Pierce Down Time	<input type="text" value="0.8"/>	s		
Stop Time	<input type="text" value="0.0"/>	s		
Cut Close Time	<input type="text" value="0.0"/>	s		

[PgUp] [PgDn] choose areas

Range: 0.0 < pa < 20.0

ignition time

General	Flame	Plasma		System	Machine	Advance	Save
---------	-------	--------	--	--------	---------	---------	------

Ignition time

Ignition time

Preheat time	Preheat time
Pierce time	Pierce time
Move pierce time	When pierce, x/y axis movement time
Torch up time	After cutting ends, torch up time
Torch down time	After cutting starts, torch down time
Pierce up time	After preheat, torch up time to the pierce height
Pierce down time	After pierce, torch down time to the cutting height
Stop time	Time of torch keeping still after cutting is over
Cut close time	Time of keeping cutting oxygen after thick plate cutting stops
Ignitor	Use ignitor
Use high preheat oxygen	Use high preheat oxygen
Keep high preheat when cut	Keep high preheat oxygen output when cut
Torch up then open cut oxygen	When pierce, firstly torch up, then open cutting oxygen
Not close output	After cutting is over, not close preheat, close cutting oxygen

1.81 plasma menu (IO control)

In the working menu, firstly press F4 Para, then press F3 Plasma, and choose IO THC in Machine menu.

Torch up time	Torch up time after cutting is over
Torch down time	Torch down time after torch moves to pierce point
Location up time	Torch up time after receiving location signal
Arc strike time	Time of keeping arc strike switch on

Delay Check Arc	Delay of checking arc strike success feedback signal
Pierce time	Pierce time
First pierce time	First pierce time, usually the time is longer
Pierce down time	After pierce, time of torch down to cutting height
Move pierce time	When pierce, time of moving x/y axis
THC delay	After torch starts to move, delay of keeping THC on
Speed down of closing THC	When cutting speed is lower than the ratio, close THC
Distance of Closing THC	Close THC away from the end point
Time between close THC and close arc	After closing THC, delay of closing arc
Arc break time	When check arc strike feedback, break time is longer than the value, there is alarm
Location feedback check	Check lifter location switch
Location after pause	Locate again after pause and restart
Arc strike success check	Check arc strike success feedback
Location output	When locate, turn on output pin 7
Small circle open THC	

Torch Up Time	1.0	s	THC Delay	0.0	s
Torch Down Time	0.8	s	Speed Down Ratio Of Closing THC	90	%
Location Up Time	0.5	s	Distance Of Closing THC	0.0	mm
Arc Strike Time	2.0	s	Time Between Close THC And Close Arc	0.0	s
Delay Check Arc	0.0	s	Arc Break Time	0.5	s
Pierce Time	0.5	s	Location Feedback Check	<input type="radio"/>	
First Pierce Time	0.5	s	Location After Pause	<input type="radio"/>	
Move Pierce Time	0.0	s	Arc Success Check	<input type="radio"/>	
			Location Output	<input type="radio"/>	
			Small Circle Open THC	<input type="radio"/>	

[PgUp] [PgDn] choose areas

Range: 0.0 < pa < 100.0

after cut, torch up time

General	Flame	Plasma		System	Machine	Advance	Save
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1.82 plasma menu (485 control)

In the working menu, firstly press F4 Para, then press F3 Plasma, and choose 485 THC in Machine menu.

Mode	Disable	<input checked="" type="radio"/>	Arc Strike Time	0.2	s
	Set Arc	<input type="radio"/>	Times Of Arc Failure	3	times
	Sample Arc	<input type="radio"/>	Melt Jump Height	100	%
Set Arc	110	v	Cut Height Delay	0.3	s
Cut Height	3.0	mm	AVC Delay	0.5	s
Pierce Height	3.0	mm	Arc Break Time	0.2	s
Pierce Delay	0.3	s	Delay Check Arc	0.0	s
Arc Transfer Height	100	%	Climb Time	0.0	s
Retraction Height	10.0	mm	Stop Time	0.0	s
IHS Initial Height	10.0	mm	Speed Down Ratio Of Closing THC	90	%
Distance To Skip IHS	0.0	mm	Distance Of Closing THC	0	mm
			Delay Between Close THC And Close Arc	0.0	s
			Arc Success Check	<input type="radio"/>	
			Location After Pause	<input type="radio"/>	
			Small Circle Open THC	<input type="radio"/>	

[PgUp] [PgDn] choose areas

AVC Disable: cut at set height instead of arc voltage. Set Arc: work as set arc voltage value. Sample Arc: work as sample arc voltage value.

