The logo features two overlapping circles with a mosaic pattern. The left circle is green and the right circle is purple.

Spangle *Elite*
User's Manual

Spangle Elite

Contents

1. Safety Instructions	13
2. Installation and Checklists	15
3. Operation Method and Individual Features Related to Basic Operation	17
3-1) Individual equipment part names and features	17
3-2) Exchanging the Press Unit	18
3-3) Material Installation	18
3-4) Self-Test	19
4. How to run Spangle Elite program	21
4-1) Start Screen	21
4-2) Preparation	24
4-3) Loading Design	25
4-4) Design Set up	27
4-5) Sending design	32
4-6) Running, Stopping the Work	32
4-7) Off-set Setup and How to use Origin-set	33
4-8) Color Off-set Setup	34
5. Error Occurrence and Measures	35
6. Modification Method for Essential Parts of Machine Operation	37
7. Maintenance and Checklists	43
※ Consumables	44

Spangle Elite

Machine Dimension & Layout

CONTENTS

● Machine Dimension

※ Spangle Elite (Standard)	7
----------------------------------	---

● Machine Layout

(A) Machine Layout (Real View-1)	9
(B) Machine Layout (Real View-2)	10
(C) Machine Layout (Real View-3)	11
(D) Warning Labels	12

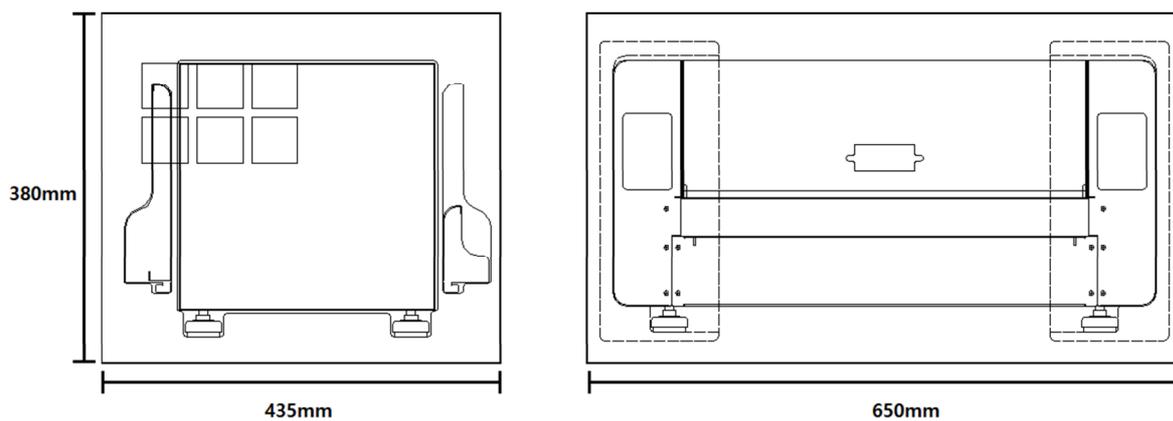
Spangle Elite

※ Spangle Elite (Standard)

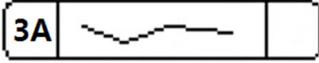
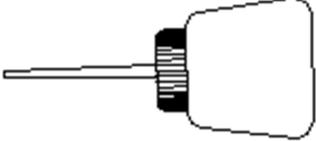
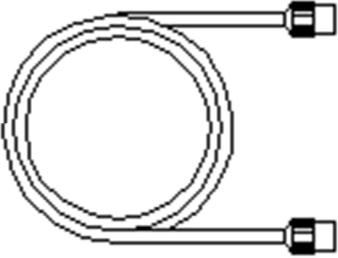
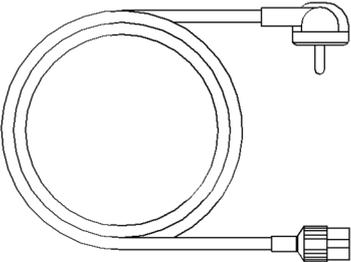
● Machine Standard DIMENSIONS



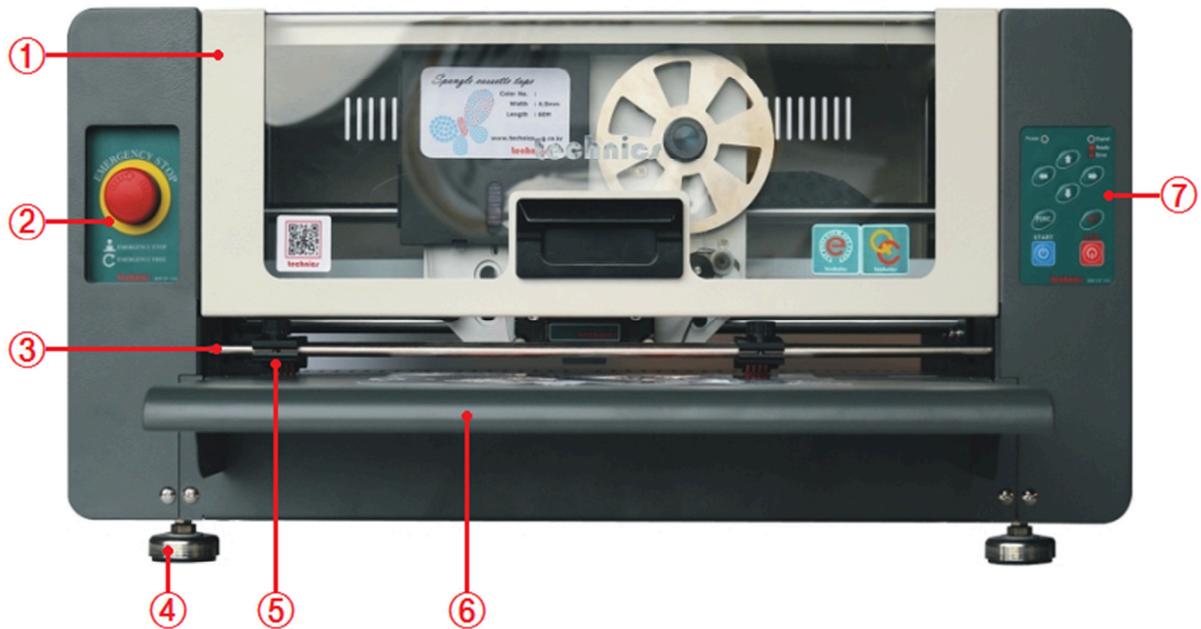
● Packing Standard DIMENSIONS



※ Articles supplied

1		Fuse 3A
2		L Wrench (4mm)
3		L Wrench (3mm)
4		Oil
5		Grease (50g)
6		USB Cable
7		Power Cord (220V)

(A) Machine Layout (Real View-1)



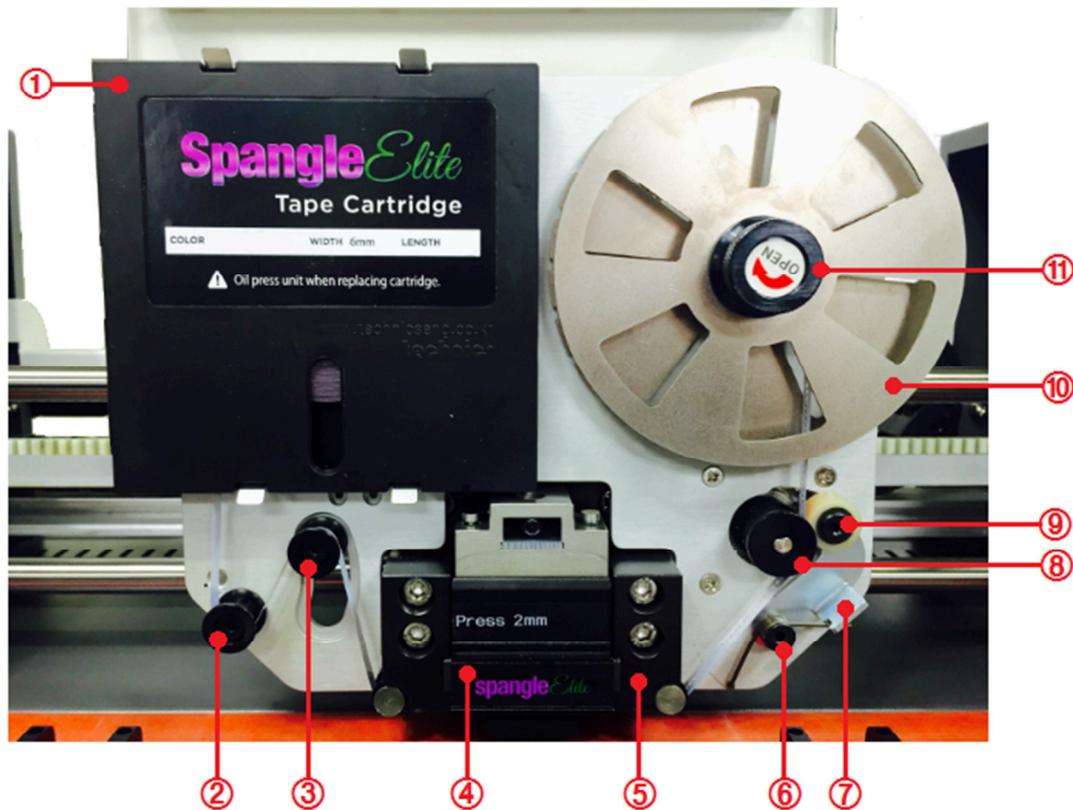
Ref.No	Part No	Part Name
A-1	PSM-MS-S011	System Cover
A-2	ASP-EL-0007E	Emergency Switch
A-3	PSM-MS-M025	Y Axis UP Roller Shaft
A-4	PSM-MS-A002	Leveling Foot
A-5	PSM-MS-P028	Y Axis Roller Base
A-6	PSM-MS-S007	Front Sub Plate
A-7	PSM-MS-A001	Keyboard (Sticker)

(B) Machine Layout (Real View-2)



