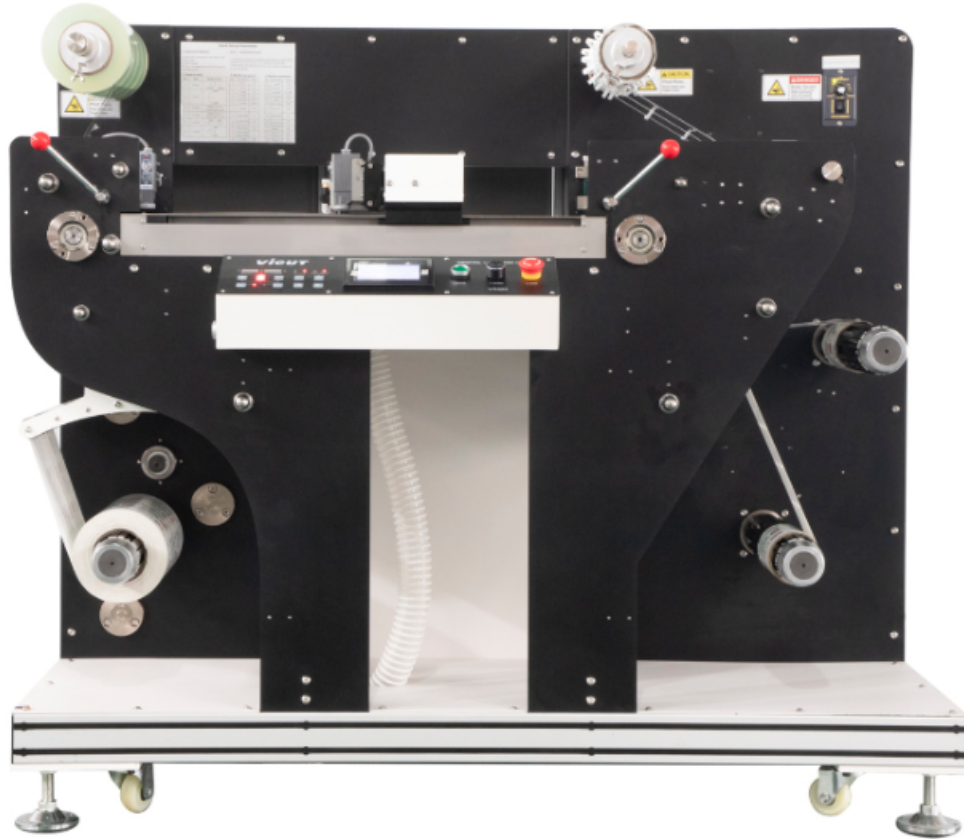


VR320 Digital Label Die-Cutter User Manual



Please read this manual before you use this equipment be carefully.

ANHUI William(VICUT) CNC Technology Co., LTD
Version: revised 2020/12

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Chapter 1 Safety Matter

1-1 Safety matter needing attention

1. The operator should obey the following 4 basic safety operation principles
 - (1) The machine should be operated or maintained only by trained technician.
 - (2) Read the user manual in detail and understand its contents.
 - (3) For check convenience, put the user manual near the machine.
 - (4) The people including operator and maintenance technician should know location of **E-stop** device and realize its function and operation methods.

2. Safety precaution before or after turning on the machine

Firstly confirm that whether all switches are **OFF**, and machine has been correctly ground.

AC electric power source

The electric power source used on this machine is 1 ϕ , 3 wires, 110V-220V~. Rated current of the main power switching device 20A. Such switching device should be in compliance with its safety relevant standards.

3. Safety precaution during handling and installation

To increase the machine working efficiency, the installation environment should be well ventilated with good air quality. The surrounding temperature should be lower than 40°C, and prevention of rain and direct sunlight is required.

Safety precautions during handling and installation are as follows:

- (1) Make sure that the foundation is strong enough to support the machine.
- (2) Lifting operation is only allowed one person.
- (3) When lifting the machine, nobody is allowed to be under or near the machine.
- (4) Helmet is required during handling, installation or cleaning.
- (5) If it's necessary to climb on the machine, please use safe and secure ladder or platform.
- (6) Adopt proper device for heavy parts lifting.
- (7) Confirm that whether the lifting wire rope is strong enough to lift the machine or components.
- (8) Please turn off the power before handling or installation. If power is required, let others know the location of E-stop device in advance.
- (9) Please wear leather gloves or other similar protective equipment during handling.

4. Safety precaution during operation

The operator should be familiar with machine's function characteristics and operation methods. Don't let other people approach the machine. During running, stretch hands into work area is prohibited. If there is any abnormal situation happened, turn off the power immediately. After that, try to find the solutions.

Safety precautions during operation are as follows:

- (1) Don't remove any safety guarding or devices.
- (2) Don't remove or change location of any interlocking mechanism.
- (3) Prevent wet hands to touch switches.
- (4) Don't put any part of human body on or near the machine's moving parts.
- (5) Keep your hair away from moving parts.
- (6) Don't wear bangle, watch, jewelry or loose clothes.
- (7) Except material loading/unloading, it's not necessary to wear gloves.
- (8) Generally an operator is required for this machine. If more than one operator is required, there should be good communication between operators.




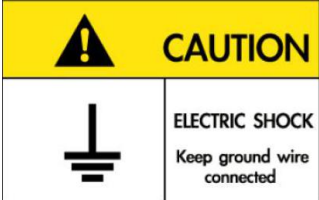

5. Safety precaution during maintenance

Please turn off the power before maintenance.

Safety precautions during maintenance are as follows:

- (1) Turn off the main power before inspection or maintenance.
- (2) Maintenance or inspection should be carried out by authorized technician.
- (3) It's prohibited to climb the machine.
- (4) Please use the recommended lubricant or grease.

1-2 Cautions labels

	<p>Improper operation can cause casualties and equipment damage</p>
	<p>Improper operation can cause casualties and other objects damage</p>
	<p>Improper operation can cause casualties and equipment damage</p>
	<p>Improper operation can cause casualties and equipment damage</p>
	<p>Improper operation can cause casualties and equipment damage</p>

1-3 Safety attention instruction

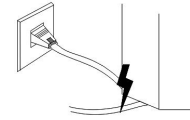


Don't touch the top end of knives.

Otherwise, fingers will be injured

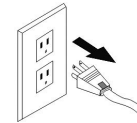


Don't damage and change original power wire and plug. The power cord should not be excessively bent, strong tension, bundling and compression under heavy loads. This will make power supply damaged, and cause electric shock and fire.



As a long time, please put down the power cord from the wall socket

Otherwise cause the fire

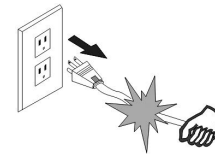


Machine running, don't put hands on axis, this will cause injury.



When the power cord from the socket, you should pull the plug , should not pull the cable

Stronger pull the cable can result in electric shock or fire



Chapter 2 Handling and Installation

2-1 Crate handling

Use forklift with capacity of 1 tons to transport the crate.

2-2 Crate assembly & dis-assembly

Crate assembly

When packing, firstly put the bottom board. Then fix the machine's 4 wheels. After that, install the 4 side boards. Finally put on the top board.



Crate dis-assembly



Use the claw hammer to pull off the nails, the arrow direction was put the nails, you can
Take off the front cover and top cover.

2-3 Storage requirements

Storage temperature: 10-40°C

Humidity: 30~90%

2-4 Machine handling

The machine transportation should be carried out by means of two persons. One person stands behind to push the machine and the other stands on machine front side to control the direction.

2-5 Space requirements

Length: 3m, Width: 2m, Height:2m

2-6 Electric and pneumatic specification

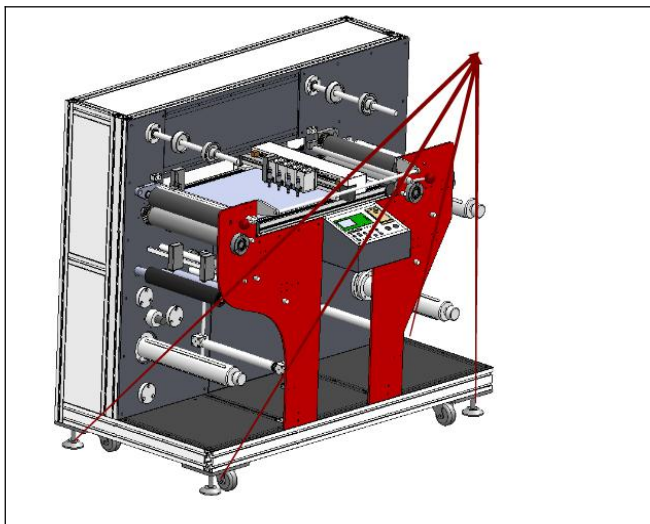
1. Electric power: 1 ϕ / 220V / 50 or 60Hz as standard. 110V model is available as per request.
2. Required compressed air: Min. 0.4 Pa, low capacity, 8mm hose connection (if your machine have vacuum system, this is options).

2-7 Installation procedure

1. Move machine to stable level floor by **forklift**.
2. Use **wrench** to adjust the level of machine foot.



3. Use spirit level check the level of 4 feet, machine will be stable and same level on the floor.



4. Installation procedure Air Compressor and Blower (Standard for VR320)

Air compressor and Blower will operate the media keeps flat during cutting.
We provide the blower as a set of the machine, but we don't offer the air compressor so please prepare it locally.

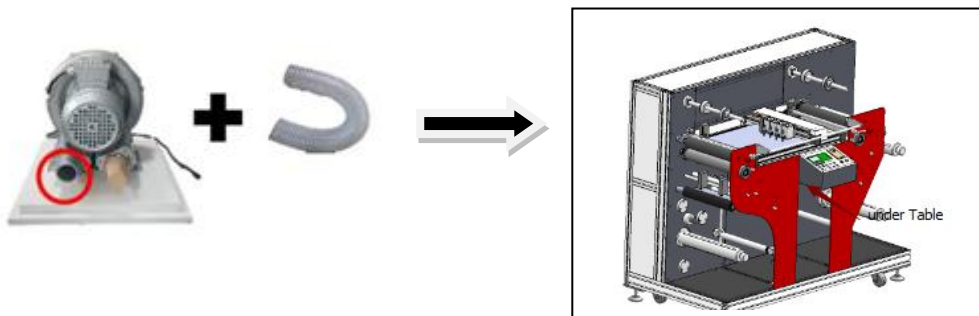
How to setup air compressor

- (1) Keep the compressor on flat floor.
- (2) Connect the 8mm tube of compressor to the machine.
- (3) Please refer to connecting position of below picture's compressor tube position.

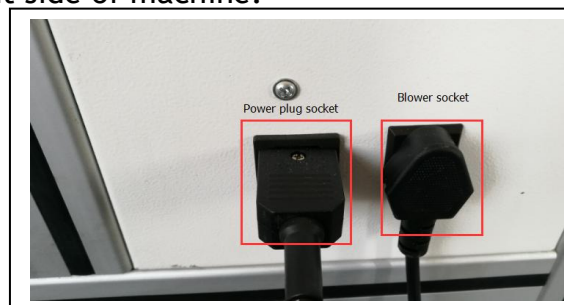


How to setup blower.

- (1) Keep the blower on the flat floor.
- (2) Connect the tube with blower. You can fix the tube by attached clamp.
- (3) Connect the tube to the machine. You can fix the tube by attached clamp.

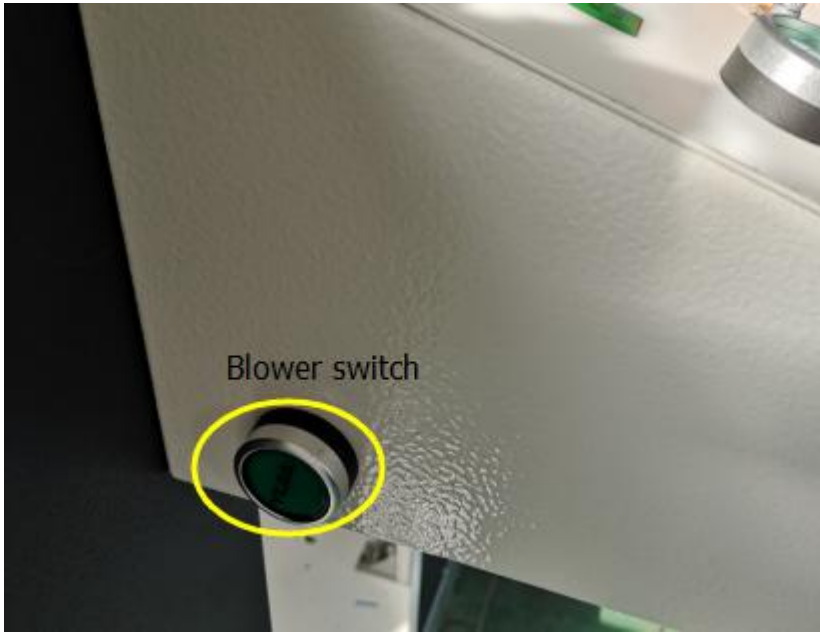


- (4) Connect the power from machine to Blower ,
the socket in the right side of machine.



Note: The tube diameter is 5cm, if you need long tube, you can buy from the market, our standard is 5m. We suggest you install blower in the outdoor, because it is big noise.

(5) The switch of blower is side of machine panel.



2-8 Dismantling

The procedures are reverse to installation.

Chapter 3 System introduction

3-1 Functions introduction

Multifunctional digital label die-cutter

VR320 digital label die-cutter is developed for work for all kinds of applications. It can use for short work or big work, can die-cut all of shapes which you design, delivery time is very fast, it is your best partner for label printer. This machine collect to laminate, die-cut, waste-remove, slit and rewind together, it is not only for die-cutting, but also work for one slitting machine. The operation is very easy, it apply into label, hang tag, and package widely., we believe that this machine will be apply more and more line, only expect you find the advantage.

Suitable for media

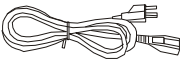
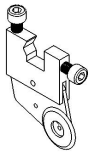




Adhesive label 、PP、 Plastic film、 PET、 PVC、 art paper and other soft media.

Scope of application

Adhesive label 、 hang tag、 paper box making, wine labels and etc.

3-2 Packing list

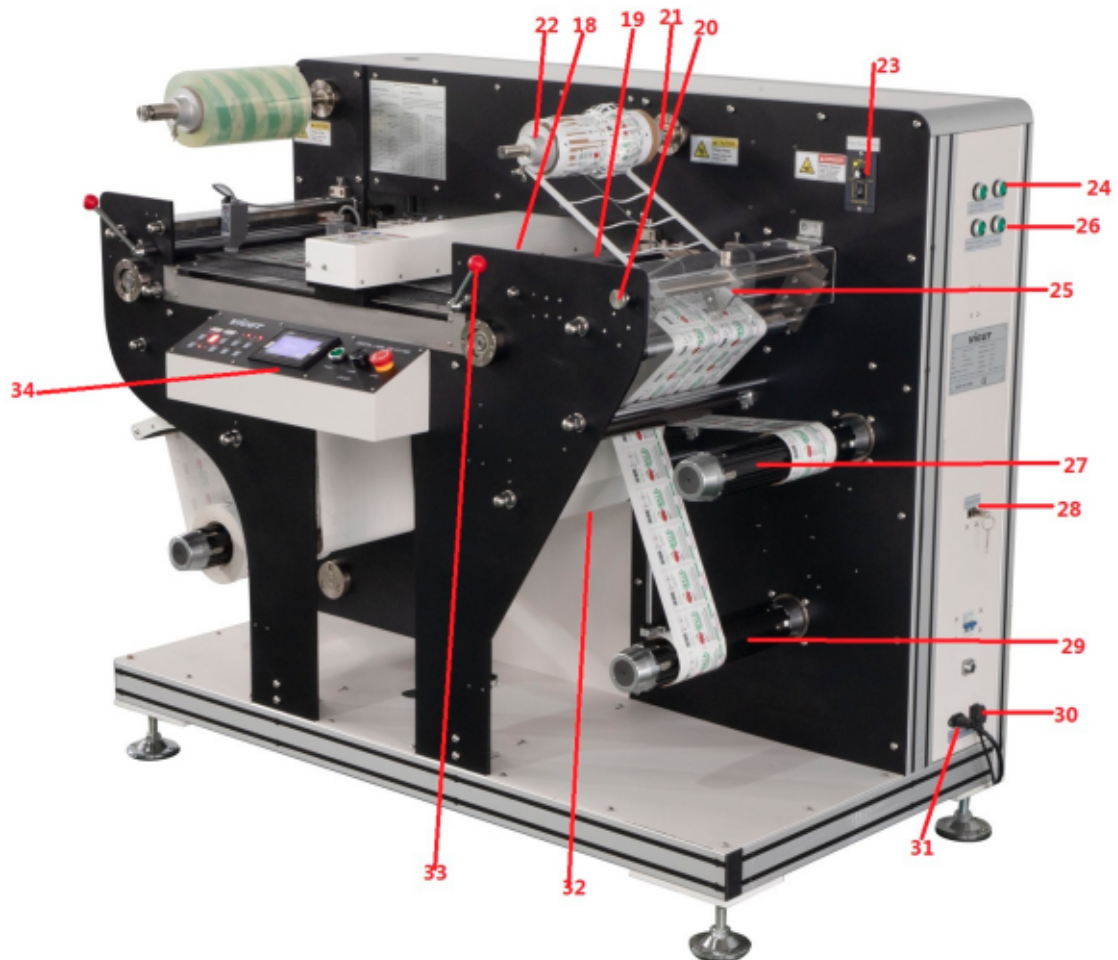
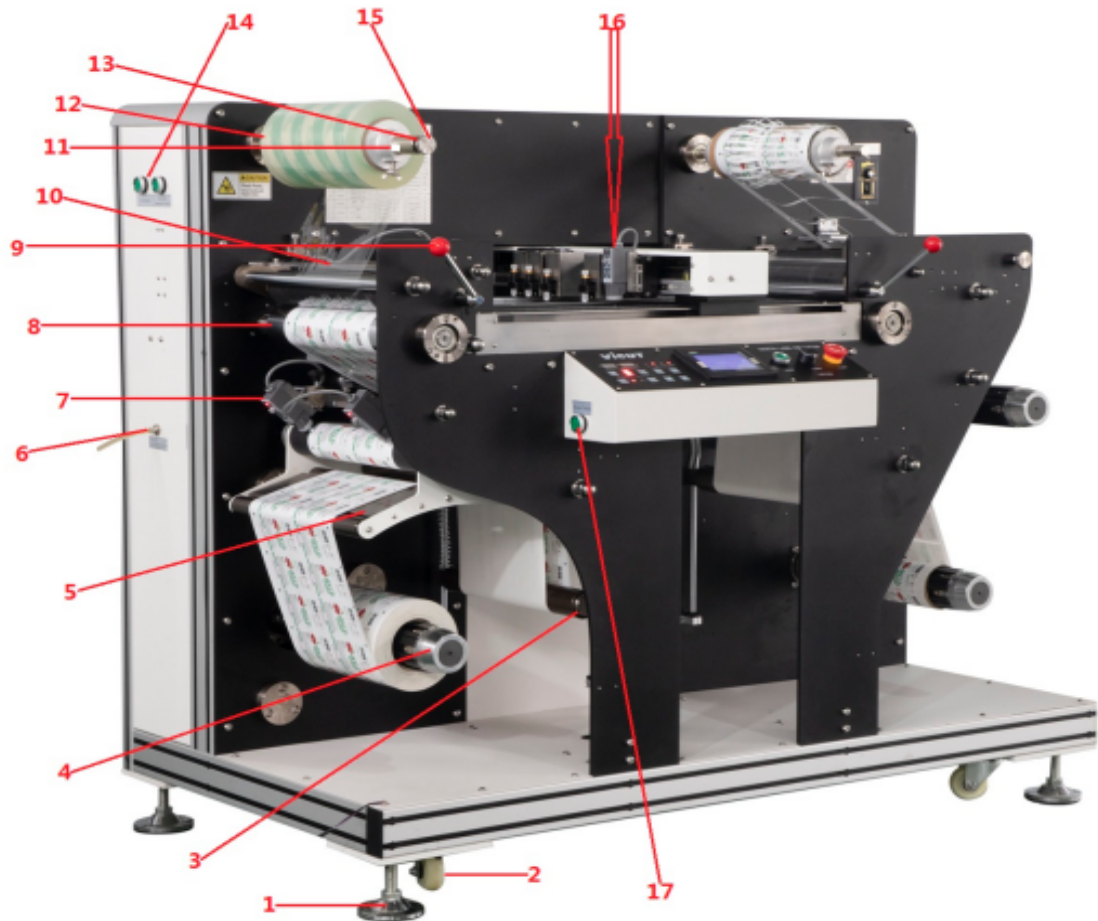
Open the carton, please check following items, if there is something missed, please contact local distributor or manufacturer.

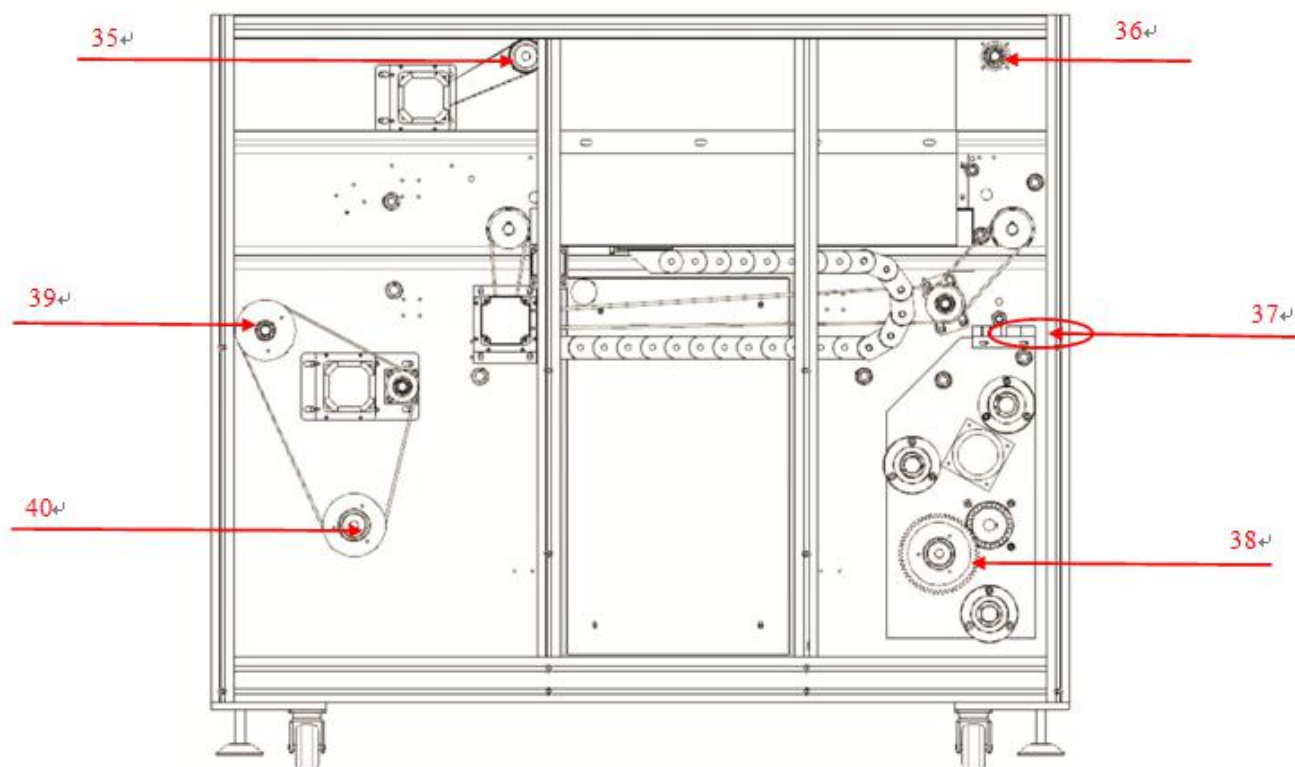
No.	Item	Qty	Picture
1	Power plug wire	1	
2	Slitting unit	4	
3	Blades holder	2	
4	Blades	5	
5	Suction tube	5m	
6	Blower	1	
7	Film back remover (Optional)	/	/
8	Paper cutter RS350 (optional)	/	/

3-3 Specification

Machine model	VR320 digital label die-cutter
Max. media roller	Diameter 450mm
Cutting media width	40-340MM
Max. cutting width	310MM
Min. label length	10MM
Max. label length	400MM
Cutting speed	6m per minute (Depend on label shape and size)
Cutting blades	2 pcs (Standard) Max. 4pcs
Slitting blades	4pcs (standard) Max. 15pcs
Die-cutting technology	Tungsten steel blades
Cutting Precision	0.05MM(Duplicate)
Cutting tracking	Manually, single mark or double mark
Slitting speed	Max. 60m per minute
Slitting precision	0.2MM
Slitting width	10-330MM
Machine size	158cm(w)x90cm(D)x136cm(H)
Weight	Approx. 450KG
Power	100-240VAC, 1000 watts
Warranty	1 year (beside high consumables parts)
Options	
Single sheet cutter RS350	
Film back remover	

3-4 Parts name





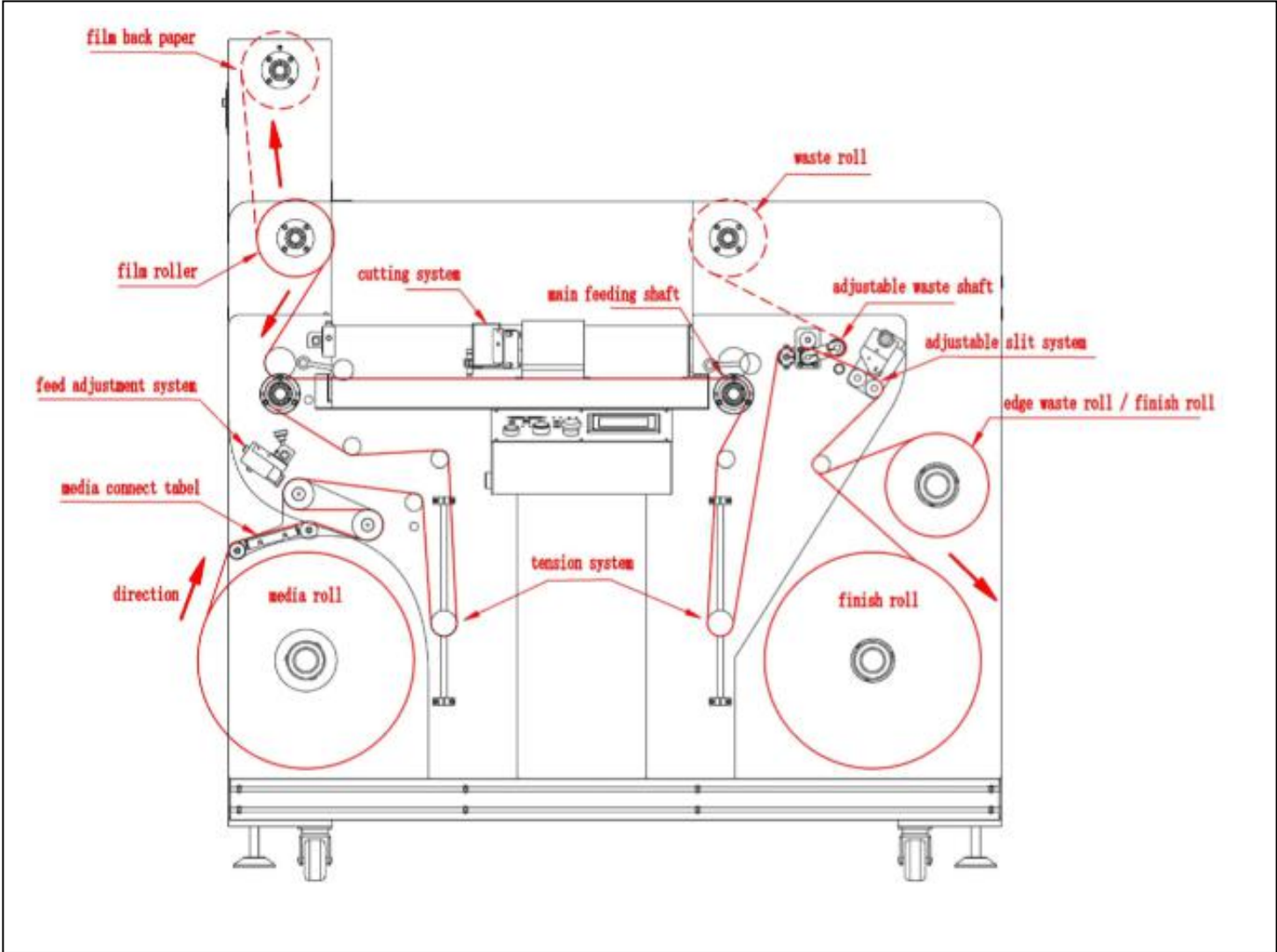
No.	Name	No.	Name
1	Foot holder *4	2	Foot wheel *4
3	Tension bar	4	Unwinder
5	Adjustment feeding System	6	8mm air compressor connection
7	Edge Sensor	8	Laminating roller
9	Laminating roller released bar	10	Laminating pressure knob
11	Switch for air bobbin (Unwinder)	12	Film roller fixed holder
13	Laminating shaft	14	Switch for unwinder
15	Film roller position adjust knob	16	Cutting head
17	Blower switch	18	Feeding pressure adjust nut
19	Main Feeding roller	20	Slitting shaft sadjust knob
21	Waster remover shaft	22	Waster core holders
23	Waster remover controller	24	Switch for rewinder 1 & 2
25	slitter unit	26	Switch for air bobbin (Rewinder)
27	Rewinder 1	28	Network, U disk data port
29	Rewinder 2	30	Blower power supply
31	Power socket	32	Tension bar
33	Main feeding roller released bar	34	Control Panel
35	Remover tension adjust knob	36	Laminating tension adjust knob
37	Adjustment limited switch	38	Magnetic clutch (unwinder)
39	Magnetic clutch (rewinder 1)	40	Magnetic clutch (rewinder 2)

Chapter 4 PREPARATION WORK



4-1 Media Loading

Selection of proper media

Core	3" only (76.2mm)
Width	Min. 40mm ~ Max. 340mm
Length	about Max.1000m (Max. 450mm in diameter)
Weight	60~350gsm for paper. (Max. 350 micron thickness)
Type	Adhesive label with liner or hot-fix media without liner or non-adhesive media
Material	Paper, PVC, PE, PET, PU, PP, PO and etc.
Lamination	Unsupported laminating film only (no rewinder for backliner of laminating media)

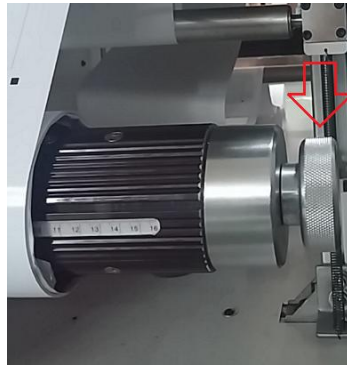


< PICTURE 4-2 >

Media loading flow diagram is provided as above. Please install media with following the arrow direction to each to ① position and direction (see Picture 4-2). After load the media onto the flat-bed and lock the rubber roller, you can feed the media manually by **press**   **button in the touch LCD**. Then please load the rest of the media to the rewinding roller parts. After media loading from unwinder to rewinder, **you can turn on the air bobbin for unwinder and rewinders.**

Unwinding roller can grab the media core rigidly by rotating the knob located at the end of the roller.

