

General Introductions

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1. Menu Bar

“Menu Bar” is on the top of **Halk P Fiber soft** program window. It shows the main function of **Halk P Fiber soft**. Users can select the function they need through clicking the corresponding menu. “Menu Bar” includes the following 9 functions.

- **File Menu**
- **Edit Menu**
- **Draw Menu**
- **Image Menu**
- **Color Menu**
- **Execute Menu**
- **View Menu**
- **Window Menu**
- **Help Menu**

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1.1 File Menu

“FileMenu” offers the following functions:


New	Create a new Halk P Fiber soft file.
Open...	Open an existing Halk P Fiber soft file (*.SMM).
Close	Close a file.
Save	Save the current document using its original file name (Cover the original file).
Save As...	Save the current document using an assigned file name
Option...	Edit the program settings.
Import	Import an image file.
Export DXF	Export the file as a ‘*.DXF’ file for other applications to use.
Select TWAIN Device...	Select the supporting scanners.
TWAIN Acquire...	Scan an image.
Configuration Import/Export	Import or export the configuration files.
Change Language...	Change to different language version.
Print...	Print the file.
Preview	Preview the current document before printing.
Printer setting...	Select the printer and edit the printing settings.
Set File Password	Lock the current file with password.
MRU File	Display the last used file.
Exit	Exit Halk P Fiber soft.

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1.1.1 New

Create a new document. Users can create several new files at the same time.


Method:

- Click **“File”** from **“Menu Bar”** and select **“New”**.
- Click  from the **Toolbar**.
- Press [Ctrl+N] on the keyboard.

1.1.2 Open

Open an existing Halk P Fiber soft file. Users can open several files and switch to different document by using **“Window Menu.”**

Method:

- Click **“File”** from **“Menu Bar”** and select **“Open”**.
- Click  from the **Toolbar**.
- Press [Ctrl+O] on the keyboard.

The default file format of **Halk P Fiber soft** is ‘*.SMM’. Users can search the file they want to open under the folder they used to save **Halk P Fiber soft** files, refer to Fig.1.1.01.

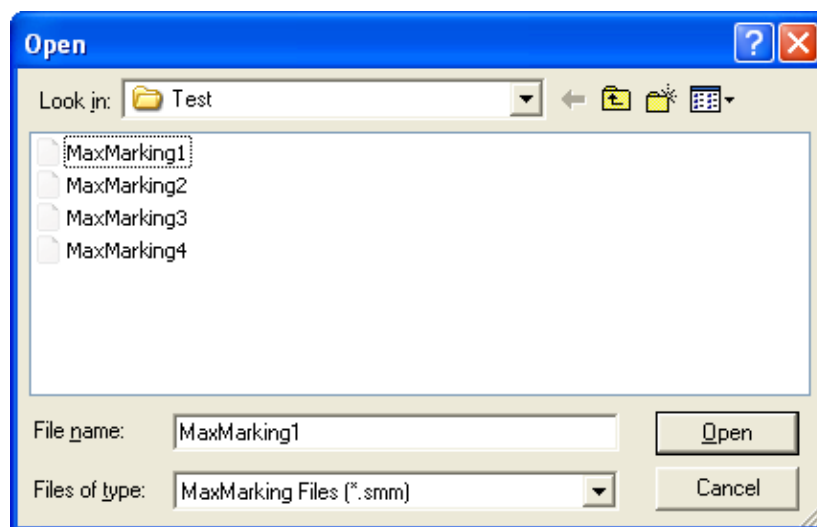


Fig.1.1.01

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1.1.3 Close

Close the current using file. Halk P Fiber soft will suggest users to save the editing file before closing it. Users will lose all the modifications they edit after the pervious saving when closing the file without saving it.


When closing an unnamed or new file, Halk P Fiber soft will pop up a “**Save As**” dialog box for users to name and save that file.

Method:

- Click “**File**” from “**Menu Bar**” and select “**Close**”.
- Click the upper right button like Fig.1.1.02 to close the file.



Fig.1.1.02

- Click the upper left icon  like Fig.1.1.03 and select “**Close**” to close the file.

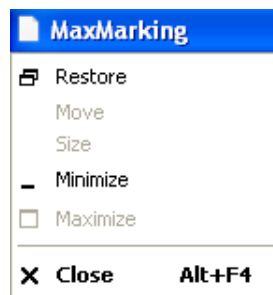


Fig.1.1.03


- Press [Ctrl + F4] on the keyboard.

1.1.4 Save

Save the current using document with the original file name under the same folder.

Halk P Fiber soft will pop up a “**Save As...**” dialog box when the file is new or unnamed or when users want to change the file’s name or folder.

Method:

- Click “**File**” from “**Menu Bar**” and select “**Save**”.
- Click  from the **Toolbar**.
- Press [Ctrl + S] on the keyboard.

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1.1.5 Save As...

Save the current document using a new file name or changing the saving folder, see Fig.1.1.04.

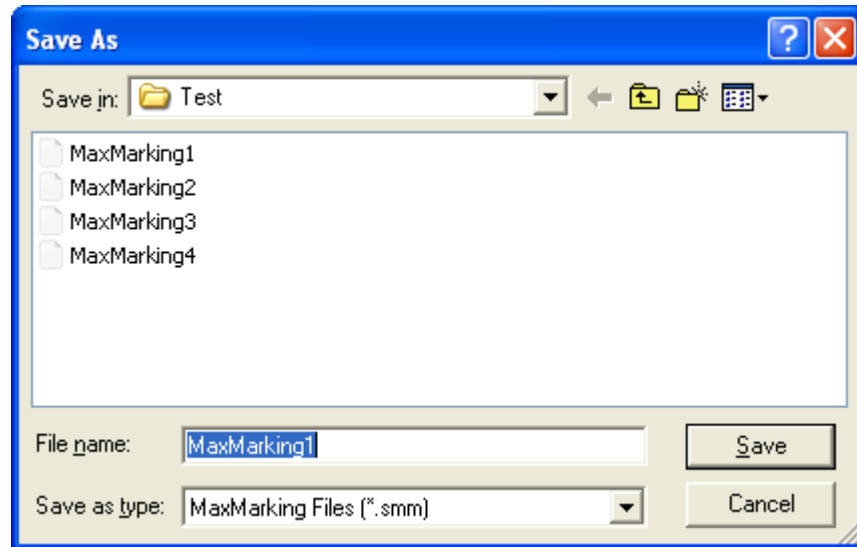


Fig.1.1.04

The following options are the functions users can select when using “Save As...”

Save in: Select the folder users want to save.

File name: Type or select a file name.

Save as type: The default file type of Halk P Fiber soft is ‘*.SMM.’

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1.1.6 Option

This function allows users to edit their own setting, such as ruler and grid.

System

Under the “System” option, there are several settings related to **Halk P Fiber soft** system, see Fig.1.1.05.

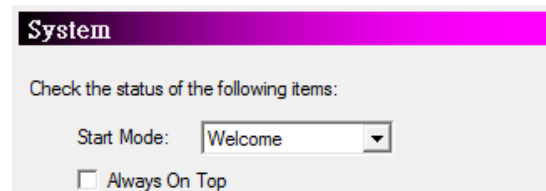


Fig. 1.1.05

Start Mode

Decide if show Welcome Dialog, open a new document, or open the latest file while **Halk P Fiber soft** is startup. Welcome dialog allows users to open file, open last edit file or create a new file, see Fig.1.1.06.

Always On Top

Make **Halk P Fiber soft** on the top of all current using programs.

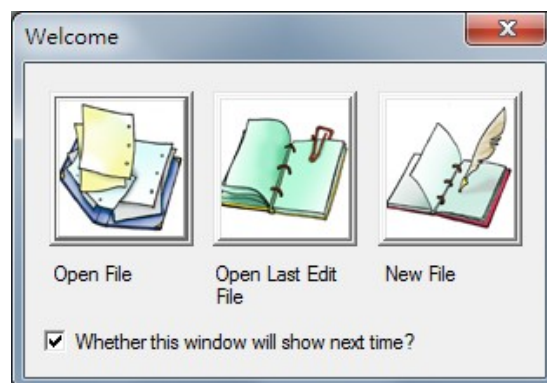


Fig. 1.1.06

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LogFile Setting

Enable/disable to use the log file, see Fig.1.1.07.

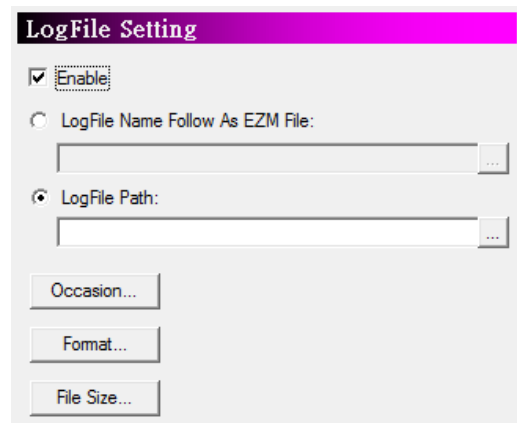



Fig. 1.1.07

Log File Path

Select the path of log file by clicking the  button.

Occasion

Click “Occasion” and a dialog box will appear as Fig.1.1.08.

Check the items users

want to record.

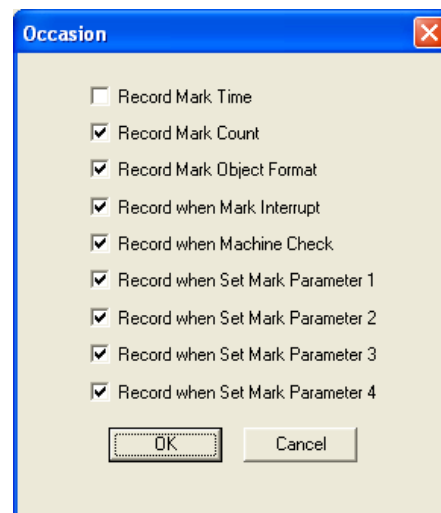


Fig. 1.1.08

Record Mark Time

Record the marking time.

Record Mark Count

Record the marking times.

Record Mark Object Format

Record the object format information.

Record when Mark Interrupt

Record the message while interrupt happened.

Record when Machine Check

Record the message of machine checking.

Record when Set Mark Parameter 1

Record one of the following parameters: Speed, Power, Frequency, Pulse Width, Marking Pass.

Record when Set Mark Parameter 2

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Record one of the following parameters: Speed, Power, Frequency, Pulse Width, Marking Pass.

Record when Set Mark Parameter 3

Record one of the following parameters: Speed, Power, Frequency, Pulse Width, Marking Pass.

Record when Set Mark Parameter 4

Record one of the following parameters: Speed, Power, Frequency, Pulse Width, Marking Pass.

Format

Click “**Format**” and a dialog box will appear as Fig.1.1.09.

Format of each item in the log file can be edited here.

Fig. 1.1.09

Description:

All of the Time Format and Message Format are listed here.

Example:

If a format of Mark Dialog Open is set as below:

[%4Y/%2M/%2D(%2H:%2N:%2S)] Dialog Open ! %#

Then the log file will be recorded as:

[2007/10/15(09:32:24)] Dialog Open !

Please note that Time Format can be used in every fields, however, the Message Format must be placed at the related fields. For example: the Message Format “\$T” (Mark Count) can only be used in “Mark Count” field, if it is placed in “Mark Dialog Open” field, an unexpected result may occur.

File Size

This function is used for editing the log file’s size and division type.

There are four kinds of file type settings, see the following examples.

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Example 1: Select Maximum Size: 1000 KBytes (default).

If the file size is over 1000 Kbytes, the system will rename the original file, for example, TEST.TXT, to TEST-1.TXT and continue recording using a new file named TEST.TXT, see Fig.1.1.10.

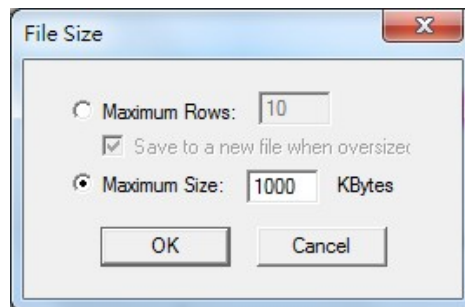


Fig. 1.1.10

Example 2: Select Maximum Rows: 10 and check “Save to a new file when oversized.”

If the file rows exceed 10, the system will rename the original file, for example, TEST.TXT, to TEST-1.TXT and continue recording using a new file named TEST.TXT, see Fig.1.1.11.

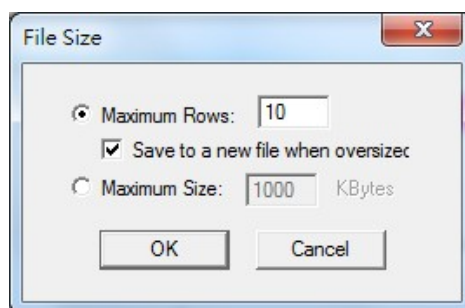


Fig. 1.1.11

Example 3: Select Maximum Rows: 10 without checking “Save to a new file when oversized.”

If the file rows exceed 10, the system will log the new message in the first row and delete row 11, see Fig.1.1.12.

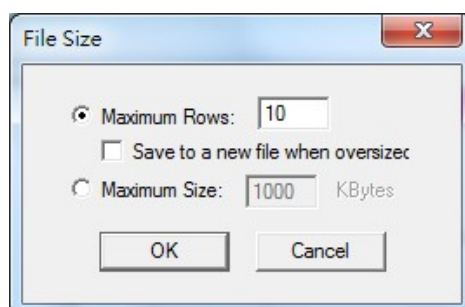


Fig. 1.1.12

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Example 4:Select Maximum Size: 0 Kbytes or Maximum Rows: 0

The system will not change the file during recording, see Fig.1.1.13.

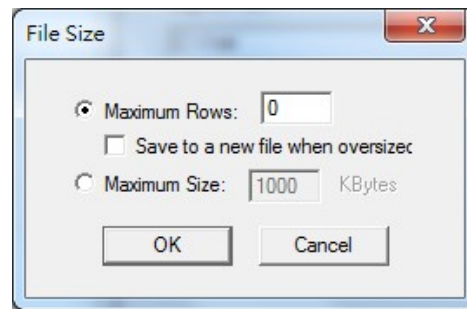


Fig. 1.1.13

Mark On Fly

Please refer to “Practical Functions” Chapter 7 “Mark On Fly”.

Auto Text Macro

The system provides three Auto Text DLLs, see Fig.1.1.14. If users need to add more Auto Text DLL modules, they can import the assigned DLL modules by themselves using “Import DLL” function.

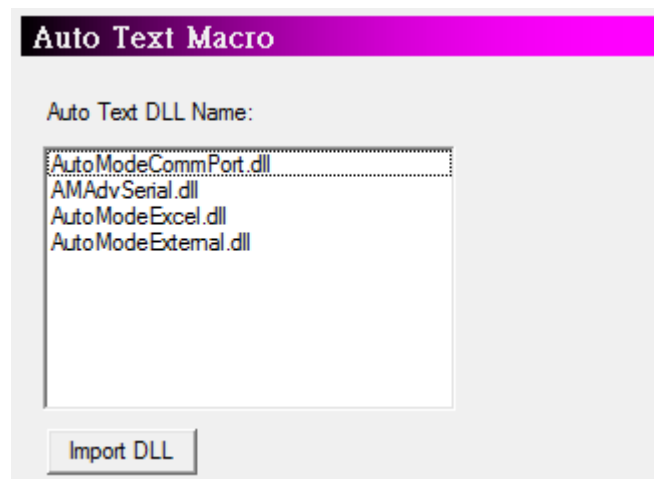


Fig. 1.1.14

Machine Check

Enable this function, the assigned output signal will shine when the marking reaches the setting max mark or auto text amount, see Fig.1.1.15.

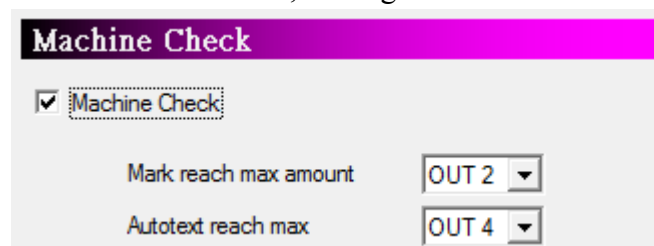


Fig. 1.1.15

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Automation

Buffered Pre Download

The system will pre download the marking data to the controller's memory buffer to fasten the marking speed, see Fig.1.1.16. Enable timeout can make sure the buffering data will be refreshed every setting time period.

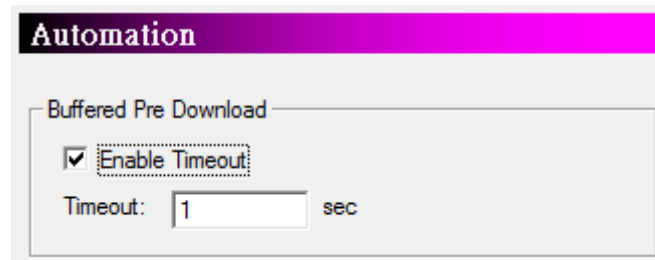


Fig. 1.1.16

ShortKey

Users can assign the short-key for each function through this option, see Fig.1.1.17.

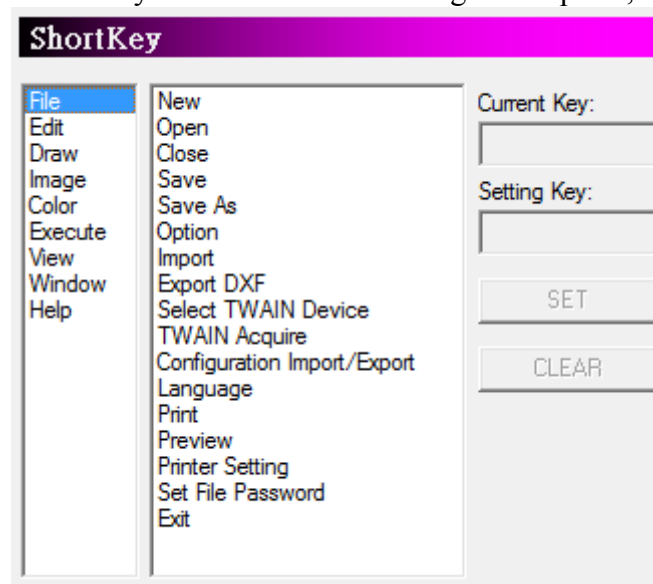


Fig. 1.1.17

Current Key The current using short-key of selected function.

Setting Key Set the short-key for selected function. If the assigned key has not been used, then the "SET" button will be enabled for users to click and set that key as the default value. Otherwise, a warning message "Short-key is used" will pop up.

Clear Clear the short-key setting.

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CommPort Setting

Please refer to “Practical Functions” Chapter 7 “Mark On Fly”.

Config

Allow users to adjust the config setting of system, see Fig.1.1.18.

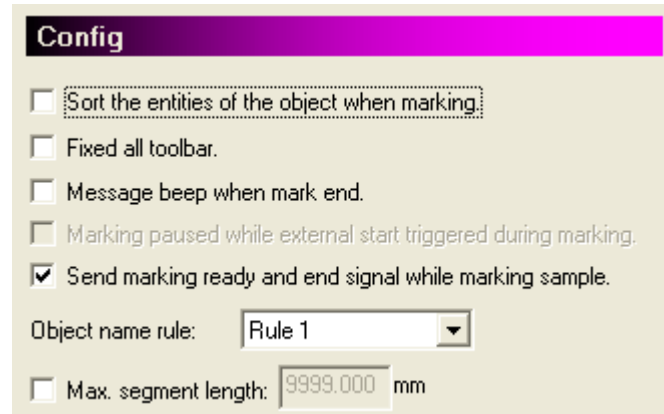


Fig. 1.1.18

Sort the entities of the object when marking.

Adjust the marking order according to the position of objects to optimize the marking speed.

Fixed all toolbar.

Keep all the Tool Bar at the current location and become immovable.

Message beep when mark end.

The system will sound a beep when mark end.

Marking paused while external start triggered during marking.

Users could pause marking process during marking from external start.

Send marking ready and end sample while marking sample.

After checking this box, marking ready signal will send out before marking sample, marking end signal will send out after marking sample.

Object name rule.

Select the name rule of objects which are in a copy group. Fig.1.1.19 is the “Object Browser” of Rule 1, and Fig.1.1.20 is Rule 2.

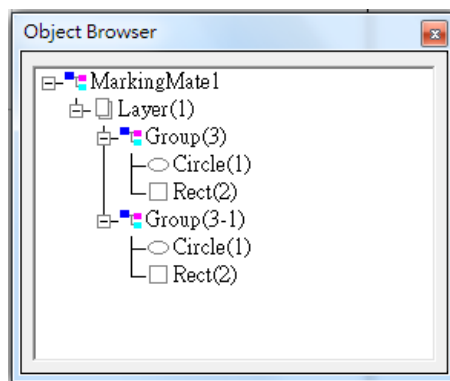


Fig. 1.1.19

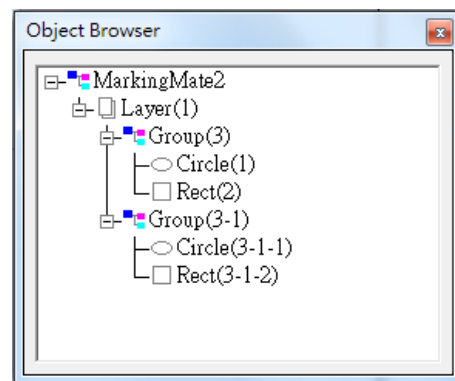


Fig. 1.1.20

Max. segment length.

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Set the segment length when marking. There will be no partition if users didn't check this option.

Lens Manager

All lenses users have will be listed here, see Fig.1.1.21.

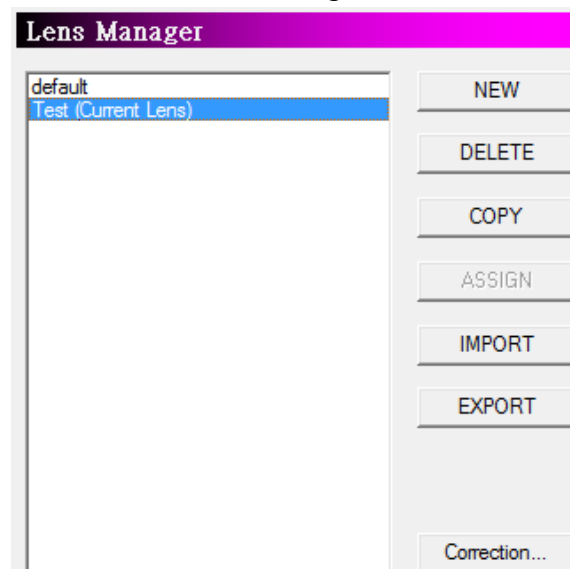


Fig. 1.1.21

NEW	Click this button to add a new lens.
DELETE	Click this button to delete the selected lens.
COPY	Click this button to copy the selected lens.
Assign	Click this button to set the selected lens as the default lens.
Import	Allow users to import lens file.
Export	Allow users to export selected lens file.
LensCor...	Select the one lens and click this button to enter the Lens Correction function.

Please refer to “Practical Functions” Chapter 4 “Lens Correction”.

Scan Head Config

Users can set the home position of scan head from here, see Fig.1.1.22.

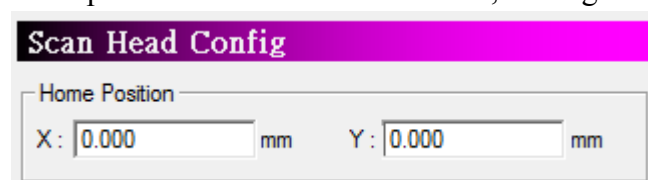


Fig. 1.1.22

Home Position	Setting original points position in X direction and Y direction.
----------------------	--

Dot Mode

Enable this function when requiring a special dot features on the marking object, see Fig.1.1.23. For example, mark a line with dot feature, like Fig.1.1.24. The main

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purpose of this function is to reach the dot effect through extending the distance and laser staying time of each dot.

Step Distance

Distance between each dot.

Step Delay

Laser staying time on each dot.

Repeat

Set the repeat times for each dot.

Time Interval

The time interval between each dot on one spot.

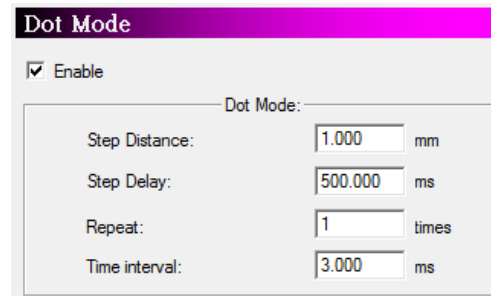


Fig. 1.1.23

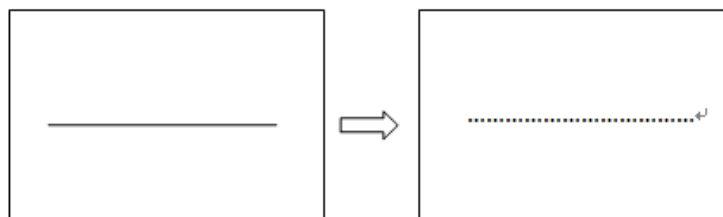


Fig. 1.1.24

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Laser Config

Allow users to do some laser related settings, see Fig.1.1.25.

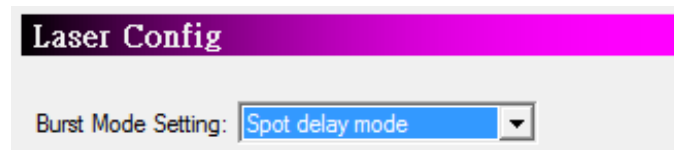


Fig. 1.1.25

Burst Mode Setting

When the marking object is vertex, image or barcode, users can select the spot marking mode.

Spot delay mode

This is the default setting. Spot delay means the time laser takes to mark a dot. Users can set the “Spot Delay” time in the ‘Mark Parameter’ page of the Property Table while select this mode, see Fig.1.1.26.

Laser shot mode

This option controls the amount of laser shot on each dot. Users can set the “Laser Shot” count in the “Mark Parameter” page of the Property Table while select this mode, see Fig.1.1.27.

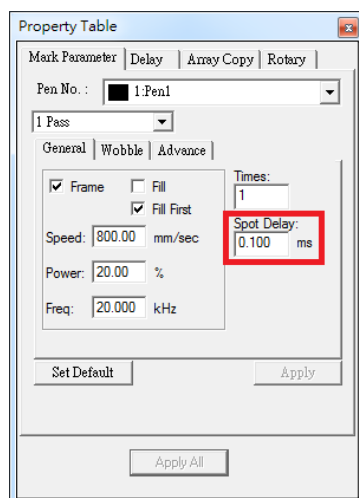


Fig. 1.1.26

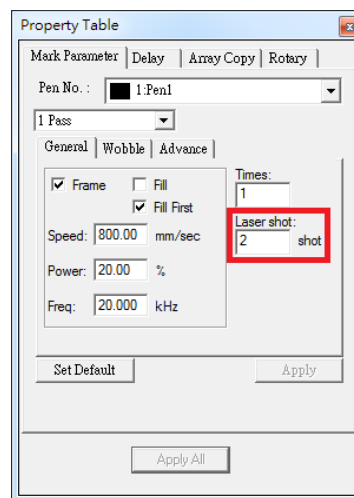


Fig. 1.1.27

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Edit

Set the edit function of the system, such as display the ruler and grid or not. The checked options will be the default value. See Fig.1.1.28.

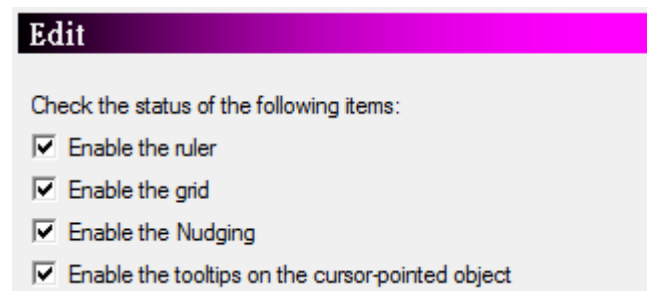


Fig. 1.1.28

Ruler

Enable/disable the ruler to appear on the work area, see Fig.1.1.29. Use ruler can help user measure the actual size of the object.

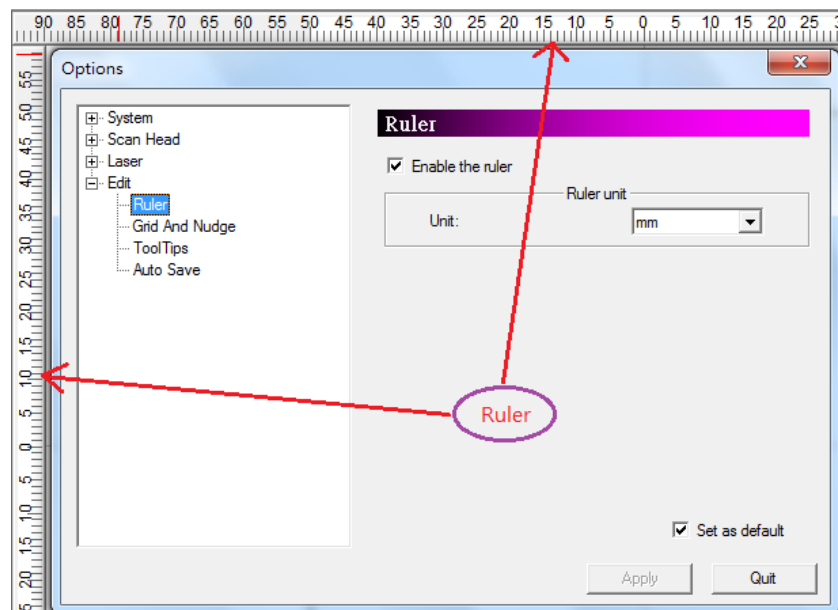


Fig. 1.1.29

Ruler Unit: mm or inch

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Grid and Nudge

Enable/disable the grid and nudging, see Fig.1.1.30. Grid is used to help users measure the actual size of the object. Enable nudge, users can adjust the object's position through direction key according to setting nudge measure.

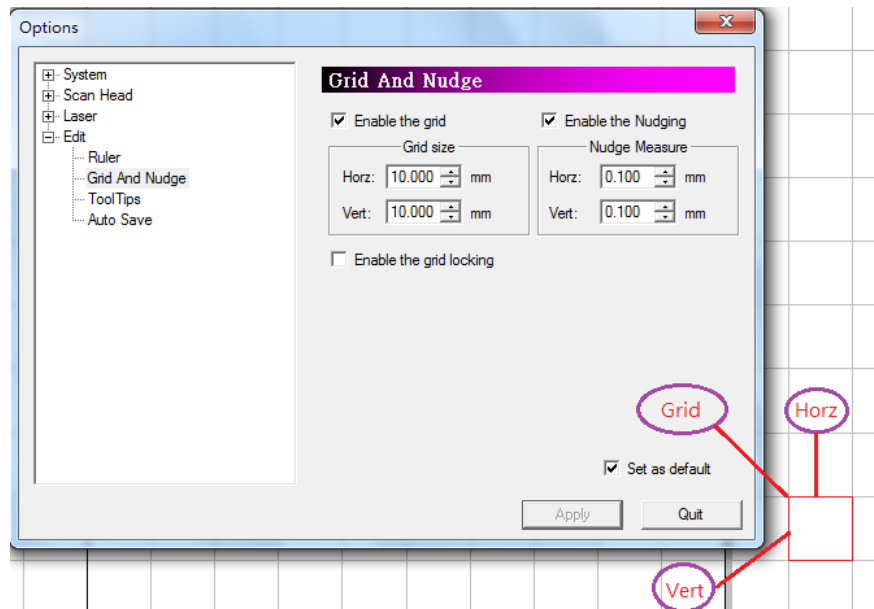


Fig. 1.1.30

Grid Size / Nudge Measure

Horz Horizontal width

Vert Vertical width

Enable the grid locking

Enable/disable the grid locking function. Enable this function allows users to adjust the size and position of selected object more accurate. The system will automatically lock a grid if the mouse pointer is close to that grid when users create or move an object.

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ToolTips

Settings about tips of objects, see Fig.1.1.31.

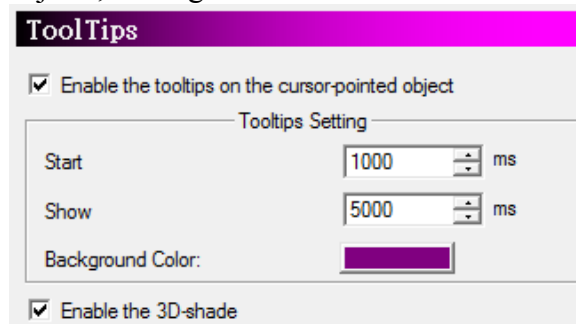


Fig. 1.1.31

Enable the ToolTips on the cursor-pointed object

ToolTips shows the info of the selected objects, see Fig.1.1.32.

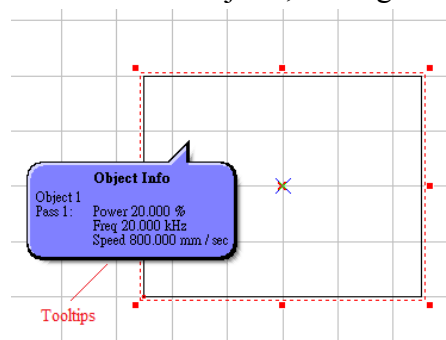


Fig.1.1.32

ToolTips Setting

Start Span Span for ToolTips to appear.

Show Span ToolTips continues time.

Background Color Background color of ToolTips.

Enable the 3D-shade Enable/disable the 3D-shade.

Auto Save

Enable/disable the Auto Save function, see Fig.1.1.33.

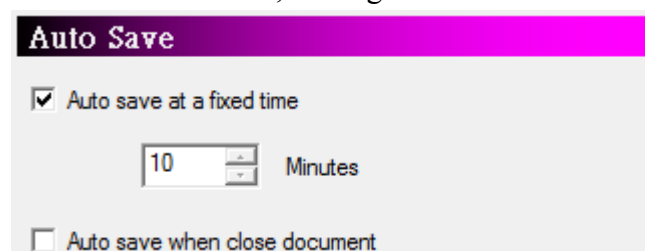


Fig. 1.1.33

Auto Save Rule

Auto save at a fixed time

The system will save the documents automatically every time period users set in the field.

Auto save when close document

Executing auto save when closing the document every time.

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1.1.7 Import

This function allows user to import an image file that was not originally created by **Halk P Fiber soft**, such as *.bpm or *.dxf. The system will automatically convert that file into a format supported by **Halk P Fiber soft** after using import function. If the import object is a group or combine object, users can use “Ungroup” or “Break” function to break that object into several individual objects, see Fig.1.1.34.

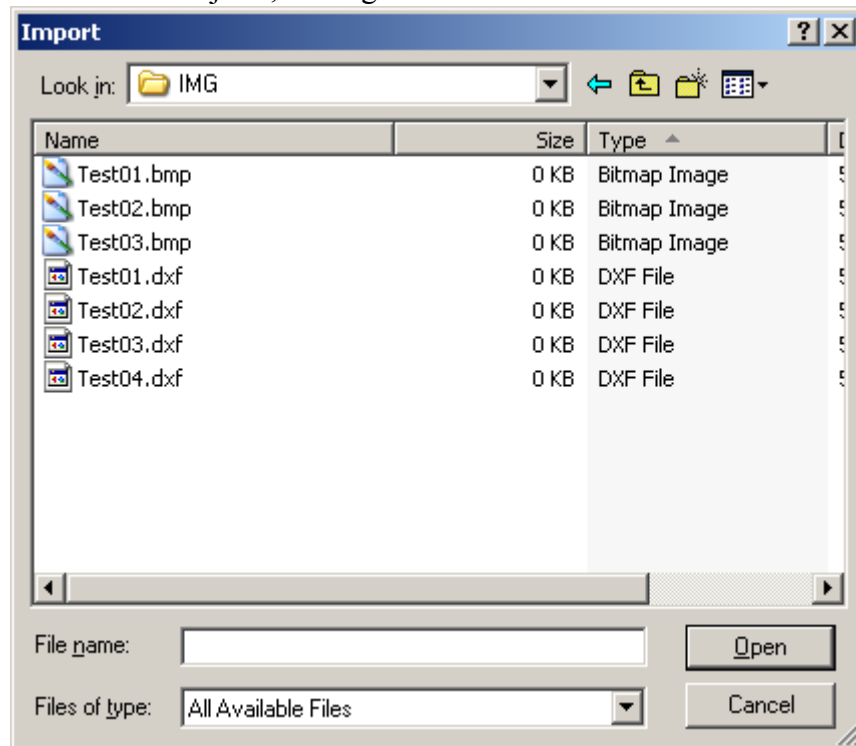



Fig. 1.1.34

Method:

- Click “File” from Menu Bar and select “Import” function.
- Click the  button from the Toolbar
- Press the [Ctrl+I] key from keyboard.

Look in

Select the directory users want to import from.

File name

Type or select the file name to import.

Files of type

Halk P Fiber soft allows users to import various file types such as:

DWG/DXF/PLT/CNC/GBR/DST/AI/BMP/EMF/PNG/PCX/CMP/FPX/PLT/CAL/ICO/JPG/PS/EPS/CLP/WMF/TIF/CUR/PSD/TGA.

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1.1.8 Export DXF

This allows users to transfer the current document into .dxf file format for AutoCAD or other applications which can use this type of file.

Click “File” from Menu Bar and select “Export DXF” function, a dialogue box as Fig.1.1.35 will appear.

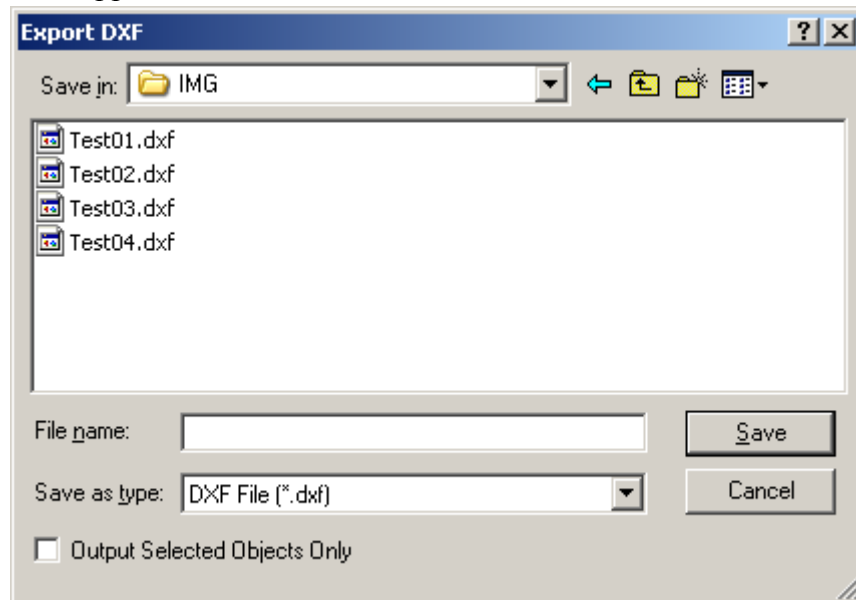


Fig. 1.1.35

File Name

Input file name or select from the list.

Save as type

DXF File (*.dxf)

Output Selected Objects only

Choose to output the selected object only or not.

1.1.9 Select TWAIN Device

Select a supported scanner, see Fig.1.1.36.

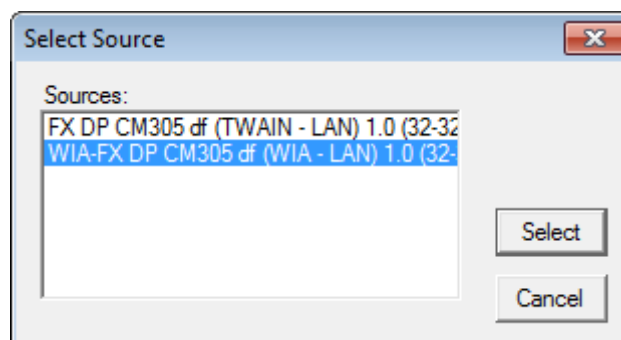


Fig. 1.1.36

1.1.10 TWAIN Acquire

Use this function to set image parameters such as size and resolution, the interface is provided from the scanner’s manufacturer.

Halk P Fiber soft

1.1.11 Configuration Import/Export

Use this function to back-up or restore current configuration, such as application configuration, object default setting, driver configuration, lens setting, machine check configuration and lens correction file.

Method:

Export:

1. Click on “File”→ “Configuration Import/Export” to bring out dialog seen as fig. 1.1.37.
2. Check on any option then choose a folder by clicking on “...” button or filling the editor with path folder directly. After that click on the “**Export**” button.

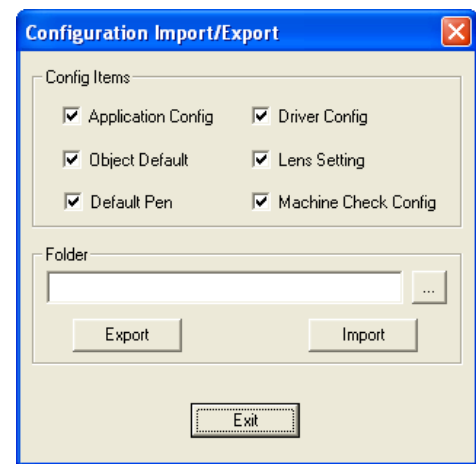


Fig. 1.1.37

Import:

1. Click on “File”→ “Configuration Import/Export” to bring out dialog seen as fig. 1.1.38.
2. Check on any option then choose a folder by clicking on “...” button or filling the editor with path folder directly. After that click on the “**Import**” button.

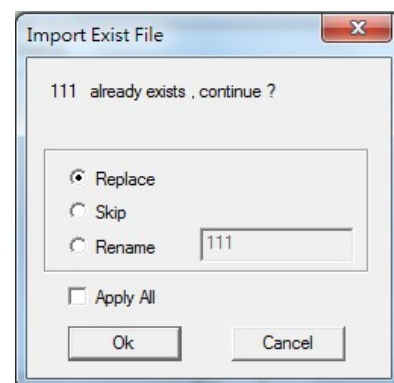


Fig. 1.1.38

3. If file is already existed, will pop-up a dialog to confirm to replace, skip, or rename the file. See fig. 1.1.38.
4. After import is completed, click on “**Yes**” when asking to restart software.

Halk P Fiber soft

1.1.12 Change Language

This function allows user to change the system to different language version. There are now four language versions for user to select: English, Turkish, Simplified Chinese, and Traditional Chinese, see Fig.1.1.39.

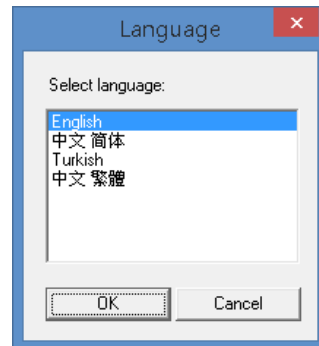


Fig. 1.1.39

1.1.13 Print

Print the current document, see Fig.1.1.41.

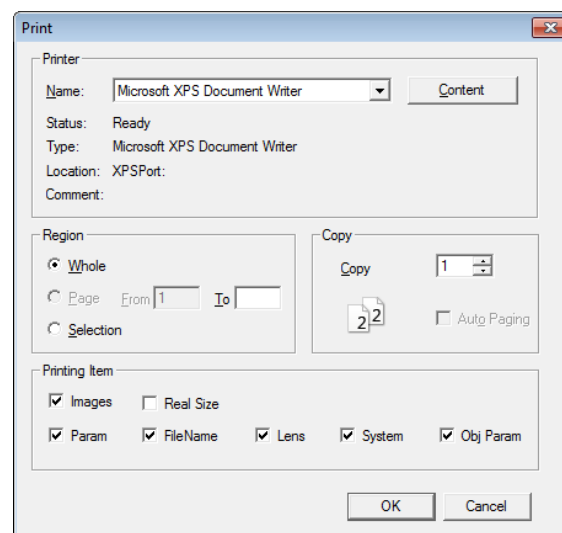


Fig. 1.1.41

Method:

Click “File” from Menu Bar and select “Print” function or press the [Ctrl + P] key from keyboard

Printer

Name

Select the printer

Content

Further setting for printer. The settings are different from the OS and the manufacture of the printer.

Region

Whole

Select the region user want to print

Page

Print all of the data in the work area

Selection

Print the selected page(s).

Copy

Print the current used page

Printing Item

Select the number of copies user want to print

Select the items users want to print (image, real size, parameter, file name, lens, system, or object parameter)

Halk P Fiber soft

1.1.14 Preview

Preview the current document before printing it. Fig.1.1.42 is the function of preview.



Fig. 1.1.42

Print – Go directly to the Print menu and start printing

Zoom In – Magnify the current image.

Zoom Out – Minify the current image.

Prev/Next – Allow user to view the document more convenient.

Images, Param, File Name, Lens, System, Obj Param – Select the parameters users want to display while printing.

Close – Return to the edit menu

1.1.15 Printer setting

Further setting about the printer, see Fig.1.1.43.

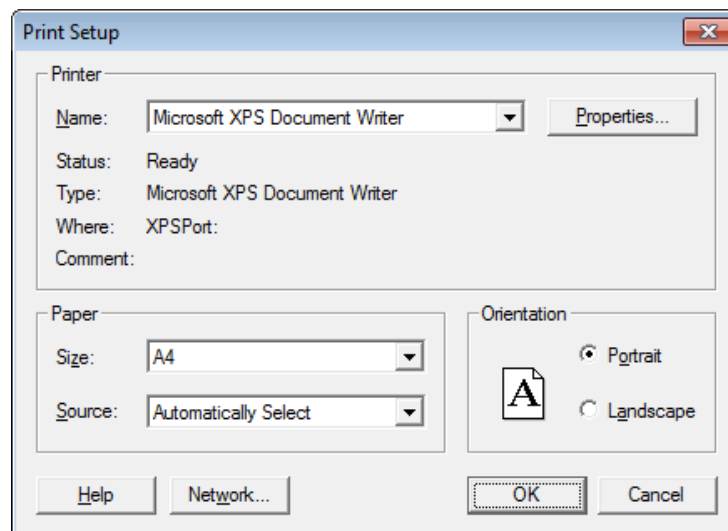


Fig. 1.1.43

Printer

Select the printer

Paper

Select the paper source

Direction

Select horizontal or vertical print

Content

Detail printer setting

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1.1.16 Set File Password

Set current file password. After setting the file password, user will be asked password for access the file.

1.1.17 MRU File

It will show “MRU File” if it’s the user’s to run **Halk P Fiber soft** , see Fig.1.1.44. Otherwise, it will display the previous used files (maximum 4 files), see Fig.1.1.45.

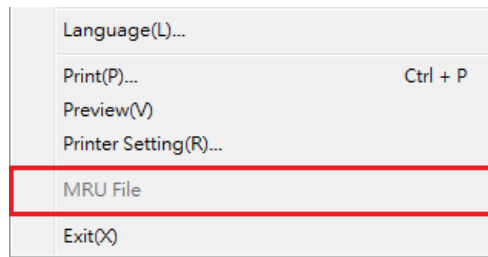


Fig. 1.1.44

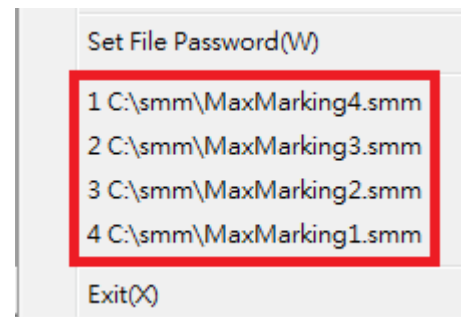


Fig. 1.1.45

1.1.18 Exit


Exit Halk P Fiber soft system.

Method:

Click “File” from Menu Bar and select “Exit” function.
Click the upper right button, see Fig.1.1.46.



Fig. 1.1.46

Click the upper left icon  to exit the system, see Fig.1.1.47.

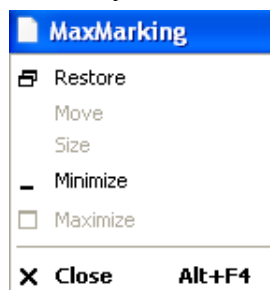


Fig. 1.1.47

Press the [Alt + F4] key from keyboard.

1.2 Edit Menu

“Edit” menu offers the following functions:

Redo	Cancel the “Undo” action
Undo	Cancel the latest edition
Cut	Remove selected data and store it in the clipboard for another use
Copy	Duplicate selected data and store it in the clipboard for another use
Paste	Attach data from the clipboard to an assigned document
Delete	Delete and remove the selected data
Select All	Select all objects, including objects which are not located in working area.
Select Invert	Select the objects which are un-selected, including objects which are not located in working area and cancel the selected ones.
Replace...	Substitute the selected object by importing assigned object.
Combine	Combine two or more objects into one. This function allows several objects to share the same property settings
Break	Break on object into several objects.
Group	Combine two or more objects into one group.
UnGroup	Do the inversion of Group function
Set Circle Object Radius	Modify circle that radius same as original radius to modified radius .
Move to New Layer	System will create a new layer and move the selected object to that new layer.
Sort	Sort the connected parts of the selected object
Reverse	Set the object’s start point as end point and the end point become the start point.
Mirror Horz	Invert an image on its horizontal axis. Left will become right and vice-versa
Mirror Vert	Invert an image on its vertical axis. Up will become down and vice-versa
Move to Center	Move the object to the center of working area.
Baseline	Align selected text along a designated path
Split	Do the inversion of baseline function
Trans-Curve	Transfer an object in to a curve line.
Nudge	Set the nudge measure of an object when using the direction key of keyboard to move that object.

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Jump Cross	Make the intersects of two objects turn into two objects without crossing
Welding	Make the selected objects do vector combination.
Contour	This function will create an outline from a selected bitmap image
Transfer to Image	Transfer the selected objects into an image
Align	Adjust the selected objects' position according to the assigned alignment.
Distribute	Adjust the selected objects' position according to the assigned distribution.

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1.2.1 Redo

Cancel the “Undo” action. If this function was grayed, it means it is disable to use. The maximum times of “Redo” are 20.

Method:


- Click “Edit” from Menu Bar and select “Redo” function.
- Click  button from Standard Bar.
- Press [Ctrl+Y] from keyboard.

1.2.2 Undo

Back to the previous edit action. If this function was grayed, it means it is disable to use.

The maximum times of “Undo” are 20.


Method:

- Click “Edit” from Menu Bar and select “Undo” function.
- Click  button from Standard Bar.
- Press [Ctrl+Z] from keyboard.

1.2.3 Cut

Remove selected data and store it in the clipboard for another use. If no data or object is selected, this function will be disabled.


Method:

- Click “Edit” from Menu Bar and select “Cut” function.
- Click  button from Standard Bar.
- Press [Ctrl+X] from keyboard.

1.2.4 Copy

Duplicate selected data and store it in the clipboard for another use. If no data or object being selected, this function will be disabled.

Method:


- Click “Edit” from Menu Bar and select “Copy” function.
- Click  button from Standard Bar.
- Press [Ctrl+C] from keyboard.

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1.2.5 Paste

Attach data from the clipboard to the current document. If there is nothing stored in clipboard, this function will be disabled.

Method:

- Click “Edit” from Menu Bar and select “Paste” function.
- Click  button from Standard Bar.
- Press [Ctrl+ V] from keyboard.

1.2.6 Delete

Delete the selected data, and the data will not be stored in the clipboard.

Method:

- Click “Edit” from Menu Bar and select “Delete” function.
- Press [Del] from keyboard.

1.2.7 Select All

Select all objects, including objects which are not located in working area.

Method

- Click “Edit” from Menu Bar and select “Select All” function.
- Press [Ctrl+ A] from keyboard.

1.2.8 Select Invert

Select the objects which are un-selected, including objects which are not located in working area and cancel the selected ones.


Method

- Click “Edit” from “Menu Bar” and select “Select Invert” function.

1.2.9 Replace

Substitute the selected object by importing assigned object.

Method


- Click “Edit” from Menu Bar and select “Replace...” function.
- Click  button from Standard Bar.

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1.2.10 Combine

Combine two or more objects into one. This function will allow several objects to share the same property settings. Under the fill situation, the odd number overlapping parts of objects will be filled in color, while the even numbers parts will not, see Fig.1.2.01.

Method:

- Click “Edit” from Menu Bar and select “Combine” function.
- Click  button from Standard Bar.
- Press [Ctrl+K] from keyboard.

Example:

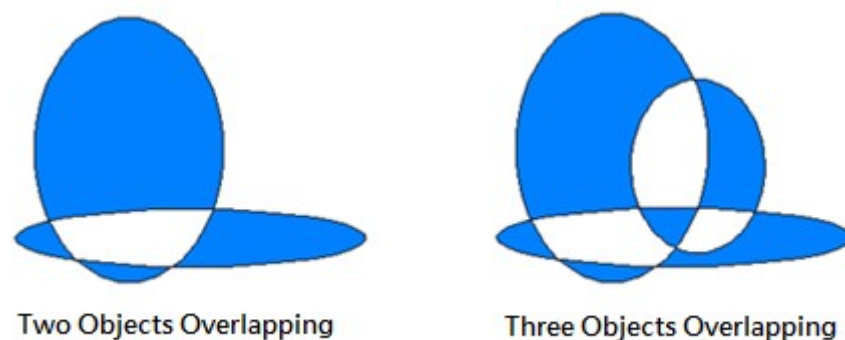



Fig. 1.2.01

1.2.11 Break

Divide a combined object into several individual objects.


Method:

- Click “Edit” from Menu Bar and select “Break” function.
- Click  button from Standard Bar.
- Press [Ctrl+B] from keyboard.

1.2.12 Group

Classify two or more objects into one group. This function will allow several objects to move together while allowing their individual property settings to remain intact. Notice: the maximum amount of group's layer is 15.

Method:


- Click “Edit” from Menu Bar and select “Group” function.
- Click  button from Standard Bar.
- Press the [Ctrl+M] from keyboard.

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1.2.13 UnGroup

Cancel the group effect of an object.

Method:

- Click “Edit” from Menu Bar and select “UnGroup” function.
- Click  button from Standard Bar.
- Press the [Ctrl+Q] from keyboard.

1.2.14 Set Circle Object Radius

Modify circle that radius same as **original radius** to **modified radius**.

Method

- Click “Edit” from Menu Bar and select “Set Circle Object Radius” function.

1.2.15 Move to New Layer

System will create a new layer and move the selected object to that new layer.

Method

- Click “Edit” from Menu Bar and select “Move to New Layer” function.

1.2.16 Sort

Sort the segments or objects which are not arranged in order, see Fig.1.2.02 and Fig.1.2.03. Please note that the objects users want to sort must be combined first. The arrow in the image is the start point of the object.

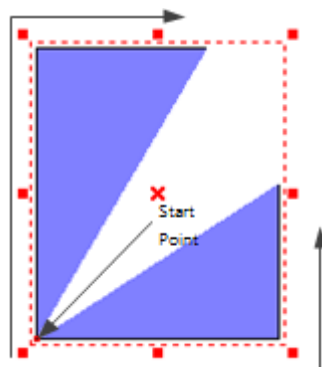


Fig. 1.2.02

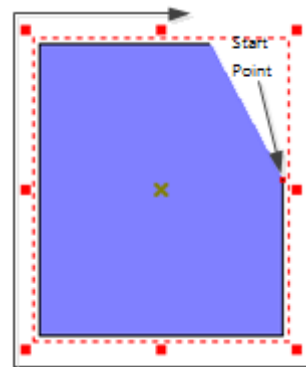



Fig. 1.2.03

Method:

- Click “Edit” from Menu Bar and select “Sort” function.
- Click  button from Standard Bar.

1.2.17 Reverse

Set the object's start point as end point and the end point become the start point.

Method:


Click “Edit” from Menu Bar and select “Reverse” function.

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1.2.18 Mirror Horizontal

Invert an object on its horizontal axis. Left will become right and vice-versa, see Fig.1.2.04.

Method:

- Click “Edit” from Menu Bar and select “Mirror Horizontal” function.
- Click  button from Standard Bar.
- Press [Ctrl+H] from keyboard.