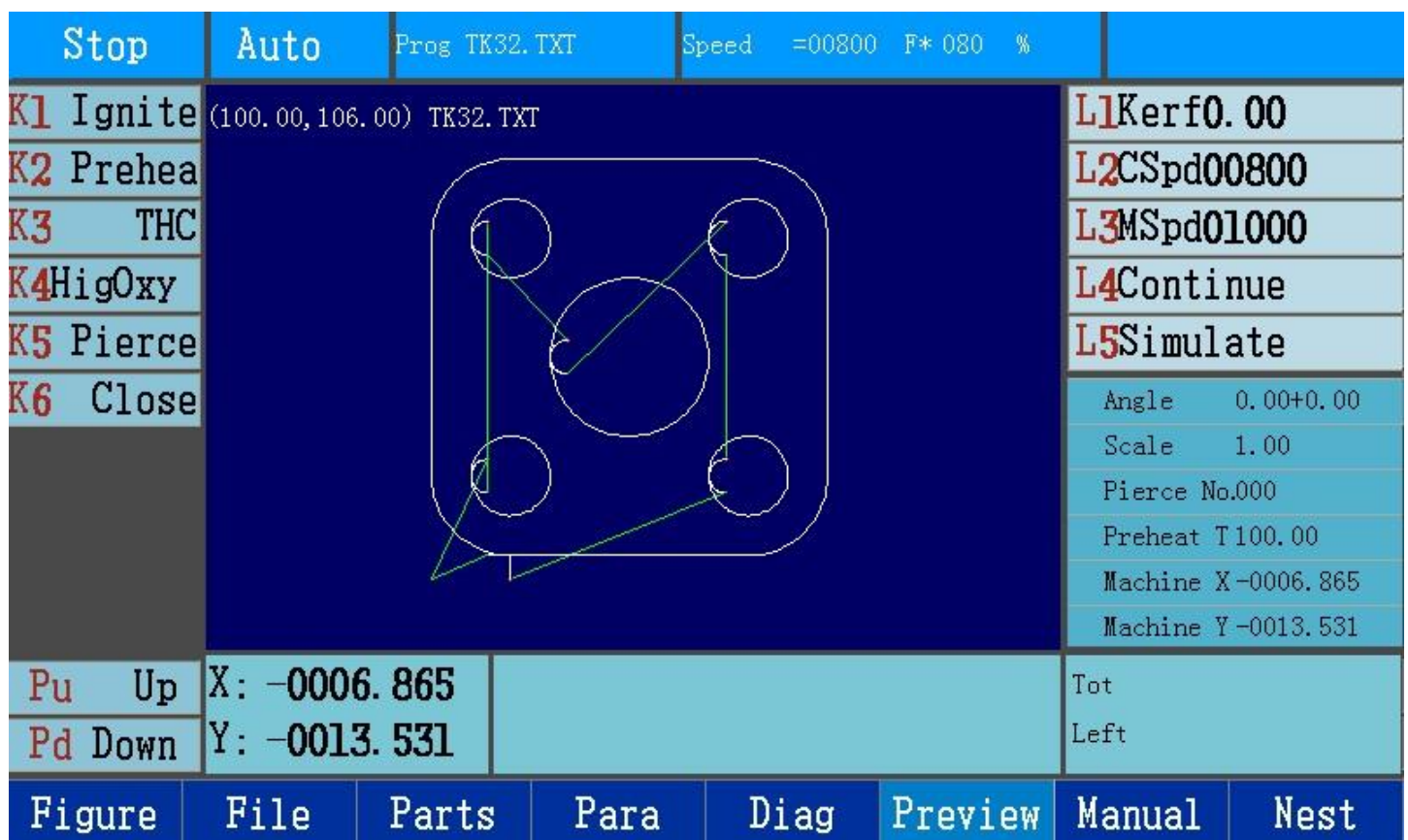
General	Flame	Plasma		System	Machine	Advance	Save
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Disable	Cutting height is set by parameters instead of arc voltage control
Set arc	Cutting height is adjusted by setting arc voltage
Sample arc	Cutting height is adjusted by sample arc voltage
Set arc	Set arc voltage value
Cut height	Set cutting height
Pierce height	Set pierce height
Pierce delay	Pierce time
Arc transfer height	Ratio of arc strike height and cutting height
Retraction height	After cutting is over, torch up height
HIS initial height	When initial location, start height of torch slowly approaching to plate
Distance to skip IHS	When the distance between end point (last cutting) and start point (next cutting) is shorter the value, then not initially locate
Arc strike time	Time of keeping arc strike switch on
Times of Arc Failure	After arc strike fails, times of arc strike
Melt jump height	Ratio of cutting height
Cut height delay	Time of keeping melt jump height
AVC delay	After torch starts to move, delay of opening THC
Arc break time	When check arc strike feedback, break time is longer than the value, there is alarm
Delay check arc	Delay of checking arc strike success feedback
Climb time	After torch starts to move, cutting time at climb speed
Stop time	Time of torch keeping still after cutting is over
Speed down ratio of	When cutting speed is lower than the ratio, close THC

closing THC	
Distance of closing THC	Close THC away from the end point
Delay between close THC and close Arc	After closing THC, delay of closing arc
Arc success check	Check arc strike success feedback
Locate after pause	Locate again after pause and restart
Small Circle Open THC	

1.91 cut in auto mode

Before cutting starts, you can press F6 to preview and can move the figure by cursor keys, and X key, Y key and G key are separately for zoom in, zoom out and restore. Press start key to cut.



1.92 pause during cutting

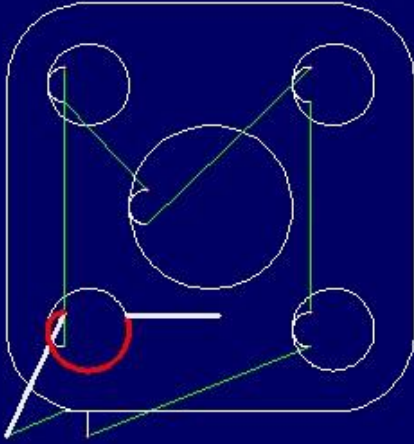
Pause when not delay

Press pause key, cutting stops, and the controller automatically record the position as breaking point to save. Continue to cut after moving torch forward or backward to a proper position and then press start key.



F3	ToStart	Back to start point, move torch to start point
F5	Pierce point	Choose pierce point
F6	Forward	Torch moves forward along path, continue to cut at next pierce point
F7	Backward	Torch moves backward along path, stop at pierce point
H	Simulate	Change to simulation mode
D	Continue	Continuously move torch in manual mode

When pause, torch can be moved manually beyond path, then continue to cut and cutting options appear.

Pause		Auto	Prog TK32.TXT	Speed =01000 F* 100 %		
K1	Ignite	(100.00,106.00) TK32.TXT				
K2	Prehea				L2	CSpd00800
K3	THC				L3	MSpd01000
K4	HigOxy				L4	Continue
K5	Pierce				L5	Simulate
K6	Close				Angle 0.00+0.00 Scale 1.00 Pierce No.001 Preheat T 100.00 Machine X 00045.054 Machine Y 00015.895	
Pu	Up	X: 00051.919			Tot 000.1	
Pd	Down	Y: 00029.426			Left 000.0	
			NearPie	RunBack	CutBack	PierCut Cancel
F4	Near pierce	Choose nearest pierce point away from the current position,				
F5	Run back	Move to breaking point along the shortest path				
F6	Cut back	Cut from current position along the shortest path to breaking position				
F7	Pierce cut	Make current position as breaking point, then cut.				

