

LaserCAD User Manual

Laser Motion Control System

RV 1.4

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	Users have the responsibility to point out the design error and establish
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Contact Us

409-411, 4F, Bldg B, Huameiju Business Center, Xinhu Rd., Bao'an District, Shenzhen, Guangdong Province, China

Phone: +86 159 9951 4920 Sabella

Tech Support: +86 136 9228 6280 Tiger. Chan

Email: trocen@sztrocen.com

Website: www.sztrocen.com

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Relevant Documents

- AWC708 Lite Panel Instruction
- AWC708 Plus Panel Instruction
- TL-5200 Panel Instruction

LaserCAD User Manual

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1. Outline

1.1. Snapshot

LaserCAD running under Windows, integrates composing with importing files into panel.

1.2. Features

- User-friendly and versatile
- Compatible with CorelDraw and Auto CAD
- Support the file format like AI, PLT, DXF, etc.
- Basic graphic drawing
- Machining by layer and designing the output sequences as required
- Optimal multipaths routing and pause during machining
- Multi-ways to save and reuse graphic & processing parameters
- Working time estimation, cost budget and auto composing
- Locating mode: Array output, instant positioning and back to the origin
- Design starting point, work path and knife parking position as required
- Communication mode: USB, Network and U disk

1.3. Requirement

LaserCAD is running under OS such as Window XP, Vista, Win 7, Win 8 and Win 10.

2. Installation

Flow like this:



	🕏 Welcome to use 🛛 🔀	
	Install USB Driver	
	Type: LaserCAD V7.58	
	Lanuage: English	
	Selcome to use	
	Install USB Driver	
	Type: LaserCAD V7.58	
	Install	
		_
DI Dri	ver Installation	×
į) ftdi	I CDM Drivers have been successfully insta	lled.
	确定	

FT

Completing the Device Driver Installation Wizard	
The drivers were successfully in	nstalled on this computer.
You can now connect your dev came with instructions, please i	vice to this computer. If your device read them first.
Driver Name	Status
Driver Name Trocen(Anywells) AWC	Status Ready to use

🕫 Welco	me to use	X
	Install USB Driver	
Type:	LaserCAD V7.58	•
Lanuage:	English	•
	Install	

Welco	me to use 🛛 🚺
	Install USB Driver
Type:	Plugin For CorelDraw
Lanuage:	English
	Install

How To Use 3. 3.1.

Main Interface

Menu Bar .

It contains file, edit, draw, tool, setting, view and help.

Tool Bar

Common functions are put in here and most of them are picked up from menu bar.

Object Bar

It contains coordinate, parallel offset, array clone, select by layer, etc.

Edit Bar

On the left side of display. It includes line, polylines, rectangle, ellipse drawing, etc.

Align Bar

Make multi-objects align and improve composing.

Layer Bar Modify selected object's color.

Control Panel •

Multi-tasks processing simultaneously. Functions include communication mode, layer parameters, graphic loading, etc.

193	Објест Баг	Control Panel Conscious sole
Test		Salart Reds. VIB 10001
1001 Bar		Lagwer Options
		L. Bode Speed Freer 0.
		Cert 100.00 50.00 7
	File Edit	0
Edit Bar	- Area	
Į	Sales S	the Inc. In Bottom
		Beckass Central Drigin Ban For Chip Ban Light
	00	Burnhand Start Story
		Control
		Panel
	\frown	
	Color DAD	Read Current Eva In 0.00

3.2. File Management

3.2.1. New File

Click [New] of [File] or D.

3.2.2. Open File

Click [Open] of [File] or ൙ .

3.2.3. Save File

Click [Save] of [File] or and you can save file in format of pwj5.

3.2.4. Save As

Click [Save as] of [File] and name it.

3.2.5. Import File

Click 【Import】 of 【File】 or to import file into file editing area. You may add the suffix like this: AI DXF PLT DST DSB BMP GIF JPG PNG MNG ICO TIF TGA PCX JBG JB2 JBC PGX RAS PNM SKA RAW.

• Unite Lines

Unite multi-lines into one.

- **DST/PLT Auto Smooth** Make curve smooth, speed up cutting and enhance stability.
- *Graphic Auto Sorting* Cutting head will follow the shortest path to process cutting material after graphic auto sorting.
- Save Current Data

Software will save the previous file before importing new one. Previous and imported graphic data will be included in software after importing new file.

• *Graphic Previewing* Display graphic.

3.2.6. Export File

Click **[**Export**]** of **[**File**]** or **b** and make imported file followed by a PLT suffix.

3.2.7. Import Machine Configuration

Click [Import Machine Configuration] of [File] and select import path. Double click file and make it a 'qscf' suffix.

Open	X
Look in: 🕞 Work (E:)	- G 🕫 📂 🖽-
Name	Date modified
June 2000	2015/5/6 22:10
J Trocen software	2014/9/20 8:24
work	2015/5/18 21:33
AWCTEST.al	2005/12/2 18:27
۰ (•
File name: AWC TEST.ai	Open
Files of type: Supported files 1	▼ Cancel
ж с к с с с с с с с с с с с с с с с с с	 ✓ Unite Lines ✓ DST,PLT Auto Smoot ✓ Auto Order PLT Unit: 1016 ▼ ✓ Reserve the current docma ✓ Preview

3.2.8. Export Machine Configuration Click [Import Machine Configuration] of [File] and make file a 'qscf' suffix.

3.3. **Object Selection&Remove**

3.3.1. Selection

The first step is select object before edit and draw it. There will be marked with ' \times ' in the center of the selected object with 8 control points around it and pick up any color with selected object.

