

ProSpangle Spangle Transfer Machine



OPERATION & MAINTENANCE MANUAL

(Ver. 2.2)

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I. Safety Regulations for the Machine

Please read carefully this safety regulations described on this manual before operate or maintain the Machine. Below regulations should be kept strongly for safety during the operation or maintenance work.

1. Machine transportation

Machine transportation should be done by a skilled personal who knows safety regulations well. Below Rules should be kept.

- Check whether or not the people are around the machine during the load or unload the machine.
- Maintain level the machine in order to avoid deformation or exposing the personnel to danger during the Transportation of the machine, especially using folk lift.

2. Machine installation

Physical damage such as malfunction or trouble may occur due to machine installation environmental. So, Keep the below conditions.

- The ground should be strong enough to bare the machine weight.
- Dust and humidity are the main reason of contamination and corrosion of the machine. Recommend to Install an air conditioner and cleaning regularly.
- Avoid a direct light.
- Discoloration or deformation may occur when exposed to direct light long time.
- Keep more than 60cm from left, right and rear wall for operation and maintenance.
- ※ Refer to II – Installation and assembly for details.

3. Caution items during the main operation

- Confirm the caution and warning stickers on the machine. Keep the followings.
- Before operation this machine, please read and understand this manual thoroughly.
- Wear working clothes.
- Check nobody is working around the machine before start the machine and remove tools around working area of the machine.
- Keep away head or hands from the working area during the machine operation.
- Power off the machine and confirm the switch location is OFF before open the electrical box such as Power Supply Box.
- Stop the machine when changing the Spangle or working at rear side of the machine.
- Do not lean to the machine and keep away hands from Y-shaft rail. Fingers may be hurt during Frame work.
- Noise level may be over 80 db during maximum speed.

- Earplugs are recommended for hearing sensitivities.
- Soundproofing may be necessary in order to avoid other work's interruption.

4. Machine repair

Keep below items before repairing the machine in order to avoid accident.

- Repairing work should be done by engineer who was trained by our agent or our company.
- Changing machine's function or part should not be done before discussing with us in advance. It threaten the safety operation and causes trouble.
- Parts which are supplied from us should be used for repair work.
- Safety covers should be closed after repair work.



- Keep below before repair the machine in avoid electric shock or serious injury by jammed at the machine.
 - Power off the machine before repair and wait 2~3 minutes until discharge.
-

II. Installation and Assembly

Installation environment and electrical specification of this machine is described as below. If this machine is not installed nor used according to below instruction, safety accident, out of order or malfunction of machine may occur.

1. Installation environment

Use the machine in below environmental in order to avoid malfunction, out of order and loss of property.

- Dust and humidity are the main reason of contamination and corrosion of the machine. Recommend to Install an air conditioner and cleaning regularly.
- Discoloration or deformation may occur when exposed to direct light long time. Avoid a direct light by Using a curtain or blind.
- The ground should be strong enough flat concrete to bare the machine weight.
- Keep away inflammables, it causes fire.
- Keep more than 60cm from left, right and rear wall for operation and maintenance.

2. Electrical specification

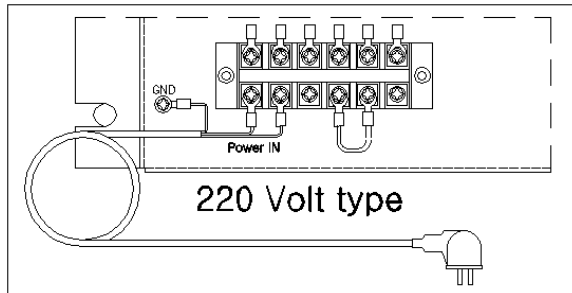
Check that the current electric power source is match-able with the machine electrical specification before installation of the machine as below.

- 1) Rated voltage: AC 110V / 220V (50~60 Hz)
- 2) Allowable voltage: within $\pm 10\%$ of rated voltage
- 3) Capacity and consumption: 3KVA 1.4~1.6KW
- 4) Insulation resistance: above 10M Ω (measurement by 500V insulation tester)
- 5) Separate power cable should be provided for machine's steady operation from the machine such as

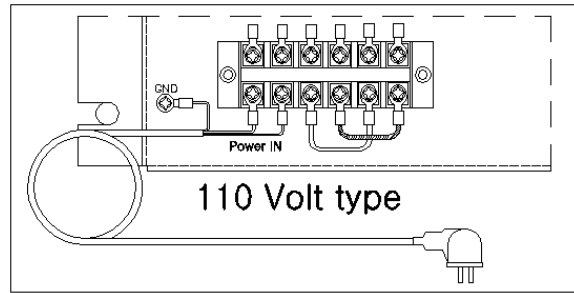
Elevator or air conditioner can impact a load fluctuation.

- 6) Install the power cable avoiding the working space of workers (preventing workers be caught in a cable).
- 7) Confirm the power plug is connected properly. Fire or electric shock may occur when metals are touched.
- 8) Power connector with ground should be used.
- 9) Contact electrician when connect the machine to outside.

※ Input voltage changing method



► Fig[2-1]



► Fig[2-2]

- Open the rear cover the power supply box and connect a jump cable to the terminal box (refer to Fig. 2-1 and 2-2).

※ Power Cord connection

- Put in the Power Cord to Power Socket(Fig @ of [2-3])of rear side of the machine, and connect to the receptacle.
- Check the input voltage and use a proper Power cord Before connect the Power Cord.



► Fig[2-3]

3. Level adjustment of the machine

If the level of the machine is not kept, the machine is deformed or twisted the working location. So, the level should be kept correctly as below.

- 1) The level (front/rear, left/right) is adjusted by adjusting bolts installed at the stand of the machine (4).
 - If the height difference of 4 bolts is more than 10mm, use Spacer to the lower level base.
 - This model can be put and operated on the working table. So, working table level should be kept correctly and machine level should be kept on the working table next.



2) The level should be adjusted at front/rear and left/right directions.

※ Level gauge using location

► Fig.[2-5]



Left/right level adjustment

► Fig.[2-6]



Front/rear level adjustment

- If the level gauge is placed at incorrect location, correct level check can't be done.
- After adjustment of level, tighten the adjustment bolt with wrench.

4. Check list before use the machine

Major parts of the machine can be moved due to movement or impact during long distance transportation. Before power on the machine, confirm as below after level adjustment.

- 1) Confirm the main shaft location is 0°.
 - If power on the machine out of 0° [Press check NEXT END] occurs.
 - adjust the main shaft to 0° (refer to page 36).
- 2) Confirm the Press unit location.
 - Press Unit may be out of correct location due to movement.
 - If power on the machine at incorrect location, [SP-Unit Fix Error 06] occurs.
 - adjust Press unit location(refer to page 37).
- 3) Clean the Frame.
 - Debris or dust may be stained onto the surface of Frame during long distance transportation. In this Case, transfer paper does not stick on the silicon pad. Clean the surface with wet towel.

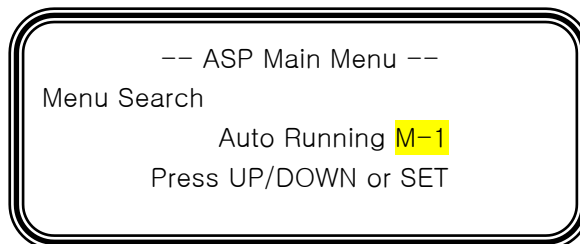
※ Power on and operate the machine after complete the above mentioned check list.

III. Major Characteristics and Specification

1. Function of each Menu

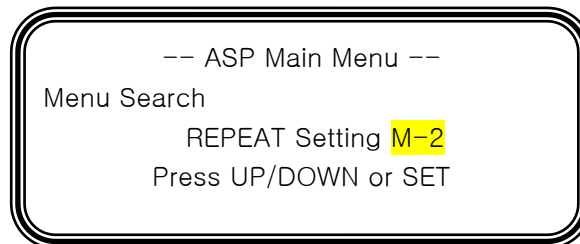
The system consists of a total 3 main Menus as below. Before operate the machine, please be acquainted With this manual.

1) M-1 : Auto Running Menu



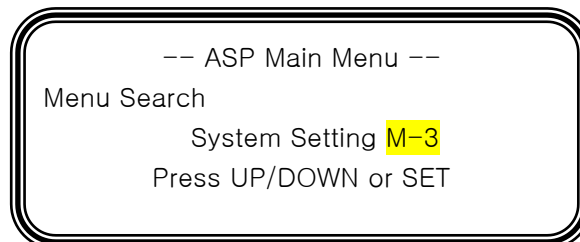
- ▶ Motif working Menu with pre-memorized design.
- ▶ Setting SP-Unit, work location, Off-set and Origin-Set can be carried out.

2) M-2 : REPEAT Setting Menu



- ▶ Automatically repeat working Menu.

3) M-3 : System Setting Menu



- ▶ Setting FEED sensor & speed setting and design editing function.

2. Major Characteristics

- ◉ When power on the machine, check each location of main shaft and Press Unit. if not at correct location, Error occurs.
- ◉ Can store 30 designs to the memory rooms(30 design memory rooms) and total memory capacity is 64,000 pieces of Spangles or 30 rooms of memory whichever comes first.



- Can use design made by embroidery Spangle punching program stored in DST and/or DSB format created From Sierra's Hot Fix ERA Program.
- Can set design mirror or rotating function(90 degree).
- Can set maximum 20 times(X and Y shaft) repeat work of same design.
- Moving Frame to the work starting point automatically after work finish by which transfer paper can be Changed easily.
- Frame moves to the work stop point when re-start the work, when moving Frame for confirming the Working condition after work stop (Original-Set).
- Can set work sequence of 6 Press Unit individually for each design.
- When Spangle is empty, stop the work and Tape Supply Error 10 is displayed.
- Set FEED value individually. Can use adjusting FEED value of each Press Unit (2~7 mm).
- Maximum working speed is 1,000RPM(based on 2 mm Spangle) and can control the speed from 500 to1,000 RPM.

IV. Basic Function of main part and Operation Method

1. Function and Characteristics of Operation Box

1) Function of OP-Box



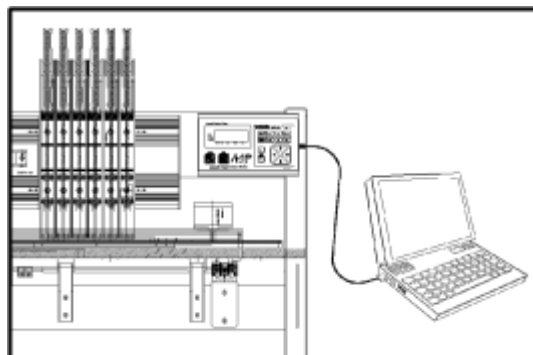
► Fig. [4-1]

① Display	Showing the current status such as operation mode, information, etc.
② Function button	Use when selecting or setting work. (refer to V. Operation box operation procedure.)
③ Frame move button	Use when moving Frame left/right or up/down,
④ UP/DOWN button	Use when design room number change, Unit change, work speed change.
⑤ STOP/START button	Use when starting or stop the work.

2) USB Port

◉ Locates at the right side of operation box. Connect with computer when design input with USB cable.

※ USB Port setting procedure :
refer to ASP-Read.



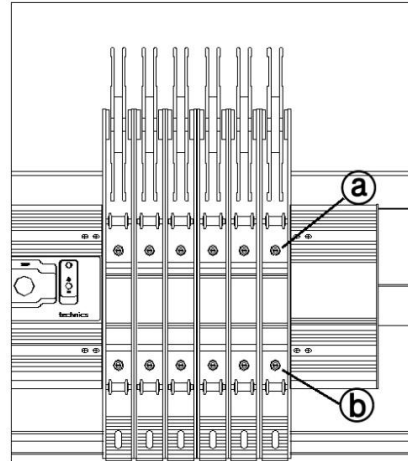
► Fig. [4-2]

2. Press Unit change and interval adjustment

1) Press Unit change

- Press Unit should be changed after stop the machine as below procedure.
 - ① Confirm and select the Press Unit which will be changed.
 - ② When Press Unit is selected, press Unit Change button and moves Press Unit to other location.

- ③ Unscrew 2 bolts ① and ② at Fig. [4-5].
- ④ Disconnect the Press Unit from the Head.
- ⑤ Install the new Press Unit at the Head and Screw the bolt ① and ② slightly.
- ⑥ After complete the interval setting of Press Unit, tightening the 2 bolts.



► Fig.[4-3]

2) Press Unit interval adjustment

- Adjust the left/right interval with Unit jig (in the tool box) which was supplied with the machine when Changing the Press Unit.

- ① Insert Unit Jig beneath the Press Unit. Center slot among 3 slots should be Located at newly changed Press Unit.



► Fig.[4-4]

- ② Tightening bolt ② first and next bolt ① Like Fig. [4-7].

- If Unit jig is not coming out after Press Unit interval adjustment, moving the Frame front by using Frame move button.
- Unit Jig is an essential part for Press Unit change. So, store it in designated place after use .



► Fig.[4-5]

3) Caution items when store Press Unit

After purchasing spare Press Unit, unused Press Units should be kept in safe as below.

- ① Store Press Unit after cleaning.
→ Debris Spangle may be stained at the bottom of Press Unit.
- ② Put in proper quantity of oil into the Press Unit.
→ be sure to put in oil before install the Press Unit onto the machine head.
- ③ Press Unit should be kept at clean place.

※ Disassembly of a Press Unit can Void Your Warranty

- We cannot guarantee the quality of disassembled Press Unit.
- Sealing sticker is attached to rear side of Press Unit. Broken Seals Can Void Warranty



▶ Fig[4-6]



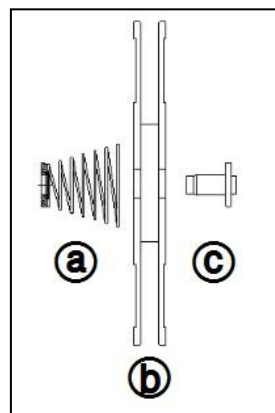
If you disassemble the main body of the product, we can not warranty of the quality.
제품의 본체를 분해하면 품질을 보증할 수 없습니다.
ASP technics

▶ Fig[4-9]

3. Spangle install

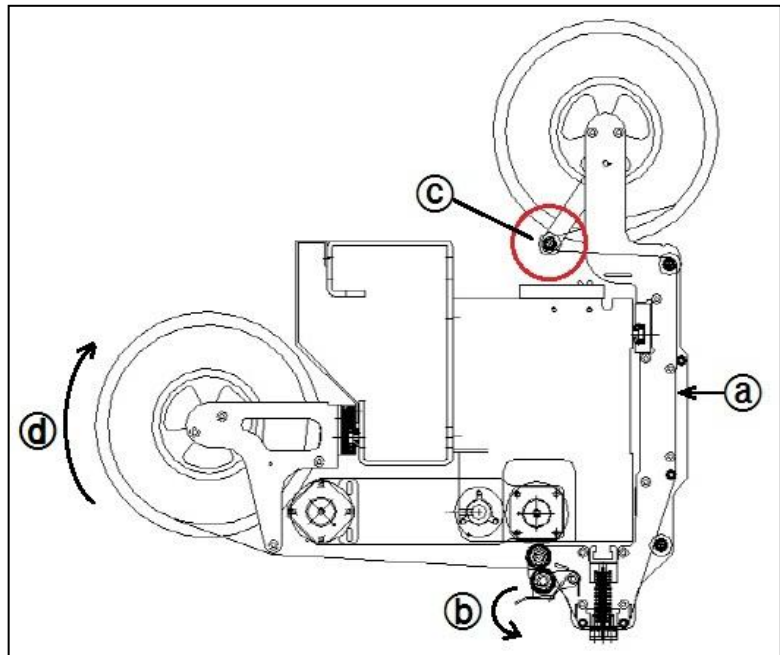
● available Spangle		※ Caution ※ Quality proven Spangle should be used. If thinner or thicker Spangle is used, noise can happen and, possibility of damage of parts such as Press Unit broken.
type	thickness	
Normal Spangle Film	150 μ m~230 μ m	
Glitter Film	200 μ m~450 μ m	
Flocking Film		

- ① When install Spangle bobbin, insert the Bobbin Shaft to the Bobbin center from the right and Bobbin Shaft Spring by pressing spring from the left.
- Install a Spangle bobbin, which Bobbin Shaft and Bobbin Shaft Spring was inserted, to Press Unit.



