



LabelExpress / DecalExpress

User Manual



v.9.0

www.GCCworld.com



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Dear Sir / Madam,

Thank you for choosing GCC and the LABELEXPRESS/DECALEXPRESS. You can be assured that this machine meets the highest safety standards while using technological innovations shared by no other digital laser finisher. LABELEXPRESS/DECALEXPRESS is backed by GCC, a truly international company that is dedicated to help your business grow.

We at GCC are proud to introduce the LABELEXPRESS/DECALEXPRESS, our most technologically advanced laser label cutter to date. This easy to operate machine has been designed with quality, productivity, and safety in mind. With innovations like SmartCONTROL Label™ and outstanding quality with high productivity, the LABELEXPRESS/DECALEXPRESS is clearly on the cutting edge of all laser systems. GCC understands that a creative technical background is the key to successful growth in the ever-changing information economy. We have a strong team of R&D experts who propel our company to new heights. From product development to manufacturing, our engineers are dedicated to innovation and quality.

Guiding our solid technical base is a world-class management team. At GCC, our leaders bring together marketing, technical support, research development and distribution experts to create an international network to meet your demands. Over the years, this network has been able to span throughout the globe. Our technical support staff is committed to provide you with impeccable service, and when your business is ready to grow, our team will be there!

Sincerely,
Leonard Shih
President of G.C.C.

Table of Contents

Chapter 1	Safety	1
1.1	Principles of a CO ₂ Laser.....	2
1.2	Safety Ratings	2
1.3	The safety interlock System	2
1.4	The safety Labels	3
1.5	Safety Measures	7
1.5.1	General Safety	7
1.5.2	Safety Notice for Class 4 Machine.....	9
1.6	Operating Environment.....	10
Chapter 2	Unpacking & Contents	12
2.1	Unloading and Unpacking	12
2.2	Contents and Accessories Checklist.....	18
Chapter 3	Mechanical Overview.....	19
3.1	LABEL EXPRESS Overview	20
3.1.1	Front View.....	20
3.1.2	Top View.....	21
3.1.3	Right (Profile) View	21
3.1.4	Left (Profile) View	22
3.1.5	Rear View	23
3.2	DECAL EXPRESS Overview.....	24
3.2.1	Front View	24
3.2.2	Top View.....	25
3.2.3	Right (Profile) View	25
3.2.4	Left (Profile) View	26
3.2.5	Rear View.....	27
3.3	DECAL EXPRESS – ECO Version Overview	28
3.3.1	Front View	28
3.3.2	Side View.....	28
Chapter 4	Setup and Installation.....	29
4.1	Machine Setup (for LABEL EXPRESS & DECAL EXPRESS).....	30
4.1.1	Roll Media Installation	30
4.1.2	Media Support Bracket of the Waste Drawer (DECAL EXPRESS only) 42	
4.1.3	Powering Up the Machine	44
4.1.4	Connecting the Computer.....	44



4.1.5	Installation for loading roll media (for DECAL EXPRESS – ECO version)	45
4.1.6	Instruction of Damper Roller	47
4.2	Software Setup	48
4.2.1	Recommended Computer Configuration	49
4.2.2	SmartCONTROL™ Label Installation	49
4.2.3	SmartCONTROL™ Label Uninstallation	51
Chapter 5	Operating the LABELEXPRESS/DECALEXPRESS	53
5.1	Using the Hardware	54
5.1.1	Control Panel Overview	54
5.1.2	Graphic Control Panel Navigation Chart	57
5.1.3	Graphic Control Panel Function Pages	57
5.2	SmartCONTROL™ Introduction	72
5.2.1	Reminder Window	72
5.2.2	Welcome Window	72
5.2.3	Main Window	73
5.2.4	Processed Condition Setup	75
5.2.5	Output	79
5.3	SmartCONTROL™ Software Label Function	80
5.3.1	Running the SmartCONTROL™	80
5.3.2	SmartCONTROL™ Label Main Window	82
5.3.3	SmartCONTROL™ Label Function	83
5.3.4	Calibrating SmartCONTROL™ Label	87
5.3.5	Convert and Import File	90
5.3.6	Operating SmartCONTROL™ Label	97
5.3.7	CCD Light Adjustment	105
5.3.8	LabelExpress / DecalExpress Sample Book Suggested Parameters	107
Chapter 6	Basic Maintenance	109
6.1	Suggested Cleaning and Maintenance Supplies	110
6.2	Maintaining the Work area and Motion System	111
6.2.1	Cleaning the Work Area and Motion System	111
6.2.2	Cleaning the Grid Drum	112
6.2.3	Cleaning the Pinch Rollers	112
6.2.4	Cleaning the Clamps and Waste Separation Bar	113
6.3	Cleaning the Optics System	113
6.3.1	Removing the Mirrors	113
6.3.2	Cleaning the Mirrors	114
6.3.3	Removing and Cleaning the Focal Lens	115
Chapter 7	Appendix	116



7.1	GCC LABEL EXPRESS Specification Sheet	117
7.2	GCC DECAL EXPRESS Specification Sheet.....	118

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Chapter 1

Safety

Principles of Laser

Safety Ratings

Safety Labels

The Safety Interlock System

Safety Measures

Operating Environment

1.1 Principles of a CO₂ Laser

LASER is the acronym for Light Amplification by Stimulated Emission of Radiation. A CO₂ laser works by electrically stimulating the molecules within a carbon dioxide gas mixture. When focused through a lens, this highly-intense and invisible beam will vaporize many materials. Depending on the speed and intensity of the projected beam, a CO₂ laser may be used to engrave or cut through a wide variety of materials.

1.2 Safety Ratings

The LABELXPRESS/DECALEXPRESS is equipped with a sealed carbon-dioxide laser that emits intense and invisible laser radiation with a wavelength of 10.6 microns in the infrared spectrum. The laser system is designated as a Class 4 laser device, meaning that the system is equipped with key safety features and an enclosed laser head to completely contain the laser under normal use. One of the key safety features found on the LABELXPRESS/DECALEXPRESS is a Class 4 red beam safety guidance pointer (similar to a laser-pointer presentation pen) allowing the operator to see the exact location where the laser beam will fire.

1.3 The safety interlock System

The laser system is equipped with a safety interlock system utilizing magnetic sensors on the front access doors, laser-activation and door LED lights on the control panel. The magnetic sensors will deactivate the laser when the door is open. At this time, the “door” LED light found on the control panel will illuminate, indicating an open or improperly closed door. When the laser is in operation, the “laser” LED will illuminate to inform the operator that the laser is activated. If at any time, any of the access doors are open and the “laser” LED is illuminated, IMMEDIATELY unplug the laser system and contact GCC service team for technical support and maintenance instructions.



WARNING

- DO NOT operate the laser system if any component of the safety system is malfunctioning.
- DO NOT attempt to remove or modify any component of the safety interlock system.

1.4 The safety Labels





According to CDRH standards, all fixed or removable covers that allow access to a laser beam must have the appropriate laser warning labels attached to them. These warning labels must be clearly visible to the operator prior to removing the cover. Additional labels must be applied inside of the machine and be visible in the event the covers are removed. A label clearly displaying the manufacturer's name, date of manufacture, description of product, model number, serial number, and compliance statement must be attached to the outside of the machine.





In compliance with CDRH standards, the required warning labels are affixed at the time of manufacture to the GCC LABELXPRESS/DECALEXPRESS Series in the appropriate locations. These labels are not to be modified in any way or removed for any reason. Please familiarize yourself with the specific labels and their locations on the machine. Below is a list of all the safety labels and their locations on the machine.





Product Label

This label is located at the left side of the machine. All the product information such as Serial Number, Model Numbers, Laser Power and Electric power can be found here. Before requiring any tech support, always provide service person the information on this label.

LABEL EXPRESS / DECAL EXPRESS

		Serial Number XXXXXX
Manufacturer	Great Computer Corporation	
Product	Laser Label System	
Model	LabelExpress	
ModelNumber	LE15-20V93	
Wavelength	9.23-9.31 μm	
Power	CO ₂ 20W	
Input	100-240VAC, 50-60Hz, Max 10A	
Manufactured	May 2016	
Class IV Laser Product Complies with EN60825-1:2014 Class IV Laser Product Complies with CDRH Made in Taiwan 4F-1., No.236, Fude 2nd Rd., Xizhi Dist., New Taipei City 22151, Taiwan		
  		

		Serial Number XXXXXX
Manufacturer	Great Computer Corporation	
Product	Laser Label System	
Model	LabelExpress	
ModelNumber	LE15-30V	
Wavelength	10.57-10.63 μm	
Power	CO ₂ 30W	
Input	100-240VAC, 50-60Hz, Max 10A	
Manufactured	May 2016	
Class IV Laser Product Complies with EN60825-1:2014 Class IV Laser Product Complies with CDRH Made in Taiwan 4F-1., No.236, Fude 2nd Rd., Xizhi Dist., New Taipei City 22151, Taiwan		
  		

		Serial Number
Manufacturer	Great Computer Corporation	
Product	Laser Label System	
Model	LabelExpress	
ModelNumber	LE15-25V102	
Wavelength	10.2~10.3 μm	
Power	CO ₂ 25W	
Input	100-240VAC, 50-60Hz, Max 10A	
Manufactured	May 2016	
Class IV Laser Product Complies with EN60825-1:2014 Class IV Laser Product Complies with CDRH Made in Taiwan 4F-1., No.236, Fude 2nd Rd., Xizhi Dist., New Taipei City 22151, Taiwan		
  		

GCC		Serial Number XXXXXX
Manufacturer	Great Computer Corporation	
Product	Laser Label System	
Model	DecalExpress	
ModelNumber	DE24-20V93	
Wavelength	9.23-9.31 μm	
Power	CO ₂ 20W	
Input	100-240VAC, 50-60Hz, Max 10A	
Manufactured	May 2016	
Class IV Laser Product Complies with EN60825-1:2014 Class IV Laser Product Complies with CDRH Made in Taiwan 4F-1., No.236, Fude 2nd Rd., Xizhi Dist., New Taipei City 22151, Taiwan		

GCC		Serial Number XXXXXX
Manufacturer	Great Computer Corporation	
Product	Laser Label System	
Model	DecalExpress	
ModelNumber	DE24-30V	
Wavelength	10.57-10.63 μm	
Power	CO ₂ 30W	
Input	100-240VAC, 50-60Hz, Max 10A	
Manufactured	May 2016	
Class IV Laser Product Complies with EN60825-1:2014 Class IV Laser Product Complies with CDRH Made in Taiwan 4F-1., No.236, Fude 2nd Rd., Xizhi Dist., New Taipei City 22151, Taiwan		

GCC		Serial Number
Manufacturer	Great Computer Corporation	
Product	Laser Label System	
Model	DecalExpress	
ModelNumber	DE24- 25Vi102	
Wavelength	10.2~10.3 μm	
Power	CO ₂ 25W	
Input	100-240VAC, 50-60Hz, Max 10A	
Manufactured	May 2016	
Class IV Laser Product Complies with EN60825-1:2014 Class IV Laser Product Complies with CDRH Made in Taiwan 4F-1., No.236, Fude 2nd Rd., Xizhi Dist., New Taipei City 22151, Taiwan		

GCC		Serial Number
Manufacturer	Great Computer Corporation	
Product	Laser Label System	
Model	DecalExpress	
ModelNumber	DE24-20V93 (ECO)	
Wavelength	9.23-9.31 μm	
Power	CO ₂ 20W	
Input	100-240VAC, 50-60Hz, Max 10A	
Manufactured	May 2016	
Class IV Laser Product Complies with EN60825-1:2014 Class IV Laser Product Complies with CDRH Made in Taiwan 4F-1., No.236, Fude 2nd Rd., Xizhi Dist., New Taipei City 22151, Taiwan		

GCC		Serial Number
Manufacturer	Great Computer Corporation	
Product	Laser Label System	
Model	DecalExpress	
ModelNumber	DE24-30V (ECO)	
Wavelength	10.57-10.63 μm	
Power	CO ₂ 30W	
Input	100-240VAC, 50-60Hz, Max 10A	
Manufactured	May 2016	
Class IV Laser Product Complies with EN60825-1:2014 Class IV Laser Product Complies with CDRH Made in Taiwan 4F-1., No.236, Fude 2nd Rd., Xizhi Dist., New Taipei City 22151, Taiwan		

GCC		Serial Number
Manufacturer	Great Computer Corporation	
Product	Laser Label System	
Model	DecalExpress	
ModelNumber	DE24-25Vi102(ECO)	
Wavelength	10.2-10.3 μm	
Power	CO ₂ 25W	
Input	100-240VAC, 50-60Hz, Max 10A	
Manufactured	May 2016	
Class IV Laser Product Complies with EN60825-1:2014 Class IV Laser Product Complies with CDRH Made in Taiwan 4F-1., No.236, Fude 2nd Rd., Xizhi Dist., New Taipei City 22151, Taiwan		

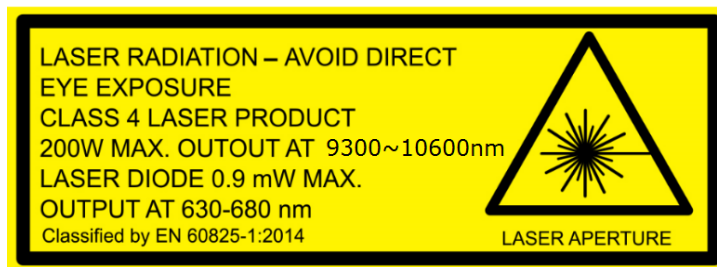
CDRH Label

This label indicates the class level of CDRH.



CE Label

This label indicates the class level of CE.



Warning Label

Warning Label shows all the necessary information to be aware of during operation.



Laser Path Warning Label

The machines are very safe under normal functioning conditions. However, in case of any accident, Laser Path Warning Label will be affixed on the possible laser path. When operators are nearby these paths, they should be careful of the possible injury while the machine is operating.



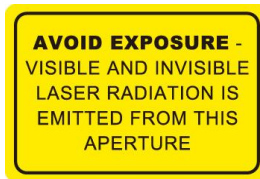
Emergency Stop Label

This label indicates the emergency stop button. You can find this label on the right upper side of the machine.

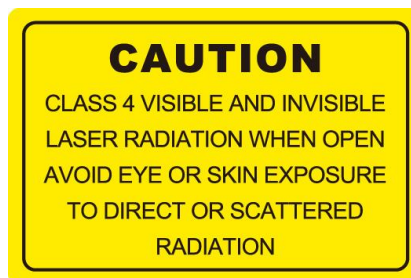


Aperture warning stickers (mirror):

This label indicates the laser path. Normally you can find this label inside of machine or laser exit. Please take extra caution of this area when you conduct maintenance or operate machine.



Door open warning labels



Protection Window Label

This label indicates the protection wavelength. You can find this label in the lower right corner of window.



Pinch Point/Entanglement Hazard Label

Avoid hands being engaged in rotating gears



Cutting Hazard Warning Label

Avoid hands being cut severely by sharp blade.



Laser Hazard Warning Label

Avoid exposure laser radiation is emitted from this aperture.



1.5 Safety Measures

1.5.1 General Safety

- **LASER RADIATION WARNING:** Exposure to laser radiation may result in burns to the skin and can cause severe eye damage. Proper use and regular maintenance of this machine is important to the safety of all people in the immediate area.
- Prior to operation, carefully read and familiarize yourself with the warning labels located on both your laser system and in this manual.
- Never leave the machine unattended during the laser cutting, engraving, and marking process. A remote connection to the laser system across a network does not void the requirement for constant supervision over the laser firing process.
- The laser may ignite combustible materials. A well-maintained fire extinguisher

and operational smoke or fire detector should be kept in the vicinity of the machine.

- Caution—Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
- Resulting debris from laser cutting are very dangerous and may cause fire hazard. DO NOT leave debris and scraps inside laser machine after job finished. Always keep machine clean after job finished.



WARNING

- Resulting debris from laser processing are very dangerous and may cause fire hazard.
- **DO NOT** leave debris and scraps inside laser machine after job finished. Must keep machine clean after job finished.

NOTE

Each Laser machine is shipped with a single pair of safety goggles. If additional safety goggles are required, please contact GCC directly or an authorized GCC distributor. If you wish to purchase one on your own, please make sure the safety goggles meet these requirements:

9,300-10,600nm OD5+

Visible Light Transmission: 92.9%

- Always wear safety goggles when the laser system is in operation. Reflective materials may partially-reflect some of the invisible laser radiation. Severe eye damage may occur if proper safety goggles are not worn.
- Connect the machine to a properly grounded power outlet. Ensure the voltage of the power source is identical to the voltage of the machine.
- Do not open the laser access panel when the machine is plugged in.
- Do not attempt to modify or disassemble the laser module.
- Do not attempt to remove or modify any component of the machine's laser interlock safety system.

- Ensure the immediate work area of the machine is well-ventilated. Odors, vapors, and dust are by products generated during the laser engraving and cutting process. An exhaust system and vacuum cutting box are recommended. Please contact GCC or your local GCC distributor for more information.
- Do not work with heat-sensitive surfaces or materials that may generate toxic fumes, such as PVC and Teflon.
- Regularly clean and maintain your machine according to our cleaning and maintenance instructions in Chapter 6. Doing so will ensure your machine will operate effectively and safely over a long period of time.

1.5.2 Safety Notice for Class 4 Machine

When operating the laser system rating at Class 4, operators must wear goggles and follow the safety instructions to operate the machine.

Exposure to a Class 4 laser beam via direct radiation and indirect stray radiation may cause damage to both skin and eyes. Exposure to the Class 4 laser beam may cause ignition of combustible materials which can lead to a fire. A proper and well-maintained fire extinguisher should keep on hand next to the laser machine all the times.

A Class 4 laser system should be operated by trained individuals in areas dedicated to their use. Failsafe interlocks should be used to prevent unexpected entry into the controlled area, and access should be limited by the laser operator to persons who have been instructed as to the safety procedures and who are wearing proper laser protection eyewear when the laser is capable of emission.

The machine operator is responsible for providing information and safety protection to untrained personnel who may enter the laser controlled areas as visitors and should take all necessary protective measures to prevent the possible ignition or explosion of materials by the laser beam. A Class 4 laser system should be operated according to the following precautionary measures among others:

- The operator is obliged to appoint a **trained Laser Protection Officer** responsible for compliance with the relevant regulations.

- **Identify the danger zone** by installing **warning lights** and **warning signs** outside the area.
- **The danger zone must be secured against unauthorized access.**
- The operator of a Class 4 laser system should always **wear laser protection goggles** suitable for the laser wavelength in use and with optical density at least OD5+ within the danger zone.
- An additional warning light should also be installed in a visible location to warn the machine operator of any emerging laser radiation.

1.6 Operating Environment

Please follow the guidelines when considering a suitable location to set the LABELXPRESS/DECALEXPRESS Series. Improper work environment may lead to operational malfunction and/or unsafe working conditions. The LABELXPRESS/DECALEXPRESS Series should be placed and operated in a standard office-type environment.

- Avoid environments where the machine is exposed to high levels of dust, temperature (temperature exceeding 30°C or 85°F) or humidity (humidity exceeding 70% or where the ambient temperature is near the dew point).
- Avoid small, enclosed areas with poor ventilation.
- Avoid areas with high levels of noise and electrical noise.
- Designed to allow for rapid emergency egress
- Select a location that is large enough to accommodate the machine, an exhaust system, a computer and a work or storage table.
- Select a location in which the ambient temperature remains between 15°C and 30°C (60°F to 85°F).
- Select a location in which the relative humidity remains between 30% - 40%.
- Select a location in which there is a short, direct path to the fume exhaust system.
- Set the machine on a floor surface that is completely even.



- Make sure your smoke or fire detection system in the immediate area is functioning.
- Setup the machine to be apart from the wall for at least 60 cm (2 feet).

Chapter 2

Unpacking & Contents

Unloading and Unpacking

Contents and Accessories Checklist

2.1 Unloading and Unpacking

The LABELEXPRESS/DECALEXPRESS Series is shipped in one crate that contains the machine, the software, and all of the necessary accessories. The following section shows detailed step-by-step instructions for unpacking and assembly of the machine.



WARNING

More than one person may be needed when loading and unloading the shipping crate in order to avoid body injury or damage to the machine.

NOTE

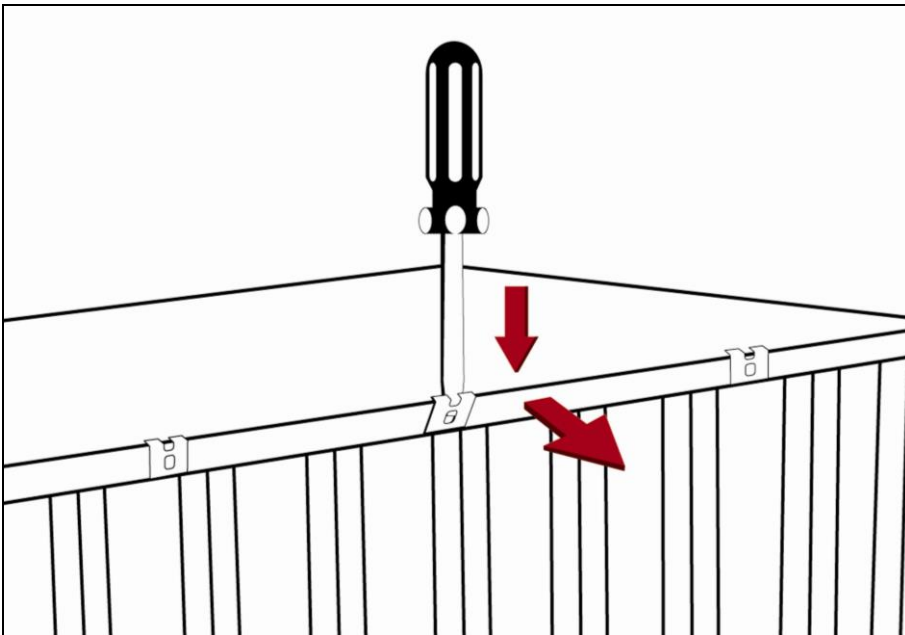
Please store the original shipping crate as it may be needed for transportation in the future.

Move the shipping crate close to the desired working location of the machine.

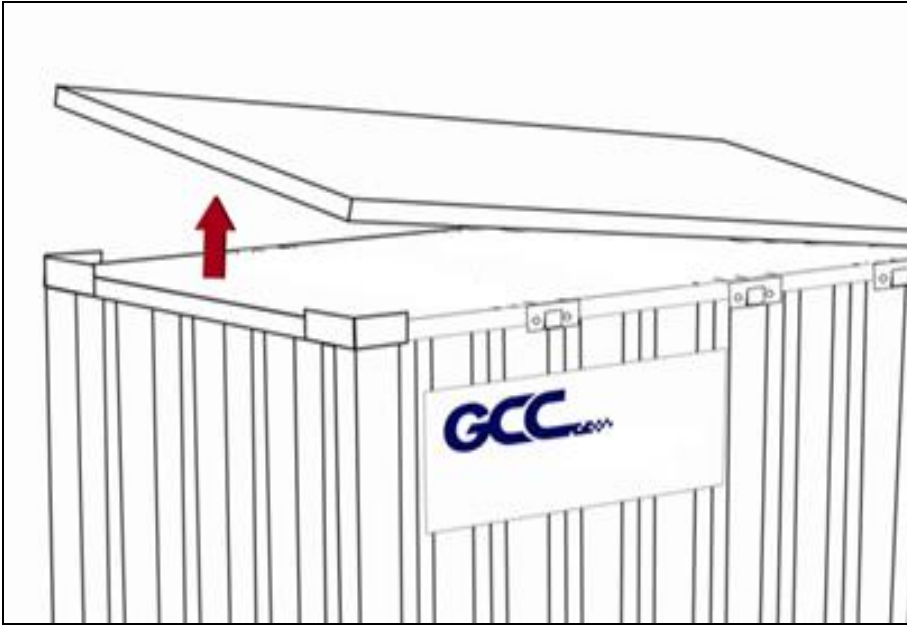
Unpack using the following steps.

NOTE: It requires minimum 2 people to move the machine and make sure there is at least 3 meters space to allow the LABEL EXPRESS/DECAL EXPRESS to be moved from the packing box to the working area. Make sure to move the LABEL EXPRESS/DECAL EXPRESS to the working area from the front side of the machine. The Front mark on the crate indicates the front side of the machine.

Step 1: Remove the 6 metal clips that secure the top panel to the crate by using a flathead screwdriver.



Step 2: Lift the top panel and remove it.



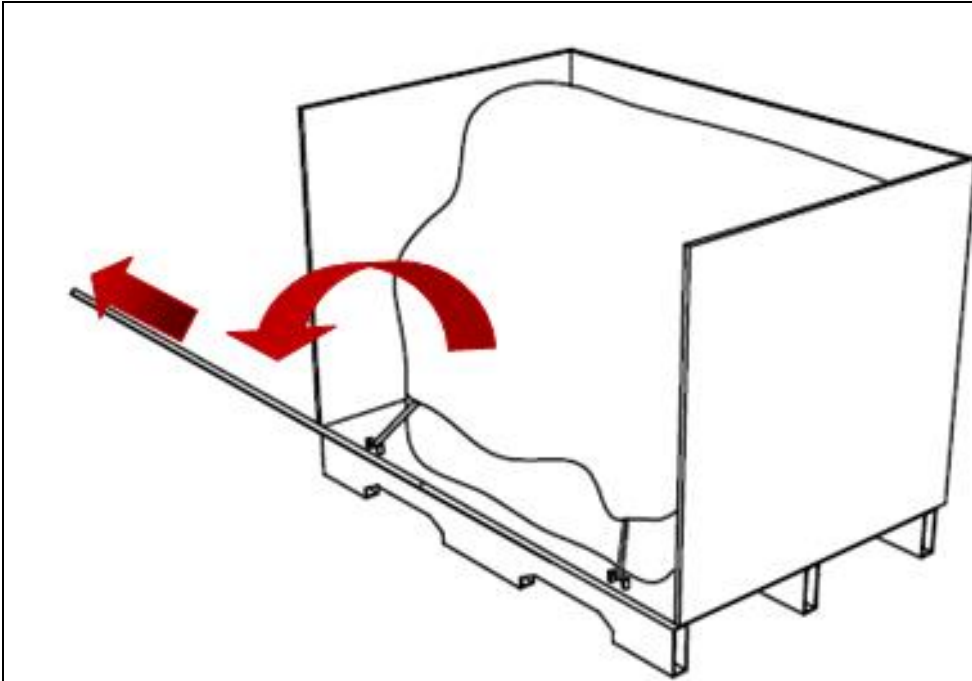
Step 3: Use a flathead screwdriver to remove the brackets on the four corners of the crate.



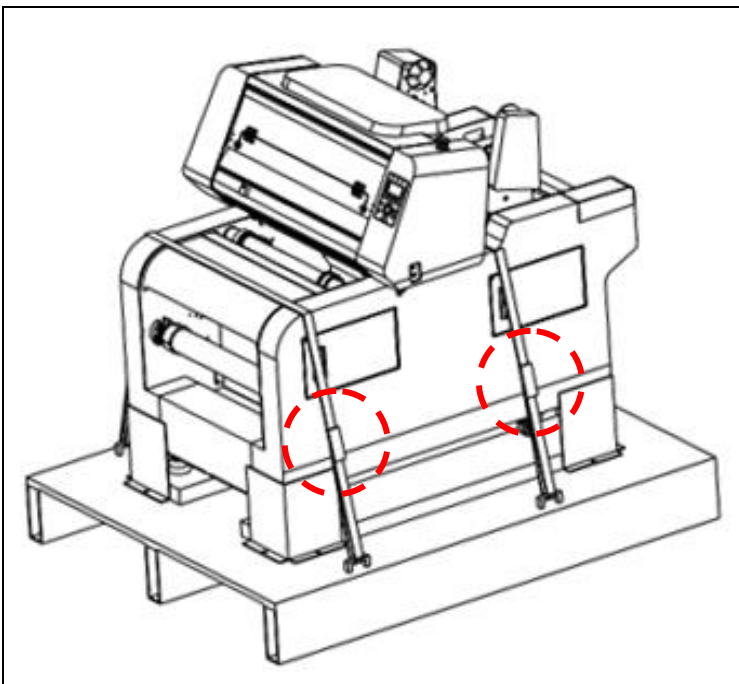
Step 5: Pull the front panel and lower it to an angle of about 45 degrees and then pull it away

from the crate. Do the same for the rear panel.

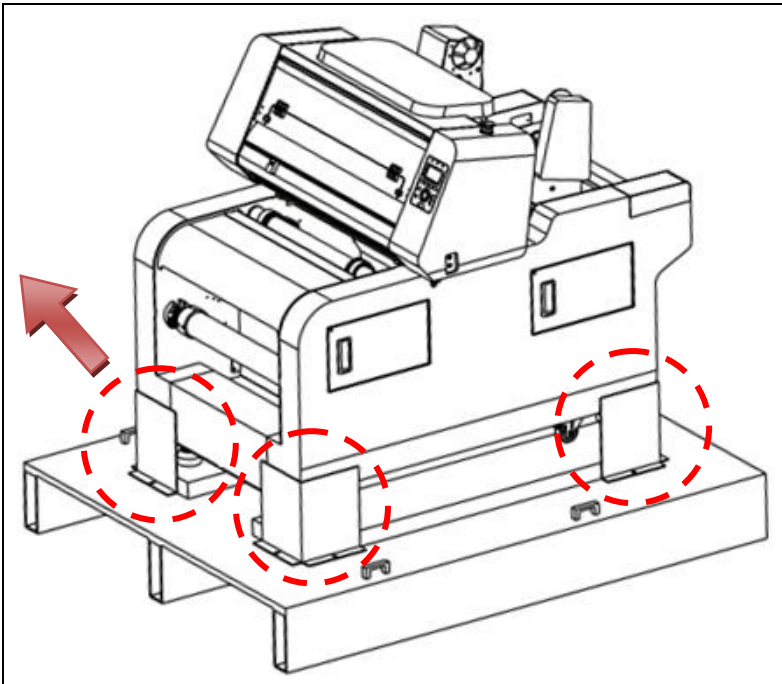
Remove the left and right panels in the same way after the front and rear panels have been removed.



Step 6: Unbuckle and remove the belts that holds the machine in place.