• Select Single Object By A Quick Flick Move cursor to object and just a flick of the cursor to select it.

• Box Select Object

Box select single object or multi-objects.

• Select All The Object

Click 【All Select】 of 【Edit】 or *Ctrl+A* to select all the object.

• Add/Remove Selected Object

Tap and hold *Shift* and click any object shown on display to add to or remove from selection.

• Select Object By Layer

Click 🛱

	Mk. B	
)		Canaal
1		Cancer

Click [Pen] or [Color] to select the object groups with same color.

3.3.2. Change Object Color

Select object and then change their color by clicking the color bar on the bottom.

3.3.3. Rotate Object

Select object that is ready to be rotated first and input the degree in 245.000 in object bar. Input positive number for clockwise while positive number for counter-clockwise.

3.3.4. Change Object Size

Select the object that is needed to be changed and drag the control points to zoom in and out.



3.4. File Editing

3.4.1. Withdraw

Click \square in tool bar to withdraw previous operation.

- 3.4.2. Recover
 - Click in tool bar to recover previous job.
- 3.4.3. Cut

Click *k* in tool bar.

3.4.4. Copy Click in tool bar.

3.4.5. Paste Select object and click 🛱 in tool bar and click 🛱 again to paste object.

3.4.6. Delete Select an object and then delete it.

3.4.7. All Select Click Ctrl+A to select all the object.

3.4.8. Combination

Select objects that are needed to be combined and click in tool bar.

3.4.9. Cancel Combination

Select combined objects and click in tool bar.

3.4.10. Cancel All Combination

Click in tool bar to cancel all the combination when an object including a couple of sub-objects.

3.4.11. Translation

Select targeted object and put cursor on center point to move graphic.

3.4.12. Zoom In And Out

Click in tool bar to zoom in object and right-click to zoom out or you can use mouse scroll wheel up and down.

3.4.13. Align

Select object that is needed to be aligned and click bar on the bottom.

3.4.14. Nudge Offset

Select object and click [Nudge Offset] of [Edit].

3.4.15. Turn To Small Parts And Scrap

Add new graphs on the blank space that are not included to graph array and these graphs are generally small parts and scrap which could be less waste.

3.4.16. Turn The Last Row Into Leftover

Add other graphs in the last arrow.

3.4.17. Add Microjoint Manually

Microjoint serves as a bridge between cutting graph and blank space which could prevent graph that is cut from slipping away. The first step to add microjoint is select object, click [Manual Notch] of [Edit]. Second, input the number of microjoint width into the pop-up dialog box.

Width(NN).	2.00
"Ident (July -	

3.5. Graph Drawing

3.5.1. Selection

3.5.2. Node Edit

Click and which includes add/delete node, connect/cut node will pop-up.

3.5.3. Straight Line

Click and be available to draw straight lines. Click *Ctrl* and drag the mouse at the same time to draw vertical and horizontal lines.

3.5.4. Polylines

Click and drag the mouse to draw any line.

3.5.5. Rectangle

Click and drag the mouse to draw rectangle at any size. Click *Ctrl* and drag the mouse at the same time to draw a square.

3.5.6. Ellipse

Click \bigcirc and drag the mouse to draw ellipse at any size. Click Ctrl and dag the mouse at the same time to draw a perfect circle.

3.5.7. Bezier

Click 💙 and drag the mouse to draw Bezier curve.

3.5.8. Text

Click **A** and double left-click the blank space and the dialog box will pop up like this:

TrueType Font 👻 Courier New	₹ 8	•	B	I	Ū
Lext					*
*					2111

Text words and select set font size and style.

3.6. Tool

3.6.1. Array Clone

Select object that is ready to be copied and click and the dialog box will pop up like this:

X Count:	1	X Offset:	1
Y Count:	1	Y Offset:	1
Direction	n		
© L	eft_Up	🔘 R	ight_Up
ΩL	eft Down	🔘 R	ight_Down

3.6.2. Select By Layer

Click and the dialog box will pop up like this:

Pen	Color	ОК
0 1		Cancel
2		

Select color for object.

- 3.6.3. **Graphic Invert Horizontally** Click 4
- **Graphic Invert Vertically** 3.6.4. Click

3.6.5. **Manually Sorting** Click [Manually Order] of [Tool] and it will be like this:



Change Cutting Order

Click [Manual Order] and you can drag the mouse to make graph cutting order.on the left side. There are *Reverse Direction* and *Reverse Order* on the top.

• Change Start Cutting Point

Click " [•] to change start cutting point.

• Cutting Direction

Arrow mark stands for cutting direction. Click [Reverse Direction] of [Manual Order] to make cutting direction in reverse.

3.6.6. Optimal Sorting

Auto sorting for current objects that is aimed to shorten the machining time. Click **[**Automatic Order **]** of **[**Tool **]** and the dialog box will pop up like this:

No O	ut Layer is n	o Order
🔲 Orde:	r by layer	
🔽 Inne:	r to outer	
📝 Auto	nation set cu	t director
🕅 Path	run region	
	10.00 C 2	

• Order By Layer

Graphs in same color will be arranged continuously(the graph group in the same color will be machined one after another during cutting).