Ref.No	Part No	Part Name
B-1	PSM-MS-S004	Right Cover
B-2	PSM-MS-A005	Power Socket
B-3	PSM-MS-A006	Fuse Holder
B-4	PSM-EL-B004	USP Port PCB
B-5	PSM-MS-S005	Back Cover
B-6	PSM-MS-A007	Power Switch
B-7	PSM-MS-S003	Left Cover

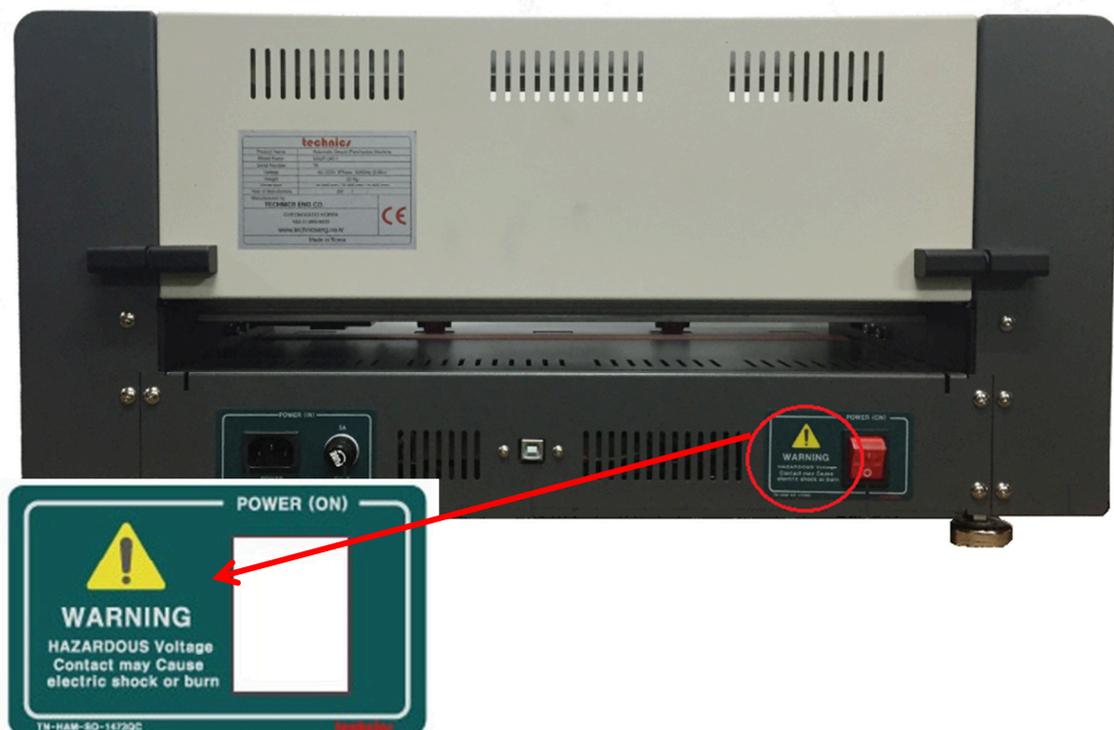
(C) Mechanism Layout (Real View-3)



Ref.No	Part No	Part Name
B-1		Spangle Cassette Tape
B-2	PSM-MS-S107	Guide Roller
B-3	PSM-MS-S107	Guide Roller
B-4	PSM-MS-M001	Press Unit (1.2mm)
	PSM-MS-M002	Press Unit (2mm)
	PSM-MS-M003	Press Unit (3mm)
	PSM-MS-M004	Press Unit (4mm)
B-5	PSM-MS-P026	Press Guide Left
	PSM-MS-P027	Press Guide Right
B-6	PSM-MS-S021	Rewind Tension Spring
B-7	PSM-MS-S016	Rewind Tension
B-8	PSM-MS-P011	Feeding Roller
B-9	PSM-MS-P018	Feeding Rubber Roller
B-10	PSM-MS-P014	Rewind Plate Knob
B-11	PSM-MS-S013	Rewind Front Plate

(D) Warning Labels

- Please be careful during machine operation.



1. Safety Instructions

Please pay close attention to the below safety instructions. All the safety instructions and operating guidelines should be read before operating the equipment.

1-1) Transporting the Machine

You should be acquainted with the safety regulations before transporting the machine. Follow the guidelines listed below.

1) Precautions for transporting the Spangle Elite Machine

- Two people are needed when lifting the Spangle Elite Machine.
- Use of a hand pallet truck is recommended for long distance transportation.

2) When Using a Hand Pallet

- To prevent deformation, use a forklift to position the machine horizontally while transporting.
- When lifting the machine up and down, make sure no one is around.

1-2) Installing the Machine

If not appropriately installed, breakdowns and/or malfunctions could occur. In order to prevent this, follow the conditions listed below.

- Please install on the stand. That stand must be able to hold the weight of the Spangle Elite.
- Because dust and moisture can contaminate or corrode the machine, please install an air conditioner and clean the machine regularly.
- Install the machine in a place where it will not be exposed to direct sunlight.
- If the machine is exposed to direct sunlight for too long, there might be discoloration and deformation of the body.
- For enough space to operate and repair, secure at least 60cm of space from the wall to the left, right, and rear of the machine.

※ For more detailed installation information, please refer to [2. Installation and Checklists].

1-3) Instructions on Operating the Machine

- Make sure to check the caution and warning stickers on the main body of the machine and obey the following guidelines.
- Before you operate the machine, read the instructions in full and make sure you thoroughly understand the contents dealing with machine operation.
- Operate the machine only after making sure that no one is operating on a moving part of the machine and that there are tools on the part.
- If the machine is operating, do not place head or hands in close proximity, as it can be dangerous.
- Shut off the power supply before opening a power supply box or any electrical outlet, and make sure the power switch is turned to "OFF."
- When you change the material or work behind the machine, you must stop operating the machine.

1-4) Repair

When repairing the machine, follow the guidelines below in order to prevent an accident.

- If the machine needs to be repaired, it must be done by electricians or users educated and designated by our company.
- You must not change specifications or certain parts of the machine without consultation with our company. These changes may threaten safety during operation and could cause malfunctions.
- When repairing the machine, you must exchange parts with 'Spangle Elite' parts supplied by our company.
- After repairing the machine, replace all the safety covers removed during repair.



- There is a danger of serious injury by electric shock or being caught in the machine.
 - Make sure to shut off the machine's power before repairing, and wait 2~3 minutes for the machine to discharge completely.
-

2. Installation and Checklists

The installation guidelines and electrical specifications of this machine are specified as follows. Negligence of these guidelines may cause accidents, dysfunctions, and/or malfunctions.

2-1) Installation

To prevent malfunctions, breakdowns, and/or loss of property, please use the machine in light of the following information.

- Dust and moisture may cause contamination, rust, fire, and/or electric shock.
- If exposed to direct sunlight for too long, the machine might discolor or be deformed.
- Do not approach the machine while in possession of flammable material. It causes fire.
- For enough space to operate and repair, secure at least 60cm of space from the wall to the left, right, and rear of the machine.

2-2) Electricity Installment Environment

Before initiating installation, make sure the machine's power supply corresponds to the power supply of the installation area.

- 1) Rated voltage: AC 220V (50~60 Hz)
- 2) Allowable voltage range: Within $\pm 10\%$ of Rated Voltage
- 3) Power capacity : 0.8KVA
- 4) Insulation resistance: Over 10M Ω (Measured in 500V Insulation Tester)
- 5) To operate the machine stably, you should connect it with a power line separated from machines like elevators or air conditioners, which could impact the functionality of the machine.
- 6) When installing the power cable, install it apart from the operation space so that the operator does not fall over it.
- 7) If metal or other external elements come into contact with the plug, it could cause fire and/or electric shock.
- 8) You should use a power connector that is connected to earth.
- 9) If you want to connect the machine to an external power source, leave it to the technician or electrician designated by our company.



※ In areas of the US that use 110V, you must use a transformer.

Spangle Elite

2-3) Power Cord Connection and Power Button

1) Power Cord Connection

- After connecting the power cord to the socket located at the back left of the equipment (picture [2-1 a]), connect the Spangle Elite to an outlet.
- If in an American area that uses 110V, stick the power supply into the transformer supplied with the machine.



► Picture [2-1]

2) Fuse Exchange

- If the power supply does not fit into the equipment, you should check the fuse first.
- The equipment uses a 3A fuse.

3) Power Button

→ At its rear, the machine has a power button on the right. Make sure that the power cord is properly connected to the power socket.



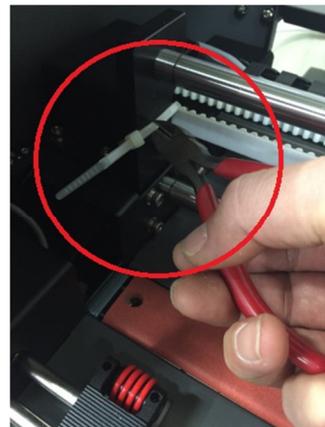
► Picture [2-2]

2-4) Initial Equipment Setup

- 1) Keep the work table level horizontally at first. Adjust the horizontality of the machine after it is put on the work table.
 - 2) In order to prevent the head from shifting in the course of the equipment's movement, tie the equipment's left-hand Rail Guide to the X-timing belt with a cable tie. Refer to the pictures below and remove the cable tie.
- ※ If the equipment again moves for long periods of time, bind it with the cable tie as in picture [2-3].



► Picture [2-3]



► Picture [2-4]

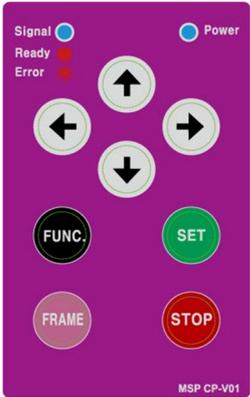
3) Before connecting the equipment, you must check the voltage.

