Contents

About this publication

Scope

This publication describes how to install, setup and operate the Ezletter Notcher, how to maintain the system and how to recognize and resolve problems.

Intended audience

This Operator's Guide is intended for machine operators responsible for operating and maintaining the different parts of the Ezletter Notcher system. You should be familiar with the electric-sign industry standards of manufacturing. Managers as well as sign manufacturing personnel may find information contained in this guide useful.

Reader's comments

We would like to know what you think about this publication. For that purpose, we have included an Email address for our Information Development project leader. That address is: support@ezletter.cn

SAFETY

DANGER

Electrical current from power cables is hazardous.

To avoid a shock hazard:
Do not connect or disconnect any cables or perform installation or maintenance of this product during an electrical storm.
Connect all power cords to properly wired and grounded electrical outlet.
Never turn on any equipment when there is evidence of fire, water or structural damage.
Disconnect the power cord from an electrical outlet before you remove the equipment covers, unless instructed otherwise in the installation and maintenance procedures.

CAUTION
The *Standby Switch* on the equipment does not completely turn off electrical current supplied to the equipment. To remove all electrical current from the equipment, ensure that power cord is disconnected from the power source.

The standby switch   will stop the Ezletter Notcher immediately!

Read complete owners manual prior to operating the equipment.
Allow only trained operators to run this equipment.
Wear safety glasses at all times while the components are running.
Find and know where the *Standby Switch* is located and know how to operate it.
Physically inspect all components for safe operation before starting or resetting the *Standby Switch*.
Place required covers on all equipment before operating.
Keep hands away from all moving parts.
Disconnect or unplug all equipment before performing maintenance.

Introduction

Thank you for purchasing an Ezletter Notcher . This Operator's Guide provides the information that is needed to:

Set up cable your Ezletter Notcher

Start and operate you Ezletter Notcher

Perform maintenance and troubleshoot your Ezletter Notcher

Also included is *Stand Alone* software that can be installed on a personal computer and can be used to create sign files and estimate material requirements.

Your Ezletter Notcher comes with one-year limited warranty.

Package contents

Your Ezletter Notcher package includes:

1	The Ezletter Notcher unit
2	The feeder
3	The toolbox
a)	The power cord
b)	Controller card
c)	GT-400-ACC1
d)	62PIN cable
e)	60PIN cable
f)	Fuse 2A x2
g)	Fuse 10A 5x20 x2
h)	Hex key one set
i)	Envelope with Ezletter Notcher software

If any part of this package is missing or damaged please contact Ezletter for assistance.

Specifications

Material handling capabilities

Widths	60mm-180mm
Aluminum	0.5mm-1.2mm

Output

Notch size	30º and 105º
Notch depth	4mm-16mm

Physical layout

Height	1600mm
Width	800mm
Length	2200mm
Weight	200kg

Power requirements

Voltage	AC 110V/220V
Frequency	50/60HZ
Air	0.8MPa
Air	0.1m3/min

Alert messages

This publication contains the following types of alert messages:

Note

Provides additional information that might be of special interest. A note can point out exceptions to rules or procedures. A note usually, but not always, follows the information to which it relates.

Caution

Informs you of conditions that might result in damage to hardware, corruption of your data or application software or long-term health hazard to you. A caution always precedes the information to which it relates.

Danger

These notices indicate situations that can be potentially lethal or extremely hazardous to you. A danger notice always precedes the information to which it relates.

Warning Electric Shock

Informs you of conditions that might result in damage to hardware, corruption of your data or application software or long-term health hazard to people. A caution always precedes the information to which it relates.

Installation

This chapter provides the information needed to install the Ezletter Notcher.

Placement

Because of a small footprint of the Ezletter Notcher it can be installed anywhere.
The Ezletter Notcher should be installed on an even floor in preferably clean environment. Try to place the Ezletter Notcher as far from paint booth and router table as possible.

The Ezletter Notcher don't have out-feed shoot so it is recommended to place the machine against a workbench.

Connecting the Ezletter Notcher

The Ezletter Notcher does not require specially wired electrical outlet. But it is recommended to use dedicated electrical outlet to connect the Ezletter Notcher into.

Connect the power cord to the Ezletter Notcher and than to electrical outlet. If desired, surge protector could be used to protect the equipment. If surge protector used ensure that it is rated at not less then 400 watt.

CAUTION:
Use supplied power cord to connect the Ezletter Notcher to an electrical outlet. Inspect the power cord and electrical outlet for any damage. If damage is found DO NOT use this power cord or outlet.
Make sure that electrical outlet is properly wired and has good ground. Ensure that power switch is in off position before plugging power cord in.

Standby switch does not turn off the electrical current to the machine. To remove all electrical current from the Ezletter Notcher, ensure that power cord is disconnected from the machine.
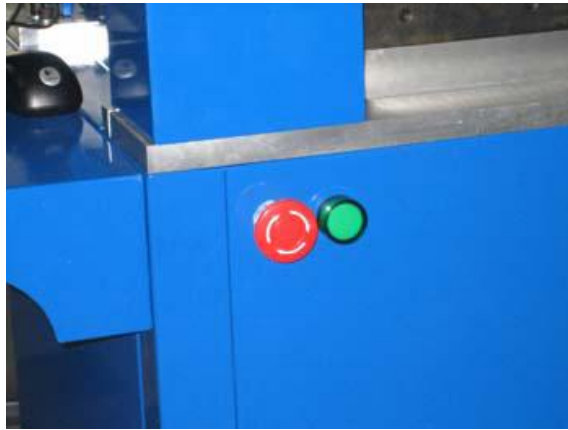
Starting the Ezletter Notcher

To start the Ezletter Notcher:

1. Connect to compressor air.

2. Press the standby switch into off position.

3. Install Controller card.

4. Install controller driver, ezletter notcher software.

5. Plug the power.

6. Turn the power switch into on position.

System Requirements

PC with normal configure

USB interface for Superpro Keys

Windows XP operating system

3 Button Mouse with middle wheel recommend Logitech M-BJ58

Warning

To avoid any electrostatic from damaging the motion controller, please discharge static in your body before touching the controller or inserting/removing the controller to/from a slot of PC.