Pause when delay

When cut, timer starts to work, following options can be done.

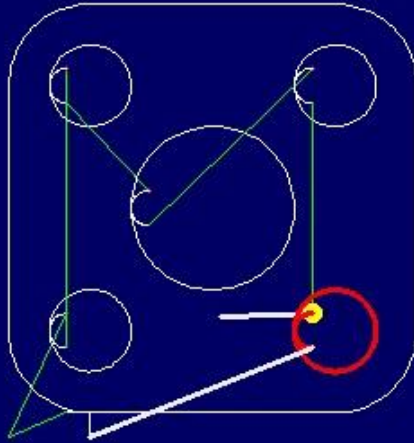
F6	Extend	Extend current time, add 100s
F7	Set	Set current time as following time of same operation
F8	Skip	Skip left time

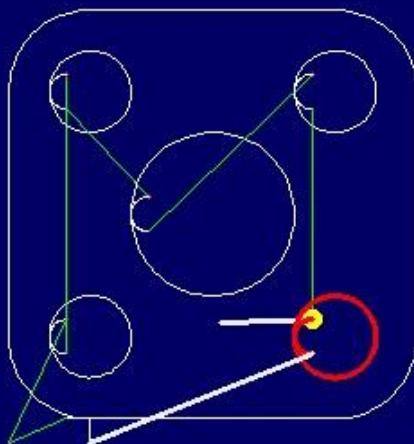
Start key can skip left time

Attention:

1. In the flame mode, load new program, preheat time is 100s.
2. When preheat delay, press start key can skip.

3. Ignition time and pierce time of flame mode and arc strike time and pierce time of plasma mode can not work with other operations.
4. When preheat delay, press pause, keep output, timer stops, press F7 M Torch (move torch) to change pierce point.

Run		Auto		Prog TK32.TXT		Speed =00800 F* 080 %					
K1 Ignite											
K2 Prehea								L2CSpd00800			
K3 THC								L3MSpd01000			
K4 HigOxy								L4Continue			
K5 Pierce								L5Simulate			
K6 Close											
								Angle 0.00+0.00			
								Scale 1.00			
								Pierce No.006			
								Preheat T100.00			
								Machine X00013.135			
								Machine Y-0013.531			
Pu Up		X: 00020.000						Tot 100.0			
Pd Down		Y: 00000.000						Left 095.5			
>>43:								Extend			
44: F								Set			
								Skip			

Run	Auto	Prog TK32.TXT	Speed =00800 F* 080 %	
K1 Ignite				
K2 Preheat				L2CSpd00800
K3 THC				L3MSpd01000
K4 HigOxy				L4Continue
K5 Pierce				L5Simulate
K6 Close				Angle 0.00+0.00
			Scale 1.00	
			Pierce No.006	
			Preheat T100.00	
			Machine X00013.135	
			Machine Y-0013.531	
Pu Up	X: 00020.000		Tot 100.0	
Pd Down	Y: 00000.000		Left 057.1	
>>43: 44: F				M Torch

1.93 optional operations

Manually move torch

In the working menu, press direction keys to move torch, and release keys, torch stops.

Press L4 Continue, press direction keys and torch continuously moves.

Jog

In Manual menu, press F1 Jog to set torch movement distance, and press direction keys, torch moves the designated distance.

Move to

Press F2 Move To to set movement distance of X and Y axis.

Plate calibration

Move torch to one side of the plate, and press F3 Start Point, then move torch to another side of the plate, and press F4 End Point, then the rotation angle appears.

Breaking point

Cutting stops because of pause, emergency stop and alarm. The controller automatically record breaking point position, then use the function of “breaking point” to continue to cut.

After press F6 Break Point, shape with breaking point appears, and yellow point is the breaking point.

Return

Press L1 Return in manual menu, then torch moves to reference point from current position.

Outline

In Parts menu, press L5 key Outline to move along outline.

When current relative coordinate is not zero point, location options appear as below,

“current point location”: make current point as workpiece reference point and relative coordinate is set as reference point coordinate. Torch moves to the bottom left corner, and move around the workpiece along its outside edge.

“reference point location”: not change current relative coordinate, move to workpiece reference point from current point, then move to bottom left corner and move around the workpiece along its outside edge.

Change start point

In Parts menu, press L4 key Start Point to change different cutting start point.

Press start key, torch moves to first pierce point from start point and then starts to cut.

Section

Choose a certain position of the parts to cut.

In Parts menu, press F1 Section to choose pierce point number. Press F1 again to choose line number.

To zero and locate

Use 485 control THC to make lifter to zero and locate

Press K1 key To Zero, lifter moves up at fastest speed, and touches the upper limit switch and stops and lifter position becomes zero.