- ※ Because Spangle Elite uses 220V, you must use a transformer in American areas.
- ※ **Make sure to thoroughly examine the above instructions before starting operation of the machine.**

3. Operation Method and Individual Features Related to Basic Operation+4

3-1) Individual equipment part names and features

1) Keyboard Feature and Explanation

 <p>▶ Picture [3-1]</p>	Signal (Lamp)	This is an LED lamp that shows the equipment's operation status.
	Power (Lamp)	This is an LED lamp that displays the ON/OFF status of the equipment's power supply.
	Arrows	Use this to move the frame up, down, left, and right.
	FUNC.	This sets up the Offset feature.
	FRAME	Run this feature to return to the starting point.
	STOP	Use this to stop the operation of the work.

2) Emergency Switch

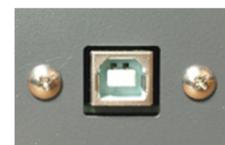
- Find the emergency switch on the upper left-hand cover of the machine.
- If a malfunction occurs during the operation of the machine, this button can be used to stop the operation immediately.
- The operation will immediately stop when the emergency switch is on.



▶ Picture[3-2]

3) USB Port

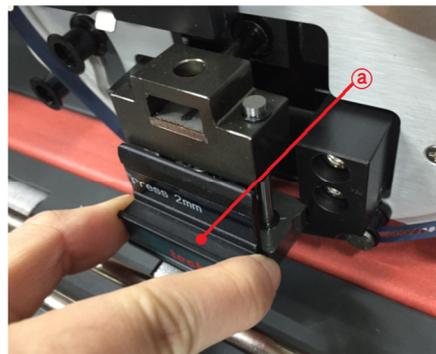
- Find the USB port on the right side of the machine. This is to be used when putting designs into the machine.



▶ Picture[3-3]

3-2) Exchanging the Press Unit

- ① When exchanging the Press Unit, use the keyboard arrows to move the Press Unit to the center.
- ② If you grab the press unit where indicated in picture [3-4] ① and pull, the Press Unit will come separated.
- ③ To equip the Press Unit, grab where indicated and push.



▶ Picture[3-4]

3-3) Material Installation



▶ Picture [3-5]

- ① Place the cassette into the spot designated in picture [3-5] ①.
- ② Hang the material in the direction of the arrows as designated in picture [3-5].



※ You must use the cassette type provided by the company when running Spangle Elite.

3-4) Self-Test

- This is a feature that checks parts of machine separately by itself
- When you install the machine you can check whether or not the machine is ready to run By running Self-Test,
- If an error occurs during operation, you can check a part that needs to fix by running Self-Test

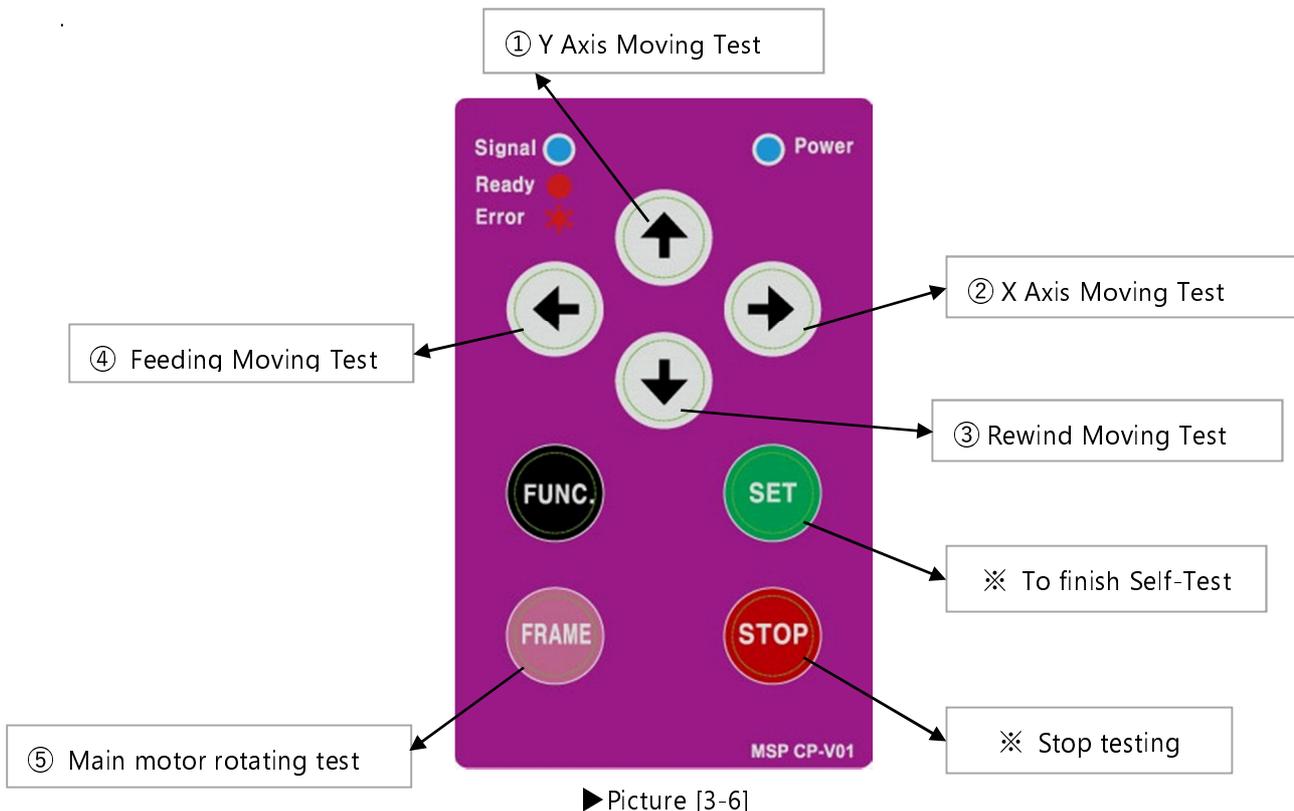
1) Running Self-Test

- Turn on the power while press the [FUNC.] button.

→ If you Hear alarm, Self-test will run.

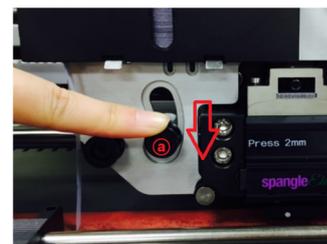
2) How to run Self-Test

- Please refer to Picture [3-6] to run Self-Test.
- When you press the [STOP] button, the test will stop.



⑥ T-Sensor Test

- When you press the Guide Roller (Ⓐ), the machine sound the alarm which mean the machine is good.



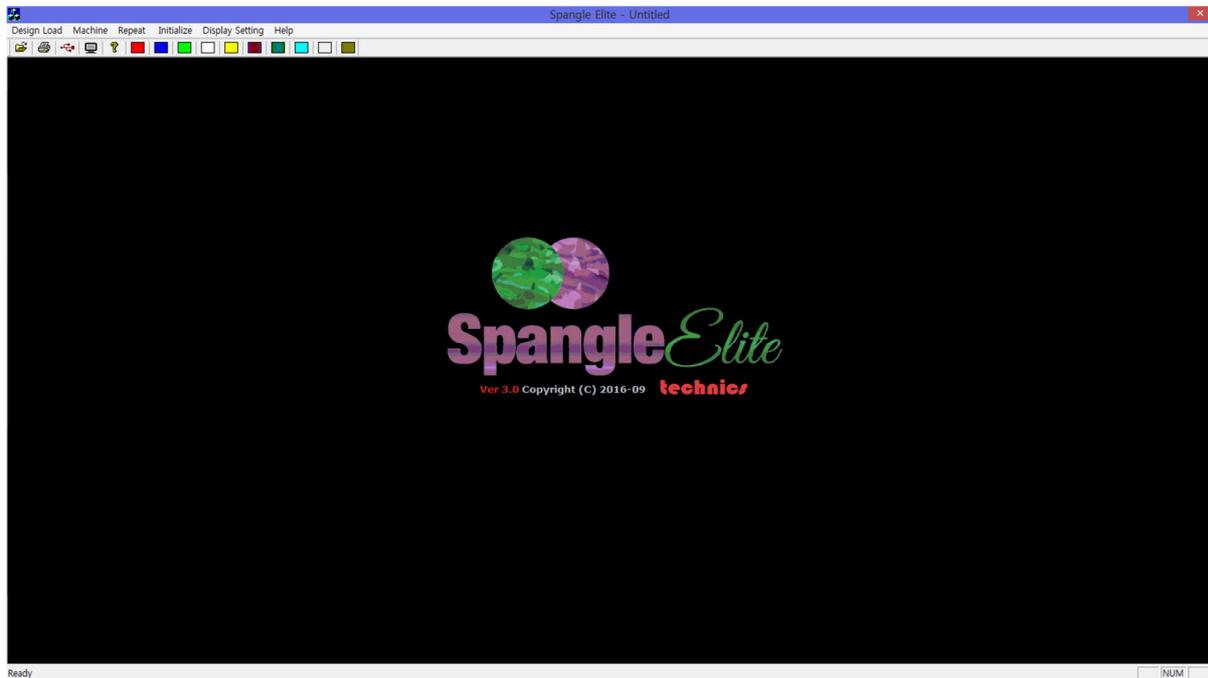
► Picture [3-7]

Spangle Elite

4. How to run Spangle Elite program.

4-1) Start Screen.

- When you click the Spangle Elite icon on your desktop, the following start screen will appear.



▶ [Picture 4-1] Start screen



※ Turn on the power, connect the USB cable, and run the program.

※ Do not run any other programs while running Spangle Elite.

→ This could affect the power supply and disrupt the program.

※ If unable to connect to Spangle Elite machine,
a message like the one on the right will appear.



● Click [Help] – [About Spangle Elite],
You can check the program version.



