High-Speed Horizontal
Form-Fill-Seal Machine

Instruction Manual

FW3200
FW3200/B

FW3210
FW3210/B

Serial Number:_____

Hand & Model Number:_____

WOODINVILLE, WASHINGTON USA

Contents

Introduction

Thank you for purchasing the Fuji-Formost High Speed Horizontal Form-Fill-Seal Machine. We hope that you will use this machine regularly and continue to support us in the future.

Instructions

To operate this machine safely and efficiently, you should first read this Instruction Manual thoroughly. Read and keep the contents of “Chapter 1 SAFETY INSTRUCTION” because it contains the requirements regarding safety.

Please keep this manual near the machine and use it for maintenance and safety operation. Educate and train all the people who use this machine so that they can use the machine safely.

Concerning the information and skill necessary to operate this machine, our service personnel will explain how to handle and inspect the machine upon delivery.

The following maintenance should be done by full-time maintenance persons who are accepted by a manager.

Maintenance of Machine

(1) Repair, adjustment and replacement of parts
(2) Replacement of expendable parts
(3) Daily and periodical inspection
(4) Other works concerning this machine

Electrical Maintenance

(1) Access to electrical enclosures
(2) Replacement, alteration and adjustment of electrical equipment
(3) Checking and replacement of wiring
(4) Other works concerning electricity

Notes

Please note that the specifications contained in this manual are subject to change for constant review and improvement without any obligation on the part of the manufacturer.

The drawings in this manual show a right-handed machine (RH machine). Left-handed machines are opposite.

Exemption of Responsibility

Please note that we cannot take full responsibility for damages to the machine from an earthquake, a lightning, storm, flood damage, a fire caused by someone, an action by the third person, other accidents except the above, a damage caused by design, by mistake or by the operator’s abuse, or usage under other abnormal conditions.

Please note that we cannot take full responsibility for damages to the machine if you do not follow the instructions in the contents of this manual.

Please note that we cannot take full responsibility for damages to the machine from malfunction by combining this machine with devices or software which we have no reference to.

Symbols in this Manual

Hazard Alert Symbols

These symbols show important contents for safety. Please follow them.

DANGER	DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
WARNING	WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
CAUTION	CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury, and damage to the machine.

These hazard alert symbols alert operators and others to possible hazardous situations while operating this machine. Understand these symbols' meanings and follow the instructions carefully. Never remove the hazard alert symbols from this machine.

This symbol indicates that you should adhere to the safety instructions in this manual.

This symbol, placed on control box and electrical parts, informs you of a hazard for electrical shock.

This symbol, placed on hazardous parts in areas of high temperature, informs you of a burn hazard.

This symbol, placed on cutting parts, informs you of a danger to hands or fingers.

This symbol, placed near moving parts, informs you of a danger to hands or fingers.

This symbol, placed on inserting parts, informs you of a hazard to hands or fingers.

This symbol, placed near cutting parts in areas of high temperature, alerts you to hazards to hands or fingers that could be burned or cut.

The meaning of these symbols in this manual are as following:

Note Means supplementary description of explanation in this manual.

Residual Risk Means a remaining risk after having taken some safe measures.

Ref. ???????? Means reference manuals and pages about related topics.

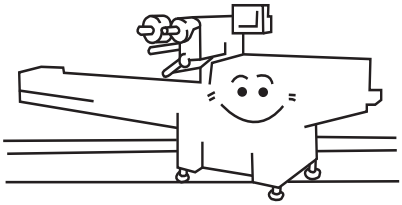
Chapter 1
Safety Instruction

This chapter describes necessary contents for the safe operation of this machine. Read thoroughly and keep nearby.

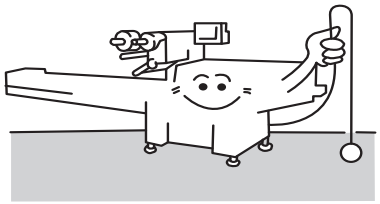
Please Keep These

DANGER

Install this machine on a solid and level surface which can support the machine's weight. Use jack bolts to adjust the height of the machine with a spirit level. Make certain the machine is level, with all jack bolts firmly on the floor, to eliminate vibration. Unexpected shaking of a machine that is not level could cause it to fall over and cause an injury.



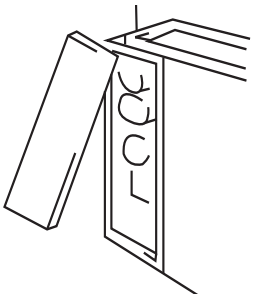
To prevent danger of electrical shock or fire and for the protection of this machine, connect an appropriate grounding wire (third class (D) grounding or above) to it.



WARNING

Replace or close all covers before turning on electrical power, or your hands could be injured.

Wait for 5 minutes after you turn the power supply OFF before you touch the electrical units inside the control box An electric shock may occur.



WARNING

When an empty bag is cought in the end sealers, STOP the machine and use pliers to remove the empty bag from the product path. Do NOT attempt to do so while the machine is in operation, hand or fingers may be injured.

Rotary Sealing

Box Motion

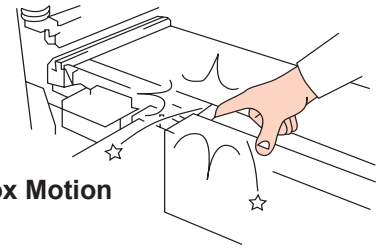
Only qualified maintenance personnel should do mechanical and electrical maintenance. Before working on the machine, turn the main breaker or the power supply OFF. Exercise care when it is necessary to turn it ON during maintenance or inspection.

Make certain people are clear of the machine and no tools are left in or on it when restarting the machine after an emergency stop. Failure to do so could cause an unexpected injury.

DANGER

WARNING

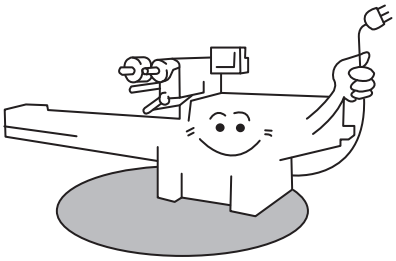
Belt conveyors move forward and backward during operation.Do not insert your hands into conveyors, or injury may occur.



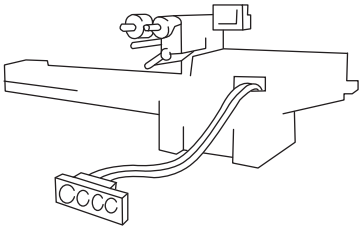
Box Motion

WARNING

This machine is designed to use a 3-phase AC200V power supply. The allowable power voltage is from 180V to 220V. When existing power supply voltage is not within this range, a transformer is required. Insert the plug completely in the electrical socket to avoid electric shock or fire hazard.



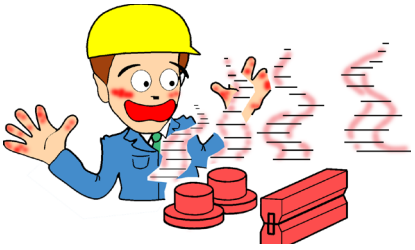
Avoid any part that does not conform to this machine or any modification to it. Never modify the machine so that it can operate with any of its covers open. Serious injury may result.



WARNING

The heated center and end sealers do not cool immediately when the power supply is turned OFF. Never touch them or a serious burn may result.

After the power supply is turned OFF, they should return to room temperature in 30 minutes.

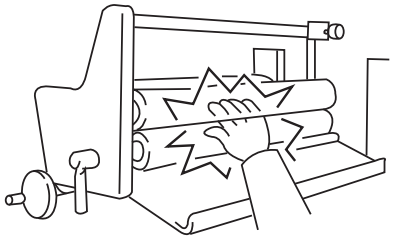


Be careful while moving this machine, or a foot may be caught in a caster and be injured.

WARNING

WARNING

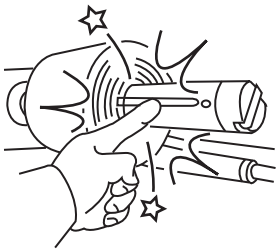
Exercise caution when putting your hand near the film feed roller and the rubber pinch roller, or serious injury may result.



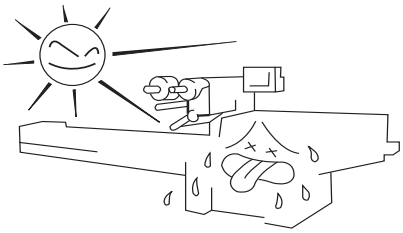
WARNING

Residual Risk

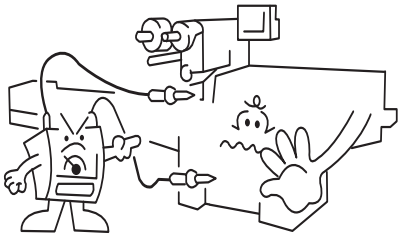
Never touch the film roll mounting shaft during operation. Your finger may be caught in the shaft hole and be injured unexpectedly.



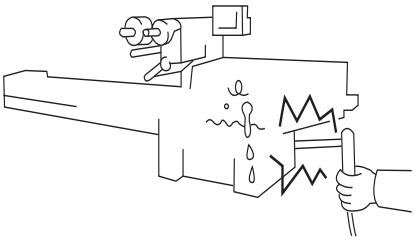
Avoid installing this machine in a place subject to direct sunlight, humidity, or dust. These may cause a fire or an electric shock.



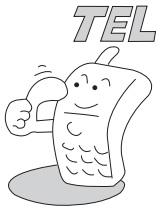
Before conducting a megger test, disconnect the printed circuit board, breaker, sequence, inverter and motor driver, etc., or they may be damaged, and an unexpected accident may result.

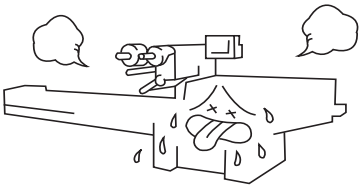


Never conduct arc welding near this machine while it is ON, or an unexpected accident or damage to the machine may result.

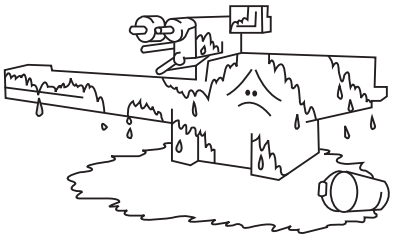


Unusual sounds, smells and vibrations may indicate a serious machine problem. If problem cannot be corrected, contact us.

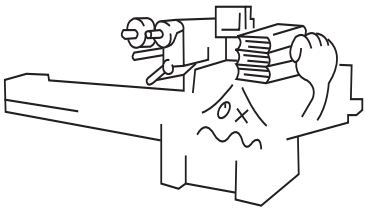




Protect this machine from water and moisture or damage to the machine may result. Never touch the machine with wet hands, or an electric shock and/or damage to the machine may occur.

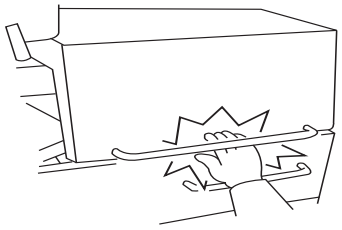


Never store anything except tools and materials necessary for operation near this machine. Never store anything on the machine. Machine damage and/or bodily injury may result. If foreign objects get carried into the wrapper, damage to the machine may result.

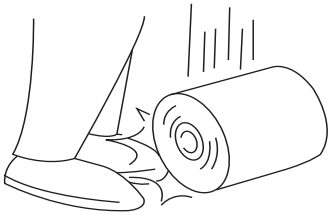


WARNING

Be careful while opening and closing the safety covers, or your hands and fingers may be caught and injured.



Be careful while handling rolls of film, or an injury may result.

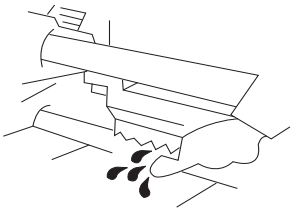


WARNING

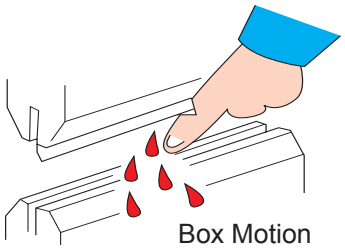
Never put hands between the bag former and the moving infeed conveyor chain, or injury may result.

CAUTION

Be careful not to cut your fingers while replacing knives and setting film, even with the machine power turned OFF.



Rotary Sealing

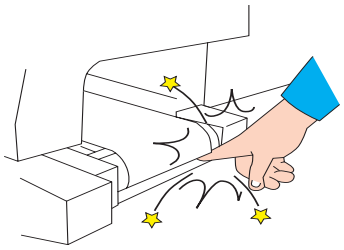


Box Motion

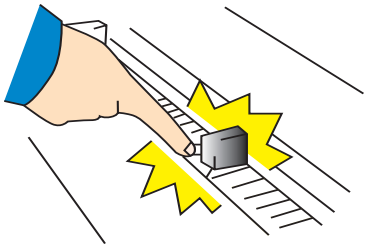
Be careful of sharp corners and protruding machine parts, or injury may result.

WARNING

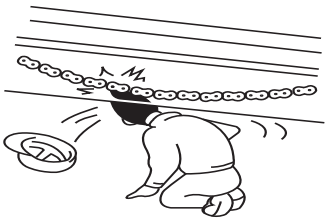
Never touch conveyors during operation. Fingers may be caught between the roller and a belt and may be injured.



Never put your hand in between pusher lug and infeed conveyor bed, or an injury may result.



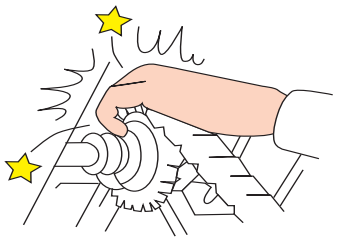
Never pass under a moving infeed conveyor chain, hair may be caught in chains, and a serious injury may result.



CAUTION

WARNING

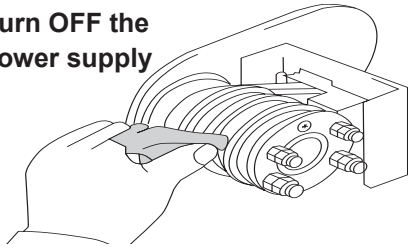
Be careful while replacing and cleaning chains, or your hands may be caught between idle sprocket and chain, causing injury.



WARNING

Be sure to turn the power supply OFF when cleaning brush rings or an electric shock may result.

Turn OFF the power supply

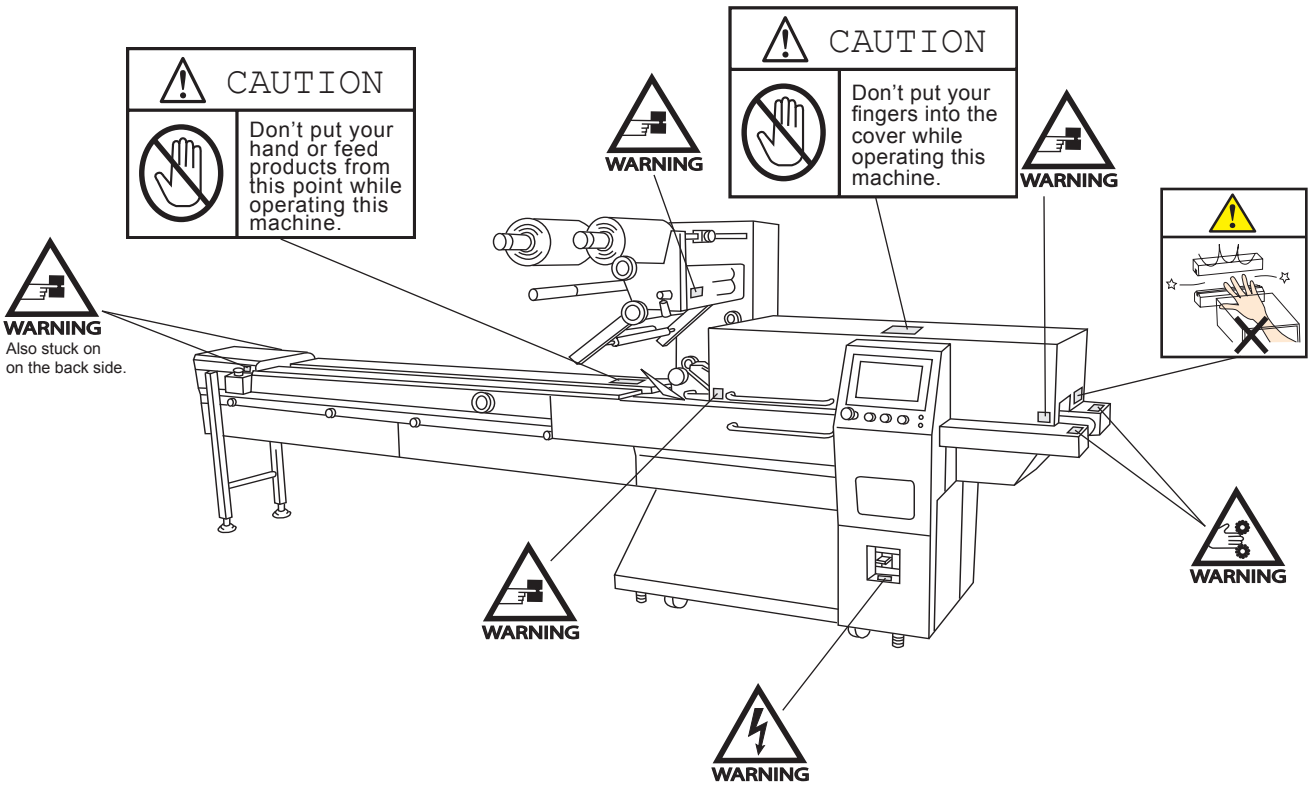


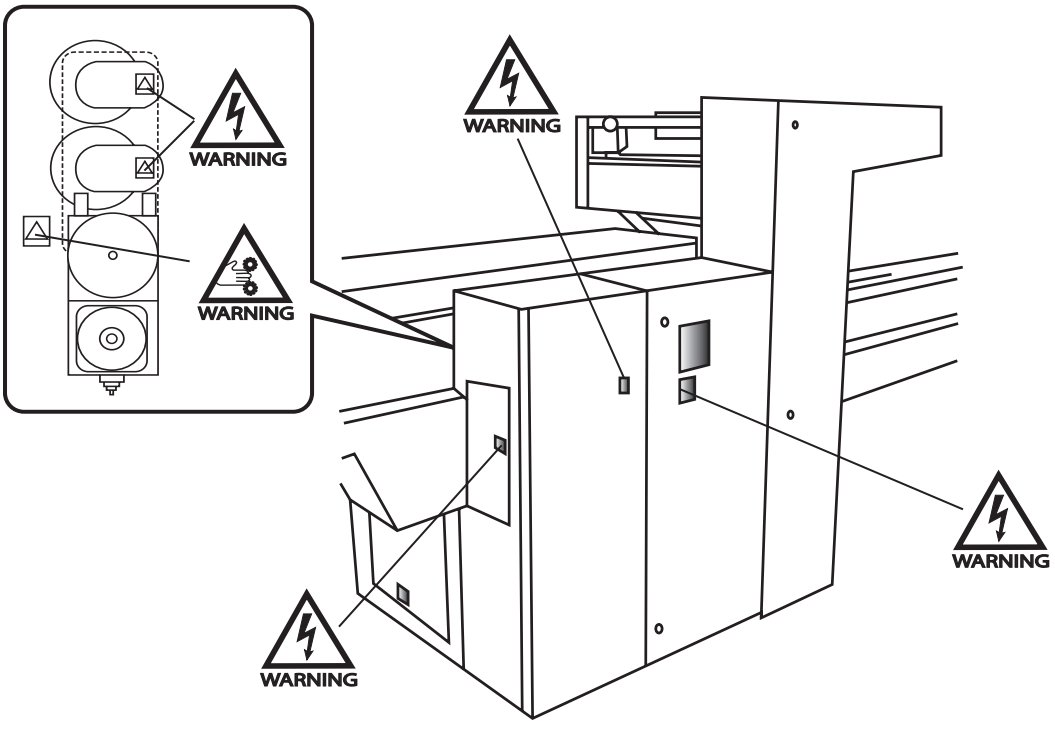
After installing this machine, always remember to clean it and the surroundings in order to prevent an accident related to hygiene. Keep and control safety and hygiene in your factory and facilities thoroughly.