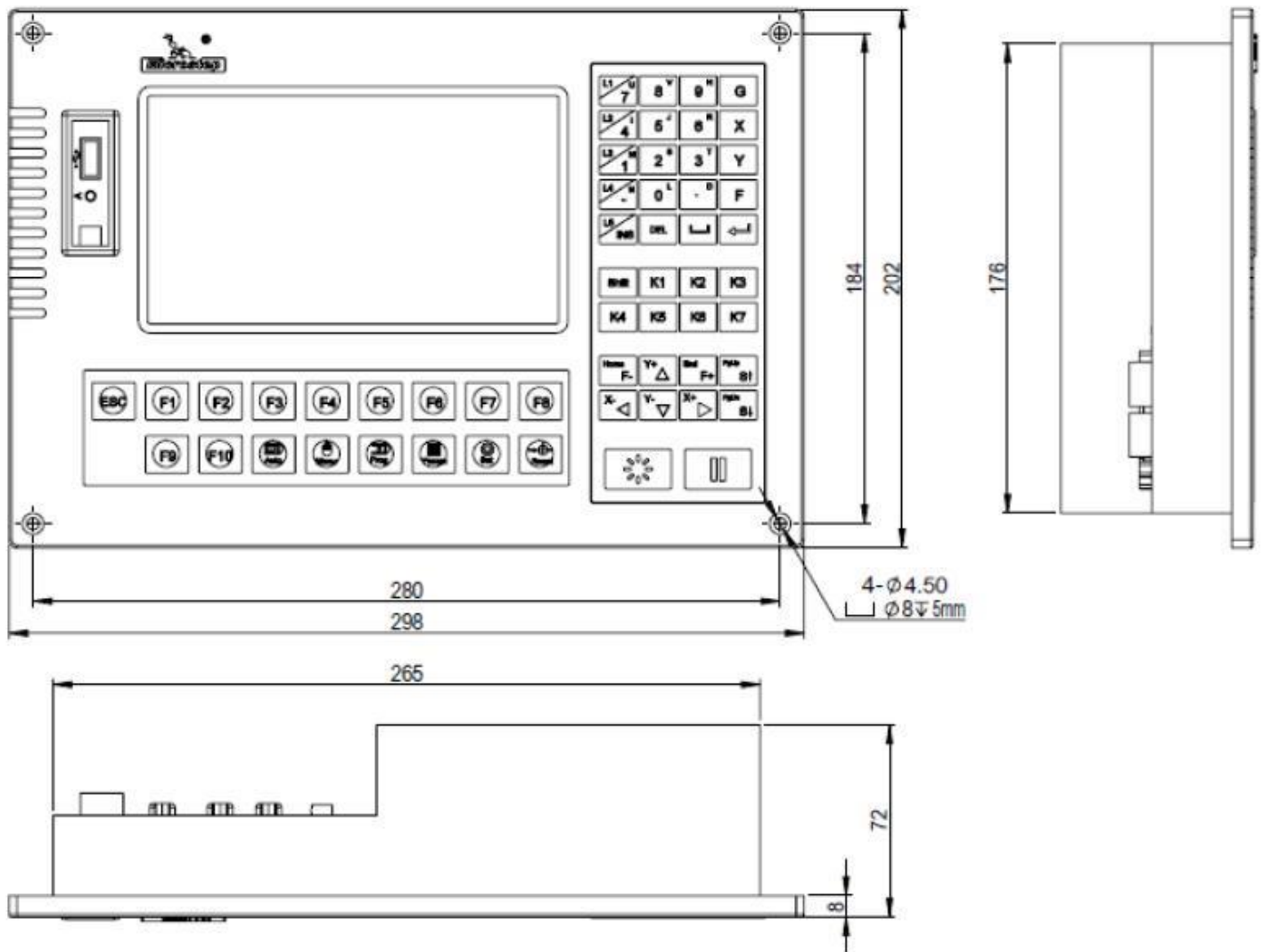
Press K2 key Locate, lifter moves down at fastest speed to initial location height, then speed down to IHS speed, torch continues to move down, touches location signal then moves up to

location height.

2.1 general introduction

	CC-S4D	CC-S4E
Torch height controller	Built-in 485 torch height controller, drive output current $\leq 3A$	IO control torch height controller
Driver	Built-in driver, drive power supply DC24~40V, output current $\leq 3A$	
Processor	Industrial ARM processor chip	
Display	7" true color LCD	
Input	16 optoelectronic isolation	
Output	16 optoelectronic isolation	
Axis quantity	2	
Communication	RS232 X1, USB X 1	
Storage	8G	
Working temperature	0~40℃	
Storage temperature	-40~60℃	