Example:

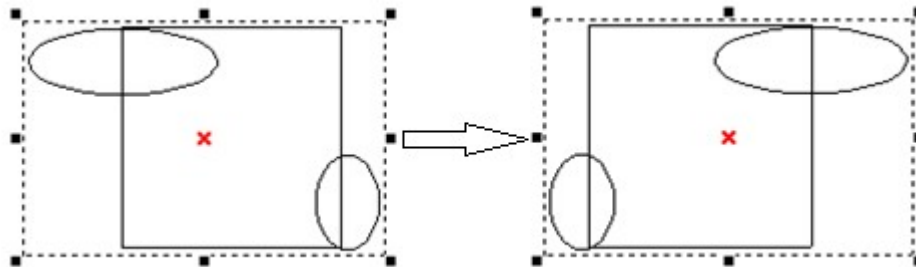



Fig. 1.2.04

1.2.19 Mirror Vertical

Invert an image on its vertical axis. Up will become down and vice-versa, see Fig.1.2.05.

Method:

- Click “Edit” from Menu Bar and select “Mirror Vertical” function.
- Click the  button from Standard Bar.
- Press [Ctrl+L] from keyboard.

Example:

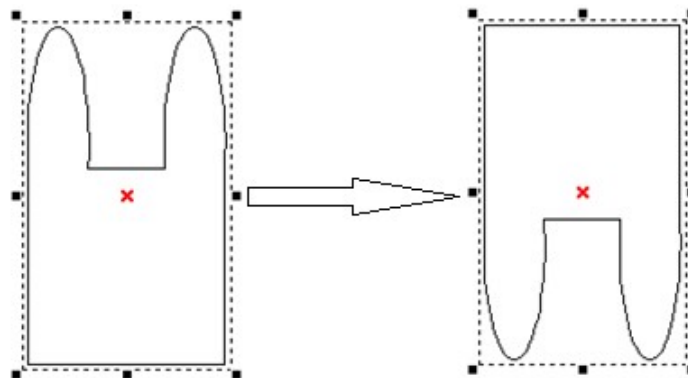



Fig. 1.2.05

1.2.20 Move to Center


Move the selected object(s) to the center of working area.

Method:

- Click “Edit” from Menu Bar and select “Move to Center” function.
- Click the  button from Standard Bar or Modify Bar.
- Press [F8] from keyboard.

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1.2.21 Baseline

Align selected text along with a designate path. First select the text, then click “Edit –Baseline” from Menu Bar, the mouse pointer will become as , and then select the path such as line, arc, or curve, see Fig.1.2.06.

Method:

- Click “Edit” from Menu Bar and select “Baseline” function.
- Press the [Ctrl+E] key from keyboard.

Example:

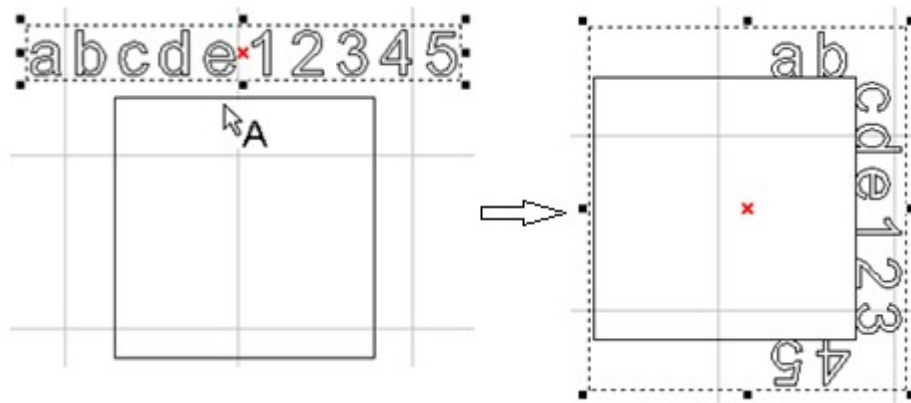


Fig. 1.2.06

1.2.22 Split

Cancel the baseline function, see Fig.1.2.07.

Method:

- Click “Edit” from Menu Bar and select “Split” function.
- Press [Ctrl+D] from keyboard.

Example:

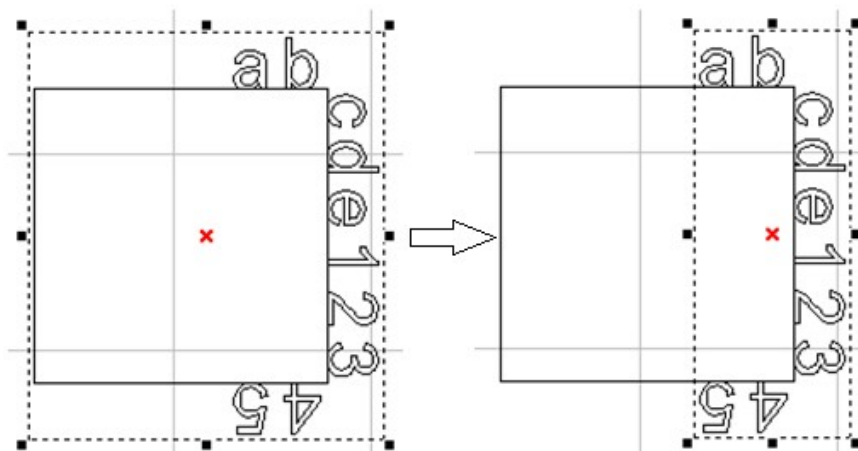


Fig. 1.2.07

1.2.23 Trans-Curve

Transfer a curved line into a series of individual lines. Allow these single lines to be manipulated individually such as using “Edit Vertex” function to change the object’s shape, see Fig.1.2.08 to Fig.1.2.10.

- * Only curve objects are able to use “Add Vertex” and “Edit Vertex” functions.
- * This function can only be used on non-image objects.

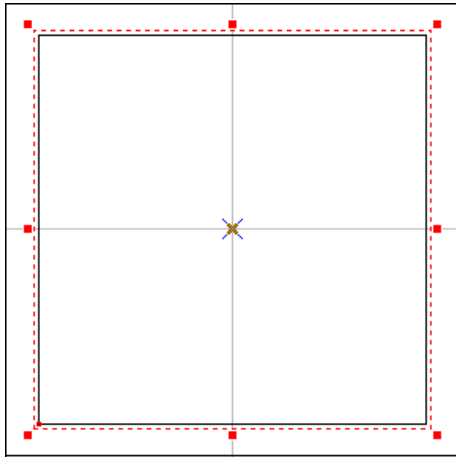


Fig. 1.2.08 Turn the Rectangle into Curve

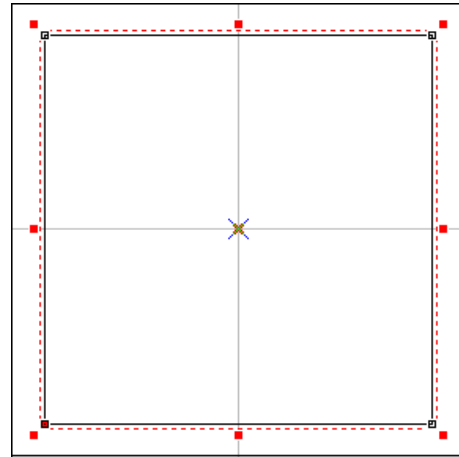


Fig. 1.2.09 Edit Vertex (White Square is Vertex)

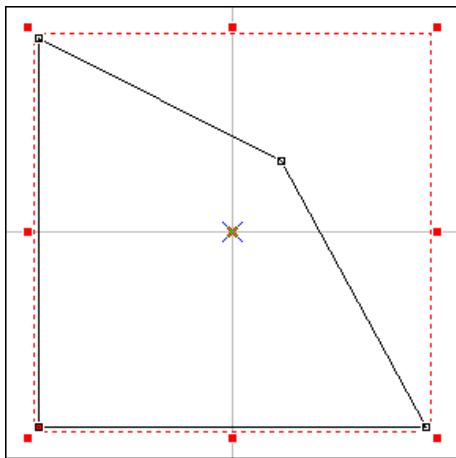



Fig. 1.2.10 Change the Shape by Drag the Vertex

Method:

- Click “Edit” from Menu Bar and select “Trans-curve” function.
- Click  button from Obj Property Bar.
- Press [Ctrl+U] from keyboard.

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1.2.24Nudge

Set the nudge measure of an object when using the direction key of keyboard to move that object, see Fig.1.2.11.

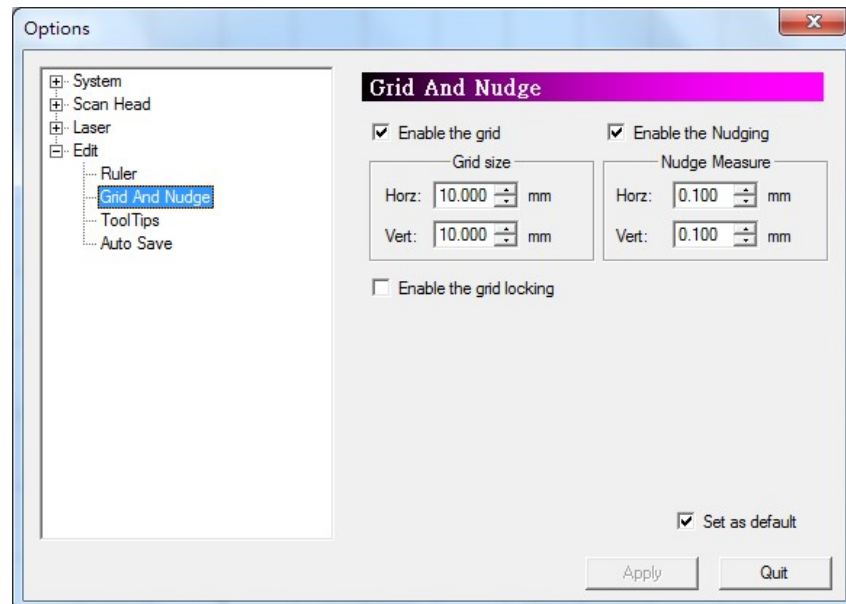


Fig. 1.2.11

Method:

- Click “Edit” from Menu Bar and select “Nudge” function.

1.2.25 Jump Cross

Make two figures with the line intersecting turn to be no crossing. The cross size is best to be set as between 0.008mm and 0.1mm, see Fig.1.2.12 and Fig.1.2.13.

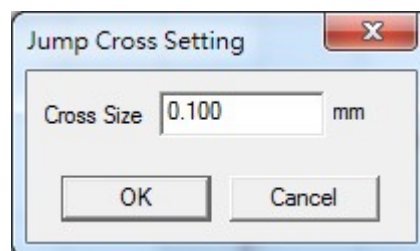


Fig. 1.2.12

Method:

- Click “Edit” from Menu Bar and select “Jump Cross” function. Enter the value of cross size in the dialog box and click “OK” button.

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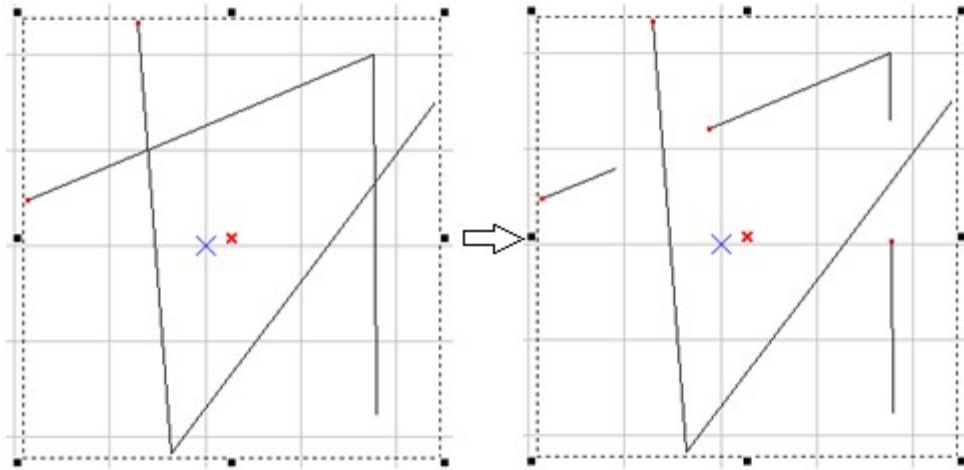



Fig. 1.2.13

1.2.26 Welding

Combine two or more objects and eliminate the overlapping lines, see Fig.1.2.14.

* This function is only work for the none-text and none-image objects. If users want to use this function for texts, they have to break the text into several segments first.

Method:

- Click “Edit” from Menu Bar and select “Welding” function.
- Click  button from Obj Property Bar.
- Press [Ctrl+G] from keyboard.

Example:

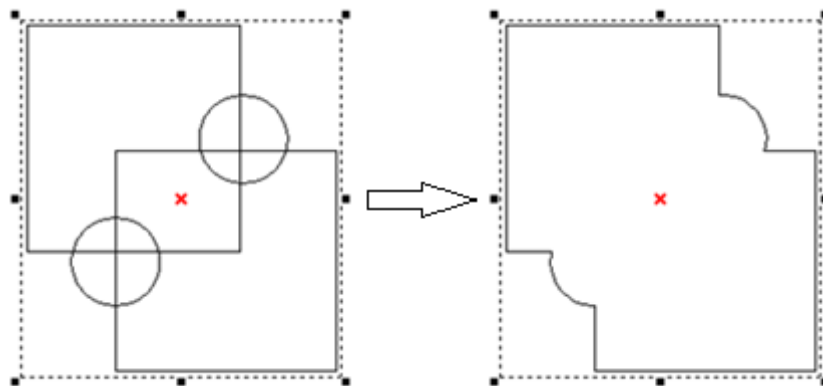


Fig. 1.2.14

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1.2.27 Contour

This function can derive the frame of a selected bitmap image. Before executing this function, users have to set the contour filter first, see Fig.1.2.15.

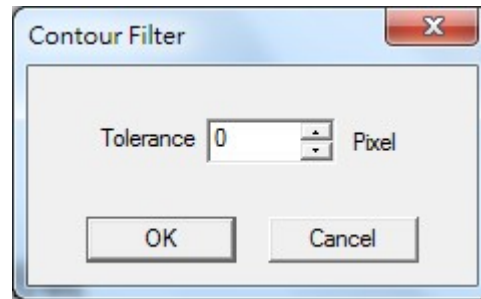


Fig. 1.2.15

Users have to input the tolerance value (maximum is 0) to get the correct figure. And then the image will become an ordinary figure. Users will see a lot of segments on the screen. They have to use “break” function if they want to use these segments, see Fig.1.2.16.

Method:

- Click “Edit” from Menu Bar and select “Contour” function.
- Press [Ctrl + W] from keyboard.

Example:

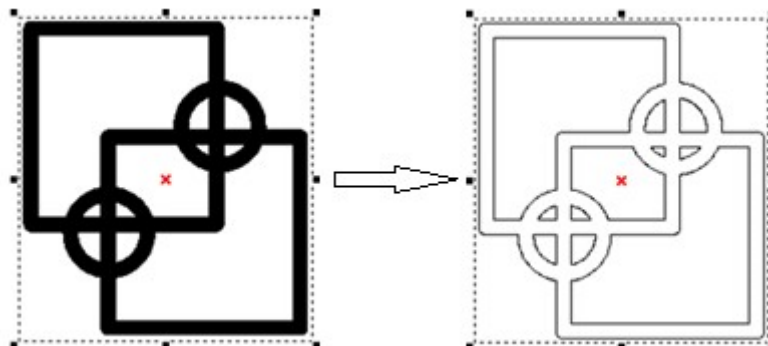


Fig. 1.2.16

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1.2.28 Transfer to Image

Transfer the selected objects into an image. The dialogue box show as Fig.1.2.17 can change the resolution, color, and dithering mode.

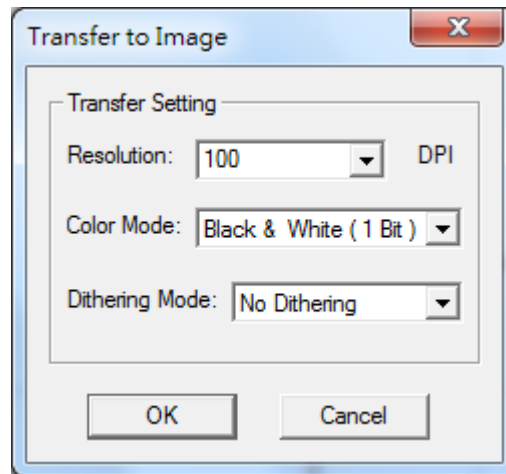


Fig. 1.2.17

Method:

- Click “Edit” from Menu Bar and select “Trans to Image” function.
- Press [Ctrl+T] from keyboard.

1.2.29 Align

Use this function to align the selected objects, see Fig.1.2.18.

Left – align to the left

Middle – align to the middle

Right – align to the right

Top – align to the top

Center – align to the center

Bottom – align to the bottom

Align to:

Last Select Object – align to the last selected object

Paper Edge – align to the paper edge

Paper Center – align to the paper center

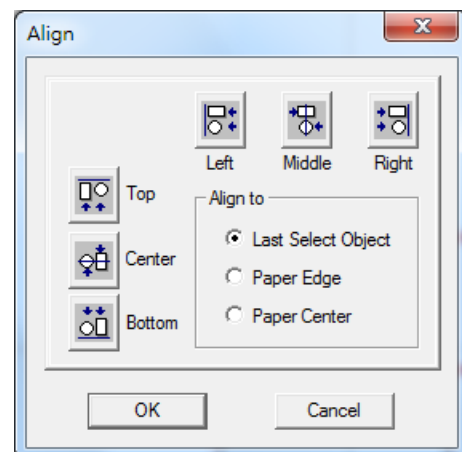



Fig. 1.2.18

Method:

- Click “Edit” from Menu Bar and select “Align” function.
- Click  button from Obj Property Bar.

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1.2.30 Distribute

Adjust the selected objects' position according to the assigned distribution, see Fig.1.2.19.

Left – adjust the distance between the left-edge of each object

Middle – adjust the distance between the middle of each object

Distance – adjust the distance between the space of each object

Right – adjust the distance between the right-edge of each object

Top – adjust the distance between the top of each object


Center – adjust the distance between the center of each object

Distance – adjust the distance between the space of each object

Bottom – adjust the distance between the bottom of each object

Total Area - The distribute area is according to a selected area, paper area, or an adjustable border area.

Method:

- Click “Edit” from Menu Bar and select “Distribute” function.
- Click  button from Obj Property Bar.

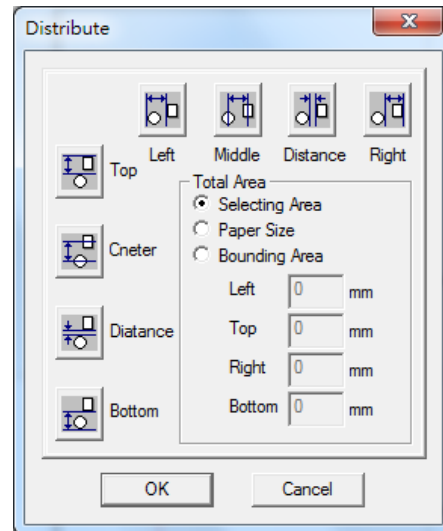


Fig. 1.2.19

1.3 Draw Menu

“Draw” menu offers the following functions:


Vertex	Draw a vertex.
Line	Draw a straight line.
Arc	Draw an arc.
Circle	Draw a circle or oval.
Rectangle	Draw a square or rectangle.
Curve	Draw a curve.
Curve Brush	Draw a freehand line using the mouse.
Text	Insert a text object.
Arc Text	Insert an arc-text object.
Rectangle Text	Insert a rectangle text object.
1D Barcode	Create a 1D barcode.
2D Barcode	Create a 2D barcode.
Matrix	Create a matrix object.
Spiral	Draw a spiral object.

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1.3.1 Vertex

Insert a vertex object in the Working Area.

Method:

- Click “Draw” from Menu Bar and select “Vertex” function.
- Click  button from Draw Tool Bar.


Marking Way:

There are two ways for vertex marking. One is “Spot Delay” mode and the other is “Laser Shot” mode. Please refer to P.29 1.1.6.8 Burst Mode Setting.

1.3.2 Line

To draw a line, first click the “Line” function. The next step is to select a start point and click the left button of mouse, and then move the mouse to the end point and click the left button again. Click left button at third point to draw another line or click right button to end this function. Or press “C” to make the line become a close path and end function.

Method:

- Click “Draw” from Menu Bar and select “Line” function.
- Click  button from Draw Tool Bar.


Marking Way:

The marking route of line or any curve object is from its start point to the end point.

1.3.3 Arc

Press the left button of mouse to set the start point of arc, the move the mouse to the second point and press left button again. And then move to the third point and click the button to set the end point. Users can press the right button of mouse to end this function or press “C” to make the curve become a close path and end the function.


Method:

- Click “Draw” from Menu Bar and select “Arc” function.
- Click  button from Draw Tool Bar.

1.3.4 Circle

Create circles or ovals. Select a start point on the working area. Press the left mouse button and move the mouse to decide the size and shape and then click the left button again to finish drawing. Press the right button to stop this function. Press “Ctrl” when drawing will get a circle.

Method:

- Click “Draw” from Menu Bar and select “Circle” function.
- Click  button from Draw Tool Bar.

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Marking Way:

No Fill

Marking starts from 0 degree following levorotary direction, see Fig.1.3.01.

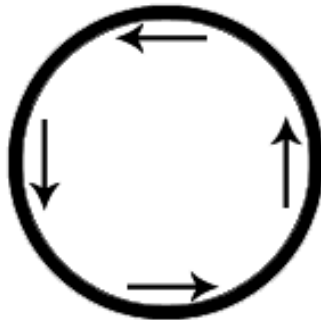


Fig. 1.3.01

Fill

Marking starts from left to right internal and then marks external frame, see Fig.1.3.02.

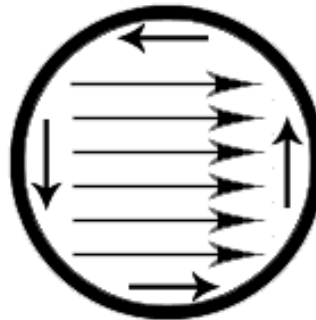



Fig. 1.3.02

1.3.5 Rectangle

Create squares and rectangles. Select a start point on the working area. Press the left mouse button and move the mouse to decide the size and shape and then click the left button again to finish drawing. Press the right button to stop this function. Press “Ctrl” when drawing will get a square.

Method:

- Click “Draw” from Menu Bar and select “Rectangle” function.
- Click  button from Draw Tool Bar.

Marking Way:

No Fill

Marking starts from upper left side following clockwise direction, see Fig.1.3.03.

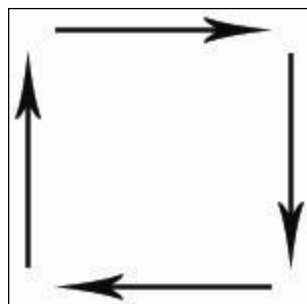


Fig. 1.3.03

Fill

Marking starts from left to right internal and then marks external frame, see Fig.1.3.04.

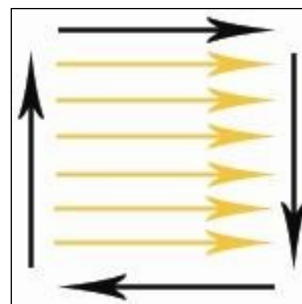



Fig. 1.3.04

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1.3.6 Curve

Select the start point of the curve, holding the mouse left button and decide the direction of tangent line of that point. Then move to another point and decide the direction of tangent line again and complete a curve. Users can continue drawing the curve through moving the mouse; press “C” to make that curve become a closed path curve or press the right button to end this function.


Method:

- Click “Draw” from Menu Bar and select “Curve” function.
- Click  button from Draw Tool Bar.

1.3.7 Curve Brush

Holding the left button of mouse and moving the mouse. A curve will display on the working area according to the move path of mouse. Release the left button to complete drawing and press right button to end this function.

Method:

- Click “Draw” from Menu Bar and select “Curve Brush” function.
- Click  button from Draw Tool Bar.

1.3.8 Text

Select this function. Decide the position of the text and a dialog box will be displayed, see the red area in Fig.1.3.05. Input the content of the text. Press “Enter” to do line feed or click right button of mouse to end this function.

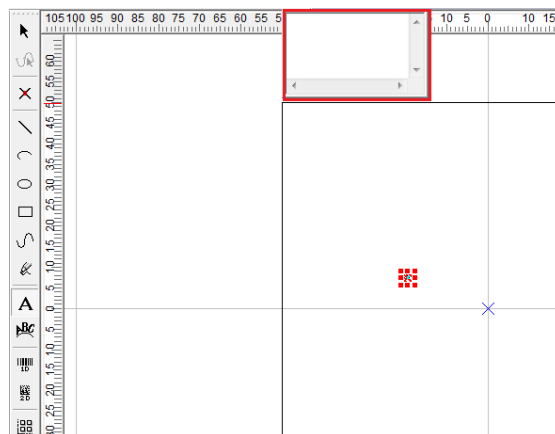



Fig. 1.3.05

Method:

- Click “Draw” from Menu Bar and select “Text” function.
- Click  button from Draw Tool Bar.

Marking Way:

If a text object has several characters, the laser will mark the characters one by one. If users need to mark the whole text at the same time, then the text must be transferred to a curve.

Halk P Fiber soft

1.3.9 Arc Text

Using this function, the system will show a window like Fig.1.3.06. Input the content and click “OK” to end this function.

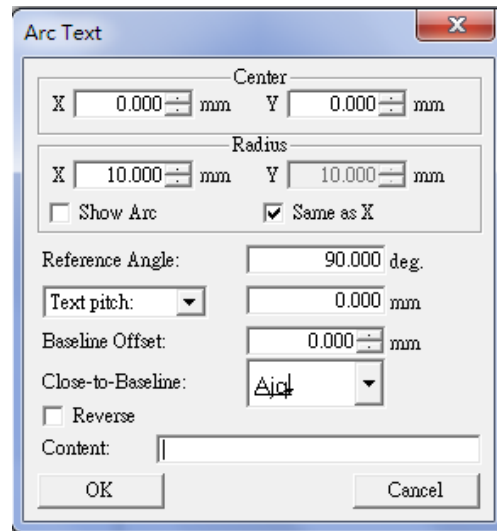



Fig. 1.3.06

Method:

- Click “Draw” from Menu Bar and select “Arc Text” function.
- Click  button from Draw Tool Bar.

1.3.10 Rectangle Text

Users can input the text within a specified rectangle, see Fig.1.3.07. The font size of text will be changed according to the amount of characters.

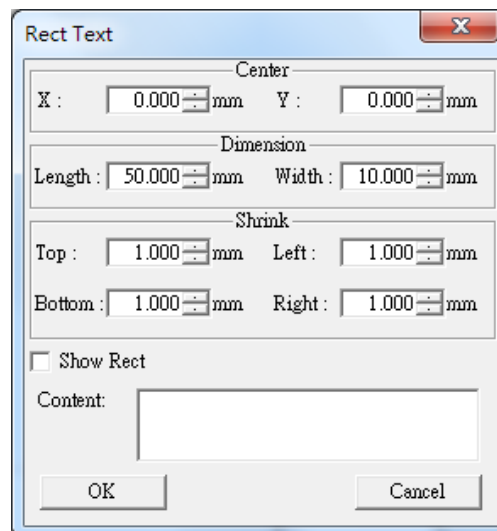



Fig. 1.3.07

Method:

- Click “Draw” from Menu Bar and select “Rectangle Text” function.
- Click  button from Draw Tool Bar.

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1.3.11 1D Barcode

Select this function and a dialog box will open for user to choose code type and enter code data, see Fig.1.3.08. Click “OK” when finish entering all information to close this dialog box and insert the 1D Barcode on working area.

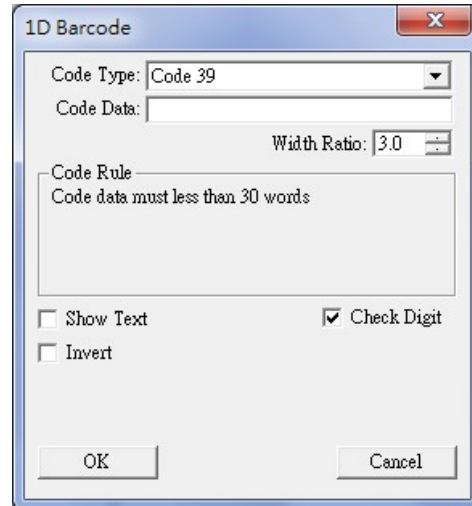



Fig. 1.3.08

Method:

- Click “Draw” from Menu Bar and select “1D Barcode” function.
- Click  button from Draw Tool Bar.

1.3.12 2D Barcode

Select this function and a dialog box will open for user to choose code type and enter code data, see Fig.1.94. Click “OK” when finish entering all information to close this dialog box and insert the 1D Barcode on working area.

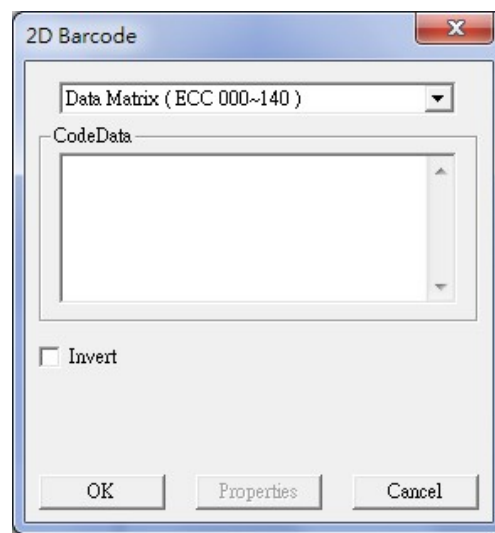



Fig. 1.3.09

Method:

- Click “Draw” from Menu Bar and select “2D Barcode” function.
- Click  button from Draw Tool Bar.

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1.3.13 Matrix

Matrix function uses one or more objects as a sample to create an assigned amount of objects with same parameters and figure. Executing this function, a 2x2 matrix object will be created on

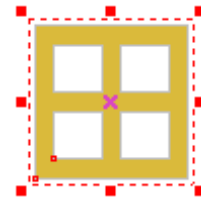
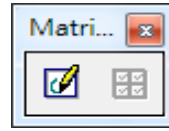





Fig. 1.3.10

working area, see Fig. 1.3.10, and a toolbar will show for users to edit the content of matrix. Decide the amount of row and column of matrix and click button  or double click the mouse left button on one cell to edit the matrix content. Then click button  to finish the editing and all cells will show the same content.


Method:

- Click “Draw” from Menu Bar and select “Matrix” function.
- Click  button from Draw Tool Bar.

1.3.14 Spiral

Create Spiral. Select a center point on the working area. Click the left mouse button to draw a spiral

Method:

- Click “Draw” from Menu Bar and select “Spiral” function.
- Click  button from Draw Tool Bar.

1.3.15 Group Hatch

Group-Hatch object is a special object which is generated within object browser when a group is generated and deleted when a group is ungroup. Users could use this object to perform carved marking task. **This object is useless to all barcode object, image object and vector object.**

Method:

- Generate a group will create a group-hatch object within object browser automatically. See fig 1.3.11.
- Choose a group hatch object from object browser. Modify group hatch object from Pass0 to Pass1 or other pass from marking property to enable hatch function. See fig 1.3.12.

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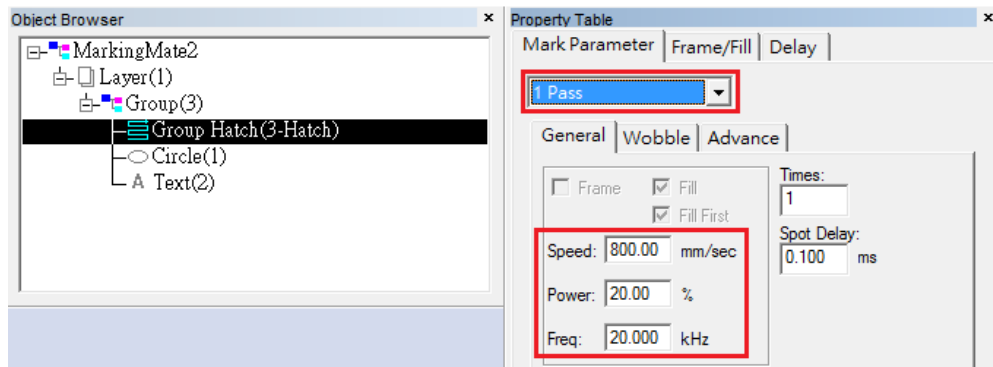


Fig. 1.3.11



Fig. 1.3.12

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1.4 Image Menu

“Image” menu offers the following functions:

Effects	Modify the image effects Posterize Mosaic Average Median Sharpen Add Noise Emboss Edge Enhance Oilify
Spatial Filters	Use different filters Gradient Laplacian Sobel Prewitt Shift & Difference Line Segment

Halk P Fiber soft

1.4.1 Effects

1.4.1.1 Posterize

Click “Image – Effects - Posterize”

This function allows user to adjust the color levels for an image, refer to the following examples.

Fig.1.4.01 is the original image:



Fig. 1.4.01

When Levels per color plane is 2, see Fig.1.4.02.

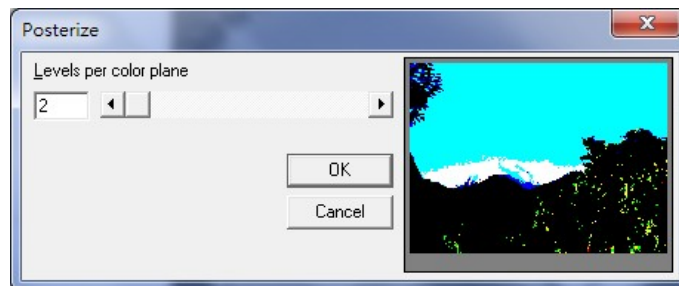


Fig. 1.4.02

When Levels per color plane is 20, see Fig.1.4.03.

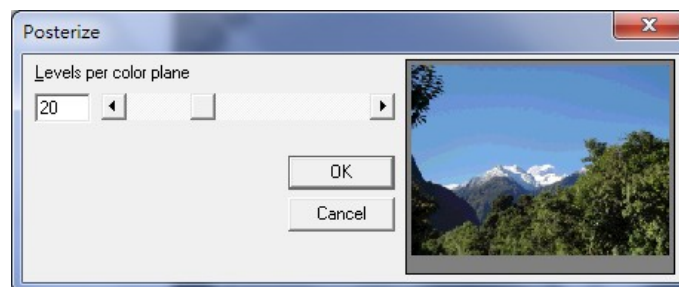


Fig. 1.4.03

When Levels per color plane is 64, see Fig.1.4.04.

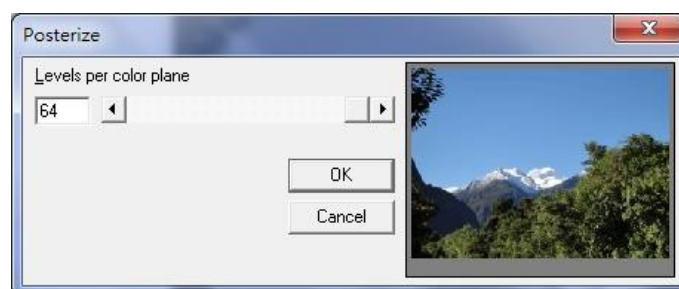


Fig. 1.4.04

Halk P Fiber soft

1.4.1.2 Mosaic

Click “Image – Effects - Mosaic”

This function will cause a blurred by magnifying the pixel size of the image, refer to the following examples.

Fig.1.4.05 is the original image:



Fig. 1.4.05

When Tile size is 2, see Fig.1.4.06.

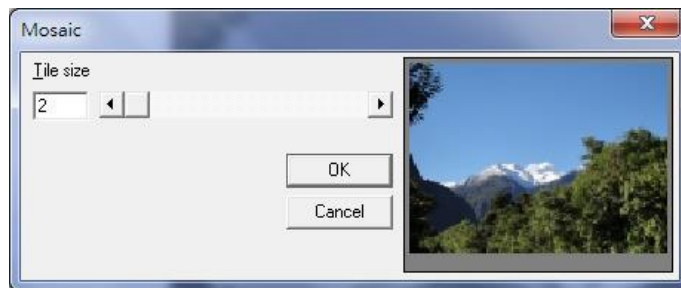


Fig. 1.4.06

When Tile size is 20, see Fig.1.4.07.

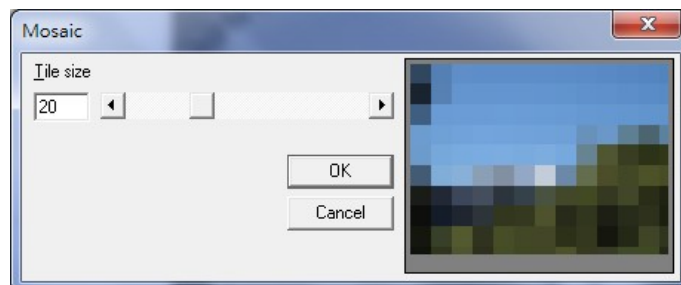


Fig. 1.4.07

When Tile size is 64, see Fig.1.4.08.

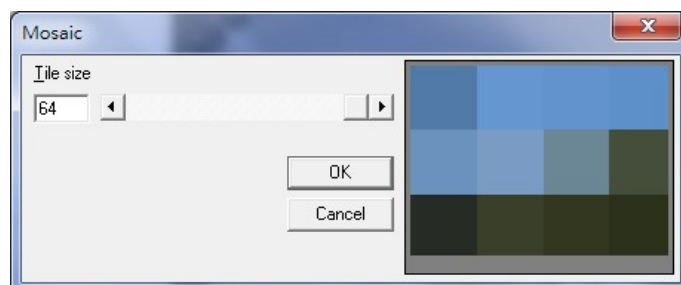


Fig. 1.4.08

Halk P Fiber soft

1.4.1.3 Average

Click “Image – Effects - Average”

This function will cause a blurred by adjusting the average sample size of the image, refer to the following examples.

Fig.1.4.09 is the original image:



When Sample size is 3, see Fig.1.4.10.

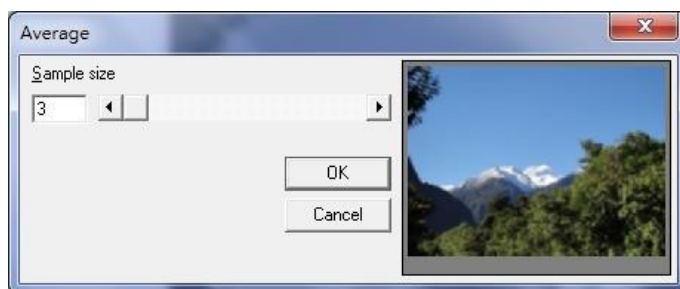


Fig. 1.4.10

When Sample size is 7, see Fig.1.4.11.

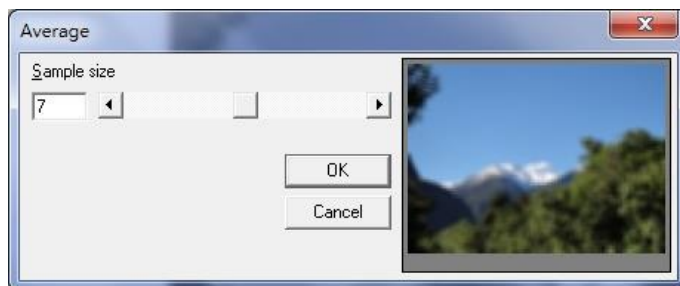


Fig. 1.4.11

When Sample size is 11, see Fig.1.4.12.

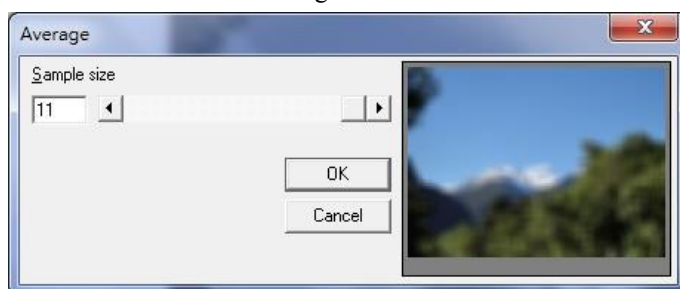


Fig. 1.4.12

Halk P Fiber soft

1.4.1.4 Median

Click “Image – Effects - Median”

Adjust the sample size of image to cause the median effect and make the image become blurred, refer to the following examples.

Fig.1.4.13 is the original image:



When Sample size is 3, see Fig.1.4.14.

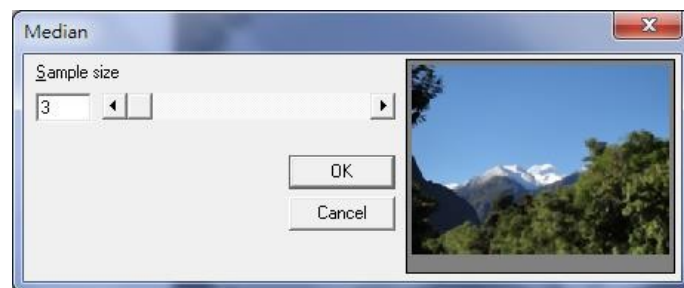


Fig. 1.4.14

When Sample size is 7, see Fig.1.4.15.

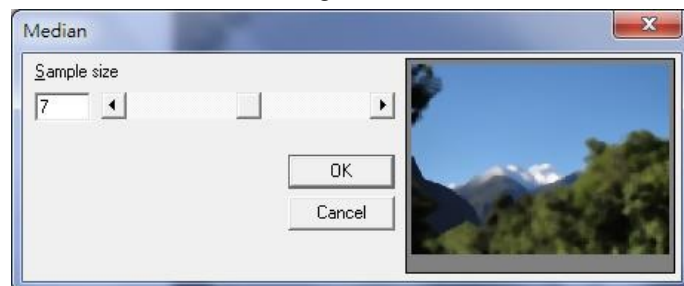


Fig. 1.4.15

When Sample size is 11, see Fig.1.4.16.

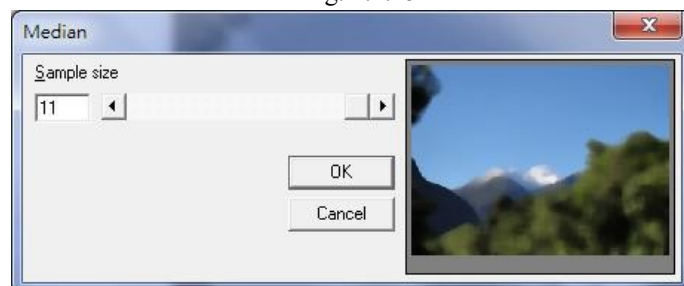


Fig. 1.4.16

Halk P Fiber soft

1.4.1.5 Sharpen

Click “Image – Effects - Sharpen”

Adjust to percentage of image to increase the resolution and emphasize the contrast, refer to the following examples.

Fig.1.4.17 is the original image:



Fig. 1.4.17

When Percentage is 0, see Fig.1.4.18.

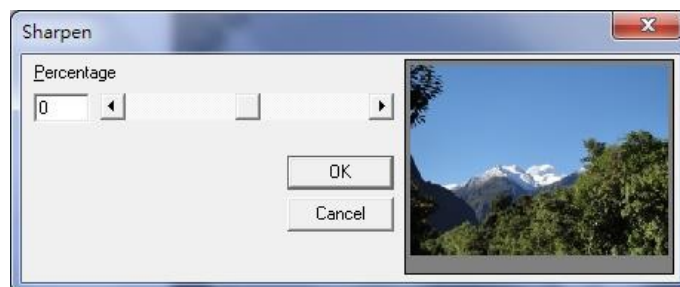


Fig. 1.4.18

When Percentage is -100, see Fig.1.4.19.

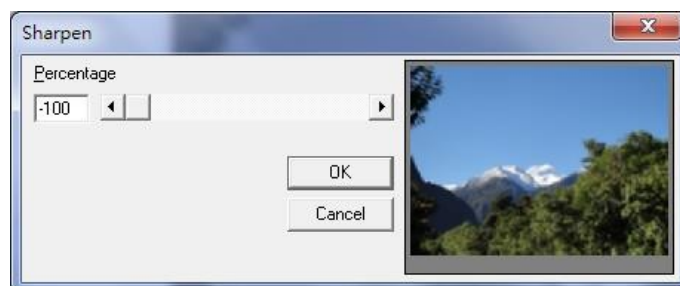


Fig. 1.4.19

When Percentage is 100, see Fig.1.4.20.

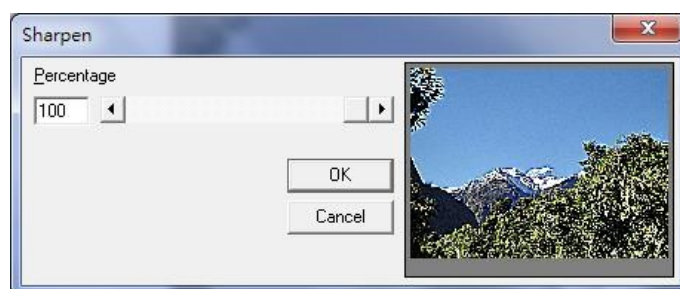


Fig. 1.4.20

Halk P Fiber soft

1.4.1.6 Add Noise

Click “Image – Effects – Add Noise”

Add white noise to the image according to the noise level and channel. There are four types of channel to choose: Master, Red, Green and Blue, refer to the following examples.

Fig.1.4.21 is the original image:



Fig. 1.4.21

When Noise Level is 50 and Level is Master, see Fig.1.4.22.

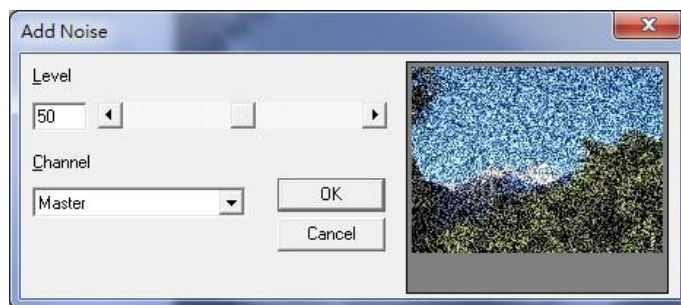


Fig. 1.4.22

When Noise Level is 50 and Level is Red, see Fig.1.4.23.

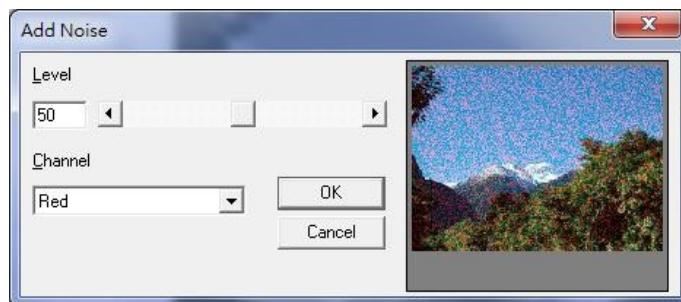


Fig. 1.4.23

When Noise Level is 50 and Level is Green, see Fig.1.4.24.

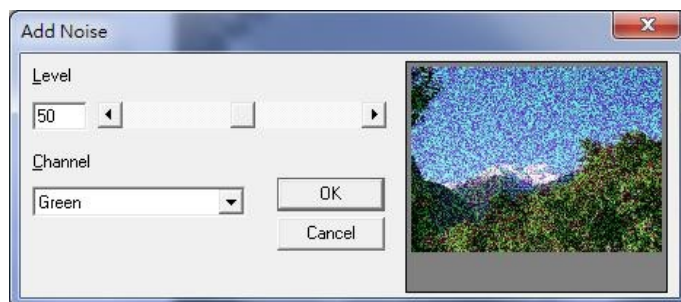


Fig. 1.4.24

Halk P Fiber soft

When Noise Level is 50 and Level is Blue, see Fig.1.4.25.

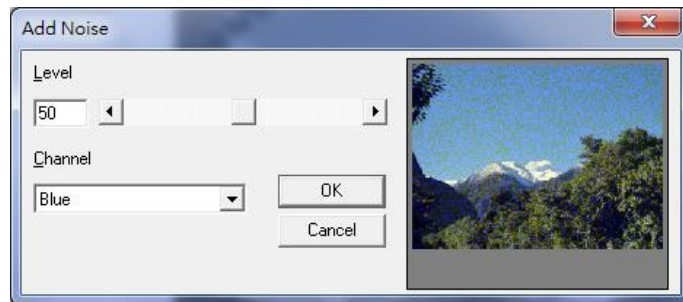


Fig. 1.4.25

1.4.1.7 Emboss

Click “Image – Effects - Emboss”

Create an embossed effect for the image by adjusting the direction and depth, refer to the following examples.

Fig.1.4.26 is the original image:



Fig. 1.4.26

Choose the direction as North and the Depth as 50, see Fig.1.4.27.

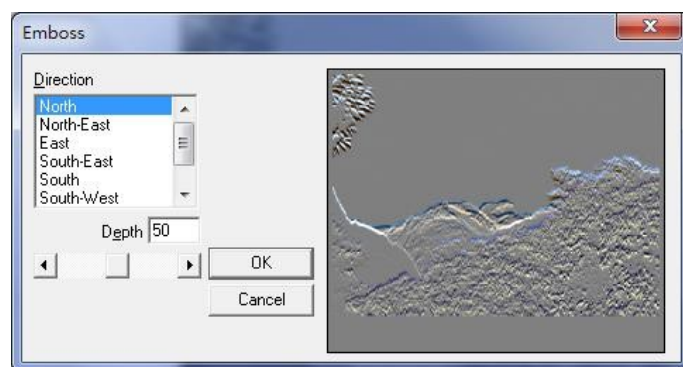


Fig. 1.4.27

Choose the direction as South-West and the Depth as 75, see Fig.1.4.28.

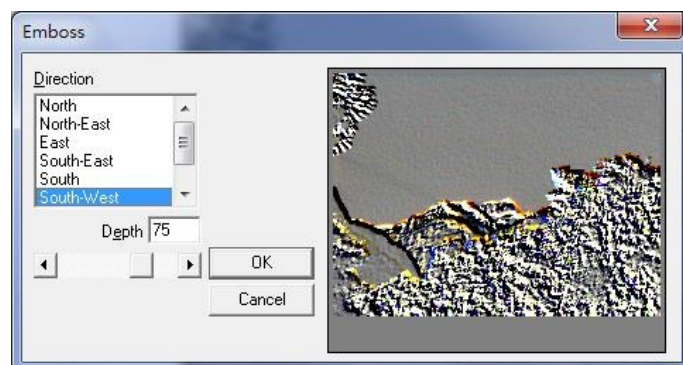


Fig. 1.4.28

Halk P Fiber soft

1.4.1.8 Edge Enhance

Click “Image – Effects – Edge Enhance”

Enhance the edge of image, refer to the following examples.



Fig.1.4.29 Original Image



Fig.1.4.30 Edge-Enhance Image

1.4.1.9 Oilify

Click “Image – Effects - Oilify”

Adjust the sample size to create an oil painting effect for the image, refer to the following examples.

Fig.1.4.31 is the original image:



Fig. 1.4.31

When Sample size is 3, see Fig.1.4.32.

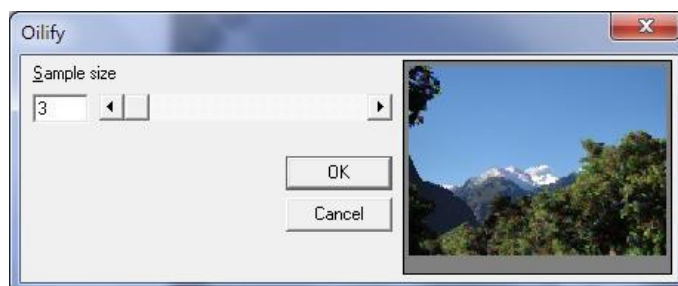


Fig. 1.4.32

When Sample size is 7, see Fig.1.4.33.

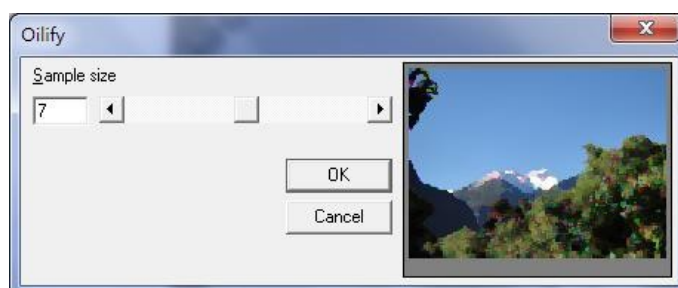


Fig. 1.4.33

Halk P Fiber soft

When Sample size is 11, see Fig.1.4.34.

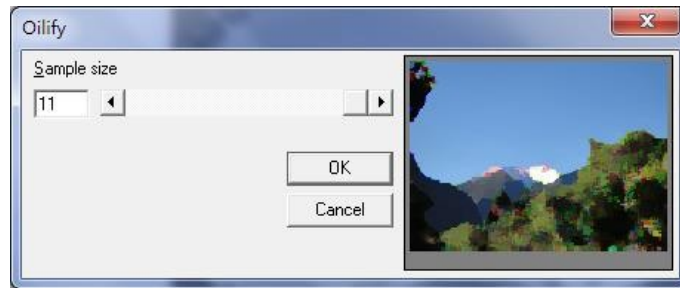


Fig. 1.4.34

1.4.2 Special Filters

1.4.2.1 Gradient

Click “Image – Special Filters - Gradient”

Adjust the Filter Value according to the direction, refer to the following examples. Fig.1.4.35 is the original image:



Fig. 1.4.35

Direction: North, see Fig.1.4.36.

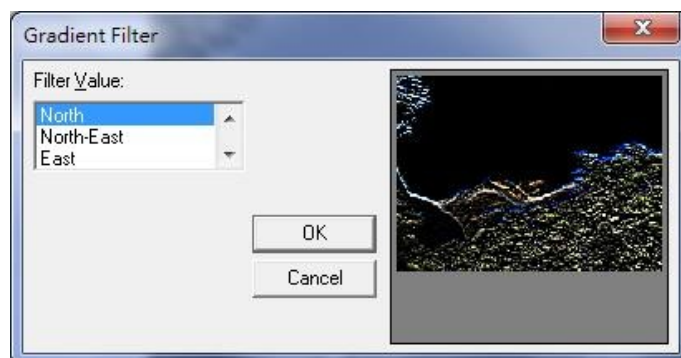


Fig. 1.4.36

Direction: South-East, see Fig.1.4.37.

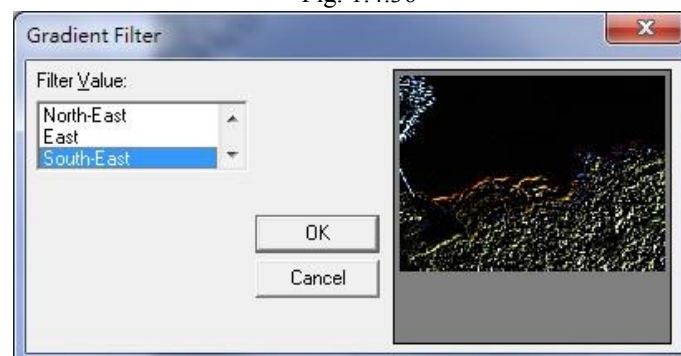


Fig. 1.4.37

Halk P Fiber soft

1.4.2.2 Laplacian

Click “Image – Special Filters - Laplacian”

Select Filter from Filter Value list to adjust the image, refer to the following examples.

Fig.1.4.38 is the original image:



When select Filter 1,
see Fig.1.4.39.

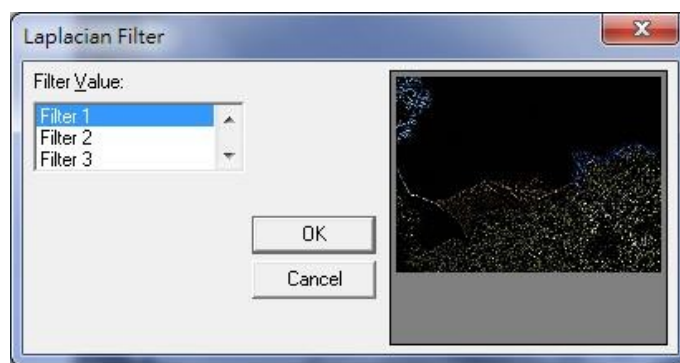


Fig. 1.4.39

When select Filter 2,
see Fig.1.4.40.

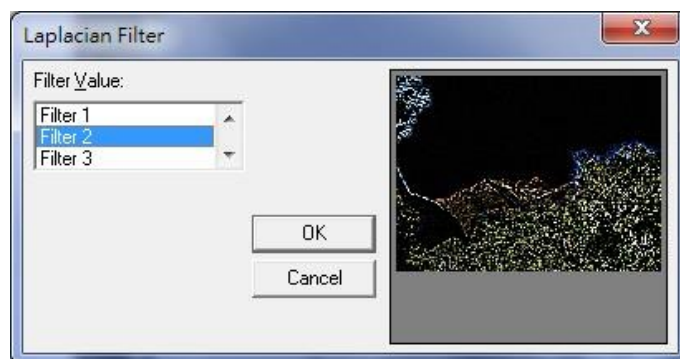


Fig. 1.4.40

When select Diagonal,
see Fig.1.4.41.