Placement of Hazard Alert Symbols

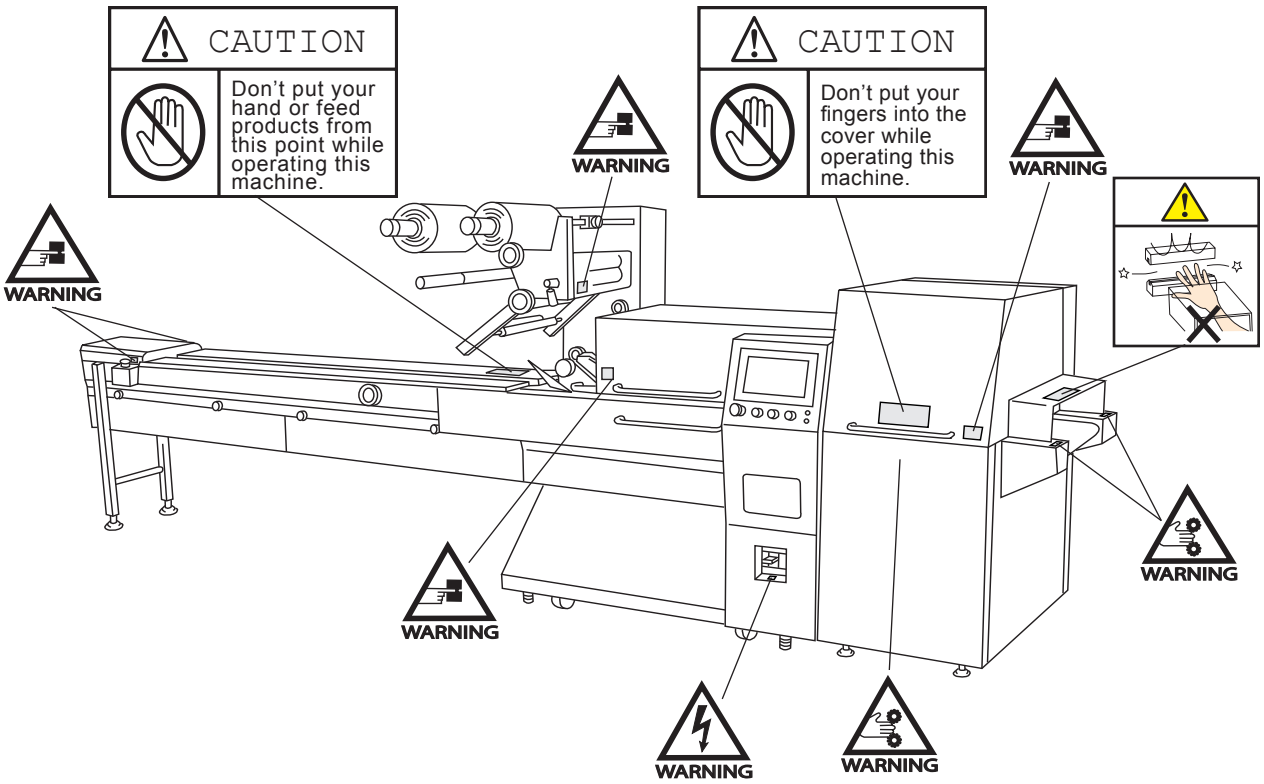
Pay close attention to the HAZARD ALERT SYMBOLS placed in the following positions on this machine. Do not remove these symbols from this machine.

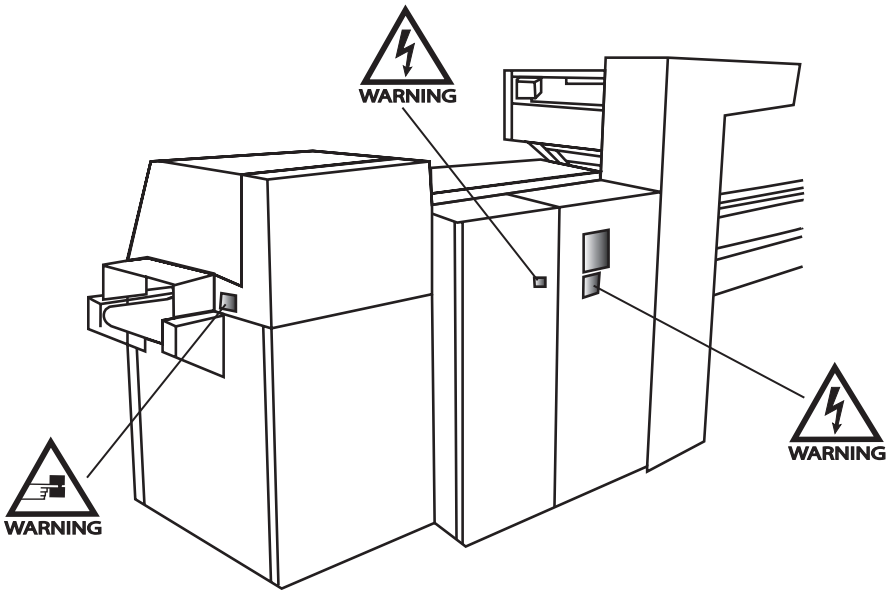
Rotary Sealing



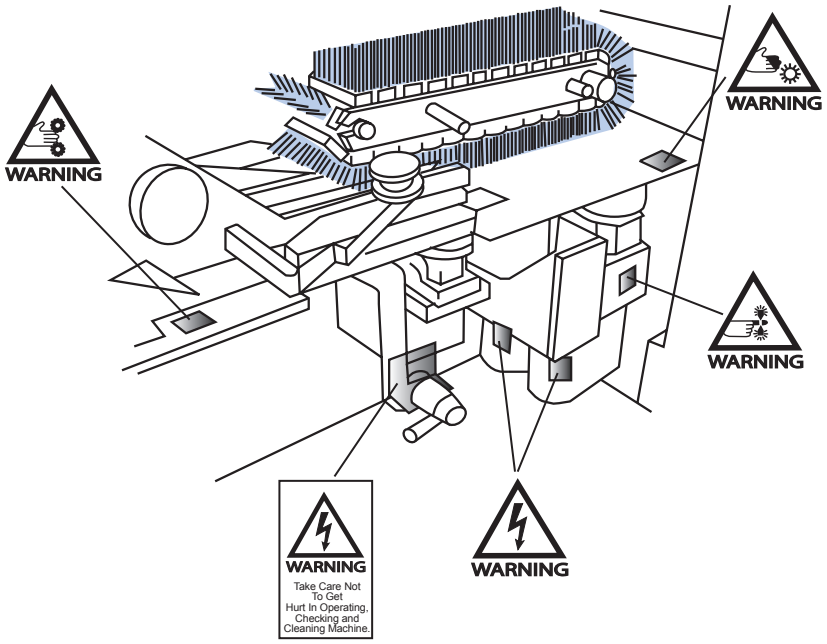


Box Motion

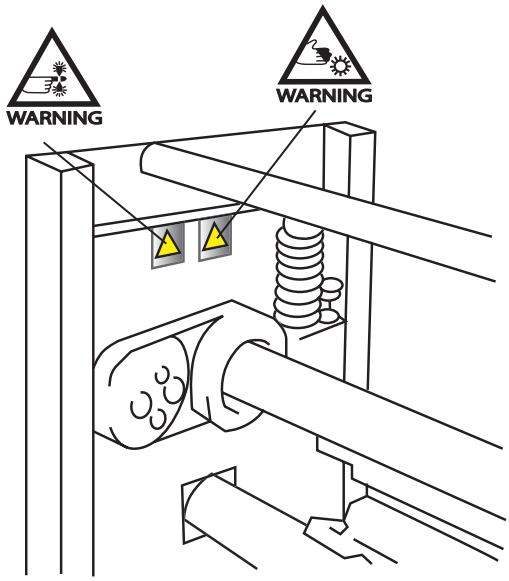

CAUTION
Don't put your hand or feed products from this point while operating this machine.
CAUTION
Don't put your fingers into the cover while operating this machine.
WARNING
WARNING
WARNING
WARNING
WARNING
WARNING
WARNING


WARNING
WARNING
WARNING

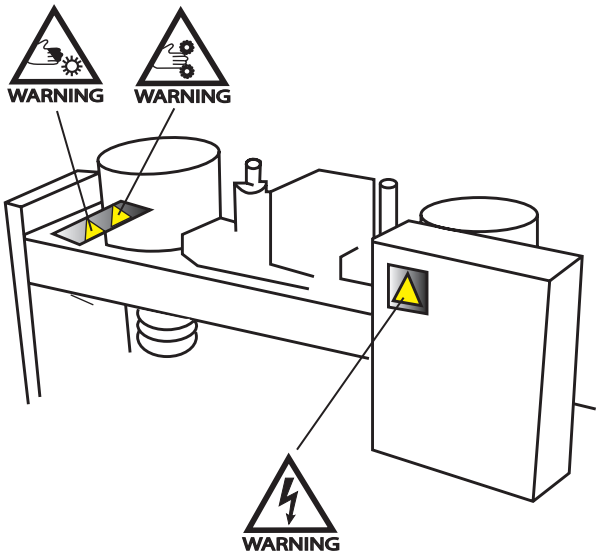
Common to Rotary Sealing and Box Motion



Rotary Sealing



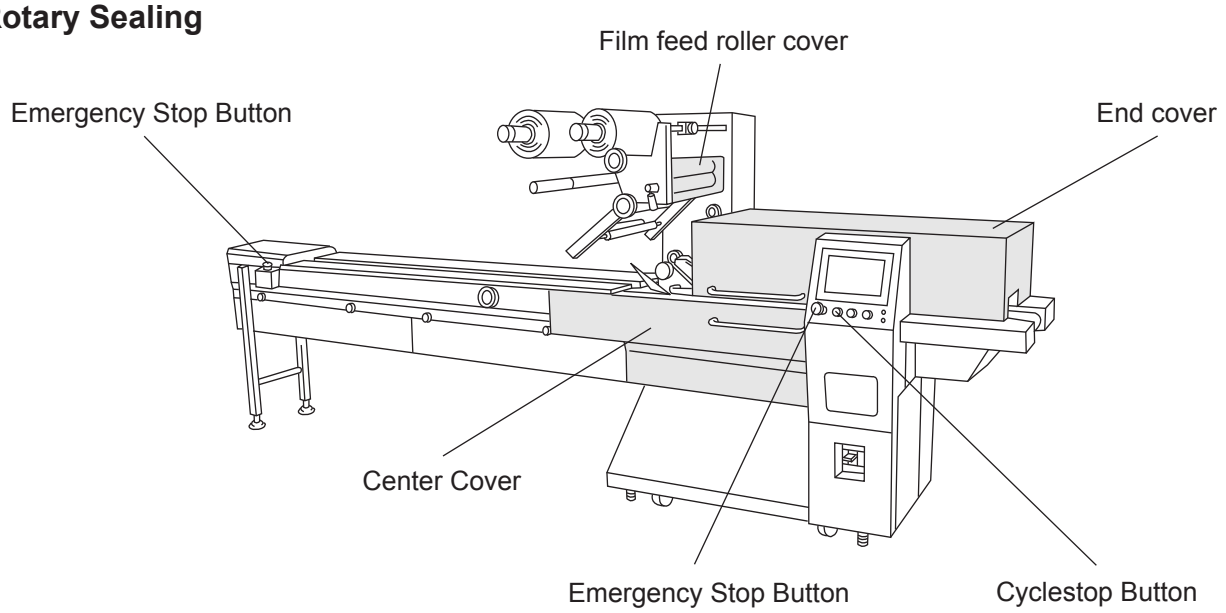
Box Motion



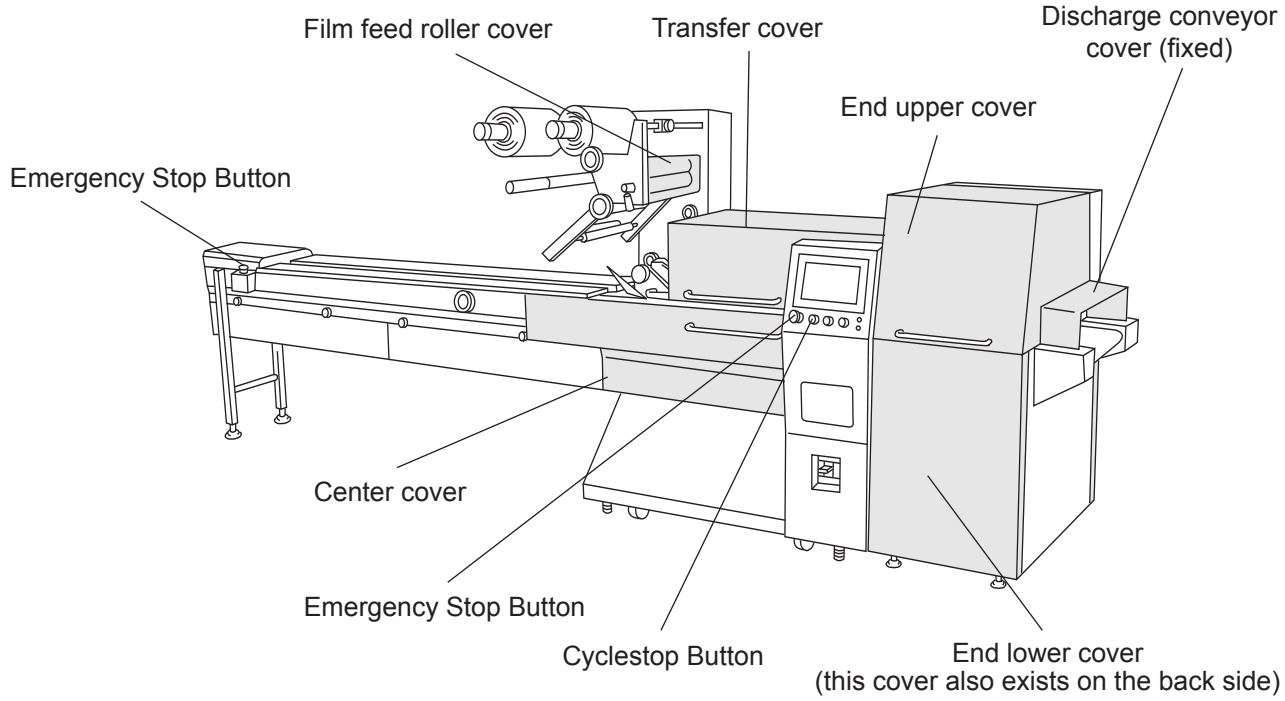
Position of Safety Covers

Never modify this machine so that it can be operated with any of the covers open. This machine is equipped with interlocked safety covers in the following locations:

Rotary Sealing



Box Motion



Noise

The noise which this machine emits is quasi-steady impulsive noise. The noise level at that time is shown by equivalent continuous A-weighted pressure level.

Quasi-steady impulsive noise	Almost steady level impulsive noise is repeatedly produced at short intervals.
Equivalent continuous A-weighted sound pressure	To calculate the average of values measured continuously in a measuring time when the noise level changes according to time.

This machine's noise is from 70 to 85dB (value measured at capacity within the range of the specifications).

If equipping the machine with optional devices, depending on the specifications, the noise may be over 85dB. In this case, we would like you to take the following measures, according to noise values in the attached Record of Noise Inspection.

Noise	Your Measures
Over 85dB Below 90dB	- Advise your operator to wear earplugs. - Teach your operator the potential dangers of auditory defect caused by noise. - Provide the necessary number of earplugs for each operator.
Over 90dB	- Make your operator wear earplugs. - Teach your operator the potential danger of auditory damage caused by noise. - Provide the necessary number of earplugs for each operator.

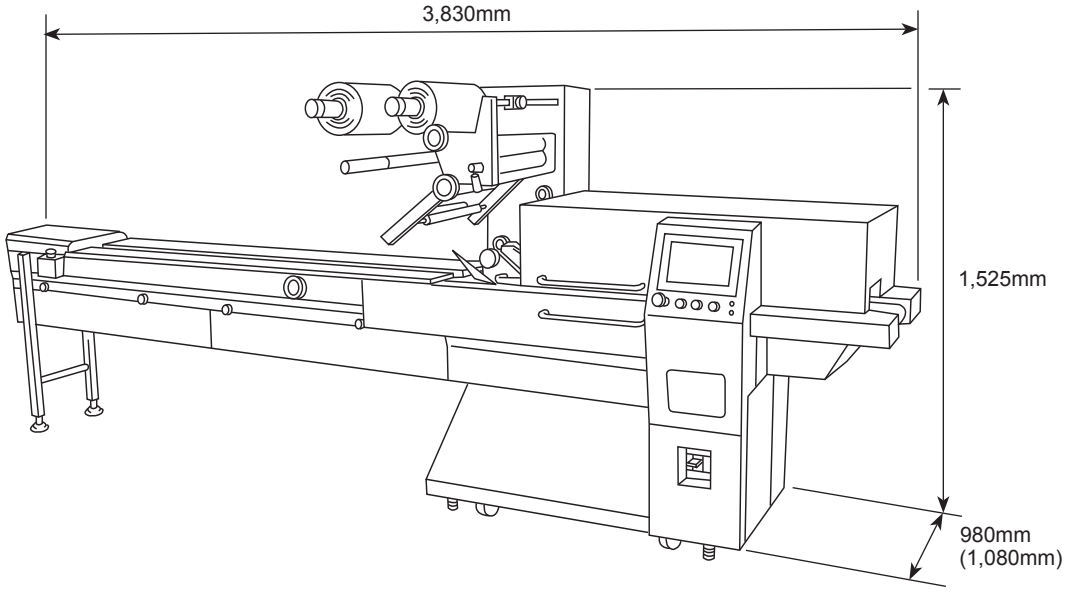
Chapter 2
Prior to Operation

This chapter explains the minimum knowledge necessary prior to operation of this machine.

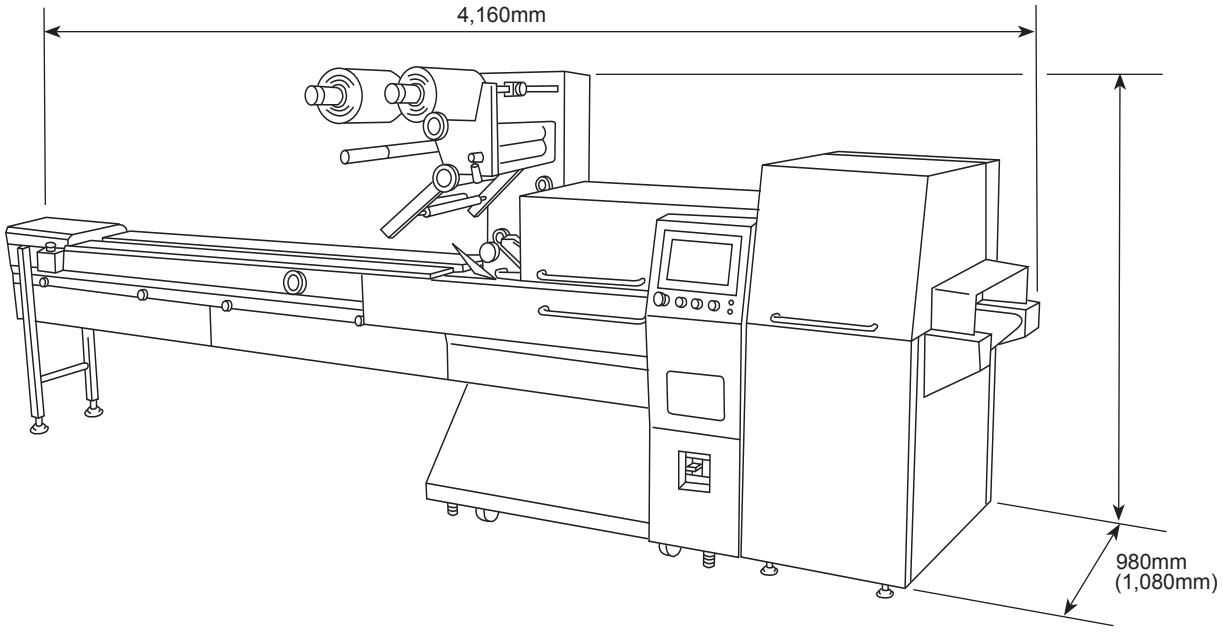
Outline of this Machine

This wrapping machine wraps the product as a forming tube with a roll of film continuously. After the center part of the film has been sealed by the center sealers like a tube, the machine seals and cuts the product wrapped in the film one by one. Then, the machine feeds the wrapped product to the next process.

Rotary Sealing **FW3200 FW3210**



Box Motion **FW3200 FW3210**



- FW3210 series can wrap wider products than the FW3200 series can wrap.
- LH-machine machine shown (RH opposite).
- The sizes in the drawings show the standard dimensions for the machines. The values in the parentheses show FW3210 series.

Machine Improvements

This machine has been improved, stressing the following items

Improved Sanitation

Structured to be difficult for product dust to collect:

-Open under the center sealers

-Consider the setting position of the conveyor drive unit.

Structured to provide easy cleaning:

-Newly installed stainless steel chute at the bottom of the main frame.

-Detachable discharge conveyor (Box Motion)

-Open and close type center cover for easy operation

-Detachable transfer deck plate

Structure of the Infeed Conveyor

- Easy-installed pins have made the conveyor guide easier to remove and install.

- Easy removal and installation of the infeed conveyor deck plate makes cleaning the chain rail easier.

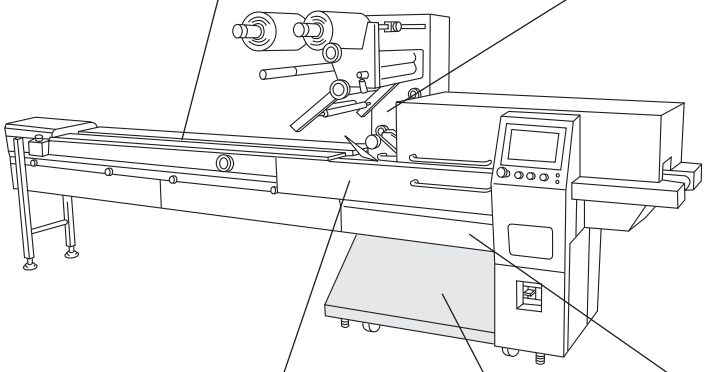
- Changing the shape of the conveyor and not using set screws for the conveyor guide has made product dust difficult to

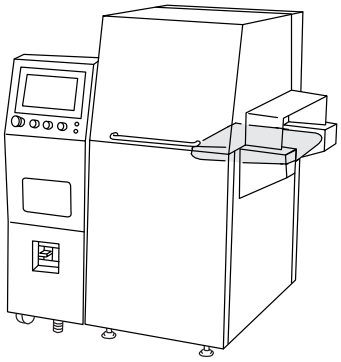
Moving the Conveyor Drive Unit

Installing the conveyor drive unit inside the film feed frame has make product dust difficult to collect.

Detachable Discharge Conveyor (Box Motion)

The detachable conveyor enables you to easily clean the end sealer unit.