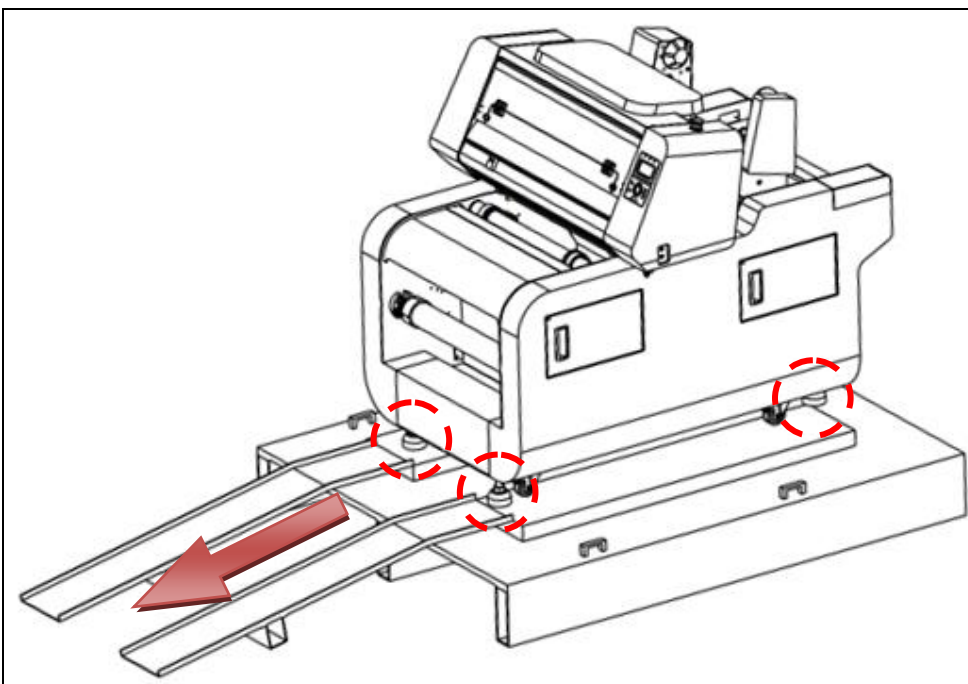


Step 7: Use a Phillips screwdriver to remove the brackets that holds the machine in place.

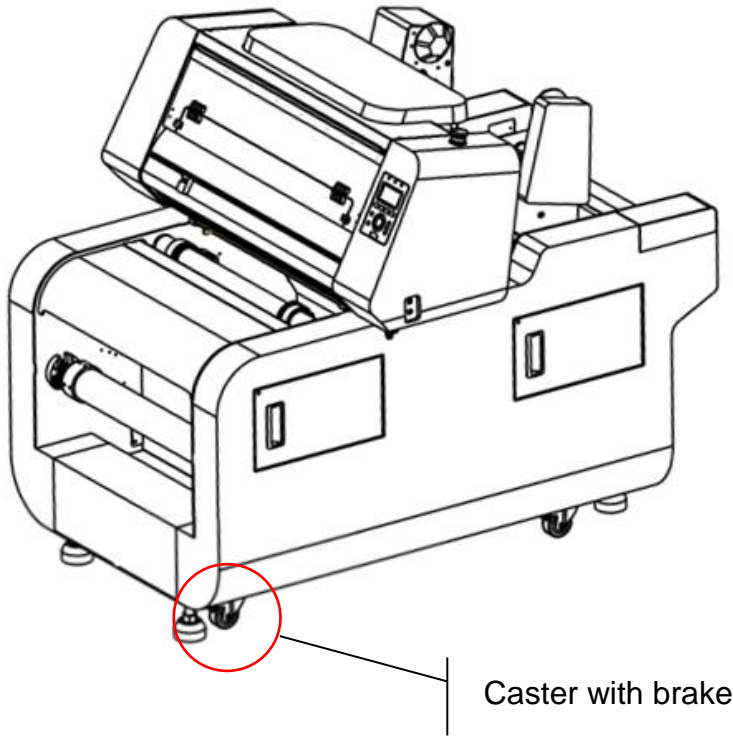


Step 8: Place the ramps as shown below and adjust the leg-glide to the uppermost position with a spanner. The machine can now be pushed off the base board via the ramps (The ramps are in a box within the crate).

NOTE: It requires minimum 2 people to move the machine.



Step 9: Fix the brake of caster (4 places) and LABELPRESS/DECALEXPRESS is ready to use.



2.2 Contents and Accessories Checklist

Please check to make sure that all of the following items are included within the shipping crate. If any of the following items are missing, immediately contact your local GCC distributor.

Checklist

Item	Unit
Installation CD set	1
GCC Promise Card Set	1
Lens cleaner	1
Lens cleaning paper	1
Cotton Bud (100 units/ package)	1
CO2 Goggles (LS-CD2-LB)	1
PS2 Grease	1
USB 2.0 Gilt A/B Type Cable 1.8M	2
1.5" & 2.0" Focus Tool	1
Left & Right clamps	1
Ventilation pipe set	1
Nozzle	1
Magnet	2
Inflatable stick (set)	1
AC Power Cable	2

Chapter 3

Mechanical Overview

[LABEL EXPRESS Overview](#)

[DECAL EXPRESS Overview](#)

[DECAL EXPRESS – ECO Version Overview](#)

Please take some time to familiarize yourself with this section regarding the mechanical

overview of the LABELPRESS/DECALEXPRESS Series. References will be made back to the different parts of the LABELPRESS/DECALEXPRESS Series in later sections.

3.1 LABEL EXPRESS Overview

3.1.1 Front View



*** Available in the model with Auto feeding base**

⚠ WARNING

Always keep the lock on both side of the front door locked. Visible and invisible laser radiation may be emitted from this aperture and hands may be injured by sharp objects or pinched by moving parts if the lock of front door is open.

3.1.2 Top View



3.1.3 Right (Profile) View



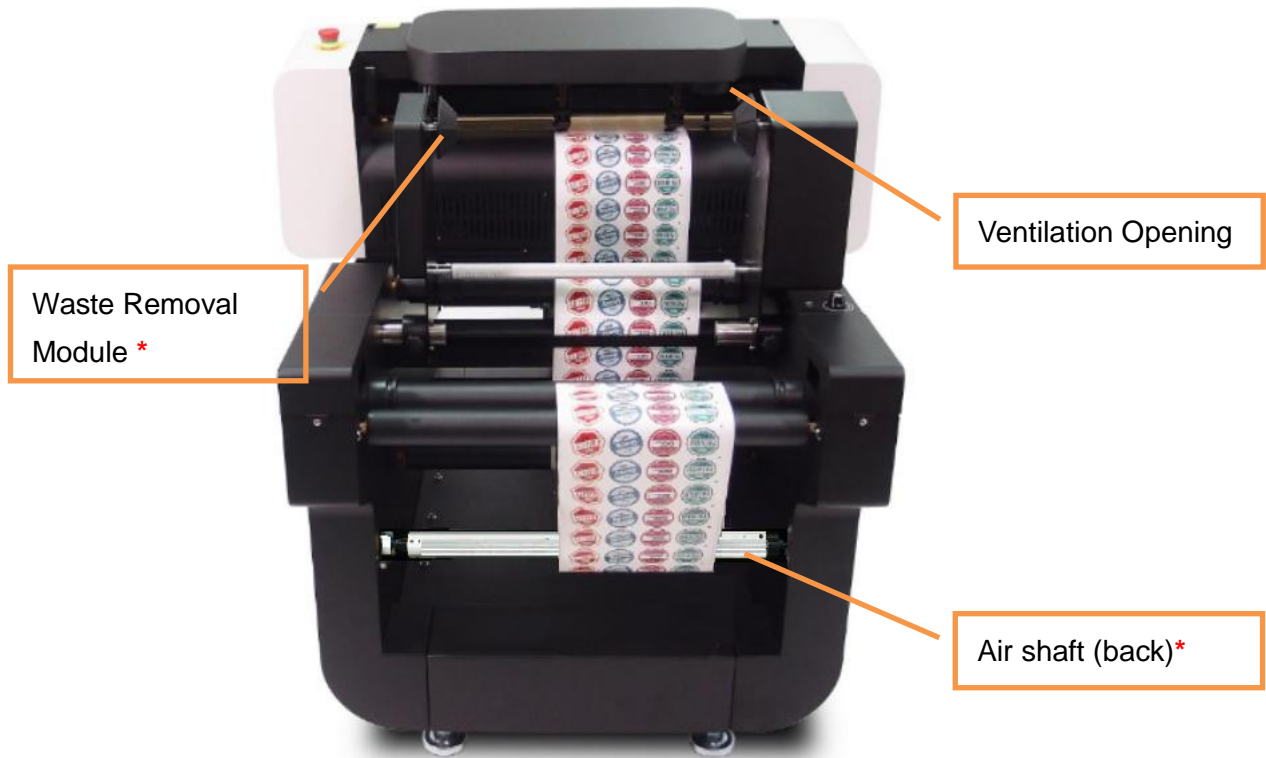
*** Available in the model with Auto feeding base**

3.1.4 Left (Profile) View



**** Available to install external Auto Feeding Control**

3.1.5 Rear View



*** Available in the model with Auto feeding base**




3.2 DECAL EXPRESS Overview

3.2.1 Front View



⚠ WARNING

Always keep the lock on both side of the front door locked. Visible and invisible laser radiation may be emitted from this aperture and hands may be injured by sharp objects or pinched by moving parts if the lock of front door is open.

3.2.2 Top View



3.2.3 Right (Profile) View

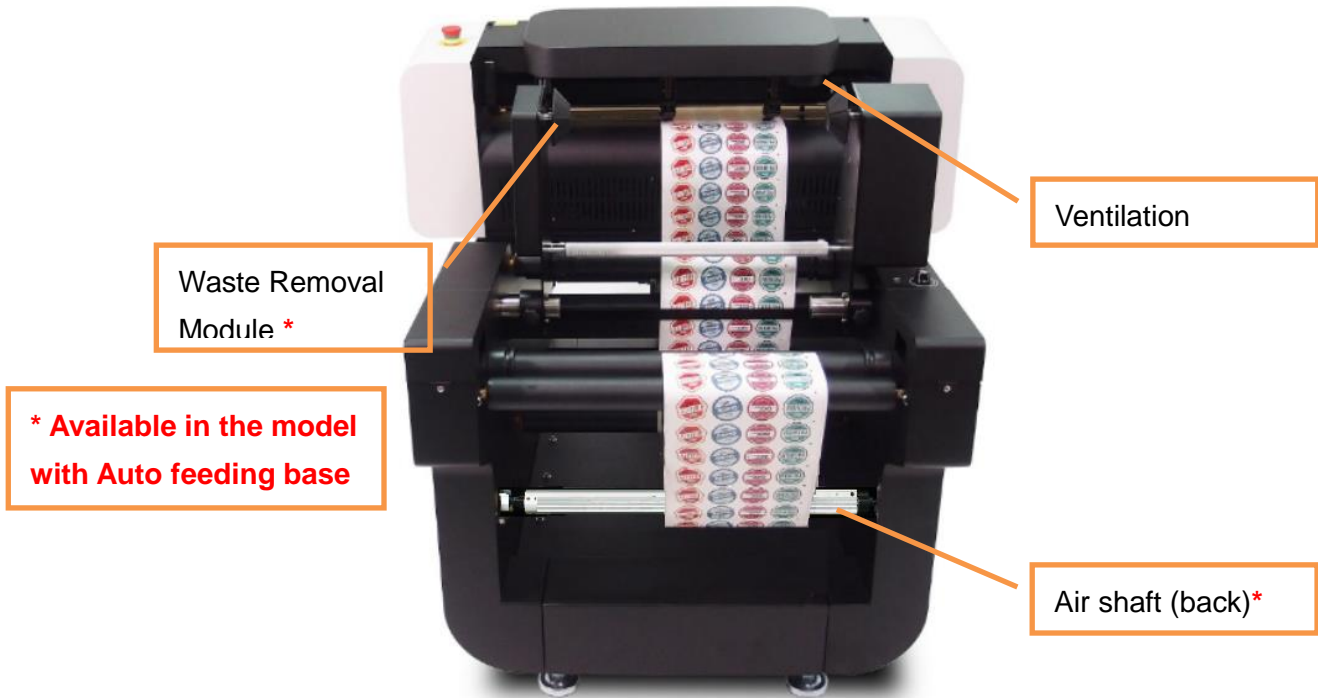


3.2.4 Left (Profile) View



**** Available to install external Auto Feeding Control**

3.2.5 Rear View



3.3 DECAL EXPRESS – ECO Version Overview

3.3.1 Front View



3.3.2 Side View



Chapter 4

Setup and Installation

[Machine Setup](#)

[Software Setup](#)

4.1 Machine Setup (for LABEL EXPRESS & DECAL EXPRESS)

4.1.1 Roll Media Installation

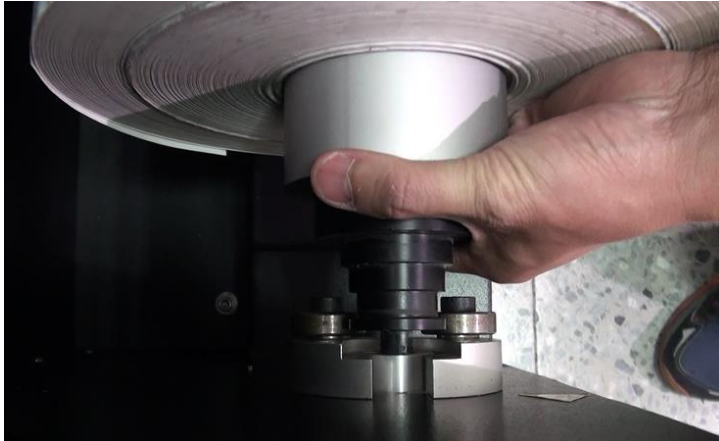
Installation of airshaft and waste removal module

Step 1 Insert the airshaft into the media core and expand it to firmly grab the media.

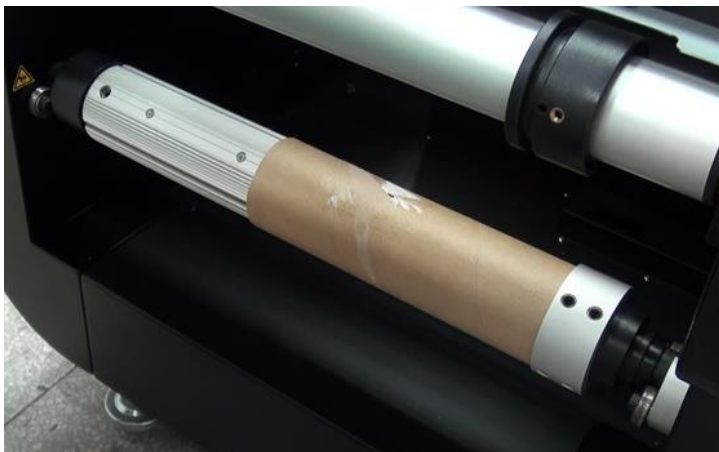


Step 2 Secure the airshaft with media on the front side of the machine.

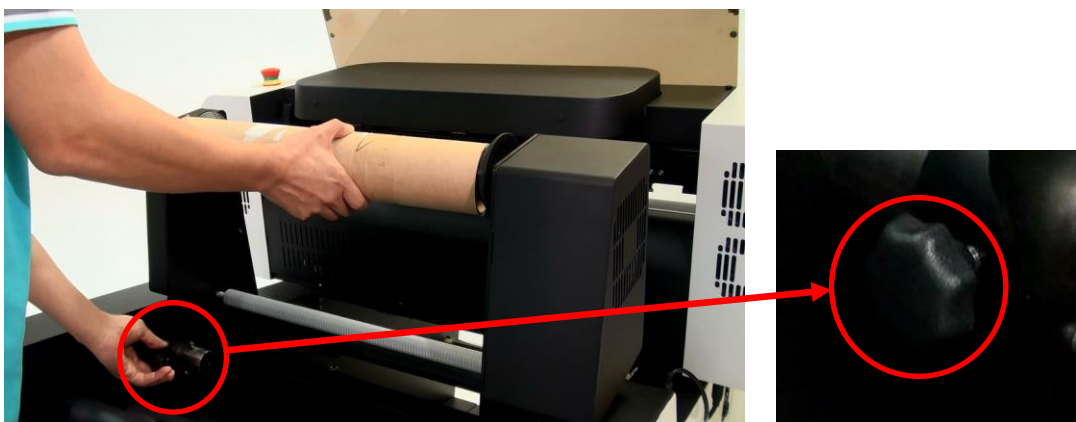




Step 3 Do the same to assemble another airshaft and install it to the machine on the rear side.



Step 4 Put the media core to waste removal module and use the knob to secure the media core in place.



Installation of roll media

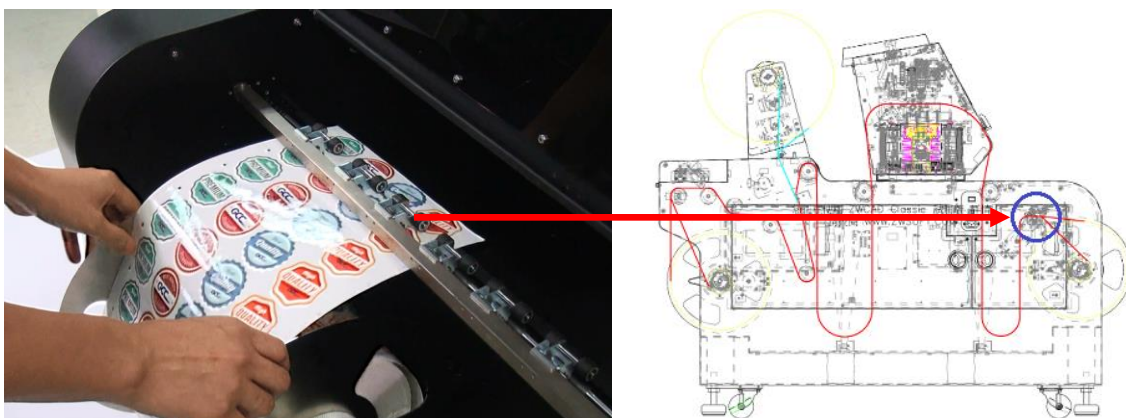
Step 1 Pull up the lever to release the front pinch rollers.



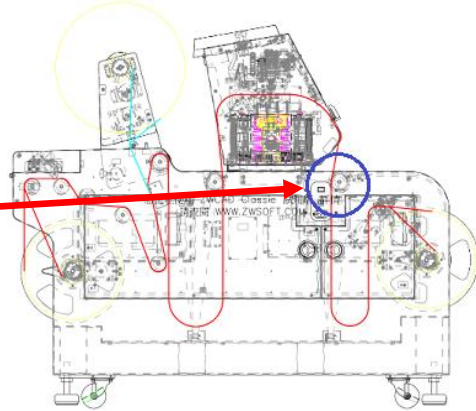
Step 2 Pull up the lever on the back side of machine to release pinch rollers on the work area.



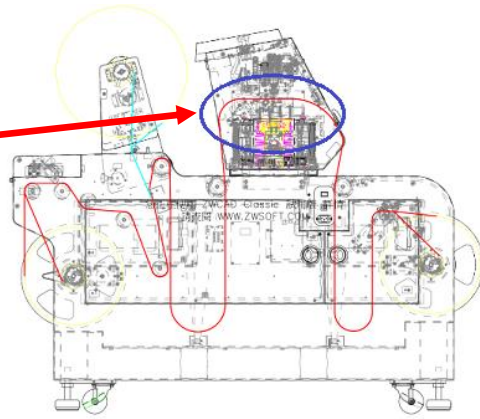
Step 3 Pull the media pass through the front pinch rollers.



Step 4 Pull the media beneath the front media shaft.



Step 5 Load the media to pass through the work area.

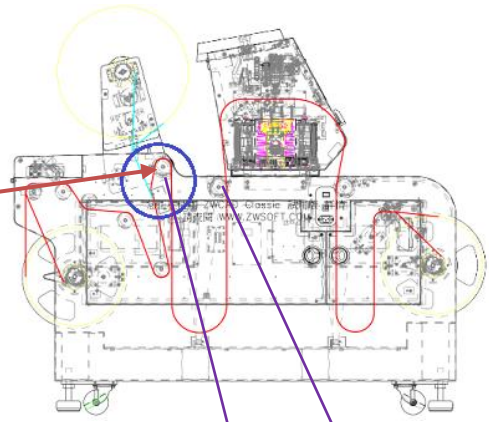


Tips:
Make sure the media edge aligns with the paper stoppers.

Step 6 Pull the media cross the first back media shaft and insert the media through the black panel.



The media has to go through this back panel.



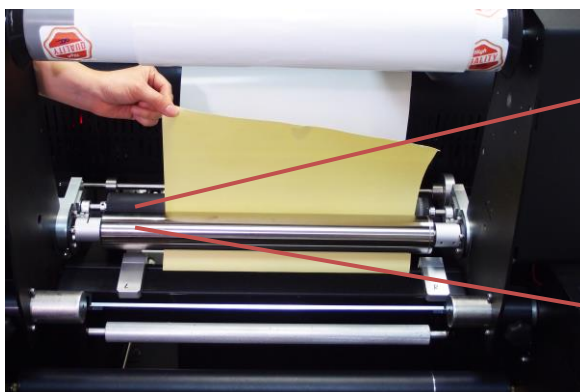
The first media shaft

The second media shaft

Step 7 Pull the media out to go through between the second media shaft & the tension bar as below picture.



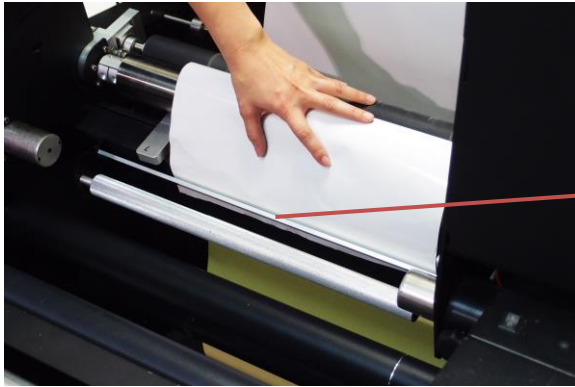
The media has to go through between the second media shaft & the tension



The second media shaft.

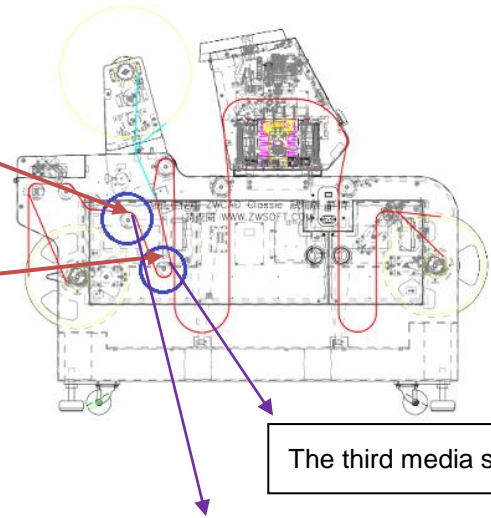
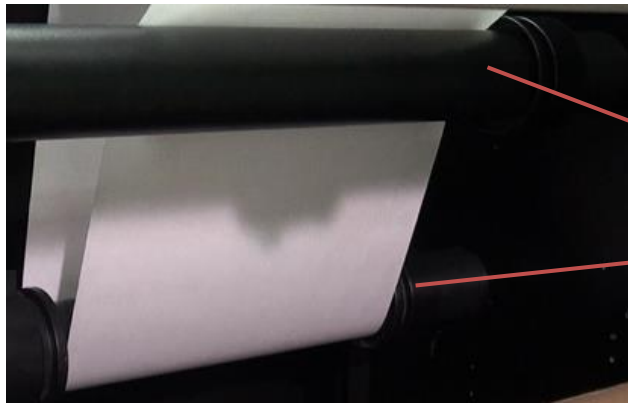
The tension bar.

Step 8 Pull the media beneath the aluminum panel of the waste separation shaft.



The aluminum panel of the waste separation shaft.

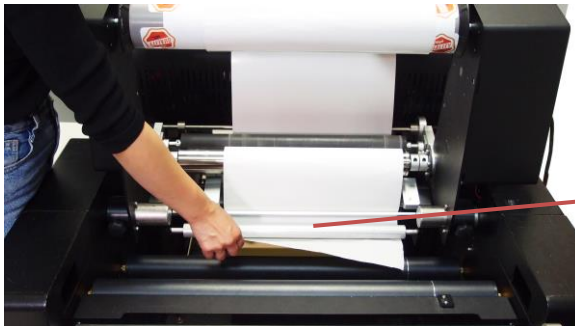
Step 9 Pull the media beneath the third media shaft and over the fourth media shaft.



The third media shaft

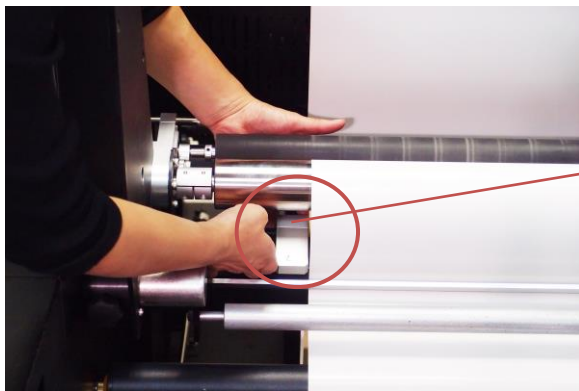
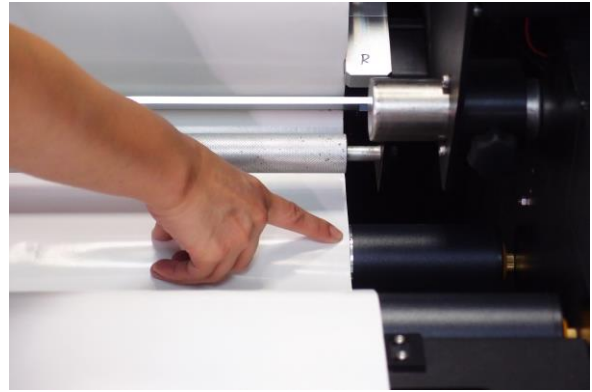
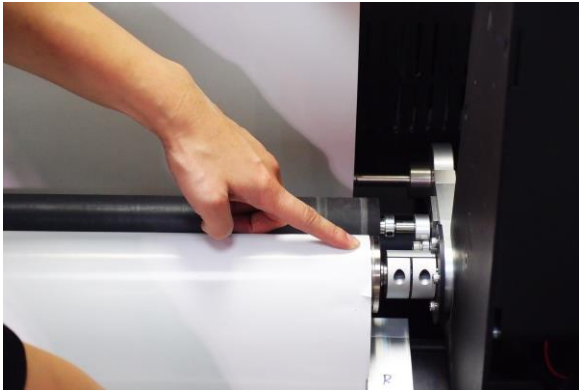
The fourth media shaft

Step 10 Pull the media through the waste separation shaft.



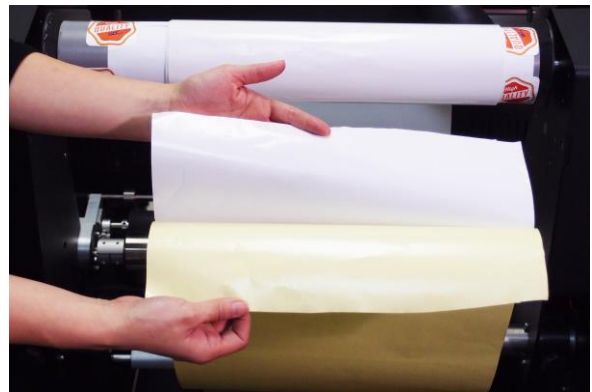
The waste separation shaft.

Step 11 Align the adjustable paper block with the media edge and fix it.



The adjustable paper block

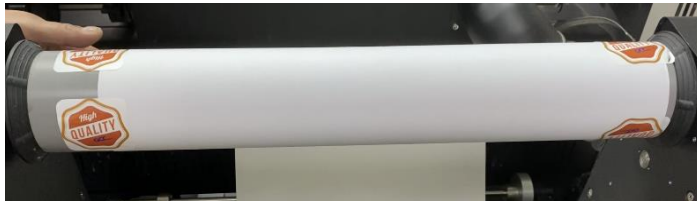
Step 12 Separate the media.



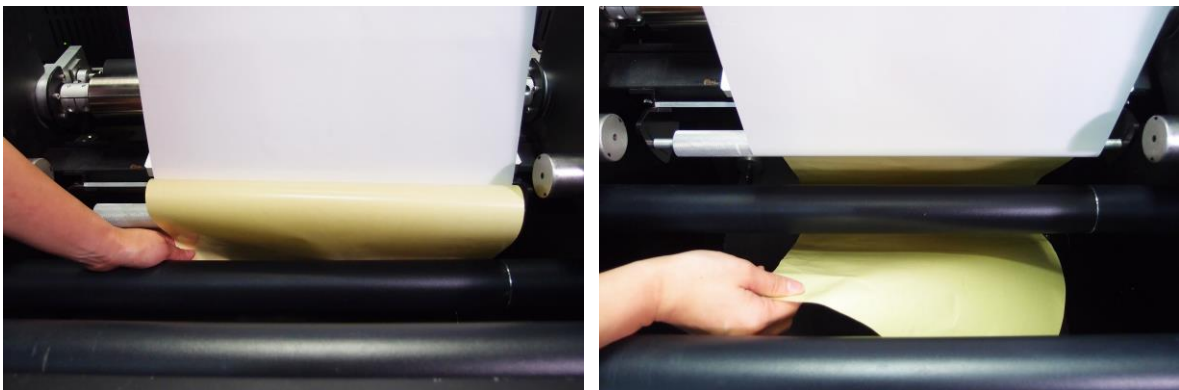
Step 13 Adhere the media to the paper core on the waste removal module.