You can do the same for 2 rewinding rollers to fix the core rigidly. See picture 4-3.



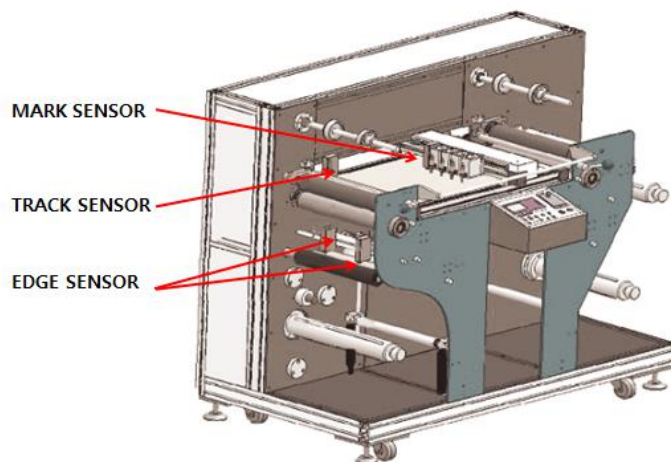
< PICTURE 4-3 >

After media loading, please check the straightness at rewinder part. Same distance from the wall should be kept from unwinder to rewinder. Initial position of core on rewinder is important to be accurate, to prevent slanting with constant edges. Proper tension should be applied in both of unwinder and rewinder.

4-2 Sensor setup

There are 4 sensors in total - 2 edge sensors, 1 track sensor and 1 mark sensor.

Each sensor is important to be calibrated properly for accurate result of the job. See picture 4-4.



< PICTURE 4-4 >

All sensors are already setup with the best calibration condition when we deliver the product.

But if you need to adjust sensibility of sensors, just handle the dial of the sensor to get good sensitivity (so called calibration). See picture 4-5. Note: The sensor light will be on when it scans empty area, the sensor light will be off when it scan on the black marks.



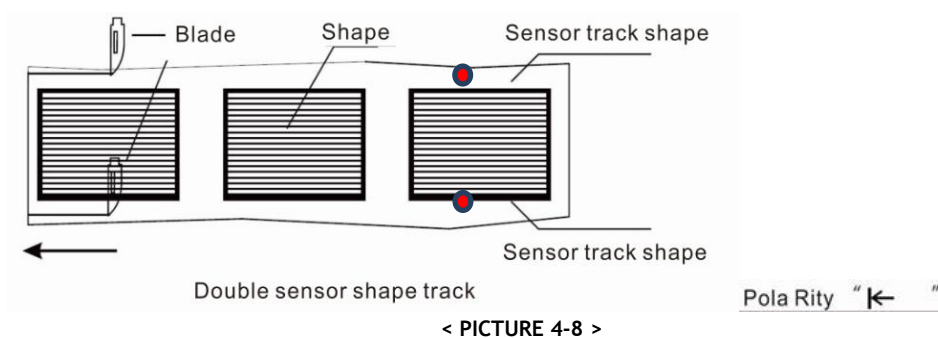
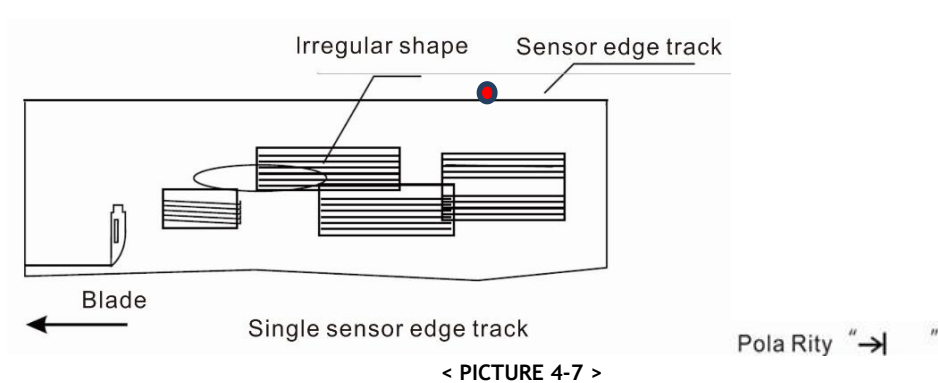
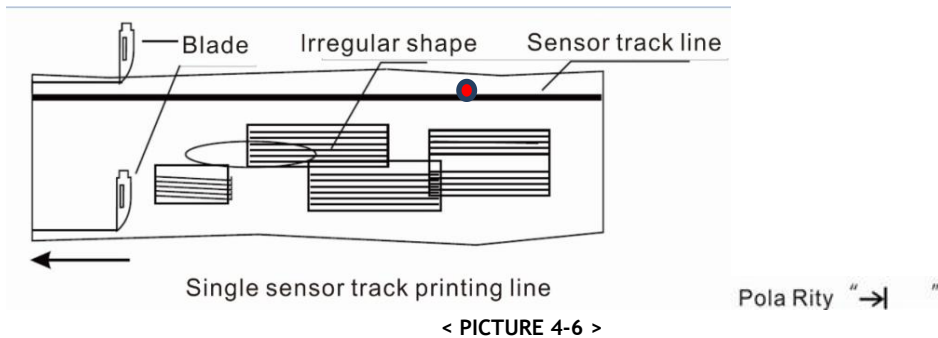
< PICTURE 4-5 >

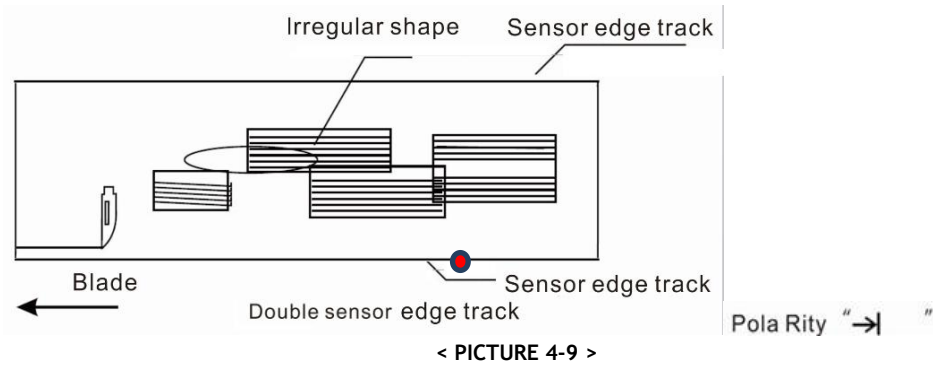
1. Edge sensor setup

One of the powerful features of VR320 is automatic feeding registration correction by using edge sensors. 3 rollers of feeding part is moving inner and outer way together to maintain previous feeding straightness. 2 edge sensors are provided for this purpose. With using single or double sensors, you can track the edges of media or printed line of the media or printed object of the media selectively.

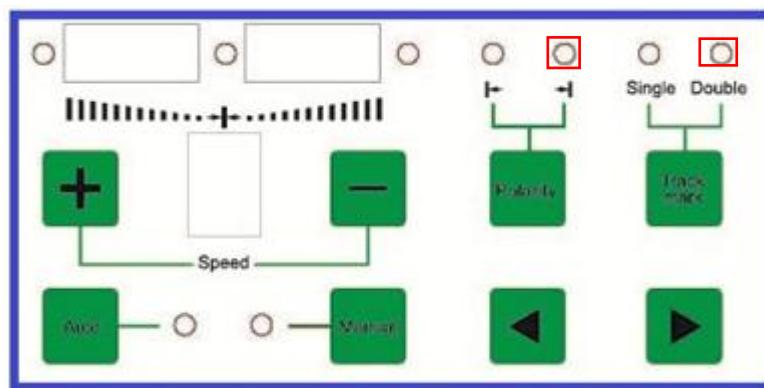
Please find some examples in picture 4-6 ~ 4-8. If roll media edge itself is not straight, you can use method of picture 4-6 or 4-8. Straightly printed line is used for tracing in picture 4-6 by single sensor and printed images (shapes) themselves are used for tracing in picture 4-8 by double sensors. In case of 4-8, 2 sensors are tracing just near outside of the both ends of images (shapes) and adjust the feeding roller's location when sensing any of printed images.

Picture 4-7 and 4-9 are showing typical applications which tracing the media edge(s). You can use one edge by using single sensor or both edges by double sensors. Generally recommended method is shown in Picture 4-9 in assumption that media roll is in good status of flat side face by good slitting and rewinding.





- (1) Inching button: Picture 4-10 below is showing parts of control panel related with edge sensors for feeding parallel adjustment. Inching buttons are left/right arrow button in right-bottom side of picture 4-10. Press inching button to run synchronous motor forward or reverse (moving 3 rollers of feeding part inner or outer direction) like picture 4-11, whenever adjusting sensor system statement is auto or manual.



Note: In practical use, this two light is on for correct operation.

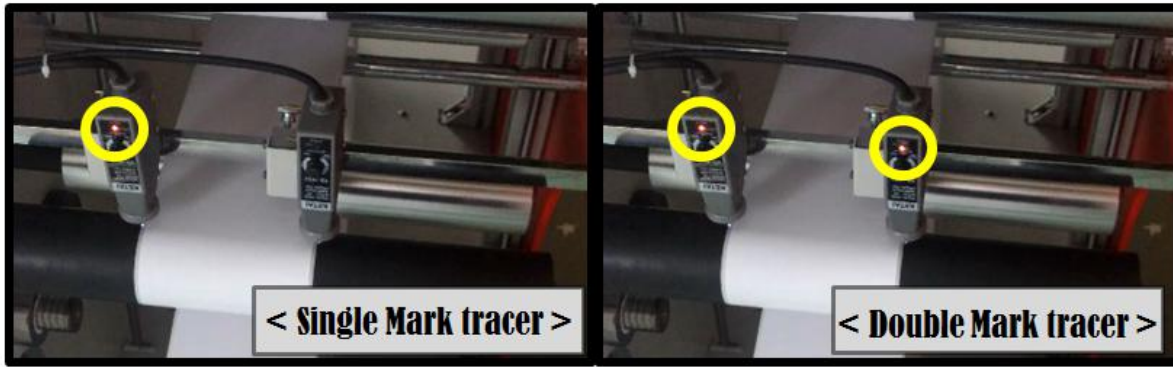
< PICTURE 4-10 >



< PICTURE 4-11 >

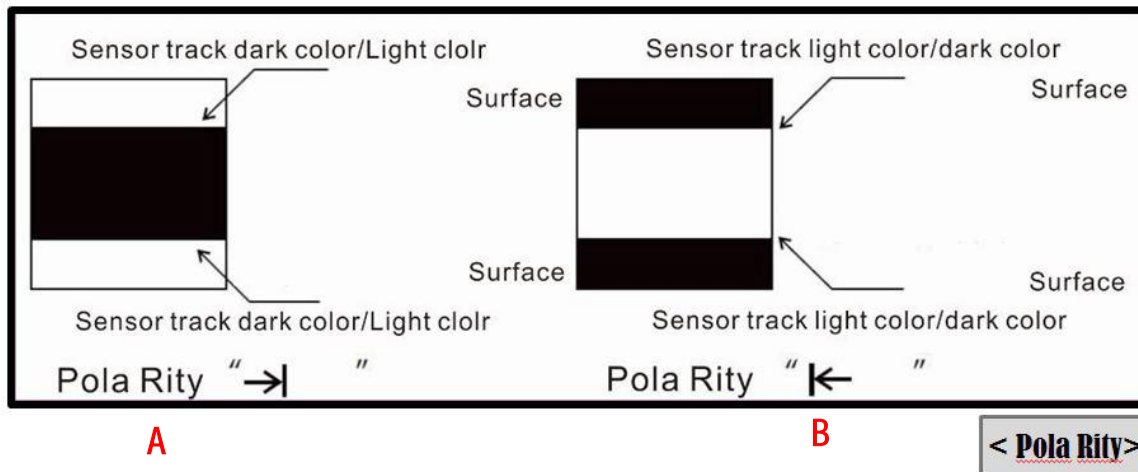
- (2) Track mark button: In picture 4-10, when pressing this Track Mark button, you can choose single mark tracer or Double mark tracer. Single mark tracer can be used when tracing printed line or single side of media edge. Double mark tracer will trace bilaterally printed lines or double side of media edge. Printed lines does not need to be continuous when tracing white color and reacting on darker color like an example of picture 4-9. Picture 4-12 is showing difference of single mark tracer and double mark tracer.

Note: In pratical use, we use doule mark tracer. The two sensors detect the paper edge and the black roller shaft. The scan light is in the middle of paper edge and black shaft. When you push the sensors, the light is blinking, it means its on the correct position.



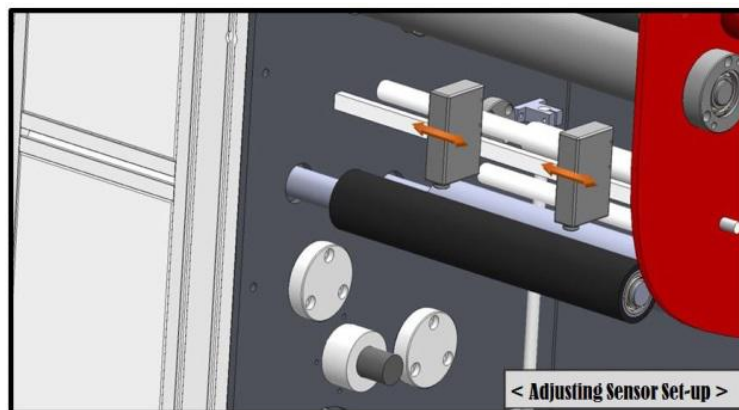
< PICTURE 4-12 >

- (3) Polarity: In picture 4-10, when pressing this Polarity button, you can choose which color to trace and which color to sense and react. See picture 4-13 to understand better.
 When Polarity is [Pola Rity "→| "], sensor is tracing dark color and when it senses light color, sensor lamp turns on and give signal to the synchronous motor to move it forward or reverse.
 When Polarity is [Pola Rity "←| "], sensor is tracing light color and reacts on dark color.
 Picture 4-6~4-9 is showing Polarity settings for each example.

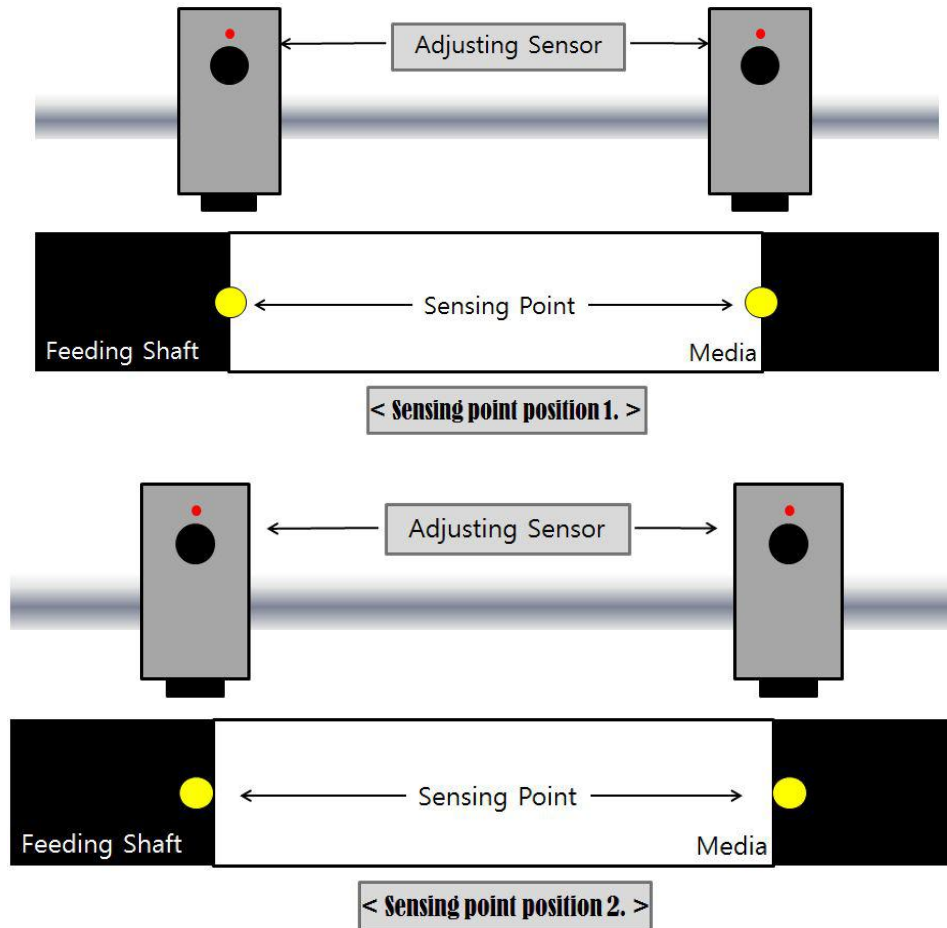


< PICTURE 4-13 >

- (4) Auto/Manual button: In Auto mode, feeding parallel adjustment by edge sensing will be done automatically. In Manual mode, this adjustment needs to be done manually by using inching buttons.
- (5) Typical sensor positioning: Below pictures are showing typical sensor positioning for examples.



< PICTURE 4-14 >



< PICTURE 4-15 >

Sensors are recommended to be positioned as close as possible to the edges. In Picture 4-15, Sensor position 1 is expected to show better result than Sensor position 2.

2. Track sensor setup (Feed control sensor)

The track sensor detects the black mark and tells the control system when to stop feeding. After detection, it can stop feeding immediately, or, it moves a certain distance, then stop feeding. The moving distance is the "feeding compensation distance", which is set by the user in the operating system. The position of the track sensor should be manually adjusted to the correct position(the light spot is in the center of black mark.) see PIC4-16



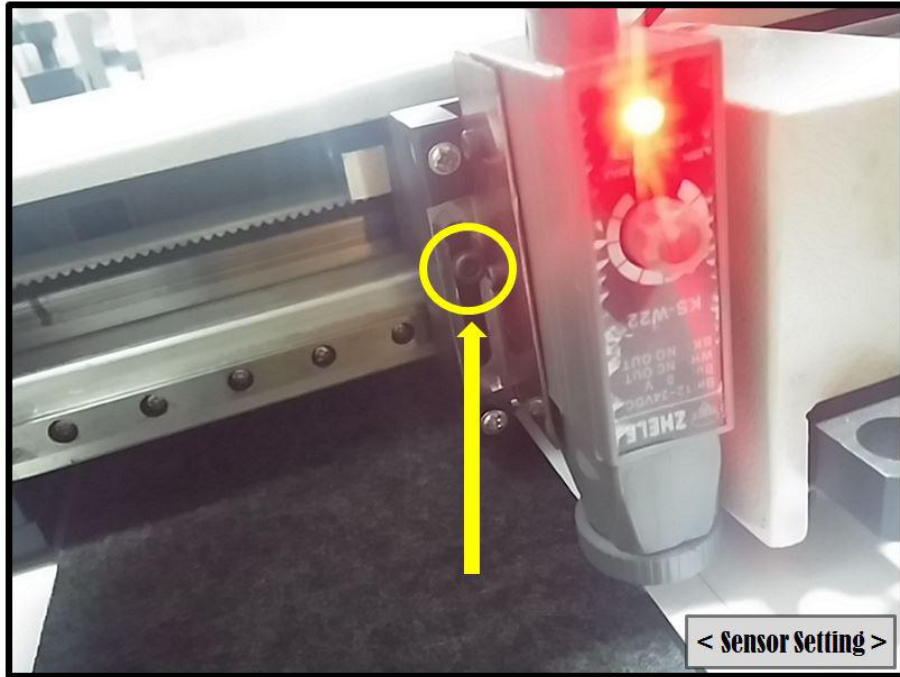
< PICTURE 4-16 >

⚠ Caution: If one job length is exceed 20cm, you should set Paper F. Ad (Touch LCD - Setting-Tools-Setting - Paper F. Ad.) Value to 60, it means 60mm; to avoid cutting head hit the track sensor and any damage.

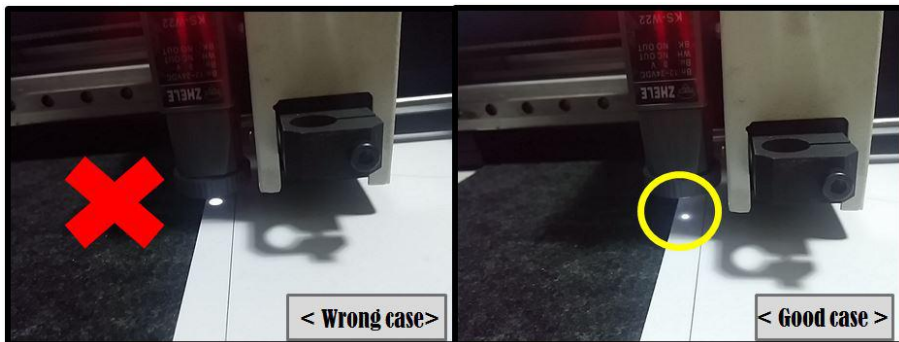
3. Mark sensor setup

Mark sensor is combined with the cutting knife head and moves together with the cutters. It monitors black marks printed on the media to know where to start cutting precisely.

For precise die-cutting, you can adjust the gap between sensor and black mark on media. Release the bolt and adjust the distance manually to have smaller beam spot for precise monitoring. See picture 4-16 and 4-17 to understand better.

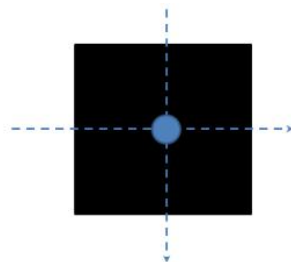


< PICTURE 4-16 >



< PICTURE 4-17 >

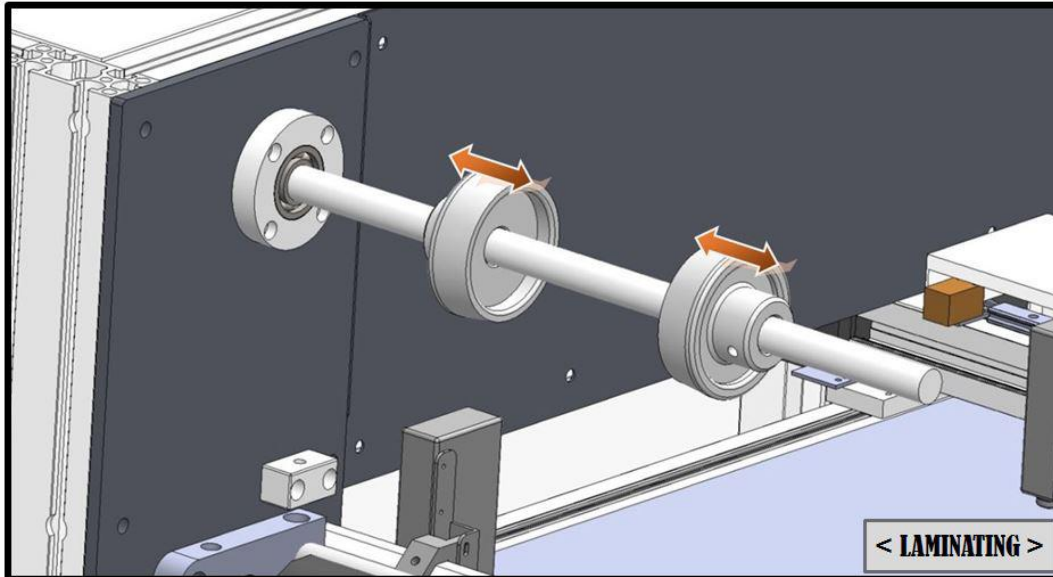
Mark sensor is moving across the mark in both of X and Y direction to find exact center of the mark. Generally we use 4mm x 4mm size of black mark. See Picture 4-18.