Insert the controller into the PC.

Warning

Please be careful when handling. Discharge static in your body before touching the controller circuit or inserting/removing the controller, to avoid any static from damaging the motion controller.

1. Connect the CN2 connector of the controller and the accessory board (ACC1) with a 62-pin flat cable provided with the board.

2. Turn off the PC and select a free PCI slot in the PC.

4. Insert the controller card into this slot firmly

5. Fix the controller card in the slot by tightening the screw.
6. Remove the cover of a nearby slot. Fix the accessory board (ACC1) on the PC frame with screws.
7. Close the PC cover and restart the PC.

Connect the controller with the terminal board.

Warning

Refer carefully to the signal description of the connectors in the controller and the pin description of the connectors in motor driver.　 Wire them correctly and avoid connecting them when power is on.　 Otherwise, wrong connection may cause the positive feedback of the system and operation with power may cause damage on hardware, so as to make the system unable to work properly.

Turn off the PC. Take out the two-shielded cables supplied with the controller. Connect CN1 on the controller with CN1 on the terminal board, and CN2 on the accessory board with CN2 on the terminal board.

Wiring of the Motion Controller and Terminal Board

Install Driver of the Controller Card in Windows

1. After installing hardware and starting computer, Insert the product CD into the CD-ROM. Windows xp will detect automatically the motion controller, and start Found New Hardware Wizard. Click Next when prompted.
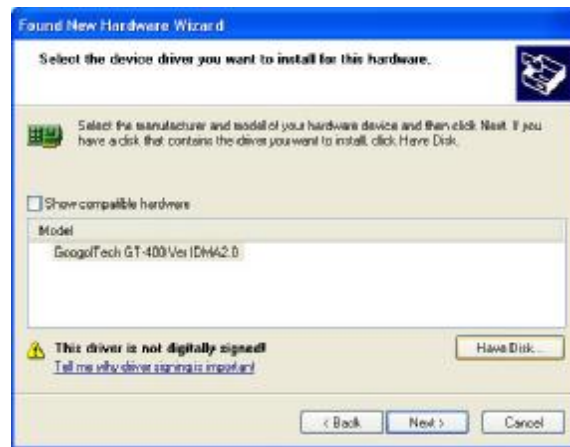

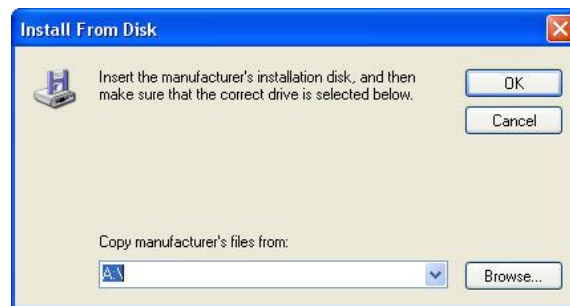2. Select "Install from a list or specific location (Advanced)". Then click Next.

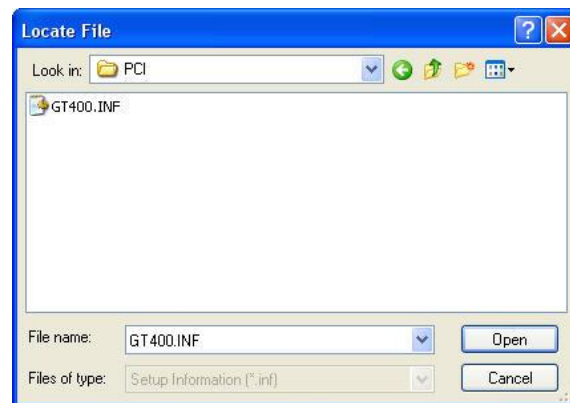3. Select "Don't search, I will choose the driver to install". Then click Next.
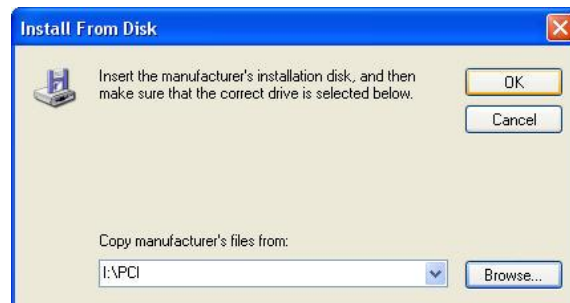

4. Select "Have Disk" Then "Next"

5. Select "Browse"

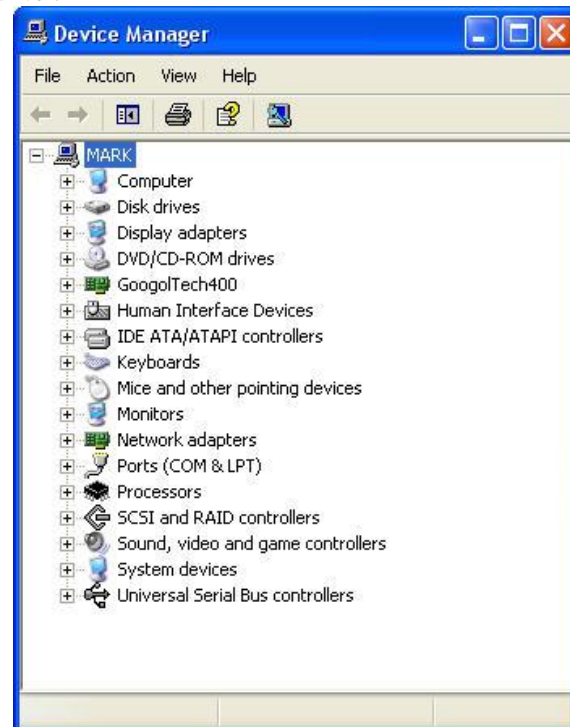6. In the "PCI" folder select file "GT400.INF"