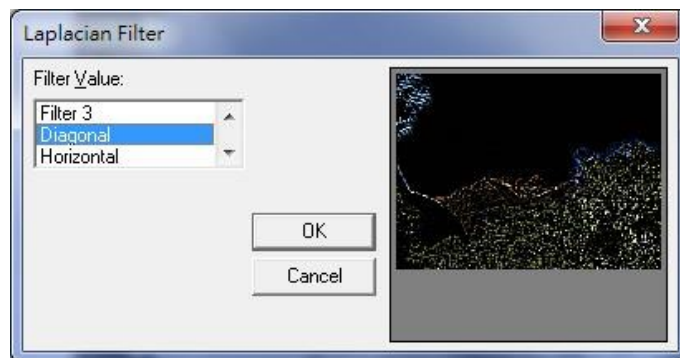


Fig. 1.4.41

Halk P Fiber soft

1.4.2.3 Sobel

Click “Image – Special Filters - Sobel”

Adjust the image by selecting the Filter Value to get Sobel effect, refer to the following examples.

Fig.1.4.42 is the original image:



Fig. 1.4.42

When the value is Horizontal, see Fig.1.4.43.

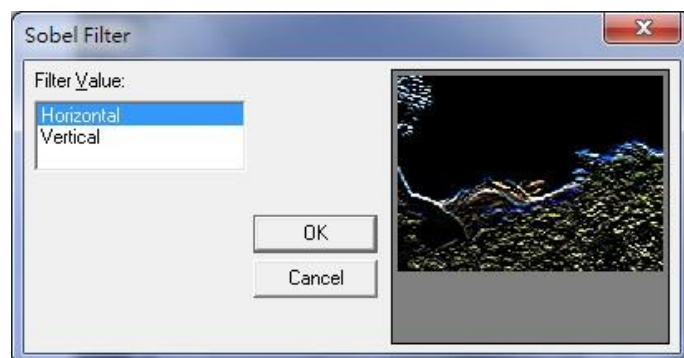


Fig. 1.4.43

When the value is Vertical, see Fig.1.4.44.

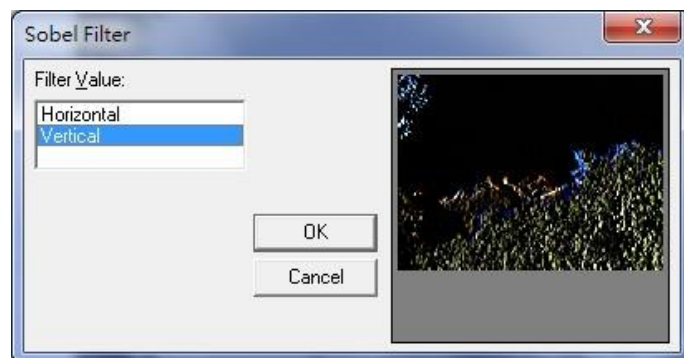


Fig. 1.4.44

Halk P Fiber soft

1.4.2.4 Prewitt

Click “Image – Special Filters - Prewitt”

Adjust the image by selecting the Filter Value to get Prewitt effect, refer to the following examples.

Fig.1.4.45 is the original image:



Fig. 1.4.45

When the value is Horizontal, see Fig.1.4.46.

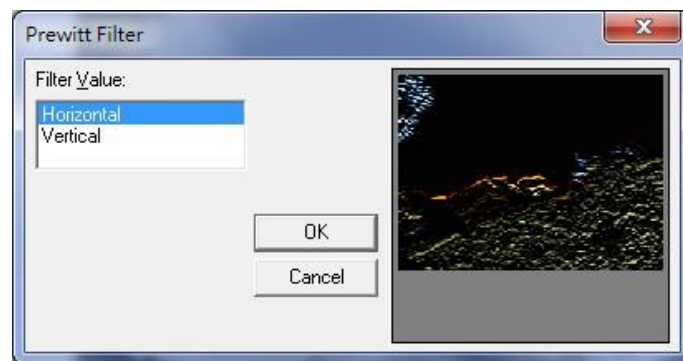


Fig. 1.4.46

When the value is Vertical, see Fig.1.4.47.

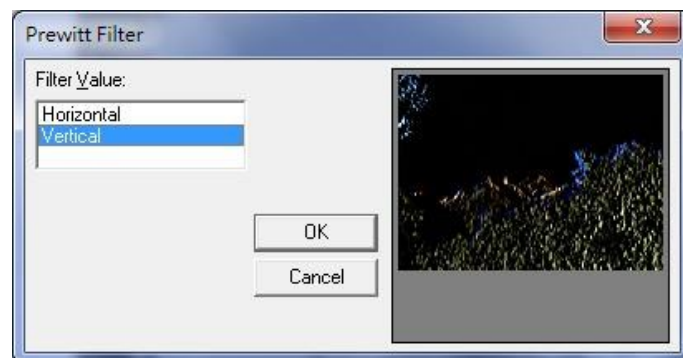


Fig. 1.4.47

Halk P Fiber soft

1.4.2.5 Shift Difference

Click “Image – Special Filters – Shift Difference”

Adjust the image effect by selecting the Filter Value, refer to the following examples. Fig.1.4.48 is the original image:



Fig. 1.4.48

When the value is Diagonal, see Fig.1.4.49.

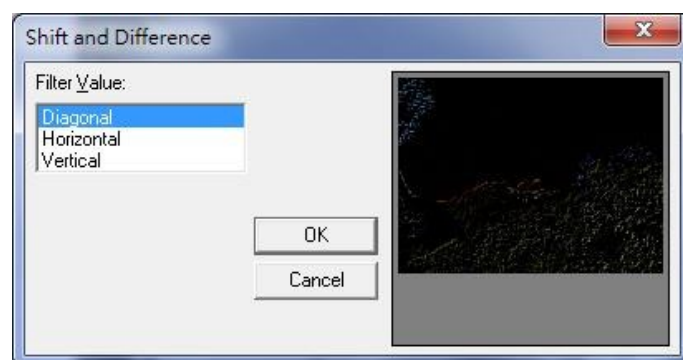


Fig. 1.4.49

When the value is Horizontal, see Fig.1.4.50.

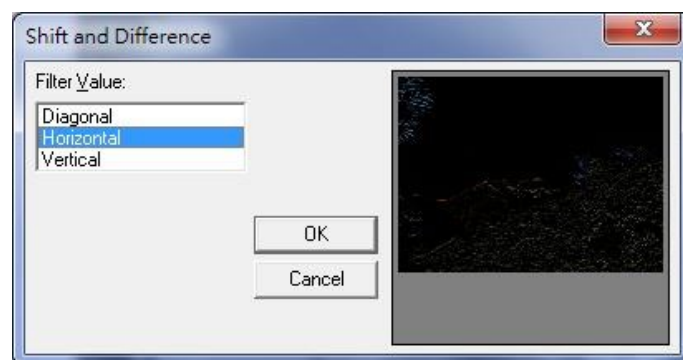


Fig. 1.4.50

When the value is Vertical, see Fig.1.4.51.

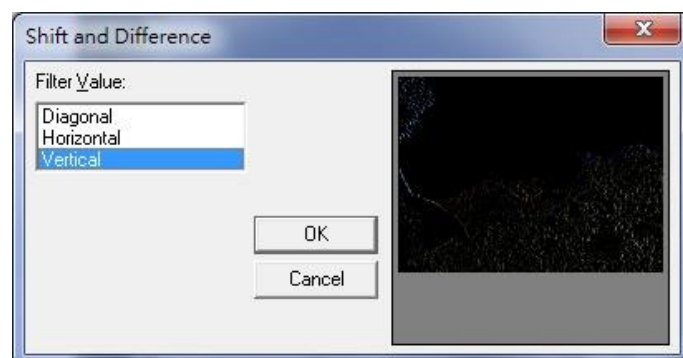


Fig. 1.4.51

Halk P Fiber soft

1.4.2.6 Line Segment

Click “Image – Special Filters – Line Segment”

Adjust the image effect by selecting the Filter Value, refer to the following examples.
Fig.1.4.52 is the original image:



Fig. 1.4.52

When the value is Horizontal, see Fig.1.4.53.

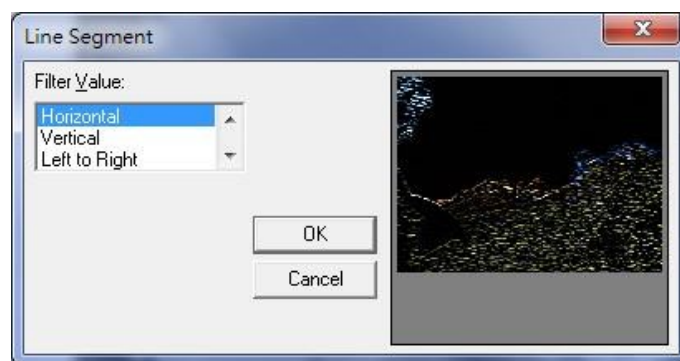


Fig. 1.4.53

When the value is Vertical, see Fig.1.4.54.

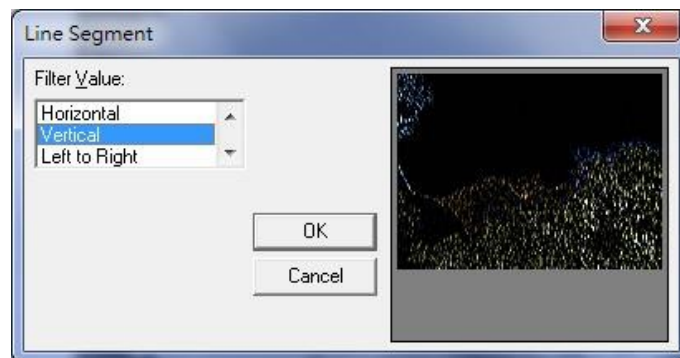


Fig. 1.4.54

When the value is Left to Right, see Fig.1.4.55.

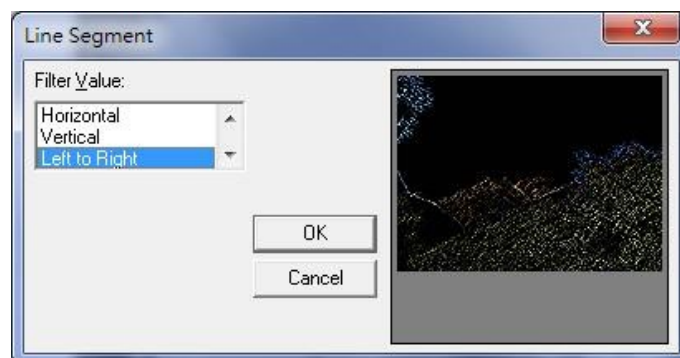


Fig. 1.4.55

Halk P Fiber soft

When the value
is Right to Left,
see Fig.1.4.56.

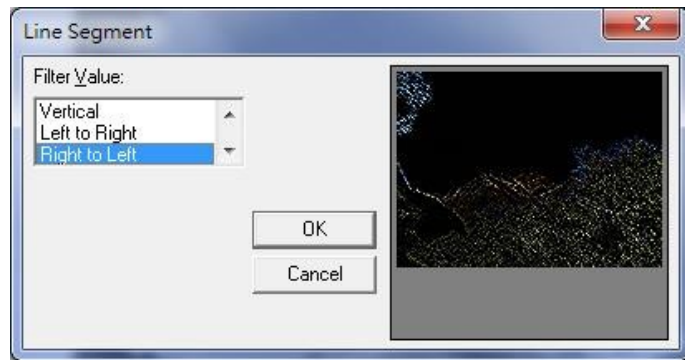


Fig. 1.4.56

Halk P Fiber soft

1.5 Color Menu

“Color” menu offers the following functions:

Gray Scale

Color Resolution

Brightness

Contrast

Hue

Saturation

Gamma

Intensity

Histogram

Invert

Solarize

Halk P Fiber soft

1.5.1 Gray Scale

Click “Color – Gray Scale”

Transform a colored image into an 8-bit grayscale image, refer to Fig.1.5.01 and 1.5.02.



Fig. 1.5.01 Original Image



Fig. 1.5.02 Gray Scale Image

1.5.2 Color Resolution

Click “Color – Color Resolution”

Change the image resolution by adjusting the Bits Per Pixel and the Color Order or Dither Method and Palette (Dither Method and Palette must be under 8-bit mode), refer to the following examples.

Fig.1.5.03 is the original image:



Fig. 1.5.03

Fig.1.5.04
Bits Per Pixel: 16-bit
Color Order: Blue-Green-Red

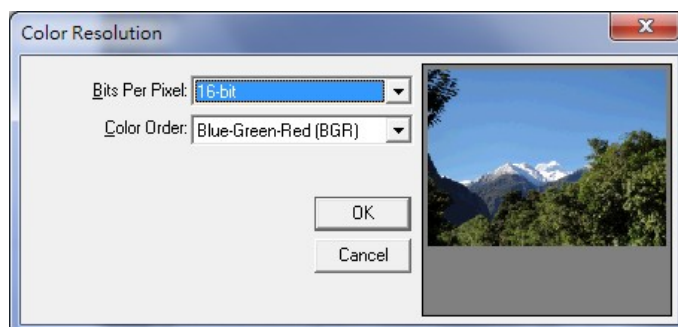


Fig. 1.5.04

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Fig.1.5.05
Bits Per Pixel: 16-bit
Color Order: Red-Green-Blue



Fig. 1.5.05

Fig.1.5.06
Bits Per Pixel: 8-bit
Dither Method: None
Palette: Fixed Palette

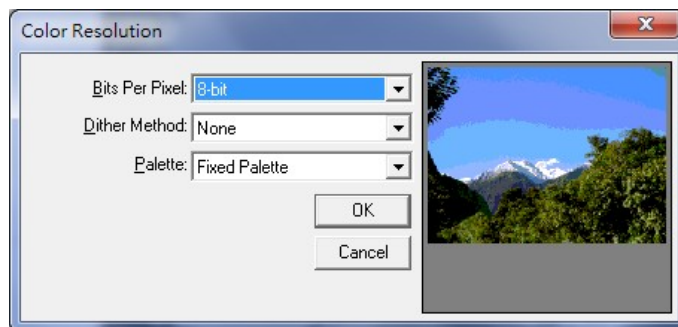


Fig. 1.5.06

Fig.1.5.07
Bits Per Pixel: 8-bit
Dither Method: Ordered
Palette: Netscape Fixed Palette

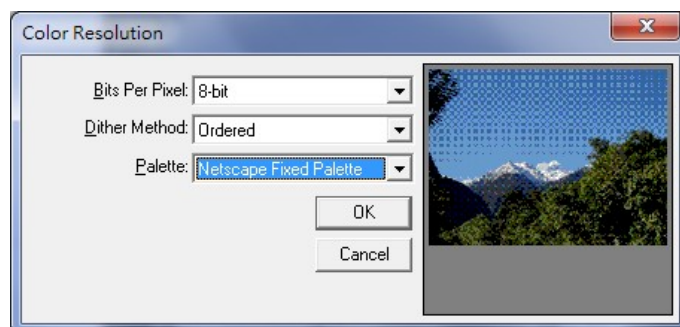


Fig. 1.5.07

Halk P Fiber soft

1.5.3 Brightness

Click “Color - Brightness”

Change the brightness of image by adjusting the Percentage, refer to the following examples.

Fig.1.5.08 is the original image:



Fig. 1.5.08

When Percentage is 0, see Fig.1.5.09.

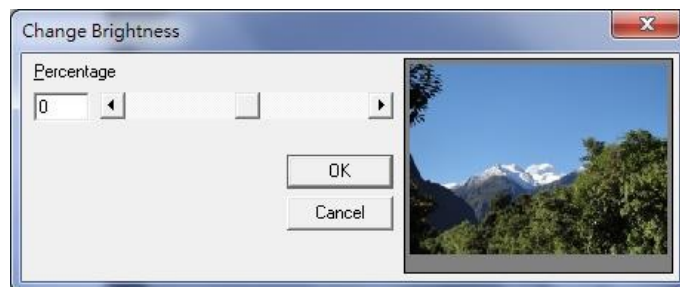


Fig. 1.5.09

When Percentage is -30, see Fig.1.5.10.

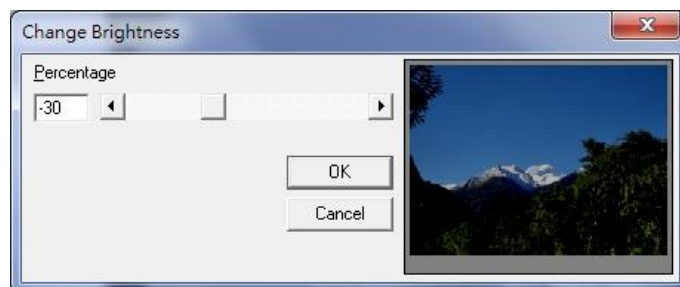


Fig. 1.5.10

When Percentage is 30, see Fig.1.5.11.

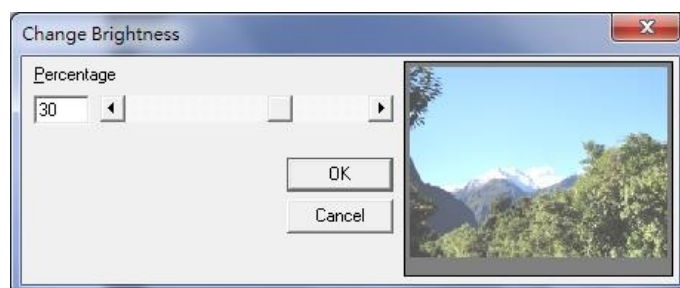


Fig. 1.5.11

Halk P Fiber soft

1.5.4 Contrast

Click “Color - Contrast”

Change the contrast of image by adjusting the Percentage, refer to the following examples.

Fig.1.5.12 is the original image:



Fig. 1.5.12

When Percentage is 0, see Fig.1.5.13.

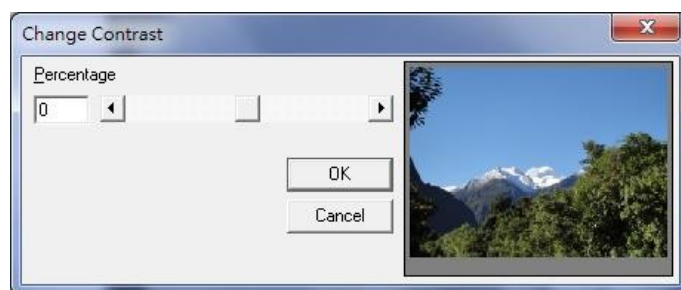


Fig. 1.5.13

When Percentage is -100, see Fig.1.5.14.

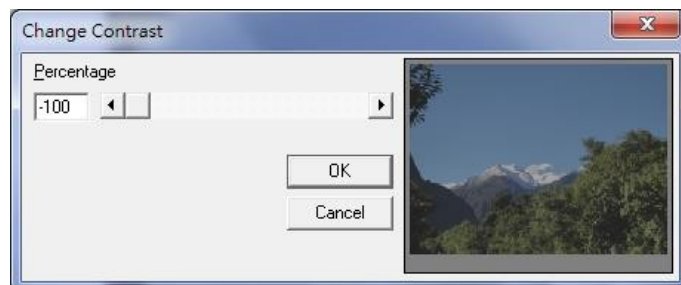


Fig. 1.5.14

When Percentage is 100, see Fig.1.5.15.

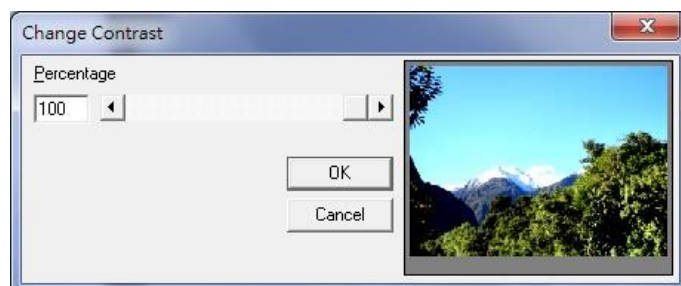


Fig. 1.5.15

Halk P Fiber soft

1.5.5 Hue

Click “Color - Hue”

Adjusting the degrees to change the hue of image, refer to the following examples.
Fig.1.5.16 is the original image:



Fig. 1.5.16

When Angle (degrees)
is 0, see Fig.1.5.17.

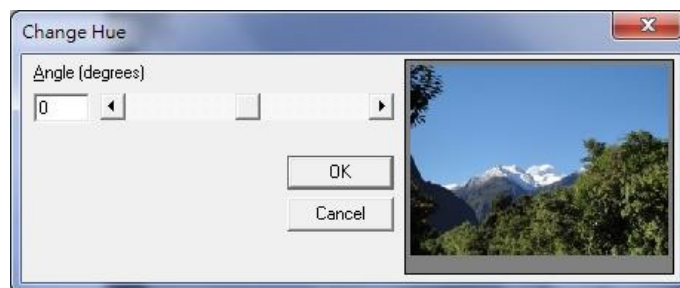


Fig. 1.5.17

When Angle (degrees)
is -280, see Fig.1.5.18.

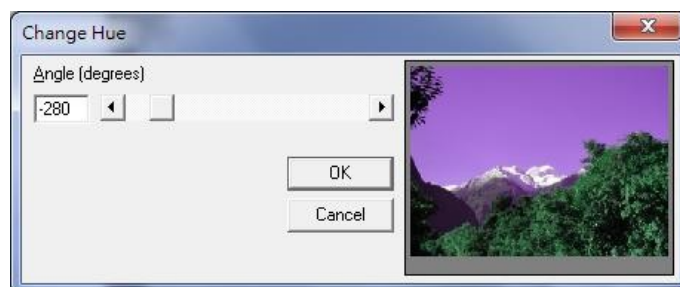


Fig. 1.5.18

When Angle (degrees)
is 280, see Fig.1.5.19.

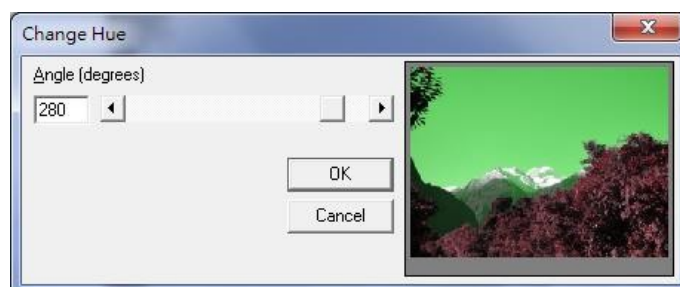


Fig. 1.5.19

Halk P Fiber soft

1.5.6 Saturation

Click “Color - Saturation”

Change the contrast of image by adjusting the Percentage, refer to the following examples.

Fig.1.5.20 is the original image:



Fig. 1.5.20

When Percentage is 0, see Fig.1.5.21.

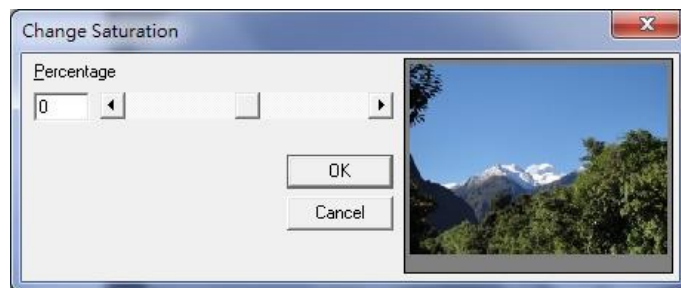


Fig. 1.5.21

When Percentage is -100, see Fig.1.5.22.

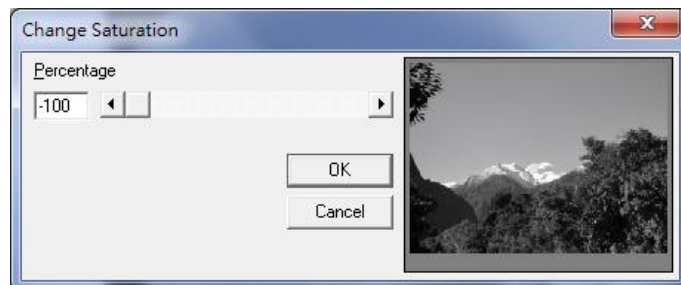


Fig. 1.5.22

When Percentage is 100, see Fig.1.5.23.

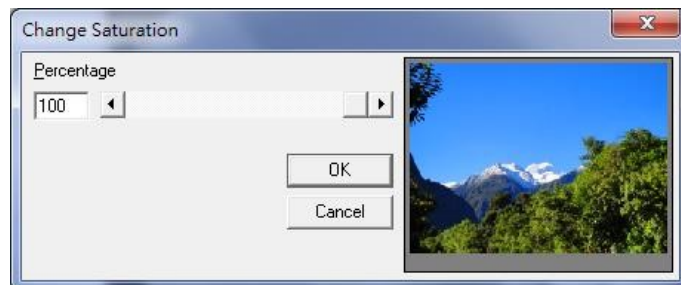


Fig. 1.5.23

Halk P Fiber soft

1.5.7 Gamma

Click “Color – Gamma”

Change the image color by adjusting the Gamma value, refer to the following examples.

Fig.1.5.24 is the original image:



Fig. 1.5.24

When Gamma Value is 1.00, see Fig.1.5.25.



Fig. 1.5.25

When Gamma Value is 0.30, see Fig.1.5.26.

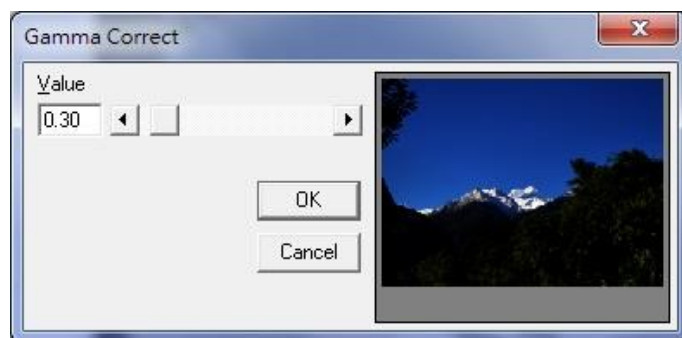


Fig. 1.5.26

When Gamma Value is 4.99, see Fig.1.5.27.

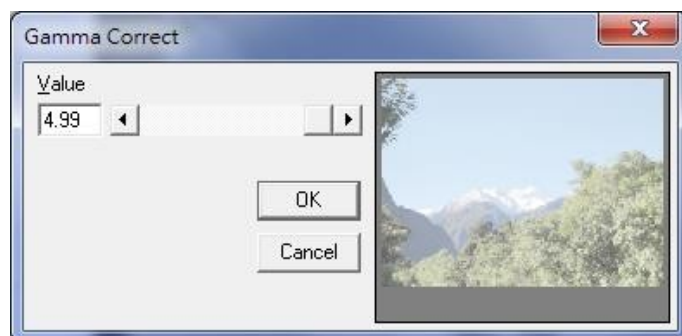


Fig. 1.5.27

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1.5.8 Intensity

Click “Color - Intensity”

1.5.8.1 Detect

Adjust image intensity according to the Low and High value, refer to the following examples.

Fig.1.5.28 is the original image:



Fig. 1.5.28

When Low Value is 43, High Value is 186, see Fig.1.5.29.

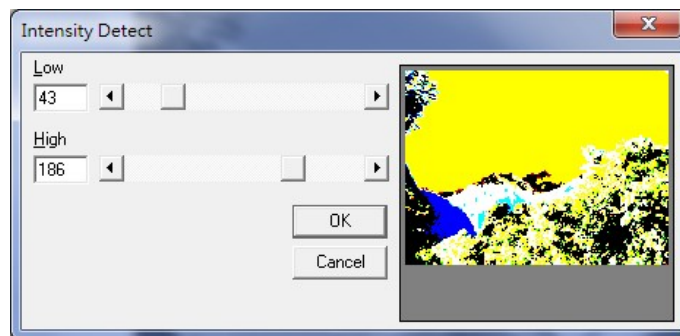


Fig. 1.5.29

When Low Value is 130, High Value is 150, see Fig.1.5.30.

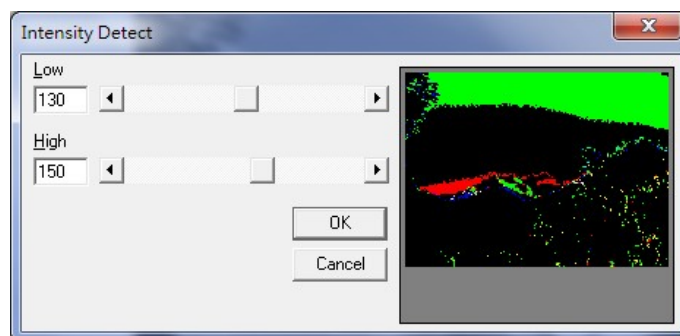


Fig. 1.5.30

1.5.8.2 Stretch

Change the image intensity according to the previous settings.

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1.5.9 Histogram

Click “Color - Histogram”

1.5.9.1 Equalize

Equalize the image automatically, refer to Fig.1.5.31 and 1.5.32.



Fig. 1.5.31 Original Image



Fig. 1.5.32 After Equalizing

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1.5.9.2 Contrast

Change the image contrast by adjusting the percentage.

Fig.1.5.33 is the original image:



Fig. 1.5.33

When Percentage is 0,
see Fig.1.5.34.

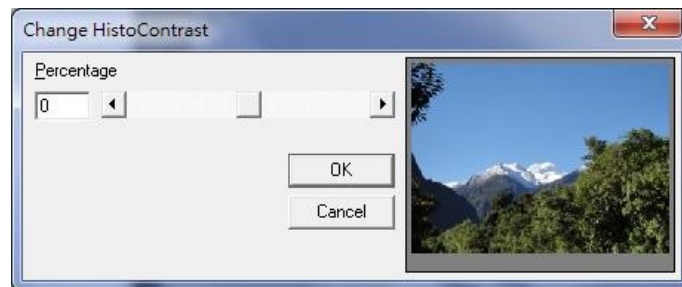


Fig. 1.5.34

When Percentage is
-100, see Fig.1.5.35.

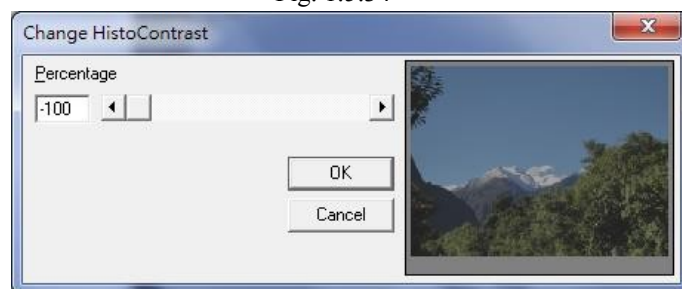


Fig. 1.5.35

When Percentage is
100, see Fig.1.5.36.

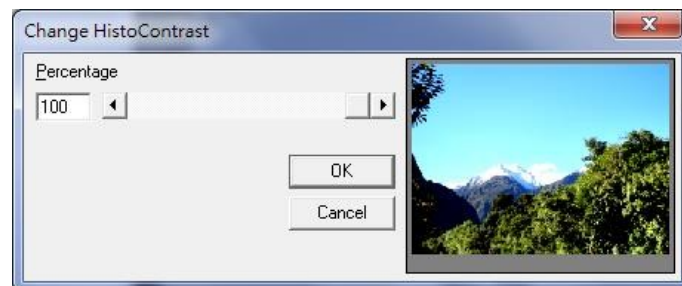


Fig. 1.5.36

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1.5.10 Invert

Click “Color - Invert”

Invert the color of the image, refer to Fig.1.5.37 and 1.5.38.



Fig. 1.5.37

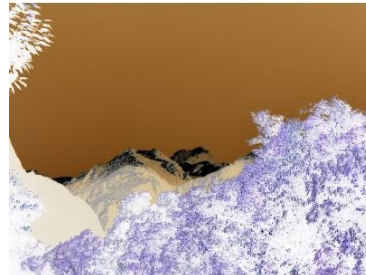


Fig. 1.5.38

1.5.11 Solarize

Click “Color - Solarize”

Create an exposure effect for the image by adjusting threshold value.
Fig.1.5.39 is the original image:



Fig. 1.5.39

When Threshold is 30,
see Fig.1.5.40.

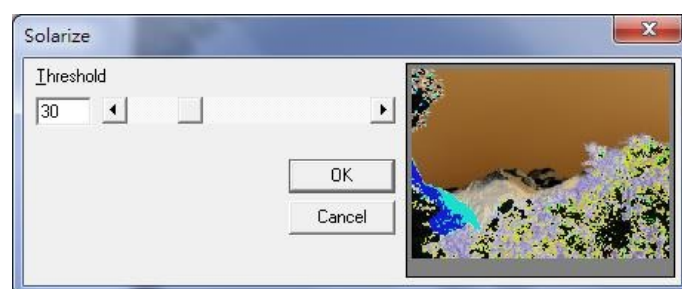


Fig. 1.5.40

When Threshold is 80,
see Fig.1.5.41.

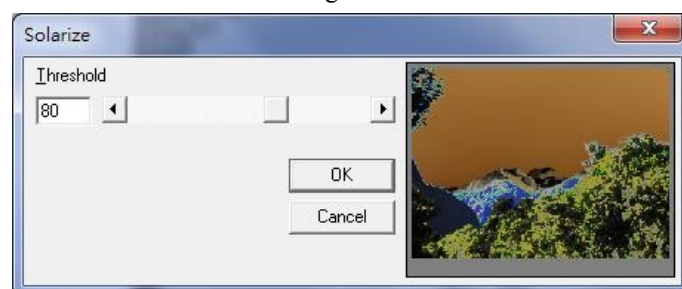


Fig. 1.5.41

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When Threshold is 128, see Fig.1.5.42.

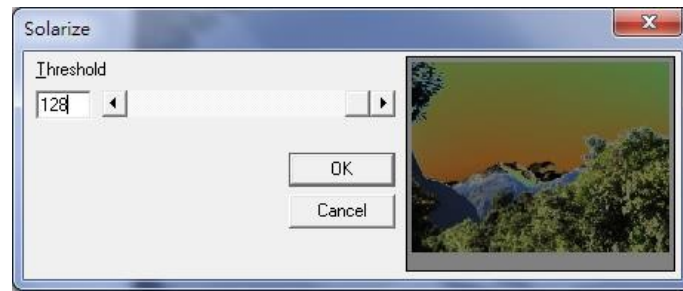


Fig. 1.5.42

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1.6 Execute Menu

“Execute” menu offers the following function:

Quick Mark	Execute marking. However, the Control Object will be ignored.
Align Test	Allow users to examine the mark position is correct or not.
Pen Number Manager	Manage pen parameter.
User Level	User Level is divided into Operator, Programmer, and Administrator to separate user’s authorities.
Auto Text Manager	Activate the auto text manager for users to edit auto text object.
Rotary Control Panel	Please refer to “Practical Functions” Chapter 6 Sec. 3 “Rotary Setup Wizard”.
Rotary Marking	Please refer to “Practical Functions” Chapter 6 Sec. 3 “Rotary Setup Wizard”.

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1.6.1 Quick Mark

Select this function to start marking, see Fig.1.6.07.

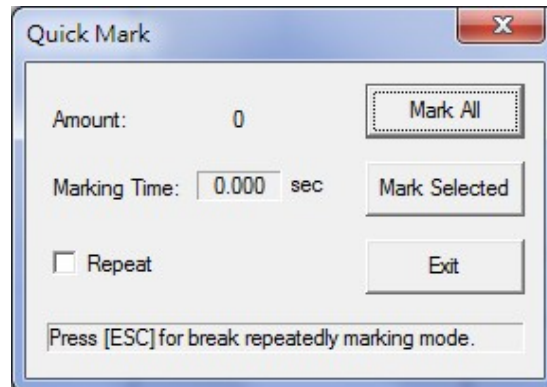


Fig. 1.6.07

Amount: The total marking amount.

Marking Time: The time cost of current marking process.

Repeat: Repeat marking. Users can press “Esc” to stop marking.

Mark All: Mark all the objects.

Mark Selected: Mark the selected objects.

Exit: Exit this mode.

The difference between “**Marking**” and “**Quick Marking**” is that “**Auto Text**” and “**Control Object**” functions will be ignored under “Quick Marking” mode.

1.6.2Align Test

Please refer to “Practical Functions” Chapter 5 Sec. 2 “Align Test”.

1.6.3 Pen Number Manager

Please refer to “Practical Functions” Chapter 11 “Pen Number Manager”.

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1.6.4 User Level

Users are allowed to execute different functions according to their authorities, see Fig.1.6.09.

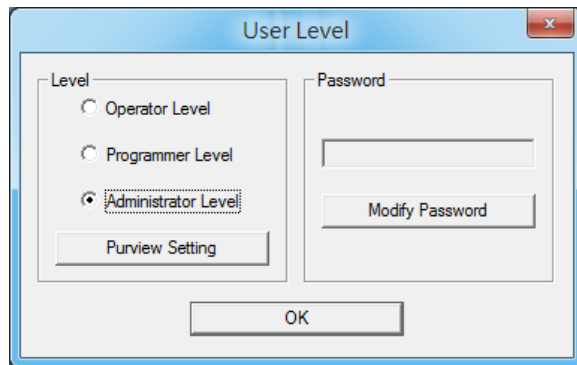


Fig. 1.6.09

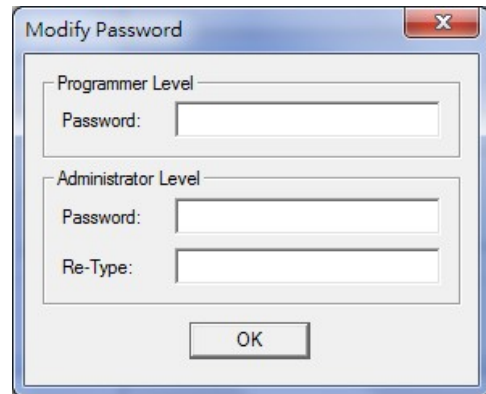


Fig. 1.6.10

Operator: Operator level users can only read and output files.

Programmer: Programmer level users are allowed to draw and edit objects and use some limited functions without system parameter settings.

Administrator: Administrator level users are able to use all the functions and modify their passwords to manage the system, see Fig.1.6.10.

Purview Setting: Need administrator authority. Allow administrator to assign different access right to different level user. See Fig 1.6.11. Administrator could assign the following parts: File, Edit, Draw, Image, Color, Execute, View, Property table, Tracker.

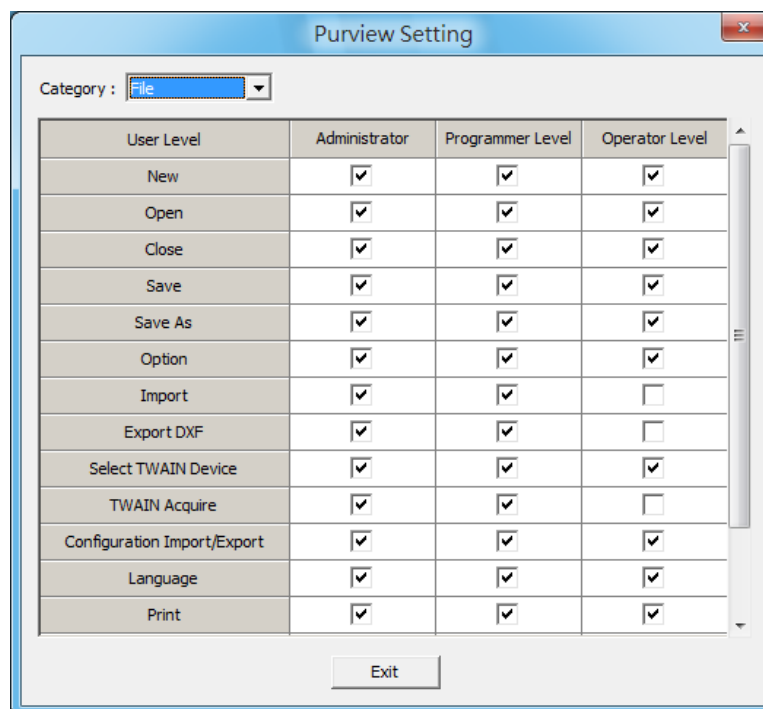


Fig. 1.6.11

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1.6.5 Auto Text Manager

Please refer to “Practical Functions” Chapter 8 “Auto Text”.

1.6.6 Rotary Control Panel

Please refer to “Practical Functions” Chapter 6 Sec. 3 “Rotary Setup Wizard”.

1.6.7 Rotary Marking

Please refer to “Practical Functions” Chapter 6 Sec. 3 “Rotary Setup Wizard”.

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1.7 View Menu

“View” menu offers the following functions:

Standard Bar	Enable/disable Standard Bar
Zoom Bar	Enable/disable Zoom Bar
Draw Bar	Enable/disable Draw Bar
Layer Bar	Enable/disable Layer Bar
Object Browser	Enable/disable Object Browser
Modify Bar	Enable/disable Modify Bar
Dimension Bar	Enable/disable Dimension Bar
Obj Property Bar	Enable/disable Object Property Bar
Mark Sample Bar	Enable/disable Mark Sample Bar
Make Font Bar	Enable/disable Make Font Bar
Text Property Bar	Enable/disable Text Property Bar
Vector Box	Enable/disable Vector Box
Property Table	Enable/disable Property Table
Mark Panel	Enable/disable Mark Panel
Status Bar	Enable/disable Status Bar
Composing	Composing Settings
Show Order	Show the mark order
Tooltips	Enable/disable Tooltips
Tooltips Setting	Go to the Tooltips setting page of Options
Ruler	Enable/disable Ruler
Ruler Setting	Go to the ruler setting page of Options
Grid	Enable/disable Grid
Grid Lock	Enable/disable Grid Locking
Grid Parameter	Grid Parameter setting
Zoom In	Enlarge a specific area
Zoom Out	Shrink a specific area
Zoom Previous	Go back to the previous view
Zoom All	Show the whole Working Area

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Zoom Extend	Show all objects
Zoom Selected Objects	Zoom the selected objects to fit the whole editing area.
Hand Tool	Drag and drop to move desktop position

Tool Bars allow users to execute some specific functions more quickly. Users can activate the tool bar they need at View Menu and the image of that tool bar, for example, Standard Bar, will become . Users can also place the tool bar to any position by dragging it.











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1.7.1 Standard Bar

The Standard Bar provides some basic functions for users to edit the file, see Fig.1.7.01.



Fig. 1.7.01

New		Create a new document.
Open		Load files.
Save		Save the current document using the existing file name.
Undo		Back to the previous action.
Redo		Cancel the Undo action.
Import		Import a graphic file and convert it into the marking format.
Replace		Replace the selected object by a new one.
Cut		Remove selected data and store it in the clipboard for another use.
Copy		Duplicate selected data and store it in the clipboard for another use.
Paste		Attach data from the clipboard to an assigned document.

1.7.2 Zoom Bar

View the objects by zooming them, see Fig.1.7.02.

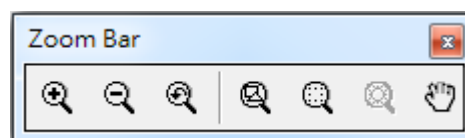









Fig. 1.7.02

Zoom in		Enlarge a specific area.
Zoom out		Shrink a specific area.
Zoom previous		Go back to the previous view.
Zoom all		Show the whole Work Area.
Zoom extend		Show all objects.
Zoom Selected Objects		Zoom the selected objects to fit the whole editing area.
Hand Tool		

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1.7.3 Drawing Bar

The Drawing Bar provides the drawing functions, see Fig.1.7.03.

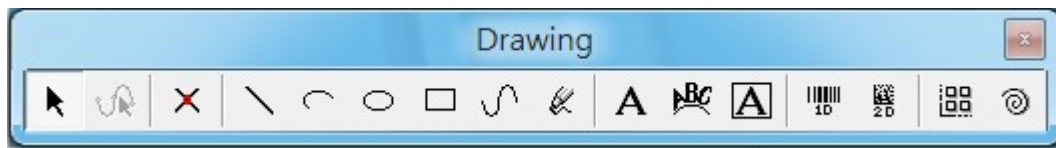


















Fig. 1.7.03

Selection		Select objects.
Edit Vertex		Edit the vertexes of curve objects.
Vertex		Draw a dot.
Line		Draw a line.
Arc		Draw an arc.
Circle		Draw a circle or oval.
Rectangle		Draw a square or rectangle.
Curve		Draw a curve.
Curve Brush		Draw a freehand line using the mouse.
Text		Insert a text object.
Arc Text		Insert an arc text object.
Rect Text		Insert a rect text object.
1D Barcode		Create a 1D barcode.
2D Barcode		Create a 2D barcode.
Matrix		Create a matrix object.
Spiral		Draw a spiral object

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1.7.4 Layer Bar

The Layer Bar allows users to edit the layers, see Fig.1.7.04.

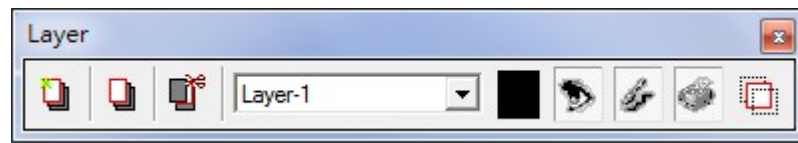


Fig. 1.7.04

Layer Manager		The layer page of Property Table will show up for editing.
New Layer		Create a new layer.
Delete the Active Layer		Delete the selected layer.
Current Layer		Select the layer.
Layer Color		Set the layer color.
View Layer		Enable or disable to view the selected layer.
Edit Layer		Enable or disable to edit the selected layer.
Output Layer		Enable or disable to output the selected layer.
Show the Selected Layer		Show the selected layer only.

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1.7.5 Object Browser

The Object Browser allows users to edit the parameters of layer, see Fig.1.7.05. Object Brower can not only view the whole layers and objects but can also change the order or rename the layer and object.

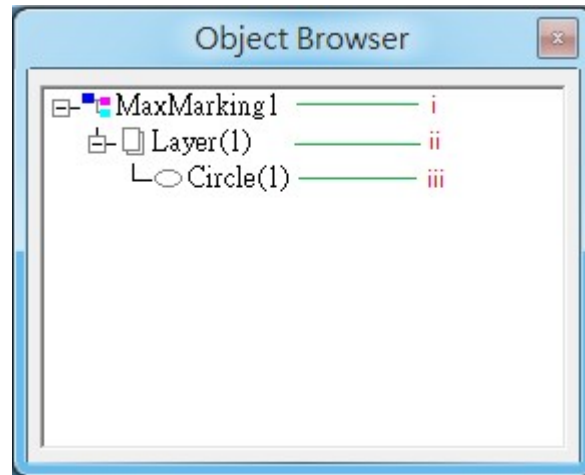


Fig. 1.7.05

- i. **Select the file:** When click the file, like MaxMarking1, all the layers and objects will also be selected and users can edit the parameters of System-Related Property Table.
- ii. **Select the layer:** When click the layer, all the objects under this layer will also be selected and users can edit the layer's parameters at Layer Page of Property Table.
- iii. **Select the object:** Users can edit the object's parameters when clicking the object's name.

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1.7.6 Modify Bar

The Modify Bar is for users to modify the object's parameters such as length and width, see Fig.1.7.06. Please notice that “Enter” must be pressed after input the value so that the modification will be effective.

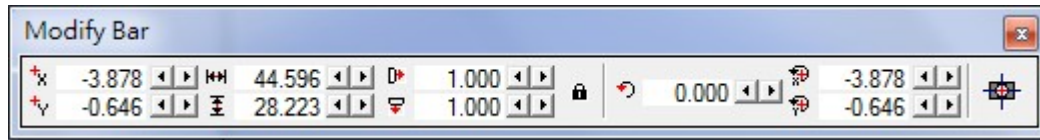


Fig. 1.7.06

X of Center		The X-axis value of the object's center.
Y of Center		The Y-axis value of the object's center.
Length		The length of the selected object.
Width		The width of the selected object.
X of Scale		The scale of the selected object's length.
Y of Scale		The scale of the selected object's width.
Lock to Same Ratio		Enable this function, the length and width will be adjusted with the same ratio at the same time.
Angle of Rotating		The rotary angle of the selected object.
X of Rotating Center		Set the X-axis value of rotating center.
Y of Rotating Center		Set the Y-axis value of rotating center.
Move to the Center		Move the object to the center of working area.

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1.7.7 Dimension Bar

The Dimension Bar allows users to set the object's datum point, shift the object or change the object's dimension and shape, see Fig.1.7.07.

Move 

Set the absolute or relative position.

Rotate 

Set the rotary angle and rotary center position.

Aslope 

Set the aslope angle

Scale 

Set the scale of the object

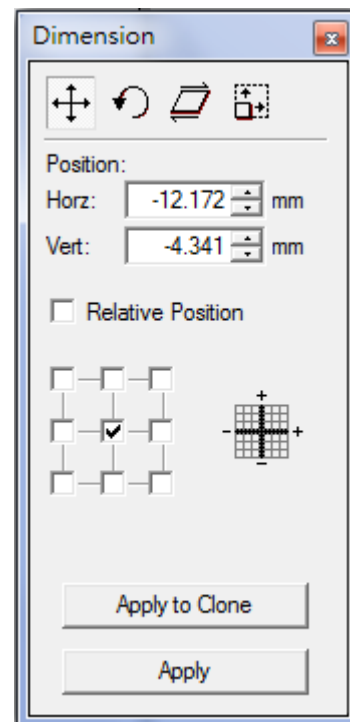


Fig. 1.7,07

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1.7.8 Object Property Bar












The followings are the introductions of Object Property Bar.

1.7.8.1 Page Tool Bar

The Page Tool Bar will be shown on screen when there is no object been selected, see Fig.1.7.08.



Fig. 1.7.08

Origin X		The X-axis value of start point of working area.
Origin Y		The Y-axis value of start point of working area.
Page Length		The length of working area.
Page Width		The width of working area.
Change the Unit		The unit of the ruler (mm or inch).
Trim X		Edit the trimming base of X.
Trim Y		Edit the trimming base of Y.
Grid X		Edit the X grid line.
Grid Y		Edit the Y grid line.
Open the Options Dialogue		Click this button to enter the Options page.
Show or Hide the Property Table		Click this button to show or hide the Property Table.

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1.7.8.2 General Tool Bar

The General Tool Bar will be shown on screen when select a non-text object, see Fig.1.7.09.

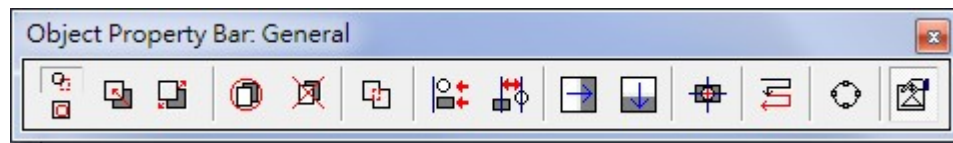


Fig. 1.7.09

General Selection		The selected object is in general situation.
Transparent Selection		The selected object is been grouped.
Combine		Combine two or more objects into one. This function allows several objects to share the same property settings.
Break		Divide a combined object into several individual objects.
Group		Classify two or more objects into one group. This function allowseach object to have its own property settings.
UnGroup		Cancel the group effect of an object.
Welding		Combine two or more objects and eliminate the overlapping lines.
Alignment		Align the selected objects to the assigned position.
Distribute		Distribute the selected objects (at least 2) based on the assigned setting.
Mirror Horizontally		Invert an object on its horizontal axis.
Mirror Vertically		Invert an image on its vertical axis.
Move to the Center		Move the selected object to the center of working area.
Sort		Combine the objects which vertex are not connect to each other first, and then using this function to sort these confused objects
Transfer to Curve		Transfer anun-curved object into a curve.
Show or Hide the Property Table		Click this button to show or hide the Property Table.

1.7.9 Mark Sample Bar

Open the Mark Preview function (Please refer to “Practical Functions” Chapter 5 Sec. 1 “Mark Preview”).

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1.7.10 Make Font Bar

Allow users to create a new font type, see Fig.1.7.10.



Fig. 1.7.10

	Enter or Exit Make Font mode.
	Using the default edge to set the new font.
	Adjust the right and up edge of the font.

1.7.11Text Tool Bar

When select a text object, the Text Tool Bar will also be shown on the screen, see Fig.1.7.11.

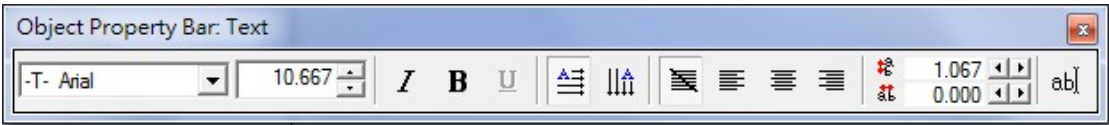


Fig. 1.7.11

Font		Select font.
Size		Adjust font size.
Italic Style		<i>Italic.</i>
Bold Style		Bold Style.
Underline		<u>Underline.</u>
Hori. Arrangement		Horizontal text.
Vert. Arrangement		Vertical text.
None alignment		None alignment.
Left alignment		Left alignment.
Center alignment		Center alignment.
Right alignment		Right alignment.
Line Pitch		Space between each line.
Text Pitch		Space between each character.
Edit Text		Set up the content of the text.

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1.7.12 Vector Box

Provide several welding choices for users to apply, see Fig.1.7.12.

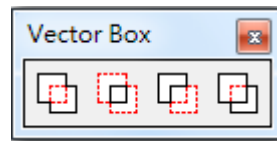


Fig. 1.7.12

Application

Fig.1.7.13 is the original appearance. The first object in the “Object Browser” is the main object. Take Fig.1.7.14 for example, the circle is the main object. If users want to change the objects’ order, please use “Reverse” function.

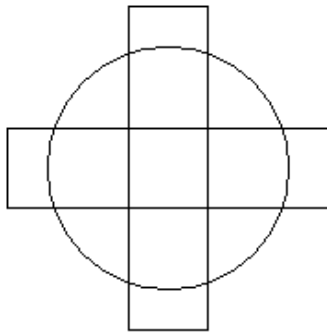


Fig. 1.7.13

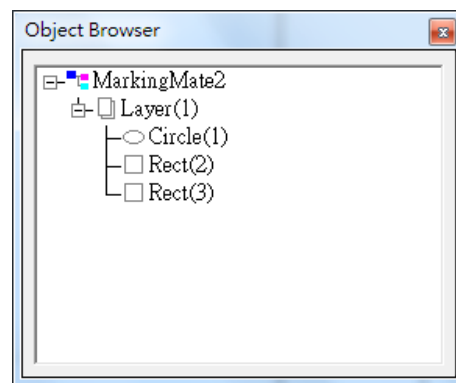


Fig. 1.7.14



Or: Retain the none-overlapping part of the objects, see Fig.1.7.15.

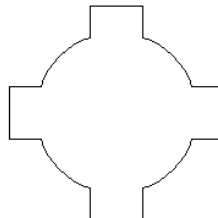


Fig. 1.7.15



And: Retain the overlapping part of objects, see Fig.1.7.16.



Fig. 1.7.16

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Subtract: Retain the none-overlapping part of main object, see Fig.1.7.17.

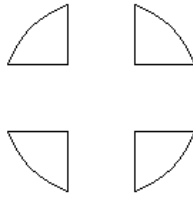


Fig. 1.7.17



Main: Retain the main object and the none-overlapping parts of the other objects, see Fig.1.7.18.

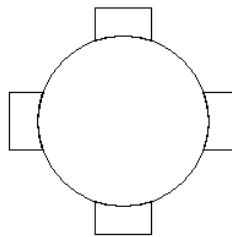


Fig. 1.7.18

1.7.13 Property Table

Click to open property table.

1.7.14 Mark Panel

The Mark Panel offers users to quickly execute some marking related functions, see Fig.1.7.19.

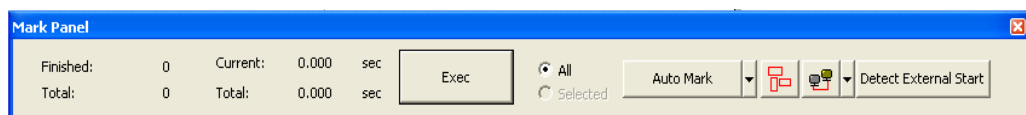




Fig. 1.7.19

Finished		Mark count at current job.
Total		Mark count of all jobs.
Current		Mark time cost at current pass.
Total		Mark time cost of all passes.
Exec		Start marking.
All		Mark all objects.