• Inner before Outer

Inner graphs will be machined before outer graphs.

• Auto Start Cutting point And Direction

System will be able to auto confirm start cutting point and direction.

• Path Run Region

Graph's direction will be based on block height. **(**Path Run Region **)** is used for graph array(like polar array and rectangle array) and under this circumstances, **(**Block Height **)** should be set as the height of single graph.

3.6.7. Smooth Curve

Speed up cutting and enhance stability. Click [Smooth Object] of [Tool] like this:

Smooth		- 75%
	a	28

The value of smoothness is larger and so is graph morphing.

3.6.8. Delete Overlapping Lines

Delete overlapping lines in order not to cutting repeatedly. Click [Delete Repeated Lines] of [Tool] and it will be like this:

Delete Repeated Lines	×
Repeated error(mm):	0.01
OK	Cancel

3.6.9. Unite Lines

Connect multi-lines into one. Click [Unite Lines] of [Tool] like below:

onite intes options	
Unite tolerance(mm	n): 0.1
	Curvil

3.6.10. Cutting Guide lines Edit Click [Edit Cutting Guide Lines] of [Tool].

3.6.11. Auto Cutting Guide Lines

The guide lines are not included in the default setting for importing graph. Select the graph and click 【Auto Cutting Guide Lines】 of 【Tool】 and the dialog box will be like this:

Cutting In'Gui —	de_Line
🔽 Enable	
Length(mm):	3.00
Angle:	90
Cutting Out'Gu	1i de_Line
🔽 Enable	
Length(mm):	3.00
Angle:	90
🔽 Auto Confri	m direction
Direction:	Inner 💌
🕅 Center Guid	e

• Lead-In&Lead-Out Angle

The angle between lead-in and lead-out and counter-clockwise is positive direction.

• Lead Wire Direction

Users can manually select lead direction when auto-confirm lead wire direction.

• Center Guide The center of lead-in and lead-out wire.

3.6.12. Color Inversion

Select object and click [Image Invert] of [Tool].

3.6.13. Bitmap

Select object and click 【Image Dither】 of 【Tool】.

Image Dither	×
Dot Size(mm):	0.40
OK	Cancel

3.6.14. Create Image Block

Copy or cut a proportion of bitmap block with edit tool after importing bitmap, then click [Create Image Block] of [Tool].



• Cut bitmap block





• Copy bitmap block





3.6.15. Create Image Outline Select object and click 【Create Image Outline】 of 【Tool】.



3.6.16. Closed Figure Check

Select object and click [Close Check] of [Tool].

Close Check	×
Close Tolerance(mm): 0.	00
Check	

3.6.17. Parallel Offset

It refers to stretch and shrink for vector graphs. Select object and click [Parallel Offset]

of 【Tool】 or and the dialog box will pop up like this:

Parallel Offset	
Offset(mm):	1.00
🖲 Outer	🔘 Inner
OK	Cancel

Parallel offset will be created into a new color layer just like this:



3.6.18. Perimeter Measurement

Select object and click [Measure Length] of [Tool] to see the perimeter.

3.6.19. Estimate Work Time

Select object and click [Estimate Work Time] of [Tool] or click to see the pop up

dialog box like this:

Estimated	d time:	0 : 0	: 35	

3.6.20. Analogue Output

Select object and click [Simulate] of [Tool] or click $[\Theta]$.



- 3.7. Settings
- 3.7.1. Parameter Settings

Click [Settings] or and the dialog box will pop up like below:

3.7.1.1. Work Space

Work Space	Work Space		
Work Parameters Manufacturer Paramet User parameters	Nudge Offset(mm): Paste Offset(mm): Language: Speed Unit: Machine Zero: Page Zero: Selected'Color: Grid Show Grid Grid Distance(mm): Simulating show objects of Always show the welcom	1.0 English mm/s Right_Up Right_Down 50.0 of engraving e screen at launch	

• Nudge Offset

Click arrow button ' \leftarrow , \rightarrow , \uparrow , \downarrow 'to move the selected object.

• Paste Offset

The offset distance when it comes to copy the selected object and paste it to the current display.

- *Language* Choose the language that fits you.
- *Speed Unit* All the speed unit.
- Machine Zero

It refers to machine current position (limit switch position), otherwise, the machined pattern will be reversed in left and right side or upside down.

• Page Zero

It refers to origin position in software and you can see the state bar showing coordinate as X=0,Y=0

• Selected Color

Show the selected object's color.

- *Show Grid* The display area will be showed in grid.
- Analogue Output of Engraving
 Or [Simulating show objects of engraving].
 *We suggest not to tick it when there's a plenty of engraving patterns because it will slow down the speed in displaying.
- *Always Show The Welcome Screen While Launching* Or [Always show the welcome screen].

3.7.1.2. Advanced Functions

Advance Functions Work Parameters Manufacturer Parameters User parameters Rotate Engrave Rotate axis con(um): 3.750000 Step per roate(pulse): 1000.00 Current diameter(mm): 200.00 Divided Cutting Enable Auto Control Of Two LaserHead Max Divide Height(mm): 900
Divided Cutting Enable Auto Control Of Two LaserHead Max Divide Height(mm): 900 Speed Optimize of cutting
Speed Optimize of cutting
 Small Object Optimize All Object Optimize

• Rotary Engraving

It will enable general engraving data to be transferred into rotary engraving data.