Open and Close Type Center Cover

Changing to open and close type center cover and increasing its size enables you easy access for cleaning and maintenance.

Open Under the Center Sealers

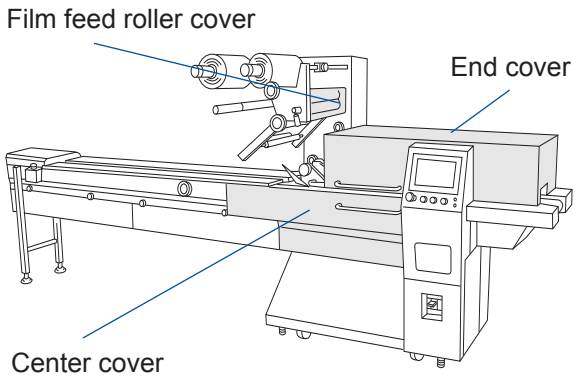
Removing the frame from under the center sealers and installing the center sealer drive unit on the back enables product dust to easily drop on the chute.

Newly Installed Stainless Steel Chute

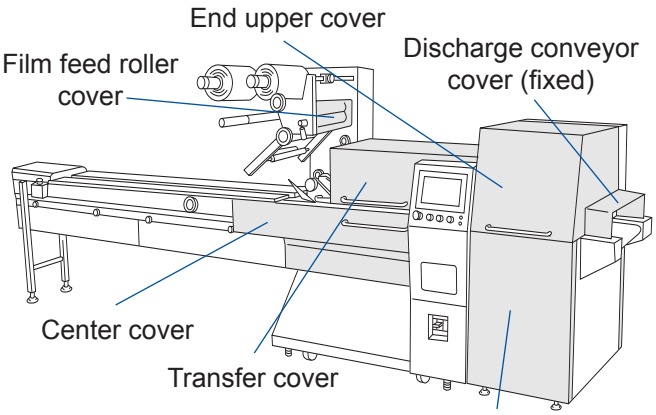
This will drop product dust onto the chute and provide easy cleaning.

Reinforcing Safety

Rotary Sealing



Box Motion



Installing Safety Covers

The safety switches are attached to:

Center Cover

Transfer Cover (Box Motion)

End (discharge) Cover (Rotary Sealing)

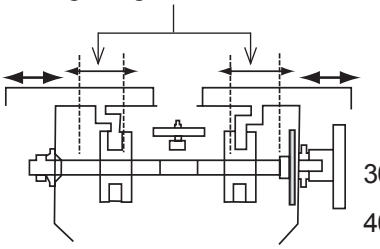
End Upper Cover (Box Motion)

End Lower Cover (Box Motion)

Widening Infeed Conveyor

Prevents the clearance in adjusting the conveyor guide width.

The danger of your fingers being caught in the clearance.



Conveyor Width

300mm (FW3200 series)

400mm (FW3210 series)

Improving Operation

Pursuing easy film setting:

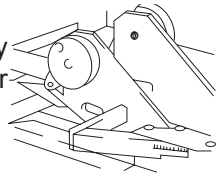
- Clearing top bag former

Pursuing easy adjustment:

- Easy adjustment of end sealers
- Improving operational screen

Clearing Top Bag Former

Enables you to set film more easily because the upper of the bag former is removed.



Easy Adjustment of End Sealers (Rotary Sealing)

- The end sealer vertical adjusting handle has been moved to the front.
- The end origin sensor has been moved to the front.

Improving Operational Screen

A series of operation such as regi-mark correction and temperature setting operated during producing has been put into one screen, and provides easier operation.

Specifications

This chart shows the standrard specifications of this machine:

Machine Name		High-Speed Horizontal Form-Fill Seal Machine			
Machine Type		**FW3200**		**FW3200/B**	
End Diameter		**R81**	**R114**	**B50**	**B100**
Capacity		10-300 packs/min		10-180 packs/min	10-140 packs/min
Cut length		60-250mm	80-350mm	80-170mm	100-340mm
		(Up to 3,999mm depending on specifications)		(Up to 3,999 mm depending on specifications)	
Product Size to be Wrapped		W: Up to 140mm		W: Up to 140mm	
		H: Up to 30mm	H: Up to 60mm	H: Up to 40mm	H: Up to 80mm
Wrapping Film		Width: Up to 430mm Outside Diameter: Up to 300mm Weight: Up to 25kg			
Properties of Wrapped Products		Solid food, medicine or industrial products etc.			
Properties of Wrapping Materials		Film which can be heat-sealed.			
Motor Capacity		200V 1.15kW			
Heater Capacity	**Center Sealer**	Rated 220V 350Wx2		Rated 220V 350W x 2	
	End Sealer	Rated110V230Wx4	Rated110V350Wx4	Rated 110V 350W x 4	
Power Supply		3-phase AC200V 50/60Hz			
Max. Power consumption		6kW			
Dimensions		3,830(L) x 980(W) x 1,525(H) mm		4,160(L) x 980(W) x 1,525 (H) mm	
Mass		About 850kg		About 1,000kg	
Working Environment		Temperature: 0° to 40° C. Humidity: 30 to 80% RH (with no condensation)			

Specifications of this machine may vary with characteristics, shapes and dimensions of materials to be wrapped, as well as characteristics, thickness, and the types of wrapping materials.

...continued on next page

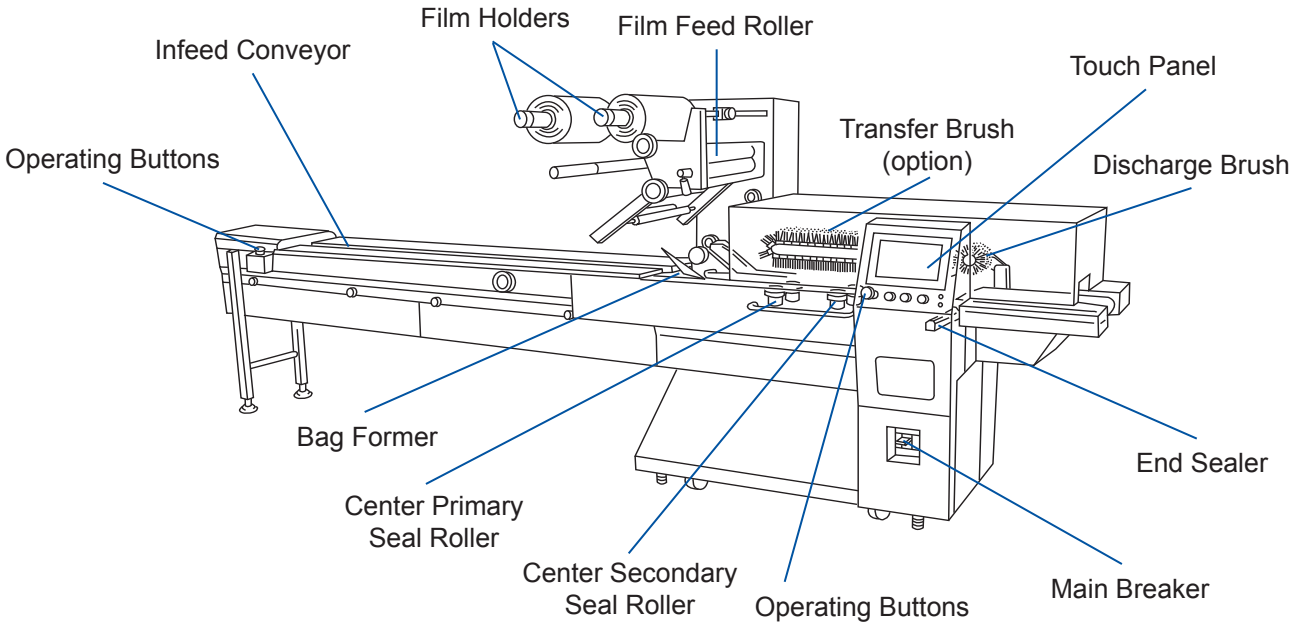
Specifications continued...

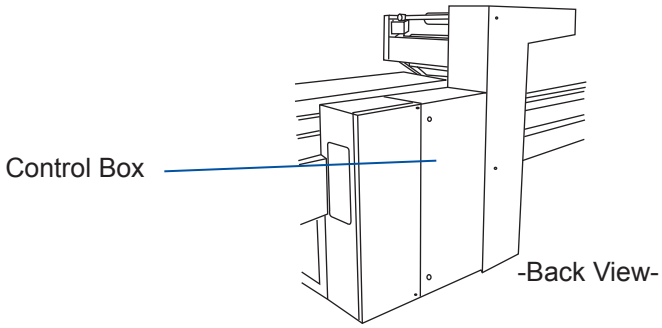
Machine Name		High-Speed Horizontal Form-Fill Seal Machine			
Machine Type		**FW3210**		**FW3210/B**	
End Diameter		**R114**	**R150**	**B75**	**B125**
Capacity		10-300 packs/min	10-150 packs/min	10-140 packs/min	10-100 packs/min
Cut length		100-350mm	120-450mm	90-250mm	130-430mm
		(Up to 3,999mm depending on specifications)		(Up to 3,999 mm depending on specifications)	
Product Size to be Wrapped		W: Up to 200mm		W: Up to 200mm	
		H: Up to 60mm	H: Up to 100mm	H: Up to 80mm	H: Up to 100mm
Wrapping Film		Width: Up to 600mm Outside Diameter: Up to 300mm Weight: Up to 25kg			
Properties of Wrapped Products		Solid food, medicine or industrial products etc.			
Properties of Wrapping Materials		Film which can be heat-sealed.			
Motor Capacity		200V 1.15kW			
Heater Capacity	**Center Sealer**	Rated 220V 350Wx2		Rated 220V 350W x 2	
	End Sealer	Rated 110V 500W x 4		Rated 110V 500W x 4	
Power Supply		3-phase AC200V 50/60Hz			
Max. Power consumption		6kW			
Dimensions		3,830(L) x 1,080(W) x 1,525(H) mm		4,160(L) x 1,080(W) x 1,525 (H) mm	
Mass		About 950kg		About 1,000kg	
Working Environment		Temperature: 0° to 40° C. Humidity: 30 to 80% RH (with no condensation)			

Specifications of this machine may vary with characteristics, shapes and dimensions of materials to be wrapped, as well as characteristics, thickness, and the types of wrapping materials

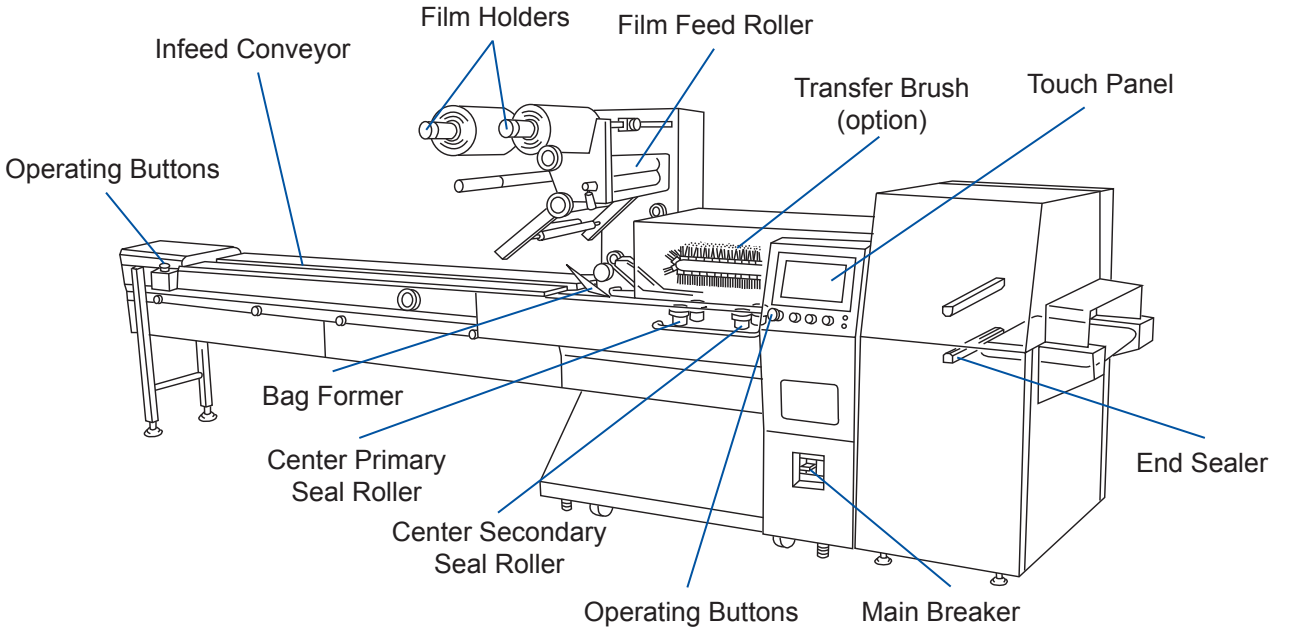
Description of Parts

Rotary Sealing



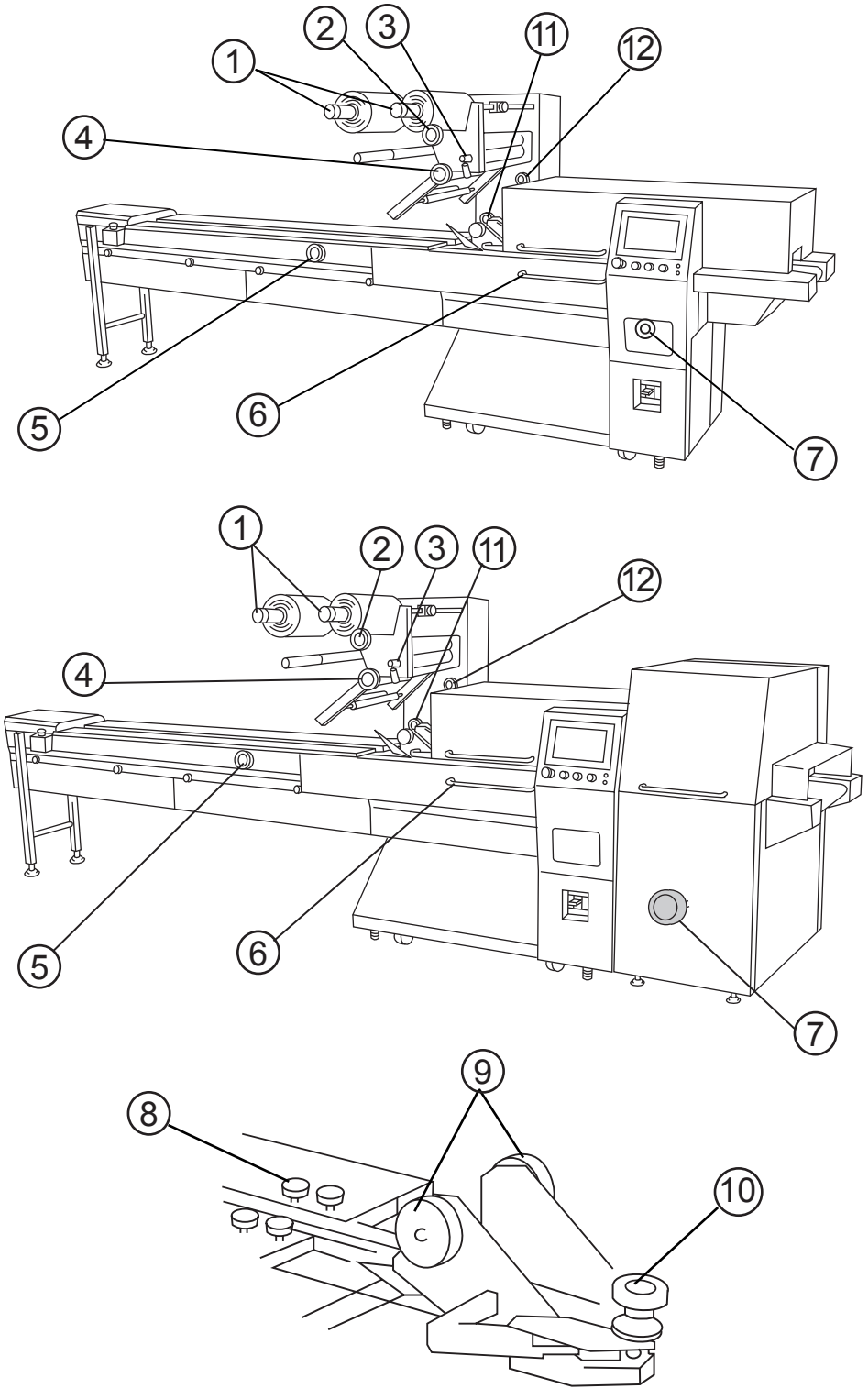


Box Motion

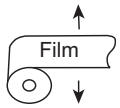


Description of Handles

(see chart on next page for descriptions)



Description of Handles continued...

Number	Name	Function
1	Film Fixing Handle	Fixes film.
2	Film Position Adjusting Handle	Adjusts film finely in the directions shown with arrows. 
3	Film Feed Roller Open/Close Lever	Feeds film with this set to “CLOSE”.
4	Film Entrance Adjusting Handle	Adjusts film for neat wrapping operation.
5	Guide Width Adjusting Handle	Adjusts the width of the infeed conveyor guide to prod-
6	Center Primary Seal Roller Open/Close Lever	Set this to “CLOSE” during operation.
7	End Sealer Vertical Adjusting Handle	Adjusts the engaging height of sealers depending on the height of products.
8	Infeed Guide Adjusting Knob	Adjusts the guide forward or backward.
9	Bag Former Height Adjusting Handle	Adjusts the height of the bag former depending on the height of products.
10	Bag Former Width Adjusting Handle	Adjusts the width of the bag former depending on the width of products.
11	Primary Roller Adjusting Handle	Adjusts the quantity of feeding film for the center primary seal roller finely.
12	Secondary Roller Adjusting Handle	Adjusts the quantity of feeding film for the center second- ary seal roller finely.

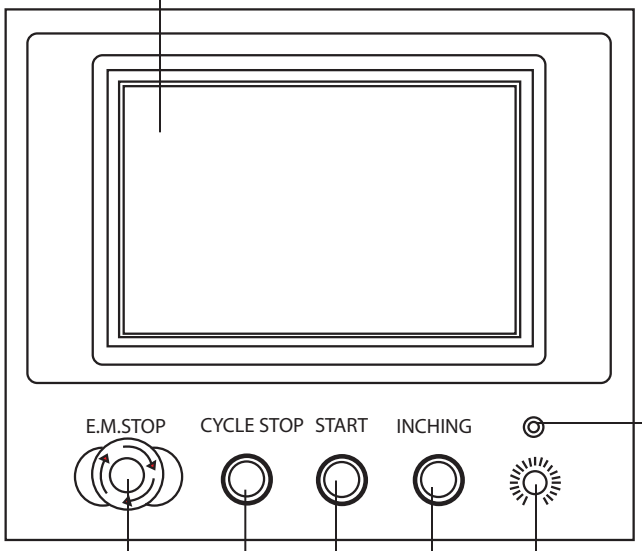
Description of Operating Buttons and Touch Panel

Touch Panel

Displays keys and messages on the screen and operate with interactive system.

Pilot Lamp

Lights up in red when detecting regi-marks.



Emergency Stop (Red)

Pressing this button stops the operation of this machine. To release the emergency stop, turn this to the right.

Sensor Sensitivity

Adjusts the sensitivity of the regi-mark sensor.

Cyclestop (Red)

Pressing this button stops the operation of this machine at a specified position. To stop the machine in a normal condition press this button.

Inching (Black)

This machine inches at a low speed while the button is pressed down.

Start (Green)

Press this to start the machine, and also for Set Operation

NOTE

Set Operation means a preparatory operation at a low speed for proper wrapper.

Chapter 3
Installation

This chapter explains preparation for operating this machine.

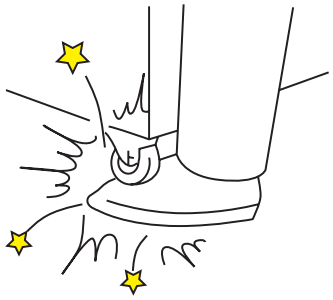
Movement of Machine

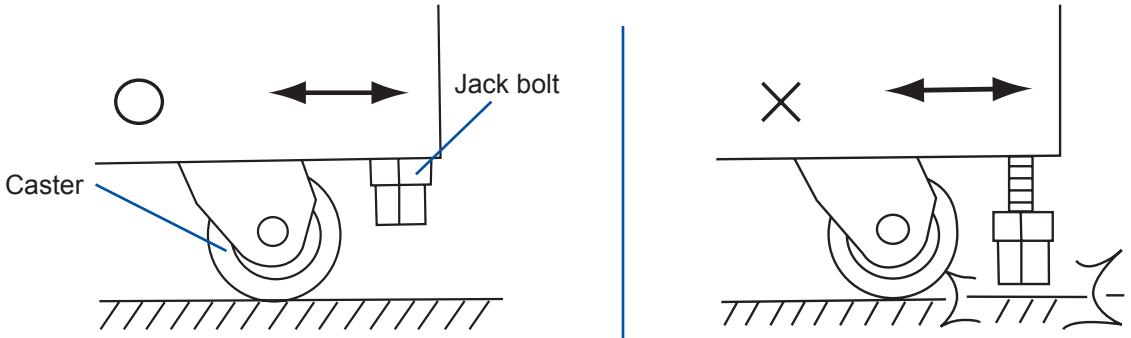
Never move this machine by pushing it with your hands.
When moving it, contact us.

Caution When Moving

WARNING

Be careful while moving this machine, or your foot may be caught in a caster and injured.





Unless otherwise noted, casters are provided with this machine.

When moving, raise jack bolts so they do not hit the floor.