< PICTURE 4-18 >

4-3 Lamination

Load a laminating film roll on the laminating roller shaft, adjust the right position to cover exact area to laminate on the media and lock both sides by using core holders like Picture 4-19. Core holders can be fixed easily by each fixing bolt like Picture 4-20.




< PICTURE 4-19 >



< PICTURE 4-20 >

Laminating roller does not have driving motor connected. It is passive system using main feeding power.

There is tension break on back side of the laminating roller. You can see it and adjust the tension by rotating the knob inside of the right door, which controls sprint power to increase/decrease the friction.

After loading laminating film, release the end and attach on the media before the feeding press rubber roller. Use feeding button  to feed the media and laminating film going through the rubber roller on to the flat bad enough in stable way.



Caution: The the width of laminating film must be less them media width.

4-4 Cutting Holder Setup

Caution: Please be careful not to touch cutting knives with bare hand. They are very sharp. Please wear PPE gloves before installation of cutting knives.

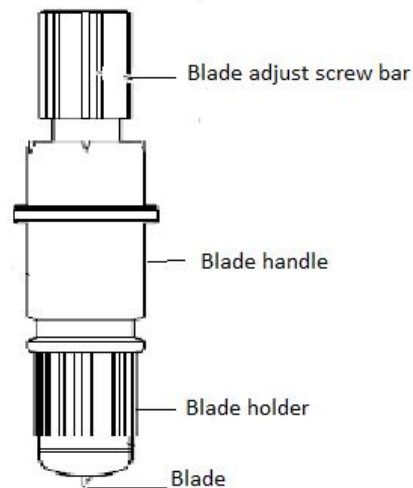
When we deliver the machine we already setup the cutting units with enough testing. Please follow below explanation when you replace cutting knife or replace / add cutting units.

1. Cutter unit assembly

Cutting unit is composed with several parts as shown in picture 4-21, including knife (blade), blade pouch, blade spring, blade adjust screw bar, bar spring and blade handle. The structure of cutter unit is very simple but very efficient. Blade spring gives constant pressure and blade adjust screw bar controls depth to cut. Cutter is equipped with 2 cutting units as default and you can install maximum 4 units in the system.

Blade Specifications:

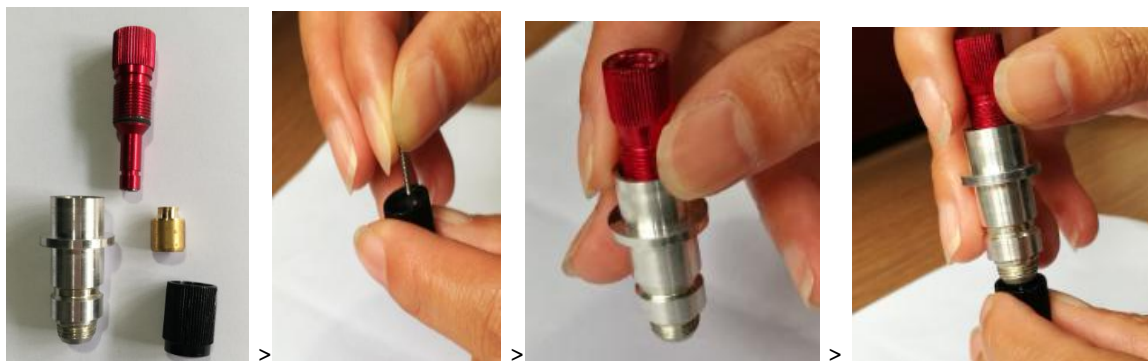
Parts No.	Spec.	Blade holder	For media
09U	ø0.9 mm/0.45	09U	Use for the media thickness is ≤ 0.25 mm . Can cut the media length is around 4000m



< PICTURE 4-21 >

Following picture 4-22 is showing step by step process of how to assemble cutting unit in sequence. Disassembling can be done in reverse steps. This process is very simple and frequently used for blade replacement. The lifetime of blade can be 50 hours of continuous operation depending on the working condition (about 1,400 meters life time in case of art paper labels).

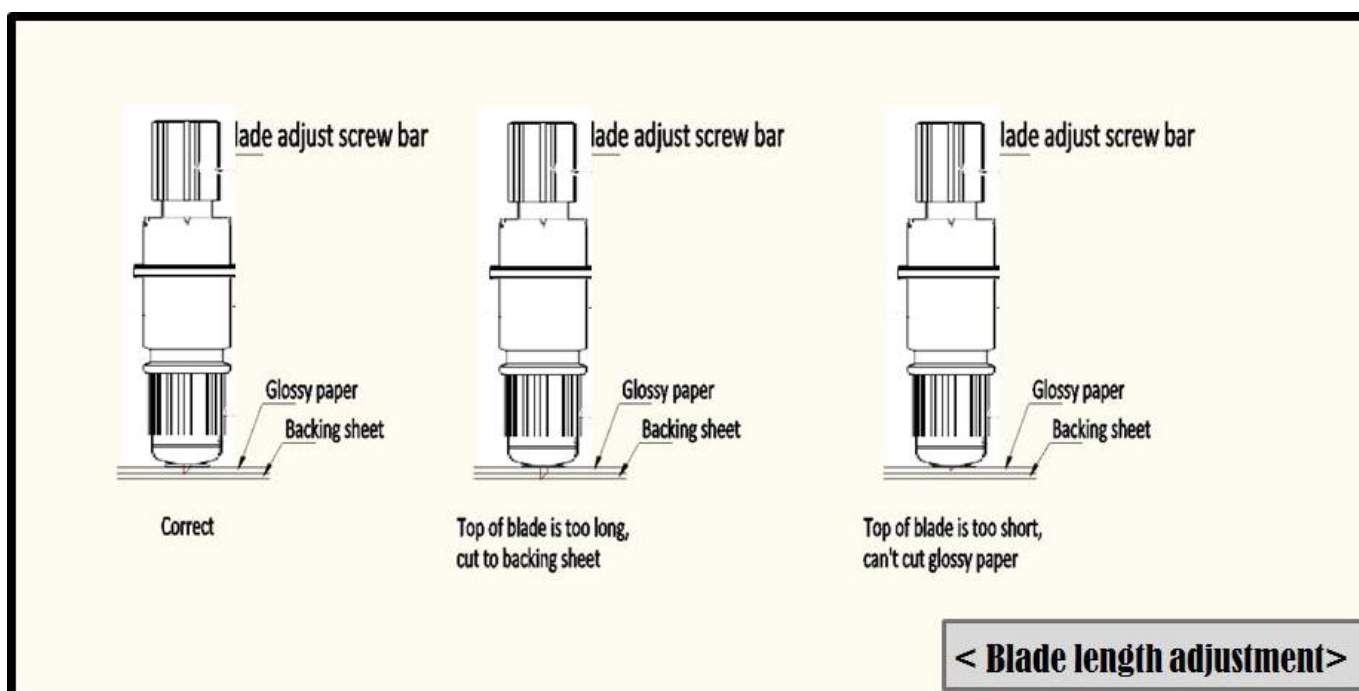
There are many small parts composing the cutting unit, so be cautious not to have missing parts during assembling or disassembling the cutting unit.



< PICTURE 4-22 >

2. Adjust the knife depth

It is possible to adjust the depth of cutting knife by rotating the Blade Adjust Screw Bar. Different media has different thickness for half cut and full cut, so find optimum depth to cut properly without scratching on the back liner. See illustration in Picture 4-23 and 4-24 as following.



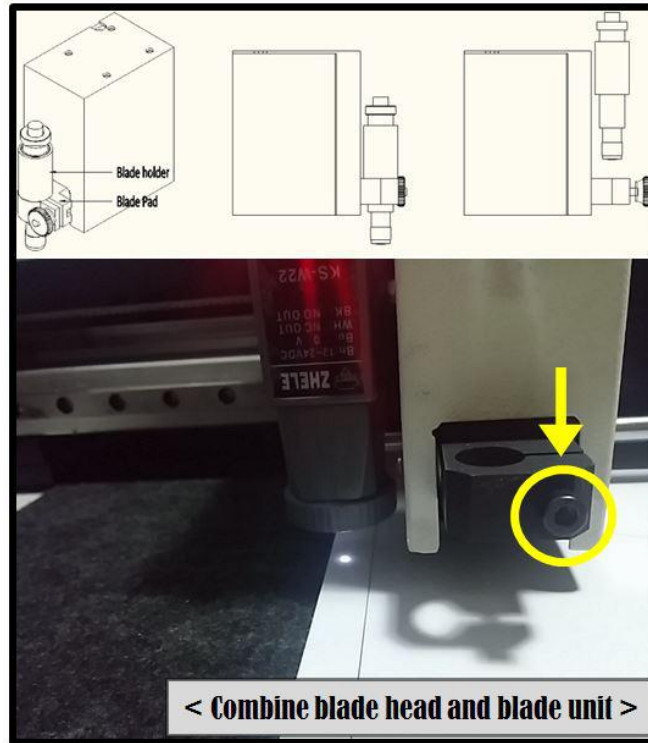
< PICTURE 4-23 >



< PICTURE 4-24 >

3. Assembling Cutting knife unit with Cutting head

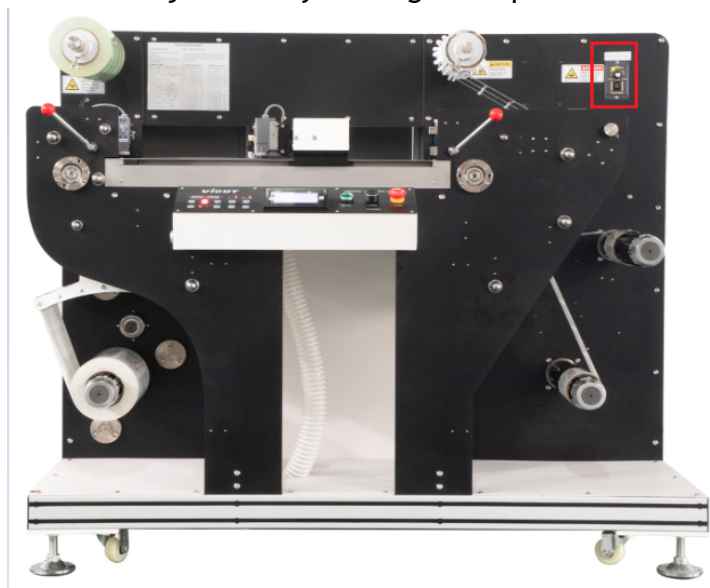
Put the Cutting knife unit into the knife unit holder of each cutting head. And manually rotate the screw bolt to fasten the cutting knife unit rigidly. Refer to Picture 4-25.



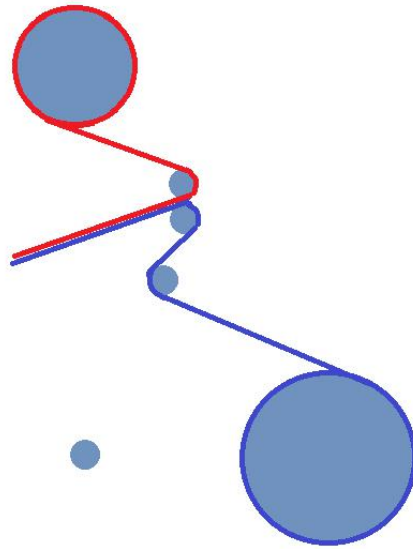
< PICTURE 4-25 >

4-5 Matrix Removal Setup


You can run matrix removing roller by using on/off switch and speed control dial on the right side of Cutter as Picture 4-26. Before starting die-cutting, it is convenient to prepare matrix removal by half-cutting across the label media and separating label and lack liner in advance. Back liner needs to be round in rewinder and label needs to be round in matrix removing roller. See Picture 4-27 to understand better. Angle of matrix separation can be adjustable by shifting the separation roller in Picture 4-29.



< PICTURE 4-26 >



< PICTURE 4-27 >

 **Caution :** If you want to stop the machine at once, please PRESS “E-STOP” button.
Twist the “E-stop button” to release it if you want to re-start the job.

Matrix removes metal plate


You shall find a Matrix remove metal plate with screws (Picture 4-28), this one will help you to remove the small labels, if You want to use this plate, please install that as following picture 4-29.



< PICTURE 4-28 >



< PICTURE 4-29 >

 **Caution :** After you install this plate on the matrix removes system, you must disassemble two holder (yellow arrow, and re-assemble the same position but need to anticlockwise rotate 90 degree.

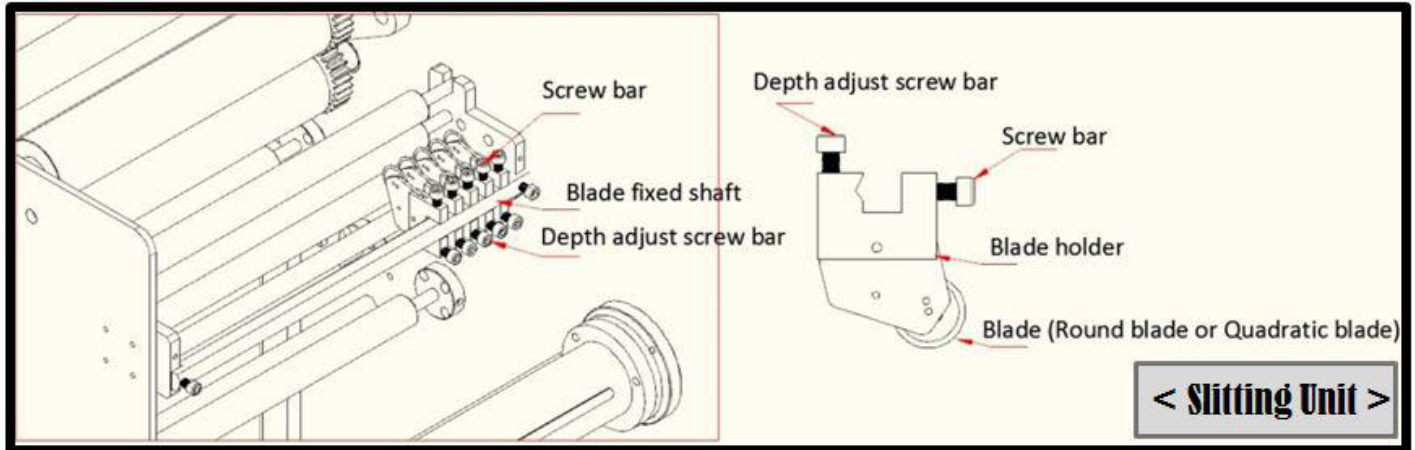
4-6 Slitting Unit Setup

1. Slitting unit installation and adjustment

Slitting unit has 2 screw bars as shown in Picture 4-30 and 4-31. Loosen screw bar of slitting unit and move it and fix it on any location of blade fixed shaft. You can add slitting unit max. 15 pcs. The gap between slitting unit will determine the width of final rolls.

The depth of slitting blade can be adjusted by screwing or unscrewing of depth adjust screw bar. You need to find optimum depth for the best performance of slitting.

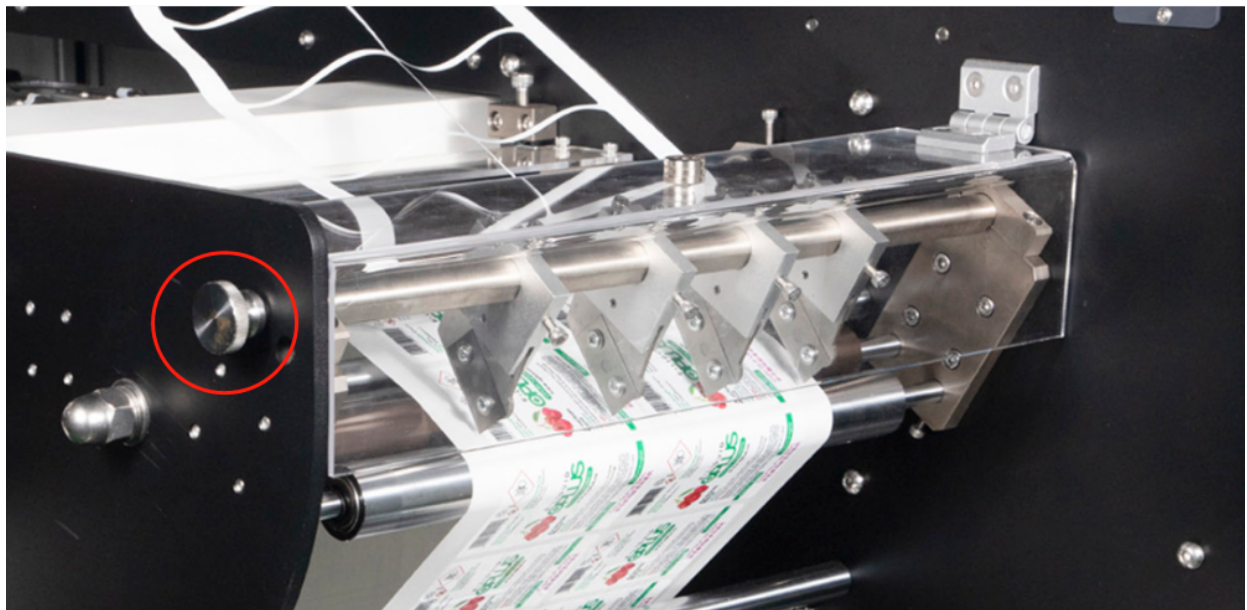
Slitting units can be used for edge trimming too. Trimmed waste can be round separately also.



< PICTURE 4-30 >

The slitting adjust knob is for adjusting the position of slitters. Rotate the knob, you can change the position for all the slitters.(can't adjust the each slitter position, the adjust arrange is 10mm)

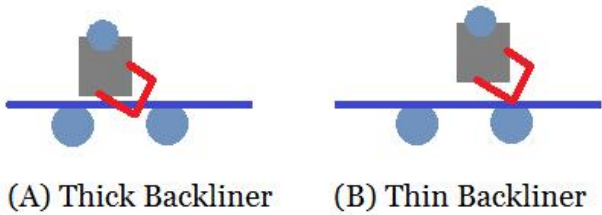
please see the picture 4-31



PIC4-31

⚠ Caution : Please use security cover when slitting works.

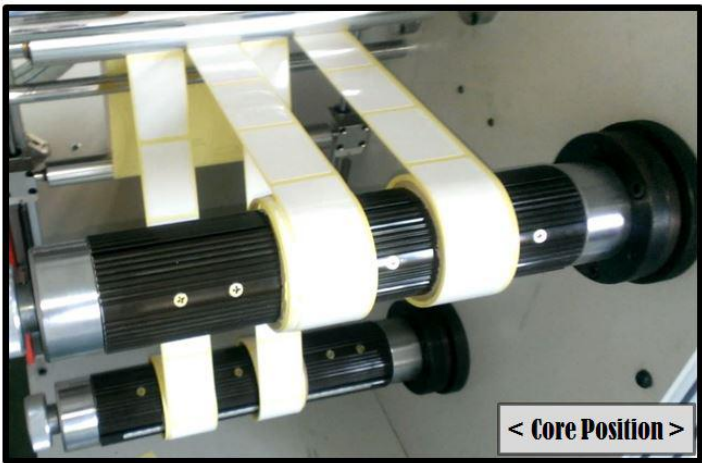
Depth adjust screw bar can be moved in 2 positions. Normally we put it to slit the media between 2 holding bars beneath. You can use this position in general. However you can also move it to cut the media on 2nd holding bar beneath, for the slitting blade to contact the metal holding bar. In Picture 4-32, (A) position is preferred for relatively thick yellowish back paper and (B) for thin bluish glassine paper.



< PICTURE 4-32 >

4-7 Separate Rewinder

If you use slitting function, you need to have the right size of mini cores as many as required. If you have trimmed waste, use upper separate rewriter for rewinding of trimmed waste and use lower separate rewriter for rewinding of mini rolls. If you need to have multiple mini rolls as result, mini cores will be recommended in zigzag location up and down to separate each contacting cores as Picture 4-33.



< PICTURE 4-33 >

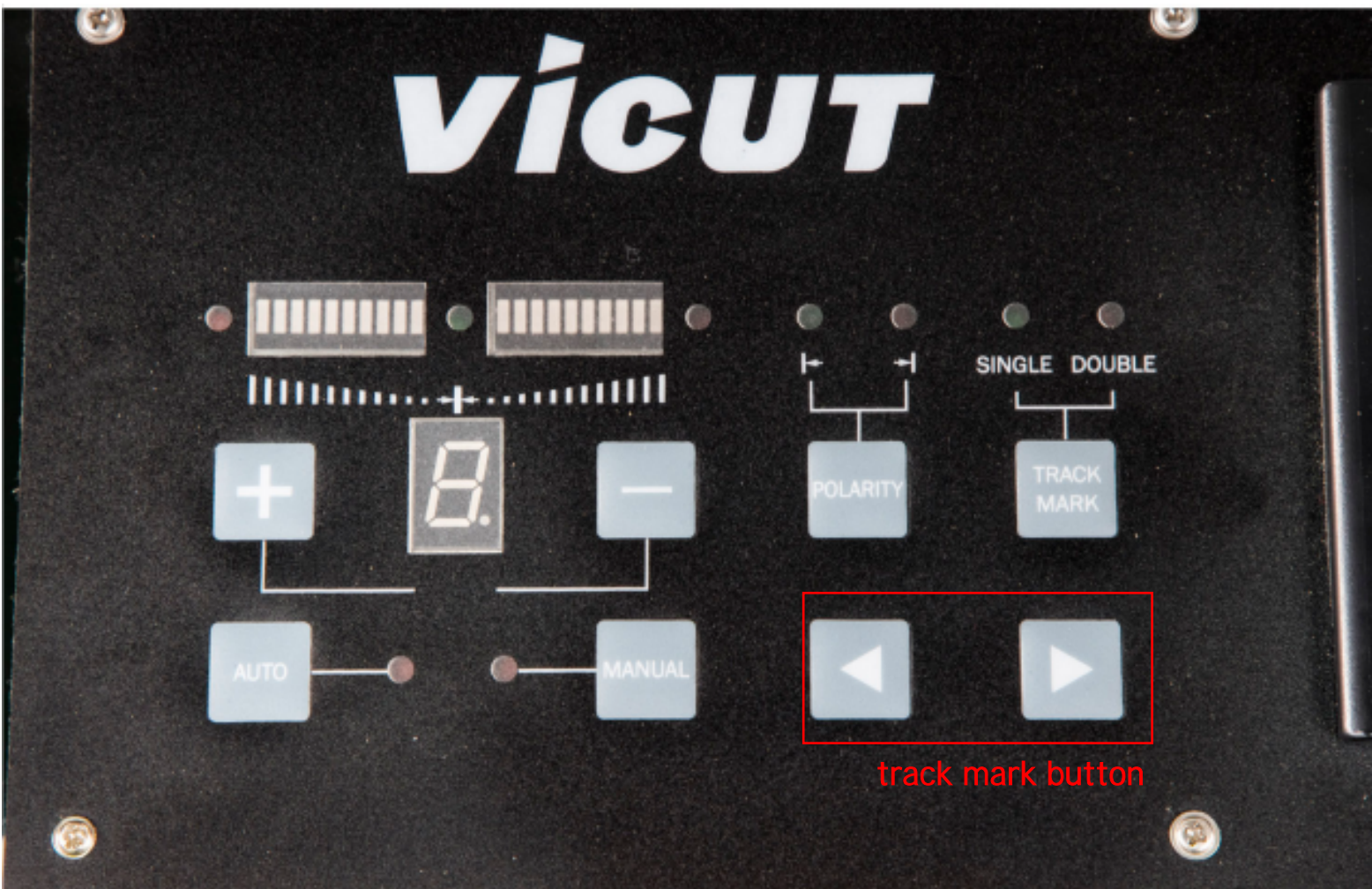
4-8 Vacuum System

Before starting a job, connect blower and air compressor and turn on their power. Blower power can be controlled by Cutter with using control panel side face button. Air compressor power needs to be turned on independently. Connection flow lines will be like Picture 4-34. Blower is for strong suction of air down from the vacuum pad on the flat bed part of Cutter. Air compressor's air is doing its role to open and close the ball valve inside of the suction pipe in Picture 4-34. During cutting, ball valve is open for vacuuming and compressed air closes the ball valve during feeding only.



< PICTURE 4-34 >

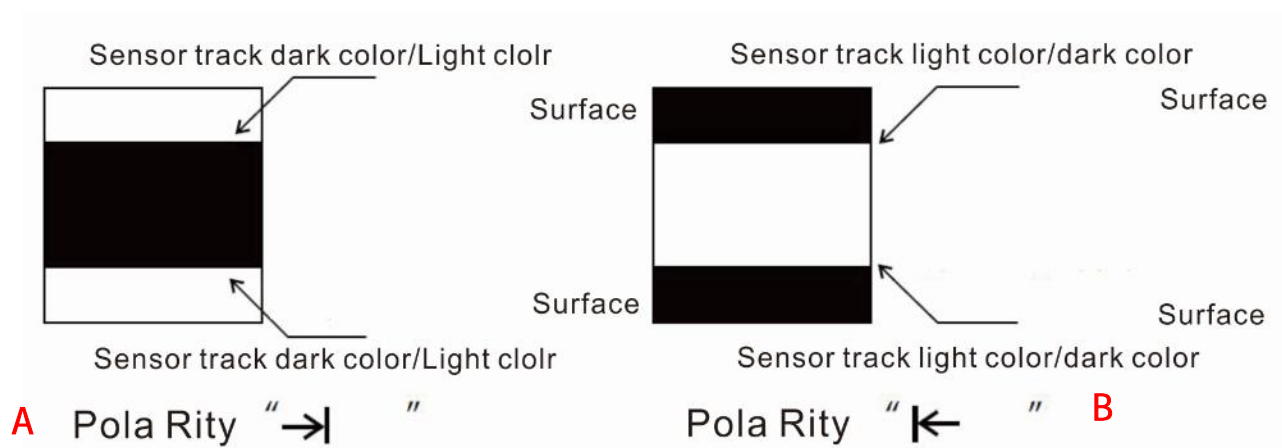
5-1 Operation instruction of control panel



Button instruction


1. **Inching button:** Press inching button can inching synchronous motor to forward or reverse, whatever adjusting sensor system statement is auto or manual.
2. **Track mark button:** Press this button to choose single mark tracer or double mark tracer. Usually, single mark tracer only track printed line or media edge, but double mark tracer will track bilateral printed mark.

3.Polarity button: press this button to choose polarity of track mark, that's means track white or black.**Remark:** In normal die cutting, we recommend to use mode A.



4.Auto button: Press this button to choose status of adjusting sensor system, at this time, It can check the difference of mark tracer when synchronous motor forward or reserve.

5.Manual button: Press this button adjusting sensor system will be controlled manually. Synchronous motor forward or reserve will be controlled by switch (1).

6.Speed:  Press two button can adjust the adjusting sensor system answer speed, the value is increased,the answer speed is slow, the value is decreased, and the answer speed is quick.

7. Synchronous motor running direction:  This light display the running direction of synchronous motor.

8. Limited position indication light :  if the light is on, the adjust sensor holder move to the controlled end.

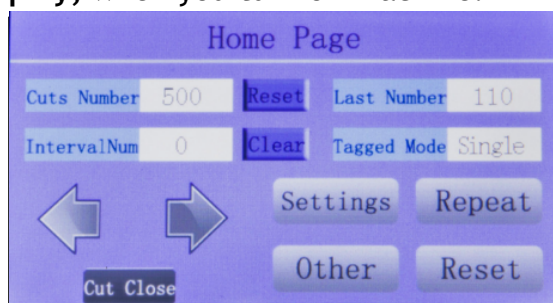
9. Speed controller: Adjust the speed of rewinding shaft, and open or close.