• Pulse Unit For Rotating Axis

When X axis is rotating axis, engraving mode must be [Vertically one-way] or [Vertically two-way]. When Y axis is rotating axis, engraving mode must be [Horizontally one-way] or [Horizontally two-way].

- *Pulse Number Per Round* It refers to pulse number of motor when axis rotating for one circle.
- *Current Diameter* The diameter of engraving object.
- Segment Cutting
- Auto Double-Head Moving Separately
- Feeding Compensation
- Anti-Whipping While Cutting
- Anti-Whipping For Small Pattern
- Anti-Whipping For All Patterns

3.7.1.3. Work Parameters

ork Space	Work Parameters				
ork Parameters	Curve Disperse(n	nm): O	.100		
er parameters	Circle Speed				
	Diameter	Speed		Enable	
	1.00	10.00			
	2.00	15.00			
	3.00	20.00		Add	
	4.00	25.00			
	5.00	30.00		Delete	
	6.00	35.00			
	7.00	40.00		Modify	
	Engrave Reverse of	offset			
	Speed	Reverse Of	fset	Enabel	
			[Add	
				Delete	
				Modify	
	Cutting Backlash				
	X(mm): 0.0000	D Y(mm):	0.00000		

• Curve Discrete Unit Length

It refers to curve smoothness. Curve discrete unit length smaller, more accurate and low speed. For example, choose default value of 0.10 for other materials while smaller number with cutting acrylic.

• Speed Limits For Small Circle

System will automatically analyse whether it is small circle or not. Speed limits for machining circle is based on its diameter.

• Engraving Backlash

Pattern edge might not be flat due to backlash when bi-directional laser engraving, so we need to increase backlash to make it up. Generally, engraving faster and backlash is larger accordingly. Backlash value could be negative. For example: Speed of 200mm/s while backlash is 0.30mm. Speed of 200mm/s while backlash when it less than 200mm/s. Speed of 100mm/s while backlash is 0.30*(100/200) =0.15mm. Speed of 300mm/s while backlash is 0.50mm.

Speed is proportional to backlash when it is between 200mm/s~300mm/s.

Speed of 250mm/s while backlash is 0.30+(300-250)/(300-200)×(0.5-0.3)=0.40mm

Speed of more than 300mm/s while backlash is 0.50mm.

3.7.1.4. Manufacturer Parameters

Work Space	Manufacturer Pa	arameters		
Advance Functions	X Axis		Y Axis	
Manufacturer Paramet	Um/Pulse:	6.500000	Um/Pulse:	6.500000
User parameters	Pulse edge:	Falling edge 🔹	Pulse edge:	Falling edge 👻
	Datum:	Negative 🔹	Datum:	Negative 👻
	Key direction:	Negative 🔹	Key direction:	Po <mark>s</mark> itive ▼
	Limit Polarity:	Negative •	LimitPolarity:	Negative 🔻
	Range:	1200	Range:	900
	Start Speed:	15.000	Start Speed:	15.000
	Max_Acc:	10000.000	Max_Acc:	3000.000
	Max_Speed:	500.000	Max_Speed:	400.000
	10			744 0.0
	Water Protect	Open Protect	Foot switch	Z/U Axes Options
	Laser Parameters	C	Function	config
	Laser Mode:	aser Mode: Glass tube		home OnPower
	TTL Level:	Low level effective	Hardwa	are limit
	PWM Frequency:	Icy: 20000		origin after work
	Max_Power:	98	Other Options	
	Import	Export	Read	Save

Take X axis as an example. There you can set X, Y, Z and U axes parameters.

• Um/Pulse

There is displacement when a single pulse output by motor. Wrong setting will cause

pattern deformation.

• Pulse Edge

Motor is driven by driver. Wrong setting will cause cutting deviation.

• Datum

The direction when axis resetting. You must modify parameters until axis resetting direction toward origin.

• Key Direction

Arrow buttons to move laser head. You might need to change this parameter when button actual moving direction backward from what it is supposed to be on this option.

• Range

Work surface and also the max axis moving distance.

• Start Speed

The initial speed of laser head from static condition to movement. Whip or chatter will be more obvious after stop working if the value of start speed is larger, but it should be proper adjusted based on technical feature for machine. Here we give you a typical range between 5 to 20mm/s.

• Max Acc

Larger acc might cause step losses and whip/chatter while smaller will result in slowing down in working speed. For axis like Y axis with great inertia, max acc is generally set between the range of 800 mm/s2and 3000mm/s2 while not that great inertia like X axis with the range between 10000mm/s2 and 20000mm/s2.

• Max Speed

Max speed of axis depends on motor's driving capability and axis inertia. Engraving speed must not exceed axis max speed. Cutting velocity must not exceed the smallest one of X axis and Y axis max speed. If cutting speed is set too fast, the system will automatically keep it under max speed.

• XY Axis Home On Power

Tick it to make both X and Y axis reset at the same time when starting machine. (It is typically ticked.)

• Hardware Limit

System will detect limit signal based on motion direction if *hardware limit* is ticked. When low logic level is detected, working machine will stop and *limit reached* is showed on screen.

• Return Origin After Work

Machine will go back to current position if *Return Origin After Work* is ticked. Not ticked, machine will stay at current position after work.

• Z/U Axes Options

You will see the interface like this if Z/U Axes Options is chosen.