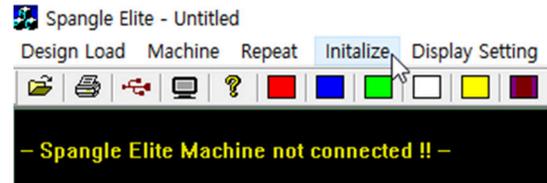
Spangle Elite

1) Initialize

※ If unable to connect to Spangle Elite machine, a message like the one on the right will appear.

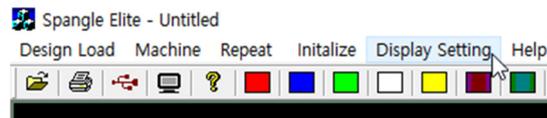


● After connecting the USB cable, click the [initialize]. Then, the message will be disappear.

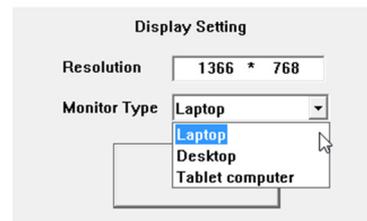


2) Display Setting

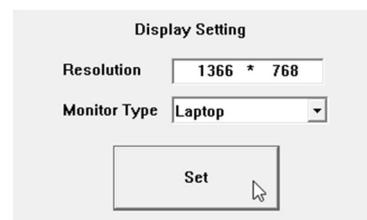
※ When you open a design the size of spangle shown depends on the resolution and monitor size. You can set your computer so that, you can use it easily.



- ① Select the correct type of your computer
 - Resolution: it will show you automatically.
 - Monitor Type: You should choose the correct type of your computer among laptop, desktop or tablet computer.



- ② If you click [Set] button, it will be saved.



※ How to check/switch COM PORT number

1. Installing FTDI Driver

- You have to install FTDI Driver.

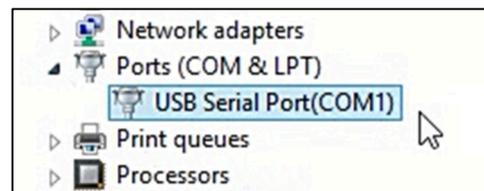
2. COM Port Setting

- COM Port Number should be 'COM1'
- If not, please refer to the paragraph 3
- After installing FTDI Driver, you must check COM PORT number.

3. How to switch COM Port Setting

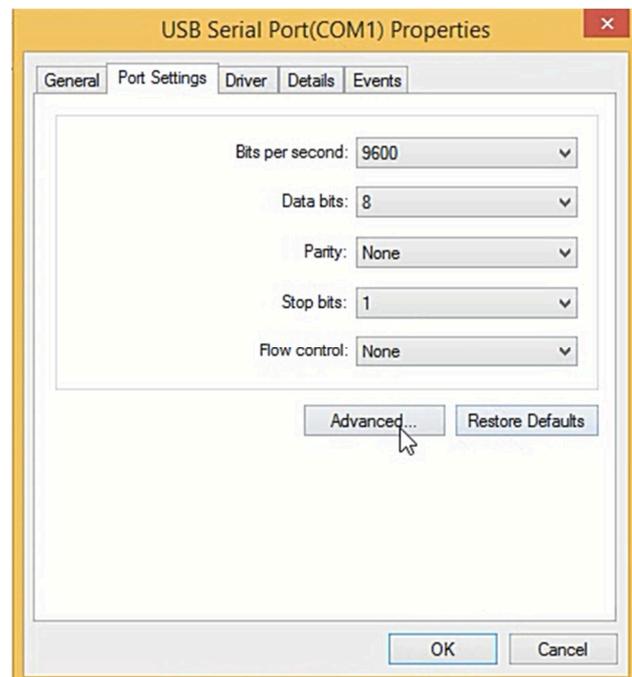
- ① Please open Device Manager to check COM PORT number.
→ [Control Panel] – [System] – [Device Manager] – [Ports (COM&LPT)]

- ② Double click [USB Serial Port].

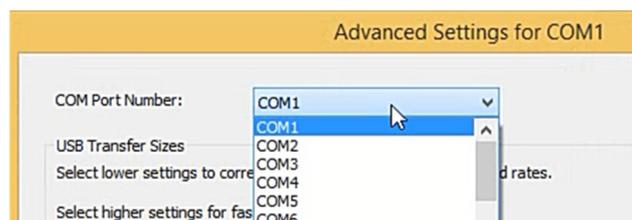


- ③ Click [Port Settings].

- ④ Click 'Advanced...' on the menu.



- ⑤ Switch COM Port Number to COM1 and save it. Check the switched COM Port Number.



Spangle Elite

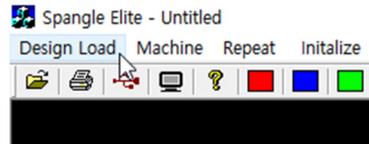
4-2) Preparation

- ① Turn on the machine and connect USB cable to a computer.
 - ② Put transfer paper as right picture.
 - ③ Send design by using Spangle Elite program.
- ※ Please check down below for more information about using Spangle Elite program.

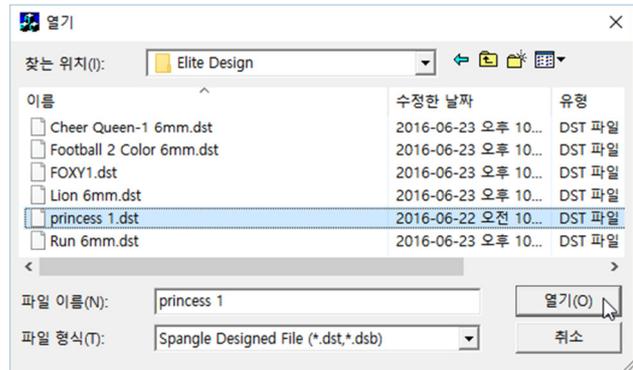


4-3) Loading Design

① Click [Design Load].



② Choose the design you wish to work with.



③ you can see System Preferences

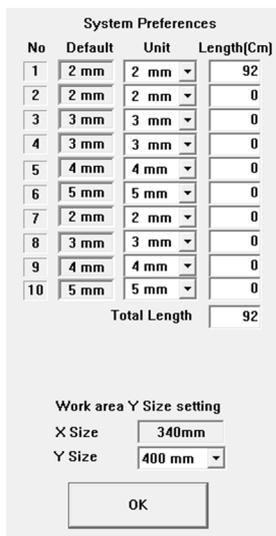
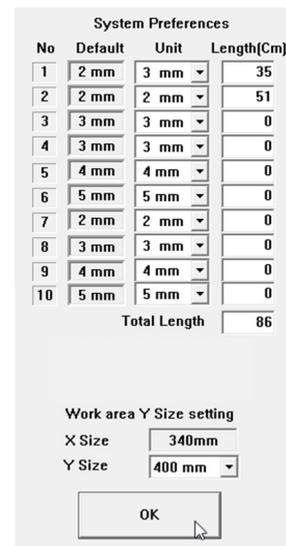
You can set working order, working speed, working area.(Y size)

※ How to use System Preferences

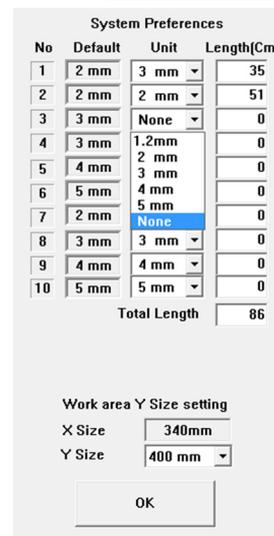
Ⓐ **Unit Setup / Color Setup** → Choose the appropriate unit for your design with Unit Setup and Color Setup

Ex) If working with 1 color, select a size appropriate for the first unit.

Ex) If working with 2 colors, after selecting an appropriate unit, setup the third unit though the [None] option.



▶ Working with 1 color



▶ Working with 2 colors

ⓑ System RPM Settings

►MAX RPM : This selects the maximum speed for the work.
750 RPM is the basic rate. You can change this rate before beginning work.

System Preferences			
No	Default	Unit	Length(Cm)
1	2 mm	3 mm ▾	35
2	2 mm	2 mm ▾	51
3	3 mm	3 mm ▾	0
4	3 mm	3 mm ▾	0
5	4 mm	4 mm ▾	0
6	5 mm	5 mm ▾	0
7	2 mm	2 mm ▾	0
8	3 mm	3 mm ▾	0
9	4 mm	4 mm ▾	0
10	5 mm	5 mm ▾	0
Total Length			86

Work area Y Size setting

X Size

Y Size

OK

ⓒ Work area Y size settings

►X Size : This displays the width of the work.
(The size of X working area is 340mm.)

►Y Size: This displays the length of the work.
(You can choose the size from between 300mm, 350mm, 400mm, 450mm, 500mm, and 'free.')