10. Power switch: Machine is on or off.

11. E-Stop Switch: Press this switch, machine will stop completely.

it is a emergency button for any dangerous situation. Need to power on to restart after E-stop.

12. Touch LCD Main display, when you turn on machine.



12-1 Settings:Click this button to enter function setting. Including Parameter,Tools, Factory Default, Speed, Data Transfer, Tools select.

12-2 Repeat Cut:Click this button can find last job file, and cut again.

12-3 Other : Manual test cutting head and slit use only.

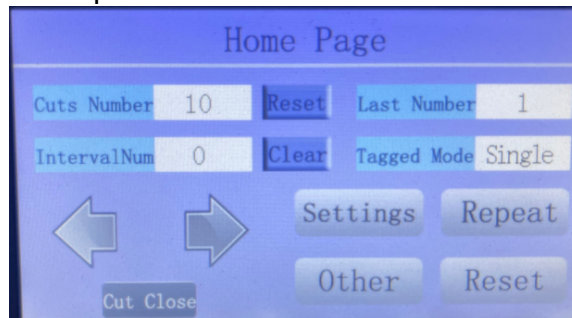
12-4 Reset: Click this when you want to reset all of value.

12-5 Left and right Directions button:Click them to feed or un-feed media.

5-2 Getting Started

1. Basic settings

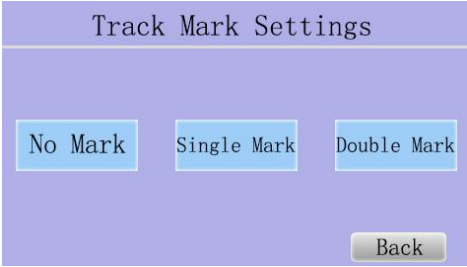
Basic setting parameters are 'Cuts No', 'Interval No', 'Tagged M.' Default value for each is blank, Click the blank you can set the value and choose the Track Mark .Last No. display the jobs of last cutting. initially like below picture 5-3.



< PICTURE 5-3 >

Refer to below Table 5-1 for the meaning of each parameter. You can choose how many jobs to cut. Also you can choose how frequently sense the mark during cutting, which is related with production speed. Generally it is ok not to sense the mark every job, but it can be better to sense the mark for every job if label length is relatively long or design is complicated. Single mark track mode can be used for most of jobs. Dual mark track mode gives better accuracy by compensation of media twist error. But VR320 Die-cutter is roll to roll machine and it already has very advanced structure for straight feeding, so double mark track mode will not be required generally, not like the sheet cutters. We recommend to choose single track mode only in normal die cutting.

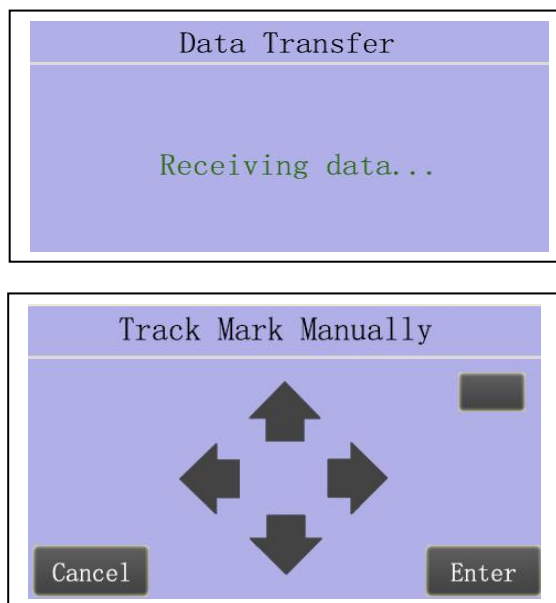
Menu Name	Input Value	Function
Homepage		Just meaning that the machine is ready for operation. The communication is good from Main board to Panel board.
Cut Numbers	0 - 99999	Click the blank to set number of jobs to repeat, whatever you need.
Interval Numbers	0 - 99999	Click the blank to set number, which means how often you want to sense the black marks during operation. 0 and 1 will sense the mark each time for every job and multiple number will sense the mark after cutting multiple jobs. This number is related with speed and accuracy, depending on user's preference and purpose.

Tagged Mode	No Mark/ Single Mark/ Double Mark	<p>This means 'Track Mode'. You can select between 2 modes. Click the blank, will have this window:</p>  <p><u>No Mark</u>: Do not sense the black mark. (ex. blank cut job without marks)</p> <p><u>Single Mark</u> : Single track mode - Sense single black mark, generally used.</p> <p><u>Double Mark</u>: Two eye mark track mode.</p>
Settings		It is main menu, there is lots of sub menu , refer to Table 5-4
Repeat cut		Click it can repeat cut last job. If you restart machine, this function was disabled.
Other		Include adjust the pressure of die-cutter and slitter
Reset		You must click it to reset after finishing the jobs, otherwise, maybe there is some wrong in next job.Each time when you change a parameter, you have to click "reset" to save it.

< TABLE 5-1 >

2. Job data sending

Please set the basic value(cuts no.intervnal no. tagged mode) on the LCD panel of the machine first. Then press “Print” button from the software to send the job data (Refer to more details about software part on in Chapter 6). LCD of VR320 die-cutter control panel will show “**Receiving data**” indication during receiving the data like below picture 5-4. After completion of data receipt, the LCD will show “Track Mark Manually” message.



< PICTURE 5-4>

3. Start cutting

When you see “Track Mark Manually” message on the LCD, Now you can move the mark sensor on the cutting head onto the center of black mark manually by using directional arrow buttons. Fit the position like Picture 5-5.



< PICTURE 5-5 >

After locate the sensor on to the center of black mark, press Enter button to start cutting.

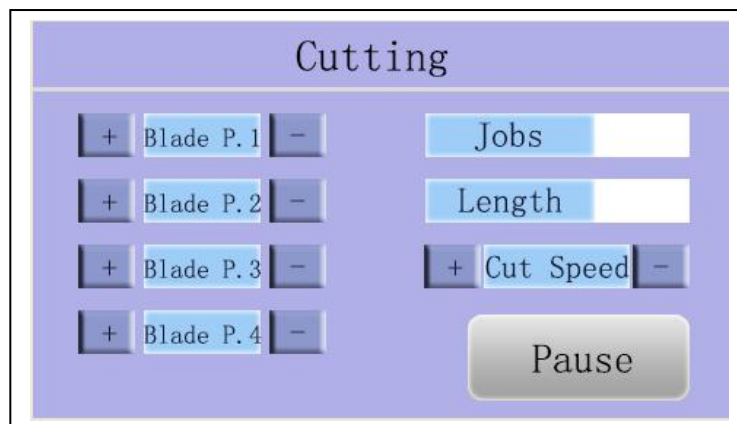


Caution

If you have 2 black marks, put the mark sensor onto the FIRST BLACK MARK. The sequence of black marks is depending on the design file itself. Also cutting sequence between objects is depending on the design file, so please cautiously design the file from starting in considering orders of objects.

4. Status monitoring

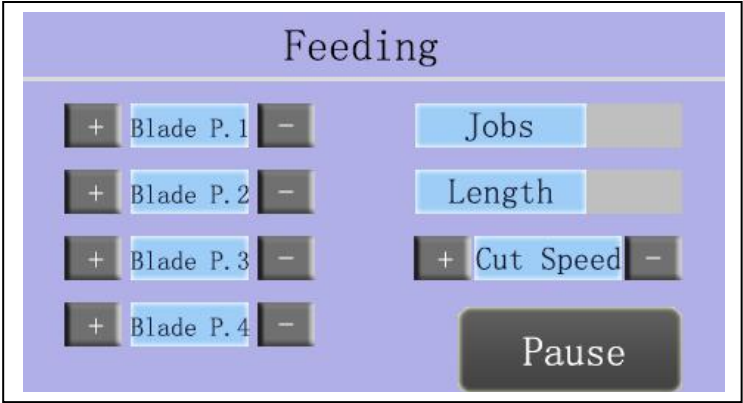
There are some parameters which can monitor the current status of operation in Cutter. You can monitor when job data is receiving or media is feeding. Also you can monitor the current number of jobs finished or length of work accomplished so far. See more details in **Picture 5-4-1** and **5-4-2** as below.



< Picture 5-4-1 >

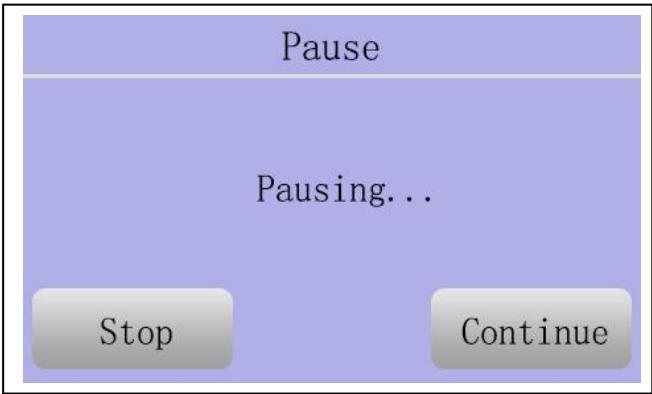
When the machine cutting job, you can adjust **Blade P. 1 /Blade P. 2/Blade P. 3/Blade P. Blade P. 4** (Blade pressure 1/2/3/4 adjustment) .

Jobs display the cutted job,
Length display the cutted length
Cut Speed can be adjusted.



< Picture 5-4-2 >

Feeding window means machine feeding the media .
Pause, you can click it when machine is cutting, and pause this job. The another window will be display and waiting for your activities. **Picture 5-4-3**



< Picture 5-4-3 >

Stop: Stop this job .
Continue: Continue to cut this job.

5-3 Functional Parameters in Settings

Click “Settings” in the touch LCD to enter to functional parameter setup menu in the LCD. Use up/down arrow buttons to select between each parameter. Press left/right buttons to edit values of each parameter and press OK button to save the parameter setting.



Caution

Manufacturer already have set machine's verticality and scale parameters before shipping. Users only need to set the X, Y cut adjustment parameters generally.

Find more details in **Table 5-4** as below.

Settings	Parameter	X Vert. Y Vert. X Scale Y Scale X cut Ad. Y cut Ad.	Refer to P1
	Tools	Cut Ad. Feed. P. Ad. Cut down time Multi. Cut Down Speed L. Model No. Language Reset Jobs Mark Length Mark Width Track IO Input Feed IO Input X Length Y Length SP Factor X/Z Shift	Refer to P2
	Factory Reset	There is window and ask you if you want to factory reset or not.	If you choose Restore, all of data will change to factory default.
	Speed	Cut Speed Cut Acc. Move Speed Move Acc. Bend Speed Feed P. Speed	Refer to P3
	Datatrans	UART NETWORK USB	Refer to P4

Table 5-4(1)



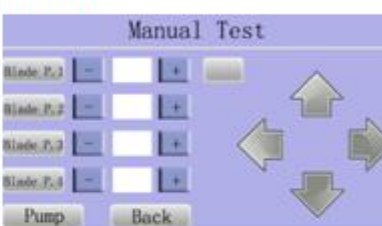
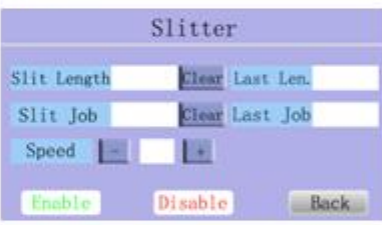
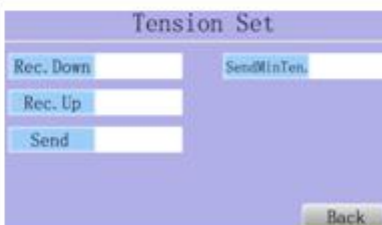
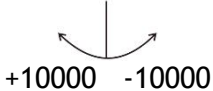
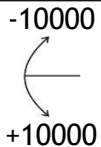
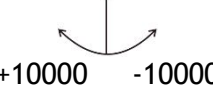
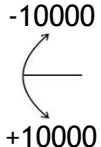

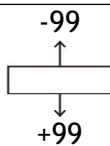

Settings	Tools select	Cutter 1	Click blank to select ON or OFF
		Cutter 2	Click blank to select ON or OFF
		Cutter 3	Click blank to select ON or OFF
		Cutter 4	Click blank to select ON or OFF
		Note: This cutter is cutting head, you must decide if you need two , three or four cutting head before shipment, you can't add the cutting head when you get machine.	
		Blade P. 1	Adjust pressure of 4 cutting head, refer to P5
		Blade P. 2	
		Blade P. 3	
		Blade P. 4	
		Pump	Test Pump of Vacuum
		Direction Arrow	Move cutting head
	 <p>Notice: When Enable this function, machine is only slitting, can't die-cut.</p>	Slit Length	Refer to P6
		Slit Job	
		Speed	
		Last Len.	
		Last Job	
		Enable	Enable slitting function
		Disable	Disable slitting function
		Rec. Down	Rewinder 2 tension set, the value is 1-100
		Rec. Up	Rewinder 1 tension set, the value is 1-100
		Send	Unqinder tension set, the value is 1-100
		Send Min Ten.	Unqinder Min. tension set, the value is 1-100
		Notice: Please turn on the tension switch when you set the value.	

Table 5-4 (2)

Remark:

The tension must be set once every time the roll is changed. For example, if a new paper roll is replaced on the receiving shaft, the tension value on the receiving shaft must be changed once. Setting reference of discharge tension value: diameter * width / 1400, unit: mm. When the calculated value is greater than 100, set it as 100. Setting reference of receiving tension value: width / 3, unit: mm. When the calculated value is greater than 100, set it as 100.

P No.	Sub Menu.	Value	Function.	Range of Value.
P1	X1 vert.	-10000 - 10000	X1 Verticality: Adjust X direction verticality (angle) for single track mode	
	Y1 vert.	-10000 - 10000	Y1 Verticality: Adjust Y direction verticality (angle) for single track mode	
	X2 Vert.	-10000 - 10000	X1 Verticality : Adjust X direction verticality (angle) for double track mode	
	Y2 Vert.	-10000 - 10000	Y1 Verticality: Adjust Y direction verticality (angle) for double track mode	
	X1 Cut Ad.	-10000 - 10000	X2 Cut Adjustment: Change X direction position for double track mode	
	Y1 Cut Ad.	-10000 - 10000	Y2 Cut Adjustment: Change Y direction position for double track mode	
	X1 Scale	-10000-10000	Change X direction scale for double track mode	+10000 (Zoom in) -10000(Zoom out)
	Y1 Scale	-10000 - 10000	Change Y direction scale for double track mode	
P2	Cut Ad.	0 - 100	Change the top of blades moving radius. The unit is 0.025mm. Note: when you use software set cut Ad, please disable it.	
	Feed. P. Ad.	-1000 - 1000	Feed paper adjustment length which means additional feeding length after track sesor is sending the black mark the gap between jobs. Unit is in mm.	Additional feeding amount in mm.
	Cut down time	0-10000	The time from command to knife down. The unit is ms.	
	Multi. Cut (For Long label cutting)	On/Off	The multi. Job cut enable or disable. For example one job length is longer than 400mm, you need to enable this function	
	Down speed L.	0 - 100	Change acceleration level of bend speed (Higher value, faster acceleration) * This parameter can reduce the impact at starting of curves from straight lines.	This is for service purpose, user don't change it.
	Model No.	3201-3204	Change the machine model to choose numbers cutter unit for	3201 : 1 head 3202 : 2 heads

			working. Only selected no. of heads will be moving up and down for cutting.	3203 : 3 heads 3204 : 4 heads
	Language	EN/CN	Select Chinese or English	
	Reset Jobs	0-10000	Set number jobs the cutting head back to original position	
	Mark Length	0-100	Unit is mm, set mark length, 4mm	
	Mark Width	0-100	Unit is mm, set mark length, 4mm	
	Track IO input	B/W	Black & White, set track Sensor track mark color	
	Feed IO input	B/W	Black & White , set he Feed Sensor track mark color	
	X length	0~10000	The cutting length range, unit is mm, defaulting set 400mm	
	Y length	0~10000	The cutting width range, unit is mm, defaulting set 340mm	
	SP Factor	>0	Service purpose, user don't change	
	X/Z shift	>0	Service purpose, user don't change	
P3	Cut speed	1-2000	Change cutting speed when moving on straight line (Higher value, faster speed) Max. 1600mm/s	Linear speed
	Cut Acc.	1 - 400	Change acceleration level of cutting speed (Higher value, faster acceleration)	Acceleration
	Move Speed	1 - 1600	Change the cutter's moving speed between label and label without cutting (value is high, speed is fast) Max. 1600mm/s	Jump speed
	Move Acc.	1 - 300	Change the cutter's moving acceleration between label and label without cutting (Higher value, faster speed)	Acceleration
	Bend speed	0 - 100	Change cutting speed when moving on curves (Higher value, faster speed) * Slow down the speed in cutting of circles and polygons, less than 20.	Curve speed
	Feed P. Spe.	1- 100	Change media feeding speed (Higher value, faster speed) Max. 60m/min.	Feed Speed
	Track speed	1-20	Change the speed to read the mark	

P4	UART		Not available for VR320	When you change the transfer M. , please restart the machine. The existing transfer M. Will be available.
	NETWORK		Click Transfer M. You can choose NETWORK, and set NETWORK IP(The same with PC IP address) NETWORK ID, TARGET ID.	
	USB		Click Transfer M. You can choose USB, you should set a file to in our software (Notice: set the knife down point, and select the cutting line. When you use Multi. Cut (long label cutting), this function is disable.	
P5	Blade P. 1	400-1000	Add the value, the pressure more heavy, the unit is G.	Notice : The value is not knife length (outside of holder)
	Blade P. 2	400-1000	Add the value, the pressure more heavy, the unit is G.	
	Blade P. 3	400-1000	Add the value, the pressure more heavy, the unit is G.	
	Blade P. 4	400-1000	Add the value, the pressure more heavy, the unit is G.	
P6	Slitting		Use this function when your job is slitting only without die-cutting. Slitting and lamination can be done together in high speed. You can use this option for just laminating and rewinding only too. Use Up and Down arrow buttons to change the running speed and press cancel button to stop the operation	Max. 60 meters per min.
	Slit Length		Display the number of jobs in slitting by measuring black marks with track sensor. The unit is in meters.	
	Slit Job		Display the number meters of job length in slitting by encoder of servo motor. The Value is number of job.	
	Speed	1-60	The max. 60m/minute	
	Last Len.		Display the number of jobs in last job slitting by measuring black marks with track sensor. The unit is in meters.	
	Last Job		Display the number meters of last job length in slitting by encoder of servo motor. The Value is number of job.	

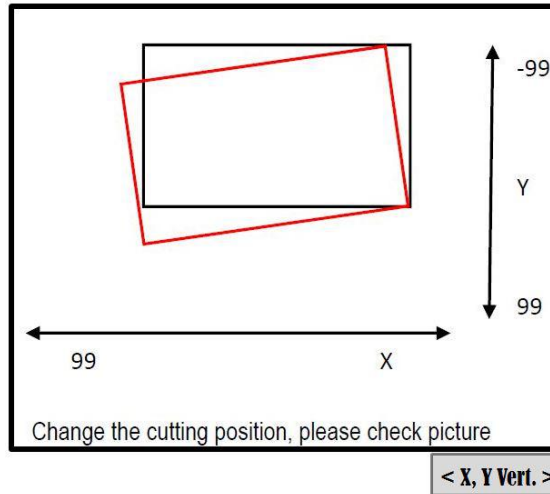
TABLE 5-4 (3)

Cutter provides fully adjustable and controllable parameters to utilize the functionality of the machine in maximum level. Cutter can meet the requirements of beginners and advanced users together.

Some of parameters can be complicated to understand by short explanation in Table 5-4 (1,2, 3). Some more explanations and illustrations are provided in following for better understanding.

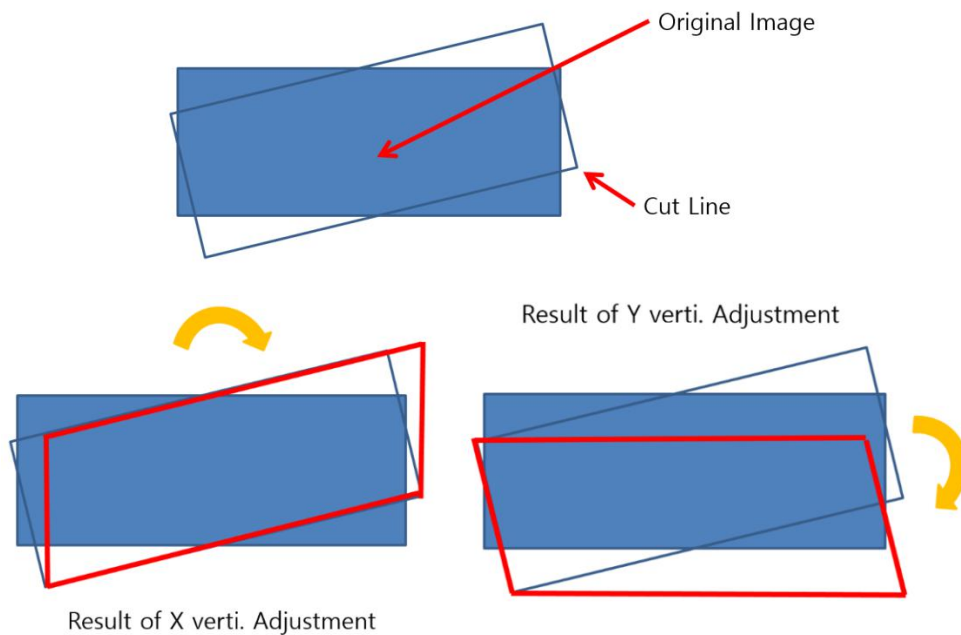
Verticality (angle)

X vert and Y vert parameters can change angles in X and Y direction as below picture 5-6.



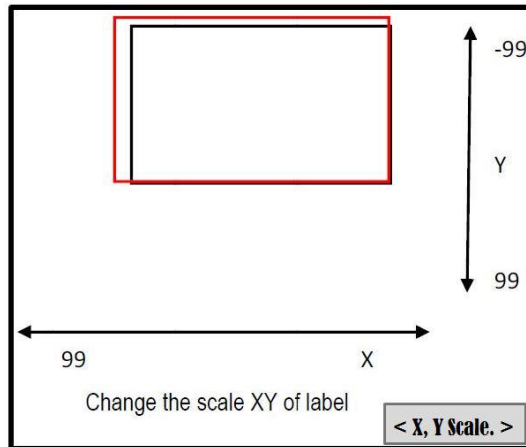
< PICTURE 5-6 >

To understand more about Verticality, it is related with twisting the image in X and Y direction separately. Image angle can be changed by adjusting X Vert and Y Vert value together. Below Picture 5-7 is showing how X Vert and Y Verti work separately.



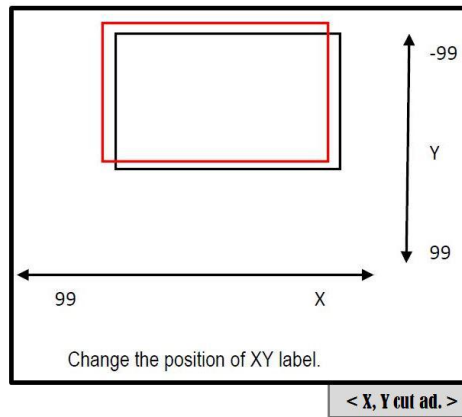
< PICTURE 5-7 >

Scale : X Scale and Y Scale adjust size of image in X direction and Y direction separately and independently. You does not need to keep original X-Y ratio. Refer to below picture 5-8 for better understanding.



< PICTURE 5-8 >

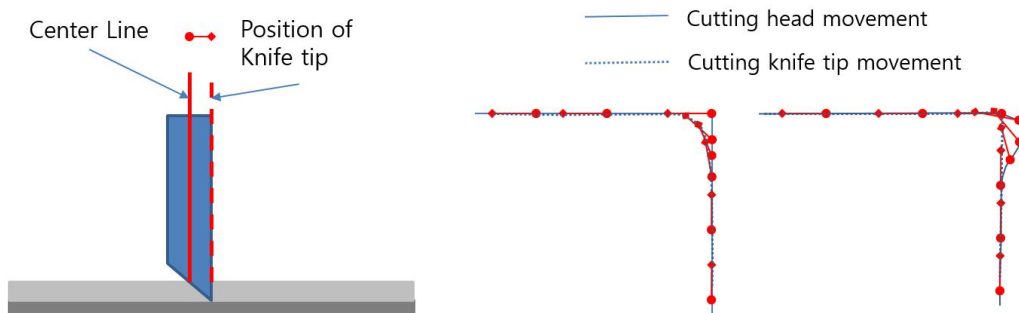
Position : X Cut Ad and Y Cut Ad adjust position of image in X direction and Y direction separately. Refer to below picture 5-9 for better understanding.



< PICTURE 5-9 >

Corner cutting control:

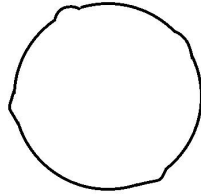
Turn Cut R parameter means corner moving radius. Knife has a cutting tip with a certain angle, a little apart from the center of cutting knife holder. This makes errors in moving around the corners. Turn Cut R parameter setting helps smooth cutting at the corner as good as possible. See below picture 5-10 to understand better.



< PICTURE 5-10>

Speed and Acceleration control:

Speed and acceleration can be very sophisticatedly controlled in Cutter. These parameters are dependent to the shape and complexity of cutting design itself. Acceleration means how fast to reach to the target speed from starting point or how fast to stop cutting at end point. Speed and acceleration can be differently setup for straight lines and curves. Be sure to use less values of Bend Speed when cutting circles. Even it is possible to setup acceleration at starting of curves from straight lines. Feeding speed by rubber press roller can be adjusted separately.



