

Standard APC 45 Electric 17.7 Inch Programmable Paper Cutter

Instruction Manual



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Horizon PAPER CUTTER **APC-45**

Important Information

- *This manual is designed to help you to install, operate and maintain the APC-45 Paper Cutter. Please read and understand this manual, and keep it in a safe and convenient place.*
- *Do not operate the APC-45 until you read and understand the instructions in this manual.*
- *Horizon International Inc. shall not be liable for incidental consequential damages resulting from: improper or inadequate maintenance by the customer unauthorized modification or misuse, or operation outside of the environmental specifications for the product.*
- *Horizon International Inc. pursues a policy of continuing improvement in design and performance of the product. Therefore, the product design and specifications are subject to change without prior notice and without our legal obligation.*
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Safety Precautions

Safety precautions are indicated in this manual as follows:

The term *WARNING* indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



The term *CAUTION* indicates a potentially hazardous situation which, if not avoided, may result in serious injury, or damage to the machine.

This symbol indicates a note which includes important information. Follow the note to operate the machine safely.



This symbol indicates a prohibited action. Do not perform any prohibited action.



This symbol indicates an essential procedure. Follow the procedure to operate the machine safely.



 Important	<ul style="list-style-type: none"> • This lists the range of acceptable values and operating conditions.
 Attention	<ul style="list-style-type: none"> • This information will help you to avoid problems with the machine or help you learn how to operate the machine.
 Note	<ul style="list-style-type: none"> • Refer to this note when you operate the machine.
 Additional Information	<ul style="list-style-type: none"> • This explains a mechanism in the machine.

Horizon International Inc. cannot anticipate every possible situation that might involve a potential hazard. The instructions in this manual and warning labels on the machine are therefore not all inclusive.

All equipment shall be locked out or tagged out to protect against accidental or inadvertent operation when such operation could cause injury to personnel. Do not attempt to operate any switch, valve, or other energy isolating device where it is locked or tagged out.

Do not operate the machines when any covers are removed.

Some of the drawings in this manual show the machine with the covers removed to explain some of the details inside the machine. Never operate the machine with the covers removed.

Safety Operation Precautions

WARNING for Operation

	This machine must be operated by just one person at a time.
	Various safety devices are installed on this machine. If any of these are bypassed or removed, this may cause severe accident and personal injury.
	Each operator should be familiar with the safety instructions, be aware of the potential dangers, and have sufficient knowledge of how to manage an accident. Anyone who does not have this training should not operate the machine.
	Before starting the machine, be sure to perform the checks described in Chapter 2: Safety Checks. When loading the sheets on the table and setting the sheet position, get your foot off from the foot pedal.

CAUTION for Operation

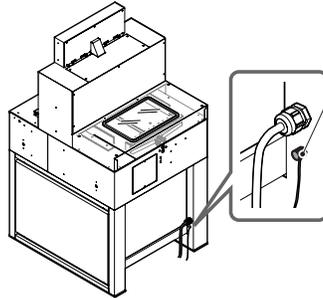
	Do not cut anything besides paper. This may damage the machine.
	If you turn the power switch Off, wait 10 seconds or more before turning it On again.
	Do not get on, or step on the foot pedal with great force. The machine may be damaged.

CAUTION for Maintenance

	Do not apply too much grease. Filled grease may stain the paper.
---	--

CAUTION for Installation

Make sure to connect the ground wire.



Ground Terminal

Make sure to connect the accessory ground wire.

If the ground wire is not connected, the letters on the guide window may not appear correctly.

Space Required for Installation

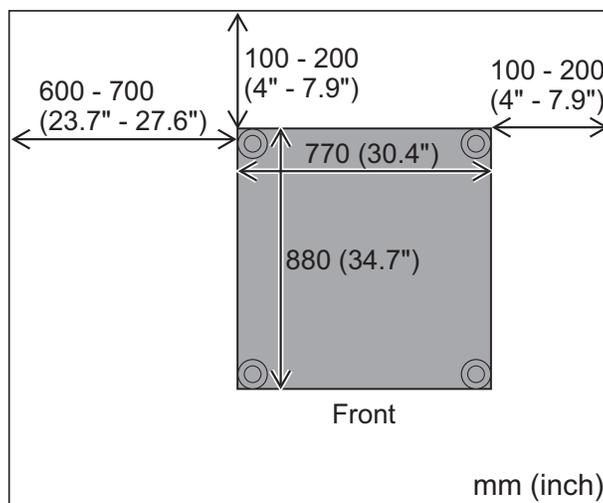
As the electrical parts are installed on the lower left of the machine, repair work may be done from the right side. Allow about 600 to 700 mm (23.7 to 27.6") on the left side of the machine if it is possible.

In addition, when you adjust the knife angle, you need to insert the tool into the machine from the left side. Allow about 200 mm (7.9") on the left side.

Allow about 100 to 200 mm (4 to 7.9") on the right side and the rear.

Antivibration Cushion

If you use the antivibration cushions, place the cushions under the four corners of the machine. In addition, place the supplied wedges under the machine to keep the machine in a horizontal position.



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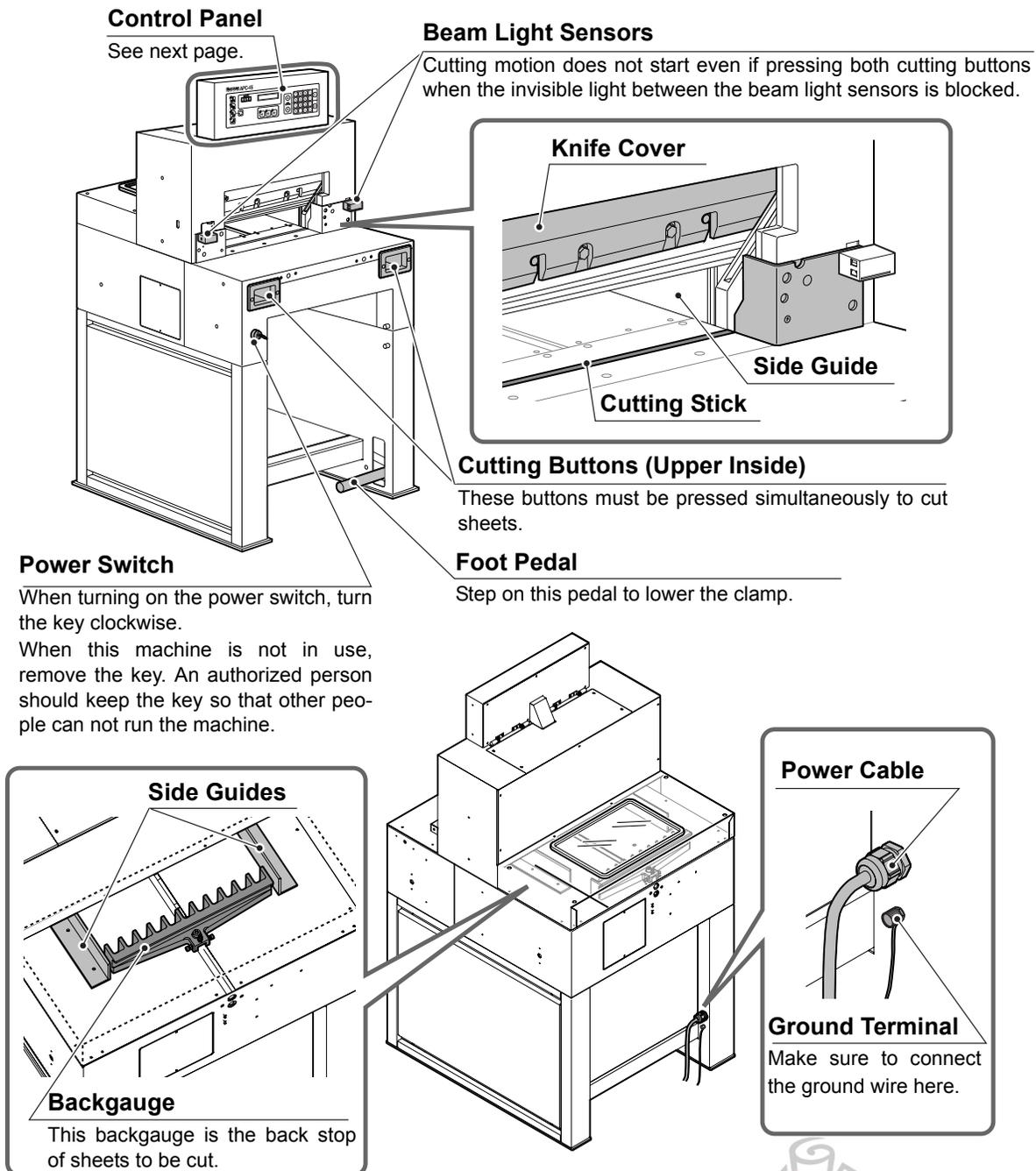
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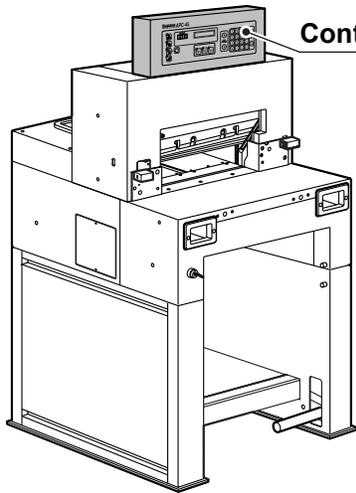
1. Machine Descriptions

This chapter explains the positions and functions of each part of this machine in this manual.

1-1 Machine Descriptions



1-2 Control Panel Descriptions



Control Panel



Backgauge Backward



Backgauge Forward

When pressing once, moves by 0.1 mm (0.005")

When continuing to press, moves at a low speed.

When continuing to press more than three seconds, moves at a high speed.

Numeric Keypad:

The input value appears in the guide window.



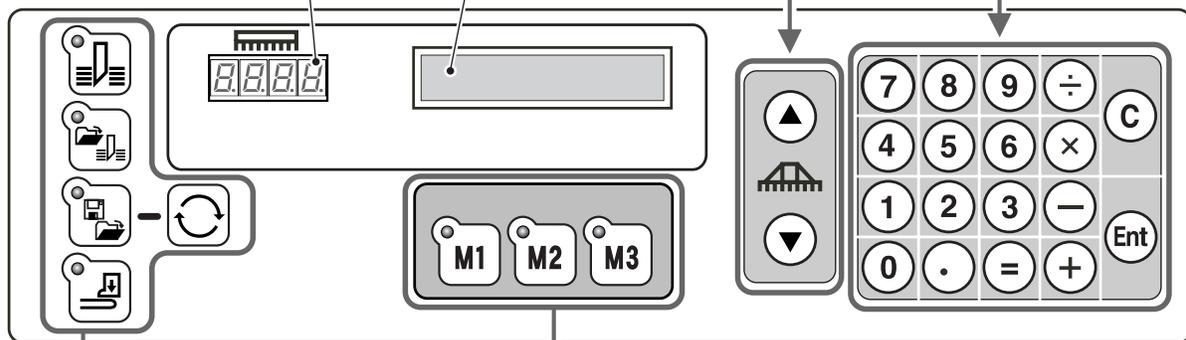
Clear = The input value is cleared.



Enter = The input value is entered.

