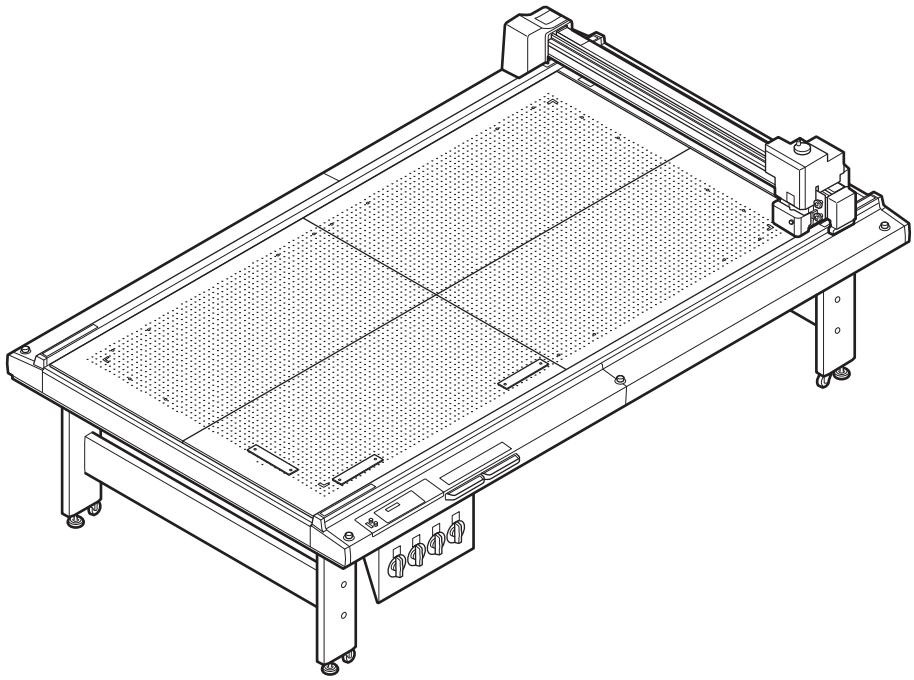
OPERATION MANUAL

Mimaki™

CUTTING PLOTTER

CF22-1225

OPERATION MANUAL



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MIMAKI ENGINEERING CO., LTD.

URL: http://mimaki.com/

D203199-14

Original instructions

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CAUTION

DISCLAIMER OF WARRANTY : THIS LIMITED WARRANTY OF MIMAKI SHALL BE THE SOLE AND EXCLUSIVE WARRANTY AND IS IN LIEU OF ALL OTHER WARRANTIES,EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS, AND MIMAKI NEITHER ASSUMES NOR AUTHORIZES DEALER TO ASSUME FOR IT ANY OTHER OBLIGATION OR LIABILITY OR MAKE ANY OTHER WARRANTY OR MAKE ANY OTHER WARRANTY IN CONNECTION WITH ANY PRODUCT WITHOUT MIMAKI'S PRIOR WRITTEN CONSENT. IN NO EVENT SHALL MIMAKI BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR FOR LOSS OF PROFITS OF DEALER OR CUSTOMERS OF ANY PRODUCT.

FCC Statement (USA) & EN55022 (Europe)

This machine has been tested and found to comply with the limits for a Class A digital machine, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the machine is operated in a commercial environment. This machine generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the Operation manual, may cause harmful interference to radio communications.
Operation of this machine in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
In the case where MIMAKI-recommended cable is not used for connection of this machine, limits provided by FCC rules can be exceeded.
To prevent this, use of MIMAKI-recommended cable is essential for the connection of this plotter.

Interference to televisions and radios

The product described in this manual generates high frequency when operating.
The product can interfere with radios and televisions if set up or commissioned under improper conditions.
The product is not guaranteed against any damage to specific-purpose radio and televisions.
The productfs interference with your radio or television will be checked by turning on/off the power switch of the product.
In the event that the product is the cause of interference, try to eliminate it by taking one of the following corrective measures or taking some of them in combination.

- Change the orientation of the antenna of the television set or radio to find a position without reception difficulty.
- Separate the television set or radio from this product.
- Plug the power cord of this product into an outlet which is isolated from power circuits connected to the television set or radio.

Introduction

Thank you for purchasing a CF22-1225 Flatbed Cutting Plotter.

This manual describes the CF22-1225.

Carefully read this manual and then store it in a place where it can be easily reached.

On This Operation Manual

- This manual describes the operation and maintenance of the CF22-1225 Flatbed Cutting Plotter ("the machine").
- Carefully read this manual and then store it in a place where it can be easily reached.
- Ensure that this manual reaches the person using the machine.
- Every care was taken when writing this manual. Please contact your Mimaki representative if you discover any problems in the manual.
- We reserve the right to change this manual at any time, without notice.
- If this manual becomes unreadable due to fire or other damage, contact your Mimaki representative to purchase a new copy.

- This machine uses sharp blades. It can be extremely dangerous during operation. Never put your face or hands near the machine head. There is a risk of injury.

Accessories

Confirm the accessories supplied against the separate “ACCESSORIES”.
Contact your Mimaki representative immediately if anything is broken or missing.

Symbols

Symbols are used in this Operation Manual for safe operation and for prevention of damage to the machine.
The indicated sign is different depending on the content of caution.
Symbols and their meanings are given below. Please follow these instructions as you read this manual.

Examples of symbols

	Meaning
	Failure to observe the instructions given with this symbol can result in death or serious injuries to personnel. Be sure to read it carefully and use it properly.
	Failure to observe the instructions given with this symbol can result in injuries to personnel or damage to property.
	Important notes in use of this machine are given with this symbol. Understand the notes thoroughly to operate the machine properly.
	Useful information is given with this symbol. Refer to the information to operate the machine properly.
	Indicates the reference page for related contents.
	The symbol " △ " indicates that the instructions must be observed as strictly as the CAUTION instructions (including DANGER and WARNING instructions). A sign representing a precaution (the sign shown at left warns of hazardous voltage) is shown in the triangle.
	The symbol " ⃠ " indicates that the action shown is prohibited. A sign representing a prohibited action (the sign shown at left prohibits disassembly) is shown in or around the circle.
	The symbol " ● " indicates that the action shown must be taken without fail or the instructions must be observed without fail. A sign representing a particular instruction (the sign shown at left instructs to unplug the cable from the wall outlet) is shown in the circle.

WARNING

Do not disassemble or remodel the machine

- Never disassemble or remodel the main unit of the plotter and the vacuum unit. Disassembling/ remodeling any of them will result in electric shocks or breakdown of the machine.

Do not use the machine in damp places

- Avoid damp environments when putting the machine into service. Do not splash water onto the machine.
  High-humidity or water will give rise to fire, electric shocks or breakdown of the machine.

Abnormal event occurs

- If the machine is used under an abnormal condition where the machine produces smoke or unpleasant smell, fire or electric shocks can result. Be sure to turn off the power switch immediately and detach the plug from the receptacle. Check first to be sure that the machine no longer produces smoke, and contact a distributor in your district or MIMAKI office for repair. Never repair your machine by yourself since it is very dangerous for you to do so.

Leave maintenance to a serviceman

- Leave maintenance works to a service engineer whenever the machine has broken. Never conduct maintenance works by yourself since the works are always accompanied by possible risks of electric shocks, etc.

Handling of the power cable

- Use a power cable attached to this machine.
- Take care not to damage, break or work on the power cable.If a heavy matter is placed on the power cable, heated or drawn, the power cable can break to cause fire or electric shocks.B

Preventive measure against dust

- When handling any dust-producing substance that will jeopardize the health of personnel, wear a mask or the like to prevent dust.

Handling of the cable

- Take care not to damage, break or work on the power cable or communication cable. If a heavy matter is placed on the power cable, heated or drawn, the power cable can break to cause fire or electric shocks.

Handling of tools

- Store cutter holders or blades in a place that is out of the reach of children. Never place cutter holders or blades in the tray on the operation panel.

Power supply and voltage

- This machine contains parts applied high voltage.Carrying out electrical work by those unauthorized for that work is prohibited.

- To prevent electrical shock, be sure to set OFF the main power circuit breaker and disconnect the power plug before carrying out maintenance.For some units, capacitors may take one minute for discharging; therefore, start maintenance work three minutes after setting OFF the main power circuit breaker and disconnecting the power plug.
- Be sure to carry out grounding work to prevent electrical shock.
- Use this machine under the power specifications given.Be sure to connect the power cable plug to a convenient outlet grounded, or fire or electric shock might occur or it may cause electrical shock.

- The main power circuit breaker should be set ON only by personnel with sufficient knowledge about operations of this machine.

Grounding connection

- For this machine, grounding connection is needed for prevention of an electric shock.
- Be sure to carry out grounding work.

Handling if grease

- If you get grease in your eyes, immediately flush with water for at least 15 minutes. Get medical attention.
- If grease settles on the skin or clothes, after wipe well, wash thoroughly with soap and water.
- If you inhale a lot of vapor and feel bad, move to a fresh air location and cover with a blanket to keep warm. Lie quietly and receive medical attention.
- If anyone drinks grease by mistake, without induce vomiting, immediately consult a physician.
- Use powder, carbon dioxide, dry sand for an initial fire. Block out the air and oxygen using a foam fire extinguisher for large-scale fire. Evacuate the people other than the person concerned to a safe place.
- Water injection in some cases is dangerous to expand the fire. Please do not use water to extinguish fire.
- Fire-fighters to wear protective machine. Work on fire extinguishing from the windward.

For safe operation

⚠ CAUTION

Do not restart the power until 30 seconds after turn off

- If the machine is restarted, do not turn on the power until 30 seconds after turning off.
  The machine may be caused faulty function.

Do not put any matters on the cable

- Do not bend the power cable and the communication cable, and do not placed any matters. These cables may be broken and heated, the power cable can cause fire or electric shocks.

Do not climb on top of the machine

- Please do not climb on top of the machine. It may cause malfunction.

Do not move your face in front of cut panel

- Do not move your face and hands in front of the cut panel while the machine is working.
  This machine can wind and touch your hairs or hands.

Do not dress baggy suits and accessories

- Do not work with dressing baggy suits and any accessories, and also tie any long hairs.

The machine is moved by our service engineer only

- The machine is precision machine, so in case if you require movement of the machine, please contact to our service engineer.

Precautions in installation

⚠ CAUTION

A place exposed to direct sunlight

- Do not install the machine at a place where the temperature of the cut panel surface exceeds 60?C. The cut panel can deform or break down.

A place that vibrates

- The machine will fail to give correct results if installed in a place that vibrates.

A place in which temperature and humidity

- Use the machine under the following environment.
  Operating environment:
  10 to 35 C
  35 to 75 % (Rh)

A place filled with dirt, dust or tobacco smoke

- The machine is a precision machine.
  Do not use it in a place that is filled with dirt and dust.

A plate that is not horizontal

- If the machine is not leveled, the machine will fail to give correct results. and may be broken down.

Near flammable materials

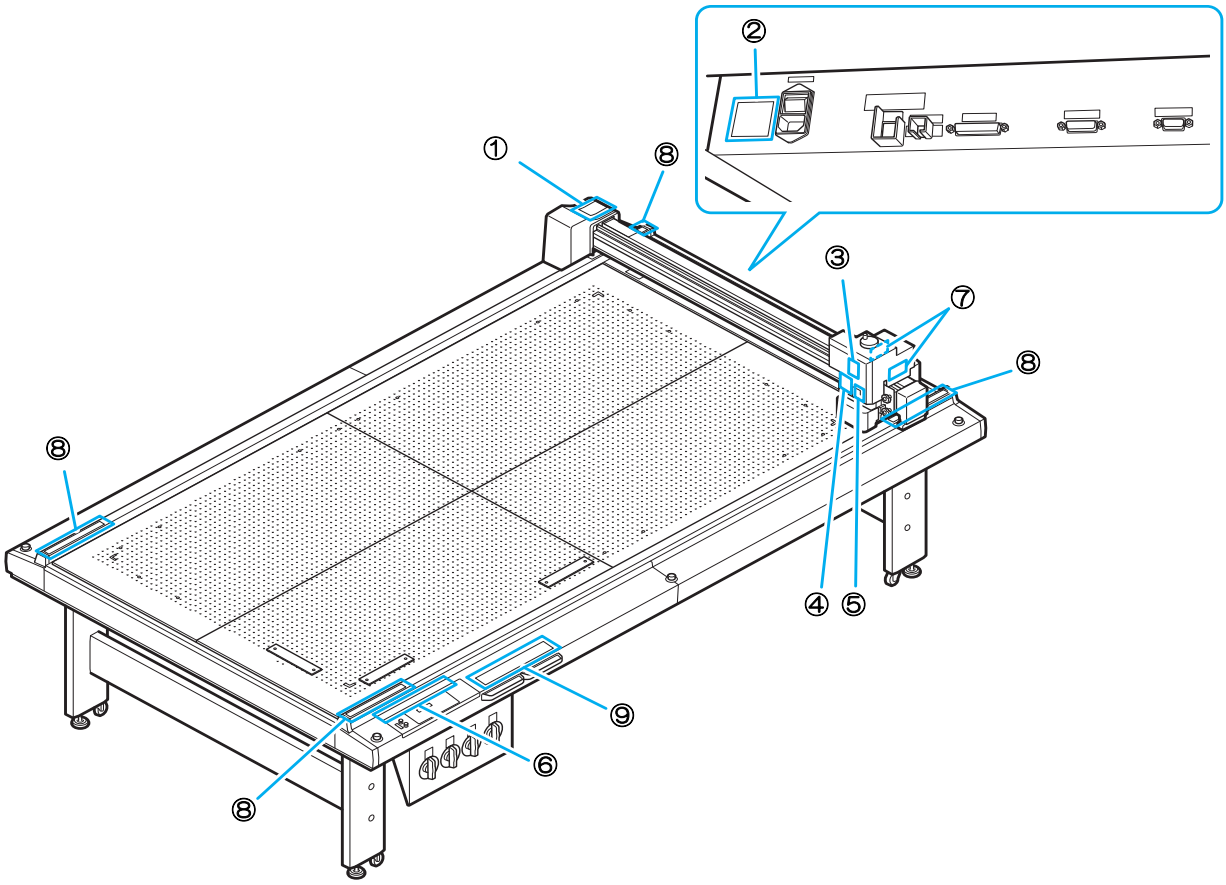
- When the vacuum is used fully open, the exhaust port temperature becomes extremely high. Do not place flammable materials near the vacuum or in front of the exhaust port.

A place exposed to direct air blow from air conditioner., etc

- Cutting quality could be adversely affected.

Warning labels(RC, RT Model)

Warning labels are stuck on the machine. Be sure to fully understand the warning given on the labels.
If a warning label is illegible due to stains or has come off, purchase a new one from your local distributor or our office.

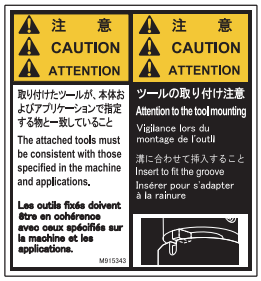


①Order No. M902667

②Order No. M907935

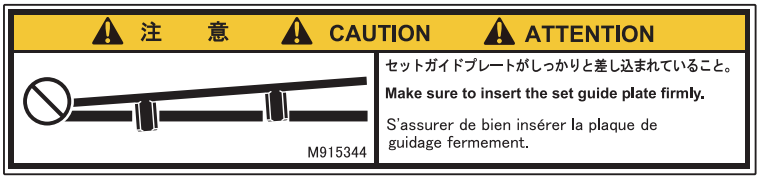
③Order No. M905694

④Order No. M915343



⑤Order No. M915345

⑥Order No. M915344



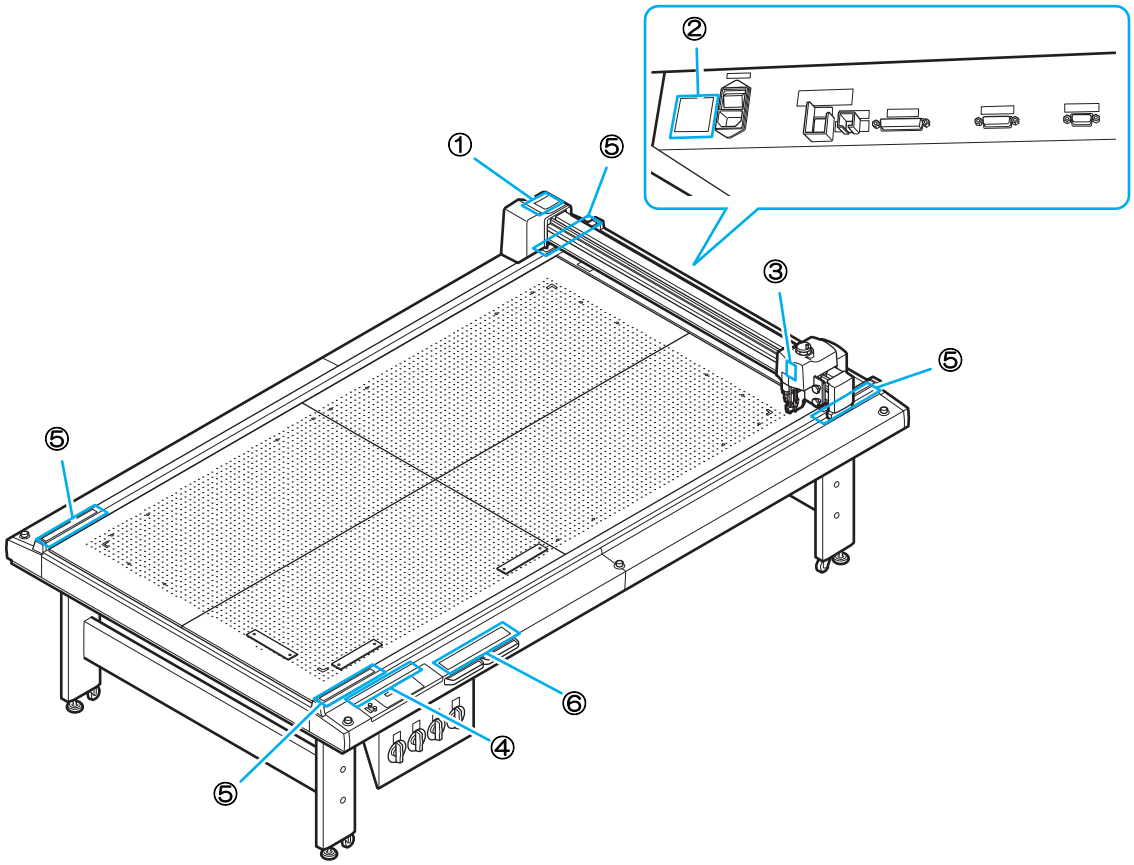
⑦Order No. M909381

⑧Order No. M906115

⑨Order No. M902663

Warning labels (T, TF, TD Model)

Warning labels are stuck on the machine. Be sure to fully understand the warning given on the labels.
If a warning label is illegible due to stains or has come off, purchase a new one from your local distributor or our office.

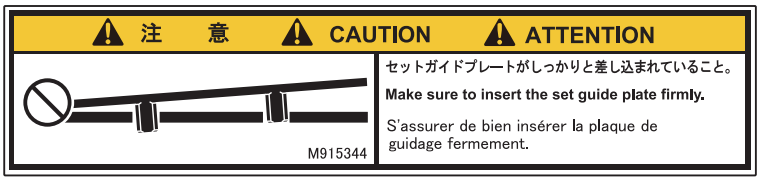


①Order No. M902667

②Order No. M907935

③Order No. M905694

④Order No. M915344



⑤Order No. M906115

⑥Order No. M902663

Chapter 1
Setup

This Section....

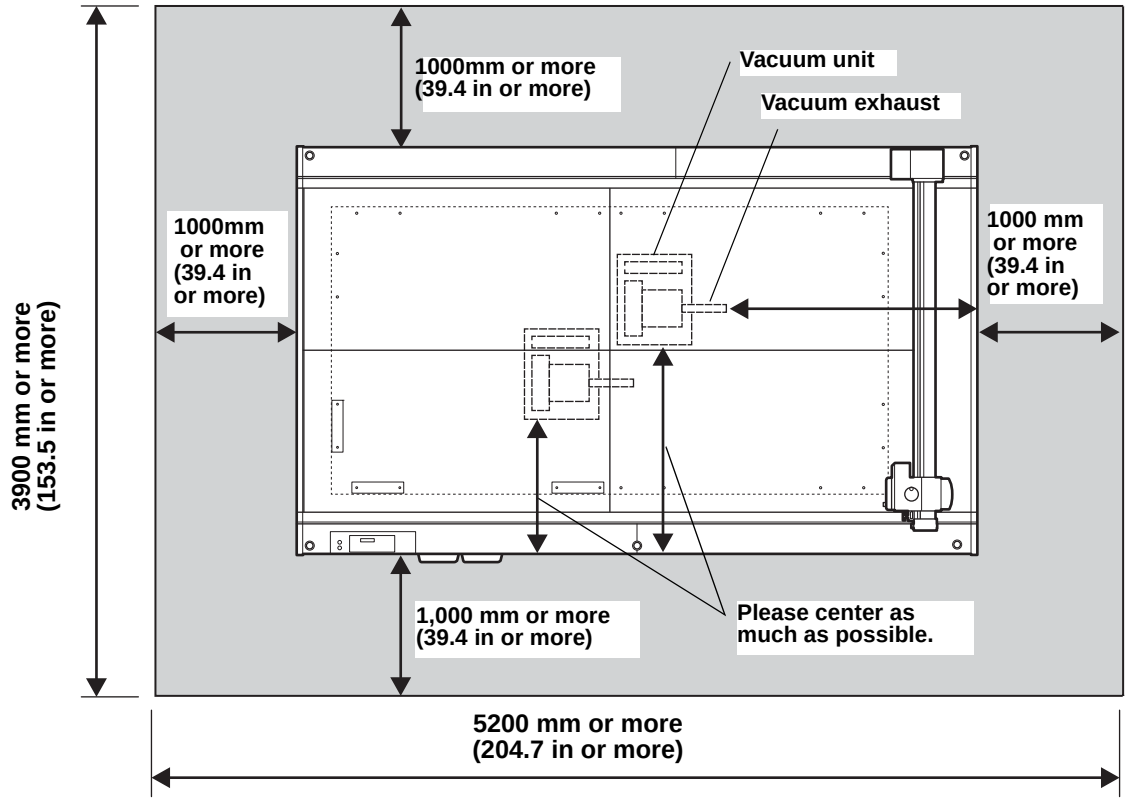
... describes the basic operations, such as mounting tools and workpieces.

Installation

Install the unit in a location where the following installation space is available.

- Allow no objects inside the installation space. These may cause you to trip.

Model	Width	Depth	Height	Total weight
CF22-1225	3,200mm (126.0 in)	1,900mm (74.8 in)	1,200 mm (47.2 in) (RC) 1,150 mm (45.3 in) (T, TD TF)	Less than 109 kg (Less than 240.3 lb)



Vacuum Installation Position (Optional)

Vacuum should be installed under the main unit, the dotted line portion above.

- Vacuum unit and exhaust temperature become high. Do not place combustible objects around the vacuum and exhaust direction.
- If you set the work so that it covers the entire cut area and continue to suck for 2 hours or more, the exhaust temperature may rise to 140 ℃ . Be careful enough for burns because the temperature is high even after stopping the vacuum.
- If interrupt work, turn off the vacuum.
- If you close the exhaust vent of the vacuum or place an object near the exhaust port, the temperature inside the vacuum rises and it may cause a malfunction

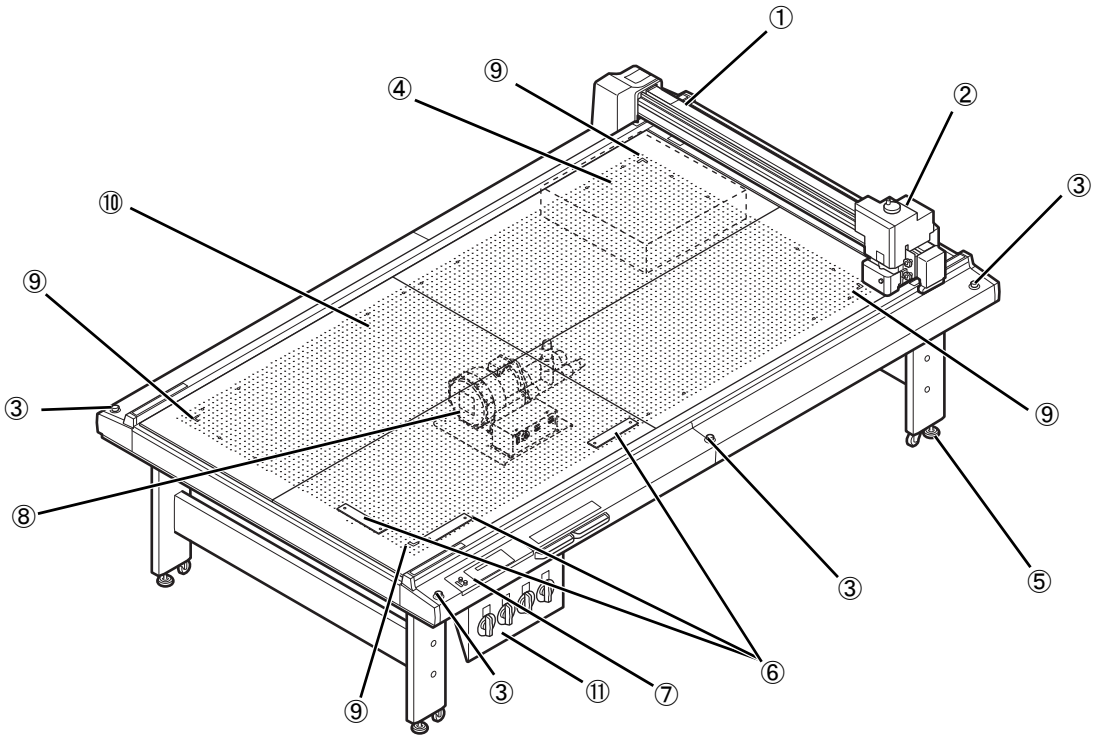
Moving This Machine

Move this machine according to the following steps when this machine needs to be moved on the same step-free floor.

- When the machine is moved to any place other than on the same step-free floor, contact your distributor or our service office.
  If you move it by yourself, failure or damage may occur.
  Be sure to request your distributor or our service office to move this machine.

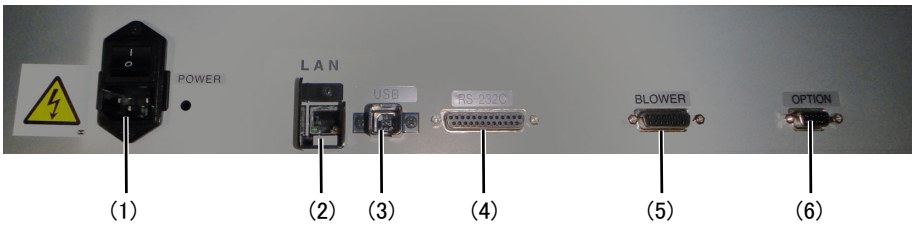
- When moving this machine, take care that it does not receive a significant impact.
- Be sure to lock the caster after moving of this machine.

Main Unit



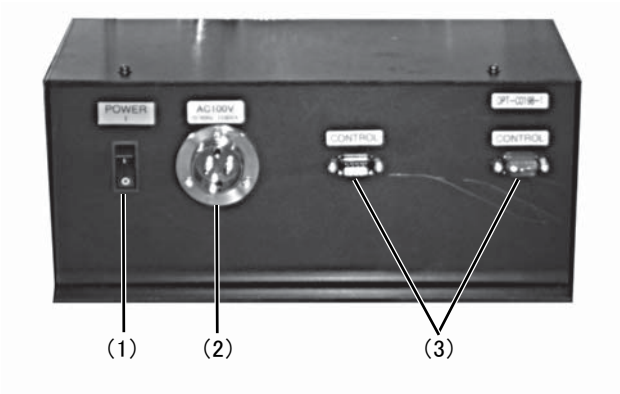
	Name	Function
(1)	Y bar	Move the head in Y direction
(2)	Head	Install various tools. Depending on the head, the tool to install varies.
(3)	Emergency switch	Press in emergency. Forcibly turn off the power and stop the operation.
(4)	Electronic box	Built-in PCB and others.
(5)	Adjuster foot	Adjust the height of the leg and keep the level of the cut panel.
(6)	Work guide	When placing a work against the guide, it can be set straight.
(7)	Operation Panel	Make necessary settings for this machine.
(8)	Vacuum unit (option)	The work is adsorbed by air on the cut panel.
(9)	Origin seal	Indicates the four corners of the maximum effective cutting area.
(10)	Cut Panel (Felt Mat)	Install the workpiece. The small air holes for absorption should be aligned. For the RC/RT model, place the felt mat on this when using the reciprocating cutter.
(11)	Adsorption area selection range	Select the adsorption area by opening and closing the valve.

Electrical box right-side



	Name	Work
(1)	Power switch/connector	Signal wire connectorConnect the power cable for the plotter. Turn the main power supply for the unit on/off. This should normally be turned on. Turn off during maintenance operations.
(2)	Ethernet connector	Connect to the computer with the LAN cable.
(3)	USB interface	Use a USB interface cable to connect to a computer.
(4)	RS-232C interface	Use a RS232C interface cable to connect to a computer.
(5)	Signal wire connector for vacuum	Use a signal wire to connect to the optional vacuum unit.
(6)	Optional connector	Connection connector for dedicated usage.

Vacuum unit (optional)



	Name	Work
(1)	Power switch	Turn the vacuum unit on/off. This should normally be turned on. Turn off during maintenance operations.
(2)	Power connector	Connect the power cable for the vacuum.
(3)	Signal wire connector	Connect the signal wire to the vacuum connector for the electrical box.

Operation Panel

VACUUM key

Turns vacuum adhesion of the workpiece on (☞ P.2-7).
When VACUUM is activated, the lamp lights green.

VIEW key

The head is saved to the set location.
When pressed during jog, can set the axis alignment.

COPY key

Re-cut the data once cut in the offline state.

TEST key

Execute a test cut.

TOOL key

Change the tool and set the cut conditions.

DATA CLEAR key

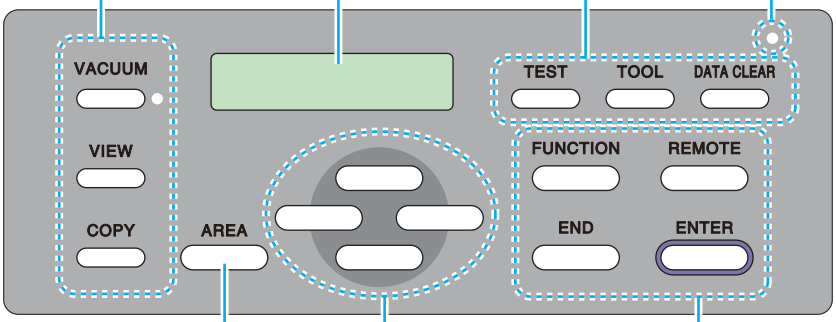
Execute the data clear.

POWER lamp

The green lamp lights when the unit power is ON.

Display

Displays the unit status and setup menus.



Jog keys

Move the head in the direction of the arrow, when the local menu is displayed.

AREA key

Can check the cut area that was set during Local.
When pressed during jog, can set the cut area.

FUNCTION keys

Select functions on the local menu and set values.

END key

Cancels a selection (clears data, copying, etc.) or reverts to the previous level without saving entered values.

REMOTE key

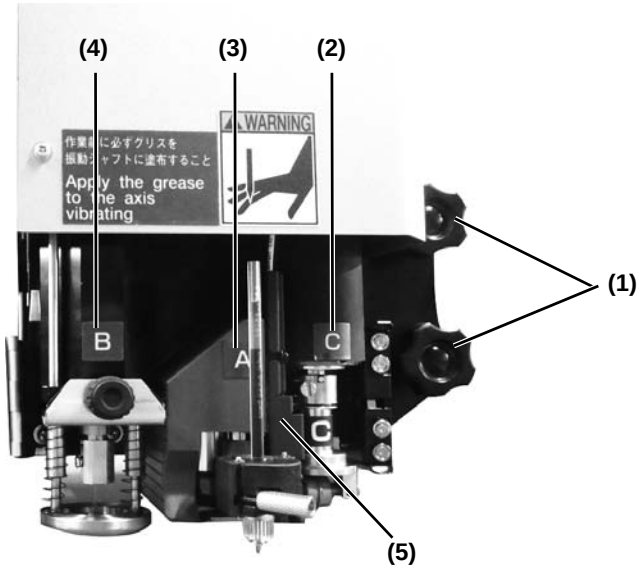
Switches the unit between the remote status and local status.

ENTER key

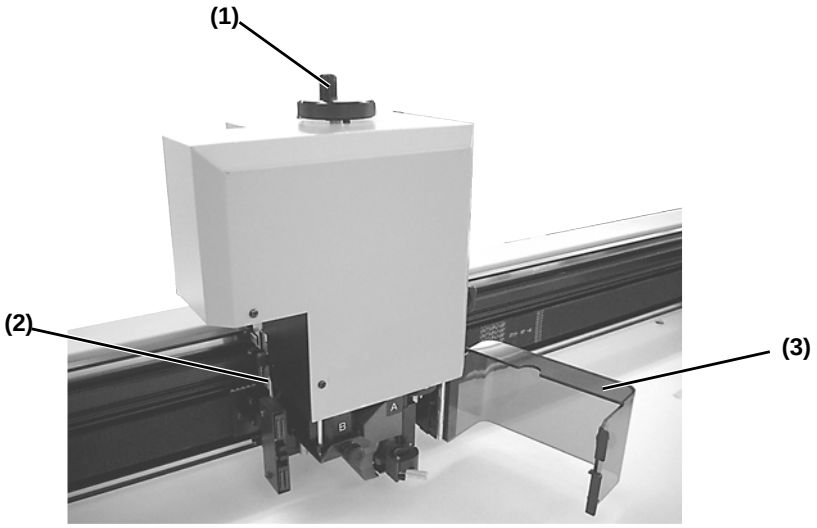
Saves the entered values.

Head (RC, RT model)

Front



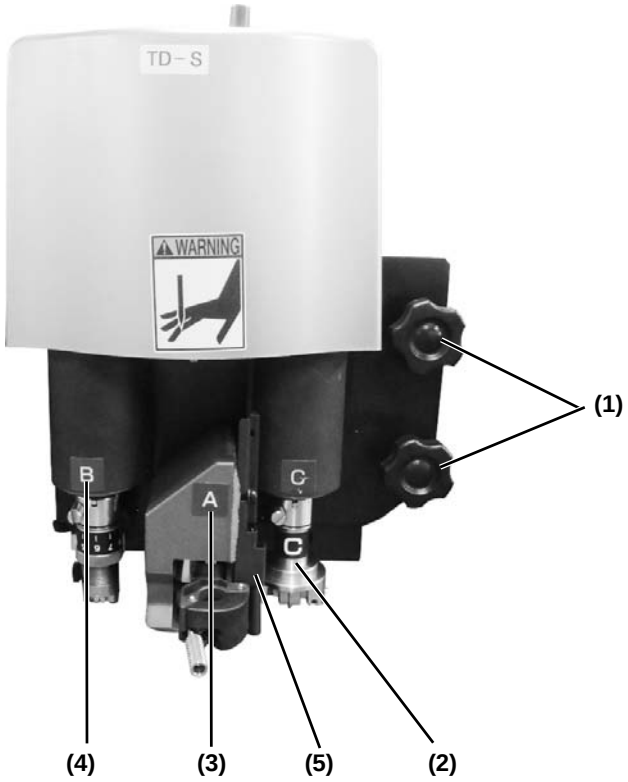
	Name	Work
(1)	Head securing screw	Secures the head to the Y bar. Loosen when adjusting the head height or removing the head.
(2)	C unit	Attaches the grid roller or cutter holder. For RC head models, the cutting pressure reaches 1 to 5 kg. For RT head models, the cutting pressure reaches 0.3 to 1.5 kg.
(3)	A unit	Attaches a pen or swivel blade.
(4)	B unit	Attaches the reciprocating cutter holder. RC head • SPA-0113 (cutter holder 2N) • SPA-0114 (cutter holder 07) RT head • SPA-0251 (cutter holder 06(S))
(5)	Mark sensor	SPA-0099 (cutter holder 06)



	Name	Work
(1)	Height adjustment handle	Adjusts the height of the head.
(2)	Height adjustment bar	This bar allows you to adjust the height of the head according to the thickness of the workpiece.
(3)	Head safety cover	Protects the operator from sharp tools. If you open this cover while the head is running, the plotter stops and cannot be restarted. Turn the power off and then back on.

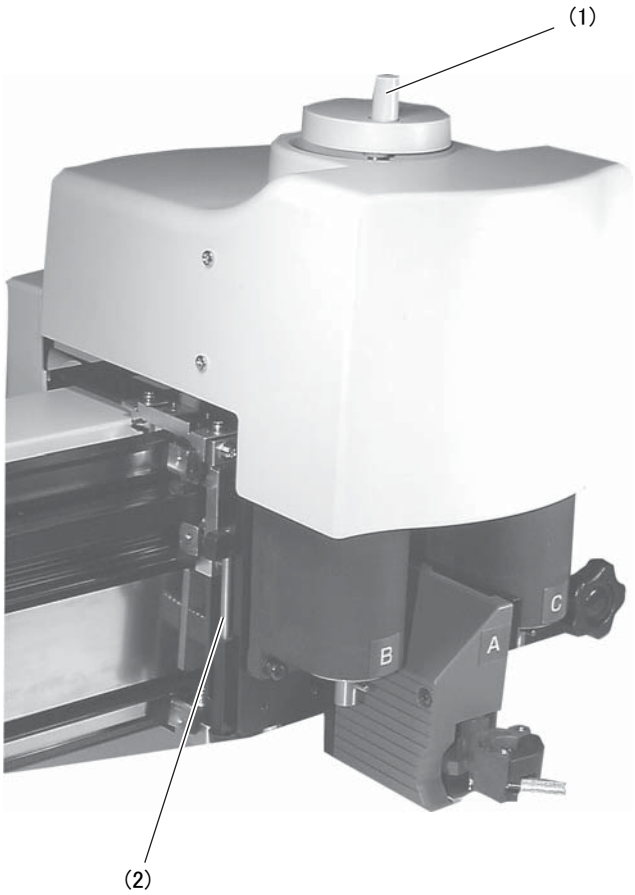
Head (T, TF, TF models)

Front



	Name	Work
(1)	Head securing screw	Secures the head to the Y bar. Loosen when adjusting the head height or removing the head.
(2)	C Unit	Attaches the grid roller or high-pressure cutter. (TD/TF head only)
(3)	A Unit	Attaches a pen or swivel blade.
(4)	B Unit	Attaches the low-pressure cutter.
(5)	Mark sensor	Sensor for detecting registration marks.