⦿ When you are finished setting up System Preferences, click the OK button.
(You will return to the Design Setup screen)

System Preferences			
No	Default	Unit	Length(Cm)
1	2 mm	2 mm ▾	165
2	2 mm	2 mm ▾	147
3	3 mm	None ▾	0
4	3 mm	3 mm ▾	0
5	4 mm	4 mm ▾	0
6	5 mm	5 mm ▾	0
7	2 mm	2 mm ▾	0
8	3 mm	3 mm ▾	0
9	4 mm	4 mm ▾	0
10	5 mm	5 mm ▾	0
Total Length			0

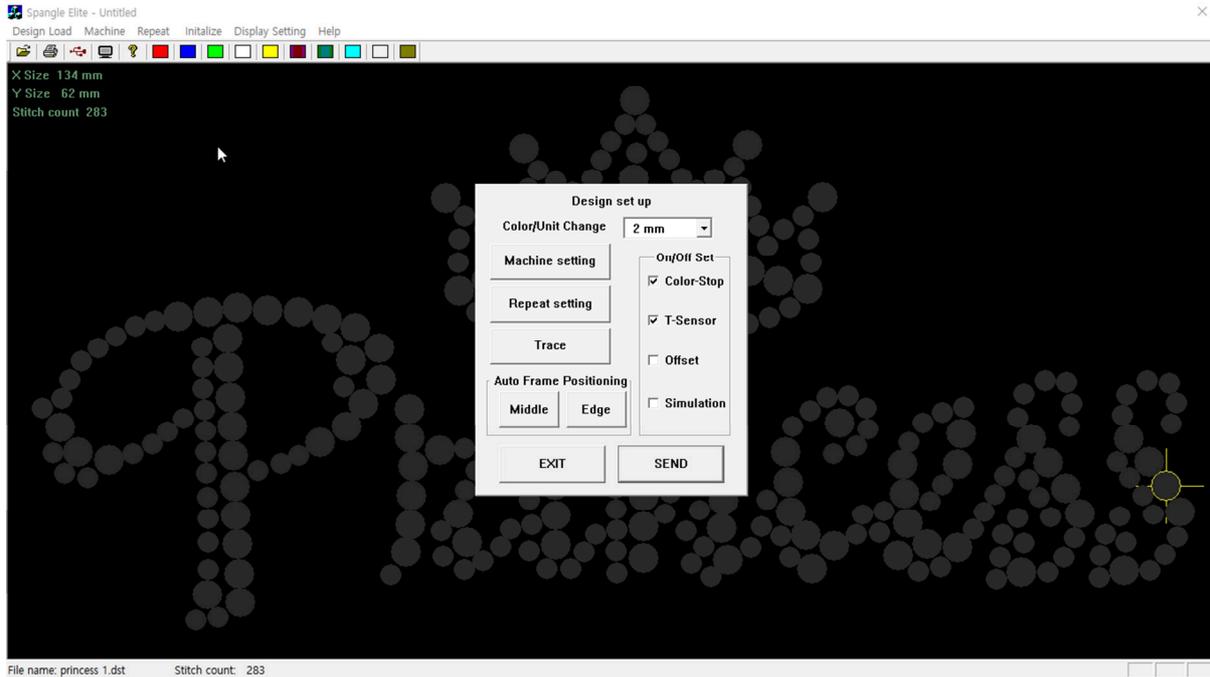
Work area Y Size setting

X Size

Y Size

OK

④ When you open your chosen design, the following [Design Setup] screen will appear.



▶ [Picture 4-2]

※ When you open the design, the design's information will be displayed in the upper left.

(This includes the design's width (X), length (Y), size and number of spangles.)

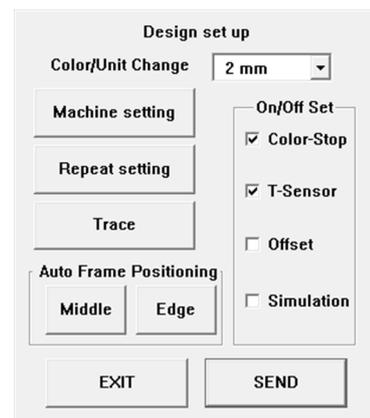


4-4) Design Setup

- In Design Setup, you can set-up the essentials for your design.
- Check your information with the detailed description below.

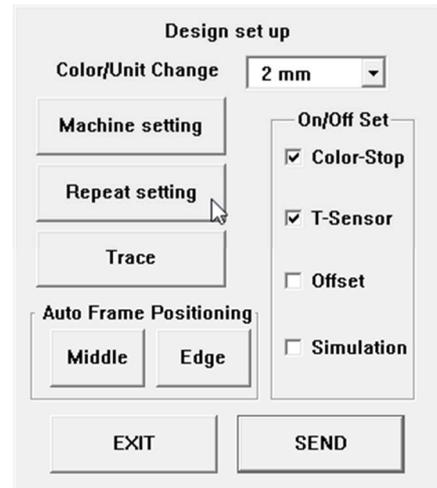
1) Machine settings

※ Please refer to page 25 of System Preferences.



2) Repeat settings

- Click [Repeat settings].

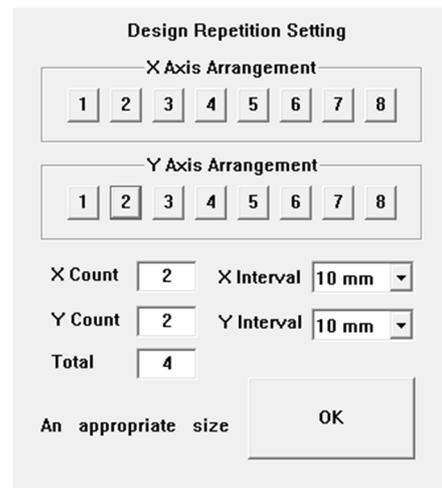


① X Axis Arrangement : This designates the span of the width.

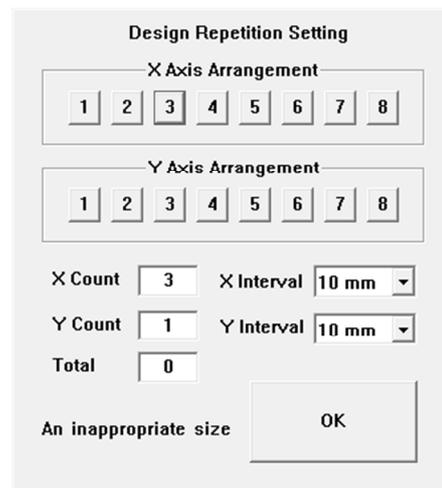
② Y Axis Arrangement : This designates the span of the length.

③ X/Y Interval : This designates the interval of the width/length.

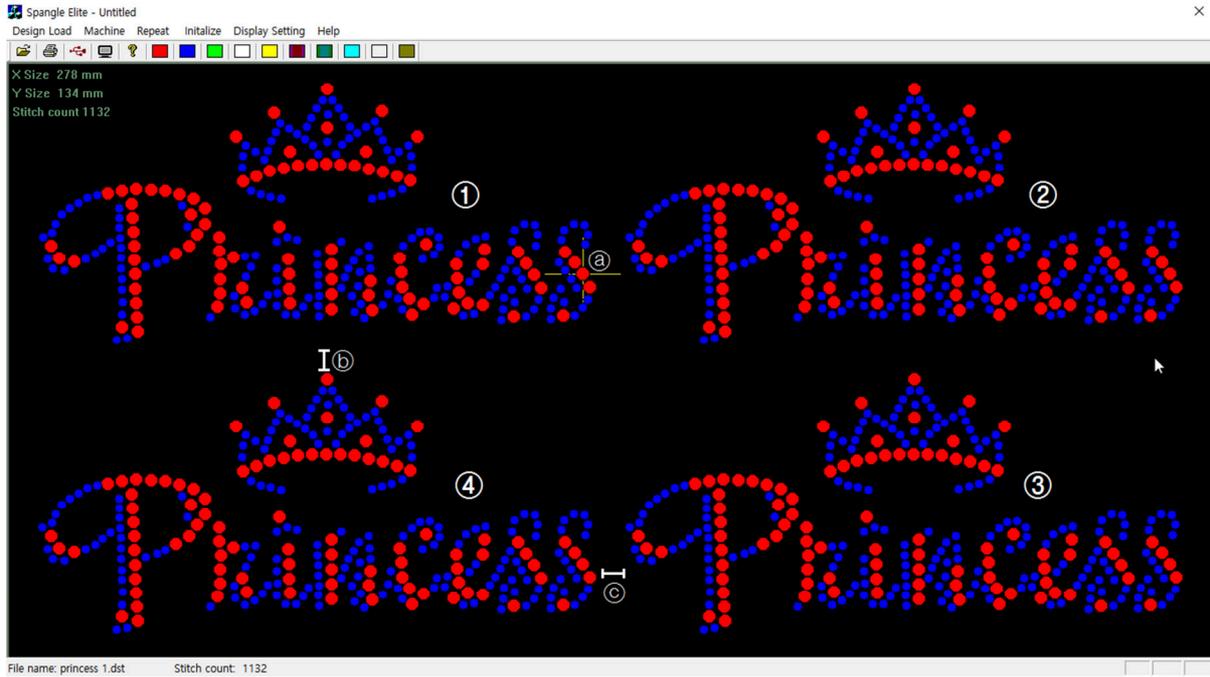
- When you are finished with Design Repetition Settings, click the OK button.



※ When you setup the Design Repetition Settings, if the range of the settings exceeds the range of the equipment, the message [An Inappropriate Size] will appear.

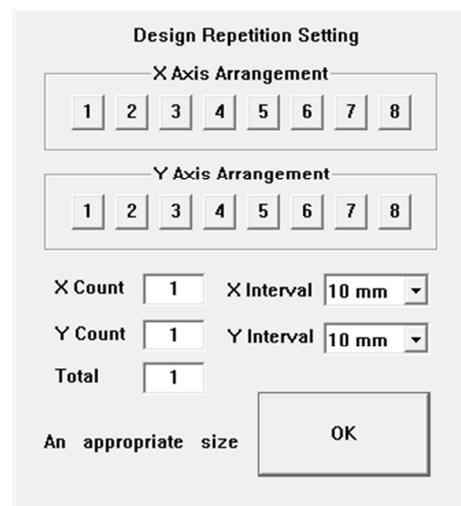


►The finish screen for Design Repetition Settings, click the OK button. [Picture 4-3]



Work Order	<ul style="list-style-type: none"> • The first color proceeds in the order displayed in Picture [4-3]: ①-②-③-④ • The second color proceeds in the order displayed in Picture [4-3]: ④-③-②-①
Starting Point	• Point ㉞ in Picture [4-3] is the design's starting point.
X Axis Interval	• The X interval of the design is based on the design's contours. Picture [4-3] ㉟
Y Axis Interval	• The Y interval of the design is based on the design's contours. Picture [4-3] ㊱

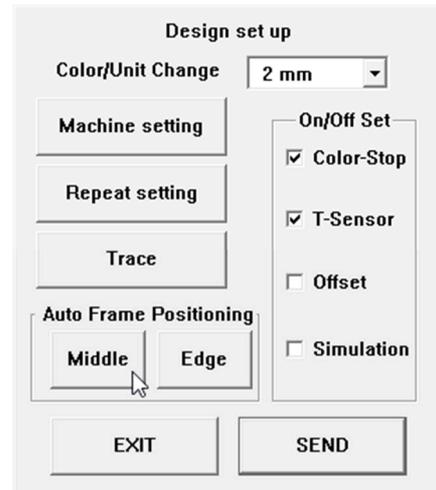
※ If you want to clear repetition, set the X / Y Count 1



3) Auto Frame Positioning

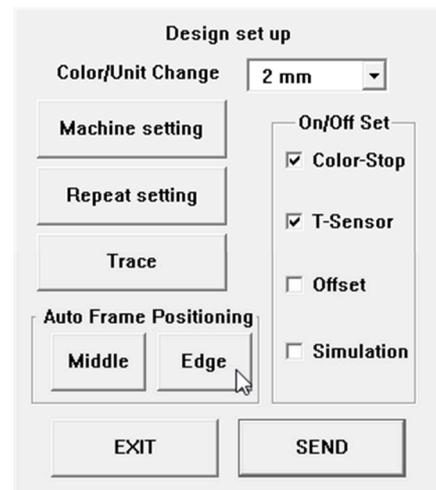
① Middle

This sets it up so that you are working in the middle of the X (width) domain.