< PICTURE 5-11 >

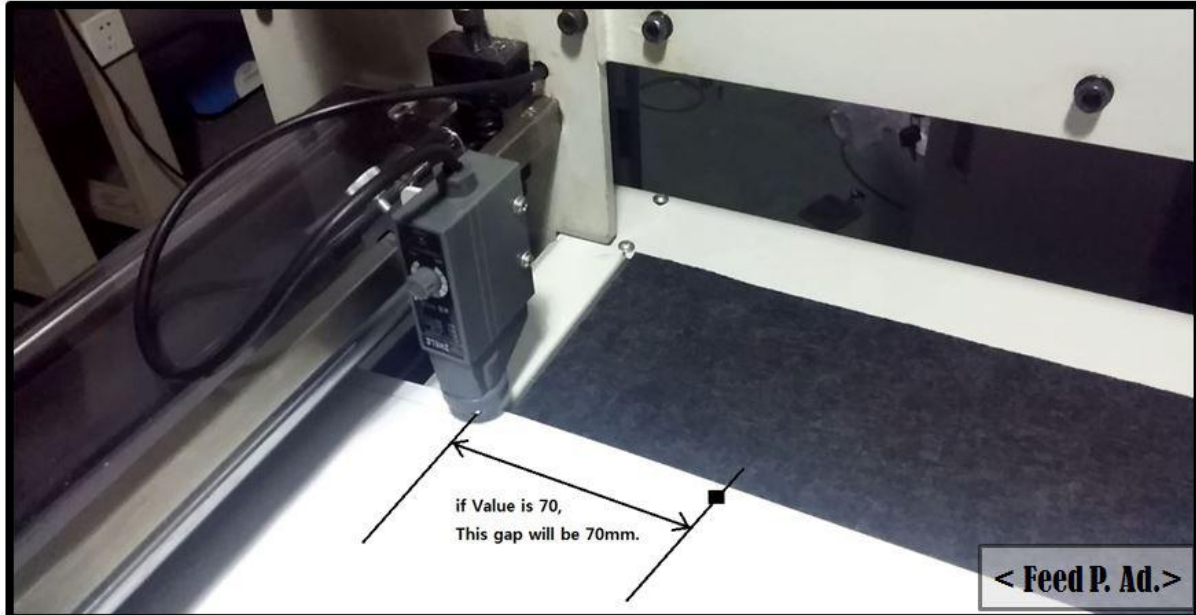


Caution

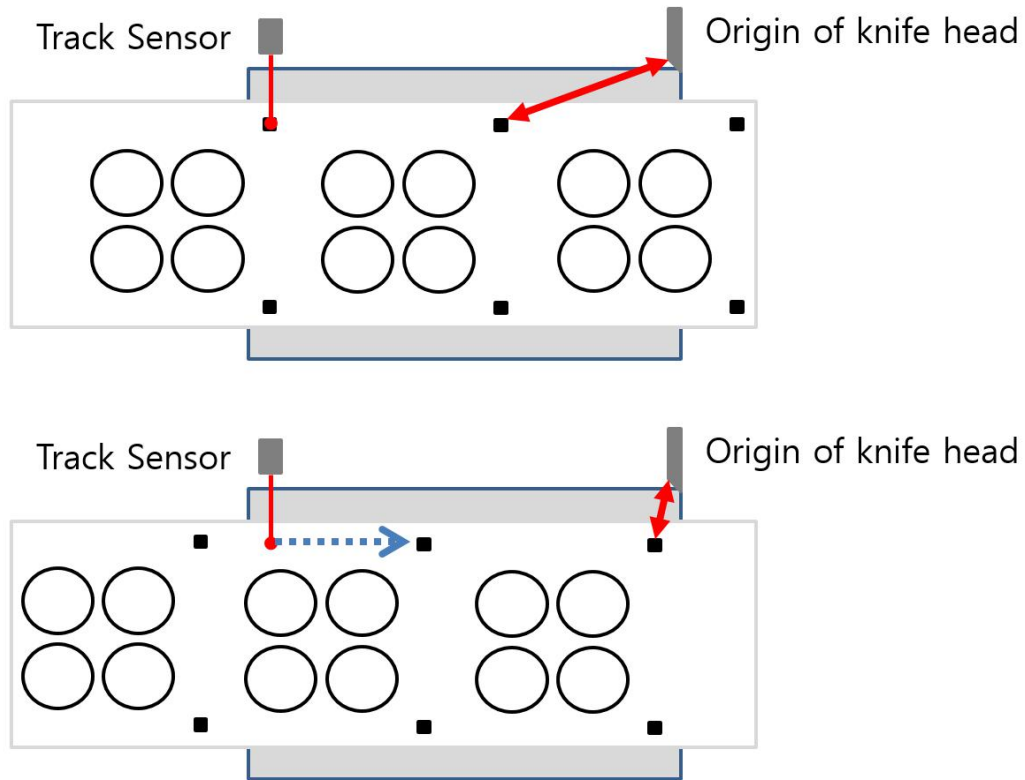
If you are cutting small circles and the result is not smooth, you need to slow down the BEND SPEED. It would be also helpful to slow down CUT SPEED together.

Feeding paper adjustment (Paper F. Ad)

The distance of additional feeding is adjustable after track mark sense next black mark (0mm ~ 99mm). It can be used if cutting heads need to move relatively long distance for finding next black mark and starting cutting. You can minimize the moving distance of head for better speed and accuracy like Picture 5-12 and 5-13.



< PICTURE 5-12 >



< PICTURE 5-13 >

Settings- Tools Select

When using multiple cutting heads, you need to setup Model No. parameter in the setting menu differently. This defines how many head units to control by machine firmware. Max. 4 cutting heads can be used in Cutter.

Others-Slitting

Slitting allows you to do slitting only without any cutting process. In this Slitting mode, you can do just laminating, slitting, rewinding or a combination of those jobs in high speed. Speed can be adjustable by speed buttons during operation simultaneously.

Settings- Tools -Multi cut

With this function, labels longer than 40cm can be divided into 2 or more sub-jobs to cut piece by piece to complete whole design. This advanced function is provided with some unique settings in the software too.

5-4 Tension Control

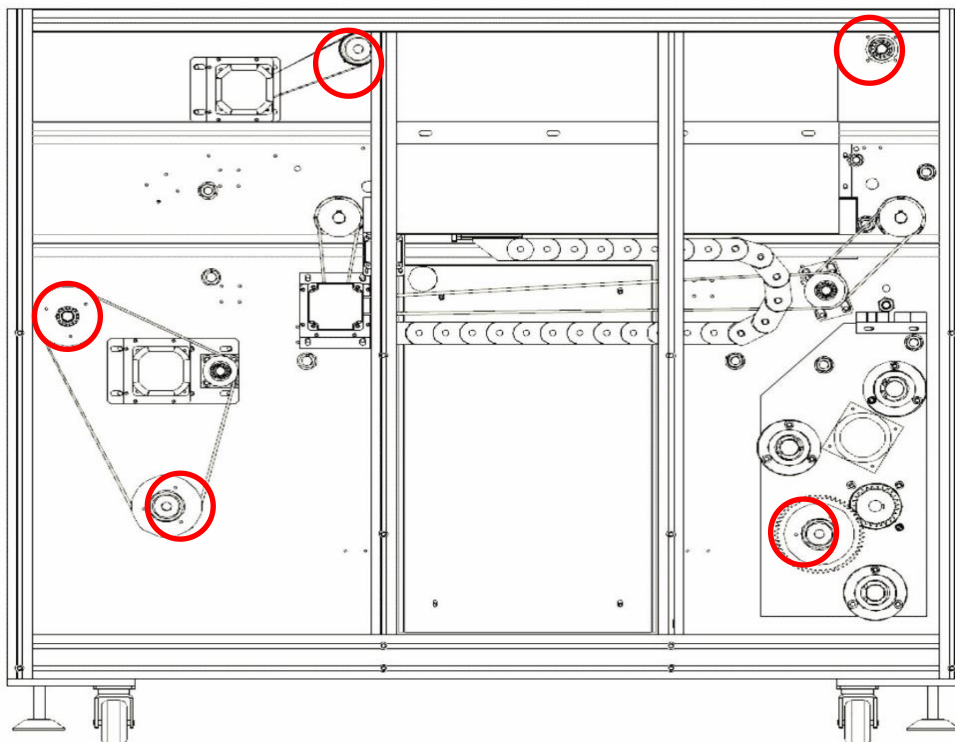
Tension control is required at starting and in the middle of operation, because media roll size and weight varies during the process and duty on each roller varies. So it is required to have properly adjusted tension power accordingly. Bigger roll gives heavier pressure and smaller roll gives lighter pressure.

To control the tension on media, there are 5 tension control knobs on opposite side of the rollers, which can be accessed by opening the backside doors. Clock-wise rotation will give stronger tension and counter clock-wise rotation will give weaker tension for each rollers. It looks like Picture 5-15 as below. Tension controllable rollers are 1 unwinding roller, 2 rewinding rollers, 1 matrix removing roller and 1 laminating roller. Check the location of reach tension control knob in Picture 5-15.



< PICTURE 5-14 >

Notice: For VR320, most of machines can be set the tension in the panel, rewinder and unwinder will be adjusted the tension automatically according the setting value. But please turn on the tension switch when machine is running.



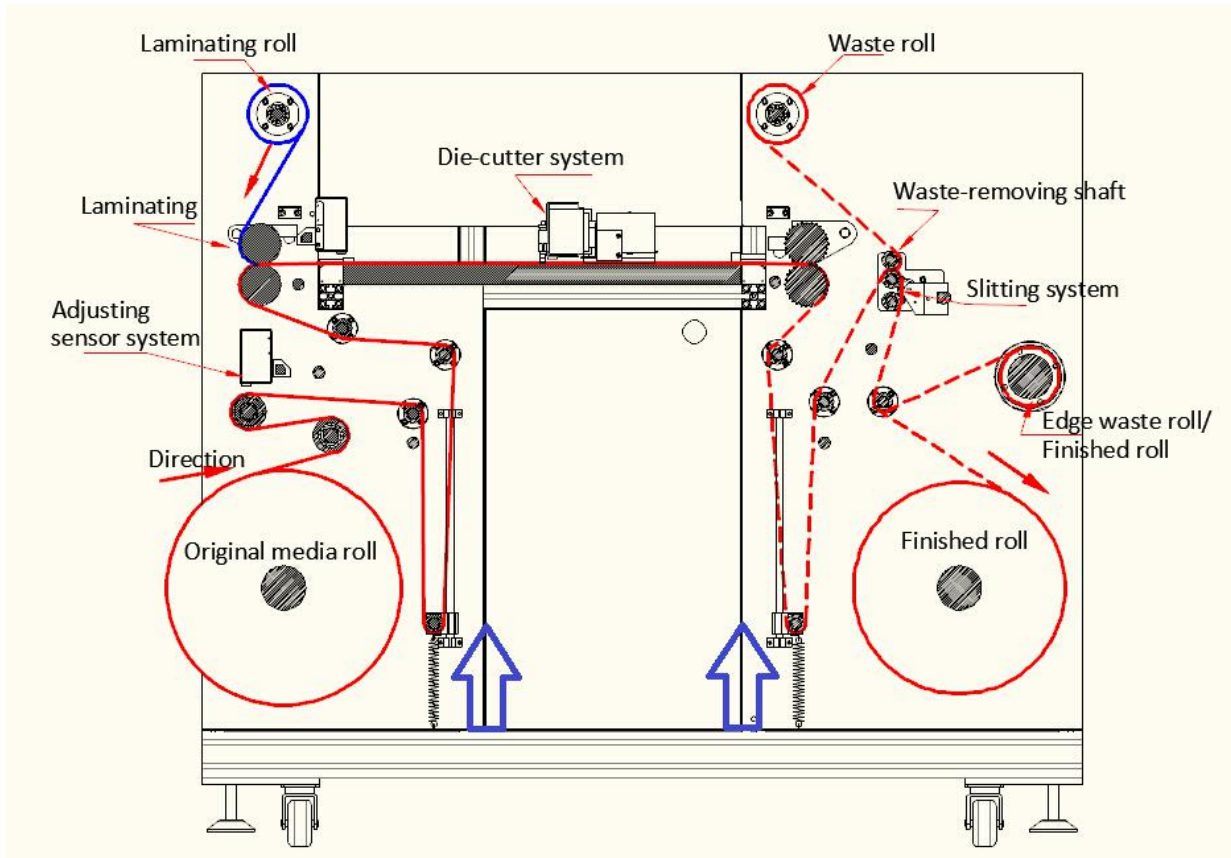
< PICTURE 5-15 >

For tension control of matrix removal roller, you are advised to find proper tension to rewind waste matrix smoothly, not too weak, not too strong. Too weak tension can draw the labels together with the matrix waste and too strong tension can break the narrow strips from gutters or edges between labels.

For tension control of laminating roller, put a proper tension not too tight on the laminating roller. If tension is not strong enough slipping on the roller can make the rotation step wise eventually and tension pressure on the laminating film will not be constant. Too strong tension will break or expand the laminating film to make wrinkles or tearing problem.

Tension control of unwinder and rewinder is a little more complicated. There are 2 dancing arms moving up and down to keep the tension on unwinder and rewinder. The height of tension arm is determining the tension strength onto the media (between unwinder/rewinder and rubber pressure roller). As described in Picture 5-16, it is important to have a constant height of the dancing bars, at starting and during operation. Recommended height is in range of 30cm to 40 cm from the bottom.

It is advised to adjust the tension for unwinder and rewriter when the height of tension bars are out of the proper range. The frequency of tension adjustment can be about every 200 meters work.



< PICTURE 6.16 >

5-5 Tools Select

One of the strong benefits of VR320 is to use multiple cutting heads to maximize the productivity. Totally 4 heads can be installed in maximum. **2 cutting heads are installed as default** and more cutting heads can be ordered in option.

Notice: New VR320 can't add the cutting head after shipment, please confirm how many cutting heads you need when you place the order.

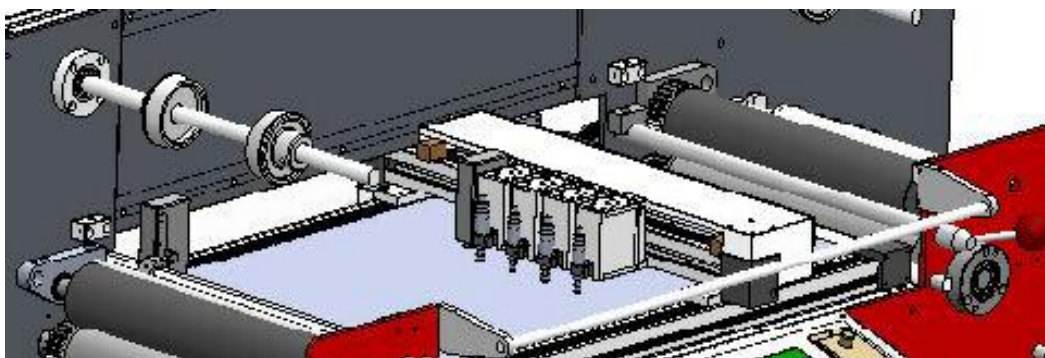
To use multiple cutting heads, it is required to design the artwork differently. There should be duplicated designed in multiple columns. Please see Table 5-5 to understand no. of heads to be used for no. of duplicated columns in design itself. Be sure to have black marks in the position of original design for printing (no change).

No. of columns in design	Max. no. of heads possible to use	Working sequence of heads for columns
1	1	①
2	2	①②
3	3	①②③
4	4	①②③④
5	1	①①①①①

6	3	①①②②③③ or ①②③①②③
7	1	①①①①①①①
8	4	①①②②③③④④ or ①②③④①②③④
9	3	①①①②②②③③③ or ①②③①②③①②③
10	2	①①①①①②②②②② or ①②①②①②①②①②

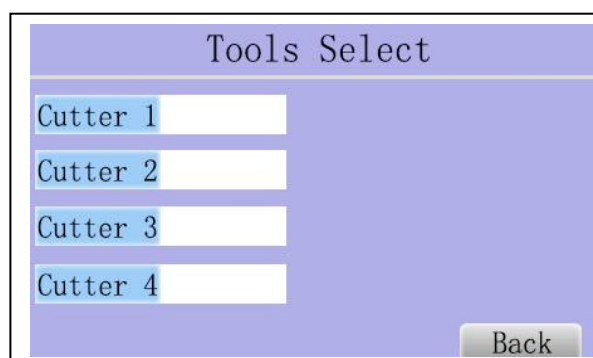
< TABLE 5-5 >

According to the label width in row, you can loosen the screw bolts of 2nd to 4th heads and adjust the distance between heads precisely. The distance needs to be the same with label width + gap value. In case that you are cutting a group of labels in series, like ①①②② or ①①①②②②③③③, the distance between heads will be 2 times or 3 times of label width + gap value. Please see below picture 5-17 when installing 4 heads in sequence.



< PICTURE 5-17 >

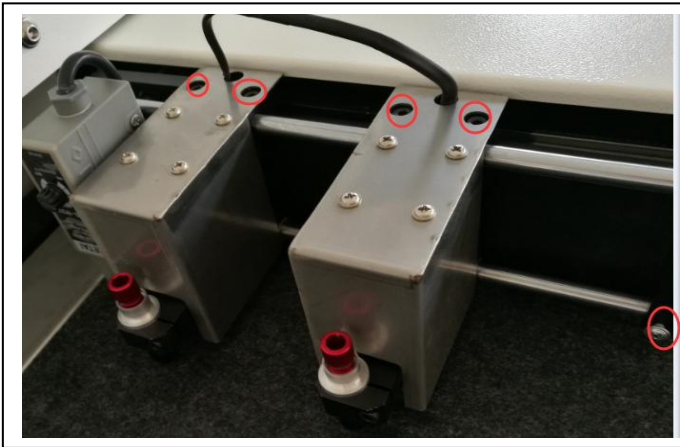
New VR320 is very easy to ENABLE/DISABLE each cutting head, you just find Settings-Tools-Tools select, you can click blank to choose cutter on or off. Refer to Picture 5-18.



< PICTURE 5-18>

To disassemble cutting heads, open the cover of head motion assembly box and unscrew 2 bolts on the side of head holding bar as below Picture 5-19. put the head into up and down support bars and fix it with 2 screw bolts as shown in Picture 5-19.

Notice: You must cut off the lines to connect pressure control board of cutting head, please be careful before you disassemble the cutting head, it is difficult to assemble again.



< PICTURE 5-19 >

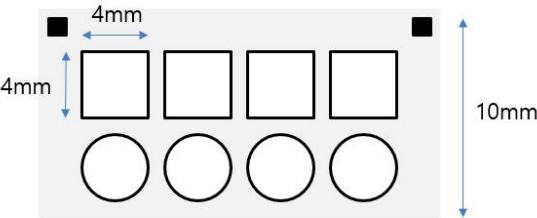
Caution

If you do not use some heads, be sure to get rid of cutting knife holders from them for safety. Very sharp knives can heard your finger and knife of 4th head can be exposed out of the bed when using single head.

Enable and Disable cutting head in the menu as described in **Table 5-5** . If you use Model No. as 3201 for multiple cutting heads, you need to disable and choose **off** for 2nd ~ 4th heads will not move up and down for cutting.

- Model No. = 3201 for using single cutter units
- Model No. = 3202 for using two cutter units
- Model No. = 3203 for using three cutter units
- Model No. = 3204 for using four cutter units

Speed comparison result in using multiple cutting heads for typical design is shown in **Picture 5-20** and **Table 5-6** as below for example.



< PICTURE 5-20 >

No. of cutting heads to use	Duration time per job	Linear speed
2 heads	3.85 sec	1.59 meters / min
4 heads	2.62 sec	2.32 meters / min

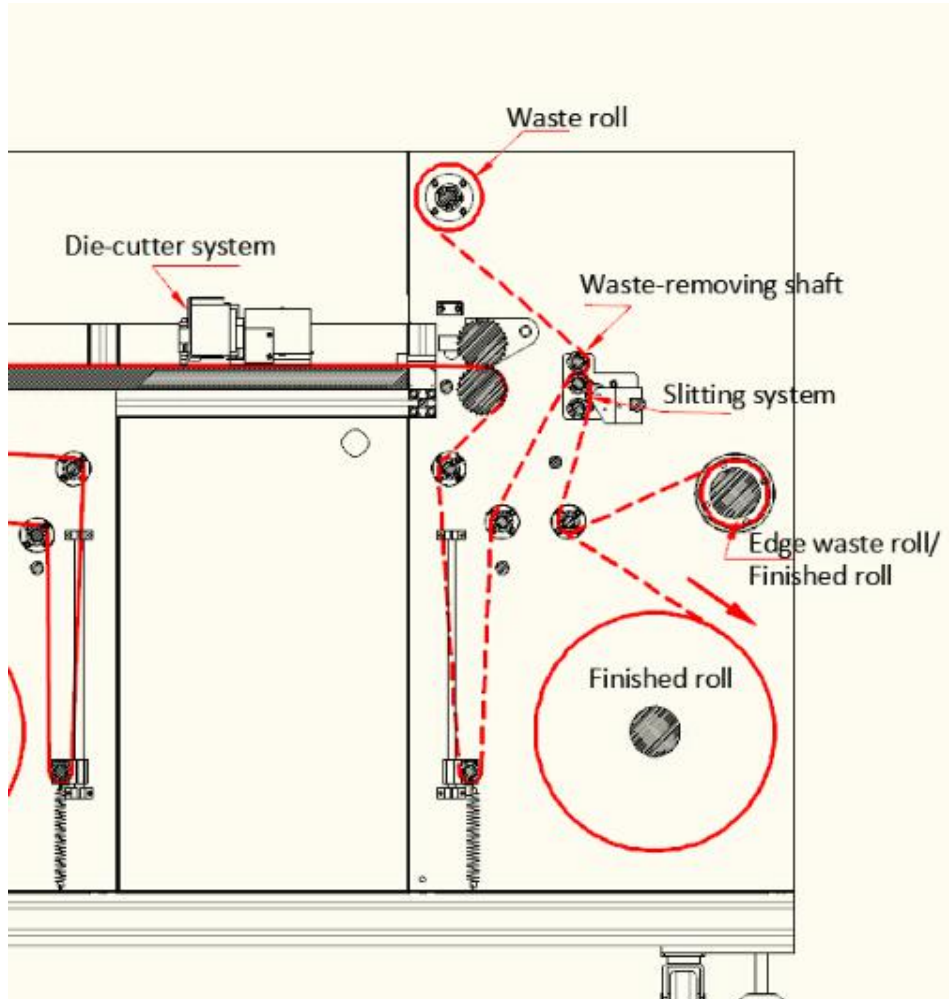
< TABLE 5-6 >

5-6 Slitting mode

For installation of slitting module, please refer to details in Chapter 4-6 on page 26.

Also please be sure that media loading is prepared properly like the Picture 5-21 as below.

Choose Slitting in additional functions in the menu as described in Table 5-4(3) on page 38. Speed can be controlled by up and down arrow buttons in real time during operation. Adjust the proper tension in unwinder part and rewinder part at starting and during the operation.



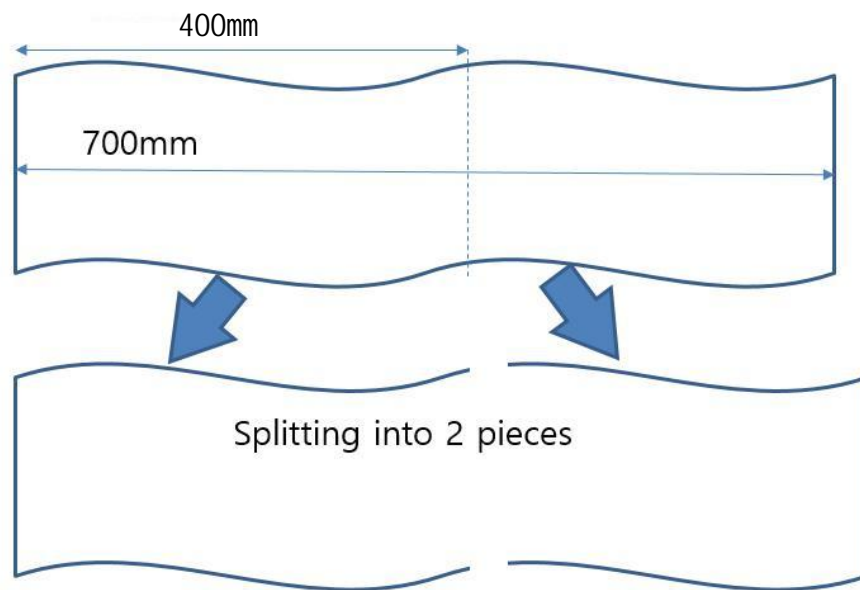
< PICTURE 5-21 >

Slitting mode can be used for simple rewinding, laminating + rewinding, simple slitting and laminating + slitting. It is also useful when you'd like to check straight rewinding with constant edges in final rolls. No. of black marks sensed and length of job will be displayed during operation for monitoring of the process.

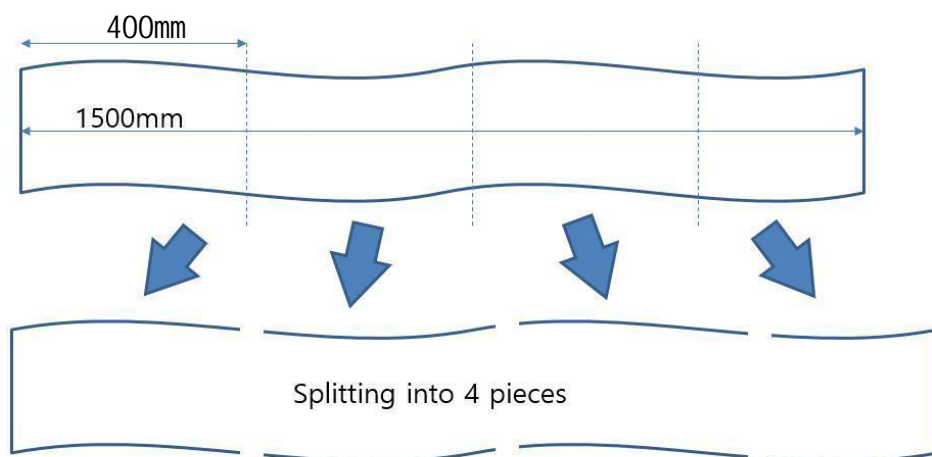
5-7 Multi.Cut (long label cut)

Choose Multi. cut functions in the menu as described in Table 5-4(3) on page 37. This function is useful in cutting of labels longer than the limitation of 400mm length, by dividing it into pieces less than 400mm length. Before selecting **Settings - Tools- Multi Cut (On/Off)**, it is important to setup proper parameters for **Multi cut** in the software. Please refer to details on page 54 of Chapter 6-4.

See below pictures 5-22 and 5-23 to understand the concept of splitting better as below.



< PICTURE 5-22 >



< PICTURE 5-23 >

Chapter 6 software

Notice: VR320 have two Transfer Mode, Network and USB. Enter settings - Data Trans - TransMode to choose, the default is network. If you want change transfer mode. You need to do following steps:

1. Data Trans - Select (NETWORK or USB). Under NETWORK, you need to set output port and IP as following explanation.
2. Back to home page
3. Restart machine

6-1 USB Drive installation and setup

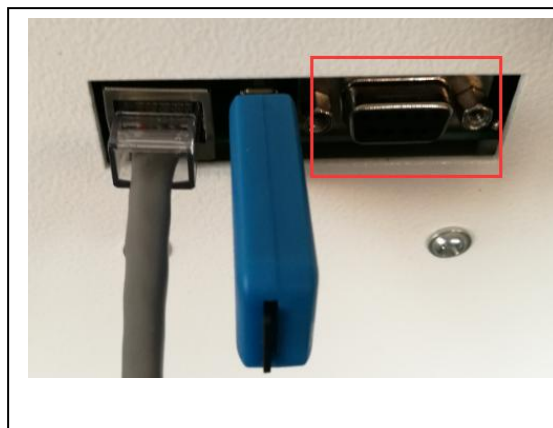
(Transfer Mode -UART, new VR320 have canceled this data transfer mode)

In the product package, you will find USB to RS232 serial cable and USB driver installation CD together with the product as below Picture 6-1. (New VR320 package is without this wire and CD)



< PICTURE 6-1 >

Connect the USB to Serial cable between your computer and Cutter machine. There's serial cable port on side face of Cutter control panel as below Picture 6-2. Connect USB end to USB port of computer.



< PICTURE 6-2 >

If you put the installation CD in CD rom drive in your computer, it will run the setup program automatically. If not, please run **AUTORUN.exe** in the CD manually.



