Panasonic

Laser Marker/Laser Processing Machine

Logo Data Conversion Software Operation Manual

ME-LOGOC-OP-5

2021. 3 | panasonic.net/id/pidsx/global

Preface

Thank you for purchasing our product.
For full use of this product safely and properly, please read this manual carefully.
This product has been strictly checked and tested prior to its delivery, however, please make sure that this product operates properly before using it.
In case that the product becomes damaged or does not operate as specified in this manual, contact our sales office.

■ Note

1. This manual is subject to the software attached to laser marker / laser processing machine. Note that illustrations might be little different depending on the models.
2. Contents of this manual will be changed without notice. (including products modifications, and discontinuance).
3. This manual and software must not be partially or totally copied or revised.
4. If there are any questions, mistakes, or comments in this manual, please notify us.
5. Please remind that we have not responsibility of any results of operations in regardless of the above clauses.

■ Trademarks

- Windows is a registered trademark or trademark of Microsoft Corporation in the United States and/or other countries.
- All other product names and companies provided in this manual are trademarks or registered trademarks of their respective companies.

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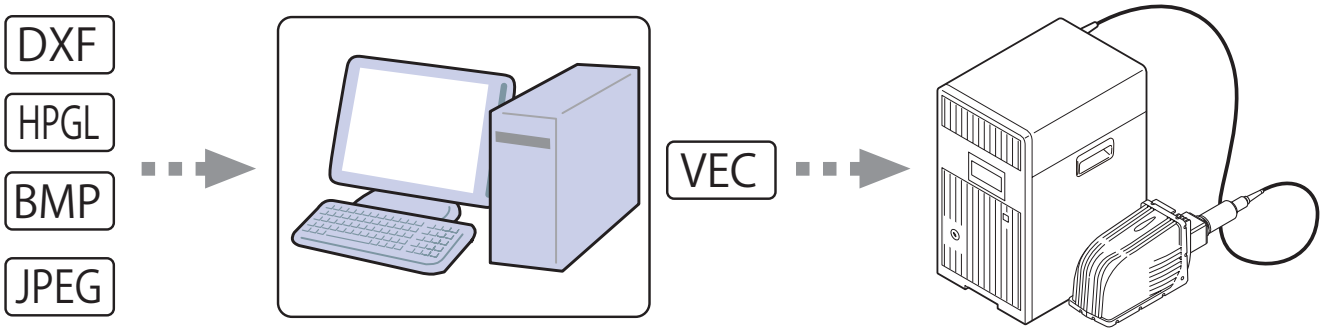
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1. Outline of Logo Data Conversion Software

The logo data conversion software is exclusively used to convert the data in the DXF, HPGL, BMP and JPEG formats to the file in “VEC format”, which the laser marker/laser processing machine can recognize.



Original Data

Logo Data Conversion Software
(Convert into VEC format)

Laser Marker / Laser Processing Machine

2. Installation / Uninstallation

2-1 Operating Environment

This software is stored in the following CD-ROM attached to the laser marker or laser processing machine and can be installed to the following OS.

Laser system	CD-ROM	Applicable OS *1
LP-M/S/Z series	Laser Marker Utility	Microsoft® Windows® 10 Pro 32bit, 64bit Microsoft® Windows® 8.1 Pro 32bit, 64bit
LP-400/V/W series	Laser Marker Driver & Utility	
VL-W1 series	Laser Processing Utility_VL-W1	

*1 : OS versions of which Microsoft has ended support are excluded. The CPU type, memory capacity, hard-disk space, and display function required to operate each OS should be provided in accordance with the recommendation of Microsoft.

2-2 Installation/Uninstallation Procedure

Notice

- The software license agreement is displayed on the screen during installation. You have to accept this agreement, to use the software.

Reference

- This software can be installed on a computer and more than one person may, under the supervision of the end-user, use this software installed on one computer.
- If the software user is limited to the end-user, this software can be installed on more than one computer on the condition that the software is not used simultaneously.

■ LP-M/LP-S/LP-Z/LP-400/LP-V/LP-W series

This software is installed/uninstalled at the same time by installation/uninstallation of “Laser Marker NAVI (plus)”.
Please refer to “Laser Marker NAVI (plus) Operation Manual” for details.

■ VL-W1 series

Set the CD-ROM “Laser Processing Utility_VL-W1” to the PC and the installation will start automatically.
Install “Laser Processing Utility_VL-W1” by following the instructions shown on the screen.
If the installation screen does not appears, double-click on following file to start installation.
[CD-ROM]\Setup\setup.exe

2-3 Settings after installation

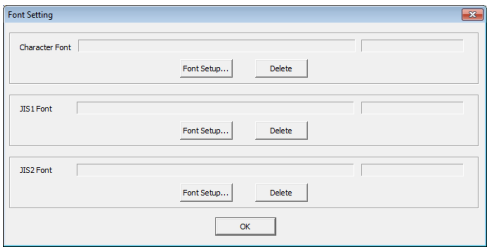
Register the font with the following procedures to convert the DXF file with text data.

1. Start up the logo data conversion software.

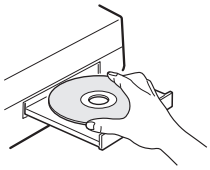
Refer to “3-1 Singularly Start-up” (P.8) or “3-2 Start-up from Laser Marker NAVI (plus)” (P.8).

2. Select the “Font set...” from the “Font” menu.

The dialog box shown in the right figure appears.

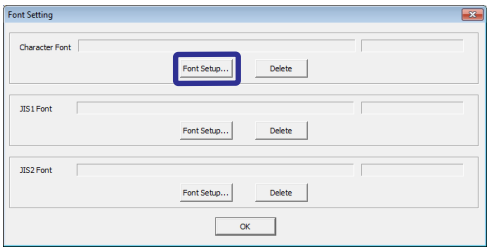


3. Insert the attached CD-ROM into the CD- ROM drive.



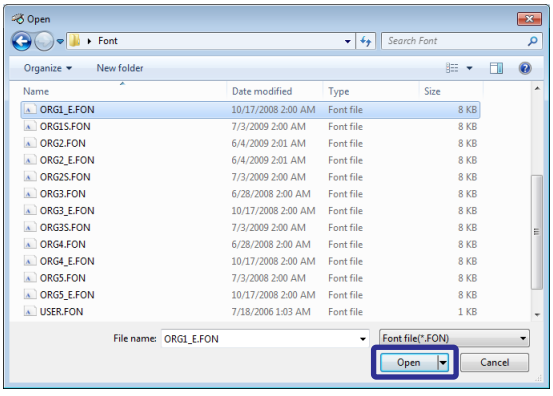
4. Click “Font setup” button on the “Character Font” for the characters which are used in the text in DXF file.