Left side



	Name	Work
(1)	Height adjustment knob	Adjusts the height of the head.
(2)	Height adjustment bar	This bar allows you to adjust the height of the head according to the thickness of the workpiece.

Cable Connections

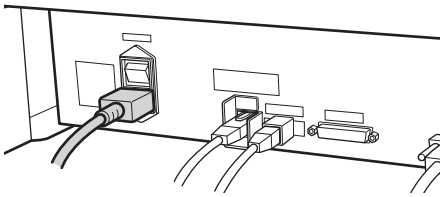
Warning

- When connecting vacuum signal cable, RS - 232C interface cable, USB interface cable and Ethernet cable, turn off the power (☞ P.2-23). There is a danger of electric shock and damage to the unit.

Connecting the Power Cable

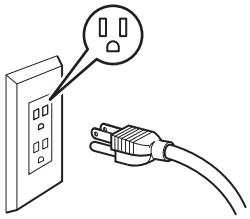
After connecting the interface cable, you must connect the power cable.
Connect the power cable with the plug outlet of the following power specifications.

- Voltage : AC100 - 240V ± 10%
- Frequency : 50/60Hz

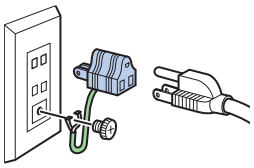


Caution

- **Be sure to connect the ground wire.**
- Using without the ground wire causes the damage of this device and electric shock that may be very dangerous.



- **Regarding the use of two polar plug outlet, you must connect the auxiliary ground adapter to the plug of power cable.**

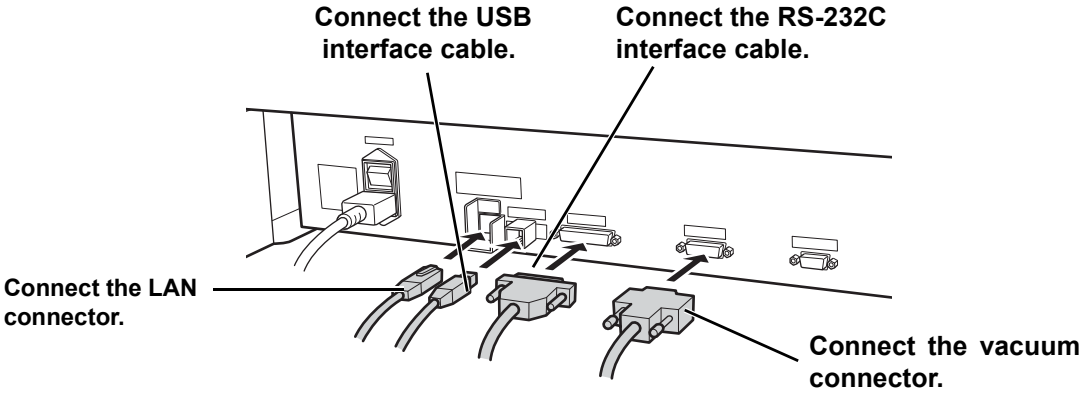


- Earth the green wire (ground wire) of the ground adapter. If you cannot, consult with an electrician.

Connecting the Interface Cable

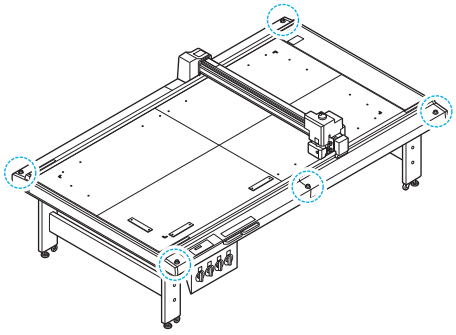
This machine is equipped with standard RS-232C compliant interface, USB interface and LAN terminal.
Use the RS-232C interface cable recommended by our company or a cable suitable for your computer.

● Turn off the plotter and PC before connecting the RS-232C interface cable.



Emergency Stop

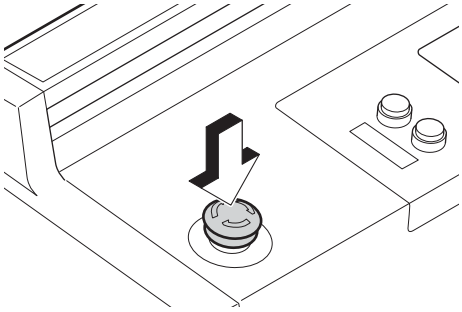
The emergency stop is used when an emergency situation arises.
EMERGENCY switch is located in five places in the key panel section and rear of the unit respectively.



Applying an Emergency Stop

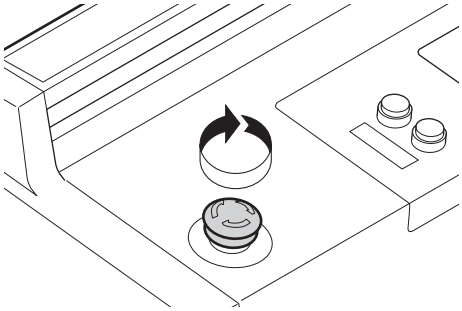
1 **Press the EMERGENCY switch.**

• Operation stops and the unit turns off.



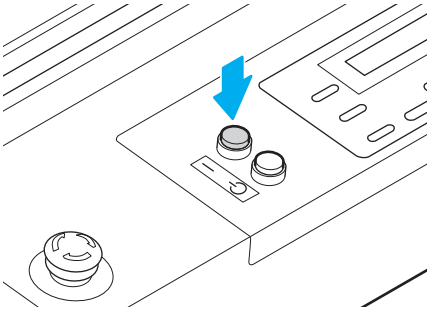
Resetting an Emergency Stop

1 **Turn the EMERGENCY switch clockwise to unlock it.**



2 **Press the POWER switch.**

• Unit operation starts.



Important!

• Wait at least 30 seconds after turning OFF the power before resetting an emergency stop. Failure to do so may result in unit malfunctions.

Preparing the Cutting Panel

Attaching the Felt Mat

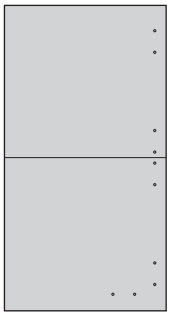
When you are using reciprocating tools, attach the felt mat to the workpiece you want to cut.

Hint!

- When using the tangential cutter, please use the cutting mat with holes.
- When using a reciprocating cutter, place the felt mat on the cutting mat before use.

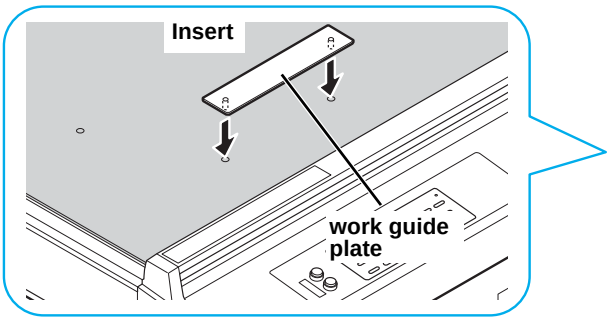
(1) Put the mat on the cutting panel.

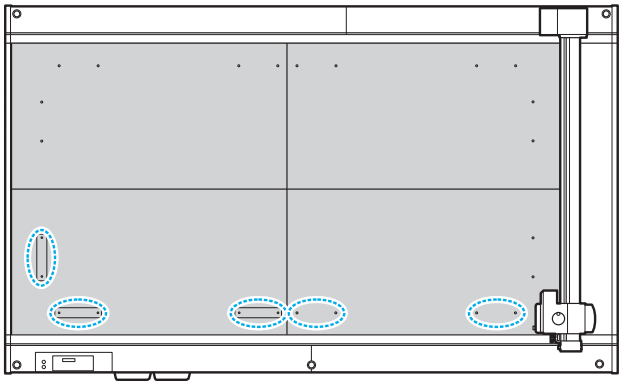
- When installing the felt mat, attach the hole (hole to insert the work guide) to the circle in the figure below.



(2) Insert a work guide plate into the holes at each edge of the cutting panel.

- Insert the work guide plate along the edges of the mat.
- Set work guide plate on the positions circled in the right.





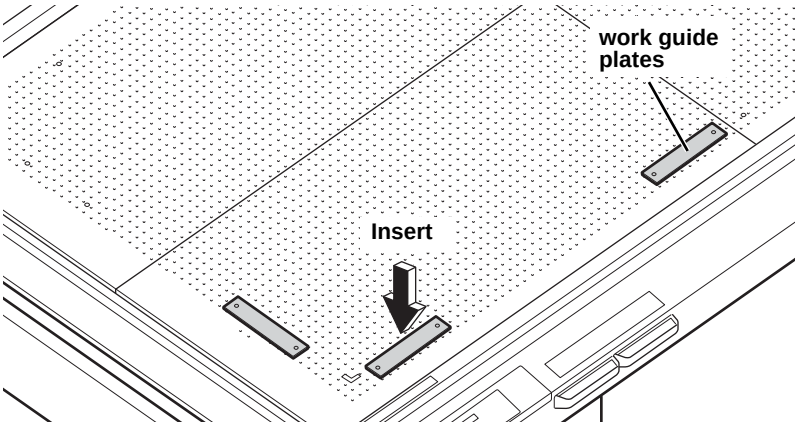
Inserting the Work Guide Plates

Insert the work guide plates as a guide to keep the workpiece straight.
Insert them into the appropriate positions for the size of the workpiece.

Important!

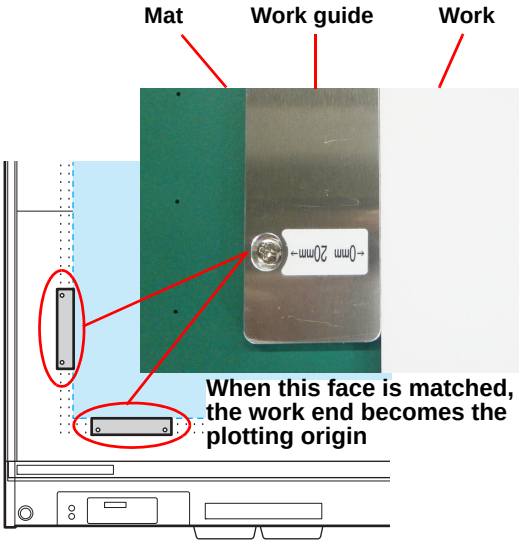
- Make sure to firmly insert the work guide plate into the hole of the cut panel surface. When the power is turned on while some area of the work guide plate floats, the work guide plate may be hit by the head and may cause the head damage.

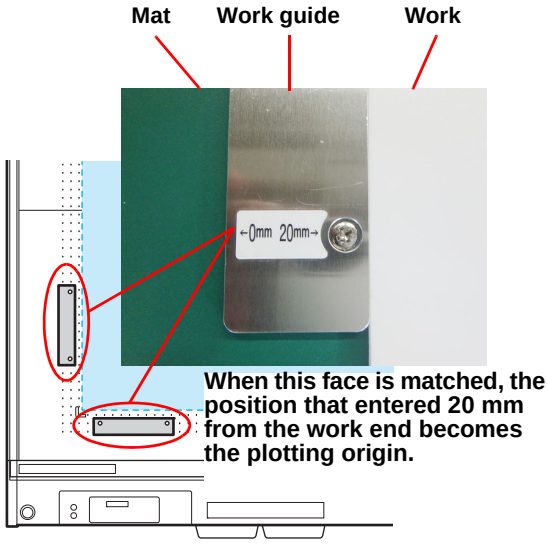
- Insert a work guide plate into the holes at each edge of the cutting panel.



Hint!

- You can determine the position of the 0 mm and 20 mm offsets by the direction in which the work guide is set, as shown in the following illustration.





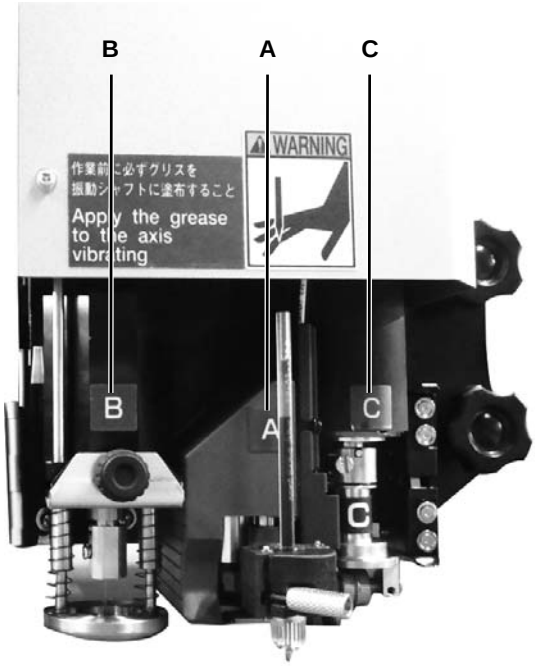
Caution

- When preparing the data of X 0 mm, Y 0 mm with the work guide set on the 0 mm side, remove the work guide after setting the work and sucking it.
  If you cut without removing the work guide, the tool may collide and the blade may be chipped.

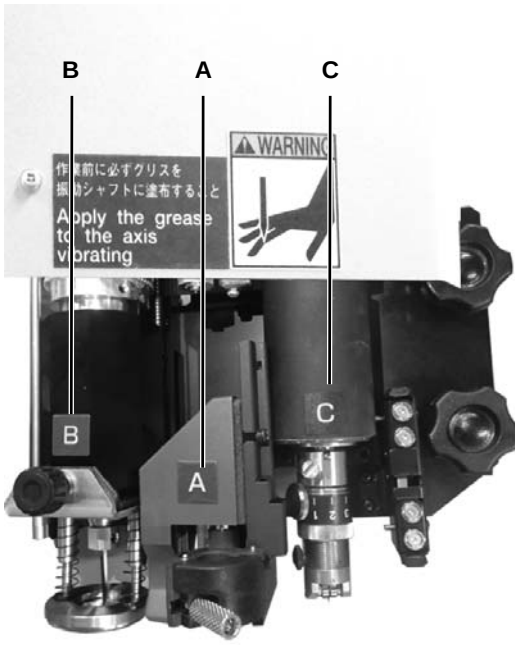
Installing the Tool (RC and RT Models)

Indicates the unit (A, B, or C) to which the tool should be installed.

RC



RT



RC

Unit	Tools You Can Install		See Page
A	Pen/swivel cutter holder		P.1-14
B	Reciprocating cutter	Cutter holder 07	P.1-22
	Tangential cutter	Cutter holder 2N	P.1-20
C	Grid roller	Grid roller CN, grid roller YN	P.1-23

RT

Unit	Tools You Can Install		See Page
A	Pen/swivel cutter holder		P.1-14
B	Reciprocating cutter	Cutter holder 06 (S)	P.1-22
C	Tangential cutter	Cutter holder 4N, cutter holder 10N	P.1-20

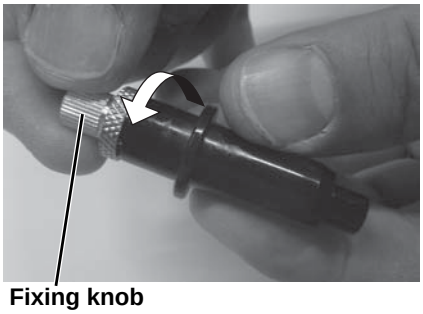
Eccentricity cutter

The included cutting edge is suitable for work of PVC sheet for sign products.

Hint!

- The cutting edge is preparing a special cutting edge by the workpiece. For details, please contact your dealer or our sales office.

1 **Loosen the fixing knob.**



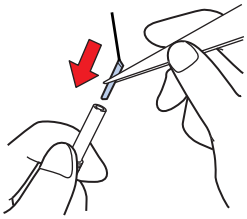
Fixing knob

2 Set a blade.

Important!

- Be sure to set with the cutting edge facing up.

Cutting edge

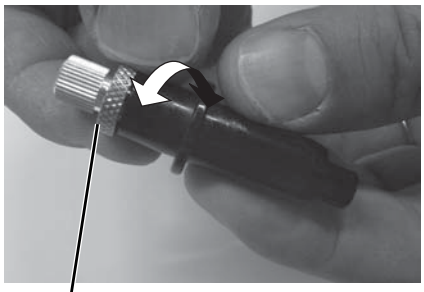


3 Tighten the fixing knob.

Fixing knob

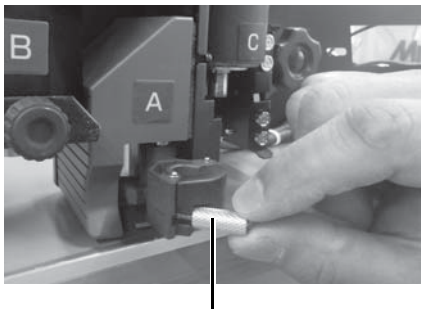
4 Turn theadjustment knob to adjust the tip amount of cutting edge.

- one turn：0.5mm



Adjustment knob

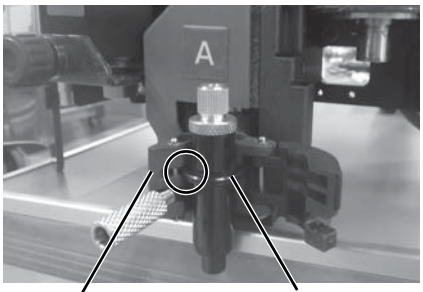
5 Turn the screw to loosen it.



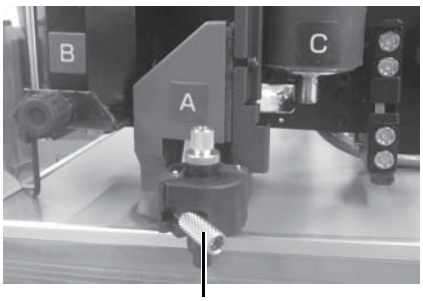
Screw

6 **Set the cutter holder.**

• Align the eccentric cutter's collar with the groove of the holder



7 **Turn the screw and tighten.**

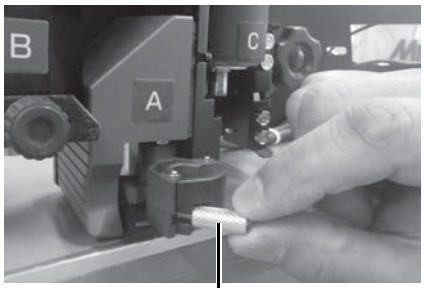


Mounting of the pen

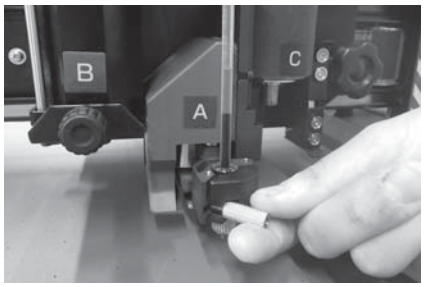
1 **Insert the spring into the pen tip.**

2 **Attach to the pen adapter while holding down the spring on the cap.**

3 **Turn the screw and loosen the holder retainer.**



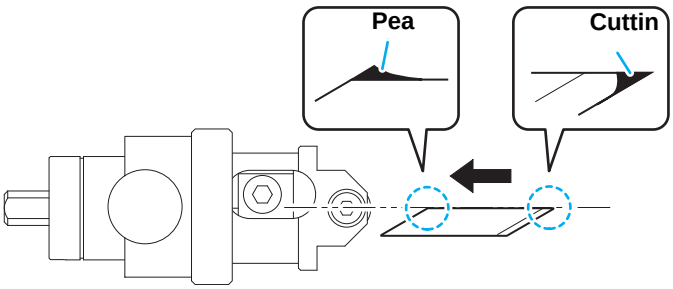
4 **Set the pen adapter and turn the knob to tighten.**



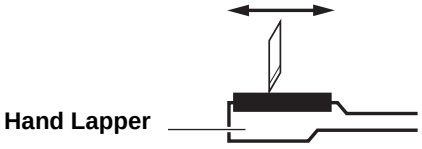
Attaching the cutter holder 2N

Important!

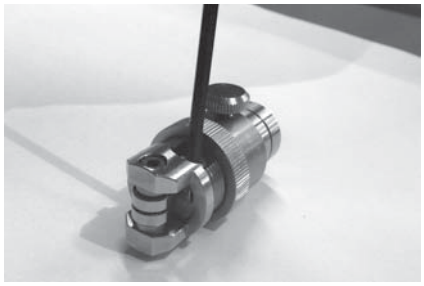
- When installing the blade, please install it in the direction of the blade as shown below.



- When installing the NT high-speed blade, please cut off the cutting edge and peak portion with the supplied hand wrapper.

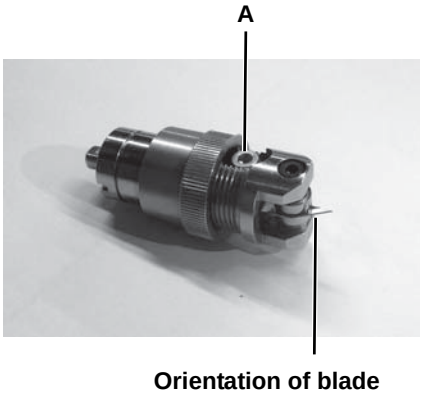


1 **Loosen the cutter stopper.**



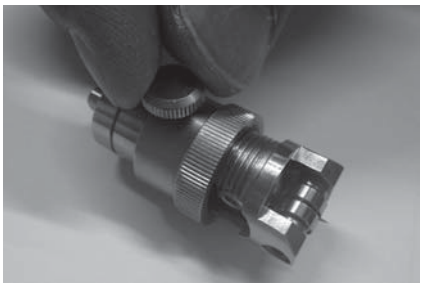
2 Pay attention to the direction of the blade and install the blade.

(1) Turn the dial
(2) Maximize tip amount of cutting edge
(3) Loosen A
(4) Insert a blade
(5) Tighten the screws



Orientation of blade

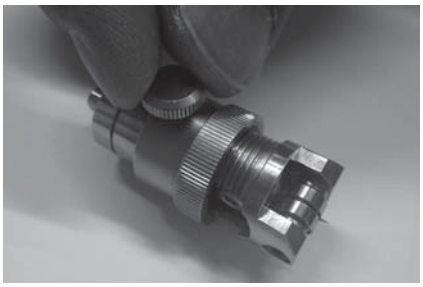
3 Loosen the dial stopper.



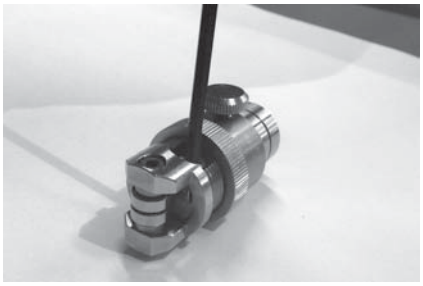
4 Turn the dial to adjust the tip amount of cutting edge.

• one turn：1mm

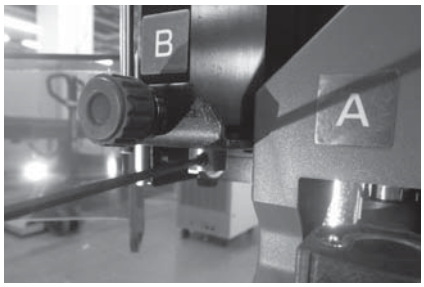
5 Tighten the dial stopper.



6 Tighten the cutter stopper.

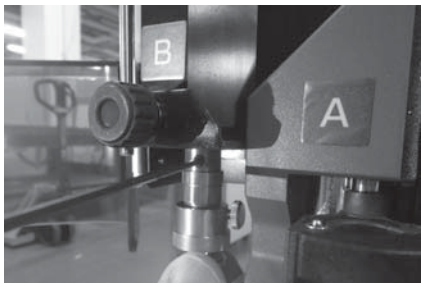


7 **Loosen the stopper screw.**



8 **Insert the pin so that it fits the groove of the cutter holder.**

9 **Attach the cutter holder and tighten the stopper screw.**



Caution

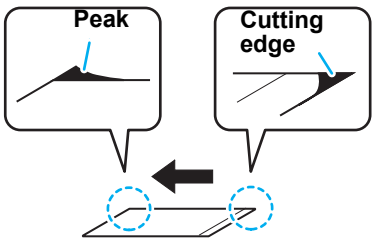
- Please fix the cutter holder securely.
  If you tighten it loose, you can not get normal quality.

Installation of tangential cutter 4N

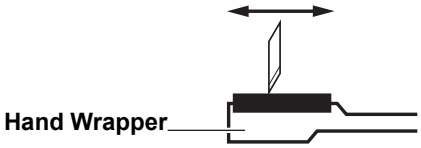
If the head is lowered and you can not install the tangential cutter, please raise the head.(☞P.1-24 "Adjusting the Head Height")

Important!

- When installing the blade, please install it in the direction of the blade as shown below.



- When installing the NT high-speed blade, please cut off the cutting edge and peak portion with the supplied hand wrapper.



Hint!

- he tangential cutters 7N and 10N are also the same.

1 Loosen the cutter stopper.

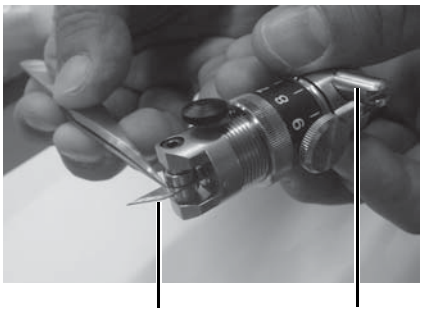
2 Turn the dial to maximize the tip amount of blades.

3 Pay attention to the direction of the blade and install the blade.

- Please set so that the blade comes to the stopper screw side.

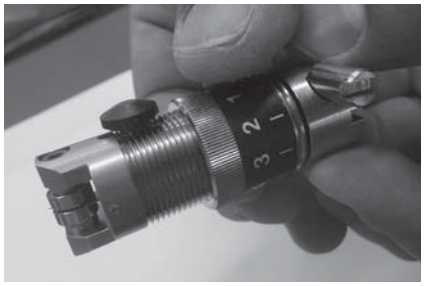
Important!

- When installing the blades, please use tweezers as there is a danger of injury.



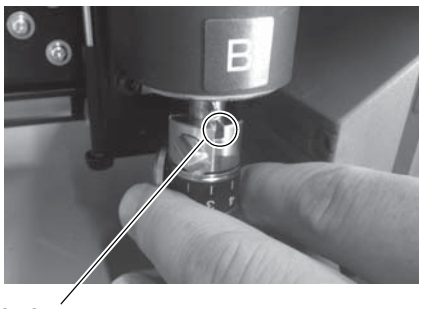
4 **Tighten the cutter stopper.**

5 **Turn the dial to adjust the tip amount of cutting edge.**



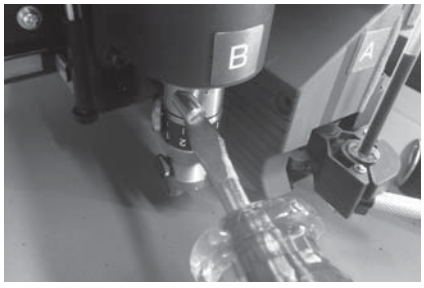
6 **Tighten the dial stopper.**

7 **Insert the pin of the B unit so that it fits the groove of the tangential cutter.**



Fit the groove

8 **Tighten the stopper screw with the supplied screwdriver.**



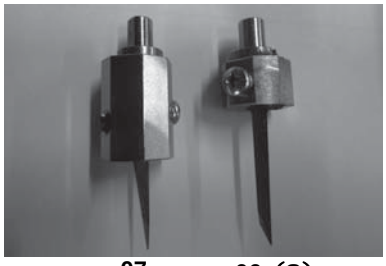
Caution

- Please fix the cutter holder securely.
  If you tighten it loose, you can not get normal quality.

Attaching the reciprocating cutter (cutter holder)

Attach the reciprocating cutter holder to the B unit.

Important!

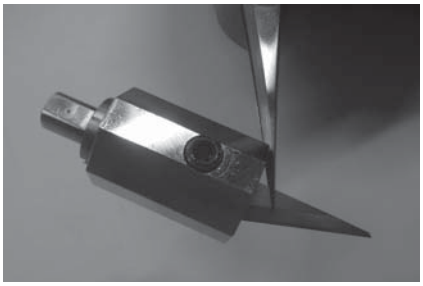


07　　06（S）

•Reciprocating cutter holder is required to attach reciprocating cutter.
Name:Reciprocating cutter holder07 (SPA-0114)
Adaptive blade:Carbide blade17°(SPB-0065)：07 holder
20mm blade(SPB-0055)：07holder
Name:Reciprocating cutter holder06 (S) (SPA-0251)
Adaptive blade:Carbide blade2°(SPB-0064)：06holder

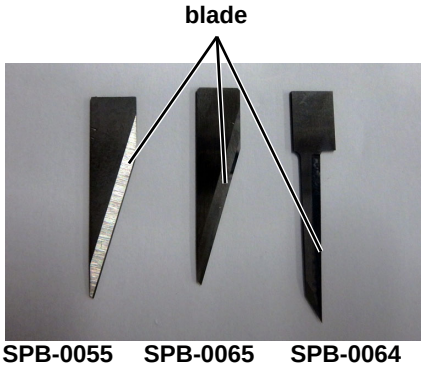
1 Loosen the setscrew.

2 While paying attention to the flat part of the holder, the direction of the blade, insert until the blade hits.



Important!

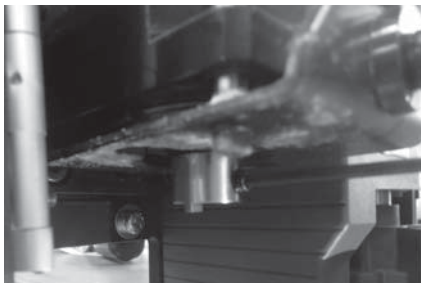
- When installing the blade, please use tweezers.
- Please pay attention to the direction of the blade and install it.



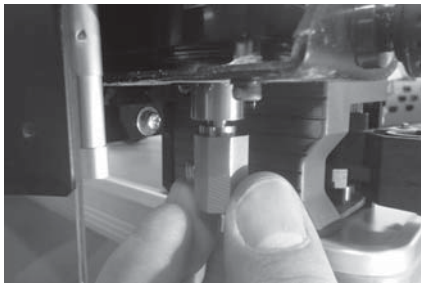
SPB-0055　SPB-0065　SPB-0064

3 Tighten the set screw.

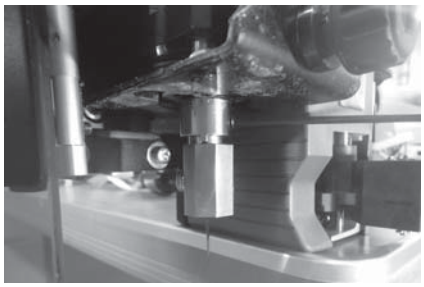
4 **Loosen the fixing screw.**



5 **Insert the pin so that it fits the groove of the cutter holder.**



6 **Tighten the screw after striking it all the way.**

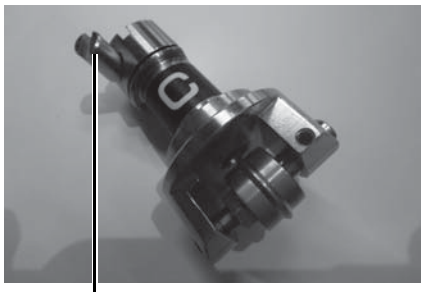


Installation of ruling roller

It is used in the RC head model.
If the head is lowered and you can not install the ruling roller, please raise the head.（☞P.1-24 "Adjusting the Head Height"）

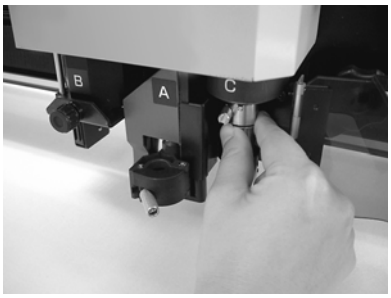
1 **Loosen the stopper screw of the ruling roller.**

- Turn it counterclockwise to loosen it.



Stopper screw

2 **Insert the pin of the C unit in accordance with the groove of the ruling roller.**



3 **Tighten the stopper screw with the supplied screwdriver.**

Caution

- Please fix the cutter holder securely.
- If you tighten it loose, you can not get normal quality.

Adjusting the Head Height

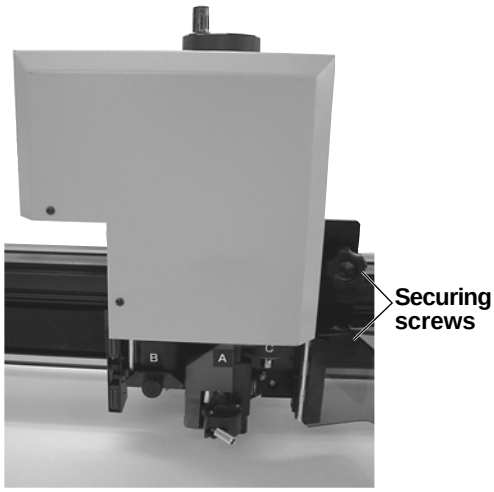
After installing the workpiece and tool, adjust the height of the head according to the tool being used and the thickness of the workpiece.

Caution

- Make sure you place the felt mat on the green cutting mat before use. If you perform cutting in unit B without using the felt mat, cutting scraps may remain.
- When securing the head, do not over tighten either of the top or bottom screws. Otherwise, the screws may be damaged.

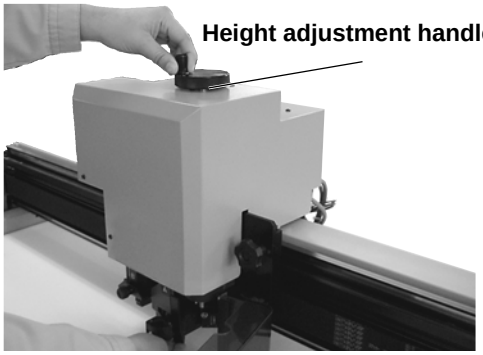
1 **Loosen the two securing screws for the head.**

- Turn the screws counterclockwise to loosen it.



2 Use the height adjustment handle to raise the head.

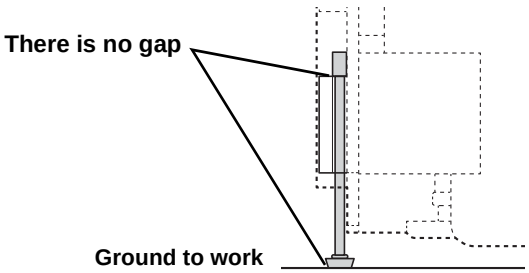
• Use the height adjustment handle to raise the head.



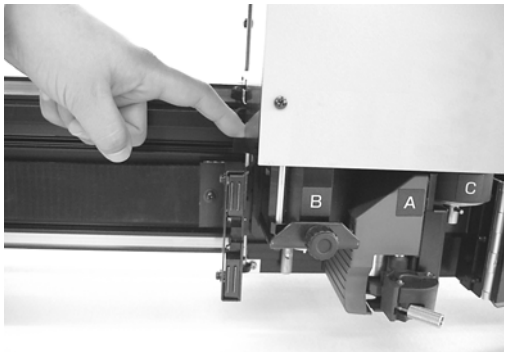
3 Lower the head until the bottom edge of the adjustment bar touches the surface of the workpiece.

Hint!

• Make sure there are no gaps between the work surface and the bottom edge of the adjustment bar.

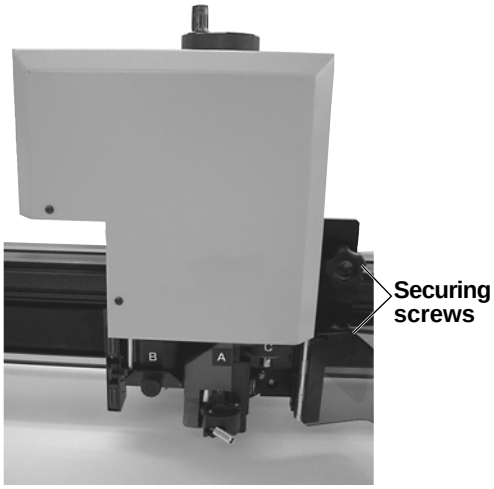


• If you do not match precisely, there is a possibility that the register marks or IDs can not be read on the workpiece.



4 Tighten the two securing screws for the head alternately starting at the bottom.

• Lower the head until the bottom edge of the adjustment bar touches the surface of the workpiece.

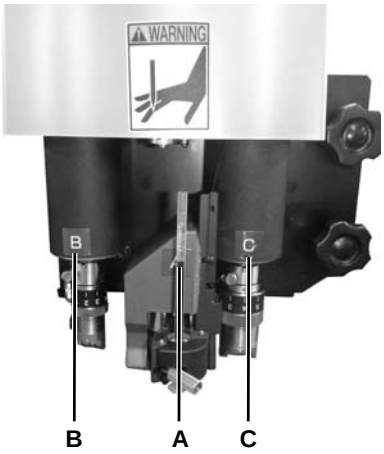


Installing the Tool (T, TF and TD Models)

Indicates the unit (A, B, or C) to which the tool should be installed.

T

TF



TD

T

Unit	Tools You Can Install		See Page
A	Pen/swivel cutter holder		P.1-28
B	Tangential cutter	Cutter holder 4N	P.1-30

TD

Unit	Tools You Can Install		See Page
A	Pen/swivel cutter holder		P.1-28
B	Tangential cutter	Cutter holder 4N	P.1-30
C	High pressure tangential cutter	Cutter holder 7N, cutter holder JN	P.1-30

TF

Unit	Tools You Can Install		See Page
A	Pen/swivel cutter holder		P.1-28
B	Tangential cutter	Cutter holder 4N	P.1-30
C	Grid roller	Grid roller DN, grid roller CN	P.1-32

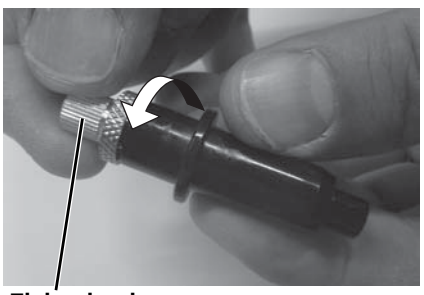
Eccentricity cutter

The included cutting edge is suitable for work of PVC sheet for sign products.