▶ Fig. [4-7]
 Ⓐ Bobbin Shaft Spring
 Ⓑ Bobbin
 Ⓒ Bobbin Shaft

- ② Install Spangle Bobbin at the Press Unit and hang a Spangle at the rear side of Tape Tension Roller like © position of Fig. [4-7].
- ※ If Spangle is not hang to Tension Roller, [Tape Supply Error 10] occurs, because Feed sensor can't sense the Spangle.
- ③ Push the Spangle to the slot of Press Mold like Fig.[4-7]. Then push in between Tension Roller and Move Roller, and press Tension Roller lever to ⑥ direction and pull a Spangle.

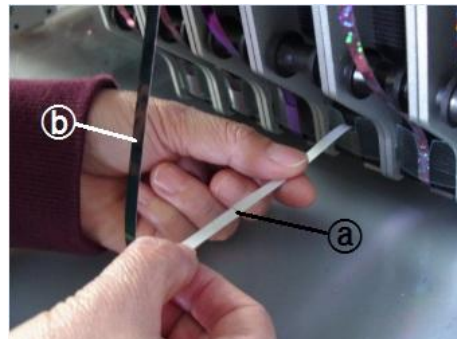


► Fig. [4-8]

- ① Front face of the Spangle is shown.
- ② Rewind Bobbin rotating direction.

• Spangle pasting method

- ① Install Bobbin at the Press Unit and hang a Spangle same as described above method.
- ② Attaching a rear side of Spangle using tape like ① of Fig. [4-8].
- ③ Pull a Spangle while attached part will be coming out by pressing ⑥ of Tension Roller Lever at the rear side of the machine like Fig. [4-9].



► Fig. [4-9]

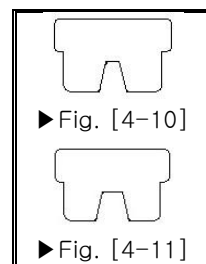
- ① Surface of a Spangle.



• Take out the used Spangle which is rolled at the Rewind Bobbin when replacing new Spangle after exhausting a Spangle. When used Spangle is over wound at the Rewind Bobbin, it may affect the work (*refer to Tape supply error 10*)

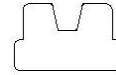
4. Install of Tape Front/Back Guide

- Tape Guide installation holes are located in front and rear bottom of Press Unit .
- Insert a Tape Guide before install a Press Unit.
- Two Tape Guides are supplied. One is narrow one (Fig.[4-10] and the other is wider one (Fig. [4-11]). Insert a proper size one according to a Spangle size.
- If inserting a Guide narrower than Spangle, feeding will be interrupted by the Guide.



1) Insert Tape Front Guide

- Insert like Fig. [4-13] direction to the Tape Front Guide slot of Press Unit.



▶ Fig.[4-12]



▶ Fig.[4-13]

2) Insert Tape Back Guide

- Insert like Fig. [4-14] direction to the Tape Back Guide slot of Press Unit.
- Work may not be done well, if Tape Back Guide is not inserted nor in proper size is inserted.
- Guide is not required when using a Spangle wider than Tape Front/Back Guide.



▶ Fig.[4-14]

V. Operation Box Operation Procedure

1. Initial and main screen

1) Initial screen

- Display model number and manufacturer Information. 5 seconds later, main screen is shown

```

-- ASP System --
VISION TECH   Seguin
Motive Auto Machine
KOR 82-32-821-8761-2
  
```



- Check SP-Unit(=Press Unit) position when power on the machine.
- ※ Refer to page 37 when [SP-Unit Fix Error 06] occurs.

2) Main screen

- Design input, each function setting and moving to different Mode is available.

```

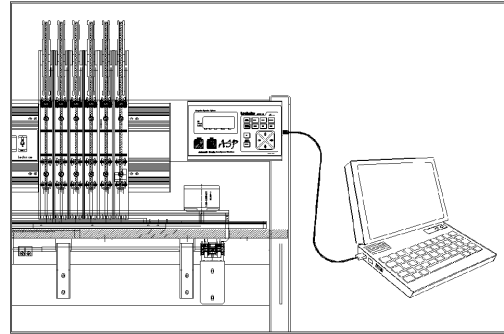
-- ASP Main Menu --
Menu Search
Auto Running M-1
Press UP/DOWN or SET
  
```

2. Design Input and delete

1) Design input

- ① Execute ASP-Read program on the user computer and connect USB cable between machine and computer.

※ Refer to ASP-Read in detail on the manual.



▶ Fig.[5-1]

- ② Press  button.

```

-- ASP Main Menu --
Menu Search
      Auto Running M-1
Press UP/DOWN or SET
  
```

- ③ Press  button. Then design input Mode is showing.

```

-- ASP Main Menu --
Designed Input MODE
SET to Read UP/D Del
Memory space = 64000
  
```



- [Memory Space = 64000 Spangles] →
Total memory room is 30

- ④ Select room number from 1~30 by press

 /  button.

Press  button.

```

-- ASP Main Menu --
System Memory Room
Memory Room No:   5
Designed Count:   0
  
```



- ※ Rooms where pre-design is stored are not shown.
- ※ [Room space Er-19] displayed when there is no empty room, then delete existing design and input new design again. (refer to page 37)

- ⑤ Check the designed count (Spangle quantity of the design) between main screen of the operation box and ASP-Read program of Computer monitor.

SET

Design input starts when press

```
-- ASP Main Menu --
Computer Connect OK
Title: Sample 2(3colo
Designed Count: 373
```

[Title :Sample 2(3colo]



- Design file name and quantity of design are displayed together when design input.
- File name can be input with 14 characters including spacing.
→ when more than 14 characters, only 14 characters are shown.
- ASR-Read (Ver.2.0) should be used when design transfer.

- ⑥ When design input is completed, Good Message is shown and return to main screen.

```
-- ASP Main Menu --
Computer Connect OK
Reading Count: 373
Good !
```

2) Design delete

- ① Press **READ** button at Main menu.

```
-- ASP Main Menu --
Menu Search
Auto Running M-1
Press UP/DOWN or SET
```

- ② When design input Mode screen is shown, press **UP** button.

```
-- ASP Main Menu --
Designed Input MODE
SET to Read UP/D Del
Memory space = 63808
```


③ Delete room Mode is shown.

Press **SET** button.

Press **Previous** button, then returns to previous screen.

```
-- ASP Main Menu --
DELETE Room No MODE
      SET to Delete
      Previous to EXIT
```

④ Select a room to be deleted by press

UP / **DOWN** button. And press

SET

• Moves to main screen after delete.

```
-- ASP Main Menu --
No: 5      Count: 373
Title: Sample 2(3colo
      Previous to EXIT
```

3) All rooms delete

① Press **READ** button at main screen.

```
-- ASP Main Menu --
Menu Search
      Auto Running M-1
      Press UP/DOWN or SET
```

② Press **DOWN** button when design Input Mode screen is shown.

```
-- ASP Main Menu --
Designed Input MODE
SET to Read UP/D Del
Memory space = 63808
```

③ Room all delete screen is shown.

Press **SET** button, then next screen is shown.

Press **Previous** button, then return to previous screen.

```
-- ASP Main Menu --
Room ALL DELETE MODE
      SET to Delete
      Previous to EXIT
```

④ Design all delete screen is shown.

Press **SET** button, and then delete all designs and moves to main screen.

Press **Previous** button, then returns to previous screen.

```
-- ASP Main Menu --
Design ALL DELETE?
      SET to Delete
      Previous to EXIT
```

3. SP Unit (Press Unit) Change and FEED setting

1) SP Unit Change

① Press **UNIT Change** button at main screen.

```
-- ASP Main Menu --
Menu Search
Auto Running M-1
Press UP/DOWN or SET
```

② Select a Press Unit by press **UP** / **DOWN** button.

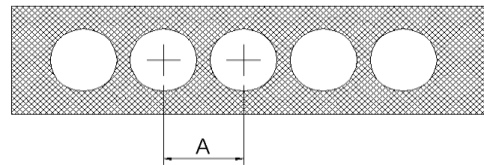
Press **SET** button, then moves to selected Press Unit and main screen.

Press **Previous** button, then return to previous screen.

```
-- ASP Main Menu --
SP Unit Change MODE
SP Unit No = 3
Previous to EXIT
```

2) FEED setting

※ FEED setting means the distance between Spangle to Spangle.
Setting value A at Fig.[5-2].



▶ Fig[5-2]

※ Standard FEED Value

Press Unit Size	●2mm	●3mm	●4mm	●5mm	●6mm	●7mm	■4mm	■5mm
Feeding Size	26~28	36~38	47~48	58~59	68~69	80	48~49	58~59

① Press **FEED** button at main screen.

```
-- ASP Main Menu --
Menu Search
Auto Running M-1
Press UP/DOWN or SET
```

② Select a distance by press **UP** / **DOWN** button.

Press **SET** button, then stores the setting value and moves to main screen.

Press **Previous** button, then moves to previous screen.

```

-- ASP Main Menu --
      Unit No: 1
UP/DOWN to Size Set
Feeding Size = 26
  
```

※ Caution items during FEED setting.

- Setting FEED distance after confirming the selected Press Unit.
- FEED distance should be set for each Press Unit and whenever changing Press Unit.
- Recommending to set FEED value as a standard value.
→If setting lower than standard value, there is higher possibility of defective product.



※ SP Unit Change and FEED setting can be done after calling designs.

4. REPEAT Setting Mode: M-2

① Press **UP** button at main screen.

```

-- ASP Main Menu --
Menu Search
      Auto Running M-1
Press UP/DOWN or SET
  
```

②Following screen is showing.

Press **SET** button, then moves to REPEAT setting menu screen.

```

-- ASP Main Menu --
Menu Search
      REPEAT Setting M-2
Press UP/DOWN or SET
  
```

③Select number of repeated design at X-shaft by press **UP** / **DOWN** button.

- can be selected from 1~20.

Press **SET** button, then setting numbers is memorized.

```

- Design REPEAT Set -
      X-Y Arrange Set
Press UP-DOWN or SET
X - Arrange :      3
  
```

④ Select number of repeated design at Y-shaft by

press **UP** / **DOWN** button.

- Can be selected from 1~20.

Press **SET** button, then setting value is memorized and moves to interval setting screen.

```

- Design REPEAT Set -
      X-Y Arrange Set
Press UP-DOWN or SET
Y - Arrange :      2
  
```

⑤ Setting interval among designs by press.

UP / **DOWN** button.

- Interval can be set by minimum 1mm to maximum 100mm (10cm).

Press **SET** button, then setting numbers is memorized and moves to main screen.

```

- Design REPEAT Set -
      X-Y Arrange Set
Press UP-DOWN or SET
XY REPEAT Space:  10
  
```

※ Auto repeat number is shown at the bottom of main screen as below.

- Following screen shows X-shaft 3, Y-shaft 2, total 6 repeat is set.

```

Auto Running MODE
Work Run Unit No:  1
Off-set Set or START
1 | 26 | 6 | off | 0
  
```

※ Auto repeat is released when X/Y-shaft is set 1.

- Following screen shows no repeat.

```

Auto Running MODE
Work Run Unit No:  1
Off-set Set or START
1 | 26 | 1 | off | 0
  
```

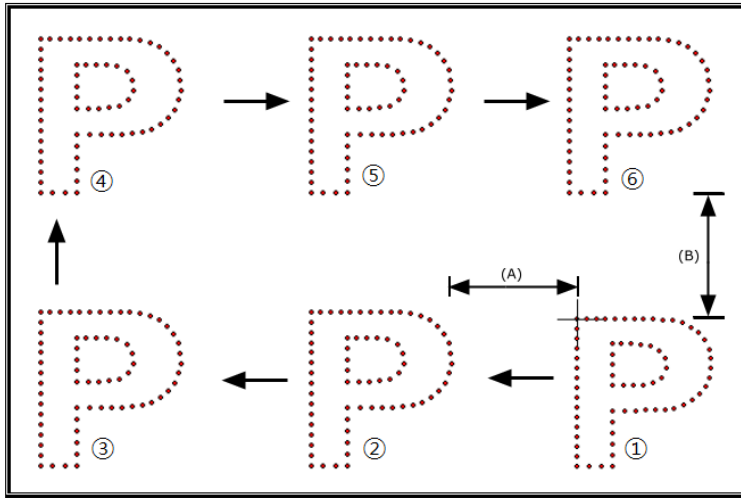
※ Repeat work size overflow screen

→ When repeated motif work is out of Frame, below screen is displayed.

- Moves to main screen when press **SET**, then user adjusts the number of repeat work and continues the work.

```

- Design REPEAT Set -
      X-Y Arrange Set
X: 13806   Y:  1810
Press SET Key Exit
  
```



► Fig[5-3]
Work sequence when repeat work set X- 3 and Y-2.

Work sequence	• Work starts from ①-②-③-④-⑤-⑥ as Fig. [5-3].
X-shaft spacing	• The interval between design and design based on design outline{refer to(A)}
Y-shaft spacing	• The interval between design and design based on design outline {refer to(B)}

5. System Setting Mode : M-3

- Setting Tape Sensor(Feeding Sensor), RPM Limit and design editing at this Mode.

① Press **UP** button twice at main Menu.

```
-- ASP Main Menu --
Menu Search
      Auto Running M-1
Press UP/DOWN or SET
```

② Press **SET** button when [System Setting M-3] screen is shown.

```
-- ASP Main Menu --
Menu Search
      System Setting M-3
Press UP/DOWN or SET
```

1) Feed Sensor setting → Can On or Off FEED Sensor.

① Press **SET** button.

Select other item by press **UP** / **DOWN** Button.