② Edge

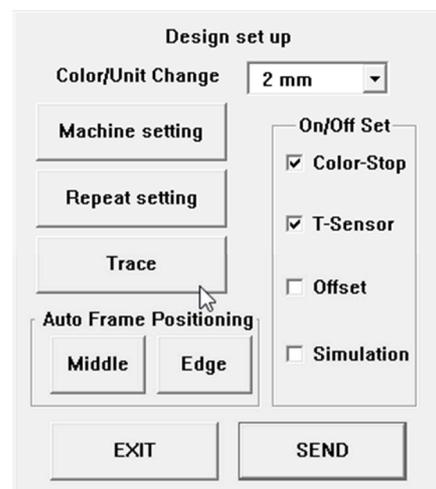
This sets it up so that you are working in the right-hand edge of the X (width) domain.



4) Trace

⦿ This is a feature that checks the working range of the design.

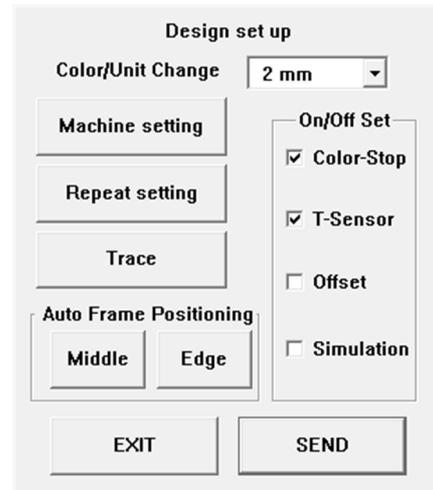
⌘ It is recommended that you run the [Trace] feature after running the [Auto Frame Positioning] feature and selecting a starting location for the work.



5) System Settings

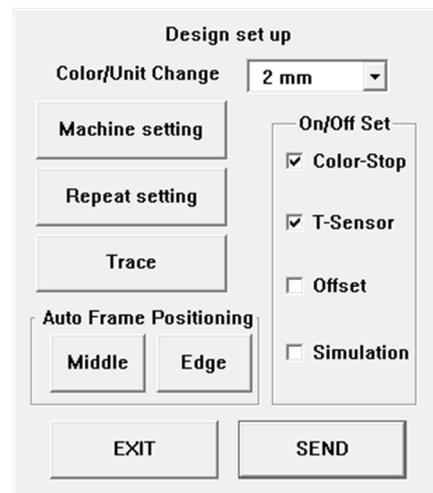
① Color-Stop (The basic settings)

→ If working on a design more than 2 colors, you can select whether or not to stop the machine by going to where you can change Press Unit or Color.



② T-Sensor (The basic settings)

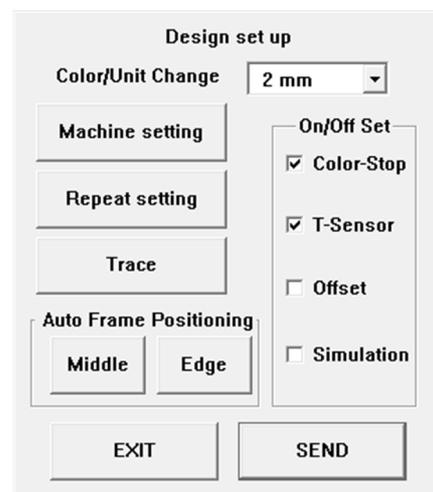
→ Select whether or not to run the Spangle Cassette Tape Sensor.



③ offset

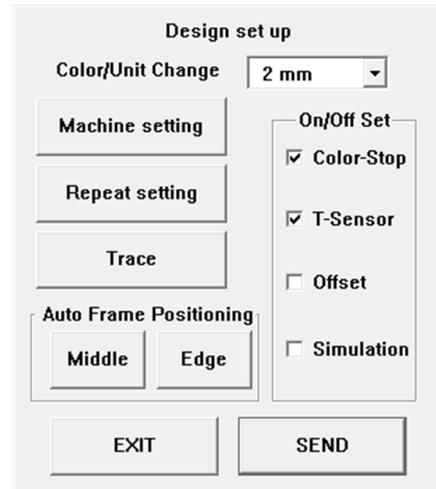
→ This is a feature that allows for transfer paper to be moved to the operator's selected location. This makes it easier to replace transfer paper after the work is complete.

※ please refer to the Offset Setup method on page 33.



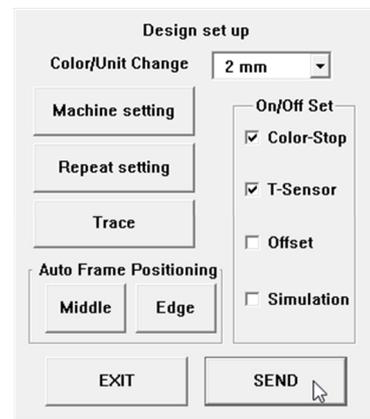
④ Simulation

→ This is a feature that shows the course of the work on a screen that displays programs running on the computer.



4-5) Sending design

▶ If you press the SEND button, the design will be stored. (You can disconnect the USB cable after sending design.)



4-6) Running, Stopping the Work.

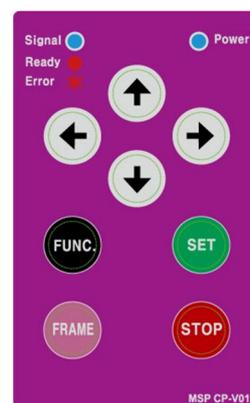
① Running the Work

If you press the SET button, the work will run.

② Stopping the Work

If you press the STOP button, the work will be stopped.

If you press the STOP button for few seconds, the machine is going to make sounds. The work is finished.



▶ Keyboard

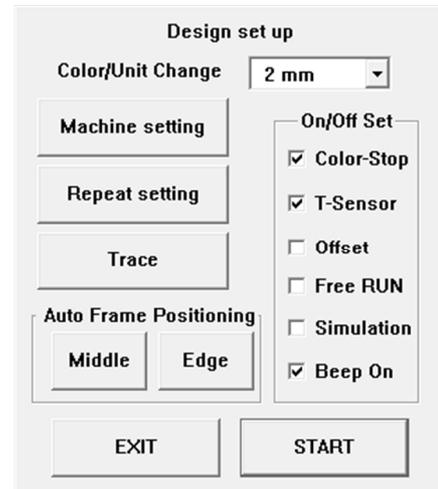
4-7) Off-set Setup and How to use Origin-set

1) Off-set Setup

- ① Run [Auto Frame Positioning] and set up the starting point for the work.)
- ② Check the [Offset] part on the [Design Set Up] screen.)
- ③ After pressing [FUNC] on the keyboard and using the arrows to set up the Offset location, press [Set] on the keyboard.)

※ If the [Offset] box is not checked in the Spangle Elite Program even after setting up Off-set on the equipment, the Off-set feature will not run.

※ If the [Offset] box is checked in the program but Off-set has not been set up on the machine, the Off-set feature will not run.

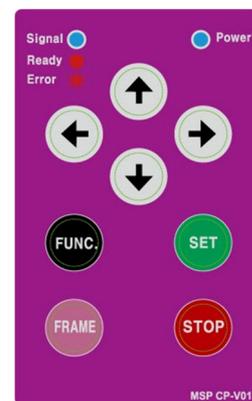


2) Off-set Clear : If you press [FUNC.] and then [Set] on the keyboard, the Off-set will be cleared.

3) Origin-set Feature

※ This is a feature that stops the work and allows for the head to be moved to the location of the stopped work in order to change the material or the Press Unit.

- ① After stopping the work, use the keyboard arrows to move the location of the head.
- ② Proceed with changing the material or Press Unit.
- ③ If you press [FRAME] then [SET] on the keyboard, the head will move to the stopped location.



▶ Keyboard

4-8) Color Off-set Setup

1) Color Off-set Setup

You can set up Color Off-Set at Color stop.

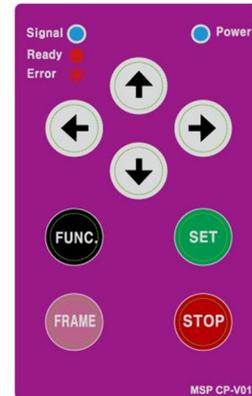
① The machine will stop for change the color.

At this time press the [FRAME]-[FUNC.] button.

(When updating the feature, the alarm will sound)

② After moving HEAD to a comfortable location, press the [SET] button. Color Off-Set will be completed.

③ If you press the [START] button on the computer screen, you can proceed with the work.



► Keyboard

2) Color Off-set Clear : If you press [FRAME]-[FUNC.] and then [Set] on the keyboard, the Color Off-set will be cleared.



※ After working with the first Color, you can set up Color Off-set.
If you reopen the design, you have to set up Color Off-set again.