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Selected		Mark selected objects.
AutoMark		Automatically repeat marking.
Preview		Start guide light preview.
Automation		Click this button, the “Exec” button cannot be clicked and the marking can only be controlled by external signal. Click the arrow button will and a dialogue box of Automation option will be displayed (refer to section 1.1.6).
Detect External Start		Click to enable external trigger.

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1.7.15 Status Bar

Enable or disable the Status Bar which display on the bottom of the software, see Fig.1.7.20.

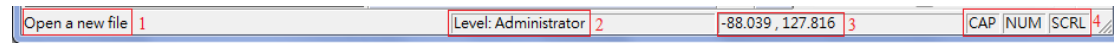


Fig. 1.7.20

Display the function description positioned by the mouse.

Show the user level.


The X, Y-axis value of the mouse position

1. When press the Caps Lock key, the CAP will appear.
When press the Num Lock key, the NUM will appear.
When press the Scroll Lock key, the SCRL will appear.

1.7.16 Desktop Mode

Change the setting Desktop Mode.

1.7.17 Composing Setting

Include tooltips, ruler, grid, and grid lock settings here. The toolbar with a  mark means that function has been opened.

1.7.17.1 Show Order

Use this function can see the mark order of each object, see Fig.1.7.21.

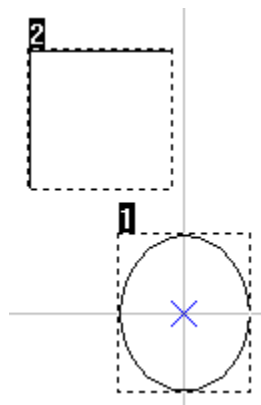


Fig. 1.7.21

1.7.17.2 Tooltips / Tooltips Setting

The tooltips setting descriptions please refer to 1.1.6.21.

1.7.17.3 Ruler / Ruler Setting

The ruler setting descriptions please refer to 1.1.6.19.

1.7.17.4 Grid / Grid Lock / Grid Parameter

The grid setting descriptions please refer to 1.1.6.20.

1.8 Window Menu

“Window” menu offers the following functions:

New	Create new window
Cascade	Allow all open windows overlapping
Tile	Show all open windows without overlapping
Arrange	Rearrange the windows
Close All	Close all windows

1.8.1 New

Create new window, and the content of the new window will be the same with the one user is using. Users can create multiple windows to view the different parts of the content. The modifications in any one of the window will also be displayed in other windows.

1.8.2 Cascade

Display all open windows in an overlapping way, see Fig.1.8.01.

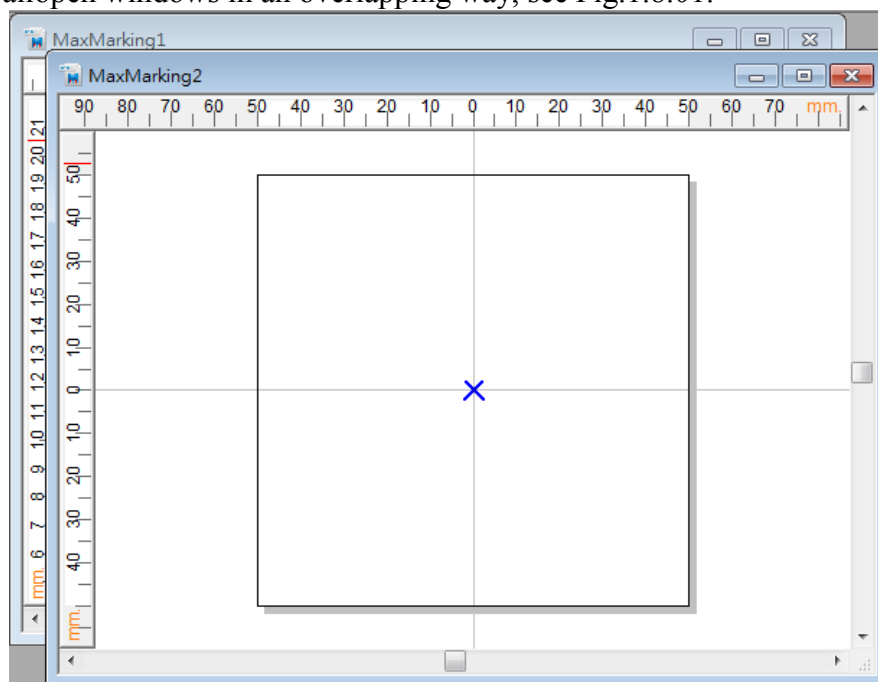


Fig. 1.8.01

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1.8.3 Tile

Show all open windows side by side, see Fig.1.8.02.

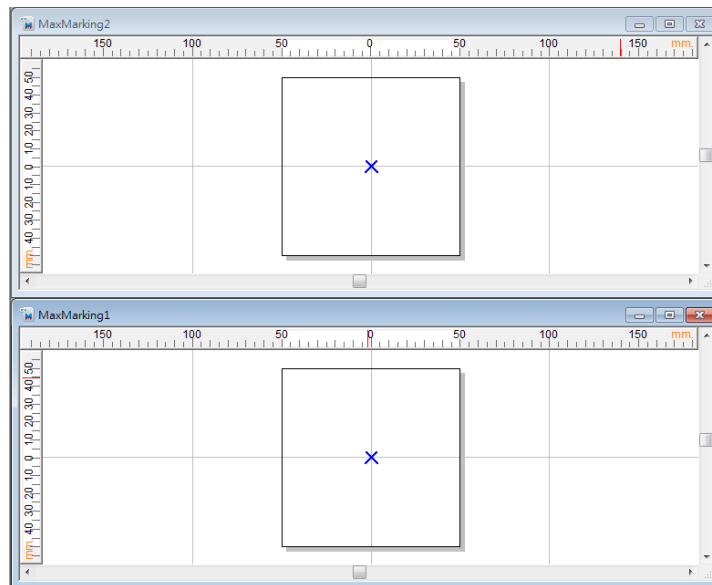


Fig. 1.8.02

1.8.4 Arrange

Rearrange the windows. The shrink window will be list at the bottom of **Halk P Fiber soft**, see Fig.1.8.03.



Fig. 1.8.03

1.8.5 Close All

Close all opened windows.

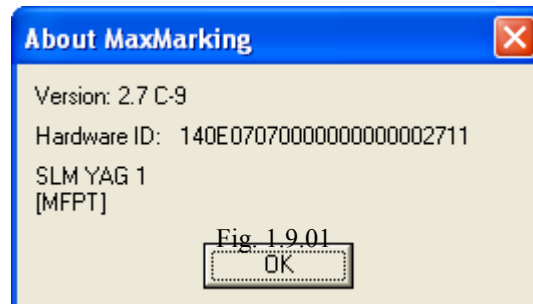
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1.9 Help Menu

“**Help**” menu will assist you to use this software

Help Topics Offers the manuals of the software.

About Halk P Fiber soft Show the current using version and driver of **Halk P Fiber soft**, see Fig.1.9.01.



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2. Objects

Halk P Fiber soft offers “Object Function” for users to draw graphics, texts, and barcodes. These functions include dot, line, arc, circle, rectangle, curve, curve brush, text, arc text, rect text, 1D barcode, 2D barcode, matrix, and spiral. Whatever an object being selected, its related property table will be displayed for setting.

Besides, click the right button of mouse after selecting an object will display a popup menu providing the normal use functions and additional functions. For example, select a curve, click right mouse button, a function of edit vertex will be added in the popup menu.

Select the Curve object.

The property table of the Curve object will be displayed as the left side of the picture below.

Click the mouse right button will see the popup menu include the “Add Vertex” function.

2.1 Common Settings

This section will discuss the common setting page of the Property Table that includes Frame/Fill, Output Parameter, CAM Parameter, and the Popup Menu.

2.1.1 Property Table

When an object in the Work Area being selected, the property table of this object will be displayed. Users can set up some marking related parameters over the dialogue box; mainly include the object’s frame/fill, marking parameter, and delay.

Frame/Fill	Adjust the color of the border and interior shading of a selected object.
Mark Parameter	This menu in the Property Table will allow you to edit the assigned speed, power, and frequency output of the laser machine.
Delay	Setting some parameters about marking speed and quality.

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2.1.2 Popup Menu

Select a general object and click the right button of the mouse, users will see a popup menu, see Fig.2.1.01.

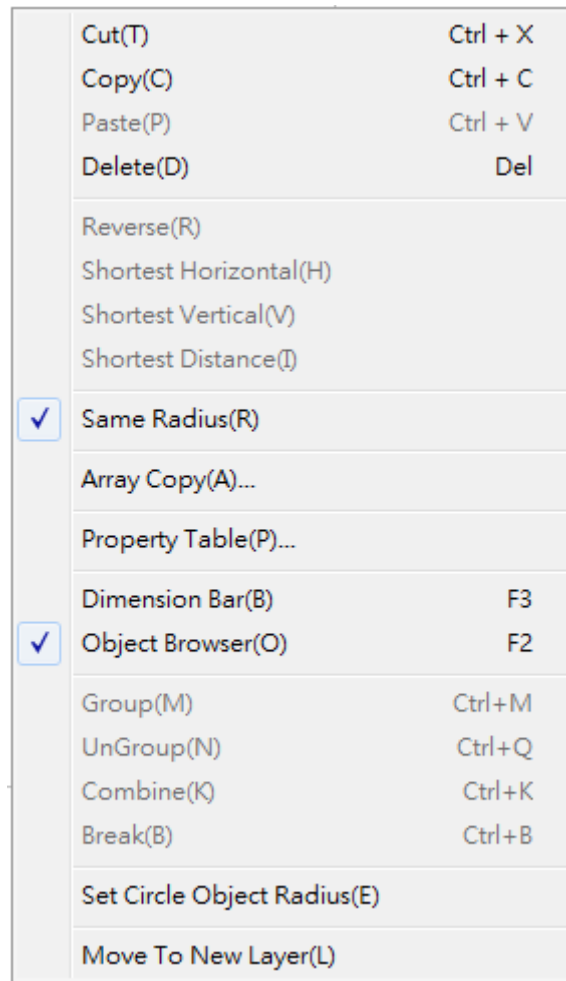


Fig. 2.1.01

Cut	Remove selected data and store it in the clipboard for future use
Copy	Duplicate selected data and store it in the clipboard for future use
Paste	Attach data from the clipboard to the current document
Delete	Delete and remove the selected data
Reverse	Reverse sorting mark order
Shortest Horizontal	Sorting mark order by the shortest horizontal direction
Shortest Vertical	Sorting mark order by the shortest vertical direction
Shortest Distance	Sorting mark order by the shortest distance of object center
Same Radius	Make the circle become the same radius

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Array Copy	Execute the array copy function
Property Table	Show the Property Table of the object
Dimension Bar	Enable/disable Dimension bar
Object Browser	Enable/disable Object Browser
Group	Group selected object
Ungroup	Ungroup selected group
Combine	Combine several objects into one object
Break	Break one object into several objects
Set Circle Object Radius	Modify circle that radius same as original radius to modified radius.
Move To New Layer	Move selected objects to new layer

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2.2 Create Objects

Create objects such as line, arc, circle, rectangle, curve, curve brush, text, arc text, Rectangle Text, 1D barcode, or 2D barcode.

Vector	Draw a point.
Line	Draw a straight line.
Arc	Draw an arc.
Circle	Draw a circle or oval.
Rectangle	Draw a square or rectangle.
Curve	Draw a curve.
Curve Brush	Draw a freehand line using the mouse.
Text	Insert a text object.
Arc Text	Insert an arc text object.
Rectangle Text	Insert a rectangle text object.
1D Barcode	Create a 1D barcode.
2D Barcode	Create a 2D barcode.
Matrix	Create a matrix object.
Spiral	Draw a spiral object.

3. Property Table

All objects have their own unique properties. These properties define how each specific object or each group of objects be displayed or how they will be marked.

NOTE: Any modification of the property will take effect after users click “Apply” button. Users can also click “Apply All” after modify several property pages to make sure all the changes are effective.

The Property Table contains the following five portions.

System	Adjust system-related parameters.
Marking Parameter	Adjust marking-related parameters.
Object	Adjust general object-related parameters.
Layer	Set the layer-related functions.

3.1 System-Related Property Table

Users can edit the system-related property table when there has no object been selected. There are five setting pages under system-related property table.

3.1.1 Work Area

The size of f-theta lens will affect the working area. If it is not properly adjusted, center drifting and distortion might be caused. Adjust the parameters carefully, and the marking result will be extremely similar to the users' design, see Fig.3.1.01.

Lens

Users can select the lens they want to use from here.

Correction/ Lens Manager

This button is used for lens correction or lens management. Please refer to “Practical Functions” Chapter 4 “Lens Correction”.

Scale X/Y

If the scale is too small, please enter a number larger than 100 (because unit is percentage); on the contrary, please enter a value smaller than 100.

X Offset / Y Offset

If the position of marking result has 5mm shift to the right side, users can enter -5mm in the X column. The other situations are the same.

Rotate

Set the angle of the marking result to fit the marking platform when the platform or work piece cannot be placed appropriately.

Galvo Direction:

X reverse / Y reverse / XY exchange

Provides X reverse, Y reverse, and XY exchange for users to apply when they need to adjust the axis' direction of working area.

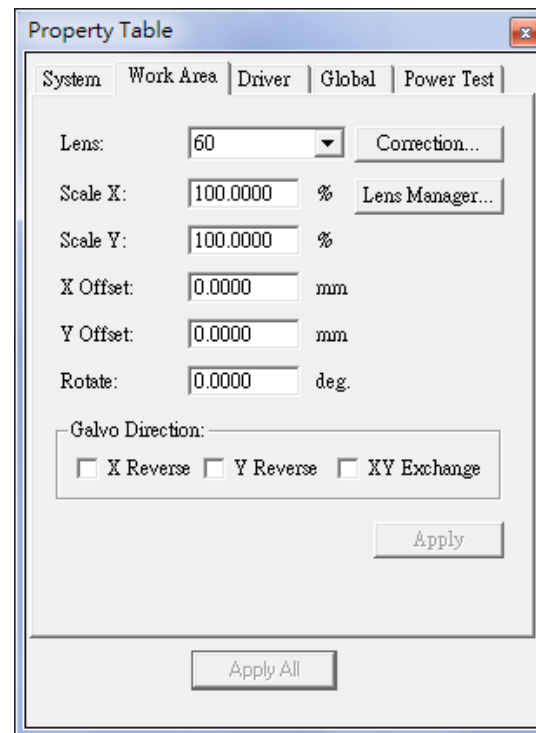


Fig. 3.1.01

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3.1.2 Driver

The page displays the driver's name and version, see Fig.3.1.02.

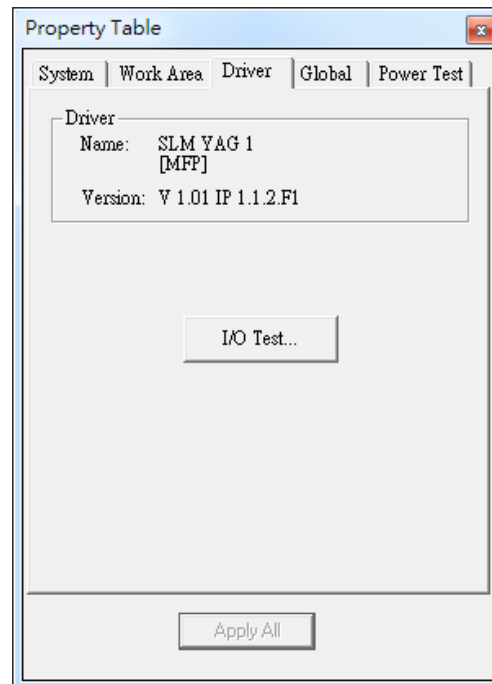


Fig. 3.1.02

I/O Test

Press the button of "I/O Test", a dialogue box like Fig.3.1.03 will be displayed to show the input and output status. The name of the I/O point can be assigned by the user. Please refer to Appendix A for more details.

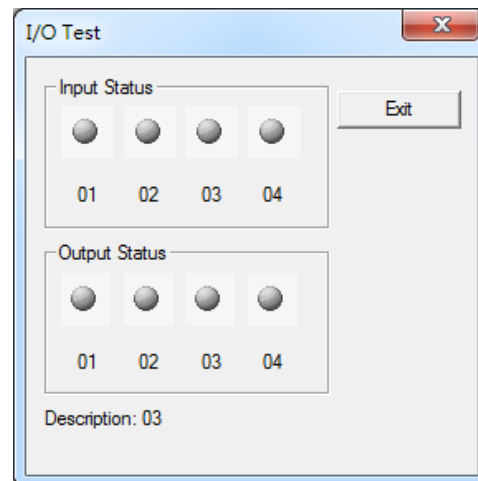


Fig. 3.1.03

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3.1.3 Global

The Global Property Page shows like Fig.3.1.04.

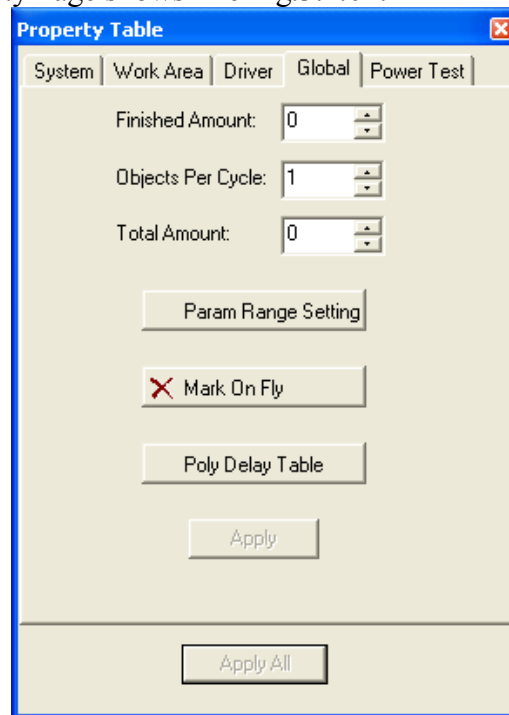
The 'Property Table' dialog box has a blue title bar with a close button. It contains five tabs: 'System', 'Work Area', 'Driver', 'Global' (selected), and 'Power Test'. Under the 'Global' tab, there are three numeric input fields: 'Finished Amount' with a value of 0, 'Objects Per Cycle' with a value of 1, and 'Total Amount' with a value of 0. Below these fields are four buttons: 'Param Range Setting', 'Mark On Fly' (which has a red 'X' icon), 'Poly Delay Table', and 'Apply'. At the bottom of the dialog is an 'Apply All' button.

Fig. 3.1.04

Finished Amount: Enable users to record how many work pieces they have already marked.

Objects Per Cycle: Set the marking times of one marking cycle. For example, suppose this value is 5, then it will automatically mark 5 times when execute marking. If execute marking again, it will also mark 5 time in this cycle, and the finished amount will shows 10 when this cycle complete.

Total Amount: Total marked count by this machine.

Param Range Setting: Set the range of speed, power and frequency, see Fig.3.1.05.

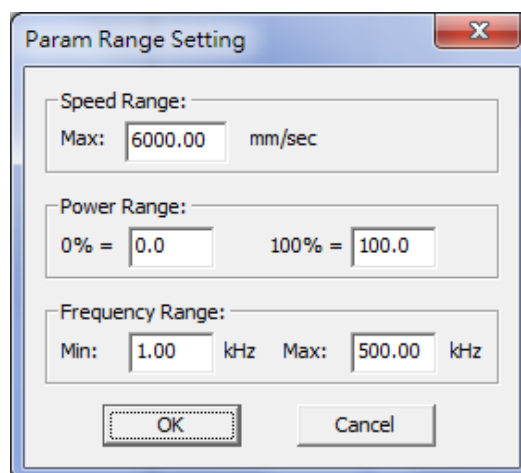

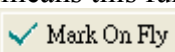
The 'Param Range Setting' dialog box has a blue title bar with a close button. It contains three sections: 'Speed Range' with a 'Max' input field set to 6000.00 and the unit 'mm/sec'; 'Power Range' with '0%' = 0.0 and '100%' = 100.0; and 'Frequency Range' with 'Min' = 1.00 kHz and 'Max' = 500.00 kHz. At the bottom are 'OK' and 'Cancel' buttons.

Fig. 3.1.05

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Mark On Fly

The button  means this function is disabled. When it is enabled, the button will become to this . Please refer to “Practical Functions” Chapter 7 “Mark On Fly”.

Poly Delay Table:

Press the “Poly Delay Table” button will show a dialogue box like Fig.3.1.06.

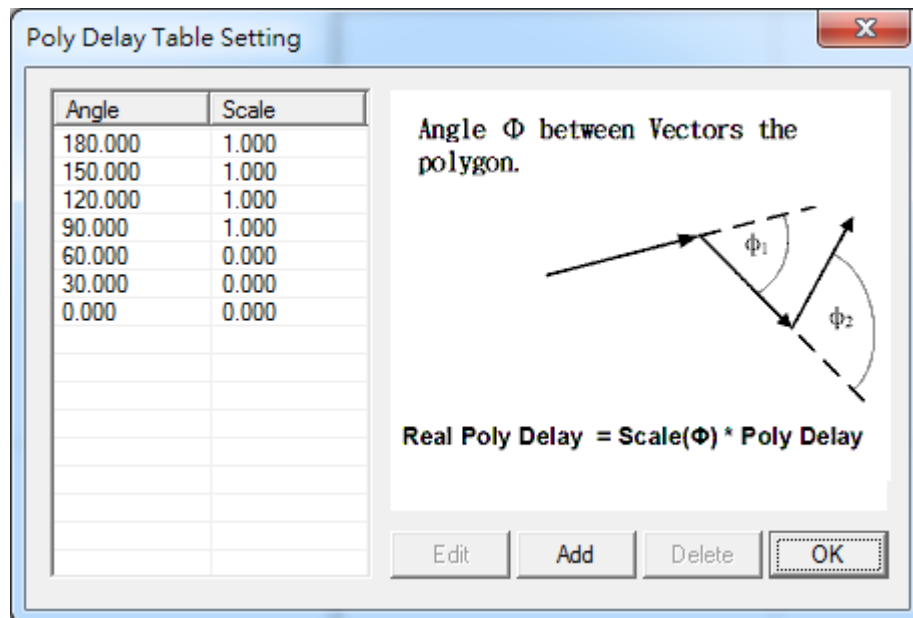


Fig. 3.1.06

The value of Angle and Scale will affect the Poly Delay under the Delay page of Property Table (refer to section 3.2.3). The following is the formula of delay time.

$$\text{Delay Time}(\phi) = \text{scale}(\phi) \circ (\text{Poly Delay})$$

Scale(ϕ) is a ratio value between 0 and 2. Please note that ϕ is a supplementary angle of an included angle, and it is calculated as Fig.3.1.07 and Fig.3.1.08.

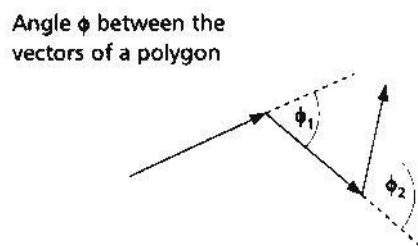


Fig. 3.1.07

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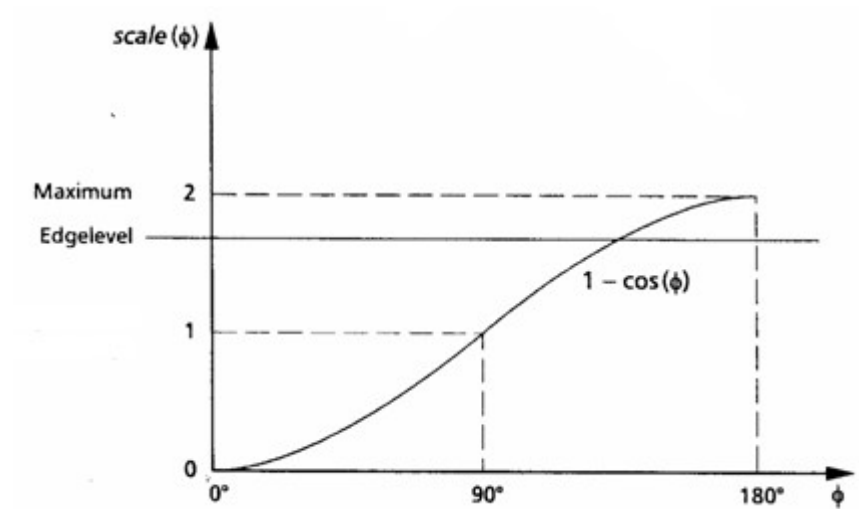


Fig. 3.1.08

Click “Add” button and a dialogue box “Poly Delay Table Editor” will pop up, see Fig.3.1.09 for users to enter the new value of angle and scale. Besides, users can select a angle and click “Edit” to edit that angle.

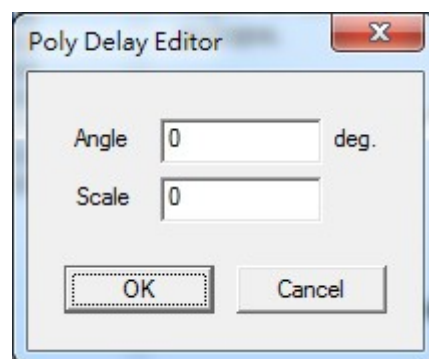


Fig. 3.1.09

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3.1.4 Power Test

This function is for users to realize the difference between the setting power and real power output through opening the laser for a period of time for users to measure the power, see Fig.3.1.10.

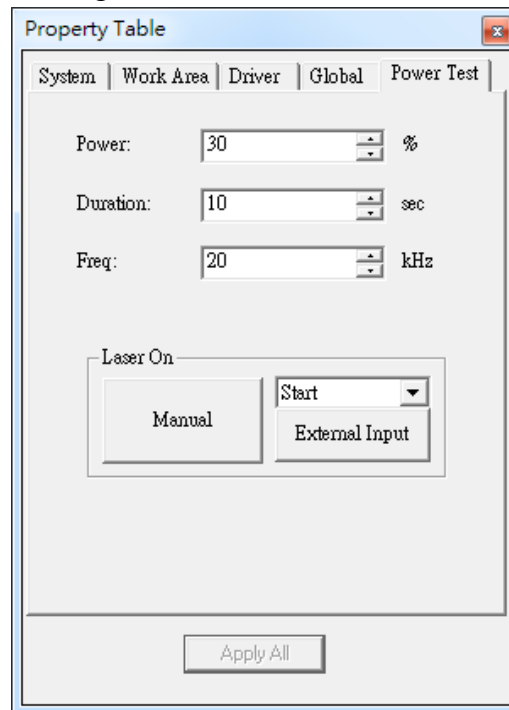


Fig. 3.1.10

Power

For MaxMarking laser, this value means the ratio of power. For example, if the maximum power 10W and the value is 30%, then the output power should be 3W.

Duration

The beam out duration of laser. Unless users shut down the laser, the laser will keep opening till the setting duration.

Freq.

Set the frequency of laser.

Laser On

Click the “**Manual**” button or select an external signal input from the list and then click “**External Input**” button to start the laser.

3.1.5 System

This page shows the total objects of the selected layer, see Fig.3.1.11.

Halk P Fiber soft

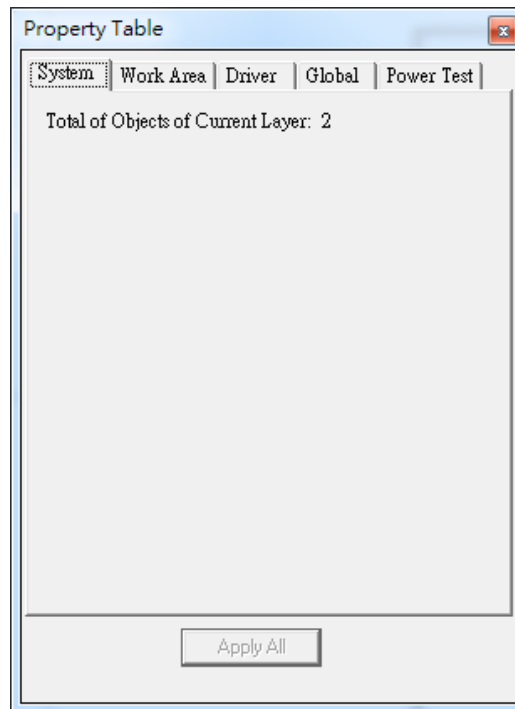


Fig. 3.1.11

3.2 Mark-related Property Table

When an object in the Working Area is being selected, the property table of this object will be displayed. Users can set up some marking related parameters such as the object's frame/fill, mark parameter, delay, array copy, and motion setup.

3.2.1 Mark Parameter

Provide maximum five marking passes for users to set. Users can edit different marking parameters for each pass. Fig.3.2.01 shows the Mark Parameter Page under Normal Mode. Fig.3.2.02 is the Mark Parameter Page under Dot Mode. Please refer to “Practical Functions” Chapter 11 “Pen Number Manager”.

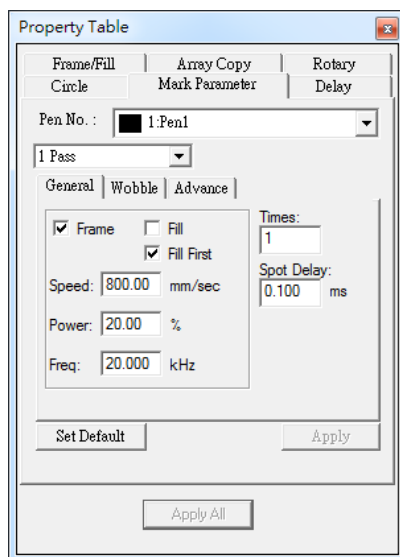


Fig. 3.2.01

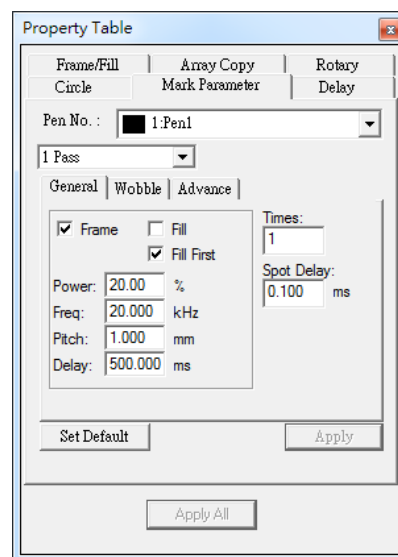


Fig. 3.2.02

General

Frame/ Fill

Decide whether to mark the object's frame or fill the object at each pass.

Fill First

Do filling first when marking.

Speed

Set the marking speed. This value cannot exceed the maximum speed of the system.

Power

Current Power percentage.

Frequency

The cycle of laser's trigger.

Pitch (Under Dot Mode)

The gap between each dot.

Delay (Under Dot Mode)

The waiting time laser needs to start marking after moving to next dot. Mode.

Times

Set the marking times for a work piece using the same marking parameters. If this value is 3, the object will be marked on the work piece three times at one process. If the value is 0, the object won't be marked.

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Spot delay

The required time for laser to mark a spot or the marking time for each pixel when marking image objects. If this value is 0.5ms that means each spot will be marked for 0.5ms.

Pulse Width

Set the pulse width (MFPT type only).

Wobble

Mark by spiral type and make the line segment become thicker, see Fig.3.2.03.

Thick(W)

The diameter of the circle.

Overlap

Higher overlap percentage will get thicker line segment, see Fig.3.2.04.

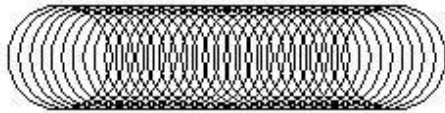


Fig. 3.2.04

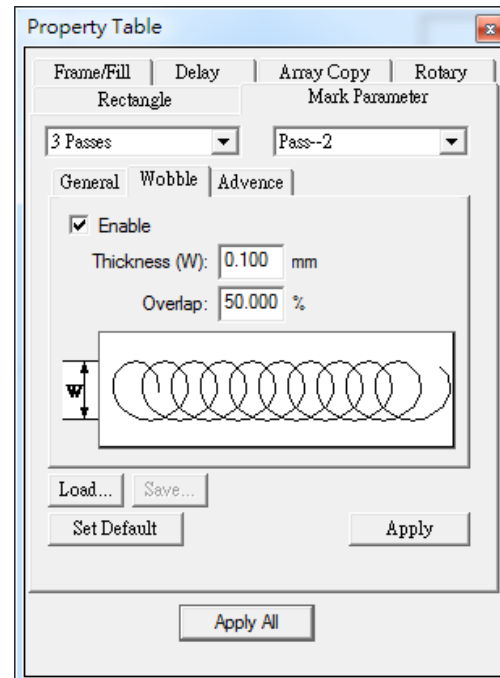


Fig. 3.2.03

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Advance

Provide users some further mark settings, see Fig.3.2.05 and Fig.3.2.06.

Mark End Add Spot

Set the Spot Delay to mark a spot again at the mark end position.

Speed Mode

Users can select to use Dot Mode or Normal Mode when marking.

Repeat

Set the repeat times for each dot.

Time Interval

The time interval between each dot on one spot.

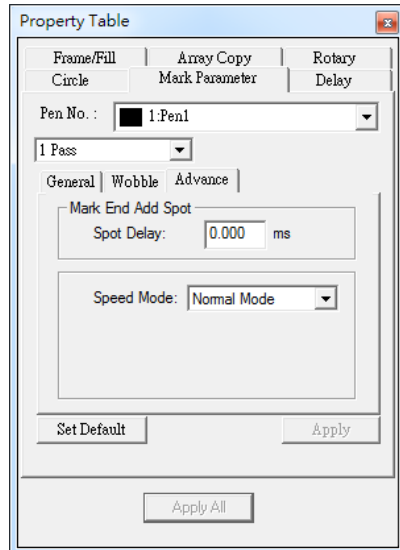


Fig. 3.2.05

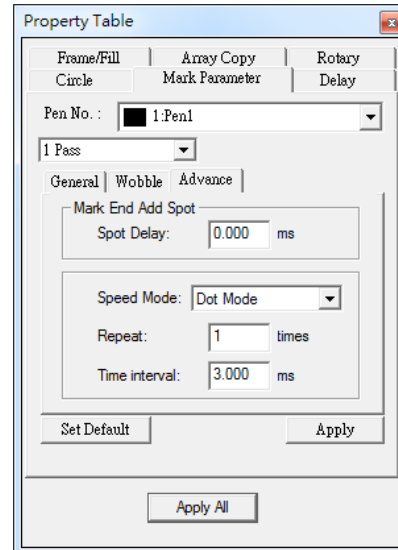


Fig. 3.2.06

Load

Load the previous saved parameter setting.

Save

Save the current setting.

Set Default

Set the current setting as the default setting.

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3.2.2 Frame/Fill

Set the frame color, fill color and fill style, see Fig.3.2.07.

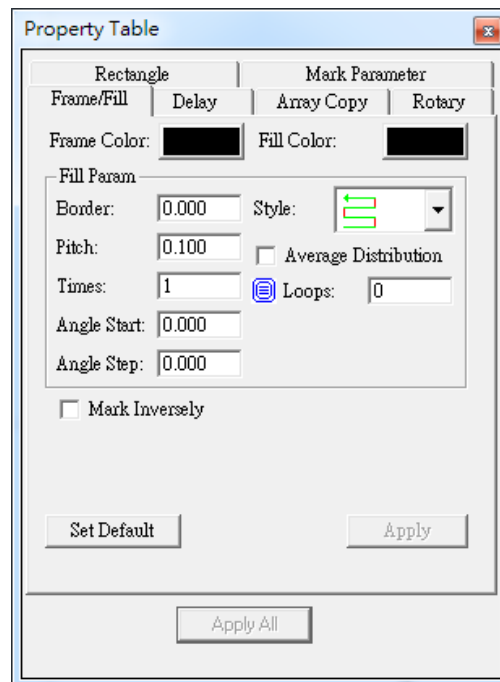


Fig. 3.2.07

Frame/ Fill Color: Select the frame of fill color.

Fill Param: Modify the related parameters when fill.

Border: The distance between hatch line and the frame.

Pitch: The distance between each hatch line.

Average Distribution: Distribute the hatch line averagely based on the pitch and the frame.

Times: The fill repetition times.

Angle Start: The start angle of each hatch line. Fig.3.2.08 shows the fill representation when this value is 45°.

Angle Step: The progressive angle of each hatch line. Fig.3.2.09 show the fill representation when Angle Start is 45° and Angle Step is 90°.

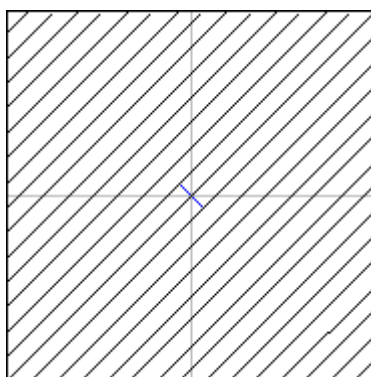


Fig. 3.2.08

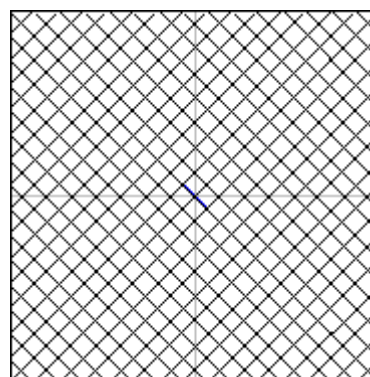



Fig. 3.2.09

Style: Decide the traveling path mode of laser when fill. There are five styles for users to select.

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 **Loops:** Decide the amount of loop created inside the object according to the pitch. The hatch line will be filled in the loop. Fig.3.2.10 shows the hatch representation when this value is 2.

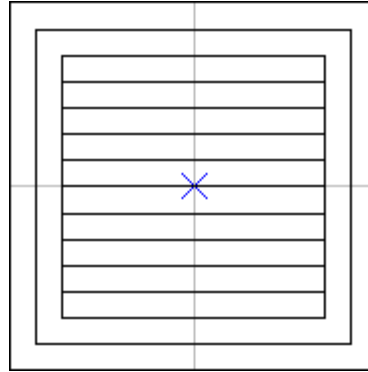



Fig. 3.2.10

* If choose  mode, users can only set pitch parameter.

Mark Inversely: Only when the object is Text, Arc Text or Rect Text. The system will mark the non-text part instead of mark the text object when using this function.

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3.2.3 Delay

Adjust the delay time parameters which affect the mark quality, see Fig 3.2.11.

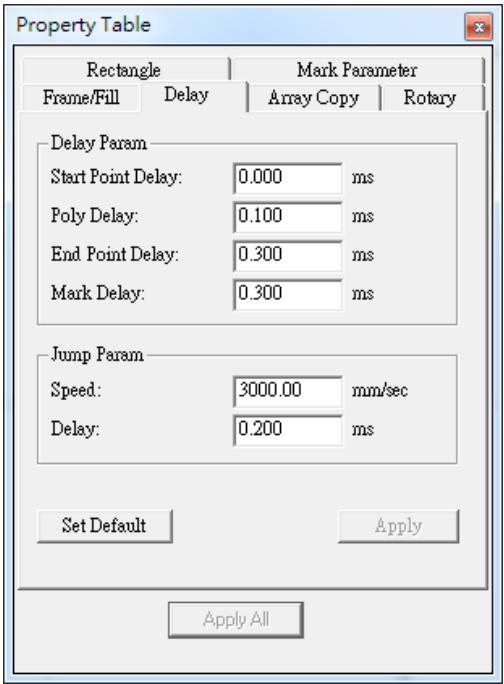


Fig. 3.2.11

Delay Param: Provides four parameters for users to regulate. Users can adjust the required delay time based on the mark result.

Start Point Delay:

The time difference between the lens starts moving and the laser starts hitting. The default value is 0. It can be set depending on users needs. This value can also be negative, and it means the lens will start moving after the laser hitting through the setting time. Table 3.1 shows the different result under different Start Point Delay Time.

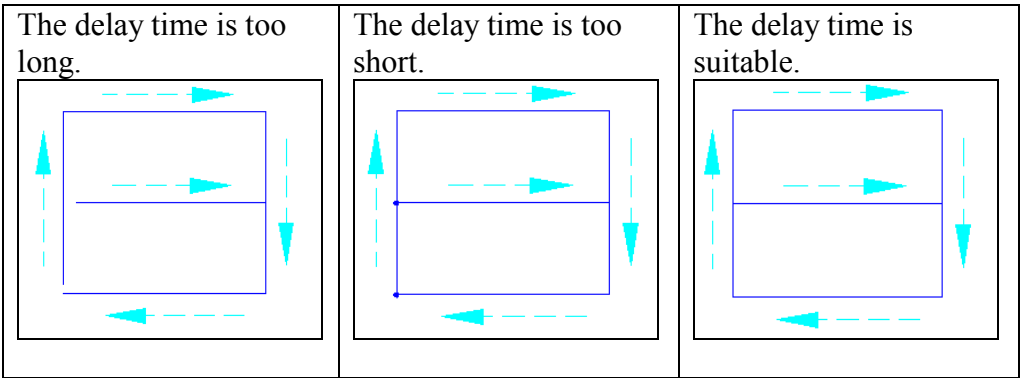


Table 3.1

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Poly Delay:

The time value will affect the mark quality of the connection part of two segments.
Table 3.2 shows the mark result under different settings.

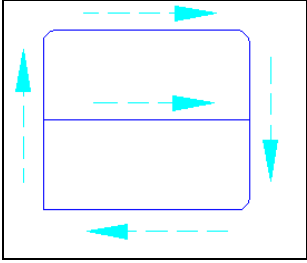
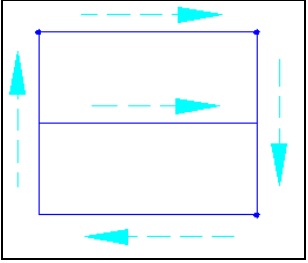
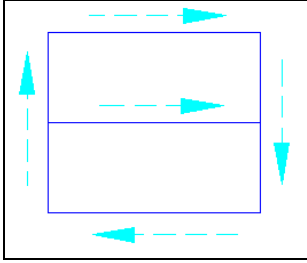
The delay time is too short.	The delay time is too long.	The delay time is suitable.
		

Table 3.2

End Point Delay:

The time value will affect the accuracy on the ending of the object. Table 3.3 shows the mark result under different settings.

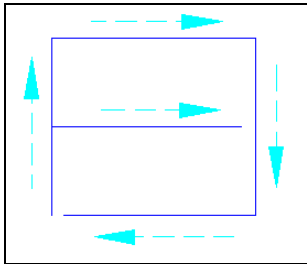
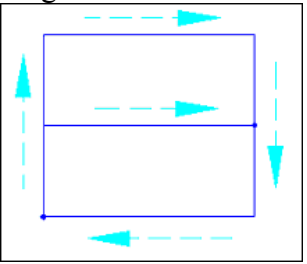
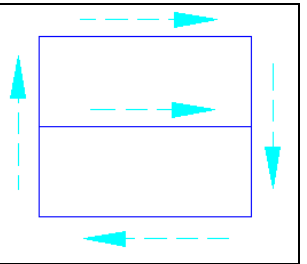
The delay time is too short.	The delay time is too long.	The delay time is suitable.
		

Table 3.3

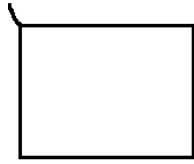
Mark Delay:

The delay time that ensures the scanner will reach the assigned position before the next command (mark or jump) starts. This delay time includes the End Point Delay.

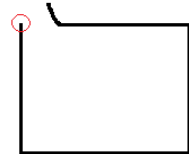
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End Point Delay and Mark Delay

If there is no tail marking at the marking end stage, end point delay and mark delay are totally equal. On the other hand, if there is a tail seen as the figure below:



User will need to adjust mark delay. First of all, set both end point delay and mark delay to 0. This time the result will be seen as below:



Then enlarge the mark delay until the tail is disappeared. Seen as below:



At this moment synchronously add end point delay and mark delay. Until rectangle start point and end point is the same point. See as below:



Jump Param: Set the parameters about the moving of lens.

Speed: The moving speed of lens. The maximum value must refer to the manual of the lens.

Delay: The waiting time laser needs to start hitting after the lens moves to the mark position.

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3.2.4 Array Copy

This function uses the selected object as the main body to copy and create the same new objects. However, the new object is a virtual object, which means the Object Browser will only show the original object. Users can only modify the original object, and the other virtual objects will be changed according to the change of original one. Nevertheless, using “Break” function will make the virtual objects become single objects and allow users to edit them individually. There are two array copy mode for users to select: By Matrix and By Circle.

Array Copy Mode: By Matrix

The Property Table of this mode shows like Fig.3.2.12, and Fig.3.2.13 is the result under this mode.

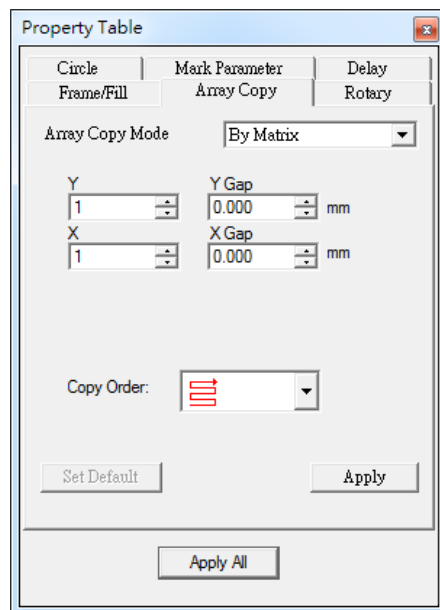


Fig. 3.2.12

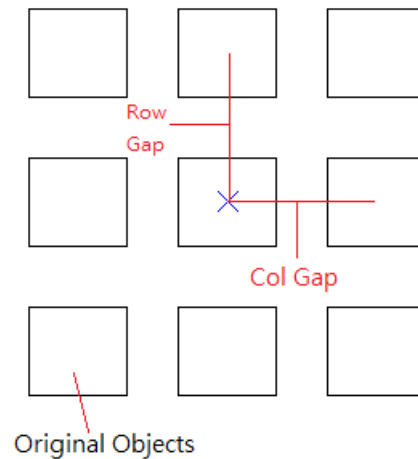


Fig. 3.2.13

X / Y: The amount of objects in a X/ Y direction.

X Gap/ Y Gap: The vertical and horizontal distance between the centers of each object.

Copy Order: Select the copy order of the object. There are four types to choose.



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Array Copy Mode: By Circle

The Property Table of this mode shows like Fig.3.2.14, and Fig.3.2.15 is the result under this mode.

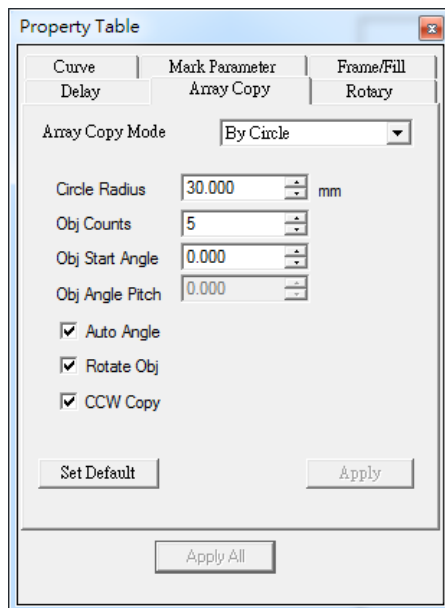


Fig. 3.2.14

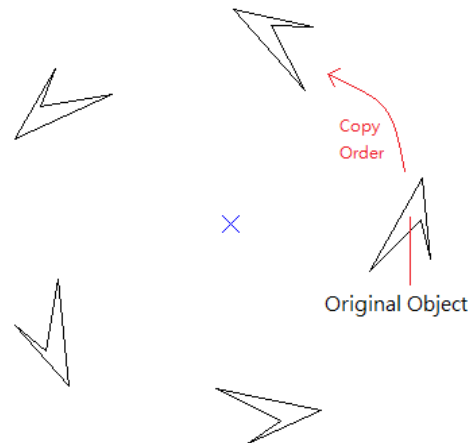


Fig. 3.2.15

Circle Radius: Edit the size of the circle.

Obj Counts: The amount of the objects.

Obj Start Angle: Set the start angle of the first copy object.

Obj Angle Pitch: Arrange the objects according to the input pitch degree and the center of the object.

Auto Angle: Arrange the objects averagely as a cycle. This option cannot be used with Obj Angle Pitch at the same time.

Rotate Object: Decide to rotate the object or not. Fig.3.2.16 uses this function, but Fig.3.2.17 doesn't.

CCW Copy: Decide to use the clockwise copy order or counterclockwise copy order. The default is counterclockwise.

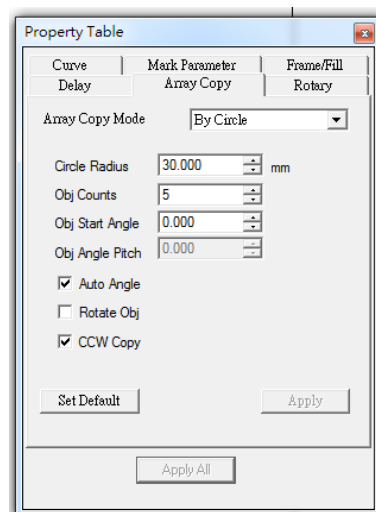
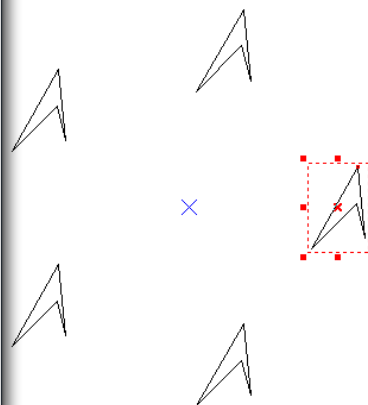


Fig. 3.2.17



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3.2.5 Rotary

This page allows users to enable rotary marking for individual object.

Fig.3.2.18 is the property page when selecting a general object.

Enable

Allow users to enable or disable the rotary axis function.

Start Position

The initial angle of the rotary.

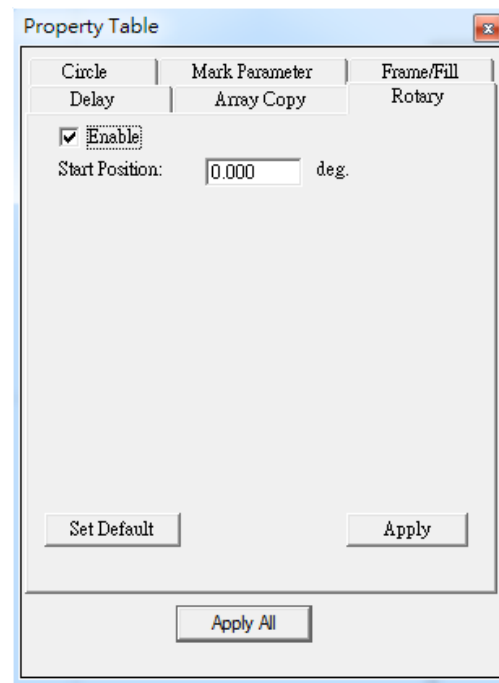


Fig. 3.2.18

Text Object

When a general text object has being selected, the Rotary Page has some particular options, like Fig.3.2.19.

Text option

Separate To Character

Separate the selected text into individual characters.

Pitch

The distance between each character.

Center: Calculate the pitch based on the center of the character, see Fig.3.2.20.

Edge: Calculate the pitch based on the edge of the character, see Fig.3.2.21.

Diameter: The software needs the diameter of the working-piece to calculate the pitch when select Edge mode.

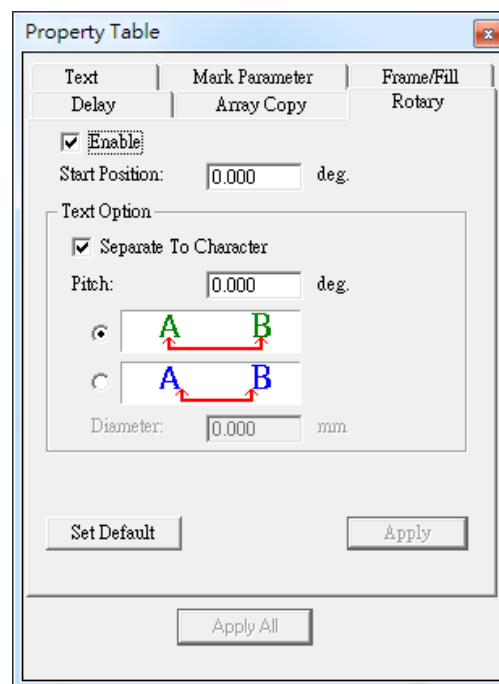


Fig. 3.2.19

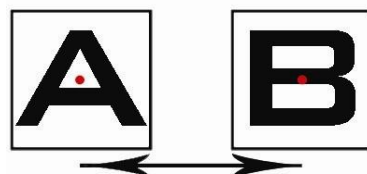


Fig. 3.2.20

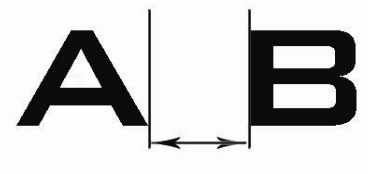


Fig. 3.2.21

3.2.6 Dimension

Please refer to Chapter “1.7.7” Dimension Bar.

3.3 Object-related Property Table

When an object in Work Area has being selected, the Property Table of this object will be displayed. Users are allowed to edit the parameters of this object through its own property page.

3.3.1 Curve

When create a curve which is not closed path, such as line, curve and curve brush, users can transform that curve into a closed path curve, see Fig.3.3.01.

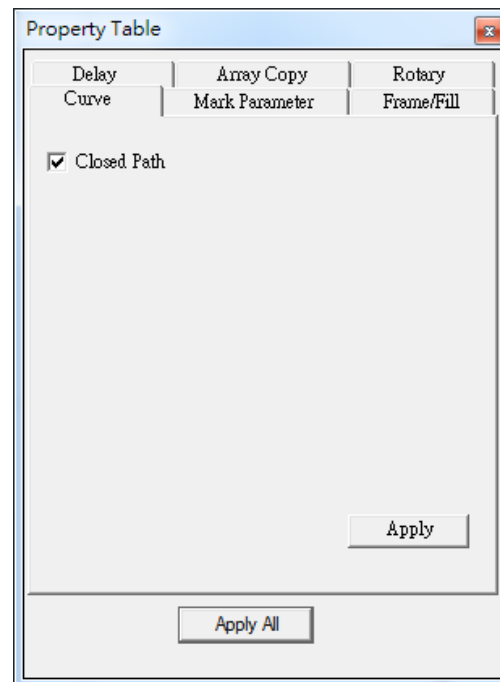


Fig. 3.3.01

3.3.2 Arc

Create an arc object, and its parameter page will show like Fig.3.3.02.

Center: Adjust the center position of the arc.

Radius: Adjust the radius of the arc.

Same as X: Make the radius of Y same as X.

Start Dot: Set the start point angle of the arc. X and Y value will change automatically following the angle.

End Dot: Set the end point angle of the arc. X and Y value will change automatically following the angle.

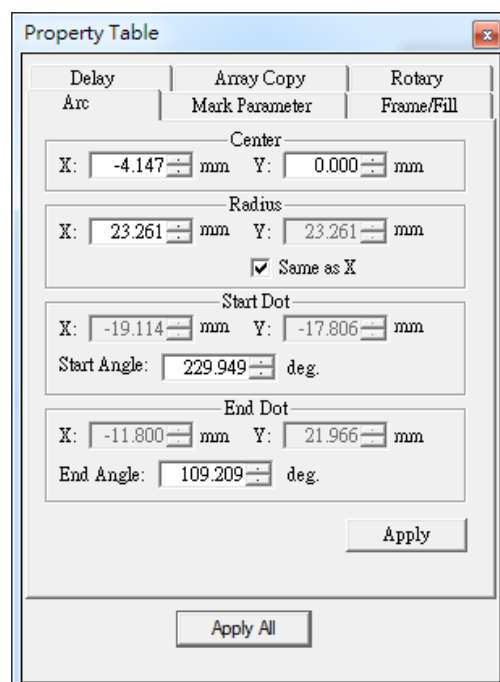


Fig. 3.3.02

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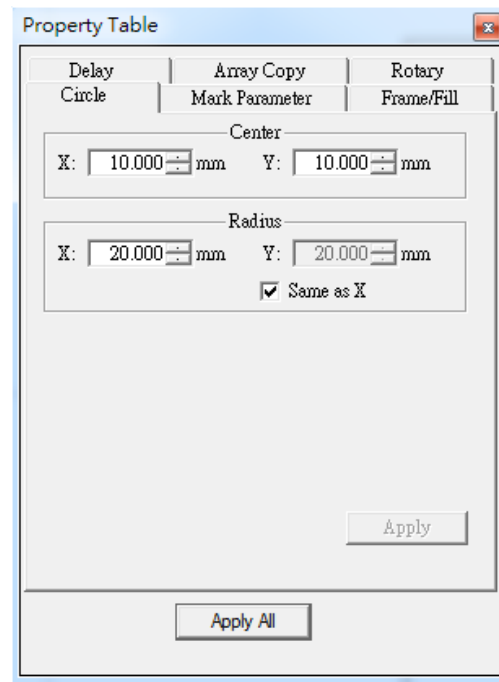
3.3.3 Circle

Create a circle object and the parameter page will show like Fig.3.3.03.