Moves to main screen when press **Previous** Button.

```
-- System Set MODE--
Feed Sensor Setting
Press UP DOWN Check
SET to Setting Mode
```

- ② Sensor On : when press **UP** button.
 Sensor Off: when press **DOWN** button.
 Press **SET** button, then memorize the value and moves to setting next item.
 Press **Previous** button, then does not remember the value and moves to setting next item.

Sequin Sensor Setting
 Sensor: On
 Press UP DOWN Check
 SET to Setting



- ※ Recommend that Feed sensor is ON.
- When the Feed sensor is On, it will detect the empty Spangle on the bobbin quickly and avoid Missing spangle in your design.

2) RPM Limit setting → Can set the working speed of the machine.

- ① Press **SET** button.
 Select other item by press **UP** / **DOWN** Button.
 Moves to main screen when press **Previous** Button.
 ② Set the speed by press **UP** / **DOWN** Button.
 ◦ Minimum : 500 / Maximum : 1000(can be set by 100 unit.)
 Press **SET** button, then memorize the value and moves to setting next item.
 Press **Previous** button, then does not remember the value and moves to setting next item.

-- System Set MODE--
 RPM Limit Setting
 Press UP DOWN Check
 SET to Setting Mode

Speed Limit Setting
 Limit RPM: 800
 Press UP DOWN Check
 SET to Setting



- ※ When setting [Limit RPM : 800]
- If press **UP** to increase the speed during work, RPM does not increased above 800.

3) Design symmetry function setting → Converting left ←→ right(mirror image) of design.

① Press **SET** button, then moves to setting screen.

Can select other item by press **UP** / **DOWN** button.

Moves to the main screen when press

Previous button.

② Press **UP** button : On

Press **DOWN** button : Off

Press **SET** button, then store Mirror On and Moves to next step.

Press **Previous** button, then moves to next Step without store Mirror function.

-- System Set MODE--
Mirror On-Off Set
Press UP DOWN Check
SET to Setting Mode

Mirror On-Off Set
Mirror: Off
Press UP DOWN Check
SET to Setting Mode



▶ Fig. [5-4] Original design

▶ Fig. [5-5] Mirror : On

4) Design Rotating function setting → Rotate the design 90 degree to counterclockwise.

① Press **SET** button, then moves to setting Screen.

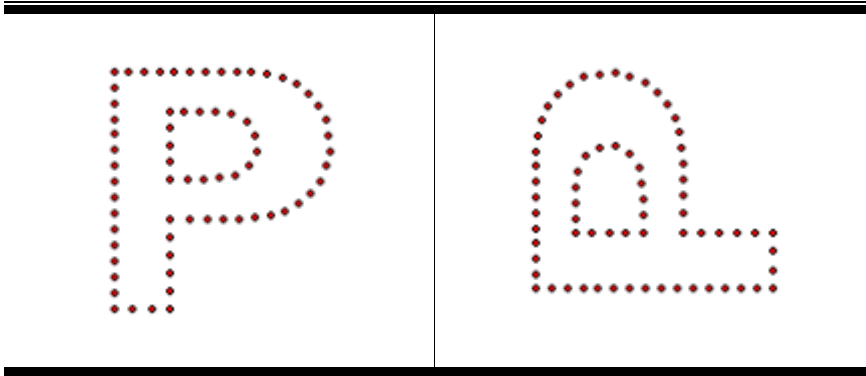
Can select other item by press **UP** / **DOWN** button.

Moves to the main screen by press **Previous** button.

-- System Set MODE--
Rotate On-Off Set
Press UP DOWN Check
SET to Setting Mode

- ② Press **UP** button : Rotate ON
- Press **DOWN** button : Rotate OFF
- Press **SET** button, then store Rotate ON and moves to next step.
- Press **Previous** button, then moves to next step without store the Rotate function.

Rotate Set MODE
Rotate (0): Off
Press UP DOWN Check
SET to Setting Mode



▶ Fig. [5-6] Original design

▶ Fig. [5-7] Rotate(90) : ON



- ※ When power off the machine, design editing function (Mirror / Rotate) is set to OFF.
- Design editing function should be set before starting the work.

5) Slow RPM(Low speed) setting → When design stitch interval from one spangle to another spangle is over 7mm, machine operates slow down the speed automatically. Slow RPM setting is as below.

- ① Press **SET** button, then moves to setting Screen.
- Select other item by press **UP** / **DOWN** button.
- Moves to the main screen when press **Previous** button.

-- System Set MODE--
Slow RPM Setting
Press UP DOWN Check
SET to Setting Mode

- ② Set the value by press **UP** / **DOWN** Button.
- Minimum speed : 400 / Maximum speed : 500 (setting by 10 unit.)
- Press **SET** button, then memorize the value and moves to setting next item.

Slow RPM Set Mode
Slow RPM = 450
Press UP DOWN Check
SET to Setting

Press **Previous** button, then does not memorize the value and moves to setting next item .

※ Caution items when setting Slow RPM(Low speed)



- When setting Slow RPM too high, vibration of the machine may occur and mismatching of design location may also occur.
- Setting the proper speed according to the design.
- Machine is set to 450RPM for slow RPM when factory out.

6) Free RUN setting → No tape operation setting function.

① Press **SET** button, then moves to setting Screen.

Select other item by press **UP** / **DOWN** Button.

Moves to main screen when press **Previous** Button.

```
-- System Set MODE--
Free RUN      Setting
Press UP DOWN Check
SET to Setting Mode
```

② ON : when press **UP** button. OFF: when Press **DOWN** button.

Press **SET** button, then memorize Free RUN and moves to setting next item.

Press **Previous** button, then does not Memorize Free RUN and moves to setting next item.

```
-- System Set MODE--
Free RUN      : Off
Press UP DOWN Check
SET to Setting
```

③ When set Free RUN function, main screen is shown as right.

Press **SET** button.

```
Free Running MODE
Menu Search
Auto Running M-1
Press UP/DOWN or SET
```

④ Select Free RUN design and press **SET** Button.

```
Free Running MODE
No: 5      Count: 373
Title: Sample2 (3colo
Press UP-DOWN or SET
```

- ⑤ Set working area and press **START** Button, then Free RUN starts.

```
Free Running MODE Work
Run Unit No: 1
Off-set Set or START
1 | 26 | 1 | Off | 0
```



- ※ Caution items when setting Free RUN.
- Normal work is available, Free RUN should be OFF after using Free RUN.

6. Auto Running Mode: M-1

1) Design selection

- ① Press **UP** button twice at main screen.

```
-- ASP Main Menu --
Menu Search
Auto Running M-1
Press UP/DOWN or SET
```

- ② Select room number by press **UP** / **DOWN** button and press **SET** button.
Press **Previous** button, then moves to previous screen.

```
Auto Running MODE
No: 5 Count: 373
Title: Sample 2(3colo
Press UP-DOWN or SET
```

Memory Room No	• Design input room number. Total 30 rooms are supplied.
Designed Count	• Pre-designed stitching number. If design is not input, displayed 0.

※ Frame size overflow screen

- When design size is out of frame size(working area), below screen is displayed.

- Press **SET** button and confirm the Design size. If design size is larger than Frame size, work can't be done.

```

Auto Running MODE
Frame Size Overflow
X: 7236   Y: 4167
Press SET Key Exit
  
```

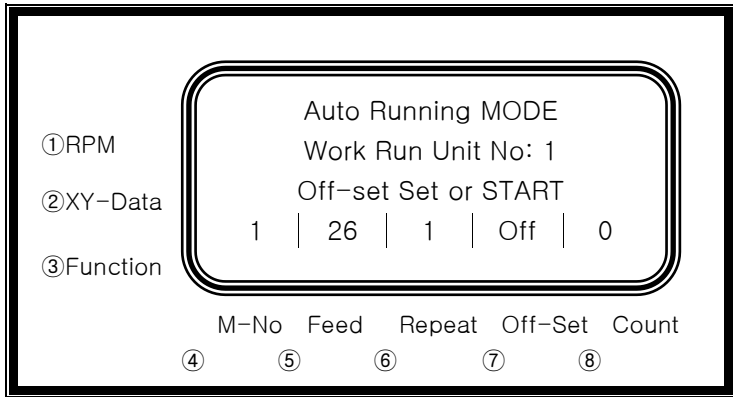
- ③ Design selecting screen.

```

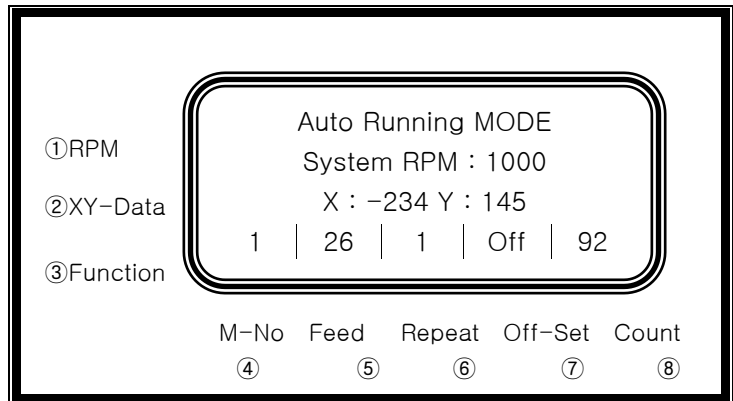
Auto Running MODE
Work Run Unit No: 1
Off-set Set or START
1 | 26 | 1 | Off | 0
  
```

2) Operation box screen

- ① Before start the work screen



- ② On the work screen



① RPM	Work speed of selected design
②XY-Data	X Y-shaft value.

③ Function	Each value from ④ to ⑧.
④ M-No	Design room number.
⑤ Feed	Distance between Spangle to Spangle of selected SP-Unit.
⑥ Repeat	Number of repeat work
⑦ Off-Set	Off-Set ON : work start point setting Off-Set OFF: not setting.
⑧ Count	Counting number of work

3) SP-Unit (=Press Unit) sequence setting procedure

※ This procedure is to set working sequence of 6 Press Unit from 1st to 6th

- Press unit setting should be done for each design.
- It does not be changed before delete design.
- One color design does not need Press Unit set.
- Work starts after moving the designated Press Unit.

※ Below design will be used as a sample to easy explanation.

- Press Unit is set as below sequence.

Press Unit No	1	2	3	4	5	6
Unit Size	2mm	2mm	3mm	4mm	5mm	6mm



※ The work sequence of this design [645] is from 6→4→5.
6 : 2mm, 4 : 3mm, 5 : 4mm.

▶ Fig. [5-8]

- ① Select design [645].

Press **UNIT Change** button.

Auto Running MODE
Work Run Unit No: 1
Off-set Set or START
1 | 26 | 1 | Off | 0

② Press Unit change mode is shown.
Press **UNIT Change** button again.

Auto Running MODE
SP_Unit change MODE
SP Unit No = 3
Previous to EXIT

③ Press Unit change mode is shown.

Run Color No Setting
UP/Down & Set or END
Design Color No = 1
System Unit No = 99

Design Color No	• Design color changing sequence can be set from 1~30
System Unit No	• Setting of working sequence of Press Unit. It can be set from 1~6.

④ Setting 1st Design Color

Set System Unit number by **UP** / **DOWN** Button.
Press **SET** button for saving and moves to 2nd Design Color No.

Run Color No Setting
UP/Down & Set or END
Design Color No = 1
System Unit No = 2

※ [System Unit No = 2]



- 1st working 6 of [645] is 2mm.
Set 2nd Press Unit as a No. 2 which contains 2 mm.
- When 1st and 2nd Press Unit contain 2 mm, select only one.

⑤ Set 2nd Design Color

Set System Unit number by press **UP** / **DOWN** button.
Press **SET** button for saving and moves to 3rd Design Color.

Run Color No Setting
UP/Down & Set or END
Design Color No = 2
System Unit No = 3

⑥ Setting 3rd Design Color


Set System Unit number by press **UP** / **DOWN** button.
Press **SET** button for saving and moves to 4th Design Color.

Run Color No Setting
UP/Down & Set or END
Design Color No = 3
System Unit No = 4

⑦ Press  button.

Run Color No Setting
UP/Down & Set or END
Design Color No = 4
System Unit No = 99

⑧ Data set save screen is displayed.

Press  button, then save this data and Moves to design calling screen.

Run Color No Setting
UP/Down & Set or END
Design Color No = 4
System Unit No = 99

⑨ Press Unit sequence setting should be done after confirming the Design color number of work.



※ [System Unit No = 99]

- 99 is displayed when SP-Unit setting is not done.
- EX) When save up to Design Color No 3, 99 is displayed from 4.

※ Caution items during SP-Unit setting sequence

- SP-Unit setting should be done for each design.
- After input new design, be sure to make SP-Unit setting before work start.
→ If work starts without Press Unit sequence setting, machine will be stopped after 1st Press Unit work.



- Unit change and FEED setting can be done after calling design.

4) Design size confirming and automatic setting

- Confirm the working area before start the work.

Design size confirm	• Confirm the size at the designated point by moving Frame.	
Working area automatic setting	Center	• Locate the design to the center of the Frame.
	Edge	• Locate the design to the right edge of the Frame.

4)-1 Design size confirm

① Select the design.

Press **Trace** button.

Auto Running MODE
Work Run Unit No: 1
Off-set Set or START
1 | 26 | 1 | off | 0

② Design Trace Mode is shown.

Press **SET** button.

- Following screen shows the design at the current Frame location.

Auto Running MODE
Design Trace MODE
Set to Frame Moving
Trace to PositionSet



- Check the Press Unit setting number before confirming design size. And confirming the design location with pre-set Press Unit.

(4)-2 working area automatic setting (Center)

① Select the design.

Press **Trace** button.

Auto Running MODE
Work Run Unit No: 1
Off-set Set or START
1 | 26 | 1 | off | 0

② Following screen shows the Design Trace Mode.

Press **Trace** button again.

Auto Running MODE
Design Trace MODE
Set to Frame Moving
Trace to PositionSet

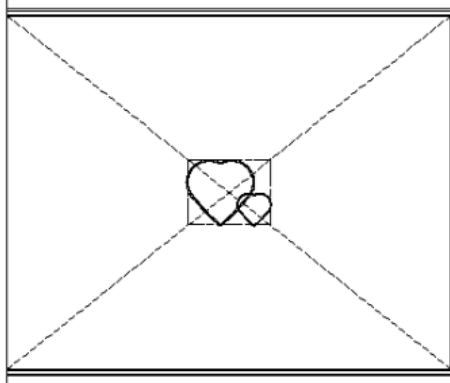
③ Following screen shows the Design auto position.

Press **SET** button.

Moves the Frame to the center and moves to ① screen.

Auto Running MODE
Design Auto position
Set to Frame Center
End to Frame Edge

► Fig. [5-9] shows locate the design to the center of the Frame.



- Locate the design to the center of the Frame, not work starting point from the center.

4)-3 Working area automatic setting (Edge)

① Select the design.

Press **Trace** button.

```
Auto Running MODE
Work Run Unit No: 1
Off-set Set or START
1 | 26 | 1 | Off | 0
```

② Following screen shows the Design Trace Mode.