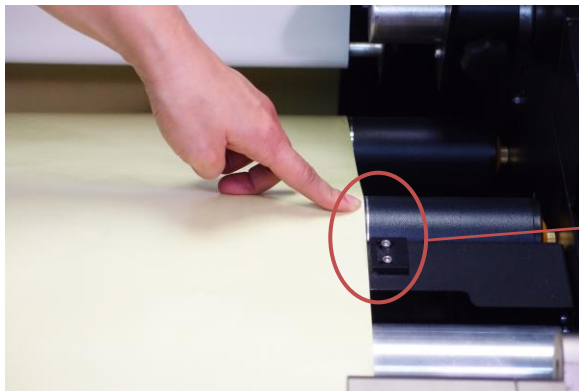
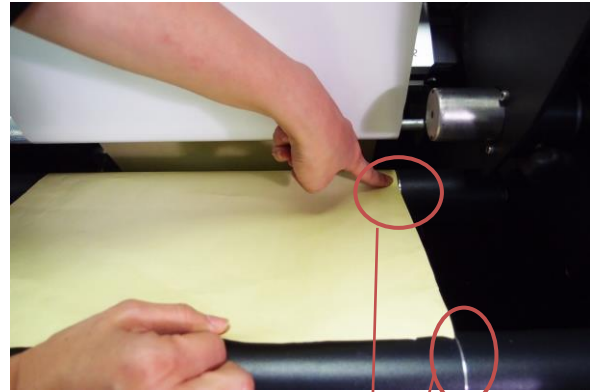
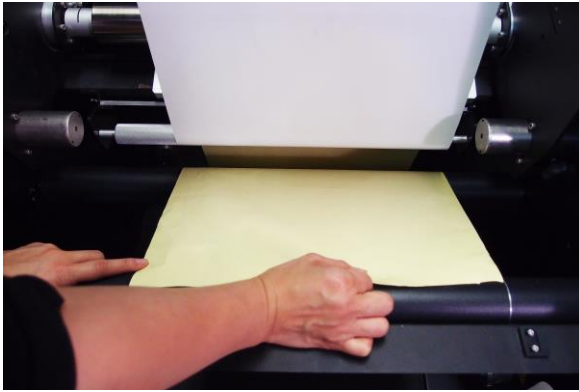
Tips: Stick the waste paper core with paper to remove the waste easily.



Step 14 Pull the backing paper beneath the third media shaft.



Step 15 And pull over the backing paper over the forth media shaft.



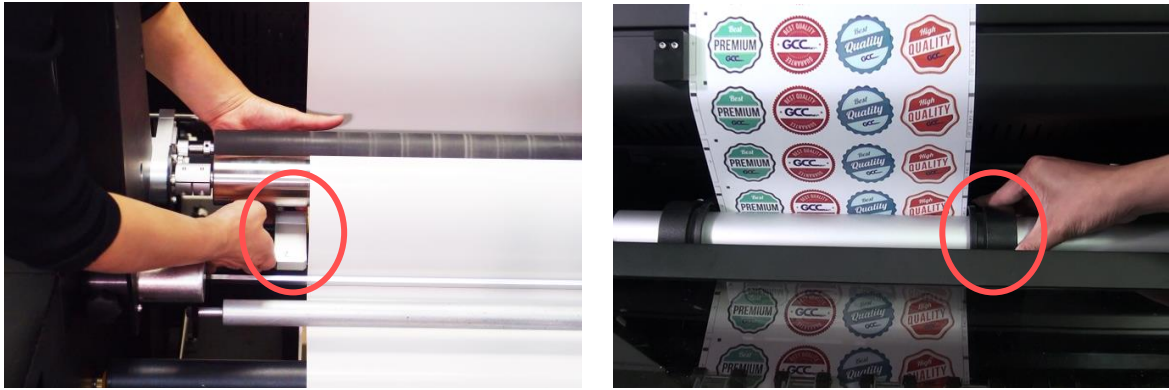
Here is the alignment line on the shift

Step 16 After alignment, adhere the backing paper to the paper core.

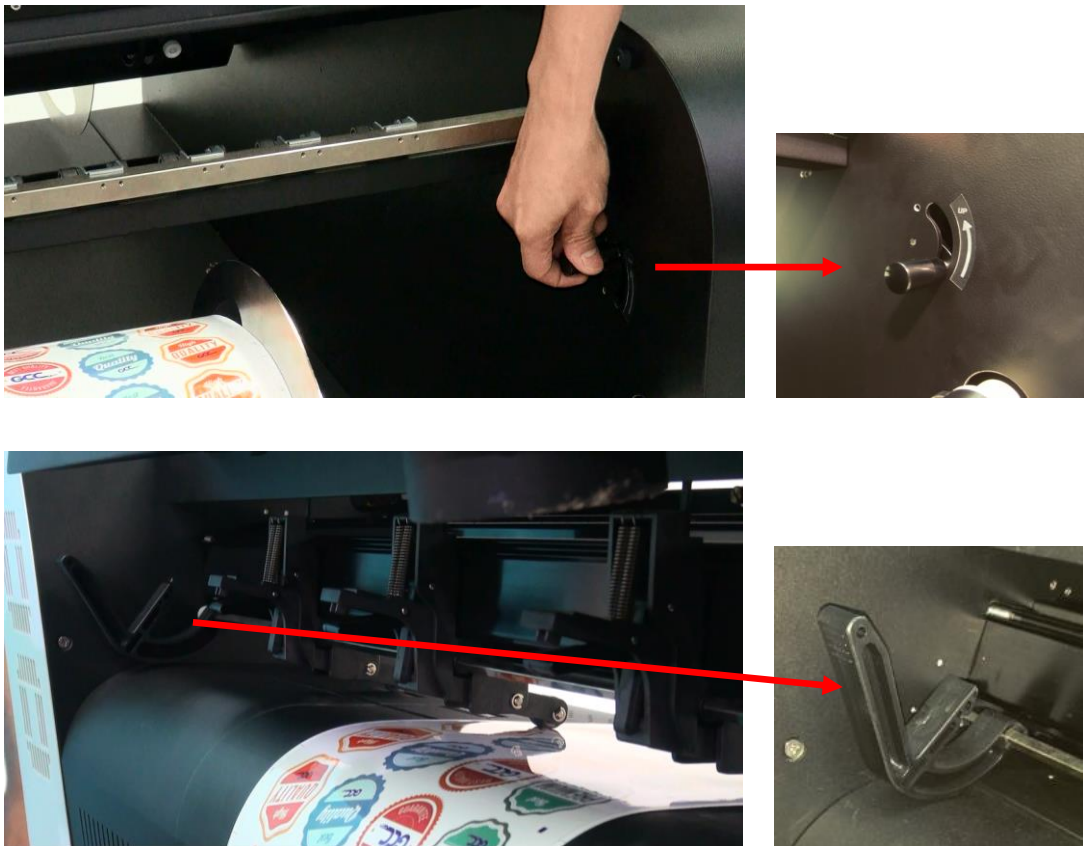


Note: Make sure the backing paper is pulled taut in order to keep the paper tension before adhering to paper core.

Step 17 Align the adjustable paper block with the media edge and fix it.



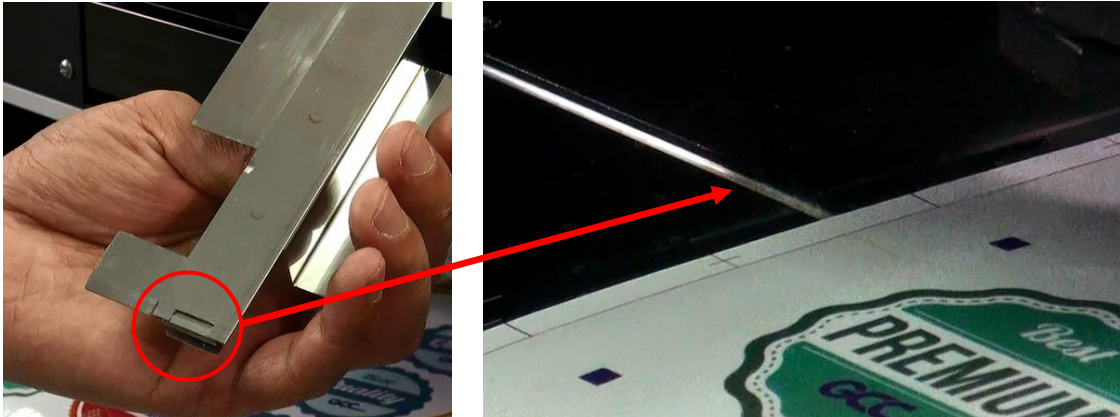
Step 18 Put down the lever to lower the front pinch rollers and the pinch rollers on the platen.



Step 19 Attach the front media clamps (left and right) on the platen and slide the clamps to align with the edge of the media.



Make sure the protrusion on the media clamp is wedged in the groove on the platen.



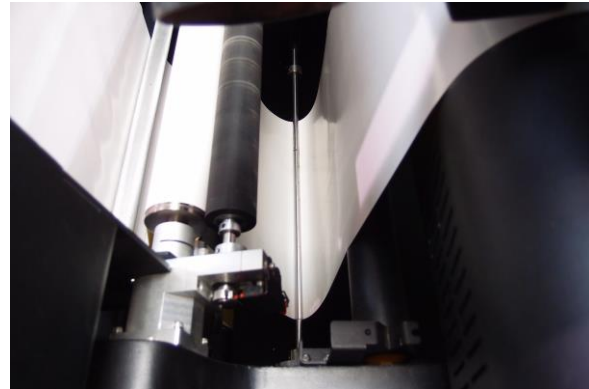
Step 20 Turn on the roll system of LabelExpress and put down the lever to lower the front pinch rollers.



Step 21 Select “Auto feed” on the control panel to feed the media and then attach the rear media clamps (left and right) to align with the edge of the media.



Step 22 Place the gravity bar onto the media to keep the paper tension while moving the media.

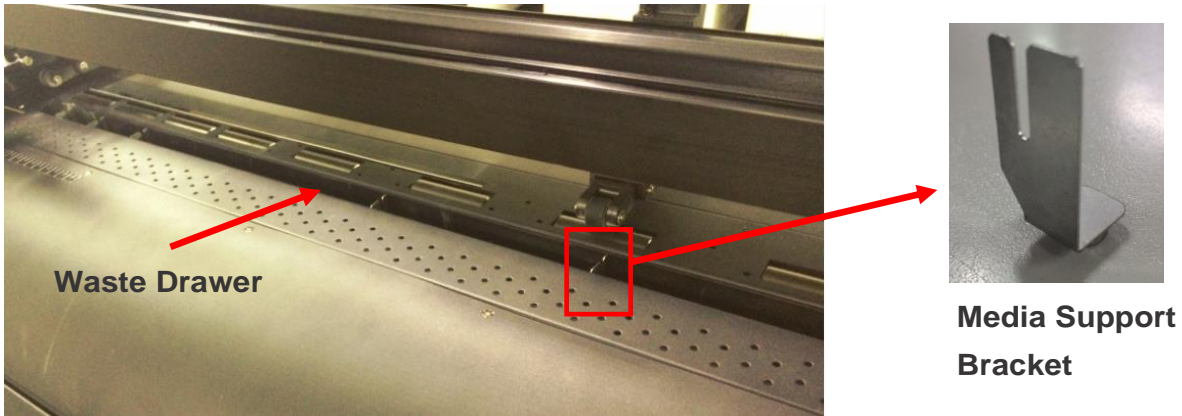


Step 23 Installation is complete.



4.1.2 Media Support Bracket of the Waste Drawer (DECAL EXPRESS only)

The Waste drawer is a recessed container attached onto the work platform, which is used to collect unnecessary materials when performing cut through function. Media Support Brackets hold the media and keep the media flat while moving back and forth.



The media support brackets are pre-installed in the waste drawer as shown below.



Make sure media support brackets are secured in proper position and the DECAL EXPRESS is ready to work.



NOTE

The media support bracket is fixed by the magnet underneath; users can move the bracket to suitable position whenever needed.



4.1.3 Powering Up the Machine

 CAUTION

Make sure both the LABELXPRESS/DECALEXPRESS and the computer are turned off before connecting either to a power source.

- 1) Connect the male end of the power cord to a quality surge protector and then connect the surge protector to a properly grounded outlet.
- 2) Do the same for the computer system.
- 3) Connect the female end of the power cord to the machine's power cable inlet located on the rear side of machine.

NOTE

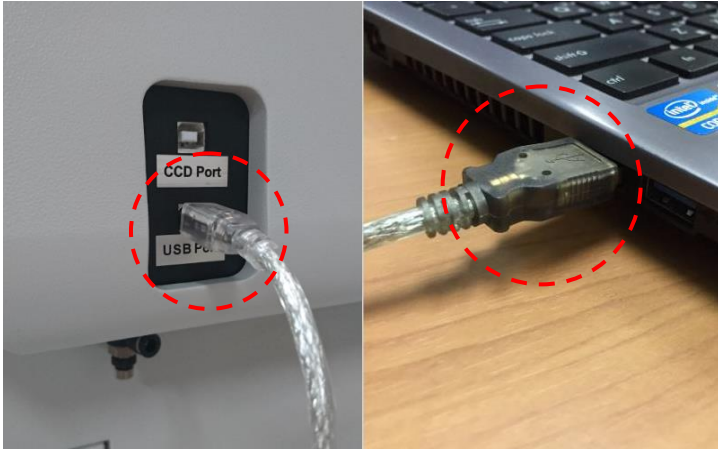
The LABELXPRESS/DECALEXPRESS has been designed to automatically switch from

4.1.4 Connecting the Computer

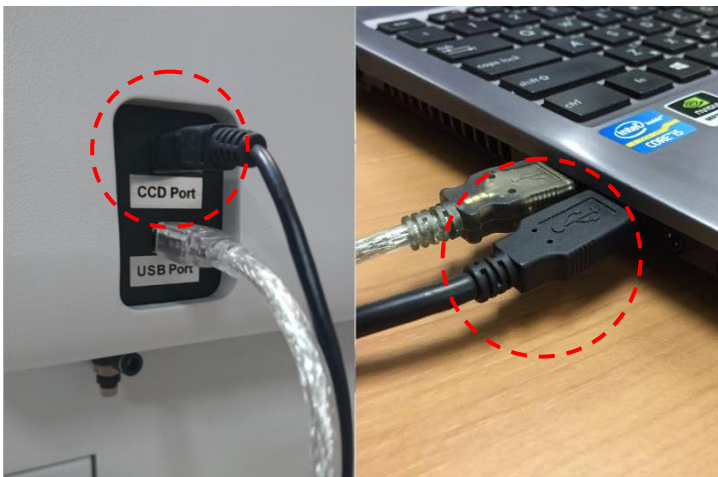
- 1) USB port and SmartCONTROL™ Label CCD connection port are located on right side of laser machine.



- 2) Connect the USB cable between computer and the laser machine



- 3) Connect another USB cable between computer and the SmartVISION™ Label CCD connection port

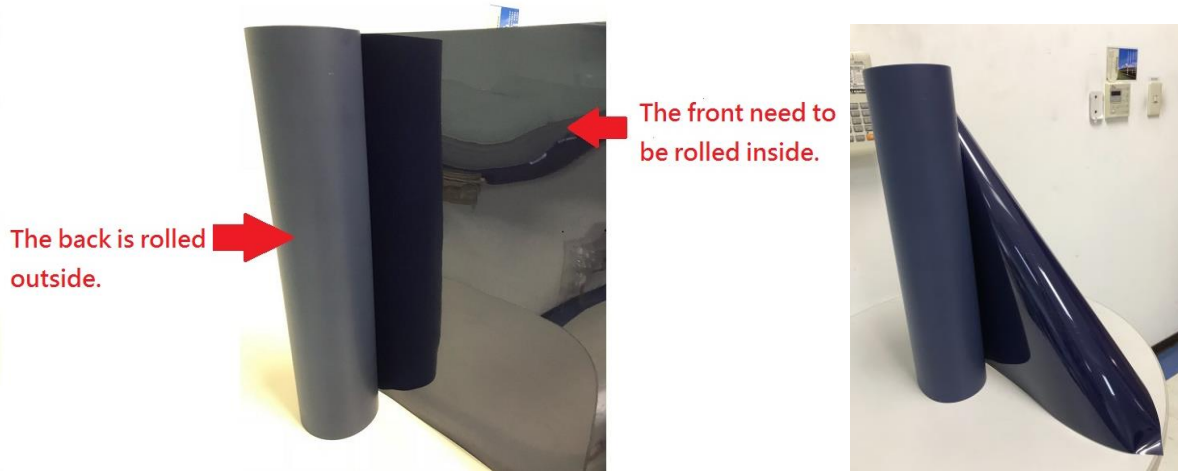


- 4) Turn on the master power on the left side of the LABELPRESS/DECALEXPRESS.

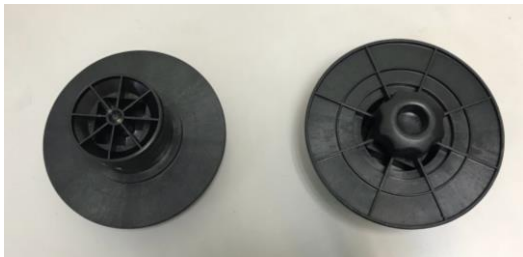


4.1.5 Installation for loading roll media (for DECAL EXPRESS – ECO version)

1) Prepare the cut media: please note to roll media inside out as below picture.



2) Take out the wheel which is included in your package.



3) Install the wheel to the core.



4) Then place the whole roll on the machine.



5) Tight up the knob from the roll which is on the machine.



6) The installation of roll media is completed.



Turn the wheel as instructed below to adjust damping. The bigger the number is, the stronger the damping. The volume symbol sticker indicates the damping level (Figure 2.3-6, 2.3-7).

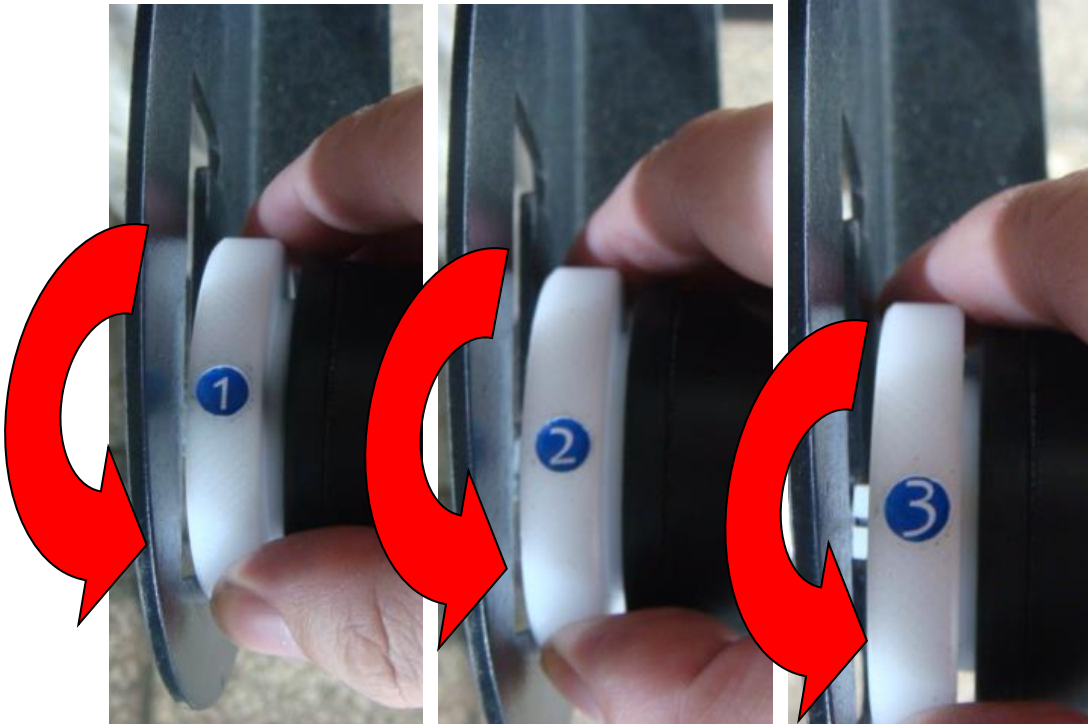


Figure 2.3-6



Figure 2.3-7

4.2 Software Setup

4.2.1 Recommended Computer Configuration

The LABELEXPRESS/DECALEXPRESS is able to accommodate Laptop and compatible PC operating systems. Both the machine and SmartCONTROL™ Label software were designed to work best using a Windows based system with the following minimum requirements.

CPU	Intel Pentium, 1GHz or above
DRAM	1GB RAM or above
CDROM	One CD-ROM disk drive
HDD	1 GB of free hard drive space
SVGA	Super VGA display (1204 x 768 min. resolution)
Interface	PC or Laptop
Operating System	Windows Win 7 /Win 8 /Win 10

4.2.2 SmartCONTROL™ Label Installation

Please perform the following steps:

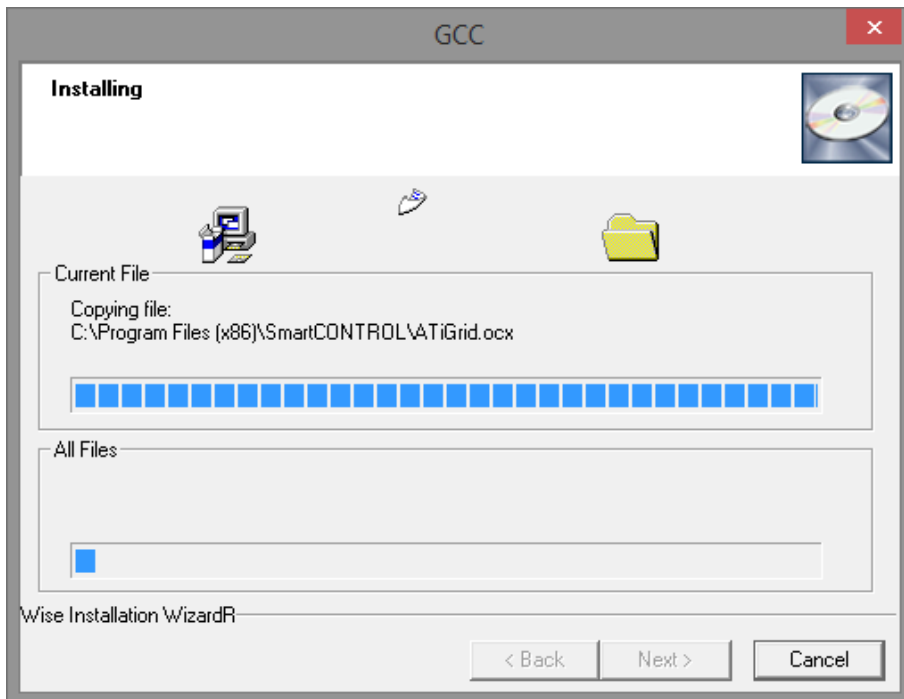
- 1) Take out the installation disk and insert to the CD-ROM drive of computer. Wait few seconds for the CD Manager to begin the Setup automatically.
- 2) Click on “Install → SmartCONTROL™ Label from the menu of the installation disk.



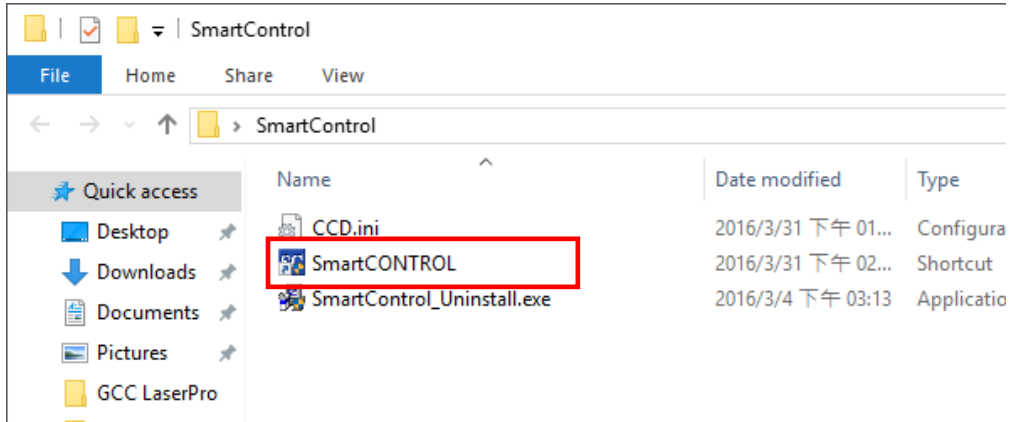
- 3) Click “Next”



4) The installation would be finished in few seconds

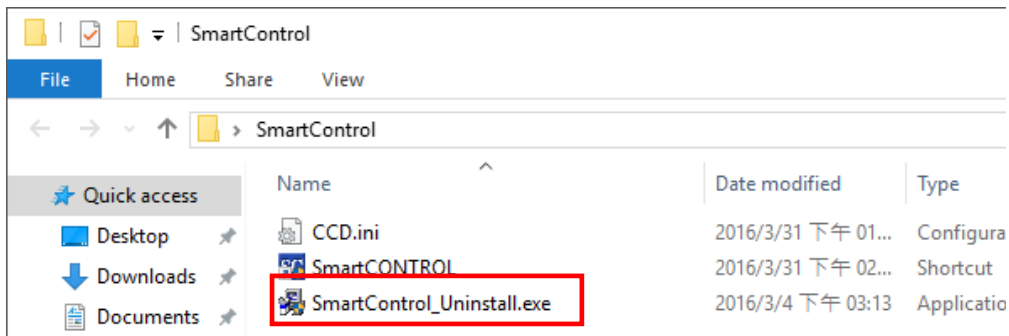


- 5) When installation is complete, SmartCONTROL™ Label will create a “SmartCONTROL_LL” folder on windows desktop, open the folder and double click SmartCONTRL.exe to run the program.

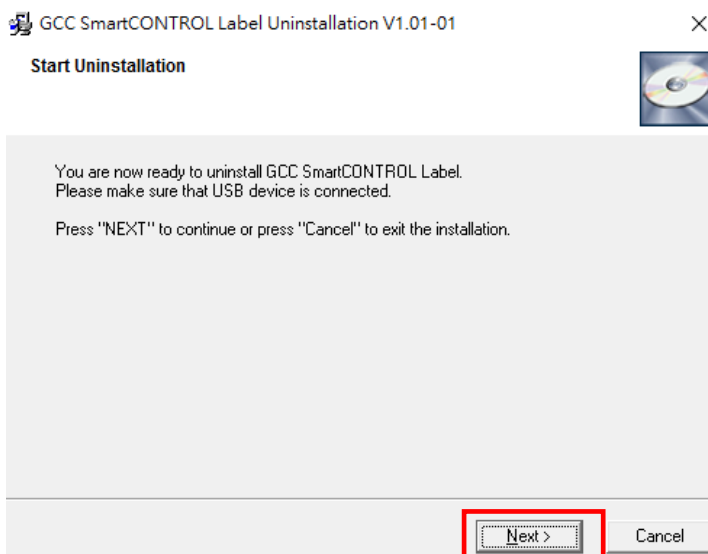


4.2.3 SmartCONTROL™ Label Uninstallation

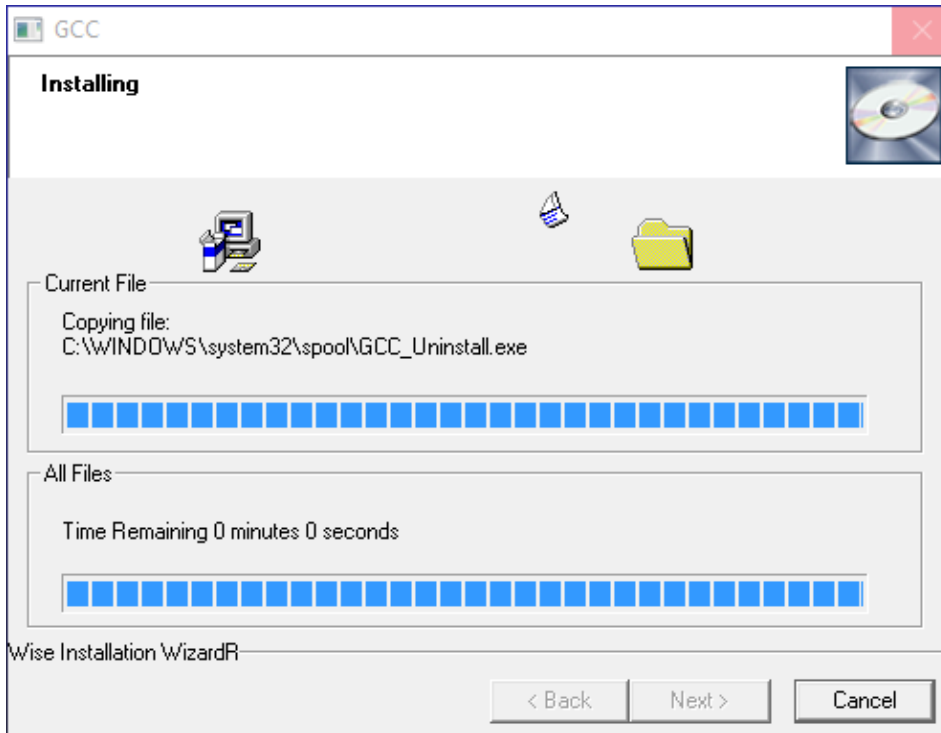
- 1) Open the SmartCONTROL_LL folder from windows desktop and double click “SmartCONTROL_Uninstall.exe”



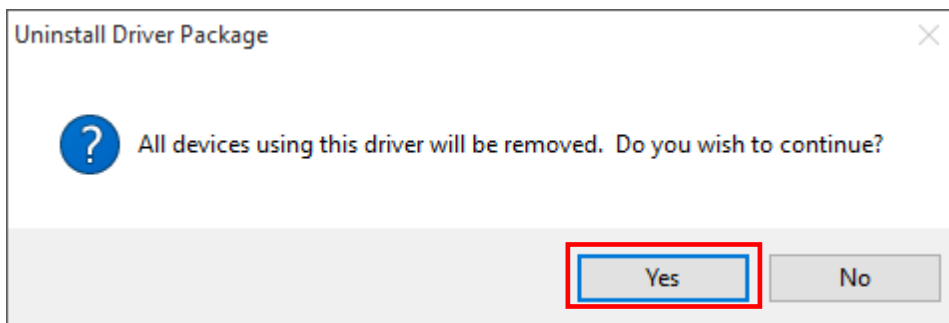
- 2) SmartCONTROL™ Label uninstallation window will pop up. Click “Next” to continue.



3) The uninstallation would be finished in few seconds.



4) Uninstall Driver Package window will pop up and ask you “All devices using this driver will be removed. Do you wish to continue?” Click “Yes” to complete uninstallation.