7. Select "OK"

8. Select "Finish"

9. Go to Device Manager and if you found "GoogolTech400", the driver has been loaded successfully. Other wise you need to reinstall the driver.
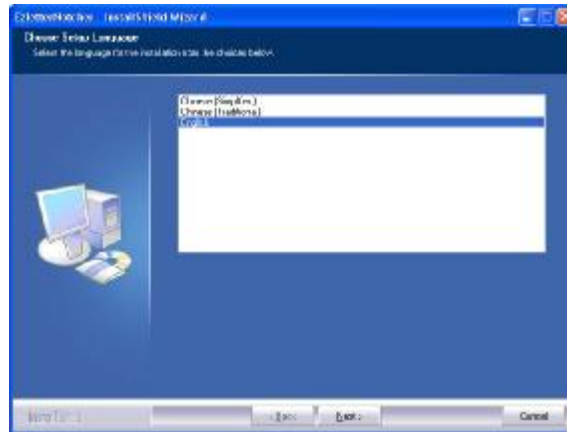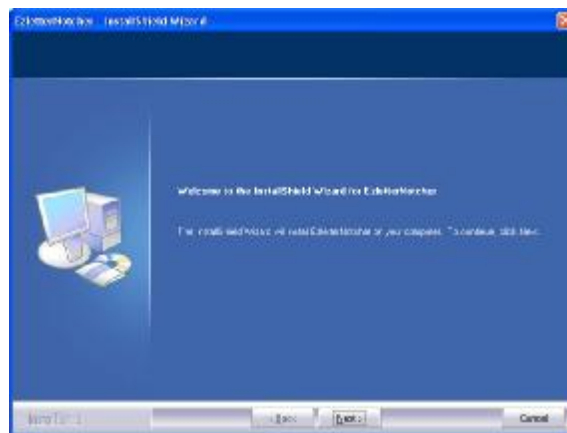
Install the Ezletter Software

1. Insert the CD into the CD-ROM, the following interface will be detected automatically.
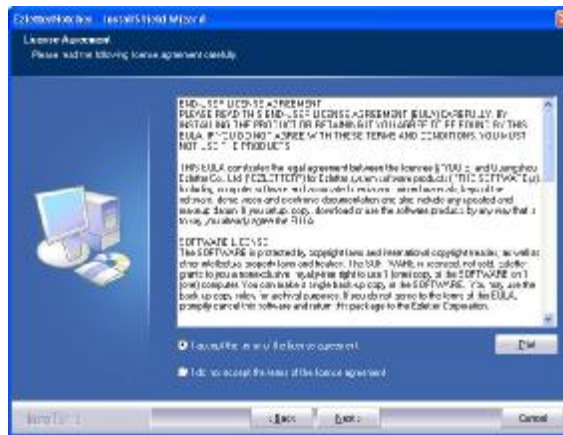Click **"Install"**

2. Select **"English",** then **"next"**

3. Select **"Next"**

4. Select **"I accept the terms of the license agreement"** then **"Next"**

5. Select **"Next". "C"** is default to be installed the software.
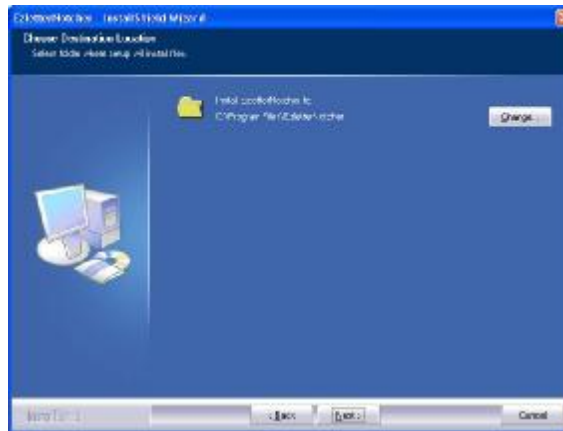
6. Click **"Install"**
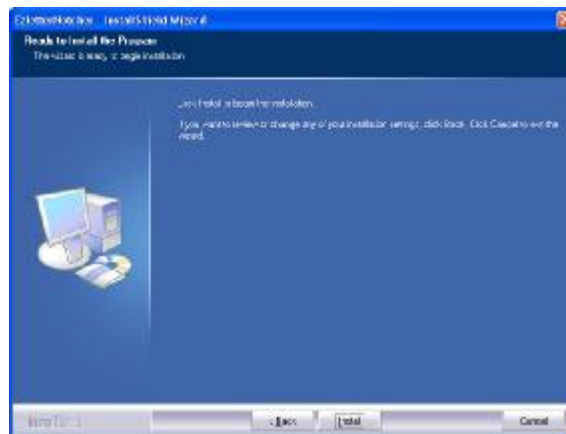
7. Setup status interface will be in your screen.
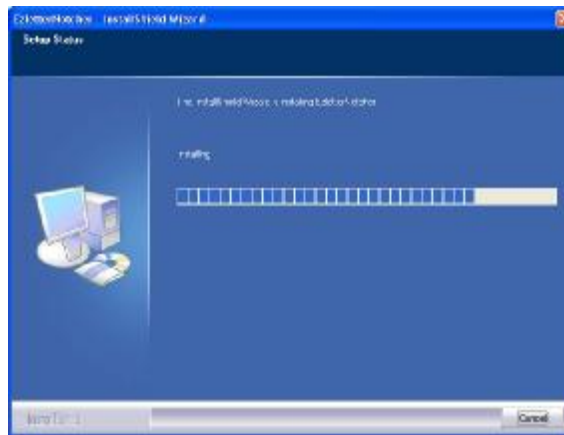
8. Click **"Finish"**, the software is loaded successfully.
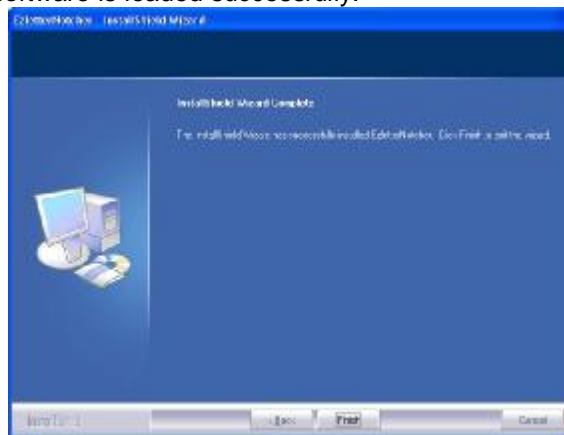
Install the driver of Superpro