Hint!

- The cutting edge is preparing a special cutting edge by the workpiece. For details, please contact your dealer or our sales office.

1 **Loosen the fixing knob.**



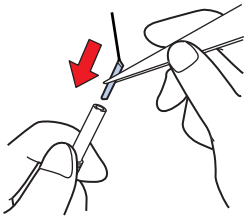
Fixing knob

2 Set a blade.

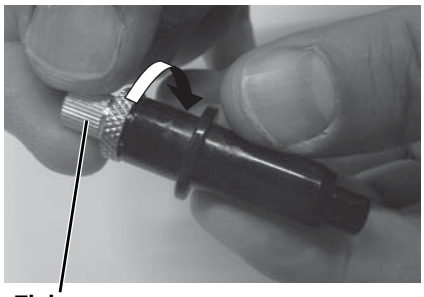
Important!

- Be sure to set with the cutting edge facing up.

Cutting edge

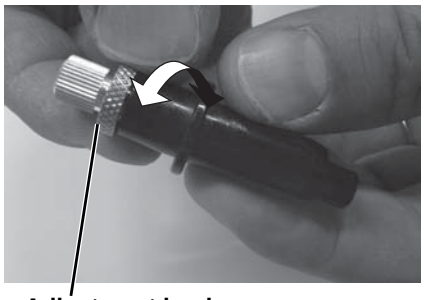


3 Tighten the fixing knob.

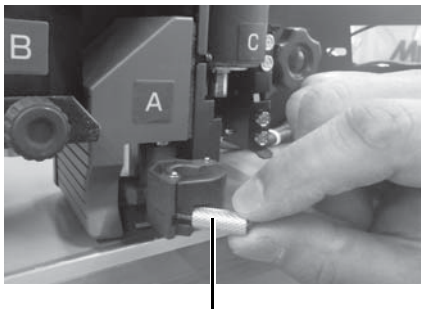


4 Turn the adjustment knob to adjust the tip amount of cutting edge.

- one turn：0.5mm

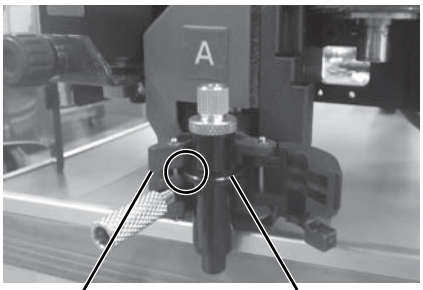


5 Turn the screw to loosen it.

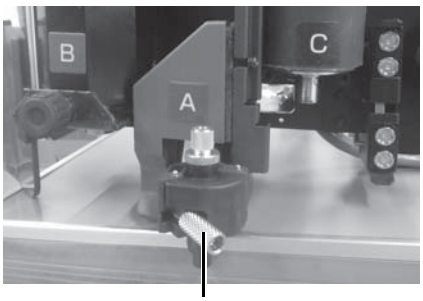


6 **Set the cutter holder.**

• Align the eccentric cutter's collar with the groove of the holder



7 **Turn the screw and tighten.**

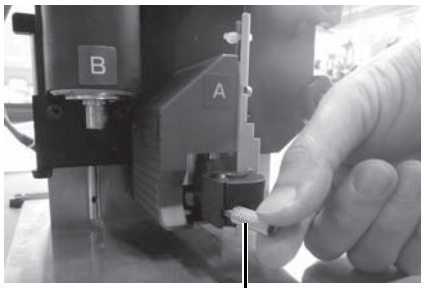


Mounting of the pen

1 **Insert the spring into the pen tip.**

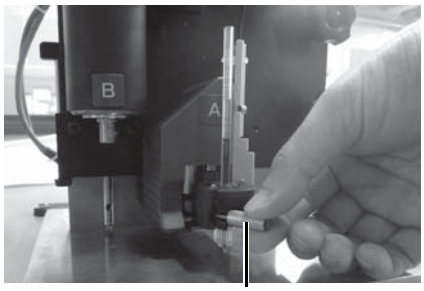
2 **Attach to the pen adapter while holding the spring on the cap.**

3 Turn the screw and loosen the holder retainer.



Screw

4 Set the pen adapter and turn the knob to tighten.



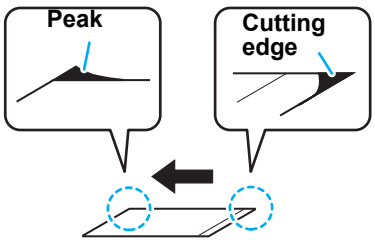
Screw

Installation of tangential cutter 4N

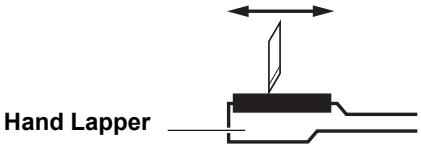
If the head is going down and you can not install the tangential cutter, please raise the head.（☞P.1-24 "Adjusting the Head Height"）

Important!

- When installing the blade, please install it in the direction of the blade as shown below.



- NWhen installing T high-speed blades, please cut off the cutting edge and ridge with the included handrailer.



Hint!

- The tangential cutters 7N and 10N are also the same.

1 Loosen the cutter stopper.

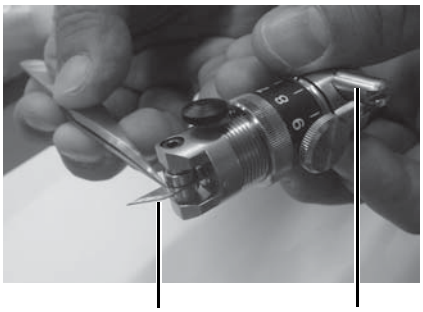
2 Turn the dial to maximize the tip amount of blades.

3 Pay attention to the direction of the blade, install the blade.

- Please set so that the blade comes to the stopper screw side.

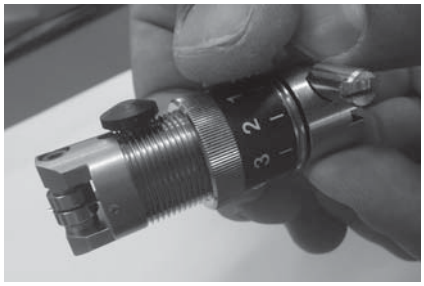
Important!

- When installing the blades, please use tweezers as there is a danger of injury.



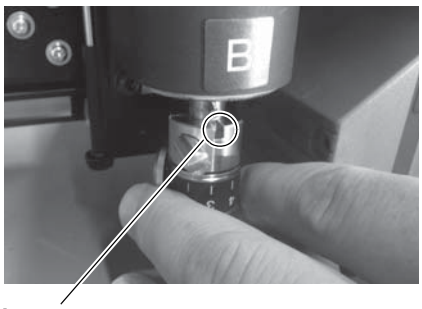
4 **Tighten the cutter stopper.**

5 **Turn the dial to adjust the tip amount of cutting edge.**



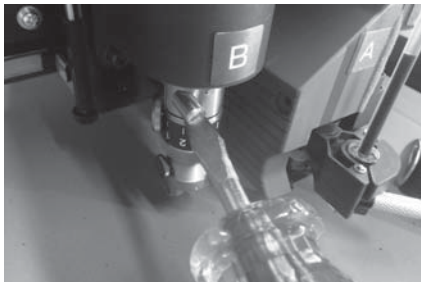
6 **Tighten the dial stopper.**

7 **Insert the pin of the B unit so that it fits the groove of the tangential cutter.**



Fit to groove

8 **Tighten the stopper screw with the supplied screwdriver.**



Caution

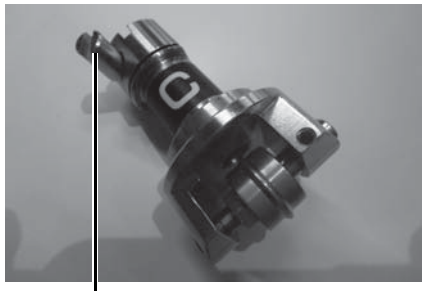
- Please fix the cutter holder securely.
- If you tighten it loose, you can not get normal quality.

Installation of ruling roller

Other than the T head model is the target.
Attach the ruling roller to C of the TD head model. You can also install a tangential cutter for high pressure.
If the head is lowered and you can not install the ruling roller, please raise the head.（☞ P.1-40）

1 Loosen the stopper screw of the ruler roller.

- Turn it counterclockwise to loosen it.



Stopper screw

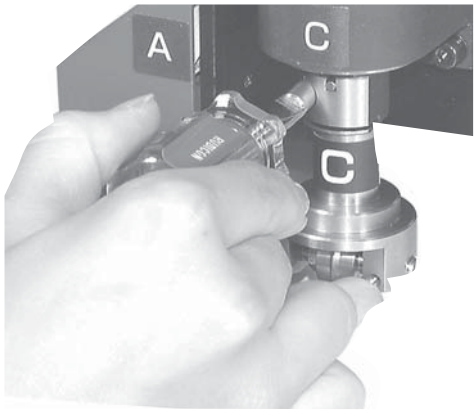
2 Insert the pin of the C unit according to the groove of the ruling roller.

Fit pin and groove

3 Tighten the stopper screw with the supplied screwdriver.

Caution

- Please secure it securely.
- If you tighten it loosely, the holder becomes unstable during cutting and accurate cutting is not done.



Adjusting the Head Height

After installing the workpiece and tool, adjust the height of the head according to the thickness of the workpiece.
Adjust the head height every time the thickness of the workpiece changes.

Caution

- Make sure you support the base of the head with your hand when raising it. If you try to raise the head using only the height adjustment knob, the knob may be damaged.
- When securing the head, do not over tighten either of the top or bottom screws. Otherwise, the screws may be damaged.

1 Loosen the two securing screws for the head.

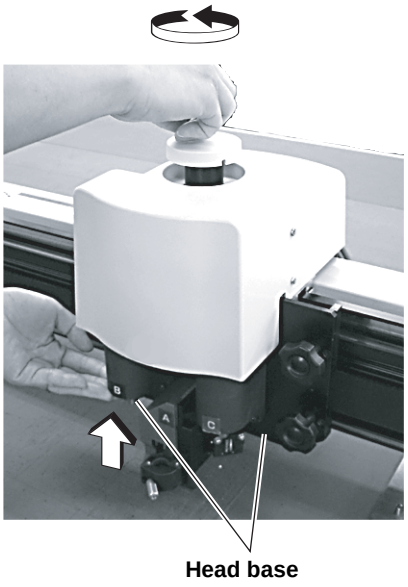
- Turn the screws counterclockwise to loosen them.

2 Use the height adjustment knob to raise the head.

- Turn it counterclockwise to lower the head.

Caution

- Since the head is heavy, make sure you support the base of the head with your hand when raising it. If you do not support it with your hands, the handle may be damaged.

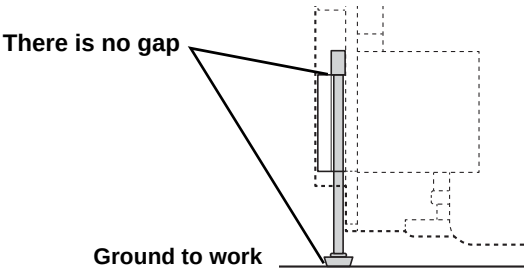


3 As you press the height adjustment bar down, use the height adjustment knob to raise the head.

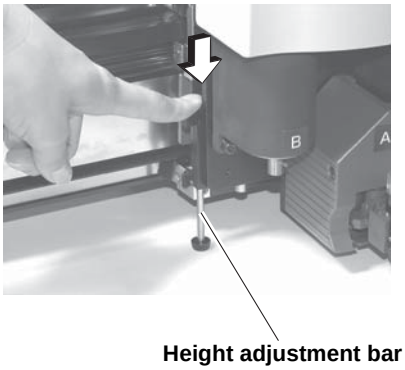
- Lower the head until the bottom edge of the adjustment bar touches the surface of the workpiece.

Hint!

- Make sure there are no gaps between the work surface and the bottom edge of the adjustment bar.



- If you do not match precisely, there is a possibility that the register marks or IDs can not be read on the table surface.



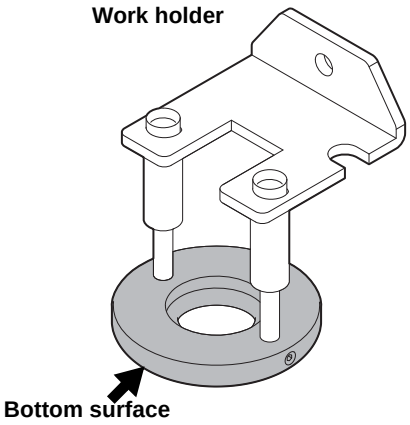
4 Tighten the two securing screws for the head alternately starting at the bottom.

Attach the Work Holder (RC and RT Models)

The work holder prevents the work from moving up after it is cut.

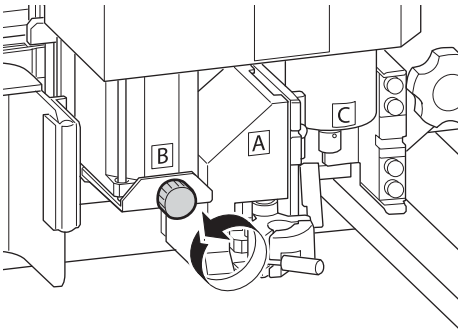
Hint!

- The work holder can be used for works of up to 10 mm thick.The work holder does not support thickness greater than 10 mm.
- When using soft works (sponges, etc.), do not use the work holder. The work holder is designed to hold works such as corrugated fiberboard.
- When using a work holder, be sure that overall bottom surface is flat against the work.
  If bottom surface run off the work edge, in a case cutting edge of a work, cutter does not down and may not cut correctly.



1 Remove the fixing screw of unit B.

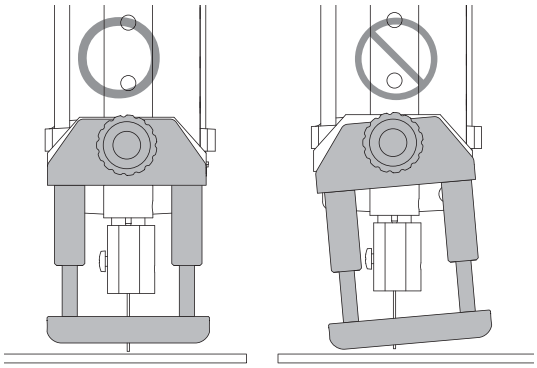
- To loosen the screw, turn it counter clockwise.

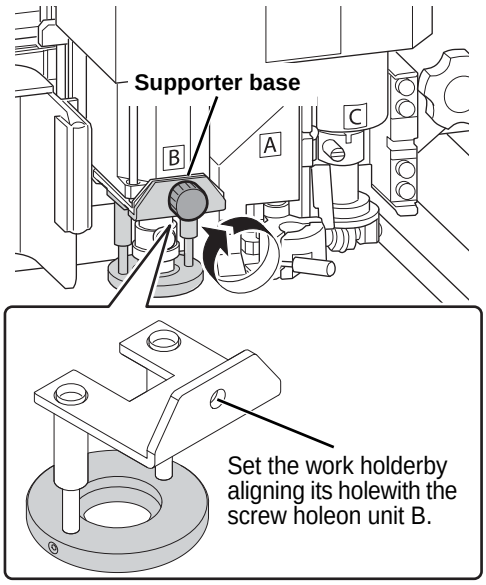


2 Set the work holder to unit B andtighten the screw.

Important!

- When installing the work holder, press against the mounting surface of the work holder to supporter base, and attach as work holder is not inclined.





Local Status / Remote Status

Press REMOTE on the operation panel to toggle between the local and remote status.

Local Status and Displays

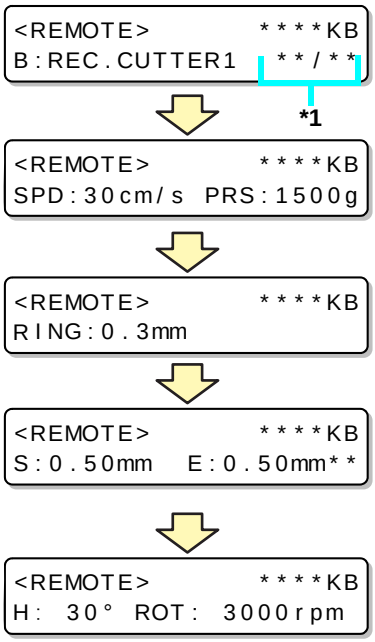
The local status permits movement of the heads, setup of the unit functions, and receiving data from the PC.
All keys on the operation panel are enabled in local status.

Remote Status and Displays

The remote status permits cutting or drawing of the received data.
The display shows the cutting (drawing) conditions and the received data volume. The number of displayed data decreases as cutting (drawing) proceeds.
POWER ON, POWER OFF, VACUUM, and REMOTE are enabled on the operation screen panel.
The following three screens appear in the remote status.

Recipro Cutter, Grid Roller Selected

This is the remote screen where you can select [Unit: B], [Unit: C], [Tool: Reciprocating Cutter 1, 2 / Tangential Cutter 1 to 4 / Roller 1, 2] in the Tool menu from the Local menu.
S (start offset) and E (end offset) do not appear when the grid roller is selected.

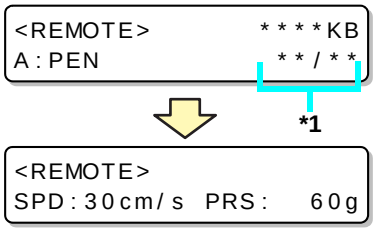


PRS : Cutting pressure
SPD : Cutting speed
RING : Rounding radius
S : Start offset
E : End offset
H: Up angle
ROT : Rotation *2

*1) Display the current number / total number during running the number of cutting.
*2) When select Tangential cutter, roller, “ROT (Rotation)” is not displayed.

Pen Selected

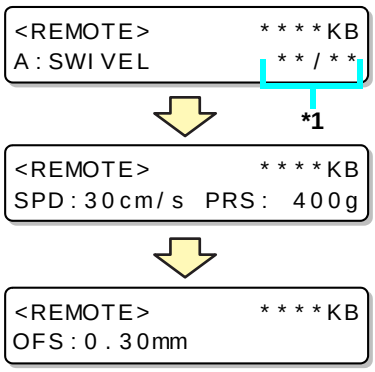
This remote screen appears when HEAD:A, TOOL: Pen is selected for TOOL SELECT in the local menu.



PRS : Cutting pressure
SPD : Cutting speed

Swivel Blade Selected

This remote screen appears when HEAD:A or TOOL:SWIVEL is selected for TOOL SELECT in the local menu.



PRS : Cutting pressure
SPD : Cutting speed
OFS: Offset value

*1) Display the current number / total number during running the number of cutting.

Setting the Command Origin

Adjust the position of the command origin of this machine to the position of the command origin of your software.
For the location of the command origin supported by the software, refer to the software's instruction manual.

Item	Set value
LOW-LEFT	Lower-left of the maximum effective cutting area.
CENTER	Center of the maximum effective cutting area.

1 **Select [PLOT SETTING] of the set up menu.**

(1) Press the FUNCTION key in LOCAL.
(2) Press ▲ ▼ to select [SET UP] and press the ENTER key.
(3) Press ▲ ▼ to select [PLOT SETTING].
(4) Press the ENTER key.

2 **Press the jog key ▲ or ▼ to select [ORIGIN], and ress the ENTER key.**

```
<PLOT SETTING>
ORIGIN    :LOE-LEFT
```

3 **Press the jog key ▲ or ▼ to select Setting.**

• Set values: LOW-LEFT , CENTER

```
<PLOT SETTING>
ROTATION  :CENTER
```

4 **Press the ENTER key.**

• Press END if you do not want to save the setting.

5 **Press the END key twice for terminating this function.**

Matching the Plotter Specifications

This unit uses the command MGL-IIC3.
Set the software command to connect to the unit to MGL-IIC3.

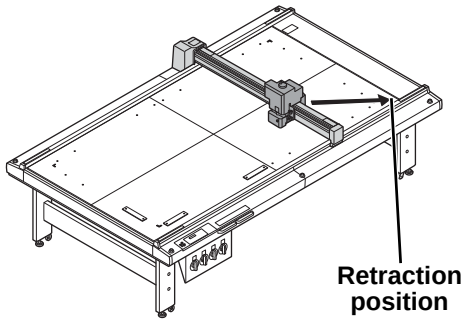
Important!

- Only the MGL-IIC3 commands are available in MODE SET. This command cannot be changed at the plotter.

Setting Automatic Head Retraction

Sets the time before the head begins to retract to the retraction position when cutting (drawing) of data from the PC is complete.

Item	Set value
OFF	No automatic retraction
(1) LOW-LEFT	Save to the lower left
(2) LOW-RIGHT	Save to the lower right.
(3) UP-LEFT	Save to the upper left.
(4) UP-RIGHT	Save to the upper right.



1 **Select [PLOT SETTING] of the set up menu.**

(1) Press the FUNCTION key in LOCAL.
(2) Press ▲ ▼ to select [SET UP] and press the ENTER key.
(3) Press ▲ ▼ to select [PLOT SETTING].
(4) Press the ENTER key.

2 **Press the jog key ▲ or ▼ to select [AFTER PLOT], and ress the ENTER key.**

<AFTER PLOT>
AUTO VIEW:OFF

3 **Press the jog key ▲ or ▼ to select [AUTO VIEW], and ress the ENTER key.**

<AFTER PLOT>
AUTO VIEW:OFF

4 **Press the jog key ▲ or ▼ to select retraction position.**

<AFTER PLOT>
AUTO VIEW:UP-LEFT

• Set values: OFF , LOW-LEFT, LOW-RIGHT, UP-LEFT, UP-RIGHT

5 **Press the ENTER key.**

• Press END if you do not want to save the setting.

6 **Press the END key twice for terminating this function.**

Setting the Vacuum

Sets the vacuum operation when the vacuum is used.

Item	Set value
AUTO OFF *1	If automatic head retraction is set to available, the vacuum turns off automatically after head retraction.
N/C	Vacuum remains on after head retraction.

*1. The vacuum cannot turn off automatically if automatic head retraction is OFF.

Hint!
- When exchanging a work during continuous cutting of register marks, the vacuum is automatically turned off regardless of the automatic head retraction setting.

Enabling / Disabling the Vacuum Automatic OFF Function

1 **Select [PLOT SETTING] of the set up menu.**

(1) Press the FUNCTION key in LOCAL.
(2) Press ▲ ▼ to select [SET UP] and press the ENTER key.
(3) Press ▲ ▼ to select [PLOT SETTING].
(4) Press the ENTER key.

2 **Press the jog key ▲ or ▼ to select [AFTER PLOT], and ress the ENTER key.**

<AFTER PLOT>
AUTO VIEW:OFF

3 **Press the jog key ▲ or ▼ to select [VACUUM], and ress the ENTER key.**

<AFTER PLOT>
VACUUM :N/C

4 **Press the jog key ▲ or ▼ to select setting.**

- Set values: N/C , AUTO OFF

<AFTER PLOT>
VACUUM :AUTO OFF

5 **Press the ENTER key.**

- Press END if you do not want to save the setting.

6 **Press the END key twice for terminating this function.**

Interlock between Remote Key and Vacuum Key

The vacuum key can be turned on/off automatically using the remote key.
If a cutting operation is performed without activating the vacuum, the workpiece may float and hinder the cutting operation.
This symptom can be prevented by selecting "REMOTE ON".

Item	Set value
REMOTE ON	When the remote mode is selected by pressing the remote key, the vacuum is automatically turned on. When the offline mode is selected using the remote key, the vacuum is turned off.
N/C	You can turn on/off the vacuum using the vacuum key on the operation panel.

1 **Select [PLOT SETTING] of the set up menu.**

(1)Press the FUNCTION key in LOCAL.
(2)Press ▲ ▼ to select [SET UP] and press the ENTER key.
(3)Press ▲ ▼ to select [PLOT SETTING].
(4)Press the ENTER key.

2 **Press the jog key ▲ or ▼ to select [BEFORE PLOT], and ress the ENTER key.**

3 **Press the ENTER key.**

4 **Press the jog key ▲ or ▼ to select [REMOTE ON].**

- Set values: N/C , REMOTE ON

5 **Press the ENTER key.**

- Press END if you do not want to save the setting.

6 **Press the END key twice for terminating this function.**

Chpater 2
Basic Operations

This Section....

... describes the basic operations, such as mounting tools and workpieces.

Basic Operation Workflow

This section describes the basic operation workflow.
For details, see the reference page shown.

1	Turning the power on	See “Turning the power on” (P.2-8)
2	Moving the Head	See "Moving the Head"(☞ P.2-4).
3	Fixing the Workpiece	See "Fixing the Workpiece"(☞ P.2-6).
4	Setting the tool conditions	See “Selecting Tools”(☞ P.2-9).
5	Making a Test Cut	See "Making a Test Cut"(☞ P.2-13).
6	Setting the Drawing Origin	See "Setting the Drawing Origin"(☞ P.2-19).
7	Cutting (Drawing)	See "Cutting (Drawing)"(☞ P.2-20).
8	Turning the power off	See “Turning the power on” (P.2-8)

Turning the Power ON

This machine is provided with the following two power switches:

Main power switch:Located on the right side of the electrical box.

Power switch : Normally, use this switch to turn the power ON/OFF.

Caution

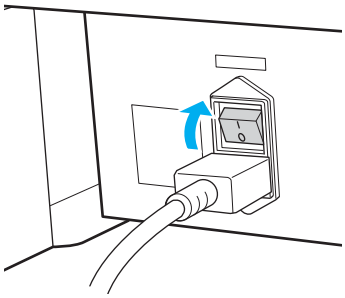
- While the power is ON, do not place objects other than the workpiece on the cutting panel. When the power is turned ON, the head moves to the low-right retraction point. The head may be damaged if it hits an object.
- Please lift up the mark sensor before turn on the power. When the power is turned on by setting the felt mat while lowering the mark sensor, the work guide plate may be hit by the head and may cause the head damage.
- Make sure that the work guide plate is firmly inserted into the hole of the cut panel surface. When the power is turned on while some area of the work guide plate floats, the work guide plate may be hit by the head and may cause the head damage.
- Wait at least 30 seconds after turning OFF the power before turning the power ON again. Failure to do so may result in unit malfunctions.

1 Check for objects on the cutting panel.

- Remove any objects before turning ON the power.

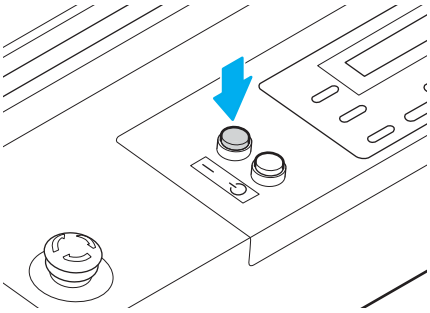
2 Turn the main power switch ON.

- Set the main power switches located on the right side of this machine to the “I” side.



3 Turn the power switch ON.

- Push the power switch located on the operation panel.
- The green POWER lamp lights.



4 Turn ON the power of the connected PC.

5 When the screen on the right is displayed, press the ENTER key.

- Origin detection starts.
- The head moves to the retraction point at the low-right of the cutting panel.
- The local menu appears.

Hint!

- If the "START MODE" is set to REMOTE, the "REMOTE" will be displayed after the origin detection. (☞ P.2-20)
- If the "MARK DETECT" is enabled (other than off), it will be "Mark detection mode". (☞ P.4-13)

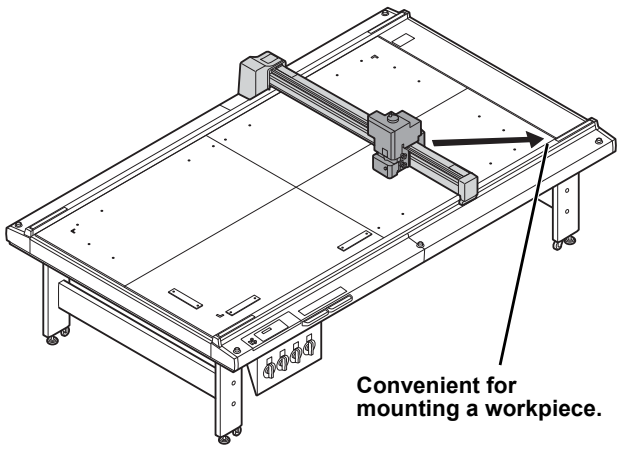
Moving the Head

The head can be moved to a convenient position to mount the workpiece, make a test cut, or mount a tool. Two methods are available to move the head.

- Using the head retraction (View) function
- Using the jog keys

Moving the Head Using the Head Retraction [VIEW] Function

The head can be moved at once to the table each corner, or the drawing origin.



Hint! • If Automatic Head Retraction ☞ P.1-40 is set, the head automatically returns to the retraction position after cutting (drawing) is complete, so that the View function is not required.

1 **Press the VIEW key in LOCAL.**

```
<VIEW>
VIEW POS  :ORIGIN
```

2 **Press ▲ ▼ and select the retracted position.**

• Set value: LOW-LEFT, LOW-RIGHT, ORIGIN, UP-LEFT, UP-RIGHT

```
<VIEW>
VIEW POS  :LOW-LEFT
```

3 **Press ENTER key.**

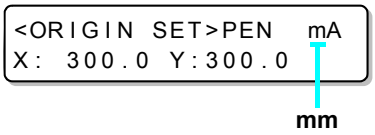
• The head retracts to the designated position.

Moving the Head Using the Jog Keys

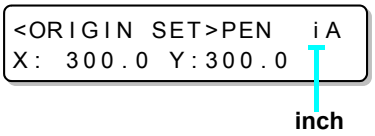
Use this method for mounting tools or making a test cut or sample cut.
The following function allows the head to be accurately positioned using the jog keys.

The coordinates are displayed with respect to the command origin position.

mm display

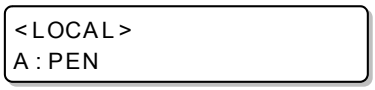


inch display



1 **Select the local menu.**

- If the unit is in remote status, press REMOTE to set local status.

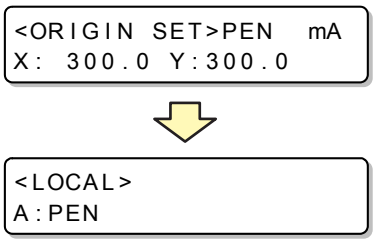


2 **Press a jog key ▲ ▼ ◀ ▶ once.**

3 **Press a jog key ▲ ▼ ◀ ▶ to move the head.**

- If you want to move diagonally, you can move by pressing two keys at the same time.
  Example) To move to the upper right, press ▲ ▶ simultaneously.

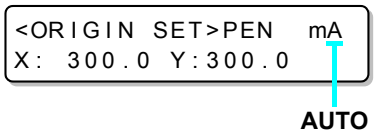
4 **Press ENTER or END key.**



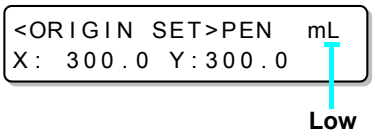
Hint!

- If you change the jog speed, the display changes as shown below. Refer to (☞ P.3-5) for how to change.

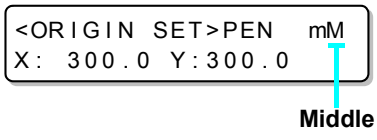
AUTOMATIC



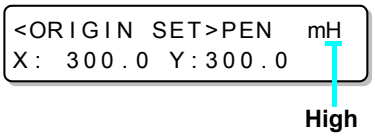
Low speed



Medium speed



High speed



Fixing the Workpiece

Two methods are available to fix a workpiece.

- Fixing the Workpiece by Vacuum Adhesion
- Fixing the Workpiece with Adhesive Tape

Caution

- The following table shows the acceptable workpiece thicknesses (Maximum value).

Workpiece thickness	20 mm

- There are four origin stickers on the table surface. This range is the maximum effective cutting area that can be cut. Fix the work within this range. Outside the origin seal can not be cut mechanically.

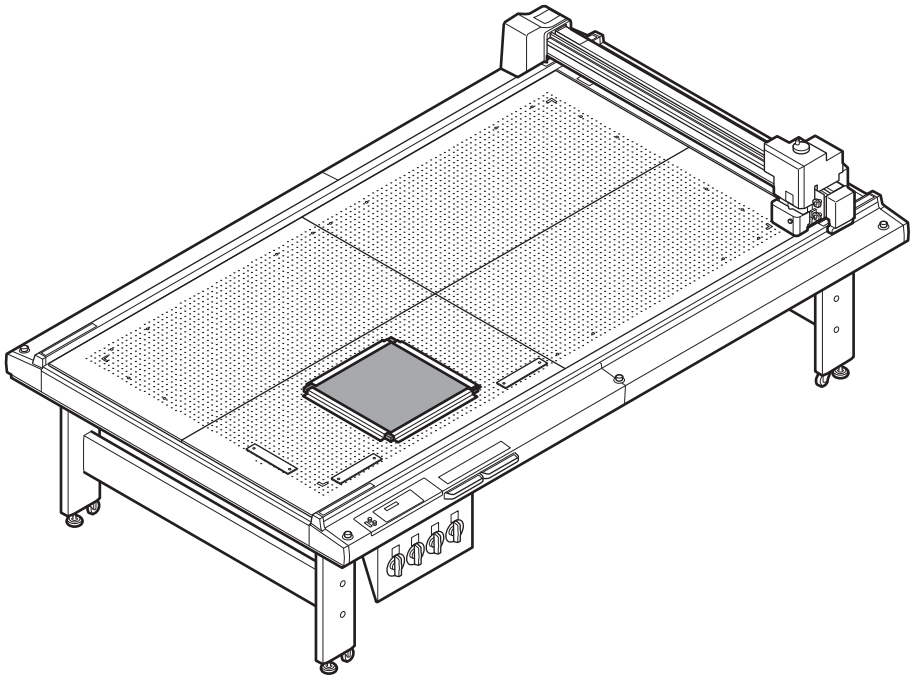
Fixing the Workpiece with Adhesive Tape

During swivel cutter / tial cutter used, and set the work(thin packing, industrial rubber, etc) that can not be properly adsorbed in vacuum. use adhesive tape, and fix the workpiece.

Important!

- Use an adhesive tape that does not leave a residue of glue or tape on the cutting panel.

Fix the four edges of the workpiece with the adhesive tape.



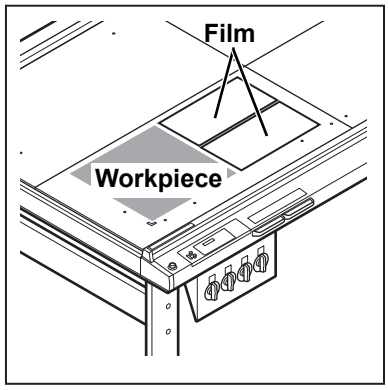
Fixing the Workpiece by Vacuum Adhesion

Relatively thin workpieces, such as thin coated board, corrugated cardboard and sponge, can be fixed by vacuum adhesion.

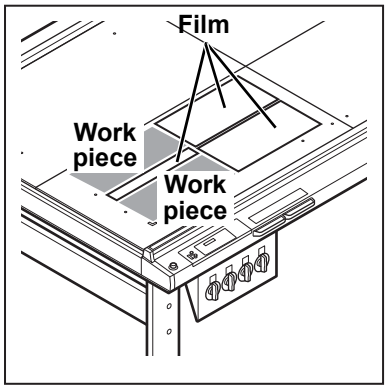
Important!

- If all the suction holes are not covered such as the following cases, use some sort of film to cover all the remaining holes. If some of the air holes are not covered, the adhesion force may be too low to fully fasten the workpiece.

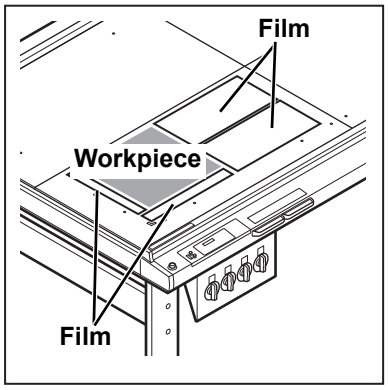
Small workpiece and cannot cover all the suction holes on cut panel



Smaller workpieces are set side by side and the gap cannot be filled



Workpiece is positioned away from the work guide plate

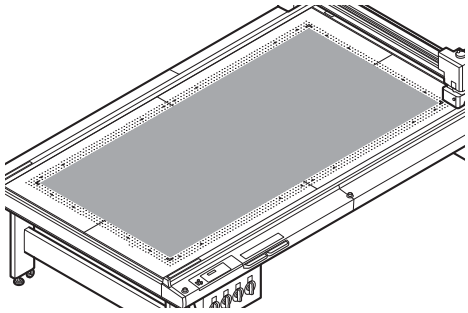


- When cut multiple small data, please block frequently the part that was cut earlier in the following procedure.
  If continue to cut (draw) as it is, air comes in from the cut portion, and the workpiece will not be fixed. In addition, the adsorption sheet of the cut portion is peeled off from the workpiece surface and it may cause inferior in drawing.
  (1) Press the REMOTE key, to suspend cut (draw) temporarily
  (2) Press the jog key ▲ ▼ ◀ ▶ to retract the head
  (3) Cover the adsorption sheet cut in small pieces to the portion cut earlier.
  (4) Press the END key to return to the local mode
  (5) Press the REMOTE key, and then restart the cut (draw)

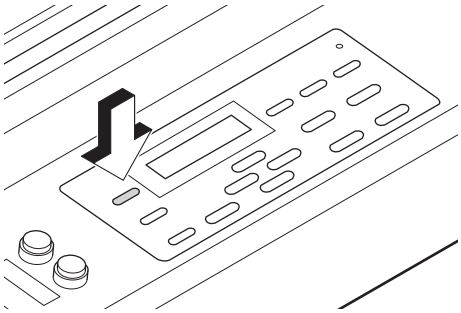
Hint!