2.2 installation dimension

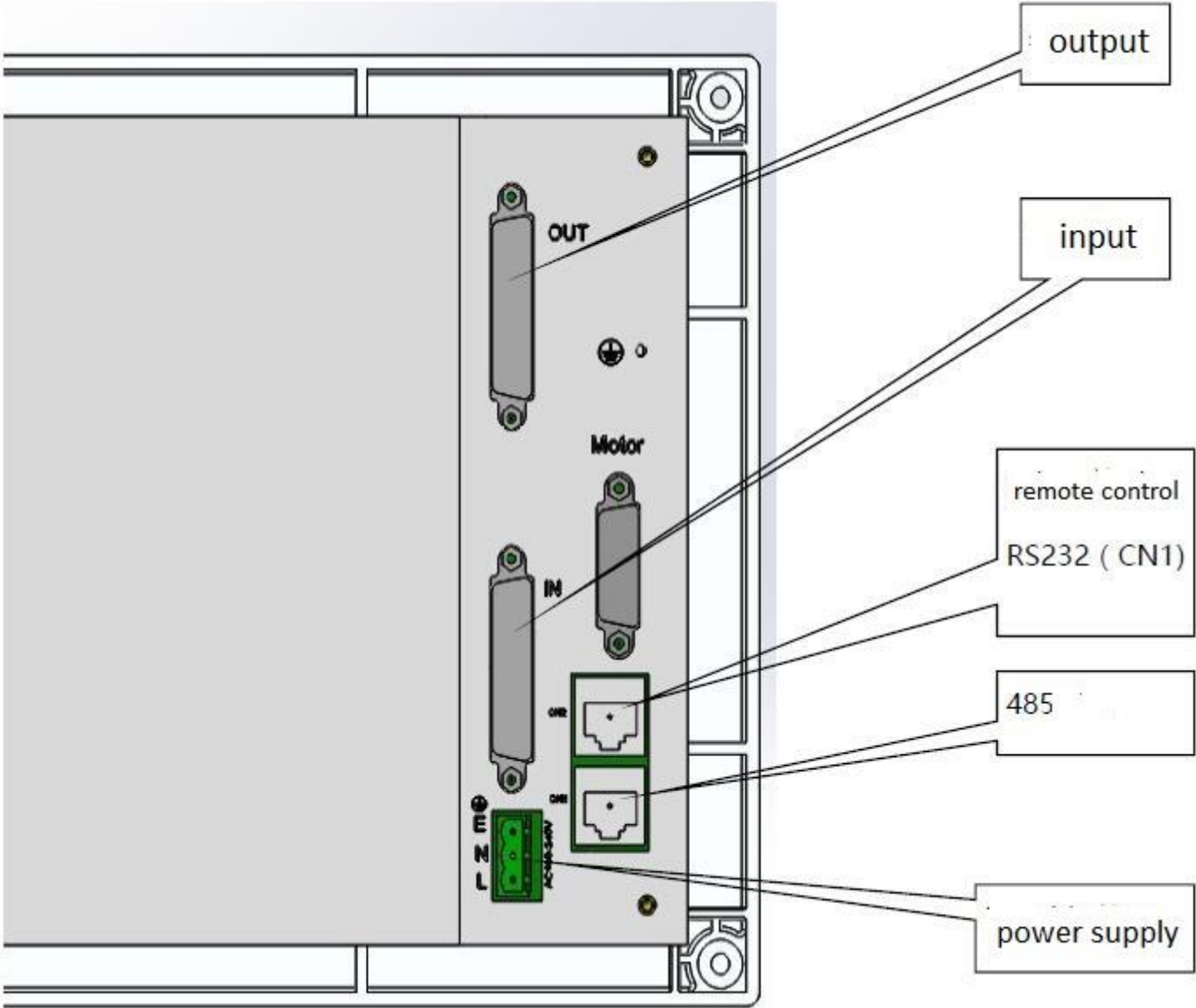


2.3 ports

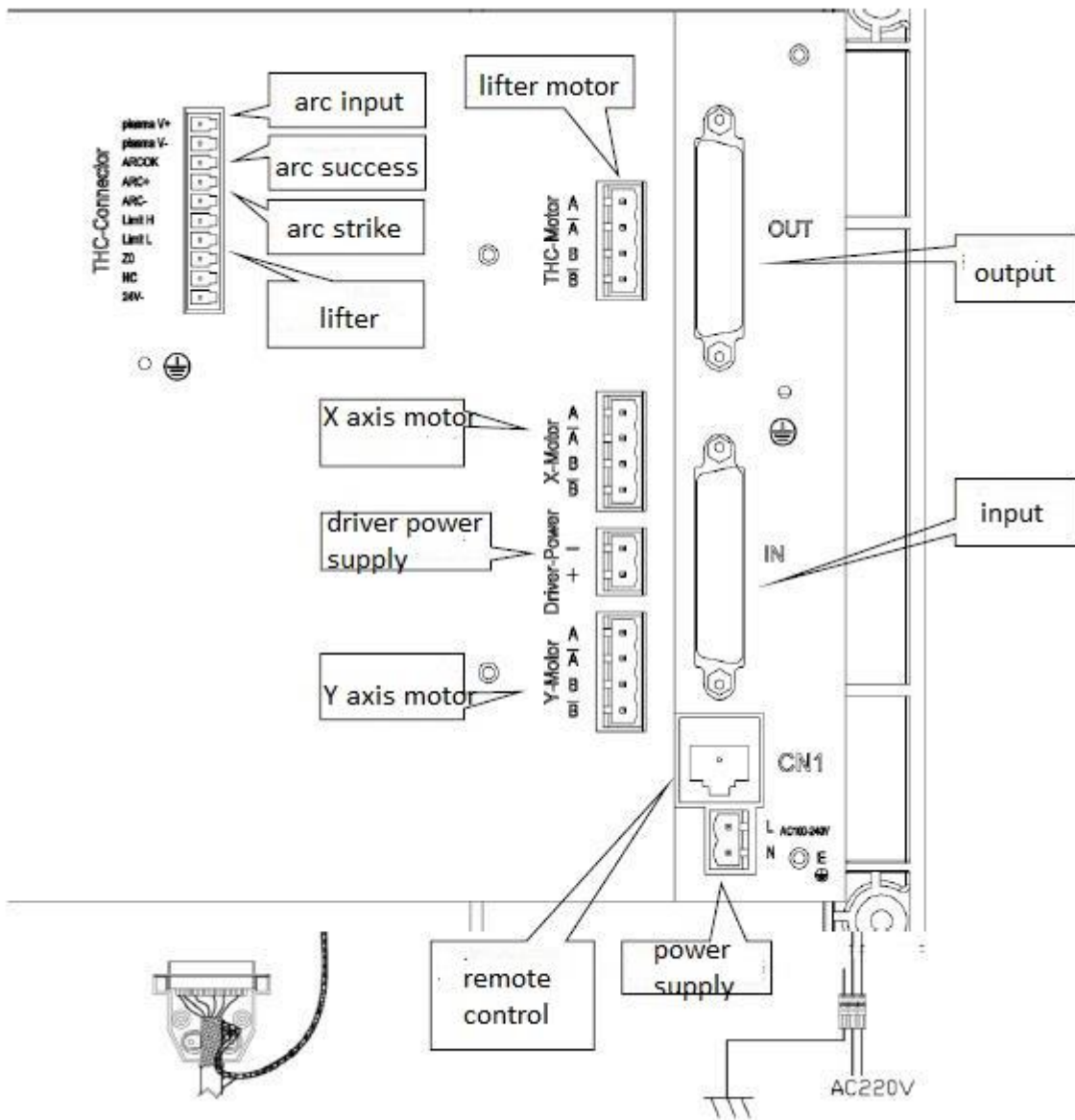
CC-S4C

Motor Pin No.	Signal Definition
1	X axis motor 1 direction+
9	X axis motor 1 direction-
2	X axis motor 1 pulse+
10	X axis motor 1 pulse-
3	Y axis motor 1 direction+
11	Y axis motor 1 direction-
4	Y axis motor 1 pulse+
12	Y axis motor 1 pulse-

5	X/Y axis motor 2 direction+
13	X/Y axis motor 2 direction-
6	X/Y axis motor 2 pulse+
14	X/Y axis motor 2 pulse-
7	5V



CC-S4D/E



Attention:

1. CC-S4E has no torch height controller port and lifter motor port.
2. When choose 485 THC in Machine menu, input signals of “arc strike success feedback”, “lifter limit”, “torch collision” and “torch location” and output signals of “arc strike” and “THC auto” should connect to relative pins at the back of the controller.
3. Screw E at the back of the controller must connect the ground (yellow/green wire).
4. Should weld yellow/green wire with diameter over 2.5 mm square to the signal wire shielded layer, then connect to screw E.