Z轴		₩	
脉冲当里(um):	6. 500000	脉冲当里(um):	6. 500000
脉冲触发边沿:	下降沿 👻	脉冲触发边沿:	下降沿 👻
原点方向:	负方向 ▼	原点方向:	负方向 👻
按键移动方向:	负方向 ▼	按键移动方向:	负方向 ▼
限位极性:	负 •	限位极性:	负 🔹
工作台幅面:	500	工作台幅面:	1000
起跳速度:	15.000	起跳速度:	15.000
最大加速度:	2000.000	最大加速度:	2000.000
最大速度:	300.000	最大速度:	300.000
 Z轴上电复位 Z轴自动对集 Z轴双头互称 双头间距 	Ż E 3 (mm): 120.00	□ V轴上电复位 ☑ V轴送料	Ī

• UAxis(Feeding Axis)

Enable it and U axis will be acting as feeding axis. (It generally is ticked.)

• Water Protect

Get access to Laser1.Protect and Laser2.Protect for water protection. Tick this option and real-time detection of water protection is also activated. Any one of water protection signals turning to high logic level will stop the working machine, lighting from laser tube and the notice of water protection breakdown will be showed on screen, too.

• Open Protect

Connection port is N1. Tick this option and rel-time detection of open protect signal is also activated. Once low logic level is detected, working will be paused and high level to continue working.

• Foot Switch

Connection port is IN2. Tick this option and real-time detection of Foot Switch signal will be activated. When signal shift from high level to low, working machine will stop or suspended machine will continue to work.

• Laser Mode

It refers to laser types. Glass tube, RF laser(pre-ignition needed) and RF laser(No need pre-ignition).

• TTL Level

Make a choice based on switch signal of power supply. Laser switch signal is matching Laser 1 TTL and Laser 2TTL. If Low Level Effect lis chosen, there will be two roads of laser signals when lighting and [High Level Effect] when off-lighting. It is the same if we choose [High Level Effect] at first and then [Low Level Effect].

• **PWM Frequency**

Frequency is generally set between 20000 and 80000. Too small will cause working power imbalance and dot overlapped.

• Max Power

Working power in user parameters could not exceed max power.

• Import/Export

Click [Import] and modify the file name into 'cf5'. Manufacturer parameters of exported file could be modified and transferred by connecting to panel and computer.

• Read/Save

Click **(**Read **)** modifying the file name into 'cf5' to read the saved parameters from panel to software display. Click **(**Save **)** to save manufacturer parameters in software.

Vork Space	User parameters				
dvance Functions Vork Parameters	Work control parameters	S			
lanufacturer Paramet	Space_Speed:	300.00	Min_Acc:	300.00	
er parameters	Start_Speed:	10.00	Cut_Acc:	3000.00	
	Speed_Factor:	3.00	Space_Acc:	3000.00	
	Space_Jerk:	80000.00	Engrave_Acc:	10000.00	
	Cut_Jerk::	50000.00			
	Instant recovery: Noraml Params			•	
	System config paramete	rs		200.00	
	X/Y_Home_Speed:	00.00	Key_Move_Speed:	200.00	
	Z_Home_Speed:	40.00	RunBox_Speed:	200.00	
	U_Home_Speed:	50.00	ClipBox_Speed:	50.00	
	Z_Work_Speed:	80.00			
	U_Work_Speed:	200.00			
	Import	Export	Read	Sav	

• Space Speed

Also known as air-travel speed. The speed of laser head moving without laser powering on. The range must not exceed max space speed in manufacturer.

• Start Speed

The initial speed of laser head from static condition to movement. The range must not

exceed start speed in manufacturer.

• Space Jerk

Also known as air-travel jerk. The variation of laser head's moving speed acc without laser powering on. The value is larger and whipping or chatter becomes greater accordingly. It is generally set between 10000 and 150000.

• Cutting Jerk

The variation of cutting acc. The value is larger and whipping or chatter is greater accordingly. It is generally set between 10000 and 150000.

• Speed Factor

The factor of corner speed. The value is larger and the whipping or chatter is greater accordingly. It is set between 0 and 5. 3 is set in most case.

• Min Acc

The min speed acc for cutting material.

• Cutting Acc

The max speed acc for cutting material.

• Space Acc

The variation of cutting speed. The value is larger and whipping or chatter becomes greater accordingly.

• Instant Recovery

It can be set as slow, normal, faster and fastest based on cutting materials and quality.

- XY Home Speed Axis reset speed/working speed.
- *Key Move Speed* Axis moving speed when clicking arrow button.
- Run Box

The speed of laser head outlining object area without cutting it.

- *Cut Box* The speed of cutting pattern box.
- *Import* Importing pre-set user parameters file.
- Export

Exported user parameters file could be modified and transferred by connecting to panel and computer.

• Read

Read the saved parameters file from panel to software.

• Save

Save user parameters into software.

3.7.2. Array Output Options

It is high efficiency and less waste for cutting materials to click [Array Output Options] of [Options].

•

Auto Cover Calculation Pattern array will be auto composed based on work surface and pattern size.