1. Look for the **Driver folder**, double click **"autorun.exe"**
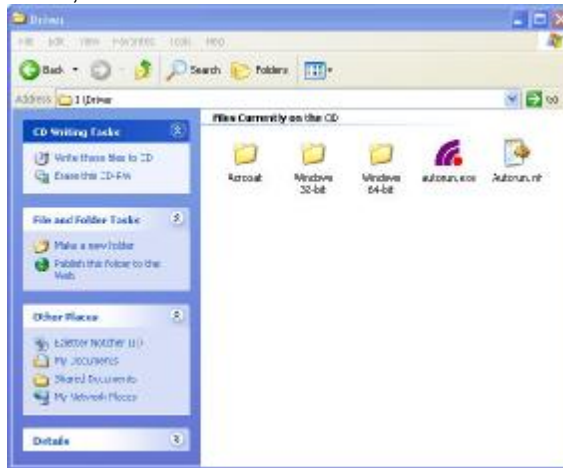
2. Select **"Yes"**

3. Select **"Next"**
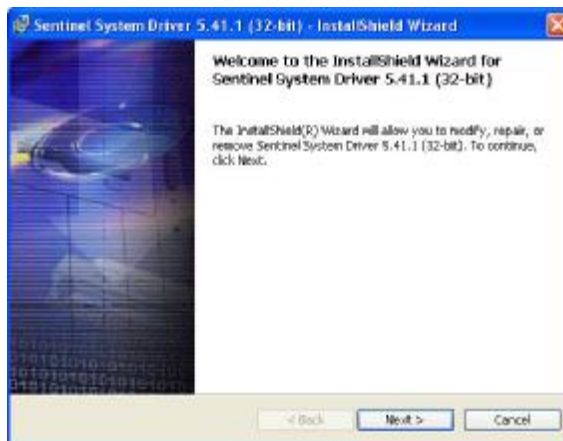
4.   Select "I accept the terms in the license agreement" then "Next"

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5. Select **"Next"**

6. Select **"Complete"** then **"Next"**
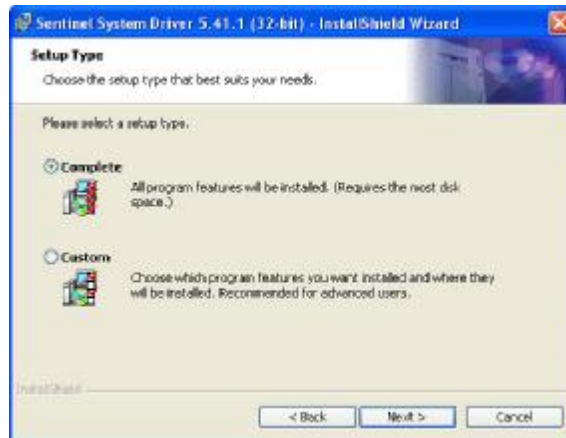
7. Select **"Install"**
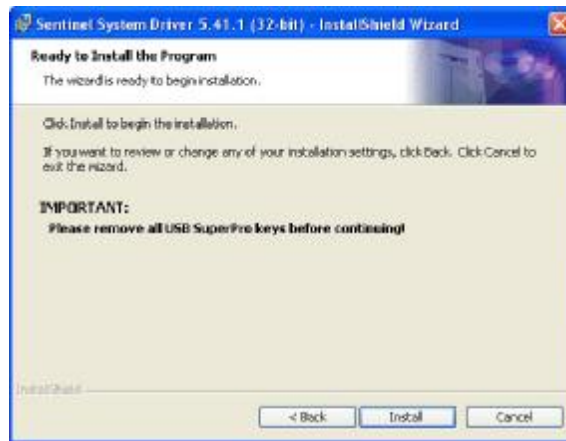
8. Status will be shown. Then select **"Next"**
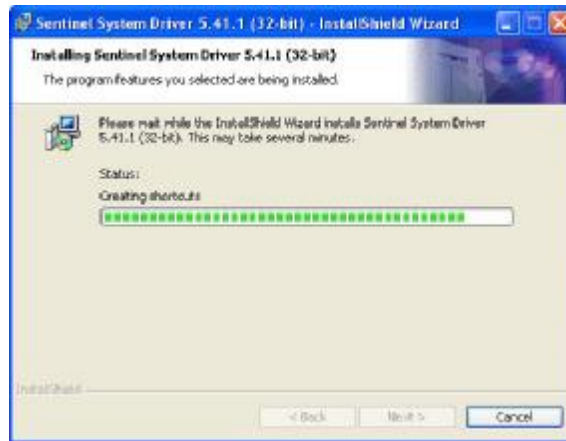
9. Select **"Finish"**
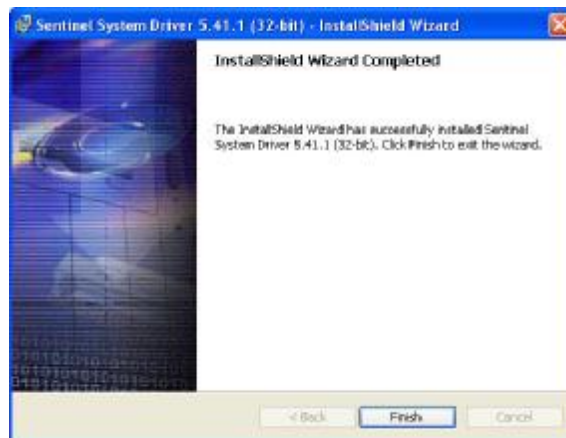
10. If you can find out "**Rainbow USB SuperPro"** in the Device Manager the key has been set up successfully.
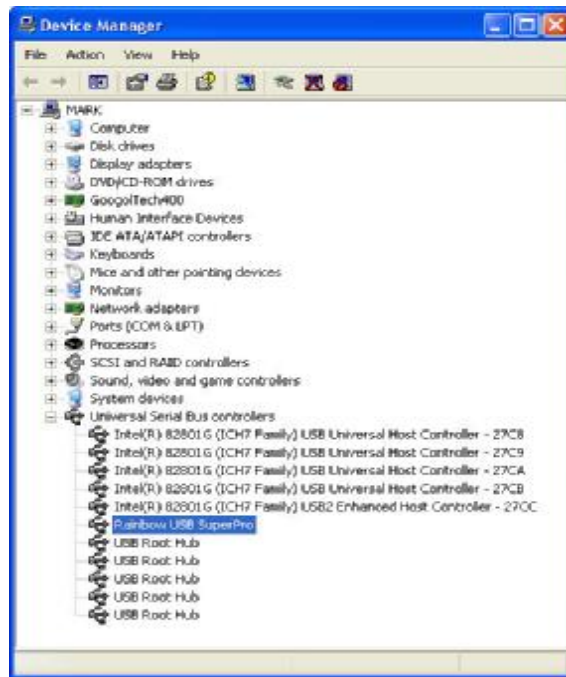
Operation