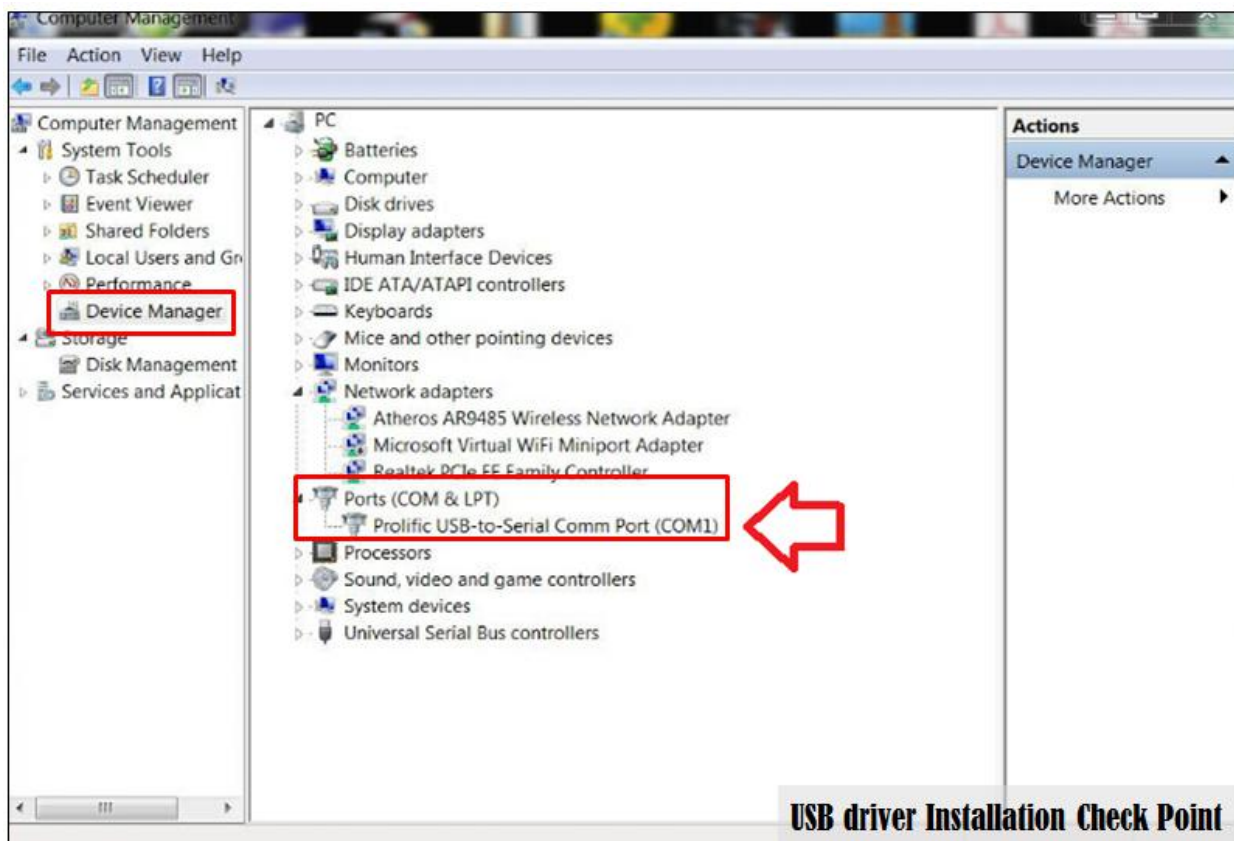
< PICTURE 6-3 >

Proper installation file will be guided automatically. Run this install program.

Proceed steps of install program to finish USB driver installation.

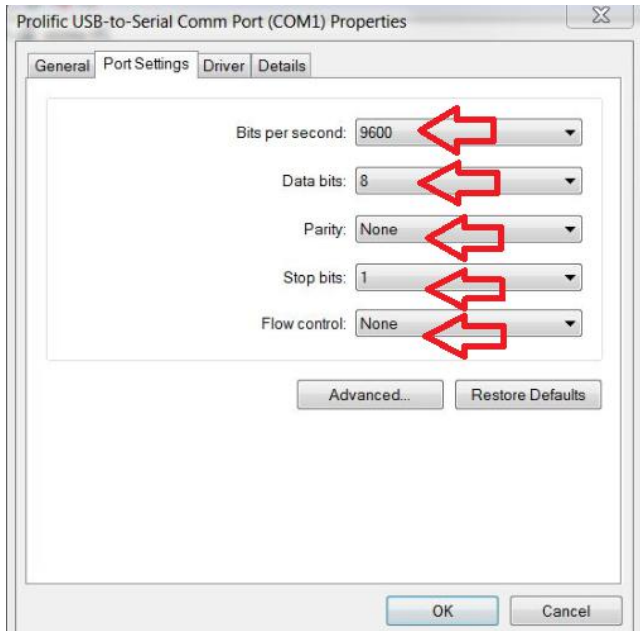
Check USB driver is properly installed by accessing to “Control Panel > Device Manager > PORT”. Be sure to connect the USB to Serial cable because COM port is plug & play activated.

If you see “Prolific USB to Serial COMM port”, USB driver is installed correctly like Picture 6-4. COM port can be any number by registering vacant port automatically. Remember this COM port number for setup in Cutter software later.



< PICTURE 6-4 >

Be sure to properties of COMM port is correctly setup as below in Picture 6-5.

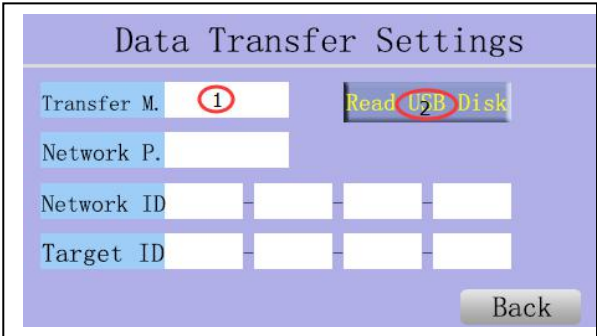


< PICTURE 6-5 >

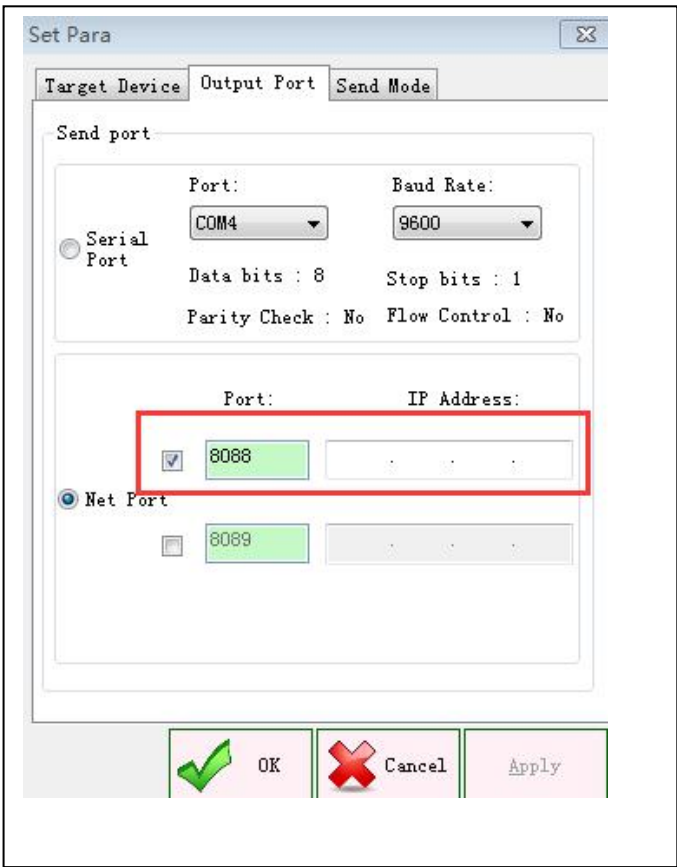
After set value, please click “OK” to save.

(Transfer Mode -NETWORK)

Prepare a network wire connect machine and computer, setting Network P. (NETWORK PORT) which same with the computer, get a network ID of your office network, and input a same target ID of your computer which put VR Cutting software picture 6-6-1 . Refer to picture 6-6.



< PICTURE 6-6 >



< PICTURE 6-6 -1>

(Transfer Mode -USB/U disk)

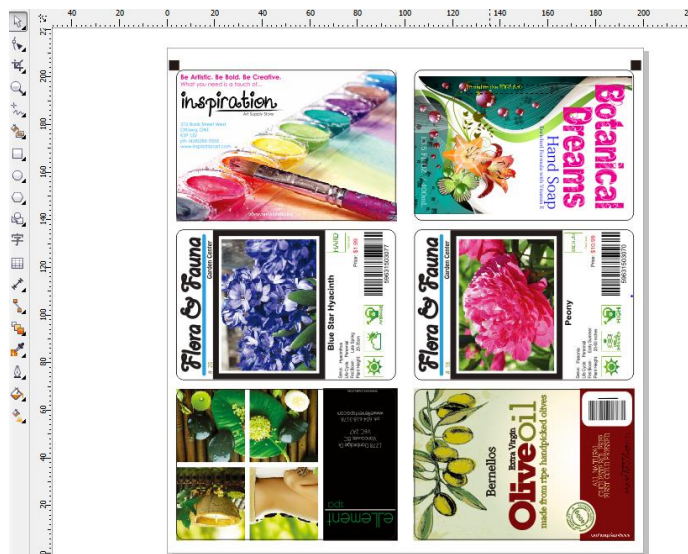
When you use this Transfer Mode, please prepare PLT file and cut save as in your USB disk (USB format is FAT32). and chick “1” to choose cutting file.

Click Read USB disk and choose the file you want to cut. The max. number files is 8.

Notice: All of files must be set in VR320 cutting software b e f o r e save to USB. You need to set knife down point and choose correct cutting line.

6-2 File Design

First of all, please do not prepare design files for printing and cutting separately. It can cause registration problem if you prepare them separately. Prepare single design for printing and add cutting contours for cutting. Make contours invisible during printing and delete printable designs during exporting of cutting file.



< PICTURE 6-7 >

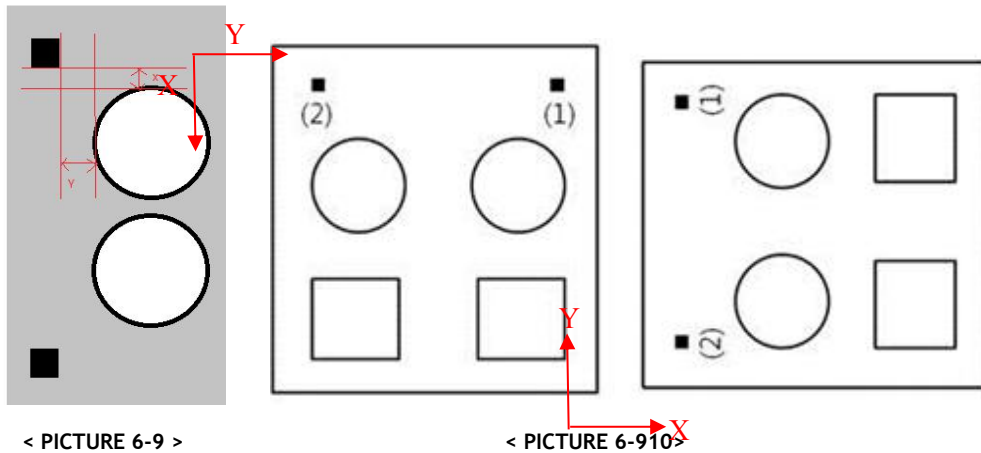
Be sure to prepare the design to have black marks in left side by rotating the layout 90° (feeding direction is anti-clockwise) before exporting the data as Picture 6-7, 6-8



< PICTURE 6-8 >

How to put Black Marks?

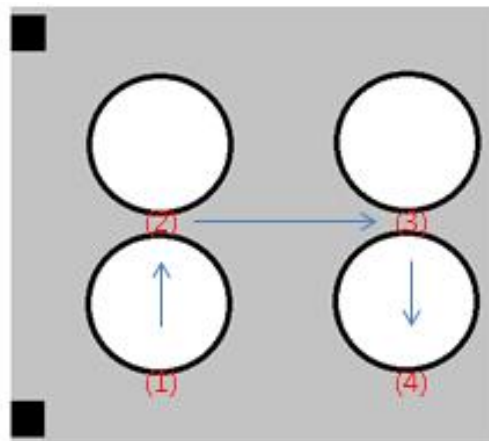
It is required to put 2 black marks side by side with the design. Black marks need to be min. 1mm x 1mm size but we recommend 4mm x 4mm size in general. The gap between object and black marks needs to be at least 1mm in X and Y direction like Picture 6-9.



Sequence of black marks in the design itself is also important. We advise put left mark first and second mark later, to measure the first black mark which is closer to the cutting head origin position. If you put the right side black mark first like Picture 6-9, you need to locate the mark sensor at black mark (1) at starting of cutting job in cutter machine (process of page 46). X and Y direction is described in Picture 6-10.

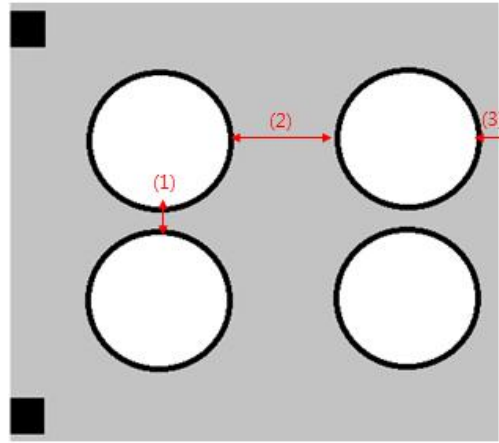
How to prepare proper design?

Objects in design file need to have proper order, just like the sequence of black marks. It is important to make the cutting head movement path as simple as possible, to reduce the inaccuracy and maximize the cutting speed. For example in below Picture 6-11, the illustrate sequence of objects will optimize and simplify the path of cutting head movement.



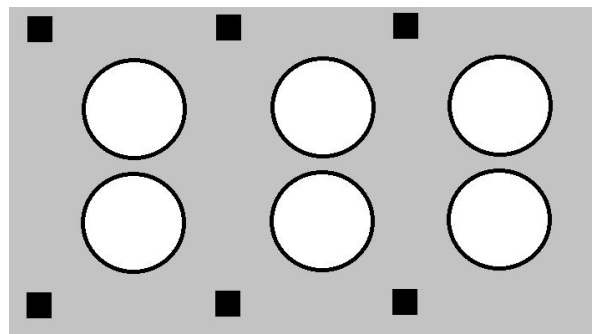
Be sure to have max. 10mm margin in the end of job - distance (3) in below Picture 6-12. If distance (3) is larger than 10mm, next mark cannot be sensed correctly.

Gaps of (1) and (2) between labels have no limitation, but recommended gap is 3mm ~ 5mm. Too narrow gap will make problems during matrix removal (weak matrix can tear easily).



< PICTURE 6-12 >

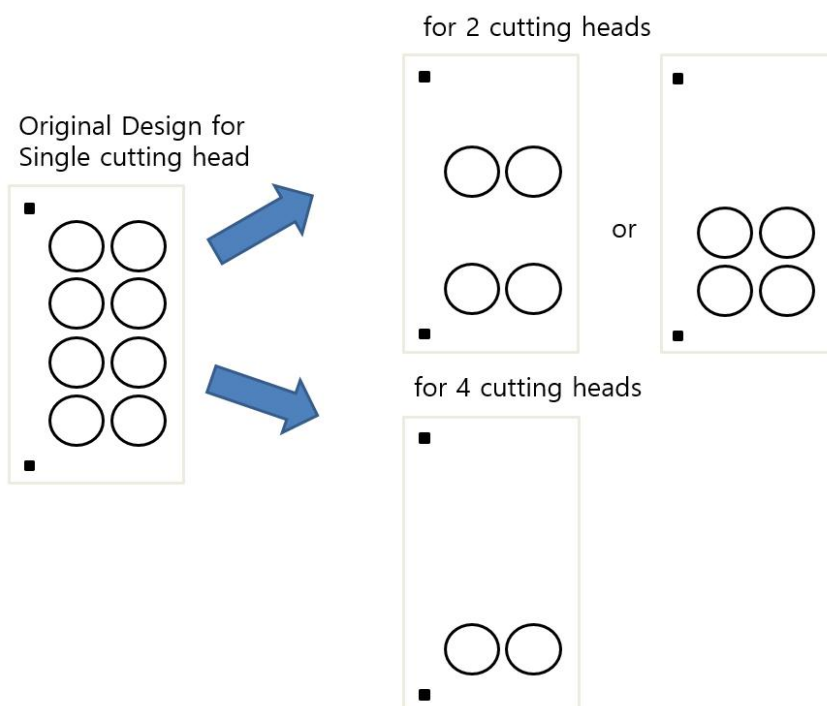
It is also possible to put multiple rows of same images in a single design like Picture 6-13. Next black mark will not be sensed until one job is finished. It gives the same effect with using Track J. parameter in Table 5.1 as more than 2 to skip mark sensing for a certain amount of jobs to save time.



< PICTURE 6-13 >

How to prepare proper design for tools select?

From original design, leave the black marks as it is and remove the columns other than the columns for the first head. Refer to below example of Picture 6-14.



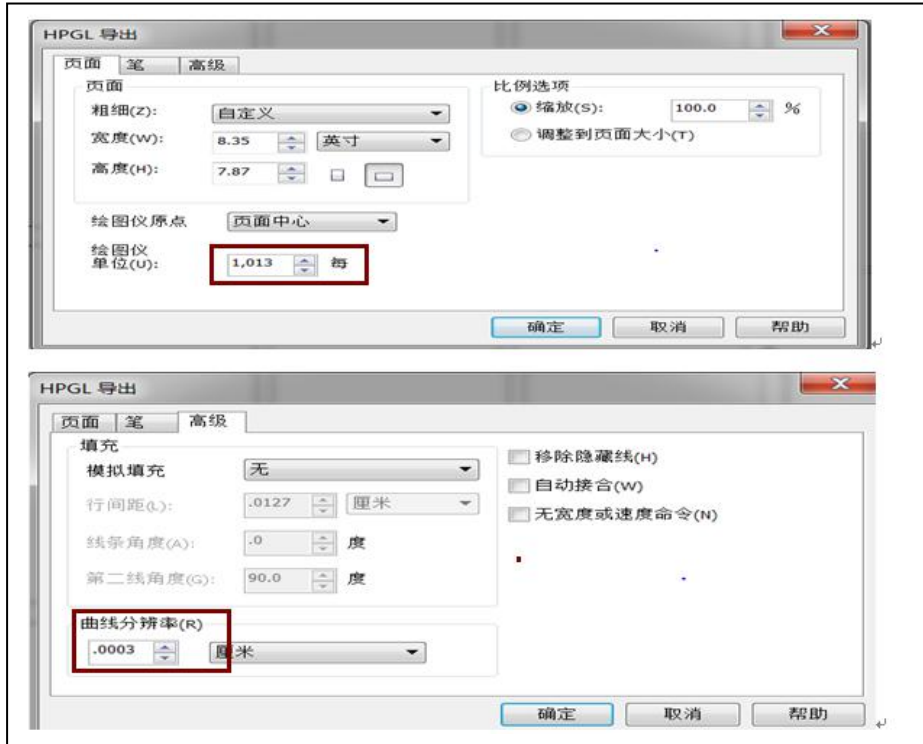
< PICTURE 6-14>

6-3 PLT format file generation

VR320 cutting software only imports **PLT format files**. It cannot read other design files directly. So it is required to save or export the design file as PLT format from the design program.

How to create PLT files from Corel Draw?

In CorelDraw, you can export the design as PLT - HPGL plotter file format, simply like Picture 6-15.



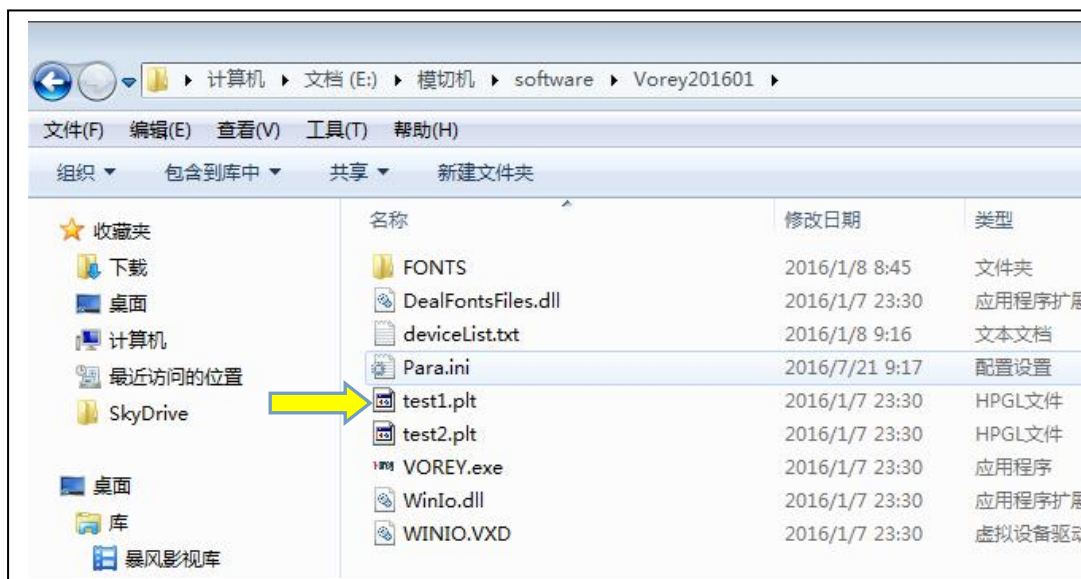
< PICTURE 6-15 >

Output die-cut file with PLT format, Plotter unit 1013, curve resolution to 0.

6-4 VR320 Cutter software

1. Software installation

Open the cutting software in software device, the output port and rate to match the same in device manager. The software is green software, no installation required, but under the other plate must be placed in addition to the system disk , Please don't put this software under C disk to avoid any data losing see picture 6-16, send the shortcut to the desktop picture 6-17.



< PICTURE 6-16 >



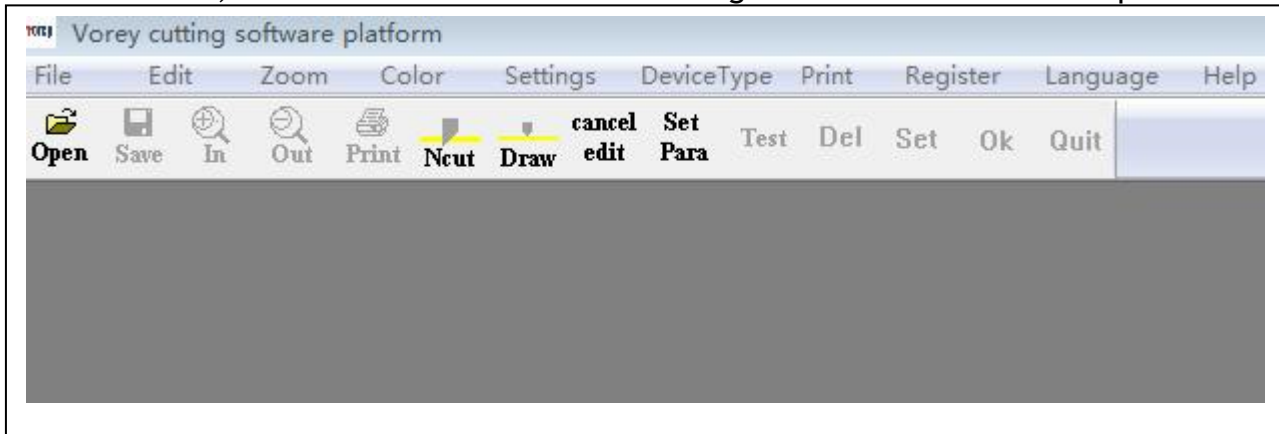
< PICTURE 6-17 >

Caution

If you run this software, please don't open this software again until you close the last one, otherwise software will running error.

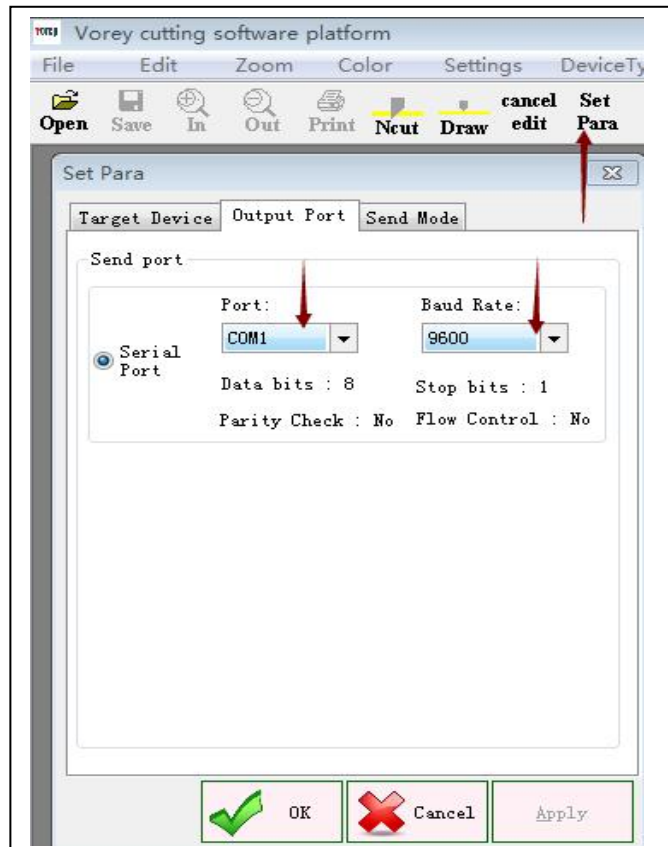
2. Software set up

Software interface, double click left mouse button to get software interface see picture 6-18.



< PICTURE 6-18 >

Set the output port, Click SET PARA icon and select Output Port tab to setup port properties properly. Please set the value like below Picture 6-19. Check Serial port, COM3 with 9600 baud rate. And click "OK" button to save.