Press **Trace** button again.

```
Auto Running MODE
Design Trace MODE
Set to Frame Moving
Trace to PositionSet
```

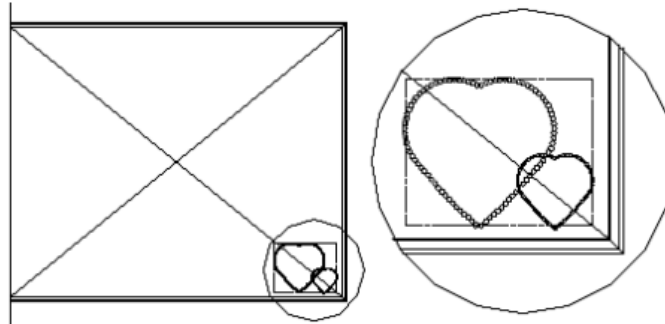
③ Following screen shows the Design auto position.

Press **END** button.

- Moves the Frame to the edge and moves to ① screen.

```
Auto Running MODE
Design Auto position
Set to Frame Center
End to Frame Edge
```

► Fig. [5-10] shows locate the design to the edge of the Frame.



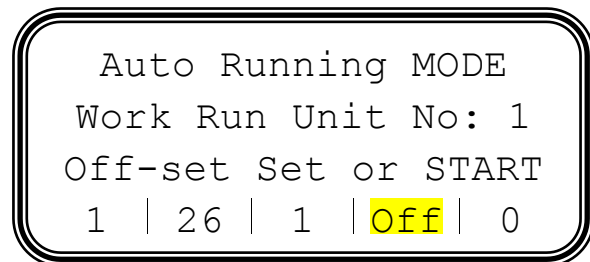
5) OFF-Set setting and Origin-Set

OFF-Set	<ul style="list-style-type: none"> ◦ Frame is moved to specific location after completion of motif work. When start the work again, work starts after moving to the starting point. ✳ Caution items before setting OFF-Set ◦ Setting after locate the working area. ◦ When open other design after work finish, OFF-Set is released automatically. ◦ Power off the machine after setting OFF-Set and power on the machine again, OFF-Set is released.
Origin-Set	<ul style="list-style-type: none"> ◦ Moving Frame to confirming the working status after work stop. Moves to the previous working stop point when restart the work.

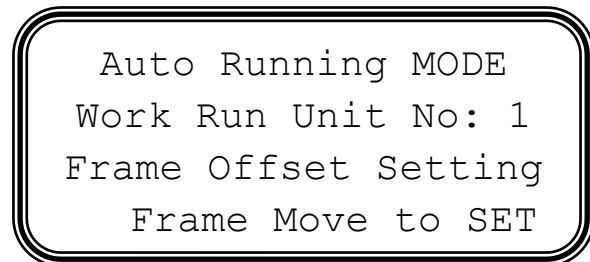
5)-1 OFF-Set setting

① Select the design
Confirming the design size and decide the working area.

② Press **OFF-S/Origin-S** button.



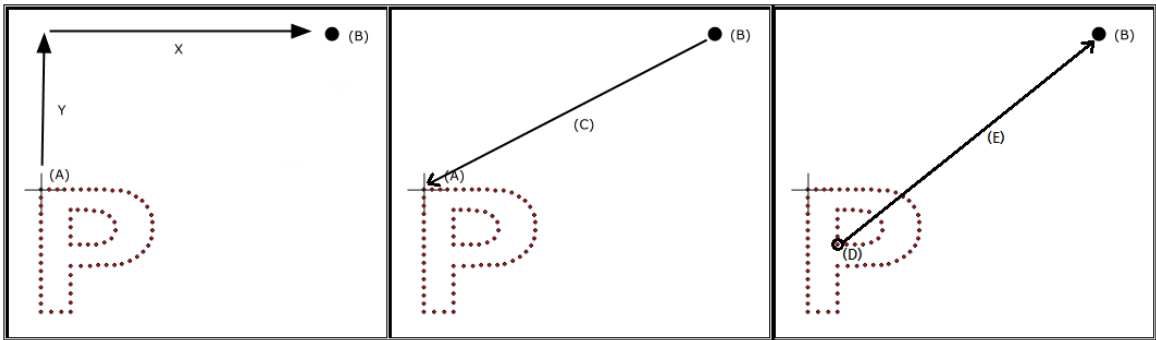
③ Press **SET** button after moving Frame to OFF-Set point using X/Y button.



- Following screen shows the OFF-Set set.

```

Auto Running MODE
Work Run Unit No: 1
Off-set Set or START
1 | 26 | 1 | ON | 0
  
```



►Fig. [5-11]

►Fig. [5-12]

►Fig. [5-13]

- Fig. [5-11]: Moves Frame to (A) starting point and set OFF-Set point (B).
- Fig. [5-12]: When work starts, moving from OFF-Set point (B) to (A) through route (C).
- Fig. [5-13]: After work finish, moving from (D) to OFF-Set point (B) through route (E).

5)-2 OFF-Set release

- Press **OFF-S/Origin-S** button.

```

Auto Running MODE
Work Run Unit No: 1
Off-set Set or START
1 | 26 | 1 | ON | 0
  
```

- Press **SET** button without moving Frame..

```

Auto Running MODE
Work Run Unit No: 1
Frame Offset Setting
Frame Move to SET
  
```

- OFF-Set is released.

```

Auto Running MODE
Work Run Unit No: 1
Off-set Set or START
1 | 26 | 1 | Off | 0
  
```

5)-3 Origin-Set function.

① Stop the work by press **STOP** button.

② Then stops after working point (A). Moves Frame To point (B).

④ Press **OFF-S/Origin-S** button.

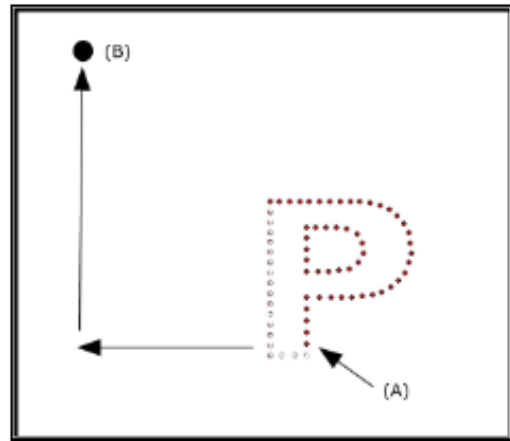
⑤ Press **SET** button.

⑥ Frame moves to previous working stop point through route (C).

Restart the work by press **START** button.

```

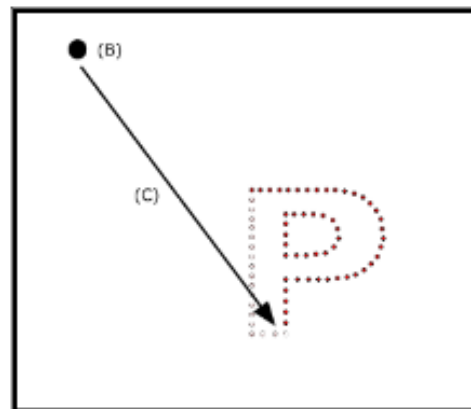
Auto Running MODE
System RPM: 1000
X: -234      Y: 145
1 | 26 | 1 | Off | 92
  
```



► Fig. [5-14]

```

Auto Running MODE
System RPM : 1000
X: -234      Y: 145
Set to Origin-Set
  
```




► Fig. [5-15]

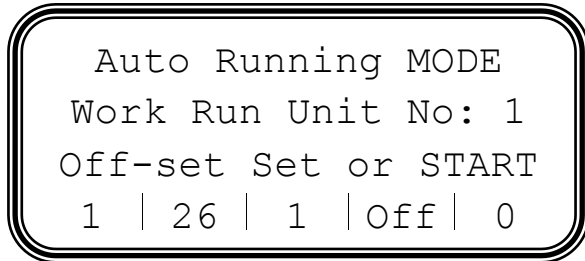
6) Work start and stop

6)–1 Confirm items before start the work




- ① Confirm the design was input to the machine.
- ② Set the repeat setting at REPEAT Setting Mode if required.
- ③ Set Design editing and RPM Limit setting at System Setting Mode if required.
- ④ Confirm the Feed setting of Press Unit.
- ⑤ Select design and confirm the work sequence.
- ⑥ Open design and set the working area.
- ⑦ Confirm the OFF–Set status.
- ⑧ Removes the tools or other items on the table.
 - ⑩ Confirm the ON/OFF status of Head. Confirm the light on of assistance switch.
 - ⑪ When everything is ready, start the work after put the transfer paper on the Frame.

6)–2 Work start

- Set all required functions and start the work by press  button.

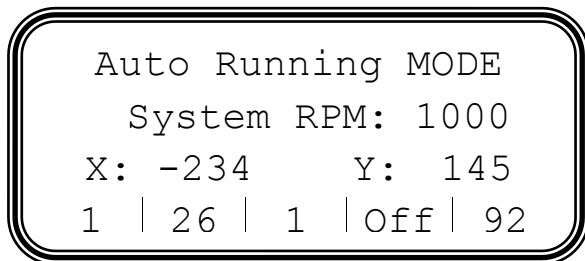


6)–3 Work speed setting









- Work speed can be set by press  /  button during the work.
 - If RPM Limit is set, RPM does not increased over setting speed.
- if speed does not increased by press  button, confirm the RPM Limit is set after complete the work

6)–4 Work stop

- ① Stop work by press  button.



- Functions of button which can be used at the work stop

Function	Button	Description
Forward		Moving forward without work.
Backward		Moving backward without work.
Start		Start the stopped work continuously.
Origin-S		When moving Frame to confirming the working condition after work stop, Frame moves backward to work stop point.
Unit Change		Changing the setting condition of pre-set Press Unit.
Feed setting		Changing the Feed value of pre-set Press Unit.
Direction key		Moving Frame to X/Y direction.
Stop		Stop the work.

VI. Cause of Error and measure procedure

- When trouble occurs, check or measure as per Safety guide. Beep sounds at the Operation box When error occurs during the work.

```

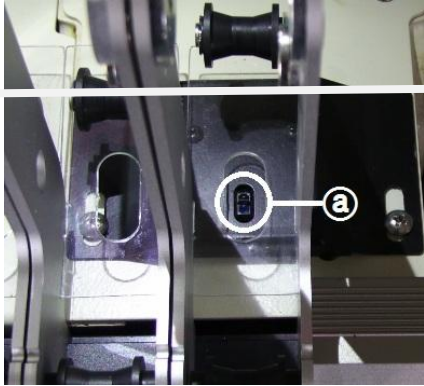
-- ASP Main Menu --
Menu Search
  Auto Running M-1
  X - Limit Error 13
  
```

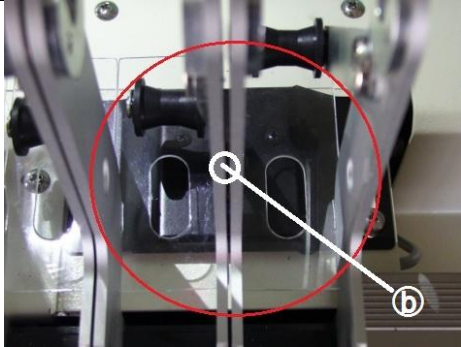
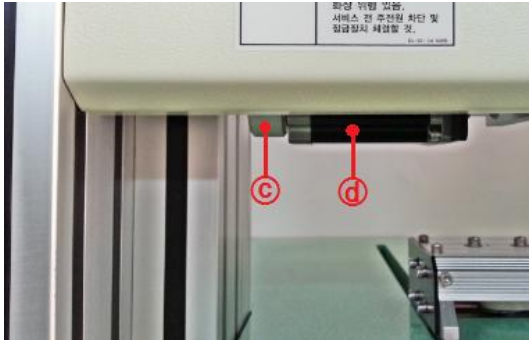
- Next work can't be done before correction of errors.
- Continue the work after taking measure procedure of each error cases as below.

※ Caution items before error correction



- Wait about 2~3 minutes until the electricity is discharged completely.
- be careful of electric shock and safety accident.

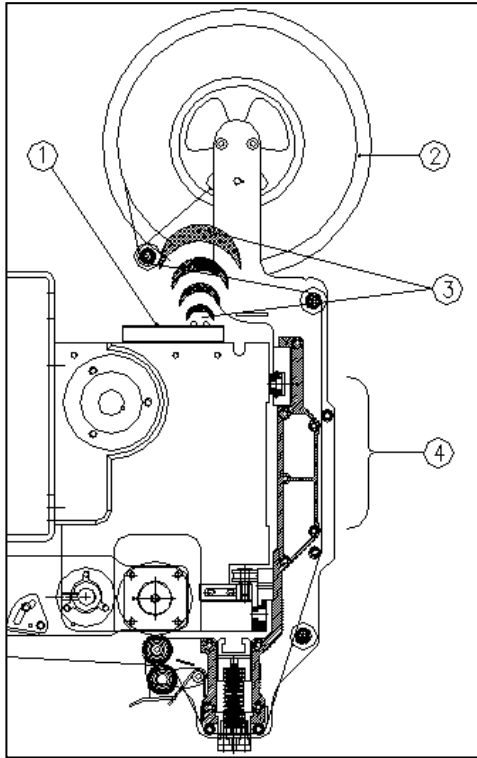
Error message screen	Cause of Error	Check or Measure item
<p>Press check Next END</p>	<p>① Occurs when power on the machine, in the state that main shaft was moved by external vibration while power off the machine</p> <p>② Occurs when load is added to the main shaft during the machine operation.</p> <p>※ When error occurs during the machine operating, confirm the cause of load to the main shaft and take a prompt action.</p>	<p>This model does not have Main shaft angle Lever. So, it should be solved as below.</p> <div style="border: 2px solid black; border-radius: 15px; padding: 10px; margin: 10px 0;"> <p style="text-align: center;">-- ASP Main Menu --</p> <p style="text-align: center;">Menu Search</p> <p style="text-align: center;">Press Check Next END</p> <p style="text-align: center;">Press UP/DOWN or SET</p> </div> <p>① Press END button when error occurs → Error bell stops and following message shows.</p> <div style="border: 2px solid black; border-radius: 15px; padding: 10px; margin: 10px 0;"> <p style="text-align: center;">-- ASP Main Menu --</p> <p style="text-align: center;">Menu Search</p> <p style="text-align: center;">Set to Exit Error</p> <p style="text-align: center;">Press UP/DOWN or SET</p> </div> <p>② Press SET button, then main shaft rotates and set(0°) position automatically</p> <p>※ When error occurs, cause of error should be identified first, then take a prompt action accordingly. If not, machine may be seriously damaged.</p>
<p>SP-Unit Fix Error 06</p>	<p>-When Press Unit is out of correct position due to External force (movement or impact).</p> <p>-When Press Unit couldn't move due to external force</p>	<p>① Confirm the Tape sensor(Feeding Sensor) is located at the center of Press Unit.</p>  <p>Fig. [6-1] Press Unit is located at correct position(normal)</p> <p>Ⓐ Tape Sensor(Feeding Sensor)</p>