DANGER

Install this machine on a relatively solid and completely level place that can support the machine's weight. Using a spirit level, adjust the height of the machine with jack bolts, and make the machine level with the floor, or unexpected shaking will knock the machine down, and injure you.

CAUTION

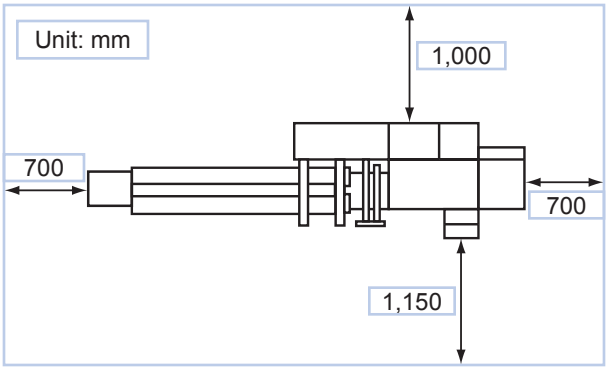
Avoid installing this machine in a place subject to direct sunlight and with humidity and dust. These may cause fire and electric shock.

CAUTION

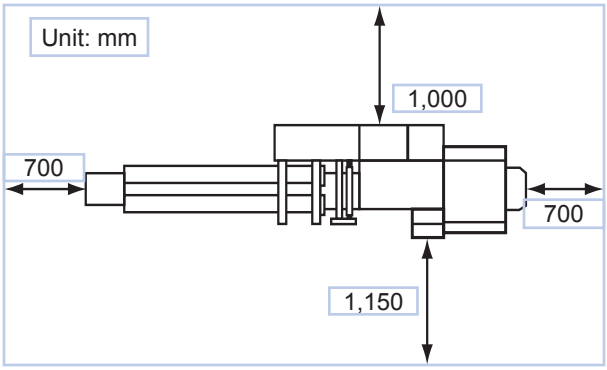
Before starting operation, remember to clean the machine and its surroundings. This will help prevent hygiene related accidents. Keep and control safety and hygiene thoroughly in your factory and facilities.

Secure enough space to operate, clean, inspect and adjust this machine when installing it. The following drawings show the measurements.

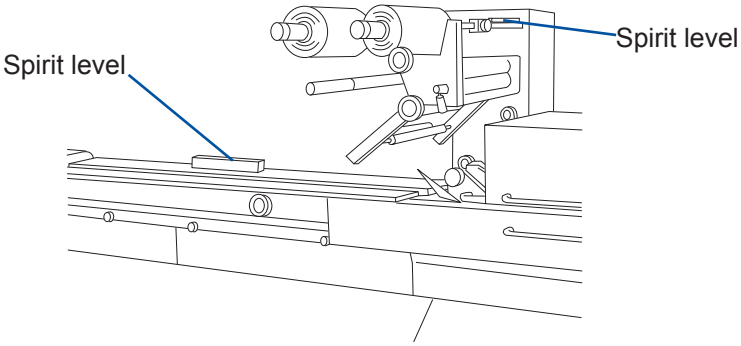
Rotary Sealing

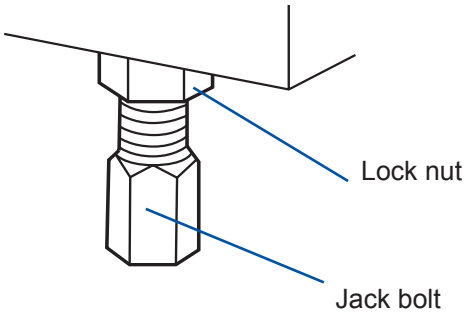


Box Motion



Installation Procedure





① Put spirit levels on the conveyor as shown in the drawing above.

② Make the machine level, adjusting the height with jack bolts.

③ After the machine becomes level, tighten the lock nuts and fix the jack bolts.

Power Supply

DANGER

To protect this machine and avoid danger, connect an earthing wire to the machine. The connection should be above the third class (D class) earthing, or earthing resistance should be below 100Ω. In case of using a plug to supply the power source put it in the socket securely. Otherwise, fire or an electric shock will occur.

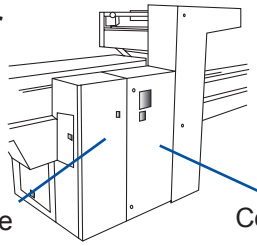
Trouble Prevention

The specifications of this machine's power source are AC200V ± 10%, 30A and 50/60Hz. When the power supply to this machine is other than AC200V, supply the power source to the transformer attached to this machine.

Connect a cable to the connector on the side of the transformer box and then it to PE, RO, SO and TO on the transformer's terminal block.

A connecting cable should be a 4-core cable, which is 600V pressure resistant and with allowable current over 30A.

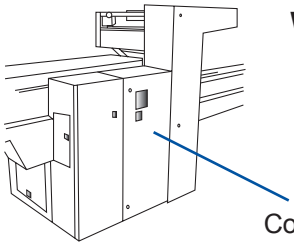
With Transformer



Transformer is inside

Control Box

Without Transformer



Control Box

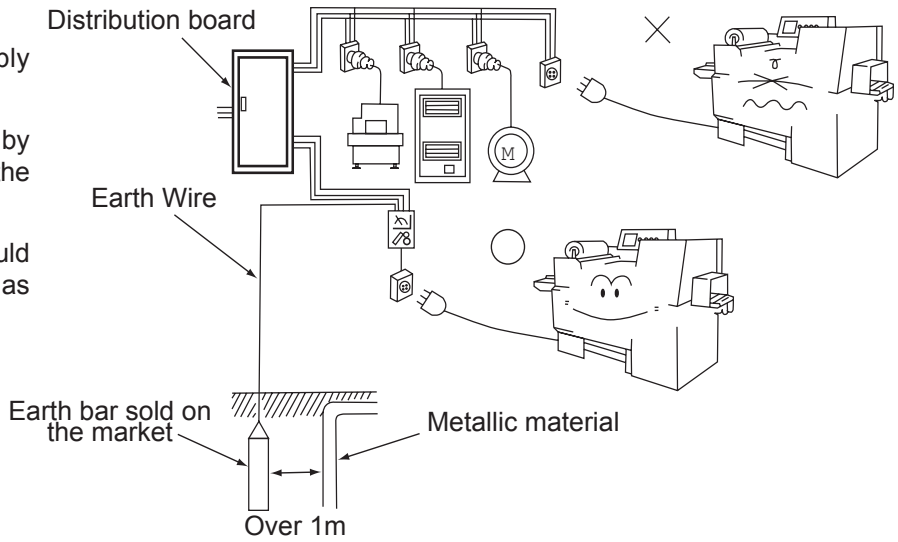
The primary power source of this transformer has 2 kinds of taps: tap equipped for 380V, 400V, 415V and 440V, and tap for 220V. Before connecting, make sure a tap for a corresponding volt is set.

When the power supply to this machine is AC200V, connect a cable to E,R,S and T on the terminal block in the control box. The specifications for a cable is the same with the case of connecting the transformer.

After connecting the power supply code, fix it with a band, and so on.

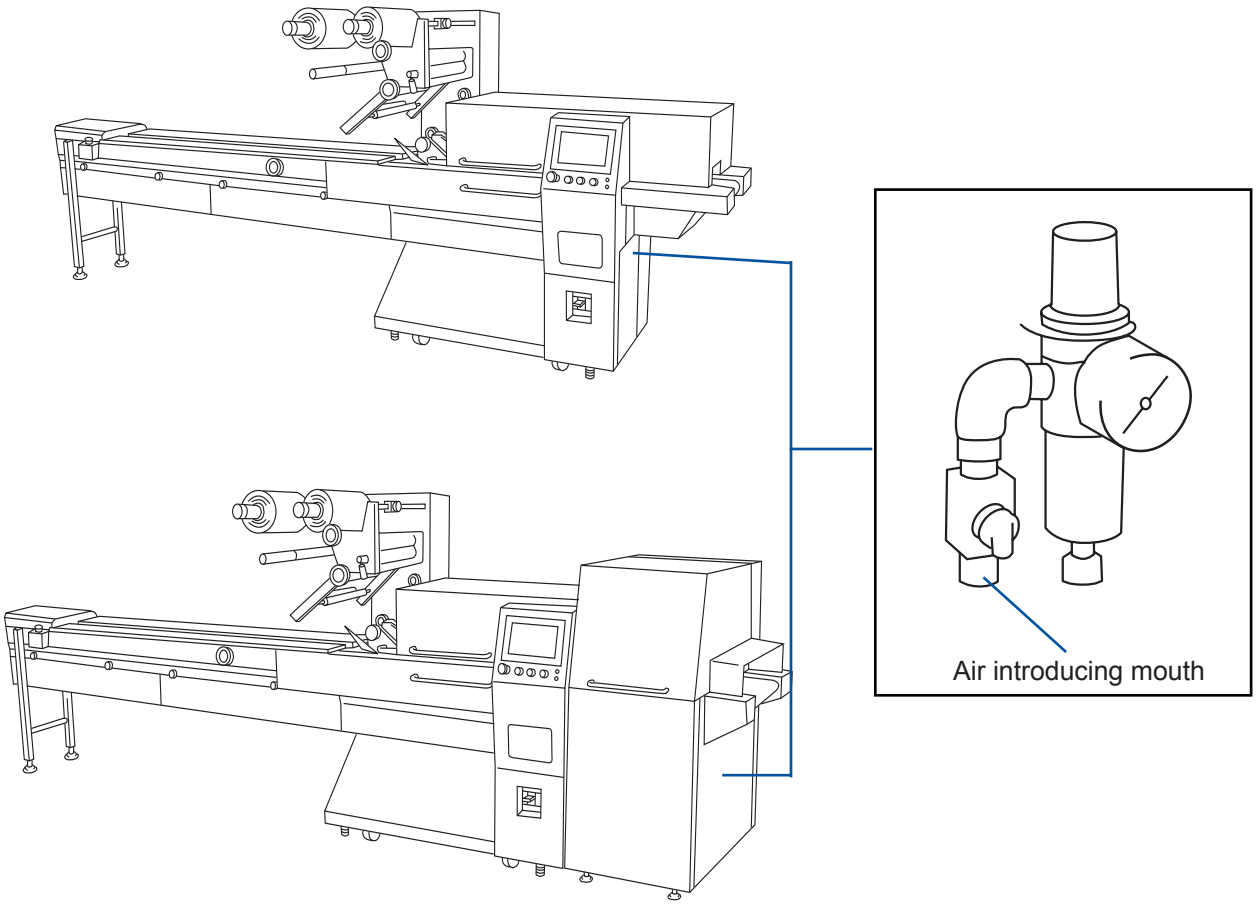
This machines should be supplied by the power supply individually from the distribution board.

Wiring work for this machine should be done by qualified persons such as electricians.



Air Source

According to the specifications, it may be necessary to introduce the air source. In this case, pipe by yourself. The air introducing mouth is ϕ10. (0.5 ~ 0.6MPa) Use a hose capable of bearing the necessary high air pressure.



Chapter 4
Starting Operation

This chapter explains operational procedure for starting this machine.

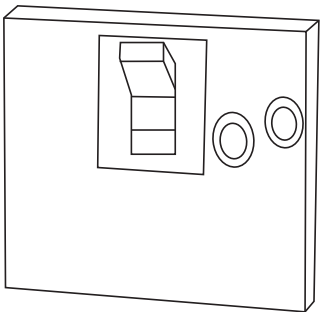
Flow of Operation

DANGER

Make sure there is no person around the machine and no tool on the machine when starting it or when restarting it after emergency stop. Otherwise, an unexpected accident may occur.

Start of Operation

1) Turn ON the main breaker.

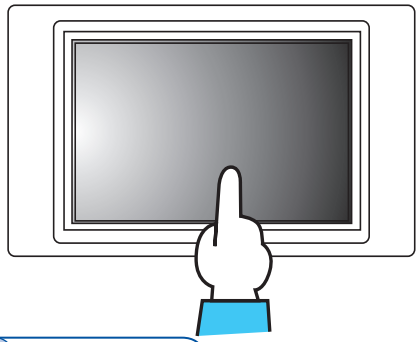


This is the breaker to turn ON/OFF the main power to this machine. Be sure to turn this OFF during maintenance.

Note To raise the heater temperature, turn this ON 15 to 20 minutes before operation. In case of turning the main breaker ON, it takes about 20 seconds to start this machine.

New Product

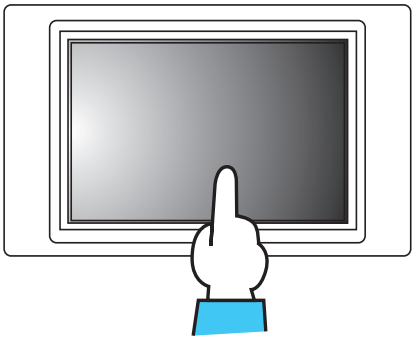
2) Enter data of a product.



Ref. Page 6-3

Registered Product

2) Verify or change product.



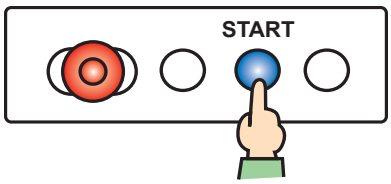
Ref. Page 6-3

3) Position respective parts.

Ref. Page 34

4) Pass film Ref. Page 37

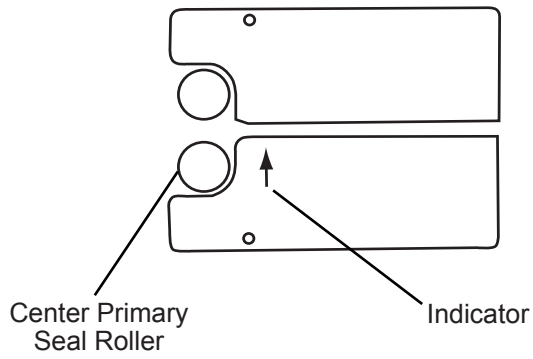
5) After verifying the safety around the machine, press the START button for set operation.



6) Adjust or set the parts, if necessary. Ref. Page 39

Regi-mark exists

7) Set regi-mark (cut position) to the indicator.

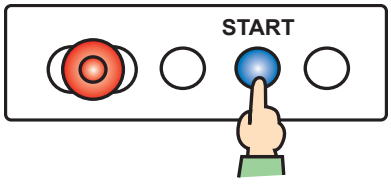


(The indicator is on the center deck plate)

8) Press the START button to register the regi-mark position.

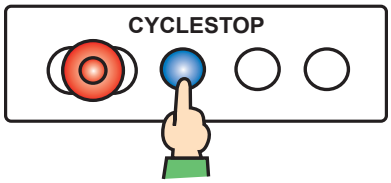
Regi-mark does not exist

9) Press the START button to start wrapping.

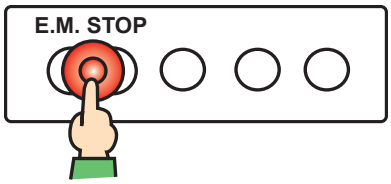


Finish of Operation

1) When finishing wrapping, press the CYCLESTOP button.



When stopping the operation in case of emergency, press the E.M. STOP button.



Note The air source will continue running even during emergency stop.

If a machine has an air source, close the cock of the air source.

2) Turn OFF the main breaker.

Note

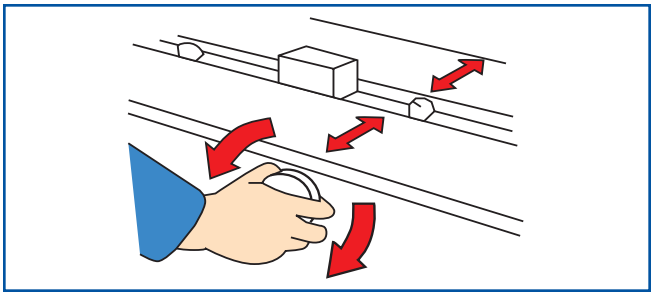
Wait approximately 5 seconds after turning OFF the main breaker before turning it ON again.

Positioning Respective Parts

DANGER

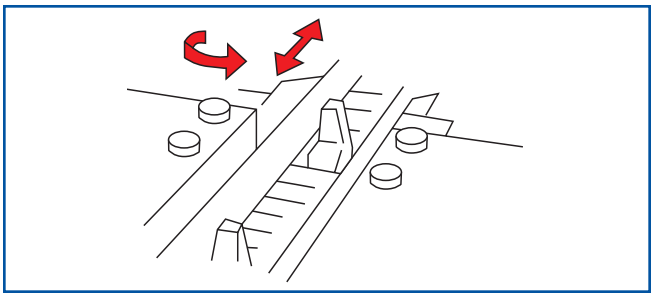
Adjusting Width of Infeed Conveyor Guide

Adjust the width of the infeed conveyor guide.



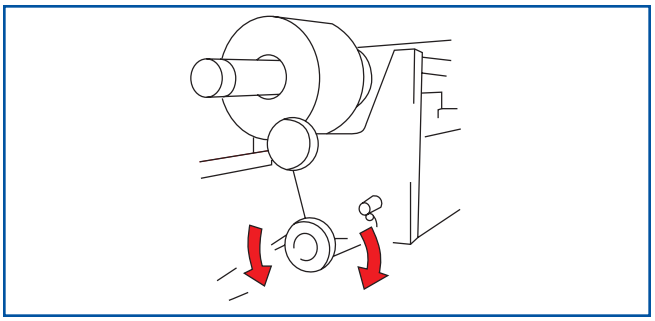
Positioning Guide

Position the guide not to hit the bag former.



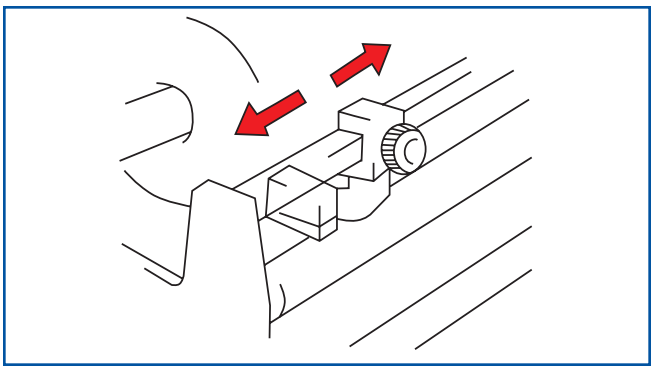
Positioning Film Entrance Roller

Adjust the film entrance roller according to values in the attached list.



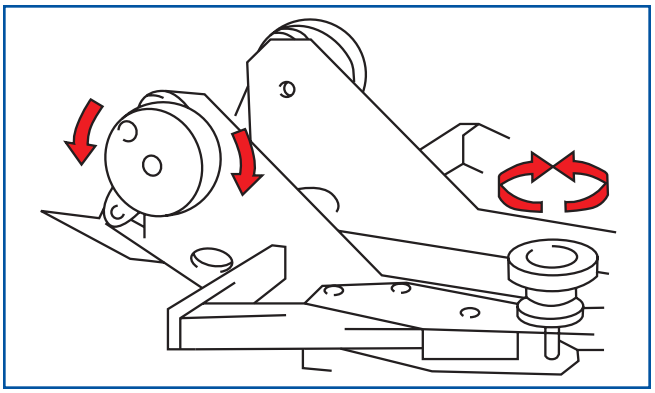
Positioning Regi-mark Sensor

Position the regi-mark sensor to a regi-mark.



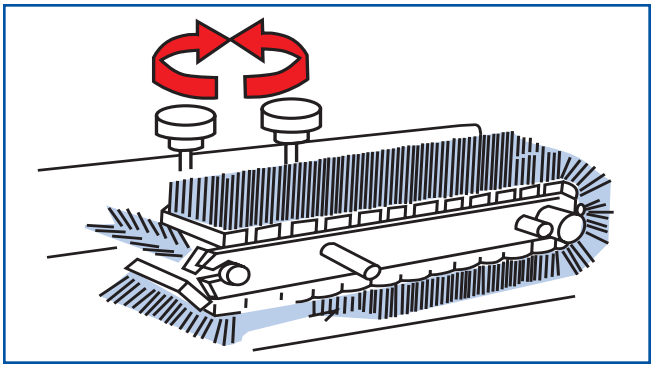
Adjusting Height and Width of Bag Former

Set the height and width of the bag former to values in the list. Adjust the height and width of the near side and the far side.



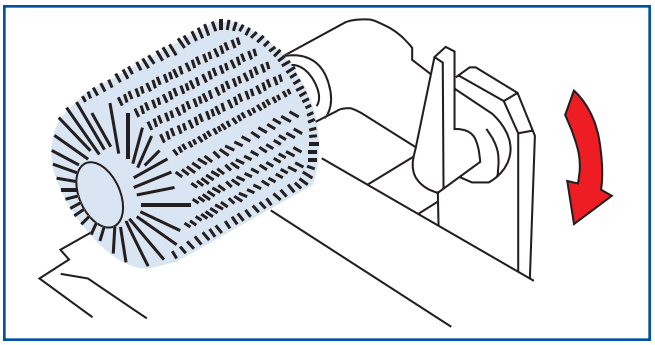
Adjusting Height of Transfer Brush (option)

Set the height of the transfer brush at the position where the brush presses products lightly. Moreover, make it level.



Adjusting Height of Discharge Brush (Rotary Sealing)

Set the discharge brush at the position where the brush presses products lightly.