Ground connection is necessary, or controller can't work stably and even it's damaged.

Input signal definition

Pin No. of 25-pin	Signal Definition	Instruction
1	X+ limit	Connection X axis +limit switch
14	X- limit	Connection X axis -limit switch
2	Y+ limit	Connection Y axis +limit switch
15	Y- limit	Connection Y axis -limit switch
3	External e-stop	Connect external e-stop switch
16	X zero	Connect X axis mechanical zero point switch,
4	Arc strike success feedback	Connect arc strike success signal of plasma power source
17	Y zero	Connect Y axis mechanical zero point switch,
5	Location	Connect zero point signal of lifter
18	External pause	Connect external pause key
6	Torch collision	Connect collision checks switch of lifter
19	External X+ direction	Connect external X +direction switch
7	External X- direction	Connect external X -direction switch
20	External Y+ direction	Connect external Y +direction switch
8	External Y- direction	Connect external Y -direction switch
21	External start	Connect external start key
12/24	24V+	DC24V+
13/25	24V-	DC24V-

Output signal definition

Pin No. of 25-pin	Signal Definition	Instruction
-------------------	-------------------	-------------

1	M10	Gas/preheat
14	M12	Cutting oxygen/arc strike
2	M14	Torch A up
15	M16	Torch A down
3	M20	Ignition
16	M32	Plasma arc strike
4	M22	Water spray
17	M24	High pressure preheat
18	M38	Plasma THC
7	M46	Plasma location output
20	M48	Flame THC
12/24	24V+	DC24V+
13/25	24V-	DC24V-

Communication signal port definition (CN1)

Pin No.	Signal definition	Instruction
1	+24V	24V power+
2	TXD	Serial port signal
3	RXD	Serial port signal
7	24VG	5V/24V power ground
8	24VG	5V/24V power ground

Lifter port and arc voltage input port

Plasma+	Connect voltage divider box
---------	-----------------------------

Plasma-	
ARC OK	Connect arc strike success signal of plasma power source
ARC+	Connect start signal of plasma power source
ARC-	
Lim H	Connect upper limit of lifter
Lim L	Connect lower limit of lifter
ZO	Connect zero point of lifter
NC	Connect collision signal of lifter
24V-	Connect 24V- of lifter

THC-Motor

A	Connect A of lifter motor
A-	Connect A- of lifter motor
B	Connect B of lifter motor
B-	Connect B- of lifter motor

X-Motor

A	Connect A of X axis motor
A-	Connect A- of X axis motor
B	Connect B of X axis motor
B-	Connect B- of X axis motor

Driver-Power

+	Driver power supply +
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-	Driver power supply -
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Y-Motor

A	Connect A of Y axis motor
A-	Connect A- of Y axis motor
B	Connect B of Y axis motor
B-	Connect B- of Y axis motor

2.4 diagnose menu

In the working menu, press F5 Diag

Name	Port	Level	State	Name	Port	Level	State
X+Limit	01	H	No	Location	05	H	No
X-Limit	14	H	No	External Pause	18	H	No
Y+Limit	02	H	No	Torch Collision	06	H	No
Y-Limit	15	H	No	X+Direction	19	H	No
External E-stop	03	H	No	X-Direction	07	H	No
X 0 Point Switch	16	H	No	Y+Direction	20	H	No
Arc Feedback	04	H	No	Y-Direction	08	H	No
Y 0 Point Switch	17	H	No	External Start	21	H	No
Info	X+Limit						
Input	Output	Advance	THC			State	Save

Name	Port	Level	State	Name	Port	Level	State
Preheat Oxy M10	01	H	No	Spare	05	H	No
Cutting Oxy M12	14	H	No	Plasma THC M38	18	H	No
Torch Up M14	02	H	No	Spare	06	H	No
Torch Dn M16	15	H	No	Spare	19	H	No
Ignition M20	03	H	No	Location(P) M46	07	H	No
Arc Strike M32	16	H	No	Flame THC M48	20	H	No
Spray Water M22	04	H	No	Spare	08	H	No
H Preheat M24	17	H	No	Spare	21	H	No

Info

Input	Output	Advance		Reverse		State	Save
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Operation			
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L1 Restore Default

L2 Save As Default

L3 Export Parameters

L4 Import Parameters

Input	Output	Advance					
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Name	Port	Level	State	Name	Port	Level	State
THC U Limit1	01	H	No		11	H	No
THC L Limit1	02	H	No		12	H	No
Zero Point1	03	H	No		13	H	No
Arc Success1	04	H	No		14	H	No
TorchCollide1	05	H	No		15	H	No
	06	H	No		16	H	No
	07	H	No		17	H	No
	08	H	No		18	H	No
	09	H	No		19	H	No
	10	H	No		20	H	No

Info

THC U Limit1

Input						State	Save
F1	Input	Input status display When DC24V+ or nothing is connected to pins, level is H. When DC24VG is connected to pins, level is L.					
F2	Output	Output status display Before set “state”, firstly close all output in manual menu.					
F3	Advance	Parameter settings					
F4	THC	Input status display about THC					
F7	State	Set status logic					
F8	Save	Save settings					

L1	Restore Default	Restore current settings to default
L2	Save As Default	Save current settings as default
L3	Export Parameters	Export all settings and save as “.IOC” file
L4	Import Parameters	Import “.IOC” file