Ezletter System Commands & Menus

Introduction on the whole interface of Ezletter system:

Main Menu

Tools

Length of the selected segment (Unit: mm)

Coordinate of the mouse

Status instruction
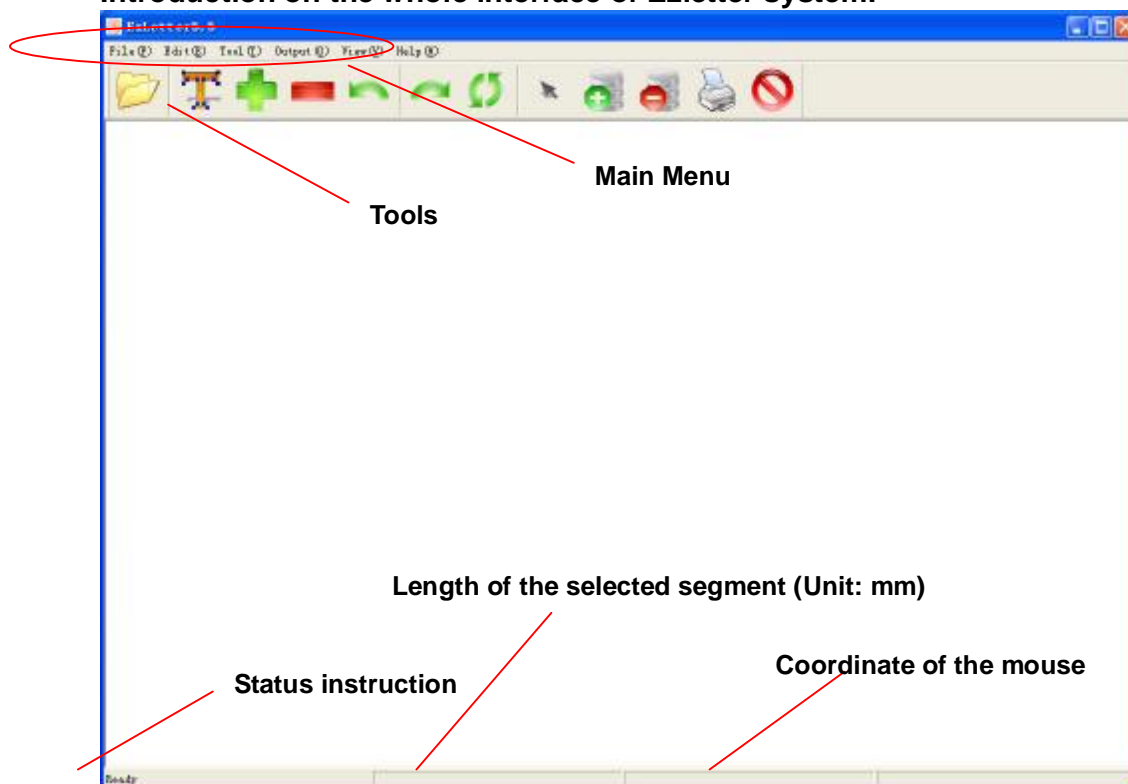
Introduction on the Main Menu

File Menu:

"Input DXF file":

Input or open a .DXF file you designed in some other sign design software such as CorelDraw, Art cam ect.

"Open Ezletter file":

Open the .ZEL file which you have edited in the Ezletter System.

"Save as Ezletter file":

It is the quick way to save an internal copy of your design-in-process as you work on it in Ezletter system.

"Exit":

Select Exit to quit the Ezletter system.

Edit Menu:

The EDIT menu is used to place the joint positions on the channel letter returns. Here, joints are referred to as split points or simply splits.

The software will automatically perform the initial split-up of the letter. For most letters no additional changes are necessary. However full control is available to split the letters exactly as needed. Splits may be added, deleted, and moved.

"Enter point mode" in Toolbar.

To select a split, first ensure in point mode, for point mode, one is click point mode button, another is click right button of mouse. The split will become BOLD indicating that it is active. Additional information about selected part and piece will be displayed in the hint bar, if any split is selected. This information includes part length. The split can then be moved clockwise and counter clockwise around the letter with the MOVE buttons. To help placement accuracy, The split marker will snap the corner when it is positioned near a corner.

"Add Split point":

It must need one split point at least if we want to outspread a closed figure of the letter or logo to a line. So when you input or open a .dxf file in Ezletter system software, one split point will be default. **"Add point"** allows you to break the segments which are longer than the raw material you are using into multiple parts.

This button allows adding an extra split. To add a split, click this button and then click the point on a letter where you want the new split.

"Remove Split point"

Delete the unwanted spilt point. Please note when only one split point it can't be deleted.

With this button you can remove an extra split. To remove a split, first select the split to remove by click it and then click this button.