- The vacuum can be turned on and off by interlocking with the remote key.(☞ P.1-42)

1 **Put the workpiece on the cutting panel.**

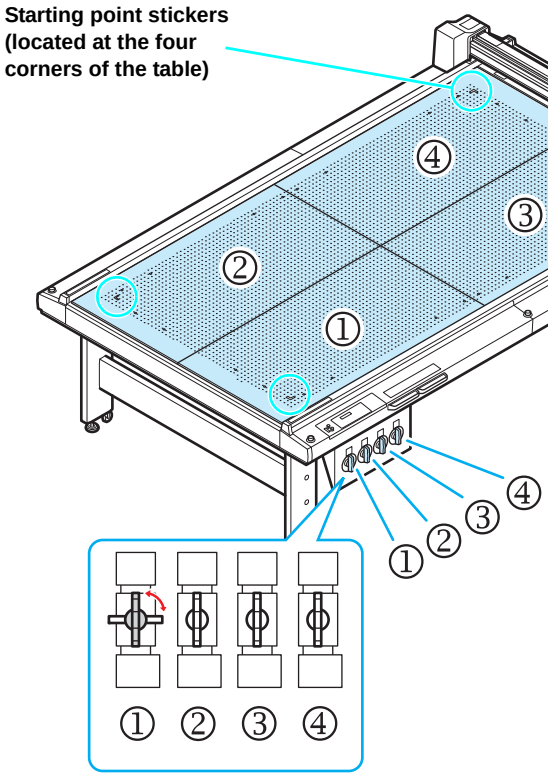


2 **Press** VACUUM **.**



Change the suction valve according to the workpiece.

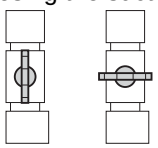
Make sure the cutting area does not extend beyond the available cutting area.



- Set the workpiece according to the starting point stickers (four corners).
- Suction valves

Valve	Table
Open " ① "	Apply suction to area "①"
Open " ② "	Apply suction to area "②"
Open " ③ "	Apply suction to area "③"
Open " ④ "	Apply suction to area "④"

- Opening/closing the suction valves



Selecting Tools

Select the tool condition

Before cutting (plotting), select the tool condition depending on the sheet and the tool type to be used.

1 **Press the TOOL key in LOCAL mode.**

<TOOL SELECT>
A : PEN

2 **Press ▲▼ key and select Unit.**

- Set values: A, B

<TOOL SELECT>
B : REC . CUTTER1

3 **Press ENTER key.**

4 **Press ▲▼ key and select TOOL.**

- The selectable tools differ according to the type of unit.

<TOOL SELECT>
B : REC . CUTTER1

	Unit		
Tool	**A**	**B**	**C**
Pen	Applicable	N/A	N/A
Swivel blade	Applicable	N/A	N/A
Rec. Cutter 1 to 3	N/A	Applicable	N/A
θ Cutter 1 to 6	N/A	Applicable	Applicable
Roller 1, 2	N/A	N/A	Applicable

5 **Press ENTER key.**

- The setting is saved.
- Press END if you do not want to save the setting.

6 **Press ▲▼ key to display the cut conition to set, and press the ENTER key.**

- The displayed items differ according to the tool. (☞ P.2-10)

7 **Press ▲▼ key to set the setting value, and press the ENTER key.**

- The setting is saved.
- Press END if you do not want to save the setting.

8 **To select and set another item, repeat Steps 7 and 8.**

- For details about the settings, see “Set Items”.

9 **When all settings are complete, press END key.**

Set Items

The cutting condition set items differ according to the tool.

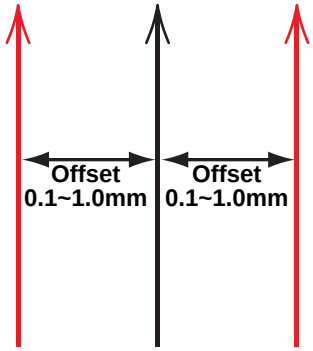
Set Item	Tool Type						Set value	Set value
	A		B		C			
	Swivel cutter	Pen	Reciprocating cutter	θ Cutter	Crease roller	θ Cutter		
CUT SPEED	○	○	○	○	○	○	0.2~55 (cm/s)	Speed of tool movement in the X or Y direction. Changes according to the type of tool and workpiece and the data size.
PRESSURE		○					30 ~ 150 (100 or less: per 5g, 100 ~ 150: step 10g)	Pressure when cutting the workpiece with a press tool.
	○						20 ~ 400 (100 or less: per 5g, 100 ~ 400: step 10g)	
			○ *	○		○	RC/RT:500 ~ 1500 T/TF/TD:300 ~ 1500 (500 ~: step 100g) * Fixed 1500g in setting VIBRATION	
					○	○	1000 ~ 5000 (step 100g)	
OFFSET	○						0.0 0~ 2.50 (step 0.05mm)	This is the offset value for the tip of the swivel blade cutter. Change the setting according to the workpiece thickness and wear of the cutter blade.
VIBRATION			○				OFF 1000~ 7000rpm (RC) 1000~ 5000rpm (RT)	Vibration speed (rpm) of the reciprocating tool.
RING DIST.			○	○	○	○	0.0 0~ 2.50 (step 0.01mm)	Sets the rounding radius (R) and adds a line segment between segments for a consecutive series of line segments. This reduces the degree of damage to the workpiece by the tool.
START CORR.			○	○		○	0.0 0~ 2.50 (step 0.01mm)	Offset for cutting start position when the tool descends. When cutting a thick workpiece, setting this offset to a large value cuts from the front of the workpiece to simplify separation.Adjust this setting while checking the finish.
END CORR.			○	○		○	0.0 0~ 2.50 (step 0.01mm)	Offset for cutting end position when the tool ascends. When cutting a thick workpiece, setting this offset to a large value makes an extra cut from the end position that simplifies.Adjust this setting while checking the finish.
UP ANGLE			○	○	○	○	0 ~ 180 (step 1 °)	Sets the minimum angle to raise the cutter and change the direction, when changing the cutting (crease) direction. This reduces the degree of damage to the workpiece by the tool. Depending on the error when converting to control unit, it may not operate with the set value.
PRESS CORR.			○	○	○	○	0 ~ 500 (step 100g)	Corrects the tool downwards pressure when cutting (crease cutting) a thick workpiece. Applying the PRESS COR value to the previously set press value

Set Item	Tool Type						Set value	Set value
	A		B		C			
	Swivel cutter	Pen	Reciprocating cutter	θ Cutter	Crease roller	θ Cutter		
Y PRESS					○		-1500 ~ +1500 (step 100g)	Corrects the press value in the Y-axis direction to allow crease cutting with a different pressure to the X-axis direction. When crease cutting corrugated cardboard, position the corrugated cardboard with the flutes in the Y direction to cut with a lighter pressure than in the X direction.
W ROLLER					○		OFF, 0.1 ~ 1.0mm	Centering the original data, drawing two ruled lines offsetting the setting value.
R5 SPEED		○					OFF, 1~2 (cm/s)	Speed for cutting an arc with a radius less than 5 mm. If OFF, the previously set speed is used for cutting.
			○	○		○	OFF, 0.5 (㎜ /s) ~ 2.0 (cm/s)	
R10 SPEED		○					OFF, 1~5 (cm/s)	Speed for cutting an arc of the radius between 5mm but less than 10mm. If OFF, the previously set speed is used for cutting.
			○	○		○	OFF, 0.5 (㎜ /s) ~ 2.0 (cm/s)	
R15 SPEED		○					OFF, 1~10 (cm/s)	Speed for cutting an arc of the radius between 10mm but less than 15mm. If OFF, the previously set speed is used for cutting.
			○	○		○	OFF, 0.5 (㎜ /s) ~ 2.0 (cm/s)	
R20 SPEED		○					OFF, 1~15 (cm/s)	Speed for drawing an arc with a radius at least 15 mm but less than 20 mm. If OFF, the previously set speed is used for drawing.
R30 SPEED		○					OFF, 1~20 (cm/s)	Speed for drawing an arc with a radius at least 20 mm but less than 30 mm. If OFF, the previously set speed is used for drawing.
R40 SPEED		○					OFF, 1~25 (cm/s)	Speed for drawing an arc with a radius at least 30 mm but less than 40 mm. If OFF, the previously set speed is used for drawing.
R50 SPEED		○					OFF, 1~30 (cm/s)	Speed for drawing an arc with a radius at least 40 mm but less than 50 mm. If OFF, the previously set speed is used for drawing.
R100 SPEED		○					OFF, 1~30 (cm/s)	Speed for drawing an arc with a radius at least 50 mm but less than 100 mm. If OFF, the previously set speed is used for drawing.

- When "SORTING" is enabled, the machine cannot recognize any arc. Therefore, the "R**SPEED" settings that specify the speed for cutting an arc are not reflected.
  Consequently, to select any "R** SPEED" setting, you must disable the"SORTING" setting.

The Setting of The W ROLLER

Center the normal ruled line and draw 2 ruled lines to the offset position.



: Normal ruled

: Draw 2 ruled lines when W ROLLER is “ON”

Important!

- Does not draw the normal ruled line.

1 **Press the TOOL key in LOCAL mode.**

<TOOL SELECT>
A:PEN

2 **Press ▲▼ key and select C Unit.**

- Set values: A, B, C

<TOOL SELECT>
C:ROLLER1

3 **Press ENTER key.**

4 **Press ▲▼ key and select Roller 1 to 3.**

<TOOL SELECT>
C:ROLLER1

5 **Press ENTER key.**

6 **Press ▲▼ key to display the [W ROLLER], and press the ENTER key.**

<CUT CONDITION>
W-ROLLER :OFF

7 **Press ▲▼ key to set the setting value, and press the ENTER key.**

<CUT CONDITION>
W-ROLLER :0.5mm

- When "OFF" is selected as the set value, the W ROLLER function is not used.
- Set values: OFF, 0.1 ~ 1.0mm

Hint!

- If you set the W ROLLER to anything other than off, (w) is displayed after the tool name.

<LOCAL>
C:ROLLOR1(W)

8 **Press the END key to finish the setting.**

Making a Test Cut

After changing the cutting conditions or tool, make a test cut to check the items listed below. For details, see "Checking the Tool Status" (☞ P.2-14).

No.	Check Item	Check Point
(1)	Are the cutting (drawing) conditions suitable?	Work is correcly cut or drawing is not smudged.
(2)	Is tool mounted eccentrically?	An eccentric tool can cause displacement in the cutting or drawing.
(3)	Do tools match?	When a tial cutter cuts over a drawing, do the drawn and cut patterns match?

1 **Press the TEST key in LOCAL.**

```
<TEST CUT>
ENTER KEY to START
```

2 **Press the ENTER key.**

- Test cutting starts.

```
<TEST CUT>
A:PEN          **/**
```

- When the cutting has been completed, the screen returns to LOCAL.

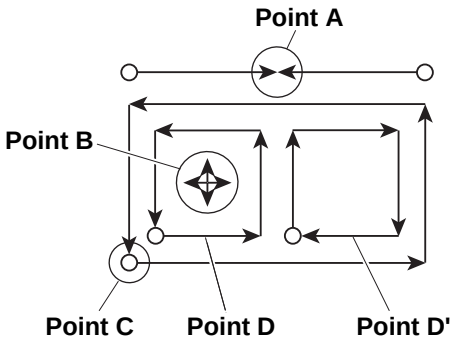
```
<LOCAL>
A:SWIVEL
```

3 **Check the cutted test pattern.**

- When the result is normal, end the operation.

Checking the Tool Status

Make a test cut using the tool selected by the Tool Select function. This section describes the check items for each tool.



Pen

Check Point	Cause	Remedy	See page
Point A contact points do not match	Pen incorrectly mounted.	Fully tighten the holder screw.	P.1-16
Lines broken or faint	Out of ink	Replace the pen with a new one.	P.1-16
	Press value low	Increase the “PRESSURE” in the cutting conditions.	P.2-10
	Speed is too high, causing the pen to lift.	Decrease the “SPEED” in the cutting conditions.	P.2-11

Reciprocating Cutter / θ Cutter

Check Point	Cause	Remedy	See page
Point B is not in the cross	Blade of the cutter is eccentric.	Please perform the pattern B of "Adjusting Eccentricity".	P.6-5
Point A contact points do not match	“END CORR.” value too low in cutting conditions.	Increase the “END CORR.”.	P.2-10
	Blade is mounted eccentrically	Conduct Adjust Eccentricity in tool adjustments.	P.6-4
Lines displaced at Point A	Abnormal angle θ of tial cutter	Conduct Adjust θ in tool adjustments.	P.6-9
Cutting incomplete	Press value low	Increase the “PRESSURE” in the cutting conditions.	P.2-10
Cutting incomplete at corners	The “START CORR.” and “END CORR.” values in the cutting conditions are too low.	Increase the “START CORR.” and “END CORR.”.	P.2-10
D and D' have different dimensions	Blade is mounted eccentrically	Conduct Adjust Eccentricity in tool adjustments.	P.6-4
Too many cuts at Point C	“F OFFSET” or “END CORR.” value is too large.	Decrease the “END CORR.” or “END CORR.” in the cutting conditions.	P.2-10
	Blade is mounted eccentrically	Please do the pattern A of “Adjust Eccentricity” of tool adjustment. Even the adjustment value is the same, the cut amount is different by the cutter blade to be used. Please adjust to suit the purpose.	P.6-4

Crease Roller

Check Point	Cause	Remedy	See page
Point A contact points do not match	Blade is mounted eccentrically	Conduct Adjust Eccentricity in tool adjustments.	P.6-4
Lines displaced at Point A	Abnormal angle θ of crease roller	Conduct Adjust θ in tool adjustments.	P.6-9
Crease is weak	Press value low	Increase the “PRESSURE” in the cutting conditions.	P.2-10
Crease lines torn along flutes of corrugate cardboard.	Y PRESS value in the cutting conditions is too high.	Align the corrugated cardboard flutes in the Y-axis direction.	
		Decrease the “Y PRESS” in the cutting conditions.	P.2-11

Swivel Blade

Check Point	Cause	Remedy	See page
Broken lines	Swivel cutter incorrectly mounted.	Fully tighten the holder screw.	P.1-14
	Speed is too slow.	Increase the “SPEED” in the cutting conditions.	P.2-11
	Press value low	Increase the “PRESSURE” in the cutting conditions.	P.2-10
Corners rounded off	The blade does not protrude enough.	Increase the amount that the blade protrudes.	
	Offset value is too small.	Increase the “OFFSET” in the cutting conditions.	P.2-10

Checking the Status Between Tools

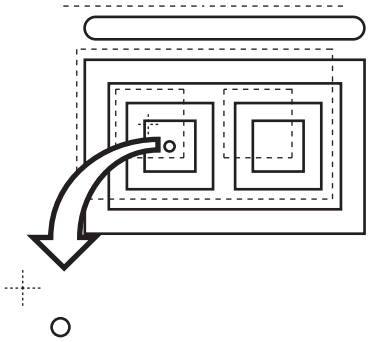
Make a test cut to check the status between the tools (pen and tial cutter or pen and crease roller).

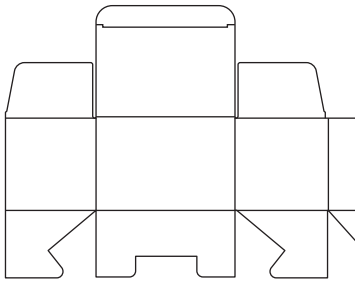
Check Method

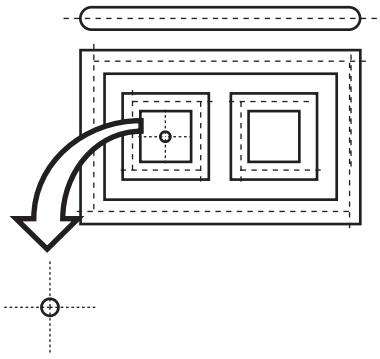
Draw the pattern with the pen. Then make a test cut at the same position using the tial cutter or crease roller to check the status between tools.
Appropriate remedies are described below for ten types of sample.

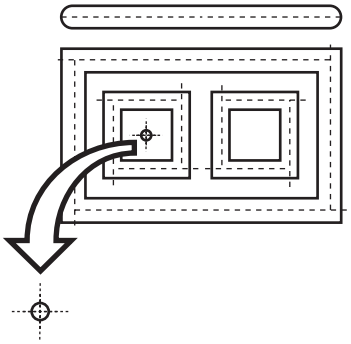
Hint!

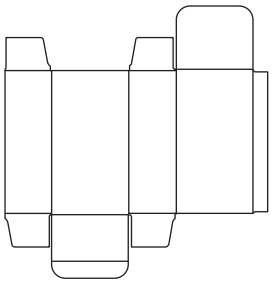
- Some samples require the adjustment of one item, while others require the adjustment of multiple items. Refer to the sample to identify the items requiring adjustment.
- The description below refers to the pen and tial cutter. For the crease roller, read "tial cutter" as "crease roller."

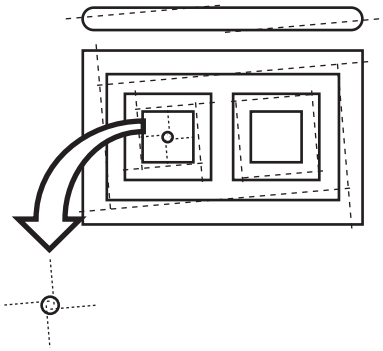
Sample A 	**Overview** The tial cutter is displaced with respect to the center of the pen, regardless of the direction of movement.
	Remedy Adjust the Offset in Adjust Cutter in tool adjustments. (☞ P.6-3)

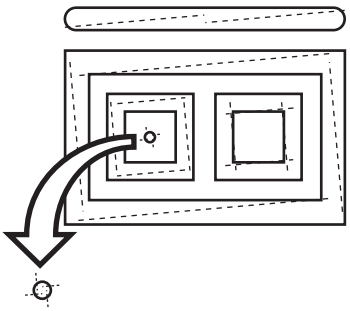
Sample B 	**Overview** The cut is rotated clockwise or counterclockwise.
	Remedy Conduct Adjust θ in Adjust Cutter in tool adjustments. (☞ P.6-3)

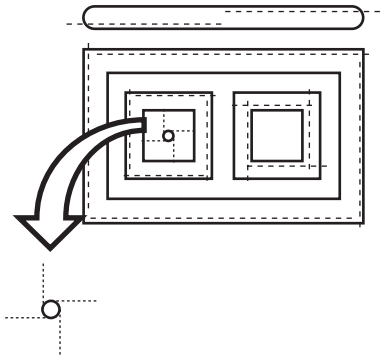
Sample C 	**Overview** Cutting start point is too far forward or backward.
	Remedy1 Adjust the START CORR. value in the cutting conditions. (☞ P.2-10)
	Remedy2 Adjust Pattern A in Adjust Eccentricity in Adjust Cutter in tool adjustments. (☞ P.6-3)

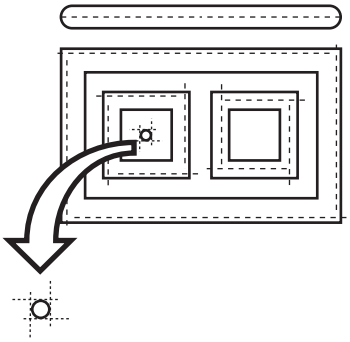
Sample D 	**Overview** Cutting end point is too long or too short.
	Remedy1 Adjust the END CORR. value in the cutting conditions. (☞ P.2-10)
	Remedy2 Adjust Pattern A for Adjust Eccentricity in Adjust Cutter in tool adjustments. (☞ P.6-3)

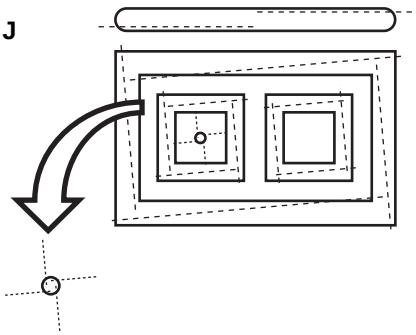
Sample E 	**Overview** The tial cutter is displaced to the right of the direction of movement.
	Remedy Adjust Pattern B for Adjust Eccentricity in Adjust Cutter in tool adjustments. (☞ P.6-3)

Sample F 	**Overview** The cut is rotated clockwise or counterclockwise, and the cutting start point is too far forward or backward.
	Remedy See the remedies described for Sample B and Sample C.

Sample G 	**Overview** The cut is rotated clockwise or counterclockwise, and the tial cutter is displaced to the right or left.
	Remedy See the remedies described for Sample B and Sample E.

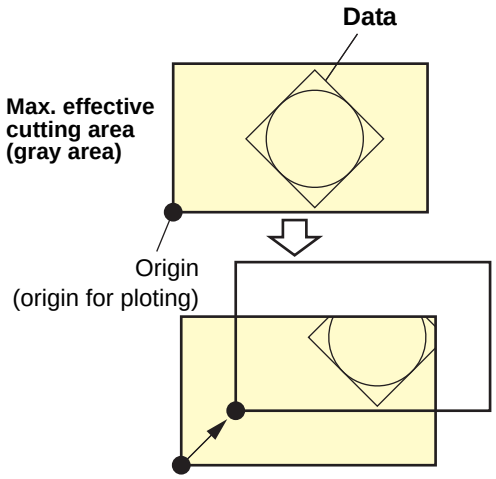
Sample H 	**Overview** The cutting start point is too far forward or backward, and the tial cutter is displaced to the right or left. **Remedy** See the remedies described for Sample C and Sample E.

Sample I 	**Overview** The cutting end point is too long or too short, and the tial cutter is displaced to the right or left. **Remedy** See the remedies described for Sample D and Sample E.

Sample J 	**Overview** The cut is rotated clockwise or counterclockwise, the cutting end point is too long or too short, and the tial cutter is displaced to the right or left. **Remedy** See the remedies described for Sample B, Sample D, and Sample E.

Setting the Drawing Origin

The origin is the reference point for drawing, cutting, and grid cutting. (It is normally set at the lower-left corner of the maximum effective cutting area.)
The drawing position moves as the origin is moved.



Hint!

- The origin is set as coordinate position (0, 0). When the head is moved by pressing the jog keys, the screen displays the coordinates with respect to the origin.
- The Sample Cut function cuts (draws, grid cuts) the data next to the origin.

1 **Press the REMOTE key to set to the local mode.**

- Confirm in advance that if you press the REMOTE key to enter the remote mode, the plotter does not perform cutting (plotting).

```
<LOCAL>
A:PEN
```

2 **Press the jog key ▲, ▼, ◀ or ▶ to enter the jog mode.**

- Press either one of the jog keys, and you can enter the jog mode.

```
<ORIGIN SET>PEN mA
X:     0.0 Y:     0.0
```

3 **Press ▲ ▼ ◀ ▶ to move to the position where you want to set the starting point.**

4 **Press the ENTER key to decide the origin.**

- After displaying the effective cutting for while, the plotter returns to the local mode.

```
<ORIGIN SET>PEN mA
X: 300.0 Y: 300.0
```

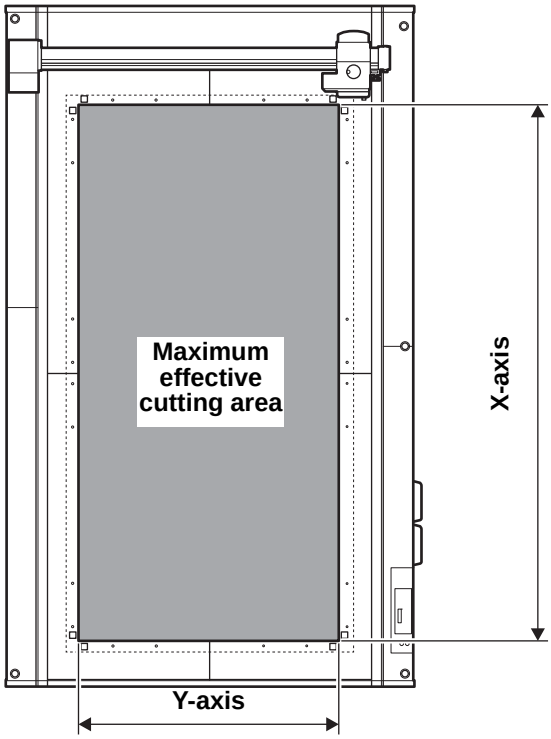
▼

```
<LOCAL>
A:PEN
```

Effective Cutting Area

The table below shows the maximum effective cutting area.

Model Name	X-axis (mm)	Y-axis (mm)
CF22-1225	2500	1220



Cutting (Drawing)

1 **Set the origin and press REMOTE.**

- The remote mode is selected.

2 **Download data from the host computer.**

- Cutting starts automatically after the data is received.
- When cutting is complete, the display appears as shown to the right.

<REMOTE> ****KB
B : REC . CUTTER1

Interrupting Processing

Follow the procedure below to interrupt data processing during drawing, cutting, or grid cutting in remote status for any reason.

1 **Press REMOTE during unit operation.**

Restarting Processing

1 **Press REMOTE.**

- The unit enters remote status and processing restarts.

Functions that Can Be Set After Interrupting Processing

● Clear the data remaining in the receive buffer

☞ P.2-22 "Interrupting Processing (Data Clear)"

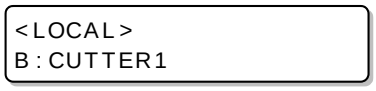
Interrupting Processing (Data Clear)

In the following cases, clear the received data from the receive buffer.

(1) To clear an interrupted cutting (drawing) file from the receive buffer, without restarting processing.
(2) To clear received but unprocessed data from the receive buffer.
(3) To clear data remaining in the receive buffer before receiving data from running the SINGLE COPY function.
(4) To cut using a PC that is different from the PC that sent the cutting data the previous time.

1 **Set local status.**

- If the unit is in remote status, press REMOTE to set local status.
- Press REMOTE during data processing to interrupt the processing.



2 **Press DATA CLEAR.**

3 **Press ENTER.**

- The data is cleared.
- Press END to cancel the data clear. Return to Step 1.

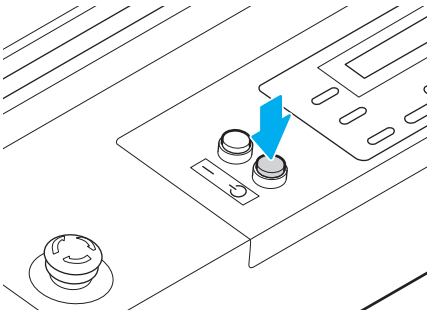
Turning the Power OFF

Before turning OFF the power, confirm that no data is being received and no un-output data remains.

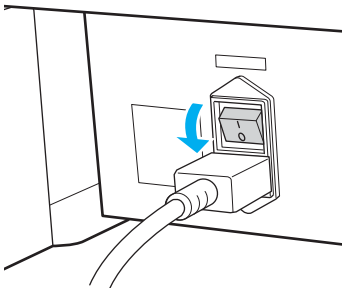
1 **Turn off the connected PC.**

2 **Press the power switch to turn the power OFF.**

- Push the power switch located on the operation panel.
- Power lamp goes off and power turns off.



3 **Set the power switch on the right side of the electrical box to the "O" position.**



Checking Uncut Data

To cut the data	**(1)** Press (REMOTE) to select remote status. **(2)** Received data volume is displayed and cutting (drawing) starts.
To delete the data	**(1)** Press (REMOTE) to select local status. **(2)** Clear the data. (☞ P.2-22)

Chapter 3
Useful Function

This Section....

... describes the basic operations, such as mounting tools and workpieces.

List of SET UP Functions

This section describes the overview of each function to be set and set values that can be registered in user types.

Function setting list

Function name			Set value		Default	Outline
PLOT SETTING	PEN ASSIGN (☞P.3-8)	PEN No.: 1~6	Unit: A	PEN, SWIVEL	Pen No. assigned default value (☞P.3-9)	This section describes how to assign pen numbers in the data to tools on the unit.
			Unit: B	REC.CUTTER 1~3, θCUTTER 1~6, ROLLER1 ~2		
	AFTER PLOT	AUTO VIEW (☞P.1-40)	OFF, KOW-LEFT, LOW-RIGHT, UP-LEFT, UP-RIGHT		OFF	Set the operation after the plot end.
		VACUUM (☞P.1-41)	N/C, AUTO OFF		N/C	
		AUTO DATACLEAR (☞P.2-22)	ON, OFF		ON	
	BEFORE PLOT	VACUUM ON (☞P.1-42)	N/C, REMOTE ON		N/C	The vacuum can be turned on and off by interlocking with the remote key.
	CLOSE TIME(☞P.3-19)		3~30sec		3 sec	set the time to determine the end of the plotting data.
	ORIGIN(☞P.1-38)		LOW-LEFT, CENTER		LOW-LEFT	Sets the position of command origin.
	Z STROKE(☞P.3-15)		4~10mm, FULLUP		7mm	Set the height that the tool of C unit rises.
	SORTING(☞P.3-14)		ON, OFF		OFF	This setting changes the cutting orderand performs cutting.
	CUT MODE(☞P.3-20)		NORMAL		NORMAL	This is to set the cutting quality.
			SHARP			
			FAST			
	UP SPEED(☞P.3-21)		AUTO, 5, 10, 20, 30, 40, 50, 55 cm/s		AUTO	Set the speed in which the head is moved when the tool is lifted.
	DUMMY CUT(☞P.3-17)		ON, OFF		ON	The blade edge of swivel cutter is made to turn to a specific direction before starting cutting, which allows dummy cutting.
	OVER CUT(☞P.3-22)		OFF, 0.1 ~ 1.0mm		OFF	Make the media without uncut area.
	ADJ-PRSOFFSET (☞P.3-21)		-9~+9		0	This is used to expand the value in such a case as when the beginning and end part of the cut are left cut.
MARK DETECT(☞P.4-8)						Set when cut the data with a register mark.
COMMAND SETTING	COMMAND(☞P.3-26)		MGL-IIc3		MGL-IIc3	
	PRIORITY (☞P.3-26)	SP, VS, AS, FS, ZF, ZA, ZO	HOST, PANEL		HOST	When this plotter and the host computer make different settings on a same item, this function is used to set about which of the two must be given priority to.
	OH UNIT (☞P.3-27)		INITVAL, SETVAL		SETVAL	Sets which value to return to the software when the unit receives the effective area coordinate output command from the software.
	GDP UNIT(☞P.3-28)		0.025mm, 0.010mm		0.025mm	This setting aligns the resolution of the unit with the resolution of the software used.
BUZZER(☞P.3-23)			ON, OFF		ON	With this you can control the key-pressing sound.

Function name			Set value		Default	Outline
START MODE(☞P.3-24)			LOCAL, REMOTE		LOCAL	Set the mode after the power is turned on.
MM/INCH(☞P.3-16)			mm, inch		mm	This is to select the unit with which you want to display the length.
JOG SETTING(☞P.3-25)			JOG STEP	0.1mm, 1.0mm (1/16, 1/256 inch)	0.1mm (1/254inch)	This is to set the moving amount of head via the jog key.
INTERFACE	RS-232C (☞P.3-29)	BAUD RATE	1200~38400bps		38400	
		DATA BITS	7, 8 bit		8bit	
		PARITY	NON, EVEM, ODD		NON	
		STOP BITS	1, 2		1	
		HANDSHAKE	HARD, ENQACK, X-PRM, SOFT		HARD	
	NETWORK (☞P.3-31)	IP Address	————		————	The IP address currently used by this machine is displayed.
		MAC Address	————		————	The MAC address currently used by this machine is displayed.
		DHCP	ON		ON	When it is ON, the IP address given by the DHCP server is used.
			OFF			
		AutoIP	ON		ON	When it is ON, the IP address is determined by the AutoIP protocol. However, DHCP is ON, DHCP has priority.
			OFF			
		IP Address *1	————		————	Set the IP address used by this machine.
		Def.Gateway *2	————		————	Set the default gateway used by this machine.
		DNS Address *2	————		————	Set the DNS server address used by this machine.
		SubNetMask *2	————		————	Set the digit number of the subnet mask used by this machine.
	EVENT MAIL (☞P.3-33)	Delivery	ON		OFF	When the set event occurs, the function to send the e-mail becomes ON.
			OFF			When the set event occurs, the function to send the e-mail becomes OFF.
		EVENT	Plot Start Event	ON	OFF	Set whether you send/ do not send the e-mail at the start of plotting.
				OFF		
			Plot End Event	ON	OFF	Set whether you send/ do not send the e-mail at the end of plotting.
				OFF		
			Error Event	ON	OFF	Set whether you send/ do not send the e-mail when an error occurs.
				OFF		
			Warning Event	ON	OFF	Set whether you send/ do not send the e-mail when a warning occurs.
				OFF		
		Mail Addr.	Alphanumeric characters and symbols (within 96characters)		————	Set the e-mail address towhich you send the event mail.
		Subject	Alphanumeric characters and symbols (within 8characters)		————	Set the characters to write inthe subject of the event mail.

*1. Settable when both of DHCP and AutoIP are [OFF]

*2. Settable only when Auth. is not OFF

Function name			Set value		Default	Outline
INTERFACE	EVENT MAIL (☞P.3-33)	SERVER	SMTP Addr.		————	Set the SMTP server.
			SMTP Port		25	Set the SMTP port number.
			SENDER Addr.		————	Set the e-mail address to be used as the sender mail address.
			Auth.	POP before SMTP	POP before SMTP	Set the SMTP server authentication method.
				SMTP Auth		
				OFF		
			User Name *1		————	Set the user name used for the authentication.
			Pass Word *1		————	Set the password used for the authentication.
			POP3 Addr. *2		————	Set the POP server.
			APOP *2		OFF	Set ON/ OFF of APOP.
		TEST	————		————	Send the test e-mail.
SETTING COPY(☞P.3-42)			————		————	Copy the set value to other user setting.
SETUP RESET(☞P.3-43)			————		————	Reset the setting values to the initial state.

*1. Settable only when Auth. is not OFF
*2. Settable only when Auth. is POP before SMTP

Functions in the Jog Mode

Press the jog key ▲ , ▼ , ◀ or ▶ in the local mode, and then you can enter the jog mode, where you can perform the following settings.

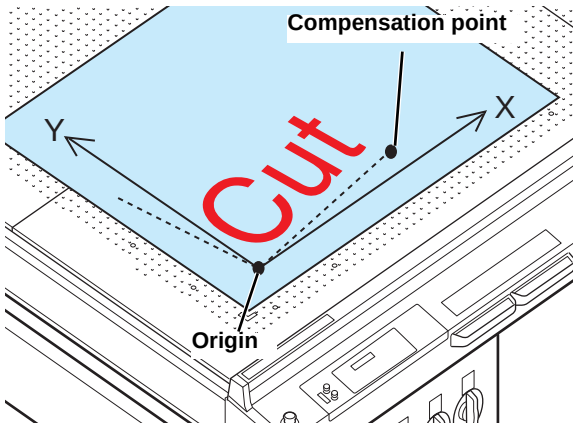
Function names	Contents	Reference page
Setting the origin	Set the point from which the plotter will start cutting (plotting).	P.2-19
Two-point axis alignment	If a ruled sheet is set, align the horizontal and vertical axes with the appropriate lines on the sheet.	P.3-5
Cutting area	Set the area in which the plotter performs cutting (plotting).	P.3-6
Tool up/down	Raise/Lower the tool. (Press the TOOL key while in jog mode) When lowering the tool, the head moves at the cutting speed set by cutting conditions.	-
Change Jog Speed	Changes the jog speed (press the FUNCTION key while in jog mode) each time you press the FUNCTION key. Auto (A) → Low speed (L) → Medium speed (M) → High speed (H)	-

Important!

- Before you set the function in the jog mode, be sure to confirm that there is no cutting (plotting) data.
- When specifying the start position and so on in jog mode, the center of the selected tool is set to the specified position. The currently selected tool is displayed on the first line of the LCD display.

Two-point axis alignment

If a ruled sheet is set, align the horizontal and vertical axes with the appropriate lines on the sheet.
Correct the axial inclination (θ) by setting a compensation point in combination with the origin.



1 **Press the REMOTE key to set to the local mode.**

- Confirm in advance that even if you press the REMOTE key to enter the remote mode, the plotter does not perform cutting (plotting).

```
<LOCAL>
A:PEN
```

2 **Set the Origin by pressing the jog key ▲ , ▼ , ◀ or ▶ to and press the ENTER key.**

3 **Press the jog key ▲ , ▼ , ◀ or ▲ to enter the jog mode.**

- Press either one of the jog keys, and you can enter the jog mode.

```
<ORIGIN SET>PEN mA
X:    0.0 Y:    0.0
```

4 **Press the VIEW key.**

```
<AXISS COR>      mA
X:+0000.0 Y:+0000.0
```

5 **Press the jog key ▲ , ▼ , ◀ or ▲ to set the compensation point.**

- θ= -45 degrees to 45 degrees

6 **Press the ENTER key to decide the origin.**

- The display is as shown on the right briefly, after which the plotter returns to the local mode.

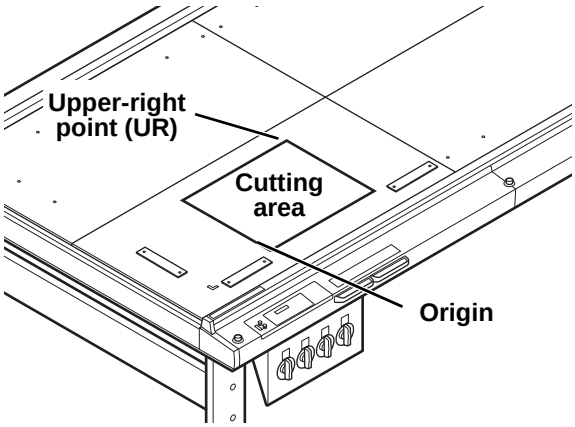
```
*AXISS CORRECT*
  th= 10.0°
```

⇩

```
<LOCAL>
A:PEN
```

Cutting area

Set the area in which the plotter performs cutting (plotting). The area that has a diagonal line extending from the origin to a given UR (upper right) point is the available cutting area.
The cutting area setting will be cleared by turning the power off.