Current Position of the Backgauge

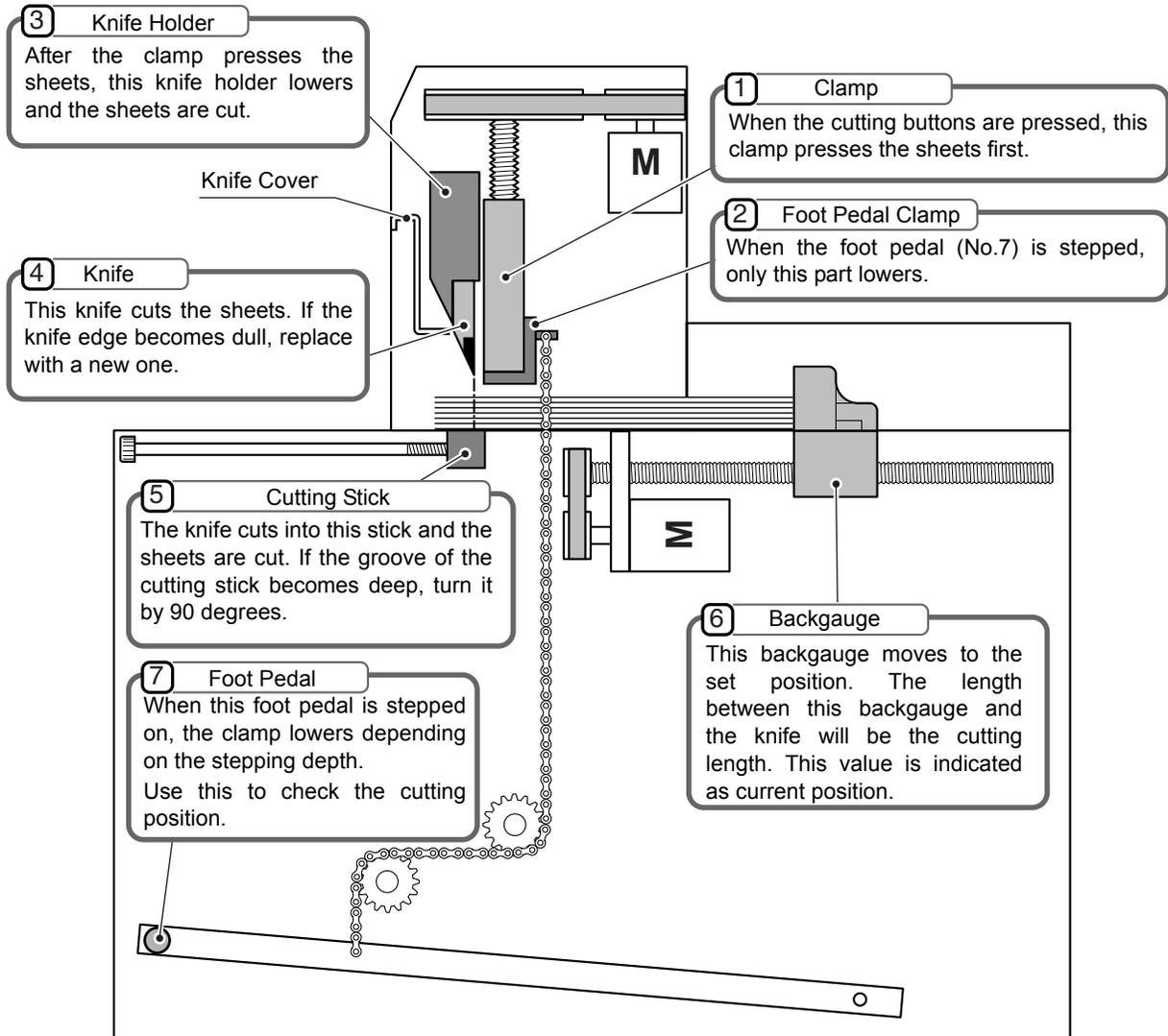
Guide Window



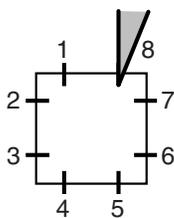
M1	→	Three programs can be stored. Call your local dealer if you want to change the program.	See page 20.
M2	→		
M3	→		

	= Cut sheets according to the current position of the backgauge without using program and function key.	For short-run job and same job pattern.	See page 14.
	= Cut sheets according to the programmed value.	For cutting many sheets which require a complicated process.	See page 17.
	= Create a new cutting program or change the saved cutting program.	If a program for the cutting job is created and memorized, it is useful when performing the same process repeatedly.	See page 23.
	= Create a new cutting program to repeat the same cutting length.		See page 29.
	= Only the clamp lifts and lowers. The knife does not move.	Spine of the saddle-stitched booklets can be pressed to reduce the bulk.	See page 22.

1-3 Cutting Mechanism



- The lowering limit position of the knife (No.2) can be adjusted.
Adjust if the knife height becomes smaller because of resharpening. See page 33.
- The cutting stick (No.4) is cut by the knife and ditched.



When the knife cuts the same position of the cutting stick and the groove of the cutting stick becomes deep, the bottom sheet may remain uncut.

In this case, turn the cutting stick and use another face. The cutting stick provides two surfaces per face.

Therefore, up to eight times - four faces can be used totally.

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2. Safety Checks

This chapter explains how to check the safety functions before starting the cutting operation.

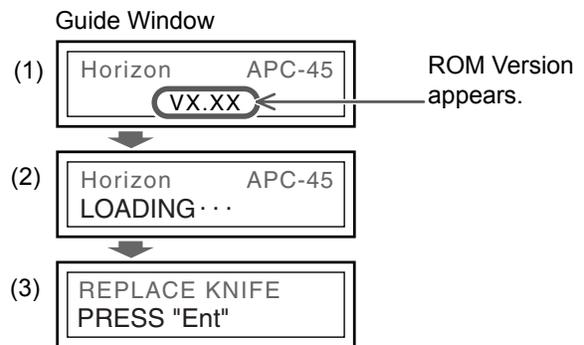
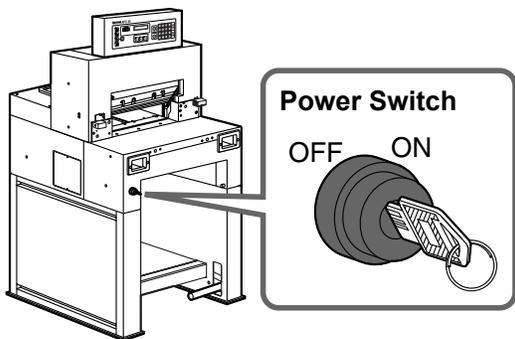
2-1 Check the Power Switch

This machine has been designed to be as safe as possible. However, if an accident occurs, it can cause severe personal injury. Before using the machine, always perform the safety checks listed in this chapter.

⚠ WARNING

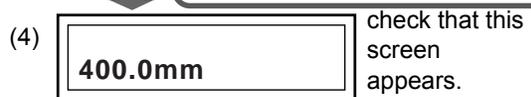
If you notice a problem while making the safety checks, do not try to correct the problem by yourself. If the machine is not working correctly, it may cause severe personal injury. Please notify your local dealer.

- 1** Turn on the power switch.
- When the power switch is turned on, the screen shown to the upper right appears.



- If the knife replacement is not necessary, press the **(C)** or **(Ent)** key.
- When pressing the **(C)** key, this message does not appear until the cutting operation has been done for another 1,000 times.
- When pressing the **(Ent)** key, this message appears when turning on the power switch again. See "3-8 Knife Replacement Message" for details.

When the **(C)** or **(Ent)** key is pressed,



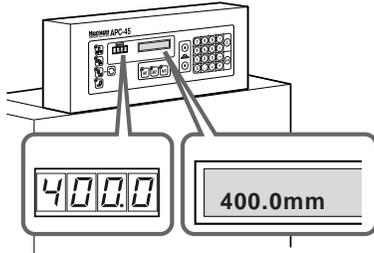
- (1) Initial Screen: When the power switch is turned on.
- (2) Initializing Backgauge: The backgauge moves to the home position (400 mm [17.00"]).
- (3) Knife Replacement Message: (Only when the knife cuts sheets over 2,000 times.)
- (4) Initializing Backgauge Completed: The backgauge reaches the home position.

2-1 Check the Power Switch

2

Check the current position of the backgauge.

- If the value "400.0" appears in the current position box and guide window, the power switch and the software are OK.

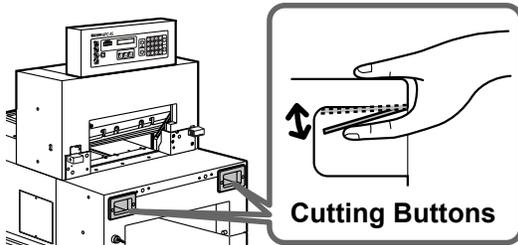


2-2 Check the Cutting Buttons

In the following steps, if the machine does not operate as explained “the machine is OK”, stop the check immediately.

1 Turn on the power switch.

- When the initialization is completed, the current position value (=400.0) appears.



2 Press only left cutting button continuously.

- If the clamp and the knife do not move, the machine is OK.

3 Press only right cutting button continuously.

- If the clamp and the knife do not move, the machine is OK.

4 Press left cutting button first and then press right cutting button more than 0.5 seconds later.

- If the clamp and the knife do not move, the machine is OK.

 Additional Information

If the knife is not at the upper limit (= the knife is in the middle position), the motor reverses when one of the cutting buttons are pressed and another one is pressed more than 0.5 seconds later.

- Also press the cutting buttons in the reverse order and if the clamp and the knife do not move, the machine is OK.

5

Press both cutting buttons continuously.

- The cutting process is as follows:

1. The clamp lowers.
2. The knife lowers.
3. The knife lifts.
4. The clamp lifts.

- If the clamp and the knife move in this order, the machine is OK.

6

Keep pressing both cutting buttons after the cutting process.

- When the cutting process is completed, the clamp and the knife stop at the upper limit and do not move. If the machine does not start the next cutting process, the machine is OK.

7

Press both cutting buttons, and then release one of them when the cutting process starts.

- If the clamp and the knife stop when releasing one of your hands, the machine is OK.
- Also check by releasing another hand.
- Press both cutting buttons again. The clamp and the knife will return to the starting position.

 Note

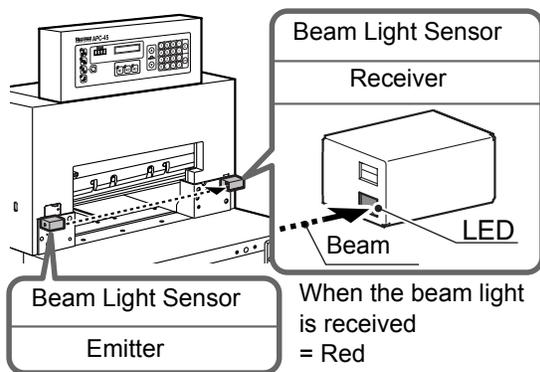
If the knife is at the lower limit, the machine does not stop even if releasing one of your hands.

Instead, the knife lifts and then the clamp lifts.

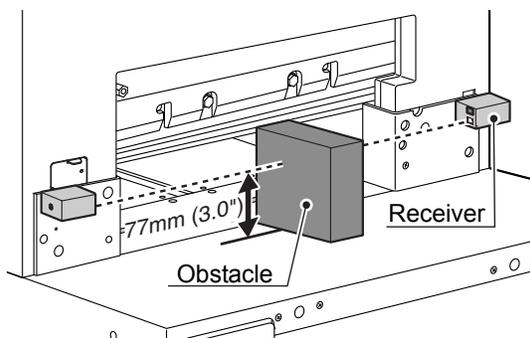
2-3 Check the Beam Light Sensors

- 1** Turn on the power switch.
- When the initialization is completed, the current position value (=400.0) appears.

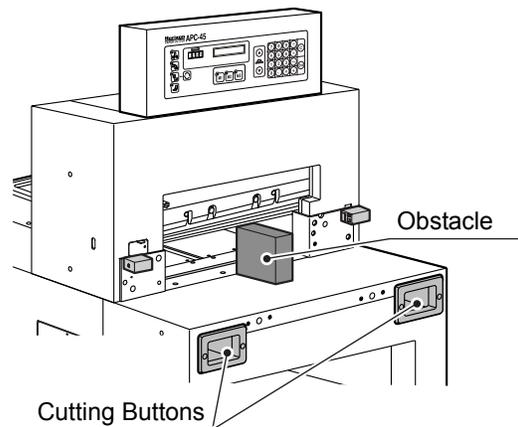
- 2** Check the beam sensor.
- If the LED on the receiver on the right sensor illuminates red, the machine is OK.



- 3** Block the beam light between sensors.
- The beam light is about 77 mm (3.0") above the table. Place any obstacle on the table to block the beam. (Do not place the obstacle under the knife.)
 - If the LED on the receiver **"does not"** illuminate, the machine is OK.



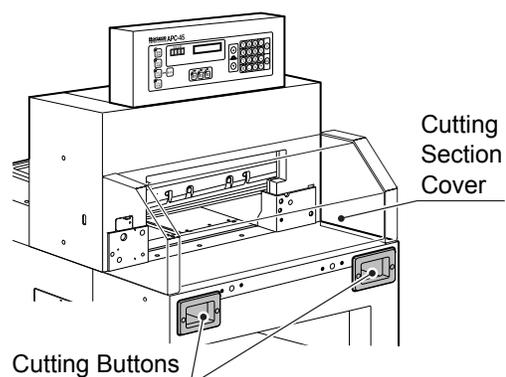
- 4** Press both cutting buttons.
- Continue to press the cutting buttons while the obstacle is on the table.
 - If the clamp and the knife do not move, the machine is OK.



If the optional cutting section cover is installed,

- 1** Turn on the power switch.
- When the initialization is completed, the current position value (=400.0) appears.