- Character Font: Alphanumeric characters
- JIS1 Font: Japanese font of JIS 1st level
- JIS2 Font: Japanese font of JIS 2nd level

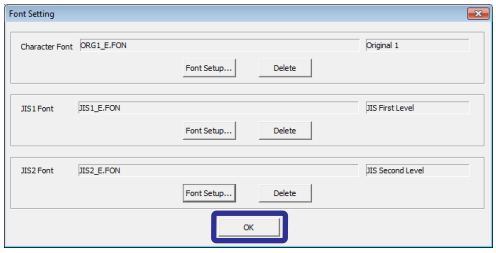


5. Click “FONT” folder stored in the CD-ROM and select the font, then click “Open” button.

- For Character Font, select from ORG1.FON to ORG5.FON.
- For JIS1 Font, select JIS1.FON.
- For JIS2 Font, select JIS2.FON.



6. Click “OK” button.



7. Remove the CD-ROM from the CD-ROM driver.
Keep it carefully for the next use.

3. Start-up & Termination

3-1 Singularly Start-up

1. Start up the personal computer.

2. From the start menu of Windows, select “All Apps” and click “Panasonic-ID SUNX Laser”.

3. According to the laser marker or laser processing machine model, click in the following order.

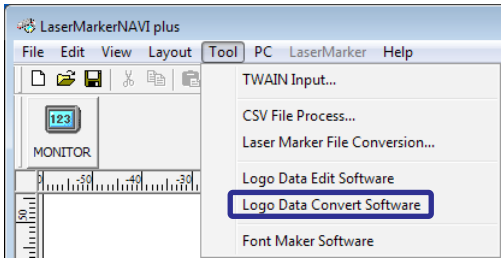
- LP-M/LP-S/LP-Z series: “Laser Marker Utility” - “Logo Data Conversion”
- LP-400/LP-V/LP-W series: “Laser Marker Driver & Utility” - “Logo Data Conversion”
- VL-W1 series: “Laser Processing Utility_VL-W1” - “Logo Data Conversion”

3-2 Start-up from Laser Marker NAVI (plus)

Applicable model: LP-M/LP-S/LP-Z/LP-400/LP-V/LP-W series

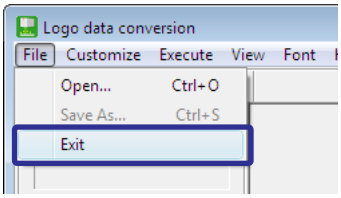
1. Start-up “Laser Marker NAVI (plus)”.

2. Select “Logo Data Convert Software” from “Tool” in Menu bar.



3-3 Termination

1. Select “File” - “Exit” from the menu bar.



4. Logo Data Conversion/Output

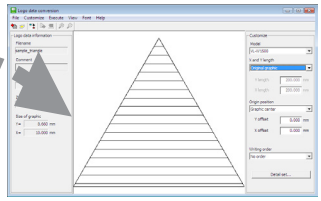
4-1 Conversion Flow

(1) Start-up of logo data conversion software

(2) Open the original data

Refer to P.10.
Select a format from HPGL, DXF, BMP or JPEG.

DXF file



(3) Customization (setting of converting method)

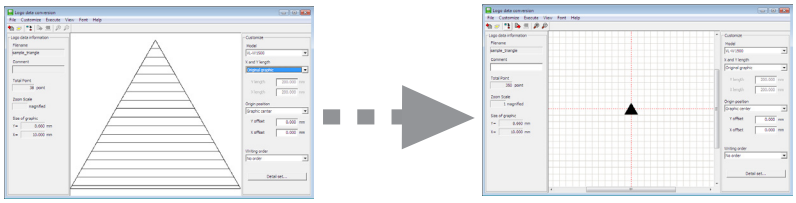
Refer to P.11.

[Setting parameters for customization]

- Model
- Aspect Ratio
- Original Position
- Optimization of
- Writing Order
- Output Form
- Image Setting

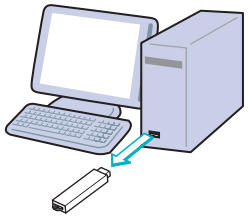
(4) Conversion

Refer to P.18.



(5) Output

Refer to P.19.



Output to File
(to USB flash memory, etc.)

(6) Termination of logo data conversion software

4-2 Logo Data Conversion/Output Procedures

(1) Start-up of logo data conversion software

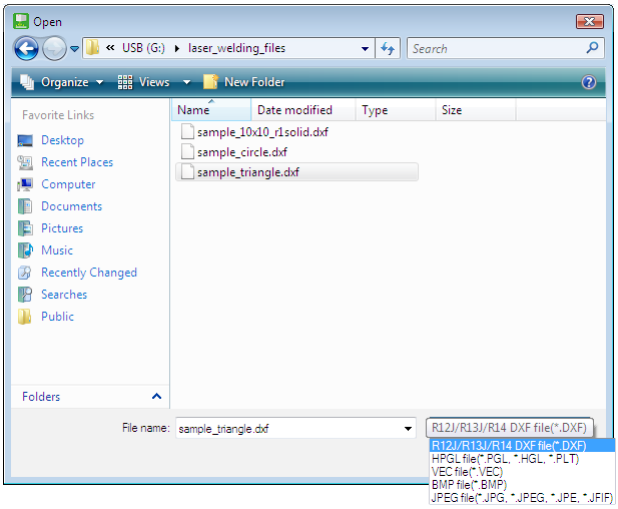
Refer to “3-1 Singularly Start-up” (P.8) or “3-2 Start-up from Laser Marker NAVI (plus)” (P.8).

(2) Open the original data

1. Select “Open” from the “File” menu, or click  button.

2. Click  button at “Files of type” and select the file format.

Select a format from HPGL, DXF, BMP or JPEG.



3. Select the original data file and then click “Open” button.

The original data appears on the image display area.

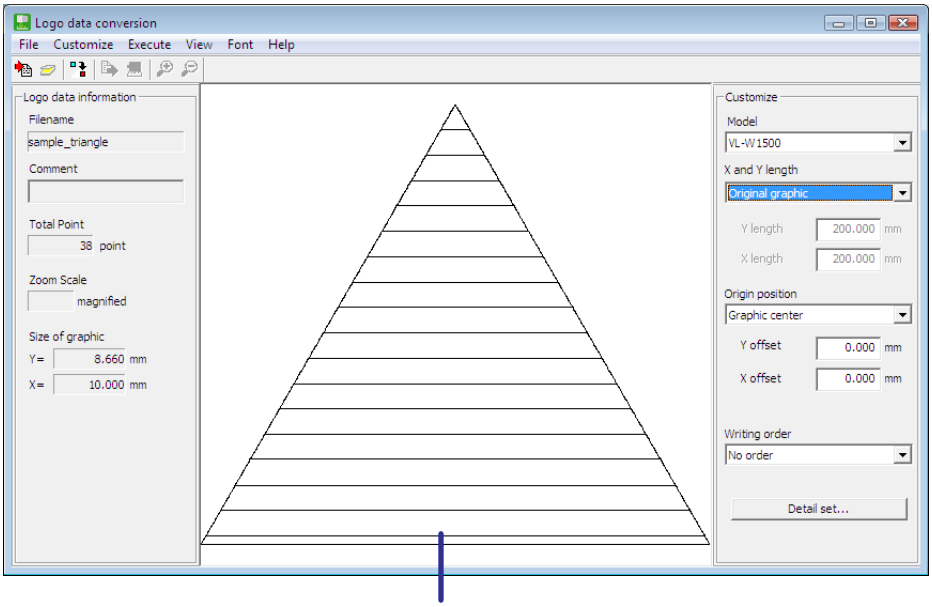


Image display area

Reference

- The original data file can be opened by drag and drop of the file to the image display area.
- An error occurs when a file in the format of other than VEC, HPGL, DXF, BMP or JPEG is opened.