1 **Press the REMOTE key to set to the local mode.**

- Confirm in advance that even if you press the REMOTE key to enter the remote mode, the plotter does not perform cutting (plotting).

```
<LOCAL>
A:PEN
```

2 **Press the jog key ▲ , ▼ , ◀ or ▲ to enter the jog mode.**

- Press either one of the jog keys, and you can enter the jog mode.

```
<ORIGIN SET>PEN mA
X:    0.0 Y:    0.0
```

3 **Press the AREA key.**

```
<CUT AREA>       mA
X:+0000.0 Y:+0000.0
```

4 **Press the jog key ▲ , ▼ , ◀ or ▲ to set the point UR.**

5 **Press the ENTER key to decide the point UR.**

- The display is as shown on the right briefly, after which the plotter returns to the local mode.

```
*CUT AREA*
X: 300.0 Y: 300.0
```

⇩

```
<LOCAL>
A:PEN
```

Important!

- Be sure to set the upper right point in the area located in the normal direction from the origin.
- Be sure to set the origin in the cutting area. If the origin is located outside the cutting area, the plotter will go into an error state.

Digitization operation

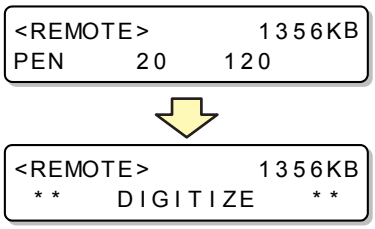
The coordinates of the plotted figure relative to the origin are displayed on the host computer.
Upon receiving the digitization command (DP;) from the host computer, the plotter is ready for digitization operation.
To conduct digitization, install a sheet with patterns to select points on it.

Hint!

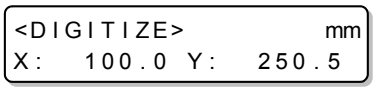
- The digitization operation is available only with an application software that incorporates a digitization function. Refer to the instruction manual for the application software for how to use the digitization function.

1 Set the plotter in the remote mode and make it receive the digitization command from the host computer.

- The display will change as shown at right.



2 Move the pen with a jog key ▲ ▼ ◀ or ▲ until the pen tip reaches a given point of the pattern.



- The coordinates relative to the origin will be displayed.
- If you set the step to a smaller value using the jog step function, you may select a desired point with increased accuracy. (☞ P.3-25)

3 Press the ENTER key.

- The plotter records the point of the pen head.
- The plotter receives the coordinate output command (OD;) from the host computer.

Assigning Pen Numbers

This section describes how to assign pen numbers in the data to tools on the unit.
For this unit, up to six pens can be assigned to each tool.

This example describes how to make the following settings.

Pen 1 (pen number in drawing data) : Set to PEN.
Pen 2 (pen number in cutting data) : Set to REC.CUTTER1.

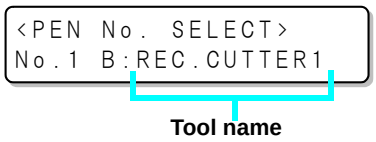
The following settings allow simultaneous drawing and cutting of Pen 1 and Pen 2 data.

1 **Select [PLOT SETTING] of the set up menu.**

(1) Press the FUNCTION key in LOCAL.
(2) Press ▲ ▼ to select [SET UP] and press the ENTER key.
(3) Press ▲ ▼ to select [PLOT SETTING].
(4) Press the ENTER key.

2 **Press the jog key ▲ or ▼ to select [PEN ASSIGN], and ress the ENTER key.**

- Tool name displays the current settings.



3 **Press the jog key ▲ or ▼ and select the pen number to be set.**

- Here select pen number "1".
- Set values: 1 to 6

4 **Press the ENTER key.**

5 **Press the jog key ▲ or ▼ to select unit.**

- Here choose the unit "A".
- Set values: A, B, C

6 **Press the ENTER key.**

7 **Press the jog key ▲ or ▼ to select tool.**

- The set values differ according to the mounted tools.
- Here choose the tool "PEN".
- Unit A: PEN, SWIVEL
- Unit B: REC.CUTTER 1 to 2, θCUTTER1 to 6
- Unit C: ROLLER 1 to 2, θCUTTER1 to 3

8 **Press the ENTER key.**

9 **Press the jog key ▲ or ▼ and select the pen number to be set.**

- Here select the pen number "2".
- Set values: 1 to 6

10 **Press the ENTER key.**

11 **Press the jog key ▲ or ▼ to select unit.**

- Here choose the unit "B".
- Set values: A, B, C

```
<PEN ASSIGN>
No.2 B:θCUTTER
```

12 **Press the ENTER key.**

13 **Press the jog key ▲ or ▼ to select tool.**

- The set values differ according to the mounted tools.
- Here choose the tool "REC.CUTTER1".
- Unit A: PEN, SWIVEL
- Unit B: REC.CUTTER 1 to 3, θCUTTER 1 to 6
- Unit C: Roller 1 to 2, θCUTTER 1 to 3

```
<PEN ASSIGN>
No.2 B:REC.CUTTER1
```

14 **Press the ENTER key.**

- If set the other pen number, repeat the operation from step 5 to 10.

15 **Press the END key twice for terminating this function.**

Hint!

- The initial value of each pen number is as follows.

Cutter		T model	TF model	TD model	RT model	RC model
No.1	Head	B	B	B	B	B
	Tool	Tangential cutter 1	Tangential cutter 1	Tangential cutter 1	Reciprocating 1*2	Reciprocating 1*2
No.2	Head	B	C	C	C	C
	Tool	Tangential cutter 2	Tangential cutter 1*1	Roller 1	Tangential cutter 1	Roller 1
No.3	Head	B	B	B	B	B
	Tool	Tangential cutter 3	Tangential cutter 2	Tangential cutter 2	Reciprocating 2*2	Reciprocating 2*2
No.4	Head	B	C	C	C	C
	Tool	Tangential cutter 4	Tangential cutter 2*1	Roller 2	Tangential cutter 2	Roller 2
No.5	Head	A	A	A	A	A
	Tool	Swivel Blade	Swivel Blade	Swivel Blade	Swivel Blade	Swivel Blade
No.6	Head	A	A	A	A	A
	Tool	Pen	Pen	Pen	Pen	Pen

*1. A high-pressure, single-edged cutter.
*2. The electric reciprocating cutter can be operated as a low-pressure blade cutter by turning off the vibration.

- The tools that can be selected with FineCut are as follows.
  If you specify an unavailable tool, it displays an error and enters the local mode.

FineCut setting	T model	TF model	TD model	RT model	RC model
Pen	○	○	○	○	○
Swivel	○	○	○	○	○
Cutter (Low pressure tangential cutter)	○	○	○	○	—
R cutter (High pressure tangential cutter)	—	○	△	—	△
Reciprocating cutter	—	—	—	○	○
Roller	—	△	○	—	○

△ : The initial value of the pen number is a tool not assigned.

- When specifying a tool, check in order starting with pen number 1 and cut with the matching tool. Be careful that the pen number 1 is forcibly changed unless the selected tool is assigned to a pen number, as in the case of selecting a tool not allocated as an initial value or changing pen number allocation.

Cutting the Same Data Again (Copy)

Previously cut data can be cut again in offline status.
This eliminates the need to send the same data many times from the PC.

Caution

- Use DATA CLEAR to clear (☞ P.2-22) the receive buffer before receiving the data to be copied. If the data is not cleared, the other data in the receive buffer will be copied.

1 **Clear the data (☞ P.2-22).**

- Clear the data immediately before receiving the data to copy.

2 **Cut the data to copy (☞ P.2-20).**

3 **Press REMOTE to select local status.**

```
<COCAL>
B:REC.CUTTER1
```

4 **Press a jog key ▲ ▼ ◀ ▶ to move the origin (☞ P.2-19).**

- Reset the origin to the position to be copied. Failure to reset the origin results in cutting at the same position.

5 **Press COPY key.**

```
<COPY>
COPY                    [ENT]
```

6 **Press ENTER key to copy the data.**

- Press END to cancel the copy.
- When copying is complete, the display reverts to the remote status.
  Head withdrawal follows the setting of [AFTER PLOT] - [AUTO VIEW]. (☞ P.1-40)
- To cut once more, repeat the procedure from Step 4.

```
<COPY>          ****KB
B:REC.CUTTER1
```

Setting Multi-pass Cutting

While changing the press value, can cut the same data up to 9 times for each tool.
This is an effective means of cutting a workpiece that cannot be cut in one pass.

Important!

- Set the cut start time (Close time ☞ P.3-19) that sets the delimiter between data. Multi-pass cutting starts if the next data is not received within the set time.
- The first pressure is the set pressure value within the cut condition.

Set Item	Set value	Description
PASS	OFF, 2 to 9	Set the number of copies you want to cut.
2nd PRESS	20 g to 5000g*1	Sets the press value for the second cut.
3rd PRESS		Sets the press value for the third cut.
4th PRESS		Sets the press value for the fourth cut.
5th PRESS		Sets the press value for the fifth cut.
6th PRESS		Sets the press value for the sixth cut.
7th PRESS		Sets the press value for the seventh cut.
8th PRESS		Sets the press value for the eighth cut.
9th PRESS		Sets the press value for the ninth cut.

*1. The set values differ according to the unit.

1 **Press the FUNCTION key in LOCAL.**

<FUNCTION>
SET UP [ENT]

2 **Press ▲ ▼ and select [MULTI PASS].**

<FUNCTION>
MULTI PASS [ENT]

3 **Press ENTER key.**

<MULTI PASS>
TOOL : B:REC.CUTTER

4 **Press ▲ ▼ and select TOOL.**

<TOOL SELECT>
TOOL : A:SWIVEL /1

Important!

- Behind the tool, display the number of times currently set.
  -: OFF
  2 ~ 9: Setting

• Setting: Reciprocating Cutter 1 to 3, Tangential Cutter 1 to 6, Roller 1, 2, Swivel

5 **Press ENTER key.**

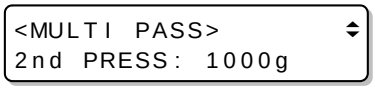
<TOOL SELECT>
PASS: OFF

6 **Press ▲ ▼, select the number of times to cut and press ENTER key.**

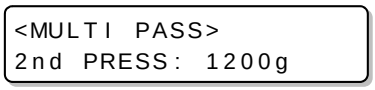
<MULTI PASS>
PASS: 3TIMES

• Set value: OFF, 2 to 9 TIMES

7 **Press ▲ ▼, select the number of times to set the cut press value and press ENTER key.**



8 **Set the cut press value by pressing the jog key ▲ ▼ and press the ENTER key.**



- The press value settings are saved.
- Press END if you do not want to save the settings.
- Reciprocating cutter / Roller / Tangential cutter: 500 g to 1500 g (RC/RT), 300 to 1500g (T/TD/TF)
  SWIVEL: 20 g to 400 g
  Tangential cutter (high pressure): 1000 g to 5000 g

9 **Repeat steps 7-8 to set the pressure value for each cut number.**

Important!

- In order to make the multi-pass cutting with FineCut function, set “Off” in step 6 and set at the output setting in FineCut.
- If the multi-pass cutting is set in both FineCut and the machine, the number will be duplicated.
  Example) 3times in the machine side and 2 times in FineCut will be 6 times in total
- If the multi-pass cut is set, the drawing starts from the roller. After the cutting of the roller is finished, the drawing of the reciprocating cutter, eccentric cutter and tangential cutter follow.

Change the cutting (plotting) order

You can reorder or sort the cut data that has been sent from the host computer to change the order for cutting (SORTING function).
If cutting is not being performed efficiently due to the order the data is sent from the software, you can change the cutting order to cut more efficiently.

Some applications software send data to the plotter in the order that the data has been created and edited.

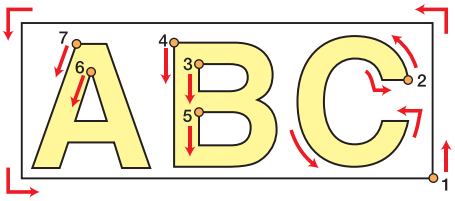
- When data that has already been read by the scanner is adjusted and so on, since the location that has been adjusted is cut later, it will not be cut efficiently.

When you want to cut after SORTING

With the sorting function, the plotter handles a piece of data corresponding to each cutting operation that starts with pen down and ends with pen up as one block. After the completion of cutting one block, the plotter will perform cutting of another block whose starting point is closest to the finished block.

For data transmitted from the host computer, the starting position and cutting direction will not be changed.

● : Starting point of data = Starting point of cutting
Arrow : Direction of data = Cutting direction
Number : Block cutting order



Set SORTING

1 **Select [PLOT SETTING] of the set up menu.**

(1) Press the FUNCTION key in LOCAL.
(2) Press ▲ ▼ to select [SET UP] and press the ENTER key.
(3) Press ▲ ▼ to select [PLOT SETTING].
(4) Press the ENTER key.

2 **Press the jog key ▲ or ▼ to select [SORTING], and ress the ENTER key.**

```
<PLOT SETTING>
SORTING   :OFF
```

3 **Press the jog key ▲ or ▼ to select Setting.**

- Setting values : ON, OFF

```
<PLOT SETTING>
SORTING   :ON
```

4 **Press the ENTER key.**

- Press END key if you do not want to save the setting.

Important!

- Changing the setting value will clear the data in the receiver buffer.
- Setting the sorting function to ON will decrease the size of the receiver buffer to about 17MB.

Setting the Cutter Stroke

This setting shortens the distance that the tool rises when cutting (or drawing) data with frequent up/down movements of the Tangential Cutter or grid roller. It thereby reduces the total cutting time.

Important!

- In case of vibration of the reciprocating cutter, always make FULLUP.

1 Select [PLOT SETTING] of the set up menu.

(1) Press the FUNCTION key in LOCAL.
(2) Press ▲ ▼ to select [SET UP] and press the ENTER key.
(3) Press ▲ ▼ to select [PLOT SETTING].
(4) Press the ENTER key.

2 Press the jog key ▲ or ▼ to select [Z STROKE], and ress the ENTER key.

```
<PLOT SETTING>
Z STROKE :7mm
```

3 Press the jog key ▲ or ▼ to select setting value.

```
<PLOT SETTING>
ROTATION :ON
```

- Set values: 4 to 10 mm, FULLUP

4 Press the ENTER key.

- Press END key if you do not want to save the setting.

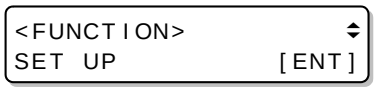
5 Press the END key twice for terminating this function.

Setting the Displayed Units

Sets the units for the values displayed on the screen.

Set value	Description
mm	Displays millimeters.
inch	Displays inches.

1 **Press the FUNCTION key in the local mode.**



2 **Press the jog key ▲ or ▼ to select [SET UP], and ress the ENTER key.**

3 **Press the jog key ▲ or ▼ to select [MM/INCH], and ress the ENTER key.**

4 **Press the jog key ▲ or ▼ to select setting value.**

- Set values: mm , inch

5 **Press the ENTER key.**

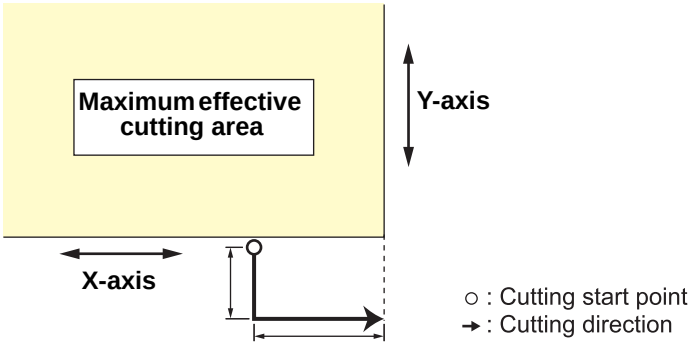
- Press END if you do not want to save the setting.

6 **Press the END key twice for terminating this function.**

Swivel Blade Dummy Cut

When turning on the power with the eccentric cutter set with the tool, or selecting the eccentricity cutter, etc., cut at the outside of the effective cutting area in order to point the cutting edge of the eccentric cutter in the progressing direction.

Set value	Description
OFF	Makes no dummy cut.
ON	Makes a dummy cut.



1 **Select [PLOT SETTING] of the set up menu.**

(1) Press the FUNCTION key in LOCAL.
(2) Press ▲ ▼ to select [SET UP] and press the ENTER key.
(3) Press ▲ ▼ to select [PLOT SETTING].
(4) Press the ENTER key.

2 **Press the jog key ▲ or ▼ to select [DUMMY CUT], and ress the ENTER key.**

```
<PLOT SETTING>
DUMMY CUT:ON
```

3 **Press the jog key ▲ or ▼ to select setting value.**

• Set values: OFF, ON

```
<PLOT SETTING>
DUMMY CUT:ON
```

4 **Press the ENTER key.**

• Press END if you do not want to save the setting.

5 **Press the END key twice for terminating this function.**

Setting the Displayed Language (DISPLAY)

Select English or Japanese as the displayed language.

1 **Press the FUNCTION key in LOCAL.**

<FUNCTION>
SET UP <ENT>

2 **Press ▲ ▼ and select [DISPLAY].**

<FUNCTION>
DISPY [ENT]

3 **Press ENTER key.**

<DISPY>
LANG:English

4 **Press ▲ ▼ and select TOOL.**

- Set value: CUTTER, ROLLER, SWIVEL

<DISPY>
LANG:Japanese

5 **Press the ENTER key.**

- Press END key if you do not want to save the setting.

6 **To exit, press the END key to return to the local mode.**

Setting the Close Time

After cutting (plotting) the data that was sent from PC, following operation starts automatically at the time that had been set in advance.

- Data clear (☞ P.2-22)
- Automatic Head Retraction (☞ P.1-40)
- Vacuum Automatic OFF (☞ P.1-41)
- Multi-pass Cutting (☞ P.3-12)

1 **Select [PLOT SETTING] of the set up menu.**

(1) Press the FUNCTION key in LOCAL.
(2) Press ▲ ▼ to select [SET UP] and press the ENTER key.
(3) Press ▲ ▼ to select [PLOT SETTING].
(4) Press the ENTER key.

2 **Press the jog key ▲ or ▼ to select [CLOSE TIME], and ress the ENTER key.**

```
<PLOT SETTING>
CLOSE TIME    : 3sec
```

3 **Press the jog key ▲ or ▼ to select the set value.**

- Set values: 3 s to 30 s

```
<PLOT SETTING>
CLOSE TIME    :10sec
```

4 **Press the ENTER key.**

- Press END if you do not want to save the setting.

5 **Press the END key twice for terminating this function.**

Setting a Cut Quality

This is to set the cutting quality.

1 **Select [PLOT SETTING] of the set up menu.**

(1) Press the FUNCTION key in LOCAL.
(2) Press ▲ ▼ to select [SET UP] and press the ENTER key.
(3) Press ▲ ▼ to select [PLOT SETTING].
(4) Press the ENTER key.

2 **Press the jog key ▲ or ▼ to select [CUT MODE], and ress the ENTER key.**

```
<PLOT SETTING>
CUT MODE  :NORMAL
```

3 **Press the jog key ▲ or ▼ to select Setting.**

```
<PLOT SETTING>
CUT MODE  :QUALITY
```

- Set values:
  NORMAL : This is a regular cutting mode.
  SHARP : This is a cutting mode used to give priority to cutting quality.
  FAST : This is used to perform cutting in a short time.

4 **Press the ENTER key.**

- Press END key if you do not want to save the setting.

5 **Press the END key twice for terminating this function.**

Hint!

- Select “QUALITY” in any of the following cases:
  a Characters whose sizes are 10 mm or less are to be cut
  b Picture patterns or characters that have many sharp corners are to be cut
  c Minute cutting is to be performed
  However, the edges of finished patterns may be rugged if the data sent from the host computer is too complicated. In such a case, select “FAST” for smooth finish.

Setting speed of head movement

Set the speed at which the head moves when the tool is up.
When [Auto] is selected, the setting values of cut condition and cut speed become up speed.

1 **Select [PLOT SETTING] of the set up menu.**

(1) Press the FUNCTION key in LOCAL.
(2) Press ▲ ▼ to select [SET UP] and press the ENTER key.
(3) Press ▲ ▼ to select [PLOT SETTING].
(4) Press the ENTER key.

2 **Press the jog key ▲ or ▼ to select [UP SPEED], and press the ENTER key.**

```
<PLOT SETTING>
UP SPEED :AUTO
```

3 **Press the jog key ▲ or ▼ to select Setting.**

• Set values: AUTO, 5, 10, 20, 30, 40, 50, 55cm/s

```
<PLOT SETTING>
UP SPEED :10cm/s
```

4 **Press the ENTER key.**

• Press END key if you do not want to save the setting.

5 **When finishing, press the END key several times to return to the local mode.**

Setting of the offset value of the cutting edge correction pressure

Set when there is an uncut at the start point and end point of the cut.

1 **Select [PLOT SETTING] of the set up menu.**

(1) Press the FUNCTION key in LOCAL.
(2) Press ▲ ▼ to select [SET UP] and press the ENTER key.
(3) Press ▲ ▼ to select [PLOT SETTING].
(4) Press the ENTER key.

2 **Press the jog key ▲ or ▼ to select [ADJ-PRS OFFSET], and ress the ENTER key.**

```
<PLOT SETTING>
ADJ-PRS OFFSET: 0
```

3 **Press the jog key ▲ or ▼ to select Setting.**

• Set values: -9 ~ +9 (Around -30g to around 30g)

```
<PLOT SETTING>
ADJ-PRS OFFSET: 3
```

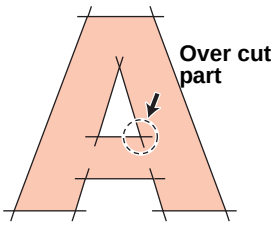
4 **Press the ENTER key.**

• Press END key if you do not want to save the setting.

5 **PreWhen finishing, press the END key several times to return to the local mode.**

Make the media without uncut area

By over lapping the start point and the end point arbitrarily, you can make the media without uncut area.
Specify the over cut function (valid/invalid) and the length of the over cut. If the length of the over cut is set, when cut starts, cut will be performed from the position to the front by the specified length and the tool will move up going too far at the end.
Additionally, perform over-cutting of corners other than the start and end points.



Important!

- Setting proper over cut can reduce uncut area of start and end point of a media easy to bend. If too large value is set, the result may have a rupture.
- Over cut is only applicable at the drawing of the eccentric cutter.

1 Select [PLOT SETTING] of the set up menu.

(1) Press the FUNCTION key in LOCAL.
(2) Press ▲ ▼ to select [SET UP] and press the ENTER key.
(3) Press ▲ ▼ to select [PLOT SETTING].
(4) Press the ENTER key.

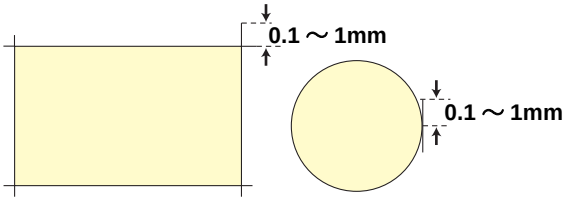
2 Press the jog key ▲ or ▼ to select [OVER CUT], and ress the ENTER key.

```
<PLOT SETTING>
OVER CUT :OFF
```

3 Press the jog key ▲ or ▼ to select OVER CUT setting.

```
<PLOT SETTING>
OVER CUT :1.0mm
```

- Setting value: OFF or a value from 0.1 to 1.0mm (0.1mm unit)



4 Press the ENTER key.

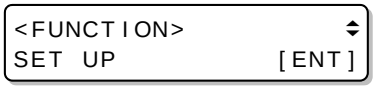
- Press END key if you do not want to save the setting.

5 When finishing, press the END key several times to return to the local mode.

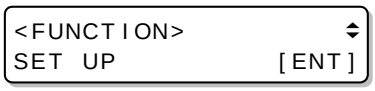
Setting a KEY BUZZER

You can turn off the buzzer sound when pressing the key.

1 **Press the FUNCTION key in LOCAL.**

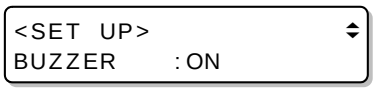


2 **Press ▲ ▼ to select [SET UP].**

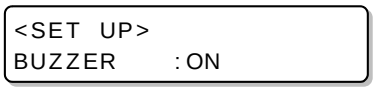


3 **Press the ENTER key.**

4 **Press ▲ ▼ to select [BUZZER].**



5 **Press the ENTER key.**



6 **Press ▲ ▼ to select ON/OFF.**

7 **Press the ENTER key.**

8 **When finishing, press the END key several times to return to the local mode.**

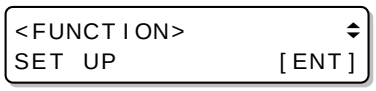
Hint!

- When the key buzzer is set to "OFF", the buzzer sound for errors, warnings, operation completion, etc. cannot be shut off.

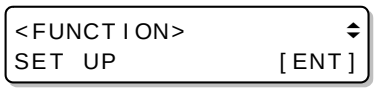
Setting a START MODE

Set the mode after power ON.

1 **Press the FUNCTION key in LOCAL.**



2 **Press ▲ ▼ to select [SET UP].**



3 **Press the ENTER key.**

4 **Press ▲ ▼ to select [START MODE].**

5 **Press the ENTER key.**

6 **Press ▲ ▼ to select LOCAL/REMOTE.**

- Set values: LOCAL, REMOTE

7 **Press the ENTER key.**

8 **When finishing, press the END key several times to return to the local mode.**

Setting a JOG SETTING

This is to set the moving amount of head via the jog key.

1 **Press the FUNCTION key in LOCAL.**

```
<FUNCTION>          ⇕
SET UP              [ENT]
```

2 **Press ▲ ▼ to select [SET UP].**

```
<FUNCTION>          ⇕
SET UP              [ENT]
```

3 **Press the ENTER key.**

```
<SET UP>            ⇕
PLOT SETTING        [ENT]
```

4 **Press ▲ ▼ to select [JOG SETTING].**

```
<SET UP>            ⇕
JOG SETTING         [ENT]
```

5 **Press the ENTER key.**

```
<JOG SETTING>
JOG STEP   :0.1mm
```

6 **Press ▲ ▼ to select set values.**

```
<JOG SETTING>
JOG STEP   :1.0mm
```

- Set values: set in mm
  0.1mm: 0.1mm movement per jog key operation
  1.0mm: 1.0mm movement per jog key operation
- Set values: Set in inch
  1/16inch: 1/16 inch movement per jog key operation
  1/254inch: 1/254 inch movement per jog key operation

7 **Press the ENTER key.**

```
<JOG SETTING>
JOG STEP   :1.0mm
```

8 **When finishing, press the END key several times to return to the local mode.**

Setting a COMMAND

Setting a PRIORITY

When this plotter and the host computer make different settings on a same item, this function is used to set about which of the two must be given priority to

1 **Select [COMMAND SETTING] of the set up menu.**

(1) Press the FUNCTION key in LOCAL.
(2) Press ▲ ▼ to select [SET UP] and press the ENTER key.
(3) Press ▲ ▼ to select [COMMAND SETTING].
(4) Press the ENTER key.

2 **Press the jog key ▲ or ▼ to select [PRIORITY] .**

<SET UP>
RS-232C [ENT]

3 **Press the ENTER key.**

<RS SETTING>
BAUD RATE :9600

4 **Press the jog key ▲ or ▼, select the item to be set.**

<PRIORITY>
ZO :HOST

SP;	Pen selection command
VS;	Pen lowering speed setting command
ZA;	Pen lifting speed setting command
AS;	Acceleration setting command
FS;、ZF;	Pen pressure setting command
ZO;	Cutter blade compensation setting command

5 **Press the ENTER key.**

<PRIORITY>
ZO :HOST

6 **Press the jog key ▲ or ▼ to select Setting.**

<PRIORITY>
ZO :PANEL

- Set values:
  HOST: This is to give priority to the setting of host computer.
  PANEL: This is to give priority to the setting of this plotter.
- If set other items, repeat the procedure from step 4 to 7.

7 **Press the ENTER key.**

- Press END if you do not want to save the setting.

<SET UP>
START MODE:REMOTE

8 **When finishing, press the END key several times to return to the local mode.**

Setting the Effective Area Return Values (OH UNIT)

Sets which value to return to the software when the unit receives the effective area coordinate output command from the software.
INITIAL: Return the maximum value of the effective cutting area of the machine.
SET VAL: Returns the value that was set in the configuration of the cut area.

1 **Select [COMMAND SETTING] of the set up menu.**

(1) Press the FUNCTION key in LOCAL.
(2) Press ▲ ▼ to select [SET UP] and press the ENTER key.
(3) Press ▲ ▼ to select [COMMAND SETTING].
(4) Press the ENTER key.

2 **Press the jog key ▲ or ▼ to select [OH UNIT].**

```
<COMMAND SETTING>
OH; UNIT :INITVAL
```

3 **Press the ENTER key.**

```
<COMMAND SETTING>
OH; UNIT :INITVAL
```

4 **Press the jog key ▲ or ▼ to select Setting.**

• Set values: INITVAL, SETVAL

```
<COMMAND SETTING>
OH; UNIT :SETVAL
```

5 **Press the ENTER key.**

• Press END if you do not want to save the setting.

6 **When finishing, press the END key several times to return to the local mode.**

Resolution (GDP *1) Setting

Adjust the resolution of this machine to the resolution of your software.
For software compatible resolution, refer to the instruction manual of your software.

1 **Select [COMMAND SETTING] of the set up menu.**

(1) Press the FUNCTION key in LOCAL.
(2) Press ▲ ▼ to select [SET UP] and press the ENTER key.
(3) Press ▲ ▼ to select [COMMAND SETTING].
(4) Press the ENTER key.

2 **Press the jog key ▲ or ▼ to select [GDP UNIT].**

<COMMAND SETTING>
GDP UNIT :0.025mm

3 **Press the ENTER key.**

<COMMAND SETTING>
GDP UNIT :0.025mm

4 **Press the jog key ▲ or ▼ to select Setting.**

• Set values:0.025mm, 0.010mm

<COMMAND SETTING>
GDP UNIT :0.010mm

5 **Press the ENTER key.**

• Press END if you do not want to save the setting.

6 **When finishing, press the END key several times to return to the local mode.**

*1.GDP:Graphic Display Pitch

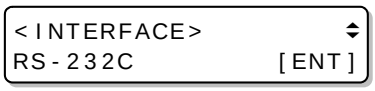
Set the configurations with a computer

Set the configurations with a computer
Set the communication condition with the RS-232C interface.

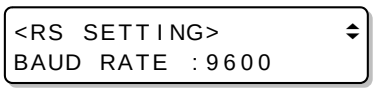
1 Select [INTERFACE] of the set up menu.

(1) Press the FUNCTION key in LOCAL.
(2) Press ▲ ▼ to select [SET UP] and press the ENTER key.
(3) Press ▲ ▼ to select [INTERFACE].
(4) Press the ENTER key.

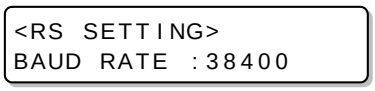
2 Press the jog key ▲ or ▼ to select [RS-232C].



3 Press the ENTER key.



4 Press the jog key ▲ or ▼ to select [BAUD RATE].



- Set values: 1200, 2400, 4800, 9600, 19200, 38400(bps)

Important!
- The recommended setting value is “38400(bps)”.
- Set the transfer speed for the host computer according to this unit.

5 Press the ENTER key.

6 Press the jog key ▲ or ▼ to select the following items.

- The following items are provided for the setting of registration mark detection:
  Data bits, Parity / Stop bits / Handshake
- See pages P.3-30 for the contents of each setting item.

7 Press the ENTER key.

8 Press the jog key ▲ or ▼ to select the set values.

- See pages P.3-30 for the contents of each setting item.

9 Press the ENTER key to confirm the value.

10 When you want to terminate this procedure, press the END key twice.

Setting Items

Boud rate	**1200, 2400, 4800, 9600, 19200, 38400(bps)**
Data bits	**7, 8(bit)**
Parity	**NON, EVEN, ODD**
Stop bits	**1, 2(bit)**
Handshake	**HARD, ENQACK, X-PRM, SOFT**

Set the network

Important!

- Network settings are not user-specific settings.
  For example, if you make settings with user 1, it will also be set for users 2 to 4, Temp.

1 Select [INTERFACE] of the set up menu.

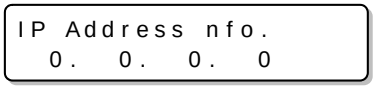
(1) Press the FUNCTION key in LOCAL.
(2) Press ▲ ▼ to select [SET UP] and press the ENTER key.
(3) Press ▲ ▼ to select [INTERFACE].
(4) Press the ENTER key.

2 Press the jog key ▲ or ▼ to select [NETWORK].

3 Press the ENTER key.

4 Press the ENTER key.

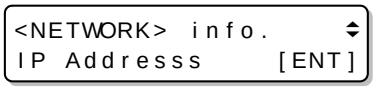
- The IP address currently used by this machine is displayed.



Hint!

- After connecting with the network, it takes time until the IP address is determined.
  If the IP address has not been determined, “0.0.0.0” is displayed.

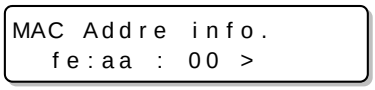
5 Press the ENTER key.



6 Press the jog key ▲ or ▼ to select [MAC Address].

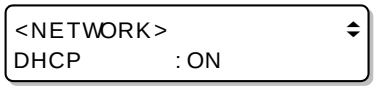
7 Press the ENTER key.

- The MAC address currently used by this machine is displayed.
- When you press ▶, the remaining address is displayed.



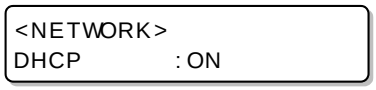
8 Press the ENTER key.

9 **Press the jog key ▲ or ▼ to select [DHCP].**

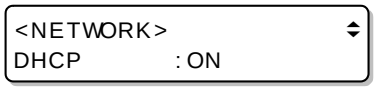


10 **Press the ENTER key.**

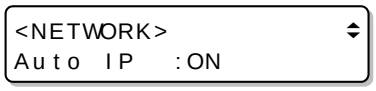
- Press ▲ ▼ to set ON/ OFF.
- When it is ON, the IP address given by the DHCP server is used.



11 **Press the ENTER key.**

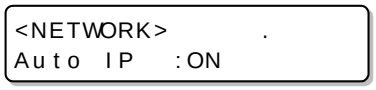


12 **Press the jog key ▲ or ▼ to select [AutoIP].**



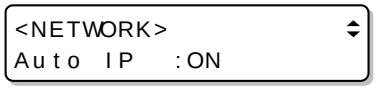
13 **Press the ENTER key.**

- Press ▲ ▼ to set ON/ OFF.
- When it is ON, the IP address is determined by the AutoIP protocol. However, DHCP is ON, DHCP has priority.



14 **Press the ENTER key.**

- If either DHCP or AutoIP is set to [On], proceed to step 19.
- If both DHCP and AutoIP are set to [Off], proceed to step 15.



15 **Press the jog key ▲ or ▼ to select the set values.**

- When both DHCP and AutoIP are set to [Off], set the IP address / default gateway / DNS address / subnet mask.

16 **Press the ENTER key.**

17 **Press the jog key ▲ ▼ ◀ ▲ to select the set values.**

18 **Press the ENTER key to confirm the value.**

19 **When finishing, press the END key several times to return to the local mode.**

Hint! • To reflect network settings, turn OFF the power once and turn ON again.

Setting event mail function

Set the function to send e-mails to the set e-mail address when events such as cutting start/ end and stop due to an error.
You can also perform network setting with “Network Configurator”, the tool to perform network setting of Mimaki’s product. To download the Network Configurator, check " Driver / Utility" on the download page at Mimaki Engineering (http://mimaki.com/download/).

Disclaimer
- The customer is responsible for the communication fee for Internet communication such as e-mail notification.
- The notification by the event mail function may not be delivered due to Internet environment, failure of the device/ the power supply, etc. Mimaki has absolutely no responsibility for any damages or loss resulting from non-delivery or delays.

Important!
- You can use event mail function by connecting LAN to this machine. Please prepare for LAN cable connection beforehand.
- Not compatible with SSL communication.
- Event mail settings are not user-specific settings.
  For example, if you make settings with user 1, it will also be set for users 2 to 4, Temp.

Enable the event mail function

1 **Select [INTERFACE] of the set up menu.**

(1) Press the FUNCTION key in LOCAL.
(2) Press ▲ ▼ to select [SET UP] and press the ENTER key.
(3) Press ▲ ▼ to select [INTERFACE].
(4) Press the ENTER key.

2 **Press the jog key ▲ or ▼ to select [EVENT MAIL] .**

<INTER FACE>
EVENT MAIL [ENT]

3 **Press the ENTER key.**

<EVENT MAIL>
Delivery [ENT]

4 **Press the ENTER key.**

Delivery
:OFF

5 **Press the jog key ▲ or ▼ to select “ON”.**

Delivery
:ON

6 **Press the ENTER key.**

<EVENT MAIL>
Delivery [ENT]

7 **When finishing, press the END key several times to return to the local mode.**

Set the event to send an event mail

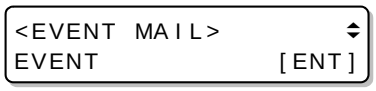
1 **Select [INTERFACE] of the set up menu.**

(1) Press the FUNCTION key in LOCAL.
(2) Press ▲ ▼ to select [SET UP] and press the ENTER key.
(3) Press ▲ ▼ to select [INTERFACE].
(4) Press the ENTER key.

2 **Press the jog key ▲ or ▼ to select [EVENT MAIL].**

3 **Press the ENTER key.**

4 **Press the jog key ▲ or ▼ to select [Event].**



5 **Press the ENTER key.**

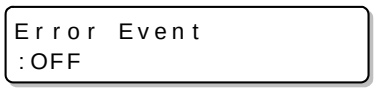
- Set whether you send/ do not send the e-mail at the start of plotting.
- Press ▲ ▼ to set ON/ OFF.

6 **Press the ENTER key.**

- Set whether you send/ do not send the e-mail at the end of plotting.
- Press ▲ ▼ to set ON/ OFF.

7 **Press the ENTER key.**

- Set whether you send/ do not send the e-mail when an error occurs.
- Press ▲ ▼ to set ON/ OFF.



8 **Press the ENTER key.**

- Set whether you send/ do not send the e-mail when a warning occurs.
- Press ▲ ▼ to set ON/ OFF.