3.1 system menu

In the working menu, firstly press F4 Para, then press F5 System

Numerator X	<input type="text" value="2"/>	Y	<input type="text" value="2"/>
Denominator X	<input type="text" value="1"/>	Y	<input type="text" value="1"/>
Machine Origin X	<input type="text" value="0.000"/>	Y	<input type="text" value="0.000"/>
Reset Direction X	<input type="text" value="0"/>	Y	<input type="text" value="0"/>
Backlash X	<input type="text" value="0.000"/>	Y	<input type="text" value="0.000"/>
Soft+Limit X	<input type="text" value="9000"/>	Y	<input type="text" value="9000"/>
Soft-Limit X	<input type="text" value="-9000"/>	Y	<input type="text" value="-9000"/>
Plate Size X	<input type="text" value="8000"/>	Y	<input type="text" value="8000"/>

Start Speed X	<input type="text" value="200"/>	Y	<input type="text" value="200"/>	mm/min
Acce/Dece Time X	<input type="text" value="300"/>	Y	<input type="text" value="300"/>	ms
Reset Speed	<input type="text" value="1000"/>	mm/min		

[PgUp] [PgDn] choose areas

Range: 1 < pa < 65535

adjust mechanical precision

Metric/British	<input type="text" value="0"/>	0/1
Coordinate	<input type="text" value="0"/>	-1/1
Smooth Precision	<input type="text" value="0.100"/>	mm
Breaking Bridge Length	<input type="text" value="20.0"/>	mm
CircleSpdLimit	<input type="text" value="0"/>	mm/min
Dia	<input type="text" value="0.0"/>	mm
CircleCorn	<input type="text" value="0"/>	degree
G41/G42 Check	<input checked="" type="radio"/>	Torch Up <input type="radio"/>
Edge Pierce	<input type="radio"/>	Move Tip <input type="radio"/>
Corner Arc	<input type="radio"/>	Auto Return <input checked="" type="radio"/>
Clear Coordinate	<input checked="" type="radio"/>	Start Point <input type="radio"/>
Pretreat Figure	<input checked="" type="radio"/>	Kerf Display <input checked="" type="radio"/>
Outline Display	<input type="radio"/>	Pierce No. <input type="radio"/>
Multi Breaking Point	<input type="radio"/>	Slow Stop <input type="radio"/>
Use Small Circle	<input type="radio"/>	

General	Flame	Plasma	System	Machine	Advance	Save
Numerator	Set machine accuracy. Press F key, input code distance and actual distance, then Enter key and save key.					
Denominator						
Machine Origin	Current coordinate after reset					
Reset Direction	1: negative direction move, 0: not move, 1: positive direction move					
Backlash	Compensate mechanical gap					
Soft +/-Limit	Maximum value of coordinate					
Plate Size	Preview figure display					
Start Speed	Start speed and stop speed					
Acce/Dece Time	Acceleration/deceleration time from start speed to maximum speed					
Reset Speed	Reset speed					
Metric/British	0: metric unit (mm), 1: British unit (inch)					
Coordinate	-1: clockwise 90 degree, 0: not rotate, 1: anticlockwise 90 degree					

Code	0: default, 1: compatible with nante code
Smooth Precision	Some softwares make drawing made of many small line sections. Smoothness function can integrate them to improve cutting efficiency and stability.
Breaking bridge length	Automatically skip the length
Circle Spd Limit	Circle cutting speed
Dia	Circle diameter
Circle Corner	Circle angle
G41/42 Check	Check kerf compensation
Torch Up	Automatically torch up after pause
Edge Pierce	When torch moves to pierce point, option box appears to choose
Move Tip	Tip before move
Corner Arc	At corner use arc transition and arc radius is kerf value
Auto Return	Automatically go back to reference point after cutting is over
Clear Coordinate	Automatically clear current coordinate after start
Start Point	Automatically go to start point after cutting is over
Pretreat figure	Automatically preview after loading file
Kerf Display	Display kerf line
Outline display	Display rectangle outline of figure
Pierce No.	Display pierce number
Multi Breaking Point	Save several breaking points
Slow stop	After alarm, speed down then stop
Use small circle	Small circle speed limit function

3.2 machine menu

In the working menu, firstly press F4 Para, then press F6 Machine

Limit Switch <input checked="" type="radio"/> PneumaticLift <input type="radio"/> Soft Limit <input type="radio"/> Collide Check <input type="radio"/> 0 Point Switch <input type="radio"/> XY Axis Exch <input type="radio"/> Dual Drive <input type="radio"/> set drive <input type="radio"/>	IO THC <input type="radio"/> 485 THC <input checked="" type="radio"/> THC Mode <input type="text" value="1"/> 0/1 Self-test Arc Voltage <input type="text" value="0"/> 0/1 Thread Pitch <input type="text" value="10"/> mm Location Tolerance <input type="text" value="0"/> mm Lifter Stroke <input type="text" value="500.0"/> mm Fast Speed <input type="text" value="6000"/> mm/min IHS Speed <input type="text" value="1000"/> mm/min Sensitivity <input type="text" value="3"/> Speed Ratio <input type="text" value="12"/> Slow Speed <input type="text" value="3000"/> mm/min Start Speed <input type="text" value="200"/> mm/min (F) Lift Step Distance <input type="text" value="0.0"/> mm Locate Ignore Collide <input type="text" value="0"/> [G] ID(TorchA) <input checked="" type="radio"/> Auto to Zero flame mode 485 <input type="radio"/>
Circle1 Dia <input type="text" value="0.0"/> mm SpdL <input type="text" value="500"/> mm/min Circle2 Dia <input type="text" value="0.0"/> mm SpdL <input type="text" value="1000"/> mm/min Circle3 Dia <input type="text" value="0.0"/> mm SpdL <input type="text" value="1500"/> mm/min [PgUp] [PgDn] choose areas use limit switch	

General	Flame	Plasma	System	Machine	Advance	Save
Limit Switch	Whether use limit switch					
Pneumatic lift	When use pneumatic lifter, torch down output keeps on during cutting					
Soft Limit	Whether use soft limit					
Collide check	Whether check torch collision					
0 point switch	Whether use machine zero point switch					
XY Axis Exch	Exchange X and Y axis					
Circle Spd Limit	Speed limit for circle					
IO THC	Control torch height controller by input/output port					
485 THC	Control torch height controller by RS485 communication					
THC Mode	1: automatically adjust height according to settings. 0: automatically adjust height according to cutting speed.					
Self-test Arc	THC checks arc voltage and sends arc strike success signal					