(3) Customization (setting of converting method)

Perform the data customization after the original file is opened.

■ Model Selection

Specify the type of laser marker or laser processing machine on which the data converted with this software is used.
Select the type from the followings;

Series	Model Name
LP-400 series	LP-410 / LP-430 / LP-420S9
	LP-411 / LP-431 / LP-421S9
	LP-435 / LP-425S9
LP-V series	LP-V10
	LP-V15
LP-W series	LP-W052
LP-M series	LP-M200 / LP-M500 / LP-MA00
	LP-M205 / LP-M505 / LP-MA05
	LP-MA06
LP-S series	LP-S200 / LP-S500 / LP-S500W
	LP-S202 / LP-S502
	LP-S205 / LP-S505 / LP-S505W
LP-Z series	LP-Z130 / LP-Z250
	LP-Z256
VL-W1 series	VL-W1500 / VL-W1A00
	VL-W1506 / VL-W1A06

Reference

- In the selection list, some model names are shown with the shortened name as below.
  Ex. “LP-430TU” is represented as “LP-430” in this table.

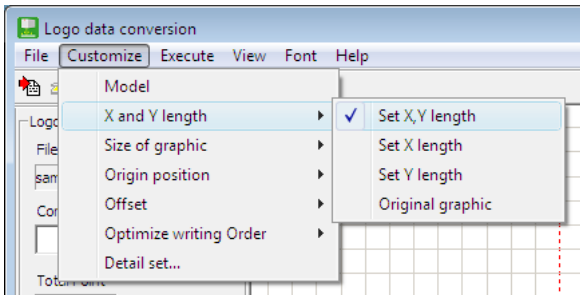
■ Set X, Y length

Specify the aspect (vertical/horizontal) ratio of loaded image data to the original data.
Select one from the followings;

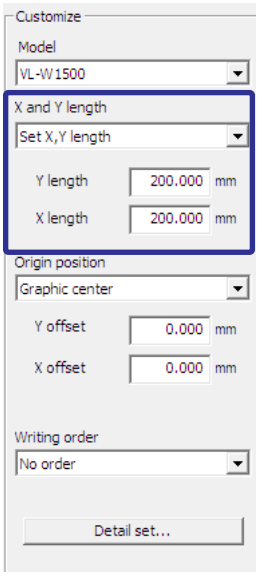
- Set X, Y length
- Set X length
- Set X length
- Original graphic (the same length in vertical and horizontal direction as the original data)

● Setting method

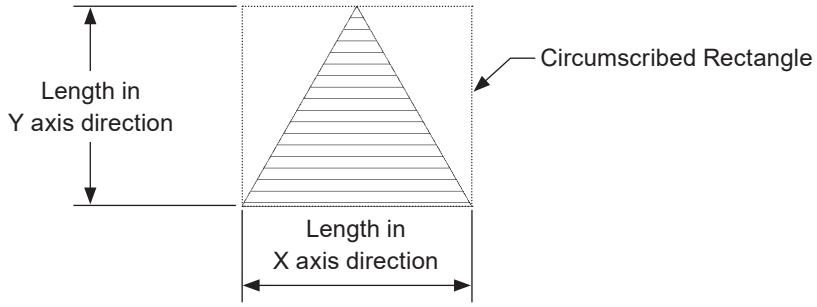
Specify the converting method in “X and Y length” submenu of “Customize” menu.



Click button at the “X and Y length” and select one from the pull-down menu displayed.



■ Specification of Size of Graphic



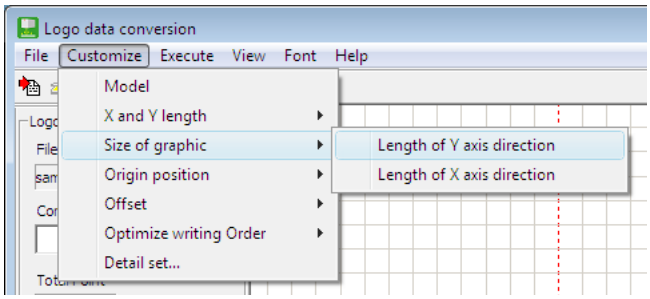
● Length in X axis / Y axis direction

Specify the length of circumscribed rectangle in Y axis (horizontal) or X axis (vertical) direction after data conversion.
The setting range is as follows depending on the selected model name.

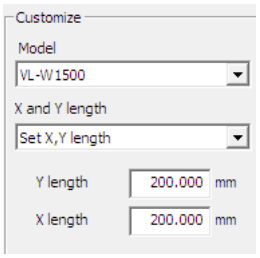
Series	Model Name	Setting Range [mm]
LP-400 series	LP-410(T)U / LP-430(T)U / LP-420S9(T)U	0.000 to 110.000
	LP-411(T)U / LP-431(T)U / LP-421S9(T)U	0.000 to 55.000
	LP-435(T)U / LP-425S9(T)U	0.000 to 160.000
LP-V series	LP-V10U	0.000 to 90.000
	LP-V15U	0.000 to 160.000
LP-W series	LP-W052U	0.000 to 55.000
LP-M series	LP-M200 / LP-M500 / LP-MA00	0.000 to 120.000
	LP-M205 / LP-M505 / LP-MA05	0.000 to 220.000
	LP-MA06	0.000 to 330.000
LP-S series	LP-S200 / LP-S500 / LP-S500W	0.000 to 90.000
	LP-S202 / LP-S502	0.000 to 55.000
	LP-S205 / LP-S505 / LP-S505W	0.000 to 160.000
LP-Z series	LP-Z130 / LP-Z250	0.000 to 120.000
	LP-Z256	0.000 to 330.000
VL-W1 series	VL-W1500 / VL-W1A00	0.000 to 200.000
	VL-W1506 / VL-W1A06	0.000 to 400.000

● Setting method

(1) Click “Customize” - “Size of graphic” - “Length of X axis direction” or “Length of Y axis direction”.