5. Error Occurrence and Measures



If an error occurs during operation, refer to the following information and proceed with the measures listed.

- You will not be able to proceed work if an error occurs.
- Read the following solutions thoroughly.



※ Precaution

- Please wait 2~3 minutes for the machine to discharge completely.
- There is a danger of serious injury by electric shock or by being caught.

1) Out of Cassette Tape

- If the material runs out while working, an error will occur.
- Refer to page 18 and exchange the material.
- ※ Refer to page 38, 42 for detailed information regarding the installation location of the Tape Sensor.

2) X Left / X Right Limit Error Stop

- If, while working, the direction of X exceeds the limits of the work, an error will occur.
- Press the left and right arrow buttons on the keyboard and move the head within the limits of the work.

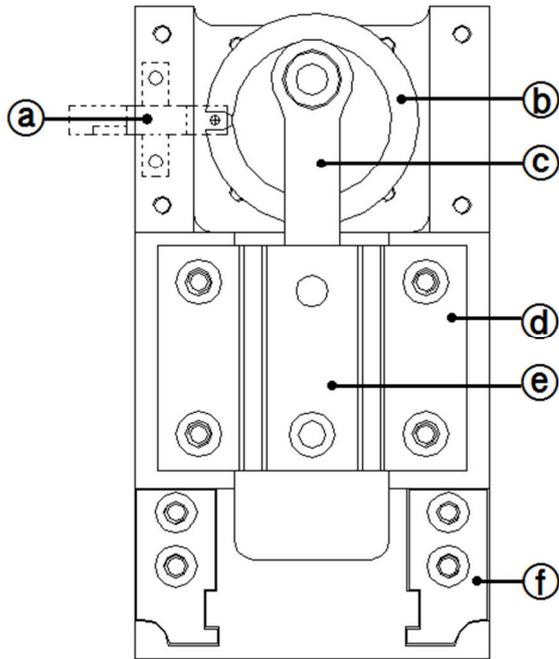
3) Main Shaft position Error

- If the main shaft will be miss position, an error will occur.
- Adjust the Main spindle to 0 degree
- ※ Refer to page 37.

Spangle Elite

6. Modification Method for Essential Parts of Machine Operation

6-1) Head Part (Front)



Ⓐ	PSM-EL-C001	Head Sensor
Ⓑ	PSM-MS-P012	Main Motor Wheel
Ⓒ	PSM-MS-P016	Wheel Link
Ⓓ	PSM-MS-P030	Press Guide (R)
	PSM-MS-P030-1	Press Guide (L)
Ⓔ	PSM-MS-P031	Hammer Piston
Ⓕ	PSM-MS-P026	Press Guide Left
	PSM-MS-P027	Press Guide Right

▶Picture[6-1]

※ How to adjust main shaft



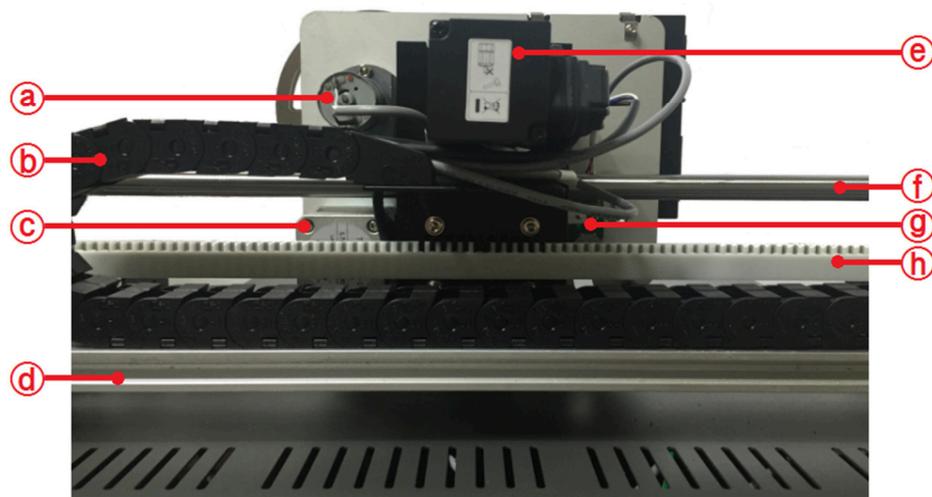
▶ Picture [6-2]



▶ Picture [6-3]

- ⦿ Turn part Ⓑ(Main Motor Wheel) to align Main Shaft angle Level to 0°

6-2) Head Part (Back)



▶ Picture [6-4]

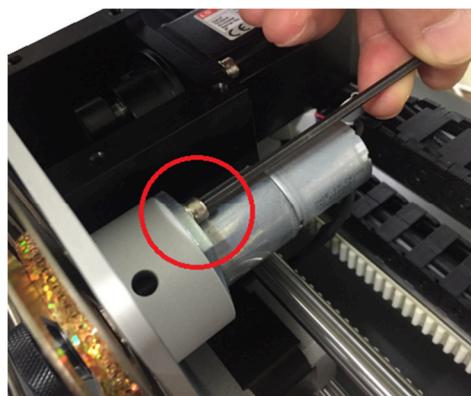
Ⓐ	PSM-EL-C002	Rewind Motor	Ⓔ	PSM-EL-C003	Main Servo Motor
Ⓑ	PSM-MS-A003	Cable Chain	Ⓕ	PSM-MS-M024	Head Rail
Ⓒ	ASP-EL-0003E	Feeding Motor	Ⓖ	PSM-EL-B003	T-Sensor PCB
Ⓓ	PSM-MS-M024	Head Rail	Ⓖ	PSM-MS-A004	X-Axis Timing Belt

6-3) Slip-ring Exchange Method

※ If you use the equipment for a long time, the slip-ring can wear down.

→ The Wheel Motor will operate, but if the material is not wound around the Rewind Plate, make sure to check it.

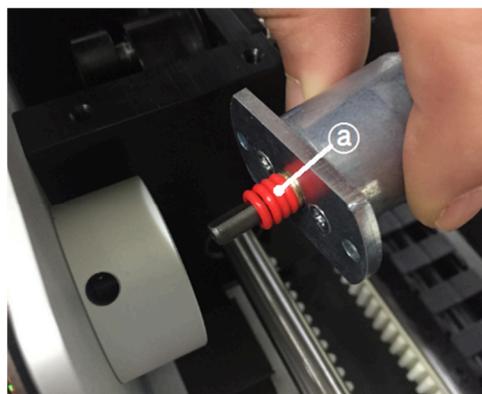
① Release the two bolts on the front part of the Wheel Motor.



▶Picture [6-5]

② If abnormalities occur after checking the condition of the Slip-ring (picture[6-3] ㉑), exchange relevant parts.

③ After exchanging, tighten the loosened screws.



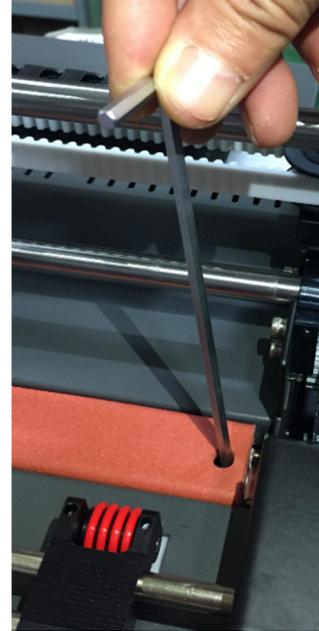
▶Picture [6-6]

6-4) Frame pad High Modification

- ◉ If you tighten the screws, the Frame Pad goes down..
 - ◉ If you loosen the screws, the Frame Pad rises.
- Refer to picture[6-4].

※ You must adjust the frame pad accurately

- ◉ If the frame pad is too high, the transfer paper will be firmly pressed, and the work will not proceed smoothly.
- ◉ If the frame pad is too low, the spangles will not attach well to the transfer paper, and the spangles could even turn inside-out or become spattered.

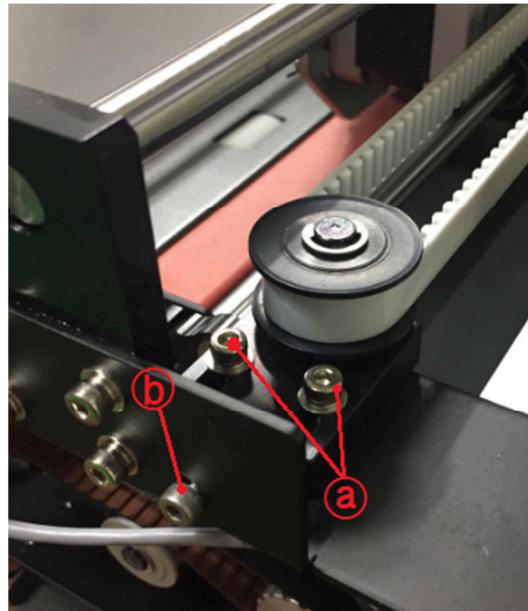


▶Picture[6-7]

6-5) X/Y Axis Tension Modification

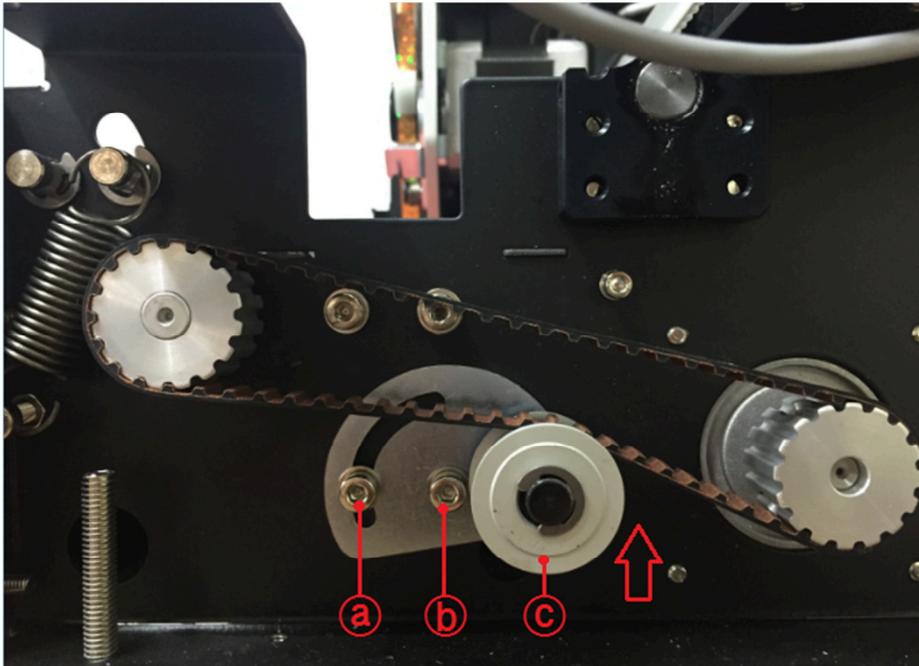
1) X-Axis Tension Modification

- ① ㉑ Loosen the two bolts.
- ② ㉒ X-Axis tension is modified by the loosening or tightening of bolts.
- ③ After finishing modification, tighten bolt ㉓.