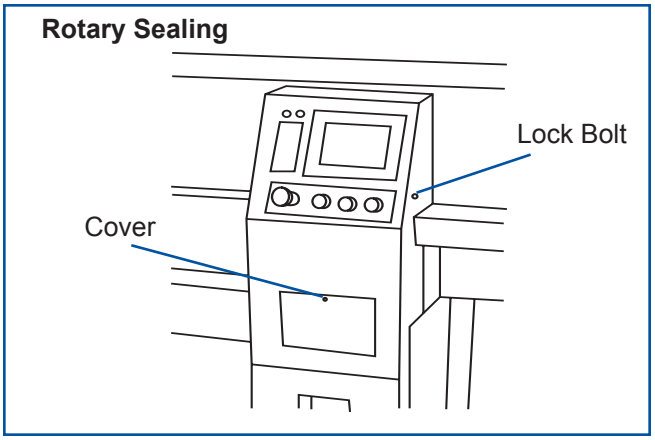


Adjusting Engaging Height of End Sealers

①Loosen the lock bolt.

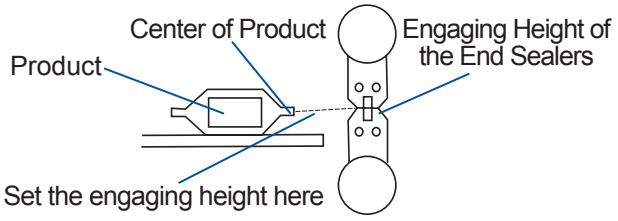
②Loosen the screws and open the cover of the end sealer vertical adjusting handle unit.

③Set the engaging height of the end sealers to the values in the list.

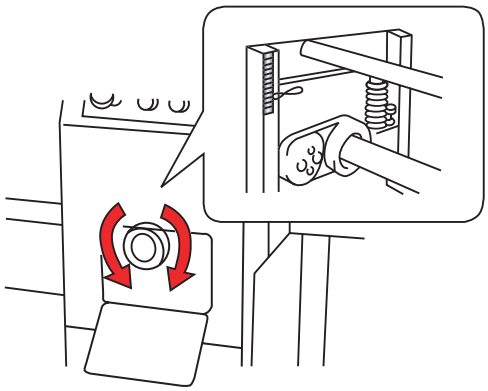


Note

The engaging height of the end sealers is the height of the center of a product.



④Close the cover and tighten the lock bolt.



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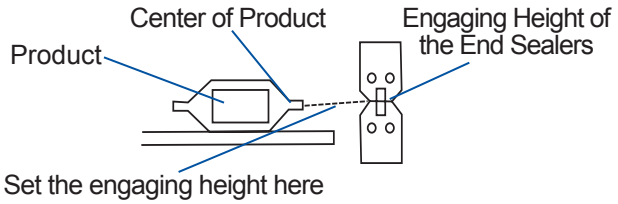
①Open the end lower cover.

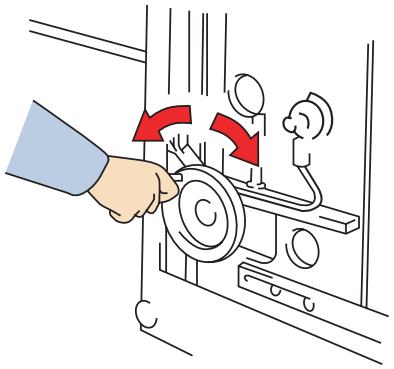
②Set the engaging height of the end sealers to the values in the list.

Note

The engaging height of the end sealers is the height of the center of a product.



Box Motion

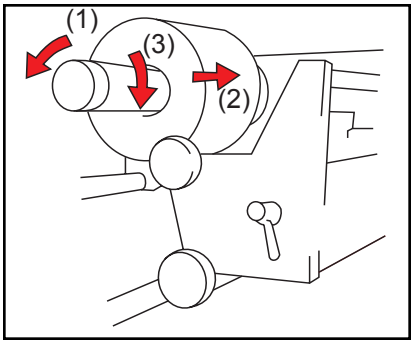


How To Pass Film

DANGER

① Turn the film fixing handle to the OPEN side.

② Insert a film roll.

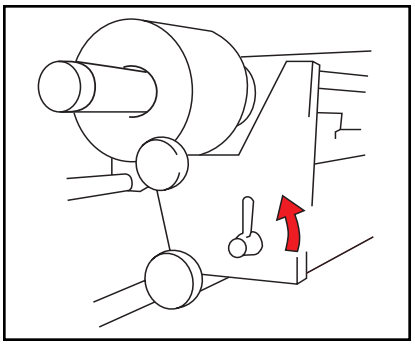


Note

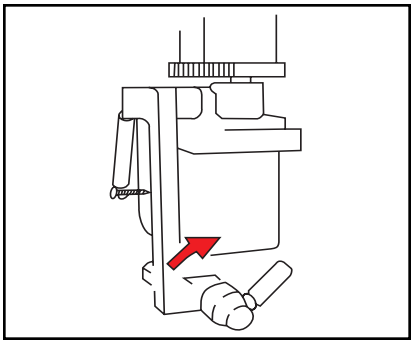
Pay attention to the rolling direction of the film.

③ Turn the film fixing handle to the SET side.

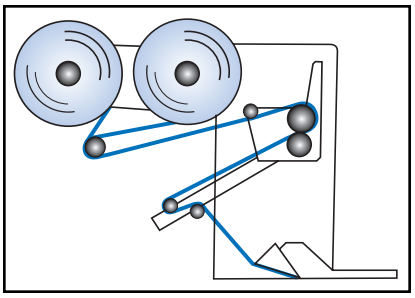
④ Set the film feed roller OPEN/CLOSE lever to OPEN.



⑤ Open the center cover and set the center primary seal roller OPEN/CLOSE lever to OPEN.



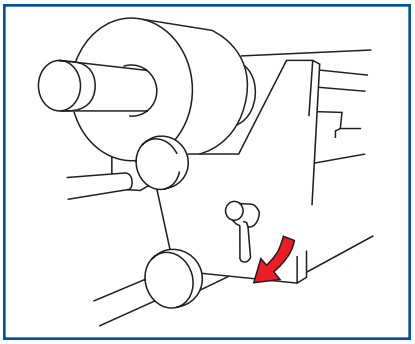
⑥Set the film as shown in the figure on the right.



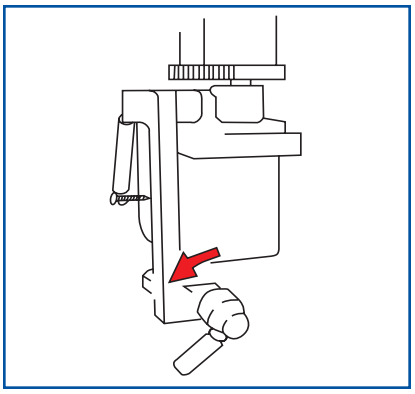
Note

The drawing on the right shows how to pass film through the standard machine. See Film Routing Label attached to the machine for proper routing.

⑦Set the film feed roller OPEN/CLOSE lever to CLOSE.



⑧Set the center primary seal roller OPEN/CLOSE lever to CLOSE, and close the center cover.



Note

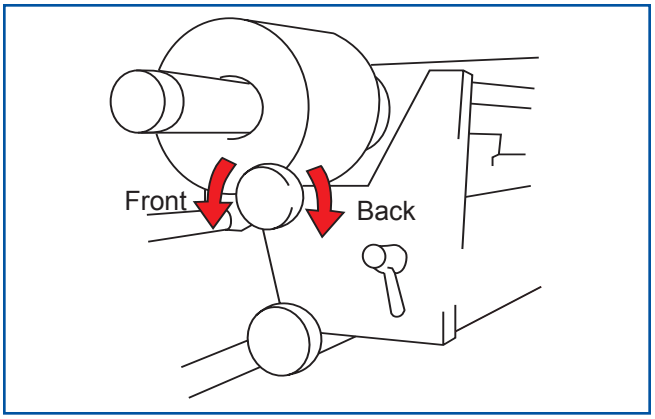
· Make sure that the film engages with the center primary seal roller.

· Make sure the film is tight.

Adjusting During Operation

Adjusting Mating Portion of Center Sealing

When the seam of center sealing is not aligned, turn the film position adjusting handle to adjust it.



Note

Make sure the position of the regi-mark sensor is not misaligned when turning the film position adjusting handle.

Changing Setting Speed

When operating this machine at higher or lower speed, change the setting speed on the Normal Screen with the ▲ and ▼ keys.

Positioning Print Pattern

When adjusting cut position of print pattern, touch ◀ and ▶ keys of the regi-mark correction on the Normal Screen.

Adjusting Heater Temperature

When sealing adhesion is not good, adjust the heater temperature.

Adjusting Film Tension

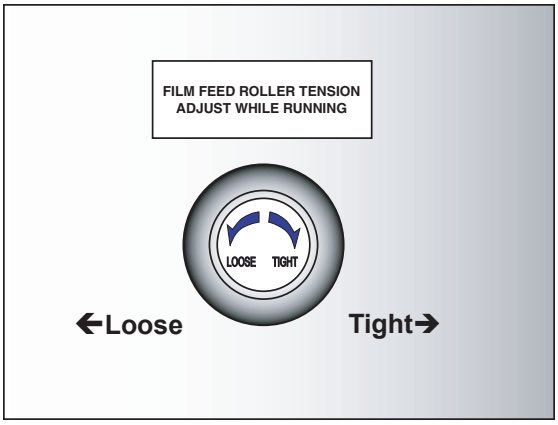
The film tension knobs control the film tension coming into the forming head. This effects the film tracking, film tube, fin seal size and the appearance and quality of the package.

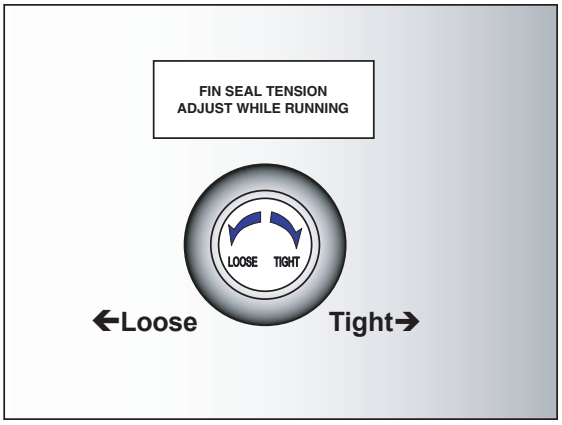
Film Feed Roller Tension

This controls the tension between the pinch roller and the first set of fin wheels. Loosening or tightening, controls the film tension.

Fin Seal Tension

This controls the tension between the first and second set of fin wheels. Loosening or tightening controls the film tension.

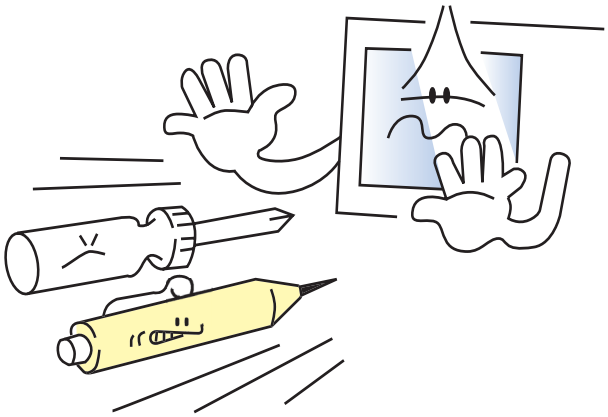




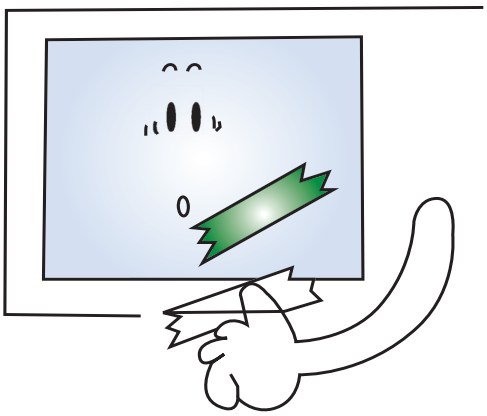
Chapter 5
Before Operating the Touchpanel

This chapter explains notes and basic contents before operating the touch panel.

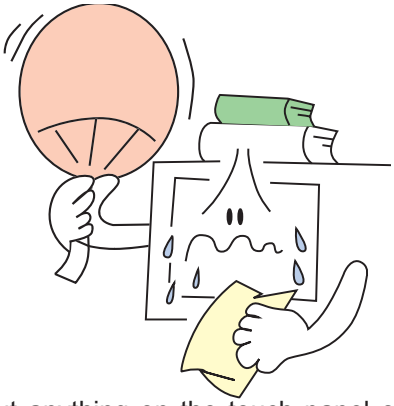
Note to Users



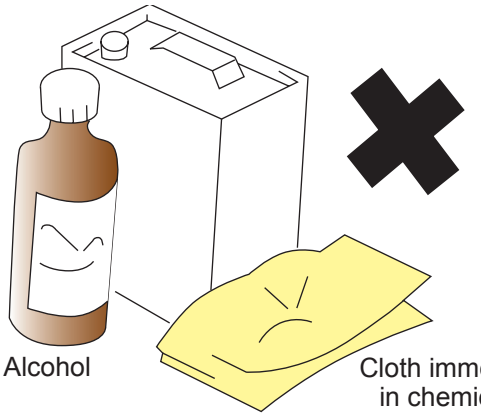
Never touch the display with a sharp edged screwdriver or pen. Otherwise, the touch panel will be damaged.



Never apply glue or tape to the display. It will lead to stains.



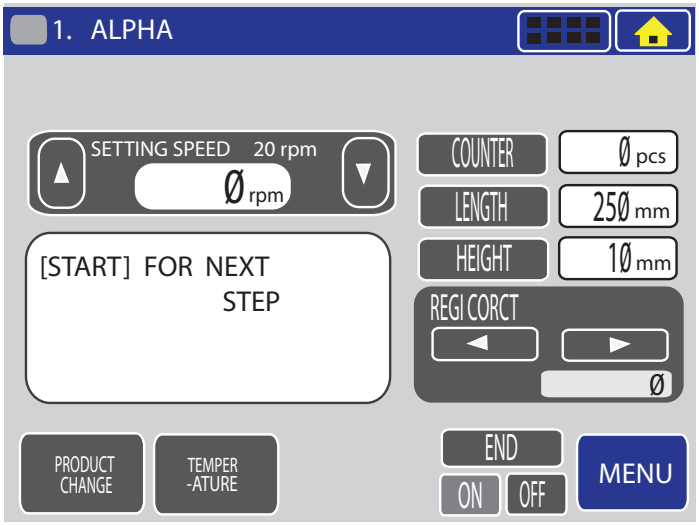
Never put anything on the touch panel or around it. Otherwise, ventilation will be restricted, causing the temperature in the machine to rise, resulting in failure.



Wipe away any dirt on the display with a dry cloth. In case of persistent stain, wring out a wet cloth and wipe the stain off.

Initial Screen

Turning ON the power supply causes the Initial Screen to appear on the display. After awhile, the screen changes to the next one, which is called the Normal Screen. during the operation of this machine, functions are selected from this screen.



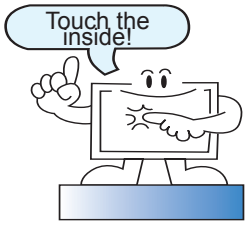
Here are some brief descriptions of respective keys:

SPEED ▲ ▼	Touch this to change speed (how many products are wrapped per minute).	Ref. Page 6-2
REGI-CORCT ▶ ◀	Touch this to adjust regi-marks.	Ref. Page 6-2
PRODUCT CHANGE	Select this to change the type of products to be wrapped.	Ref. Page 6-3
TEMPERATURE	Select this to set the temperature for wrapping.	Ref. Page 6-7
COUNTER	Touch this over 1 second, and the value changes to “0”.	
END ON	ON The end unit works.	
END OFF	OFF The end unit will not work.	
CONTROL PANEL	Select this to correct necessary portions for wrapping minutely.	Ref. Page 6-10
MENU	Select this to utilize various functions for wrapping	Ref. Page 6-11

Messages and keys are displayed in the message frame according to the status of the machine. Ref. Page 5-9

Procedures for Basic Operation

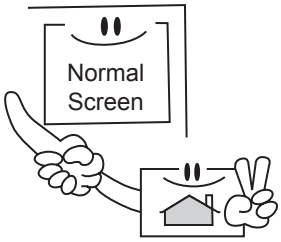
Basic Operation



Touch the inside of a key on the touch panel. When touched correctly, you will hear a beep.

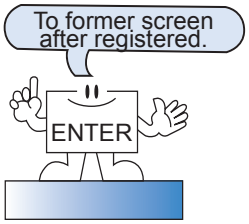
Descriptions for basic keys:

Key



With any screen, touching  key returns the screen to the Normal Screen.

Key

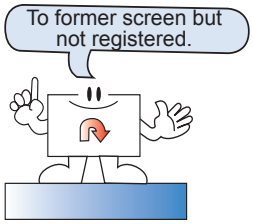


Touching the 

key on the screen with 

key displayed registers the changed data and then goes back to the previous screen.

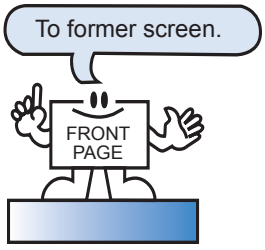
Key

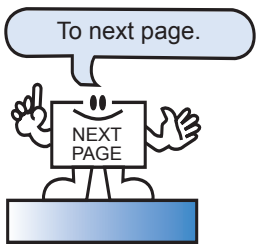


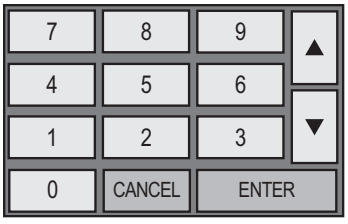
Touching  key also changes the screen to the previous one, however, please note that in this case, data is not registered.

Key

Key







Touch these numerical keys to enter numerical values. Touching the “CANCEL” key makes a numerical value of “0”.

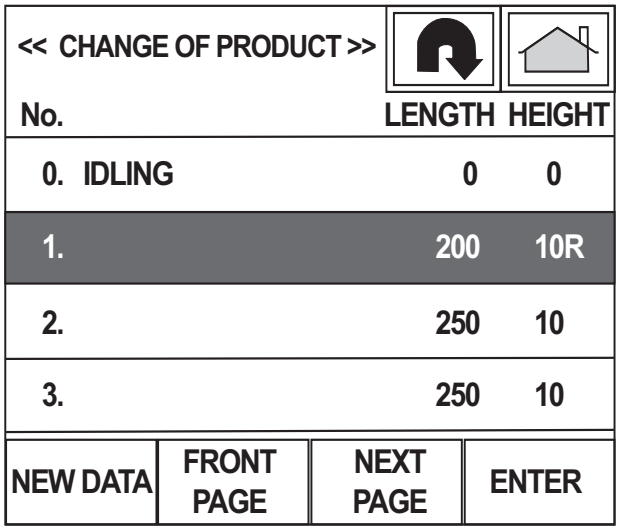
Touching the “ENTER” key enters data in a reverse color.

How to Enter Characters

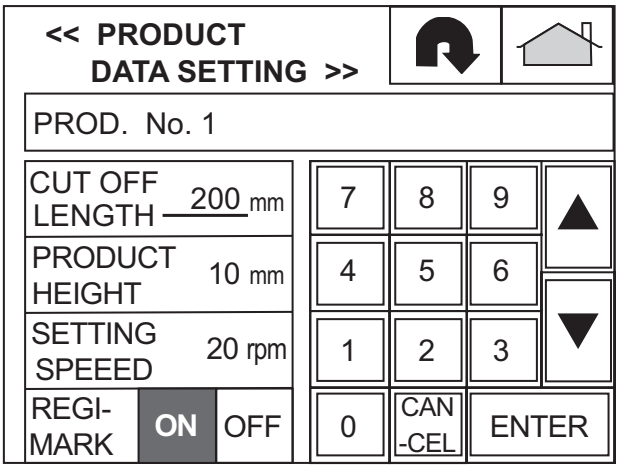
It is necessary to enter character strings.

Let's enter a product name according to the procedure of operation. "ALPHA" is taken as an example, and explains how to enter characters.To enter "ALPHA", display the character entering screen.

①Touch "PRODUCT CHANGE" key on the Normal Screen. The following will appear:



②Touch "NEW DATA" key to display the following screen:



③ Touch a part displaying a product name to display the Capital Letter Entering Screen.

Note

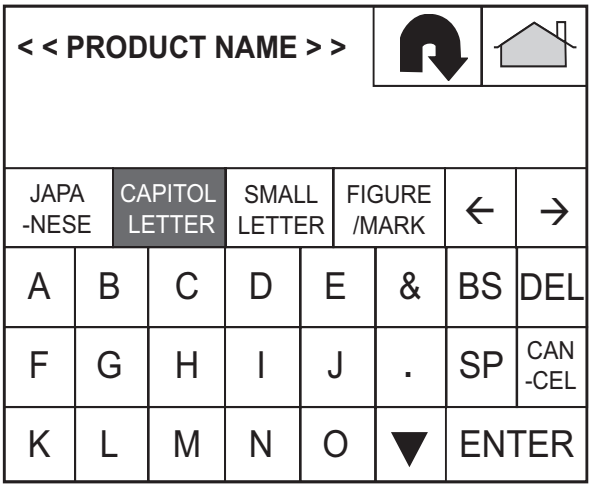
To change characters touch the following keys:

"FIGURE/MARK" key

"CAPITAL LETTER" key

"SMALL LETTER" key

The screen to enter each character will appear.