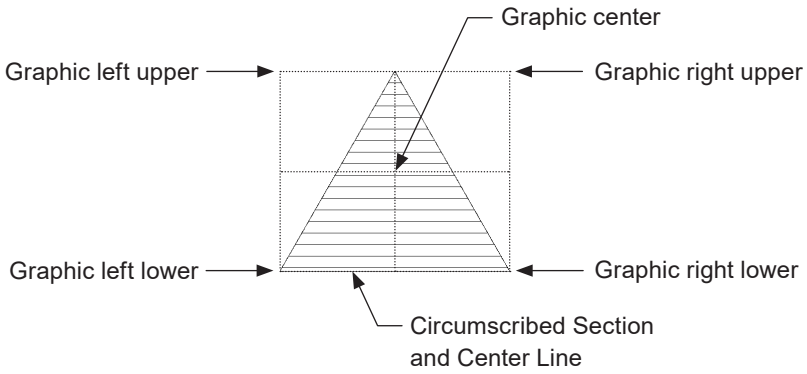


Or click the numerical number input box at “X length” or “Y length”.



(2) Input the value with the numeric keypad.

■ Specification of Origin Position

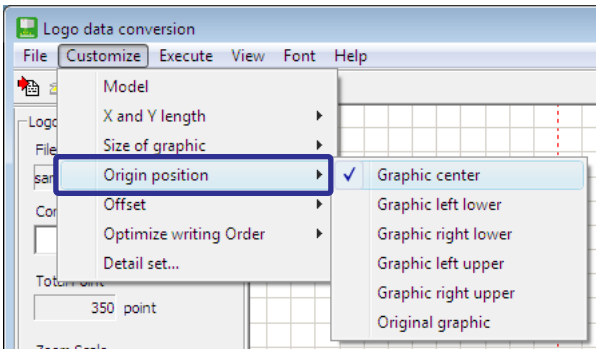


Specify the origin (0,0) of coordinate system on the graphic.
The whole graphic is converted with the position shifted so the point specified here matches the origin position. Select one from the followings;

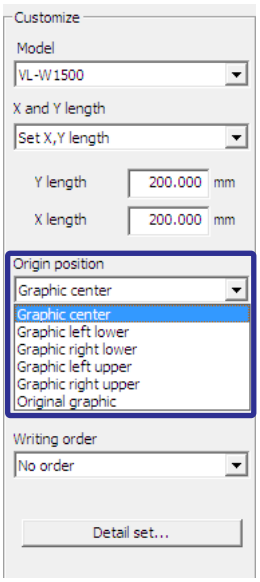
- Graphic center
- Graphic left lower
- Graphic right lower
- Graphic left upper
- Graphic right upper
- Original graphic (the position of original data loaded is not changed)

● Setting method

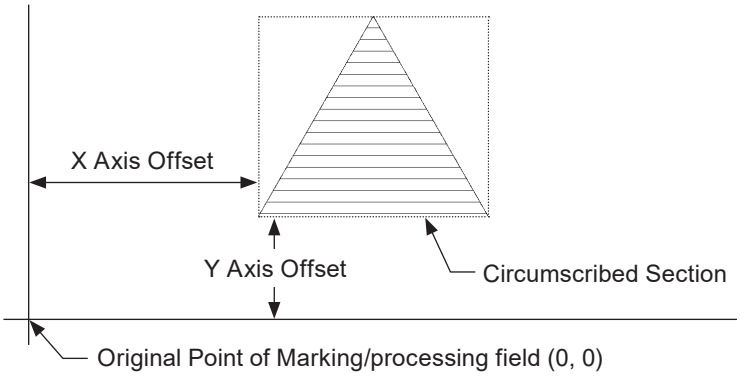
Click “Customize” - “Origin position”, and then specify the origin position.



Or click  button at “Origin position” and select one from the pull-down menu displayed.



■ Specification of Offset



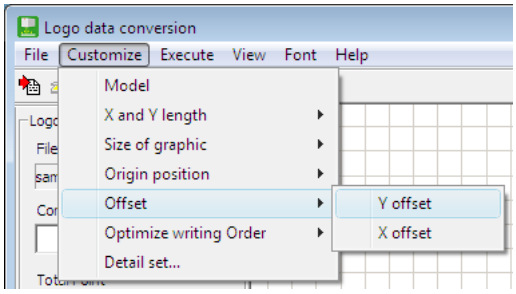
● X offset / Y offset

Specify the distance from the original point of marking/processing field (0,0) to the original point of the graphic.
The setting range is as follows depending on the selected model name.

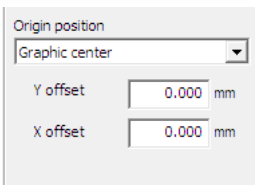
LP Series	Model name	Setting Range [mm]
LP-400 series	LP-410(T)U / LP-430(T)U / LP-420S9(T)U	-55.000 to 55.000
	LP-411(T)U / LP-431(T)U / LP-421S9(T)U	-27.500 to 27.500
	LP-435(T)U / LP-425S9(T)U	-80.000 to 80.000
LP-V series	LP-V10U	-45.000 to 45.000
	LP-V15U	-80.000 to 80.000
LP-W series	LP-W052U	-27.500 to 27.500
LP-M series	LP-M200 / LP-M500 / LP-MA00	-60.000 to 60.000
	LP-M205 / LP-M505 / LP-MA05	-110.000 to 110.000
	LP-MA06	-165.000 to 165.000
LP-S series	LP-S200 / LP-S500 / LP-S500W	-45.000 to 45.000
	LP-S202 / LP-S502	-27.500 to 27.500
	LP-S205 / LP-S505 / LP-S505W	-80.000 to 80.000
LP-Z series	LP-Z130 / LP-Z250	-60.000 to 60.000
	LP-Z256	-165.000 to 165.000
VL-W1 series	VL-W1500 / VL-W1A00	-100.000 to 100.000
	VL-W1506 / VL-W1A06	-200.000 to 200.000

● Setting method

(1) Click “Customize” - “Offset” - “X offset” / “Y offset”.



Or click the numerical number input box at “X offset” / “Y offset”.

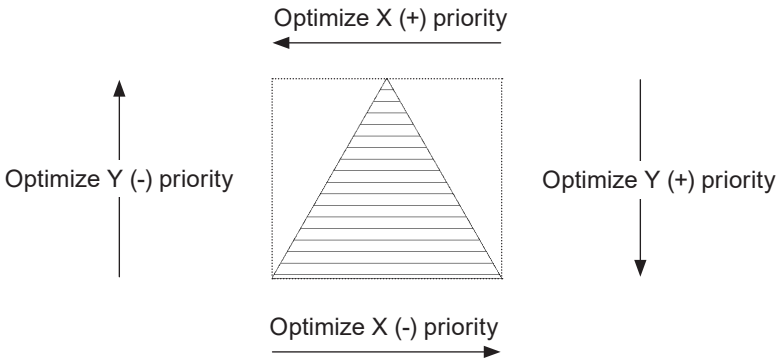


(2) Input the value with the numeric keypad.