		 <p>Fig. [6-2] Press Unit is located at incorrect position(error occurs) b Tape Sensor location</p>
		 <p>Fig[6-3] Set Press Unit location by rotating Color Moving ADJ Knob(c) which is located left side of the machine by hand. d Color Change Motor</p>
<p>Main Servo Error 07</p>	<p>Machine is stopped due to main shaft being overloaded.</p>	<p>① Power off the machine. ② Confirm the Press Unit is located at correct position. ③Take out the troubled Press Unit from head. ④ Checking the Press Unit and find a troubled one. *Check the knocking, fragile or debris of Press Unit, -Contact the manufacturer when knocking or fragile is found. In case of debris, remove the debris and use Press Unit.</p>
<p>X-Motor DRV Error 08 Y-Motor DRV Error 09</p>	<p>-X/Y motor driver is stopped due to overload of X or Y shaft of Frame(Red lamp of X/Y driver at Power supply box is light on)</p>	<p>① Power off the machine ② Moving Frame to X/Y direction by hand and find a overload point. Take a proper action(debris around Time Pulley, etc) ③ When red lamp is on without overload of Frame, it means that , driver is broken electrically. In this case, contact manufacturer. *When fan is not working, driver may be broken due to overheat.</p>

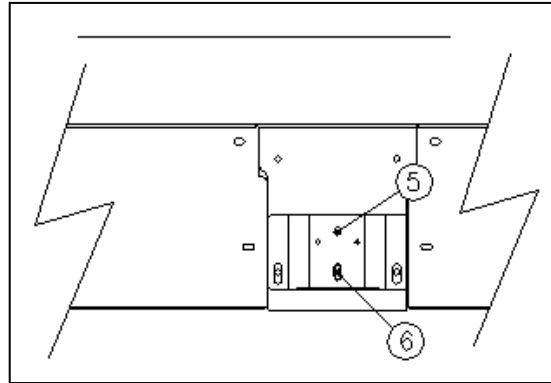
Tape supply Error 10	<p>-Occurs when Feed (Spangle) is exhausted, work stopped.</p> <p>-Lamp is flickers at the head of assistance switch</p>	<p>① Install new Spangle bobbin at the Press Unit</p> <p>② Start the work.</p> <p>*Refer to VII-1 Tape sensor moving parts</p>
X-Limit Error 13 Y-Limit Error 14	<p>-Occurs when Frame reaches to the X/Y direction limitation</p>	<p>-Move the Frame within the Frame limit boundary by X/Y direction button.</p>
Input Fail Error-15	<p>-USB cable disconnection during design transfer or other problem such as computer rebooting.</p>	<p>① Press Previous button(return to previous screen)</p> <p>② Check USB cable connection status/ computer and transfer again.</p>
Memory Count Error-16	<p>When design information is not transferred to the machine during design input</p>	<p>① Press Previous button(return to previous screen)</p> <p>② Perform the ASP-Read again and design transfer</p>
USB Cable Error-17	<p>-Occurs when design transfer without connecting USB cable between computer and machine.</p>	<p>① Press Previous button(return to previous screen)</p> <p>② Design transfer after connecting USB cable between computer and machine.</p>
Memory Space Error-18	<p>-Memory space is remaining less than design volume which will be transferred</p>	<p>① Press Previous button(return to previous screen)</p> <p>② Design transfer again after making enough memory space by deleting unused design.</p>
Room Space Error 19	<p>-Occurs when all memory rooms are fully occupied.</p>	<p>① Press Previous button(return to previous screen)</p> <p>② Delete the unused memory rooms and input design again.</p>
Room Erase Error 20	<p>-Occurs when deleting room is not deleted due to electrical matter.</p>	<p>① Press Previous button(return to previous screen)</p> <p>② Delete the room again, if error occurs again, delete all memory rooms.</p>
Communication Error	<p>-When momentary obstacle between OP box and MPU occurs due to serious electrical noise from outside or inside of the machine.</p>	<p>-Power off the machine. After waiting about 2~3 minutes for discharge, power on the machine again.</p>

VII. Major adjustment of moving parts of the Machine

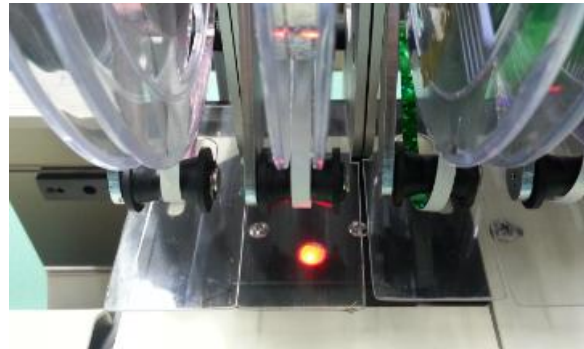
1. Tape sensor(Feeding sensor) installation location and sensing principal



► Fig.[7-1]



► Fig.[7-2]



► Fig.[7-3] – Tape Sensor LED on.

- Tape Sensor installation location: Top middle of Head (refer to Fig.[7-1] ①)
- ※ Sensing principal of Tape Sensor
- Tape Sensor sensing the Spangle at ⑥ location of Fig.[7-2]. Sensing the existence of Spangle by Measuring reflected light's quantity after emitting the infrared ray.
- ③ of Fig.[7-1] indicates the sensing range and decides the existence of Spangle by sensing the Spangle Which is passing over the Tape Sensor and the wound Spangle at ② of Fig. [7-1]. [Tape Supply Error 10]

Occurs when Spangle is not existent 20 times (rotating times) consecutively, and stops the work. At this moment, end of Spangle is intended to stop at ④ of Fig. [7-1].

- Monitoring LED(Fig.[7-2] ⑤) is installed. If Spangle is locates exactly on top of Tape Sensor, LED is ON. If

Locates out of position, LED is OFF. So, can replace or maintain the Tape sensor easily.

※ When [Tape Supply Error 10] occurs with Spangles

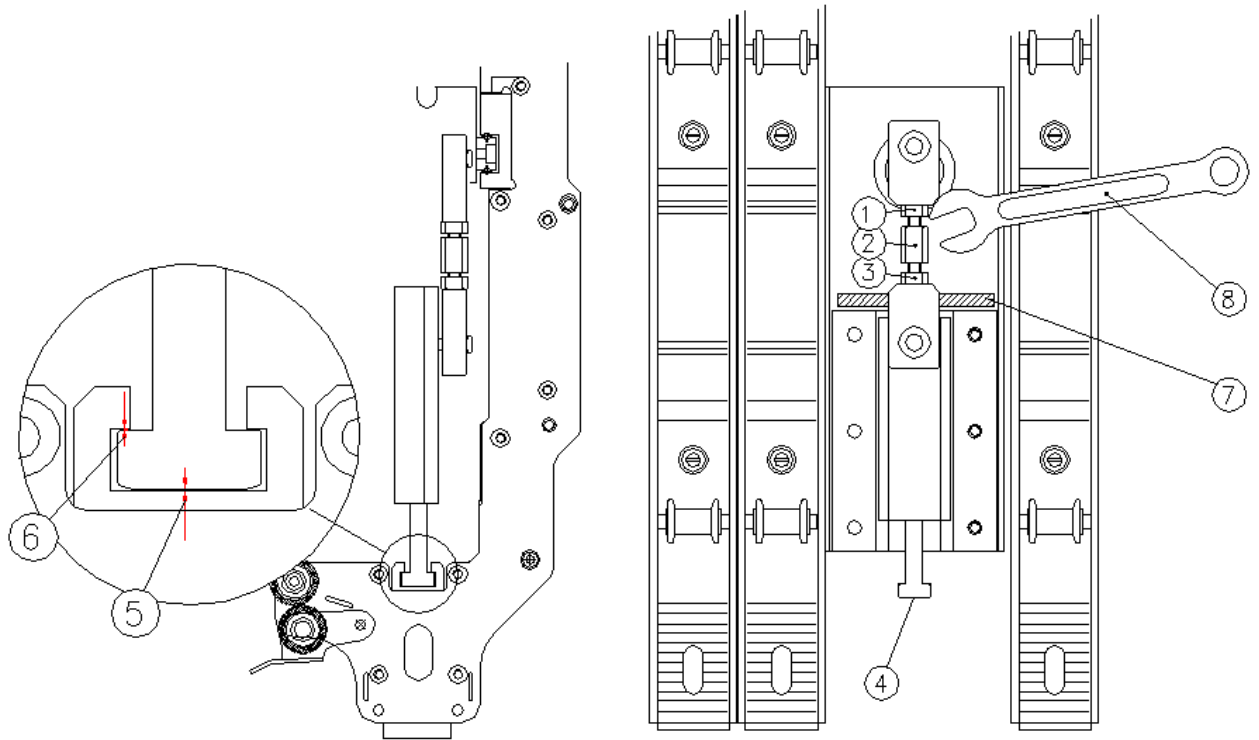
→ Occurs when Tape Tension Roller(refer to B-14 of Mechanism Layout{rear view-2}) is out of Tape Sensor range due to not-smooth unwinding of Spangle from the bobbin reel.

※ When [Tape Supply Error 10] does not occur without Spangle

→ Dust or other material around Tape sensor interrupt the reflecting of infrared ray. Clean the Tape sensor

area.

2. Hammer Adjustment method



► Fig.[7-4]

◉ When changing Press Unit, the distance of Hammer ⑤, ⑥(refer to ④ of Fig) should be checked and adjusted.

※ Hammer adjustment method

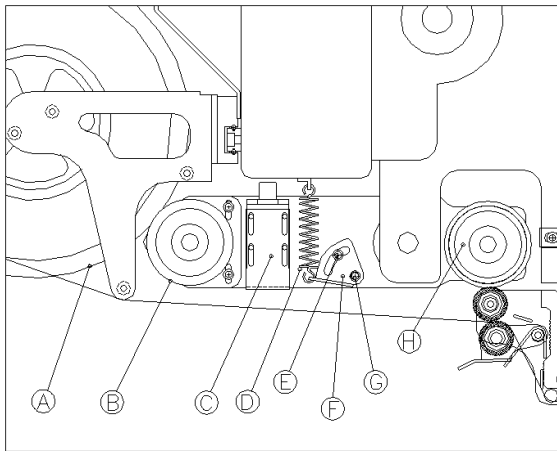
1. Install one Press Unit to center (3rd or 4th) of 1st Head.
2. Unscrew fixing nuts ① and ③ by using spanner ⑧ and adjust up and down by using control nut ② until keeping even(same) interval of ⑤, ⑥.

→ if this adjustment is not correctly done, interruption occurs and error [SP-Unit Fix Error 06] displayed
During a color change. So, repeat Color Change several times until interruption does not occur again and
Then tighten nuts ① and ③ firmly.

3. Fig ⑦ is felt material for lubricant, supply enough lube oil here.

3. Feeding Part adjustment method

◉ When irregular feeding of Spangle(pushing out to rear side)occurs, tension springⓄ adjustment is required..



► Fig. [7-5]

- Ⓐ Rewind Bobbin
- Ⓑ Rewind Wheel
- Ⓒ Feeding Unit up/down Solenoid
- Ⓓ Feeding Unit Tension Spring
- Ⓔ Tension adjust upper bolt
- Ⓕ Tension adjust
- Ⓖ Tension adjust lower bolt
- Ⓗ Feeding Wheel

• Adjustment method

When adjusting tension spring, unscrew bolt Ⓔ loosely until bolt can be adjusted. Then unscrew bolt Ⓖ and adjust tension by push down Ⓕ.

※ If tension is adjusted too strong, Ⓒ(Solenoid) is working unstable while SP-Unit Change is made. When SP-Unit Change is made, unstable movement occurs due to Rewind wheel(Ⓑ) touching Rewind Motor. So, adjustment should be done carefully with SP-Unit Change repeatedly.

• When used Spangle is wound too much on the Ⓐ(Rewind Bobbin), Ⓑ (Rewind Wheel) is pressed by weight. Then Ⓗ (Feeding Wheel) moves up and can't deliver (feed) the used Spangle. So, remove the used Spangle of Ⓐ(Rewind Bobbin) while changing new Spangle after exhausted.

4. Y-shaft belt tension adjustment method



► Fig. [7-6]



► Fig. [7-7]

• Tension of Y-shaft belt can be checked by press Ⓐportion(beneath of table) with hand.

• If tension is weakened Y direction inertia occurs and it causes the design locating at incorrect position.

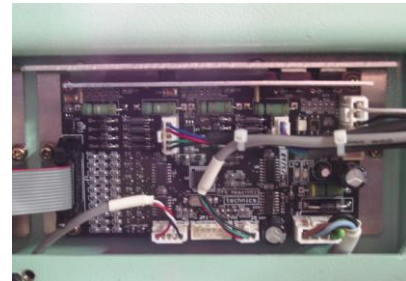
• Adjustment method

Unscrew bolt Ⓒ loosely. Tension is adjusted when tighten bolt Ⓑ. Adjusted strongly when turning to clockwise and weakly adjusted when turning to count clockwise. Tighten bolt Ⓒ after adjustment.

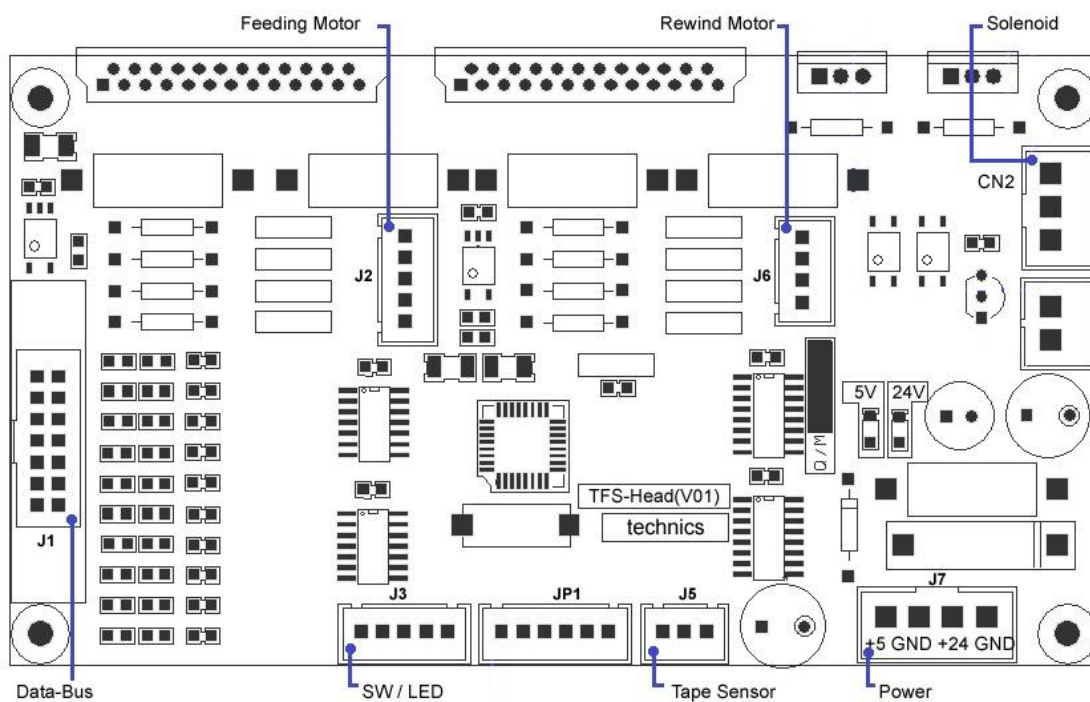
※ If tighten too strong, vibration and noise occur while Frame moves to Y direction. So, fine tuning is required.