Auto_conver (Calculation	
Cell height(Y):	121.74]
Cell width(X):	97.30]
Height (Y):	121.74]
Width(X):	97.30	
Count (Y) :	1	
Count (X):	1]
0 Add Interval (Y).	0.00	
🔘 Even Interval (Y):	0.00	Aut
🔘 Did Interval (X):	0.00	
🖱 Even Interval (X):	0.00	Aut
🖱 Offset (X):	-0.00	Aut
🖱 Offset (Y):	-0.00	Aut
Pulse Distance:	1.00	1
Left	P Right	
Line Mirror	Y 🗐	
Row Mirror	Y	
Convert To	Solidline	

3.7.3. **Position Relative**

The relative position between graphic output and cutting head. Click [Position Relative]

of \Box of \Box or \Box and the interface will be like this:





3.7.4. Default Parameters

oming back to def	ault!
Machine property	
Machine Zero:	Right_Up 👻
X_Size(mm):	1200
Y_Size(mm):	900

3.8. View

Functional bars are allowed to hide or display on screen.



Click the functional bar from **(**View **)** to make it appear on display when they are not shown on the interface. It is the same effect to make functional bar show on display or hide it when right-clicking blank space in menu bar area.

3.9. Help

3.9.1. Info Modification

Manufacturer is allowed to modify software info like this:

Copyright:	Company
Address:	Address
Tel:	Tel
Fax:	Fax
Web:	Website

Extract installer file before entering installing catalog. You will see file named *AWCLanguage* and double-click the file named *lang_chs* like this:

🔄 lang_Enu - Notepad	x
<u>File Edit Format View H</u> elp	
[Section1]	*
110000=Company	
110001=Address	
110003=Fax	
110004=Website	
[Section2]	
2000=&File	
576001=Create a new document	
576002=New	
57601=&Open	
576011=Open an existing document	
576012=0pen	
576031=Save the active document	
576032=Save	
57604=Save &As	
576041=Save the active document with a new name	
576042=Save As	+

User is allowed to modify the info of the first four lines.

🗌 lang_Enu - Notepad File Edit Format View Help [Section1] . 110000=Shenzhen dry cheng automation technology co., LTD 110001=guangdong province shenzhen baoan district 82 new road east west B room 410 110002=0755-27958262 110003=0755-27447913-608 110004=www.sztrocen.com www.awc608.com [Section2] 2000=&File 57600=&New 576001=Create a new document 576002=New 57601=&Open... 576011=Open an existing document 576012=0pen 57603=&Save 576031=Save the active document 576032=Save 57604=Save &As... 576041=Save the active document with a new name

Copyright:	Shenzhen dry cheng automation technolog
Address:	guangdong province shenzhen baoan distr
Tel:	0755-27958262
Fax:	0755-27447913-608
Web:	www.sztrocen.com www.awc608.com

3.9.2. Software Icon Modification

Manufacturer is allowed to replace software icon. Extracting installer file before entering installation catalog and open file named AWCRes. Rename prepared software file with *title* and replace it. Icon size is 32*32 and in the format of ico.

4. Panel Control

Computer is able to connect to panel by USB or network.

4.1. Connecting to Panel Via USB

Click [Communication Mode] of [Control Panel] like this:

ontron	Panei				
communi	cation m Gelect Mo	ode de	IP:	192. 168	. 8. 8
.ayer O	ptions				
L	Mode	Sp	eed	Power	0
	Vp D	own	Тор	Bot	tom
lachine Oui air	Control	Pau][[[]]	Bar	Linht
Downlo	ad St	art	lise/C	ontin	Stop
	Y +	•			Z+
X	- Dat	m	X+	D	atum
	<u> </u> Ү-				z
6	ad Currer	nt Pos	:	x= 0.00	E.
Rea					

) US	B Mode	Add	Delete	Modify
	DeviceName		COM	
	MachName		3	
	MachName		13	
🗸 MachName			21	
) (n . 1/6
) Ne	twork Mode	Add	Delete	• Modify
) Ne	twork Mode DeviceName MachName	Add	Delete IP 192.168.8	• Modif y 3.8
) Ne	twork Mode DeviceName MachName	Add	Delete IP 192.168.0	. Modify 3.8

Tick **[**USB Mode **]** and double-click one of them like this:

MachName 13

DeviceName:	MachNe	ame
USB COM:	21	FindCom

You can make any name at your will for machine. Input machine name and end up with clicking $\mbox{[Find Com]]}$.

4.2. Connecting to Panel via Network

Tick [Network Communication]:

) US	B Mode	Add	Delete	Modify
	DeviceName		COM	
	MachName		3	
	MachName		13	
~	MachName		21	
) Ne	twork Mode	Add	Delete	Modi f3
) Ne	twork Mode DeviceName	Add	Delete	Modify

Double-click it:

~	MachName	192.168.8.8

DeviceName:	MachName
IP:	192 . 168 . 8 . 8

Name your machine and input IP add. Take Win7 as an example. Double-click *Network and Internet*.



Click Network and Sharing Center.



Click Change Adapter Settings.



Double-click Local Area Connection.