■ Optimization of Writing Order

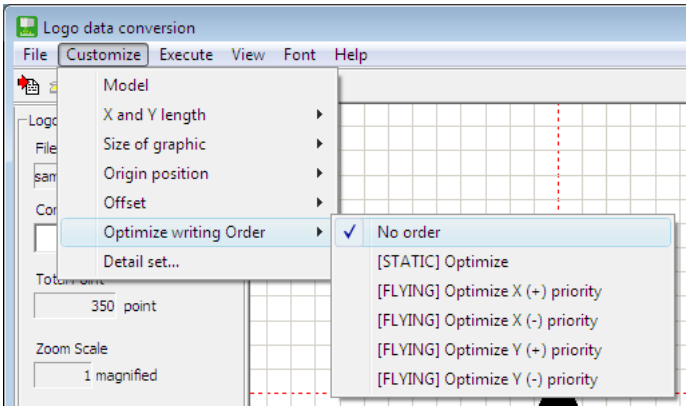
When the lasing objects are moving, the drawing order should be optimized with the following setting to apply their moving direction. Select the order from the followings;

- No order
- [STATIC] Optimize
- [FLYING] Optimize X(+) priority
- [FLYING] Optimize X(-) priority
- [FLYING] Optimize Y(+) priority
- [FLYING] Optimize Y(-) priority

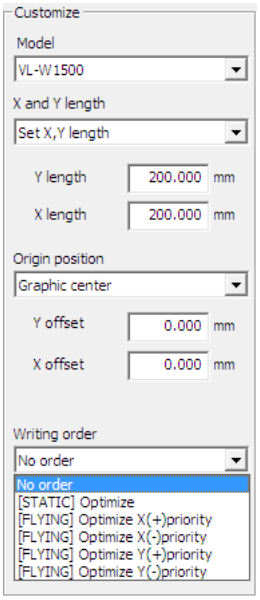


● Setting method

Click “Customize” - “Optimize writing Order”, and then specify the writing order.



Or click  button at “Writing order” and select one from the pull-down menu displayed.

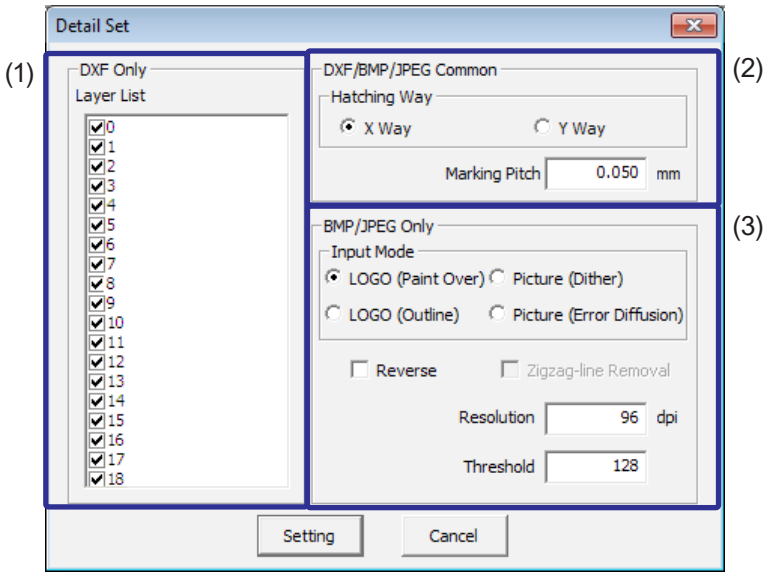


Reference

- In case of specifying the optimization of the writing order, specify the optimizing direction with the starting of the marking be toward downstream.
- Only [STATIC] Optimize is valid when JPEG file or BMP file is opened.

■ Detail Set

Click “Customize” - “Detail set”, or click “Detail set” button at conversion of data in DXF, BMP or JPEG format.
The dialog shown below appears to set the conditions of conversion.



(1) Setting items that are available only for DXF-format file

- Layer list
  The list of the layer name that are possible for conversion is displayed with check mark. Check only the layer(s) to draw by the laser marker/laser processing machine.

(2) Common setting items that are available for DXF-/BMP-/JPEG-format file

- Hatching way
  For BMP, JPEG file and DXF file with “Hatch” or “Solid” function, select the hatching direction from “X way” or “Y way”.
- Marking Pitch
  Specifies the marking pitch of image and “SOLID”, “HATCH” of the DXF-format data. (setting range: 0.00 to 2.00 mm)
  The input is available only for the image in the “Logo (Paint Over)”, “Picture (Dither)” or “Picture (Error Diffusion)” mode.

(3) Setting items that are available only for BMP-/JPEG-format file

- Input mode
  - Logo (Paint Over) : marks the image either with the horizontal line or with vertical line.
  - Logo (Outline) : extracts the outline of image.
  - Picture (Dither) : represents simulated image with many gradations.
  - Picture (Error Diffusion) : reflects the difference of a picture element on the image between actual color and used color (black or white) to the surrounding picture elements.
- Reverse
  Check the box to reverse the black and white on the image.
  Input possible only in the “Logo (Paint Over)”, “Picture (Dither)” or “Picture (Error Diffusion)” mode.
- Zigzag-line Removal
  Check the box to smooth the zigzag-line.
  Input possible only in the “Logo (Outline)” mode.
- Resolution
  Specifies the level of the graphic information to draw by the laser marker or laser processing machine. It is recommended to input the same resolution of the original graphic. (setting range: 60 to 2400 [dpi])
- Threshold
  Specifies the segmentation level to create the black/white image.
  Inputting the larger value creates the image with more black part.
  (setting range: 0 to 255)
  Input possible only in the “Logo (Paint Over)” or “Logo (Outline)” mode.

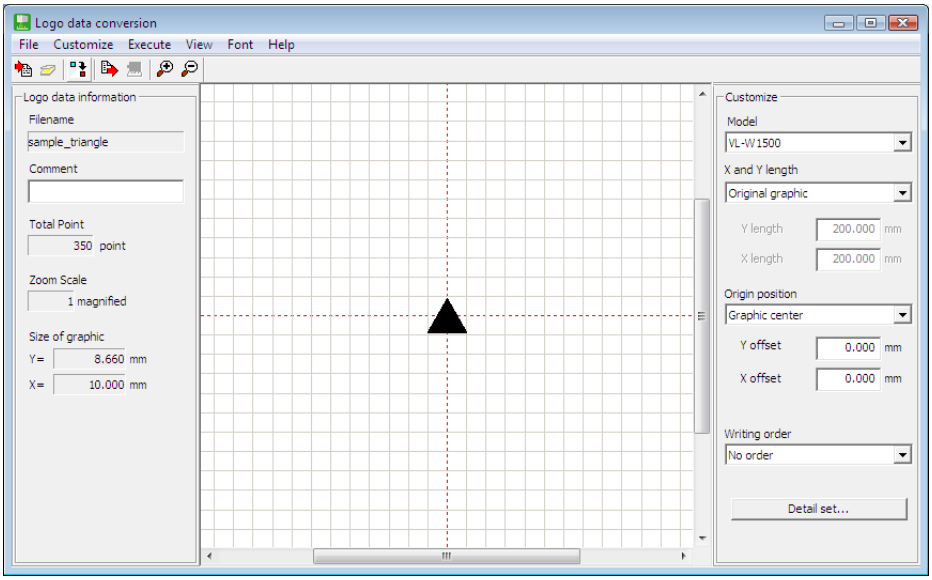
(4) Conversion

Convert the logo data with the file opened by the following procedures.