Chapter 5

Operating the LABLEXPRESS/DECALEX PRESS

Using the Hardware

SmartCONTROL™ Introduction

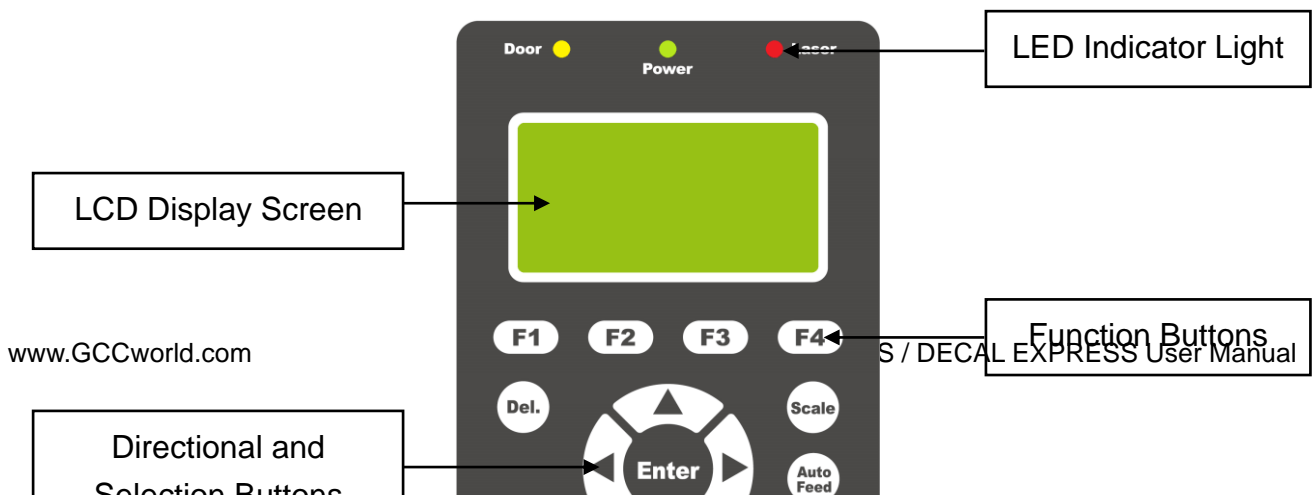
SmartCONTROL™ Software Label Function

5.1 Using the Hardware

5.1.1 Control Panel Overview

The Control Panel

The control panel on the LABELXPRESS/DECALEXPRESS Series provides an easy access to all the manual controls needed for cutting. The liquid crystal display (LCD), functional, directional and selection buttons make navigating through the machine's manual controls easy to do.



LED Indicator Lights

Three indicator lights on the LABELEXPRESS/DECALEXPRESS control panel are part of the system's safety interlock system.

- **Power** - The power light will illuminate when the LABELEXPRESS/DECALEXPRESS is powered on.
- **Door** - The door light will illuminate when the front door is open or improperly closed.
- **Laser** - The laser light will illuminate when the laser is active and in operation.



WARNING

- DO NOT attempt to remove or modify any component of the safety interlock system.
- If at any time, any of the access doors are open and the "laser" LED is illuminated, unplug the laser system IMMEDIATELY and contact GCC technical support for service instructions.
- DO NOT operate the laser system if any component of the safety system is malfunctioning.

Directional and Selection Buttons

Function (F1 / F2 / F3 / F4) – Four function buttons allow you to select various functions which will change depending on what section of the menu you are in. Each function button's corresponding task will be displayed right above its respective button on the LCD display screen. Please note that in certain menus, not every function button will always be mapped to a corresponding action. In these situations, that particular button will not have a function.

Directional (Δ / ∇ / \triangleleft / \triangleright) – Four directional buttons allow you to navigate the selection cursor through the control panel menu and adjust the value of specific settings. In general, the \triangleleft / \triangleright directional buttons cycle through the various selections, while the Δ / ∇ directional buttons adjust the value of that particular selection.

Enter – Confirm the current selection.

Start / Stop – Allow you to start or stop cutting jobs, once those jobs have been successfully loaded onto the system.

Delete – Provide quick access to delete the current job.

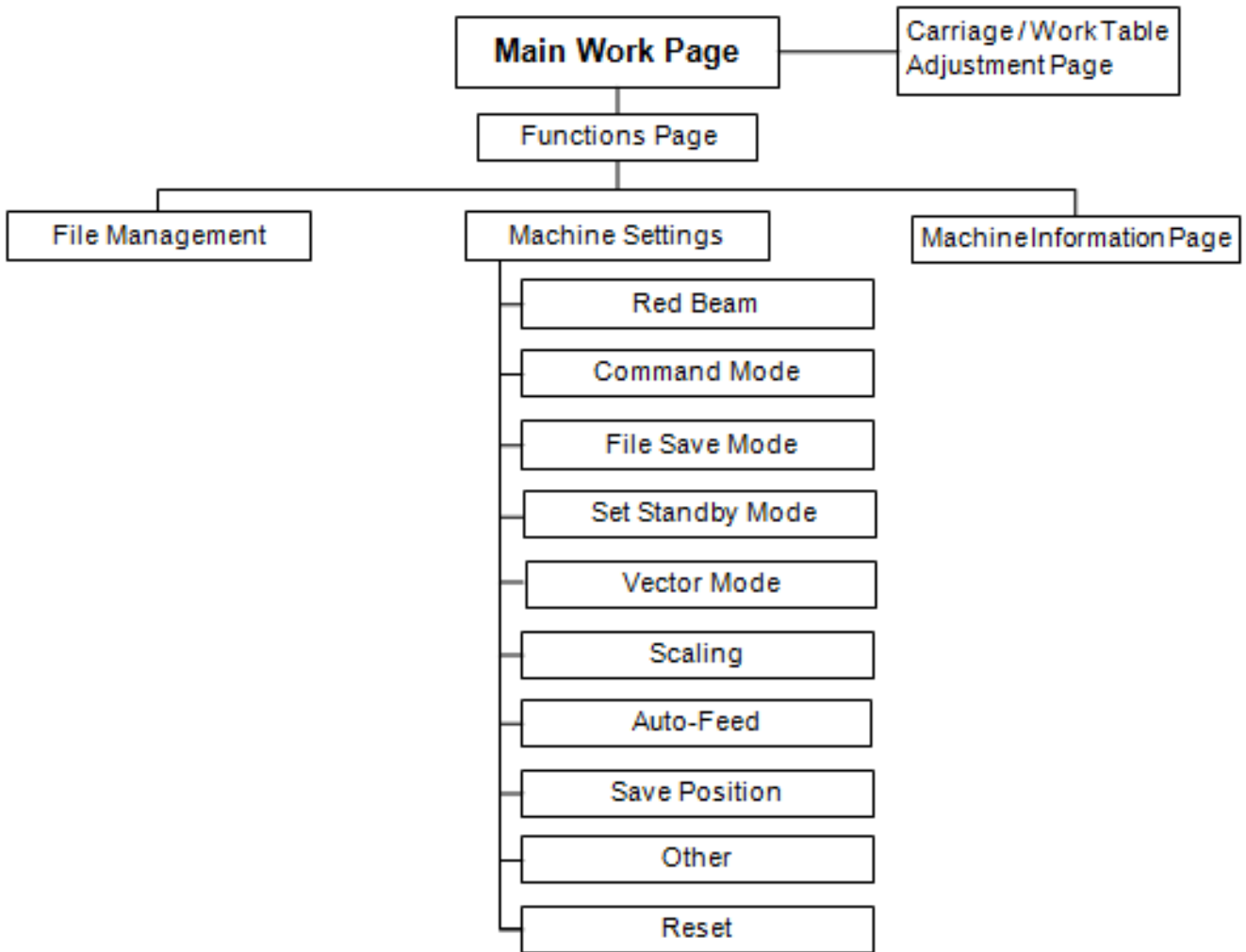
Pause – Pause the current cutting process. Press again to resume the current process.

Scale – Tune the laser machine output scale to fit the original graphic file design scale to optimize the cutting precision.

Auto Feed – Feed the media to avoid paper jam and ensure smooth cutting operation. The feeding length is 35 cm each time when you press Auto Feed button.

Red Beam – Allow you to turn on or off the cross laser pointer on the lens carriage.

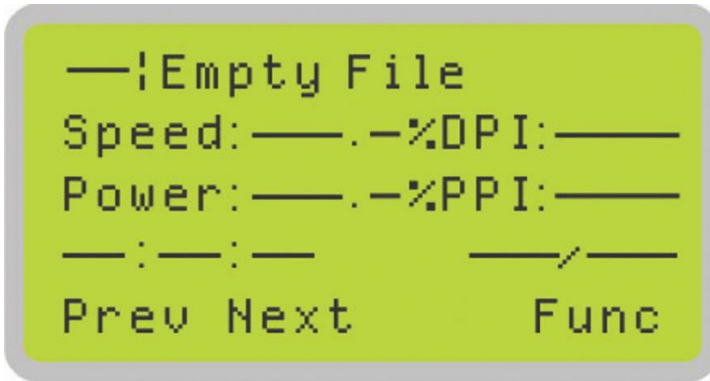
5.1.2 Graphic Control Panel Navigation Chart



5.1.3 Graphic Control Panel Function Pages

When the LABEL EXPRESS/DECAL EXPRESS is powered on, the machine will perform a series of safety checks and initialization routines. The LCD display screen will display the GCC copyright, GCC logo, and machine initialization pages before going to the main work page.

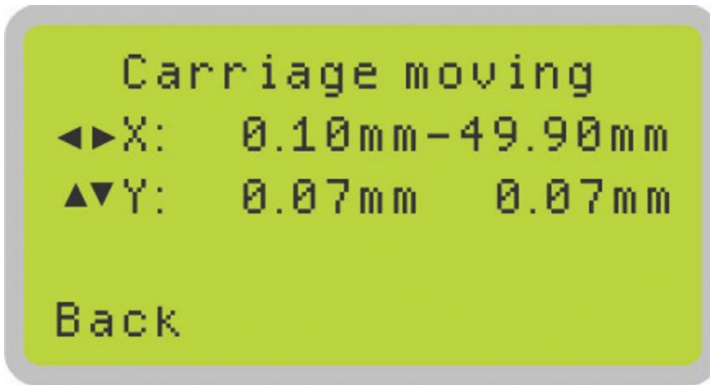
Main Work Page



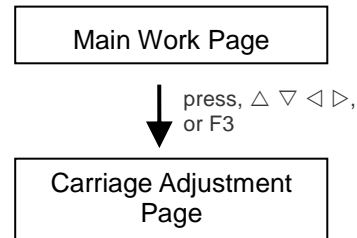
The main work page is the page that the LABELEXPRESS/DECALEXPRESS will default to upon startup and will be the “home base” for when navigating through the various functions of the control panel. This will be the page that is displayed when you are processing your jobs. This page contains specific job information such as the current job’s name, Speed, Power, PPI, DPI, processing / remaining times, and jobs loaded.

Main Work Page	
Relevant Buttons	Function
F1 (Prev)	Scroll through previous jobs
F2 (Next)	Scroll through next jobs
F4 (Func)	Go to Functions Page
△ / ▽ / ◀ / ▶ Directional	Go to Carriage / Work Table Adjustment Page
Start / Stop	Start / Stop the current job
Delete	Delete the current selected job

Carriage Adjustment Page



i Navigating to this page:

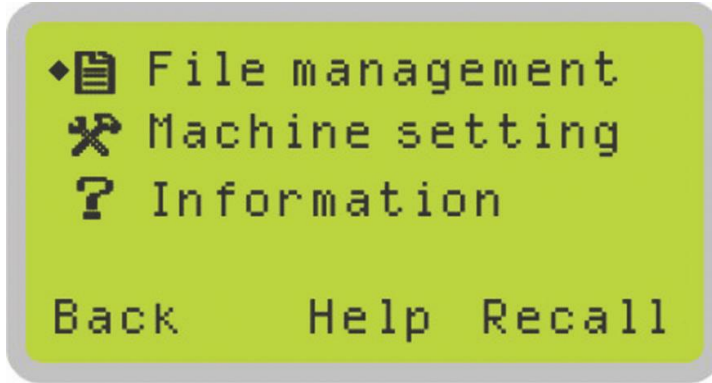


The Carriage Adjustment Page allows you to manually adjust the X-axis of the lens carriage and roll/unroll the media in Y-axis.

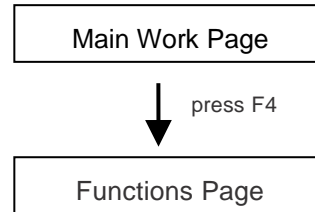
Carriage / Work Table Adjustment Page	
Relevant Buttons	Function
F1 (Back)	Back to previous page
△ / ▽ Directional	Manually adjust the Y-axis position of the lens carriage
◀ / ▶ Directional	Manually adjust the X-axis position of the lens carriage
Start / Stop	Start / Stop the current job

Functions Page

The Functions Page allows you to edit file management and machine settings. From this page, you will be able to access the File Management, Machine Setting, and Machine Information pages.



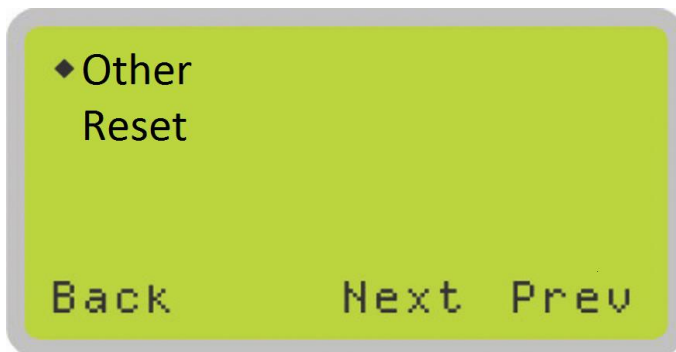
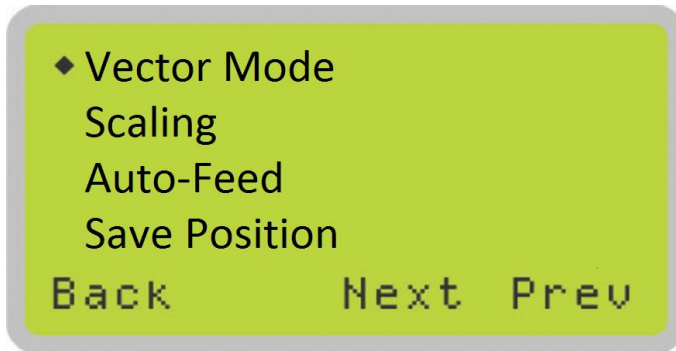
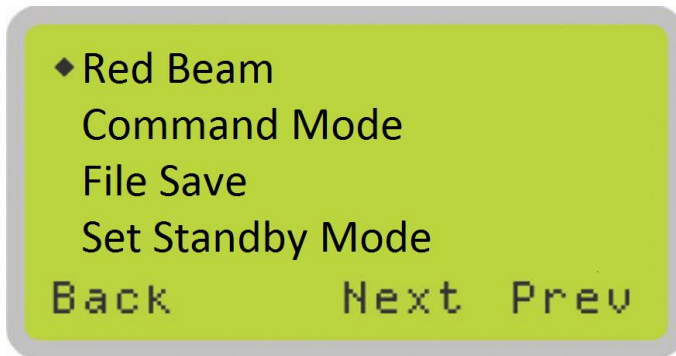
 Navigating to this page:



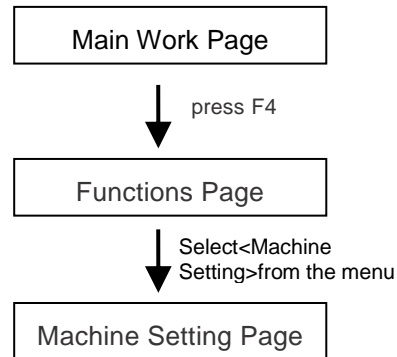
- File Management Page – this page allows you to manage the files that you have loaded onto the LABELPRESS/DECALPRESS.
- Machine Setting Page – this page allows you to access and modify various machine settings, including: Set Red Beam, Set Command Mode, Set File Save Mode, Set Standby Mode, Set Vector Mode, Set Scaling, Set Auto-Feed, Set Save Position, Other, Reset.
- Machine Information Page – this page allows you to view information regarding the system such as the GCC logo, machine name, firmware version, and other information.

Functions Page	
Relevant Buttons	Function
F1 (Back)	Back to previous page
F3 (Help)	Display help
F4 (Recall)*	Recall the saved position as origin for subsequent jobs
△ / ▽ Directional	Scroll through the menu selections
Enter	Perform the selection
Start / Stop	Back to Main Work Page

Machine Setting Page



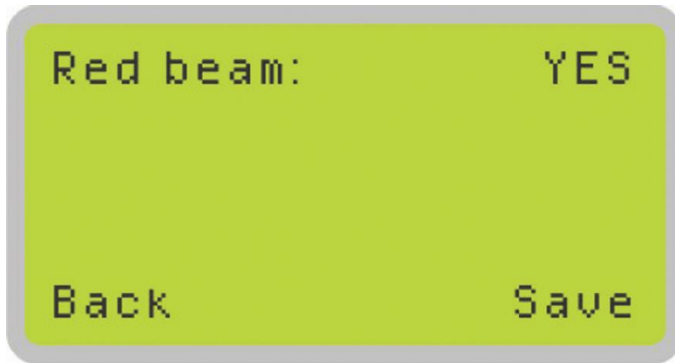
i Navigating to this page:



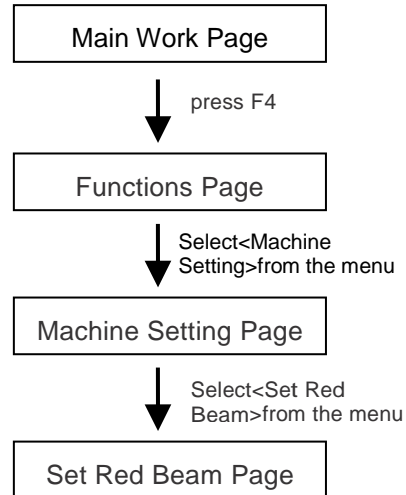
The Machine Setting Page allows you to access and modify various machine settings, including: Set Red Beam, Set Command Mode, Set File Save Mode, Set Standby Mode, Set Vector Mode, Set Scaling, Set Auto-Feed, Set Save Position, Other and Reset..

Machine Setting Page	
Relevant Buttons	Function
F1 (Back)	Back to previous page
F3 (Next)	Scroll to next page
F4 (Prev)	Scroll to previous page
△ / ▽ Directional	Scroll through your loaded jobs
Enter	Perform the selection
Start / Stop	Back to Main Work Page

Machine Setting- Set Red Beam Page



i Navigating to this page:

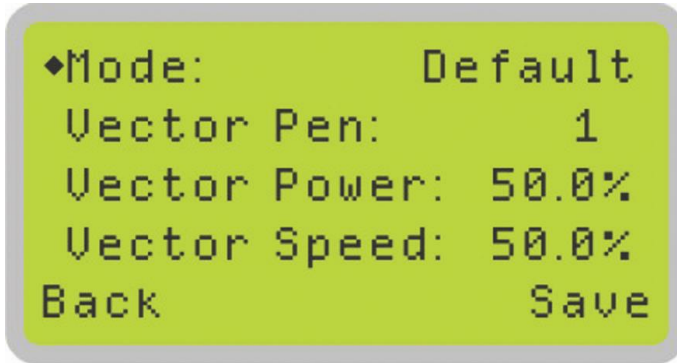


The Set Red Beam Page allows you to turn on or off the red dot laser pointer on the lens carriage. Enabling this function will indicate the exact area the engraving laser will fire upon.

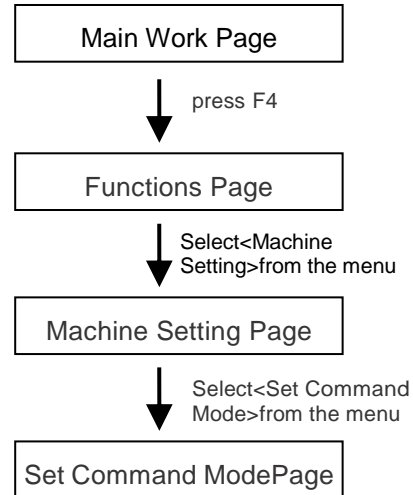
- Red Beam YES / NO

Set Red Beam Page	
Relevant Buttons	Function
F1 (Back)	Back to previous page
F4 (Save)	Save your current settings
◀ / ▶ Directional	Cycle Red Beam between YES / NO
Start / Stop	Back to Main Work Page

Machine Setting- Command Mode Page



i Navigating to this page:



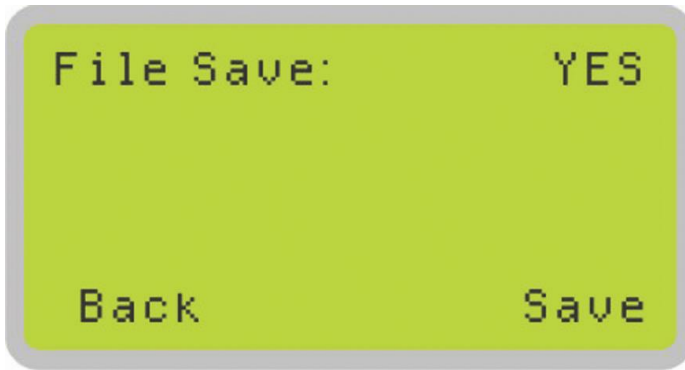
The Command Mode Page allows you to configure vector settings when outputting in Default or HPGL mode. Default mode refers to output the file through standard Windows print driver and also recognized by the most popular graphic software programs such as CorelDRAW, Photoshop, Illustrator, and more. Whereas, HPGL mode is a less common output format generated from some RIP applications (signage industry). Regardless of which format you will be working with, both output formats are supported.

- Mode: Default / HPGL
- Vector Pen: 1 - 16
- Vector Speed: 0.0% - 100%
- Vector PPI: 0.0% - 100%
- Power Ramp: YES / NO

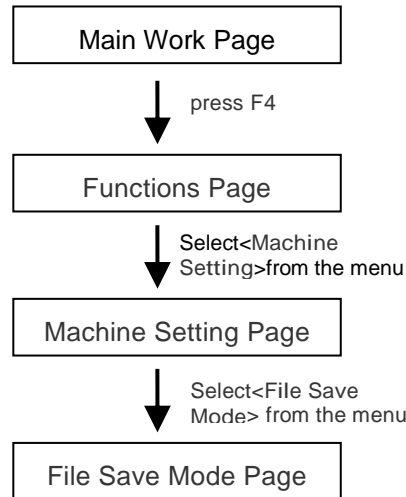
Set Command Mode Page	
Relevant Buttons	Function
F1 (Back)	Back to previous page
F4 (Save)	Save your current settings
△ / ▽ Directional	Scroll through the menu selections

◀ / ▶ Directional	Adjust the value for that selection
Start / Stop	Back to Main Work Page

Machine Setting- File Save Mode Page



i Navigating to this page:

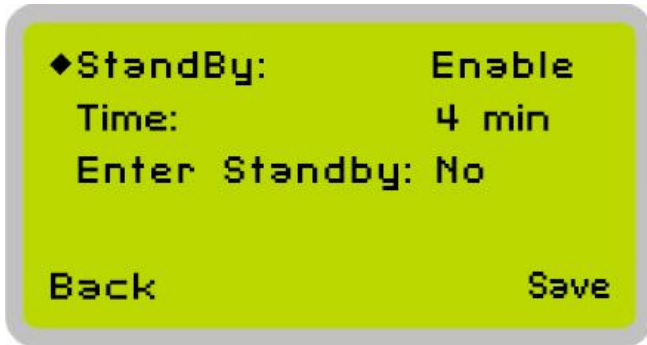


The File Save Mode Page allows you to set whether or not the LABELXPRESS/DECALEXPRESS Series automatically deletes each job file after processing. Setting File Save to <NO> will automatically and immediately delete each job file from the LABELXPRESS/DECALEXPRESS Series after the cutting process. Setting File Save to <YES> will retain the job files on the LABELXPRESS/DECALEXPRESS Series.

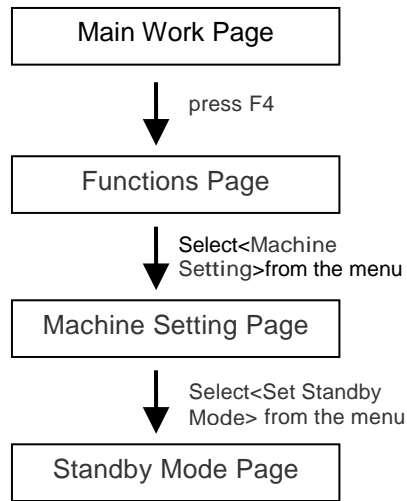
- File Save: YES / NO

File Save Mode Page	
Relevant Buttons	Function
F1 (Back)	Back to previous page
F4 (Save)	Save your current settings
◀ / ▶ Directional	Cycle File Save between YES / NO
Start / Stop	Back to Main Work Page

Machine Setting- Standby Mode Page



i Navigating to this page:



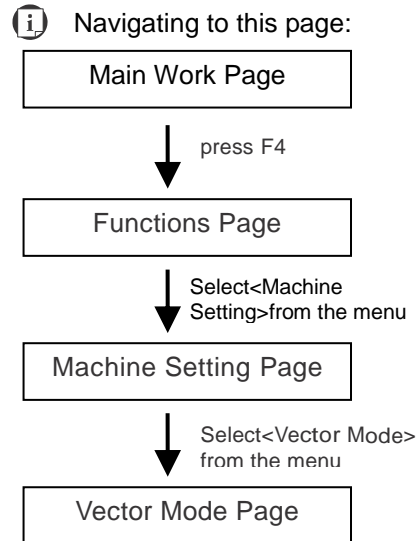
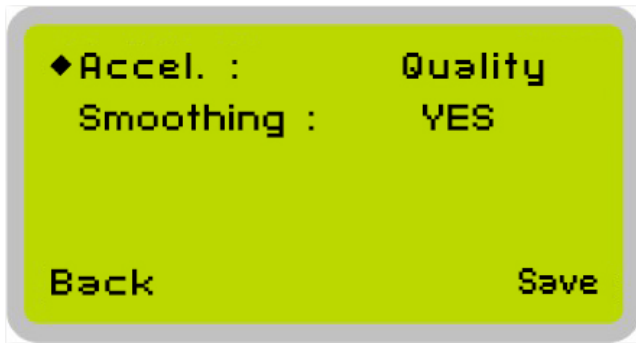
The Set Standby Mode page allows you to configure the laser machine automatically enter into power saving if machine is idle for a specified time.

When entering into the Set Standby Mode function, you can use Left or Right arrow keys to scroll between <Enable> or <Disable> the function. The Time function is to determine after how long the laser machine is idle, it will enter in power saving automatically. The default time is 4 minutes. The Enter Standby function will turn the machine into power saving immediately after selected.

- Standby: Enable/ Disable
- Time: 4-30 mins. (Default 4 mins.)
- Enter Standby: YES/ NO

Standby Mode Page	
Relevant Buttons	Function
F1 (Back)	Back to previous page
F4 (Save)	Save your current settings
◀ / ▶ Directional	Cycle standby mode between YES / NO
Start / Stop	Back to Main Work Page
△ / ▽ Directional	Scroll between menu options

Machine Setting- Vector Mode Page



The Accel. (Acceleration) function modifies the acceleration and deceleration of the X and Y rails to adjust and balance vector mode’s quality and speed settings based on your specific job. <Speedy> mode offers the highest output speed while sacrificing certain degree of quality. Whereas <Quality> mode offers the highest quality, sacrificing output speed. Keep in mind that speed and quality are usually a trade-off.

Select Smoothing function to <YES>, the laser machine will smooth out the curve path, result in smooth edge, higher speed, while less precise in scale factor, whereas setting Smoothing to <NO>, the curve will move in more precision scale, less smooth path, and slower speed.

- Acceleration Modes: Quality, Fine, Coarse, Speedy
[Slower speed/ higher quality —————> Faster speed/ lower quality]
- Smoothing: YES/ NO (default: YES)

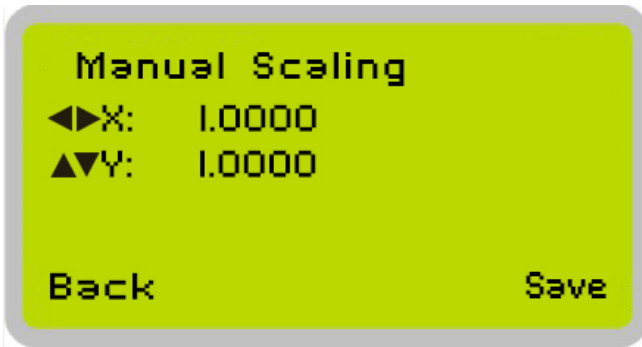


Tip

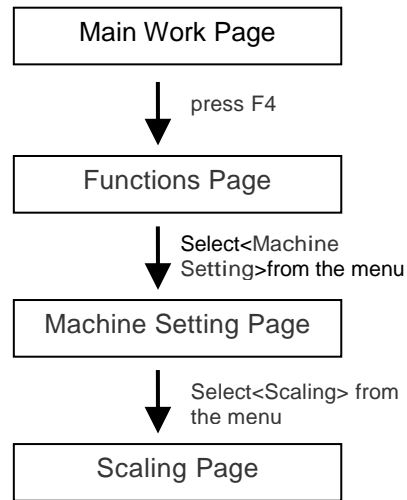
Enable Smoothing will be most evident when processing small, fine, intricate designs which request to run in high speed. We recommend you leave Smoothing to <YES> when cutting such designs. Disable the Smoothing when precise output scale is required.