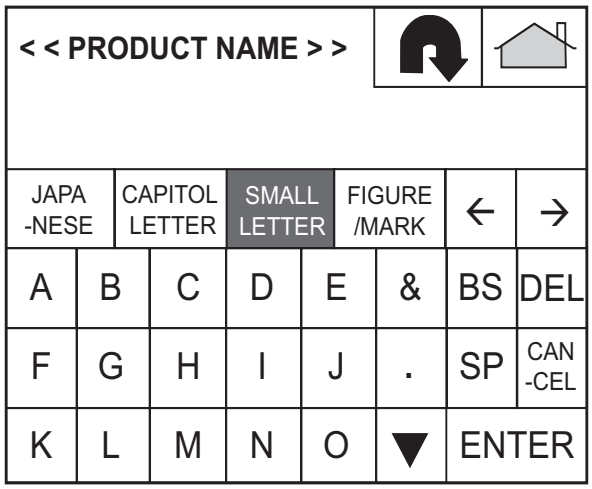
In the case of entering small letters: Touch "SMALL LETTER" key and small letters can be entered.

Note

If there are no desired keys, touch "▼ " key, and keys change to others.

Note

Touching "ENTER" key registers the product name and goes back to the previous screen.



④ Touch "A", "L", "P", "H", and "A".

ALPHA _____

⑤ Now, entering a new product name has complete. Finally, touch "ENTER" key, and the screen goes back to the previous screen.

Correcting Wrong Entries

If you make a mistake, for example entering “ARPHA” instead of “ALPHA”, correct it using “BS” (Back Space) or “DEL” (Delete) key.

① Touch “←” or “→” keys to move the cursor to the position of P in the case of “BS” key, or R in the case of the “DEL” key.

A R P H A Using the “BS” key.

A R P H A Using the “DEL” key.

② Touch “BS” or “DEL” key to delete “R”.

A P H A

③ Touch the right character key, “L”.

A L P H A

To enter a space between Entries

① Move the cursor to “P”.

A L P H A

② Touch the “SP” key.

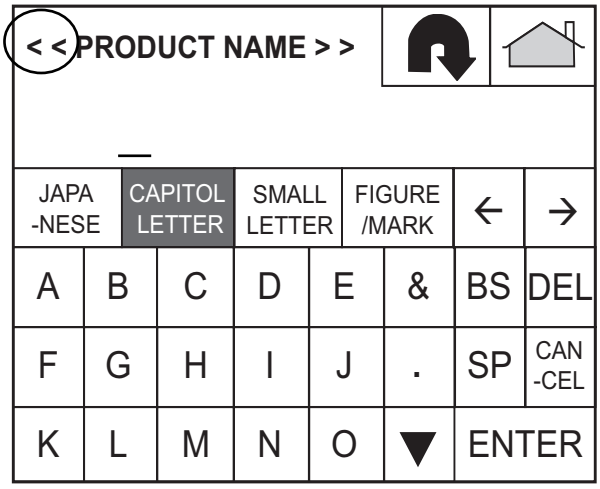
A L P H A

Note

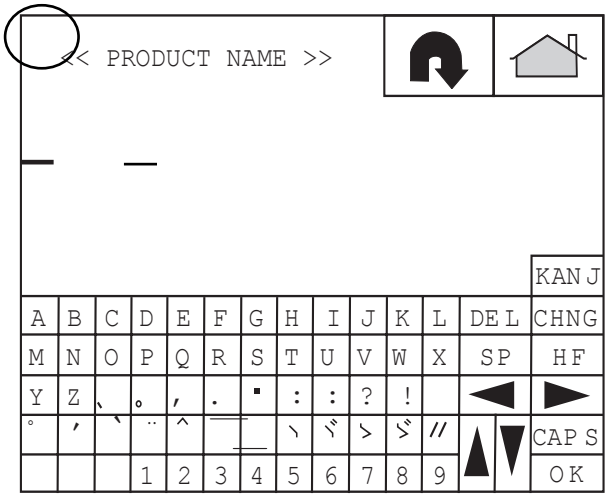
Touching the “JAPANESE” button will open the Japanese Entry Screen.

Entering Full-Size Characters

① Touch the upper left area of the Product Name Entry Screen. The screen for entering full-size characters will appear.

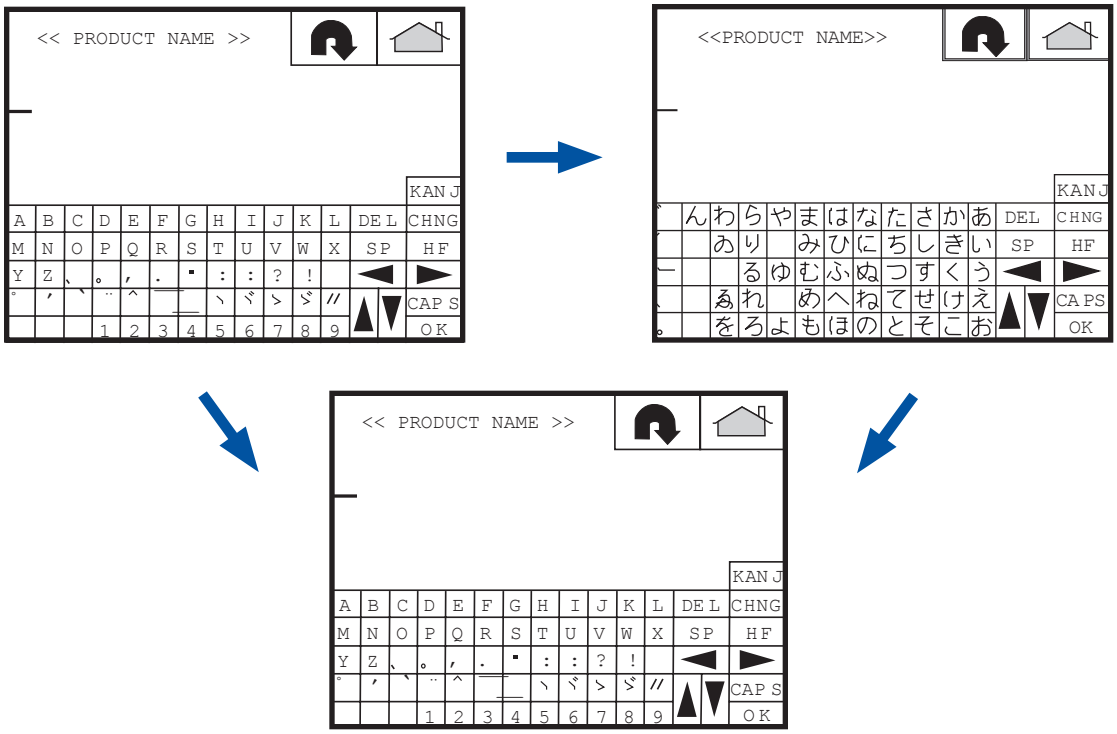


② Touch the upper left area of the Full-size Character Entry Screen to go back to the previous screen.

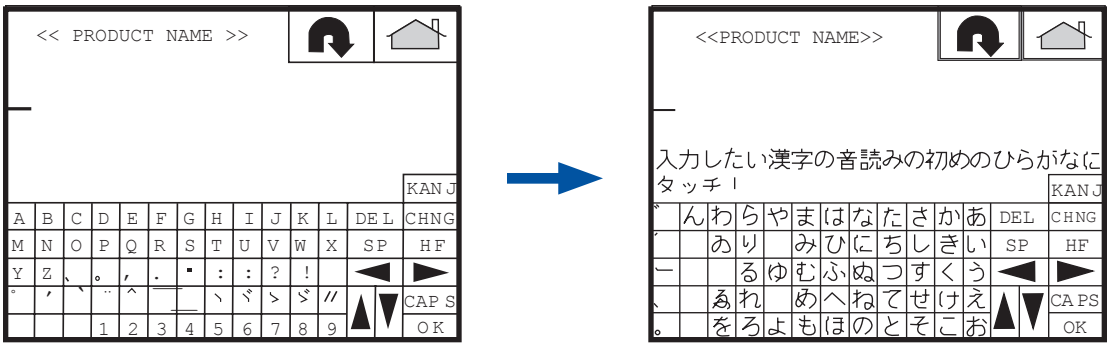


Note

Touching CHNG key changes the entry screen in the order below.



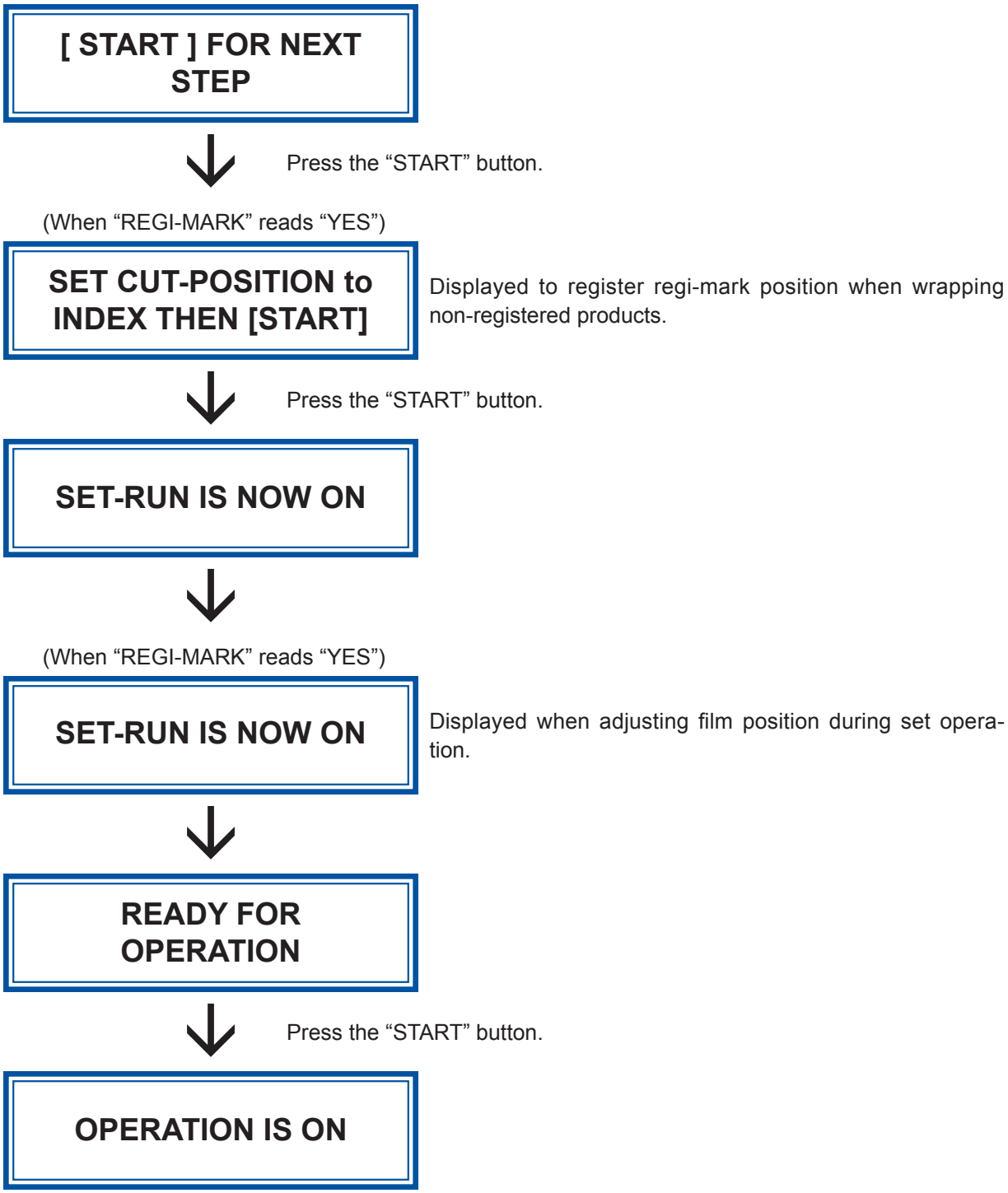
Touching KANJ key also displays the Japanese Entry Screen.



Touch KANJ key again to go back to the previous screen.

Messages on the Normal Screen

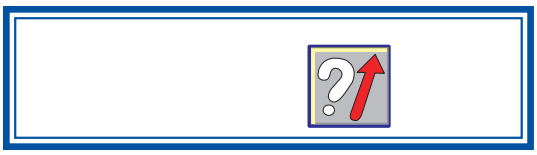
The following messages and keys are displayed on the Normal Screen according to the status of the ma-



Something is wrong with the machine, which cannot be operated (inching can be made with some errors). Touching ERROR key causes the screen to return to the trouble screen, so confirm the contents of the screen and deal with the trouble appropriately.

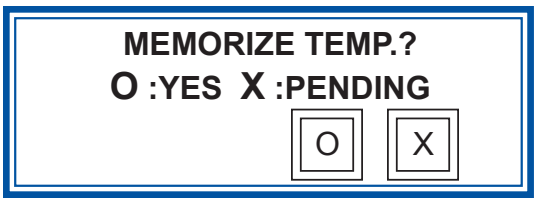
Ref. Page 8-3

The heater temperature does not reach the set value (either lower or higher). During this message, operation cannot be made, but touching  key enables operation. However, please note that the heater temperature is not appropriate, and don’t start wrapping products.

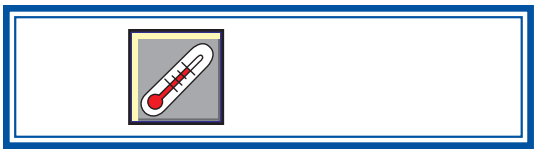


Touch this key to delete the messages displayed in the message frame.

Touch this key to stop the buzzer.



To set the current temperature of the heater as a set value, touch the “O” key. The temperature will not be changed if the power is turned off unless you touch the “O” key.



This message appears when you touch the “X” key. Touch the key to display the “O” key for registration. The normal message is displayed while this key is displayed.

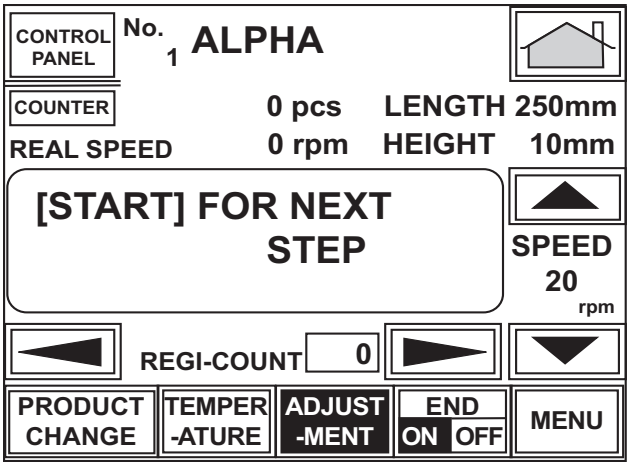
Chapter 6
Operations from Normal Screen

This chapter explains how to operate various functions from the Normal Screen according to the current operation.

Setting the Speed ▲ ▼

Changing Revolution Speed

①Touch ▲ and ▼ to set the setting speed to the desired speed (rpm).



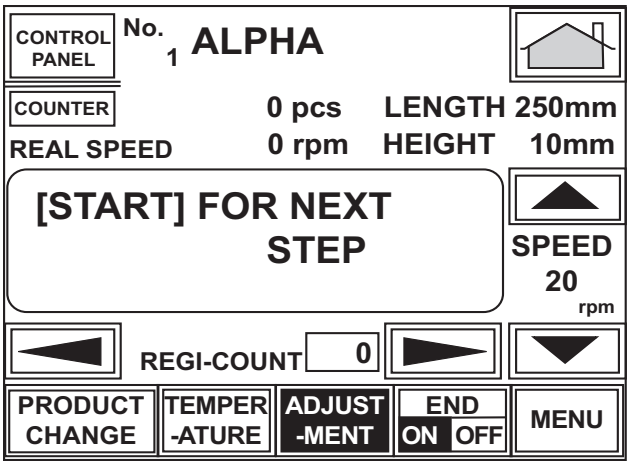
Note

This can be changed even when the machine is stopped. To increase or decrease the speed (rpm) sharply, change it on the Product Data Setting Screen of the Product Change.

Regi-Mark Correction ◀ ▶

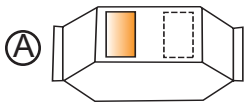
Adjusting Print Pattern Position

②Touch ◀ and ▶ keys to adjust the cut position of print pattern.

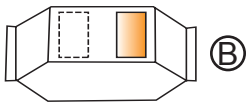


Note

Touching ◀ key moves print pattern to Ⓐ direction.



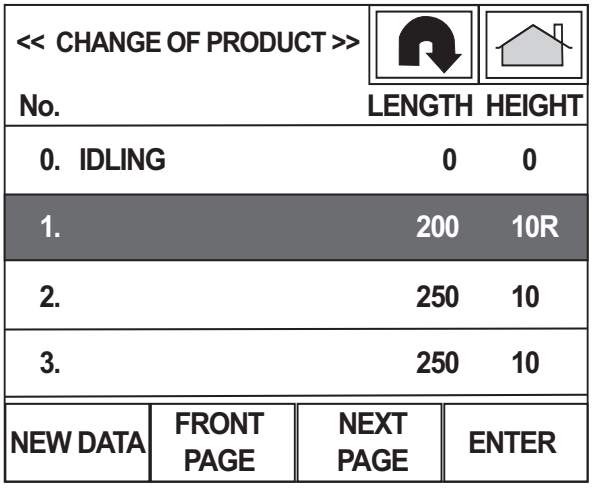
Touching ▶ key moves print pattern to Ⓑ direction.



Product Change

Changing Products

① Touch “PRODUCT CHANGE” key on the Normal Screen. The screen shown on the right will appear. This is called the Change of Product Screen.



Note

Product Numbers can be registered for up to 99 items.

② Touch the desired Product No. .

③ Touch “ENTER” key, and the screen returns to the Normal Screen.

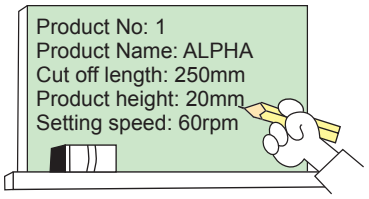
Note

If the desired product No. is not displayed on the screen, touch “Front Page” or “Next Page” key to look for

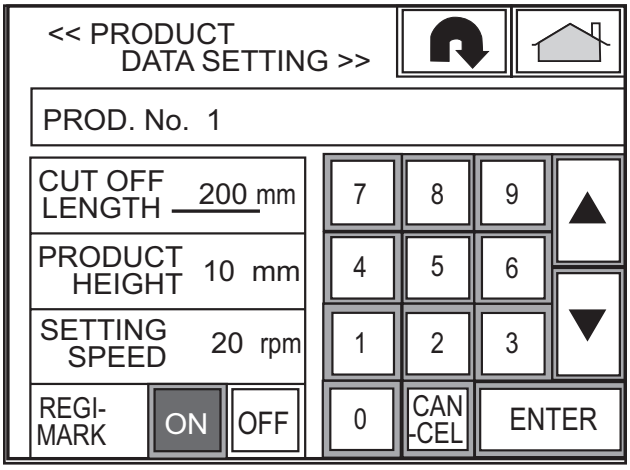
Touching ENTER key after selecting IDLING key causes only the infeed chain to turn. Use this function after operation to clean the infeed chain.

Entering New Products

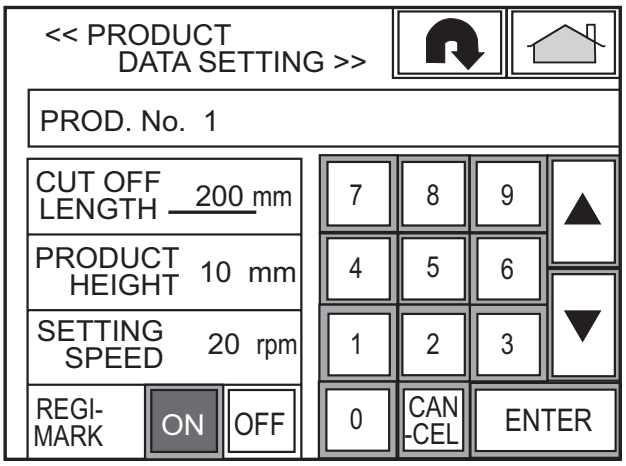
An example on the basis of the following data explains how to register a new product.



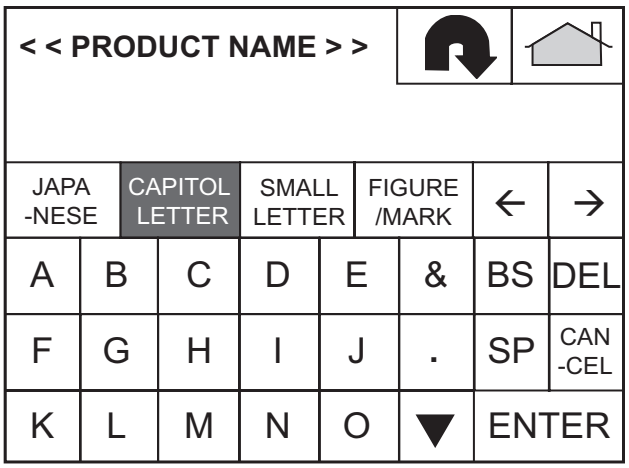
① On the Change of Product Screen, touch the Product No. that is desired . In this case touch “1”.



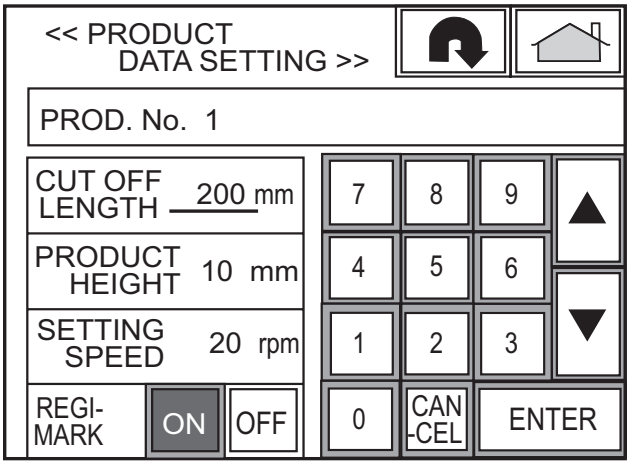
② Touch NEW DATA at the left bottom of the Product Change Screen. The screen changes to the Product Data Setting Screen.