"CW move split"

Move the split point by one click clockwise.
First select a split to move. Then press this button to move it to the desired location.

"CCW move split"

Move the split point by one click in counter-clockwise

"Change point style"

Toggle tab, "Change point style" can change the types of split to butt seam-overlapping tab one side (left or right), double overlapping tab, special mark without

overlapping tab.

	Overlapping on left
	Overlapping on right
	Double overlapping
	Without overlapping

Additional split points can be added to a letter with the ADD SPLIT button. Press the ADD SPLIT button and then click the letter where the split is to be located. It is only necessary to click the letter near where the split should be use; the split can easily be moved to the exact position use the MOVE SPLIT buttons.

Splits can be removed with the REMOVE SPLIT button. Click the split to select. The split will become bold indicating that is active. Click the REMOVE SPLIT button to remove the split. All letters must have at least one split, so it is not possible to remove the last split on a letter.

Many types of splits are available. The split type is selected by using the CHANGE POINT STYLE button after selecting a split. The tab options are tab left, tab right, double tab, and no tab. The length of the tab is 10mm.The splits do not have to be on the corners of the letter. They can be placed anywhere.

Tool Menu:

Option

The OPTION is used to enter the basic information used to make the channel letter returns. The option contains all of the information.

The option is split into five parts.

The following dialog box will be present when click **Option Menu**:

Reduce point set

This field affects how much information is printed on the tape. If you do not want too much angle and radius to be printed, you can adjust the following parameters:

Distance: This is the minimum distance between two points which will be printed. If the letter is bigger, the distance will be set larger. For example: The height of letter is 300mm, then the distance always be set between 10 and 15; The height of letter is 1 meter, the distance always be set between 20 and 30.

Angle: This is the minimum angle will be printed. If the font of the letter is very square, the little angle is also very important, so the value of angle should be small. For example for black font "**B** the angle always be set between 10~15. If the font is very round and smooth such as **"ℬ",** there are many little angles and the little angle isn't very important for the letter, so the value of minimum angle can be set larger and will be 20~30.

Chord: It will affect how much information on the arc will be printed. If the size of the letter is larger the value of chord will be larger. For example: the letter's size is 300x300mm, the value of chord is set 0.2~0.3. The letter size is 1X1meter, the value is set 0.5~1.

Distance to 30 Notch

These parameters can adjust the tolerance caused by the assembly.

"Distance from 105" is designed 150mm, and the "Dimple" is designed in the line of the 30 notch so it is "0", the "cut" is designed 295mm from 30 notch.
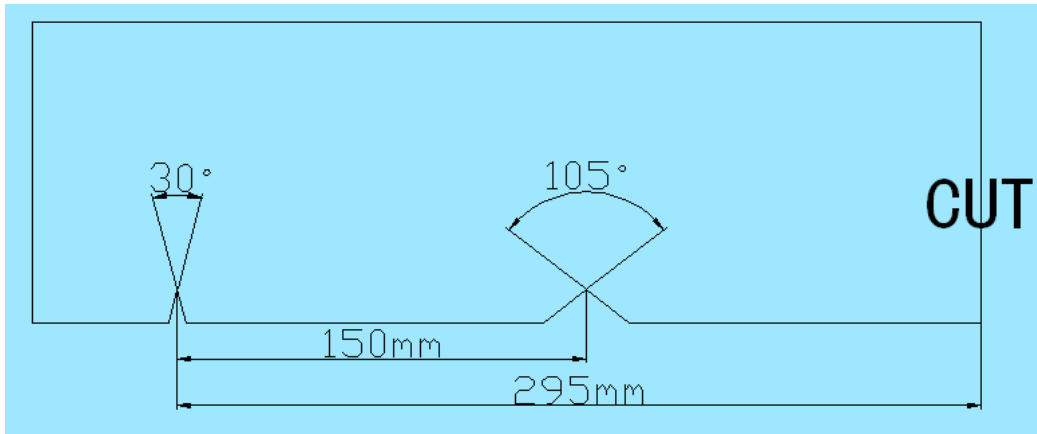
You can input the exact value you measure the Al sheet which notched by step feed to adjust the assembly tolerance of the machine.

Normally these parameters are not need to be modified in the new machine and they are already being set properly before leave factory.

Velocity set

These two parameters are to adjust the working speed of the machine.

"Velocity" is the speed of the feeding and it can be adjusted from 32~1024. Normally it is set from 64~256 according to the customer's requirements.

"Acc" is the acceleration of the feeding and it is always be set between 0.2~0.4.

Length Scale

Some times there is some system tolerance caused the working length isn't same as that of designed length which showed in the computer. We can adjust the length scale to resolve this problem.

$$\text{Length Coefficient} = \frac{\text{Length in Design (Which showed in the computer)}}{\text{Length of tape printed in practice}}$$

Delay Set

The action of the machine is always delayed than the direction of the computer. So we need to make these delays set to adjust the computer to adapt to the delay of the machine.

Because the cutting and dimpling are drove by the compress air. If the press of the compress air is very enough the action of the machine will be faster. The delay values

can be set smaller. Normally you can adopt the default value.

The unit of the value is millisecond.

Capture picture

Can capture the picture in the screen and will save it on the root directory of the system disk. By this way we can get the picture which we edited in the Ezletter system software. From these pictures we can know where is split point in and how the point overlapping joint. It is very helpful for channel letter fabrication in practice.

Language

We can select different language here.

Vertical Mirror & Horizontal Mirror

We can overturn the figures when we need by these two menus. Sometimes the .DXF file is input to the Ezletter System software the drawing is rotated and we can use these menus to overturn them to the view we want.

Output Menu:

"Code"

This menu can output the code of printing.

"Start Notch"

Begin to notch.

"Test Length"

Normally the distance between two holes of the tapes should be 12.6~12.8mm then the length of printed will be same as the design. We need to adjust the scale of the tape to ensure the precision of the printed tape is same as the design when the quality of the tape isn't as good as required.

View Menu:

"Zoom all"

This menu is to show the whole sign. Double clicks on the right button of the mouse will be the same function.