Adapters and Bindings	Provider Order		
Connections are listed	in the order in which they are a	ccessed by	
C			
Connections:			-
Local Area Conn	ection		t
	connectionsj	5	5
			*
l			
P b c b b b	0		
Bindings for Local Area	a Connection:		_
Bindings for Local Area	a Connection: er Sharing for Microsoft Network	S	t
Bindings for Local Area	a Connection: er Sharing for Microsoft Network Protocol Version 4 (TCP/IPv4) Protocol Version 6 (TCP/IPv6)	:S	t
Bindings for Local Area	a Connection: er Sharing for Microsoft Network Protocol Version 4 (TCP/IPv4) Protocol Version 6 (TCP/IPv6) rosoft Networks	s	î ţ
Bindings for Local Area	a Connection: er Sharing for Microsoft Network Protocol Version 4 (TCP/IPv4) Protocol Version 6 (TCP/IPv6) rosoft Networks Protocol Version 4 (TCP/IPv4)	:S	t ł
Bindings for Local Area File and Prints File and File and File File and File and File and File File and File File and File and File File	a Connection: er Sharing for Microsoft Network Protocol Version 4 (TCP/IPv4) Protocol Version 6 (TCP/IPv6) Protocol Version 4 (TCP/IPv4) Protocol Version 6 (TCP/IPv6)	S	1
Bindings for Local Area File and Print ✓ ▲ Internet F ✓ ▲ Internet F ✓ ▲ Internet F ✓ ▲ Internet F ✓ ▲ Internet F	a Connection: er Sharing for Microsoft Network Protocol Version 4 (TCP/IPv4) Protocol Version 6 (TCP/IPv6) rosoft Networks Protocol Version 4 (TCP/IPv6) Protocol Version 6 (TCP/IPv6)	S	1
Bindings for Local Area File and Print ✓ → Internet F ✓ → Internet F ✓ ♥ Client for Mice ✓ → Internet F ✓ → Internet F	a Connection: er Sharing for Microsoft Network Protocol Version 4 (TCP/IPv4) Protocol Version 6 (TCP/IPv6) rosoft Networks Protocol Version 4 (TCP/IPv4) Protocol Version 6 (TCP/IPv6)	:S	\$ \$
Bindings for Local Area File and Print	a Connection: er Sharing for Microsoft Network Protocol Version 4 (TCP/IPv4) Protocol Version 6 (TCP/IPv6) rosoft Networks Protocol Version 4 (TCP/IPv4) Protocol Version 6 (TCP/IPv6)	5	*

Double-click Internet Protocol Version (TCP/IPv4) Properties.

Connect using:		
Network Cor	nnection	
Horo a construction of the	and a faller day a second	<u>C</u> onfigure
This connection us	es the following items:	
Client for I	Microsoft Networks	
	tet Scheduler	
In the Life was been been been been been been been bee	nintee Chanine for Missoand	the Distance date
File and P	rinter Sharing for Microsof rotocol Version 6 (TCP/IP	t Networks
File and P A Internet Pr A Internet Pr	rinter Sharing for Microsof rotocol Version 6 (TCP/IF rotocol Version 4 (TCP/IF	t Networks v6) v4)
 ✓ ➡ Internet Pr ✓ ▲ Internet Pr ✓ ▲ Internet Pr ✓ ▲ Internet Pr 	rinter Sharing for Microsof rotocol Version 6 (TCP/IF rotocol Version 4 (TCP/IF r Topology Discovery Maj	t Networks v6) v4) oper I/O Driver
 File and P Internet Pi Internet	rinter Sharing for Microsof rotocol Version 6 (TCP/IF rotocol Version 4 (TCP/IF r Topology Discovery Maj r Topology Discovery Res	t Networks (v6) (v4) oper I/O Driver sponder
 ✓ ➡ Internet Pr ✓ ▲ Internet Pr ✓ ▲ Internet Pr ✓ ▲ Link-Layer ✓ ▲ Link-Layer 	rinter Sharing for Microsof rotocol Version 6 (TCP/IF rotocol Version 4 (TCP/IF r Topology Discovery Maj r Topology Discovery Res	t Networks v6) v4) pper I/O Driver ponder
Install	rinter Sharing for Microsof rotocol Version 6 (TCP/IF rotocol Version 4 (TCP/IF r Topology Discovery May r Topology Discovery Res Uninstall	t Networks (v6) (v4) oper I/O Driver sponder Properties
Image: Price and P Image:	rinter Sharing for Microsof rotocol Version 6 (TCP/IF rotocol Version 4 (TCP/IF r Topology Discovery Maj r Topology Discovery Res	t Networks (v6) (v4) oper I/O Driver sponder P <u>r</u> operties
Image: Project and P Image: P </td <td>rinter Sharing for Microsof rotocol Version 6 (TCP/IF rotocol Version 4 (TCP/IF r Topology Discovery May r Topology Discovery Res Uninstall</td> <td>t Networks (v6) (v4) oper I/O Driver sponder Properties</td>	rinter Sharing for Microsof rotocol Version 6 (TCP/IF rotocol Version 4 (TCP/IF r Topology Discovery May r Topology Discovery Res Uninstall	t Networks (v6) (v4) oper I/O Driver sponder Properties
 ☑ ➡ Internet P ☑ ➡ Internet P ☑ ➡ Link-Layer ☑ ➡ Link-Layer ☑ ➡ Link-Layer Install Description Transmission Cowide area netwo 	rinter Sharing for Microsof rotocol Version 6 (TCP/IF rotocol Version 4 (TCP/IF r Topology Discovery Ma r Topology Discovery Res <u>U</u> ninstall ntrol Protocol/Internet Pro rk protocol that provides	t Networks (v6) (v4) oper I/O Driver sponder <u>Properties</u> otocol. The default communication
Hile and P H	rinter Sharing for Microsof rotocol Version 6 (TCP/IF rotocol Version 4 (TCP/IF r Topology Discovery Maj r Topology Discovery Res <u>U</u> ninstall ntrol Protocol/Internet Pro rk protocol that provides iterconnected networks.	t Networks (v6) (v4) (pper I/O Driver sponder (Properties (ptocol. The default communication