Center: Adjust the center position of the arc.

Radius: Adjust the radius of the arc.

Same as X: Make the radius of Y same as X.



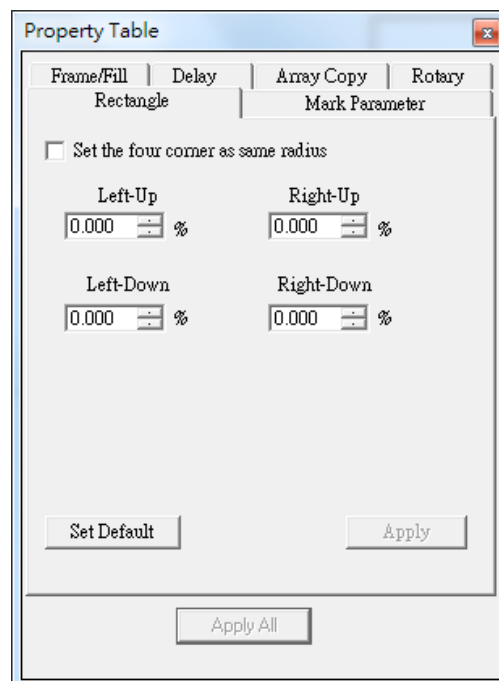
The 'Property Table' window for a 'Circle' object. It has tabs for 'Delay', 'Array Copy', 'Rotary', 'Circle', 'Mark Parameter', and 'Frame/Fill'. The 'Circle' tab is active. It contains two sections: 'Center' with X: 10.000 mm and Y: 10.000 mm, and 'Radius' with X: 20.000 mm and Y: 20.000 mm. There is a checkbox 'Same as X' which is checked. At the bottom are 'Apply' and 'Apply All' buttons.

Fig. 3.3.03

3.3.4 Rectangle

Create a rectangle object and the parameter page will show like Fig.3.3.04. Users can set the four corners of rectangle as circle cape. The radius of circle cape can be set individually or set as same radius.

Set the four corners as same radius: Corner radius is the radian of the rectangle's four angles. The radius is set according to the percentage of the rectangle's short side or the square's side, see Fig.3.3.05.



The 'Property Table' window for a 'Rectangle' object. It has tabs for 'Frame/Fill', 'Delay', 'Array Copy', 'Rotary', 'Rectangle', and 'Mark Parameter'. The 'Rectangle' tab is active. It contains a checkbox 'Set the four corner as same radius' which is unchecked. Below it are four percentage input fields: 'Left-Up' (0.000 %), 'Right-Up' (0.000 %), 'Left-Down' (0.000 %), and 'Right-Down' (0.000 %). At the bottom are 'Set Default', 'Apply', and 'Apply All' buttons.

Fig. 3.3.04

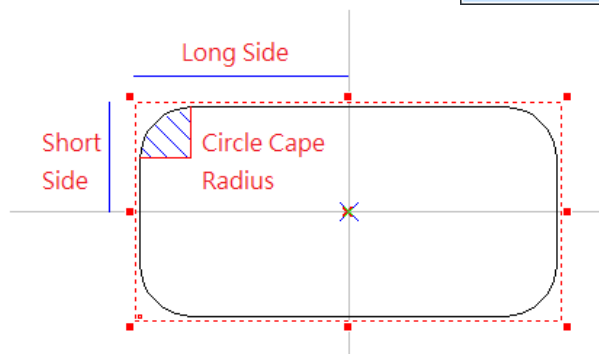


Fig. 3.3.05

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3.3.5 1D Barcode

Create a 1D Barcode object and the parameter page will show like Fig.3.3.06.

The screenshot shows a 'Property Table' dialog box with a tabbed interface. The '1D Barcode' tab is selected. The 'Code Type' dropdown is set to 'Code 39'. The 'Code Data' field contains '123456'. The 'Width Ratio' is set to '3.000'. A 'Code Rule' section contains the text 'Code data must less than 30 words'. There are checkboxes for 'Show Text' (checked), 'Invert' (checked), 'Check Digit' (checked), and 'Auto Text' (unchecked). A 'Set Font' button is next to 'Show Text'. A 'Quiet' field is set to '1' with a '%' symbol. A 'Manager' button is next to 'Auto Text'. At the bottom, there are 'Set Default', 'Apply', and 'Apply All' buttons.

Fig. 3.3.06

Code Type

There are several code types for users to select: Code 39, Code 128, Code 128A, Code 128B, Code 128C, Code 93, Code Bar, ITF, MSI Code, Us PosNet, UPC-A, UPC-E, EAN 8, EAN 13, UCC 128, EAN 128, FIM, Code 25 or ITF 25.

Code Data

Input the code data here.

Width Ratio

Set the ratio of narrow bar to wide bar. This value is between 2.0~3.0.

Code Rule

Display the special rule of selected code type.

Show Text

Decide to show the code data under barcode or not.

Set Font

Change the font, font style and font size of code data.

Invert

Invert the bar and space of the bar code. This application is when the work piece is black, see Fig.3.3.07.

Quiet

The size of quiet area when using Invert function, see Fig.3.3.07.

Check Digit

A check digit is calculated automatically and added.

Auto Text

Use auto text as the content of code data.

Manager

Manage the auto text.

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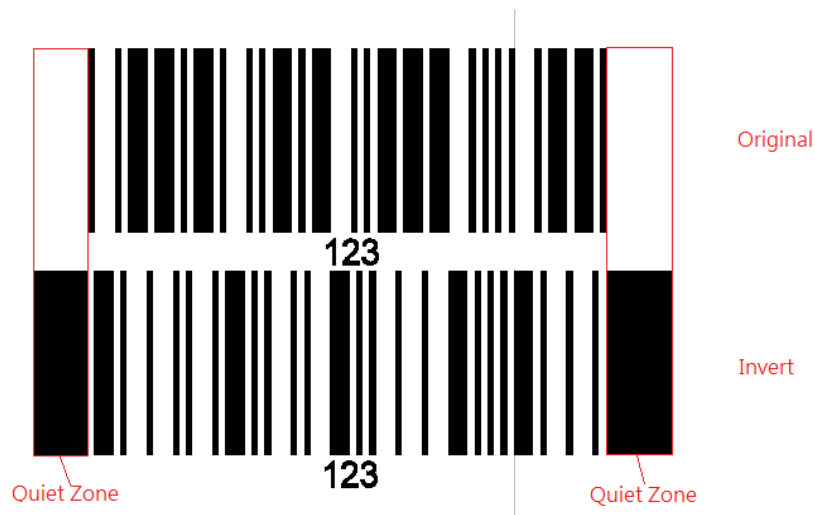


Fig. 3.3.07

3.3.6 1D Marking

Some marking-related settings, see Fig.3.3.08.

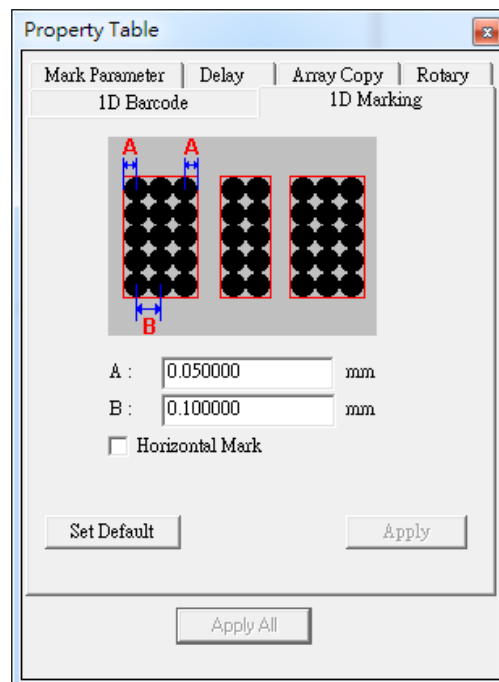


Fig. 3.3.08

A

The distance between laser spot center and the edge of barcode.

B

The distance between two laser spots (according to the spot center).

Horizontal Mark

Mark the bar code in horizontal way (generally is in vertical way).

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3.3.7 2D Barcode

Create a 2D Barcode object and the parameter page will show like Fig.3.3.09.

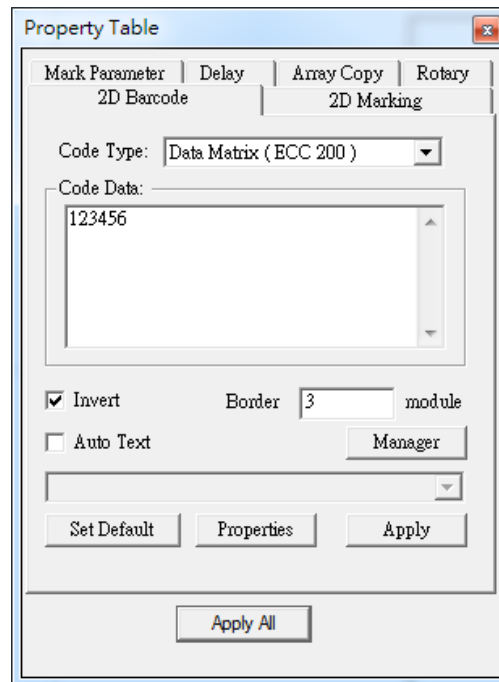


Fig. 3.3.09

Code Type

There are several code types for users to select: Data Matrix (ECC 000~140), Data Matrix (ECC 200), PDF417, QR Code, and Maxi Code, PDF417 Truncated 、 Micro PDF417 、 Micro QR Code 、 AZTEC.

Invert

Invert the bar and space of the bar code. This application is when the work piece is black, see Fig.3.3.10.

Border

The size of quiet area when using Invert function, see Fig.3.3.10.

Auto Text

Use auto text as the content of code data.

Manager

Manage the auto text.

Properties

Select the rectangular size and format of 2D Barcode.

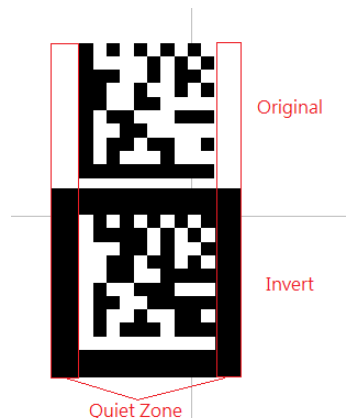


Fig. 3.3.10

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3.3.8 2D Marking

Some marking-related options, see Fig.3.3.11.

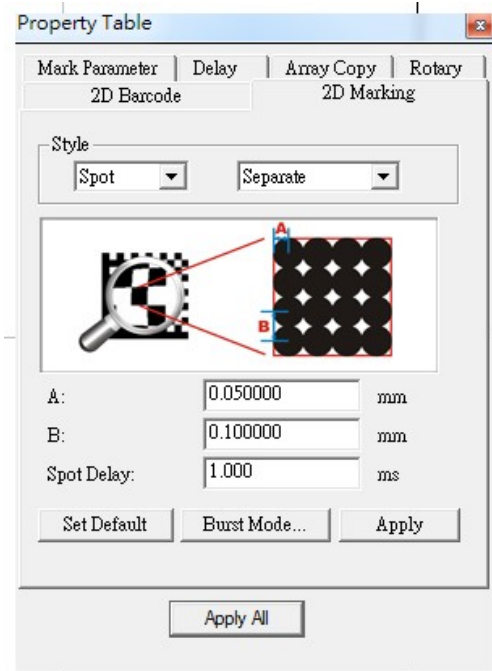


Fig. 3.3.11

Style

2D barcode is divided into many cells and has three mark style to mark each cell. Besides, in order to make the instruction more lucid, we consider that 2D Barcode has two parts: cell and row, see Fig.3.3.14.

	Spot: Mark each cell in spot manner.
	Line: Mark each cell in line manner.
	Rectangle: Mark each cell as a rectangle.
	Spiral: Mark each cell as a spiral.
	Circle: Mark each cell as a circle.
Custom	Custom: After user choosing Custom and press on Apply, will appear 2D Barcode toolbar . Clicking on to enter edit mode. If we draw as fig 3.3.12, after clicking on to leave edit mode, 2D barcode will be seen as like fig 3.3.13.

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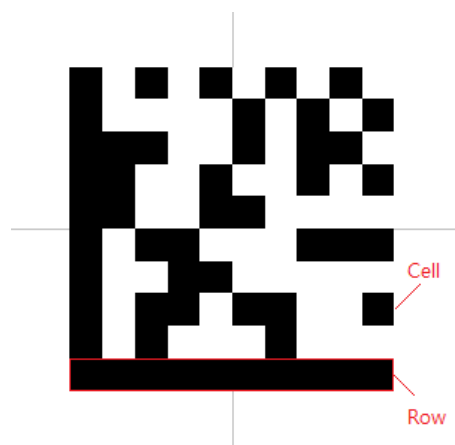
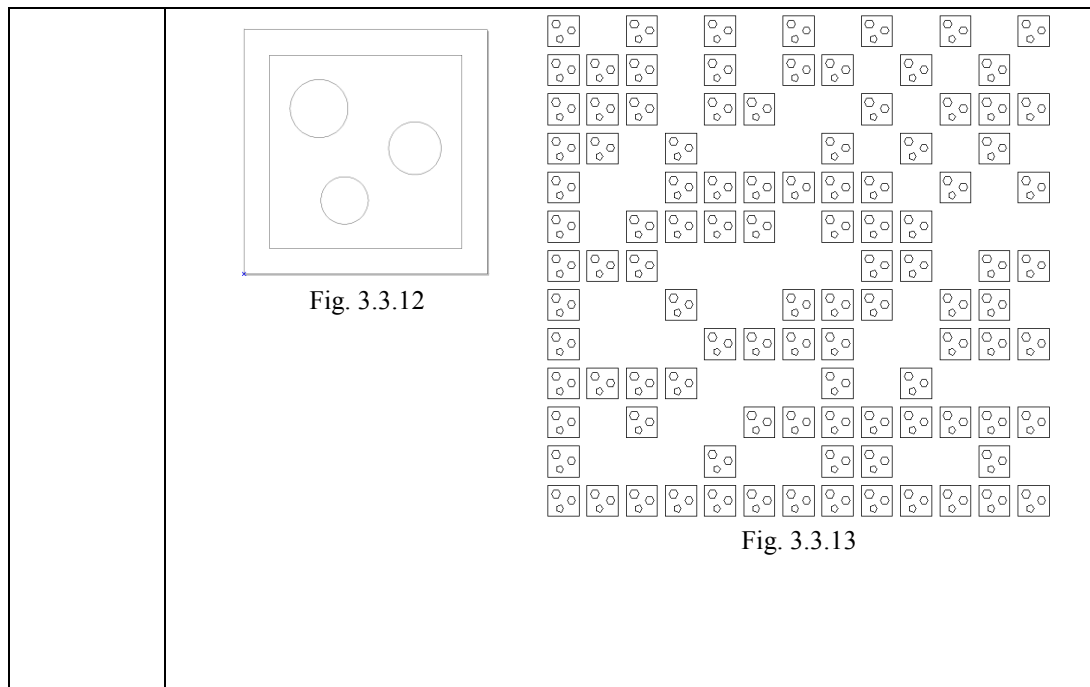


Fig. 3.3.14

Each style has two mark modes.

Spot and Rectangle Style

Orderly: Mark following the cell's and row's order.

Separate: Mark without following the cell's order. This method can avoid the blurred result caused thermal effects.

Line Style

Continuous: Consider all the cells on the same row as one unit and mark.

By Cell: Mark all the cells one by one and follow the row's order.

A: The distance between laser spot center and the edge of barcode.


B: The distance between two laser spots (according to the spot center).

Spot Style

Spot Delay: The required time for laser to mark a spot.

Burst Mode: Click "Burst Mode..." button the dialogue box of options will appear to set up the Burst Mode settings (please refer to 1.1.6.8).

Line Style

Non-Stop: Mark all the cells (By Cell) or each row (Continuous) by  style.

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Alternate Lines: Mark without following the row's order to avoid the blurred result caused thermal effects.

Rectangle Style

Poly Delay: Set the poly delay. For more details about Poly Delay, please refer to Section 3.2.3.

Spiral Style

Out ring circle: Mark an outer ring after each spiral is marking completed.

Outer to inner: Setting spiral marking direction is from outer to inner.

CCW: Setting spiral marking direction is counter clockwise.

3.3.9 Image

Import an image, and the property table will show the related information of this image, see Fig.3.3.15.

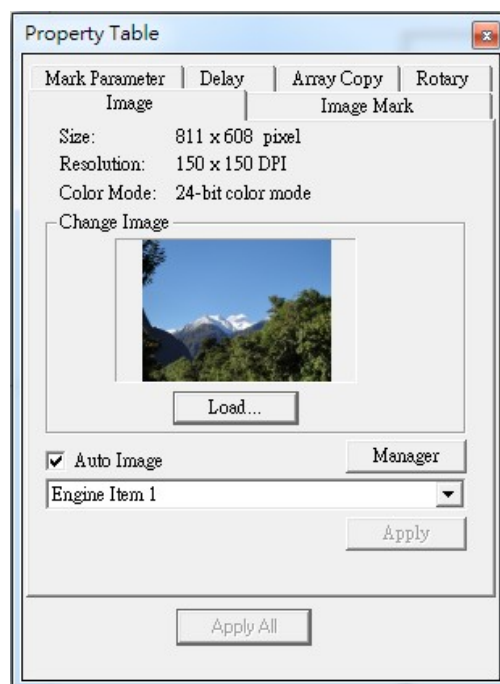


Fig. 3.3.15

Auto Image: Mark the image based on the application of Auto Text when there has a series of images to mark.

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3.3.10 Image Mark

Adjust the mark settings of the image, see Fig.3.3.16.

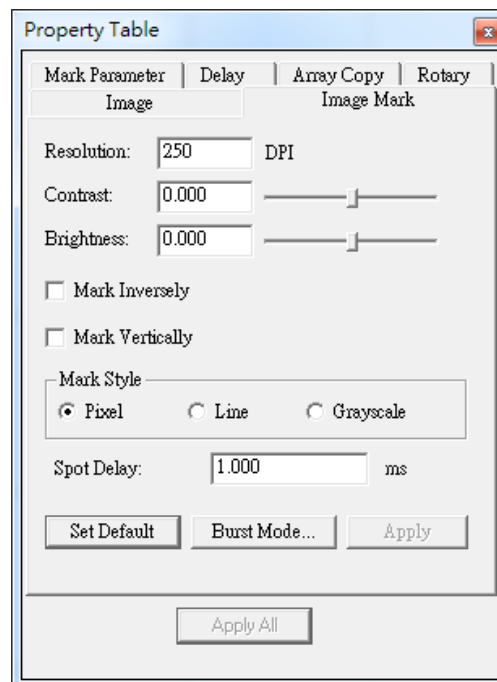


Fig. 3.3.16

Resolution

The resolution of the image. DPI means “Dots Per Inch.”

Contrast/ Brightness

Adjust the contrast/ brightness of the image.

Mark Inversely

This function is used when the color of work piece is black.

Mark Vertically

Mark the image in vertical way.

Mark Style: An image is composed by pixels which are according to the size of the image. For example, if the size of the image is 600×800, then the amount of pixels of that image will be 480,000.

Pixel: Mark the image as dots.

Spot Delay: The required time for laser to mark a spot.

Burst Mode: Click “Burst Mode...” button the dialogue box of options will appear to set up the Burst Mode settings (please refer to 1.1.6.8).

Line: Connect the pixels on the same row as a line and mark the image.

Grayscale: Transfer the image into a black-and-white color image.

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3.3.11 Text

Create a Text object, and the Text Property Page will display like Fig.3.3.17.

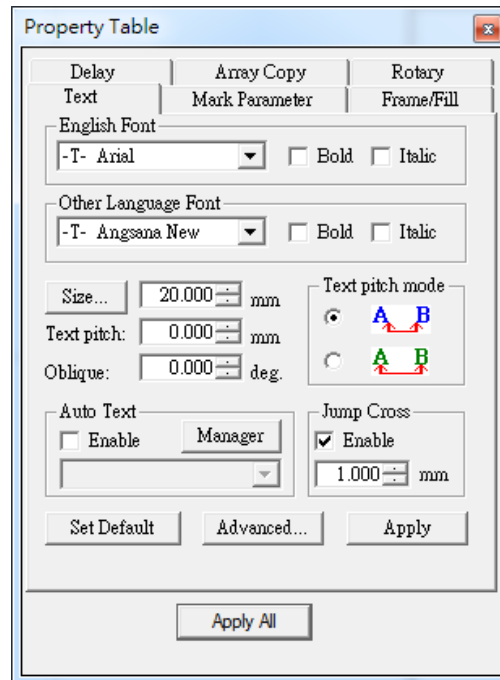


Fig. 3.3.17

English Font: Select the font for letters of the alphabet and numerals.



Other Language Font: Select the font for other language characters.

Bold/ Italic: Select the font type as bold, italic or both.

Size: Adjust the font size.

Text Pitch: Adjust the spacing between two characters.

Oblique: Adjust the tilt angle of the text.

Text Pitch Mode: Select the text pitch base. There are two modes for users to apply: based on the edge of characters  or based on the center .

Auto Text: Apply the Auto Text function.

Jump Cross: Enable or disable the jump cross function. For more details please refer to 1.2.24.

Advance: Offer further settings for text, see Fig.3.3.18.

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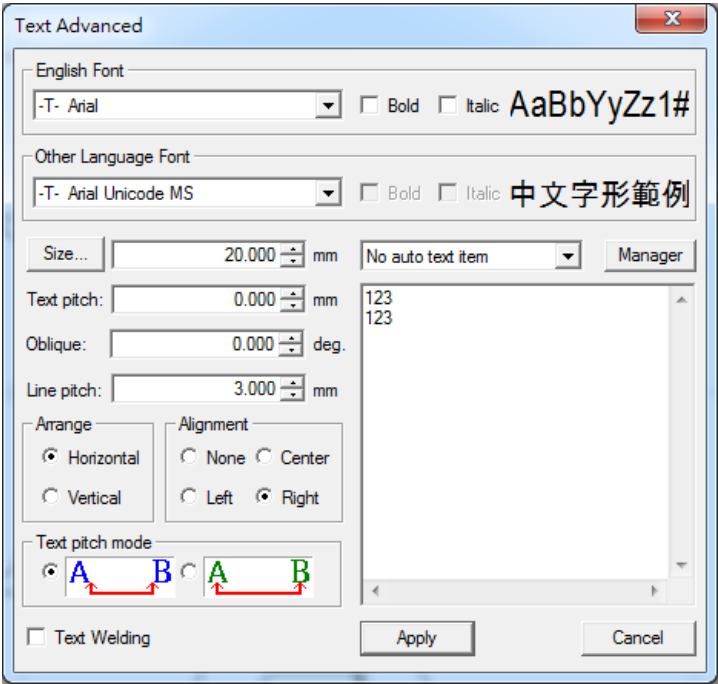


Fig. 3.3.18

Line Pitch: Adjust the spacing between each line.
Arrange:Select the character arrange style, see Fig.3.3.19.

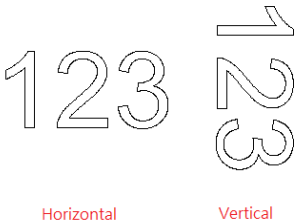


Fig. 3.3.19

Alignment: Use the insert position as the baseline, and align the text object along that baseline.

None	Left	Center	Right

Text Welding: Use to avoid the overlapping part of character's strokes.

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3.3.12 Arc Text

Create an Arc Text object, and the Arc Text Property Page will be displayed like Fig.3.3.20.

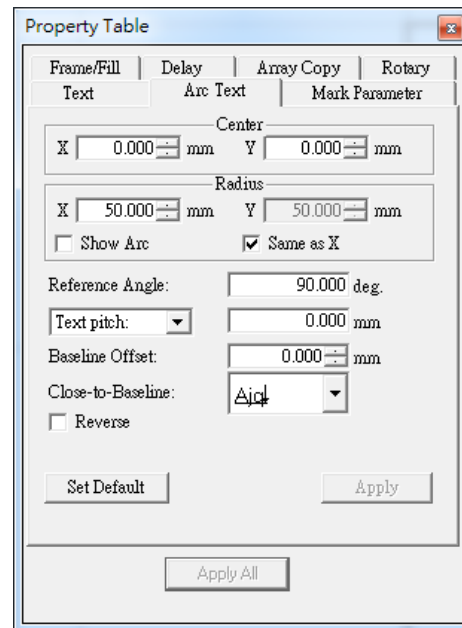


Fig. 3.3.20

Center: Set the center position of the arc.

Radius: Set the arc's radius.

Show Arc: Show the arc path, see Fig.3.3.21.

Same as X: Make the arc has the same radius (becomes a circle).

Reference Angle: Set the angle between 0° line and reference line. Users can adjust the text's alignment from Text Tool Bar or Text Property Table — Advance. Please note that the system will suppose the reference line as the alignment baseline when using Arc Text.

Text Position: Adjust the spacing between characters.

Spread Angle: Set the spread angle and the characters will distribute averagely in this range.

Baseline Offset: Set the spacing between the text and the baseline.

Close-to-Baseline: Select the position of text based on the baseline.

Reverse: Reverse the text part of the art text, see Fig.3.3.22.

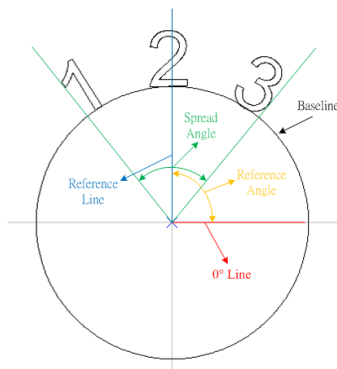


Fig. 3.3.21

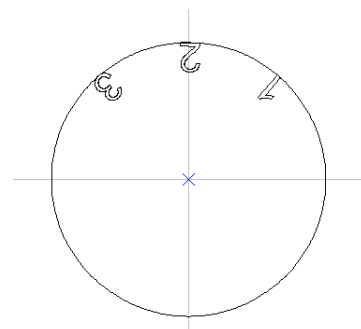
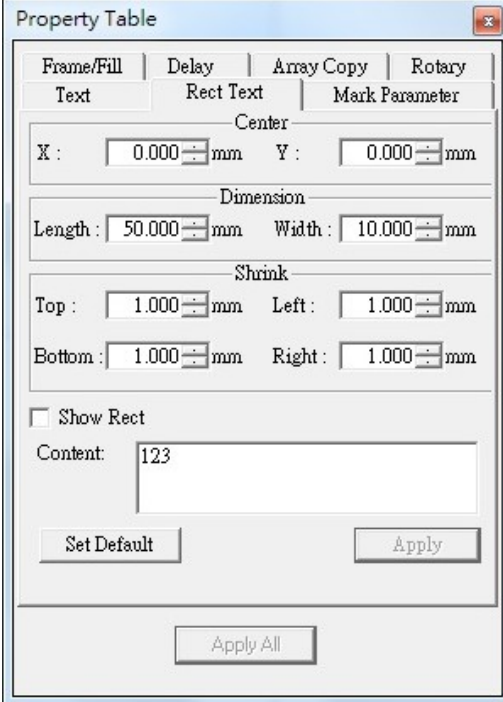


Fig. 3.3.22

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3.3.13 Rectangle Text

Create a Rectangle Text object, and the Rectangle Text Property Page will be displayed like Fig.3.3.23.



The 'Property Table' dialog for 'Rect Text' contains the following sections:

- Center:** X: 0.000 mm, Y: 0.000 mm
- Dimension:** Length: 50.000 mm, Width: 10.000 mm
- Shrink:** Top: 1.000 mm, Left: 1.000 mm, Bottom: 1.000 mm, Right: 1.000 mm
- Show Rect:** ☐ (unchecked)
- Content:** 123
- Buttons:** Set Default, Apply, Apply All

Fig. 3.3.23

Center: Set the center position of the Rectangle.

Dimension: Set the rectangle width and height.

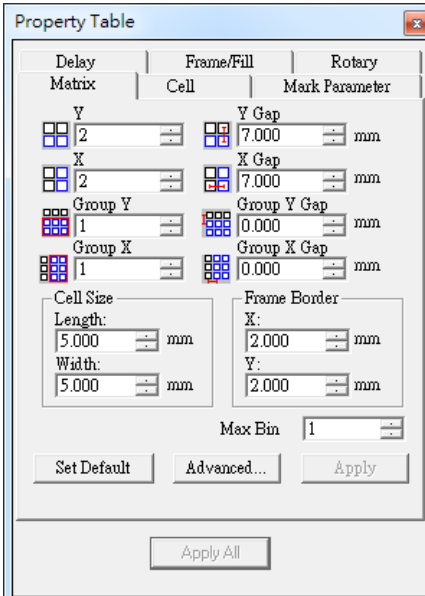
Shrink: Set the gap between text and rectangle edge.

Show Rect: Reveal rectangle.

Content: Text content.

3.3.14 Matrix

Create a matrix object, and the Matrix Property Page will be displayed like Fig.3.3.24.



The 'Property Table' dialog for 'Matrix' contains the following sections:

- Delay Matrix:** Y: 2, X: 2
- Frame/Fill Cell:** Y Gap: 7.000 mm, X Gap: 7.000 mm
- Group Y:** 1
- Group X:** 1
- Group Y Gap:** 0.000 mm
- Group X Gap:** 0.000 mm
- Cell Size:** Length: 5.000 mm, Width: 5.000 mm
- Frame Border:** X: 2.000 mm, Y: 2.000 mm
- Max Bin:** 1
- Buttons:** Set Default, Advanced..., Apply, Apply All

Fig. 3.3.24

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X/ Y: The amount of cells in an X/ Y direction.

X/ Y Gap: The spacing between each of X/ Y direction.

Group X/ Y: Set the amount of the cells in an X/ Y direction as a group, see Fig.3.3.25.

Group X/ Y Gap: The X/ Y direction spacing between each group.

Cell Size: The length/ width of each cell.

Frame Border: The frame size of the matrix.

Max Bin: Create new bins (layers) to edit different objects for matrix to use. The range of bins is 1~16. Users can select different bins to edit from Matrix Tool Bar, see Fig.3.3.26.

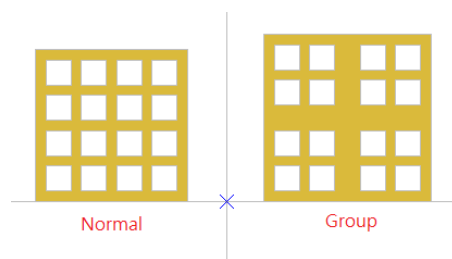


Fig. 3.3.25

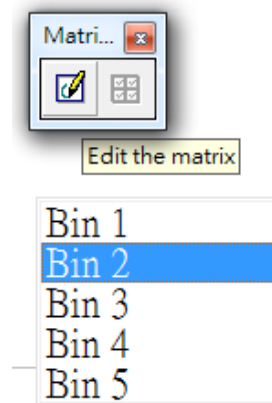


Fig. 3.3.26

Advance: Further settings for matrix, see Fig.3.3.27.

Interleave: Adjust the vertical or horizontal position of even rows or columns, see Fig.3.3.28.

Copy Order: Choose the copy order of the cells.

Frame Color: Choose the color of the matrix's frame.

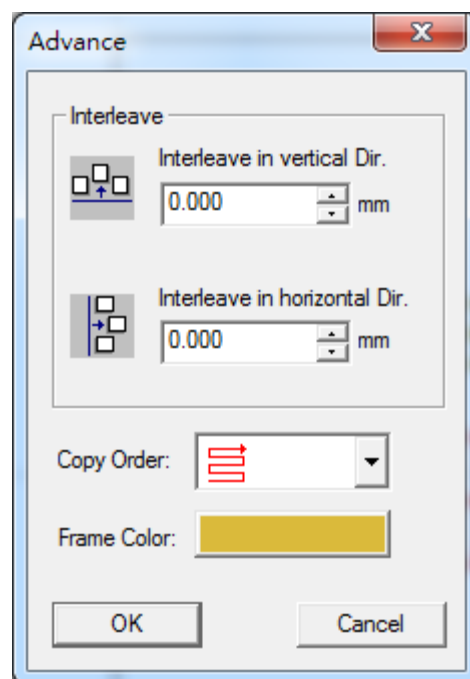


Fig. 3.3.27



Fig. 3.3.28

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3.3.15 Cell

Allow users to select which cell they want to edit, see Fig.3.3.29.

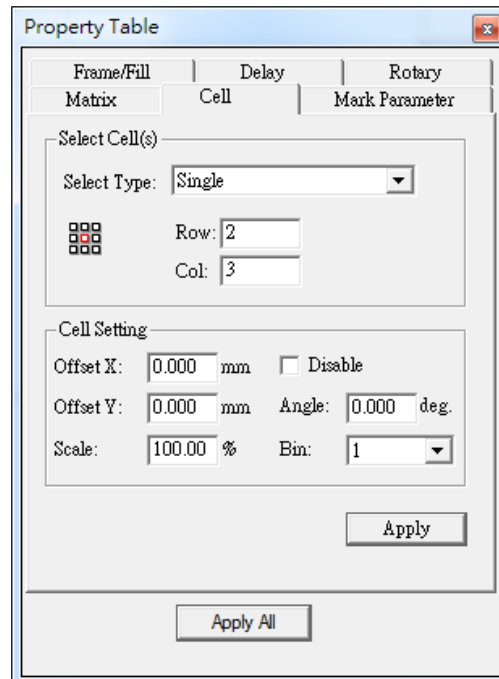


Fig. 3.3.29

Select Cell(s)

Select Type: There are four editing types: Single, Row, Column and Rectangle Area. Users can assign which cell, row, column or area they want to edit by input the value in row/ col.

Cell Setting

Offset X/ Y: The X/ Y offset of the selected cell(s).

Scale: Set the scale of the selected cell(s).

Disable: The selected cell(s) will be hidden and won't be marked.

Angle: The rotary angle of the selected cell(s).

Bin: Select the bin users want to edit.

3.3.16 Baseline

The Baseline Property Page will be displayed when using “Baseline” function. There are two different positions according to the baseline-type, see Fig.3.3.30 and Fig.3.3.31.

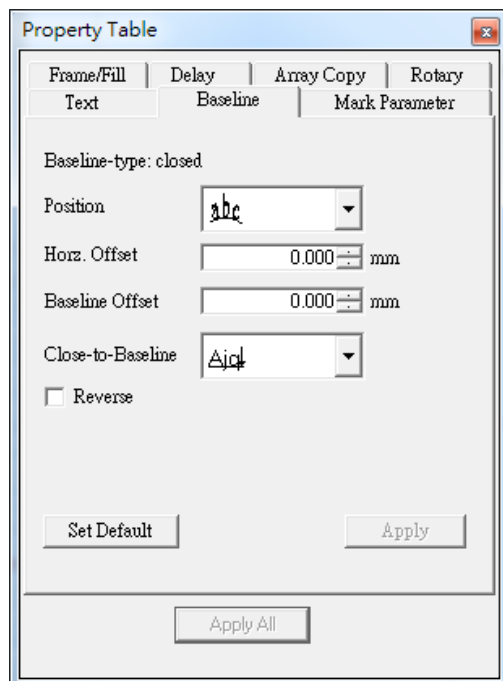


Fig. 3.3.30

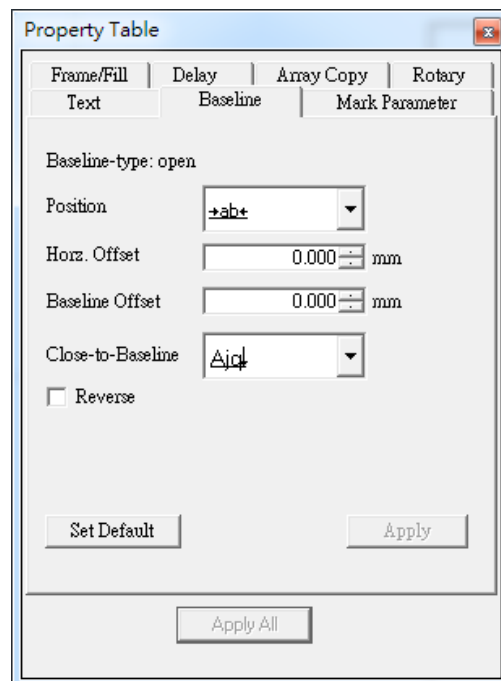


Fig. 3.3.31

Baseline-type: The baseline-type is based on the curve types (closed or open) users used.

Position: Decide the text position. For example, when the baseline is an open curve, the position can be chosen to align center (default), left or right.

Horz. Offset: The horizontal offset between the text and the selected position.

Baseline Offset: The space between the text and baseline.

Close-To-Baseline: Select the position of text based on the baseline.

Reverse: Reverse the text, see Fig.3.3.32

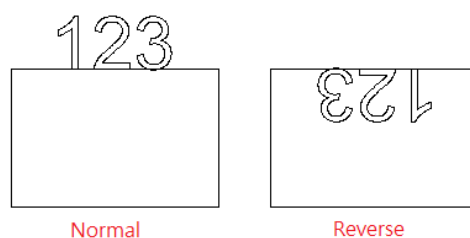


Fig. 3.3.32

3.3.17 Graphic

When users import a “*.dxf” file, the Graphic Property Page will be display like Fig.3.3.33.

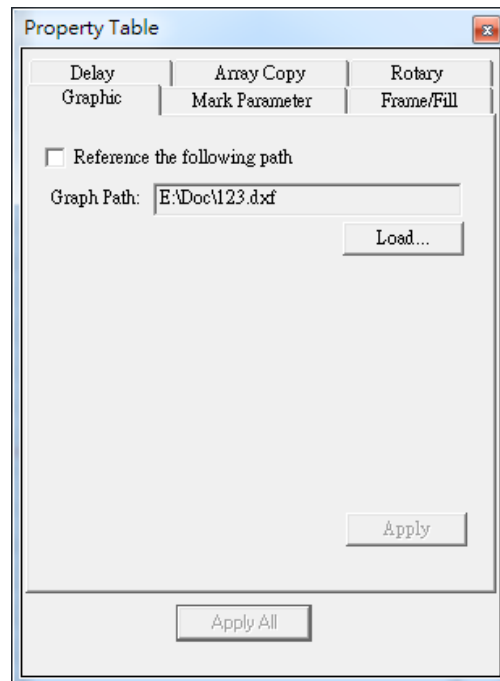


Fig. 3.3.33

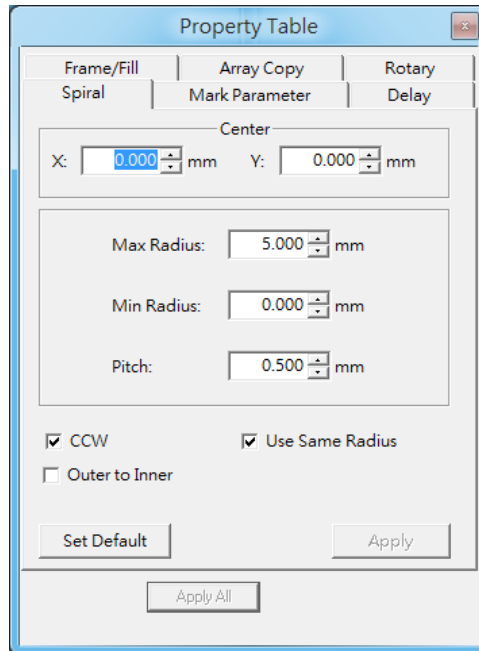
Reference The Following Path: Suppose that users click this option and import a “*.dxf” file and then save it as a “*.SMM” file. If the graphic of the assigned Graph Path has been modified, the graphic of the “*.SMM” file will update automatically when users load that “*.SMM” file next time.

Load...

This option can only import a “*.dxf” file.

3.3.18 Spiral

While a spiral object has been created, spiral property table will show as fig 3.3.34.



The image shows a 'Property Table' dialog box for a spiral object. It has three tabs: 'Frame/Fill', 'Array Copy', and 'Rotary'. The 'Spiral' tab is selected. The 'Mark Parameter' sub-tab is active. The 'Center' section has 'X: 0.000 mm' and 'Y: 0.000 mm'. The 'Max Radius' is 5.000 mm, 'Min Radius' is 0.000 mm, and 'Pitch' is 0.500 mm. There are checkboxes for 'CCW' (checked), 'Outer to Inner' (unchecked), and 'Use Same Radius' (checked). At the bottom are 'Set Default', 'Apply', and 'Apply All' buttons.

Frame/Fill	Array Copy	Rotary
Spiral	Mark Parameter	Delay

Center

X: 0.000 mm Y: 0.000 mm

Max Radius: 5.000 mm

Min Radius: 0.000 mm

Pitch: 0.500 mm

☒ CCW ☒ Use Same Radius

☐ Outer to Inner

Set Default Apply

Apply All

Fig. 3.3.34

Center: The center position of the spiral.

Max. Radius: The spiral outer ring radius.

Min. Radius: The spiral inner ring radius.

Pitch: The interval distance between two spiral lines.

CCW: Spiral is generated as counter-clockwise direction.

Use Same Radius: Let spiral could fit into a perfect circle.

Outer to inner: Spiral is generated from outer to inner instead of from inner to outer.

3.4 Layer-related Property Table

When a layer object in the Object Browser has being selected, the Property Table will display the layer-related property page for uses to edit.

3.4.1 Layer

The Layer Property Page allows users to set the parameters of the selected layer, see Fig.3.4.01.

Name: Edit the layer's name.

View: Enable or disable to view the layer.

Edit: Enable or disable to edit the layer.

Output: Enable or disable to output the layer.

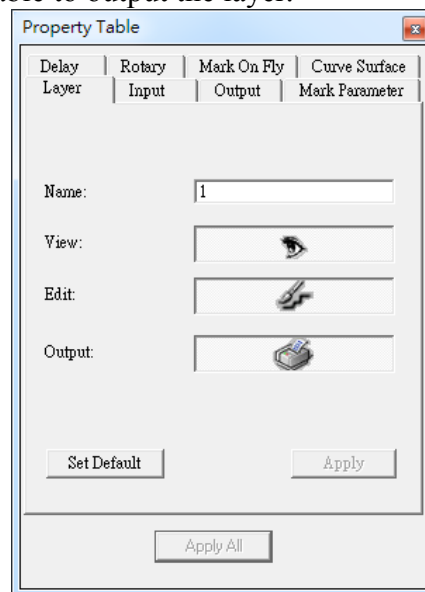


Fig. 3.4.01

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3.4.2 Input

The Input Property Page allows users to set up the input status of the layer, see Fig.3.4.02. The system will first check the Input Status settings and then start to mark the layer's objects.

Input Status

Set the potential (high or low) of the input points.

- ☒ High Potential.
- ☐ Low Potential.
- ☒ Ignore.

Timeout

The time system needs to wait for the input signal. The default is -1.

Wait Input

Wait until all input status exist, otherwise wait for Timeout

Match Input

Wait until all input status exist, otherwise skip the layer.

The screenshot shows the 'Property Table' dialog box with the 'Input' tab selected. The 'Input Status' section has four checkboxes labeled 1, 2, 3, and 4, all of which are checked. Below this, the 'Timeout' is set to '-1 ms'. There are two radio buttons: 'Wait Input' (which is selected) and 'Match Input'. At the bottom, there are three buttons: 'Set Default', 'Apply', and 'Apply All'.

Fig. 3.4.02

3.4.3 Output

Use this function to set up the output status of the layer.

The system will first handle the graph and then the output status.

Output Status

High or low voltage of the output points

For example:

- ☒ High Level.
- ☐ Low Level.
- ☒ Ignore.

Auto Clear Signal

Wait for Delay Time and auto clear signal after the voltage settings are done

The screenshot shows the 'Property Table' dialog box with the 'Output' tab selected. The 'Output Status' section has four checkboxes labeled 1, 2, 3, and 4, all of which are checked. Below this, there is a checkbox labeled 'Auto Clear Signal' which is currently unchecked. At the bottom, there are three buttons: 'Set Default', 'Apply', and 'Apply All'.

Fig. 3.4.03

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3.4.4 Mark Parameter

The Mark Parameter Property Page here is for the selected layer, see Fig.3.4.04. Its setting method is the same with the individual object. Please refer to the section 3.2.1 Mark Parameter.

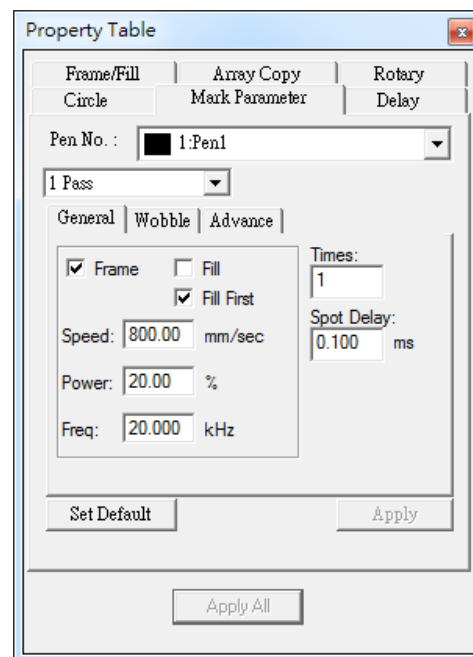


Fig. 3.4.04

3.4.5 Delay

The Delay Parameter Property Page here is for the selected layer. Its setting method is the same with the individual object. Please refer to the section 3.2.3 Delay.

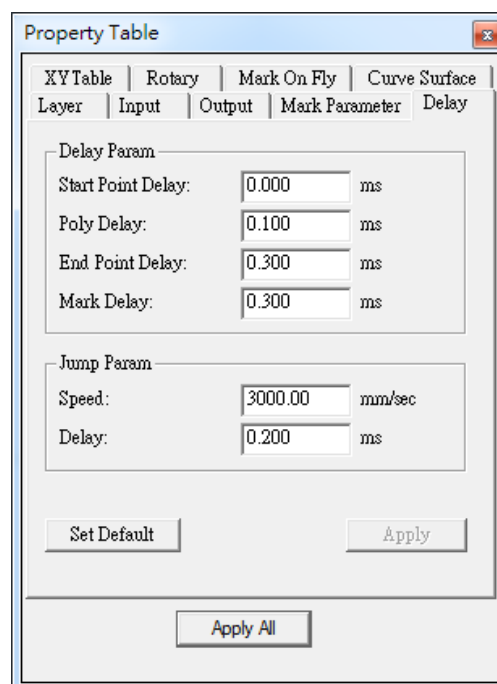


Fig. 3.4.05

3.4.6 Rotary

Please refer to “Practical Functions” Chapter 6 Sec. 1 “Enable Rotary Marking”.

3.4.7 Mark On Fly

Please refer to “Practical Functions” Chapter 7 “Mark On Fly”.

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3.4.8 Curve Surface

When Curve Surface function is enabled, the objects of this layer will be marked according to the setting parameters, see Fig.3.4.11.

Enable

Check this box to enable this function. The default setting is disabled.

Style

There are several styles of the object are listed at Table 3.4.

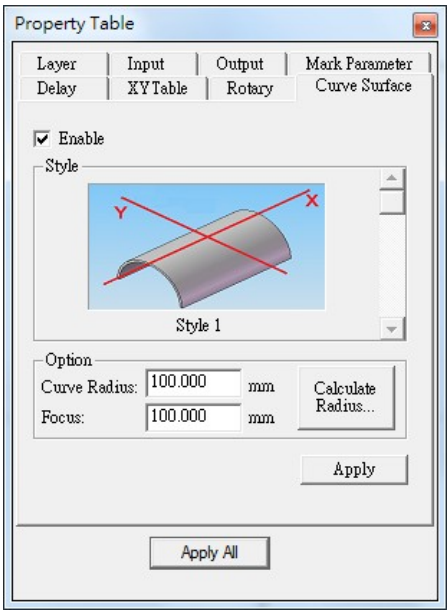
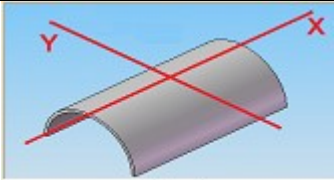
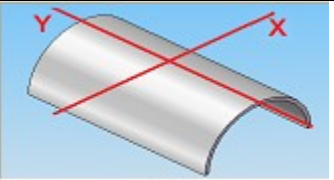
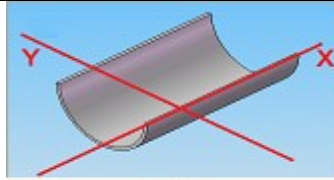
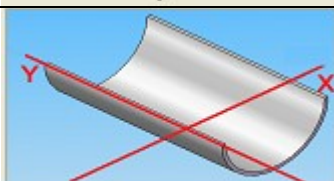




Fig. 3.4.11

 Style 1	 Style 2	 Style 3
 Style 4	 Style 5	 Style 6

Gray figures represent objects. Red lines represent X/Y direction of the working table. Style 1-4 are cylindrical objects; Style 5-6 are sphere objects

Table 3.4

Option

Curve Radius: radius of the curve.
Focus: focus of the lens.

Calculate Radius

Click the button will see the dialog box, see Fig.3.4.12.

Blue area represents object.

(W) Width: width of the object

(H) Height: the distance between the top point and the surface.

Click “OK” button to renew the curve radius.

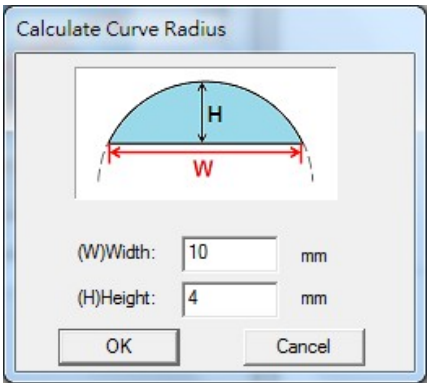


Fig. 3.4.12

4. Popup Menu

Click the right button of the mouse will display a quick view menu. When Show Order in View Menu is activated, users can change the mark order. And when the object has been transferred to curve (in Edit Menu), user is able to Add Vertex to the object.

The popup menu is different when users select different objects.

4.1 General Object

Select a general object and click the right button of the mouse, users will see the popup menu like Fig.4.1.01.

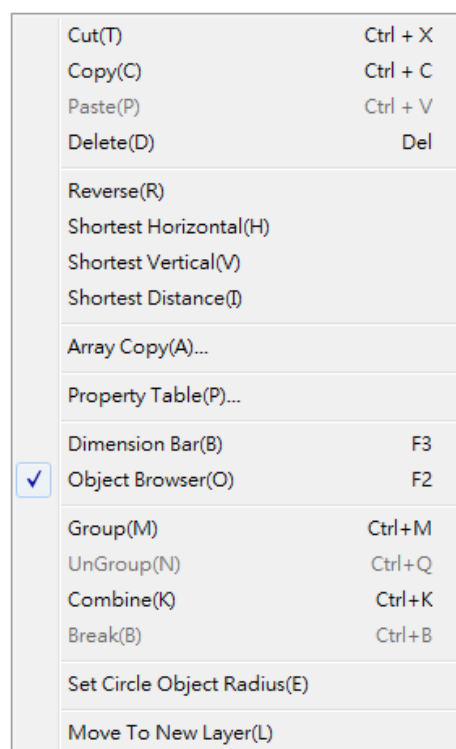


Fig. 4.1.01

Cut	Remove selected data and store it in the clipboard for future use
Copy	Duplicate selected data and store it in the clipboard for future use
Paste	Attach data from the clipboard to the current document
Delete	Delete and remove the selected data
Reverse	Reverse sorting mark order
Shortest Horizontal	Sorting mark order by the shortest horizontal direction

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Shortest Vertical	Sorting mark order by the shortest vertical direction
Shortest Distance	Sorting mark order by the shortest distance of object center
Same Radius	Make the circle object become the same radius
Array Copy	Execute the array copy function
Property Table	Show the Property Table of the object
Dimensional Bar	Enable/disable Dimension bar
ObjView Bar	Enable/disable Object Browser
Group	Group selected object
Ungroup	Ungroup selected group
Combine	Combine several objects into one object
Break	Break one object into several objects
Set Circle Object Radius	Modify circle that radius same as original radius to modified radius.
Move To New Layer	Move selected objects to new layer

4.1.1 Reverse

This function is used to reverse sorting marking order.

For example: the original marking order 1-2-3-4-5-6 will be changed to be 6-5-4-3-2-1.

4.1.2 Shortest Horizontal

This function is used to sort mark order by the shortest horizontal direction. Input the partition count number in the box like Fig.4.1.02. The work area will be divided into several partitions in vertical direction. The mark order will be sorted from left to right first as Fig.4.1.03. If the checkbox of “Reverse” is checked, the mark order will then changed to be sorted from right to left first.

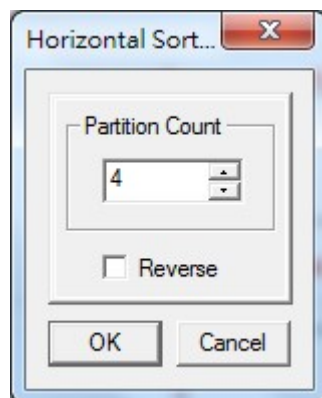


Fig. 4.1.02

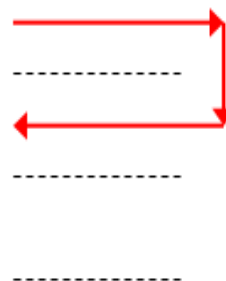


Fig. 4.1.03

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4.1.3 Shortest Vertical

This function is used to sort mark order by the shortest vertical direction. Input the partition count number in the box like Fig.4.1.04. The work area will be divided into several partitions in horizontal direction. The mark order will be sorted from bottom to top first as Fig.4.1.05. If the checkbox of “Reverse” is checked, the mark order will then changed to be sorted from top to bottom first.

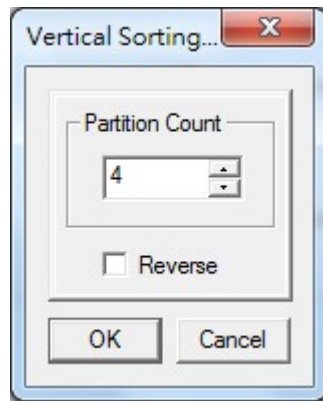


Fig. 4.1.04

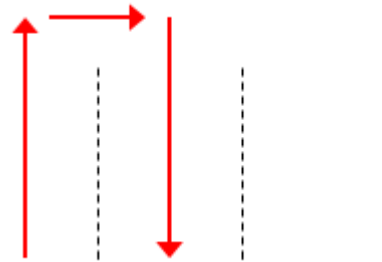


Fig. 4.1.05

4.1.4 Shortest Distance

This function is used to sort mark order by the shortest distance of object center. Select all objects in the work area, a red box as below will appear. The mark order will be sorted by the shortest distance between the left-bottom of the red box and the center of each object like Fig.4.1.06.