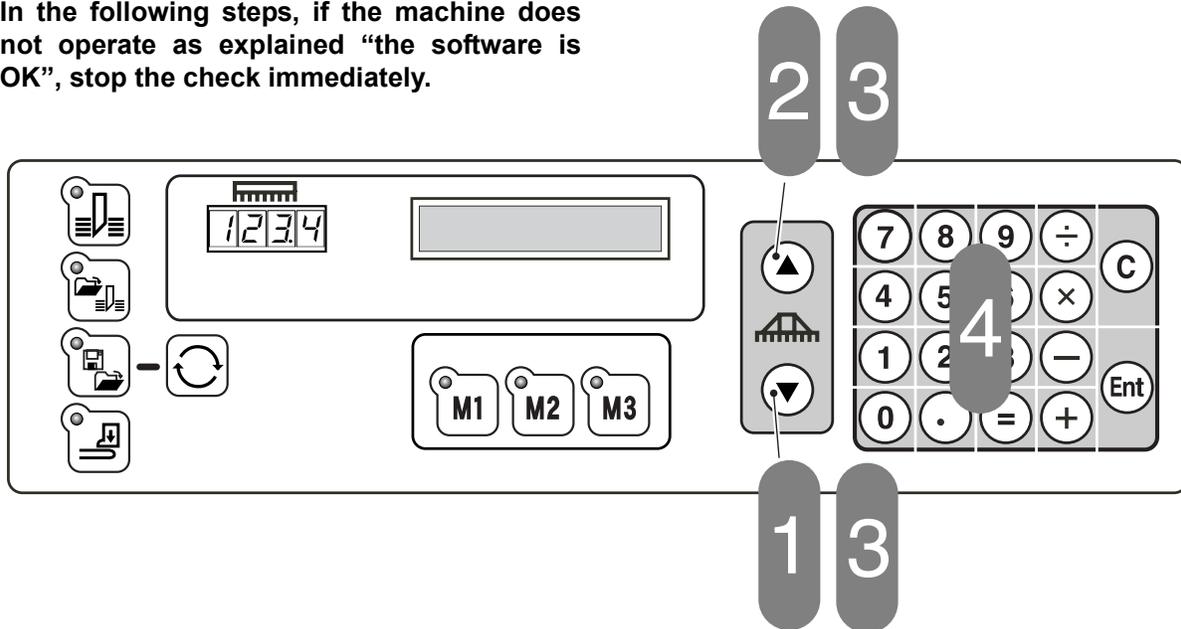
- 2** Open the cutting section cover.



- 3** Press both cutting buttons.
- Continue to press the cutting buttons while the cutting section cover is open.
 - If the clamp and the knife do not move, the machine is OK.

2-4 Check the Control Panel

In the following steps, if the machine does not operate as explained “the software is OK”, stop the check immediately.



1 Press the button.

- Press the button once and release.
- If the value of the current position of the backgauge decreases by 0.1 mm (0.005”), the software is OK.

2 Press the button.

- If the value increases more than 0.1, then decreases gradually and finally the value increases by 0.1, the software is OK.

 Additional Information

Because the screw has a little play, when the backgauge is moved backward, it is moved backward beyond the input depth first, and then forward.

3 Continue to press the or button.

- If the backgauge moves at low speed in the arrow direction for three seconds, then it moves at high speed, the software is OK.

4 Input 200 (mm) / 7.000 (inch).

- Check that the  button is selected and input the     keys (mm) / the       keys (inch), using the numeric keypad.
- If the backgauge moves and the value “200.0 / 7.00” appears in the box of the current position of the backgauge, the software is OK.

 Additional Information

When inputting the value 200, the input of figures after the decimal point is not necessary.

2-5 Check the Foot Pedal

In the following steps, if the machine does not operate as explained “the machine is OK”, stop the check immediately.

The foot pedal is used for the following purpose.

1. To check the cutting position

The cutting position can be checked before actual cut by stepping on the foot pedal and lowering the clamp.

2. Sheet Press

Swelled or curled sheets can be cut more accurately by stepping on the foot pedal and pressing them by the clamp. (The sheets can be cut by pressing the cutting buttons while stepping on the foot pedal.)

1

Step on the foot pedal slowly.

- If the clamp lowers smoothly, the machine is OK.



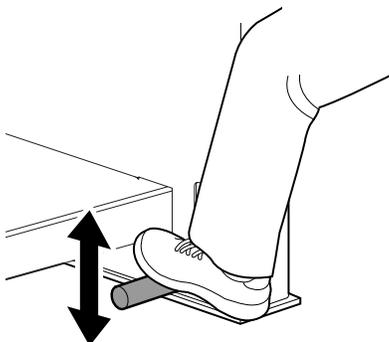
CAUTION

Do not get on, or step on the foot pedal with great force. The machine may be damaged.

2

Release the foot pedal.

- If the clamp lifts to the upper limit, the machine is OK.



3. Operation Procedures

This chapter explains four cutting operation procedures, compression operation, program and how to indicate the counter.

There are four ways of cutting operation as shown to the right.	1	Cutting Operation on the Cutting Line	Cutting the sheets by aligning them to the present cutting line (light shows the cutting line).
	2	Cutting Operation by Entering a Value	 Cutting the sheets by entering a value directly or positioning using the backgauge forward and backward buttons.
	3	Cutting Operation by Programmed Value	 Program a complicated cutting process beforehand and cutting the sheets by recalling the program.
	4	Function Cutting	 Cutting the sheets by recalling the frequent cutting process using the M1 to M3 buttons.

3-1 Cutting Operation on the Cutting Line

1 Press the  button.

- The LED on the upper left of this button is illuminated and shows that the “cutting operation by entering a value” is selected.

2 Place the sheets.

- The maximum cutting height is 60 mm (2.36”).
- Align the sheets using the backgauge and the side guide.

 Note

Do not pile the narrow sheets high. Place the sheets on the other side so that the clamp does not incline widely.

 **WARNING**

This machine must be operated by just one person at a time.

 **CAUTION**

Do not cut anything besides paper. This may damage the machine.

3-1 Cutting Operation on the Cutting Line

3

Align the desired cutting position with the cutting line.

- Align the desired cutting position with the cutting line by pressing the backgauge forward button.



Attention

Align the cutting position by moving the backgauge forward.
If the backgauge is moved backward, the sheets should be aligned with the backgauge every time.



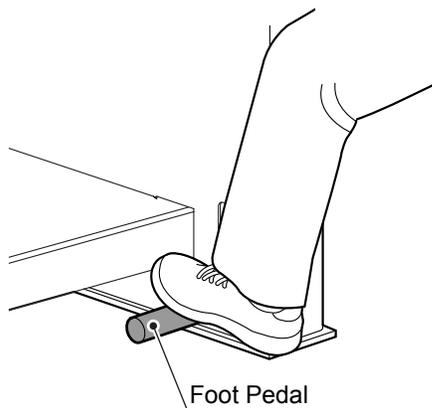
Note

The cutting position can be checked also by stepping on the foot pedal and lowering the clamp.



Backgauge Forward and Backward Buttons

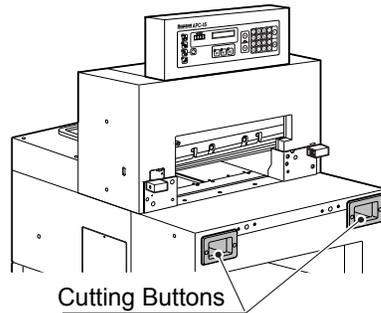
- Pressing once: Moves by 0.1 mm (0.005")
- Pressing continuously within three seconds: Moves at low speed
- Pressing continuously for three seconds or more: Moves at high speed



4

Press both cutting buttons at the same time and keep pressing them.

- The cutting operation starts.
- Release your hands from the cutting buttons when the knife returns to the upper limit.



Note

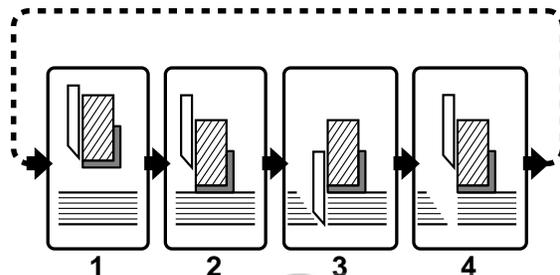
- **Press both cutting buttons at the same time. If they are not pressed within 0.5 seconds, the machine does not operate.**
- **If your hand is released from one of the cutting buttons while the knife is lowering toward the lower limit, the knife stops at that position.**
- **Release your hands from the cutting buttons when the cutting operation is completed. The secondary cutting operation does not start even if pressing them continuously after the cutting process.**



Additional Information

The clamp and the knife move as follows during the cutting operation.

- The clamp presses the sheets and the knife lowers.
- The knife lifts and the clamp lifts.



3-1 Cutting Operation on the Cutting Line

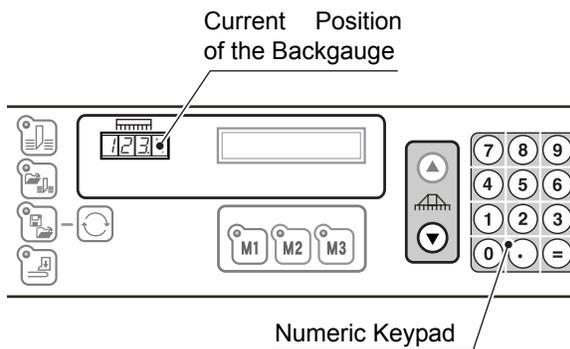
5

Remove the cut sheets.

- The value of the cutting length appears in the box of the current position of the backgauge. If you memorize this value, the sheets can be cut for the same length at the next time.

- If the  button is pressed, the cut sheets is pushed forward.

(The cutting position changes. If you memorizes the value, input the value using the numeric keypad. The backgauge moves to the set position.)



3-2 Cutting Operation by Entering a Value

This section explains the cutting operation when entering a value directly without using program.

WARNING

This machine must be operated by just one person at a time.

CAUTION

Do not cut anything besides paper. This may damage the machine.

1 Press the  button.

- The LED on the upper left of this button is illuminated and shows that the “cutting operation by entering a value” is selected.

2 Input the cutting length.

- Input using the numeric keypad. The input value appears in the guide window.
- The value can be input in the range of 40 mm to 450 mm (1.575” to 17.715”).



Attention

For inch version, only “0” and “5” can be input to the third decimal place.

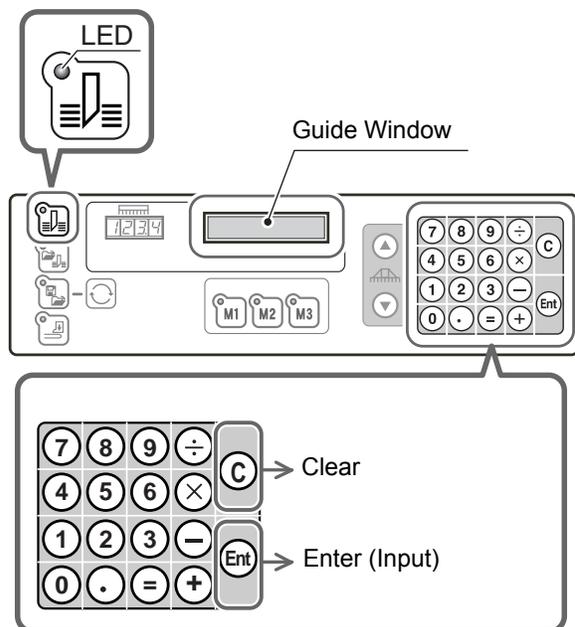
If the value out of range is input, “OUT OF RANGE” appears on the guide window. In

this case, press the  key and input the correct value.

- (For mm version) The value can be input up to the first decimal place.
- (For inch version) The value can be input up to the third decimal place.
- If the value after the decimal point is “0”, the decimal point and “0” is not necessary to be input.
- The calculation keys can be used.

Example: If cutting the sheet whose length is 594 mm into half, press the

       keys. The backgauge moves to the position of 297 mm



3 Press the  key.

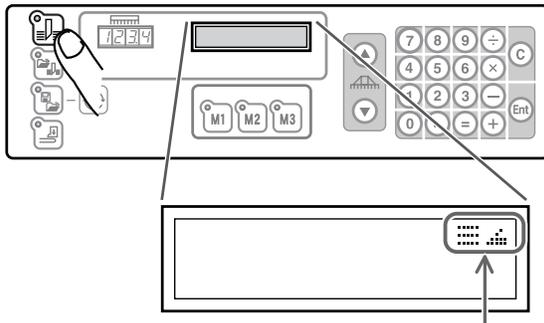
- The value is entered and the backgauge moves to the position.
- When the backgauge moves to the input position, the “beep” sounds and the value is indicated in the box of the current position of the backgauge.

3-2 Cutting Operation by Entering a Value

4

Set the automatic push-out mode.

- When the automatic push-out mode is selected, the backgauge moves forward after every cutting to push the sheets forward.
- Press the  button. The icon of the "Automatic Push-Out Mode" appears on the guide window.
- When pressing the  button again, the automatic push-out mode is canceled.
- The push-out length is 50 mm (1.97", fixed). However, the push-out length may be less than 50 mm (1.97") according to the cutting length (less than 90 mm [3.54"]).



Automatic Push-Out Mode Icon

5

Place the sheets.

- The maximum cutting height is 60 mm (2.36").
- Arrange the sheets by aligning them with the backgauge and side guide.

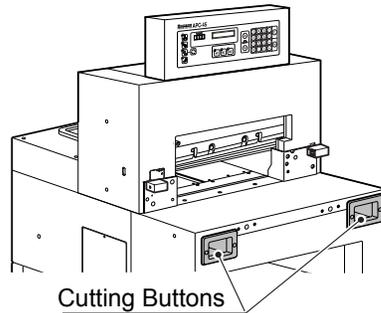
 Note

Do not pile the narrow sheets high. Place the sheets on the other side so that the clamp does not incline widely.

6

Press both cutting buttons at the same time and keep pressing them.

- The cutting operation starts.
- Release your hands from the cutting buttons when the knife reaches the lower limit and starts to lift.