eneral	Alternate Configuration				
You car this cap for the	a get IP settings assigned autor ability. Otherwise, you need to appropriate IP settings.	matically if b ask your i	yo <mark>ur n</mark> netwoi	etwork s rk admini	upports strator
<u>o</u>	otain an IP address automatica	ly l			
	e the following IP address:				
<u>I</u> P ac	ldress:				
S <u>u</u> br	et mask:				
<u>D</u> efa	ult gateway:		24	- 14	
() O	tain DNS server address autor	matically			
O Us	e the following DNS server add	lresses:			
Prefe	erred DNS server:			1	
Alter	nate DNS server:			+	
V	aļidate settings upon exit			Ad <u>v</u> a	nced
			OK		Cancel

Select *Use The Following IP Add* and the first 3 number should be the same as it is in panel. The last number should be selected between 0 and 255, but different from it in panel.

4.3. Connecting to Panel via Router

It is almost the same routine as what has been mentioned above. Select *Obtain an IP Address Automatically*. Take Win7 as an example. Double-click *Network and Internet*.



Click Network and Sharing Center.



Click Wireless Network Connection.

Wireless Network	Connection Status	X
General		
Connection		
IPv4 Connectivit	y: Int	ernet
IPv6 Connectivit	y: No network a	ccess
Media State:	En	abled
SSID:	li	nksys
Duration:	11 days 11:	22:41
Speed:	54.0	Mbps
Signal Quality:		llte
Details		
Activity		
	Sent — Rec	eived
Bytes:	1,200,647 5,91	9,189
Properties	Disable Diagnose	
		Close

Click Network Connection Details.

Property	Value
Connection-specific DN	
Description	Intel(R) PRO/Wireless 3945ABG Network
Physical Address	00-18-DE-74-2C-8F
DHCP Enabled	Yes
IPv4 Address	192.168.1.100
IPv4 Subnet Mask	255.255.255.0
Lease Obtained	Sunday, December 11, 2011 11:42:02 A
Lease Expires	Monday, December 12, 2011 3:12:56 PM
IPv4 Default Gateway	192.168.1.1
IPv4 DHCP Server	192.168.1.1
IPv4 DNS Servers	192.168.1.1
	192.168.1.1
IPv4 WINS Server	
NetBIOS over Tcpip En	Yes
4	III +

4.4. Layer Parameters

Double-click layer option like this:

Pen	Color	Layer:		
)		Work Mode:	Cut 👻	ОК
2		Work Count:	1	
3	BMP	Laser PPI:	200	Cancel
		🔲 If Air Swit	ch Open	Cancer
		Cut Parameters	Laser2 V Laser3 V I	
		MaxPower (%):	50.00	
		MinPower(%):	40.00	
		Speed:	100.00	
		Power (%):	50.00	
		Speed:	300.00	
		Scan gap(mm):	0.10	
		Engrave Mode:	X_swing -	
		VertWiden(mm):	0.00	
		HoriWiden(mm):	0.00	
		BMP Optimize:	🔘 Yes 🔵 No	
			+++	
		Hole Para	meters	
		2. C.		

• Layer

Select the layer that is ready to be modified and click it.

- Work Mode It is fixed and cannot be modified.
- **Speed** The speed here means cutting speed.
- Blow Also known as air switch.
- 4.5. Machine Control

Origin	Run Box	Clip Box	Light
Download	Start	ise/Contin	Stop
		r	
	Ү+		Z+
x-	Datum	X+ I	latum

4.5.1. **Document Download**

- Click Download and the interface will be like this:
- File Name

Work Times •

Processing times for graphic.

•

Repeat Delay(s) The time interval between the previous and next job.

lemory D	ocument		Current Document	options
Number	Docum	ent Name	Name: Work times: Repeat Delay(s):	DOC 1 0
Refre	sh	Work	Document Data Op Auto Group Eng Gap Optimize GoCenter Mode V Re-Order Objec	timize grave :ts
Dele	te][All Delete	Save Docu	ment to UFile
lowpload	1071.0	Format		1.0.

Advance Options

Click :

Enable			
Feed length(mm):	117.57	+ 0.00	
Feed back(mm):	0.00		

Tick [Enable] and user will need to set two parameters.

• Gap Optimize

System will auto make sure of cutting direction for backlash compensation when cutting complicated pattern, but it will increase air-travel distance so we suggest not to tick it.

• Re-Order Objects

Route O	otimize	
No No	Out Layer is no (Order
🗖 0r	der by layer	
V In	ner to outer	
🔽 Au	tomation set cut o	director
🕅 Pa	th run region	
	Size: 50.0	Director: Up To Dow

4.5.2. Common Buttons

Origin Set current cutting head as origin.

- Start Start machining the current file.
- **Pause/Continue** Pause or continue to work.
- Stop Stop machine from working.

• Run Box

Cutting head is outlining the rectangle without powering-on based on graphic size. This is aimed at confirming graphic position.

Datum

Click Datum and cutting head(Z axis) will turn to origin slowly and it will quickly move to preset positioning point once reaching limit switch. This is aimed to eliminate accumulated error so it has to be done before working.

• X+/X-/Y+/Y-Cutting head (Z axis)