1. Select “Execute” - “Convert”, or click  button.

The data is converted according to the settings at “Customize”.

The image exemplified in the figure below appears after the conversion is completed normally.



(5) File Output (File Save)

1. Input the comment.

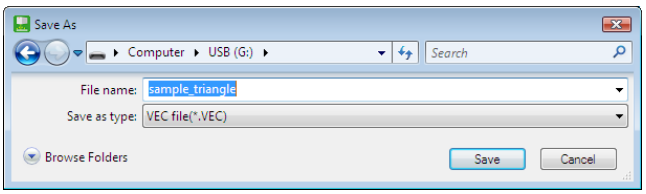
A comment can be attached to the output file (converted data) by inputting it in the “Comment” box.

The input comment is indicated with the file name on the setting screen of the laser marker/laser processing machine.

Leave the box blank if a comment is not necessary to be attached.

2. Select the “Output” from “File” menu, or click  button.

The dialog shown in the right figure appears.



3. Specify the folder to be output and file name.

Input the file name.

4. Click “Save” button.

The file output is executed.

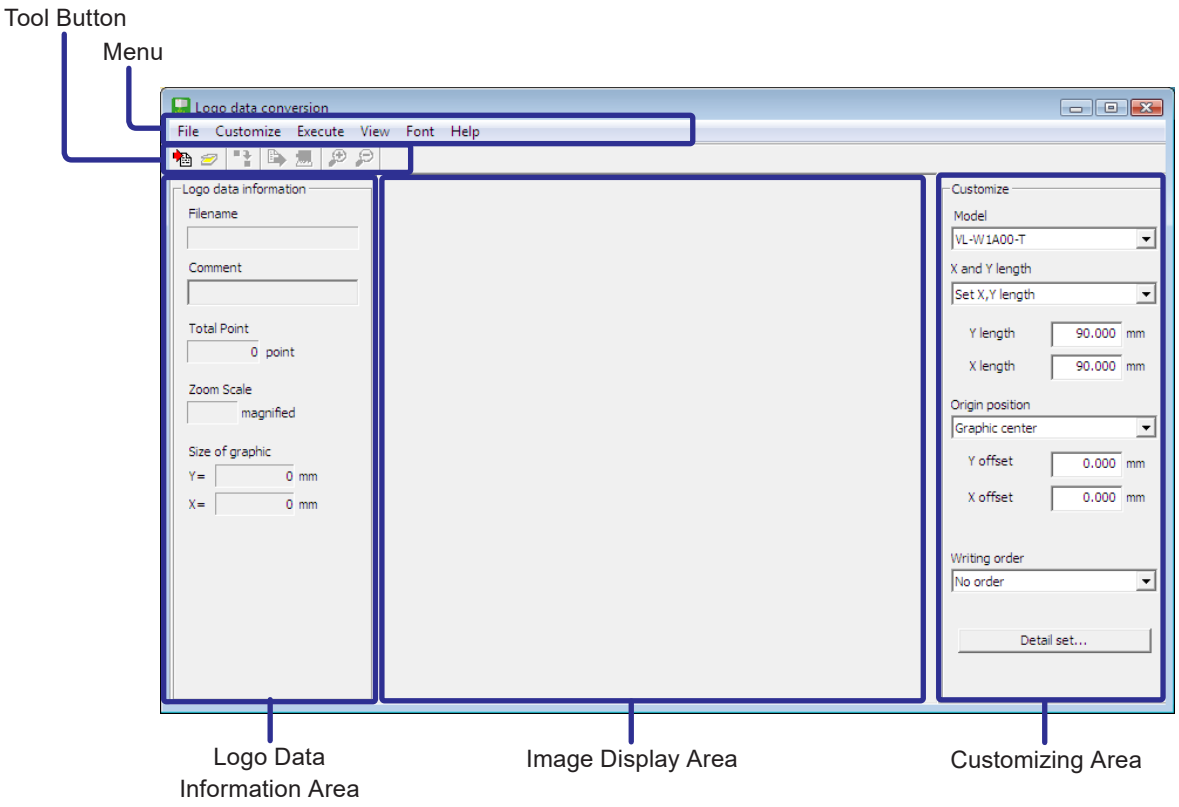
Click the “Cancel” button to abort the file output.

The other operations with the logo data conversion software become possible after the file outputting is normally completed.

(6) Termination of Software

Refer to “3-3 Termination” (P.8).

5. Screen Layout of Logo Data Conversion Software



5-1 Menu Function

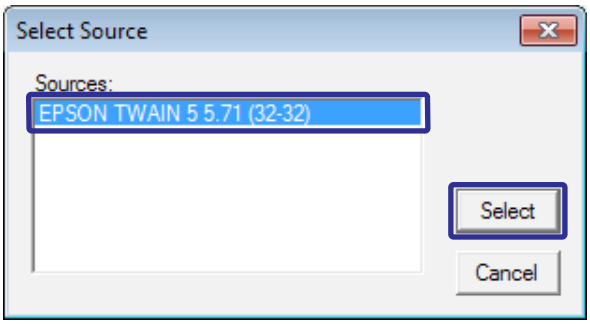
■ File Menu

Function	Description
Open	Reads (imports) the original data. The same function can be executed by clicking button. “Open file” dialog box is appeared. Select the original data. The selectable file formats are as follows; • HP-GL (format: PGL or HGL, PLT) • DXF-R12, R13, R14 (format: DXF) • Bitmap (format: BMP) • JPEG (format: JPG) • VEC (format: VEC)
Output	Outputs the converted data to a file. The same function can be executed by clicking button.
Exit	Exits the execution of the software.