▶Picture[6-8]

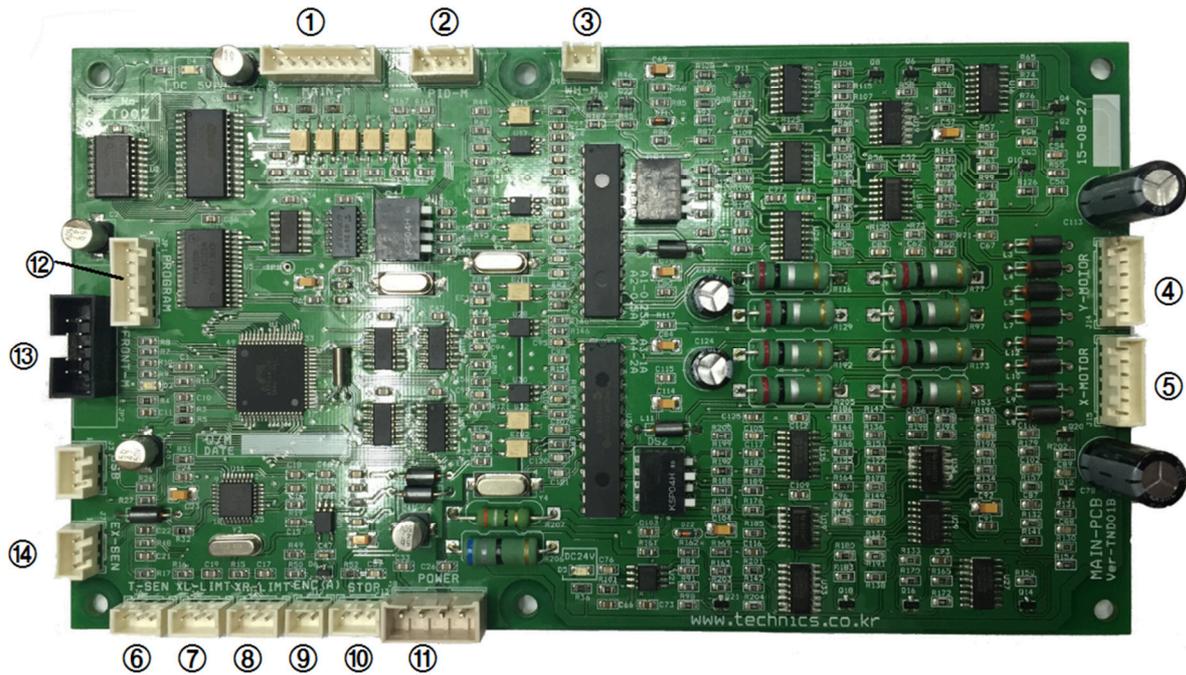
2) Y-Axis Tension Modification



►Picture [6-9]

- ① Loosen the two bolts that modify tension (picture[6-7] ㊸ and ㊹).
- ② The Y-Axis Pulley (picture[6-7] ㊺) moves upwards.
(Refer to the direction of the arrow in the picture.)
- ③ After modifying the tension, firmly tighten the two bolts.

6-6) Main PCB Board



▲ Picture [6-10]

①	MAIN-Servo Motor	④	Y-Motor	⑦	XL-LIMIT	⑩	STOP	⑬	Keyboard
②	Feed Motor	⑤	X-Motor	⑧	XR-LIMIT	⑪	POWER	⑭	Emergency
③	Wheel Motor	⑥	T-Sensor	⑨	ENCODER	⑫	USB		Switch

◦ Main PCB Board Location

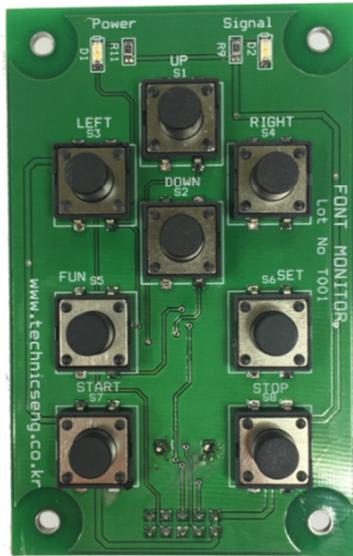
→ The Main PCB Board is attached to the bottom of the equipment. (▼Picture [6-11])



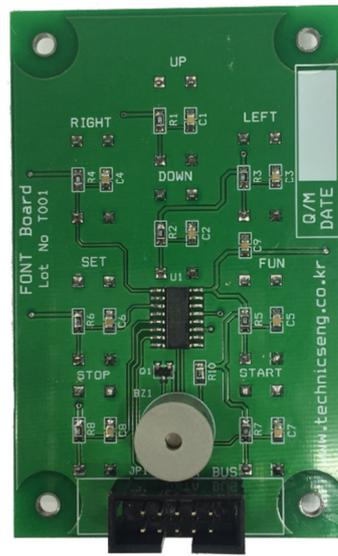
①	SMPS (PSM-EL-B005)	②	Main PCB Board (PSM-EL-B001)	③	Main Servo Driver (PSM-EL-C004)
---	-----------------------	---	---------------------------------	---	------------------------------------

6-7) Keyboard PCB (Part No. : PSM-EL-B002)

- ◉ The Keyboard PCB is attached to the Right Cover and is a feature that sets up X/Y movement and the off-set/origin-set feature.
- ◉ Through a lamp, this displays the communication status and movement status between the equipment and a computer.



▶Picture[6-12]



▶Picture[6-13]

6-8) T-Sensor PCB (Part No. : PSM-EL-B003)

- ◉ This is attached to the back of the Head Plate and senses whether or not there is material.



▶Picture[6-14]

6-9) USB port PCB (Part No. : PSM-EL-B004)

- ◉ This is a USB port where you can insert a USB cable that connects the equipment with a computer. It is located in the middle of the equipment at the lower back side.
- ⊗ If used for an extended period of time, the port can become loosened. For information regarding USB port PCB purchases, please refer your questions to an agent.



▶Picture[6-15]

7. Maintenance and Checklists

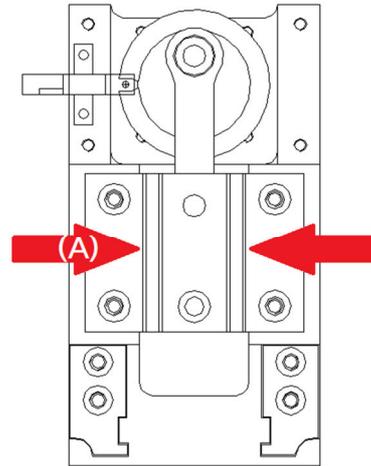
In order to prevent failures and to maintain smooth functioning of the device, please pay close attention to the checklists below.

7-1) Injecting Grease

- Once every three months inject grease into the inside part of the head (A).

※Precautions when Injecting Grease and Oil

- Turn off the machine before injecting.
- Do not turn on the power while injecting. This can cause serious injury.

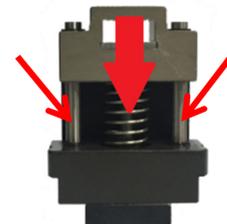


▶Picture[7-1]

7-2) Checking the Press Unit

1) Press Unit Oil Injection

- For maintenance reasons, it is very important to inject oil.
- Oil press unit when replacing cartridge.
- ※ If the machine is being frequently operated, inject more oil.
- ※ If operating the machine for the first time in a long time, inject oil before operating.



▶Picture[7-2]

2) Cleaning the Press Unit

- Clean the hole below the Press Unit once a month.
- If foreign materials or dust collect inside, the work may not turn out as desired.



▶Picture[7-3]



※ If the machine does not work for a long time, inject a sufficient amount of oil, let the machine run idle (Free run), and after removing the oil, proceed with the work.

※ If the Press Unit lies dormant and is not used for a long period of time, work after injecting a sufficient amount of oil.

※ Consumables

No	Part No	Part Names	No	Part No	Part Names
1	PSM-MS-A008	3A Fuse	4	PSM-MS-P014	Rewind Plate Knob
2	PSM-MS-A009	Frame Pad	5	PSM-MS-S013	Rewind Front Plate
3	ASP-EL-0007	Emergency Switch	6	PSM-MS-A010	Slip-Ring

◉ Included free of charge for 12 months except for consumables. Excluded free of charge in the following cases.

- 1) User modifies or changes the device at random.
- 2) The machine breaks down after user uses materials not supplied by the company.
- 3) User incurs the problem by ignoring the regulation power voltage.
- 4) Broken or damaged by external shock
- 5) Loss of components by user's mistakes.
- 6) Any damage caused by natural disasters.



◉ Operating instructions should be read (refer to chapter 1 ~ chapter 7 for details) before the appliance is operated.