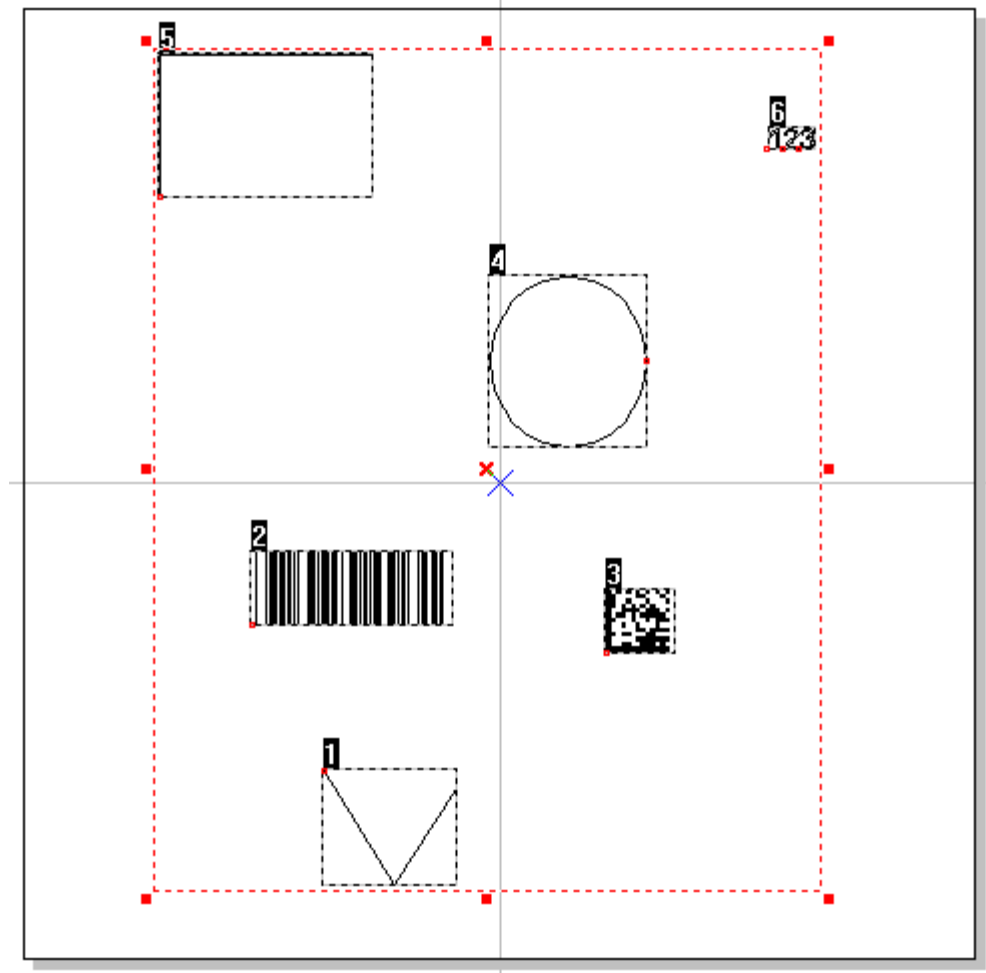


Fig. 4.1.06

4.2 Curve

Select a curve users drew or the curve transferred from objects, and click the right button of the mouse, users will see the popup menu like Fig.4.2.01.

Cut(T)	Ctrl+X
Copy(C)	Ctrl+C
Paste(P)	Ctrl+V
Delete(D)	Del
Reverse(R)	
Shortest Horizontal(H)	
Shortest Vertical(V)	
Shortest Distance(I)	
Add Vertex(A)	
Del Vertex(X)	
Curve To Line(L)	
Line To Curve(I)	
Arc To Curve(R)	
Cusp(U)	
Smooth(S)	
Symmetrical(Y)	
Array Copy(A)...	
Property Table(P)...	
Dimension Bar(B)	F3
✓ Object Browser(O)	F2

Fig. 4.2.01

4.2.1 Add Vertex

This function allows users to modify a curve object; more vertexes will be more convenient to change the shape of the curve, see Fig.4.2.02.

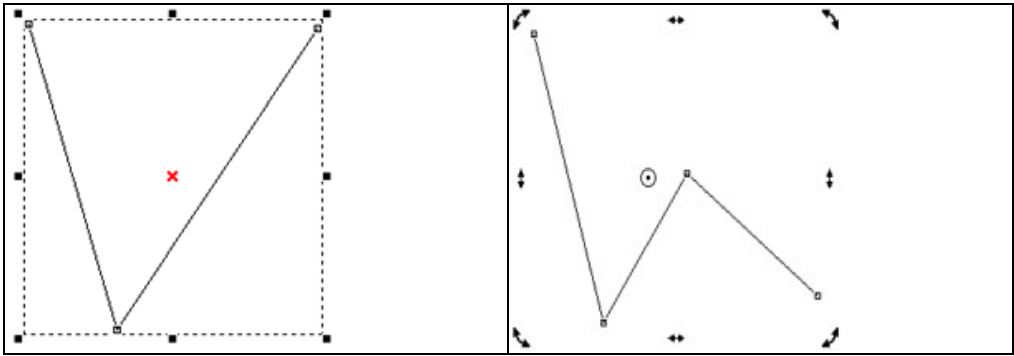


Fig. 4.2.02

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4.2.2 Delete Vertex

Using “Delete Vertex” function will decrease the control points like Fig.4.2.03.

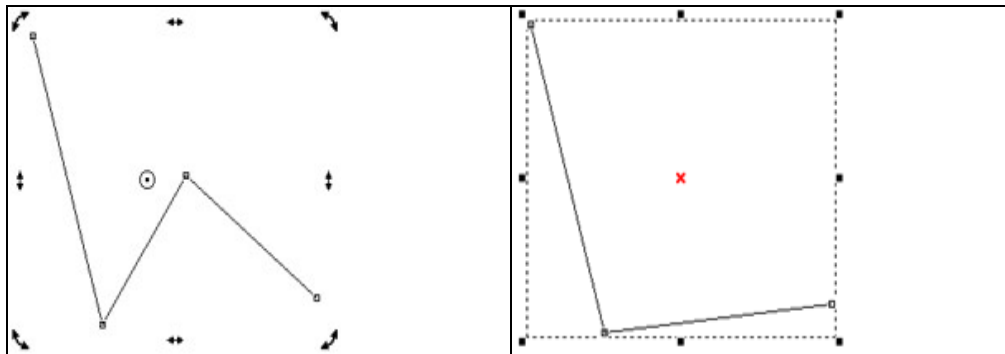


Fig. 4.2.03

4.2.3 Curve to Line

Select “Curve to Line” function; the curve has been transferred to a line segment and lost its control points like Fig.4.2.04.

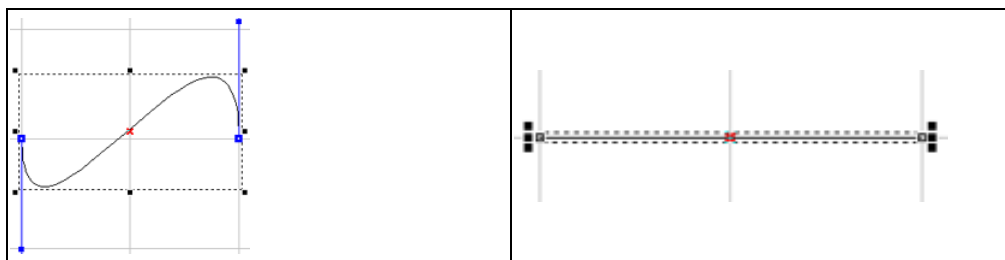


Fig. 4.2.04

4.2.4 Line to Curve

Select “Line to Curve” function; the line segment has been transferred to a curve and its control points appeared like 4.2.05.

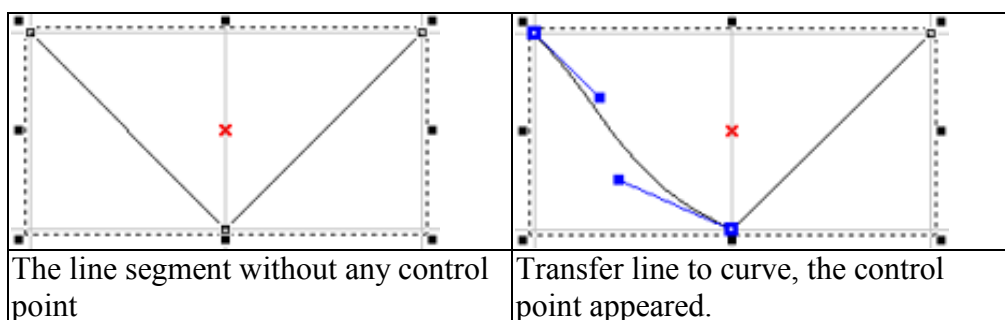


Fig. 4.2.05

4.2.5 Arc to Curve

To use this function, users must first create an object and transfer the object to curve, and then click right button of the mouse to select the “Arc to Curve” function. This function allows users to add more vertexes to the curve like Fig.4.2.06.

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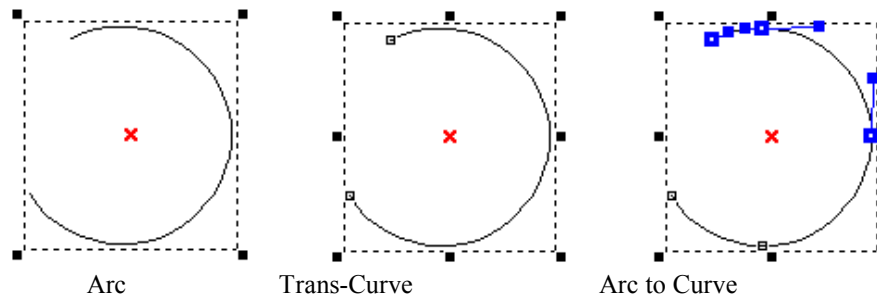


Fig. 4.2.06

4.2.6 Cusp

The control points of the curve were smooth at the beginning; select “Cusp” function on the popup menu; the two sides of control points become independent like Fig.4.2.07.

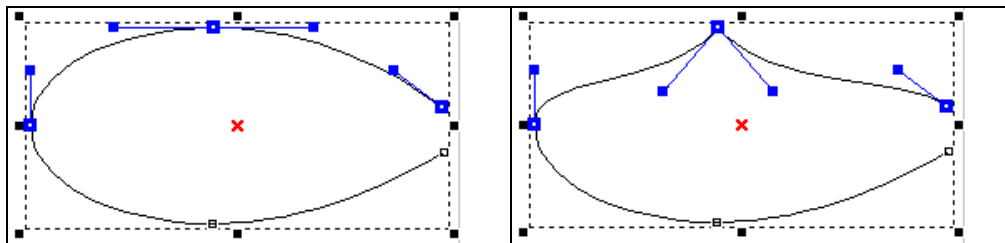


Fig. 4.2.07

4.2.7 Smooth

The control points of the curve were cusp at the beginning; select “Smooth” function on the popup menu; the two sides of control points become smooth and dependent on each other like Fig.4.2.08.

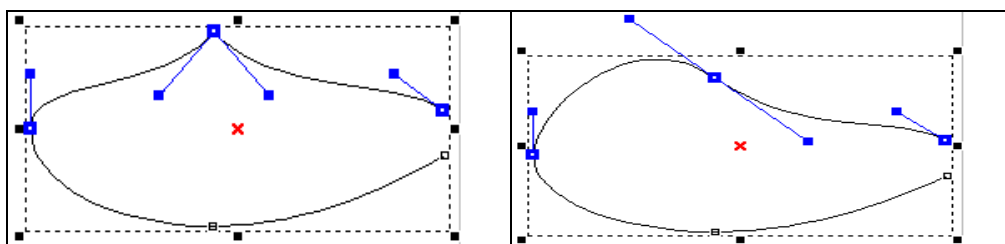


Fig. 4.2.08

4.2.8 Symmetrical

The control point was smooth but not symmetrical; select “Symmetrical” function on the popup menu and move one of the control point; the other side of control point will move symmetrically like Fig.4.2.09.

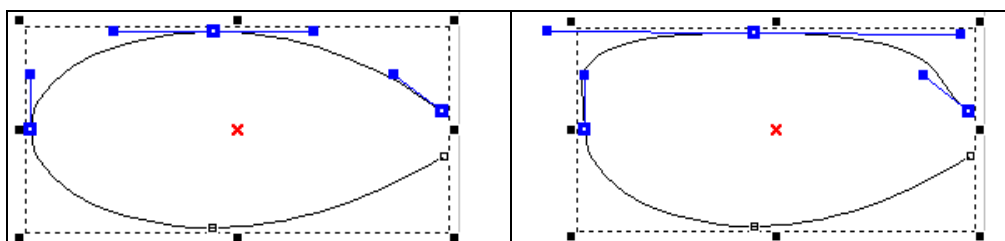
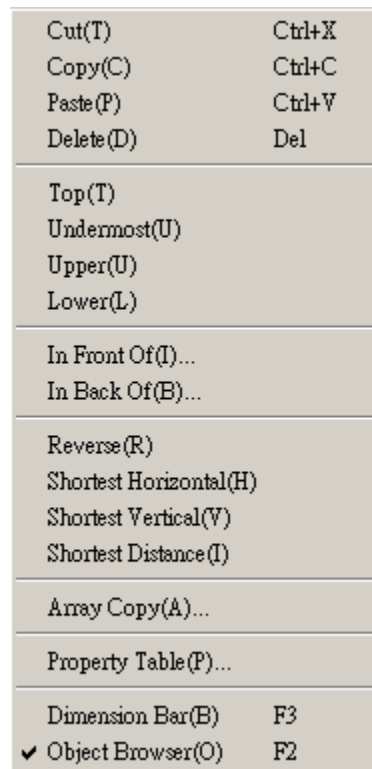


Fig. 4.2.09

4.3 Show Mark Order of a General Object

If the “Show Order” function in View Menu is activated, select a general object, and click the right button of the mouse, users will see a popup menu like Fig.4.3.01.



Cut(T)	Ctrl+X
Copy(C)	Ctrl+C
Paste(P)	Ctrl+V
Delete(D)	Del
Top(T)	
Undermost(U)	
Upper(U)	
Lower(L)	
In Front Of(I)...	
In Back Of(B)...	
Reverse(R)	
Shortest Horizontal(H)	
Shortest Vertical(V)	
Shortest Distance(I)	
Array Copy(A)...	
Property Table(P)...	
Dimension Bar(B)	F3
✓ Object Browser(O)	F2

Fig. 4.3.01

4.4 Show Mark Order of a Curve

If the “Show Order” function in View Menu is activated, select a curve users drew or the curve transferred from objects, and users will see the popup menu like Fig.4.4.01 when clicking the right button of the mouse.

Cut(T)	Ctrl+X
Copy(C)	Ctrl+C
Paste(P)	Ctrl+V
Delete(D)	Del
Top(T)	
Undermost(U)	
Upper(U)	
Lower(L)	
In Front Of(I)...	
In Back Of(B)...	
Reverse(R)	
Shortest Horizontal(H)	
Shortest Vertical(V)	
Shortest Distance(I)	
Add Vertex(A)	
Del Vertex(X)	
Curve To Line(L)	
Line To Curve(I)	
Arc To Curve(R)	
Cusp(U)	
Smooth(S)	
Symmetrical(Y)	
Array Copy(A)...	
Property Table(P)...	
Dimension Bar(B)	F3
✓ Object Browser(O)	F2

Fig. 4.4.01

5. Hot Key

File Menu	
Ctrl + N	Create a new document
Ctrl + O	Open an existing document
Ctrl + S	Save the current document using the existing file name
Ctrl + I	Import
Ctrl + P	Print
Edit Menu	
Ctrl + Y	Replace a cancelled action
Ctrl + Z	Cancel un unwanted action
Ctrl + X	Remove the selected object and place it in the clipboard
Ctrl + C	Duplicate the selected object and place it in the clipboard
Ctrl + V	Place the data on the clipboard on to the document
DEL	Delete the selected object
Ctrl + L	Combine
Ctrl + K	Break
Ctrl + G	Group
Ctrl + U	UnGroup
Ctrl + E	Baseline
Ctrl + D	Split
Ctrl + A	Trimming
Ctrl + W	Contour
Execute Menu	
F5	Marking
F6	Quick Mark
F7	Dry Run
F10	Close Dialogue Box of Marking, Quick Mark, and Dry Run
Others	
F1	Open HELP
F2	Open the Object Browser
Shift+F2	Move the Object Browser to the lower left corner
F3	Open the Dimension Bar

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F4	Open the User Level dialogue box
Ctrl + F4	Close the current file
Ctrl + F6	Switch to another opened file
Ctrl	1. Force the angle of a line segment to be 15°when drawing a line, and force the width equal to the height when drawing an arc, circle, or rectangle. 2. The XY axis of the object will be adjusted simultaneously
Ctrl + T	Open the Property Table
Shift	The center of a circle or rectangle will be the center of the initial axis The XY axis of the object will be adjusted simultaneously
Tab	Select object by marking order
C	When you are drawing lines, arcs, and curves, press C key will make the continuous segments become a closed loop.
X/Y	Set the start point or end point of the object

Config.ini

Appendix A: Config.ini

Config.ini is a setting file in the directory of C:\Program Files\MaxMarking. In general situation, user does not have to modify this file unless some special cases. If you need to modify this file, just simply open the file, change the settings, save the file, and then restart the **Halk P Fiber soft** program. The more detail description will be listed as below:

[ENV]	System Environment Parameters
MachineChk= 0	Automation (0:Disable, 1:Enable)
MachineChk_ShowMessage=1	Show error message (0: Disable, 1: Enable)
VariablePolyDelay= 0	The Mid Point Delay time will be changed in accordance with angle (0: Disable, 1: Enable)
AutoTextMode=1	Auto Text Mode (0: Disable, 1: Enable)
Jump_Min_Delay=0.0	Delay time for Jump (ms)
Jump_Limit_Length=0	Limited movement (mm)
MarkThreadEnable=1	Enable the Mark Thread (0: Disable, 1: Enable)
[Rotary]	Rotary Axis Parameters
Enable=1	Enable (0: Disable, 1: Enable)
Calibration=1	Calibration (0: Disable, 1: Enable)
Ring=1	Ring Text (0: Disable, 1: Enable)
Cylinder=1	Cylinder (0: Disable, 1: Enable)
MotorSetup=1	Motor Setup (0: Disable, 1: Enable)
[MultiMarking]	Auto Marking Parameters
Enable=1	Enable (0: Disable, 1: Enable)
Delay=0	Delay Time (sec)
[LogFile]	Log File Parameters
Enable=0	Enable (0: Disable, 1: Enable)
KeepRow=10	Log Rows
LogMarkDialog=1	Log Mark Dialogue (0: Disable, 1: Enable)
StartTime=0	Log Start Time (0: Disable, 1: Enable)
Path=	Log Path
[Application]	Application related parameters
ShowLaserPanel=0	Show Laser Panel (0: Disable, 1: Enable) 
ShowHatch=1	Show Hatch function (0: Disable, 1: Enable)
[SEGMENT]	Break a circle into lines
CHORDPXL	Setting how a circle will be broken into multiple lines. The smaller the value, the shorter the line. On the other hand, will take longer time to process a circle. Arc-Text will not be affected by this value. Default value is 10000.

Config.ini

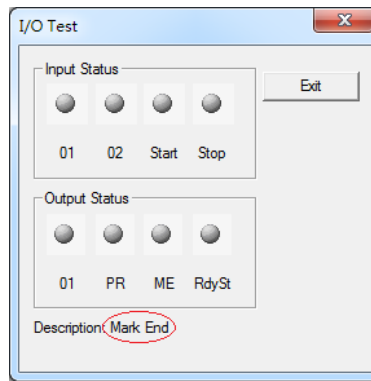
[IO INPUT]	Input point related parameters
INPUT01= 01,01	Input No.= Display Name, Description (See below figure)
INPUT04= 04,04	Input No.= Display Name, Description (See below figure)
[IO OUTPUT]	Output point related parameters
OUTPUT01= 01, 01	Output No.= Display Name, Description (See below figure)
OUTPUT04= 04, 04	Output No.= Display Name, Description (See below figure)
[MarkAndPrint]	Mark & Print Parameters
Enable=0	Enable (0: Disable, 1: Enable)
FeedUp=0	Rows for moving ahead
FeedDown=10	Rows for moving follow-up
BarcodeHeight=130	Barcode Height (cm)
PrintAndCut=0	Print & Cut (0: Disable, 1: Enable)
[SignalRule]	Signal Parameters (refer to section 2.2.1)
Active_PR_MR=1	Program Ready/Mark Ready signal (0: Active Low, 1: Active High)
Active_ReadyStart=1	Ready for Start signal (0: Active Low, 1: Active High)
Active_ME=1	Mark End Signal (0: Active Low, 1: Active High)
Active_Shutter=1	Shutter Signal (0: Active Low, 1: Active High)
Active_Lamp=1	Lamp Signal (0: Active Low, 1: Active High)
Active_Align=1	Align Signal (0: Active Low, 1: Active High)
PR2MR=0	Change Program Ready Signal to Mark Ready Signal (0: Program Ready, 1: Mark Ready)
MarkEndPulseTime = 0	MarkEnd Signal keep high (sec) (0: default setting, means no pulse)
[MarkParmList]	Mark Parameters List
CurPath=E:\Program Files\MaxMarking\MarkParam	Current Path
[VERSION]	Version Parameters
Version=1000	Version

The Planning of Input/Output Point:

Open the **Halk P Fiber soft** software, go to the Property Table and select “Driver” label and then click the “I/O Test” button will see the figure as below:

Config.ini

```
[IO_INPUT]
INPUT01= 01,01
INPUT02= 02,02
INPUT03= Start,Start
INPUT04= Stop,Stop
[IO_OUTPUT]
OUTPUT01= 01,01
OUTPUT02= PR,Program Ready
OUTPUT03= ME,Mark End
OUTPUT04= RdySt,Ready for Start
```



Config.ini

Appendix B: MM.ini

There were some parameters in MM.ini can be modified but now they are all moved to the Config.ini. If you need to change them please see the detail description in Appendix A: Config.ini.

Practical Functions

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Halk P Fiber soft

1.System Installation

This chapter will let user know how to install and setup **Halk P Fiber soft**.


1.1 System Requirement

- OS: Microsoft Windows XP/Vista/7/8/8.1.
- RAM: Win XP: 2GB Win Vista/7/8/8.1: 4GB.
- Resolution: 1024*768 or above.
- Font size must be the smaller (100%) one.
- SLM laser controller must be connected to the user's computer.

1.2 Halk P Fiber soft Installation

Execute “**Setup.exe**” from **Halk P Fiber soft** installation disc and follow the steps as listed below (use Win7 64 bit operating system for example).

Step 1: Select Destination Directory

Choose a installation path. The default path is 「**C:\Program Files (x86)\MaxMarking**」. Users can change the path by clicking “**Browse...**” button. After decide the installation path, click “**Next**” to do the next step, see Fig.1.2.01. If users want to stop the installation, click “**Cancel**” or  at the upper right corner of the dialog box and a warning dialog box will appear like Fig.1.2.02 to notice users that the installation has not yet completed. Click “**Resume**” to continue installing, or click “**Exit Setup**” to quit the setup progress.

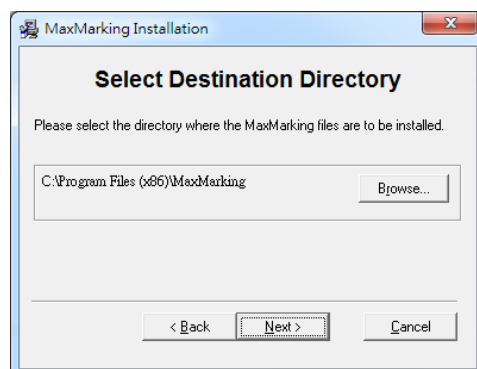


Fig.1.2.01



Fig.1.2.02

Halk P Fiber soft

Step 2: Ready to Install

Confirm that the users are ready to install **Halk P Fiber soft** or not, see Fig.1.2.03.

Click “**Next**” to proceed the next step or click “**Back**” to go back to previous step.

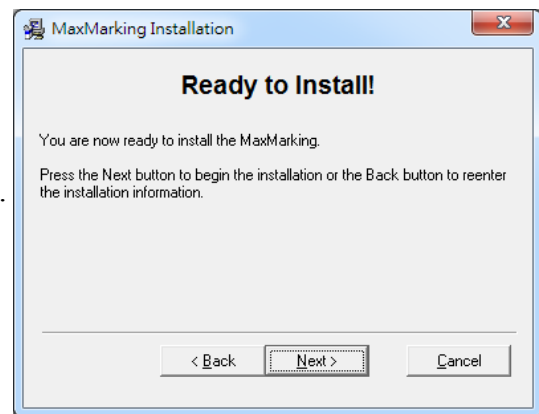


Fig.1.2.03

Step 3: Choose to Upgrade or New Install

Decide to upgrade **Halk P Fiber soft** or install it as new software, see Fig.1.2.04.

Click “**Next**” to start installation.

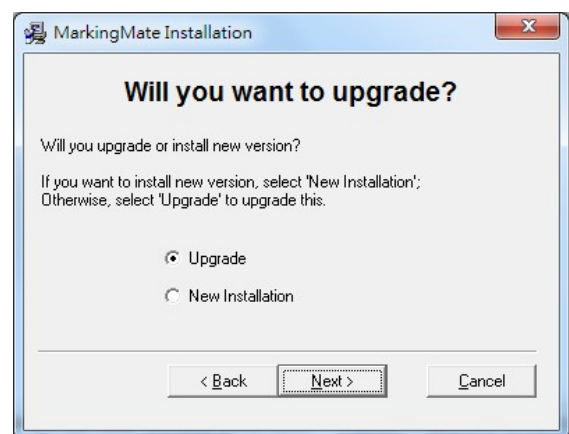


Fig.1.2.04

Halk P Fiber soft

Step 4: Select Driver

Select an appropriate driver according to the control card and the laser machine, see Fig.1.2.05, and then click “**OK**”.

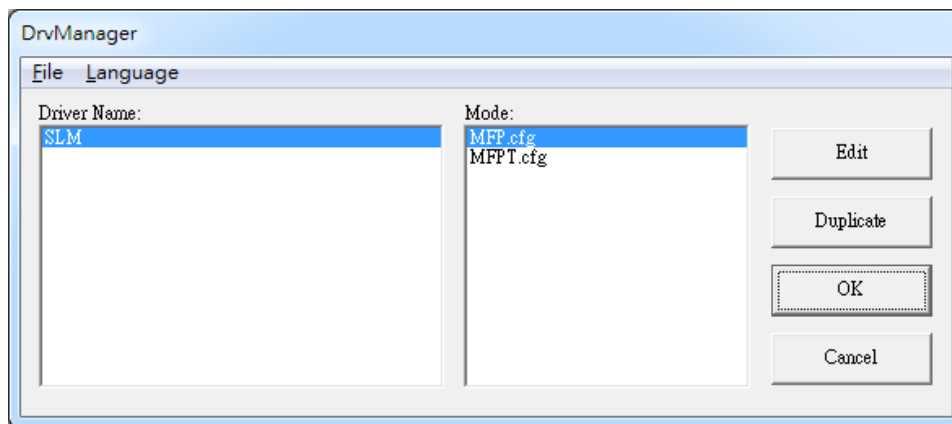


Fig.1.2.05

Step 5: Installation Complete

The installation is finished. Click “**Finish**” to exit the setup program, see Fig.1.2.06.

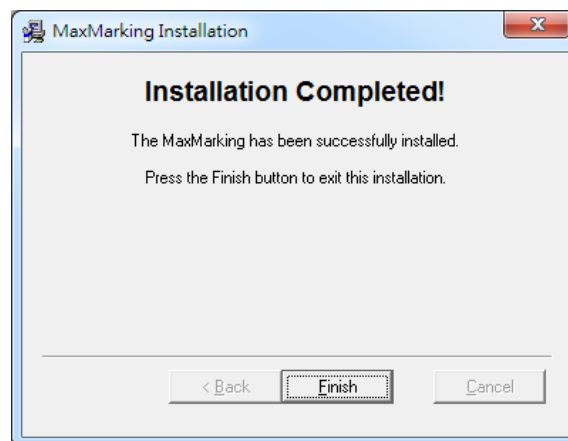



Fig.1.2.06

Step 6: Execute Halk P Fiber soft

After the installation is completed, the system will add a “**MaxMarking System**”

folder at 「**Start→All Programs**」 and create a shortcut like  on the Desktop. Users can execute **MaxMarking** by click “MaxMarking” which is under “**MaxMarking System**” (see Fig.1.2.07) or double click the shortcut on the Desktop. Users can also pin the shortcut to the Taskbar and click the icon to execute the software, see Fig.1.2.08.

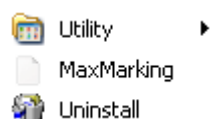


Fig.1.2.07



Fig.1.2.08

Halk P Fiber soft

2. Driver Manager

Based on the different marking controller usage, user must select a correct driver.

Users need to select the driver when installing **Halk P Fiber soft** . Besides, they can also change the driver by executing **Driver Manager** through the following path: **Start – Programs –MaxMarking System–Utility – Drv Manager**, see Fig.2.0.1.

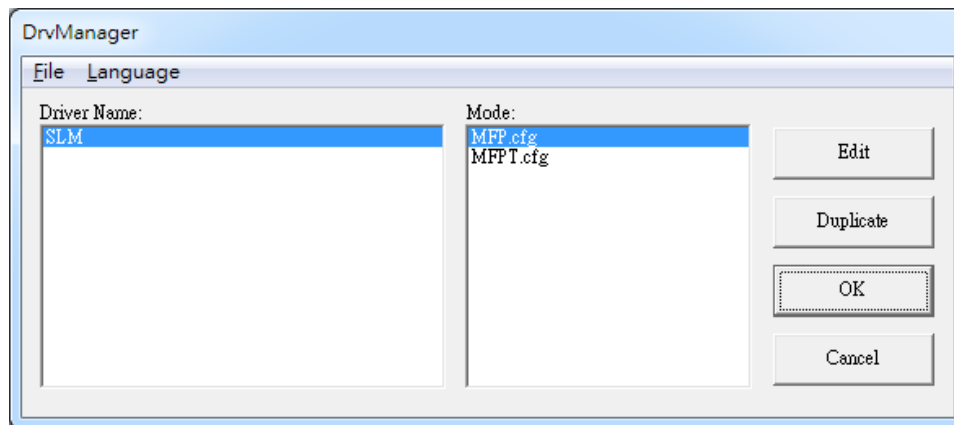


Fig.2.1.01

3.System Info Backup and Recovery

3.1Configuration Import/Export

Use this function to load the backup configuration files or export the current configuration files for backup, see Fig.3.1.01.

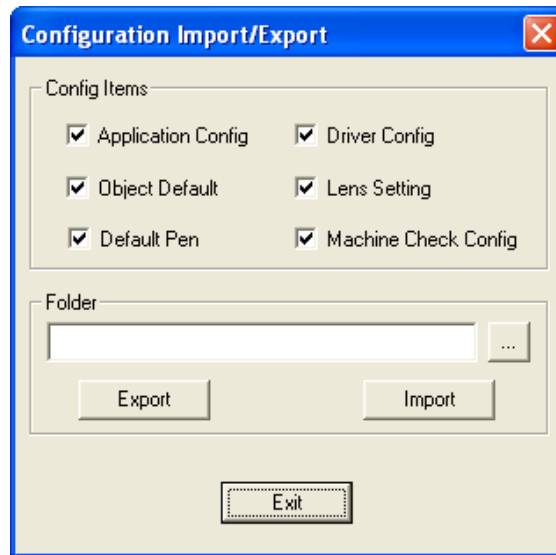


Fig. 3.1.01

Method:

1. Select "File" from Menu Bar and click "Configuration Import/Export."
2. Select the items and click "..." to select the folder user want to export or import, then click "Import" or "Export" button. If the name of lens has already existed, the system will pop a warning dialog box, see Fig.3.1.02. Please notice that "*Jen (Lens cor. File) is only used for version 2.4, so it can only be import.
3. Restart the program.

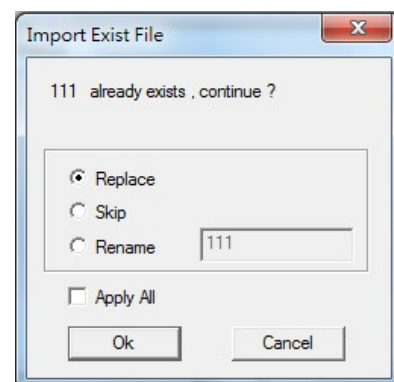


Fig. 3.1.02

3.2Auto Save

Activate 「**Auto Save**」function can help users to save the editing file automatically to avoid losing the data. Users can enable this function from 「**File Menu**」 → 「**Options**」 → 「**Edit**」 → 「**Auto Save**」, see Fig.3.2.01.

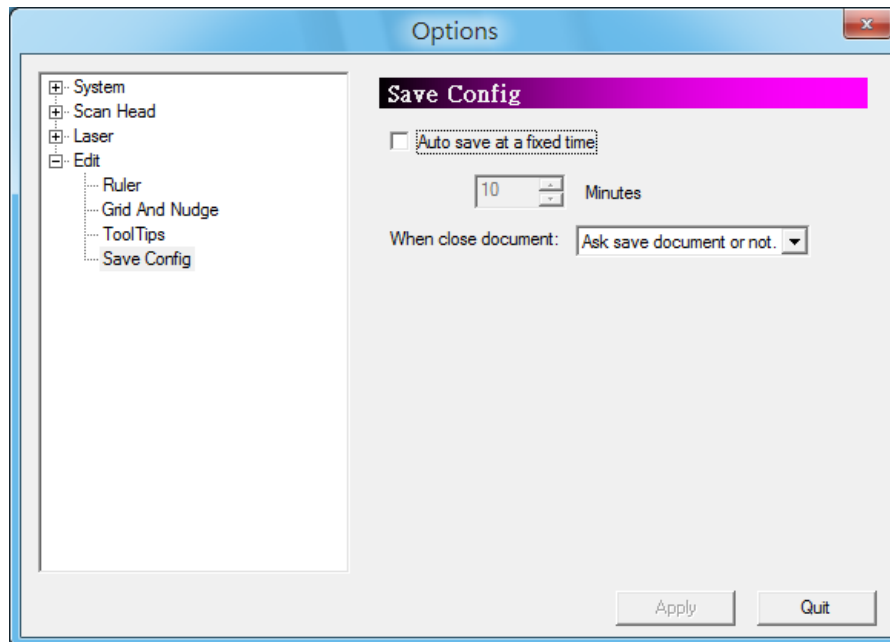


Fig. 3.2.01

Auto Save Rule

Auto-save at a fixed time

The system will save the documents automatically every time period user setted in the field.

When close document

Default action while closing document.

Ask save document or not

Ask if save document or not.

Auto save document

Executing auto save when closing the document every time.

Not save document

Close document directly.

4.Lens Correction

“**Lens Correction**” function is used to fix the distortion resulted from Lens characteristics or optical problems. If the lens correction has been completed, but the mark result still has some problems such as unfocused or ratio inaccuracy, users need to adjust these parameters from the “**Work Area**” page under “**Property Table**.”

4.1 Lens Manager

Enter “**Lens Manager**” from 「**File**」 → **Option**」 → **Scan Head**」, see Fig.4.1.01. All lenses users have will be listed here.

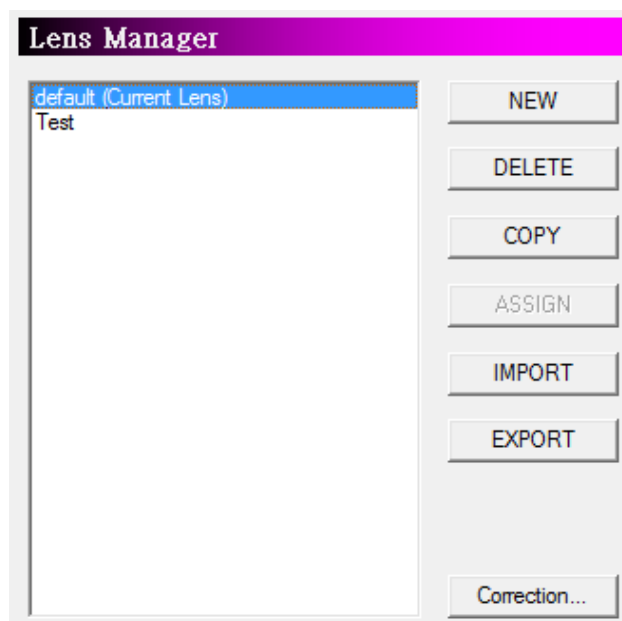


Fig. 4.1.01

NEW	Click this button to add a new lens.
DELETE	Click this button to delete the selected lens.
COPY	Click this button to copy the selected lens.
Assign	Click this button to set the selected lens as the default lens.
Import	Allow users to import lens file.
Export	Allow users to export selected lens file.
LensCor...	Select the one lens and click this button to enter the Lens Correction function.

4.2 Lens Correction

The system will use math formula to correct the barrel distortion, trapezoid distortion, or parallelogram distortion resulted from lenses and optical devices. Adjust lens parameter properly will make the marking result be the same as the original design.

Fig.4.2.01 shows the lens setup under normal mode. Fig.4.2.02 is the lens setup under dot mode.

Lens Setup : 126

LensCor: Formula Method

Mark Area: 100.000 mm ☒ Use Cor File: 126 Cor File...

Offset
 X: 0.000 mm Y: 0.000 mm

Scale
 X: 100.000000 % Y: 100.000000 %

Rotate
 Angle: 0.000 CX: 0.000 CY: 0.000

PreMark Parameters
 Speed Mode: Normal Mode
 Power: 20.0 %
 Speed: 400.0 mm/sec
 Frequency: 20.0 KHz

Correction
☒ Advance
 - X: 0.0000 + X: 0.0000 X: 0.0000 X: 0.0000
 - Y: 0.0000 + Y: 0.0000 Y: 0.0000 Y: 0.0000

Exit

Fig. 4.2.01 Under Normal Mode

Lens Setup : 126

LensCor: Formula Method

Mark Area: 100.000 mm ☒ Use Cor File: 126 Cor File...

Offset
 X: 0.000 mm Y: 0.000 mm

Scale
 X: 100.000000 % Y: 100.000000 %

Rotate
 Angle: 0.000 CX: 0.000 CY: 0.000

PreMark Parameters
 Speed Mode: Dot Mode
 Power: 20.0 %
 Pitch: 1.0 mm
 Delay: 500.0 ms
 Frequency: 20.0 KHz

Correction
☒ Advance
 - X: 0.0000 + X: 0.0000 X: 0.0000 X: 0.0000
 - Y: 0.0000 + Y: 0.0000 Y: 0.0000 Y: 0.0000

Exit

Fig. 4.2.02 Under Dot Mode

- Working Area** Working area of the lens.
- Use Cor File** Use the correction files from manufacturers or use the file created by using Scale or Grid Methods and then adjust parameters.
- Correction file** Select the file name same as the lens name from dropdown menu or select "Import..." item from the dropdown menu to import the correction file such as COR, CTB (from ScanLab), or GCD (from

Halk P Fiber soft

	RayLase).If the selected correction file has the same name as the assigned lens, users are able to click “ Cor File... ” button and do correctionthrough “ Using Correction File ” function.
Offset	If the working pieces cannot be put in an ideal position, users can modify the design or change the offset value to fix this problem. For example, if the position has 5mm deviation to the right side, then input -5mm in Offset X to correct it.
Scale	If the size of marking result (real size) are different from the original design (theoretical size), user can use the scale function of X and Y to fix it. The unit of scale is percentage (<i>theoretical size / real size * 100</i> , the default value is 100). For example, if real size is smaller, this value should be larger than 100.
Rotate	If the working pieces cannot be put in an ideal position, users can modify the design or input suitable values in these fields to amend it.
Correction	When the barrel distortion, trapezoid distortion, or parallelogram distortion happen, enter the suitable X/Y values to do the correction. Please refer the following description of Distortion Correction .
Advance	Allow users to input different correction values at negative X and Y direction.
PreMark Parameters	Setting the parameters for PreMark.
Speed Mode	Select to use Normal Mode or Dot Mode to Premark.
Power	Laser power percentage for PreMark.
Speed	Laser speed (mm/sec) for PreMark.
Frequency	Laser frequency for PreMark.
Pitch (Under Dot Mode)	The distance between dot and dot on the marking route when doing PreMark.
Delay (Under Dot Mode)	The waiting time a lens needs to start radiating when move to a dot while doing PreMark.
Pulse Width (MFPT Type)	The spending time for each pulse.
PreMark	Click the “ PreMark ” button, the laser will mark according to the parameters setting above.

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Please follow the steps listed below to do the correction and note that the direction of X and Y means the output port of GALVO motor:

- Step 1:** Select the lens user want to correct and adjust its focus.
- Step 2:** Input the value of lens working area.
Input the value of scale percentage according to the output voltage ratio of lens and driver. **Attention, users need to complete this step first and then start executing PreMark, otherwise the lens would be damaged.**
- Step 3:** When barrel distortion happened, follow the rules of “Distortion Correction” as Table 4.1 to do the correction until four square sides are all straight lines.
- Step 4:** When trapezoid distortion happened, follow the rules of “Distortion Correction” as Table 4.2 to do the correction until four square sides are equal in length.
- Step 5:** When parallelogram distortion happened, follow the rules of “Distortion Correction” as Table 4.3 to do the correction until four square sides are all vertical.
- Step 6:** Measure the dimension of marking result. Input the value of scale according to the formula (*theoretical size / real size * 100*). If the real size is larger than theoretical size, then reduce its value and retry. On the contrary, increase its value and retry.
- Step 7:** Repeat Step 6 until the theoretical size and real size are equal.

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Distortion Correction

Correction of barrel distortion


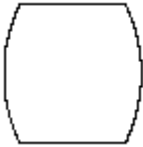
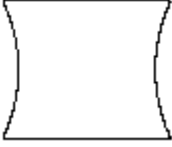
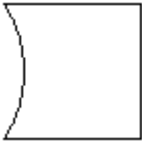
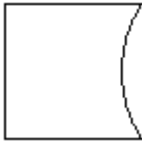


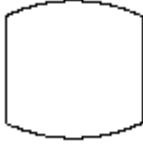
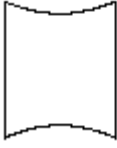

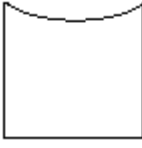


Original				
Mark Results				
Solutions	Increase the X value of  field	Reduce the X value of  field	Reduce the value of -X (Advance)	Reduce the value of +X (Advance)
Mark Results				
Solutions	Increase the Y value of  field	Reduce the Y value of  field	Reduce the value of -Y (Advance)	Reduce the value of +Y (Advance)

Table4.1

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Correction of trapezoid distortion


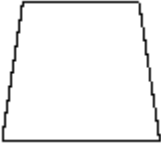
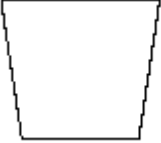



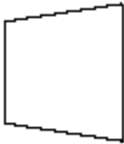


O r i g i n a l		
Mark Results		
Solutions	Enlarge the X value of  field	Reduce the X value of  field
Mark Results		
Solutions	Enlarge the Y value of  field	Reduce the Y value of  field

Table4.2

Halk P Fiber soft

Correction of parallelogram distortion


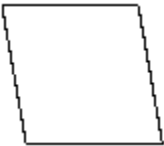
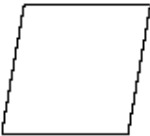



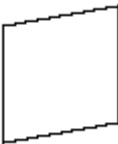


O r i g i n a l		
Mark Results		
Solutions	Enlarge the X value of  field	Reduce the X value of  field
Mark Results		
Solutions	Enlarge the Y value of  field	Enlarge the Y value of  field

Table4.3

4.3 Using Correction File

Correction files are provided by lens manufacturers such as SCANLAB and RayLase for users to do lens correction. Mostly, the results of using these files are acceptable. Users only need to adjust some of the scale parameters.

If require more accurate result or the correction files from lens manufacturers are unable to meet the requirement, users can do advanced correction through using the “Cor File...” function to reach the goal. Before using this function, please make all the parameters as the default values as Fig. 4.3.01.

Once finding that still need to adjust these values after finishing lens correction, users can come back to this dialog box to modify them.

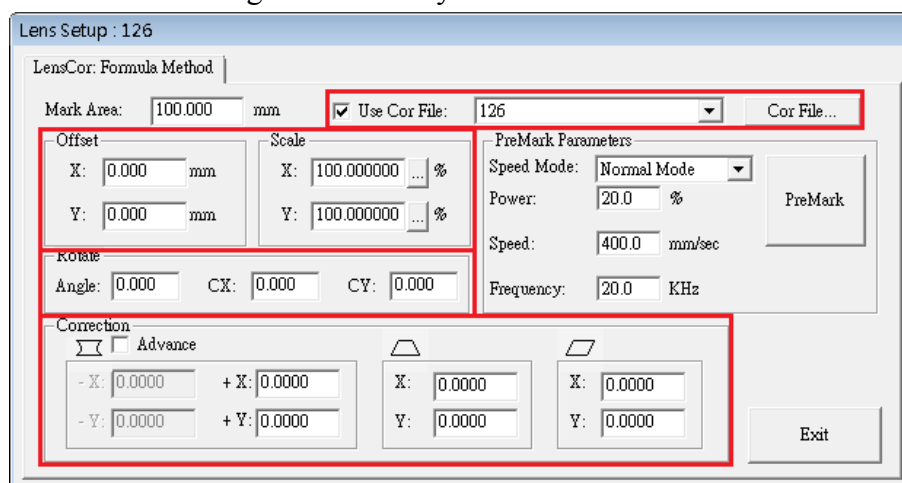


Fig. 4.3.01

4.3.1 New/Edit Correction File

If it's the first time entering the “Cor File...” function after creating a new lens, users will need to select one correction method from Scale Method and Grid Method, see Fig. 4.3.02. Please note that each lens can only choose one method.

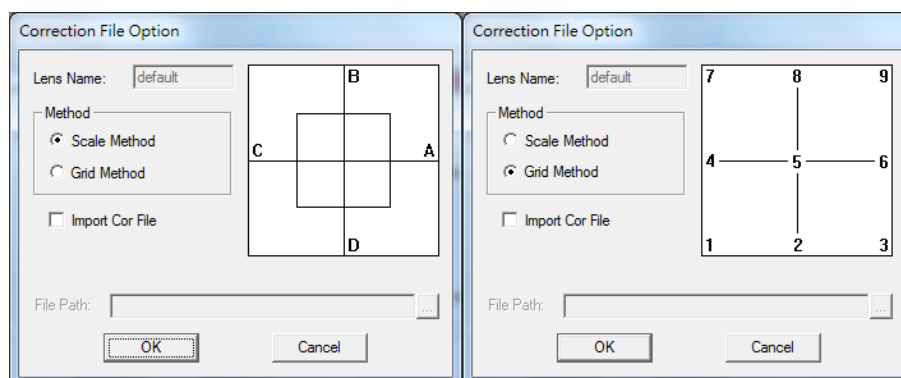


Fig. 4.3.02

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Method	Select Scale Method or Grid Method. Please refer to the following description.
Import Cor File	Import an existing correction file and do advanced correction. There are three usable file types: COR, CTB, and GCD.
File Path	The path of the imported correction files.

4.3.2 Scale Method

The traditional lens correction method is using linear way to correct the distortion. However, some of distortions are not completely linear. In this situation, users can use the Scale Method to divide the lens into several areas and adjust each area by different percentage, see Fig.4.3.03.

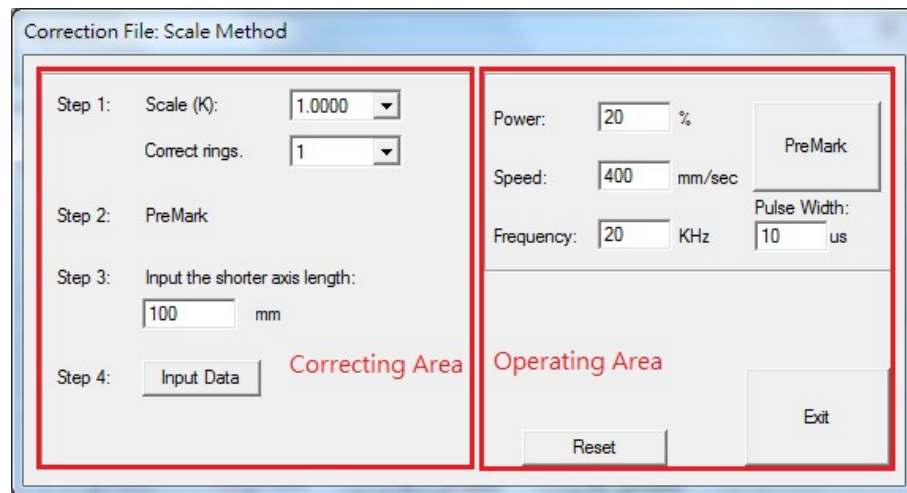


Fig. 4.3.03

The left side of Scale Method window is correcting area for users to enter values to get a correction file. The right side is operating area; users can measure the result according to settings of left side or reset the settings of correcting area.

Operating Area

On the top of this area is the Premark parameters (refer to p.13)

Reset

The purpose of this function is to reset the setting of correcting area, or import a correction file to do correction, see Fig.4.3.04.

Import Cor File

Import the correction file provided by the manufacturers for correcting area.

The value of correcting area will be reset if press "OK" without clicking "Import Cor File".

File Path

The path of correction file.

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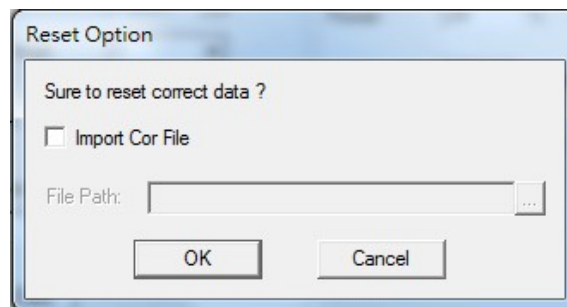


Fig. 4.3.04

Correcting Step

- Step 1** Select a Scale (K) value which is close to the voltage ratio of lens and driver. Then select correct rings from the list. The more correct rings users select the better accuracy they will get.
- Step 2** Click the “PreMark” button to execute marking.
- Step 3** Measure the axis length and then enter the value in the field. (Since the value of X-axis and Y-axis may be different, please enter the shorter one.) If the real value is 109.11mm, it will be better to enter 110mm.
- Step 4** Click the “Input Data” button for next step, see Fig.4.3.05.

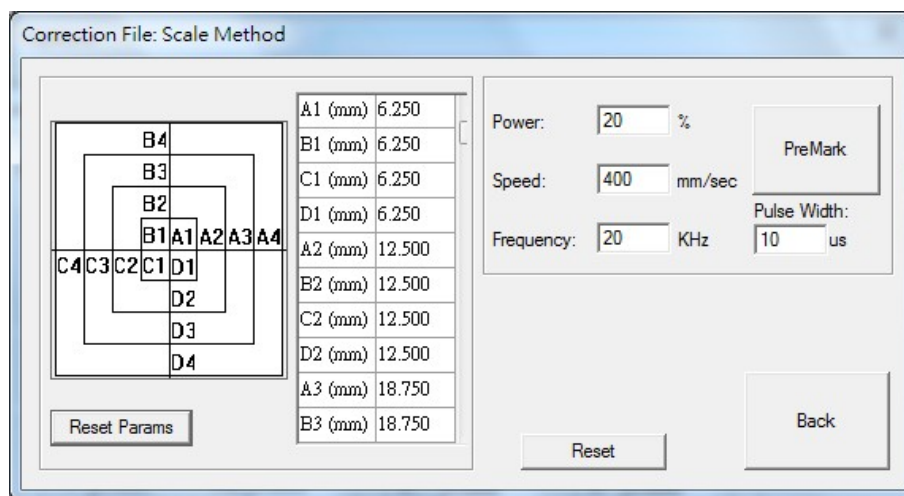


Fig. 4.3.05

- Step 5** Click the “PreMark” button to see the mark result
- Step 6** Edit the values of A, B, C, and D in the fields separately and then click the “PreMark” button again to see the mark result. If necessary, repeat these steps until achieving the goal. Click “Back” button and then “Exit” button to save the file and exit.

Reset Params Reset all correction data as the default values.

4.3.3 Grid Method

Instead of using a formula, this method measures the real position of correct dots directly. More correct dots will get more accurate result, see Fig 4.3.06.

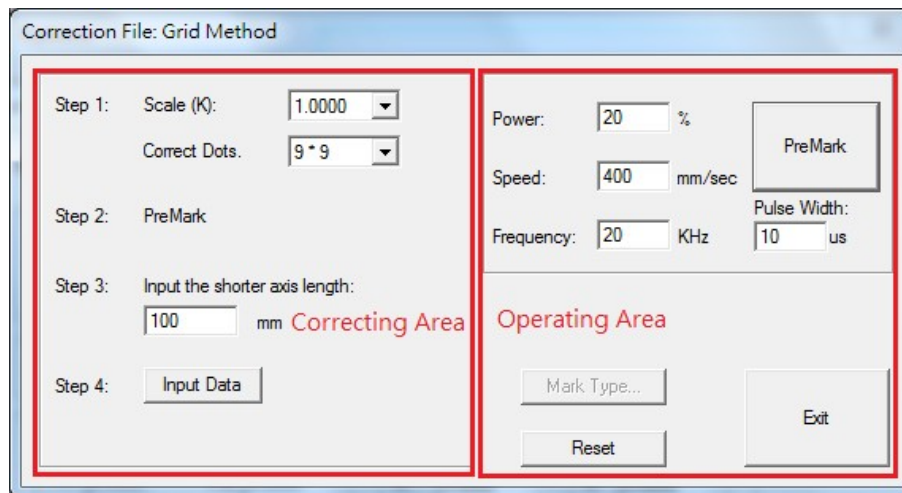


Fig. 4.3.06

Operating Area

On the top of this area is the Premark parameters (refer to **p.13**)

Mark Type

To use the function, users must click “Input Data” at “Correcting Area” first, see Fig.4.3.07.

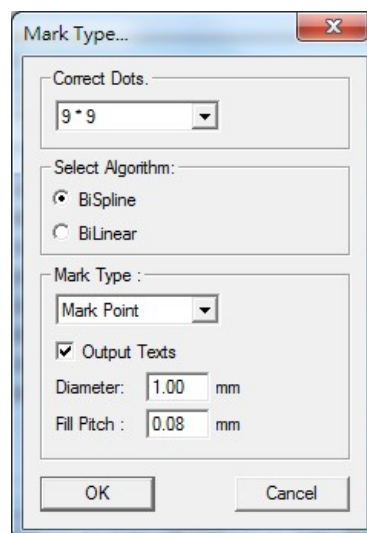


Fig. 4.3.07

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Correct Dots

Select correct dots from the list. More correct dots will get more accurate result.

Algorithm

Select “**BiSpline**” or “**BiLinear**” algorithm.

Mark Line

The laser will mark grid line when choosing “**Mark Line**”.

Mark Point

The laser will mark grid point when choosing “**Mark Point**”. Users can also set the diameter and fill pitch of the grid point from the field below.

Output Texts

If checked the “**Output Texts**” checkbox, the representing numbers will appear next to the grid point or line, see Fig.4.3.08.

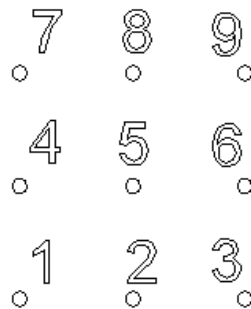


Fig. 4.3.08

Reset

Please refer to page 18.

Correcting Step

- Step 1** Select the scale (K) value which is close to the voltage ratio of lens and driver output from the drop down menu. Then select the correct dots. More correct dots will get more accurate result.
- Step 2** Click the “PreMark” button to execute marking.
- Step 3** Measure the axis length and then enter the value in the field. (Since the value of X-axis and Y-axis may be different, please enter the shorter one.) If the real value is 109.11mm, it will be better to enter 110mm.
- Step 4** Click the “Input Data” button for next step, see Fig.4.3.09.

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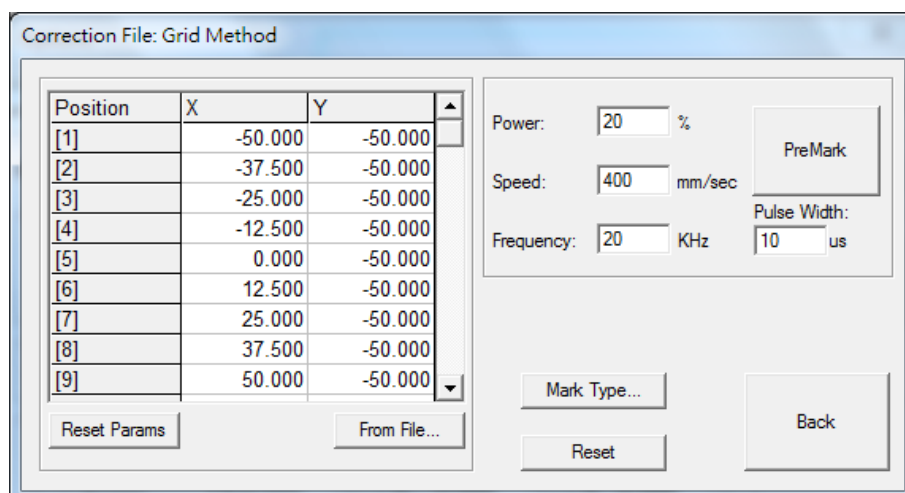


Fig. 4.3.09

- Step 5** Click the “**PreMark**” button to see the mark result.
Select from the drop down menu to set correct dots. More correct dots will get better accuracy.
- Step 6** Edit the positions of X and Y in the fields separately and then click the “**PreMark**” button again to see the mark result. If necessary, repeat these steps until achieving the goal. Click “**Back**” button and then “**Exit**” button to save the file and exit.