Vector Mode Page	
Relevant Buttons	Function
F1 (Back)	Back to previous page
F4 (Save)	Save your current settings
◀ / ▶ Directional	Cycle Set Vector Mode between QUALITY/ FINE/ COARSE/ SPEEDY VECTOR
△ / ▽ Directional	Scroll through menu options
Start / Stop	Back to Main Work Page

Machine Setting- Scaling Page



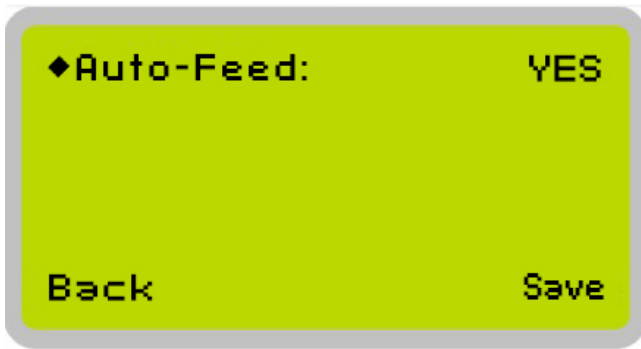
i Navigating to this page:



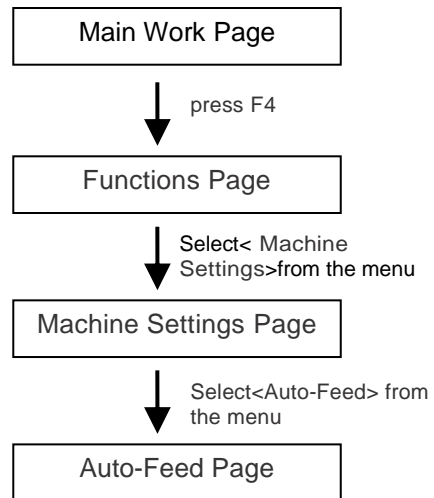
The Scaling Page allows you to fine tune the laser machine output scale to precisely fit the original graphic file design scale when precision output is required to your application.

Scaling Page	
Relevant Buttons	Function
F1 (Back)	Back to previous page
F4 (Save)	Save your current settings
◀ / ▶ Directional	Adjust the X axis scaling numbers
▲ / ▼ Directional	Adjust the Y axis scaling numbers
Start / Stop	Back to Main Work Page

Machine Setting- Auto-Feed Page



i Navigating to this page:

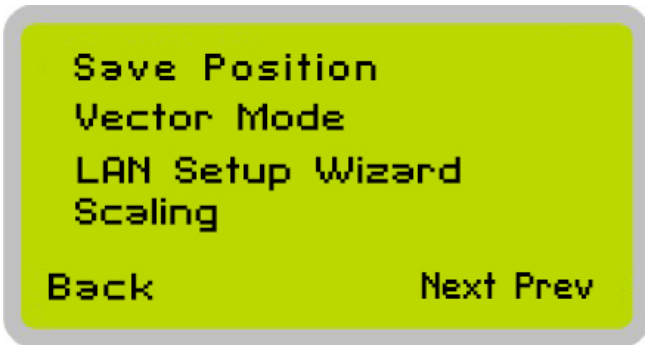


Enable the Auto-Feed function allows you to activate the ultrasonic sensor, which can automatically feed the media to ensure a fluent workflow. The auto-feed function wind the roll media 35 cm each time.

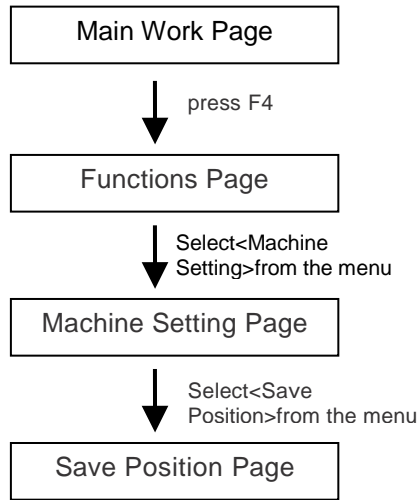
- Auto-Feeder: Yes/No

Standby Mode Page	
Relevant Buttons	Function
F1 (Back)	Back to previous page
F4 (Save)	Save your current settings
< / > Directional	Cycle standby mode between YES / NO
Start / Stop	Back to Main Work Page

Machine Setting- Save Position Page



i Navigating to this page:



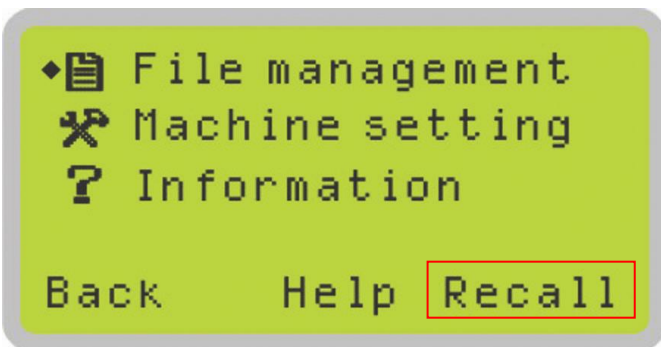
The Save Position Function allows you to save the current X-axis and Y-axis positions of the lens carriage to be the origin for subsequent jobs.



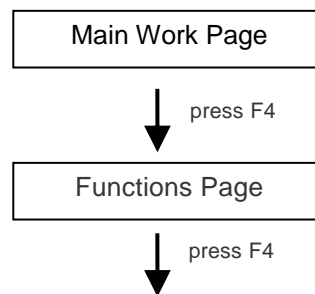
Tip

.....
 This is an excellent function to use when you are processing identical items or engraving relatively smaller objects positioned away from the default start position (top left) of the work table.

Recall Position

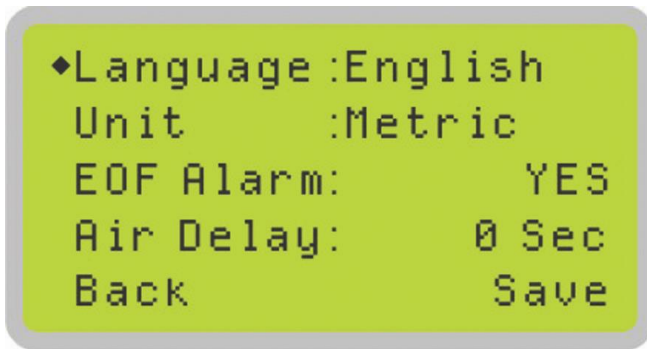


i Navigating to this page:

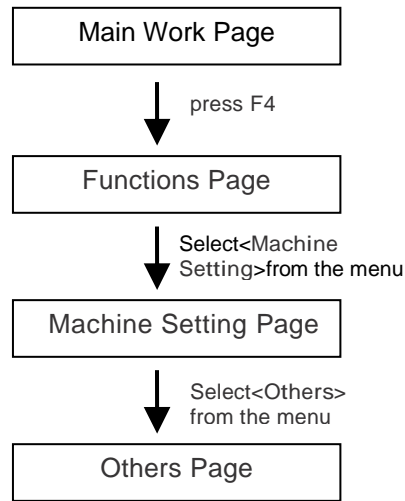


To recall the saved position, simply go to Functions page and press F4 again to recall the saved position. The lens carriage will be moved to the saved position and start subsequent jobs from this origin.

Machine Setting- Others Page



i Navigating to this page:



The Others Page allows you to change various settings that correspond to the control panel. The Language setting will allow users to change available languages displayed on the control panel.

The Unit setting will allow you to change whether the units displayed by the control panel is in the metric or imperial system. The EOF (end of file) Alarm setting will enable or disable an audible notification when jobs are complete. The Air Delay setting allows you to specify the delay in seconds of the SmartAIR air-assist after the point of laser firing.

- Language: ENGLISH (others dependent on Firmware)
- Unit: METRIC/ INCH
- EOF Alarm: YES/ NO
- Air Delay: 1-100 seconds



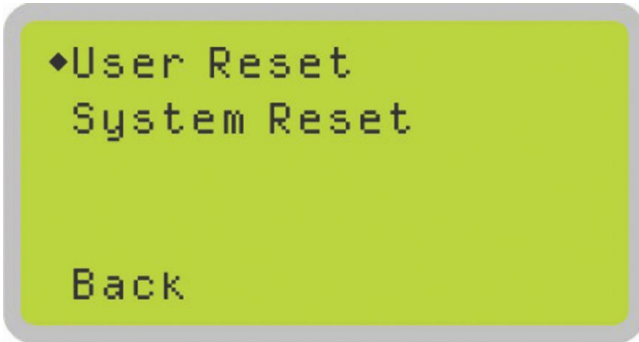
Tip

Depending on the material you are working with, your laser settings, and the desired results, please experiment with the air delay to achieve your desired results.

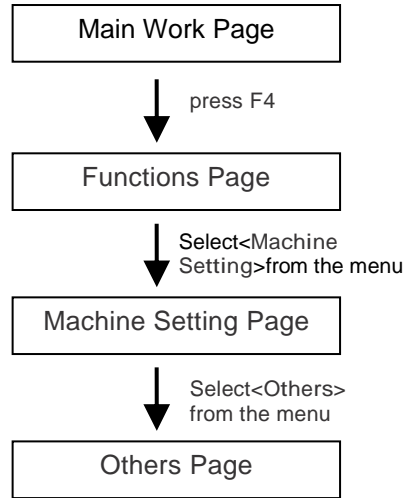
.....

Others Page	
Relevant Buttons	Function
F1 (Back)	Back to previous page
F4 (Save)	Save your current settings
△ / ▽ Directional	Scroll through the menu selections
◀ / ▶ Directional	Adjust the value for that selection
Start / Stop	Back to Main Work Page

Machine Setting- Reset Page



i Navigating to this page:



The Reset Page allows you to reset all changes made to the LaserPro Spirit Series Machine Settings Page to their default settings. This does not affect the settings saved to an image file on the computer. The <User Reset> setting will set all settings back to default. After any firmware updates, you must use the <System Reset> setting (your previous settings are saved).

- User Reset (a confirmation will pop up, press Enter to confirm and continue)
- System Reset (a confirmation will pop up, press Enter to confirm and continue)

Reset Page	
Relevant Buttons	Function
F1 (Back)	Back to previous page
△ / ▽ Directional	Scroll through the menu selections
Enter	Perform the selection
Start / Stop	Back to Main Work Page

5.2 SmartCONTROL™ Introduction

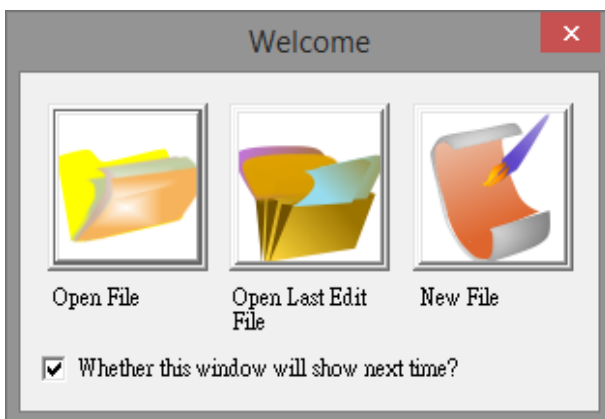
5.2.1 Reminder Window

In order to avoid transmission collisions, each time you launch the SmartCONTROL™ software, it will show a reminding message that shut down SmartCONTROL™ first if you want to print files through other graphic software to laser machine. Click “OK” to open SmartCONTROL™ software.

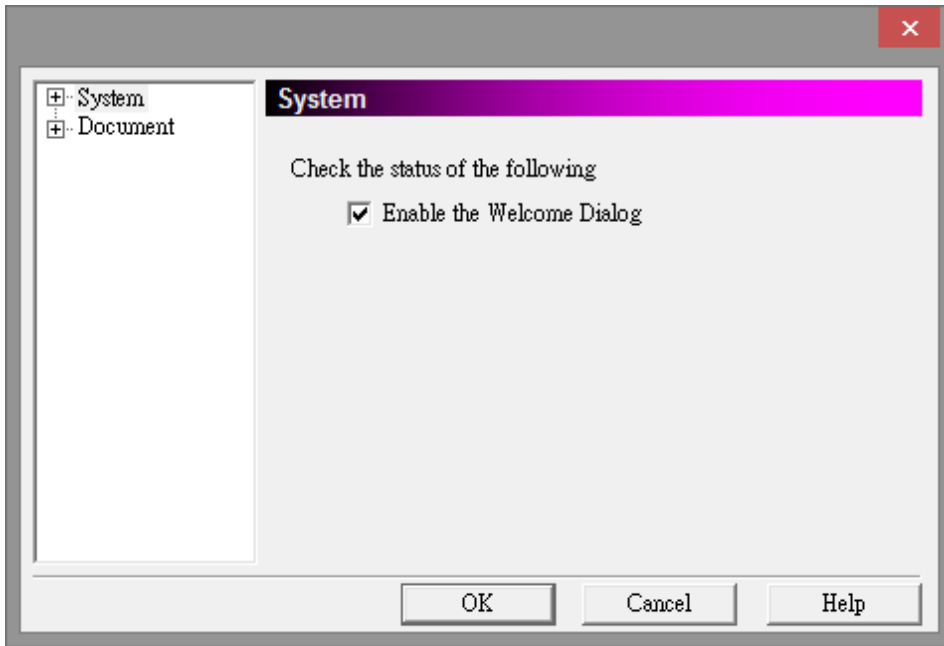


5.2.2 Welcome Window

This welcome window will allow you to quickly open historic files or begin a new job.

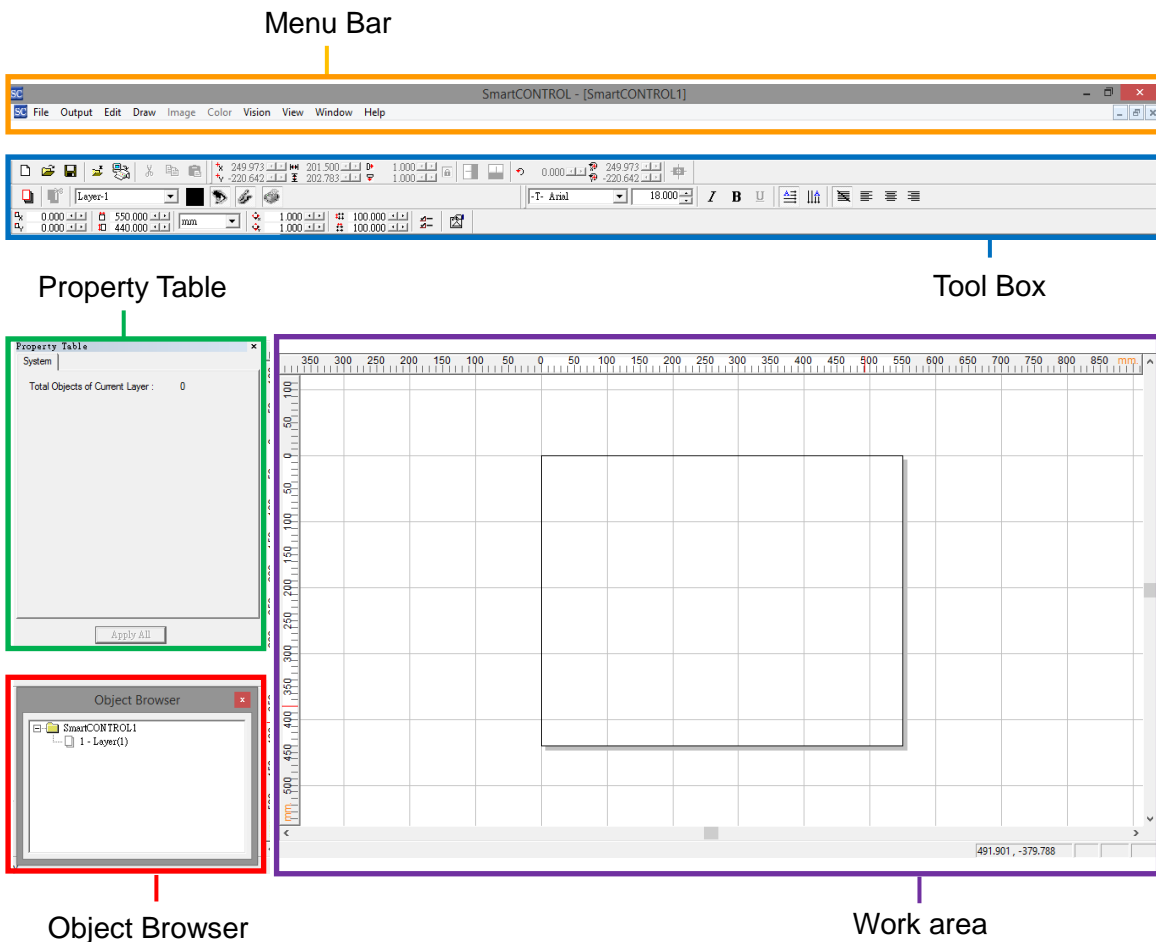


If you would like to disable this opening window next time you start SmartCONTROL™, please go to File→Option→System→Welcome and cancel the check on “Enable the Welcome Dialog”



5.2.3 Main Window

The Main Window of SmartCONTROL™ software is divided into several unique sections: The Menu Bar, the Tool Box, the Work Area, and the Property Table.



Menu Bar

Similar to many Windows™ based program, the Menu Bar contains the locations of almost all the functions of the SmartCONTROL™ Software. They are sorted into the following categories:

- File Menu
- Output Menu
- Edit Menu
- Draw Menu
- Image Menu
- Color Menu
- Vision Menu
- View Menu
- Window Menu
- Help Menu

More information regarding the different Menus will be provided in the following sections.

Tool Box

The default Tool Box is composed of the Standard Bar, the Properties Bar, the Draw Bar, the Font Bar, and the Edit Bar. These bars provide visual references for the most commonly used tools. More information regarding different tools would be present in the VIEW MENU section.

Work Area

The Work Area is where graphics placed to create a file. The area can be enlarged or decreased to equal the size of the materials that are to be engraved or cutting.

Property Table

All objects created or imported on the Work Area have their own unique sets of properties. These properties define how each specific object or groups of objects are displayed on the Work Area or marked by SmartCONTROL™. To display the properties of an object or a group, simply highlight it and the specific property details should reveal themselves on the Property Table. If the Property Table is not currently active, choose

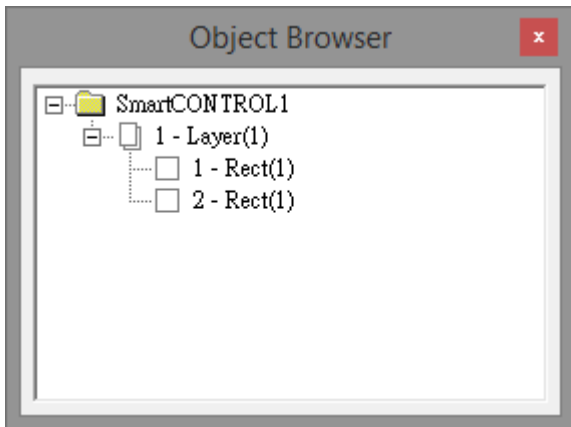
the object and press the right mouse button to choose Property Table.

NOTE

After you have edited one of the parameters in the Property Table, click on Apply or Apply to All in order to insert your changes.

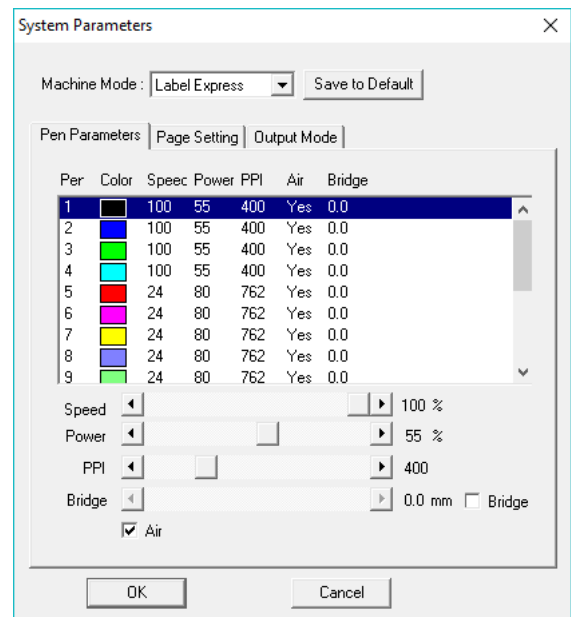
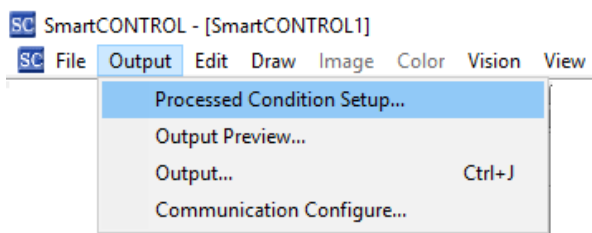
Object Browser

The Object Browser would show a OBJECT BROWSER Window in the left side, and list all the objects you create on the working area, you can identify the object format, create sequence, name the object and select objects by clicking it in the OBJECT BROWSER Window. The objects shown in the upper level means its output sequence.

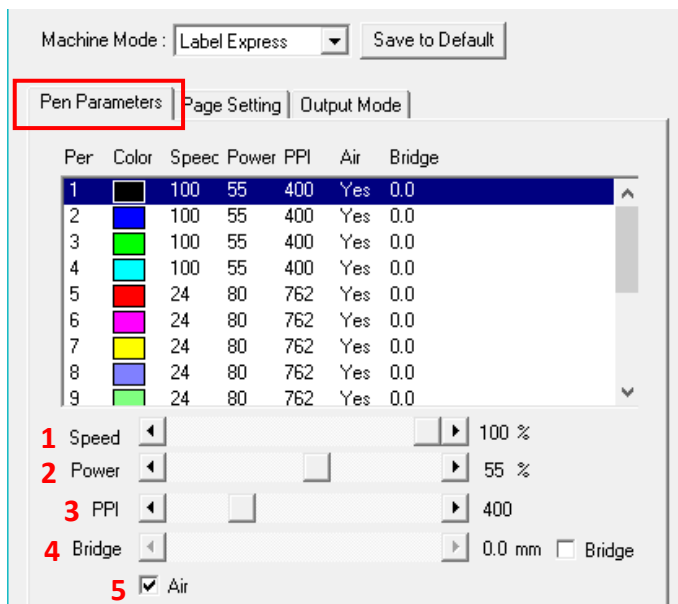


5.2.4 Processed Condition Setup

Set the output parameters such as pen parameters, page setting and output mode by selecting Processed Condition Setup under Output function.



- **Pen parameters**



SmartCONTROL™ provides 16 color pens, and each pen presents laser parameter setting, once colors are set, the pen would refer to the specified parameters when you apply the colors to an output. Pen Parameters under Processed Condition Setup would enable you to adjust the power, speed of each color pen.

- (1) Choose a color pen
- (2) Adjust the bar next to speed, power and PPI for the chosen color pen.

Remark:

1. **Speed**

The speed is calculated by percentage, which means some percentage of the max. speed of the indicated laser label cutter.

2. **Power**

The power is calculated by percentage, which means some percentage of the max laser power that the indicated laser label cutter has.

3. **PPI**

PPI (pulses-per-inch) represents the number of times the laser pulses (fires) per linear inch, exclusive for vector cutting. Higher PPI settings will generate deeper, overlapping laser pulses, resulting in cleaner cuts. Lower PPI settings (lower than 150) will result in the individual laser pulses being spread apart, resulting in a perforated effect (similar to

the perforation in the paper between mailing stamps).

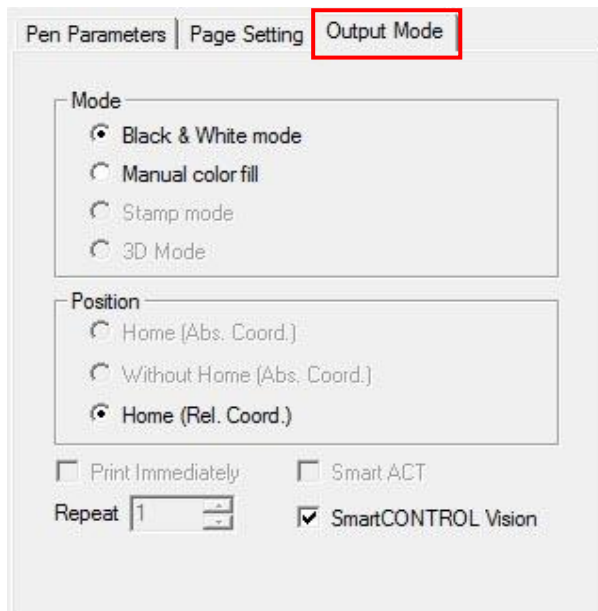
4. Bridge

Checking the Bridge Cutting checkbox will allow users to easily create perforation lines (dash-line). Once see the line color along with another corresponding pen can be used in tandem to indicate the length of the gap and the uncut part of a perforation line. (If Pen 1 is selected for bridge cutting, Pen 9 will be reserved to the length of the connected lines of the perforation. If Pen 2 is selected, Pen 10 will be reserved and so on...)

5. Air

This checkbox controls the SmartAIR air-assist function. By selecting a pen color and checking this box will enable the SmartAIR air-assist function for that particular pen color. As an example, if you are performing label cutting, you may want to enable the SmartAIR air-assist to avoid the edges of prints turning yellow. To do this, you would simply need to select the pen color that you have assigned to the sections to be cut and select the Air checkbox for those particular pen colors.

• Output Mode



(1) Mode

You can select from four primary mode settings, depending on your application or results you would like to achieve.

- **Black & White mode**

Select this mode when using clipart images or drawings with several colors, shades of gray, or many outlines. This mode outputs in a method similar to that of a black and white laser printer.

The GCC laser machine will interpret colored and shaded areas as 256-level shades of gray by producing a halftone effect while engraving. Instead of engraving only solid lines, gray or halftone areas will be a collection of dots with varying density.

The entire selected image will be engraved using a single set of power and speed settings (the black pen from the PEN menu. Please refer to the next section of the details regarding the PEN functions). The resolution and depth of these halftone areas can be adjusted with the DPI setting found on the Options page. Please note that selecting the Black & White mode will add a new Raster page to the menu. The Black & White mode dithering settings can be changed from the Raster page. (Please refer to the Raster section below for details). Experiment with different dithering settings to attain the desired results.

TIP

The Black & White mode interprets the processed image by the varying colors and shades. For the best results, we suggest you convert the image to a grayscale image with your graphics software prior to engraving in the Black & White mode.

- **Manual color fill**

Select this mode when you would like to designate specific power and speed settings and link them to certain colors of your image.

(2) **Position**

These selections allow you to control the positioning of the laser head after each job completion and before the next subsequent job.

- **Home**

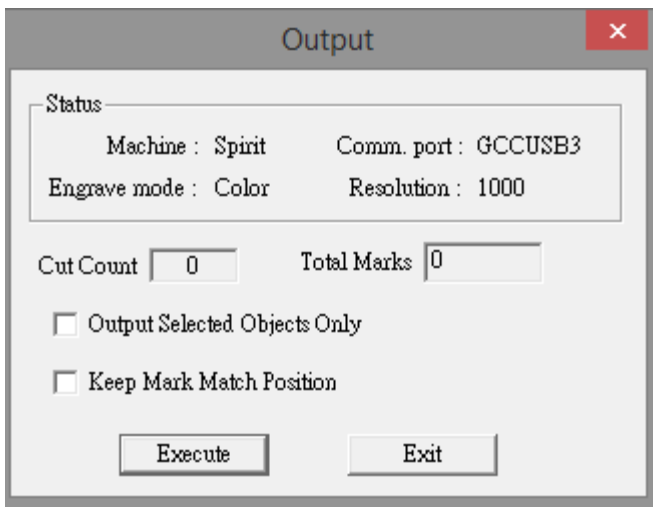
Set the position of laser machine carriage corresponding to the origin (top left) position of the graphic software before and after processing each job. Therefore, the laser carriage

will start a job from this home position and return to the home position after completed jobs.

(3) SmartCONTROL Label

More detailed setting can be found in Chapter 5.3.

5.2.5 Output



The output box would show all the output setting, and you can press Execute to start cutting or press Exit to close output and return to editing or output setting.

(1) Output Select Objects Only

Checking this will instruct the laser machine to prints the objects that you have selected.

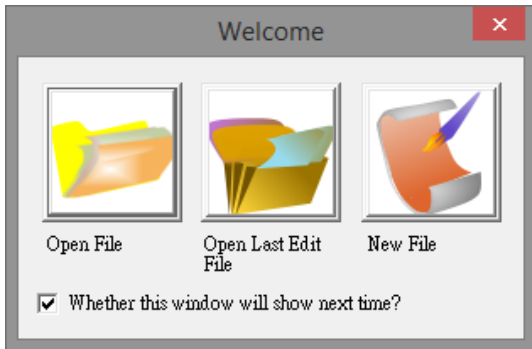
(2) Keep Mark Match Position

Checking this will instruct the SmartCONTROL™ Label used last time mark position to process job.