9 **Press the ENTER key.**

10 **When finishing, press the END key several times to return to the local mode.**

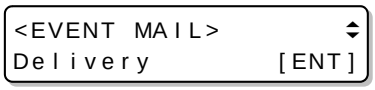
Set the e-mail address

1 **Select [INTERFACE] of the set up menu.**

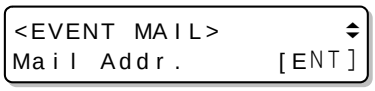
(1) Press the FUNCTION key in LOCAL.
(2) Press ▲ ▼ to select [SET UP] and press the ENTER key.
(3) Press ▲ ▼ to select [INTERFACE].
(4) Press the ENTER key.

2 **Press the jog key ▲ or ▼ to select [EVENT MAIL].**

3 **Press the ENTER key.**



4 **Press the jog key ▲ or ▼ to select [Mail Addr.].**

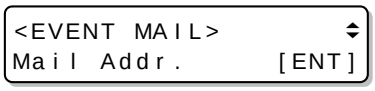


5 **Press the ENTER key.**

6 **Press the jog key ▲ ▼ ◀ ▶ to set mail address.**

- Set the e-mail address to which you send the event mail.
- Set it with alphanumeric characters and symbols within 96 characters.

7 **Press the ENTER key.**



8 **When finishing, press the END key several times to return to the local mode.**

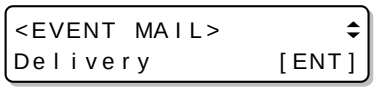
Set the subject

1 **Select [INTERFACE] of the set up menu.**

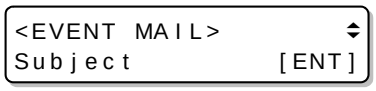
(1) Press the FUNCTION key in LOCAL.
(2) Press ▲ ▼ to select [SET UP] and press the ENTER key.
(3) Press ▲ ▼ to select [INTERFACE].
(4) Press the ENTER key.

2 **Press the jog key ▲ or ▼ to select [EVENT MAIL].**

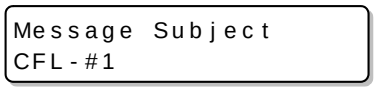
3 **Press the ENTER key.**



4 **Press the jog key ▲ or ▼ to select [Subject].**



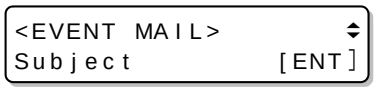
5 **Press the ENTER key.**



6 **Press the jog key ▲ ▼ ◀ ▶ to set subject**

- Set the characters to write in the subject of the event mail.
- Set it with alphanumeric characters and symbols within 8 characters.

7 **Press the ENTER key.**



8 **Press the END key several times for terminating this function.**

Set the server

1 **Select [INTERFACE] of the set up menu.**

(1) Press the FUNCTION key in LOCAL.
(2) Press ▲ ▼ to select [SET UP] and press the ENTER key.
(3) Press ▲ ▼ to select [INTERFACE].
(4) Press the ENTER key.

2 **Press the jog key ▲ or ▼ to select [EVENT MAIL].**

```
<INTER FACE>
EVENT MAIL      [ENT]
```

3 **Press the ENTER key.**

```
<EVENT MAIL>
Delivery        [ENT]
```

4 **Press the jog key ▲ or ▼ to select [SERVER].**

```
<EVENT MAIL>
Server          [ENT]
```

5 **Press the ENTER key.**

```
SERVER SETUP
SMTP Addr.      [ENT]
```

6 **Press the ENTER key.**

- Press the jog key ▲ ▼ ◀ ▶ to set SMTP server.
- Input the SMTP server name or IP address.

```
SMTP Address
```

7 **Press the ENTER key.**

```
SERVER SETUP
SMTP Addr.      [ENT]
```

8 **Press the jog key ▲ or ▼ to select [SMTP PORT].**

```
SERVER SETUP
SMTP Port       [ENT]
```

9 **Press the ENTER key.**

```
SMTP Port No.
:       25
```

10 **Press the jog key ▲ or ▼ to set [Auth.].**

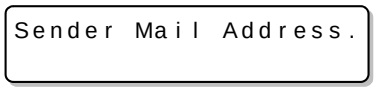
11 **Press the ENTER key.**

```
SERVER SETUP
SMTP Port       [ENT]
```

12 **Press the jog key ▲ or ▼ to select [Sender Adr].**

13 **Press the ENTER key.**

- Press ▲▼◀▶ and set the e-mail address to be used as the sender mail address.
- Set it with alphanumeric characters and symbols within 64 characters.

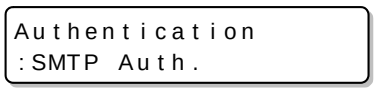


Hint!
- Depending on your server, if you do not set the e-mail address not supporting the account, sending/receiving e-mails may be unavailable.

14 **Press the ENTER key.**

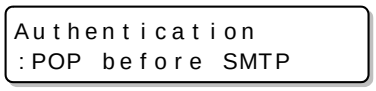
15 **Press the jog key ▲ or ▼ to select [Auth.].**

16 **Press the ENTER key.**



17 **Press the jog key ▲ or ▼ to set [Auth.].**

- Set the authentication method of the SMTP server.
- When you select [OFF], proceed to the Step 32.



18 **Press the ENTER key.**

19 **Press the jog key ▲ or ▼ to select [User Name].**

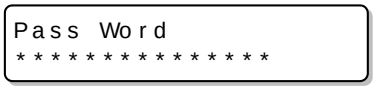
20 **Press the ENTER key.**

- Press ▲▼◀▶ to set the user name to use for the authentication.
- Set it with alphanumeric characters and symbols within 30 characters.

21 **Press the ENTER key.**

22 **Press the jog key ▲ or ▼ to select [Pass Word].**

23 **Press the ENTER key.**



- Press ▲ ▼ ◀ ▶ to set the password to use for the authentication.
- Set it with alphanumeric characters and symbols within 15 characters.

Hint!
- On the password setting screen, the value currently set is not displayed. Only you can do is to enter the value newly.

24 **Press the ENTER key.**

- When you select [POP before SMTP] in the Step 17, set the items in the Step 27 to 31.

25 **Press the jog key ▲ or ▼ to select [POP3 Addr.].**

26 **Press the ENTER key.**

- Press the jog key ▲ ▼ ◀ ▶ to set POP server.
- Set the server name or the IP address.

27 **Press the ENTER key.**

28 **Press the jog key ▲ or ▼ to select [APOP].**

29 **Press the ENTER key.**

- Press ▲ ▼ to set ON/ OFF of APOP.

30 **Press the ENTER key.**

31 **When finishing, press the END key several times to return to the local mode.**

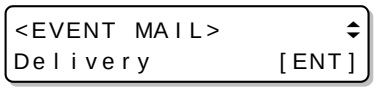
Send a test e-mail

1 **Select [INTERFACE] of the set up menu.**

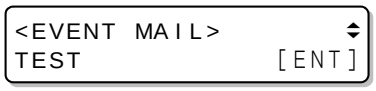
(1) Press the FUNCTION key in LOCAL.
(2) Press ▲ ▼ to select [SET UP] and press the ENTER key.
(3) Press ▲ ▼ to select [INTERFACE].
(4) Press the ENTER key.

2 **Press the jog key ▲ or ▼ to select [EVENT MAIL].**

3 **Press the ENTER key.**



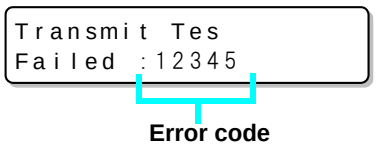
4 **Press the jog key ▲ or ▼ to select [Test].**



5 **Press the ENTER key.**

6 **Press the ENTER key.**

- The sent result is displayed.
- If sending test e-mail has failed, an error code is displayed. Refer to the next page to solve the problem.



7 **When finishing, press the END key several times to return to the local mode.**

Important!

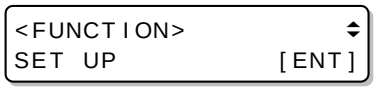
- The sent result of the test e-mail is the result of e-mail sending process performed by this machine to the e-mail server. It does not indicate that the e-mail was received at the address.
- If the spam e-mail filter etc. has been set in the terminal in which e-mails are received, even if "Sending has been completed" is displayed, the e-mail cannot be received in some cases.
- If sending test e-mail has failed, the error below is displayed.
- If the error cannot be solved, try again after a while.
- For the server setting etc., contact with the network administrator or the provider.

Error Code	Error contents	Remedy
10	Network connection error	• Check that the machine is connected with the network. • Check that the machine IP address is correct. • Check that the machine is in the environment where DNS is available.
20	No valid e-mail address.	• Enter the correct e-mail address.
11003 **11004**	The POP server cannot be found. Or cannot access DNS server.	• Check the POP server address. • Check that the machine is in the environment where DNS is available.
11021	Cannot connect with the POP server.	• Check the POP server setting. • Check the firewall setting.
12010	An error returns from the POP server.	• Check the POP server setting.
13000	The POP authentication has failed.	• Check the user name and the password. • Check the APOP setting.
10013 **10014**	The SMTP server cannot be found. Or cannot access DNS server.	• Check the SMTP server address. • Check that the machine is in the environment where DNS is available.
10021	Cannot connect with the SMTP server.	• Check the SMTP server setting. • Check the SMTP port number. • Check the firewall setting.
10*** **11***** **20***** **21*****	An error returns from the SMTP server. Or, there was no response.	• Check the SMTP server setting. • Cannot communicate with a server that requires mandatory SSL communication. • Check protocol filter settings.
12***	It is invalid sender address.	• Check that the e-mail address supporting the account entered in the user name/ the password is set in "Sender mail Adr.".
13***	The e-mail address cannot be found. Or, it is invalid sender address.	• Check the e-mail address. • Even if there is a mistake in the e-mail address, this error cannot be detected in some cases. • Check that the e-mail address supporting the account entered in the user name/ the password is set in "Sender mail Adr.".
22008	SMTP authentication error	• The authentication method is not supported.
23*** **24***** **25*****	The SMTP authentication has failed.	• Check the user name and the password.

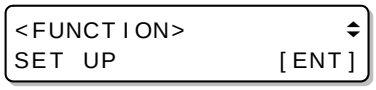
"***" is the error code returned from the e-mail server.

Copy the set value from the other user setting

1 **Press the FUNCTION key in the local mode.**



2 **Press the jog key ▲ or ▼ to select [SET UP].**



3 **Press the ENTER key.**

4 **Press the jog key ▲ or ▼ to select [CONFIG COPY].**

5 **Press the ENTER key.**

6 **Press the jog key ▲ or ▼, and choose the parameter you wish to copy.**

- Set values: CONFIG, CUT COND, MULTI PASS

7 **Press the ENTER key.**

8 **Press the jog key ▲ or ▼ to select the user setting number to copy.**

- Set values: 1 to 4, Temp.

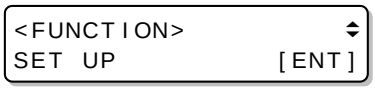
9 **Press the ENTER key.**

- From the selected user, copy the settings that you selected in step 4.

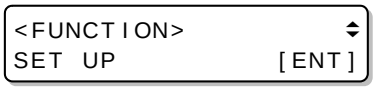
10 **Press the END key two times for terminating this reset operation.**

Reset the setting values to the initial state

1 **Press the FUNCTION key in the local mode.**



2 **Press the jog key ▲ or ▼ to select [SET UP].**



3 **Press the ENTER key.**

4 **Press the jog key ▲ or ▼ to select [SETUP RESET].**

5 **Press the ENTER key.**

- This is to initialize the setting items and parameters.
- Initialized items: “SET UP”, “MULTI PASS”, and “CUT CONDITION”

6 **Press the END key three times to stop and end initialization.**

Important!

- Initialize the current user setting. Other user settings are not initialized.
- The following setting values are excluded from initial setting in this function
  - Network setting
  - Event mail setting
  - Cut area setting

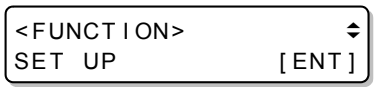
Switch the User

You can save the setting value (cutting condition and main body setting) by five users from the User 1 to 4, Temp. user.
By changing the user number depending on the user, you can change the environment without resetting these parameters.

Important!

- You cannot change the user while the cutting operation stops. First, clear data and then change the user.
- Temp. user does not save the settings.
  Please use if you do not want to change the existing settings such as a temporary test cut.
- Setting of Temp. user is initialized when the power is turned on again.
- If copy the settings of other users, execute the “Copy the set value from the other user setting (☞ P.3-42)”.

1 **Press the FUNCTION key in the local mode.**



2 **Press the jog key ▲ or ▼ to select [USER CHANGE].**

3 **Press the ENTER key.**

4 **Press the jog key ▲ or ▼ to select a user.**

- Set values: 1 to 4, Temp.

5 **Press the ENTER key.**

6 **Press the END key twice for terminating this function.**

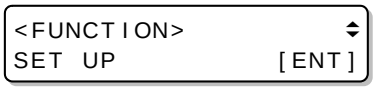
Confirming Machine Information

The information of this machine can be confirmed.
The following items can be confirmed as machine information.

Item	Description
MODEL	This displays the model name of the machine.
SERIAL No.	This displays the serial number of the machine.
IP Address	This displays the IP address of the machine.
F/W ver.	This displays the firmware version of the machine.
Command Ver.	This displays the command version of the machine.

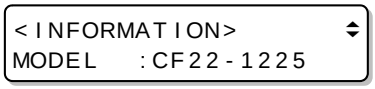
Displaying the Information / IP address

1 **Press the FUNCTION key in LOCAL.**



2 **Press ▲ ▼ to select [INFORMATION].**

3 **Press the ENTER key.**

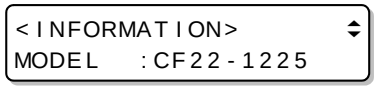


4 **Press ▲ ▼ to select the machine information to display.**

• Information on IP address and firmware version are confirmed by pressing ENTER key.

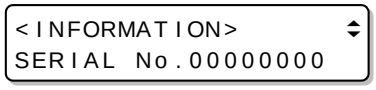
MODEL

Displays model name.



Serial No.

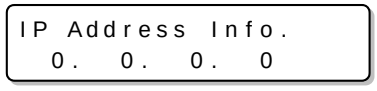
Displays serial number.



IP address

Displays IP address in use.

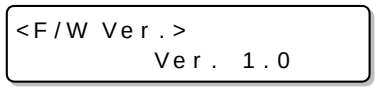
ENTER



F/W version

Displays firmware version.

ENTER



▲ ▼

ENTER

Chapter 4
Register Mark Reading Functions

This Section....

... describes the basic operations, such as mounting tools and workpieces.

Precautions when Creating Data with Register Marks

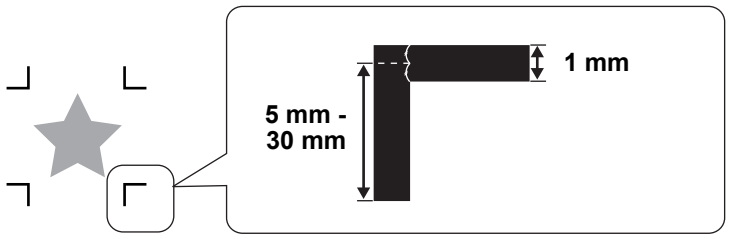
Several restrictions apply when creating data with register marks.
To get the best out of the register mark functions, carefully read the precautions below to gain the knowledge required when creating register marks.

Hint!

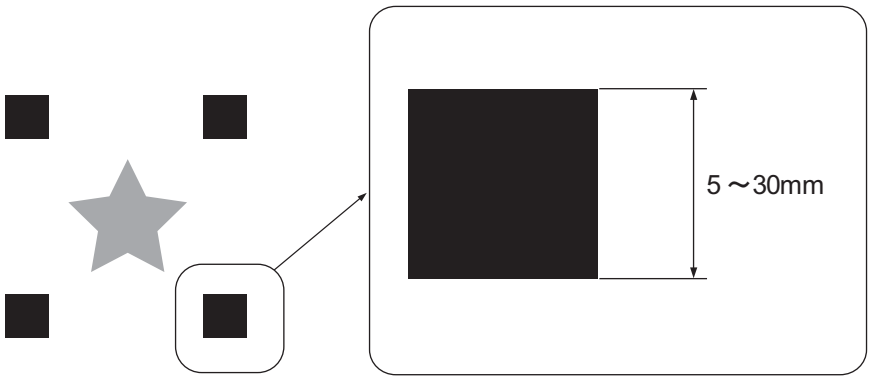
- The register marks described here are used to detect the work orientation and the lengths of the X and Y axes. They are not crop marks.

Size of Register Marks

See "Guide to Register Mark Separation and Register Mark Size" (☞ P.4-6) for guidelines on a side length of register marks with respect to the data.



- Set a side length of the register mark between 5 mm and 30 mm.

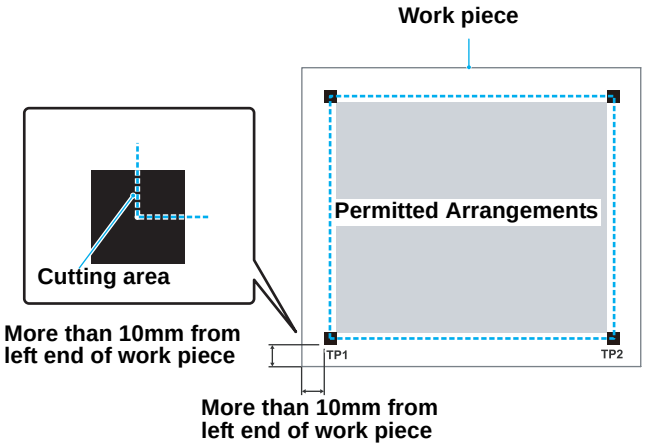
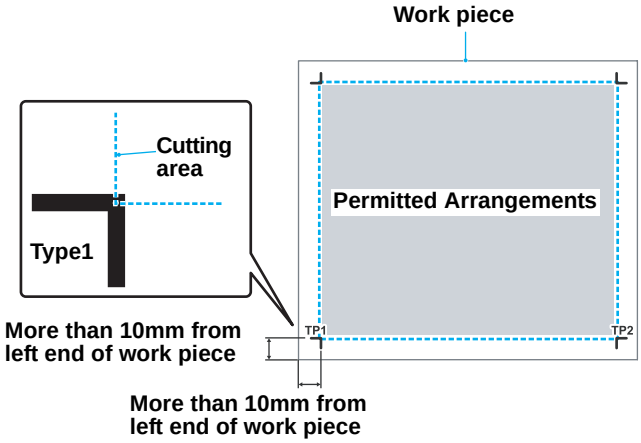
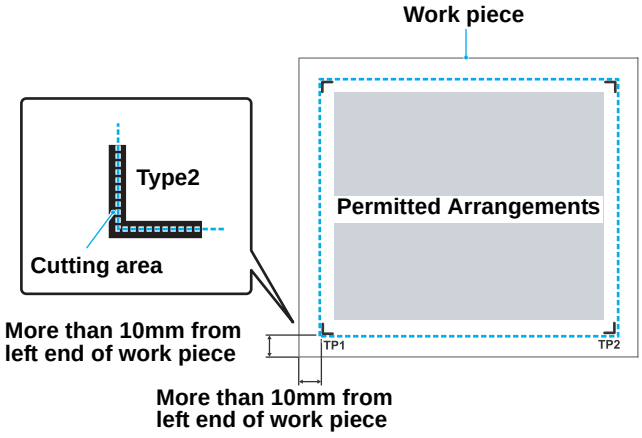


Permitted Arrangements of Register Marks and the Design

Arrange the register mark with a margin of 10 mm or more from the work edge.

Hint!

- When place a register mark outside the cut area (the end of the workpiece), turn on the setting of MARK FILLUP.

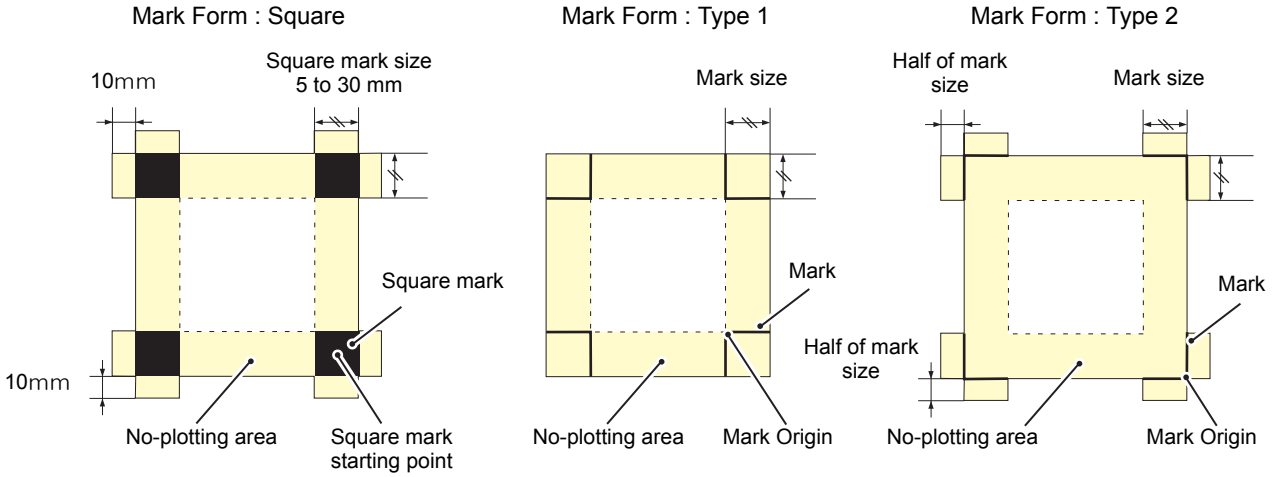
Mark Form : Square	
Mark Form : Type 1	
Mark Form : Type 2	

Prohibited Drawing Areas around Register Marks

Ensure that the areas around the register marks (area equivalent to the register mark size from the register mark origin) remain free of data and dirt. Otherwise, false detection or incorrect reading of the register marks may occur.

Hint!

- False detection of the register marks causes displacement of the cutting position.



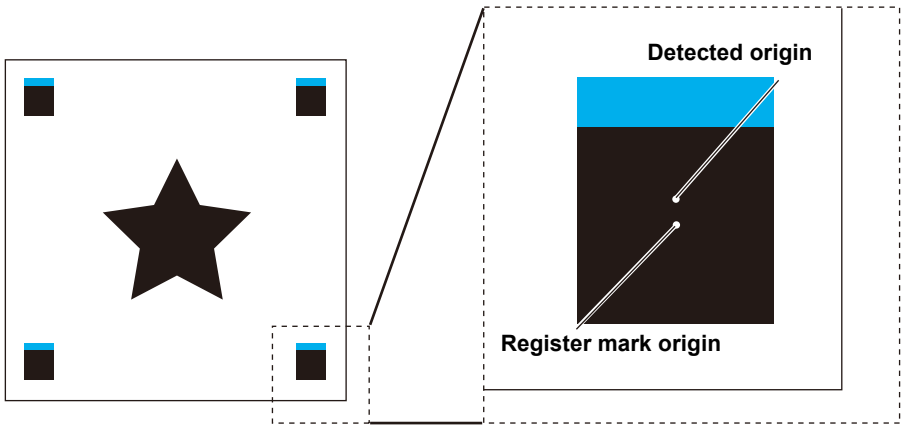
False Detection of Register Marks - Example 1

Plate displacement during offset printing

- Color printing by offset printing requires the output of CMYK plates.
  A slight displacement between these plates also causes a displacement of the printed register marks.
- Register mark detection on the print with plate displacement results in displacement of the register mark origin and therefore of the cutting position.

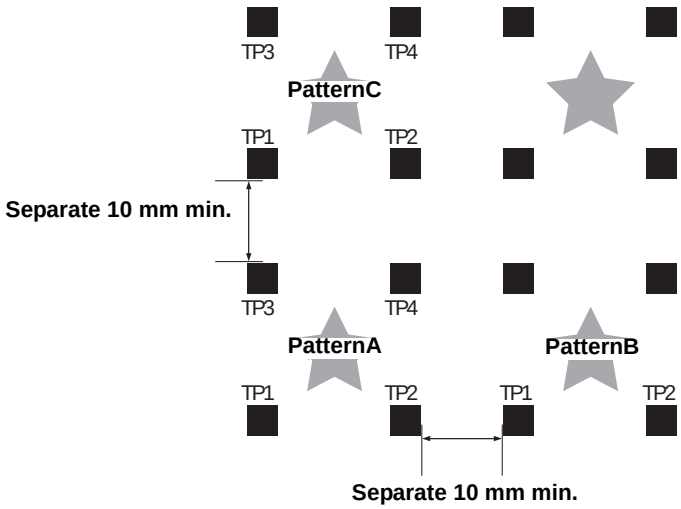
Hint!

- Therefore, when using offset printing, print the register marks on only one of the four CMYK plates (such as printing register marks as K100%). Printing the register marks on one plate only eliminates concerns about plate displacement.
- Determine an easily detected register mark color by considering the color of the printed workpiece. (☞ P.4-7 "Register Mark Colors")



False Detection of Register Marks - Example 2

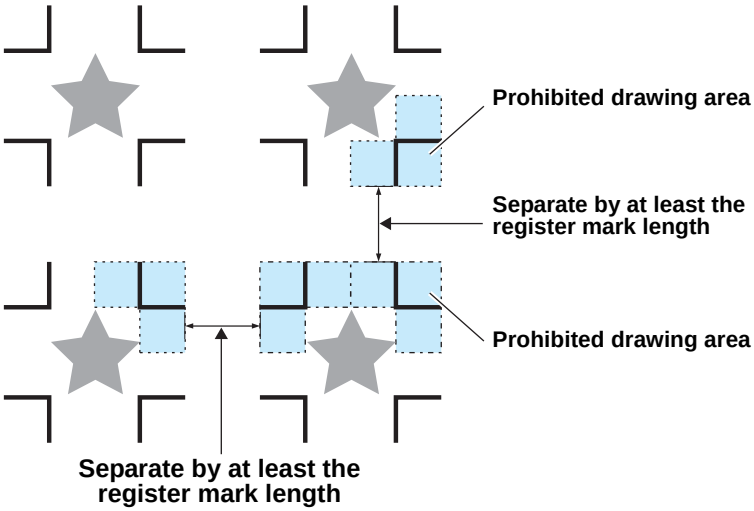
If the register mark separation (TP 3 of pattern A, TP 1 of pattern C, TP 2 of pattern A and TP 1 of pattern B) is not more than 10 mm, there is a possibility of erroneous detection.



False Detection of Register Marks - Example 3

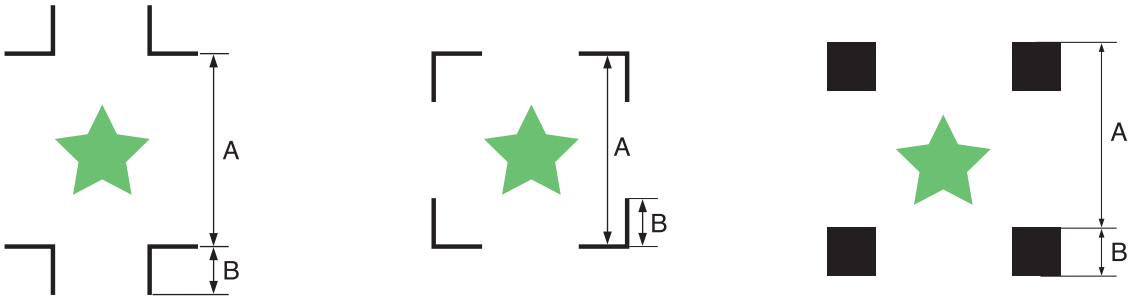
If the register mark separation (TP 2 and TP 1, TP 4 and TP 2) is not longer than the length of register marks, there is a possibility of erroneous detection.

● For sType1 register marks



Guide to Register Mark Separation and Register Mark Size

The chart below shows a guide to the register mark separation (A) and register mark size (B).
The register marks may not be detected correctly if the register mark size (B) is too small with respect to the register mark separation (A). Create register marks of an appropriate size.



A	200 mm max.	500 mm	1000mm	1500mm~
B	10 mm	15 mm	20mm	30mm

Register Mark Colors

Recommend black color for register marks.
Although registration marks can be detected when using other colors, do not use a color that is similar to the color of the workpiece.
Check in advance if the color of your registration mark can be read.

Also, if the workpiece has a strong gloss or design (such as a hairline pattern), or depending on the basecolor, registration mark detection cannot be performed normally.

Black mark

Bleeding or Smudging of Register Marks

If the mark is blurred, a wrong mark origin can be detected, thus resulting in deviated cutting.

Register mark (Normal)

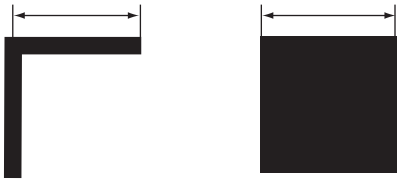
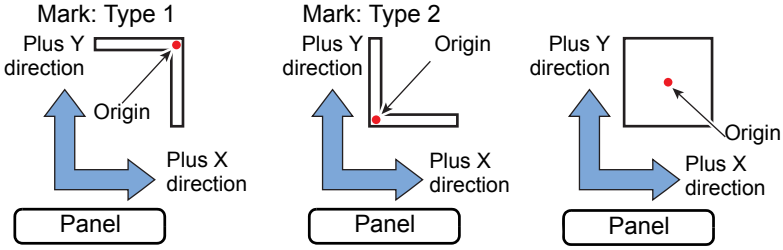
Register mark (There is bleeding)

Precautions Related to Register Mark Detection

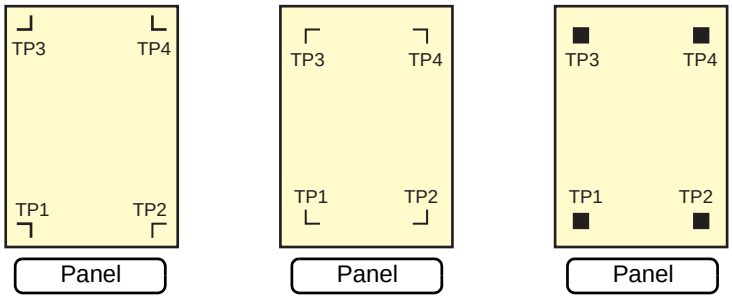
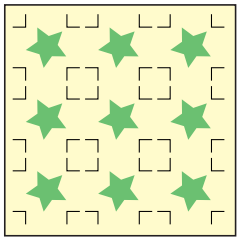
- To set the distance between the printed register marks the same as the cut distance, enter the distance between the printed register marks used for register mark detection. (☞ P.4-14)
- When register marks are detected, the origin is set at TP1. When the origin is moved to another position using the jog keys, the new origin is enabled.
- Rotation is disabled.
- To detect the register mark with FineCut, select “LOWRIGHT” in the command origin setting. (☞ P.1-38)

Table of Settings

Make the following settings to make cuts using register marks.

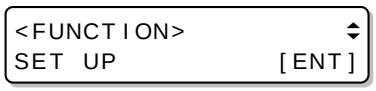
Set Item	Set value	Description
DETECT	OFF	Set for cutting normal workpieces, not for outline cutting.
	1 pt	Detects TP1 and sets the origin.
	2 pt X	Detects the two registration marks TP1 and TP2. Performs the skew compensation and the scale compensation in the X-direction.
	2 pt Y	Detects the two registration marks TP1 and TP3. Performs the skew correction and the scale compensation in the Y-direction.
	3 pt	Detects TP1, TP2, and TP3. Conducts tilt correction and scale correction in the X-direction and Y-direction.
	4 pt	Detects TP1, TP2, TP3, and TP4. Conducts tilt correction and 4-point scale correction.
SCALE	OFF *1	No scale correction during register mark detection.
	after	Enter the X and Y sizes in the data after register mark detection to correct the scale. SCALE is not conducted if DETECT is set to “1pt”.
	before	Enter the X and Y sizes in the data before register mark detection to correct the scale. SCALE is not conducted if DETECT is set to “1pt”.
SIZE	5 mm - 30 mm	Sets a side length of the register mark edge length. 
OFFSET-X **OFFSET-Y**	± 40.00mm	Generally the origin will be set at the position shown below. However, depending on your application and the work to be cut, the cutting position may be misaligned to the same direction. In this case, the location of the origin can be corrected.  If the origin is located out of the available cutting area, “ERRC37 MARK ORG” will be displayed. In this case, write the registration marks in the area closer to the center of the sheet.

*1. Set to OFF when using FineCut.

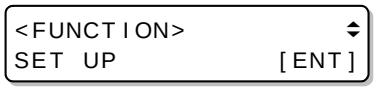
Set Item	Set value	Description
FORM	TYPE1 TYPE2	Select from three register mark styles: **TYPE1** **TYPE2** **Square** 
COPIES X (->) **COPIES Y (↑)**	1 to 99 (X) 0 to 99 (Y)	Effective when the same pattern is multi-printed at regular intervals. Cuts automatically the preset number of sheets while detecting registration marks consecutively based on the first data.  When the number of copies can be set on the application software, like on the supplied FineCut, set the value to [1].
DETECT MODE	FAST, PREC	Set the detection operation of register mark. When [PREC] is selected, the detection speed is lowered, and the position is measured more accurately. Detection time will be slightly late.
Data ID code	On, Off	Set to On when reading the data ID code after detecting a registration mark.
Registration mark search	On, Off	Set it on to automatically search marks after cutting.
Scan width	10 to 99	When automatically searching for registration marks, set the width of the scanning operation to cm.
Search range	10 to 99	When automatically searching for registration marks, set the search range to cm.

Setting Register Mark Detection

1 **Press the FUNCTION key in the local mode.**



2 **Press the jog key ▲ or ▼ to select [SET UP].**



3 **Press the ENTER key.**

4 **Press the jog key ▲▼ to select [MARL DETECT].**

5 **Press the ENTER key.**

6 **Press the jog key ▲ or ▼ to select [Number of detected registration marks].**

- Set values: OFF, 1pt, 2pt-X, 2pt-Y, 3pt, and 4pt

7 **Press the ENTER key.**

8 **Press the jog key ▲ or ▼ to select the following items.**

- The following items are provided for the setting of registration mark detection:
  Scale correction / Registration mark size / Offset X / Offset Y / Registration mark shape / Number of consecutive cuts in X direction / Number of consecutive cuts in Y direction / Data ID code / Registration mark search / Scan width / Search range
- See pages P.4-8 through P.4-9 for the contents of each setting item.

9 **Press the ENTER key.**

10 **Press the jog key ▲ or ▼ to select the set values.**

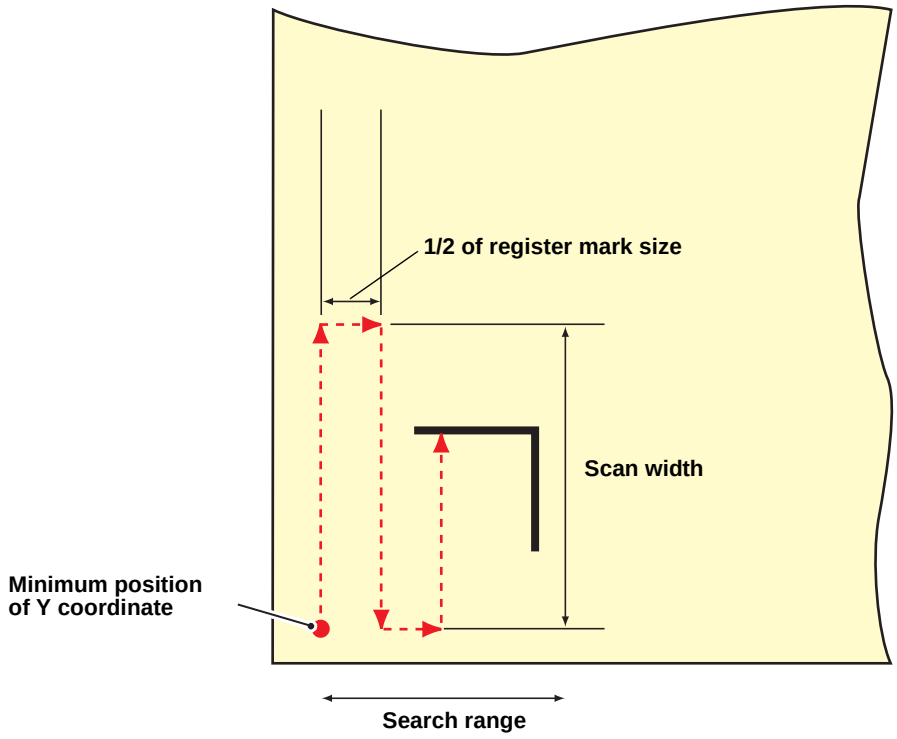
- See pages P.4-8 through P.4-9 for the contents of each setting item.

11 **Press the ENTER key to confirm the value.**

12 **When you want to terminate this procedure, press the END key twice.**

Detecting Registration Marks Automatically

Setting up the auto register mark search function.
If the register mark detection and register mark search functions are enabled, the software automatically searches for the next register mark after cutting is complete.
After the auto update, the software scans back and forth between the set scan width at half of the register mark size, and detects the register marks when lines, dots, and printed material is detected.
When square marks or vertical/horizontal lines are detected correctly, they are recognized as register marks and the starting point is set.



1 Press the FUNCTION key in the local mode.

```
<FUNCTION>
SET UP          [ENT]
```

2 Select [SETTINGS] with ▲ ▼.

3 Press the ENTER key.

4 Press the ▲ ▼ to select [MARK DETECT].

```
<SET UP >
MARK DETECT     [ENT]
```

5 Press ENTER key.

6 Press ▲ ▼ to select [Registration mark search].

```
<MARK DETECT>
SEARCH MARK     :OFF
```

7 **Press the ENTER key.**

8 **Select "on" with ▲ ▼.**

9 **Press the ENTER key.**

10 **Press ▲ ▼ to select the width to scan.**

- Setting value: 10 to 99 cm

11 **Press the ENTER key.**

12 **Press ▲ ▼ to select the search range.**

- Setting value: 10 to 99 cm

13 **Press ENTER key.**

14 **When you are finished, press END key several times to return to local mode.**

Important!

- If it is not recognized as a register mark, or if it does not respond to scanning even to the setting search range, a failure message will be displayed after the search for a certain time.
  After that, it returns to the origin position and shifts to normal semi-automatic register mark detection mode.