Thread Pitch	Thread pitch of lifter, 8mm or 10mm of ball screw is recommended
Location Tolerance	When locate, tolerance between the location height and the actual height
Fast Speed	Fastest speed of lifter up and down
IHS Speed	When locate, speed of slowly approaching to plate
Sensitivity	When automatically adjusting height, sensitivity of lifter height following arc voltage change, the smaller the value is, more closely it follows, value 3 is recommended.
Speed Ratio	When automatically adjusting height, up and down speed ratio, value 12 is recommended.
Slow Speed	Fastest speed when automatically adjusting height
Start Speed	Start and stop speed of lifter motor, value 200 is recommended
(F)Lift step distance	when cut in flame mode, jog distance of torch up/down
Locate ignore collide	When locate, ignore torch collision signal
AHC to zero	Cutting finishes, torch height controller returns to 0
Flame mode 485	In flame mode, lifter is 485 communication

3.3 advance menu

In the working menu, firstly press F4 Para, then press F7 Advance

G Initialize
X Language
Y System ID
F Version
9 User Code
6 Upgrade
3 Boot Screen
8 Company Info
5 System Time
2 Set Driver
0 En/Decryption

L1 Restore Defa
L2 Save Default
L3 Export Para
L4 Import Para
L5 Para Manage

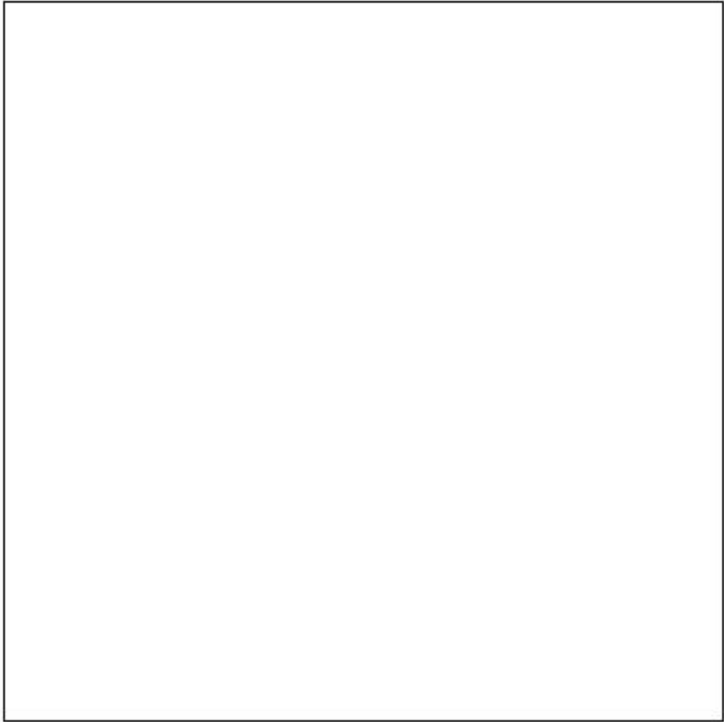
General	Flame	Plasma		System	Machine	Advance	Save
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4 nest menu

In the working menu, press F8 Nest

L1 L1000. 0
L2 W1000. 0
L3 Gap10. 0
L4StepL5. 0
L5Angle0. 0

Add	Delete	Forwd	Backwd	Move		Refresh	Save
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L1	L1000.0
L2	W1000.0
L3	Gap10.0
L4	StepL5.0
L5	Angle0.0

Figure	File						
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(110.00,110.00) TL00.TXT

Qty **5**

Entry Line
Exit Line
Size1
Size2
Size3

L1 L1000.0

L2 W1000.0

L3 Gap10.0

L4StepL5.0

L5Angle0.0

TL00. TXT

TL00. TXT

TL00. TXT

TL00. TXT

TL00. TXT

Add	Delete	Forwd	Backwd	Move		Refresh	Save
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File	Manage			
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Name	Info	Select
GrapLib		
3. bmp	768072	
4. bmp	768072	
5. bmp	768072	
<div> <div>Space 7.275G</div> <div>Used 0.017G</div> <div>Item 4</div> </div> <div>Right Arrow:Enter,Left Arrow:Exit</div> <div>5. bmp (0.00, 0.00)</div>		

CNCDisk	USBDisk					Save As	Replace
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F1	Add	Add shape from library or controller disk or USB disk
F2	Delete	Delete added shape
F3	Forward	Change cutting sequence, forward
F4	Backward	Change cutting sequence, backward

F5	Move	Move shape
F7	Refresh	Refresh shape
F8	Save	Save settings
L1	Length	Plate length
L2	Width	Plate width
L3	Gap	Distance between two parts
L4	Step	Distance of manually moving shape
L5	Angle	Rotation angle

5 edit menu

In the working menu, firstly press F2 File, then press F7 Edit

Edit		Prog TK00.TXT	Ln Qty 000013			
00001 G2						
00002 G90						
00003 G0 X0.000 Y-10.000						
00004 G41						
00005 M7						
00006 G1 X0.000 Y100.000						
00007 G1 X100.000 Y100.000						
00008 G1 X100.000 Y0.000						
00009 G1 X-10.000 Y0.000						
00010 M8						
00011 G40						
00012 G0 X0.000 Y0.000						
00013 M2						
00014						
00015						
00016						
00017						
00018						
00019						
00020						
New		Preview	DelLine	SelLine	Save As	Save
F1	New	Create a new file				
F3	Preview	Preview the current file				
F4	Del Line	Delete the current line				

F5	Sel Line	Input the line number, then go to that line
F7	Save As	Save the current file as another file
F8	Save	Save the current file
<p>Use up/down/right/left keys to move the cursor.</p> <p>PgUp/PgDn keys are for pageup and pagedown.</p>		