③ To enter a new product name, touch the area where a product name is displayed. The screen changes to the Product Name Setting Screen.



④Enter ALPHA and touch ENTER key. The screen returns to the Product Data Setting Screen.



Ref. How to enter characters Page 5-5

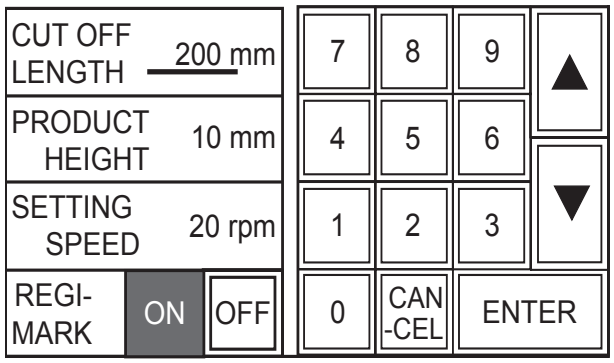
⑤ Touch the value of CUT OFF LENGTH on the Product Data Setting Screen.

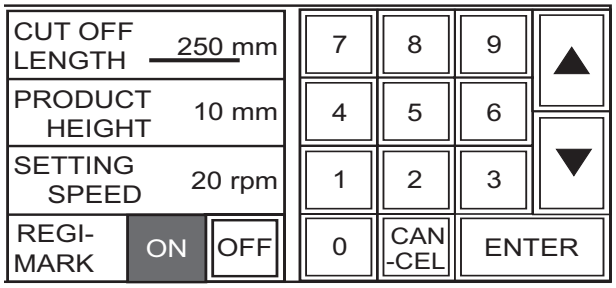
⑥ Enter 2,5, and 0 by pressing corresponding nu merical keys,

Note

Touching CANCEL key sets the set value to 0.

⑦ Next, touch the value of PRODUCT HEIGHT.





⑧ Enter “2” and “0” by pressing corresponding numerical keys.

⑨ Then, touch the value of “SETTING SPEED”.

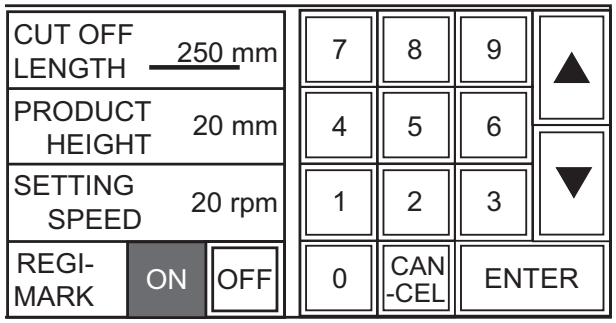
⑩ Enter “6” and “0” by pressing corresponding nu merical keys.

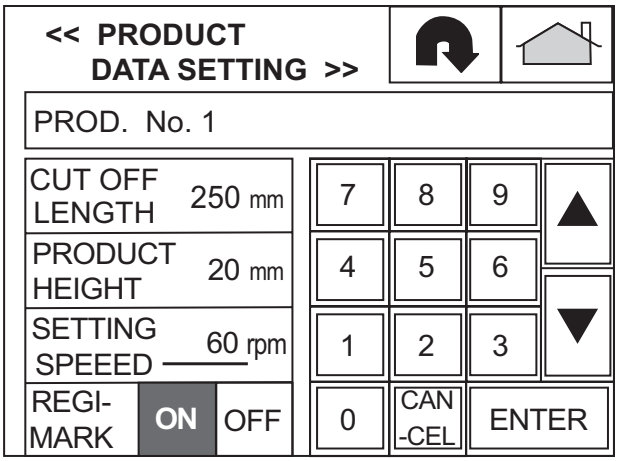
Note

If the screen does not change when the “ENTER” key is touched, the set value with the underbar is out of the setting range.

⑪ Touch ENTER key. The Product Change Screen appears to display the set values entered.

⑫ Touch ENTER key. The Product Change Screen. The screen returns to the Normal Screen.



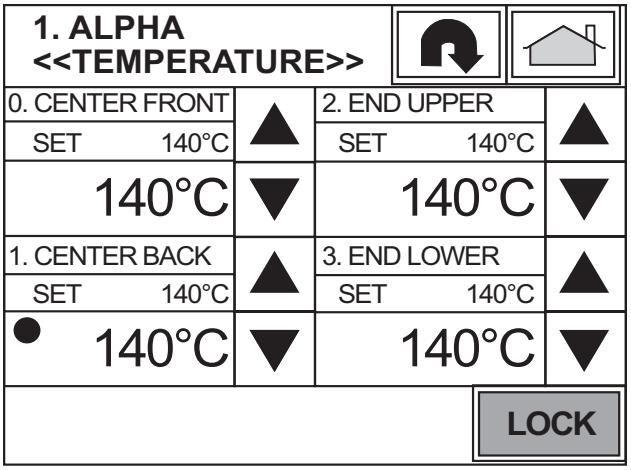


Heater Temperature

Setting Heater Temperature

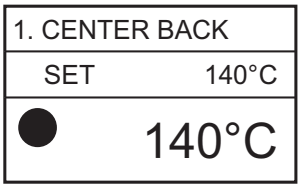
This explains how to set the aimed temperature to control heater temperatures.

①Touch TEMPERATURE key on the Normal Screen. The screen at right will appear.



Note

When a heater is ON, the current heater temperature is displayed on the screen.

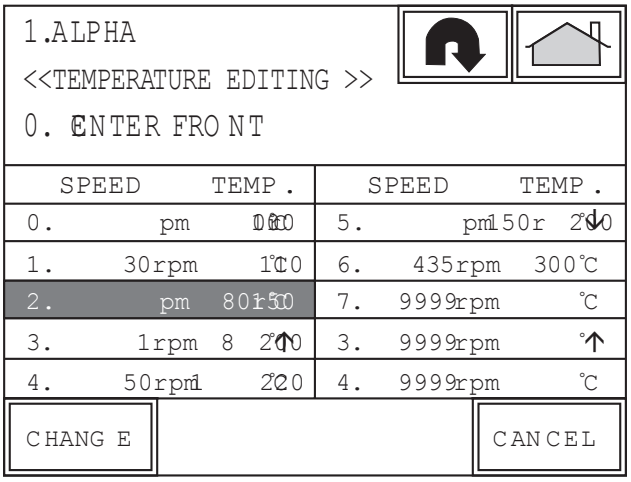


The mark ● is displayed when the heater (SSR) is ON.

②Touch “0” CENTER FRONT” key, and the screen changes to the Temperature Setting Screen.

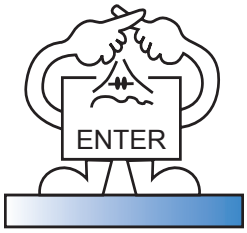
③Then touch “ON” key. Enter the temperature you want by pressing corresponding numerical keys.

④After the entry, touch “ENTER” key.



Note

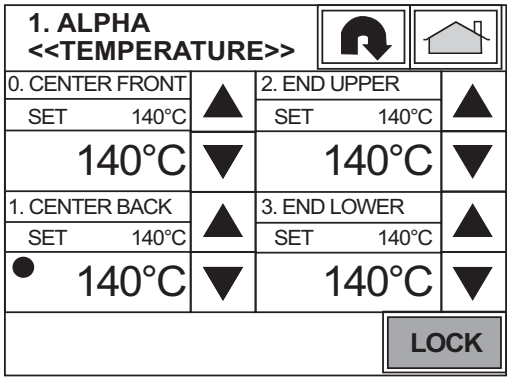
Below 50°C and over 300°C



The setting range of each temperature is from 50 to 300°C. Setting it below 50° or over 300°C is not accepted even when ENTER key is touched (out of the range).

Lock Key

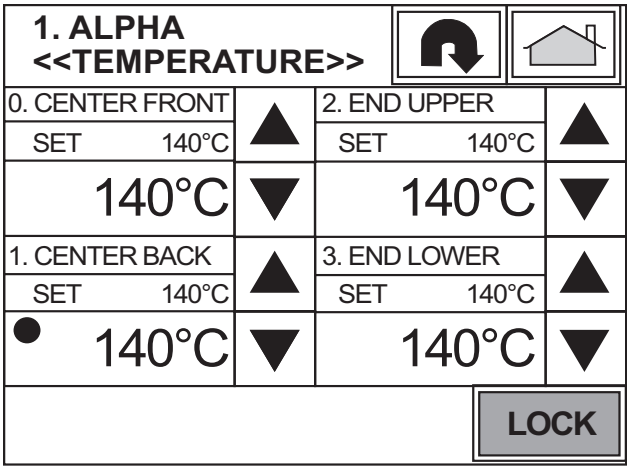
When the keys for setting temperature are locked (“LOCK” key is highlighted), you cannot change the temperature on the Temperature Setting Screen. Touch “LOCK” key to release the lock. “ ▲ ” and “ ▼ ” keys appear, and you can change the set temperature.



Temperature Editing

This machine has a function to adjust heater temperatures automatically. With this function, the heater temperature changes automatically in proportion to the revolution speed (RPM).

① Touch EDIT TEMP key on the Temperature Setting Screen. The following screen will appear. Temperatures corresponding to each revolution speed are listed on this screen. Highlight the area of the revolution speed and temperature to set, and touch CHANGE key.



NOTE

9999rpm 0°C

It shows the condition that temperature has not been set yet.

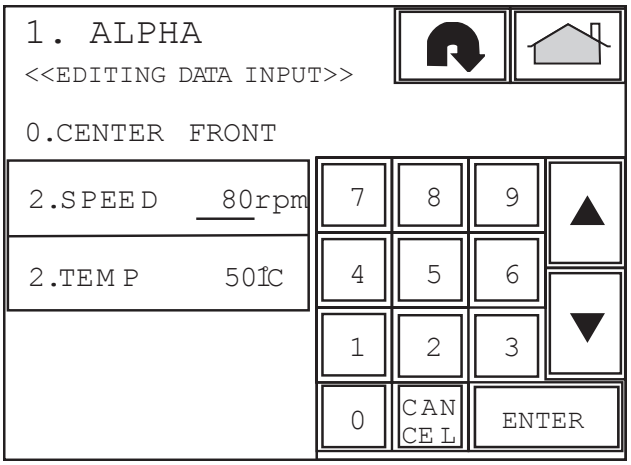
NOTE

The settings of speed and temperature are arranged in ascending order of revolution speed regardless of the position you had entered.

NOTE

If you press CANCEL key, a confirmation dialog box for deleting all the temperature settings. To delete all the settings, select “YES”.

②Touch SPEED or TEMP to change, and enter a value with the numerical keys.



NOTE

When you first set a temperature, the temperatures for 0rpm and the maximum speed are automatically calculated and registered. The values for 0rpm and the maximum speed cannot be changed (the *temperature* can be changed). The value of rpm in excess of the maximum speed cannot be entered.

NOTE

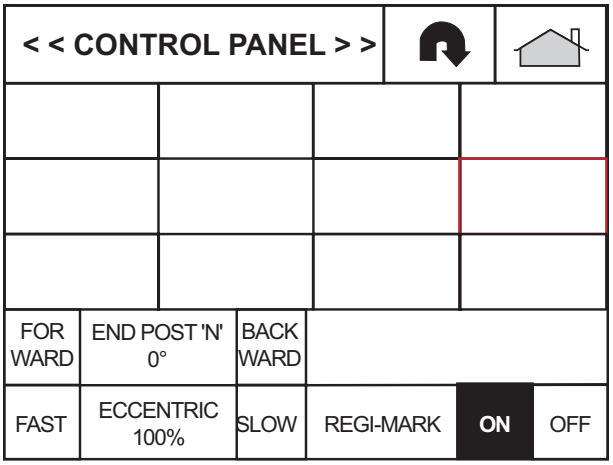
If you enter “9999” to SPEED the temperature setting can be deleted.

③After the entry, touch ENTER key.

Confirming Correction Status

This screen enables you to finely adjust the actions of this machine for better wrapping operation.

①Touch CONTROL PANEL key on the Normal Screen and the following screen will appear.

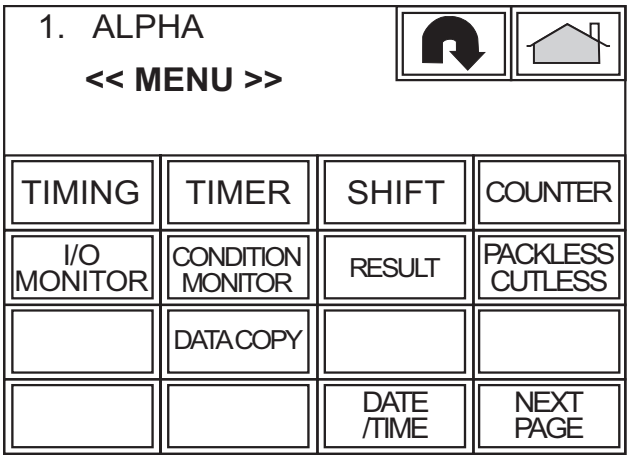


Each item on the screen is explained below.

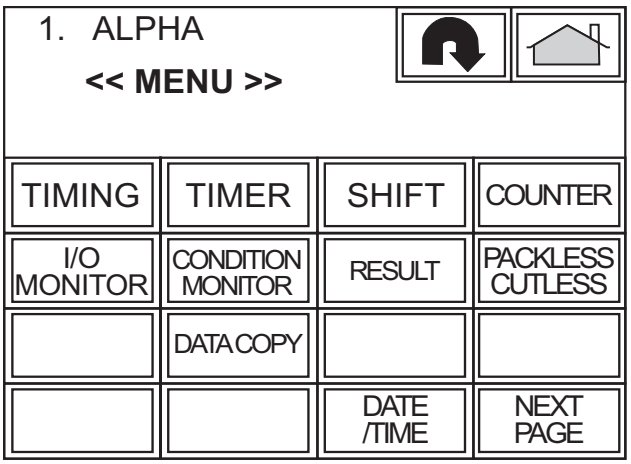
END POSITION	FORWARD	Moves the end sealers forward
	BACKWARD	Moves the end sealers backward.
ECCENTRIC	FAST	Moves the end sealers fast.
	SLOW	Moves the end sealers slow.
REGI-MARK	ON	Controls regi-mark.
	OFF	Will not control regi-mark.

Displaying Menu Screen

①Touch MENU key on the Normal Screen, and the following screen will appear. This screen is called “Menu Screen”.



②Touch the key you want on the Menu Screen, and start operation.

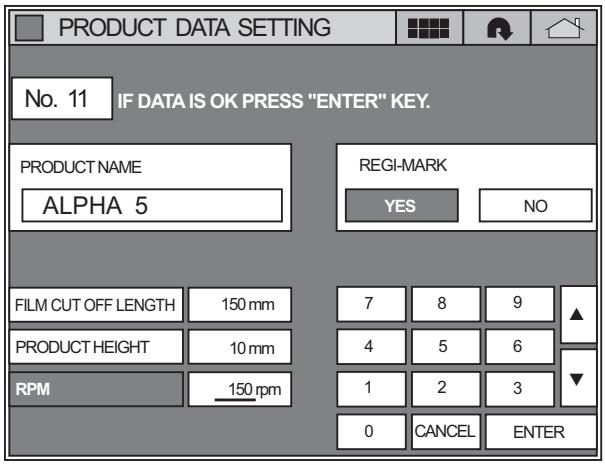


Chapter 7
Operations From Menu Screen

This chapter explains how to operate various functions from the Menu Screen according to the mode of operation.

Setting Timing

①Touch TIMING key on the Menu Screen.



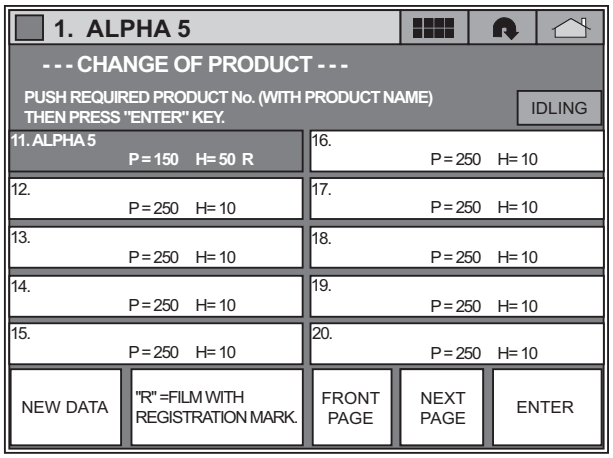
Note

The current angles of each timing cam of the film feed roller, infeed conveyor, and the end sealer are displayed in the lower right of the screen.

②Select the item to change, and touch CHANGE key.

③Touch either ON or RANGE key, and enter a value using numerical keys.

④After entry, touch ENTER key.



Timing Setting Chart

In this timing setting, Nos. 0 to 27, and 40 to 43 can be set.

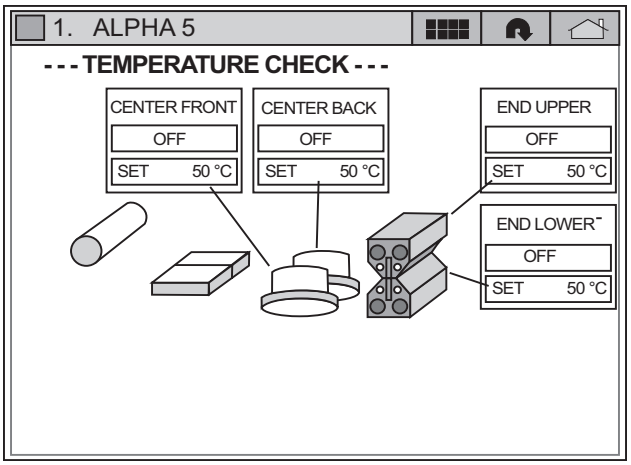
Timing No.	Standard
0. - 7.	FILM 1 pitch is equal to 350 degrees C. According to the movement of film, the virtual timing cam turns.
16. - 27.	INFEED One pitch of the pusher lug is equal to 350 degrees C. The position when ENTER key is touched on the Lug Zero Position Register Screen is 0 degrees C.
40. - 47.	END One rotation of the end sealer is equal to 360 degrees C. The position where the sealer opens is 0 degrees C.

Function of Timing

No.	Item	Function
4.	FILM SHIFT	The timing to work the shift register. The ON position is right after the product is cut by the end sealer.
16.	CYCLE STOP	The cycle stop timing of this machine due to errors.

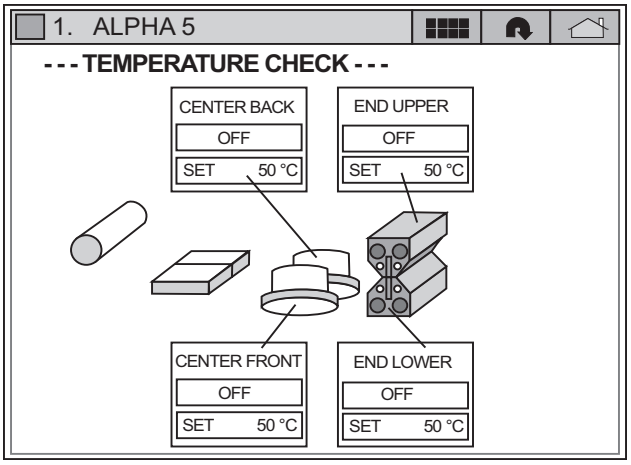
Setting Timer

①Touch TIMER key on the Menu Screen.



②Select an item to change, and touch CHANGE key.

③Enter a value you want using numerical keys, and touch ENTER key.



Function of Timer

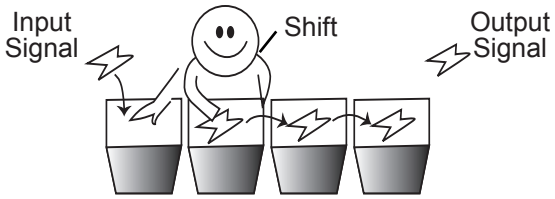
No.	Item	Function
0.	BUZZER (FIRST BAG)	In operating this machine, the machine starts operation after the buzzer sounds for the set time.
1.	BUZZER (SET-RUN)	In set operation, the machine starts operations after the buzzer sounds for the set time.
2.	CENTER SEALER CLOSE	In operating this machine, this machine starts operation after the set time has elapsed after closing the center sealer.
3.	CENTER SEALER OPEN	When this machine stops, the center sealer opens after the set time has elapsed.

Setting Shift

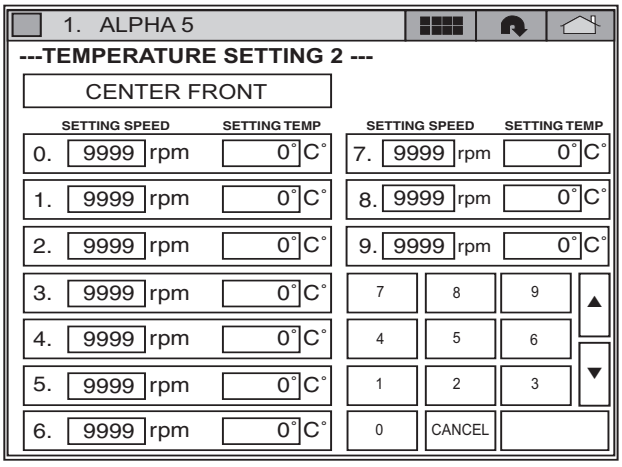
①Touch SHIFT key on the Menu Screen.