< PICTURE 6-19>

Summary of software menu

Please refer to below Table 6.1 for overview of software menu.

menu	sub-menu	function	REMARK
file	open	Open *.plt file	Icon access available
	close	Close all opened file.	-
	save	Save file.	Icon access available
	save printed file	Save file as another name.	-
	print	Job sending.	Icon access available
	exit	Exit program	X icon in title bar
Edit	Line cut	Assign object as Cutting line	Icon access available
	Line draw	Assign object as Draw line (like black mark)	Icon access available
	Cancel edit	Undo assigning	Icon access available
Zoom Color	Zoom in	Zoom-in the screen	Icon access available
	Zoom out	Zoom-out the screen	Icon access available
	Cutting color	Select color for Cutting line	Icon access available
	pen color	Select color for Draw line (like black mark)	Icon access available
	Cutting zone color	Select background color (default is White)	-
Settings	Set Para	Select the values and parameter	Icon access available
	Drop point knife cut	Editing starting point of object to cut	Drop point knife cut
Device type	Cutting	No use	For future use in the new version.
	Template	No use	For future use in the new version.
Print	Circle	Valid in RP split mode (long labels than 410mm)	For future use in the new version.
	Normal	Default when cutting normal label less than 400mm	-
Register	User log-in	Security checking access code of the machine when connected	For future use in the new version.
Language	Chinese/English	Choice of menu language	English and Chinese
Help	about	Program version information.	V.1.2 currently

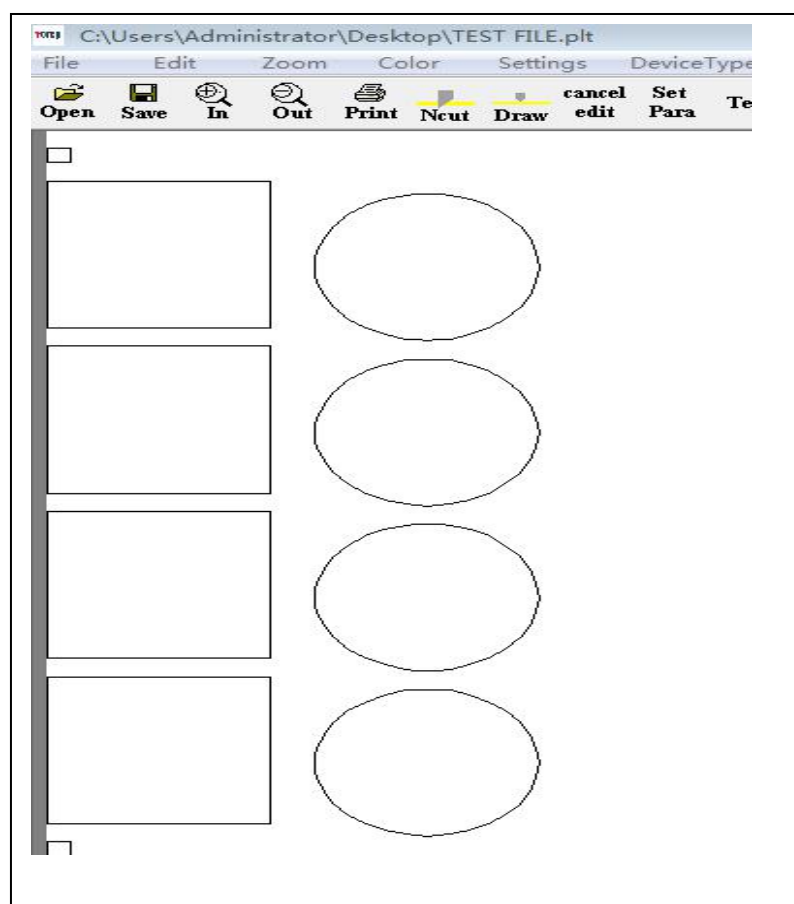
< TABLE 6.1 >

6-5 File opening

Open sample files provided together with the program as shown in Picture 6-20.
Click “file“ menu and select “Open” or click OPEN icon to choose a specific PLT file to open.
For example below design of ‘TEST FILE.plt” file can be opened like Picture 6-21.

FONTS	2016/8/9 11:15	文件夹	
golongfileback	2016/8/9 11:15	文件夹	
Pieces	2016/8/9 11:15	文件夹	
DealFontsFiles.dll	2016/8/9 11:15	应用程序扩展	276 KB
deviceList.txt	2016/8/9 11:15	文本文档	1 KB
Para.ini	2016/8/10 11:42	配置设置	1 KB
temp.plt	2016/8/9 11:15	HPGL文件	1 KB
TEST FILE.plt	2016/8/10 13:42	HPGL文件	3 KB
test1.plt	2016/8/9 11:15	HPGL文件	9 KB
test2.plt	2016/8/9 11:15	HPGL文件	26 KB
VOREY.exe	2016/8/9 11:15	应用程序	918 KB
WinIo.dll	2016/8/9 11:15	应用程序扩展	48 KB
WINIO.VXD	2016/8/9 11:15	虚拟设备驱动程序	6 KB

< PICTURE 6-20 >



< PICTURE 6-21 >

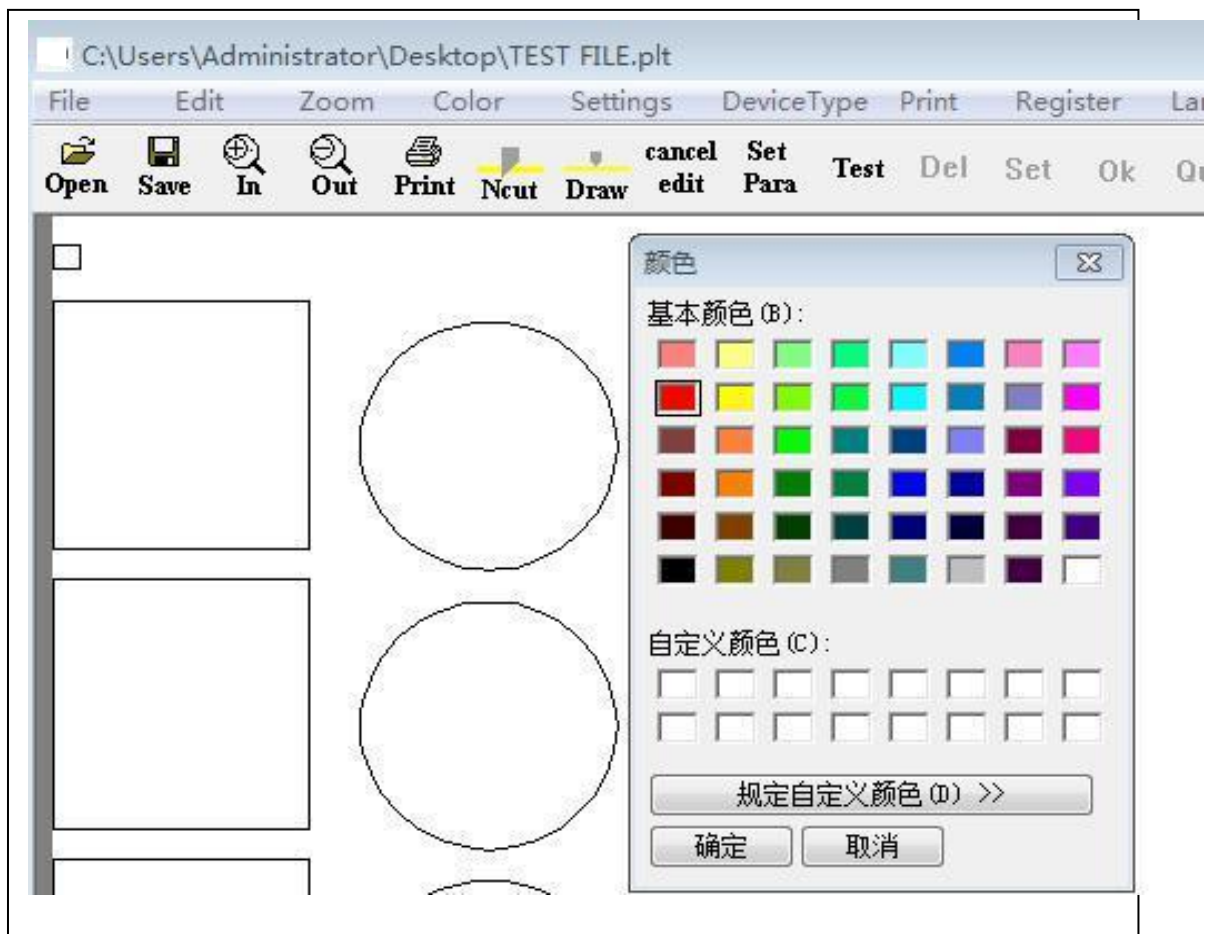
Color Settings and Object Assignment

Setup colors for marks and cutting lines separately. Select “Color” menu and setup Cutting color and Pen color. Pen color will be used for mark. Cutting color will be used for cutting lines.

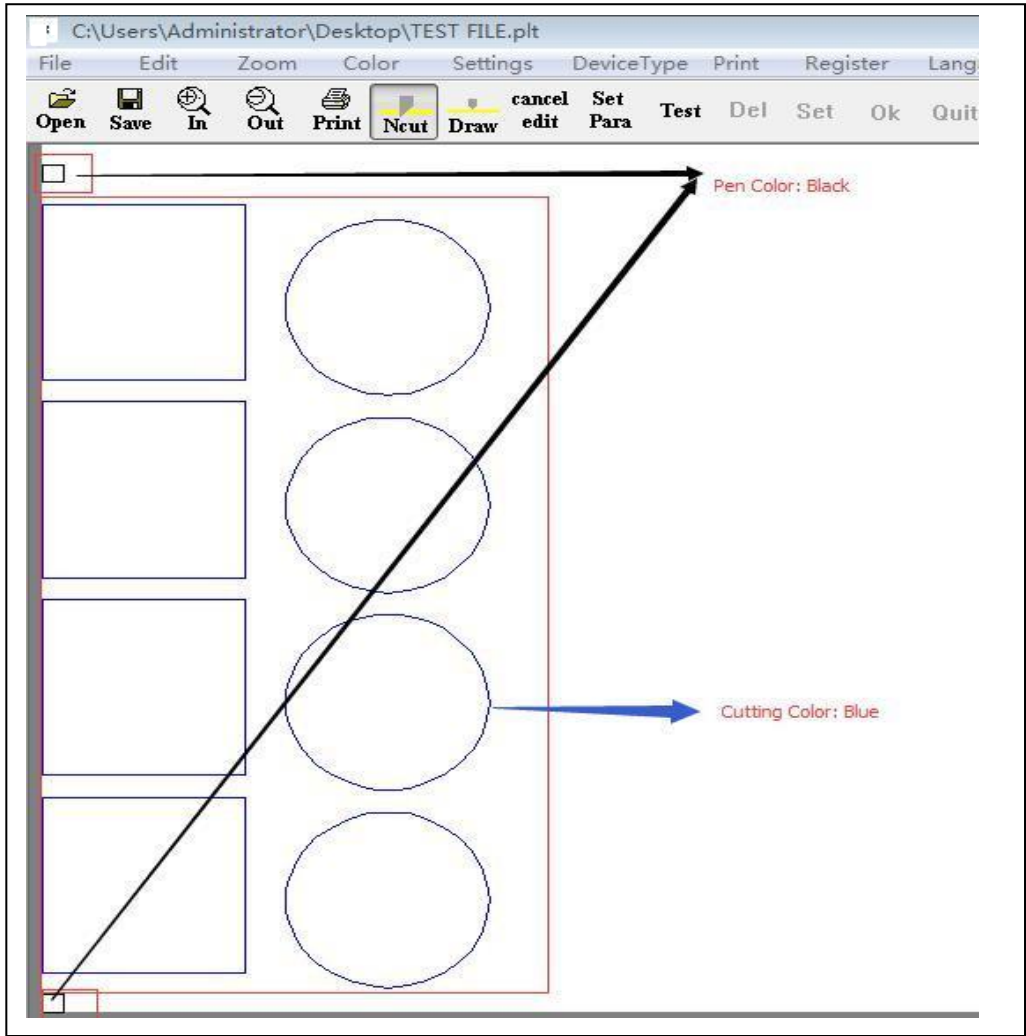
Select Color in the menu and assign colors for Cutting color, Pen color and Cutting Zone color differently. Recommended colors are red for Cutting color, black for Pen color and white for Cutting zone color.

You need to assign marks as Draw and cutting lines as Ncut. Draw component means reference object without requiring cutting like black marks, where PEN color will be applied. Ncut component means actual cutting lines where Cutting color will be applied. As default, all objects are assigned as Draw initially.

Click “Ncut” icon and select the objects which you want to die-cut. Click “ Draw” icon and select any object like black marks, which will not be cut. You will see objects are displayed in different color as result. (Black pen color for Draw and Red cutting color for Ncut in below example of Picture 6-22 & 6-23



< PICTURE 6-22 >



< PICTURE 6-23 >

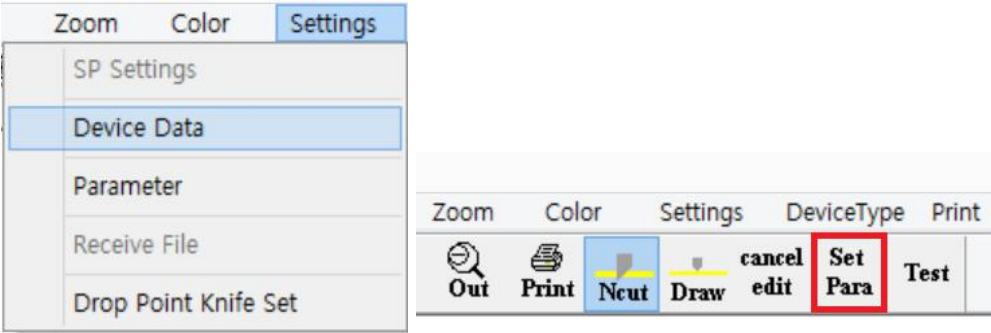


Caution

If you see Ncut and Draw icons are inactivated, please right click on the background of the layout to make those icons activated.

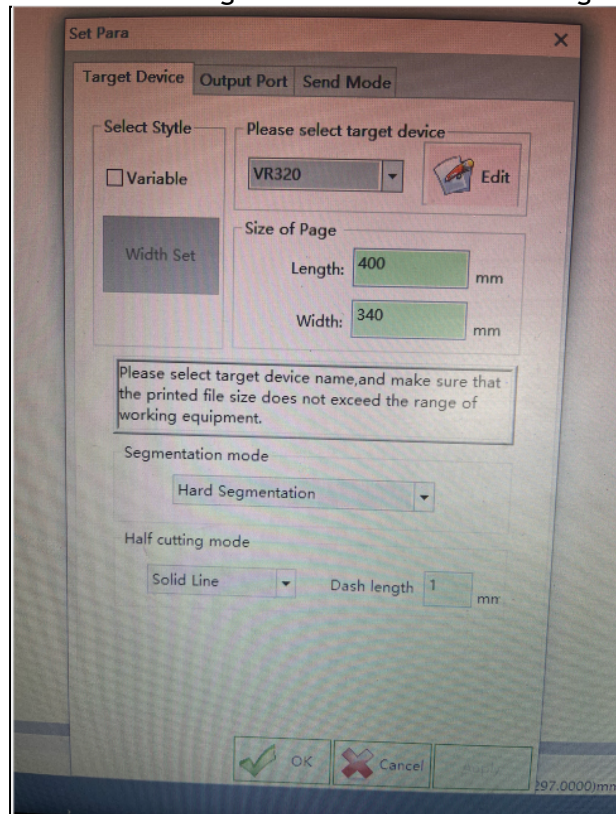
Parameter Settings

Click menu > Settings > Device Data or click [Set Para] icon in the main program GUI to access to parameter settings window as shown in Picture 6-24.



< PICTURE 6-24 >

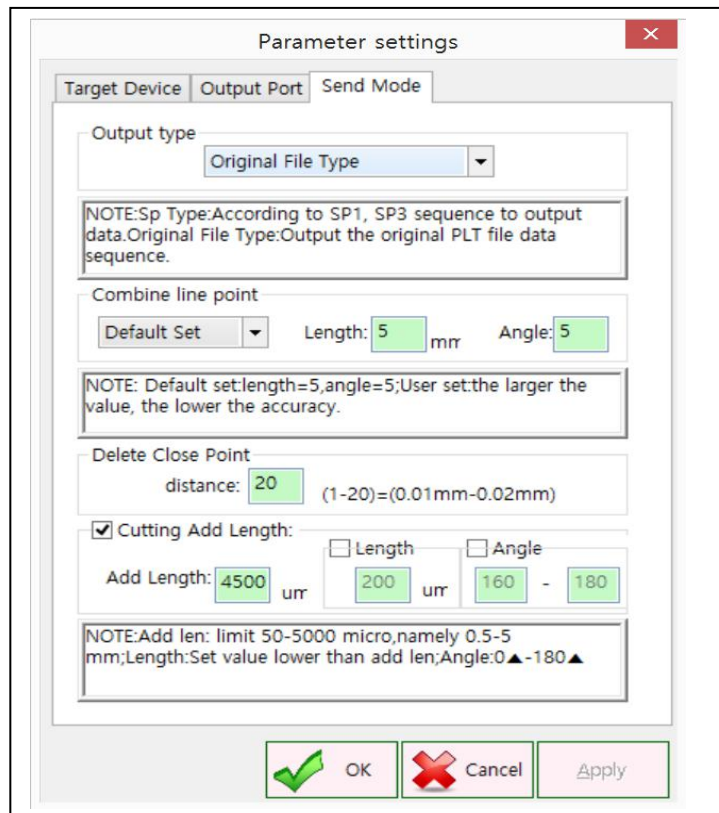
Parameter settings window has 3 tabs. Click Target Device tab and you can see VR320 is detected and page size is 400mm x 340mm as default. Please leave all the settings there as they are in Picture 6-25. (Segmentation mode should be Coordinate Segmentation and Half cutting mode is not used (no meaning).



< PICTURE 6-25>

We setup all the parameters in Output Port tab already in Picture 6-19 before for communication.

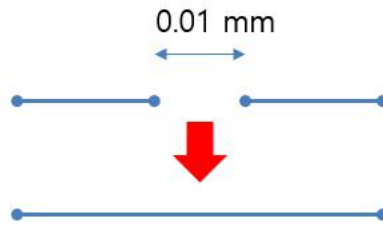
Go to Send Mode tab and setup parameters. Default values are shown in Picture 6-26 and you do not need to edit them in general cases.



< PICTURE 6-26>

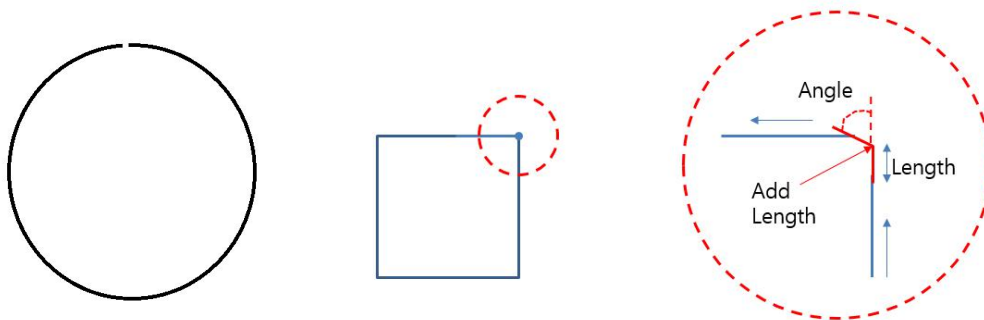
Output type: Use Original File Type as default. SP type is for split cutting of long labels in RP mode, which is not available in version 1.2. This will be supported in next version of software.

Delete close point: ignoring any points very near each other within this distance. For example, points on the line with 0.01mm distance will be ignored when setting value of 20 like Picture 6-26.



< PICTURE 6-27 >

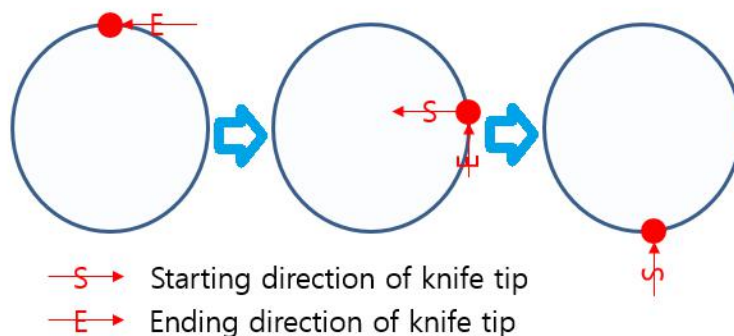
Cutting Add Length: Center line of the knife has a slight different with actual knife tip point. So starting point will not meet ending point when we cut the closed contour by moving the center line as it is. So it is required to move additional length to make starting point and ending point meet together smoothly. Add length means additional length to move the knife in total. Length means additional length to move in original direction. The rest of the length will be moved in a certain angle as defined. Refer to Picture 6-28 to understand better.



< PICTURE 6-28 >

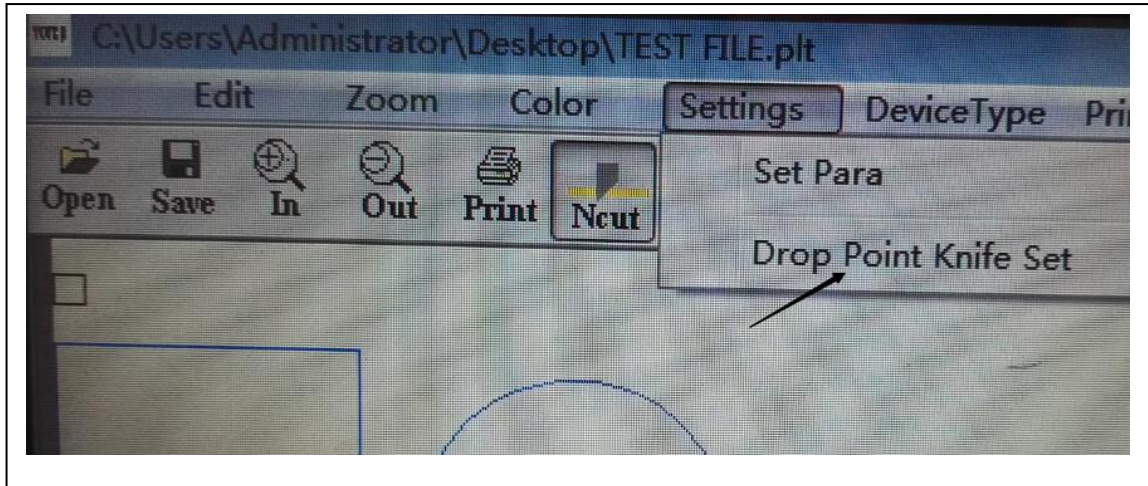
Adjustment Starting Point

You can select starting point of cutting in each object. Adjust of starting point is important for some cases, because the direction of knife tip on starting point of new object is depending on ending point of the previous object. See Picture 6-29 to understand better.



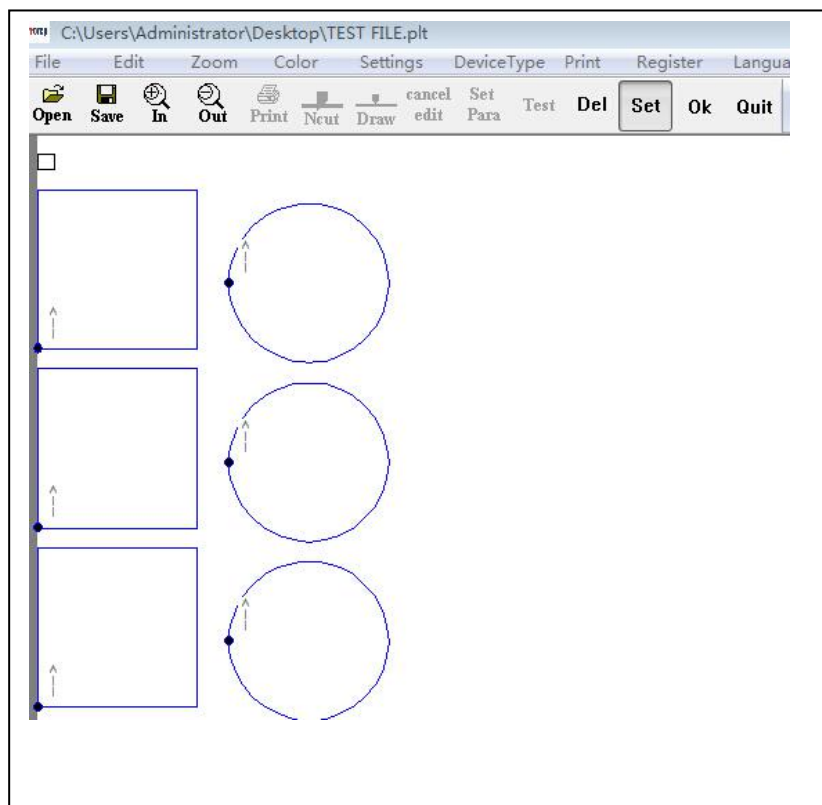
< PICTURE 6-29 >

Select Setting menu and select 'Drop point knife set' from the menu, as shown in Picture 6-30. This will not be activated if you do not have cutting lines assigned as Ncut.



< PICTURE 6-30 >

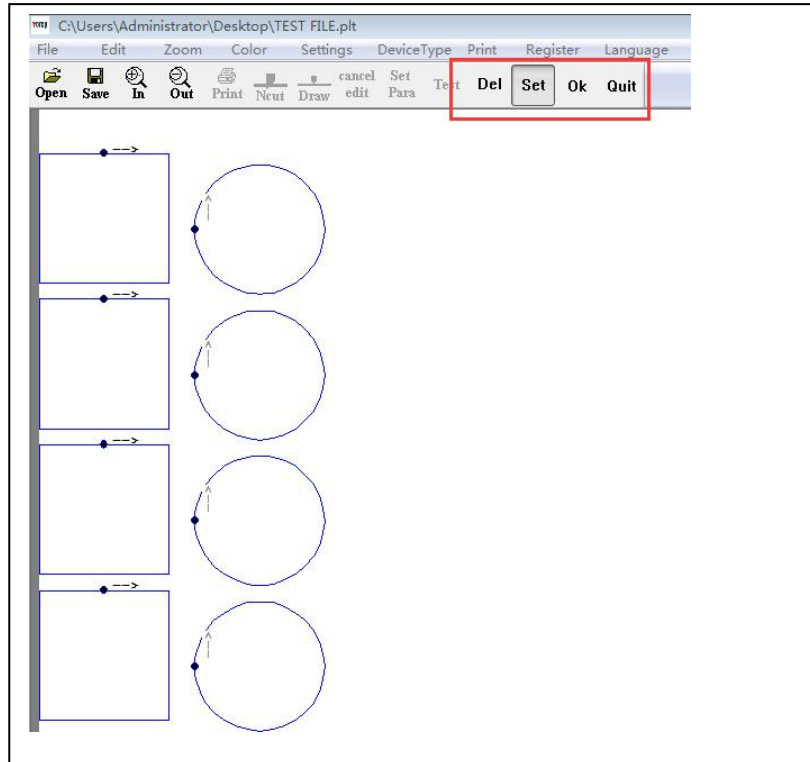
In starting point setup mode, display will be shown differently as below Picture 6-31 by indicating current starting points and directions for each object.



< PICTURE 6-31 >

Click any point of objects to change the starting position and click OK button in right end of the GUI.

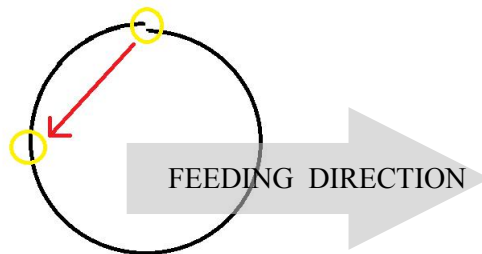
If you select 'Drop point knife set' menu again, you can find starting positions are moved as below picture 6-32.



< PICTURE 6-32 >

Del ---Delete setting; **Set**----Set the drop point knife; **OK**---to confirm. **Quit** ---quit setting

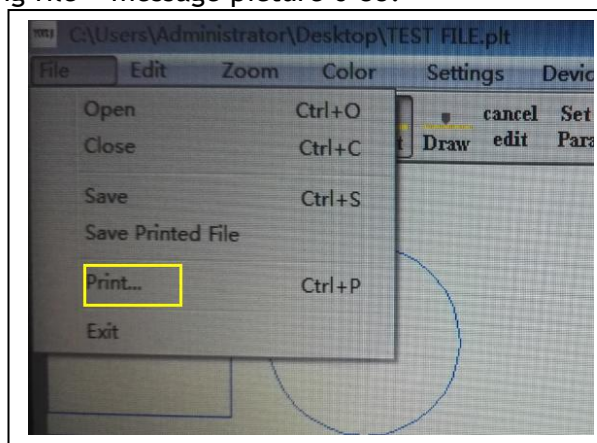
If you have slightly mismatching between starting point and ending point, you may easily resolve the problem by moving the starting point to top/bottom edge against feeding direction as below picture 6-33.