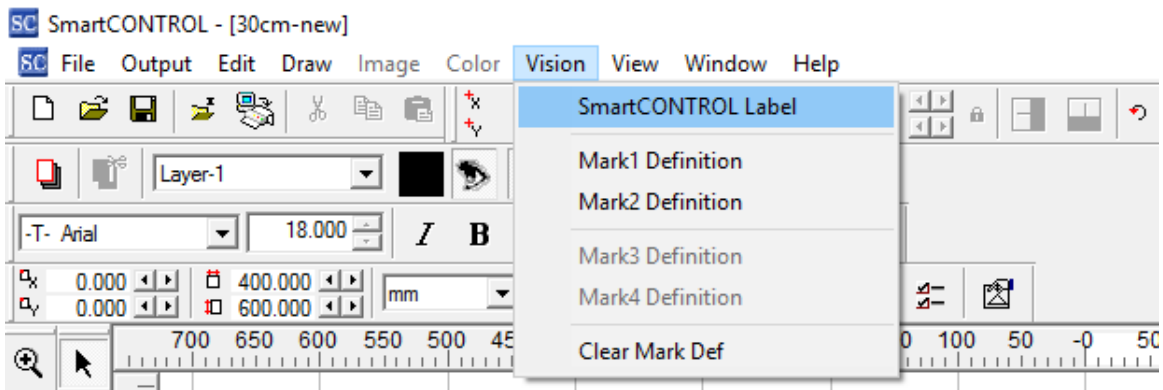
5.3 SmartCONTROL™ Software Label Function

5.3.1 Running the SmartCONTROL™

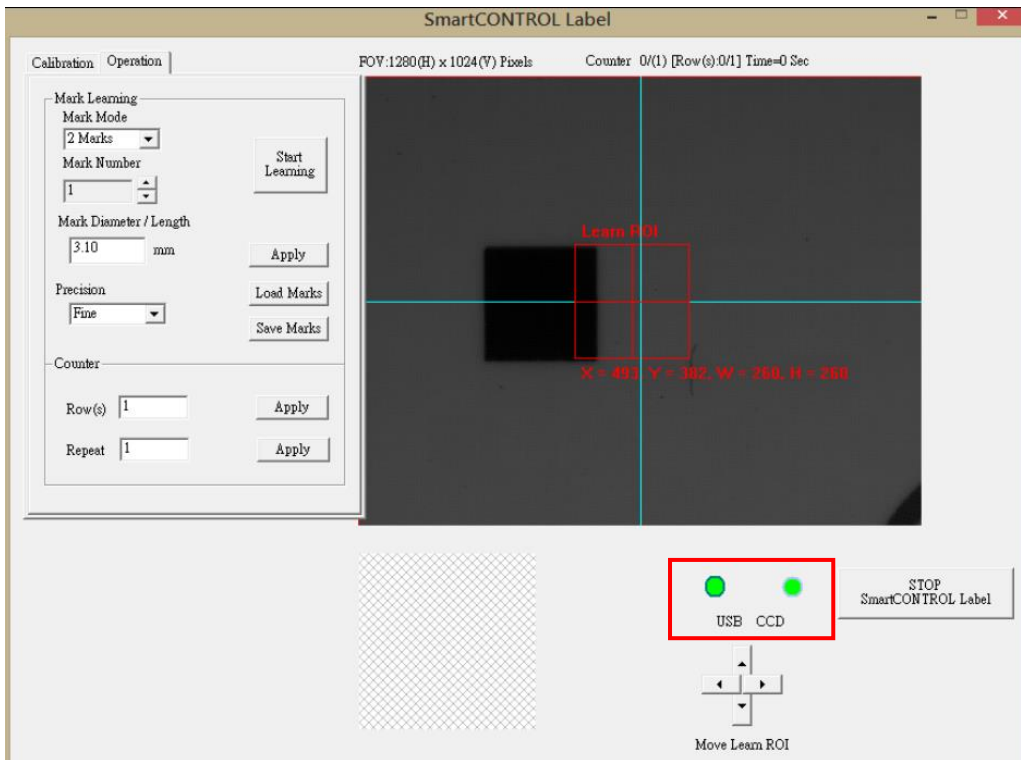
- (1) Launch SmartCONTROL™ software program and click “New File” or “Open File” to open history file.



- (2) Go to “Vision” in the Menu Bar and select “SmartCONTROL Label”.



- (3) Make sure connection status indicator shows **green** for both “USB” and “CCD” Status.

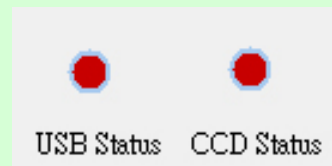


NOTE

If the connection status indicator shows red, please reconnect the two USB cables and make sure “USB Status” green light is on, and the “CCD Status” green light is blinking.



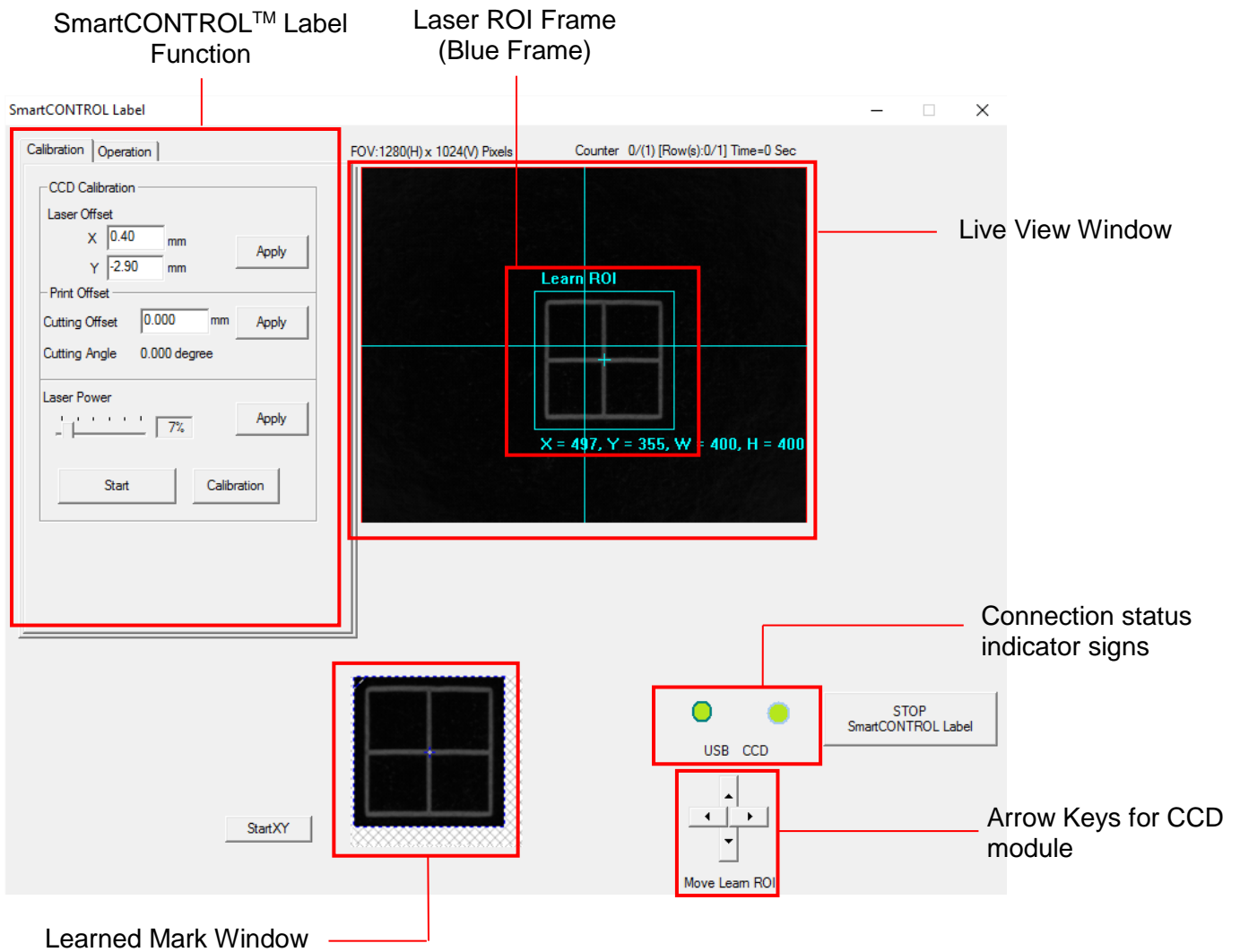
▲ Successful Connection



▲ Incorrect Connection

Incorrect connection may cause the SmartVISION™ Label fail to work.

5.3.2 SmartCONTROL™ Label Main Window



- **SmartCONTROL™ Label Function**

There are two functions of SmartCONTROL™ Label, including Calibration and Operation.

- **Live View Window**

Displaying the object read by SmartCONTROL™ Label in real time.

- **Laser ROI Frame**

It allows user to choose the registration marks for learning, all the objects in the frame will be defined as mark.

- **Connection Status Indicator**

Allow user to check connection status between the SmartCONTROL™ Label software and SmartVISION™ Pro CCD.

- **Learned Mark Window**

Shows the graphic which has been memorized

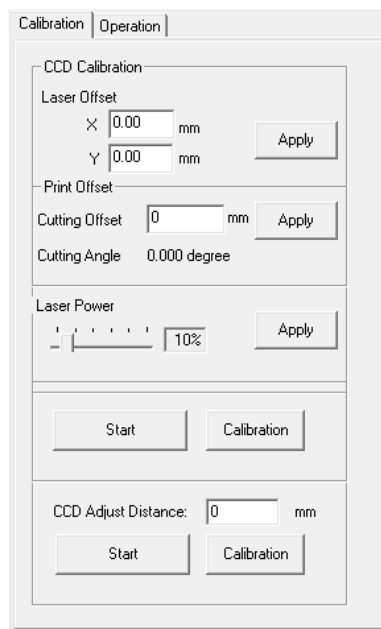
- **Arrow Keys for CCD module**
To fine tune the position of the SmartVISION™ Pro CCD module
- **Stop SmartCONTROL Label**
Stop the operation of SmartCONTROL™ Label

5.3.3 SmartCONTROL™ Label Function

The SmartCONTROL™ Label function is divided into two unique sections: the Calibration and the Operation.

➤ **Calibration Tab**

Calibration Tab allows user to accurately calibrate the position of CCD module and laser beam and the print shift.



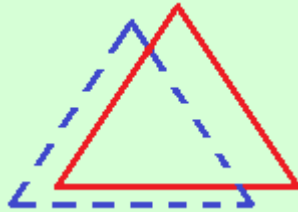
✚ **CCD Calibration**

- **Laser Offset**

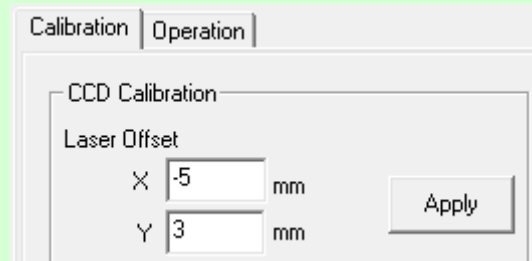
Define the offset of X axis and Y axis variation comparing with the contour of printed graphics and the actual cutting contour line.

NOTE

If the actual cutting contour line is on the left of printed graphics by 5 mm and 3 mm below the printed graphics, enter “-5” in X and “3” in Y in Laser Offset section for laser offset calibration.



- Actual cutting contour line
- The contour of printed graphics



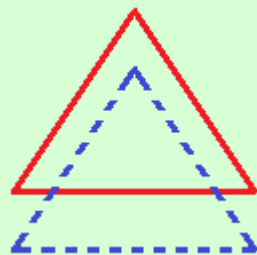
- Print Offset

Define the offset of angle variation comparing the printed graphics with the original designed graphics.

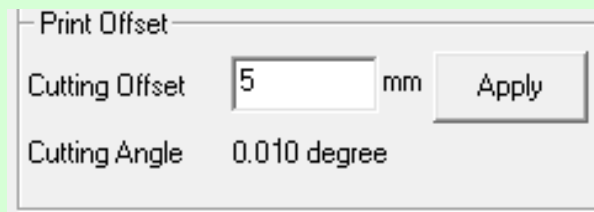
Acquire the Cutting Offset value by measuring the shift between the actual cutting line and the edge of the printed graphic on the rightmost side. Fill in the measured shift value in Cutting Offset and the Cutting Angle will be calculated automatically.

NOTE

If the actual cutting contour line is 5 mm below the printed graphics, enter “5” in Cutting Offset in Print Offset section.



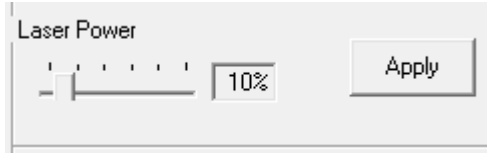
- Actual cutting contour line
- The contour of printed graphics



✚ Laser Power

Define the laser power applying for performing label cutting.

Define the offset of X axis and Y axis variation comparing with the original learned mark when SmartCONTROL™ Label is reading or searching marks.

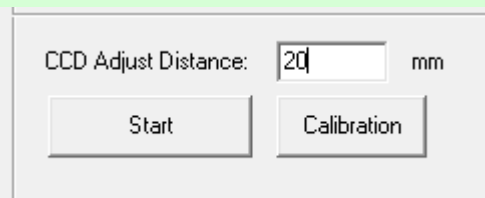
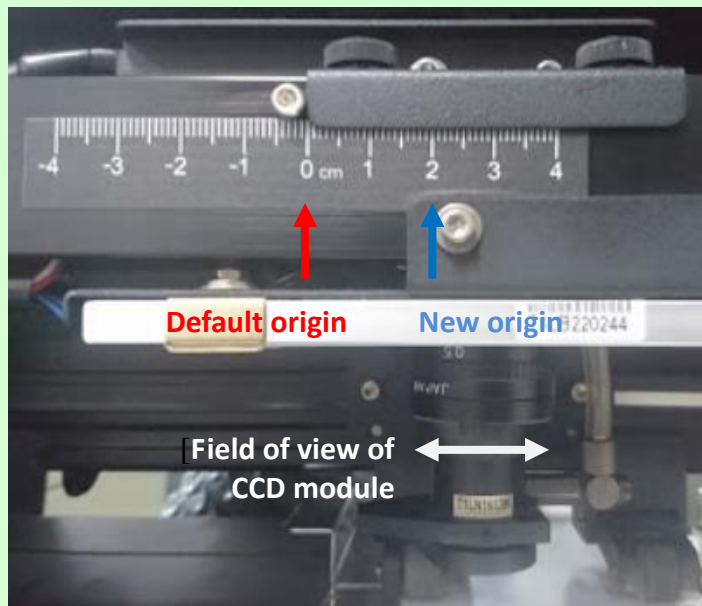


✚ CCD Adjust Distance

Move the position of the CCD module rightwards or leftwards to allow CCD module to read the registration mark when the mark is out of field of view of the CCD module. If moving CCD module rightwards, input positive value and input negative value if moving leftwards.

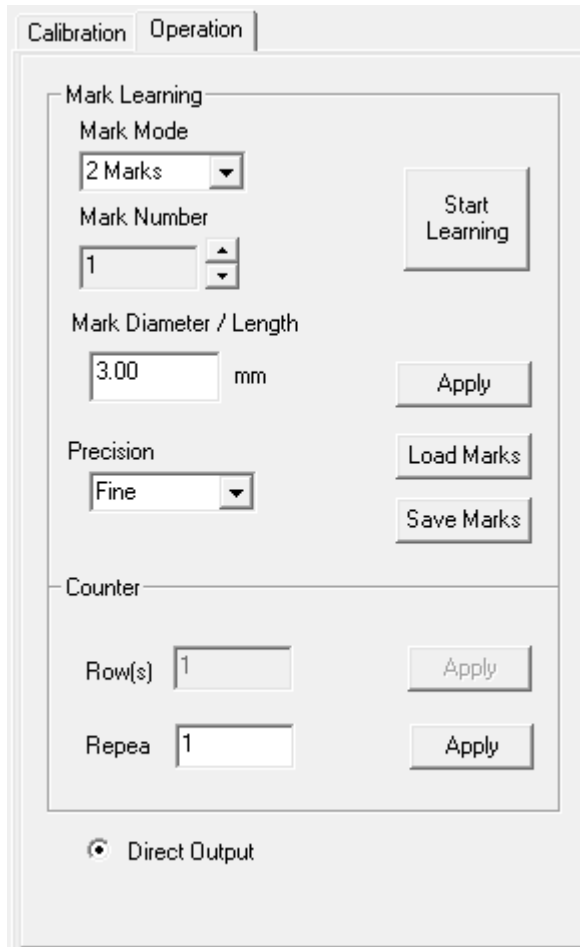
NOTE

The default origin of CCD module is at “0” on the alignment rule for CCD module. If moving the CCD module to the right by 20 mm, you should input “20” in the CCD Adjust Distance to calibrate the new origin of CCD module.



➤ Operation Tab

Operation allows users to learn, save and load the marks and define the number of jobs to be performed each run.



Mark Learning

- **Mark Mode**
Define using two-mark mode.
- **Mark Number**
Assign a number to the mark SmartCONTROL™ Label is about to learn.
- **Start Learning**
Start to lean the marks. Select 1st mark to start learning, and the 2nd mark learning will be succeeded automatically after 1st mark learning is complete.
- **Mark Diameter/Length**
Set the registration mark dimension or length, and the laser ROI frame will be automatically adjusted to the suitable size for the best result. The default setting of the ROI frame is 3.1mm.
- **Precision**
Define the mark reading mode. Fine mode provides highest output quality whereas Speedy mode provides highest output speed.

- **Save Marks**
Save the marks which are learned.

- **Load Marks**
Load the marks which are saved.

 **Counter**

- **Row(s)**
Define the number of rows will be cut each job.
- **Repeat**
Define the times the laser system to output the same job.

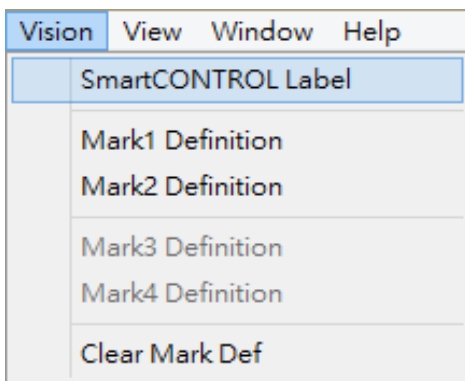
 **Direct Cut**

Cut the selected graphic directly. The position where the cartridge is will be the start point for cutting and marks learning will not be performed.

5.3.4 Calibrating SmartCONTROL™ Label

Calibration function is to calibrate the shift and angle variation caused by printing or media loading. Perform the calibration to ensure the cutting accuracy.

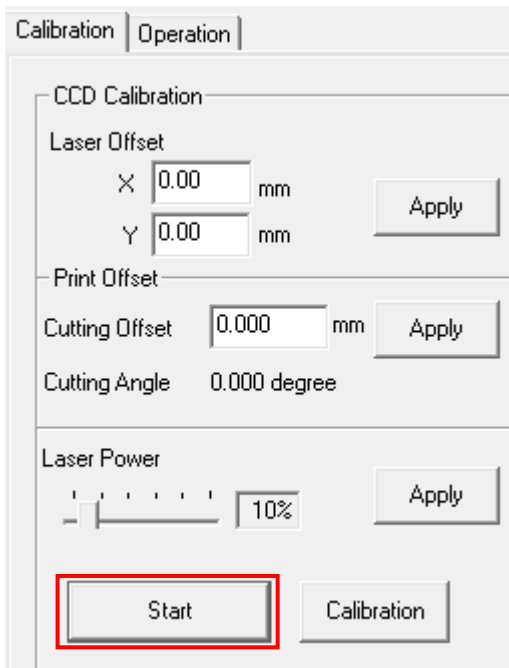
- 1) Load the printed roll media onto LABELXPRESS/DECALEXPRESS.
- 2) Launch SmartCONTROL™ and Click "Vision" on the menu and select "SmartCONTROL Label" from pull-down menu.



- 3) Move the laser carriage to blank area.



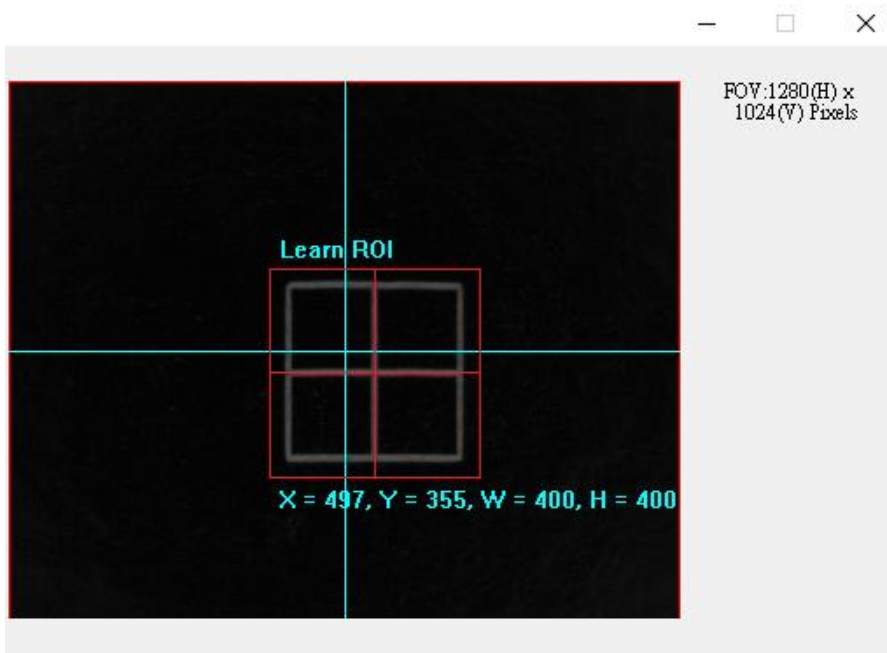
4) Click the “Start” button in “Calibration” tab.



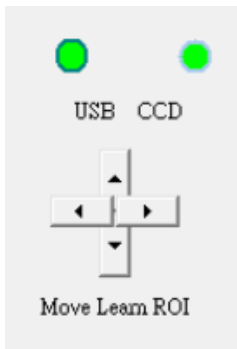
5) The laser machine will engrave a calibration mark.



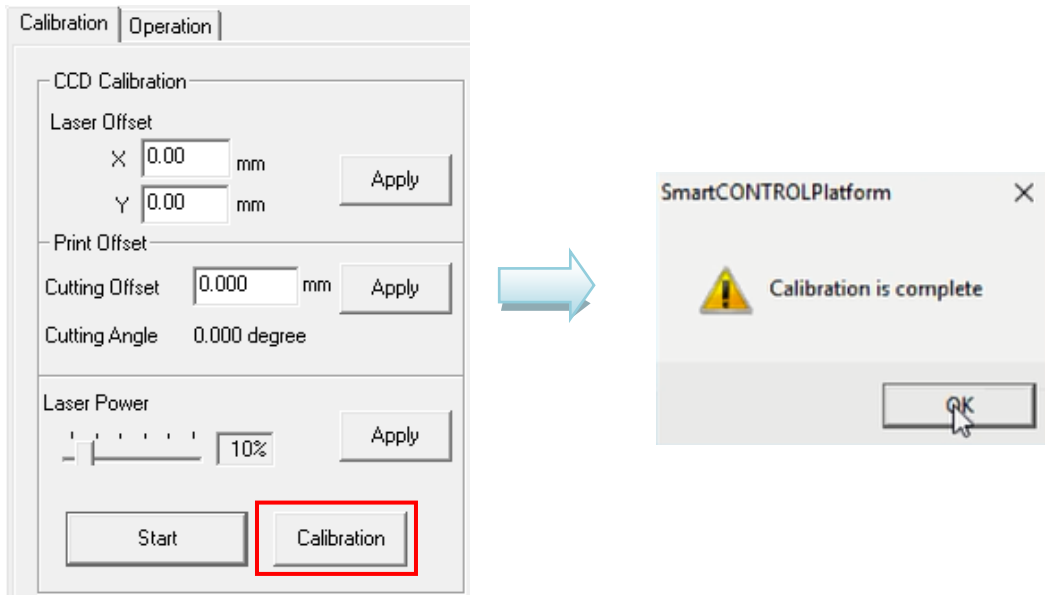
- 6) Move the CCD to the position where the screen shows the engraved calibration mark and make sure the frame crosshair is aimed at the center of the mark.



Users can use the Arrows Key to fine-tune the position of ROI frame.



- 7) Click Calibration button to complete the CCD calibration.



5.3.5 Convert and Import File

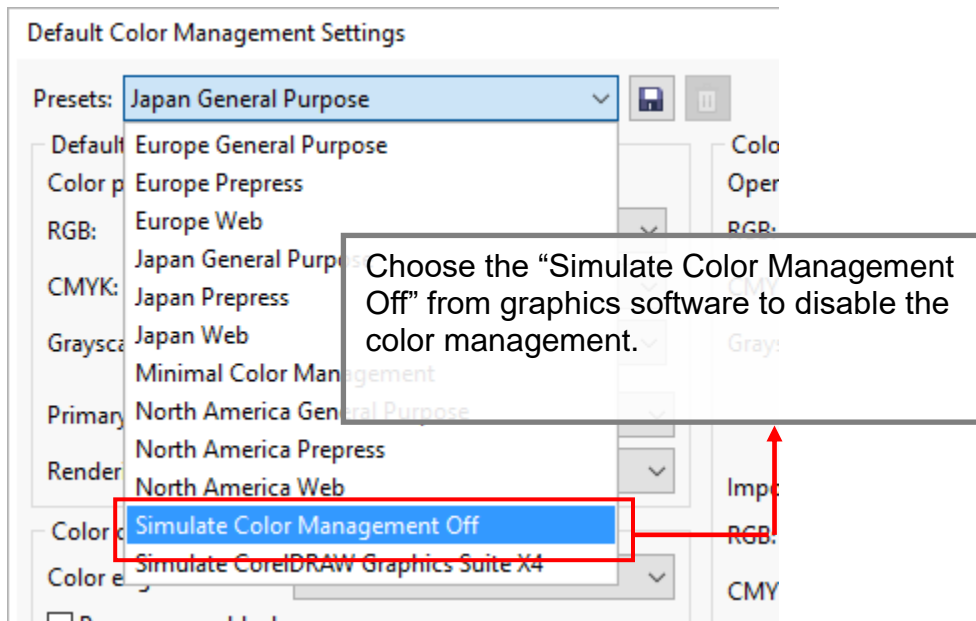
For the best output quality, we recommend you convert the graphic file to **prn format** via SmartCONTROL™ print driver from the graphics software (e.g. CorelDRAW or Illustrator). SmartCONTROL™ print driver will install to your computer automatically when you installed SmartCONTROL™ software.

Before converting the graphic file, please make sure Color Management is disabled and the Page Size fits to SmartVISION™ Pro CCD under graphic software.

CorelDRAW Example (Color Management)

The following is an example of how to properly disable Color Management in the graphics software. CorelDRAW is the designated graphics software used for this example. For other graphics software, you will need to access the corresponding Color Management page.

- 1) From the primary menu, click Tools → Color Management → Default Settings... and CorelDRAW's Default Color Management Settings will appear.
- 2) Under the Present pull down menu, select Simulate Color Management Off.



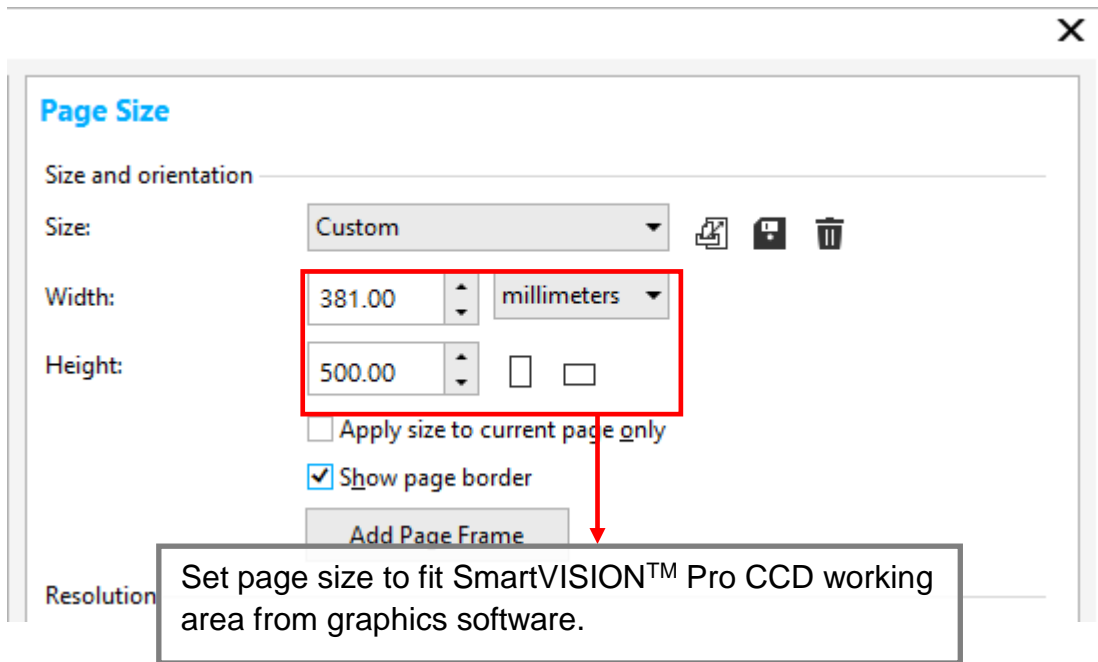
3) Click OK to complete the color management adjustments.

From your graphic software’s Page Setup page:

CorelDRAW Example (Page Setup and Orientation)

The following is an example of how to set the Page Setup and Orientation in the graphics software. CorelDRAW is the designated graphics software used for this example. For other graphics software, you will need to access the corresponding Page Setup page.

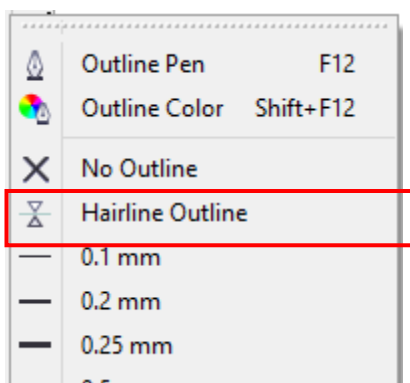
- 1) From the primary menu, click Layout → Page Setup.
- 2) From the navigation bar on the left, click Document → Page → Size.
- 3) Ensure that LANDSCAPE is selected.
- 4) Input the size of Width and Height dimensions to match the LABELXPRESS/DECALEXPRESS work area dimensions.
 - ◆ LABELXPRESS/DECALEXPRESS with SmartVISION™ Pro CCD: 381mm x 500mm (15” x 19.7”)



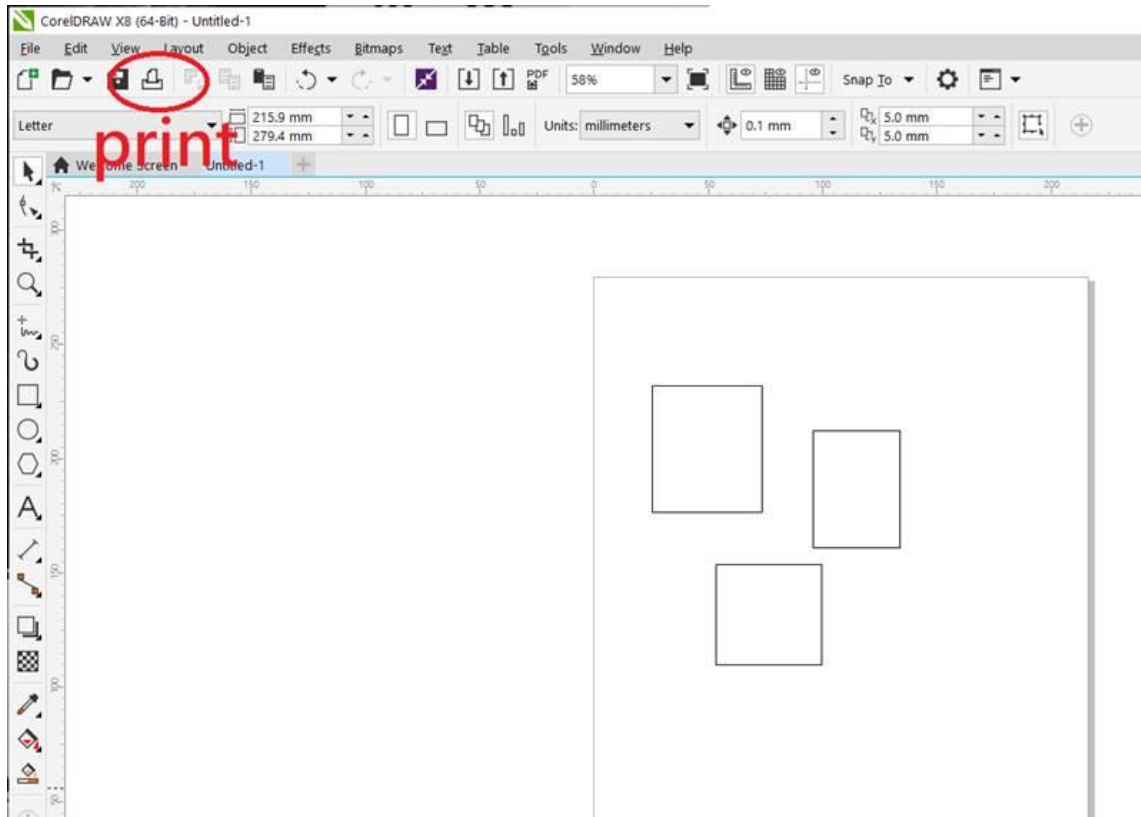
- 5) Click OK to end the paper size adjustment.