Help Menu:

"Visit website":

This menu will bring you to Guangzhou Ezletter Co., Ltd. Website if your PC is connected to the internet.

"About Ezletter":

This menu will show you the information of the version of the software.

Introduction on the Tools

Select all   **Select Nothing**   **Stop Notching**

Enter the point edit function
We need to enter the point edit function then can add split point or remove split point.

Select the segment for notching
You can select the segments which you want to notch one by one. The second time you click is to cancel selecting.

Shortcut Keys:

"O" Open the .DXF file

Click the right button of the mouse: Enter point edit

"+" or "E":   Add split point

"—" or "R" or "F3":   Reduce split point

"3" Or "D":   Move the split point by CCW

"3" Or "F":   Move the split point by CW

"5" And "6" Overlapping tap

Select parts can be selected by click the letter. When a part is selected it will appear in BOLD outline. Use middle button of mouse can ZOOM IN and ZOOM OUT and PAN will assist in selecting parts in complicated letters. small parts may be enlarged until their pieces can be easily selected by click them. Twice click them will not selected.

"P":   Start Notch, starts the job.

Stop

The start notch is used to start the production of letters or parts of your design-file.
"Space bar" is pause a job or resume on machine.

For safety reasons press the Standby switch after purchasing the machine. This will prevent unexpected machine operation if the job were to be accidentally resumed.
To IMMEDIATELY ABORT the job use Standby switch on the front of the Ezletter Notcher.

All tools on the machine can be manually operated individual.

Manually operates both the 30 and 105 notches.

Number key **"1"** is machining the 30 notch.

Number key **"2"** is machining the 105 notch.

Make sure that all guards are in place and that the Notchers are clear before pressing either key.

Manually operates the shear:

Number key **"3"** is cutting.

Be certain the guards are in place and that the shear path is clear before pressing this key.

Manually operates the front and rear dimples:

Number key **"4"** is one piece dimpling.

Number key **"5"** is two pieces dimpling.

Be sure that there is material under the Dimples and that they are clear before pressing either key.

Move material forward and backwards through the machine:

"F3" is feed back the material

"F4" is feed in the material.

Mouse Operation

The sign drawing image can be enlarged, made smaller and pan with mouse.

Double clicks on the right button of the mouse: Zoom all

Turn the middle wheel of the mouse forwards: Zoom out

Turn the middle wheel of the mouse backwards: Zoom in
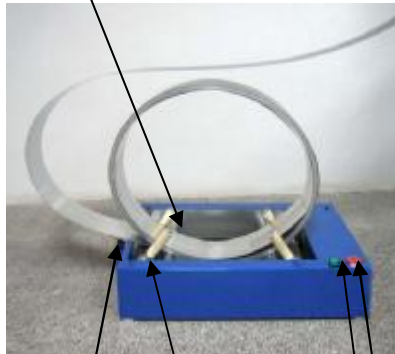
Press the middle wheel of the mouse and move mouse: Move the view

Operation
Loading material
Mark sure Standby switch is in OFF (pressed in) position.

Bottom coil rollers

Material sensor   Standby switch

Adjustable roller   Indicated lamp

Setting material width
The Ezletter Notcher can use different width material. To do so the machine has to be adjusted.

Adjust adjustable roller. To do so, loosen the axis of adjustable roller, and slide the adjustable roller to touch the material, keep a clear about 5mm.

The leveler infeed guides have to be set .Remember to loosen only left guide! Right guide is used to set notch depth therefore should be left in place.
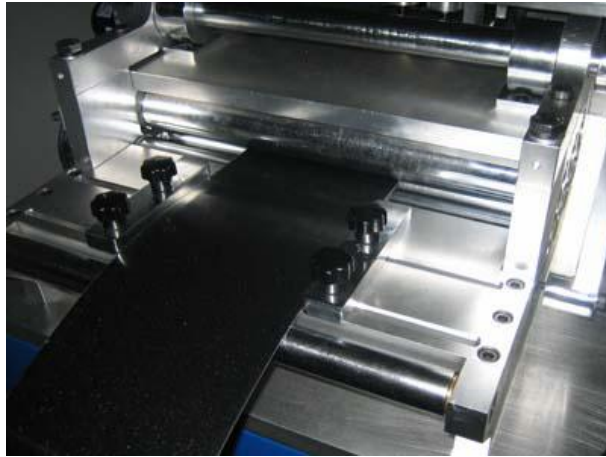
Because most material is not slit perfectly it could differ in width. To compensate for this leave a small gap between left guide and material.
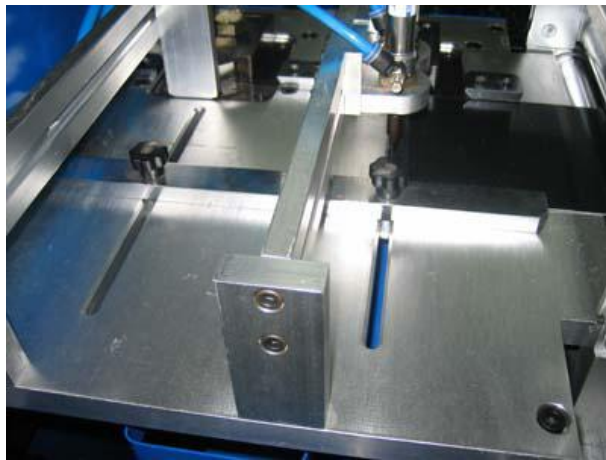
And finally, adjust sliding material guide by loosening two thumbscrews pictured here in the center. Bring this guide all the way towards the front of the machine. And then back it off just a little bit.
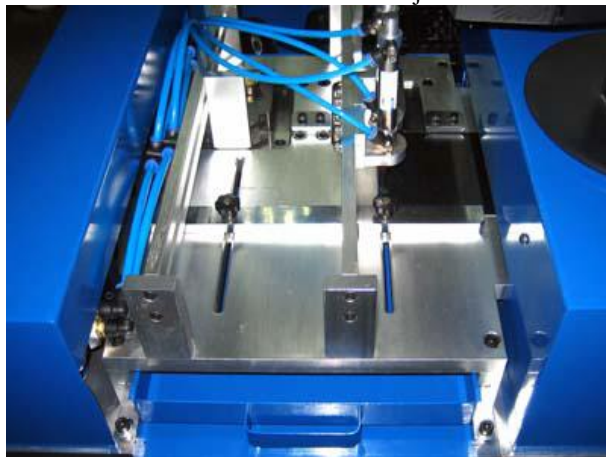
Setting material thickness

The Ezletter Notcher can handle different material thicknesses with only one adjustment!