5. Head PCB

- One Head PCB is installed. Control the Feeding Motor, Rewind Motor and Solenoid of Head.
- Refer to right Fig. [7-8] installed at the Head.
- Refer to below Fig. [7-9] for connector location.



► Fig. [7-8] Head PCB



► Fig [7-9] Head PCB

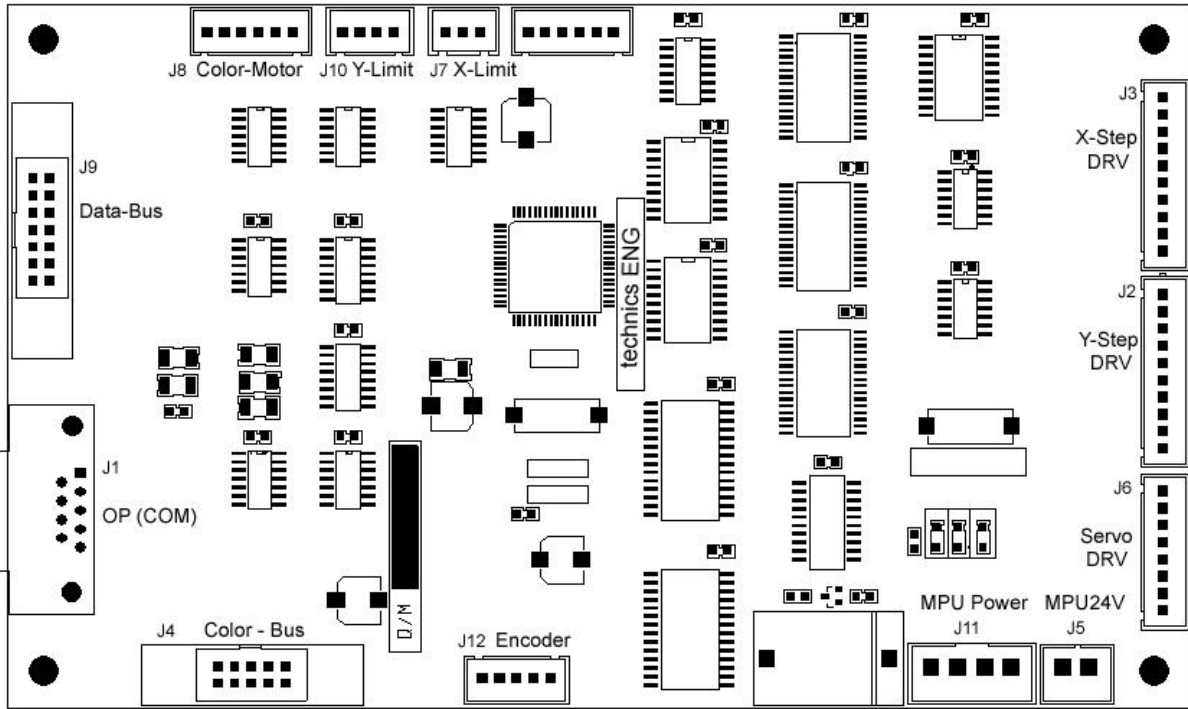
6. MPU PCB

- MPU PCB is an important PCB which controls all functions of this machine.



► Fig[7-10]

- MPU PCB is installed inside of the machine(can be shown when open the plate).
- Refer to Fig. [7-10] for Connector location.



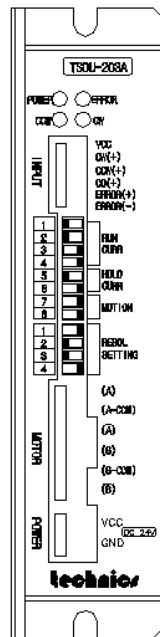
► Fig [7-11] MPU PCB

7. Color Change Motor Driver

- Control the working of Color change Motor.



► Fig [7-12]

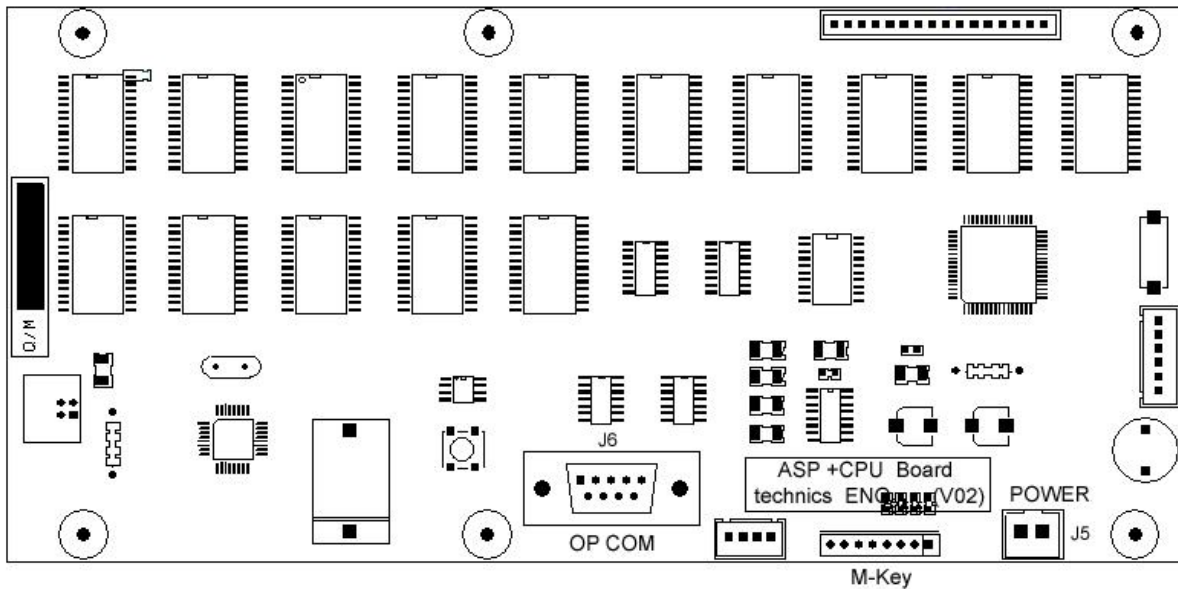


► Fig [7-13]

- Color change motor driver is installed inside of the machine (can be shown when open the plate <refer to Fig [7-12]>). Refer to Fig [7-13] for DIP switch.

8. OP PCB

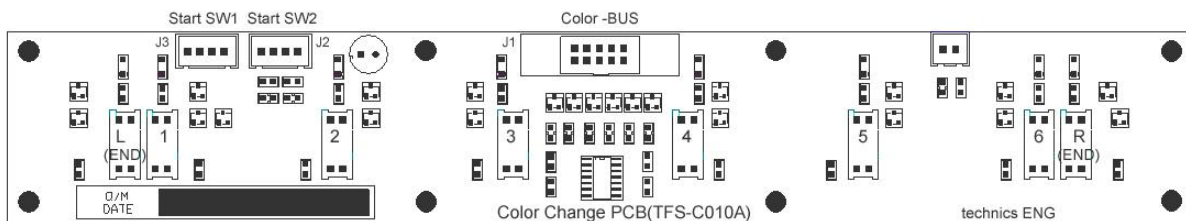
- Control all function setting and design input/output. Display the current status on the Operation box.



► Fig..[7-14]

9. Color Change PCB

- Position Sensor board of Press Unit.



► Fig. [7-15]

10. Power supply Parts

1) Power switch

- Power switch of VT-ASP-645-1 locates top left of the Machine) Fig [7-21]).
- Power on when turns to the right, power off when turns to the Left.



► Fig[7-16] – power on status

2) Power Cord and Fuse



►Fig[7-17]



►Fig[7-18]

① Power Cord

- Connect power cord to © of Fig[7-17] and receptacle.
- please confirm the power cord is inserted firmly.

② Fuse replacement

- Use 10A fuse for X/Y Driver(Fig[7-17] of ①) and 7A fuse for SMPS(Fig[7-17] of ②).
- Be sure to power off the machine when changing Fuse.

④ Input voltage change

- When changing input voltage, open the Power Change Cover(© of Fig[7-18])and change terminal Block (④ of Fig[7-17]) like diagram of Power Change Cover(© of Fig[7-18]).
- Be sure to power off the machine when changing the input voltage.
- When connecting Power Cord after changing input voltage, be sure to confirm the power cord is correct Voltage one.

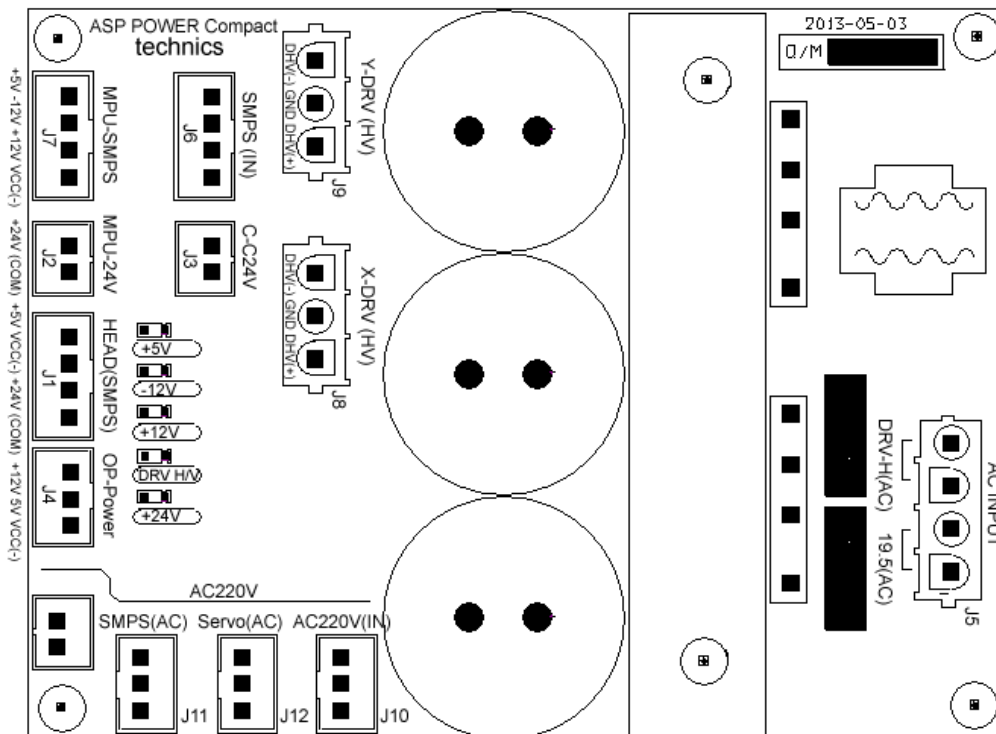
3) Control system

- Control system of VT-ASP-645-1 locates inside of the machine. so, be sure to power off the machine before check the control system.



► Fig.[7-19]

Ⓐ MPU PCB (refer to Fig.[7-11])	Ⓓ SMPS(Power)	Ⓖ Main Servo Motor Driver
Ⓑ Head PCB Board (refer to Fig.[7-9])	Ⓔ Y-Motor Driver	Ⓗ VT-ASP-645-1 Power PCB (refer to Fig.[7-20])
Ⓒ Color Change Motor Driver (refer to Fig[7-13])	Ⓕ X- Motor Driver	Ⓘ Power Transformer



► Fig.[7-20] VT-ASP-645-1 Power PCB

VIII. Trouble Shooting

Kinds of defective Spangle is irregular shape(half moon, side cut and oval) and misalignment of Spangle. Work should be done after solving problems with proper check and solution for each reason.

1. Half moon shape

- Spangle is cut as a half moon shape like Fig. [8-1].



► Fig. [8-1]

1) Check items

- ① Confirm the FEED setting value is set correctly.
- ② Check Feeding Motor and Rewind Motor working status at the rear side of the machine. Check the distance between Rewind Bobbin and Rewind Wheel.
 - ① Check oil filling at Press Unit (once a week)

2) Solution

- ① If FEED value is wrong, set the FEED value according to standard value.
 - If FEED value is set too low, the possibility of defective product is higher.
 - ⑤ If working status of Feeding Motor/ Rewind Motor and distance between Rewind Bobbin and Rewind Wheel is wrong, correct by referring to VII-2 Feeding Part adjustment method.
 - ⑥ Fill the oil and operate the machine if oil is not filled longer than a week.
 - If operate the machine for a long time without filling oil, Press Unit knocking may occur.

2. Side cut

- Spangle is cut left or right like Fig. [8-2].



► Fig. [8-2]

1) Check items

- ① Check the Spangle width is narrower than Press Unit size.

Spangle is cut like Fig. [8-3].

- ⑦ Check Tape Back Guide is inserted on the Press Unit. If not, Spangle is cut like Fig. [8-4] by moving Around at the hole of Press Mold Set.



► Fig. [8-3] Spangle after work



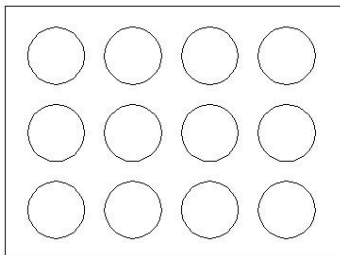
► Fig. [8-4] Spangle after work

2) Solution

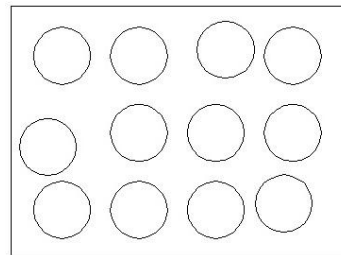
- ① If the Spangle width is narrower than Press Unit size, replace it with a proper size Spangle.
 - ① If Tape Back Guide is not inserted, install a proper Tape back Guide and start the work. (Keep Tape Guide carefully after disassembles.)

3. Misalignment of Spangle

- Spangle is not aligned after work like Fig. [8-6].



▶ Fig. [8-5]



▶ Fig. [8-6]

1) Check items

- ① Check the Spangles are stick onto the transfer paper well.
- ② Check the distance is narrow among Spangles in the design .

2) Solution

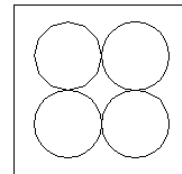
- ① Depending on the Spangle surface condition, Spangle does not stick onto the transfer

Paper well.

→When using glitter Spangle, more adhesive transfer paper should be used.