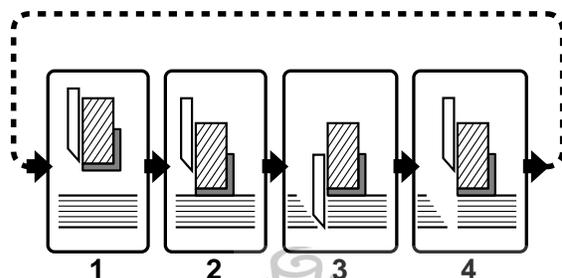
 Note

- **Press both cutting buttons at the same time. If they are not pressed within 0.5 seconds, the machine does not operate.**
- **If your hand is released from one of the cutting buttons while the knife is lowering toward the lower limit, the knife stops at that position.**
- **Release your hands from the cutting buttons when the cutting operation is completed. The secondary cutting operation does not start even if pressing them continuously after the cutting process.**

 Additional Information

The clamp and the knife move as follows during the cutting operation.

- The clamp presses the sheets and the knife lowers.
- The knife lifts and the clamp lifts.



3-2 Cutting Operation by Entering a Value

7

Enter the value of the cutting length for the next cutting.

- Repeat from the step **2**.
- If the cutting operation is finished, remove the cut sheets.
- If the  button is pressed, the cut sheets on the rear side move forward.

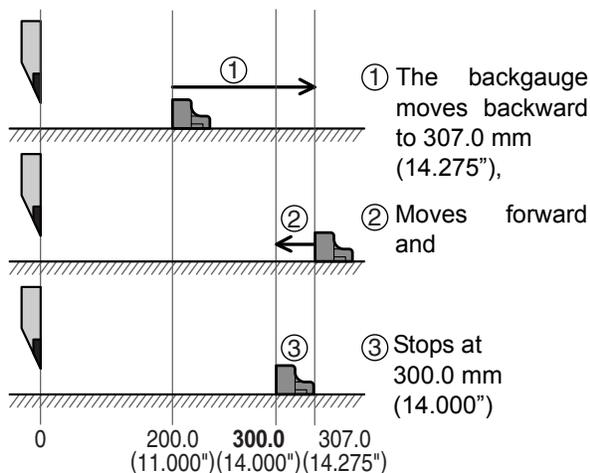


Additional Information

The movement of the backgauge when it moves backward for positioning:
(Example)

If the sheet is cut to 200.0 mm (11.000") and next cut to 300.0 mm (14.000"), the backgauge moves backward to the position of 307.0 mm (14.275") first, and then moves forward to the position of 300.0 mm (14.000") and stops.

The backgauge moves in this way to ensure the accurate cutting length. The backgauge is always positioned by moving forward.



3-3 Cutting Operation by Programmed Value

This section explains the cutting operation performed following the programmed process.

When performing the same cutting process repeatedly, or performing a complicated cutting process, input each value of the process in order beforehand, so that the backgauge automatically moves into the position for each step and makes the operation efficient.

Refer to “3-6 How to Program” for the programming and correcting the program.

WARNING

This machine must be operated by just one person at a time.

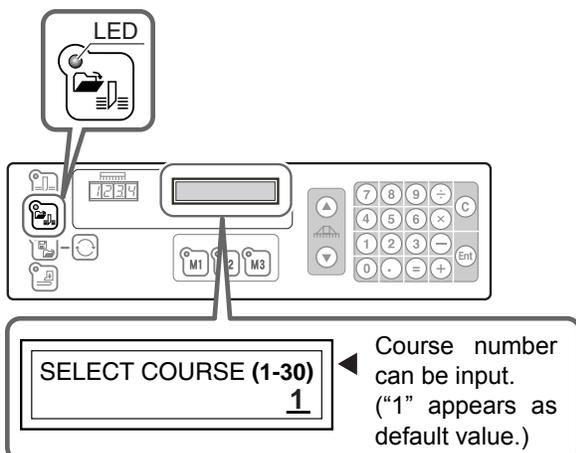
CAUTION

Do not cut anything besides paper. This may damage the machine.

1 Press the  button.

- The LED on the upper left of the program button is illuminated and shows that the “cutting operation by programmed value” is selected.
- The course number appears in the guide window.

Course Number:
“Course” is a program composed of a series of the cutting steps. The course is managed using the number 1 through 30.



2 Input the course number.

- Input using the numeric keypad.
- The value can be input in the range of 1 to 30.

Example:

When recalling the course number 3, press the  and  keys.

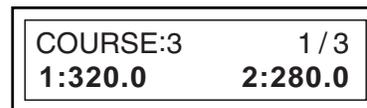
 Note

The job name of the course number should be written down when programming.

To check the process of the course, press the  button.

- When the course number is input, the backgauge moves to the position of the step 1 and the machine becomes ready to be operated.

When the course number 3 is input, This message appears on the screen and the backgauge moves to the position of the step 1 (320.0).

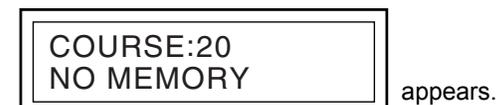


When the incorrect course number is input,



Press the  key and input the correct number again.

When the empty course number is input,



To cancel the cutting operation by programmed value, press the  button.

3-3 Cutting Operation by Programmed Value

3

Place the sheets.

- The maximum cutting height is 60 mm (2.36").
- Arrange the sheets by aligning them with the backgauge and side guide.



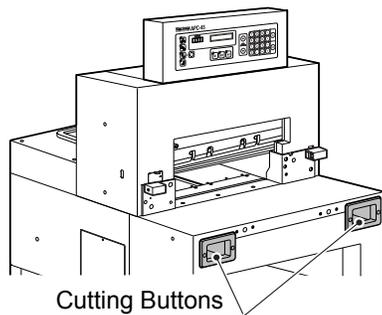
Note

Do not pile the narrow sheets high. Place the sheets on the other side so that the clamp does not incline widely.

4

Perform the cutting operation of the step 1.

- Press both cutting buttons.
- Release your hands from the cutting buttons when the knife reaches the lower limit and starts to lift.



Note

- **Press both cutting buttons at the same time. If they are not pressed within 0.5 seconds, the machine does not operate.**
- **If your hand is released from one of the cutting buttons while the knife is lowering toward the lower limit, the knife stops at that position.**
- **Release your hands from the cutting buttons when the cutting operation is completed. The secondary cutting operation does not start even if pressing them continuously after the cutting process.**

- When the step 1 is completed, the backgauge pushes out the sheets for 50 mm (2") and moves to the position of the step 2.

Push-Out:

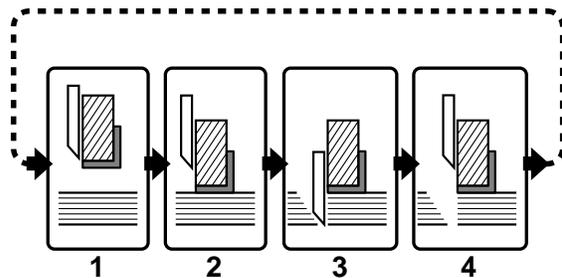
"Push-out" means to move the cut sheets forward before the following process by moving the backgauge forward. The push-out length of this machine is 50 mm (2"). However, if the cutting length is smaller than 90 mm (3.575"), the backgauge pushes out the sheets to the position of 40 mm (1.575").



Additional Information

The clamp and the knife move as follows during the cutting operation.

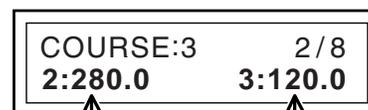
- The clamp presses the sheets and the knife lowers.
- The knife lifts and the clamp lifts.



5

Perform the cutting operation of the step 2.

- Place and align the sheets to the backgauge and side guide.
- Check that the following message appears on the guide window, and press both cutting buttons.
- When the step 2 is completed, the backgauge moves to the position of the step 3. (If the backgauge moves backward, it pushes out the sheets first and moves backward.)



Step 2

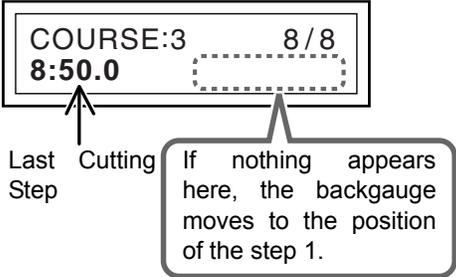
Step 3

3-3 Cutting Operation by Programmed Value

6

Repeat the cutting operation in the same way.

- When the last cutting step is completed, the backgauge moves to the position of the step 1 automatically.



3-4 Function Cutting

This section explains how to recall the cutting job performed most frequently using the function keys M1 through M3. Three programs can be saved. Call the service representatives of your local dealer.

WARNING

This machine must be operated by just one person at a time.

CAUTION

Do not cut anything besides paper. This may damage the machine.

▼ Write down your own program value for your reference.

 M1	
 M2	
 M3	

The following steps explain the function cutting using the  key.

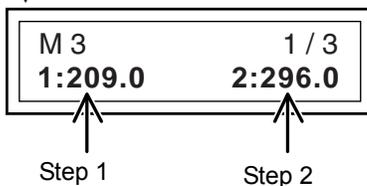
Example:

 : 1:209.0 → 2:296.0 → 3:295.0

1 Press the  key of the function keys.

- The program saved in  is recalled. The backgauge moves to the position of the step 1 and the machine becomes ready to be operated.

▼ Guide Window



2

Place the sheets.

- The maximum cutting height is 60 mm (2.36").
- Arrange the sheets by aligning them with the backgauge and side guide.

 Note

Do not pile the narrow sheets high. Place the sheets on the other side so that the clamp does not incline widely.

3-4 Function Cutting

3

Perform the cutting operation of the step 1.

- Press both cutting buttons.
- When the step 1 is completed, the backgauge moves to the position of the step 2.

 Note

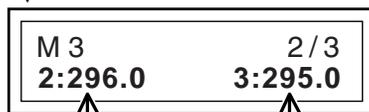
- **Press both cutting buttons at the same time. If they are not pressed within 0.5 seconds, the machine does not operate.**
- **If your hand is released from one of the cutting buttons while the knife is lowering toward the lower limit, the knife stops at that position.**
- **Release your hands from the cutting buttons when the cutting operation is completed. The secondary cutting operation dose not start even if pressing them continuously after the cutting process.**

4

Perform the cutting operation of the step 2.

- Place and align the sheets to the backgauge and side guide.
- Check that the following message appears on the guide window, and press both cutting buttons.
- When the step 2 is completed, the backgauge moves to the position of the step 3. (If the backgauge moves backward, it pushes out the sheets first and moves backward.)

▼ Guide Window



Current Step

Next Step

5

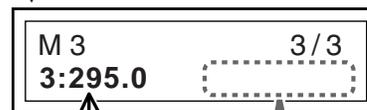
Repeat the cutting operation in the same way.

6

Perform the cutting operation of the last step.

- Place and align the sheets to the backgauge and side guide.
- Check that the following message appears on the guide window, and press both cutting buttons.
- When the step 3 is completed, the backgauge moves to the position of the step 1.

▼ Guide Window



Last Step

If nothing appears here, the backgauge moves to the position of the step 1.

3-5 Compression Operation

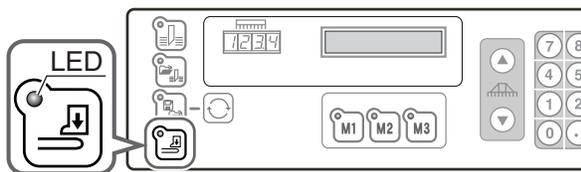
This section explains how to reduce the bulk of the saddle-stitched booklets using the pressure of the clamp.

WARNING

This machine must be operated by just one person at a time.

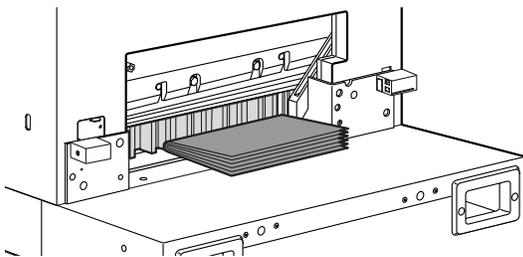
1 Press the  button.

- The LED on the upper left of the compression operation button is illuminated and shows that the “compression operation” is selected.



2 Move the backgauge to the front.

- Move the backgauge so that the spine of the booklets can be placed under the clamp.



3 Place the swelled booklet.

- Place the booklet so that the spine touches the backgauge.



Note

Do not pile the narrow sheets high. Place the sheets on the other side so that the clamp does not incline widely.

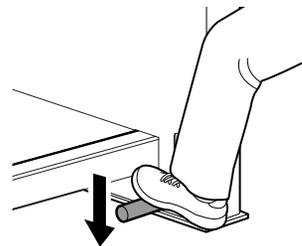
4

Step on the foot pedal.

- Press the swelled part of the booklet by stepping on the foot pedal temporarily.