- Register mark search may not be performed correctly unless the workpiece that was detected last time and the register mark color are used. In that case please detect the register mark manually again.
- Register mark search cannot be performed unless register mark detection is performed normally more than once after turning on the power.

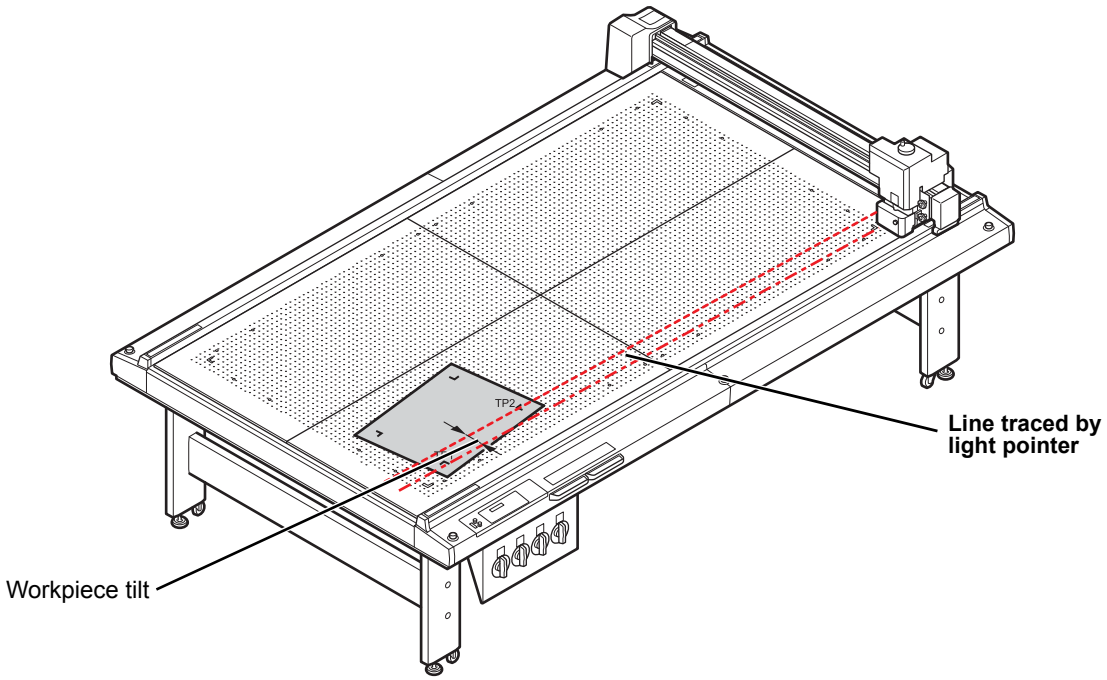
Detecting Register Marks

The unit can automatically detect register marks printed on the workpiece to cut round outlines of designs printed on the workpiece.

Important!
- If the workpiece has curled, flatten it out.
- If using cutting software that does not offer register mark functions, ensure that the areas between TP1 and TP3 and between TP1 and TP2 are free of images and dirt.

Using the Light Pointer to Check the Workpiece Tilt

By pressing the jog keys to move the light pointer between points TP1 and TP2, the tilt of the workpiece can be checked from the light-pointer line. Adjust the tilt of the workpiece to this line.



Register Mark Detection Procedure

1 **Mount the workpiece.**

2 **Adjust the height of the head.**

- Adjust the head height by referring to the following. RC, RT (☞P.1-24), T, TF, TD (☞P.1-33)

Hint!
- If you do not adjust the height of the head, you may erroneously detect register marks and IDs.

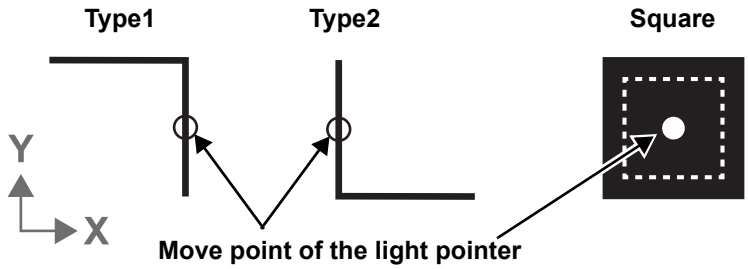
3 **Press END key in local mode.**

- The mark search mode is selected.

<MARK DETECT> mm
X:+0000.0 Y:+0000.0

4 Press the jog keys to accurately align the light pointer to the positions shown below.

• If you cannot match the position easily, use FUNCTION key to reduce the jog speed.(☞P.3-5)



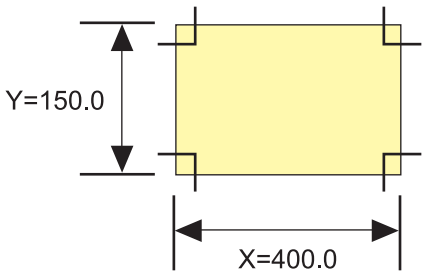
5 Press ENTER key.

• Register mark detection starts.
• If SCALE is set to “BEFORE”, when ENTER is pressed, the screen shown at Step 5 appears before register mark detection starts.
• An error message appears if the register marks cannot be detected. Mount the workpiece again.

6 After the register marks are detected, the SCALE CORRECT screen appears. (This example shows 4-point detection.)

• If the data lengths and detected lengths differ, use ▲ ▼ to set them.

Hint!
- If [SCALE] is set to OFF, the <SCALE SET> screen is not displayed.
- If [MARK DETECT] its set to [2pt−X], the display for inputting the Y length will not appear.
- If [DETECT] is set to “1pt” the <SCALE SET> screen is not displayed.



7 Press ENTER key after setting.

• The local mode is selected.
• If SCALE is set to “before”, register mark detection starts.
• Press END to disable the scale correction.

Automatic detection of register marks after cutting

When register mark detection, register mark search, and data ID are all valid, after the cut, the next register mark is automatically searched.
Also, if you detect marks one or more times, after work exchange, perform register mark search in the following procedure.
Please set the cut area so that you can search for register marks correctly.

1 **Replace the workpiece and set a new workpiece so that the origin is on the workpiece.**

2 **Press the ENTER key in Local mode.**

3 **Search for register marks automatically.**

- Scanning back and forth between the set scan width at half the registration mark size from the origin, and detect marks when a line, dot or printed material is detected.
  When square marks or vertical/horizontal lines are detected correctly, they are recognized as register marks and the starting point is set.

Continuous Cutting of Register Marks

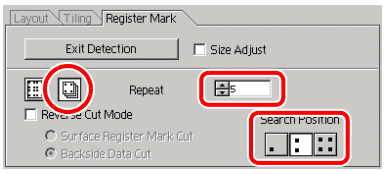
The FineCut cutting software permits continuous cutting of workpieces with only one set of register mark data printed.

Important!

- To cut multiple printed images into one workpiece, select "Multi Mode".
- When data remains in the receive buffer, the remaining data will also be cut. Be sure to carry out the Data Clear operation before performing continuous cutting.
  ☞ P.2-22"Interrupting Processing (Data Clear)"

1 Make the FineCut settings and start plotting.

(1) Select the single mode.
(2) Set the number of continuous cuts.
(3) Select the number of register marks to detect.
• For details, see the FineCut Operation Manual.



2 When cutting of the first workpiece is complete, replace the workpiece and press VACUUM .

• Press END key to cancel continuous cutting.

<REMOTE>
WORK EXCHANGE

3 Detect the register marks. (☞ P.4-13)

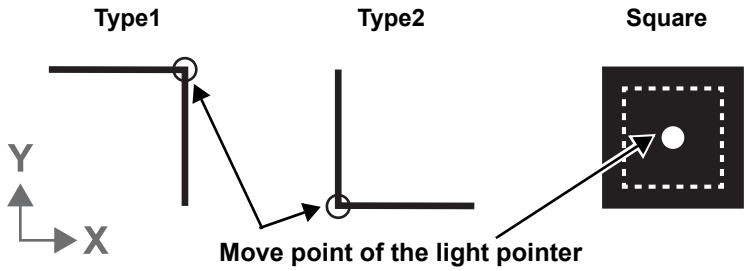
• Copying starts when register mark detection is complete.
• Repeat Step 2 and Step 3 for the designated number of cuts.

<MARK DETECT> mm
X:+0000.0 Y:+0000.0

Important!

Detecting the registration marks

- The light pointer alignment position and movement procedures during registration mark detection using the plotter are different for the first time, and the second and following times.
  Light pointer position
  Align the light pointer with the edges of the registration mark by referring to the figure on the right.



4 When the designated number of workpieces has been cut and the system reverts to remote mode.

• Head withdrawal follows the setting of [AFTER PLOT] - [AUTO VIEW]. (☞ P.1-40)

<LOCAL>
A:SWIVEL

Link cut and print (ID cut)

You can send cut data automatically from the computer by adding data ID code to the register mark.
Please also refer to the operation manual of "FineCut 8 or RasterLink" for how to attach the data ID code.
You can print & cut (ID cut) at once by linking with RasterLink 6 Plus.
For details, refer to "ID cut usage guide".

IDcut

1 Changing settings for reading data ID code.

• Change the following setting of "Mark detection".

	Setting item	Setting parameter	Setting value	Remarks
1	Read data ID	Data ID code	ON OFF	Enable reading of data ID.
2	Number of mark detection	Mark detection	1 point	To detect only the origin register mark, you will make one detection. Even if it is set to a point other than 1 point, only one point will be detected.
3	Register mark size	Size	Any	Adjust to the printed registered mark.
4	Register mark shape	Shape	Any	Adjust to the printed registered mark.
5	Mode after startup	Startup mode	Remote	After data ID detection, it becomes automatically remote.

2 Set the work.

3 Detect register marks. (☞P.4-13)

• When detection of register mark ends, read the data ID code.
• If ID reading fails, an error is displayed and processing is interrupted.

Important!
• Because IDs may be misrecognized, be sure to match the setting to the printed register mark size.

4 After reading the data ID code, shift to remote mode.

• Automatically send cutting data from the computer.
• Please be aware that cutting will start automatically.

5 After cutting, find the next register mark.

• Detection time is affected by the specified width and range.

Hint!
- When using data ID, the size of data to be cut (distance between register marks) must be about 70 mm or more.
- Registration mark search may be incorrectly searched unless the media and register mark color is the same as the last detected registration mark. In that case, please detect marks again manually.
- Register mark detection can not be performed unless register mark detection is performed normally more than once after turning on the power.
- When the data ID code setting is ON, please do not set mark registration detection setting to OFF.

Cut from the backside

Procedure of backside cutting

It corresponds to backside cutting using mark chip. Please use it for media such as cardboard, which does not make the finish clean when cutting from the surface.
It can also be combined with data ID code.
Please also see the operation manual of "FineCut 8".

1 **Set the work.**

2 **Detect register marks. (☞P.4-13)**

3 **Press REMOTE key.**

- Change to remote mode.

4 **Send data from the host computer.**

- When receiving data, the cut will start automatically.

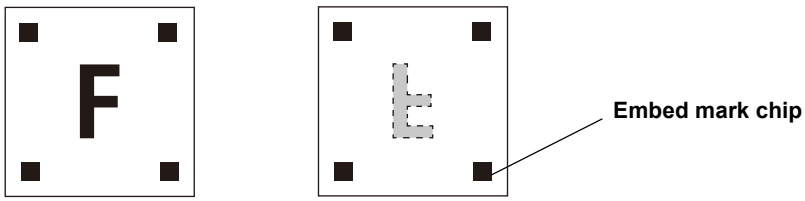
5 **Cut the diagonal of the register mark**

6 **Retract the head to the upper right after cutting.**

- The head is evacuated regardless of the operation setting.
- Vacuum turns off after head retraction.
- The display will show as shown on the right.
- If you want to interrupt work, please press END key.

```
Reverse work Mark
chipset Press REMOTE
```

7 **Flip the media upside down and embed the mark chip**



8 **Reverse work Mark chip set Press REMOTE key.**

- Turn on vacuum. (If it is OFF before head retraction, it remains OFF)
- It moves automatically to the vicinity of registration mark position and shifts to jog mode for origin mark detection.

9 **Detect register marks.**

- After mark detection, it shifts to remote mode.
- Cutting will start automatically after shifting.

10 **After cutting, head retreats to the upper right.**

Hint!

- It is necessary to embed the mark tip on the back side cut, so the thickness of the media is required 3 mm or more.

Alignment of MARK SENSOR

The offset value of the cutter and the mark sensor can be adjusted.
Set the sheet on which the register mark is printed.

1 **Install a cutter in the tool holder.**

2 **Confirm that the plotter is in the local mode.**

```
<LOCAL>
A:SWIVEL
```

3 **Press the FUNCTION key.**

```
<LOCAL>                    ▲▼
SET UP                [ENT]
```

4 **Select [MARK SENSOR] by pressing the jog key ▲ or ▼.**

```
<FUNCTION>                 ▲▼
MARK SENSOR           [ENT]
```

5 **Press the ENTER key.**

```
<MARK SENSOR>              ▲▼
SENSOR OFS            [ENT]
```

6 **Select [SENSOR OFS] by pressing the jog key ▲ or ▼.**

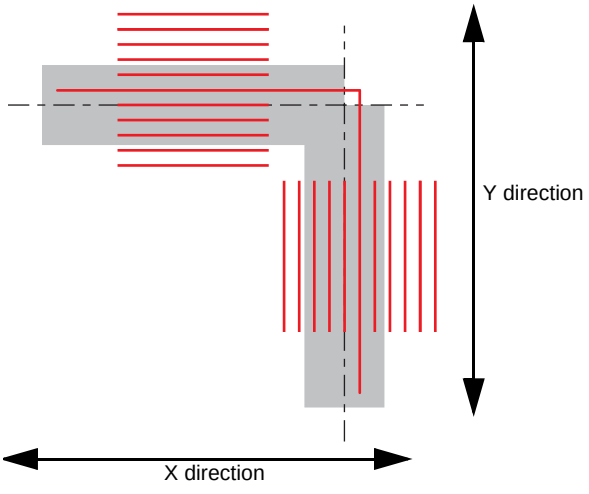
```
<MARK SENSOR>              ▲▼
SENSOR OFS            [ENT]
```

7 **Press the ENTER key.**

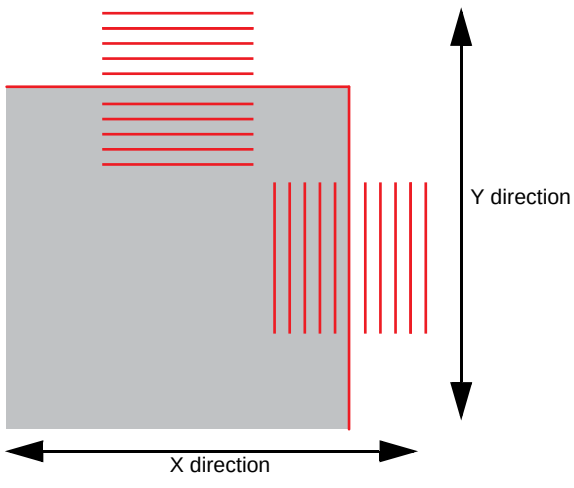
```
<SENSOR OFFSET>
X= 0.0mm Y= 0.0mm
```

- After detecting registration mark (1pt), cut the center line of the register mark and both sides of five auxiliary lines every 0.2 mm.

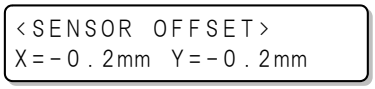
Misaligned by +0.2 mm from the center line of the register mark (— - —) in the X and the Y direction.



When performing sensor offset adjustment with a square registration mark

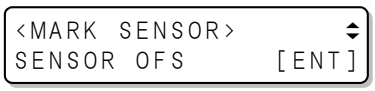


8 **Enter the corrected value (mm) by pressing the ▲▼ for the X direction, or the ▲▼ for the Y direction.**



- If misaligned by +0.2 mm, enter "-0.2".

9 **Press the ENTER key.**



- Registering the compensation value.

10 **Press the END key twice for terminating this function.**

Important!

- The setting values are kept in memory even when the power is turned off.
- The sensor offset value selected by this operation is not initialized by SETUP RESET operation.

Check the sensor for the registration mark detection

Prepare the sheet on which the registration mark is printed.

Important!

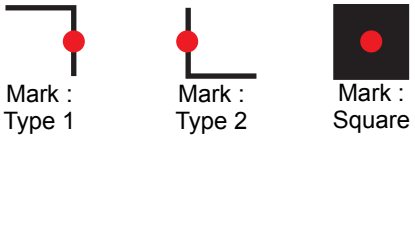
- If you move the head and sheet manually, you cannot perform the right response check. Be sure to perform it via the following operations.
- For conditions of already printed registration mark, refer to “Precautions when Creating Data with Register Marks” (☞ P.4-2).

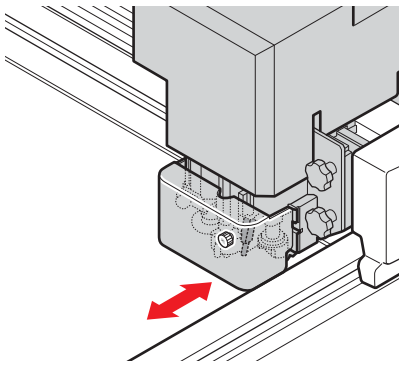
1 **Make sure that the plotter is in local mode.**

<LOCAL>
A:SWIVEL

2 **Enter the jog mode by pressing the jog key ▲ ▼ ◀ or ▶.**

3 **Press ▲ ▼ ◀ ▶ to move the light pointer to the registration mark detection position.**





4 **Press the END key to terminate the jog mode.**

- The plotter returns to the local mode.

5 **Press the FUNCTION key.**

<FUNCTION>
SET UP [ENT]

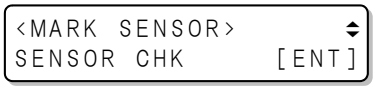
6 **Select [MARK sensor] by pressing the jog key ▲ or ▼.**

<FUNCTION>
MARK SENSOR [ENT]

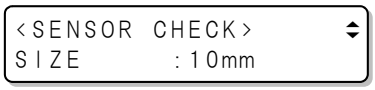
7 **Press the ENTER key.**

<MARK SENSOR>
SENSOR OFS [ENT]

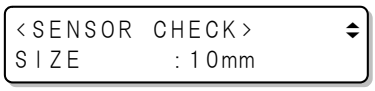
8 **Select [SENSOR CHECK] by pressing the jog key ▲ or ▼ .**



9 **Press the ENTER key.**



10 **Press the jog key ▲ or ▼ to select [SIZE], and ress the ENTER key.**



- Set the length of the register mark.
- For details on setting the [SIZE], refer to the [MARK DETECT] setting procedure. (☞ P.4-10)

11 **Press the jog key ▲ or ▼ to select [FORM].**

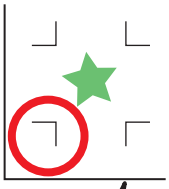
- Set the shape of the register mark.
- For details on setting the [FORM], refer to the [MARK DETECT] setting procedure. (☞ P.4-10)

12 **Perform registration mark detection with the jog key ENTER key. (Next page)**

Detect operation

1 **Scan in the Y direction (plus direction) to detect the line.**

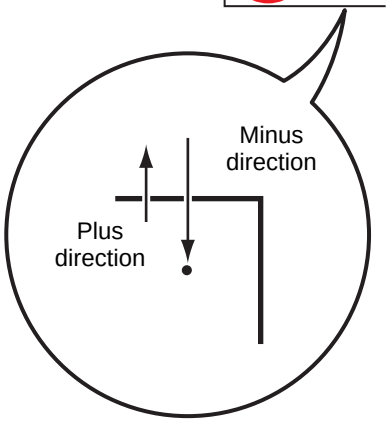
- The buzzer sounds when the line is detected. If the line is not detected, the buzzer does not sound.



2 **Scan in the Y direction (minus direction) to detect the line.**

3 **Scan in the X direction (plus direction) to detect the line.**

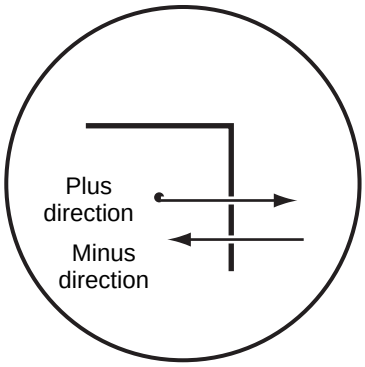
4 **Scan in the X direction (minus direction) to detect the line.**



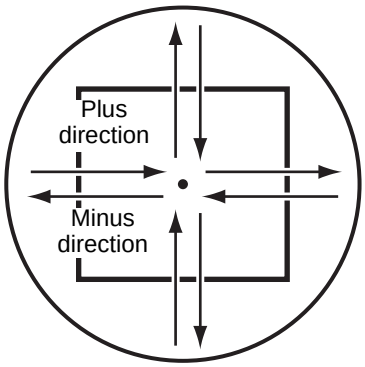
Scan in the Y direction

5 **Follow the Steps 1 to 4, and confirm if the buzzer sounds 4 times.**

- When the detection behavior completes successfully, the buzzer sounds 4 times.
- If the buzzer does not sound, contact our sales office after checking the registration mark condition.



Scan in the Y direction



When mark is square

Chapter 5
Daily Maintenance

This Section....

... describes how to maintain the unit and how to replace the head with an optional head.

Daily Maintenance

Periodic cleaning is recommended to ensure continuous satisfactory use of the unit.

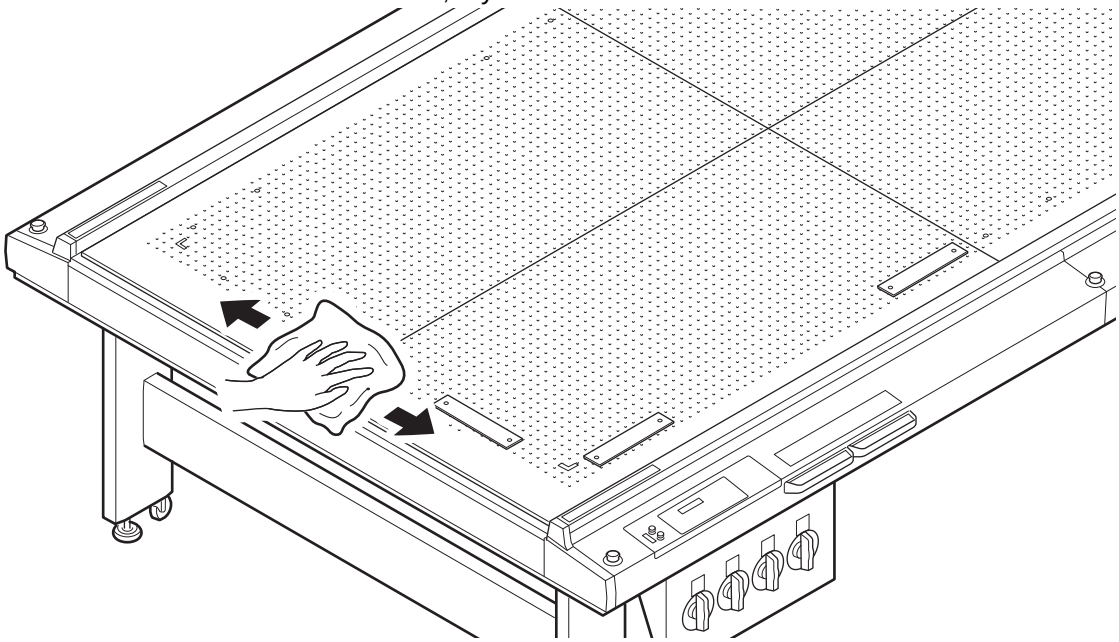
- Do not use an abrasive cleaner or thinners. These could deform the covers or cutting panel.

Cutting Panel Surface

Clean the air holes with a fine needle if they become blocked. The blocking foreign matter will be discharged from the vacuum outlet.
If the surface is lightly contaminated, wipe off the dirt with a clean, dry cloth. For more severe dirt, wipe off the dirt with a small amount of alcohol on a clean, dry cloth.

Covers

If the surface is lightly contaminated, wipe off the dirt with a clean, dry cloth. For more severe dirt, wipe off the dirt with a small amount of alcohol on a clean, dry cloth.



Care of the cutter blade

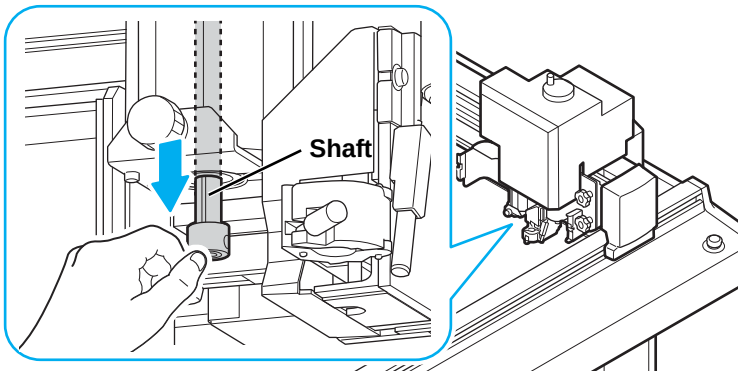
When you cut the tacky work, the blade gets glue and the sharpness of blade becomes dull.
Please wipe off with a commercially available cleaner, etc..

- When cleaning of the cutter blade, please do not touch the cutting edge with your fingers. This may cause injury.

Unit B

The reciprocating shaft may cease moving if lubrication is inadequate.

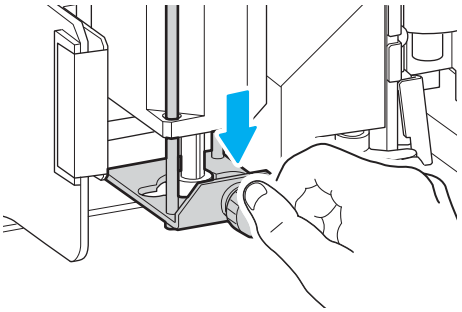
Before the work of the day, apply the grease to vibration axis.



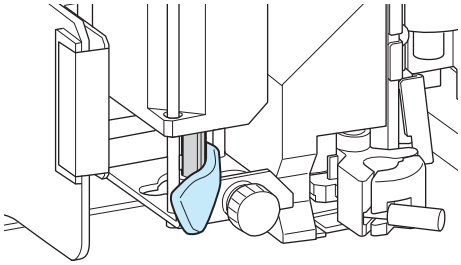
Important!

- This work is done in the state of power supply OFF.
- Keep the tool removed.

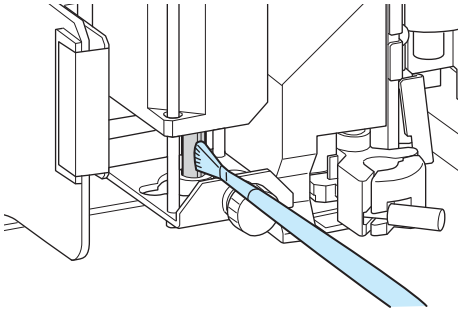
1 Draw the vibration axis.



2 Wipe off the old grease adhering to the axis in the lint-free cloth.

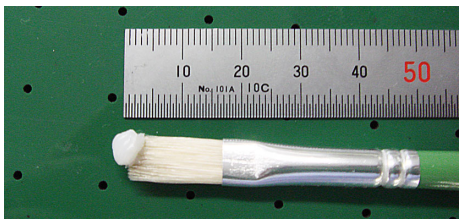


3 Apply grease to the vibration axis with the included brush.

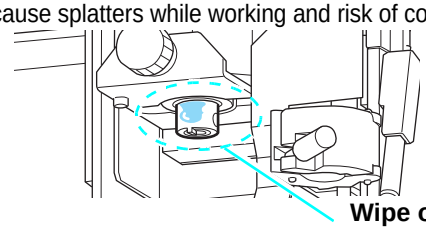


Important!

- Amount of grease to be applied is about 0.05g.



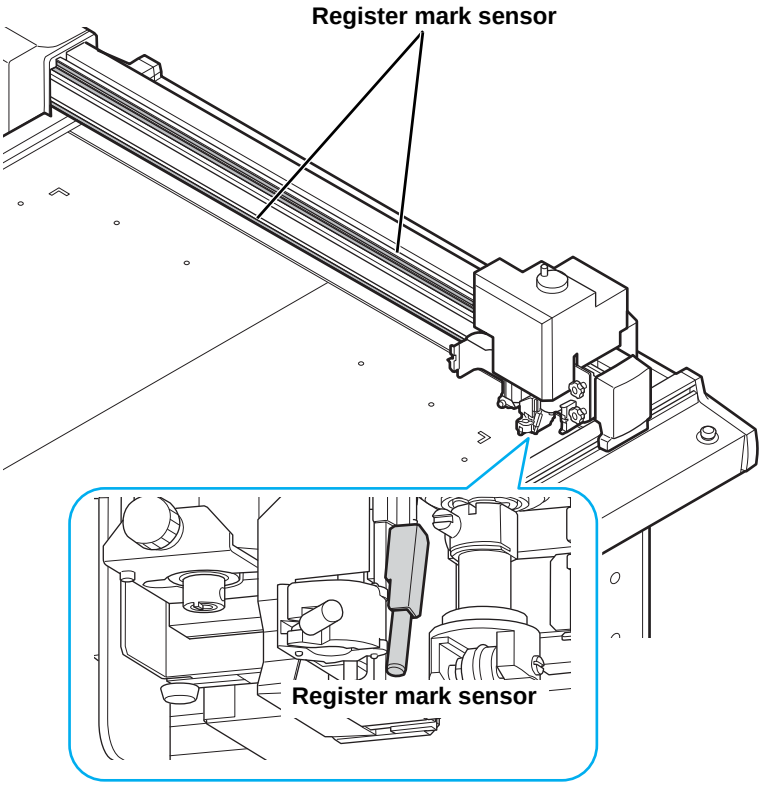
- If the application quantity of grease is too much or adheres to other than the oscillation axis, may cause splatters while working and risk of contaminating the work. Please wipe off the extra grease.



Cleaning the Register Mark Sensor

Wipe dust generated during cutting off the register mark sensor with a clean, dry waste.

In addition, when Y bar rail is dirty, noise occurs.
After wiping off the dust with a dry lint-free cloth, take the attached grease to lint-free cloth and apply to the rail.



Supplied Items

Tool List

★= Standard attachment
○= Optional/Supplied Items

Name	Part Number	T	TF	RT	TD	RC	Notes
Swivel cutter holder	SPA-0001	★	★	★	★	★	
Swivel replacement blade for PVC	SPB-0001	★	★	★	★	★	3
Swivel replacement blade for small letters	SPB-0003	○	○	○	○	○	3
Swivel replacement blade for rubber sheets	SPB-0005	○	○	○	○	○	3
Swivel replacement blade for reflecting sheets	SPB-0006	○	○	○	○	○	2
Swivel replacement blade for fluorescent sheets	SPB-0007	○	○	○	○	○	3
Low pressure blade	SPB-0030	○	○	○	○	○	3
Cutter holder 4N	SPA-0053	★	★	★	★	○	
High-speed blade 30°	SPB-0043	★	★	★	★	★	40 x 5 case
High-speed blade 45°	SPB-0044	○	○	○	○	○	3
Carbide blade 30°	SPB-0045	★	★	★	★	★	3
Carbide blade 30° DLC	SPB-0080	○	○	○	○	○	3
Carbide blade 45°	SPB-0046	○	○	○	○	○	3
Carbide blade 45° DLC	SPB-0081	○	○	○	○	○	3
Titanium-coated blade 30°	SPB-0047	○	○	○	○	○	1
Titanium-coated blade 30°	SPB-0050	○	○	○	○	○	1 x 3 set
Titanium-coated blade 45°	SPB-0008	○	○	○	○	○	1
Cutter holder 2Nα	SPA-0261	—	—	○	—	★	
High-speed blade 30°	SPB-0043	★	★	★	★	★	40 x 5 case
Carbide blade 30°	SPB-0045	★	★	★	★	★	3
Carbide blade 30° DLC	SPB-0080	○	○	○	○	○	3
Titanium-coated blade 30°	SPB-0047	○	○	○	○	○	1
Titanium-coated blade 30°	SPB-0050	○	○	○	○	○	1 x 3 set
Cutter holder 7N	SPA-0054	○	★	○	○	○	
High-speed blade 30° 7 mm	SPB-0048	○	★	○	○	○	15 x 5 case
Cutter holder RN	SPA-0055	○	○	○	○	○	
Titanium-coated, double-edged blade	SPB-0009	○	○	○	○	○	1
Cutter holder JN	SPA-0061	○	★	○	○	○	
Carbide round blade	SPB-0031	○	★	○	○	○	2
Cutter holder 10N	SPA-0077	○	○	★	○	○	
Carbide design blade 30°	SPB-0051	○	○	★	○	○	3
Joint sheet carbide blade	SPB-0063	○	○	○	○	○	3
Cutter holder 06 (S)	SPA-0251	—	—	★	—	—	CF 2 and 3 only
Carbide blade 2°	SPB-0064	—	—	★	—	—	5
Cutter holder 07	SPA-1114	—	—	—	—	★	
20 mm blade	SPB-0055	—	—	—	—	★	10
Carbide blade 17°	SPB-0065	—	—	—	—	★	5
Carbide blade 17° DLC	SPB-0083	—	—	—	—	★	5

Name	Part Number	T	TF	RT	TD	RC	Notes
Cutter holder 08 x 15	SPA-0170	—	—	○	—	○	
Carbide blade 7 x 15	SPB-0075	—	—	○	—	○	
Cutter holder 09 x 15	SPA-0179	—	—	○	—	○	
Carbide blade 25 x 5	SPB-0077	—	—	○	—	○	5
Carbide blade 25 x 5 DLC	SPB-0078	—	—	○	—	○	5
Carbide blade 25 x 5 F DLC	SPB-0079	—	—	○	—	○	5
Grid roller DN	SPA-0056	—	—	—	★	○	Thick (for thickness E)
Grid roller CN	SPA-0057	—	—	—	★	★	Medium (for coat ball)
Grid roller PN	SPA-0058	—	—	—	○	○	Thin (for pleats)
Boat-shaped plate EN	SPA-0067	—	—	—	○	○	Cardboard (for thickness E and B)
Boat-shaped plate YN	SPA-0124	—	—	—	○	★	Cardboard (standard)
Mitsubishi pen holder	SPA-0183	★	★	★	★	★	
Mitsubishi ball-point pen refill	SPC-0726	★	★	★	★	★	
Commercially available pen holder	SPA-0068	○	○	○	○	○	For N-5200
Felt mat for reciprocating 1225	SPA-0835	—	—	★	—	★	

Optional connection

Name	Part Number	Specifications
Interface cable for PC (5 m)	RSC-02-05	PC-98 series, for 25 PIN (male/male type)
Interface cable for DOS/V (5 m)	RSC-32-05	DOS / V PC, (9 PIN male, 25 PIN female type)
Interface cable for Macintosh (3m)	OPT-SS019	For Macintosh (9 PIN male, 25 PIN female type)
Vacuum unit	OPT-C0199	120V, 0.51/0.7kw Sold separately: filter unit (OPT-C0165) filter element (SPC-0226)
Vacuum unit	OPT-C0200	220V, 0.51/0.7kw Sold separately: filter unit (OPT-C0165) filter element (SPC-0226)
Vacuum unit	OPT-C0201	240V, 0.51/0.7kw Sold separately: filter unit (OPT-C0165) filter element (SPC-0226)
Vacuum unit	OPT-C0206	220V, 0.25/0.38kw Sold separately: filter unit (OPT-C0164) filter element (SPC-0225)
Vacuum unit	OPT-C0207	240V, 0.25/0.38kw Sold separately: filter unit (OPT-C0164) filter element (SPC-0225)
Vacuum unit	OPT-C0205	120V, 0.38kw Sold separately: filter unit (OPT-C0164) filter element (SPC-0225)
Vacuum connection cable	OPT-C0151	
Edge adjuster	OPT-C0030	For tangential cutter
Edge adjuster	OPT-C0066	For eccentric cutter

Chapter 6
Troubleshooting

This Section....

describes what to do if you think the unit is broken and gives the appropriate remedies for each displayed error number.
It also describes the self-test functions.

Problem	Solution
Inadequate cutting • When the cutter descends, cutting is incomplete, although the blade protrudes by more than the workpiece thickness.	The workpiece can be reliably cut by increasing the pressure when the cutter descends. • Set or increase the pressure offset value that is added to the press value. ☞ P.2-9 "Select the tool condition"
Cutting incomplete at the start or end point (Reciprocating cutter) • Cutting is incomplete at the positions where the cutter descends or ascends.	Increase the start offset setting to move forward the position where the cutter descends. ☞ P.2-9 "Select the tool condition"
	Increase the end offset setting to move backward the position where the cutter ascends. ☞ P.2-9 "Select the tool condition"
Cutting incomplete at the start or end point (Swivel cutter)	Set the over cut. (☞ P.3-22)
Circle start and end points do not match • A circle start and end points can be displaced due to the workpiece thickness and hardness.	Use circle θ correction to correct for the displacement.
Grid lines torn along flutes of corrugate cardboard. • Tearing can occur if the press value in the cutting conditions is too high when grid cutting along the flutes of corrugated cardboard.	**(1)** Align the corrugated cardboard flutes in the Y-axis direction. **(2)** Set the Y press value in the cutting conditions. (☞ P.2-11)

Adjusting the Tools

Tool adjustment is required if the start and end points do not match when cutting (drawing) with the unit.
Tool adjustment is possible only when using Model R1 or Model TF2.

The following four tool adjustments are available:

(1) Cutter adjustment ..... Adjusts the cutter mounted in Head B or C.
(2) Roller adjustment ..... Adjusts a roller mounted in Head C.
(3) Circle θ correction ..... Adjustment if start and end points do not match when cutting (drawing) a circle.

Adjusting the Cutter

Adjusts the cutter mounted in Head B or C.
The following adjustments are available to adjust the cutter.

Hint! • A roller can be adjusted in the same way.