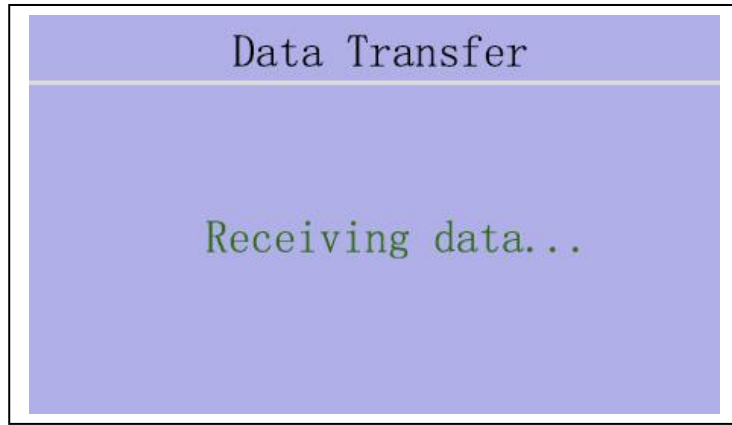
< PICTURE 6-33 >

Job Data Sending

When everything is ready, click "Print" icon or select file > Print menu as Picture 6-34. die-cutter's panel LCD will display "Receiving file " message picture 6-35.



< PICTURE 6-34 >



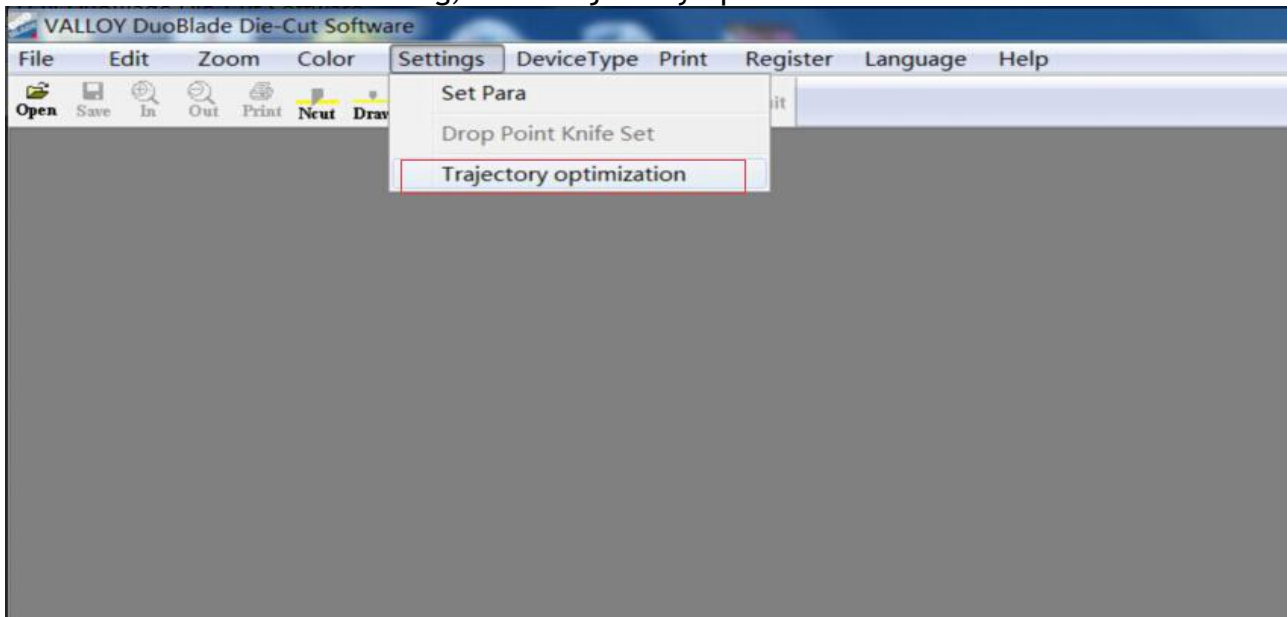
< PICTURE 6-35 >

6-6 Trajectory Optimization

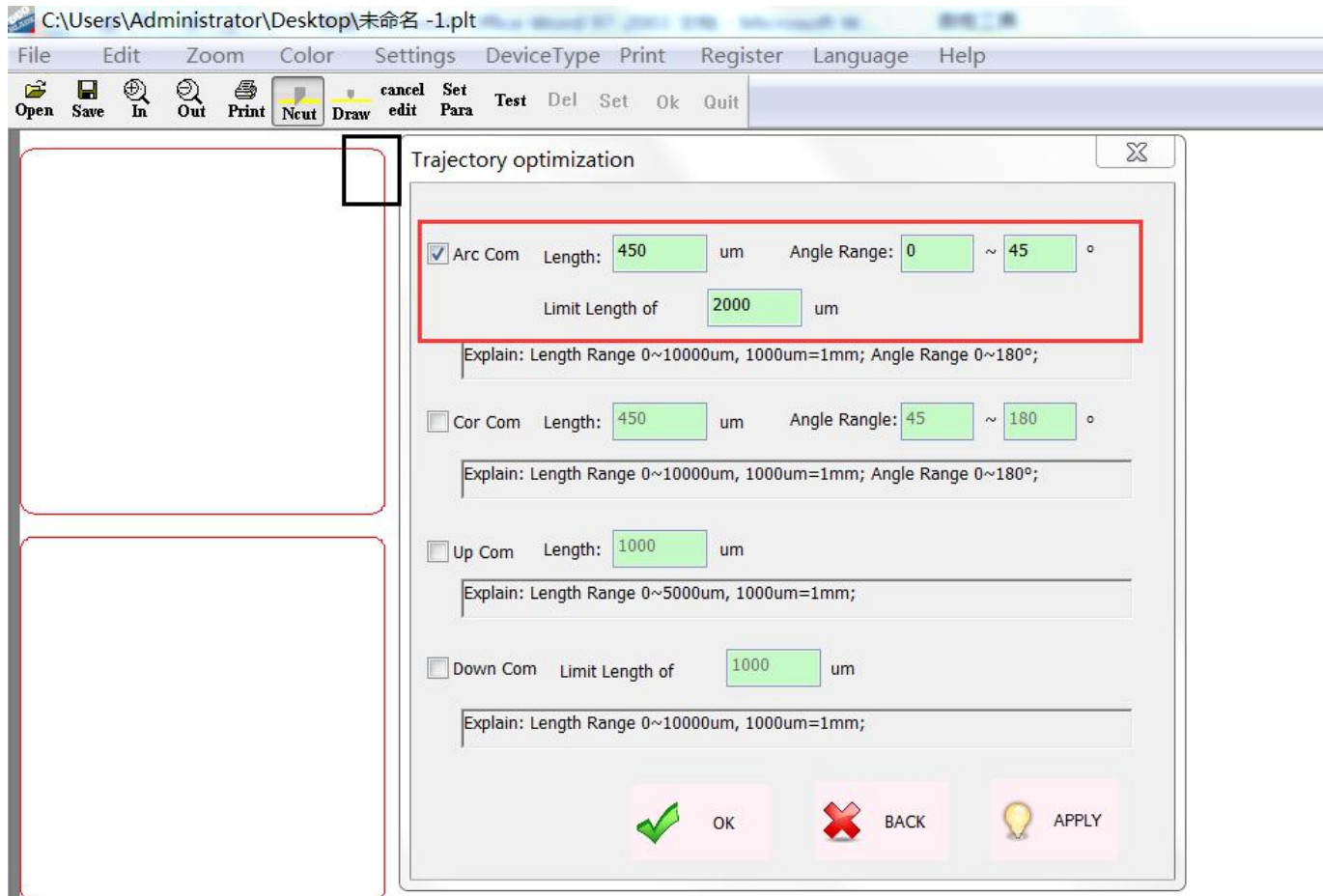
1. This function can adjust the Add length of round corner and right corner separately, the accuracy will be higher.
2. The add length in the software will be adjusted automatically, and software will register Add length before cut up and cut down.

Operation as following:

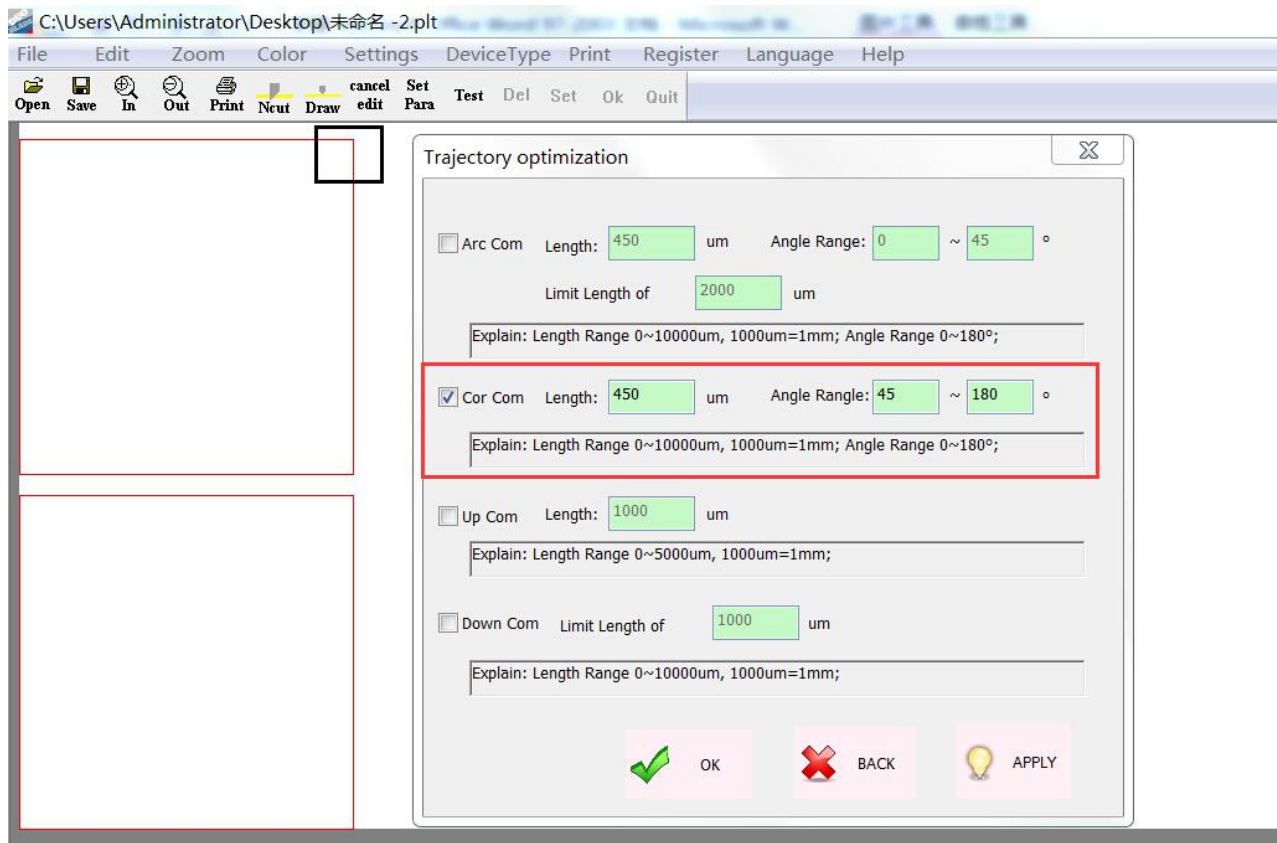
- 1) Open the software and click setting, click trajectory optimization.



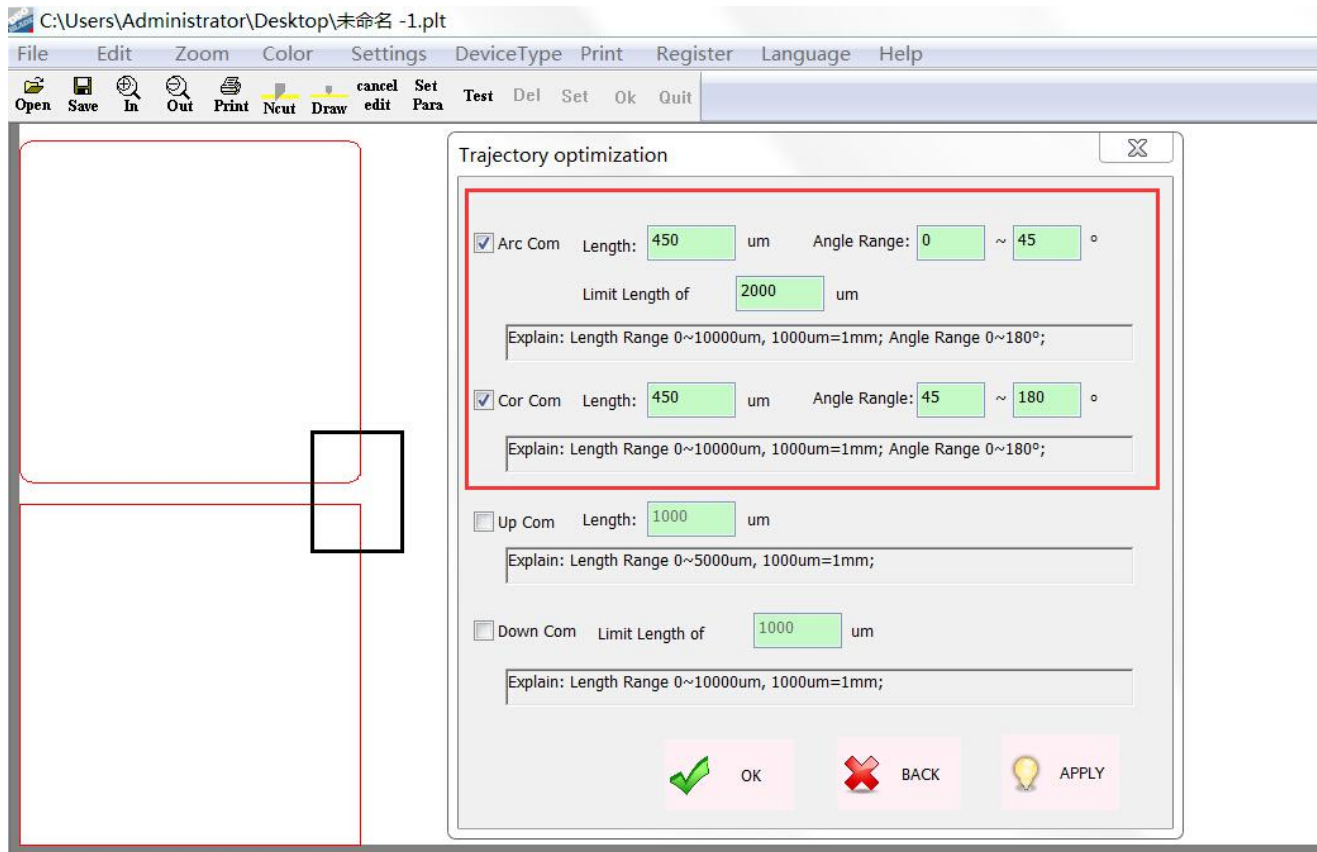
2) As picture: Label is round corner, set the value in the Red frame.






3) As Picture: Label is right corner, Set the value in the Red frame

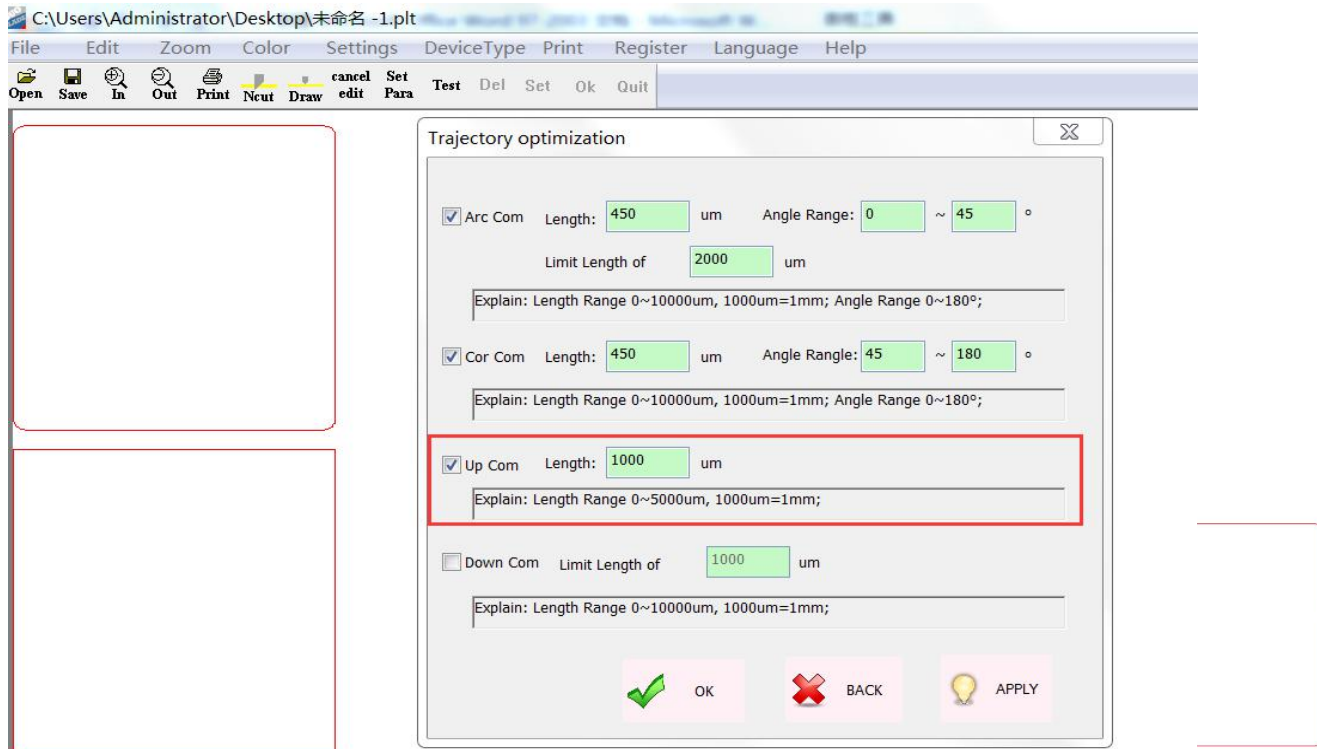




4) As Picture: There is round corner and right corner in the label. Setting Red frame.



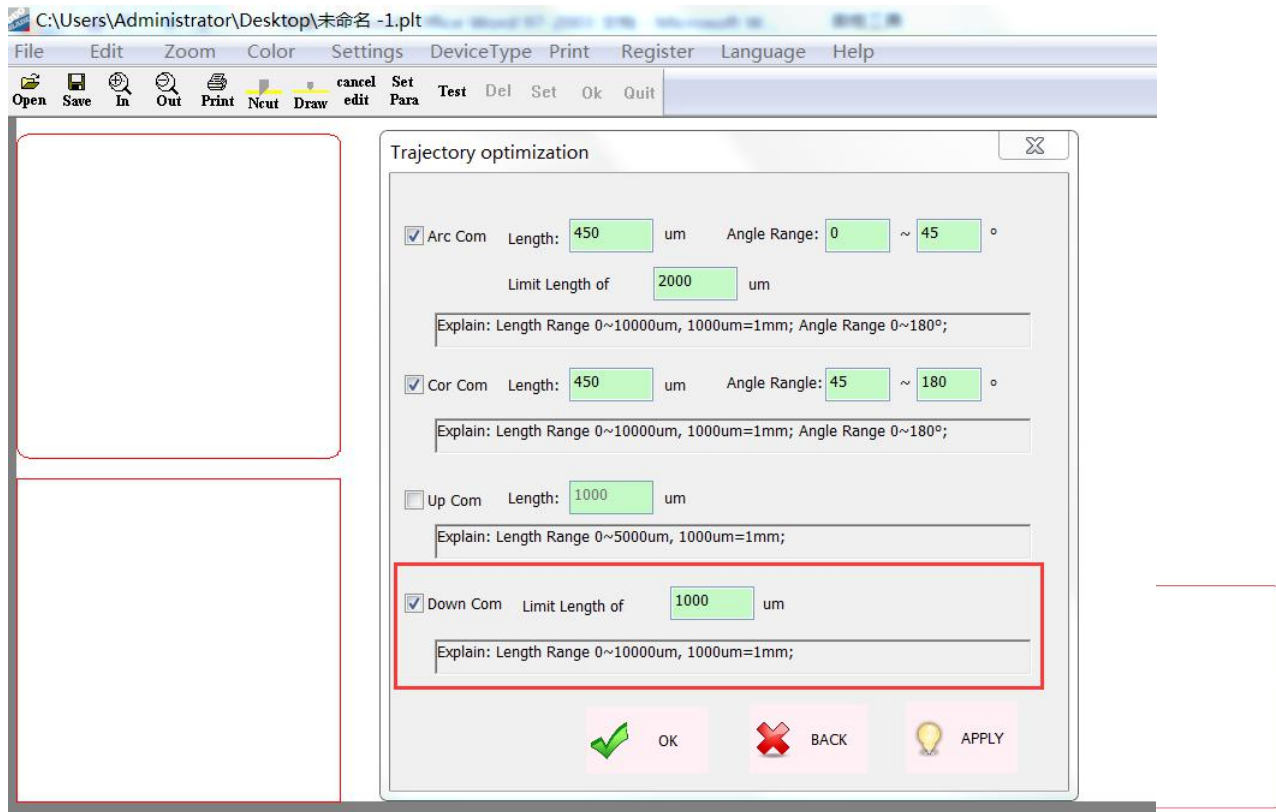
Remark: This setting is same as Turn Cut R in the panel, when you use this function, you need to set "0" of Turn Cut R in the panel, click  and click  .

5) As Picture: If Cut up point and Cut Down point is not connect , please set Up Corner in the Red Frame.



Remark: This is function is same as Add Length in the previous software. Click  and click .

6) As Picture: If Cut Down point and Cut Up point is not connect , please set Down Corner in the Red Frame.



Remark: This is function is same as Add Length in the previous software. Click  and click .

Chapter 7 Equipment Maintenance

Maintenance

Check the media feeding system parts every day before use. If there is some dust or debris , please clean shaft, roller and board with alcohol and gasoline, You must do the basic clean, the clean rate is depends on your use and the media. Dust will be block the die-cutting system moving. Caused the moving incorrect, even there is risk and effect the life-span of equipment.

General cleaning and maintenance procedures

1. Confirm machine is power off, and plug is out of socket.
2. Clean the dust and debris inside of machine.
3. Wipe the board with glass cleaner, use soft cloth to wipe dry.
4. Use soft cloth to wipe all of shaft and roller with alcohol. There are three set moving shaft on the board. There is V trough in the X directions, two sets moving shaft in the side of Y direction.
5. Must clean wheel , the there is dust or debris in the wheel, the moving system will be unbalance. After clean moving wheel, you must use cotton swab with alcohol to put on wheel, and move the die-cutter system, it can clean wheel and slide as well.
6. Adjust tense force of belt regularly , there 2 pcs in X direction, one in Y direction on the board,. There are two screws to fixed belt both slide side. Fixed rotate in clockwise, loosed rotate in anticlockwise.

Troubleshooting

Panel error info	Issue	Solution
CHECK FAIL	Error communication of panel and main board	<ul style="list-style-type: none"> ➤ Turn off machine and restart . ➤ Check your machine and power supply are grounding. ➤ Check voltage of power supply is stable. ➤ Check the main board and panel board was burn. If can't solve this problem, please contact VICUT.
SET FAIL	Error communication of panel and main board	<ul style="list-style-type: none"> ➤ The panel board is not match the main board. ➤ Other equipment block the signal. ➤ If you can't solve this problem, please contact VICUT.
Resetting	Resetting sensor error.	<p>Check resetting sensor of XY directions, use metal to touch sensor, if the light is on, check the position of board, and adjust the position.</p> <p>If it still problem, please contact VICUT.</p>
Error when open the serial port	Communication of PC and machine is error.	<p>Check the connection wire, re-insert the port.</p> <p>Check the PC port and software port are ok.</p>
Machine lock	To the period of testing	Please contact VICUT

Common troubleshooting

Problem	Reason and Solution
The cutting depth is different, some backing sheet is cut, and some paper can't cut	<ol style="list-style-type: none"> 1. The length of blade point is too long: Adjust the length of point to 2/3 of paper. Confirm can't cut backing sheet, adjust the pressure of blade, and confirm paper can be cut correctly. 2. If PVC cutting board has been cut one line, or new board is not smooth, or board is not level, please adjust the board in the level.
The corner of label is warping. Not smooth.	<ol style="list-style-type: none"> 1. The length of blade point is too long, please adjust. 2. The blade is wearied, please replace blade
Label shape is not correct and not complete closed.	<ol style="list-style-type: none"> 1. Pressure of blade is too heavy, or the length of blade pointed it too long, or PVC board is dirty, or PVC board is too soft. Cause the paper move when cutting. 2. The XY direction belt too tight, Or gear of motor shaft is loosed, caused die-cutter system moving wrong. 3. If only not closed, you need to set the value of scale in the software.
Die-cutter system move in wrong and cutting in wrong	<ol style="list-style-type: none"> 1. Your file is not set correctly in software. 2. Output file is not complete. 3. Software is damaged or computer is virus. 4. some electric welding close to machine, or wireless\Equipment \and other interfere this machine.
Media feed incorrect	<ol style="list-style-type: none"> 1. Media roller is installed incorrectly. 2. PVC board is too dirty, and glue on that, the side of media moving is not stable. caused media feed in the left or right. 3. The pressure The Main feeding roller and laminating roller are unbalance.
Track mark is not correct	<ol style="list-style-type: none"> 1. The color of black mark and paper is very similar, and sensibility is low, please adjust of sensibility of sensor. 2. The media sides is not smooth, can't track mark correctly.
Track length is not correct	<ol style="list-style-type: none"> 1. The color of black mark and paper is very similar, and sensibility is low, please adjust of sensibility of sensor.

	<ol style="list-style-type: none"> 2. The media sides is not smooth, can't track mark correctly. 3. Media feed incorrect (pls reference Media feed incorrect.)
Rewinding incorrect	<ol style="list-style-type: none"> 1. Media installation is incorrect 2. PVC board is too dirty, and glue on that, the side of media moving is not stable. Caused media feed in the left or right. 3. The pressure The Main feeding roller and laminating roller are unbalance. 4. Adjust sensor system is not effect, or system move to limited position. 5. The pressure of Rewinding tense shaft is unbalance. Adjust the pressure.
Waste removing incorrect	<ol style="list-style-type: none"> 1. Paper is not cut 3. Shape is not closed. 4. Adjust the angle of removing, angle is wide, removing will be good. 4. Adjust the speed and pressure of shaft, if speed is high, the pressure will be strong, the waste will be break.

Notice for Warranty

Dear User,

Thank you very much for your choose our products.

We provide warranty to our user when you buy our products, please contact your local distributor or dealer to get this warranty period.

In order to provide good service to you, we must ask your attention as following clause which we don't assume the responsibility and quality assurance.

- If you install, storage, use and operation this equipment incorrect
- You disassemble equipment and change the assembly without our permit.
- The people who haven't been trained and repair this equipment.
- You use high - consumable parts from other supplier.

ANHUI WILLIAM (VICUT) CNC TECHNOLOGY CO., LTD.

Address: RM1602, Vienna Garden, Shushan District, Hefei, China

Tel: 0086-65774134 Email: vivien@vicut.cn

Website: www.cncvicut.com