CAUTION

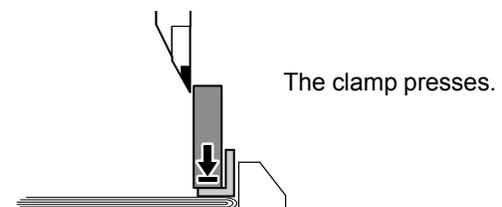
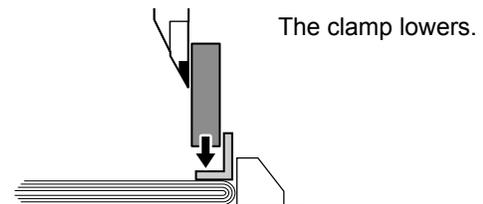
Do not get on, or step on the foot pedal with great force. The machine may be damaged.



5

Press both cutting buttons.

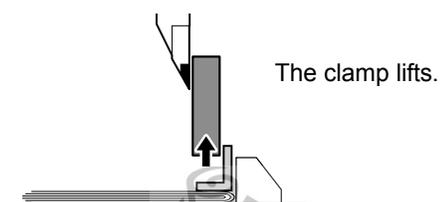
- Only the clamp lowers and compresses the bulk. (The knife does not lower.)
- The clamp still compresses the booklet after the cutting buttons are released.



6

Press both cutting buttons again.

- The clamp lifts and the compression operation is completed.



3-6 Creating a Cutting Program (Input)

When repeating a complicated cutting job, it is helpful to create and save the process to a cutting program. (Up to thirty programs can be saved.)

This section explains how to create or correct the cutting programs.

WARNING

This machine must be operated by just one person at a time.

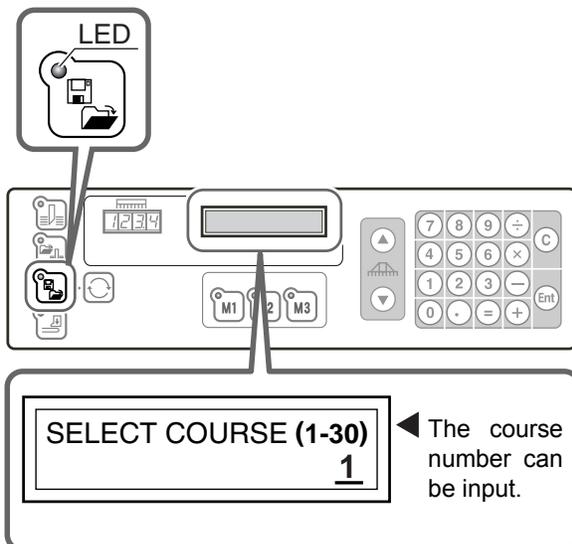
CAUTION

Do not cut anything besides paper. This may damage the machine.

[Creating a New Program]

1 Press the  button.

- The LED on the upper left of the program memory button is illuminated and shows that the “program memory” is selected.
- “SELECT COURSE (1-30)” appears in the guide window.



2 Input the course number for saving the program.

- For example, this procedure explains how to save a new program into the course number 14.
- Press the **1** **4** **Ent** keys on the numeric keypad. The guide window will be ready to input the cutting length value for the step 1.

When the course number 14 is input,


The value for the step 1 is ready to be input.

COURSE14	1 / 0
	1: <u>0</u>

 Note

The job name of the course number should be written down when programming.

To check the process of the course,

press the  button.

3-6 Creating a Cutting Program (Input)

3

Input the cutting length for the step 1.

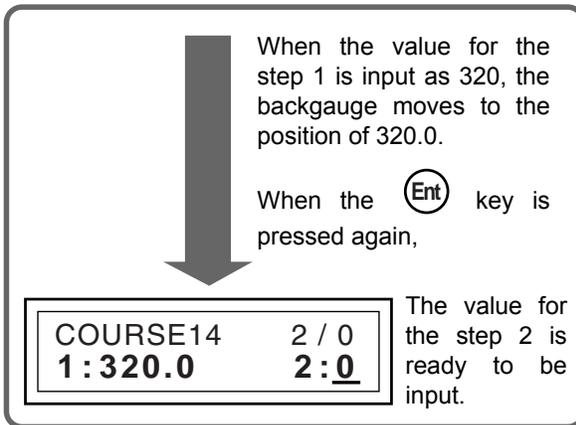
- In this step, the cutting length of the step 1 should be 320.0 for example.

- Press the **3** **2** **0** **Ent** keys on the numeric keypad. The backgauge moves to the position of 320.0.

- Check that the current position of the back-

gauge is "320.0" and press the **Ent** key again.

- The step 1 is set and the step 2 is ready to be input.



Note

If the value after the decimal point is "0", the decimal point and "0" is not necessary to be input.

4

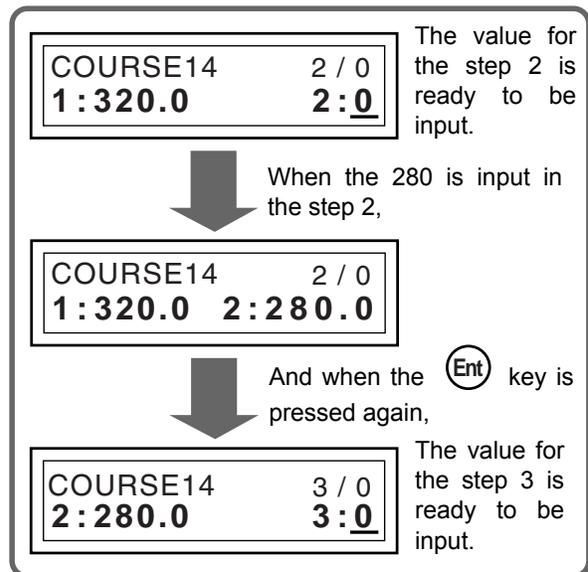
Input the cutting length for the step 2.

- In this step, the cutting length of the step 2 should be 280.0 for example.

- Press the **2** **8** **0** **Ent** keys on the numeric keypad. The backgauge moves to the position of 280.0.

- Check that the current position of the back-

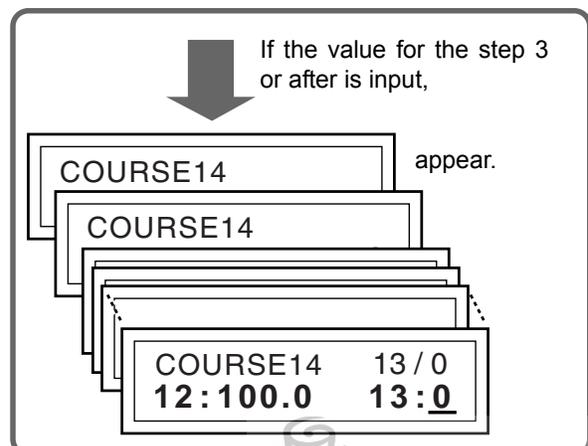
gauge is "280.0" and press the **Ent** key again. The step 3 is ready to be input.



5

Input the cutting length for the step 3 or after as well.

- In the following procedures, the last process should be step 13 for example.



3-6 Creating a Cutting Program (Input)

6

Input the cutting length for the last step.

- Press the **Ent** key while the value is "0" in step 14.

After the value for the last step 13 is input,

COURSE14	14 / 0
13:90.0	14:0

The value for the step 14 is ready to be input.

Press the **Ent** key while the value is "0" to complete the program.

7

Save the program.

- Press the **Ent** key on the confirmation screen below and finish creating the program.
- The program cutting mode starts and the LED on the  button is illuminated.

When the **Ent** key is pressed while the input value is 0,

EXIT?	
Y:"Ent"	N:"C"

The exit confirmation screen appears.

When the **Ent** key is pressed,

MEMORIZE?	
Y:"Ent"	N:"C"

The memory confirmation screen appears.

When the **Ent** key is pressed,

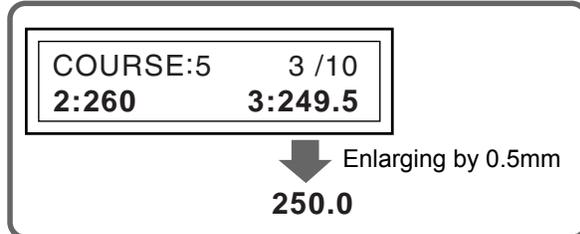
COURSE14	1/13
1:320.0	2:280.0

The program of the course number 14 starts.

3-6 Creating a Cutting Program (Correct)

This section explains how to correct the saved program.

Example: When enlarging the cutting length by 0.5 mm at the step 3, course number 5.

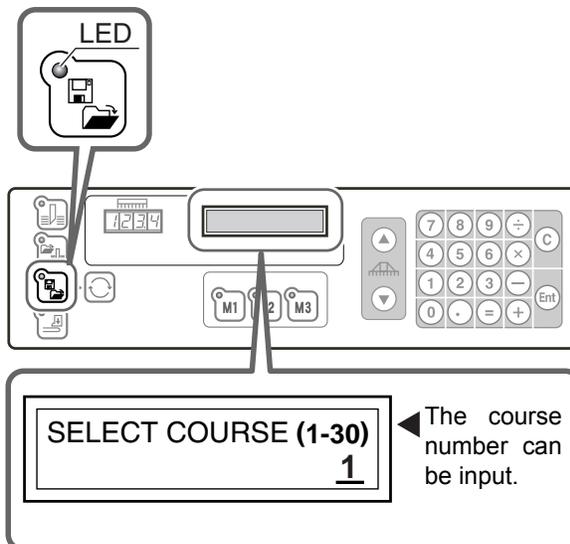


[Correcting the Saved Program]

1

Press the  button.

- The LED on the upper left of the program memory button is illuminated and shows that the “program memory” is selected.
- “SELECT COURSE (1-30)” appears in the guide window.

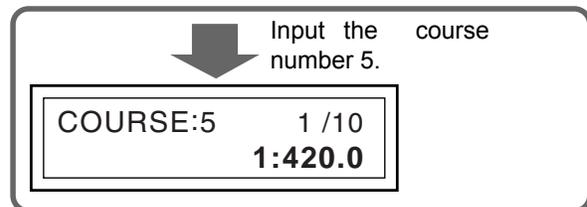


2

Input the course number to correct.

- In this step, for example, input the course number 5.

- Press the **5** **Ent** keys on the numeric keypad. The step 1 of the course number 5 appears on the guide window as shown below.



3-6 Creating a Cutting Program (Correct)

3

Show the step 3 to correct.

- Press the **Ent** key for the step 1 which will not be corrected.
- Repeat the same procedure and move to step 3.

4

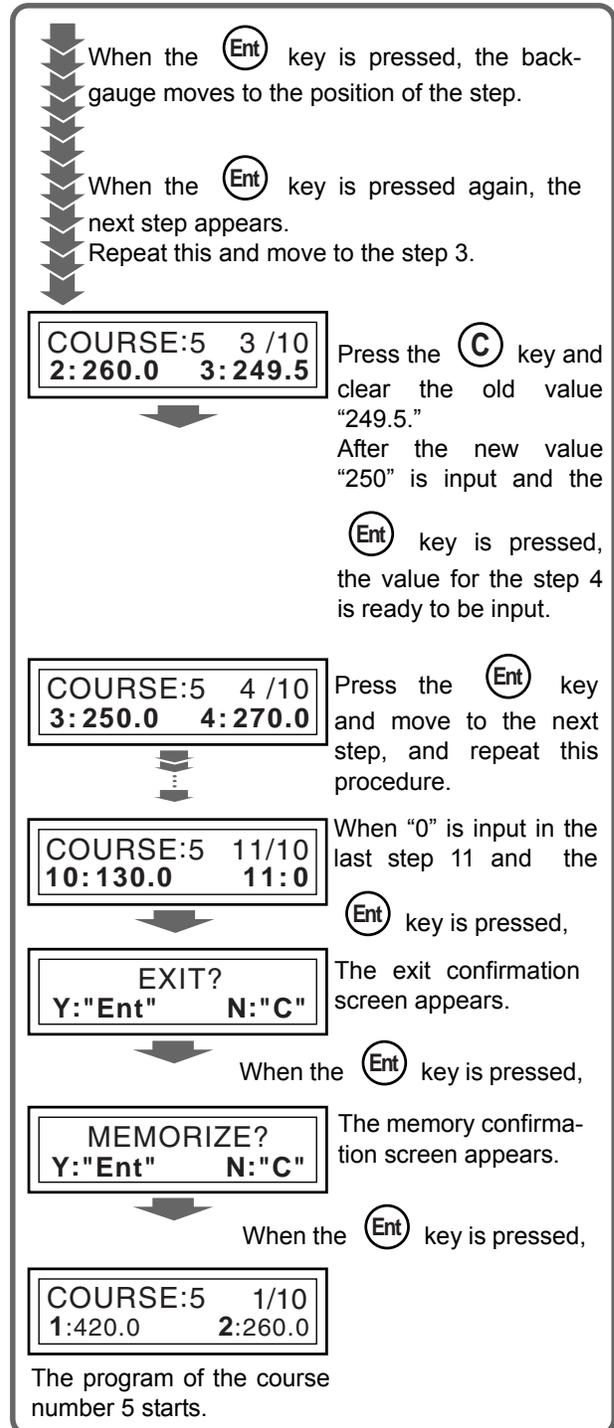
Correct the value of the step 3.

- Press the **C** key to clear the old value "249.5", input the new value "250" and press the **Ent** key.

5

Save the program.