Reset Params. Reset all correction data as the default values.

From File... Users can create a *.txt file as a correction file and using this function to import that file as the coordinates of X and Y, see Fig.4.3.10.

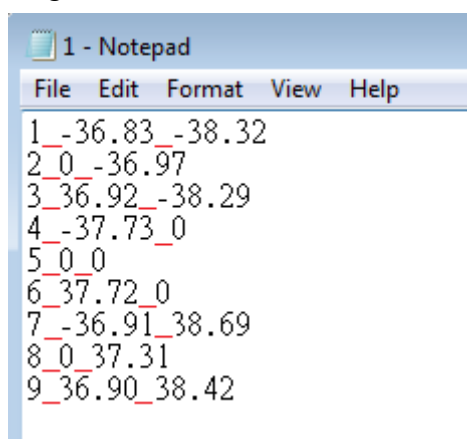


Fig. 4.3.10

4.4 Work Area

The size of f-theta lens will affect the working area. If it is not properly adjusted, center drifting and distortion might be caused. Adjust the parameters carefully, and the marking result will be extremely similar to the users' design, see Fig.4.4.01.

Lens

Users can select the lens they want to use from here.

Correction/ Lens Manager

This button is used for lens correction or lens management.

Scale X/Y

If the scale is too small, please enter a number larger than 100 (because unit is percentage); on the contrary, please enter a value smaller than 100.

X Offset / Y Offset

If the position of marking result has 5mm shift to the right side, users can enter -5mm in the X column. The other situations are the same.

Rotate

Set the angle of the marking result to fit the marking platform when the platform or work piece cannot be placed appropriately.

Galvo Direction:

X reverse / Y reverse / XY exchange

Provides X reverse, Y reverse, and XY exchange for users to apply when they need to adjust the axis' direction of working area.

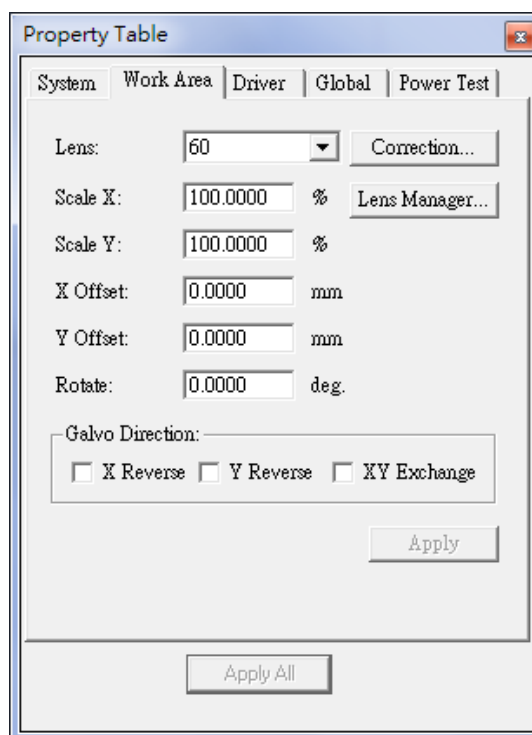



Fig. 4.4.01

5.Alignment

5.1 Mark Preview

This function is used to position the marking object. The interface shows as Fig.5.1.01. It uses align light instead of laser to display marking route on work piece. Users can adjust the position of work piece to fit the marking area through this function. To exit

preview, click  on the upper right of the interface.

Speed: Movingspeed of align light.

Position: Click the four arrows around the control lever in Fig.5.1.01 to move the align light, and the moving distance depends on X or Y value which is set at “Unit.”

Preview Mode

Bounding: The preview only shows the marking frame.

Full Path: The preview shows the whole marking path.

Selected Only: Preview the selected object only.

Mark On Fly: Preview the marking position under “Mark On Fly” mode.

Preview: Start preview.

Align Adjust

If the position of laser does not match with align light, users can use this function to adjust the offset, scale, and rotate angle of the align light, see Fig.5.1.02.

Offset: Adjust the align light’s offset of X or Y direction.

Scale: Adjust the align light’s scale of X or Y.

Rotate: Adjust the angle of align light.

Mark Sample: Execute marking directly.

Mark Time:Time spent at this marking.



Fig. 5.1.01

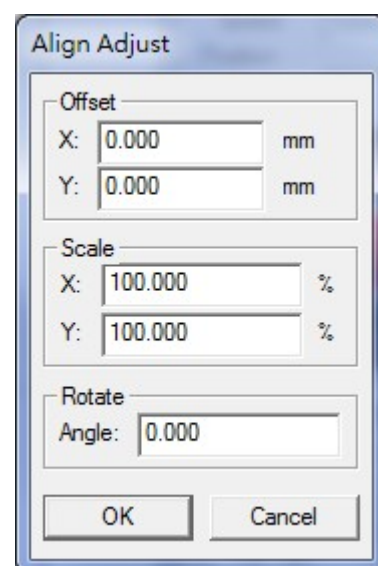


Fig. 5.1.02

5.2 Align Test

Set the parameters for align light, see Fig.5.2.01.

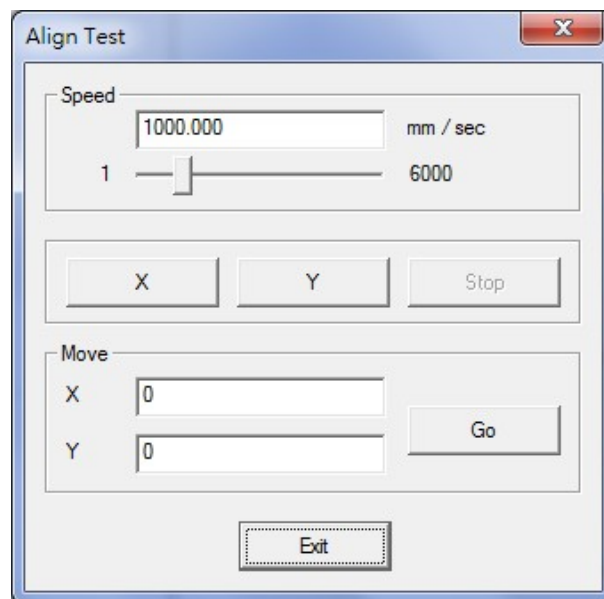


Fig. 5.2.01

Speed

Adjust the speed of the align light. Modify it by key in the value or move the scrollbar directly. The maximum speed is 6000 mm/sec.

X: Click “X” button, the align light will shift toward the X direction.

Y: Click “Y” button, the align light will shift toward the Y direction.

Stop: Click “Stop” button and the align light will stop.

Move

X: Set the shift distance of X direction (unit: mm).

Y: Set the shift distance of X direction (unit: mm).

Go: Click the button and the align light will adjust the X/Y position according to the X/Y value.

6.Rotary Marking

6.1 Enable Rotary Marking

To control the **Rotary Axis**, users need activate the **Rotary** function by clicking the **Layer** object in **Object Browser** and then go to the **Rotary Page** of **Property Table** and enable this function. Or users can decide to enable rotary marking for each object or not under 「**Mark-Related Property Table**」 → 「**Rotary**」. **Layer rotary marking and object rotary marking are mutually exclusive.**

Layer-Related Rotary

There are two methods of rotary: Cylinder Mode (see Fig.6.1.01) and Disc Mode (see Fig.6.1.02). The difference between cylinder and disc is the figure of the rotary axis.

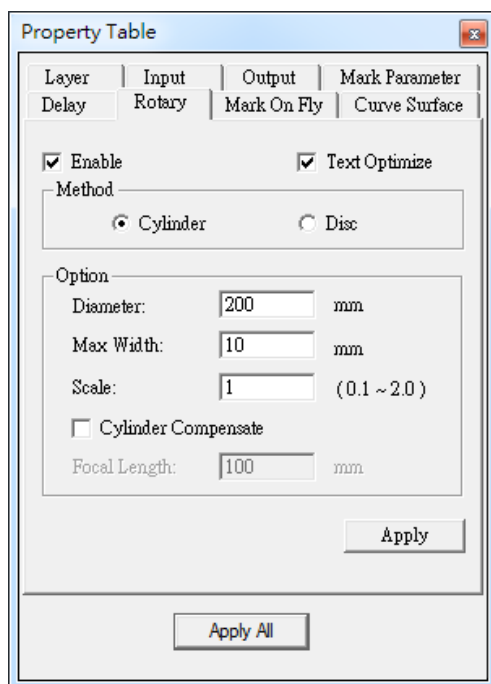


Fig. 6.1.01

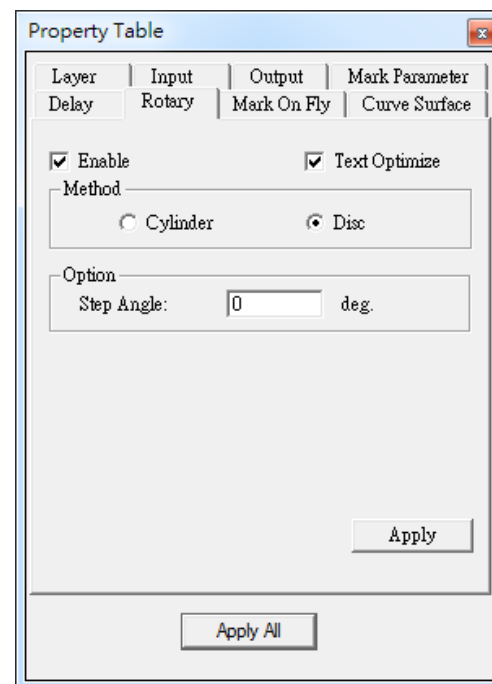


Fig. 6.1.02

Cylinder Mode

Diameter: The diameter of the object.

Max Width: The ideal section width when marking. This value is based on the radius of axle.

Scale: Adjust the ratio of radius to reach the optimum marking effect. The default value is 1. Please refer to the following example and figures.

Example: Suppose that users set the value of rotate rate as 1.5, and the marking result

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is shown as Fig.6.1.03, all sections are overlapped. In this case, users should lower that value, such as 1.0, to make the marking effect optimum, see Fig.6.1.04. On the contrary, if the value of rotate rate is 0.5, and the marking result displays like Fig.6.1.05, there are intervals between each section. As a result, users should increase this value to make the marking effect become ideal, like Figure 6.1.04.

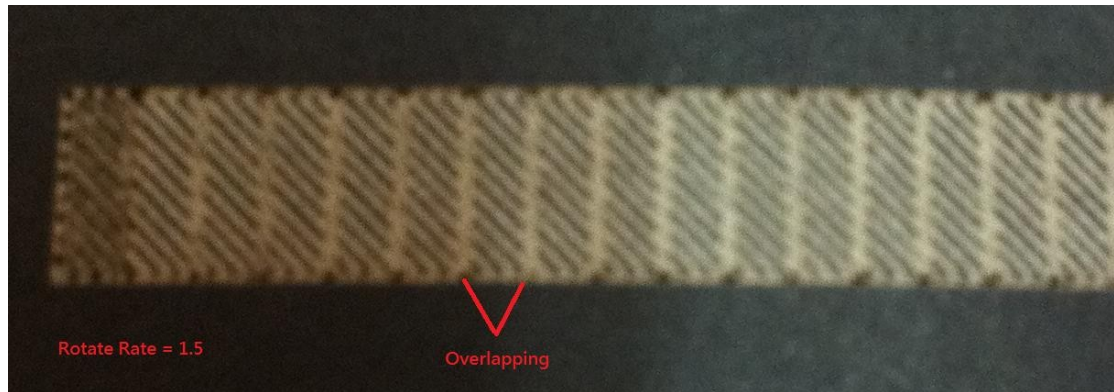


Fig. 6.1.03



Fig. 6.1.04

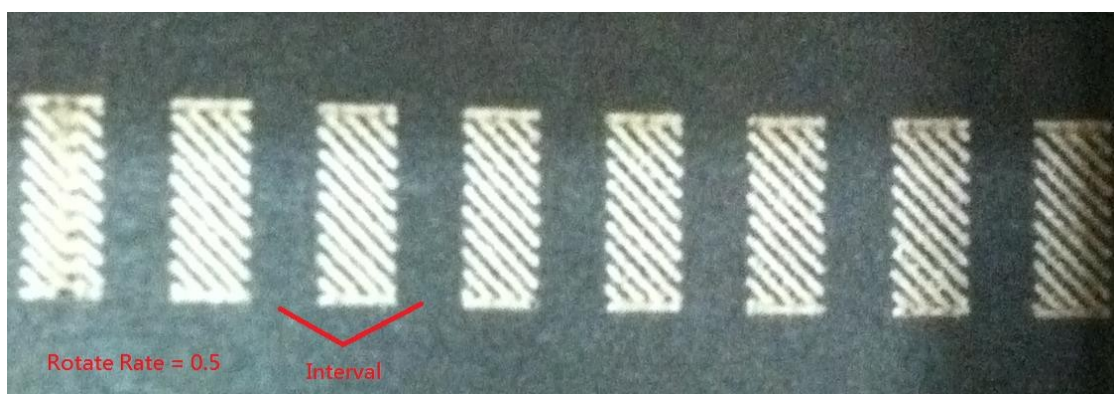


Fig. 6.1.05

Cylinder Compensate: The default value of this function is disable. Enable the function, Halk By Estan soft will fix the overlapping of marking result according to the

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object's radius and the Focal Length.

Focal Length: Input the focal length of the lens.

Disc Mode

Step Angle: Set the rotary angle for each step of marking.

Mark-Related Rotary

This page allows users to enable rotary marking for individual object. Fig.6.1.06 is the property page when selecting a general object.

General Object

Enable

Allow users to enable or disable the rotary axis function.

Start Position

The start angle of the rotary axis.

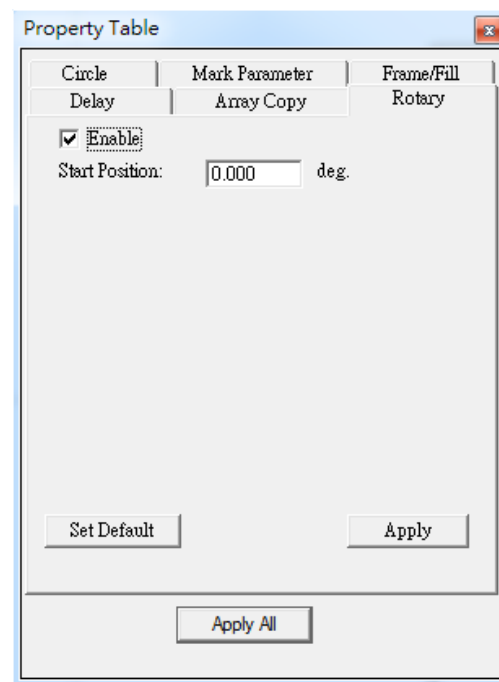


Fig. 6.1.06

Text Object

When a general text object has being selected, the Rotary Page has some particular options, like Fig.6.1.07.

Text option

Separate To Character

Separate the selected text into individual characters.

Pitch

The distance between each character.

Center: Calculate the pitch based on the center of the character, see Fig.6.1.08.

Edge: Calculate the pitch based on the edge of the character, see Fig.6.1.09.

Diameter: The software needs the diameter of the workpiece to calculate the pitch when select Edge mode.

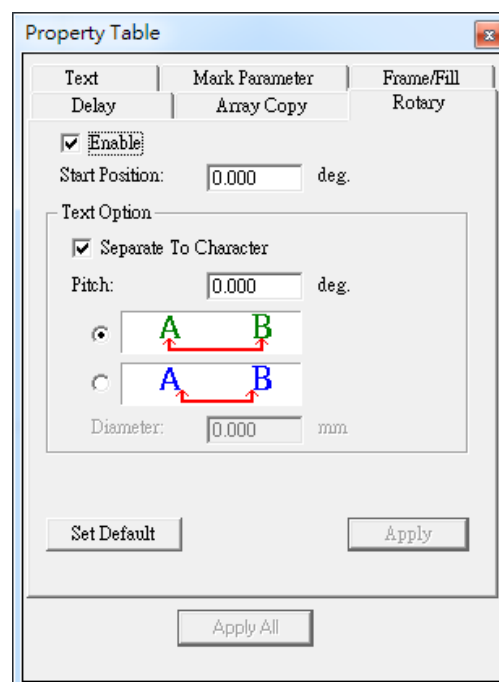


Fig. 6.1.07

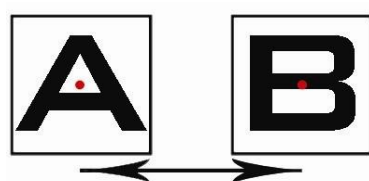


Fig. 6.1.08

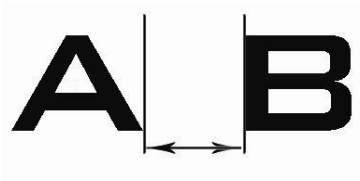



Fig. 6.1.09

6.2 Rotary Control Panel

After enabling rotary, click  button and do the further setting, see Fig.6.2.01.

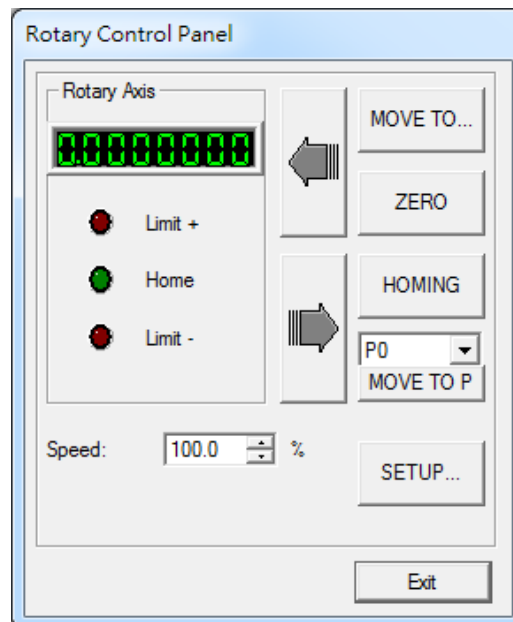


Fig. 6.2.01

1. Click "MOVE TO..." button and input the degree value in the dialog box like Fig.6.2.02 and click "GO," the rotary axis will rotate to that specific angle. The rotating speed can be adjusted from "Speed" parameter.

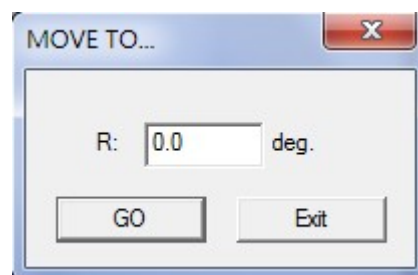


Fig. 6.2.02

2. Click the two direction buttons to move the rotary axis.
3. Click "ZERO" and the program will set the present position as (0,0).
4. Click "HOMING" and the rotary will move to program origin.
5. Click "MOVE TO P", the rotary axis will directly move to the setting position (P0~P9). Users can click "SETUP..." button to set the value of these points.

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6. Click “SETUP...” and do more detail settings, see Fig.6.2.03.
7. Click “XY-Table...” button can do X/Y Table control setting.
8. Click “Z-Axis...” button can do Z-Axis control setting.

Program Org. [deg.]	0
Axis Unit [pulse/rev.]	90000
Speed [deg./sec]	20
Backlash [deg.]	0
Motor Reverse	<input type="checkbox"/>
Jog Reverse	<input type="checkbox"/>
Limit Trigger Level(0/1)	1
Home Trigger Level(0/1)	1
Inpos Trigger Level(0/1)	1
Acc/Dec Times [sec]	0.1
Init. Speed [deg./sec]	10
Inpos Timeout [sec]	0.02
Inpos Delay [sec]	0.02
Rotary Direction	...
Method of Mark End	Reverse Direction
Ext I/O Home	Null

Exit

Fig. 6.2.03

Program Org. [deg]	The program will consider this point as the program origin.
Axis Unit [Pulse/rev]	The pulse needed for rotary to move 1 round (must refer to the motor's specification).
Speed [deg/sec]	The rotating speed of the rotary axis.
Backlash [deg.]	The transmission deviation between motor and axis.
Motor Reverse	Reverse the motor rotating direction.
Jog Reverse	When rotary axis is placed in the different direction with the software's control panel, this parameter can make it rotate following the right direction.
Limit Trigger Level (0/1)	0: active low; 1: active high
Home Trigger Level (0/1)	0: active low; 1: active high
InPos Trigger Level	0: active low; 1: active high

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(0/1)

Acc/Dec Time [sec]

The time motor needs to reach the setting speed.

Init. Speed [mm/sec]

The initial speed of motor.

Inpos Timeout [sec]

The program will consider rotary axis completed position after passing the time setting here.

Inpos Delay [sec]

The program will wait for the setting time here to execute the next command.

Rotary Direction

Click to do further settings for the rotating direction of the rotary axis, see Fig.6.2.04.

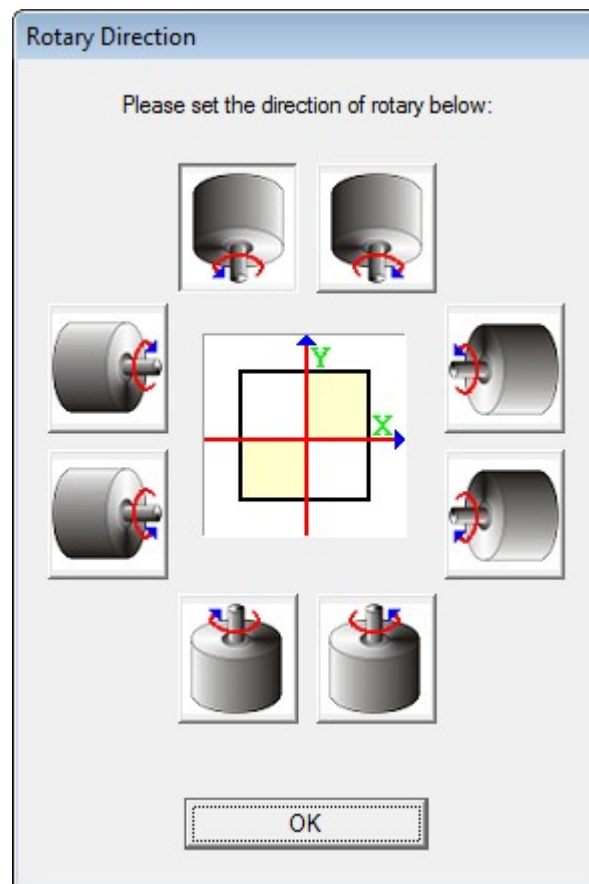


Fig. 6.2.04

Method of Mark End

Five ways for laser to go back to the origin after finishing marking job.

- ◆ Reverse Direction: go back to the origin by backward direction.
- ◆ Shortest Path: go back to the origin by the shortest path.
- ◆ Reset As Origin A: set the mark end

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point as the new origin and the start point for the next marking.

- ◆ Reset As Origin B: set the mark end point as the new origin, but the rotary will move some distance (based on the distance of the object and the upper edge of software's working area) and then start the next marking.
- ◆ Forward Direction: go back to the origin by forward direction.

Please note that the origin represent different position according to the method of mark end. Only "Reset As Origin" method will consider the latest point as the origin, the other methods will treat the left-top corner of the work area as the origin.

Ext I/O Home	Using external controller (I/O) to do homing.
Ext I/O Jog+	Using external controller (I/O) to do positive shift.
Ext I/O Jog-	Using external controller (I/O) to do negative shift.
Home Speed [deg/sec]	The homing speed of rotary axis.
Home Back Speed [deg/sec]	The speed motor needs to move from home position to the edge of home sensor after reaching the home position (only for PMC2 & PCMark).
Home Reverse	Reverse the direction of homing.
Home Sensor Touching Mode (0/1)	Decide that rotary axis will stop or do home in reverse direction when touching the limit sensor during homing. 0 is stop, and 1 is homing reversely.
Home End Point	Rotary axis will move to the assigned position (P0~P9) after homing.
Limit Stop Mode	Decide the motor stop rapidly (0) or slowly (1) when moving to limit sensor.
P0~P9 [deg.]	Set the position of P0~P9.

6.3 Rotary Setup Wizard

The system provides three common used rotary marking functions for users to select, see Fig.6.3.01. Moreover, it also allows users to set the motor. If users click “Setting>>,” then the “Rotary Control Panel” will display as Fig.6.3.02.

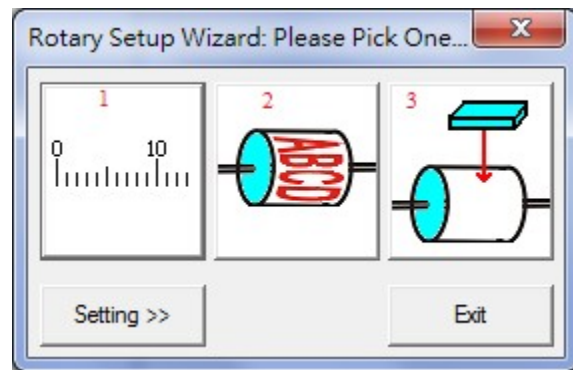


Fig. 6.3.01

1. Calibration Marking

2. Ring Text Marking

3. Cylinder Marking

4. Rotary Control Panel

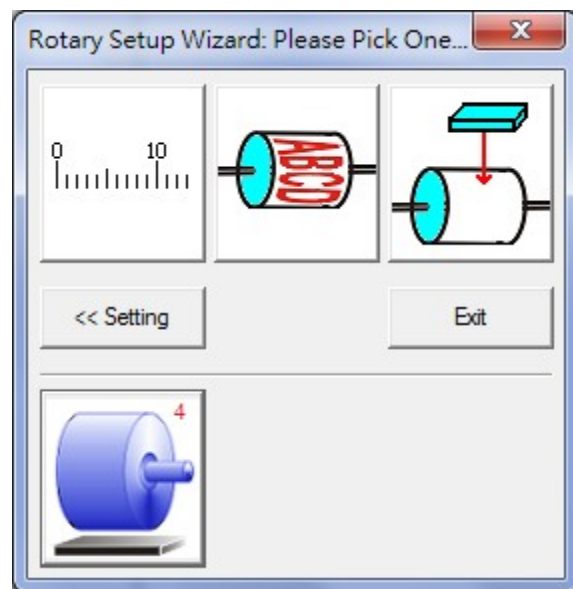


Fig. 6.3.02

6.3.1 Calibration Marking



Press  to display the “**Calibration Marking**” dialogue box, see Fig.6.3.03.

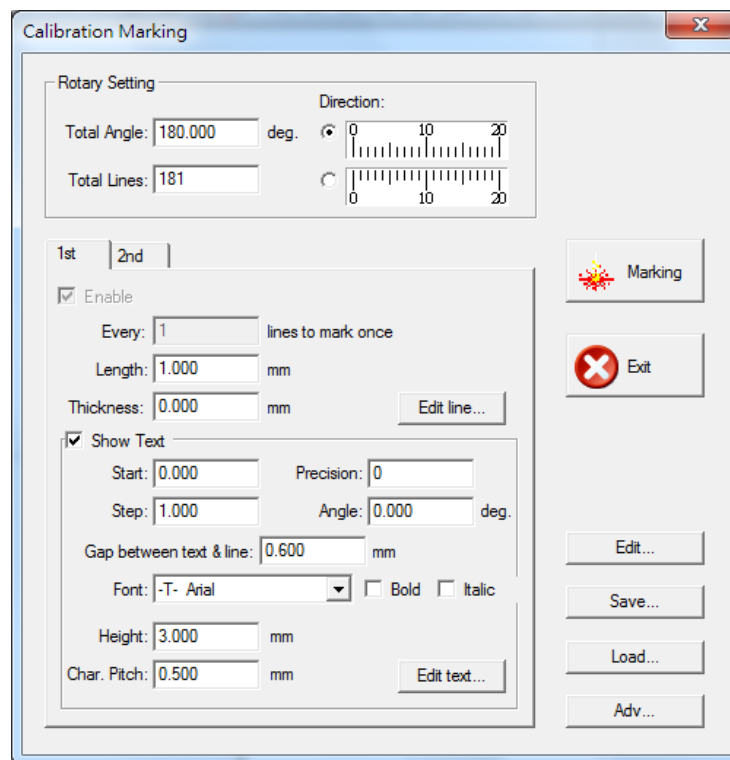


Fig. 6.3.03

Rotary Setting

Total Angle

Set the total mark angle.

TotalLines

The amount of lines users want to mark in the range of total angle.

Direction

Select the corresponding position of scale lines as well and text.

1st / 2ndScale Line

Every xxx lines to mark once

The system will mark the selected scale line in every setting amount of lines. For example, if the value of 2nd scale line is 10, then the system will mark the seconf scale line every 10 lines.

Please note that 1st scale line is a default value and cannot be changed.

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Length	Length of scale line (unit: mm)
Thickness	Width of scale line (unit: mm)
Show Text	Check this option to show text when marking and set the text parameters.
Start	Initial value of text(can be reversed calculation).
Step	The increasing value of text.
Precision	Set the decimal digits (from 0 to 3), and 0 means the integer mode.
Angle	The rotary angle for the text.
Text-Line Gap	Set the distance of text and scale lines.
Font	Set the text font (TrueType, SHX, FON, FNT, etc.)
Bold	This option can be checked if the select font supports Bold type.
Italic	This option can be checked if the select font supports Italic type.
Height	Set the height of text.
Char Pitch	Set the spacing of each character.

Edit Line / Edit Text

Click the button to edit the mark parameters of the line or text, see Fig.6.3.04.

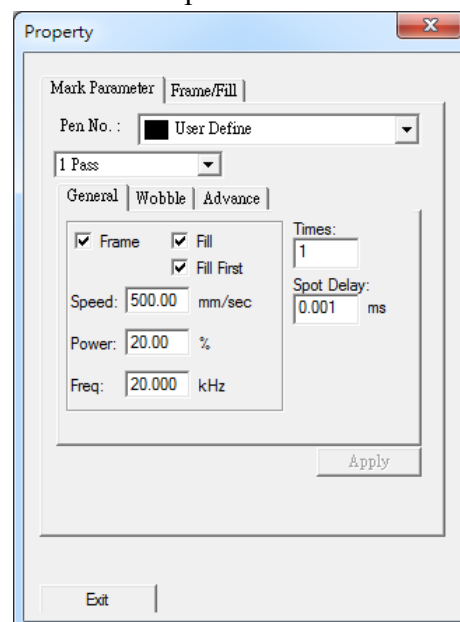


Fig. 6.3.04

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Advanced

Click the button to do the further setting, see Fig.6.3.05.

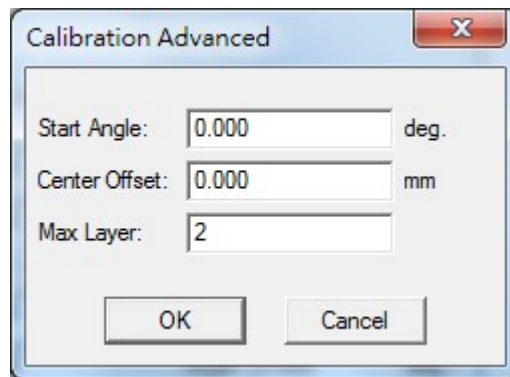


Fig. 6.3.05

Start Angle	Set the start marking angle of the scale line.
Center Offset	The offset on center. The default value is 0.
Line's Layer	Set the amount of scale line layer. The default layer is 2 which means there will be two kinds of scale lines. If users want to have 3 scale lines, please input 3 here.

Edit

Allow the users to edit the scale line.

Save

Export the setting values to assigned folder as a configuration file.

Load

Import the assigned configuration file.

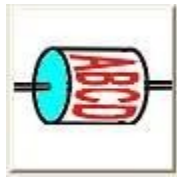
Marking

Click this button and the Marking dialog will pop up. Users can click "Exec" button to execute marking or click "Exit" button to return to the setting dialog box.

Exit

Click this button to exit the dialogue box.

6.3.2 Ring Text Marking



Press  to display the “**Ring Text Marking**” dialogue box, see Fig.6.3.06.

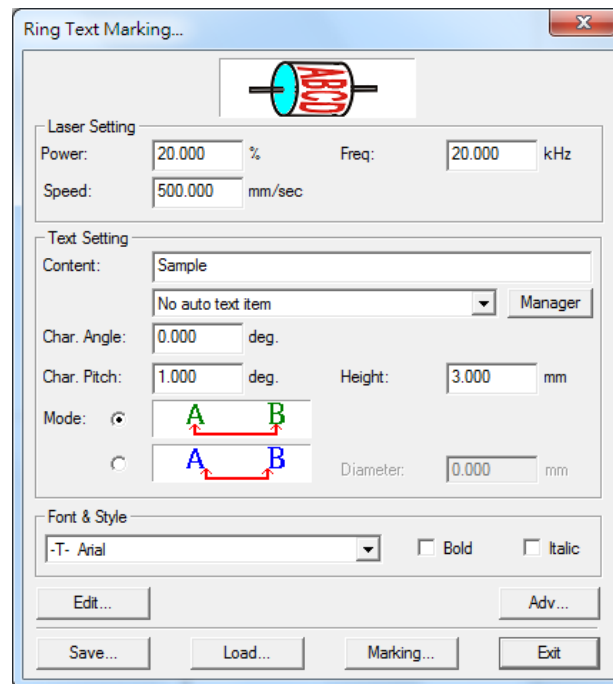


Fig. 6.3.06

Laser Setting

Speed

Set the marking speed.

Power

Set the marking power percentage.

Freq

Set the laser frequency when marking.

Text Setting

Content

Input the text content here or click “Manager” button to insert an auto text item.

Height

Set the height of text.

Char Angle

The rotary angle for the text.

Char Pitch

Set the spacing of each character. There are two spacing modes for users to select:

(1) Center to center spacing

A. Check the first option of “Char Pitch.”

B. The system will calculate the rotary position for each character according to the “Char Pitch” which is based on the center distance of

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the characters.

- C. For instance, the text content is "Text", the character pitch is 5 degrees in the center mode, the Start Angle is 90 degrees, then the marking flow is as follows:

- I. The rotary axis will first turn to 90 degrees
- II. Mark "T" (T in the center of the lens)
- III. Turn the rotary axis forward by 5 degrees
- IV. Mark "e" (e in the center of the lens)
- V. Turn the rotary axis forward by 5 degrees
- VI. Mark "x" (x in the center of the lens)
- VII. Turn the rotary axis forward by 5 degrees
- VIII. Mark "t" (t in the center of the lens)
- IX. Turn the rotary axis to 0 degree

(2) Margin spacing mode

- A. Check the first option of "Char Pitch."
- B. The system will calculate the rotary position for each character according to the "Char Pitch" which is based on the margin distance of the characters.
- C. For instance, the text content is "Ring", the font size is 2mm, the character pitch is 5 degrees in the margin mode, the Start Angle is 90 degrees, the diameter of work is 50mm, then the marking flow is as follows:
 - I. The rotary axis will first turn to 90 degrees
 - II. Mark "R" (R in the center of lens)
 - III. Turn the rotary axis forward by $(\frac{2}{50} * 360 + 5 = 19.4)$ degrees
 - IV. Mark "i" (i in the center of lens)
 - V. Turn the rotary axis forward by $(\frac{2}{50} * 360 + 5 = 19.4)$ degrees
 - VI. Mark "n" (n in the center of lens)
 - VII. Turn the rotary axis forward by $(\frac{2}{50} * 360 + 5 = 19.4)$ degrees
 - VIII. Mark "g" (g in the center of lens)
 - IX. Turn the rotary axis to the 0 degree position

Font & Style

- | | |
|-------------|---|
| Font | Set the font of text(TrueType, SHX, FON, FNT, etc.) |
| Bold | This option can be checked if the select font supports Bold |

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Italic type.
This option can be checked if the select font supports Italic type.

Advanced

Click this button to do the futher setting, see Fig.6.3.07.

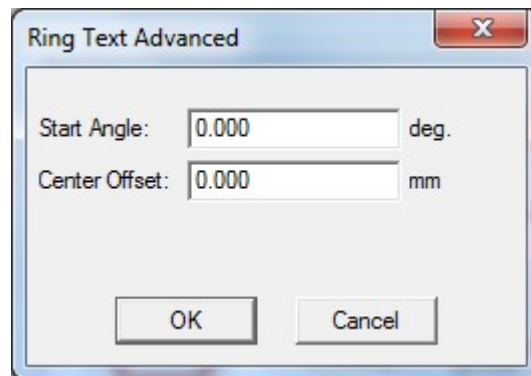


Fig. 6.3.07

Start Angle Set the start marking angle of the scale line.

Center Offset The offset on center. The default value is 0.

Edit

Allow the users to edit the text.

Save

Export the setting values to assigned folder as a configuration file.

Load

Import the assigned configuration file.

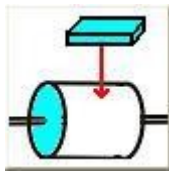
Marking

Click this button and the Marking dialog will pop up. Users can click "Exec" button to execute marking or click "Exit" button to return to the setting dialog box.

Exit

Click this button to exit the dialogue box.

6.3.3 Cylinder Marking



Press button to display the “**Cylinder Marking**” dialogue box, see Fig.6.3.08. Users can import image to mark through this function.

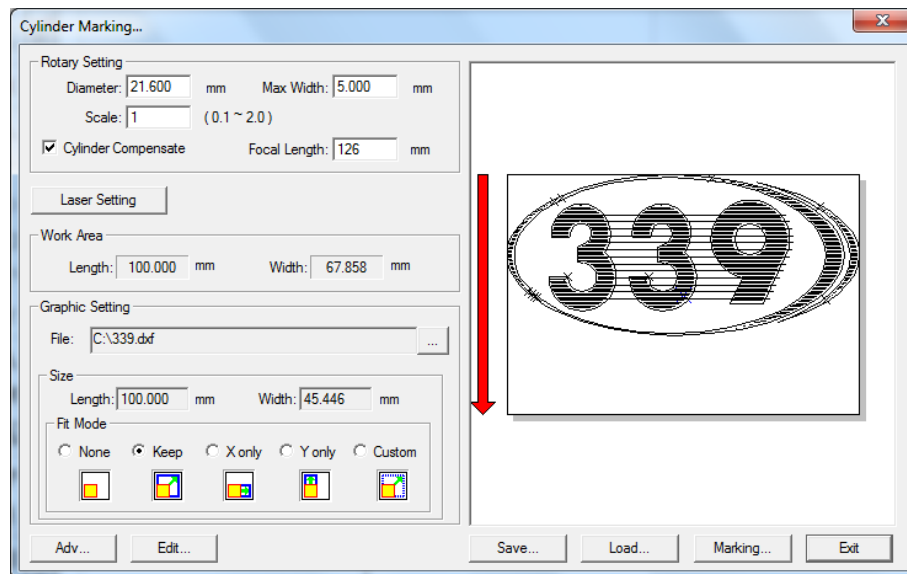


Fig. 6.3.08

Rotary Setting

About rotary setting, please refer to p.28 “Cylinder Mode.”

Laser Setting

Click this button and enter the “Mark Parameter Page” to set the mark parameters.

Work Area Info.

The length and width are based on the lens mark area and the diameter of rotary users set.

Graphic Setting

File	Display the image file users import.
Size	The image size will be displayed here according to the “Fit Mode” users selected.
Fit Mode	
None	Keep the original size.
Keep	Enlarge the image isometrically to fit the work area.
X only	Enlarge the image in X direction.

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Y only	Enlarg the image in Y direction.
Custom	Users can assign the size of image themselves.

Preview Window:

The image file users import will be displayed in this Preview Window. Any changes users make will be shown in the Preview Window synchronously.

Edit

Allow the users to edit the image.

Save

Export the setting values to assigned folder as a configuration file.

Load

Import the assigned configuration file.

Marking


Click this button and the Marking dialog will pop up. Users can click "Exec" button to execute marking or click "Exit" button to return to the setting dialog box.

Exit

Click this button to exit the dialogue box.

6.3.4 Motor Setting



Press  button and "Rotary Control Panel" dialog box will pop up for users to do further setting of rotary axis. More details please refer to the section **6.2 Rotary Control Panel**.

7.Mark on Fly

Without the “Mark On Fly” function, the marking result will be incorrect while the working pieces are moving. Enable this function the system will pursue the object’s position and revise it to make sure the marking result is correct

7.1 Enable Mark on Fly

Users can enable “**Mark on Fly**” function from「**File Menu**」→**Option**」→**System**」→ **Mark on Fly**」, see Fig.7.1.01. After the parameters setting of X/Y Axis (depends on the users’ demand) were finished, users can start using this function.

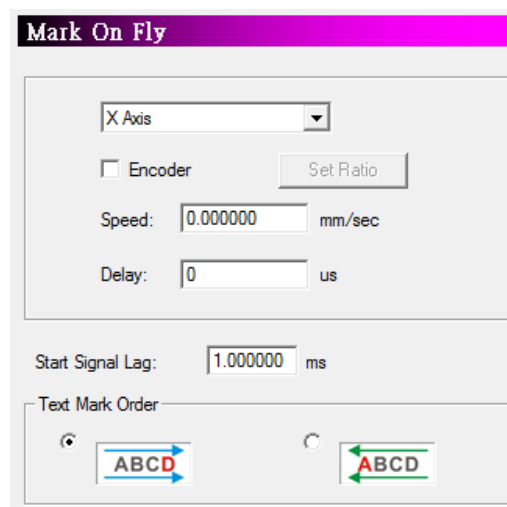
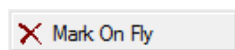


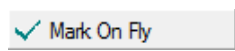
Fig. 7.1.01

Additionally, users can also enable this function from 「**Property Table**」→「**Global**」, see Fig.7.1.02. When the button is like



, that means this function is

disable.If the button shows like



, that means this function is enable.

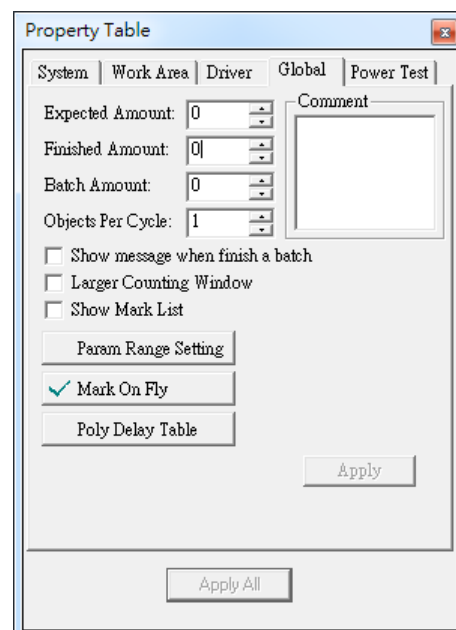


Fig. 7.1.02

7.2 Mark On Fly Setting

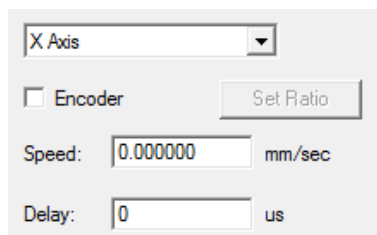


Fig. 7.2.01

X/Y Axis (checked)

Enable “Mark On Fly” on X/Y Axis.

Encoder (unchecked)

The system will use the setting value of “Speed” to pursue the object’s position, see Fig.7.2.01.

Speed

Theoretical speed of conveyer.

Delay

The time that laser needs to start marking after receive the start signal.

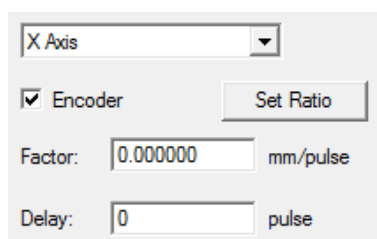


Fig. 7.2.02

Encoder (checked)

The parameter will change from “Speed” and “Delay” to “Factor” and “Delay”, see Fig.7.2.02.

The system will pursue the object’s position according to “Factor” which is the product of the encoder feedback pulse value and moving distance. When checking the encoder setting options, please make sure the encoder device is connected with the laser controller; otherwise an incorrect result will happen. As to the encoder connection method, please refer to encoder manual.

Factor

The moving distance of conveyer per pulse.

Delay

The pulses that laser needs to start marking after receive the start signal.

Set Ratio

Counting the factor through the pulse from the encoder and the moving distance, see Fig.7.2.03.

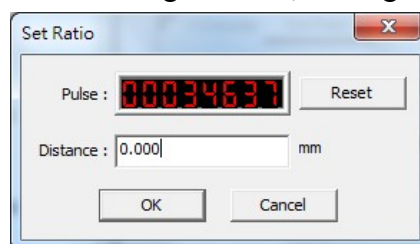


Fig. 7.2.03

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Reset

Reset the value of pulse.

Delay application

In order to raise the accuracy of marking on the moving objects, the system will usually install a sensor instead of using an operator to measure whether the working pieces are located on the available place for marking. The sensor will trigger the start signal to mark when the working piece move through it. Since the sensor is unable to install right below the laser machine directly, users can apply the delay setting to make the laser machine wait for a period of time when it received the start signal, so the working pieces can move to the available marking position and then start marking. Besides, users can also apply “Automation Process” to “Mark on Fly.”

Delay setting method

Users can calculate the delay time through the setting speed or factor and the distance the object move from triggering the start signal to the correct marking position.

For example, assume that the X Axis is checked, and the moving distance of object from triggering start signal to the marking position is 50mm. If X Encoder is unchecked and the setting speed is 100 mm/sec, then the delay value should set as $(50/100)*10^6 = 5*10^5$ us. If X Encoder is checked and the setting factor is 10 mm/pulse, then the delay value should set as $50/10=5$ pulse.

Start Signal Lag

When using “Mark On Fly” function, users will find that the preview mark position and the real marking position are not the same, see Fig.7.2.04. This is because there will have a tiny delay time between the sensor inducts the work piece and the laser starts to mark. This delay time and the speed of conveyer will cause this status. As a result, users can fix this status by modifying “**Start Signal Lag**” and make the position of preview and real marking be the same, see Fig.7.2.05.

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This value can be positive or negative according to the actual result. Users must satisfy the following conditions to set “**Start Signal Lag**.”

- I. Do not check X/Y encoder.
- II. Set an optimize speed for X/Y axis, and set “Delay” as 0.
- III. The arrangement of Mark On Fly device, workpiece and sensor must be placed such as Fig.7.2.04.

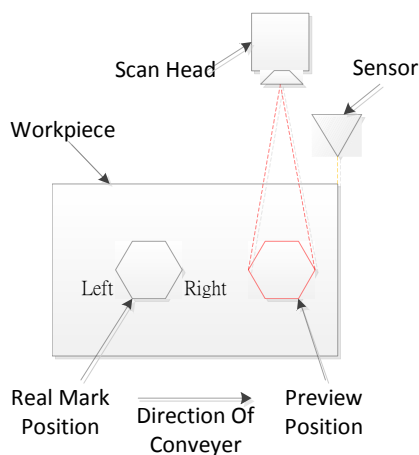


Fig. 7.2.04 Different Position

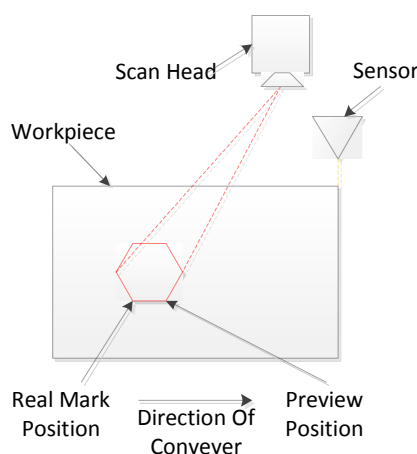


Fig. 7.2.05 Same Position

Adjustment Description

Take Fig.7.2.05 for example. Suppose users set this value as 100. If the preview result located on the right side of real mark position, then increase the setting value. On the contrary, decrease the setting value.

Text Mark Order

Select the marking direction. The direction of arrow represents the conveyer moving direction.



: Conveyor moving direction is right-to-left. The marking direction will be $D \rightarrow C \rightarrow B \rightarrow A$.



: Conveyor moving direction is left-to-right. The marking direction will be $A \rightarrow B \rightarrow C \rightarrow D$.

7.3 Mark on Fly – Distance to Next Layer

This function is set up when using “Mark on Fly” function for marking, enable or disable the delay marking between layers, see Fig.7.3.01.

Enable this function, the system will mark the first layer and then wait for conveyer moving this setting distance, and then continue the next layer’s marking. The distance between layers is the calculation of encoder factor multiplied by encoder feedback value.

The following lists are conditions for enable this function:

1. Driver need to support encoder function, and make sure encoder have connected to controller. About encoder connection method, please refer to encoder manual.
2. Need to enable the “Mark on Fly” function, and checked the “Encoder” options, in addition, input the rational value at “Factor” section. About the Mark on Fly Settings, please refer to section 1.1.6.6.
3. Input a rational value for “Distance to Next Layer” option. This value need larger than the distance which conveyer has moved while marking this layer. When system has finished marking this layer’s objects, will wait until conveyer has moved this distance, and then start marking next layer’s objects. If the setting value is less than the distance conveyer has moved when marking this layer, it will cause incorrect result.

For example:

Suppose the EZM file has a circle object and a text object like Fig.7.3.02, and the “Mark on Fly” function is enabled and the “Encoder” option is checked:

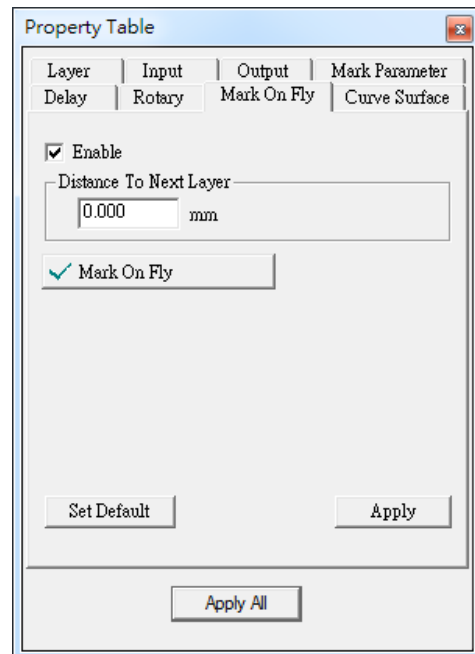


Fig. 7.3.01

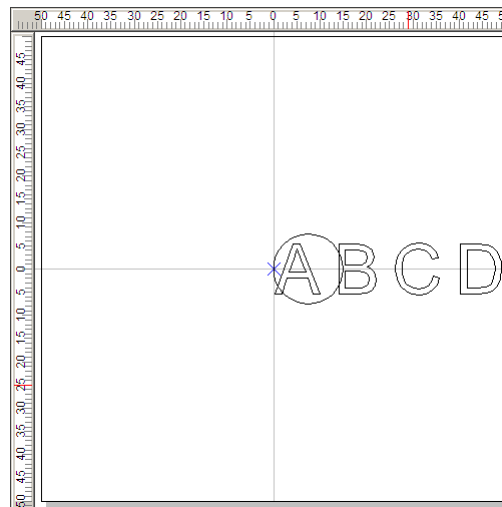


Fig. 7.3.02

1. If two objects are in the same layer, the result of marking will like Fig.7.3.03.



Fig. 7.3.03

2. If in different layer which the circle object is in layer 1, and the text object is in Layer 2, and the moving direction of objects is right-to-left, the system will reset encoder position, and consider the current position as the origin point while marking different layers.

(a) If Layer 1 (circle object) disable the encoder delay function, the marking result will like Fig.7.3.04.



Fig. 7.3.04

Distance between red arrows pointed means which conveyer has moved while executing Layer 1 marking process. Because of disable the layer encoder delay function, so the system will reset encoder position after finishing marking Layer 1, and then consider the current position as the origin point to mark Layer 2. This

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distance will be changed depends on the marking speed.

(b) If Layer 1 (circle object) enable the encoder delay function, the marking result will like Fig.7.3.05.



Fig. 7.3.05

Distance between red arrows pointed means the setting value of “Distance to Next Layer” at Encoder page. This value cannot be less than the distance which conveyer has moved when marking this layer. Otherwise, it will cause incorrect result.

Suppose when finishing marking Layer 1, conveyer has moved 30 mm, just as triangle position as the figure. Because of enable the layer delay function, so after system finishing marking Layer 1, the system will wait until conveyer has moved 50 mm as settings. In this example, conveyer only moved 30 mm after finish marking Layer 1, so the system will wait for conveyer to continue moving 20 mm, such as distance between orange arrows pointed. After conveyer has moved 50 mm, the system will reset encoder position, and consider the current position as origin point to execute marking Layer 2.

8.Auto Text

To apply Auto Text, users first need to create a text object. After that, go to 「**Property Table**」 → 「**Text**」 and enable Auto Text, see Fig.8.01. Then a Auto Text setting page will pop up for users to select mode and do another setting, see Fig.8.02.

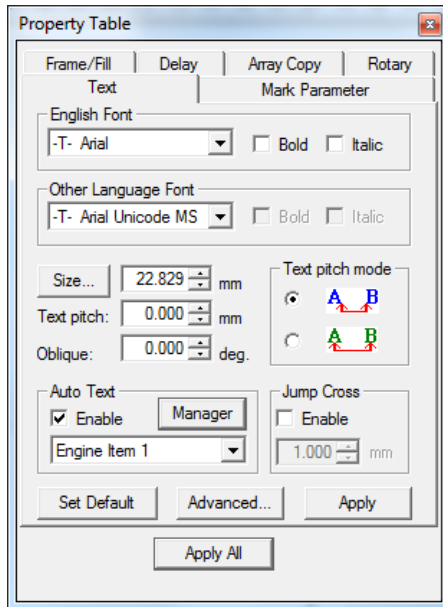


Fig. 8.01

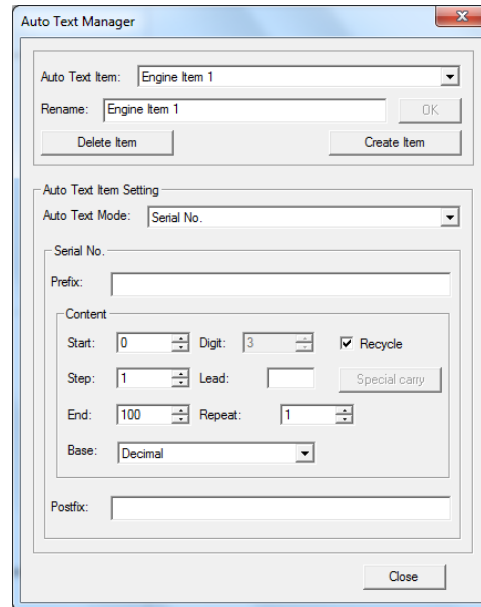


Fig. 8.02

Auto Text Item

The default Auto Text Item is named: “Engine Item 1”.Users can change the name in the field of “Rename” and click “OK” button. If click “Create Item” button, then the second Auto Text Item will be created. “Delete Item” button allows users to delete the selected item.

Auto Text Item Setting

The system provides several modes of Auto Text such as: “Serial No.”, “File”, “Keyboard”, “Date”, “Com Port”, “Serial No. Advance” and “Excel” for users to use. Please refer to the following descriptions for more details.

8.1 Auto Text — Serial No.

The text content will be an accumulation serial number which depends on the users' setting. Auto Text has three parts to set, which are “Prefix”, “Content”, and “Postfix”, see Fig.10.02.

Prefix	Set a specific constant string at the beginning of the Auto Text. This can be blank.
Postfix	Set a specific constant string at the ending of the Auto Text. This can be blank.
Content	
Start	The initial serial number. If “Auto-recycled” has been checked, the serial number will repeat from this number when reach the end number.
Step	The accumulation value.
End	The end number.
Digit	The total digit of serial number. 0 means no limitation.
Lead	Fill up characters. For example, if the digit value is 4 and lead value is 0, then 1 would be displayed as 0001.
Repeat	The repeated marking amount for each number.
Recycle	The system will repeat marking automatically from the start number when finishing marking the end number.
Base	The default setting is Decimal system. Users can select another method. If choosing “Special Carry,” a setting dialog will pop up for users to modify, see Fig.8.03.

Example

If the settings are “Start: 0, Step: 1, End: 100, Repeat: 1, Base: Decimal, Digit: 3, Lead: 0, and checked the Recycle checkbox”, the marking result will be 000, 001, 002, 003, 004,099, 100, 000, 001, 002....