❶ **Adjust Eccentricity** **P.6-4**	Make this adjustment after replacing the blade or the tool.	**Adjust Eccentricity Screen** <CENTER ADJUST> CENTER A: 0.00mm <CENTER ADJUST> CENTER B: 0.00mm
❷ **Adjust θ Angle** **P.6-9**	Adjusts the cutter and roller angle of rotation.	**Adjust θ Angle Screen** <θ ADJUST> θ: 0.00°
❸ **Adjust Offset** **P.6-7**	Adjusts for displacement between the cutter and tool positions.	**Adjust Offset Screen** <OFFSET ADJUST> OFFSET X: 0.00mm <OFFSET ADJUST> OFFSET Y: 0.00mm

- **For more efficient cutter adjustment, follow the sequence below:**

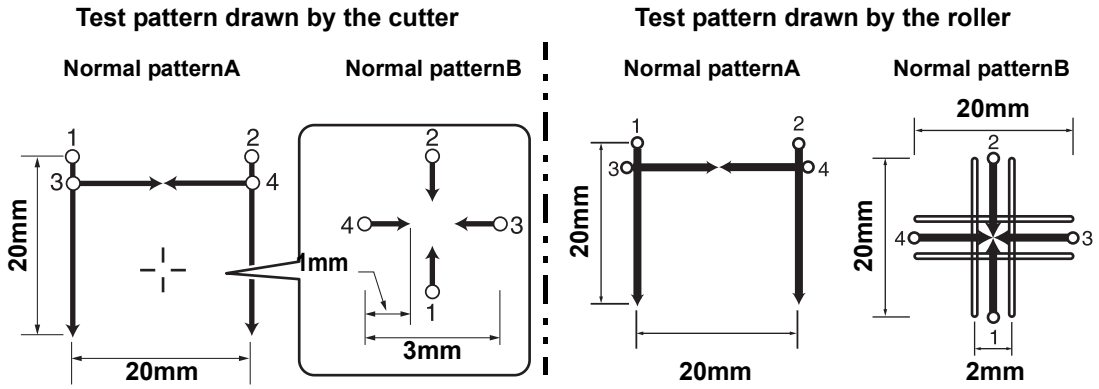
❸ ⇨ ❶ ⇨ ❷ ⇨ ❶ ⇨ ❷ ⇨ ❸

This sequence is one recommended example. Set in a sequence that will be convenient for you.

Adjusting Eccentricity

Adjust the eccentricity by checking the test pattern drawn by the cutter or roller.

Hint! • First, mount a pen in Unit A.



1 **Press the FUNCTION key in the local mode.**

```
<FUNCTION>
SET UP          [ENT]
```

2 **Press the jog key ▲ or ▼ to select [TOOL ADJUST].**

```
<FUNCTION>
TOOL ADJUST     [ENT]
```

3 **Press the ENTER key.**

```
<TOOL SELTECT>
TOOL: B:REC.CUTTER1
```

4 **Press the jog key ▲▼ to select tool.**

• Setting: Reciprocating Cutter 1 to 3, Tangential Cutter 1 to 6, Roller 1 to 3

```
<TOOL SELTECT>
TOOL: B:REC.CUTTER1
```

5 **Press the ENTER key.**

```
<FUNCTION>
MARK DETECT     [ENT]
```

6 **Attach the selected tool. (☞ P.1-14)**

7 **Press the jog key ▲▼ to select [CENTER ADJUST].**

```
<REC.CUTTER1 ADJ>
CENTER ADJUST   [ENT]
```

8 **Press the ENTER key.**

```
<CENTER ADJUST>
CENTER A: 0.00mm
```

9 **Press TEST key.**

<TEST PATTERN>
DRAW: [ENT] POS: [JOG]

10 **Press the jog keys to move the head to the drawing position.**

11 **Press ENTER key to start drawing the test pattern.**

12 **Press END key to return to the selection of the adjustment value.**

<CENTER ADJUST>
CENTER A: 0.00mm

13 **Press the jog key ▲▼ to select A or B.**

<CENTER ADJUST>
CENTER B: 0.00mm

14 **Press the ENTER key.**

15 **Adjust by pressing ▲▼.**

<CENTER ADJUST>
CENTER B: 1.00mm

SWIVEL A : - 5.00mm ~ + 5.00mm
SWIVEL B : - 5.00mm ~ + 5.00mm

• For details, see P.6-6 “Adjusting Eccentricity”.

16 **Press ENTER key, and determine the adjustment value.**

<CENTER ADJUST>
CENTER A: 0.00mm

- When cancel the registration, press END key.
- When adjust the other pattern, press ▲▼ key to display the screen to adjust and repeat steps 12 and later.
- When quit, press END key in the display of step 12.

Adjusting the Eccentricity

The eccentricity can be adjusted on the screen below.

Adjusting Pattern A
Aligns the center of the cutter (roller) with the center of the holder.
Press ▲ or ▼ to adjust. (0.01 mm pitch)

<CENTER ADJUST>
CENTER A: 0.00mm

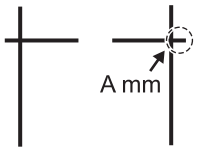
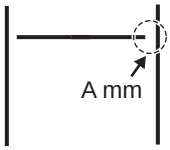
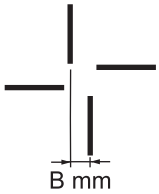
Adjusting Pattern B
Adjustment to check whether the tool is tilted.
Press ▲ or ▼ to adjust. (0.05 mm pitch)

<CENTER ADJUST>
CENTER B: 1.00mm

(1) Check the position of the horizontal line with respect to the vertical lines on Pattern A.
- Check if the horizontal line protrudes or if there are gaps.

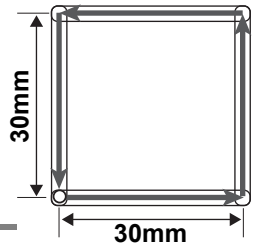
(2) Check if the X and Y axis lines in Pattern B form straight lines.

(3) Make the adjustment.

Adjusting Pattern A	Adjusting Pattern B
 **Line protrudes** Measure distance A on the diagram. Press ▼ to adjust in the positive direction to Set value = -A.  **Gap** Measure distance A on the diagram. Press ▲ to adjust in the negative direction to Set value = +A.	 **Top line displaced to the right** Press ▲ to adjust in the positive direction to Set value = (length B in diagram) / 2.  **Top line displaced to the left** Press ▼ to adjust in the negative direction to Set value = (length B in diagram) / 2.
• When using the 2°x10 carbide reciprocating cutter, adjust the horizontal line to protrude approx. 2 mm.	

Adjusting the Offsets

Conduct positioning to correct for displacements by comparing a test pattern drawn by the pen with a test pattern drawn by the cutter or roller.



Normal test pattern

○ : Cutting start point
→ : Cutting direction
⬭ : Pen

Hint!

- First, mount a pen in Unit A.

1 **Press the FUNCTION key in the local mode.**

```
<FUNCTION>
SET UP          [ENT]
```

2 **Press the jog key ▲ or ▼ to select [TOOL ADJUST].**

```
<FUNCTION>
TOOL ADJUST     [ENT]
```

3 **Press the ENTER key.**

```
<TOOL SELTECT>
TOOL: B:REC.CUTTER1
```

4 **Press the jog key ▲▼ to select tool.**

- Set value: REC.CUTTER1~3, Tangential Cutter1~6, ROLLER1, 2
- The tools that can be selected depend on the model.

```
<TOOL SELTECT>
TOOL: B:REC.CUTTER1
```

5 **Press the ENTER key.**

```
<FUNCTION>
MARK DETECT     [ENT]
```

6 **Attach the selected tool. (☞ P.1-14)**

7 **Press the jog key ▲▼ to select [OFFSET ADJUST].**

```
<REC.CUTTER1 ADJ>
OFFSET ADJUST   [ENT]
```

8 **Press the ENTER key.**

```
<OFFSET ADJUST>
OFFSET X: 0.00mm
```

9 **Press TEST key.**

```
<TEST PATTERN>
DRAW:[ENT] POS:[JOG]
```

10 **Press the jog keys to move the head to the drawing position.**

11 **Press ENTER key to start drawing the test pattern.**

12 **Press END key to return to the selection of the adjustment value.**

```
<OFFSET ADJUST>
OFFSET X: 0.00mm
```

13 **Press the jog key ▲▼ to select X or Y.**

<OFFSET ADJUST>
OFFSET Y: 0.00mm

14 **Press the ENTER key.**

15 **Press ▲▼ to adjust.**

<OFFSET ADJUST>
OFFSET Y: 1.00mm

CUTTER X(ROLLER X): -20.0 ~ +20.0
CUTTER Y(ROLLER Y): -20.0 ~ +20.0

• For details, see P.6-8 “Adjusting the Offsets”.

16 **Press ENTER key to determine the adjustment value.**

<OFFSET ADJUST>
OFFSET X: 0.00mm

• When cancel the registration, press END.
• When adjust the other pattern, press ▲▼ and display the screen to adjust and repeat steps 12 or later.
• When quit, press END in the display of step 12.

Adjusting the Offsets

The offsets can be adjusted on the screen below.

Adjusting Pattern X
Distance from pen to cutter (roller) with respect to the X axis.
Press ▲ or ▼ to adjust. (0.05 mm pitch)

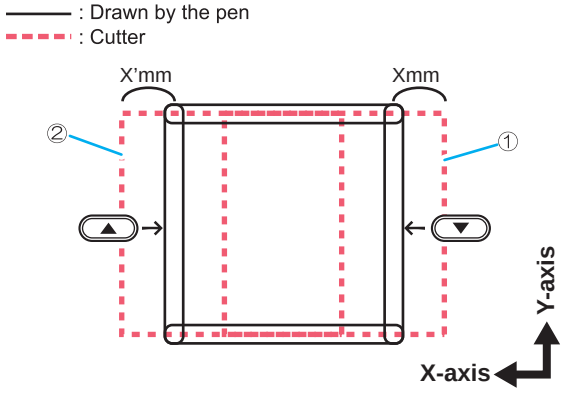
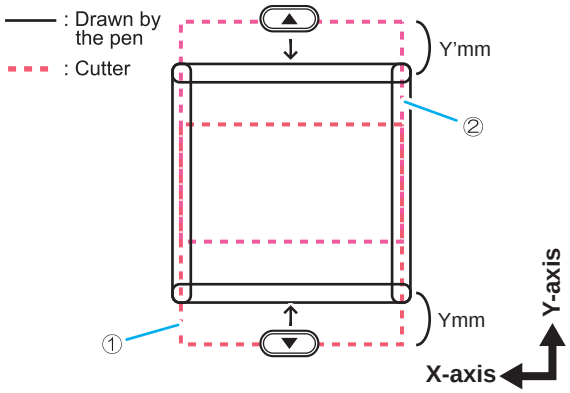
<OFFSET ADJUST>
OFFSET X: 0.00mm

Adjusting Pattern Y
Adjustment to check whether the tool is tilted.
Press ▲ or ▼ to adjust. (0.05 mm pitch)

<OFFSET ADJUST>
OFFSET Y: 0.00mm

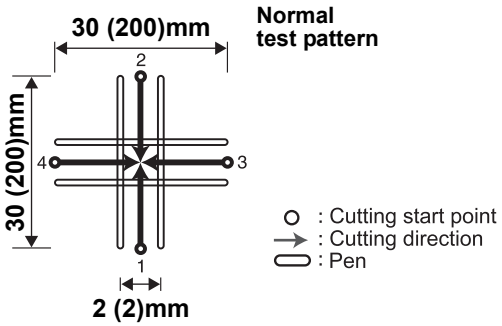
(1) Measure the displacement between the patterns drawn with the pen and cutter (roller).

(2) Make the adjustment.

Displaced horizontally from the operation panel	Displaced vertically from the operation panel
	
When a drawing by the cutter is displaced to the right (dotted line 1) Press ▲ to set the Set value = (Current indicated value) + (Y mm). **When a drawing by the cutter is displaced to the left (dotted line 2)** Press ▼ to set the Set value = (Current indicated value) - (Y' mm).	**When a drawing by the cutter is displaced downward (dotted line 1)** Press ▼ to set the Set value = (Current indicated value) + (X mm). **When a drawing by the cutter is displaced upward (dotted line 2)** Press ▲ to set the Set value = (Current indicated value) - (X' mm).

Adjusting the θ Angle

Adjust the angle of rotation by comparing a test pattern drawn by the pen with a test pattern drawn by the cutter or roller.



Hint!

- Values in parentheses ( ) in the diagram show the sizes of Roller.
- First, mount a pen in Unit A.

1 **Press the FUNCTION key in the local mode.**

```
<FUNCTION>
SET UP          [ENT]
```

2 **Press the jog key ▲ or ▼ to select [TOOL ADJUST].**

```
<FUNCTION>
TOOL ADJUST     [ENT]
```

3 **Press the ENTER key.**

```
<TOOL SELTECT>
TOOL: B:REC.CUTTER1
```

4 **Press the jog key ▲▼ to select tool.**

- Set value: REC.CUTTER1~3, Tangential Cutter1~6, ROLLER1, 2
- The tools that can be selected depend on the model.

```
<TOOL SELTECT>
TOOL: B:REC.CUTTER1
```

5 **Press the ENTER key.**

```
<FUNCTION>
MARK DETECT     [ENT]
```

6 **Attach the selected tool. (☞ P.1-20)**

7 **Press the jog key ▲▼ to select [θ ADJUST].**

```
<REC.CUTTER1 ADJ>
θ ADJUST        [ENT]
```

8 **Press the ENTER key.**

```
<θ ADJUST>
θ:   0.00°
```

9 **Press TEST key.**

```
<TEST PATTERN>
DRAW:[ENT] POS:[JOG]
```

10 **Press the jog keys to move the head to the drawing position.**

11 **Press ENTER key to start drawing the test pattern.**

12 **Press END key to return to the selection of the adjustment value.**

<θ ADJUST>
θ: 0.00°

13 **Press the ENTER key.**

14 **Adjust by pressing ▲▼.**

- **Set values**:- 45.00º ~ + 45.00º
- For details, see P.6-10 “Adjusting the θ Angle”.

<θ ADJUST>
θ: 1.00°

15 **Press ENTER key and determine the adjustment value.**

- When cancel the registration, press END key.
- When quit, press END key in the display of step 12.

<CENTER ADJUST>
CENTER A: 0.00mm

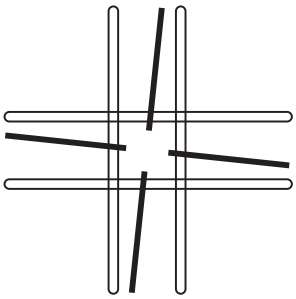
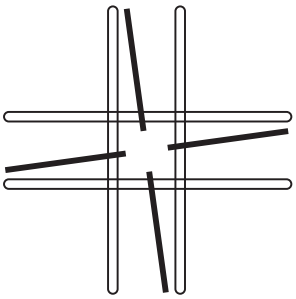
Adjusting the θ Angle

The θ angle can be adjusted on the screen below.

Press ▲ or ▼ to adjust. → <θ ADJUST>
θ: 0.00°

(1) Check the displacement between the patterns drawn with the pen and cutter (roller).

(2) Make the adjustment.

Rotated clockwise	Rotated counterclockwise
	
Press ▼ to decrease the CUTTER θ value.	Press ▲ to increase the CUTTER θ value.

Circle θ Correction

Conduct the operations below to correct for displacements if the start and end points do not match when cutting a circle.

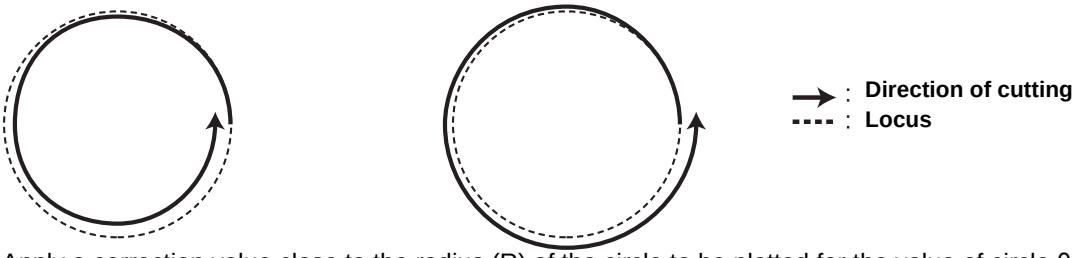
Circle θ Correction

The unit can conduct correction for six circles of different radius.

Circle type for correction	Set values
Radius (R) ≤ 5 mm	- 20° ~ + 20°
5 mm < Radius (R) ≤ 10mm	- 20° ~ + 20°
10 mm < Radius (R) ≤ 20mm	-9.8° ~ + 9.8°
20 mm < Radius (R) ≤ 50mm	-9.8° ~ + 9.8°
50 mm < Radius (R) ≤ 100mm	-9.8° ~ + 9.8°
100 mm < Radius (R)	-9.8° ~ + 9.8°

Important!

- Depending on the software, correction may not be possible.
- First, set arc θ correction to Enable.
  If arc θ correction is not set to Enable, this offset will not be applied to the drawing (cut).



- Apply a correction value close to the radius (R) of the circle to be plotted for the value of circle θ correction.
  Input not only the correction value of the target range, but also enter the correction value with the range before and after.

  Example)
  - When the radius (R) is 4.5 mm, set the correction value of "radius (R) ≤ 5 mm" and "5 mm <radius (R) ≤ 10 mm"
  - When the radius (R) is 10.5 mm, set the correction value of "10 mm <radius (R) ≤ 20 mm" and "20 mm <radius (R) ≤ 50 mm"

1 **Press the FUNCTION key in the local mode.**

```
<FUNCTION>
SET UP          [ENT]
```

2 **Press the jog key ▲ or ▼ to select [TOOL ADJUST].**

```
<FUNCTION>
TOOL ADJUST     [ENT]
```

3 **Press the ENTER key.**

```
<TOOL SELTECT>
TOOL : B:REC.CUTTER1
```

4 **Press the jog key ▲▼ to select tool.**

- Setting: Reciprocating Cutter 1~3, Tangential Cutter 1~6, Roller 1, 2
- The tools that can be selected depend on the model.

```
<TOOL SELTECT>
TOOL : B:REC.CUTTER1
```

5 **Press the ENTER key.**

6 **Attach the selected tool (☞ P.1-20).**

7 **Press the jog key ▲▼ to select [CIRCLEθ ADJUST].**

<REC.CUTTER1 ADJ>
CIRCLEθ ADJUST [ENT]

8 **Press the ENTER key.**

<CIRCLEθ ADJUST>
R<=5 : 0.0°

9 **Press TEST key.**

<TEST PATTERN>
DRAW:[ENT] POS:[JOG]

10 **Press the jog keys to move the head to the drawing position.**

11 **Press ENTER key to start drawing the test pattern.**

12 **Press END key to return to the selection of the adjustment value.**

<CIRCLEθ ADJUST>
R<=5 : 0.0°

13 **Press the jog key ▲▼ to select circle type for collection.**

<CIRCLEθ ADJUST>
20<R<=50 : 0.0°

- Set values: R<=5, 5<R<=10, 10<R<=20, 20<R<=50, 50<R<=100, 100<R

14 **Press the ENTER key.**

15 **Press ▲▼ to adjust.**

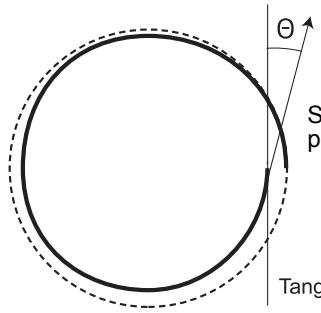
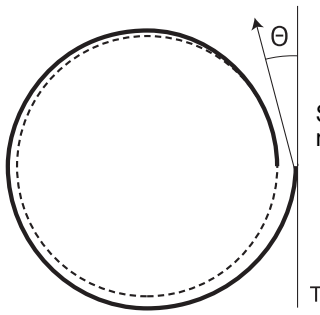
SWIVEL A：-5.00mm ～ +5.00mm
SWIVEL B：-5.00mm ～ +5.00mm

- For details, refer to "Circle θ Correction Method".

16 **Press ENTER key and determine the adjustment value.**

- When cancel the registration, press END key.
- When adjust the other pattern, press ▲▼ and display the screen to adjust and repeat steps 12 and later.
- When quit, press END key in the display of step 12.

Circle θ Correction Method

End point displaced inward	End point displaced outward
	

Setting Arc θ Correction

Set arc θ correction setting to "ON".
Circle θ correction may not be effective depending on your software. (When plotting a circle with an arc command other than a perfect circle, etc.) In that case, set it to "on" in the arc θ correction.

1 **Press the FUNCTION key in the local mode.**

```
<FUNCTION>          ⇕
SET UP              [ENT]
```

2 **Press the jog key ▲ or ▼ to select [TOOL ADJUST].**

```
<FUNCTION>          ⇕
TOOL ADJUST         [ENT]
```

3 **Press the ENTER key.**

```
<TOOL SELTECT>
TOOL: B:REC.CUTTER1
```

4 **Press the jog key ▲▼ to select tool.**

- Setting: Reciprocating Cutter 1~3, Tangential Cutter 1~6, Roller 1, 2
- The tools that can be selected depend on the model.

```
<TOOL SELTECT>
TOOL: B:REC.CUTTER1
```

5 **Press the ENTER key.**

6 **Attach the selected tool. (☞ P.1-20)**

7 **Press the jog key ▲▼ to select [CIRCLE θ ADJUST].**

```
<REC.CUTTER1 ADJUST>
CIRCLEθ ADJUST [ENT]
```

8 **Press the ENTER key.**

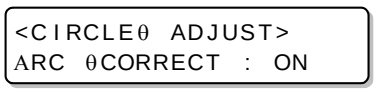
```
<CIRCLEθ ADJUST>    ⇕
R<=5      :  0.0°
```

9 **Press the jog key ▲▼ to select [ARC θ CORRECT].**

```
<CIRCLEθ ADJUST>    ⇕
ARC θCORRECT : OFF
```

10 **Press the ENTER key.**

11 **Press the jog key ▲▼ to select “ON”.**



12 **Press ENTER key.**

- The setting is saved.
- Press END key if you do not want to save the settings.

Troubleshooting

Make some final checks if you think that the unit has broken down. Contact your Mimaki representative if the problem cannot be solved by the remedy described.

Unit does not operate when the power is turned ON

Is the power connected properly ?	NO →	Correctly connect the power cable. (☞ P.1-10)
Is the EMERGENCY switch pressed in ?	Yes →	Release the EMERGENCY switch. (☞ P.1-11)

Unit does not operate after the software data is sent

Is the unit in local status ?	Yes →	Set to remote status. (☞ P.1-36)
Is the interface cable connected properly ?	NO →	Correctly connect the interface cable. (☞ P.1-10)
Has the interface been changed ?	Yes →	Perform the Data Clear operation. (☞ P.2-22)

An error occurs when the data is sent

Do the communications conditions match ?	NO →	Match the plotter conditions to the conditions in the PC. (☞ P.1-38)
Do the PC and plotter commands match ?	NO →	Change the commands on the computer side. (☞ P.3-26)

Tool lifts up the paper

Is the paper (sheet) wrinkled or flexed?	**Yes** →	Flatten out the work. (☞ P.2-6)
Is pen up / down operation defective?	**Yes** →	Turn off the power and move Unit A vertically. Contact your Mimaki representative if Unit A does not move up and down normally.
Isn't Z stroke too small?	**Yes** →	Change the Z stroke value. (☞ P.3-15)

Drawn lines are broken or smudged

Is the drawing speed too high?	**Yes** →	Slow down the “Cutting Speed” for the cutting conditions. (☞ P.2-11)
Is the drawing pressure too low?	**Yes** →	Increase the “Pressure” for the cutting conditions. (☞ P.2-10)
Is the pen out of ink?	**Yes** →	Replace the pen with a new one. (☞ P.1-16)

No reciprocating movement

Inadequate lubrication of the reciprocating shaft?	**Yes** →	Apply a small amount of grease to the shaft. (☞ P.5-3)
Is the oscillation movement turned off?	**Yes** →	Set the “VIBRATION” cutting condition from 1 to 5. (☞ P.2-10) Contact your Mimaki representative if reciprocating movement does not start.
Is the head safety cover open?	**Yes** →	Check that the height of the head is appropriate.

Problems Causing an Error Display

A message appears on the screen when an abnormality occurs in this unit.
Take the appropriate remedy for the displayed message.

Non-fatal Errors

Display	Cause	Remedy
ERROR C02 MAIN RAM	Trouble has occurred in the control RAM.	Contact your dealer or a sales office of MIMAKI.
ERROR C04 EEPROM	Trouble has occurred in the system ROM.	
ERROR C10 COMMAND	Code other than command data has been received.	Check the command setting on the host computer.
ERROR C11 PARAMETER	A parameter outside the numerical range has been received.	Check the parameter.
ERROR C12 DEVICE	The plotter received an improper device control command.	Check the command setting on the host computer.
ERROR C13 PM OVER	Data on polygon has overflown the polygon buffer.	Change the setting so that the polygon command is not used.
ERROR C20 I/O	The communication condition is different.	Make the communication condition same as that of the host computer side. (☞ P.3-29)
ERROR C27 BUFFERover	The interface is faulty.	Check the interface cable.
ERROR 901 OPERATION	An invalid operation was performed on the control panel.	Refer to the relevant page of operation manual for valid operations.
	An ASCII dump was made with an effective area less than A3.	Set the effective area to at least A3 size before conducting an ASCII dump.
	An ASCII dump was made with the origin set at a position that does not allow an effective area of A3 to be obtained.	
ERROR C31 NO DATA	The plotter started the plural sheets cutting but found that there is no data in the receiver buffer.	Refer to the explanation of the plural sheets cutting function. (☞ P.3-11)
ERROR C32 DATAtooBIG	Received data is too large, it is not possible to cut the number of copies	
ERROR 902 DAT REMAIN	The plotter executed an improper operation during a halt.	Press the REMOTE key to cut the remaining data or execute data clear if there is no need of using the data in the receiver buffer. (☞ P.2-22)

Display	Cause	Remedy
ERROR C36 MARKdetect	No registration mark was detected.	Make sure workpiece is not floating
		Check to see if the starting point to detect the registration mark has been set properly. (☞ P.4-13)
		Check to see if the black registration mark is printed against the white background.
		Check to see if there is no dust or dirt between the registration marks.
		Check to see if there is no mistake in registration mark settings. (☞ P.4-8)
		Check that the height of the head is appropriate. RC, RT (☞ P.1-24) T, TF, TD (☞ P.1-33)
		Confirm the status and the settings described above. If still no registration mark is detected, contact your distributor or a sales office of MIMAKI.
ERROR C37 MARK ORG	The origin point was detected outside the cutting area.	Arrange the registration marks inside the sheet.
ERROR C38 MARK SCALE	Registration mark detection was not achieved. However, this error is attributable to a false detection or a compensation value setting error, since the calculated compensation value is wrong.	Correct the compensation value if it is wrong, and perform detection again.
	The required scale compensation value was not smaller than 1.3 times or not greater than 0.7 times.	Remove the cause of the detection error, for example, correct the blurred print of registration mark data and then retry.
	A detection error occurred since the distance from the adjacent graphics was too short.	Increase the distance from the adjacent graphics properly, and perform printing again.
	The designateed spacing between the registration marks is not correct.	The value of the spacing between the registration marks designated by the command is wrong and it is attributable to a selection error of data. Therefore, check the output data.
	The print is not uniform and some graphics are omitted.	Correct the graphic data to obtain uniform print and perform printing again.
	As the printed registration mark was blurred, it was not read correctly and the registration mark of the next graphics was read by mistake.	Perform printing again with care that the print is not blurred.

Display	Cause	Remedy
ERROR 401 MOTOR X	An excessive load was applied to the Y bar driving motor.	Turn off the power on the machine and turn it on after a while. When displaying again, contact your local distributor, our sales office, or service center.
ERROR 403 X CURRENT	An overcurrent error in the motor in the Y bar driving motor.	
ERROR 402 MOTOR Y	An excessive load was applied to the head driving motor.	
ERROR 404 Y CURRENT	An overcurrent error in the motor in the head driving motor.	
ERROR 462 MOTOR θ	An excessive load was applied to the θ motor.	
ERROR 464 θCURRENT	An overcurrent error in the motor in the θ motor.	
ERROR 461 MOTOR Z	An excessive load was applied to the Z motor.	
ERROR 463 Z CURRENT	An overcurrent error in the motor in the Z motor.	
ERROR 50a Y ORIGIN	The plotter has failed to detect the origin sensor.	
ERROR 511 Z ORIGIN		
ERROR 532 θ ORIGIN		
ERROR 533 X ORIGIN		
ERROR 521 INIT MOTOR	Motor can not be initialized.	
ERROR 503 COVER OPEN	Protection door is open.	Close the protection door.
ERROR C60 PenEncoder	The height of the pen cannot be detected.	Turn off the power on the machine and turn it on after a while. When displaying again, contact your local distributor, our sales office, or service center.
ERROR C76 VAC / TILT	Excessive vacuum current.	Turn off the plotter and vacuum. Wait a while and turn them back on.
ERROR C75 REC.CUTTER	Appropriate cutting conditions not set.	Set appropriate cutting condition values. (☞ P.2-10)
	Worn blade	Replace the blade with a new one. (☞ P.1-22)
*** OFF SCALE ***	Data extends beyond the effective cutting area.	**(1)** Stop processing (☞ P.2-21) and clear data. **(2)** Expand the effective cutting area or enter data within the effective cutting area.

Status message

The messages given below appear in the remote mode.
They do not indicate errors but require an appropriate action.

Message	Cause	Remedy
** OFFSCALE **	The cutting data exceeds the effective cutting area.	Either increase the size of the cut area or reduce the data
** DIGITIZE **	The plotter has received the digitization command (DP;) from the host computer and has entered the digitization mode.	Move the pen to a desired location, where necessary, and press the REMOTE key. To reset the digitization mode, execute the data clear using the FUNCTION key.
COPY SKIP	A mark cannot be detected during continuous copying. One pattern is skipped.	There is no problem if the marks are successfully detected after skipping one pattern. If marks cannot be detected continuously by five patterns or more, [ERRC36 MARKdetect] (☞ P.6-18) is displayed.
SHEET EXCHANGE	The plotter is waiting for the work to be replaced during continuous copying in the single mode.	Replace the leaf work with a new one, and resume continuous copying.
F-ROM WRINTING	The plotter is now storing the tool parameters and setting parameters. The data is saved in flash memory so that the saved data will not be erased even when the power is turned off.	Do not turn the power off while this message is displayed.

Sample Cut

IIn case that normal data cutting cannot be performed etc., perform cutting with the sample stored in this plotter to find out the cause of cutting error.

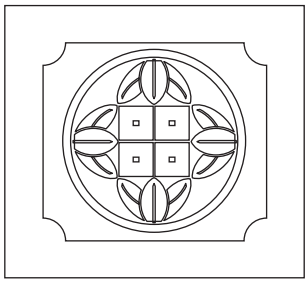
Important!

- If there is data that has not been cut in the receive buffer, an error is displayed and can not cut the sample. Run the data clear at first.

Overview of the Self Test

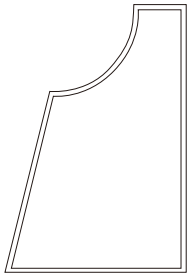
PATTERN CUT 1

Uses the tool selected by the Tool Select function. The sample is a Japanese family crest using a variety of line segments.



PATTERN CUT 2 (T model)

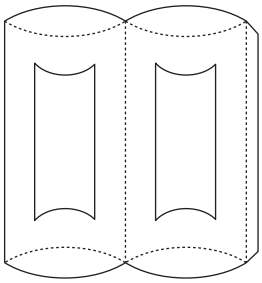
The sample is a pattern paper for the apparel industry. After drawing the inner line, cut the outer line.



Necessary tool
A unit: Pen
B unit: Tangential Cutter

Cutting quality 2 (other models)

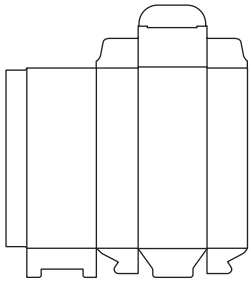
when creating a paper sample using coated cardboard (approx. 0.5 mm thick).



Necessary tool
A unit: Pen
B unit: Reciprocating cutter
C unit: Roller

SAMPLE 0.5 mm

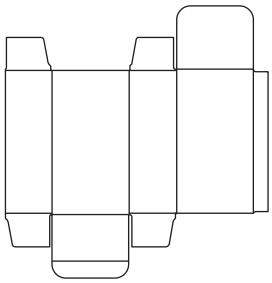
Use this to make a paper container sample from thick paper (approx. 0.5 mm thick). The perimeter is cut after cutting the grid. Requires thick paper at least A4 in size.



Necessary tool
A unit: Swivel cutter
B unit: Roller

SAMPLE1.0 mm

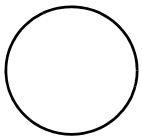
Use this to make a paper container sample from corrugated cardboard (approx. 1 to 2 mm thick). The perimeter is cut after cutting the grid. Requires corrugated cardboard at least A3 in size.



Necessary tool
B unit: Reciprocating cutter
C unit: Roller

R = 3 / 5 / 10 / 20 / 50 / 100

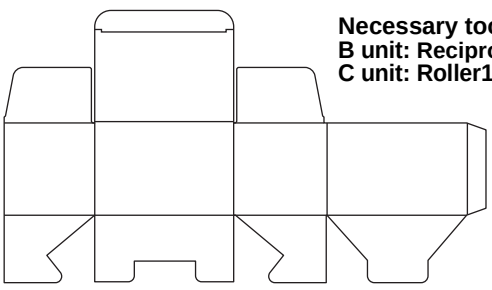
Cuts a circle with the selected radius. (Radius (R) = 3, 5, 10, 20, 50, 100 mm)



R=3 to 100

SAMPLE 1.5 mm

Use this to make a paper container sample from corrugated cardboard (approx. 1.5 to 3 mm thick). The perimeter is cut after cutting the grid. Requires corrugated cardboard at least A2 in size.



Necessary tool
B unit: Reciprocating cutter1
C unit: Roller1

Perform SAMPLE CUT to Find out the Cause of Cutting Error.

The pen number must assigned before conducting PATTERN CUT or SAMPLE CUT. (☞ P.3-8)
Set the following values as the initial values.

Pen No.		T model	TF model	TD model	RT model	RC model
No.1	Head	B	B	B	B	B
	Tool	Tangential cutter 1	Tangential cutter 1	Tangential cutter 1	Reciprocating cutter 1	Reciprocating cutter 1
No.2	Head	B	C	C	C	C
	Tool	Tangential cutter 2	Roller 1	Roller 1	Tangential cutter 1	Roller 1
No.3	Head	B	B	B	B	B
	Tool	Tangential cutter 3	Tangential cutter 2	Tangential cutter 2	Reciprocating cutter 2	Reciprocating cutter 2
No.4	Head	B	C	C	C	C
	Tool	Tangential cutter 4	Roller 2	Roller 2	Tangential cutter 2	Roller 2
No.5	Head	A	A	A	A	A
	Tool	Swivel Blade	Swivel Blade	Swivel Blade	Swivel Blade	Swivel Blade
No.6	Head	A	A	A	A	A
	Tool	Pen	Pen	Pen	Pen	Pen

1 **Set the origin at the point where you wish to run the sample cut.**

2 **Press the FUNCTION key in the local mode.**

<FUNCTION> ⇕
SET UP [ENT]

3 **Press the jog key ▲ or ▼ to select [SAMPLE CUT].**

<FUNCTION> ⇕
SAMPLE CUT [ENT]

4 **Press the ENTER key.**

<SELECT PATTERN> ⇕
PATTERN CUT1 [ENT]

5 **Press the jog key ▲ or ▼ to select the self test items.**

<SELECT PATTERN> ⇕
PATTERN CUT2 [ENT]

• Set values: PATTERN CUT1, 2 / SAMPLE 0.5mm, SAMPLE 1.0mm, SAMPLE1.5mm, CIRCLE CUT R=3~R=100

6 **Press ENTER to draw the data.**

• Press END to cancel SAMPLE CUT.j\

Result of SAMPLE CUT

Sample data can be cut successfully, but other data cannot.
The host computer is faulty.
Sample data as well as other data cannot be successfully cut either.(When leaving the start/end lines without cutting off)
Increase the set value of [ADJ-PRS OFS] (☞ P.3-21) to raise the pressure for pressing the cutter blade down.

Specifications

Specifications / Model Name		CF22-1225
Available Drawing Range	X axis	2500mm (98.4 in)
	Y axis	1220mm (48.0 in)
Workpiece sizes that can be set	X axis	2600mm (102.4 in)
	Y axis	1360mm (53.5 in)
Driving Method		X, Y, Z, θ axis: DC servo
Maximum speed		55cm/s (2.2in/s)
Head unit		Specify the following units when purchasing (cannot be replaced by the user) **(1)** T-S **(2)** TD-S **(3)** TF-S **(4)** RC-S **(5)** RT-S
Cutting pressure		Swivel: 20 to 400 g (0.04 to 0.89 lb) Low pressure tangential cutter: 500 to 1500 g (1.1 to 3.3 lb) (RC/RT) 300 to 1500 g (0.7 to 3.3 lb) (T/TF/TD) High pressure tangential cutter: 1000 to 5000 g (0.2 to 11.0 lb) Grid roller: 1000 to 5000 g (2.2 to 11.0 lb)
Static accuracy	Repeated accuracy	± 0.1 mm (± 0.004 in)
	Range accuracy	± 0.1 mm (± 0.004 in) or ± 0.1 mm or ± 0.1% of the moving distance whichever is greater
	Right angle accuracy	± 0.7 / 2500 mm (± 0.03 / 98.4 in)
	Starting point reproducibility	± 0.1mm (± 0.004 in)
Maximum cuttable workpiece thickness		Tangential cutter: 10 mm (0.4 in) Reciprocating cutter: 20 mm (0.8 in)
Settable workpiece masses		70 kg (154.3 lb) Max. (point load cannot be performed)
Media securing method		Vacuum absorption
Buffer reception capacity		27MB
Commands		MGL-IIC3
Command resolution		0.025mm/0.01mm (0.01in/0.0004in)
Interface		RS-232C / USB2.0 / Ethernet
Power specifications		Single phase AC100 ～ 240V, 50/60Hz
Power consumption		300W or less
External dimensions		3200mm x 1900mm (126.0 x 74.8in)
Unit weight		Less than 230 kg (507.1 lb)
Compliance standards		VCCI-class A, FCC class A, CE marking, CB report (EN 60950), UL 60950-1, Opportunity directives, RoHS, REACH

CF22-1225 Operation Manual

April, 2018

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