- Press the **Ent** key on the confirmation screen to the right and finish the correction of the program.
- The program cutting mode of the course number 5 starts and the LED of the  button is illuminated.



3-6 Creating a Cutting Program (Delete)

This section explains how to delete the saved program.

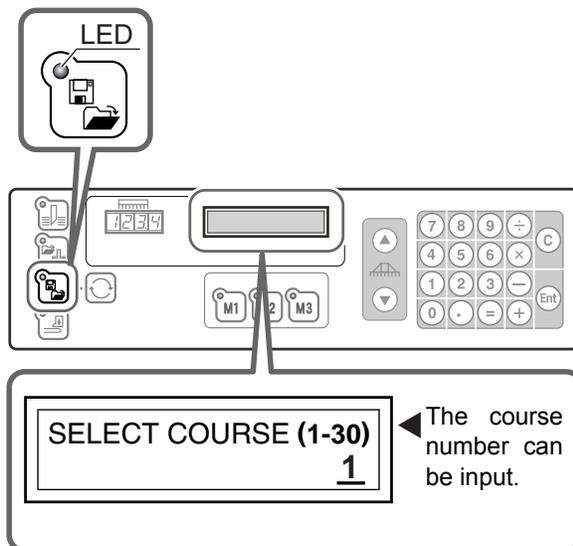
Example: When deleting course number 5.

COURSE:5	3 /10
2:260	3:249.5

[Deleting the Saved Program]

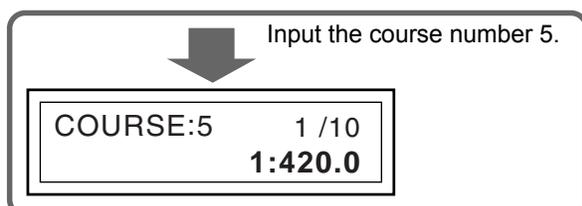
1 Press the  button.

- The LED on the upper left of the program memory button is illuminated and shows that the "program memory" is selected.
- "SELECT COURSE (1-30)" appears in the guide window.



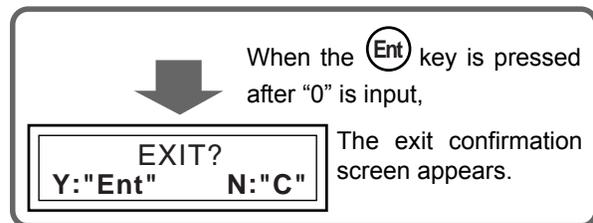
2 Input the course number to delete.

- In this step, for example, input the course number 5.
- Press the **5** **Ent** keys on the numeric keypad. The step 1 of the course number 5 appears on the guide window as shown below.



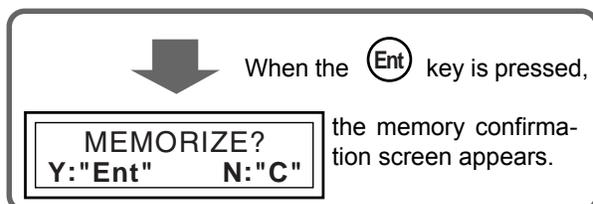
3 Press the 0 key and the **Ent** key on the numeric keypad.

- "EXIT?" appears in the guide window.



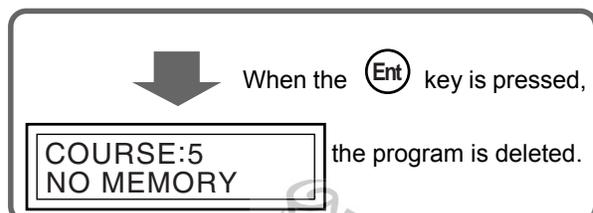
4 Press the **Ent** key.

- "MEMORIZE?" appears in the guide window.



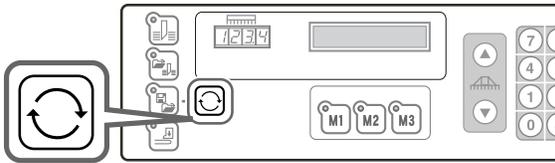
5 Press the **Ent** key.

- "NO MEMORY" appears in the guide window. This is the end of the procedure for deleting the program.

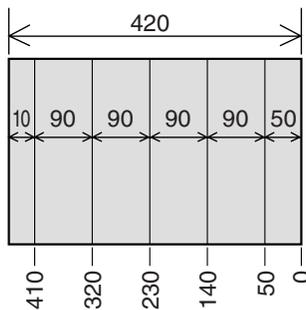


3-6 Creating a Cutting Program (Repeat Cutting Program)

When using the  button, the program to cut the sheets for the same length continuously can be easily input. This section explains how to use the repeat function.



Example:
420 mm sheets are cut to 410 mm, and then the rest of the sheets are divided evenly by 90 mm.



1

Input 410 for the step 1.

- Press the **4** **1** **0** **Ent** keys. The backgauge moves to the input position and stops.
- Check the position and press the **Ent** key. The step 2 can be input.

2

Press the  button and set the repeat of the step.

- The "repeat" mark appears on the guide window.
- When you press the  button again, the "repeat" mark disappears.

1 / 0
1 : 0 ← The value for step 1 is ready to be input.

1 / 0
1 : 410.0

↓

2 / 0
2 : 0 ← The value of step 2 is ready to be input.

← **2 / 0**
2 : 0 ← The value of step 2 is ready to be input. (With repeat mark)

3

Input the repeat cutting length 90.

- Input the **9** **0** **Ent** keys.

2 / 0
← **2 : 90.0** ← The repeated cutting length is input.

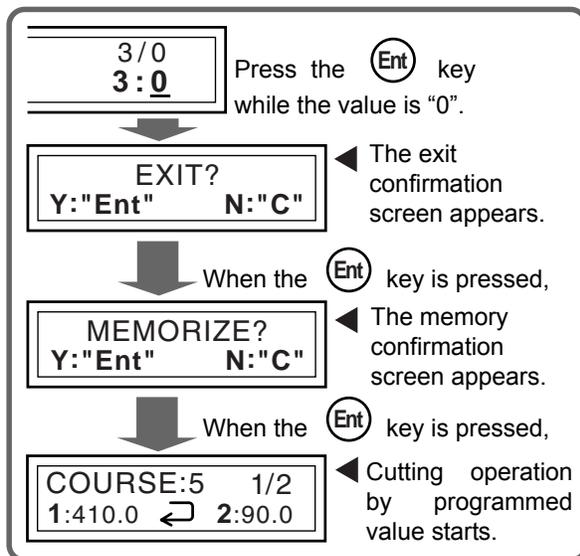
3-6 Creating a Cutting Program (Repeat Cutting Program)

4

Input "0" to the step 3.

- When the **0** **Ent** keys are input to the cutting length, the confirmation screen appears.

When the **Ent** key is pressed, the program is determined and the cutting program starts.

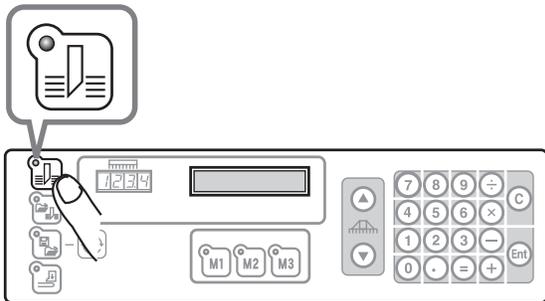


3-7 Checking the Counter

This section explains how to indicate the frequency of the total cut since the machine was new, or since the last knife replacement.

Refer to the value for the knife replacement.

1 Press the  button.



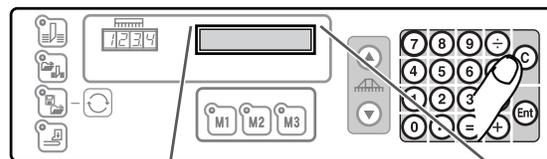
2 Press the  key of the numeric keypad.

- The counter indicates the value for two seconds.

2,000 times of cutting operation is used as a target for knife replacement.

The knife condition depends on the type of sheets to cut.

If prime condition of the knife, good finishing, or accurate trimming is required, it is recommended to replace the knife every 500 times of cutting operation.



TOTAL KNIFE → 10050
510 / 2000

How many times the sheets are cut since the machine was new.

How many times the sheets are cut since the last knife replacement.

2,000: Reference for replacing the knife.

3-8 Knife Replacement Message

When the cutting operation has been done over 1,000 times since the last knife replacement, the message shown at lower right appears turning on the power switch. This message informs you the knife replacement timing. This message does not mean that the knife must be replaced. If the knife is still sharp enough to cut, you can keep using the knife.

[If replacing the knife]

- Ask the replacement of the knife to your local dealer.

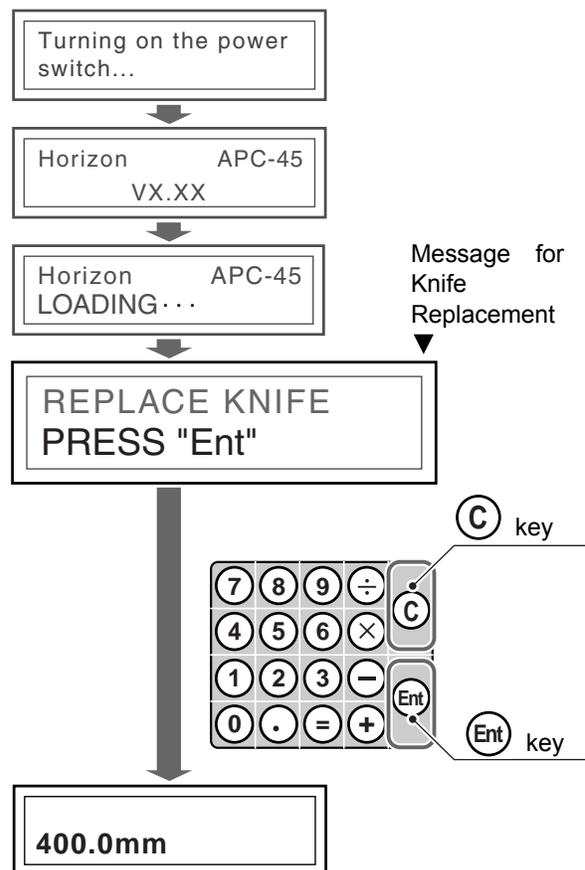
[If not replacing the knife]

→ If not coming up this message until the cutting operation has been done over 1,000 times again

- Press the **C** key.
- The machine comes up this message again after another 1,000 times of cutting operation.
- The postponement of another 1,000 times can be done repeatedly.

→ If indicating this message each time the power switch is turned on

- Press the **Ent** key.



4. Replacement and Adjustment

This chapter explains how to adjust the knife lower limit, the knife angle and how to replace the cutting stick.

4-1 Knife Lower Limit Adjustment

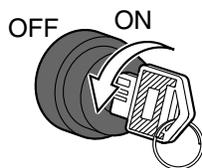
The lowest position of the knife can be adjusted mechanically. Adjust the lower limit if the knife is worn and the bottom sheet remains uncut.

WARNING

- A single operator must perform the adjustment.
- There will be some procedures to turn off the power switch below. Make sure to turn off the power switch. Otherwise, moving parts can cause severe personal injury.

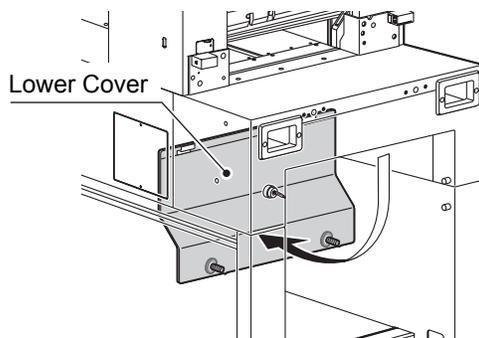
1

Turn off the power switch.



2

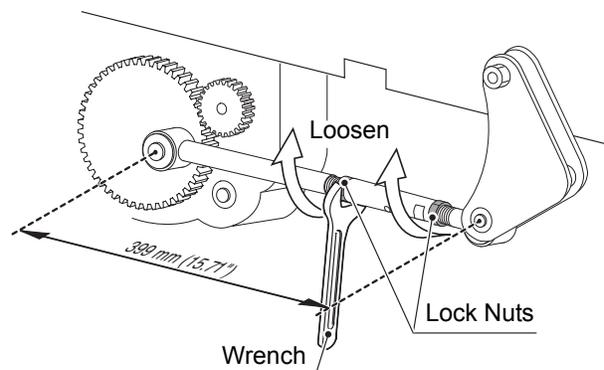
Open the lower cover.



3

Loosen two lock nuts of knife height adjusting screws using the wrench.

- The right lock nut is a left-handed screw.



4-1 Knife Lower Limit Adjustment

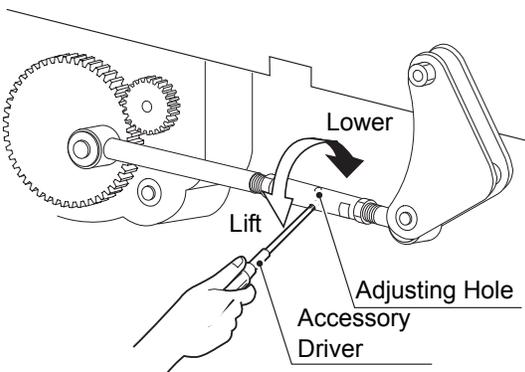
4

Adjust the lower limit.