- ② When distance among Spangle is narrow like Fig, [8-7], touching among Spangles or

Setting incorrect position. In this case, correct the design and start the work.

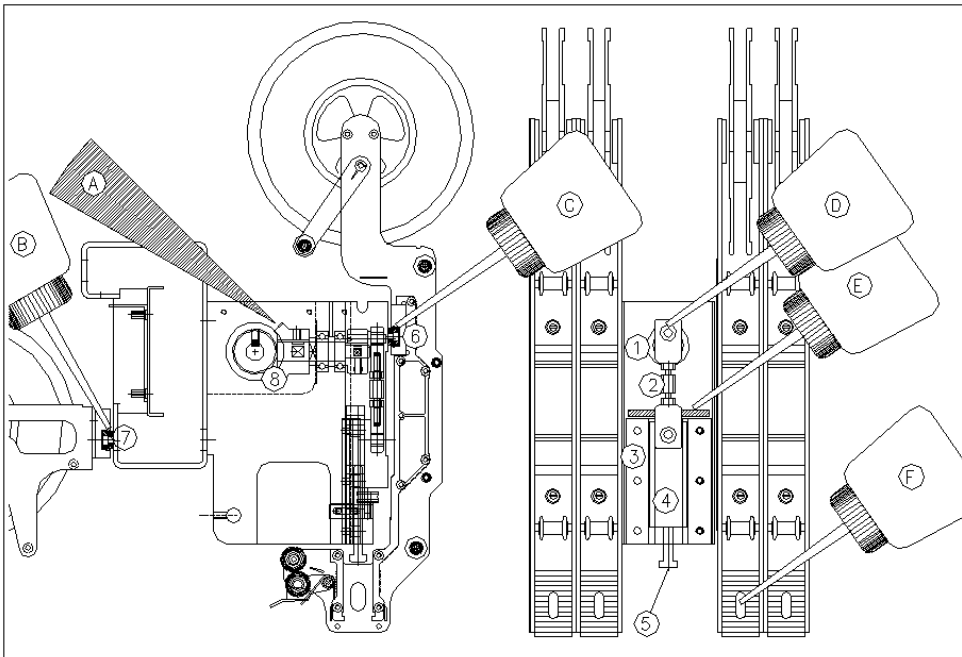


▶ Fig. [8-7]

IX. Machine Maintenance and check items

For the smooth operation and avoid trouble, below machine maintenance and check items should be kept.

1. Oil and Grease filling



► Fig. [9-1]

- Ⓐ Bevel gear grease filling point (quarterly check)
- Ⓑ Case Linear Oil filling point (monthly check)
- Ⓒ Case Linear Oil filling point (monthly check)
- Ⓓ Crank Oil filling point (monthly check)
- Ⓔ Crank Oil filling point (monthly check)
- Ⓕ Press Unit Oil filling point (weekly check)

※ **Caution items during filling Oil and Grease**

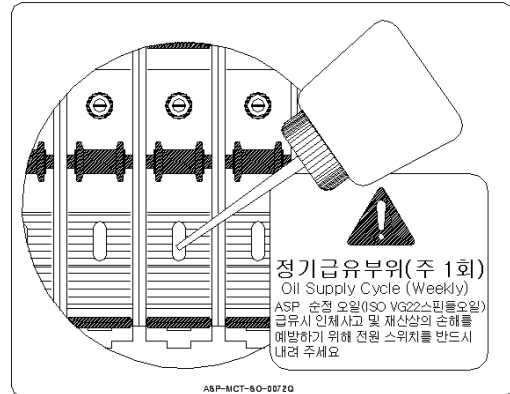


- Power off the machine when filling.
 - Do not power on the machine during filling. Operator may be injured seriously.
 - When machine is not operated for a long time, power on the machine after filling oil and grease and monthly/weekly check.
-

2. Weekly check

1) Press Unit Oil filling

- Oil filling at the Press Unit is the most important matter.
- Oil should be filled per week in order to avoid defective Spangle and Press Unit knocking.
- Warning message sticker is stick both end cover like Fig. [9-2].



▶ Fig. [9-2]

※ Phenomenon when oil is over filled

- ① Oil is spilled on the transfer paper and Spangle may be slide.
 - ② Silicon pad may be deformed if oil is spilled on the Frame.
- Counter measure : Power off the head switch, Remove the oil by no-road rotation after put waste paper on the Frame.



※ When machine is not operated for a long time, fill oil enough and remove oil by no-road rotation, then start the work.

※ When using a Press Unit which is not used for a long time, use after filling oil enough.

2) Frame (Silicon pad) cleaning

- Dusts are stick easily on the silicon pad due to static electricity. Dust may interrupt the transfer paper tight contact on the silicon pad.
- Cleaning well with wet towel once or twice a week.

3. Monthly check

1) X/Y-shaft Belt check

- Frame may not move properly due to debris around X/Y-shaft Belt.
- when checking X/Y-shaft Belt, power off the machine surely and moving Frame by hand.

2) Main shaft Time-Belt check

- Main shaft is very import part for machine operation. Check should be done each month.
- If the surface of Time Belt is damaged, it should be changed. Confirm the damage during check.

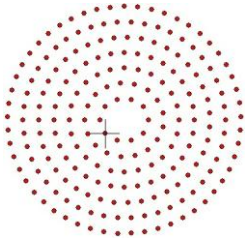
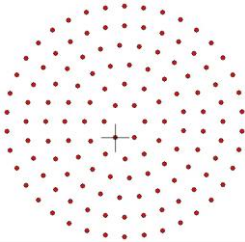
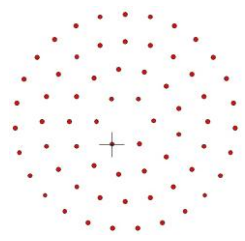
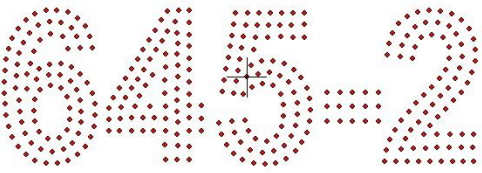
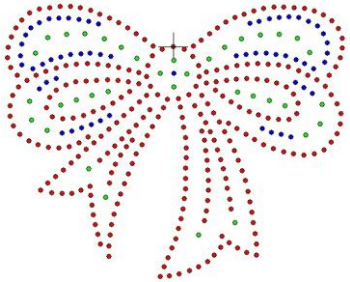
3) Press Unit check

- Debris may get jammed at the Press Mold of Press Unit according to Spangle type.
- Using Glitter or Flocking type Spangle may cause debris. Be sure to check Press Unit after using special

Spangle for a long time.

X. Test & Sample Design

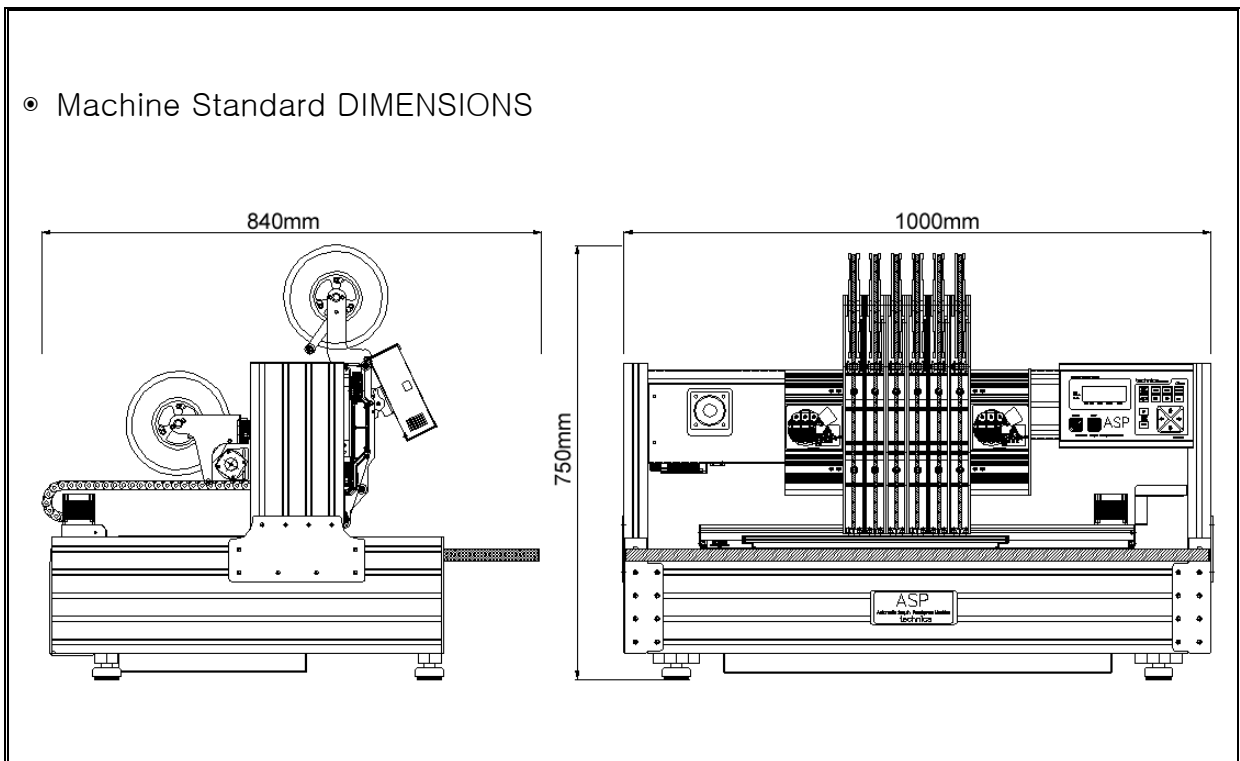
- Test & Sample designs are stored ASP-Read CD also.

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Design File Name	ASP 2-3 Test								
Room No	1								
Count	221								
Press Unit	2mm or 3mm								
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Design File Name	ASP 4-5 Test								
Room No	2								
Count	132								
Press Unit	4mm or 5mm								
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Design File Name	ASP 6-7 Test								
Room No	3								
Count	66								
Press Unit	6mm or 7mm								
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Design File Name	Sample 1 (1color)								
Room No	4								
Count	341								
Press Unit	2mm								
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Design File Name	Sample 2 (3color)								
Room No	5								
Count	373								
Press Unit work sequence	2mm - 2mm - 4mm								