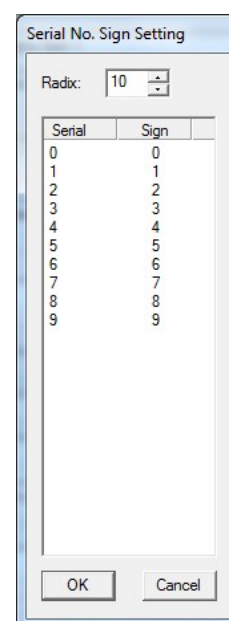


Fig. 8.03

8.2 Auto Text — File

Allow users to import notepad file (*.txt) as the content of Auto Text, see Fig.8.04.

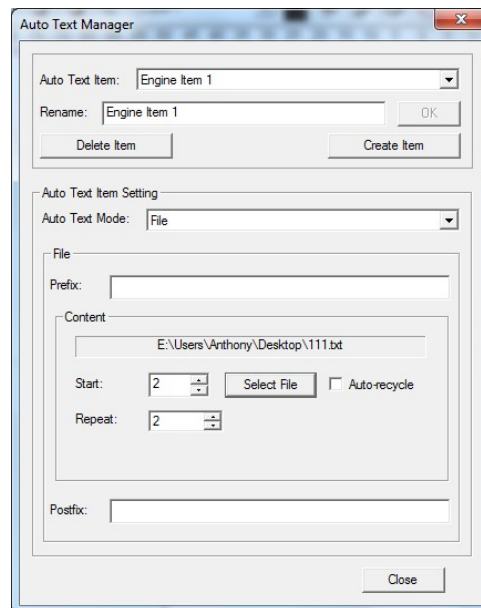


Fig. 8.04

Content

Select File	Select the file users want to use as the content of Auto Text.
Start	Decide the which row of the file will be marked as the first content.
Repeat	The marking times of each row.

Example

If the content of the file is like Fig.8.05, and the value of Start and Repeat are both 2, then the marking result will be 222, 222, 333, 333...999,999.

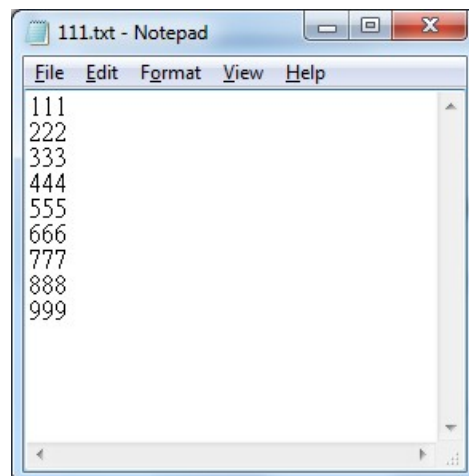


Fig. 8.05

8.3 Auto Text — Keyboard

Users can input the text content through external keyboard such as keyboard or Barcode Reader by applying this option, see Fig.8.06.

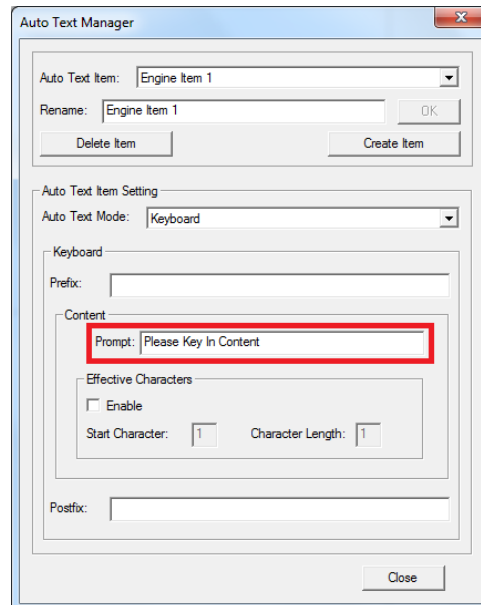


Fig. 8.06

Content

Prompt

Under this mode, when users try to execute marking, a dialog box will pop up for users to key in the text content. Prompt allows users to name the title of this dialog box, see Fig.8.07.

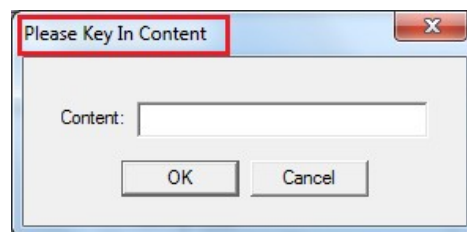


Fig. 8.07

Effective Characters

Enable

Users can set the start character and character length of the input content.

For example

If the “Start Character” is 3; the “Character Length” is 2, and the content of the input text is “ABCDE”, then the marking result will be “CD”.

8.4 Auto Text— Date

Allow users to use date as the content of Auto Text, see Fig.8.08.

Content

Users can decide the form and format of date from here. The following descriptions are the meanings of each format.

%Y	Year
%M	Month(number)
%B	Month(English)
%b	Month(abbr.)
%?M	Month(assign)
%?W	Week(assign)
%D	Day
%J	Solar Day
%H	Hour(24-hours)
%-H	Hour(12-hours)
%N	Minute
%A	AM or PM
%S	Second
%W	Week(English)
%w	Week(abbr.)
%U	Current Week Number

Note

“%?M” is filled in the Auto Text by the system according to the file “**MON.txt**” which is under “**Halk P Fiber soft Insatllation Folder (for example: C:\Program Files\MaxMarking)\DATA.**”

The first line in the file represents the content of January; while the second line represents the content of February, and so on. The system will automatically ignore the contents which are listed after the twelfth line.

Each line can only contain 18 characters at most (a Chinese character or holomorphy characteris regarding as 2 characters). An unexpected error will occur if there have more than 18 characters in one line .

If the amount of lines in the fileare less than 12, the system will replace the lacking part of content by the string of “FMonth”.

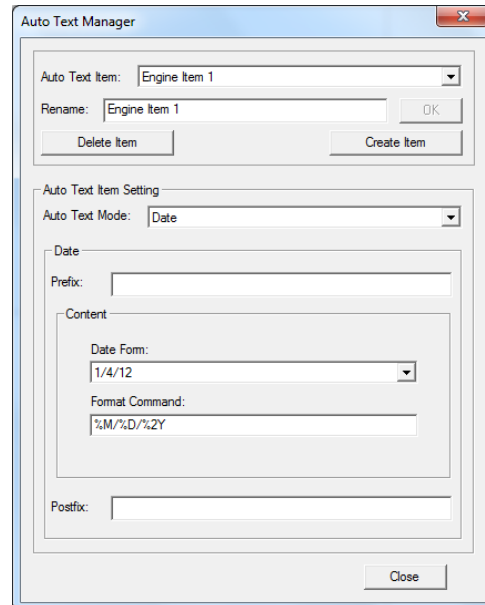


Fig. 8.08

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“%?W” is filled in the Auto Text by the system according to the file “Week.txt” which is under “Halk P Fiber soft Insatllation Folder (for example: C:\Program Files\MaxMarking)\DATA.

The first line in the file represents the content of 1st week; while the second line represents the content of 2nd week, and so on. The system will automatically ignore the contents which are listed after the twelfth line.

Each line can only contain 18 characters at most (a Chinese character or holomorphy characteris regarding as 2 characters). An unexpected error will occur if there have more than 18 characters in one line .

If the amount of lines in the fileare less than 52, the system will replace the lacking part of content by the string of ”FWeek”.

8.5 Auto Text —ComPort

Users can transmit the Auto Text content through communication port by using this option, see Fig.8.09.

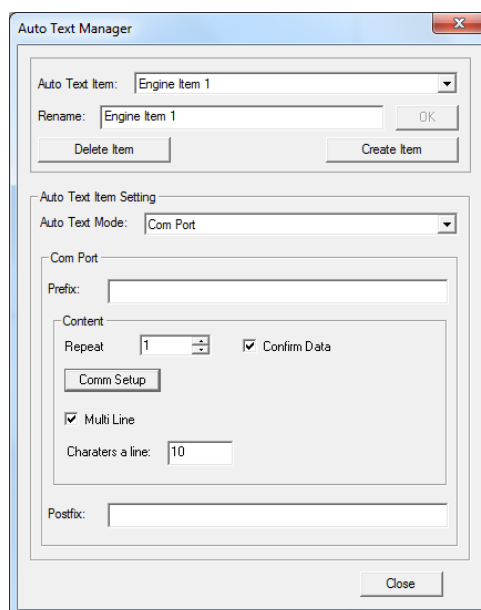


Fig. 8.09

Content

Repeat

Set the repeated marking times for each data.

Confirm Data

Under Com Port Auto Text mode, a status dialog box will pop up when users execute marking. If **Confirm Data** is been checked, this dialog box will show the text content users input while receiving data and users need to click “**OK**” to execute marking, see Fig.8.10. If users do not check this option, the system will

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start to mark automatically after receive data, which means users no need to click “OK,” see Fig.8.11.

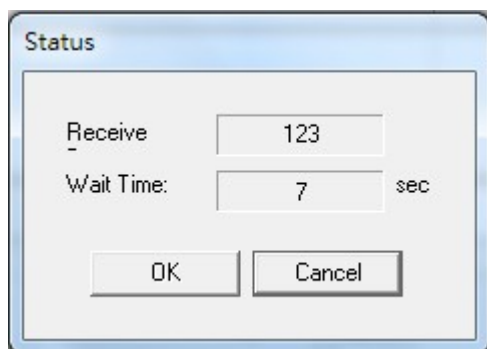


Fig. 8.10

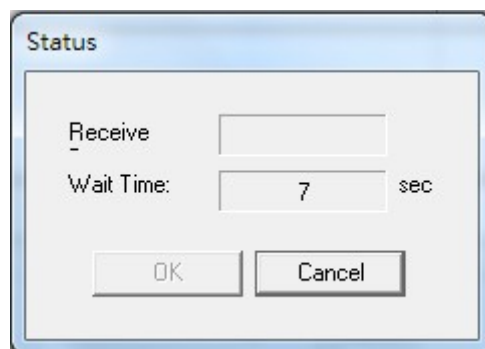


Fig. 8.11

Comm Setup

In order to make “Auto Text—Com Port” working, users need to enable com port setting first. To do com port settings, please click “Comm Setup” button to enter “CommPort Setting” page. Users can also enter this page from 「File」 → 「Option」 → 「System」 → 「Commport Setting」, see Fig.8.12.

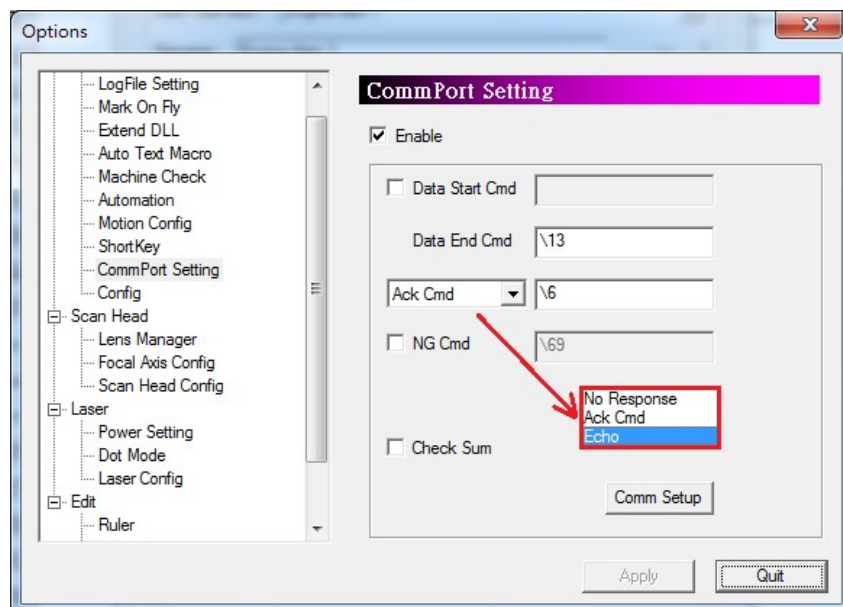


Fig. 8.12

Data Start Cmd

When system receives this value from the host, it means that the next received character is the correct marking content. If this column is blank, the system will treat the first received character as the Auto Text content.

Data End Cmd

This is an essential setting. When the system receives this parameter, it

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means the transmission is finished. The default value is “\13,” the line feed symbol. This parameter cannot be blank; otherwise the system will pop up a warning dialog box like Fig.8.13.

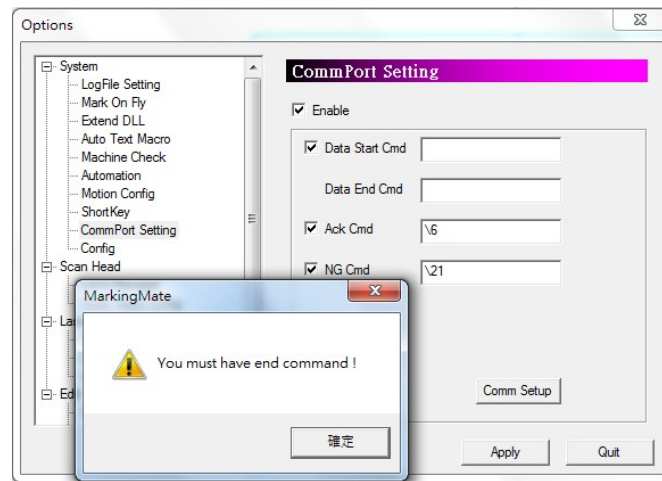


Fig. 8.13

NoResponse

No any reply after receiving “Data End Cmd” and “Check Sum”(if checked).

AckCmd

Setting this parameter, the software will transmit this value to the host to report the transmission is regular after system receives the value of “Data End Cmd” and “Check Sum” and confirms that both values are correct. Default value is \6.

Echo

Setting this parameter, the software will transmit “Data Start Cmd (if checked) + transmitted data from host + Data End Cmd + Check Sum (if checked)” to the host to report the transmission is regular after system receives the value of “Data End Cmd” and “Check Sum” and confirms that both values are correct.

NG Cmd

The software will report to the host that the transmission is wrong when the “Check Sum” is incorrect while using this function.

Check Sum

Decide to transmit the “Check Sum” or not to do the further verification of information. The operation of “Check Sum” is to convert each character of information into Hex first and then do XOR operation for each one in order. The Hex of final result is the “Check Sum.” For example, the “Check Sum” of “2578” is “8,” see Fig.8.14.

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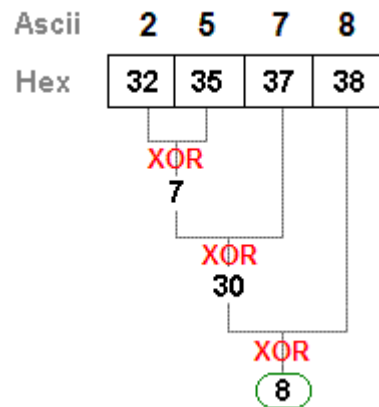


Fig. 8.14

CommSetup

Another dialog box will appear for users to select using Com Port or TCP/IP and do further settings when clicking this button.

COM1 ~ COM8

If select any port from COM1 to COM8, it means the content of Auto Text will be transmitted via RS-232, see Fig.8.15.

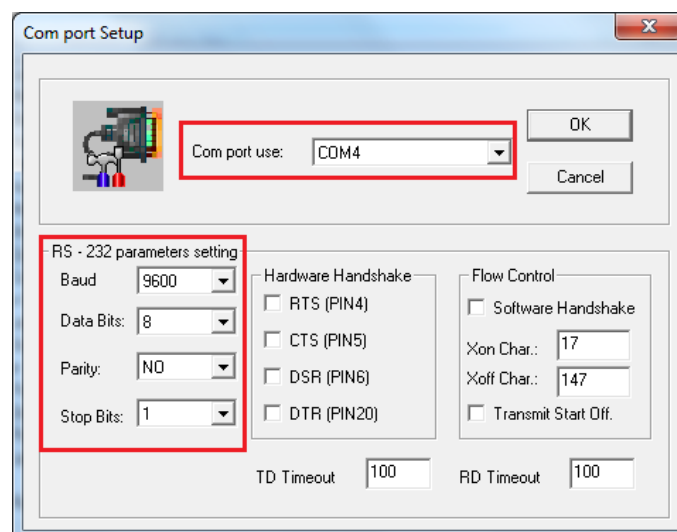


Fig. 8.15

Com Port Use

Choose the proper Com Port according to the computer device.

RS-232 Parameters Setting

Do the same setting as the information transmission source.

Please do not change the parameters which are not in the red flame of Fig.10.15 if not necessary.

TD/RD Timeout

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This function is available only when “NG Cmd” is active. After receiving data, the system will wait for the time setting here to receive “Data End Cmd” and then do the next step. If “Data End Cmd” is not been received, the system will send a “NG Cmd” and clear all received data.

TCP/IP:

If select TCP/IP port, it means the data of Auto Text will be transmitted via TCP/IP, see Fig.8.16. Please input the IP address of the remote host. The port number must be the same as the remote host and users also need to select “CLIENT” here.

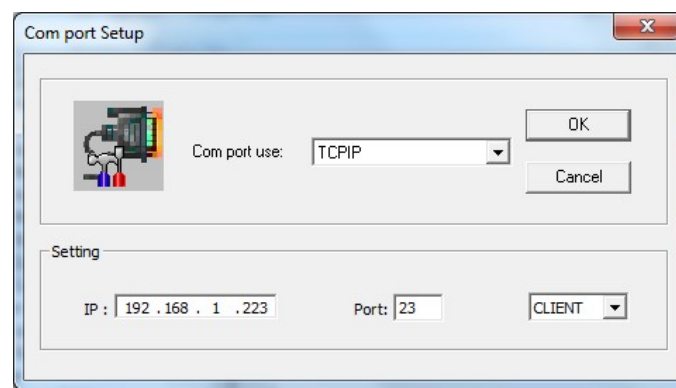


Fig. 8.16

Note

When entering the marking dialog box, the system will connect with the remote host at the same time. Therefore, users must enable the service of remote host before that. Otherwise, the connection between two systems will fail and the marking job will terminate.

Multi Line

Set the amount of character for one line. If exceed this value, the system will automatically do the line feed.

8.6 Auto Text — Serial No. Advance

If users have further requirements for Serial Number, they can use “Serial No. Advance,” see Fig.8.17. Some settings here are the same as “Serial No.,” in this case, this section only introduces the different parts.

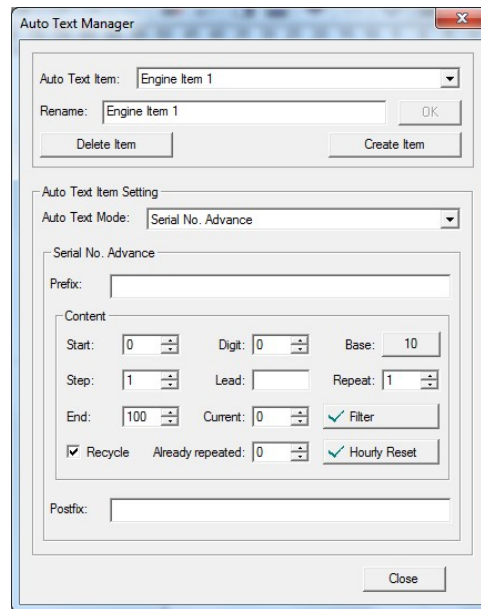


Fig. 8.17

Content

Current

This value can be any number which is between “Start” and “End” number. When users execute marking, the system will mark this value first rather than the “Start” number.

Already repeated

The current repeat marking times of current number.

For example

Suppose that Start: 0, Step: 1, End: 9, Current: 7, Repeat: 3, Already repeated: 2, and check “Recycle”, then the mark result will be “7, 8, 8, 8, 9, 9, 9, 0, 0, 0, 1, 1, 1, 2, 2, 2...”

Hourly Reset

The serial number will be reset as the Start number on the hour if enable this function.

Filter

If users do not want to mark certain number, they can use this function. When clicking “Filter” button, an edit window like Fig.8.18 will pop up for users to input the filter rule.

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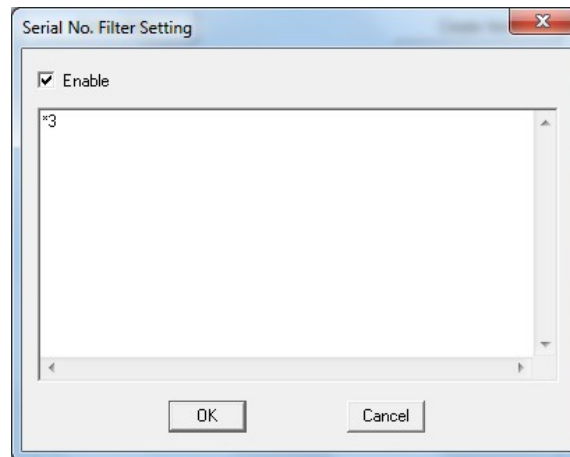


Fig. 8.18

Filter Rule

- If users want to filter just one assigned number, for example, 4, then just input “4” in the edit area, and the mark result will be 0, 1, 2, 3, 5, 6..., 12, 13, 14, 15...
- If users want to filter any units digit, for example, 4, then input “*4” in the edit area, and the mark result will be 0, 1, 2, 3, 5, 6..., 12, 13, 15, 16..., 22, 23, 25...
- If users want to filter the first number of the string, for example, 1, then input “*1” in the edit area, and the mark result will be 0, 2, 3, 4,..., 9, 20, 21, 22, 98, 99, 200, 201...
- If users want to filter every certain unnumber of assigned digit of the string, for example, every hundreds digit 7 of a five-figure serial number, then input “**7**” in the edit area, and the mark result will be 0, 1, 2, 3, 4, 5, 6, 7, 8..., 69, 70, 71...698, 699, 800, 801, 1698, 1699, 1800, 1801...
- Suppose that users want to filter every string which Start value is 2; End value is 8 and the hundreds digit is 5, they should input “2*5*8” in the edit area, and then each serial number which Start value is 2; End value is 8 and the hundreds digit is 5 will not be marked, for example, 2508, 2518, 20528, 210538... and so on.
- If users want to filter the serial numbers which include a specific number, for example, 8, then all the serial numbers with “8” will not be marked and the filter rule are listed below (take four-figure for example):

*8

8

*8**

8*

8.7 Auto Text — Excel

Users can import an excel file as the content of Auto Text, see Fig.8.19.

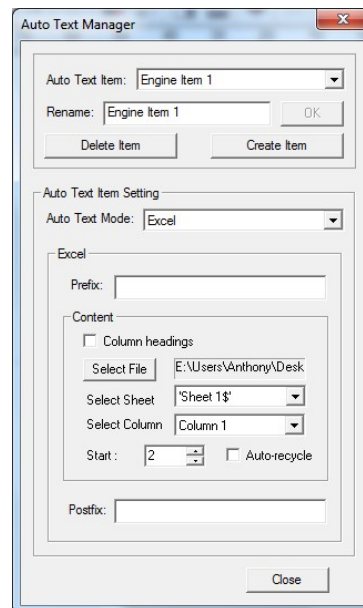


Fig. 8.19

Content

Column headings

If this option has been checked, then the “**Select Column**” will display the heading of the selected column. Otherwise, it will only show the column’s number.

Select File

Select the excel file users want to import.

Select Sheet

Select which sheet users want to mark.

Select Column

Select which column users want to mark.

Start

System will start marking the content from the setting row.

If content of excel file at first column is all digits, such as 123, 234, the marking result will be 123.000000, 234.000000.

8.8 Auto Text — External

Users can set text content. What's different to normal text object is if used frequently to multiple position, users just need to change one time for changing all content, which is allowed to save massive time. See Fig.8.20.

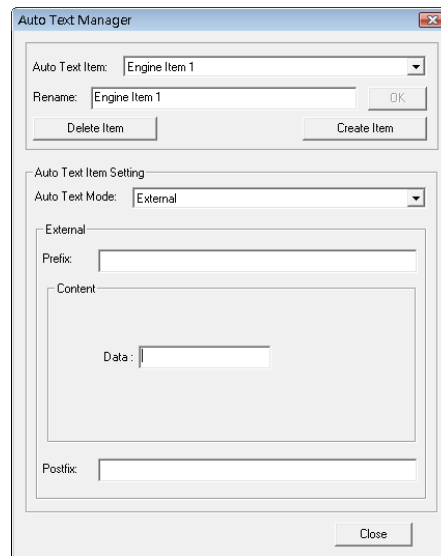


Fig. 8.20

Content

Data

Enter text content.

8.9 Multi Auto Text Setting

If users want to use two or more same or different Auto Text in one text object (take serial number and date for example), please refer to the following steps.

Step 1

Create a text object and then go to 「**Property Table—Text**」, then check “**Enable**” from “**Auto Text**,” like Fig.8.21, and the “**Auto Text Manager**” will pop up.

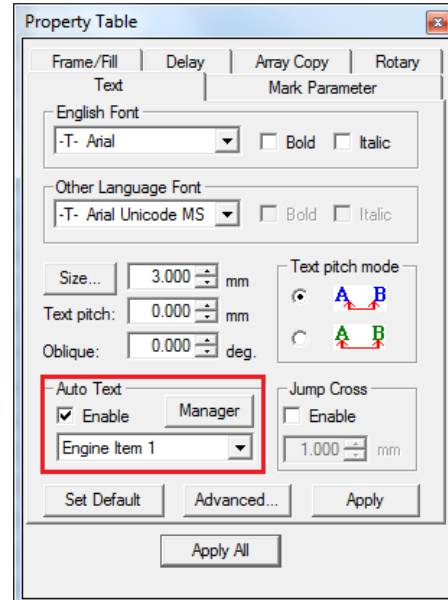


Fig. 8.21

Step 2

Set the mode of the first **Auto Text Item** (for example, **Engine Item 1**) as “**Serial No.**,” see Fig.8.22. Then create a new item and set the mode as “**Date**” and click “**Close**” to do the next step.

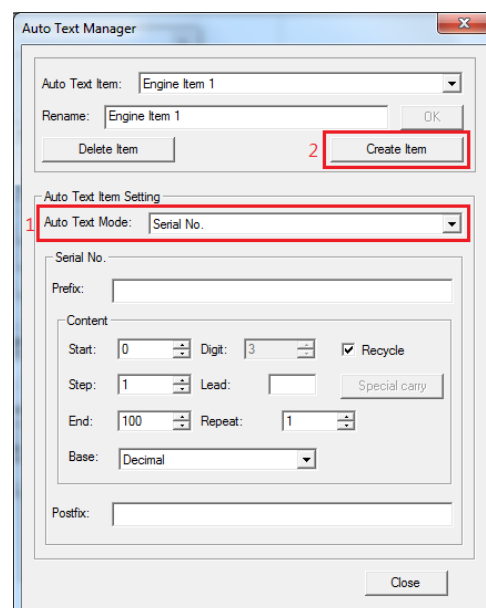


Fig. 8.22

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Step 3

Click “Advanced” from 「**Property Table—Text**」 to enter “**Text Advanced.**” Users can edit the text content at the blank area.

In this example, input “No.,” first (users can input any word they want or input nothing) and then click “**Insert auto text item**” to select “**Engine Item 1.**” At this time, the blank area will be like “No.:\\[1].” This is the first Auto Text object.

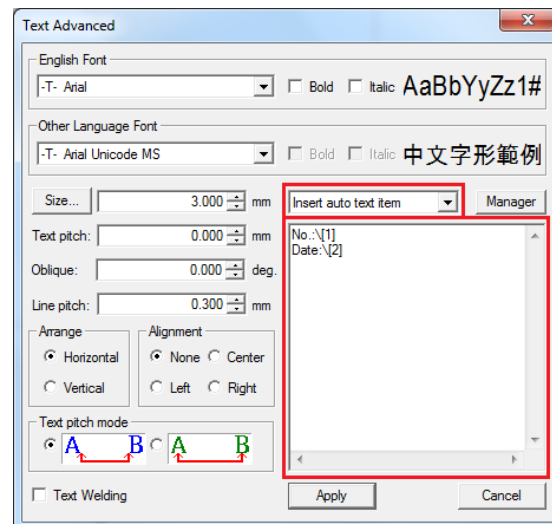


Fig. 8.23

If users wish the second text object and the first object are at the same row, then just input the content of object 2 from the end of object 1. If users want the second object is at the next row, just press “**Enter**” and then input the text content.

In this example, the second object is at the next row. After inputting the content, for example, “Date:,” select “Engine Item 2” from “Insert auto text item” drop list. The blank area will display like Fig.8.23. Exit “Text Advanced” and the working area of software will be like Fig.8.24, and this means that users create two Auto Text successfully.

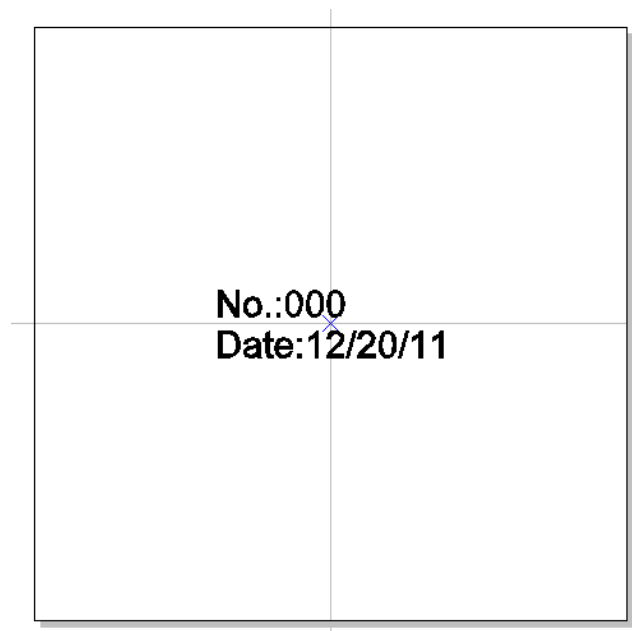


Fig. 8.24

9. Automation

9.1 Automation and I/O

If users want to apply this system in automatic process, all they need to do is understanding how the system works with I/O signals and do the right setting.

9.1.1 Time Sequence Signal

Program Ready/Mark Ready

Program Ready and Mark Ready signals are programmable. System integrators are able to plan the signal as Program Ready or Mark Ready signal depending on their requirements. The setting method is to open “**Config.ini**” with notepad which is under the installation folder of Halk P Fiber soft. In the file, find the parameter “**PR2MR=0/1.**” If the value is 0, it means enable **Program Ready** signal. If the value is 1, it means users are using **Mark Ready** signal. If users cannot find this parameter, they can add this parameter under the “**SignalRule**” tag by themselves.

If set as **Program Ready**, the signal will be “**OFF**” when powering up the computer, and will continue to be “**ON**” when executing the software until exiting the software. This signal is mainly planned to tell that the marking software is ready.

If set as **Mark Ready**, the signal will be “**ON**” when entering “**Mark**” dialog, and will turn to “**OFF**” if exiting the dialog.

Ready for Start Signal

Ready for Start signal was called “**Mark Ready**” before. This signal is initially set as “**OFF**”. When entering “**Mark**” dialog, the system will wait for “**START**” signal, and the signal will become “**ON**” at this time. After receiving “**START**” signal, the system will start to mark, and this signal will change to “**OFF**”. When finishing marking, the system will continue to wait for “**START**” signal, and the signal will become “**ON**” again.

If users add a control object “**DO PAUSE**” into the marking flow, this signal will also be “**ON**” and waiting for “**START**” signal when executing to “**DO PAUSE**” object.

Stop/Error

This signal is also programmable. Under **Normal Mode**, this signal can be planned

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as "Stop" signal, while in **Automation Mode**, it can be planned as "**Error**" signal. In **Normal Mode**, when users press "**STOP**" button to break down the marking process, the "**Ready for Start**" signal will be "**ON**" and wait for "**START**" signal to continue the marking process.

Under **Automation Mode**, once the program detecting the "**Error**" signal, the system will exit the "**Mark**" dialog, and the "**Mark Ready**" signal will become "**OFF**" as well as the "**Ready for Start**" and "**Marking End**" signals. Only when the breakdown has been eliminated and re-enter the "**Mark**" dialogue, the "**Mark Ready**" and "**Ready for Start**" Signal will be changed to be "**ON**" again.

Mark End/Mark End Pulse

This signal is also programmable. The default setting is Mark End, which means Mark End Pulse Time= 0 (this parameter can be changed in Config.ini.)

The signal will be "**OFF**" at the start when the parameter is set as **Mark End**. When the marking process finish, it will become "**ON**." The signal will be "**OFF**" again when the system receives "**START**" signal. If the system stop marking because of "**DO PAUSE**" (**Ready for Start** signal will be **ON** at this time), then even receive "**START**" signal again and continue marking process (**Ready for Start** signal will become **OFF**), the "**Marking End**" signal will still be "**OFF**" until the marking finished.

If set as **Mark End Pulse** signal (**Mark End Pulse Time** was assigned as a certain value), it will be "**OFF**" at the beginning and will become "**ON**" when marking process finish. However, the time this signal keeps "**ON**" is according to the value of **Mark End Pulse Time**.

Fig.9.1.01 and Fig.9.1.02 are the signal time sequence under **Normal Mode** and **Automation Mode**.

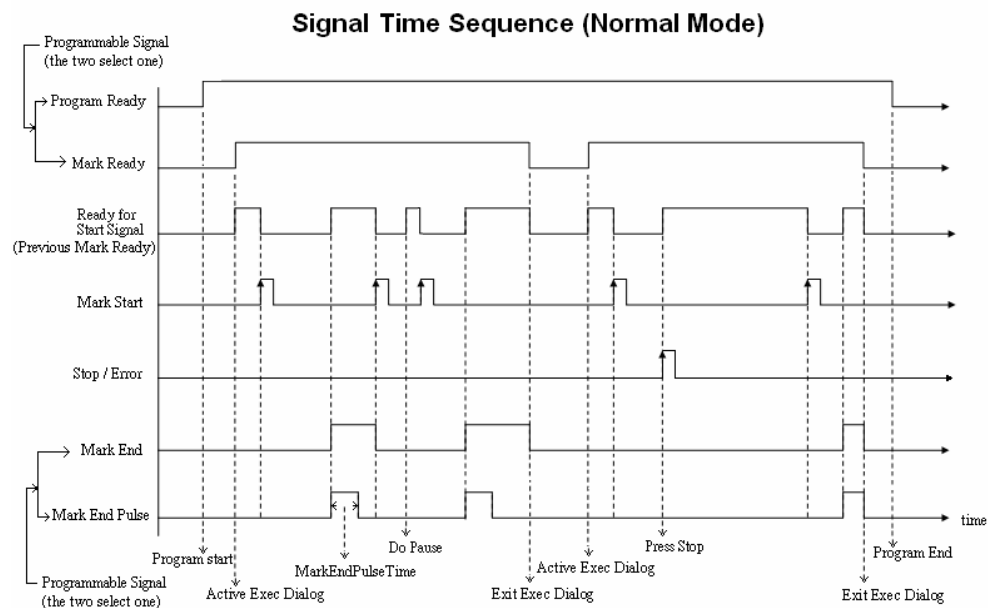


Fig. 9.1.01

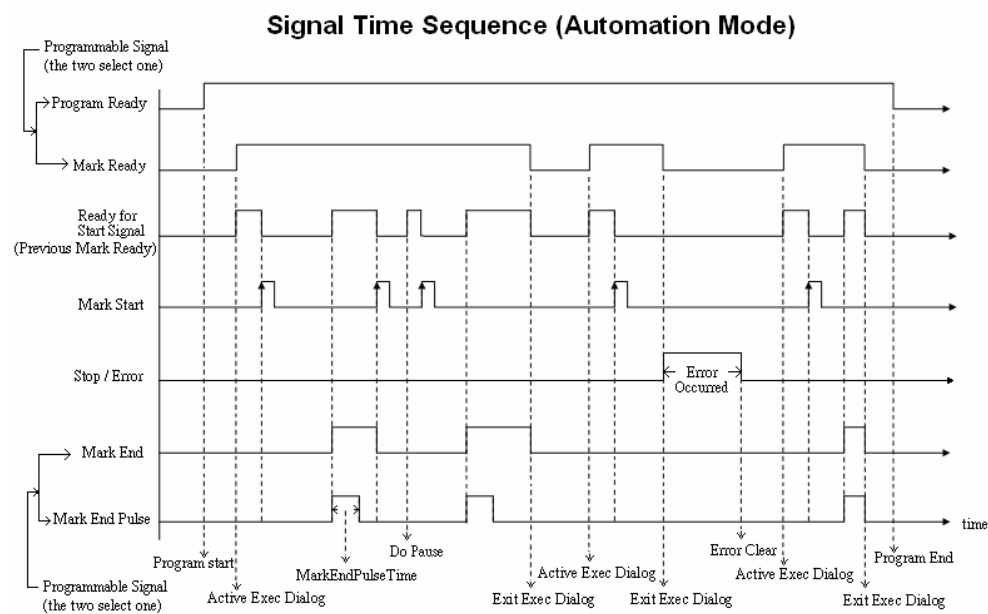


Fig. 9.1.02

9.1.2 Machine Check Error Message Planning

Enable Machine Check function, users can edit some I/O signals and error messages to help them realize what happen while mistakes took place.

1. Activate

To activate **Machine Check** function, users need to open a file “**config.ini**” which is under the installation folder of **Halk P Fiber soft** (for example, **C:\Program Files (x86)\MaxMarking**) first and then change the value of parameter “**MachineChk=**” from “**0**” to “**1**.” Otherwise, users can also enable this function by **Halk P Fiber soft** and the path is 「**File**」 → **Option**」 → **System**」 → **Machine Check**」, see Fig.9.1.03.

If users want to activate the error message, change the value of parameter “**MachineChk_ShowMessage=**” (which is also under the file “**config.ini**”) from “**0**” to “**1**.”



Fig. 9.1.03

Mark reach max amount	Signal will be sent out while mark count reach target amount.
Autotext reach max amount	Signal will be sent out while serial number reach End value.

2. Edit Messages

To edit the error message, please open the file “**MachineChk.cfg**” which is also under the installation folder of **Halk P Fiber soft** (for example, **C:\Program Files (x86)\MaxMarking**). Table 9.1 is the description of the error message.

Please note that this file is **not** under the folder of “**MachineChk.**”

Name	Setting method	Description
[I10]		From [I1] to [I16]. [I10] means the tenth input
	ENABLE=1	1 means open, 0 means close.
	LEVEL = 1	INPUT activated potential, 1 means activated when signal changed from 0 to 1, 0 means activated when signal changed from 1 to 0

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	OUTLEVEL= 0	Output potential (0 or 1)
	OUT=3	Output number (0 means no output)
	MSG_EN=Error Message(001)\nX Scanner head failure\nResolve Method: Contact with us	Input the error message after “MSG_EN=” (\n means line feed)
	PRIORITY=6	Users can add several different messages for the same I/O; they will show in accordance with priority. Less number means higher priority. (from 0 to 15)
	QUITMARKING=1	Decide to exit Mark dialog or not. (1 means exit; 0 means not)
[EMG_STOP]		Emergency Stop
	ENABLE=1	1 means open, 0 means close
	OUTLEVEL= 1	Output potential (0 or 1)
	MSG_EN=Error Message\nEmergency Stop!	Input the error message after “MSG=EN” (\n means line feed)
	PRIORITY=7	Less number means higher priority. (from 0 to 15)
	OUT=0	Output number (0 means no output)
	QUITMARKING=1	Decide to exit Mark dialog or not. (1 means exit; 0 means not)
[GALVO_MOTOR_1]		First GALVO motor error, if the scanhead supports.
	ENABLE=1	1 means open, 0 means close
	MSG_FAIL_EN=X Galvo is unusual	Input the error message after “MSG_FAIL_EN=” (\n means line feed)
	MSG_SUCC_EN=X Galvo is normal	Input the normal message after “MSG_SUCC_EN=” (\n means line feed)
	IN=9	Input number
	LEVEL=1	INPUT activated potential, 1 means activated when signal changed from 0 to 1, 0 means activated when signal changed from 1 to 0

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	PRIORITY=10	Less number means higher priority. (from 0 to 15)
[GALVO_MOTOR_2]		Second GALVO motor error, if the scanhead supports
	ENABLE=1	1 means open, 0 means close
	MSG_FAIL_EN=Y Galvo is unusual	Input the error message after “MSG_FAIL_EN=” (\n means line feed)
	MSG_SUCC_EN=Y Galvo is normal	Input the normal message after “MSG_SUCC_EN=” (\n means line feed)
	IN=11	Input number
	LEVEL=1	INPUT activated potential, 1 means activated when signal changed from 0 to 1, 0 means activated when signal changed from 1 to 0
	PRIORITY=9	Less number means higher priority. (from 0 to 15)
[CONNECT]		Controller connect error, only MC1 Driver supports
	ENABLE=1	1 means open, 0 means close
	MSG_EN=Error Message\nController connect error\nResolve Method:\nStep 1: Make sure the USB connector is connected well.\nStep 2: Make sure the controller power is on and wired\nStep 3: See if the Emergency Stop is activated\nStep 4: Contact us if the above steps do not work.	Input the error message after “MSG_EN=” (\n means line feed)
	OUT=9	Output number (0 means no output)
	PRIORITY=8	Less number means higher priority. (from 0 to 15)
	OUTLEVEL= 1	Output potential (0 or 1)
	QUITMARKING=1	Decide to exit Mark dialog or not. (1 means exit; 0 means not)

Table 9.1

10. Make Font Description

10.1 Execute Make Font Function

To Execute Make Font function, please refer to the following step.

Step 1

Select Make Font Bar from View Menu, see Fig.10.01, and Make Font Bar will pop up like Fig.10.02.

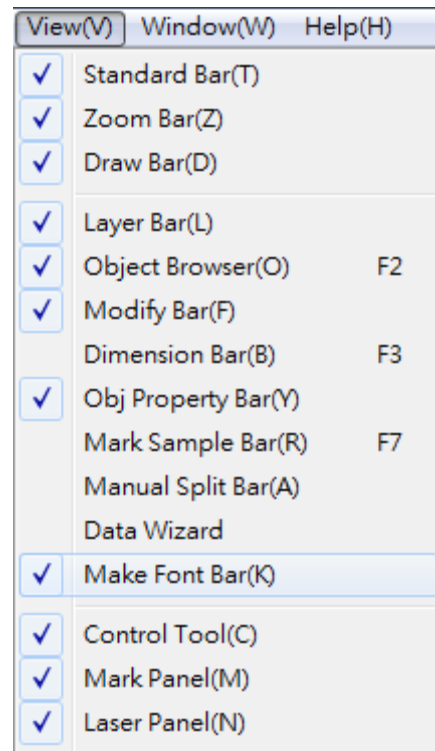


Fig. 10.01

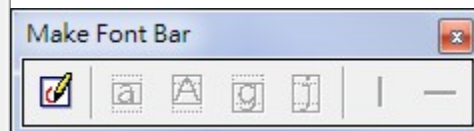



Fig. 10.02

Step 2

Click  and enter make font mode, like Fig.10.03. The make font property page will also be displayed at property page, like Fig.10.04.

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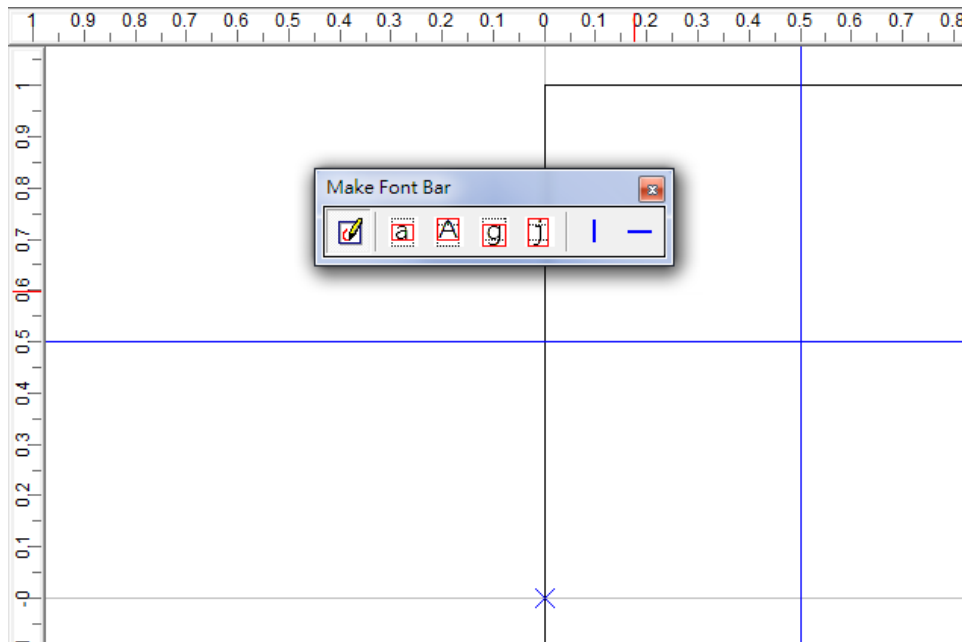


Fig. 10.03

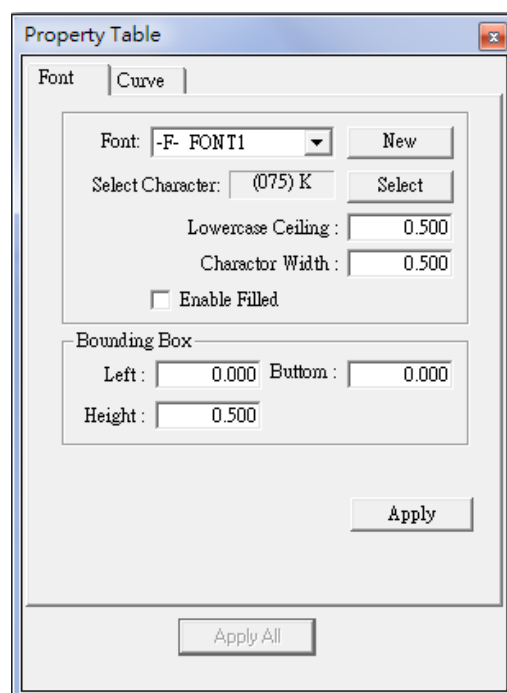


Fig. 10.04

10.2 Parameter Description

The following statements are the description of Make Font parameters.

Make Font Property Page

Font	Select the font users want to use or create a new font.
Select Character	Select the character users want to edit.
Lowercase Ceiling	Set the upper boundary when select a lowercase character.
Character Width	Set the maximum character width (right boundary). If the right side of the character exceeds this value, then this character will overlap with other ones.
Enable Filled Bounding Box	Decide to fill the character or not when marking.
Left	Set the distance between the character and the left boundary.
Bottom	Set the distance between the character and the bottom boundary.
Height	Set the font size.

Make Font Tool Bar



Enter or Exit Make Font mode.



Use the default edge to set the new font.



Adjust the right and up edge of the font.

10.3 Operating Method

Select the font and character first when entering make font mode, see Fig.10.05. After this, users can use drawing objects or adjust the parameters under property page to edit the character, see Fig.10.06.



Fig. 10.05

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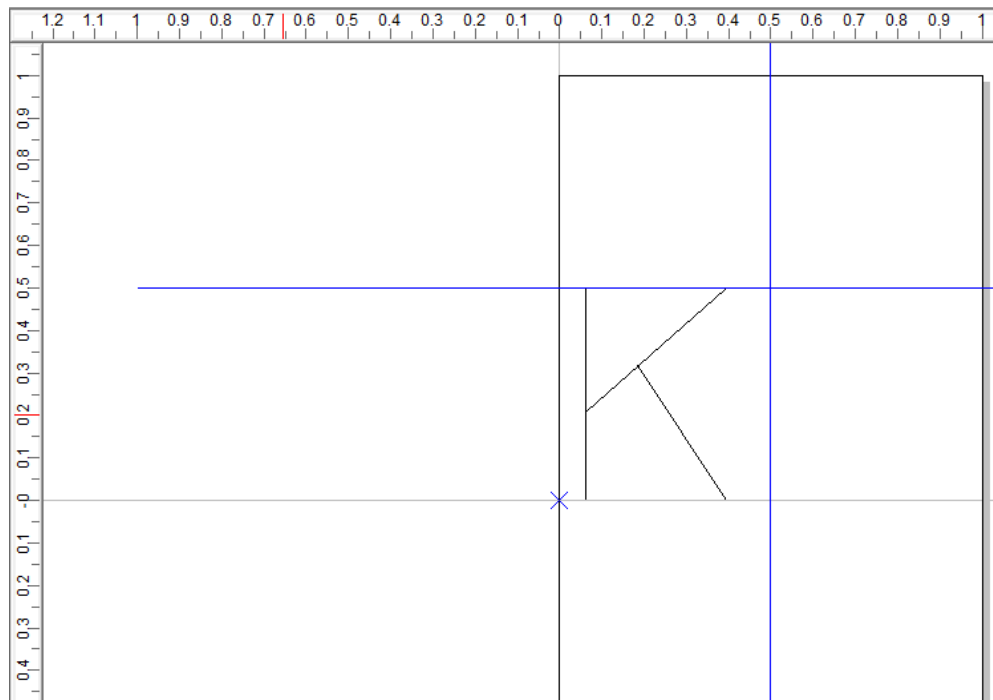


Fig. 10.06

11. Pen Number Manager

User could control objects color and marking enable functions by pen manager instead of layer property table according to the pen number assigned to objects..

11.1 Function Description

Refer to Fig11.01.

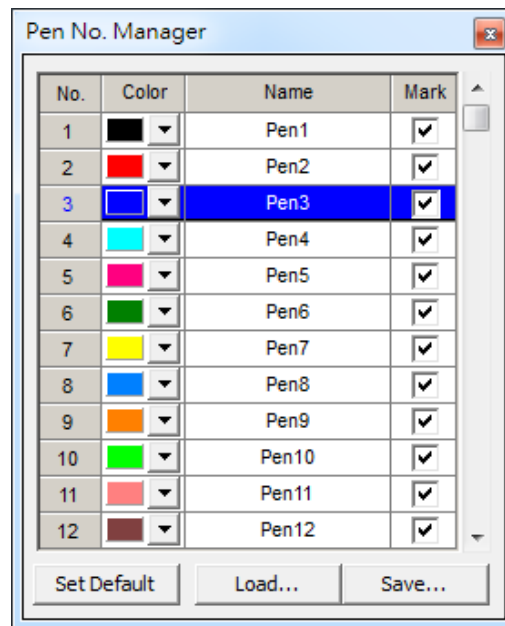


Fig. 11.01

No.	The index of the pen. Support up to 256 sets.
Color	Each of the objects of using the same pen no. will have same color.
Name	The name of the pen. Allow user rename the pen's name. Double click on this column to enable edit. Click on other place to leave edit mode.
Mark	Enable the marking for the objects using this pen.
Save	Save the pen setting to another file.
Load	Load the pen setting from other file.
Set Default	Set current pen setting to other newly created document.

11.2 Operation Method

After creating a object, switch to marking parameter property page. See fig 11.02. Take this picture as example, setting pen number to 3, speed to 2000, and click on Apply.

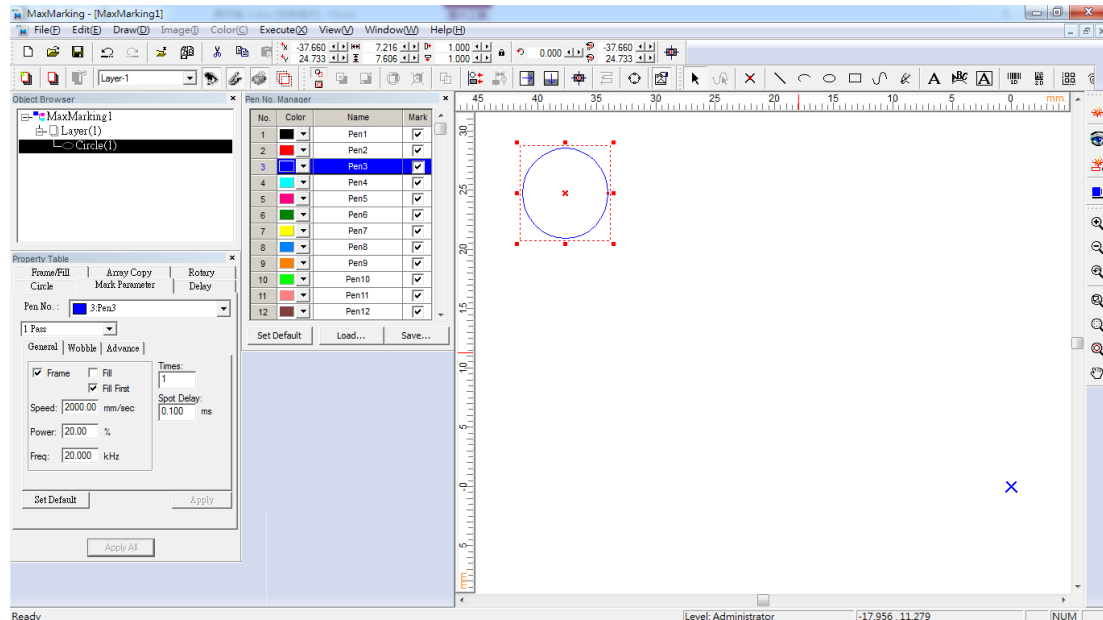


Fig. 11.02

User could notice the objec color has changed from black to blue. If user create another object and also choose to use pen number 3, then the object color will not only have been setting to blue, but speed also been setting to 2000.

In fact, all of the objects using the same pen number will have the same **mark and delay parameter**, as well as **fill enable**; however, **fill pattern, array copy and rotary function** are allowed to set separately.

Each pen is allowed to have an user defined name. Double clicking within the name column to enable edit mode. Clicking on anywhere else to leave edit mode. See fig 11.03.

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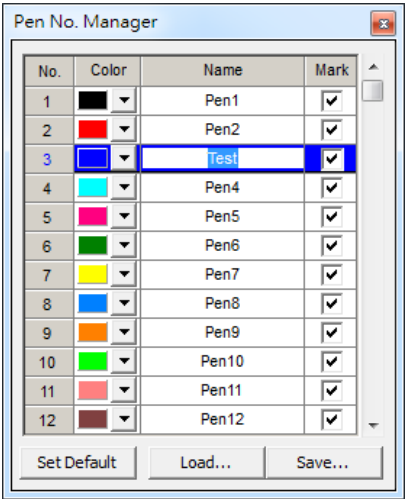


Fig. 11.03

User could uncheck mark checkbox to disable object marking which is chosen to use this pen. If checkbox is unchecked, the graphic will not be output even if this object is located at a layer which is enabled output. See fig 11.04.

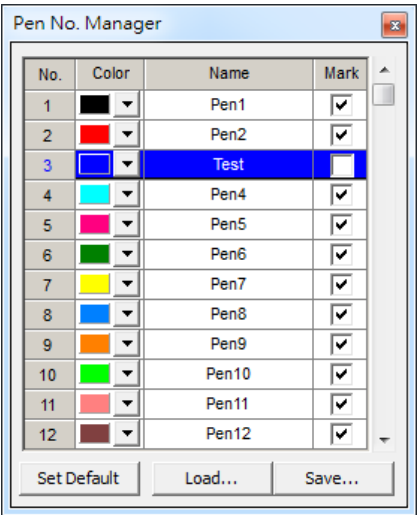


Fig. 11.04

12. Hot Key

The list below is a list of default shortcut key. Users could define most of them from option→shortcutkey.

File Menu	
Ctrl + N	Create a new document
Ctrl + O	Open an existing document
Ctrl + S	Save the current document using the existing file name
Ctrl + I	Import
Ctrl + P	Print
Edit Menu	
Ctrl + Y	Replace a cancelled action
Ctrl + Z	Cancel un unwanted action
Ctrl + X	Remove the selected object and place it in the clipboard
Ctrl + C	Duplicate the selected object and place it in the clipboard
Ctrl + V	Place the data on the clipboard on to the document
DEL	Delete the selected object
Ctrl + L	Combine
Ctrl + K	Break
Ctrl + G	Group
Ctrl + U	UnGroup
Ctrl + E	Baseline
Ctrl + D	Split
Ctrl + A	Trimming
Ctrl + W	Contour
Execute Menu	
F5	Marking
F6	Quick Mark
F7	Dry Run
F10	Close Dialogue Box of Marking, Quick Mark, and Dry Run
Others	

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F1	Open HELP
F2	Open the Object Browser
Shift+F2	Move the Object Browser to the lower left corner
F3	Open the Dimension Bar
F4	Open the User Level dialogue box
Ctrl + F4	Close the current file
Ctrl + F6	Switch to another opened file
Ctrl	1. Force the angle of a line segment to be 15°when drawing a line, and force the width equal to the height when drawing an arc, circle, or rectangle. 2. The XY axis of the object will be adjusted simultaneously
Ctrl + T	Open the Property Table
Shift	The center of a circle or rectangle will be the center of the initial axis The XY axis of the object will be adjusted simultaneously
Tab	Select object by marking order
C	When you are drawing lines, arcs, and curves, press C key will make the continuous segments become a closed loop.
X/Y	Set the start point or end point of the object