■ Customizing Menu

Function	Description
Model	Selects the laser marker/laser processing machine model.
X and Y length	Selects the aspect ratio from the following menu; • Set X, Y length • Set X length • Set Y length • Original graphic Refer to “Set X, Y length” (P.12).
Size of graphic	Specifies the length of X/Y axis direction of the data to be converted. • Length of Y axis direction • Length of X axis direction Refer to “Specification of Size of Graphic” (P.13).
Origin position	Selects the origin point position from the following menu; • Graphic center • Graphic left lower • Graphic right lower • Graphic left upper • Graphic right upper • Original graphic Refer to “Specification of Origin Position” (P.14).
Offset	Offsets the origin point of the data to be converted. • Y offset • X offset Refer to “Specification of Offset” (P.15).
Optimize writing Order	Selects the order of writing optimization from the following submenu; • No order • [STATIC] Optimize • [FLYING] Optimize X(+) priority • [FLYING] Optimize X(-) priority • [FLYING] Optimize Y(+) priority • [FLYING] Optimize Y(-) priority Refer to “Optimization of Writing Order” (P.16).
Detail set	Set the condition of DXF, BMP or JPEG file conversion. Refer to “Detail Set” (P.17).

■ Execute Menu

Function	Description
Convert	Starts converting. The same function is executed by clicking button. According to the settings in “Customize” menu, the graphic data is converted to VEC format. After the conversion, the converted image is displayed in the marking/processing field of selected model in the image display area.
Apply To Laser Marker NAVI *1	This function is valid when starting “Logo Data Conversion Software” from “Laser Marker NAVI (plus)”. By clicking on this button, converted logo data is updated (refreshed). The same function is executed by clicking button.
TWAIN Input	• Scanner Reading Reads the graphic data which is read by the scanner (Scanner Setting). The same function is executed by clicking button. • Scanner Setting Selects the scanner driver for executing scanner reading. Select on the below screen, and click on “SELECT” button. 

*1 : For VL-W1 series, this function is not applicable.

TWAIN input (Scanner reading) procedures

1. Select the scanner read command to start the scanner driver.

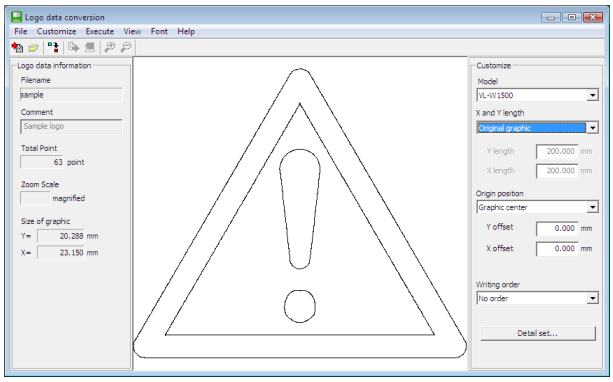
Read the graphic data by operating the scanner driver.

Reference

- The operation method of the scanner driver varies depending on the scanner model.
- Some scanner driver cannot be applicable for this function.

2. Read graphic is displayed.

After reading the graphics, refer to “(3) Customization (setting of converting method)” (P.11) and specify the conversion condition, then execute the conversion.



■ View Menu

Function	Description
Zoom In	Enlarges the image. The same function can be executed by clicking  button. Clicking this button enlarges the image by 0.2x, 1x, 2x, and up to 100x in this order. When the image is enlarged by 100x, this button is invalid and indicated in gray.
Zoom Out	Reduces the image. The same function can be executed by clicking  button. Clicking this button reduces the image by 100x, 90x, and at minimum 0.2x in this order. When the image is displayed by 0.2x, this button is invalid and indicated in gray.

■ Font Menu

Function	Description
Font set...	Registers fonts. Refer to “2-3 Settings after installation” (P.6).

■ Help Menu

Function	Description
Manual	Displays the operation manual of logo data conversion software.
About...	Version information of the software can be checked. Close the window by clicking “OK” button.

5-2 Logo Data Information Area

Logo data information area indicates the below information on the original data.

■ File Name

File name to identify data for outputting the converted data.

■ Comment

Comment added to the output of the converted data.
If inputting any comments, the inputted comment is displayed with the file name on the setting screen of the laser marker/ laser processing machine. Comments can be inputted within 20 characters in single byte or 10 characters in double byte.

■ Total Point

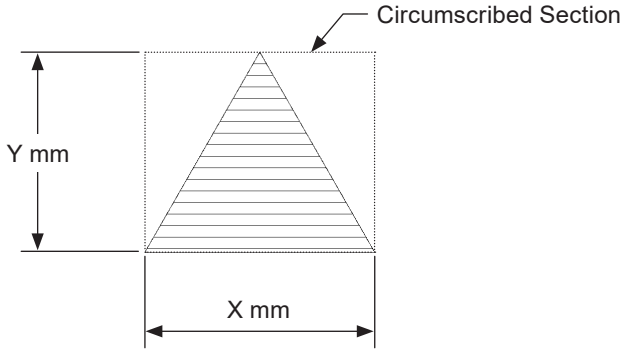
The number of configuration points (the number of coordinates) of graphic in the image display area is displayed.
When the value of total coordinates number exceeds the limit value, the value is displayed in red.
If the total coordinates number of the converted data exceeds the limit value, it is necessary to edit the original data (reduce the configuration points of the graphic, or output the character string and the graphics separately when the data contains the character string, etc.).

■ Zoom Scale

The current magnification of the image display is displayed.

■ Size of graphic

The vertical length and lateral length of the graphic are displayed.
The vertical length (Y axis) is displayed at the indication “Y=”, and the lateral length (X axis) is displayed at the indication “X=” in mm unit respectively.



5-3 Image Display Area

The image display area of the original data and the converted data.
When the original data is loaded, it is displayed in full of the display area.
The data which is properly converted is displayed in the marking/processing field of selected model.

5-4 Customizing Area

Specification (customize) area of the action for converting the original data.
Conversion is executed after setting the customize items.
In case that any customize items are changed after data conversion, it is necessary to convert the data again.
For the setting detail, refer to “(3) Customization (setting of converting method)” (P.11).

6. Troubleshooting

Message	Remedy
Format error of the HPGL file.	• The HPGL data has a invalid parameter to be converted. • Check whether HPGL command that is impossible to deal with this software is existed.
Numbers of coordinates exceeding maximum coordinates.	The max. loadable coordinate is 131,072 points. Retry converting the font after reducing the configuration segment of the original data for conversion using the current CAD software. If this message is appeared in spite of reducing the configuration segment, the current CAD software cannot convert the original data for conversion to be output.
Not existed file.	Check whether this file uses other application or this file can be opened using other application such as Notepad.
File access error.	
Format error of the DXF file.	The data in the original data for conversion might be broken. Re-create the original data for conversion.
Not existed designated layer.	
Not existed designated line type.	
Not existed designated style.	
Not existed designated block.	
File does not have data.	Check the followings and re-create the original data for conversion. • The graphic data is too small. • The DXF data has an unsupported function for this software. • The font has not been specified.
File format: Not corresponded.	Re-execute the file that supports the conversion.
Coordinate values in data exceeded allowable coordinate values.	Check specified aspect ratio and graphic size setting in the customize panel. “Size of graphic” (P.24)
Converted graphic is out of area.	Check specified aspect ratio, graphic size setting, and specified position of the original point in the customize panel. “Specification of Origin Position” (P.14)
Converting character data has failed because there is not character data in the font.	It needs to register font before converting DXF file including character. “2-3 Settings after installation” (P.6)
A font file isn't being setup. Converting character data has failed.	
There is invalid line type. It has the possibility that data are lost.	HPGL or DXF file was created with the drawing function that was not supported by this software. Re-create the original data for conversion, or change the data into the one that includes simple graphic (straight line, polyline, circle, etc.).
There is invalid entity. It has the possibility that data are lost.	
There is invalid command. It has the possibility that data are lost.	
Font access error. Converting character data has failed.	Check whether the other applications use the font file or not. If no application uses the font file, register the font file again.
Abnormal program operation.	• Restart the Logo Data Conversion Software. • If the symptom persists after restart, contact our sales office.