Lever cam arm is used make the adjustment. For thicker material rotate leveler cam arm clockwise. For thinner material rotate leveler cam arm counter clockwise.

Test setting y feeding material through the machine. Material has to be flat. If it's curved up-leveler is set too tight. If material curved down-leveler is too loose.

Note: if leveler is set too tight, material might move backwards on it's own after machine moves it forward. This will result in inaccurate parts. Or even broken tools!

If leveler is set too loose, material slippage will occur. This may cause material stall errors ("Not sensing material motion"), inconsistent parts and inability to properly calibrate machine.

Setting notch depth

The Ezletter Notcher could be set to make notches from 4mm to 16mm deep. Moving material in and out of the notches changes notch depth.
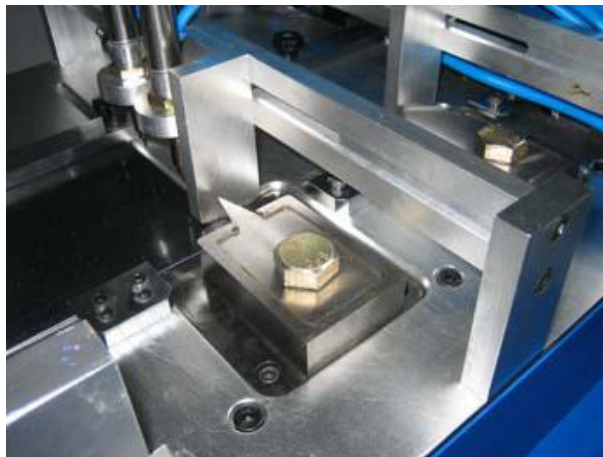
There are few steps to position material for the desired notch depth.

Remove material from the machine.

Adjust stationary material guides to desired notch depth.

The stationary material guides could be placed anywhere between 4 to 16mm with a help of ruler, or adjustable square.

To set stationary material guides loosen two screws (visible in the center of the picture).

Position guide into desired position. Make sure it's square! Tighten the screws.

Note: all three stationary material guides have to be set identically. To insure this use ruler or adjustable square to measure distance from the edge of the notcher base plate to each stationary material guide.

Loosen *leveler infeed guides*, *leveler cam arm* and *sliding material guide* so that material can easily slide back and forward.

Manually insert material all the way through the machine.

Slide material all the way towards the front of the machine. And square it against *stationary material guides*.

Slide *sliding material guide* all the way towards the front of the machine and tighten it's thumb screws.

Slide the *leveler front infeed guide* towards material until they touch. And tighten the guide.

Follow the **Setting material width** procedure to perform final guides' adjustments.

Setting dimple position

The Ezletter Notcher uses *dimples* to indicate place and direction of a bend. Basic configuration includes two dimplers.

Both dimplers are adjustable and can be positioned to dimple return virtually anywhere.

To adjust dimpler position, loosen the bolt. Then slide dimpler into desired position. And tighten the bolt. Repeat this for the second dimpler.

Making parts

In this chapter we will go step by step over making returns with the Ezletter Notcher. First we start with a DXF design file.

Power the machine on by turning the *Main On/Off switch* into **on** position. Make sure the compressor air is on and the air pressers have past 0.5MPa. Turn on the computer and launch Ezletter Notcher5.

Open sony.dxf file in c:\program files\ezletter notcher\sample\sony.dxf, Next we need to t/add/delete splits and rivet tabs.

Click F4 to feed in material all the way past the 30 notch, click F3 to feed back material.

Click select mode button, and select any part that you want to start with.

Make sure that all guides are in place and machine is clear. Pull the *Standby switch* into on position.

Now click Print button. Wait until part is finished. Check if made part is any good and fits the back. If it doesn't, see page 38 for troubleshooting.

Select all parts that you want to run. And click *Make Parts* button to run them.

Maintenance

The Ezletter Notcher requires very little maintenance. Most of it is keeping different parts of the machine clean.

Danger: ALL MAINTENANCE SHOULD BE PERFORMED WITH MACHINE TURNED OFF AND UNPLUGGED FROM THE POWER SOURCE!

Notcher tools maintenance (as needed)

This is most important maintenance item to do. Notcher tool damage, material jams can occur if not performed.

Danger: be extremely careful when removing and handling notcher tools. They have very sharp edges and could be very slippery because of grease.

Notcher housing maintenance (6 month)

Shear maintenance (6 month)

Cleaning leveler head (as needed)

Remove the upper roller closing bolts and swing the upper rollers up. Clean the rollers with WD40 and/or other solvents to remove any stuck residue. Remove the oil from the rollers with a clean cloth and solvent. Swing the upper rollers back down and reinstall the closing bolts.

Leveler maintenance (6 month)

Remove the upper chain/gear cover and apply a small amount of grease to the gears and chain. Be careful not to grease encoder drive belt and pulleys.

Parts don't fit

This is most common problem with finished parts. And it is the most complicated problem to troubleshoot. First of all we need to establish a base line. So we'll know what works and what doesn't.

1. To know if the machine can accurately measure material, perform *calibration*. Use quality ruler to perform measurements.

2. Verify that the job you are running matching the backs.

2a. It is very easy to accidentally use a wrong design file. The best way to check if backs matching the file is to plot the file and compare the plot against the backs.

2b. Keep in mind that not all letters that look symmetrical really are symmetrical.

2c. Router tables require calibration as well. To check if router table is accurate, make 500mm square and verify that it really is 500mm.