- Insert the accessory driver into the adjusting hole and rotate the shaft to adjust the lower limit.

 Note

- **1/6 rotation of the knife height adjusting screws lifts/lowers the knife about 0.6 mm (0.024"). Excessive cutting depth may damage the machine. Maximum cutting depth is 0.5 mm (0.019").**
- **The standard length shown in the figure in the previous page is 399 mm (15.71"). Adjust so that this length will be 397 mm to 400 mm (15.63" to 15.74").**



5

Fasten two lock nuts.

6

Close the lower cover.

7

Turn on the power switch.

8

Perform the test cutting.

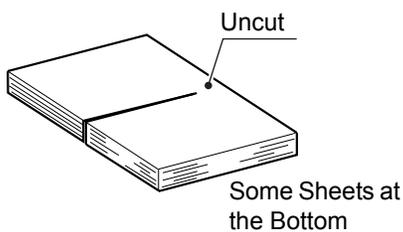
- If the sheet still remains uncut, repeat the steps **3** through **7**.

4-2 Knife Angle Adjustment

Adjust the knife angle if part of the sheets remain uncut as shown in the figure below.

WARNING

- A single operator must perform the adjustment.
- There will be some procedures to turn off the power switch below. Make sure to turn off the power switch. Otherwise, sharp knife can cause severe personal injury.

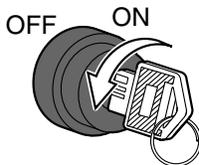


Note

If only bottom sheets remain uncut, the problem can be improved also by lowering the knife position. Refer to “4-1 Knife Lower Limit Adjustment.”

1

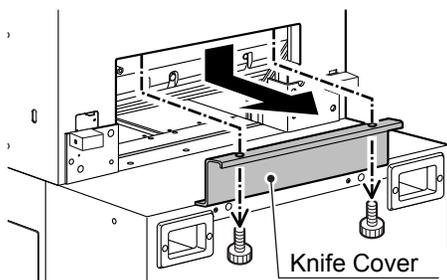
Turn off the power switch.



2

Remove the knife cover.

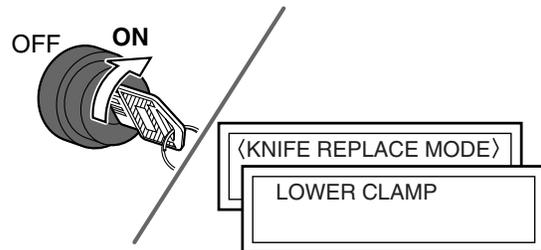
- Loosen two screws and remove the knife cover.



3

Turn on the power switch.

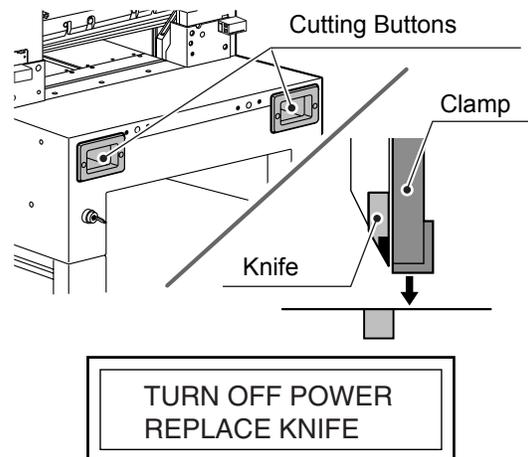
- The indication [REPLACE MODE] is shown on the guide window and then it changes to [LOWER CLAMP].



4

Press the cutting buttons and keep pressing until you hear a beeping sound.

- Release the cutting buttons after only the clamp lowers and stops.
- The indication [TURN OFF POWER REPLACE KNIFE] is shown on the guide window.



5

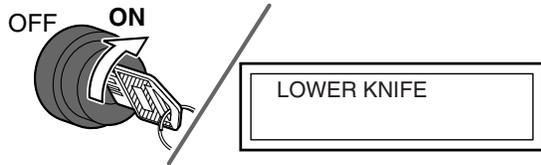
Turn off the power switch.

4-2 Knife Angle Adjustment

6

Turn on the power switch.

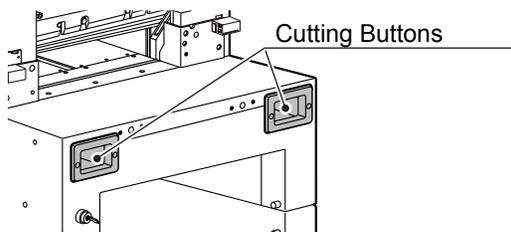
- The indication [LOWER KNIFE] is shown on the guide window.



7

Press the cutting buttons and keep pressing until you hear a beeping sound.

- The knife lowers and stops.



8

Turn off the power switch.

9

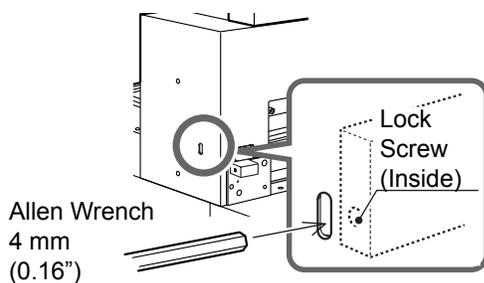
Loosen the lock screw.

- Insert an Allen wrench in the slot on the left side cover of the machine and loosen the lock screw.



CAUTION

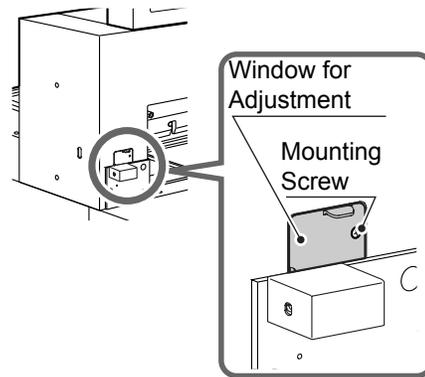
Loosen the lock screw only for one or two turns. Do not remove it.



10

Open the window for adjustment.

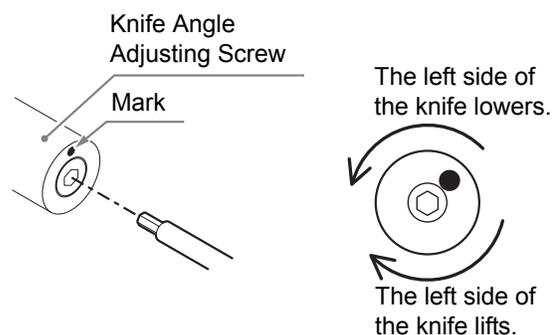
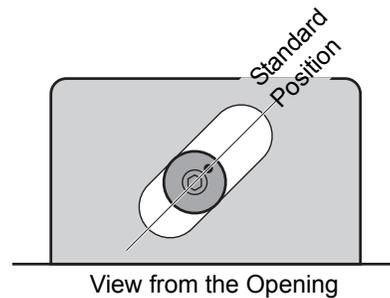
- Remove the mounting screw and open the window.
- A hexagon hole can be seen through the window. This is the knife angle adjusting screw.



11

Adjust the knife angle.

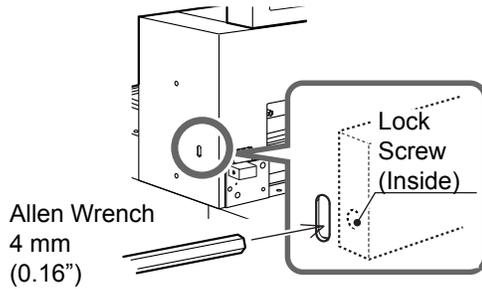
- Adjust the direction and angle of the knife by changing the position of the mark in the figure below.
- The standard position is as shown in the figure below.



4-2 Knife Angle Adjustment

12

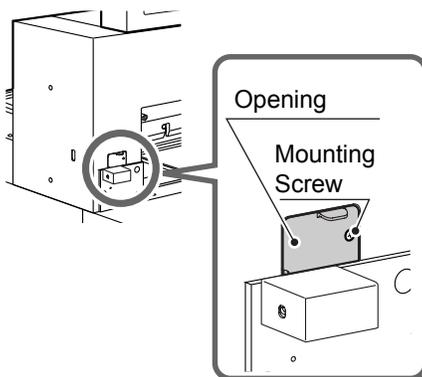
Fasten the lock screw.



13

Close the window for adjustment.

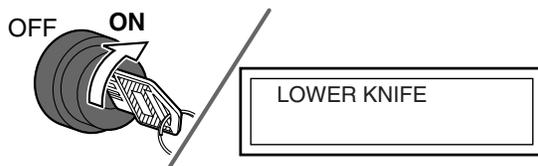
- Fasten the mounting screw.



14

Turn on the power switch.

- The indication [LOWER KNIFE] is shown on the guide window.



15

Press the cutting buttons.

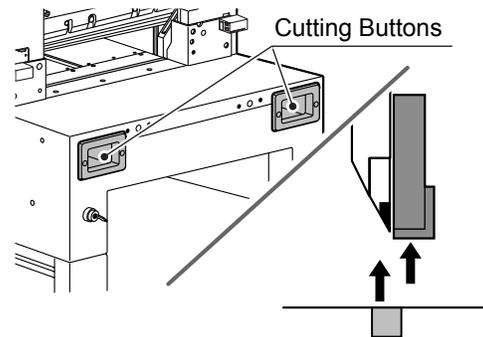
- The indication [FIX KNIFE] is shown in the guide window.



16

Lift the knife holder and the clamp.

- Press one of the cutting buttons first, and then press another cutting button after 0.5 seconds or later.
- The knife holder and the clamp lifts and stops.



17

Install the knife cover and press the

- ⓔ button.

18

Perform the test cutting.

- Place wide sheets and check that the sheets do not remain uncut. If the sheets still remain uncut, repeat the steps 1 through 17.
- If only bottom sheets remain uncut, the problem can be improved also by lowering the knife position. Refer to "4-1 Knife Lower Limit Adjustment."

4-3 Cutting Stick Replacement

When the groove of the cutting stick becomes deep, the bottom sheet may remain uncut, or torn. In these cases, replace the cutting stick.

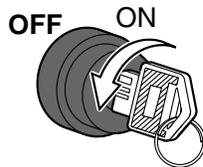
WARNING

A single operator must replace the cutting stick.

Wear gloves and be careful to keep your hands away from the knife. Otherwise, sharp knife can cause severe personal injury.

1

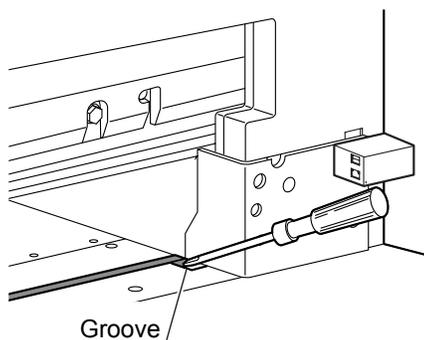
Turn off the power switch.



2

Lift the cutting stick.

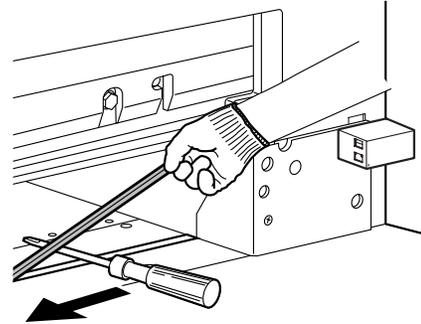
- Insert a screwdriver under the cutting stick from the right and left groove, and lift it.



3

Remove the cutting stick.

- Lift the cutting stick, insert a screwdriver under the cutting stick and slide it. The cutting stick can be removed easily.



4

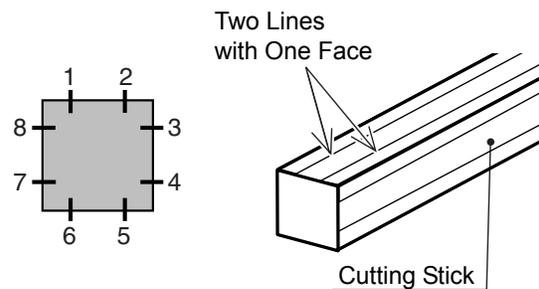
Clean the groove.

- In the groove for the cutting stick, paper chips and paper dust remain. Remove them completely.

5

Insert a new cutting stick.

- Each cutting stick can be used up to eight times - four faces and two surfaces per face. Insert the unused surface of the cutting stick face up.