7. Readable DXF File

Logo data conversion software can convert the data with the following format to VEC format.
VEC format file can be used as a drawing data for the laser marker/laser processing machine.

- HP-GL format
- DXF-R12, R13, R14 format
- Image (BMP, JPG) format

The data that created by either Autocad (This software is released by “autodesk”) is recommended as the original CAD data for conversion to be loaded.
The creating method for original data for conversion in each format to be created by Autocad is described below;

HP-GL format file

The HP-GL format file to be created by Autocad can be prepared by marking the data so as to output to file on marking.
Apply “Hewlett-Packard (HP-GL)” printer (plotter) driver attached to Autocad as the printer (plotter) driver for marking.
Refer to “Operation Method” that is appeared on the screen by searching the reference pages on the online help using the keyword such as “Write into File” or “Output to File”.

DXF-R12, R13, R14 format file

The DXF-R12, R13, R14 format file to be created by Autocad can be prepared using the “Writing” function in “File” menu.
At this time, select “AutoCAD LT R2/R12/R13/R14 DXF” from “File Format” in “Data Writing” dialog, and then click [Save] button.
Refer to “Operation Method” that is appeared on the screen by searching the reference pages on the online help of Autocad using the keyword such as “Writing”.

Reference

- Logo data conversion software is interpreted the content of the specified CAD data file on part of the rule for HP-GL and DXF (it is impossible to interpret all commands for HP-GL and DXF). (Logo data conversion software can determine the type of the format of the specified file from the extension of the file.) Therefore, Logo data conversion software can load the CAD data if the CAD data is created as bog-standard data irrespective of the CAD software that outputs the CAD data. With this function, Logo data conversion software cannot deal all CAD data created by Autocad. However, this software can deal part of the data created by CAD software except for Autocad.
- The CAD data created by the command not corresponding to Logo data conversion software is invalid for opening or becomes lack caused by non-loading part of the data. Also, part of DXF format file cannot load caused by the difference of interpretation against DXF per CAD software to be applied.
- “HP-GL” (abbreviation of “Hewlett Packard Graphics Language”) is the plotter control language developed by Hewlett-Packard Development Company, L.P., and is also the standard written by both command groups to be transformed between personal computer and plotter and written format.
- “DXF” (abbreviation of “Drawing Interchange Format”) is the standard written by both command groups to be transformed between software dealing CAD data, and “R14” (abbreviation of “Release14”, “R12” is abbreviation of “Release12”, and “R13” is abbreviation of “Release13”) is represented the version of its standard.
- For the drawing data with text and curved line, DXF file format is practical on the point of the drawing quality and shortening of the drawing time by laser in comparison with the HP-GL format.

■ Applicable DXF functions and elements

The applicable functions and drawing elements of AutoCAD for Logo data conversion software are shown in below table.

DXF Version	DXF Elements		Applicability *1	Remarks
	Entity Name	Graphic Name		
R12J R13J R14	3DFACE	3D face	N	
	3DLINE	3D line	N	
	ARC	Arc	Y	
	ATTDEF	Attribute definition	N	
	ATTRIB	Attribute	N	
	CIRCLE	Circle	Y	
	DIMENSION	Dimension	N	
	INSERT	Insert graphic	Y	
	LINE	Segment	Y	
	POINT	Point	N	
	POLYLINE	2D Polyline	Y	Bold line is not supported.
		3D Polyline	N	
	SEQEND	Sequence end	Y	SEQEND in combination with POLYLINE element is available.
	SHAPE	Shape	N	
	SOLID	2D paint	Y	The SOLID element is converted to the outline and filling lines in the marking data. The filling lines are either of vertical or horizontal lines.
	TEXT	Character	Y *2	The font of the TEXT element is replaced to the laser marker font and then disassembled to the lines in the marking data. You cannot treat it as a character object.
	TRACE	Bold line	N	
	VERTEX	Vertex	Y	VERTEX in combination with POLYLINE element is available.
	VIEWPORT	View port	N	

DXF Version	DXF Elements		Applicability *1	Remarks
	Entity Name	Graphic Name		
R13J R14	3DSOLID	3D paint	N	
	ACAD_PROXY_ ENTITY	Proxy graphic	N	
	BODY	Body	N	
	ELLIPSE	Ellipse	Y	
	IMAGE	Image	N	
	LEADER	Lead line	N	
	LWPOLYLINE	Light Weight polyline	Y	Bold line is not supported.
	MLINE	Multi-line	N	
	MTEXT	Multi-text	Y *2	The font of the MTEXT element is replaced to the laser marker font and then disassembled to the lines in the marking data. You cannot treat it as a character object.
	OLEFRAME	OLE frame	N	
	OLE2FRAME	OLE2 frame	N	
	RAY	Radiation (half line)	Y	
	REGION	Region	N	
	SPLINE	Free curve	Y	
	TOLERANCE	Geometric tolerance	N	
	XLINE	Line (straight line)	Y	
R14	HATCH	Hatching	Y	Graphics which contain POLYLINE or SPLINE are not supported. The HATCH element is converted to the outline and filling lines in the marking data. The filling lines are either of vertical or horizontal lines.
	ARCALIGNEDTEXT	Character string on arc	N	
	RTEXT	Reference character string	N	
	WIPEOUT	Masking graphic	N	

*1 : For the applicability of the function, “Y” means “applicable” and “N” means “not applicable” for VEC conversion.
*2 : This function is not available for VL-W1 series.

Reference

- If the graphic data which contains filling lines cannot be converted properly to the marking data, change the file format of the DXF file.
- Max. 128 layers in one DXF file are supported.
- When the drawing magnification of VEC file is set less than 100% in the laser marker/laser processing machine setting, he graphic including curve might not be drawn by laser as just the original images.
- Depending on the drawing procedures and methods of the DXF data, there might be a minor conversion error and some graphics might not be drawn by laser as just the original images.
- When DXF file with unsupported function is converted to HP-GL format, in some case, it can be converted to VEC.

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