Here we use CorelDraw as illustration of how to convert a file.

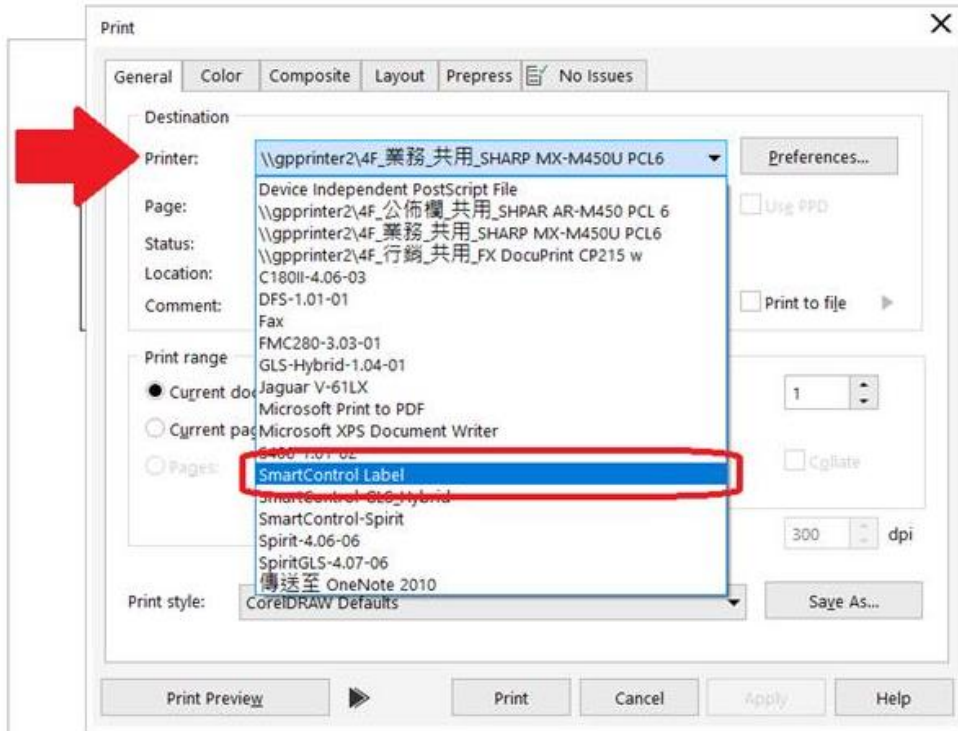
- 1) Select all the designed objects and set the outline to hairline from tool bar in the graphics software.



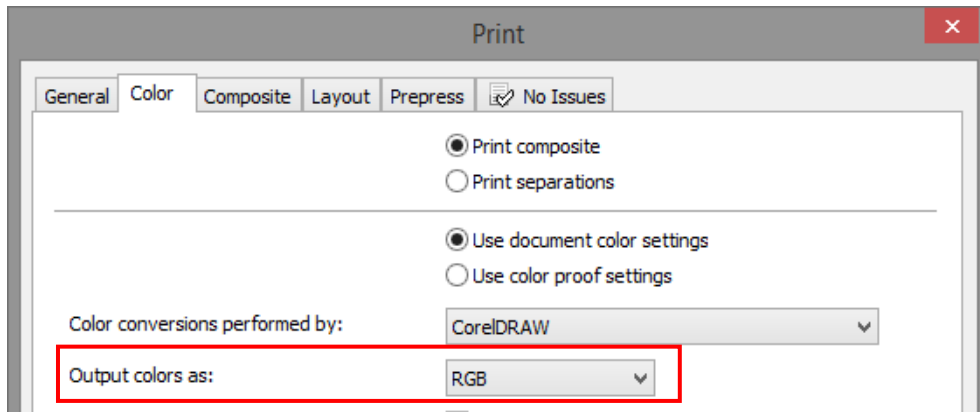
- 2) Click File → Print... from the primary menu in graphics software and the Print window will appear.



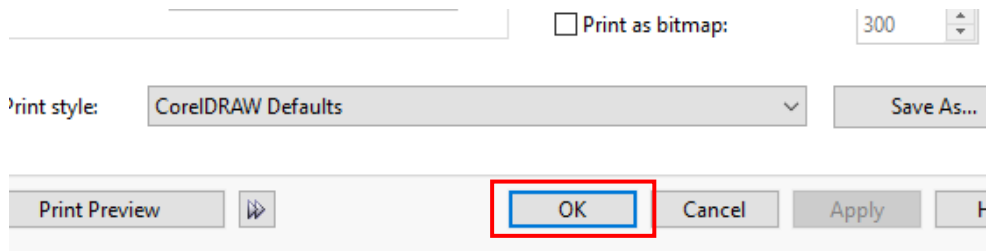
- 3) Select "SmartControl Label" to output. If you do not find "SmartControl Label" from the printer list, please check if SmartControl is properly installed in your computer.



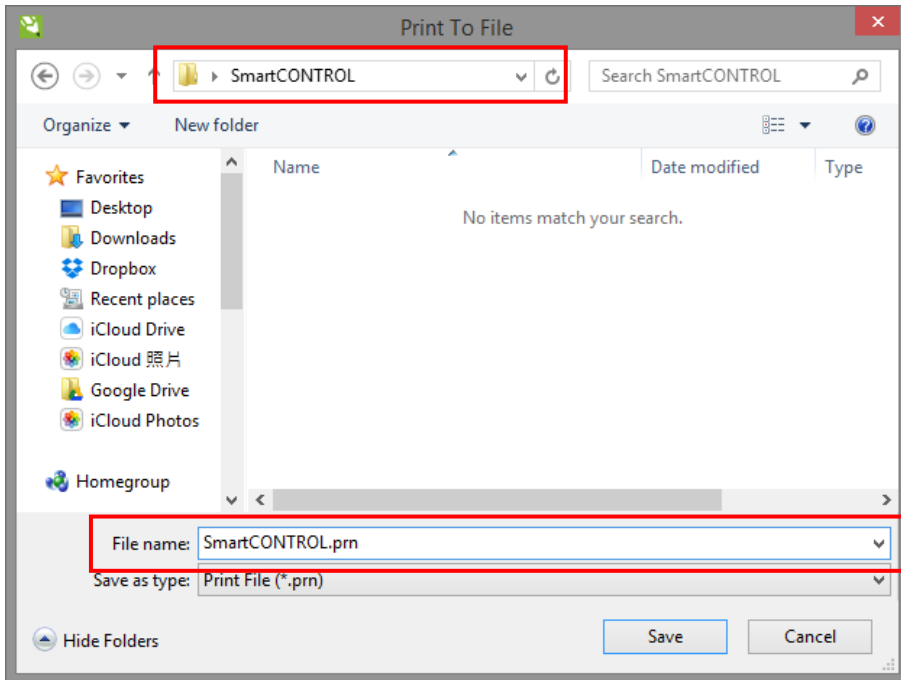
- 4) Click “Color” tab to make sure the “Output colors as:” set as RGB, and then click “OK” to continue.



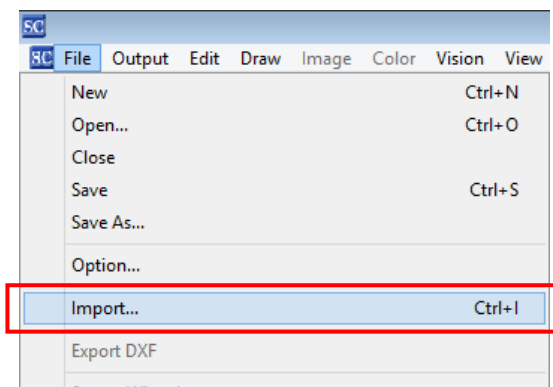
- 5) Click “OK” and Print To File window will appear



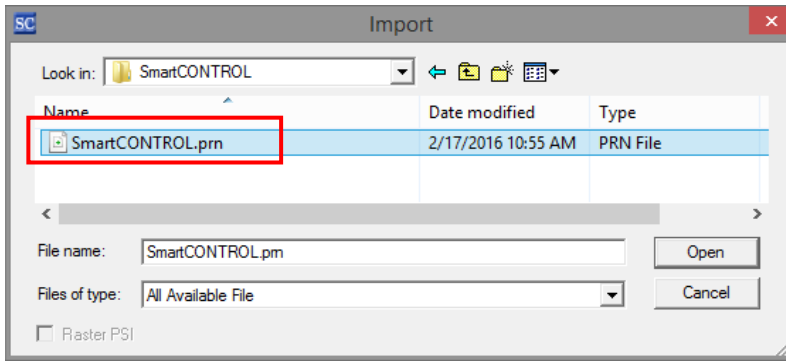
- 6) Select the save folder, define file name and select file type as prn, then click “Save” to convert



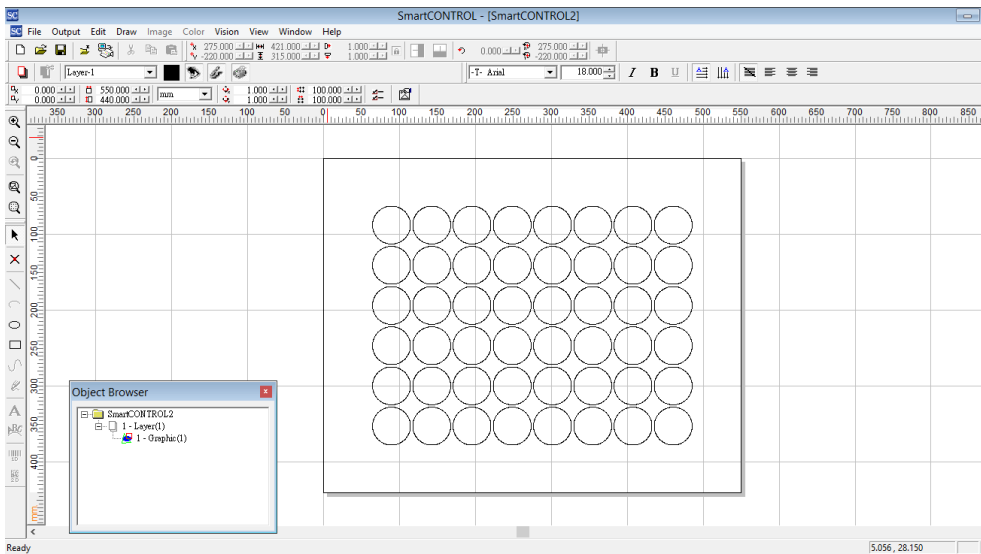
- 7) Close the graphics software (here is Corel Draw) and open the SmartCONTROL™ Software.
- 8) Click “File” → “Import”



- 9) Select the converted file and click “Open” to import the saved file to SmartCONTROL™



10) File import is completed.

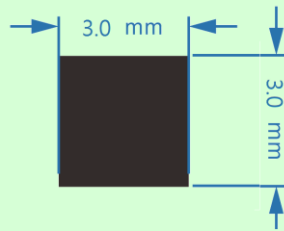


5.3.6 Operating SmartCONTROL™ Label

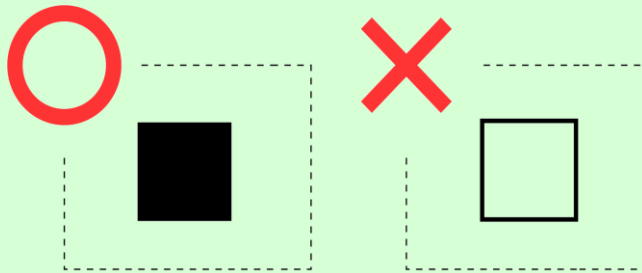
It is suggested to use square as registration mark to ensure high precise cutting.

NOTE

- The recommended value for registration mark size is 3 mm.



- SmartCONTROL™ will automatically define the mark #2. Make sure all the registration marks are the same type and filled before converting the graphic file to prn format.

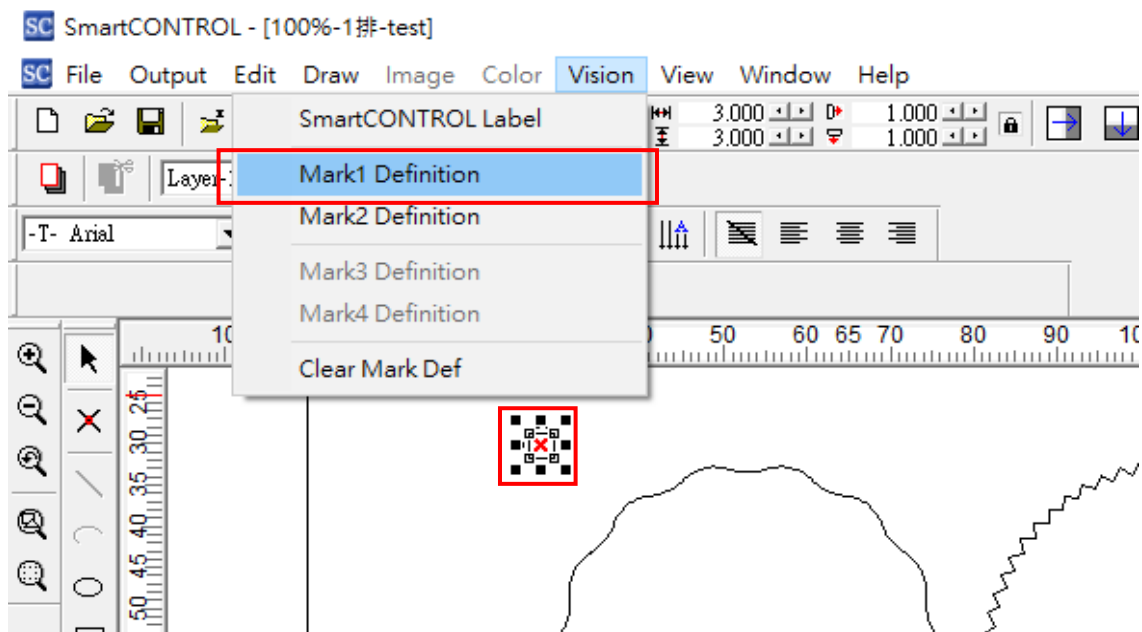


Perform roll media cutting

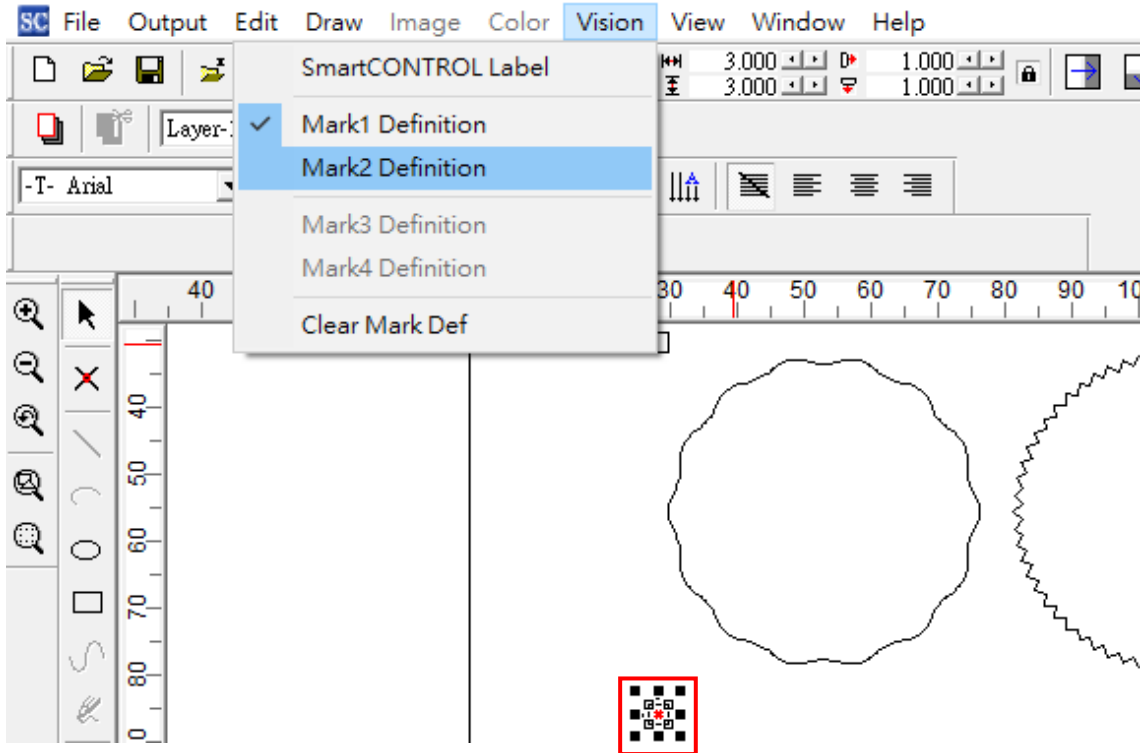
- 1) Load the printed roll media on the work area.



- 2) Open the file or import prn file illustrated in Chapter 5.3.5.
- 3) Select the square on the upper left side of the graphic and select Mark1 Definition under Vision menu to define it as the first mark.

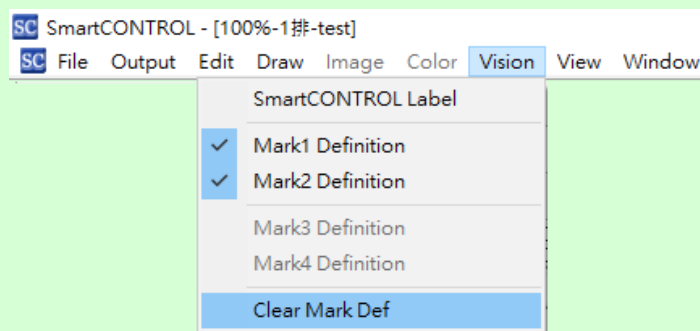


- 4) Select the square on the lower left side of the graphic and select Mark2 Definition under Vision menu to define it as the second mark.

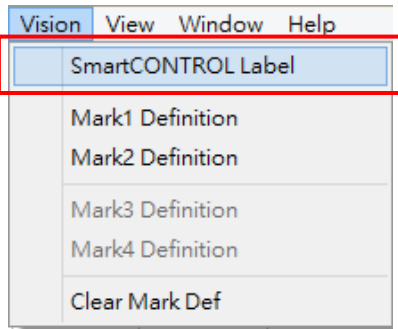


NOTE

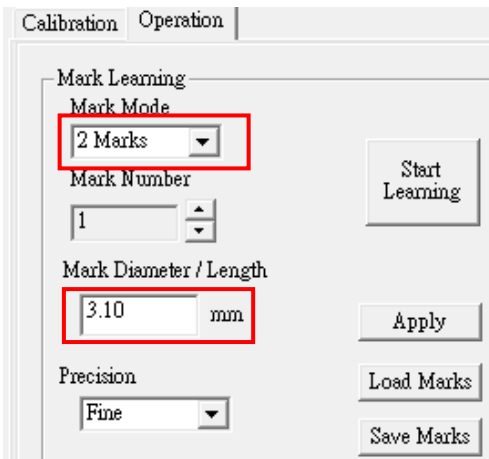
- If you want to redefine the mark1 and mark2, select Clear Mark Def under Vision menu and repeat the above steps to redefine the marks.



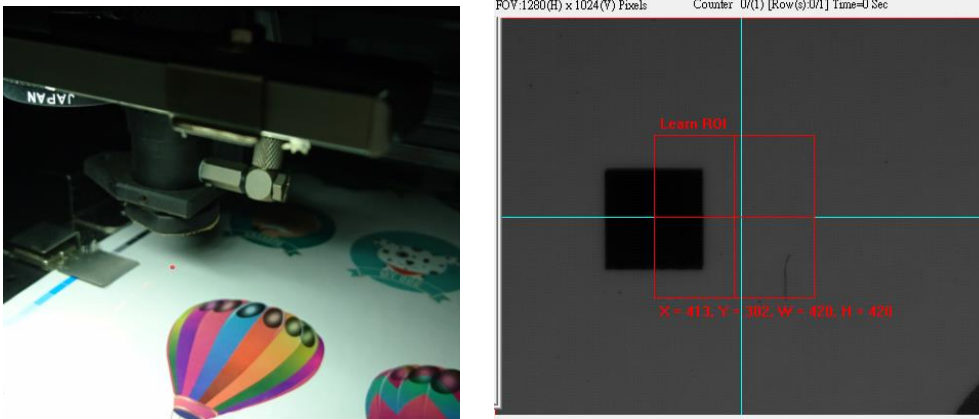
- 5) Click "Vision" on the menu bar and select "SmartCONTROL Label" to launch the Label operation window



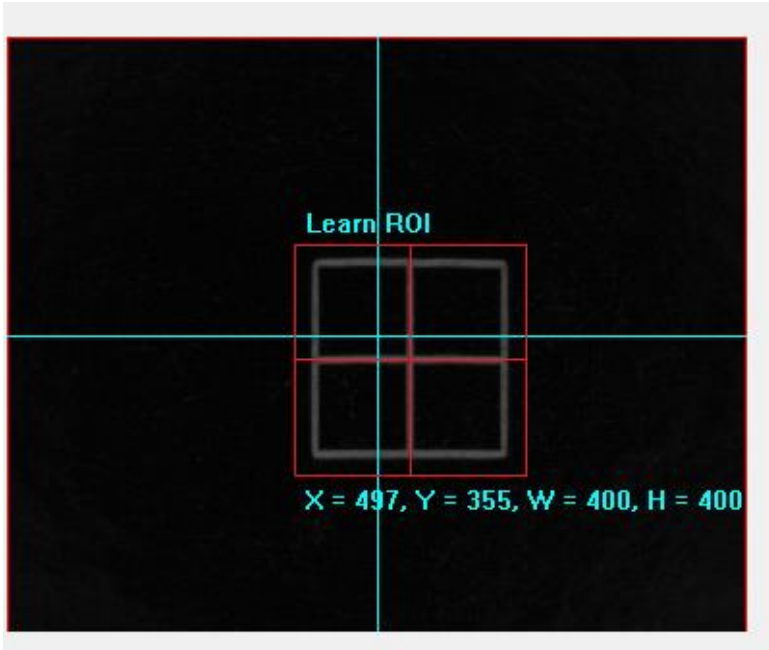
- 6) Go to the “Operation” tab, the default setting of Mark Mode is 2 Marks. Input registration mark Diameter/Length value in the Mark Diameter /Length field.



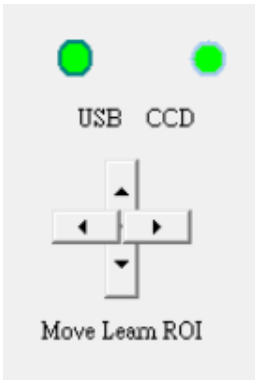
- 7) Move the media forward/backward to allow SmartVISION™ Pro CCD module to read the first mark and show the mark on the software screen.



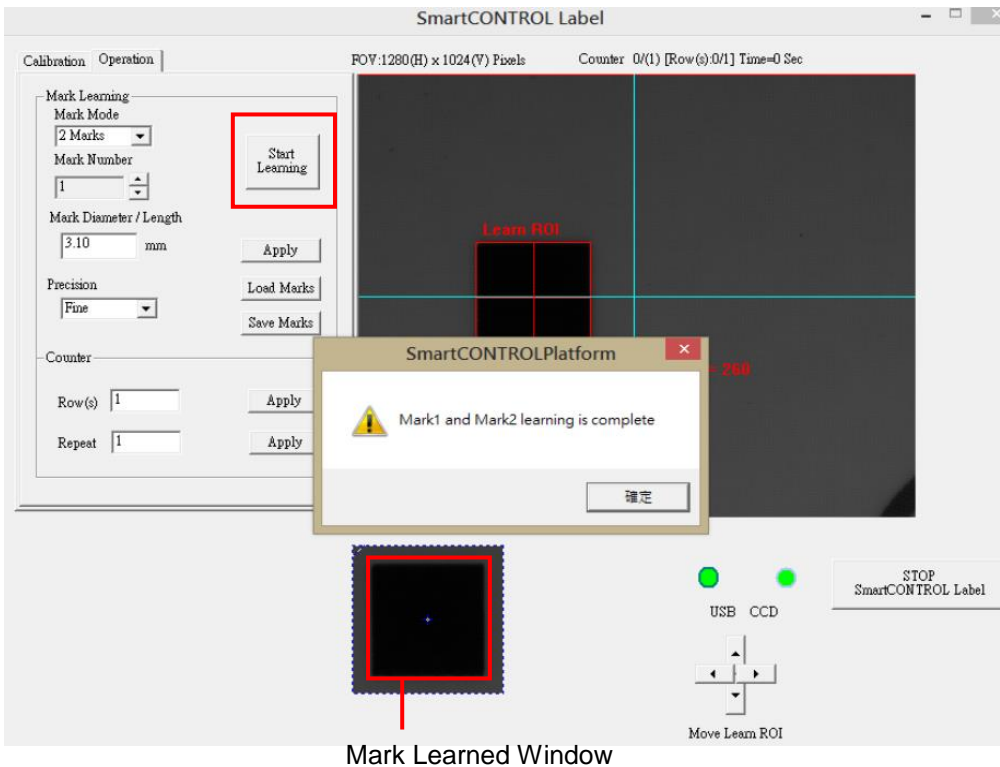
- 8) Use the mouse to move the laser ROI frame until the crosshair of the frame aims at the center of registration mark.



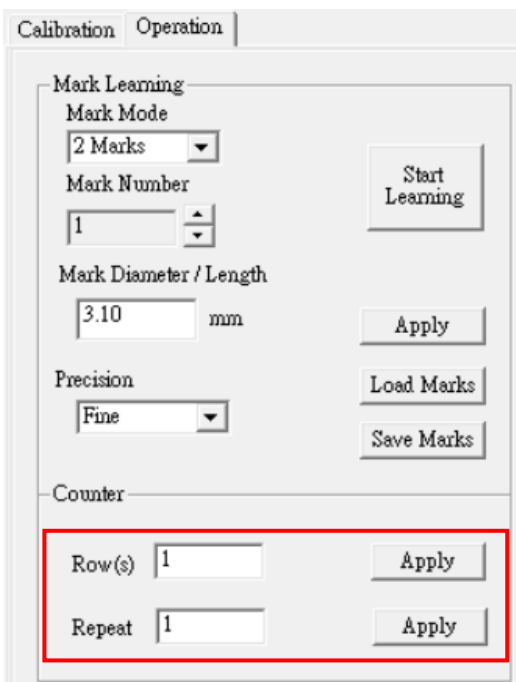
Users can use the Arrows Key to fine-tune the position of ROI frame.



- 9) Click "Start Learning" button, the Learned Mark Window will show the memorized pattern and the mark 1 and mark 2 will be learned successively.



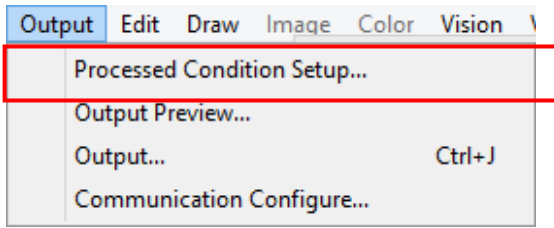
- 10) Define the number of rows will be cut each job and the times the laser system to output the same job.



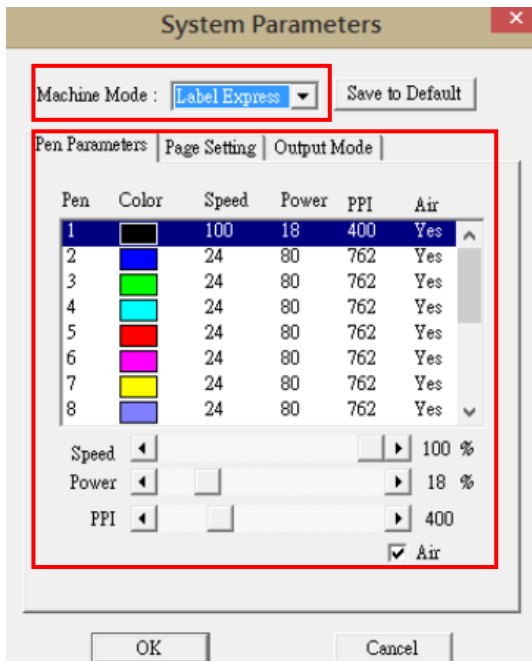
NOTE

Auto-feed function automatically feed the roll media 35 cm each time. If the totaled length in one cutting process exceeds 35 cm, a warning window will pop up to notify you that cutting length is over the allowed range and need to adjust the value.