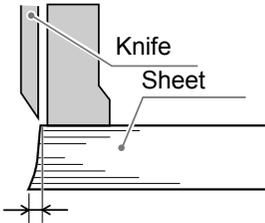
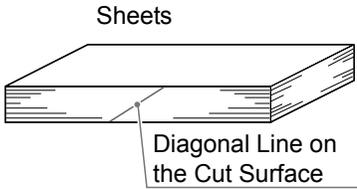
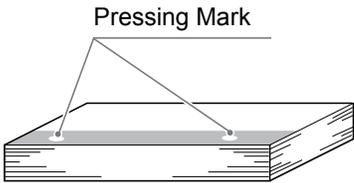
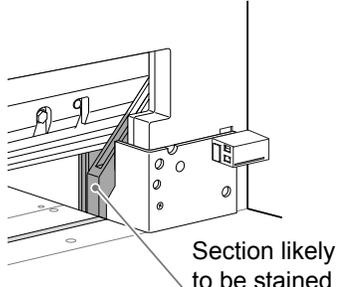
5. Troubleshooting

5-1 An Error Message Appears

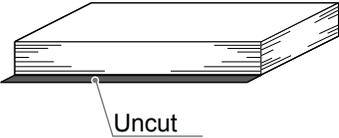
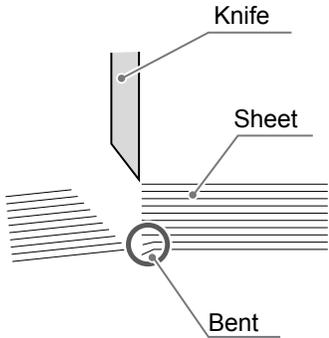
Error Message	Cause	Remedy
E01: KNIFE HOME ERROR	The knife is not at the upper limit when the power switch is turned on. (The power switch is turned off while the knife is lowered.)	Press one of the cutting buttons, and while this is pressed, press another cutting button after 0.5 seconds or later.
E02: CLAMP HOME ERROR	The clamp is not at the upper limit when the power switch is turned on. (The knife is at the upper limit.)	Press the Ent key.
E03: BACKGAUGE ERROR	The problem of the home positioning switch.	Check the home positioning switch.
E04: BACKGAUGE ERROR	The limit switch is activated.	Move the backgauge using the  or  button.
E05: BACKGAUGE ERROR	The encoder malfunctions. The spindle of the backgauge does not turn.	Call your local dealer.
E06: BACKGAUGE ERROR	The spindle is turned by hand.	Turn off the power switch and on again.
	The machine is influenced by noise.	If this occurs frequently, call your local dealer.
E14: COVER OPEN	The lower cover is open.	Close the lower cover.
E09: OUT OF RANGE	The cutting length out of range is input.	Press the Ent key and input the cutting length within the range.
E10: MEMORY ERROR	The program is not recalled correctly.	Press the Ent key. However, the data of the EEPROM may be collapsed. If this occurs frequently, replace the EEPROM.
PRESS CUTTER BUTTONS	The mechanical problem of the clamp occurs: The upper limit sensor and pulse sensor malfunction.	Remove the cause and press the cutting buttons.

5-2 Problems and Remedies

5-2-1 Stain, Diagonal Line, Pressing Mark and Uncut of the Sheets

Problem	Causes and Remedies	See
<input type="checkbox"/> Sheets are cut diagonally.	 <ul style="list-style-type: none"> • The sheets may not hit the back-gauge. (Make sure that the sheets hit the back-gauge.) • There may be air between the sheets. (Press the sheets to remove air before cutting operation.) • The knife may be dull. (The replacement of the knife is necessary.) 	For the Knife Replacement, Service Call
<input type="checkbox"/> Diagonal line appears on the cut surface.	 <ul style="list-style-type: none"> • The knife is worn or damaged. (The replacement of the knife is necessary.) 	For the Knife Replacement, Service Call
<input type="checkbox"/> Cut sheets has pressing mark.	 <ul style="list-style-type: none"> • The clamp pressure is too strong for the sheets, or the support plate is not attached. (Attach the support plate on the clamp.) 	-
<input type="checkbox"/> Cut sheets are stained by grease.	 <ul style="list-style-type: none"> • Excess grease may be filled. <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p style="text-align: center;">⚠ WARNING</p> <p style="text-align: center;">Turn off the power switch before the operation. Otherwise, sharp knife can cause severe personal injury.</p> </div> <p>(Wipe the filled grease at cutting section.)</p>	-

5-2 Problems And Remedies

Problem	Causes and Remedies	See
<input type="checkbox"/> Sheet remains uncut.	 <ul style="list-style-type: none"> • If the cutting stick is worn, the sheet may remain uncut. (Use another face of the cutting stick.) • If the knife becomes dull, the sheet may remain uncut. (The replacement of the knife is necessary.) 	4-1 Knife Lower Limit Adjustment 4-2 Knife Angle Adjustment 4-3 Cutting Stick Replacement For the Knife Replacement, Service Call
<input type="checkbox"/> Some of the cut sheets are bent.	 <ul style="list-style-type: none"> • If the cutting stick is worn, some of the cut sheets may be bent. (Use another face of the cutting stick.) • If the knife becomes dull, some of the cut sheets may be bent. (The replacement of the knife is necessary.) 	4-3 Cutting Stick Replacement For the Knife Replacement, Service Call

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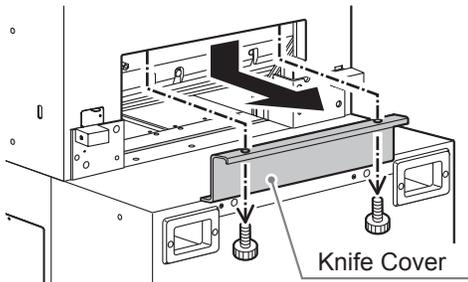
6. Maintenance

This chapter explains the lubrication procedures necessary to keep the machine in good condition.

6-1 Lubrication (Front Side)

1 Turn on the power switch.

2 Stop the knife at the bottom.
- Press the cutting buttons and release them just before the knife reaches the lower limit.
➔ The knife and clamp lower and stop.



3 Turn off the power switch.

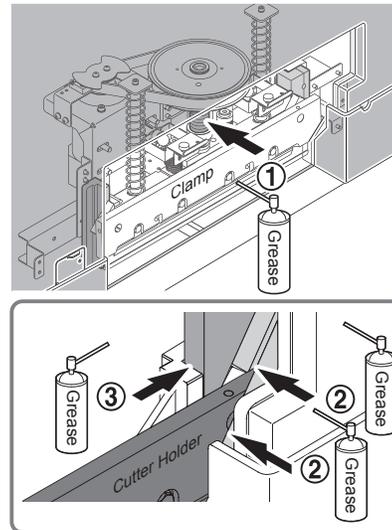
⚠ WARNING

Make sure to turn off the power switch before the following steps. Otherwise, moving parts can cause severe personal injury.

4 Remove the knife cover.

5 Lubricate using a grease spray.
Lubricate the following parts once every month.

1. Clamp Screw
 2. Knife Guide
 3. Clamp Guide
- Lubricate also the left side on the items 2. and 3.



6 Attach the knife cover.

7 Turn on the power switch.

8 Lift the knife.
- Press the cutting buttons to lift the knife.

Note

Move the knife up and down several times to spread the lubricated grease.

6-1 Lubrication (Rear Side)

1

Turn on the power switch.

2

Move the backgauge backward.

- Move the backgauge to the far end.

3

Lubricate each section.

- There is a hole for lubrication behind the window. Lubricate using a grease spray through this hole. Lubricate the shaft in the groove of the table and the spindle under the shaft directly.

- Lubricate once every month.

4

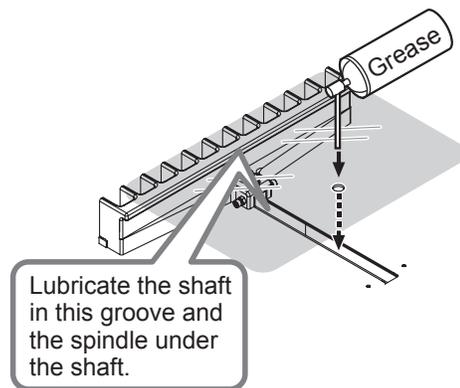
Move the backgauge forward.

- Move the backgauge forward until the rear end of the backgauge comes forward than the hole for lubrication.

5

Lubricate each section.

- Lubricate in the same way as shown in the step 3.



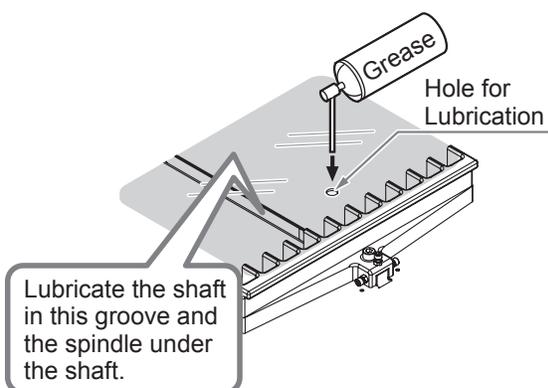
CAUTION

Make sure to spray after the end of the grease nozzle touches the shaft or spindle. Otherwise, grease may be scattered and sheets may be smeared.

6

Move the backgauge forward and backward.

- Move the backgauge through full stroke from 0 to 450 mm (0" to 17.715"). Grease will spread to the whole part.

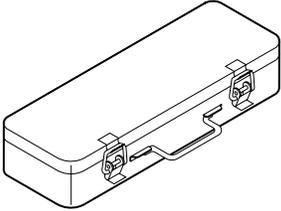
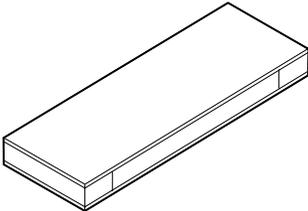
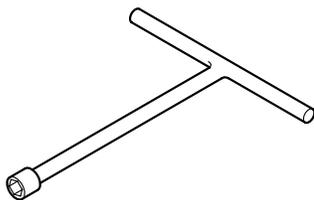
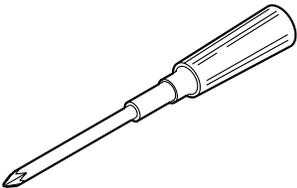
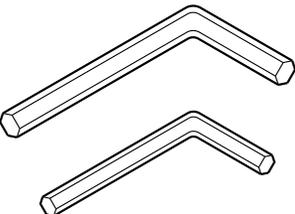
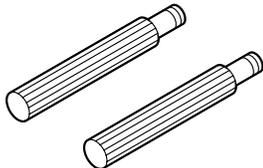
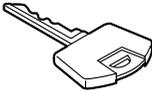
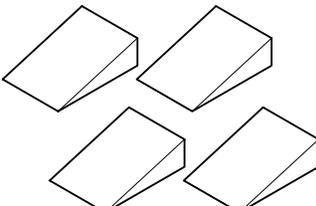
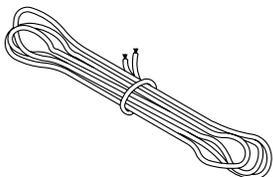
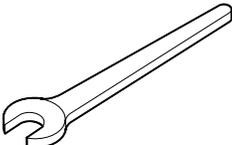
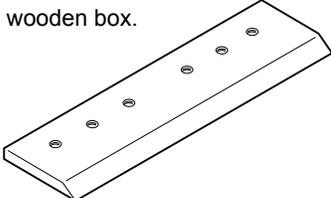


7. Appendix

7-1 Specifications

Cutting Width	Max. 450 mm (17.71")
Cutting Height	Max. 60 mm (2.36")
Feed Depth	Max. 450 mm (17.715") Min. 40 mm (1.575")
Clamp	Electrical Powered
Job Memory	99 Steps, 30 Jobs (Total 300 Steps)
Push-out Length	50 mm (2")
Table Height	900 mm (35.43")
Voltage/Frequency	Single Phase 100 V, 50 / 60 Hz Single Phase 115 V, 60 Hz
Rated Current	100V 50 Hz : 11 A 100V 60 Hz : 15 A 115V 60 Hz : 13 A
Power Consumption	100V 50 Hz : 900 W (Using Transformer) 100V 60 Hz : 1,100 W 115V 60 Hz : 1,100 W
Heat Output	1,460 kJ (350 kcal)
Motors	550 W x 1, 40 W x 1, 70 W x 1
Machine Dimensions	770(W) x 880(D) x 1,510(H) mm (30.4" x 34.7 "x 59.5")
Machine Weight	330 kg (728 lb)

7-2 Accessories

<p>Tool Box (4003344) 1 pc</p> 	<p>Wooden Box (M007425) 1 pc</p> 	<p>Box Wrench (4004368) 1 pc</p> 
<p>Screwdriver (4005382) 1 pc</p> 	<p>Allen Wrench (4001439 / 4000968) 1 pc each</p> 	<p>Knife Replacing Tools (M007396) 2 pcs</p> 
<p>Key (M002056) 1 pc</p> 	<p>Wedges (M013154) 4 pcs</p> 	<p>Operation Manual (UM204023) 1 pc</p> <p>The manual you are reading now.</p> 
<p>Ground Wire (L50-G3000) 1 pc</p> 	<p>Open Wrench (4001745) 1 pc</p> 	<p>Spare Knife (M136899) 1 pc</p> <p>Housed in the wooden box.</p> 
<p>T-Handle Hexagon Wrench (4019113) 1 pc</p> 