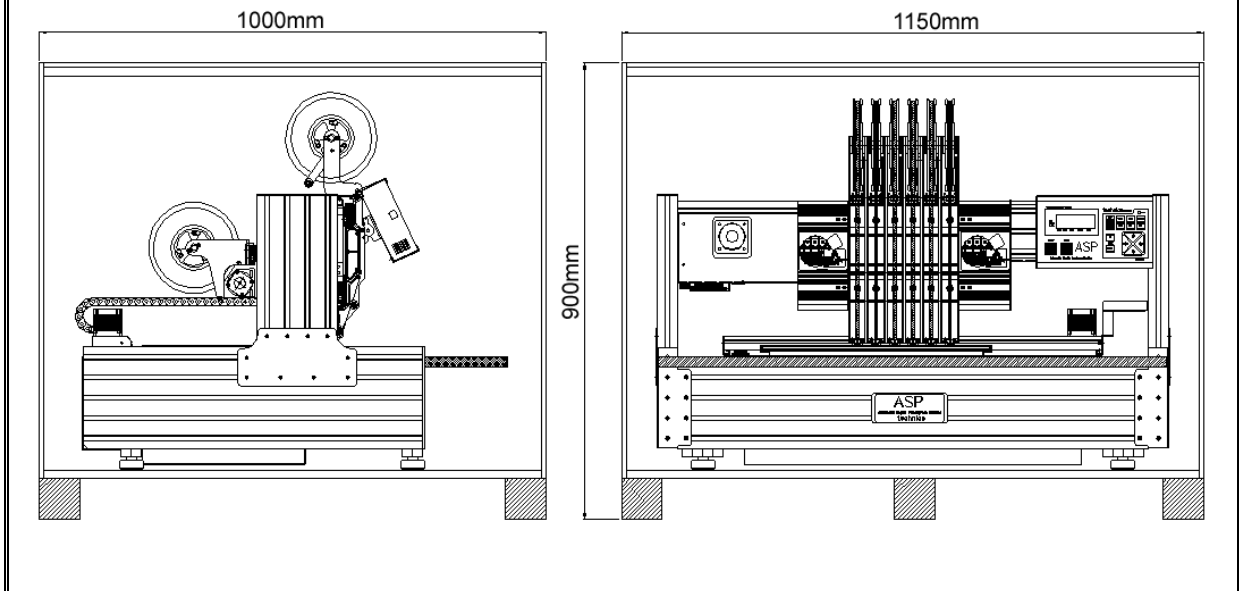
XI. Appendix

※ VT-ASP-645-1

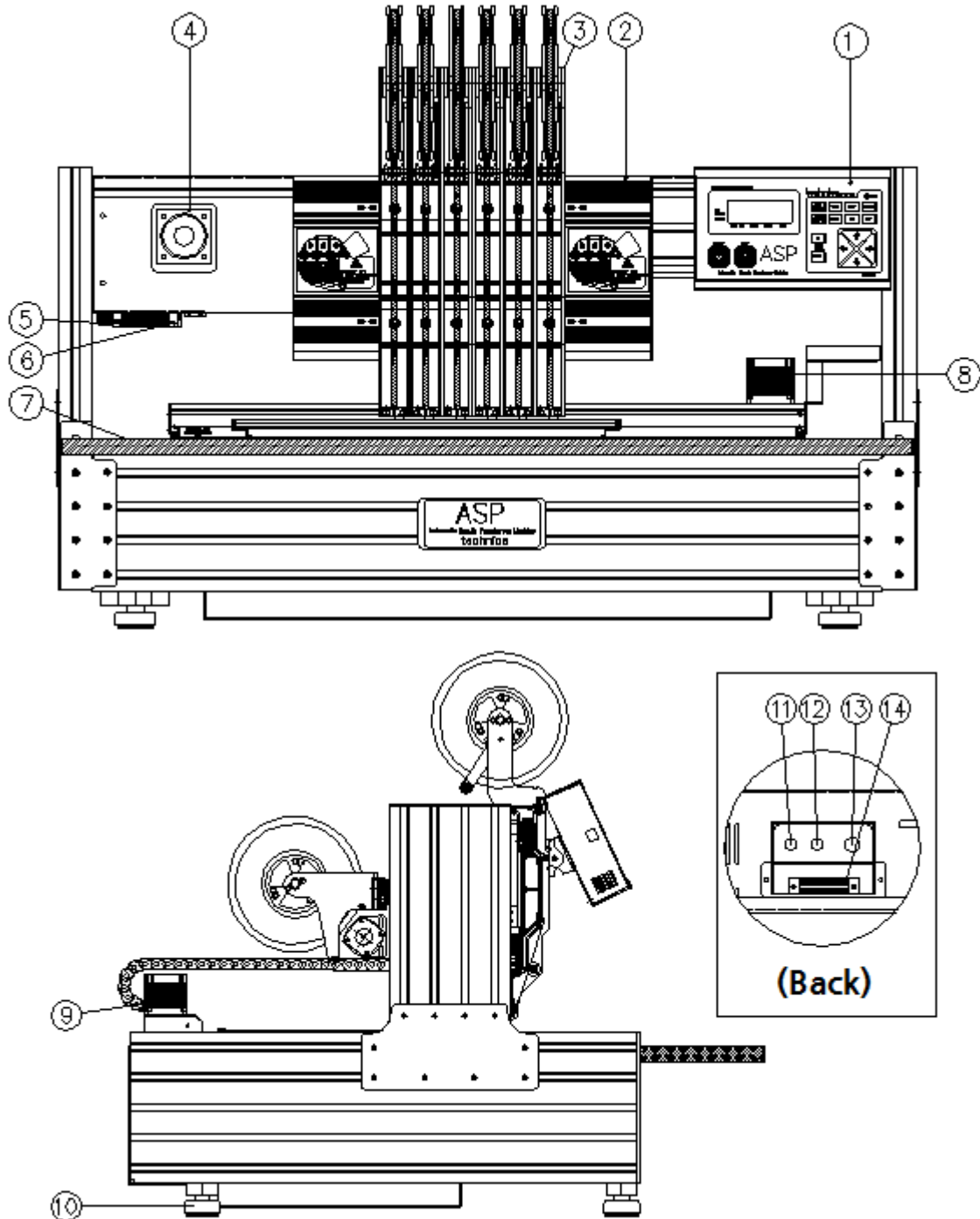
◦ Machine Standard DIMENSIONS



◦ Packing Standard DIMENSIONS

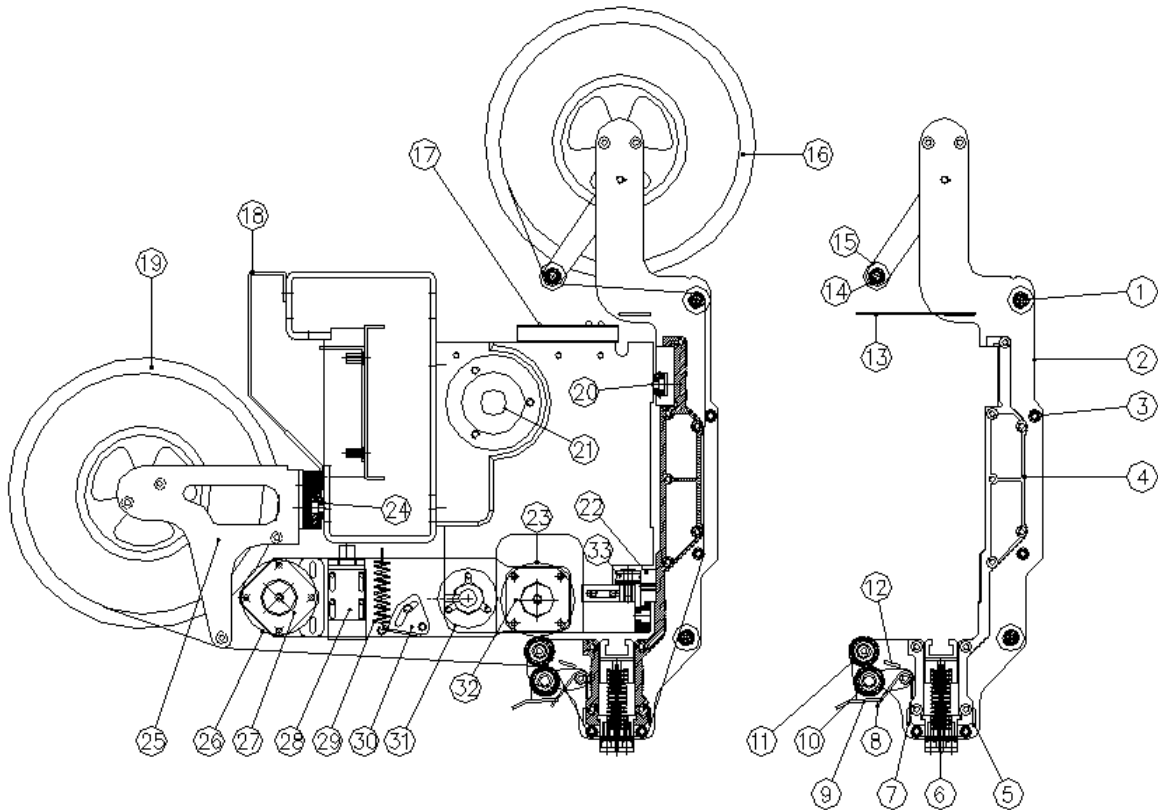


(A) Machine Layout (Real View-1) VT-ASP-645-1



Ref.No	Part No	Part Name	Ref.No	Part No	Part Name
A-1	ASP-LA-002	OP Key Board	A-8	ASP-EL-0021	X-Axis Motor
A-2	ASP-CR-0017	Front End Cover(Right)	A-9	ASP-EL-0021	X-Axis Motor
A-3	ASP-CH-001	Press Unit	A-10	ASP-PL-0009	Leveling Foot
A-4	ASP-EL-0020	Power Switch	A-11	ASP-EL-0010	Fuse (X/Y Driver)
A-5	ASP-CM-0056	Color Moving ADJ Knob	A-12	ASP-EL-0010	Fuse (SMPS)
A-6	ASP-EL-0004	Color Change Motor	A-13	ASP-EL-0022	Power Socket
A-7	ASP-TA-001	Table	A-14	ASP-EL-0007	Terminal Block

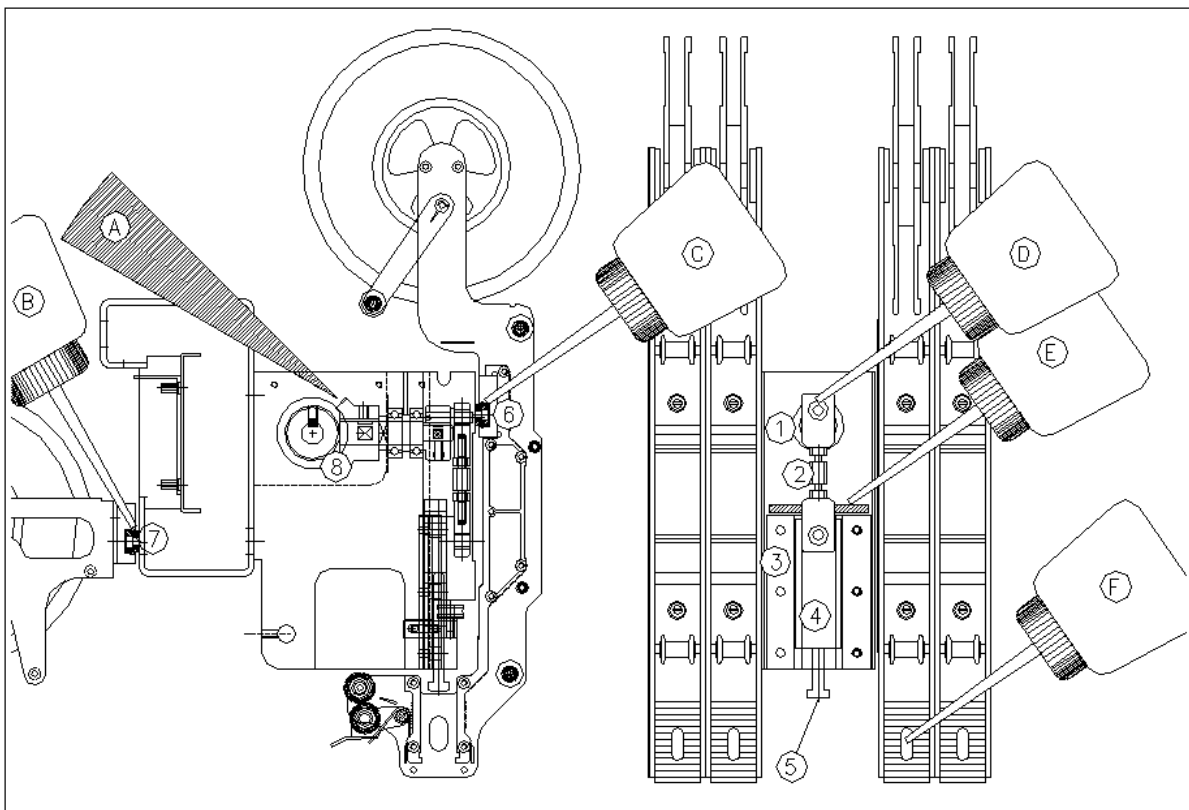
(B) Mechanism Layout (Rear View-2)



Ref.No	Part No	Part Names	Ref.No	Part No	Part Names
B-1	ASP-CM-0021	Tape Guide Roller (A)	B-18	ASP-2H-0006	Back Cover
B-2	ASP-CR-0033	Press Unit Housing	B-19	ASP-PL-0006	Rewind Bobbin
B-3	ASP-CM-0022	Tape Guide Roller (B)	B-20	ASP-CR-0003	Front Case Linear
B-4	ASP-CR-0021	Press Unit Housing Frame	B-21	ASP-CM-0044	Main Shaft
B-5	ASP-PL-0001	Tape Front Guide	B-22	ASP-CR-0004	Press Unit Support
B-6	ASP-CR-0023	Press Mold Set	B-23	ASP-CM-0007	Feeding Wheel
B-7	ASP-PL-0001	Tape Back Guide	B-24	ASP-CR-0003	Rewind Case Linear
B-8	ASP-SP-002	Roller Spring	B-25	ASP-CR-0031	Rewind Bobbin Support
B-9	ASP-CP-0017	Tension Roller Lever	B-26	ASP-CM-0017	Rewind Wheel
B-10	ASP-CM-0032	Tension Roller	B-27	ASP-EL-0003	Rewind Motor
B-11	ASP-CM-0019	Move Roller	B-28	ASP-EL-0013	Feeding Unit up/down Solenoid
B-12	ASP-PL-0003	Tape Guide	B-29	ASP-SP-004	Feeding Unit Tension Spring
B-13	ASP-PL-0004	Tape Sensor Guide	B-30	ASP-CP-0051-2	Tension adjust

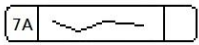
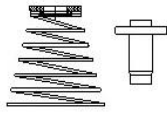
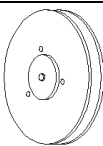
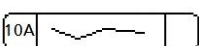
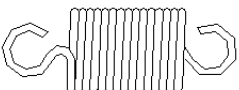
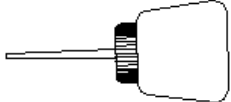
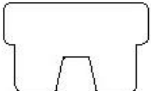

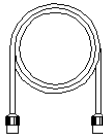
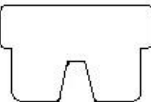
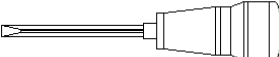
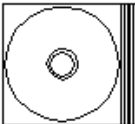
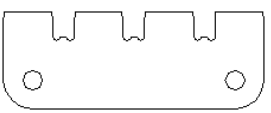
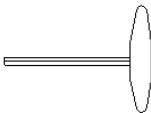
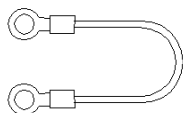
B-14	ASP-CM-0031	Tape Tension Roller	B-31	ASP-CM-0009	Shaft Block
B-15	ASP-CP-0044-3	Tape Tension Bar	B-32	ASP-EL-0003	Feeding Motor
B-16	ASP-PL-0005	Tape Supply Bobbin	B-33	ASP-BR-011	Press Unit Support Bearing
B-17	ASP-EL-0012	Tape Sensor (Feeding Sensor)			

(C) Mechanism Layout (Rear View-3)



Ref.No	Part No	Part Names	No	Part Names
C-1	ASP-CM-0008	Crank Wheel	Ⓐ	Bevel Gear Grease filling point (quarterly check)
C-2	ASP-CH-021	Crank Set	Ⓑ	Case Linear Oil filling point (monthly check)
C-3	ASP-CR-0001	Cylinder Bar(R/L)	Ⓒ	Case Linear Oil filling point (monthly check)
C-4	ASP-CR-0002-1	Hammer Piston	Ⓓ	Crank Oil filling point (monthly check)
C-5	ASP-CM-0036	Hammer	Ⓔ	Crank Oil filling point (monthly check)
C-6	ASP-CR-0003	Front Case Linear	Ⓕ	Press Unit Oil filling point (monthly check)
C-7	ASP-CR-0003	Rewind Case Linear		
C-8	ASP-CM-0047	Bevel Gear Set		

※ Standard Accessories List(Tool box)

①		⑥		⑪	
②		⑦		⑫	
③		⑧		⑬	
④		⑨		⑭	
⑤		⑩		⑮	

No	Part Names	Quantity
①	Fuse 7A	5pcs
②	Fuse 10A	5pcs
③	Press Unit Guide (Large)	5pcs
④	Press Unit Guide (Small)	5pcs
⑤	Unit Jig	1pc
⑥	Bobbin Shaft & Spring Set	STD 6set +3set
⑦	Feeding Unit Tension Spring	1pc
⑧	L Wrench Set	1set
⑨	± Screwdriver	1pc
⑩	T Wrench (5mm)	1pc
⑪	Rewind Bobbin	6pcs
⑫	Spindle Oil	1 bottle
⑬	USB Cable (A/M TO B/M 1.8M)	1pc
⑭	ASP-Read (CD)	1pc
⑮	Power jump Cable	1pc (supplied when setting 220V)
⑯	Power Cord	1pc



- Unit Jig, Press Unit Guide and Bobbin Shaft & Spring set are essential parts during the work. Keep these tools very carefully not to be stolen.
- 220V power cord is supplied with VT-ASP-645-1. 110V power cord is supplied when requested.



※ Consumables(warranty excluded item)

No	Part No	Part Names	No	Part No	Part Names
1	ASP-EL-0010	Fuse 7A	10	ASP-EL-0007	Emergency Switch
2	ASP-EL-0011	Fuse 10A	11	ASP-EL-0008	Assist Switch - Start
3	ASP-LA-002	OP Key Board	12	ASP-EL-0009	Assist Switch - Stop
4	ASP-PL-0005	Empty Bobbin (Reel)	13	ASP-EL-0013	Assist Switch - Head on/off
5	ASP-PL-0006	Rewind Bobbin			
6	ASP-PL-0001	Tape Front/ Back Guide (Large)			
7	ASP-PL-0002	Tape Front/ Back Guide (Small)			
8	ASP-SP-004	Feeding Unit Tension Spring			
9	ASP-CM-0025	Bobbin Shaft & Bobbin Shaft Spring Set			

• Warranty period is 12 month from FOB Korea excluding consumables. Below are examples of what can Void your warranty.

- 1) Machine modified by user himself.
- 2) Trouble occurs due to using a different material described on this manual (page 13).
- 3) Trouble occurs when regulated voltage is not supplied.
- 4) Broken or damage by external force.
- 5) Loss parts due to user's mistake.
- 6) Damaged by force majeure.