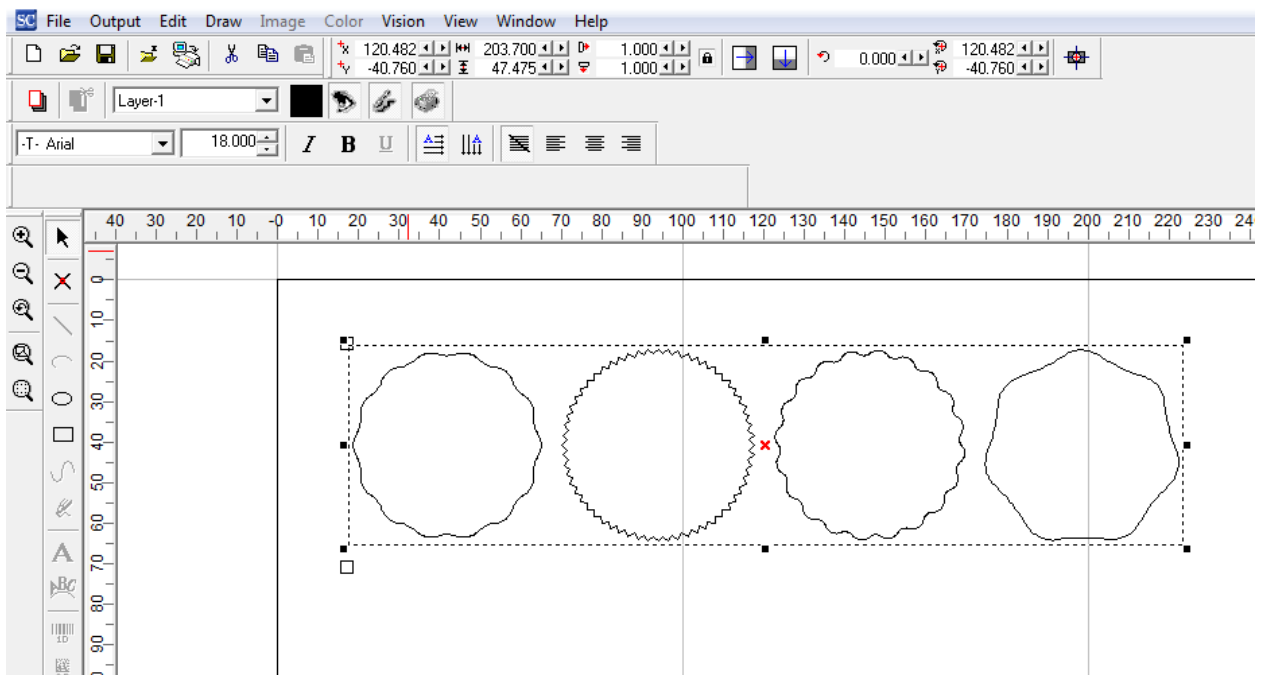
11) Click "Output" on menu bar and click "Processed Condition Setup"



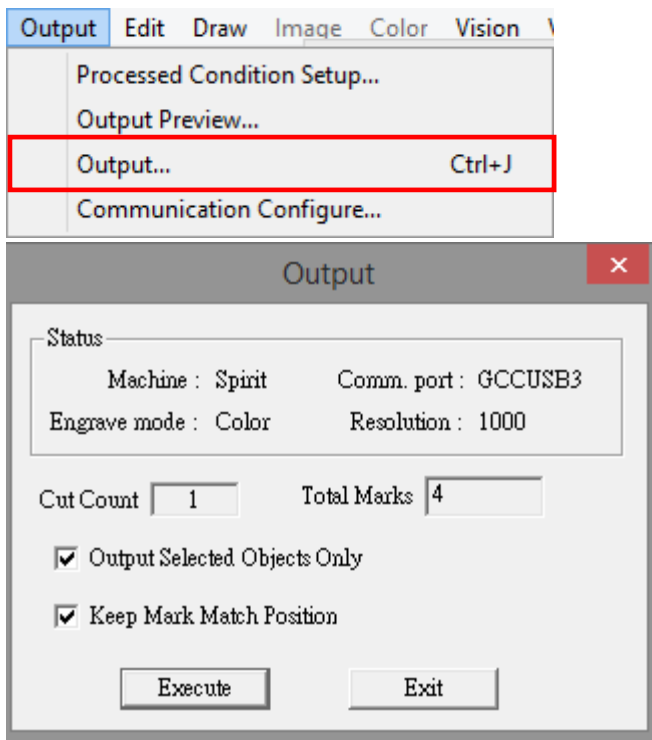
12) Select machine from "Machine Mode" and set the processing parameter in "Pen Parameter" tab.



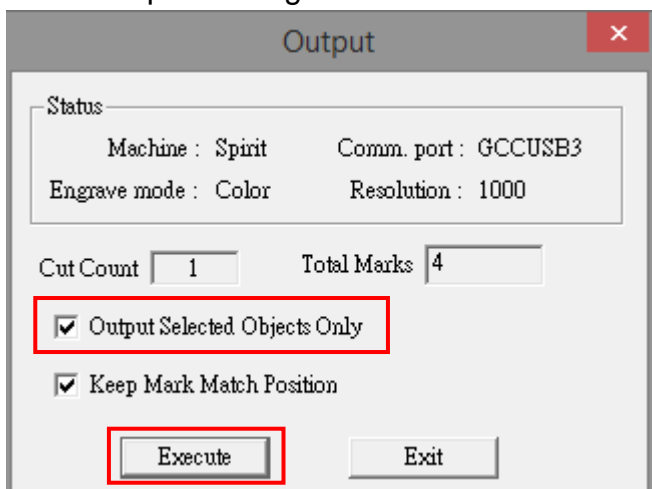
13) Select the objects to be cut.



14) Click "Output" on menu bar and click "Output".



15) Check "Output Selected Objects Only" and the "Execute" button to start CCD reading and laser processing.



NOTE

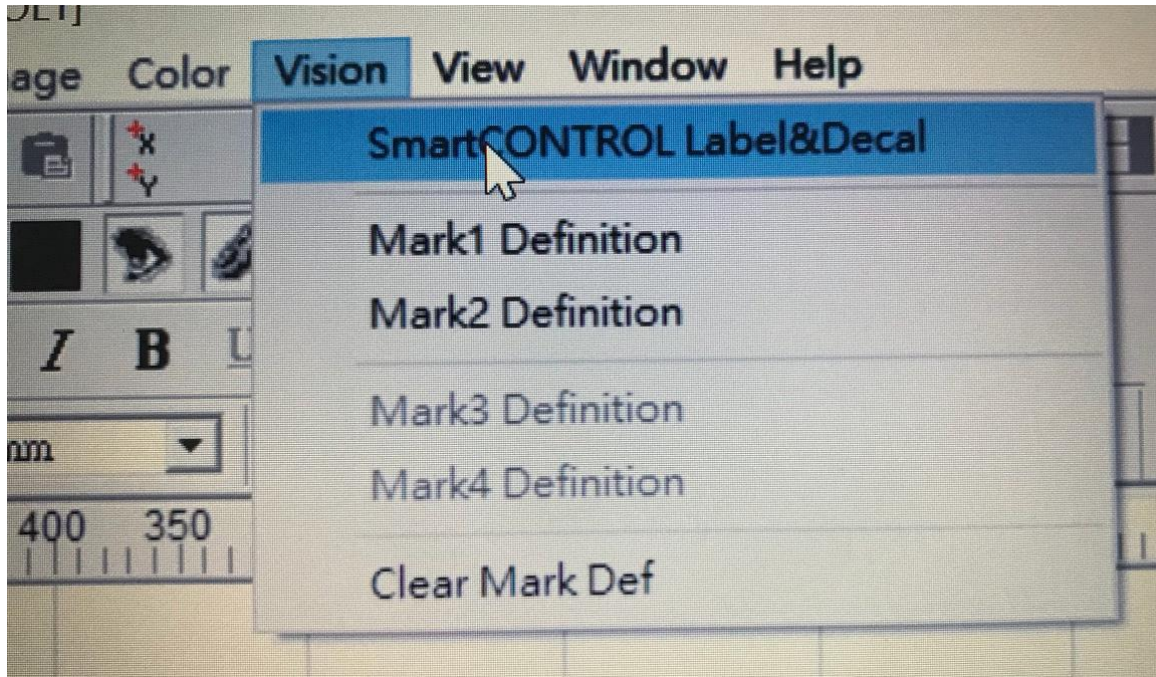
If there is any emergency when SmartCONTROL™ Label is processing, press "STOP SmartCONTROL Label" button to stop the CCD action immediately.



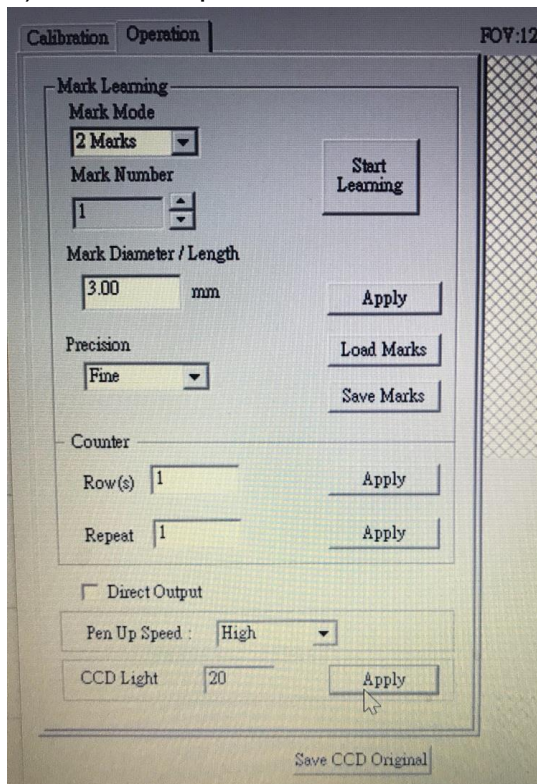
- 16) SmartVISION™ Pro CCD will automatically search for the registration marks and perform laser cutting jobs.

5.3.7 CCD Light Adjustment

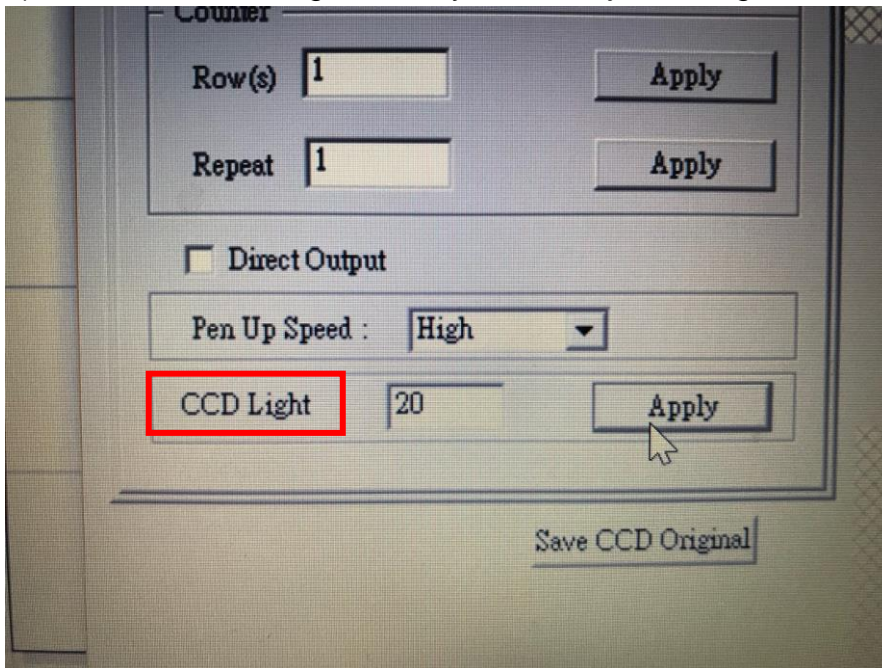
- 1) Go to Vision and click “SmartCONTROL Label&Decal”



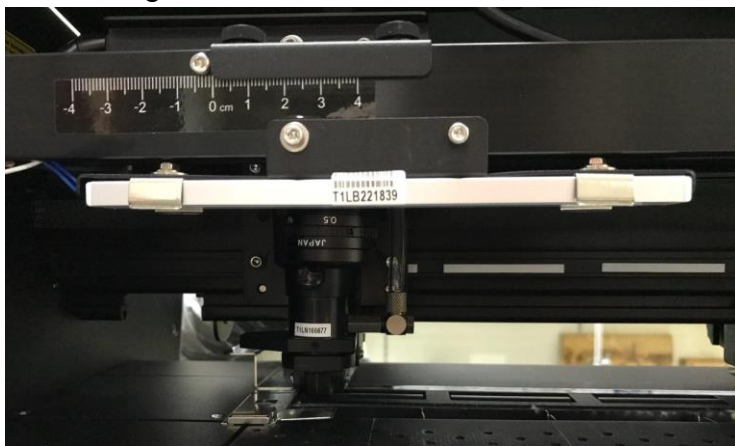
- 2) Choose Operation Function



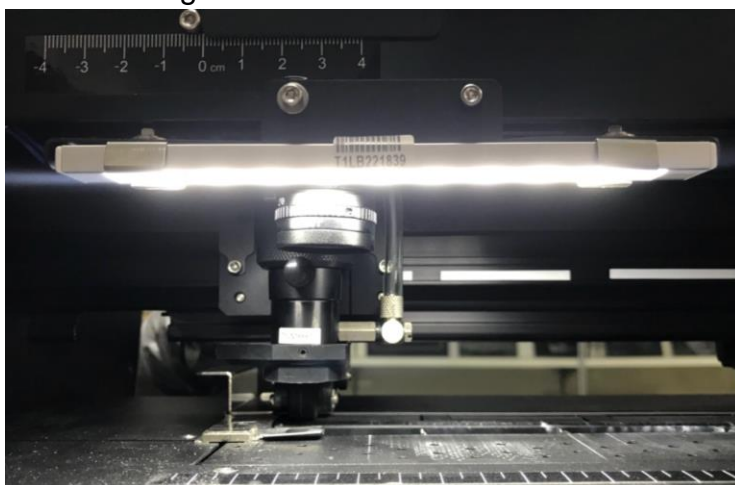
3) There is a CCD Light which you can adjust the lightness from 0 to100



0: CCD Light off



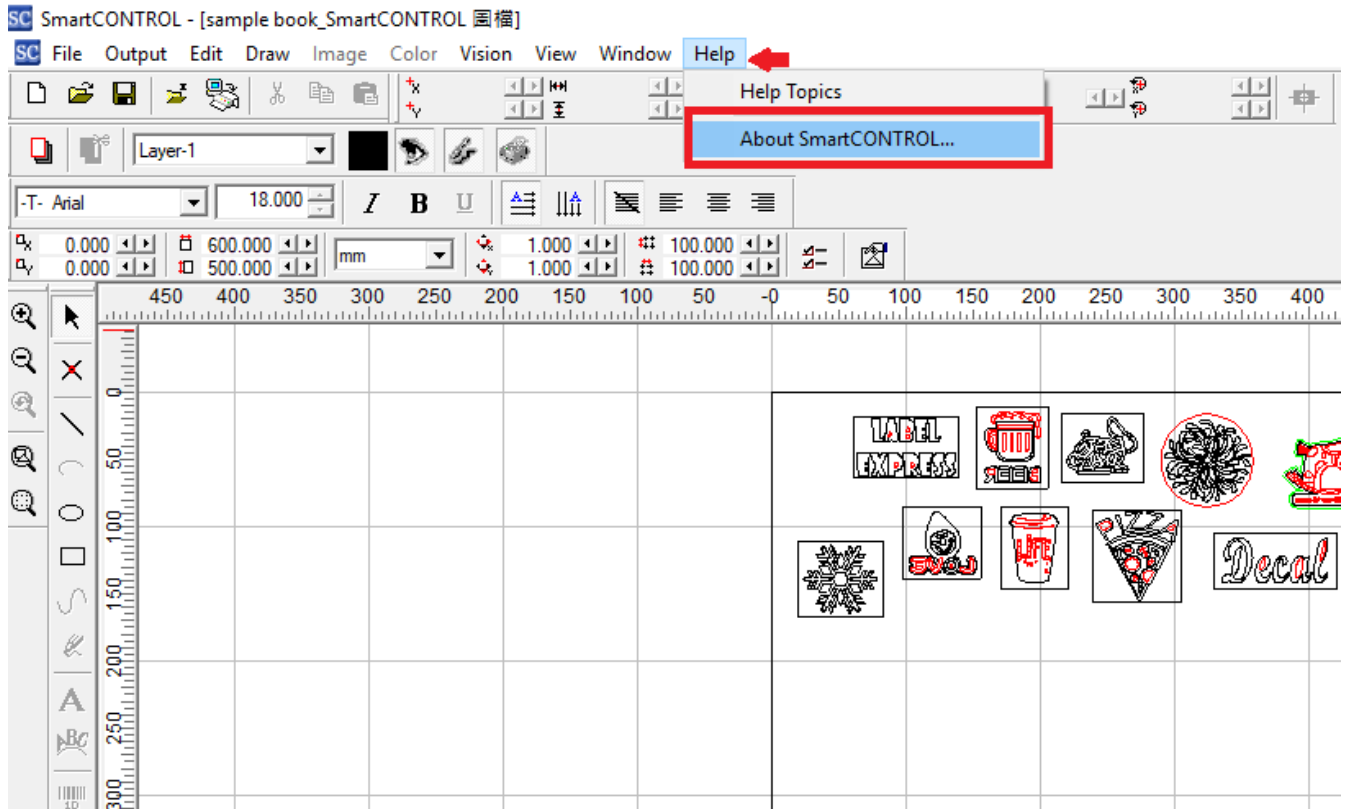
100: CCD Light on



5.3.8 LabelExpress / DecalExpress Sample Book Suggested Parameters

GCC LabelExpress/DecalExpress delicate sample book is now available for purchasing. Follow the below steps, you will find GCC suggested parameters for those materials shown in the sample book.

1) Go to Help and click “About SmartCONTROL...”



2) Click Sample Book Parameters





- 3) Then you will see GCC suggested parameters for LabelExpress/DecalExpress (30W) shown in the list.

NOTE

Parameters are subject to change on laser wattage and material dependent.

Chapter 6


Basic Maintenance

Suggested Cleaning and Maintenance Supplies Maintaining the Work Table and Motion System

- Cleaning the Work Area and Motion System
- Lubrication of the X Rails

Keeping your LABELEXPRESS/DECALEXPRESS Series clean and well maintained will ensure quality output, consistent reliability and extended product life. Smoke, dust or residue build-up inside the laser system or the mechanical components can cause a reduction in the laser power, irregularities in the motion system, reduced product life cycle, and a host of other avoidable problems. This section will cover how to perform regular maintenance on the LABELEXPRESS/DECALEXPRESS work area, motion system, mirrors, and focal lens.

The frequency of the cleaning schedule will depend on number of variables such as the types of material you work with, the immediate work environment, the frequency of use, the quality of the exhaust system, etc.

 WARNING	
<ul style="list-style-type: none"> ▪ Electrical shock may occur if you do not turn off and unplug the Spirit Series before cleaning. ▪ Damage may occur to the system if you do not turn off and unplug the Spirit Series before cleaning. ▪ Always turn off and unplug the Spirit Series before cleaning! 	

6.1 Suggested Cleaning and Maintenance Supplies

Cleaning / Maintenance Tool	Special notes
Soap Solution or All-Purpose Cleaner	
Paper Towels	
Cotton Cloth	
Denatured Alcohol	DO NOT use alcohol on any painted surface, plastic, or the laser system.
Acetone	ONLY to be used on the work table
Vacuum Cleaner with a Flexible Nozzle	Only to be used in and around the work table and motion system
Lubrication syringe	Supplied
Cotton Swabs	Supplied
Lens Cleaner	Supplied 1pc. Local supply is suggested.*
Lint Free Lens Tissue	Supplied
#2 Phillips Screwdriver	
Allen Wrench .050"	

* The recommended lens cleaner is Eclipse Cleaning System Solution from Photographic Solutions or HPLC grade Methanol. Search “Eclipse Cleaning System Solution” on Amazon or eBay to get the solution locally.

<http://www.amazon.com/Photographic-Solutions-ECDCS-Cleaning-Solution/dp/B0000AUR11>



Eclipse Cleaning System Solution

6.2 Maintaining the Work area and Motion System

6.2.1 Cleaning the Work Area and Motion System

Clean the working area and the motion system on a frequent basis through the following steps:

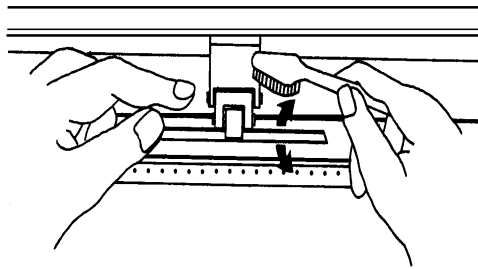
- 1) Turn the power off and unplug the LABELXPRESS/DECALEXPRESS before cleaning.
- 2) Use a vacuum cleaner with a flexible nozzle to remove dust and debris from the work area and motion system.
- 3) Apply small amounts of all-purpose cleaner, alcohol, or acetone to a paper or cotton towel to clean the working area.
- 4) Apply a soap solution, all-purpose cleaner, or alcohol to a paper or cotton towel to wipe down the rails of the motion system.
- 5) Wait for all cleaning residue to dry completely before plugging in and operating the LABELXPRESS/DECALEXPRESS.

CAUTION

- ✚ Never pour or spray alcohol or acetone directly to the work table.
- ✚ Oil, alcohol and acetone can cause fires or smoke build-up if improperly used.

6.2.2 Cleaning the Grid Drum

1. Turn off the machine, and move the tool carriage away from the area needed to be cleaned.
2. Raise the pinch rollers and move them away from the grid drum for cleaning.
3. Use a bristle brush (a toothbrush is acceptable) to remove dust from the drum surface. Rotate the drum manually while cleaning.



6.2.3 Cleaning the Pinch Rollers

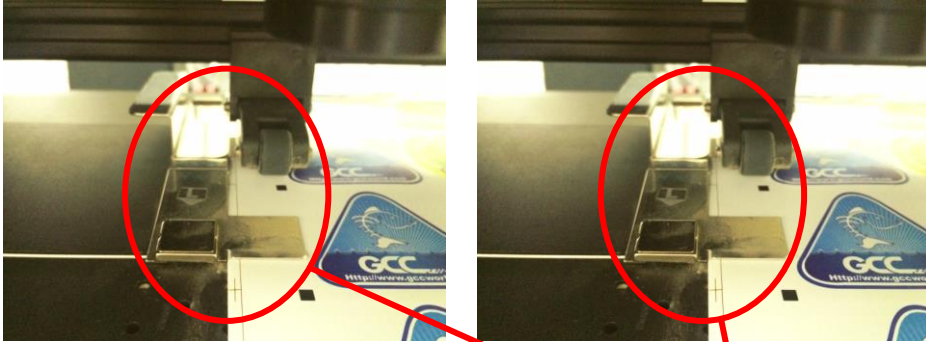
1. If the pinch rollers require a thorough cleaning, use a lint-free cloth or cotton swab to wipe away the accumulated dust from the rubber portion of the pinch rollers. To prevent the pinch rollers from rotating while cleaning, use your finger to hold the pinch rollers to prevent them from rotation.
2. To remove the deeply-embedded or persistent dust, use the lint-free cloth or cotton swab moistened with rubbing alcohol.

Note:

The daily maintenance of your cutting plotter is very important. Be sure to clean up the grid drum and pinch rollers regularly for better cutting accuracy and output quality.

6.2.4 Cleaning the Clamps and Waste Separation Bar

Sticky residues and dust may be generated during operation and left on the clamps on the work area or the waste separation bar on the back side. Use a lint-free cloth or cotton swab to wipe away the accumulated residues and dust. Be sure to remove the residues and dusts periodically for better output quality.



Dust and icky residues generated during cutting on the left and right clamps may affect paper alignment and movement.

[Sticky residues left on the bottom of waste separation bar after working for a period of time may affect waste removal function.

6.3 Cleaning the Optics System

6.3.1 Removing the Mirrors

We recommend that you check the mirrors once or twice a week to see if they require cleaning.

Note:

- Mirrors should be removed for cleaning one at a time to avoid beam misalignment after placing them back to the lens holders.
- Refer to section 6.3.2 on how to clean the mirrors.

6.3.2 Cleaning the Mirrors

After removing the mirror, you will want to inspect each mirror for scratches, smoke residue, or debris. If any residue or debris is present, use the following steps to clean the mirrors.

- 1) Hold the mirror with the reflective side up, without touching the reflective side of the mirror (DO NOT apply any finger pressure or any other cleaning solutions to the mirror surface).
- 2) Drape a new sheet of lens tissue over the mirror.
- 3) Apply a few drops of lens cleaner on the tissue covered mirror (apply enough so that the tissue absorbs just enough solution to cover the mirror surface).
- 4) Pull the tissue across the mirror in only one direction.
- 5) Repeat the cleaning processes if the mirror is not completely clean after the first attempt.
- 6) Make sure that the mirror is completely dry before reinstalling it.



 **CAUTION**

If the center of the mirror is scratched, contact the dealer in your location for a replacement.

6.3.3 Removing and Cleaning the Focal Lens

- 4) Unscrew the three thumbscrews securing the lens carriage panel and remove the lens carriage panel to reveal the focal lens.
- 5) Carefully pull out the focal lens.
- 6) Clean the focal lens with a cotton swab and lens cleaner solution. Be sure to clean both sides of the focal lens (DO NOT apply any finger pressure or other cleaning solutions to the lens surface).
- 7) After cleaning, use a cotton swab to gently dry the focal lens and lens cover.

Chapter 7

Appendix

GCC LABELEXPRESS/DECALEXPRESS Specification Sheet



7.1 GCC LABEL EXPRESS Specification Sheet

Model		LABEL EXPRESS		
Model Number		LE15-20V93	LE15-30V	LE15-25Vi102
Cutting Width		381 mm (15")		
Work Area (Sheet) (W x L)		381 x 330 mm (15" x 13")		
Max. Roll Material	Width	85 mm to 400 mm (3.4" to 15.7")		
	Roll size	76.2 mm (3") core with 300 mm (11.8") diameter		
Laser Source		Sealed CO2 Laser		
Wattage		20W 9.3- μ m	30W 10.6- μ m	
Drive		Closed-loop DC Servo Control		
Roll to Roll		Stepper motor Control		
Maximum Speed		1,530 mm/s (60ips) (for straight line cutting)		
Speed Control		Adjustable from 0.1~100% (Up to 16 color-linked speed settings per job)		
Power Control		Adjustable from 0~100% (Up to 16 color-linked speed settings per job)		
Alignment System		CCD Module		
Distance Accuracy		0.254 mm or 0.1% of move, whichever is greater		
Computer interface		Standard USB port		
Operating systems		MS Windows		
Display Panel		4-line LCD panel		
Paper Feeding ⁽¹⁾		Auto feed sensor, re-winding system, paper alignment control, waste removal system		
Vacuum System		Down vacuum for media fixation		
		Top vacuum for media surface cleaning		
Process materials		Paper, PET, PP, BOPP, etc.		
Safety		Class IV Laser Product Compliant with EN60825-1:2014 Class IV Laser Product Compliant with CDRH		

Dimensions (W x L x H)	Machine	1,070 x 1,441 x 1,180 mm (42.2 x 53.2 x 46.7 in.)
	Shipping	1,320 x 1,660 x 1,490 mm (52 x 65.4 x 58.7 in.)
Weight	Machine	250 kg
	Shipping	385 kg
Facility Requirement		
Electrical	100~240 Volt AC, 50/ 60Hz, Auto Switching, Max. 10 Amp	
Power Consumption	MAX:1000W	
Air Exhaust System (Optional)	External exhaust system required (Air Flow: 1000~1500m ³ /h)	
Compressor (Optional)	Air Compressor required (Air Capacity: 64~81L/min)	
Optional item		
Slitting device Paper loading cart External I/O board		

7.2 GCC DECAL EXPRESS Specification Sheet

Model	DECAL EXPRESS			
Model Number	DE24-20V	DE24-30V	DE24-20V ECO	DE24-30V ECO
	DE24-25Vi102		DE24-25Vi102 ECO	
Cutting Width	610 mm (24")			
Work Area (Sheet) (W x L)	610 x 330 mm (24" x 13")			
Max. Roll Material	Width	85 mm to 610 mm (3.4" to 24")		
	Roll size	76.2 mm (3") core with 300 mm (11.8") diameter		
Laser Source	Sealed CO2 Laser			
Wattage	20W 9.3- μ m	30W 10.6- μ m	20W 9.3- μ m	30W 10.6- μ m
	25W 10.2- μ m		25W 10.2- μ m	
Drive	Closed-loop DC Servo Control			
Roll to Roll	Stepper motor Control			

Maximum Speed		1,530 mm/s (60ips) (for straight line cutting)	
Speed Control		Adjustable from 0.1~100% (Up to 16 color-linked speed settings per job)	
Power Control		Adjustable from 0~100% (Up to 16 color-linked speed settings per job)	
Alignment System		CCD Module	
Distance Accuracy		0.254 mm or 0.1% of move, whichever is greater	
Computer interface		Standard USB port	
Operating systems		MS Windows	
Display Panel		4-line LCD panel	
Paper Feeding ⁽¹⁾		Auto feed sensor, re-winding system, paper alignment control, waste removal system	
Vacuum System		Down vacuum for media fixation	
		Top vacuum for media surface cleaning	
Process materials		Paper, Nonwoven, PET, PP,BOPP etc.	
Safety		Class IV Laser Product Compliant with EN60825-1:2014 Class IV Laser Product Compliant with CDRH	
Dimensions (W x L x H)	Machine	1,135 x 1,441 x 1,180 mm (44.6 x 56.7 x 46.5 in.)	1,135 x 700 x 1,305 mm (44.7 x 27.6 x 51.4 in.)
	Shipping	1,385 x 1,741 x 1,430 mm (54.5 x 68.5 x 56.3 in.)	1,230 x 920 x 1,605 mm (48.4 x 36.2 x 63.2 in.)
Weight	Machine	275 kg	90 kg
	Shipping	375 kg	186 kg
Facility Requirement			
Electrical		100~240 Volt AC, 50/ 60Hz, Auto Switching, Max. 10 Amp	
Power Consumption		MAX:1000W	
Air Exhaust System (Optional)		External exhaust system required (Air Flow: 1000~1500m ³ /h)	
Compressor (Optional)		Air Compressor required (Air Capacity: 64~81L/min)	



(1) Available in the model with Auto-feeding base

* Please visit GCC club for the latest user manual download. GCC reserve the right to modify the user manual without notice.