Note

"Shift number" means the number to shift action.

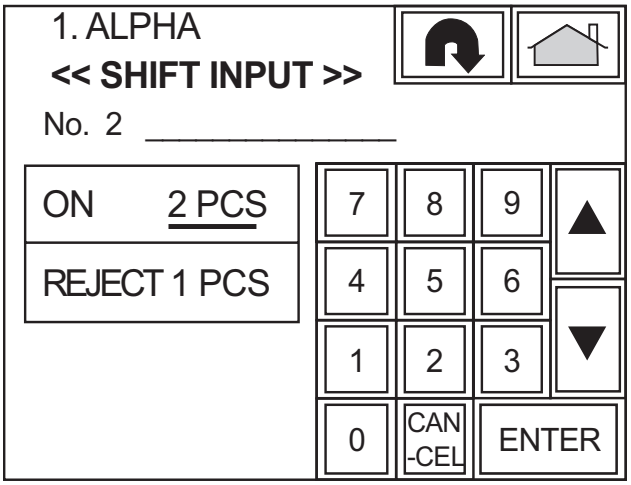


The number of boxes is equal to the number of shifts.



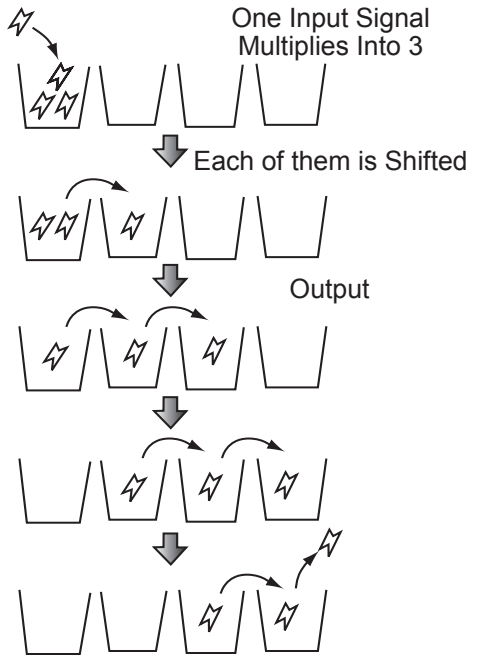
②Select an item to set, and touch CHANGE key.

③Next, touch SHIFT or REJECT key to change, and enter a value using numerical keys.



Note

For example, when setting REJECT to “3”, one signal continues action for 3 cycles.

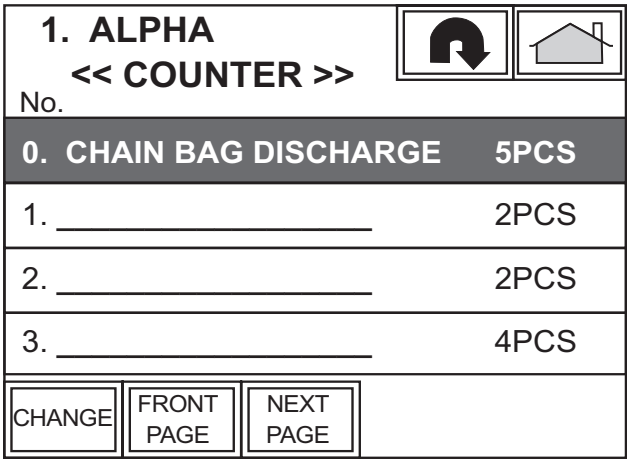


④After entry, touch ENTER key.

Setting Counter

COUNTER is the function to count the number of some signals, according to the signals.

①Touch COUNTER key on the Menu Screen.

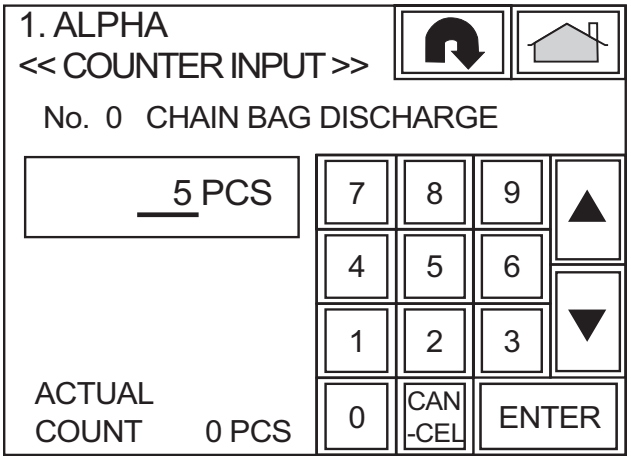


②Select an item to set, and touch CHANGE key.

Note

When the number of input signals becomes over the set value, the signals are output.

③Enter a value using numerical keys, and touch ENTER key.



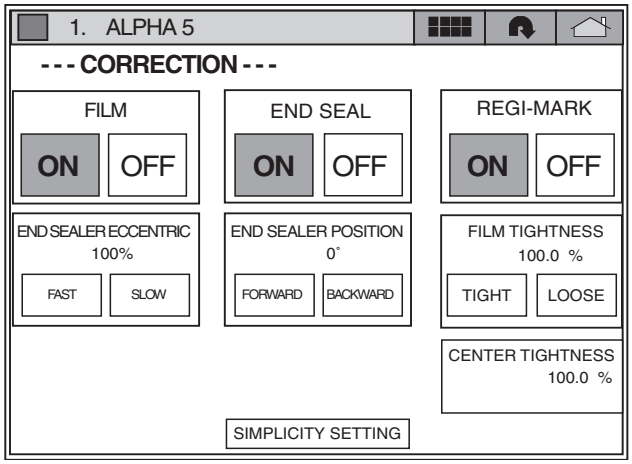
Function of Counter

No.	Item	Function
0.	PROD. JAM SERIAL BAGS	If the end sealer catches a product, it discharges the set number of bags that are not cut at restarting, and starts operation.

Adjusting Lug Zero Position

LUG ZERO POSITION means the standard position (0 degree) of the infeed pusher lugs.

①Touch LUG ORG key on the Menu Screen.

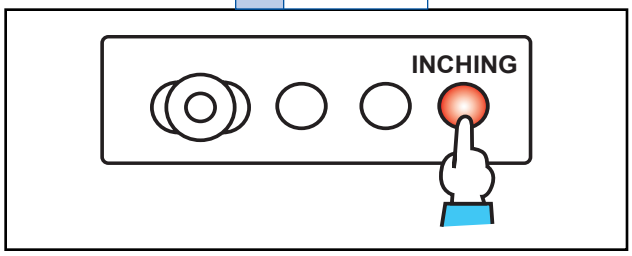


Note

Never adjust lug zero position except when having replaced the infeed chain.

②Press INCHING button to move the top end of a pusher lug to the position indicated with an arrow, then touch ENTER key.

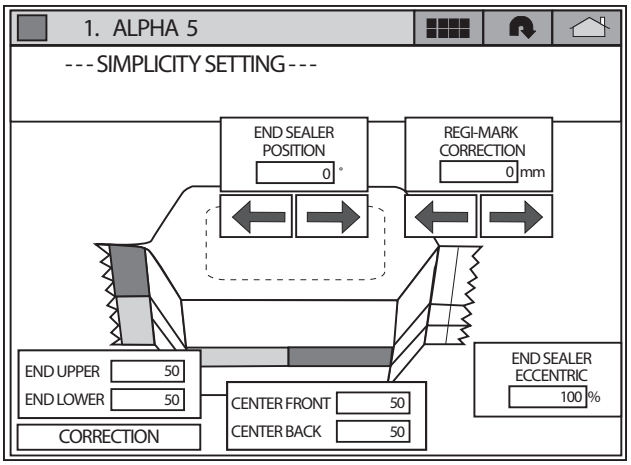
Note



When Lug Pitch Changes

①Touch LUG PITCH key at the left bottom of the screen, and enter data using numerical keys.

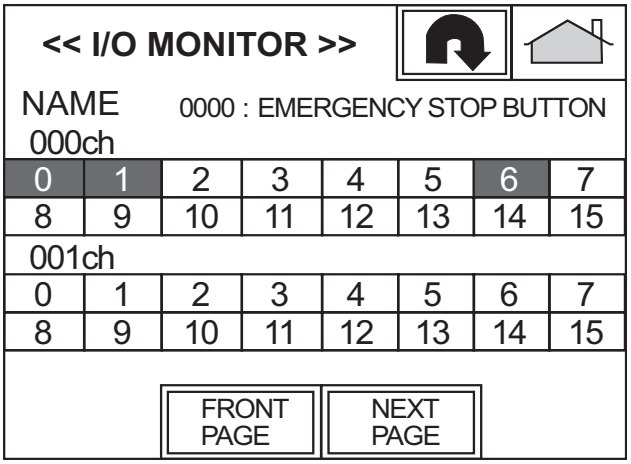
②After entry touch ENTER key.



I/O Monitor

I/O MONITOR displays the status of input and output signals.

①Touch I/O MONITOR key on the Menu Screen. The Input Monitor Screen appears.



Note

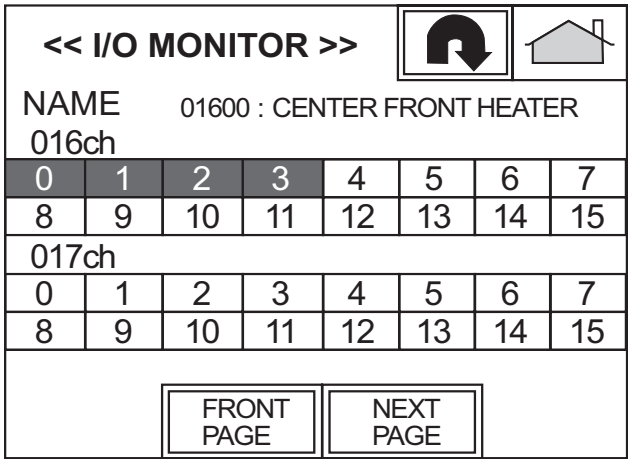
The I/O that is ON is highlighted.

Touching an I/O number causes a signal name to be displayed in the upper left of the screen.

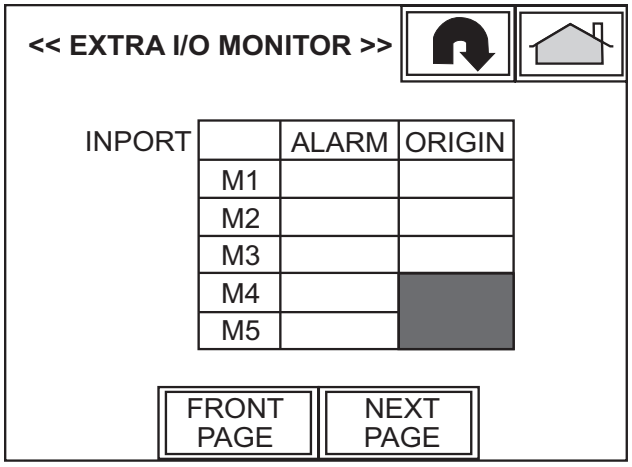
②Touching NEXT PAGE key displays the Output Monitor Screen.

Note

In the case of extending I/O points as an option, the Servopack I/O monitor is displayed after the option I/O monitor.



③Touching NEXT PAGE key displays the Extra I/O monitor Screen.



Items on the I/O Monitor Screen

Input 000ch

No.	I/O Name	Description
00	EMERGENCY STP BUTTON	It turns OFF when the Emergency Stop button is pressed.
01	CYCLESTOP BUTTON	It turns OFF when the Cyclestop button is pressed.
02	START BUTTON	It turns On when the Start button is pressed.
03	INCHING BUTTON	It turns ON when the Inching button is pressed.
04	CENTER SEALER BUTTON	It turns ON when the center sealer is closed.
05	COVER OPEN	It turns OFF when the cover is open.
06	MAIN POWER ON	It turns ON when the power is On and the relay CR4 is ON.
08	FILM FINISH	It turns OPN when the end of the film is detected.
09	PRODUCT DETECT (OPTION)	It turns ON when the product detecting sensor is shaded.

Items on the I/O Monitor Screen continued...

Output 016ch

No.	I/O Name	Description
00	CENTER FRONT HEATER	The nearer heater of the center sealer is ON.
01	CENTER BACK HEATER	The farther heater of the center sealer is ON.
02	END UPPER HEATER	The upper heater of the end sealer is ON.
03	END LOWER HEATER	The lower heater of the end sealer is ON.
04	CENTER PRE-HEATER	Option
05	WEB PRE-HEATER	Option
06	SPARE HEATER	Option
07	SPARE HEATER	Option
08	CENTER SEALER OPEN	The command of opening the center sealer.
09	CENTER SEALER CLOSE	The command of closing the center sealer.
10	MC1 ON	The command of turning the servo power ON.

Items on the Extra I/O Monitor Screen

Alarm

M1	-----	It turns ON by the error signal of the inverter.
M2	-----	It turns OFF by the error signal of the servomotor of the film.
M3	-----	It turns OFF by the error signal of the servomotor of the end sealer
M4	-----	Not used.
M5	-----	Not used.

Origin

M1	-----	It turns ON when the infeed origin sensor detects an origin.
M2	-----	Not used.
M3	-----	It turns ON when the end sealer origin sensor detects an origin.
M4	-----	Not used.
M5	-----	Not used.

Condition Monitor

CONDITION MONITOR displays the status of the drive motor and the regi-mark detection.

①Touch CONDITION MONITOR key on the Menu Screen.

Note

This monitor is useful upon trouble occurrence of the motor.

Encoder is a device to generate pulse according to the movement of the motor.

1. ALPHA

<< CONDITION MONITOR >>

		M1	M2	M3	M5
ENCO-DER	PULSE	0	0	0	0
	RPM	0	0	0	0
SERVO MONITOR		0	0	0	0
D/A OUTPUT		0.0	0.0	0.0	0.0

REGI-CONTROL ERROR		
	1.5 SAME WAY	0
	5mm	0
REGI-DETECT ERROR		0

Condition Monitor Items

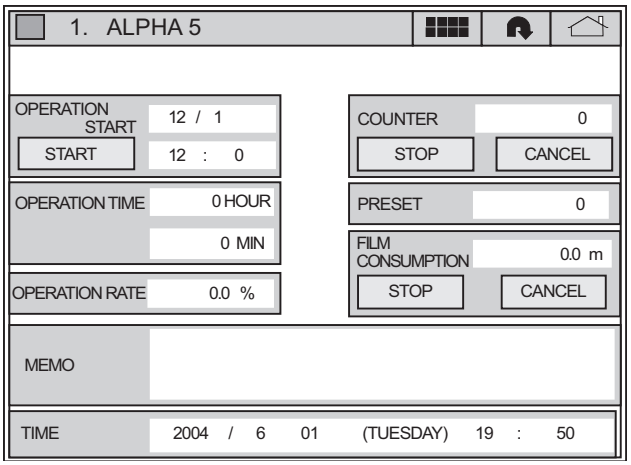
Below are brief descritions of the items on the Condition Monitor Screen.

ENCODER PULSE	Counts the number of pulses issued by the encoder. Returns to “0” when the encoder rotates in a complete cycle.
ENCODER RPM	Displays RPM of the encoder.
SERVO MONITOR	Displays the difference between command and feedback. One rotation of the motor is equal to 6,000 pulses.
D/A OUTPUT (V)	Displays the speed command voltage supplied to the servopack and inverter.
REGI-CONTROL ERROR 1.5 SAME WAY	Counts the number that regi-marks have deviated over 1.5mm from the correct position to the same direction sequentially. Shows “0” when detecting them at the correct position (under 1.5mm).
REGI-CONTROL ERROR 5mm	Counts the number that regi-marks have deviated over ± 5mm from the correct position sequentially. Shows “0” when detecting them at the correct position (under 5mm).
REGI-DETECT ERROR	Counts the number of regi-marks that were not detected.

Seeing a Result

The “Result” is the function to store each error occurred.

①Touch RESULT key on the Menu Screen.



Note

Up to 100 errors can be stored. When the number of errors stored exceeds 100, the oldest error will be erased.

The newest error is displayed at the top, and the oldest one is at the bottom.

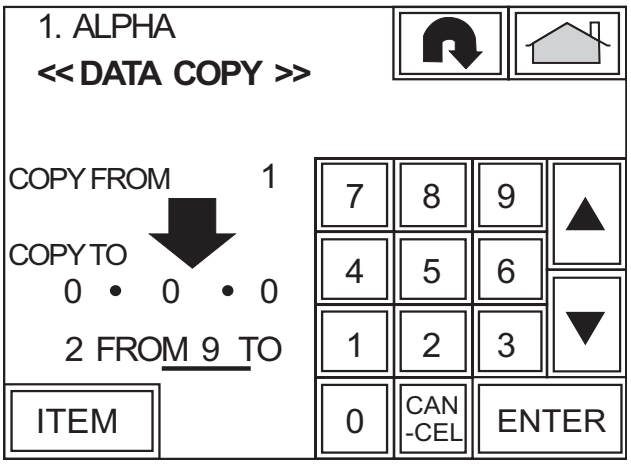
Copying Data

DATA COPY is the function to copy the data of a product to another product No.

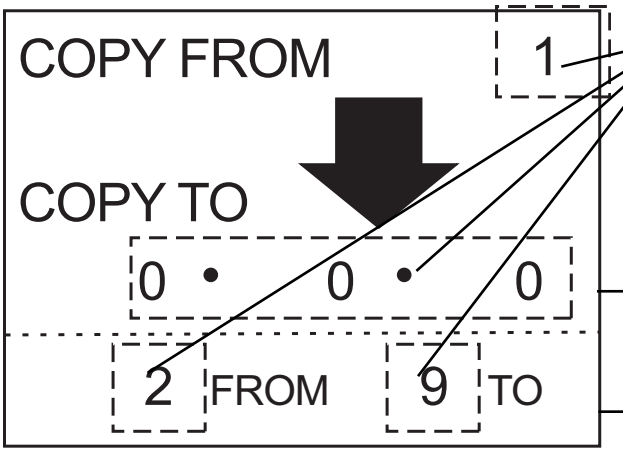
① Touch DATA COPY key on the Menu Screen.

②Touch the value of COPY FROM and enter the product No. by using numerical keys.

③Touch the value of COPY TO and enter the product No. by using numerical keys.



Entering the Product Number



Touching each value moves the cursor, so you can change the Product No. (Product No.1-99)

The copy destination can be set in 2 ways. (It cannot be copied to the copy source Product No.)

·To set 3 Product Nos.

·To set all Product Nos. “from Product No. A to Product No. B”.

Item to be copied

ALL DATA

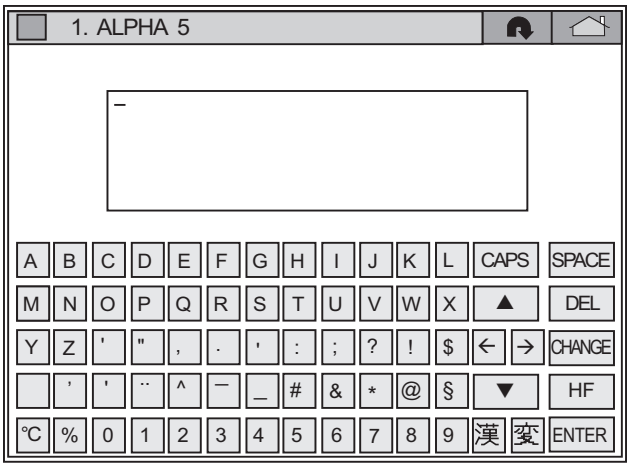
When ALL DATA is displayed: All items on the Copy Details Screen are copied.

ITEM

When ALL DATA is not displayed: Touching the ITEM key displays the Copy details Screen. Set the item to be copied on this screen.

④Touch ITEM key.

⑤Touch the item to be copied.



A brief explanation of each key on the screen is below.

ALL DATA

If ALL DATA key is displayed on the Data Copy Screen, ALL DATA key is ON as well as the other keys on this screen. If you turn OFF any key on this screen, ALL DATA key turns ON. If you turn this key ON, the other keys also turn ON.

The item of the key that is ON is to copied.

PROD. REVISE TEMP

TIMING TIMER SHIFT COUNT LUG

PCKLES OPTION ECCENT

DATA COPY

LUG

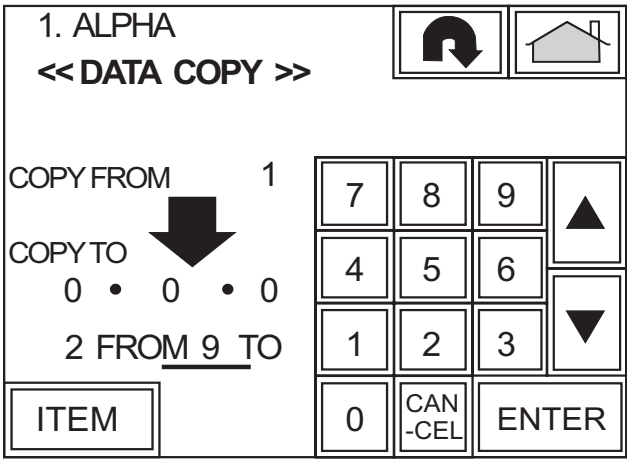
In the specification using infeed chains of different chain pitches, the lug zero position and the lug pitch are copied. The machine of the other specifications will not be affected.

PCKLES

The setting of cutless is included.

⑥After selecting the items to be copied, touch DATA COPY key. The Data Copy Screen appears.

⑦After confirming the copy destination and the items to be copied, touch “ENTER” key.



Note

The previous data of the copy destination will be erased.

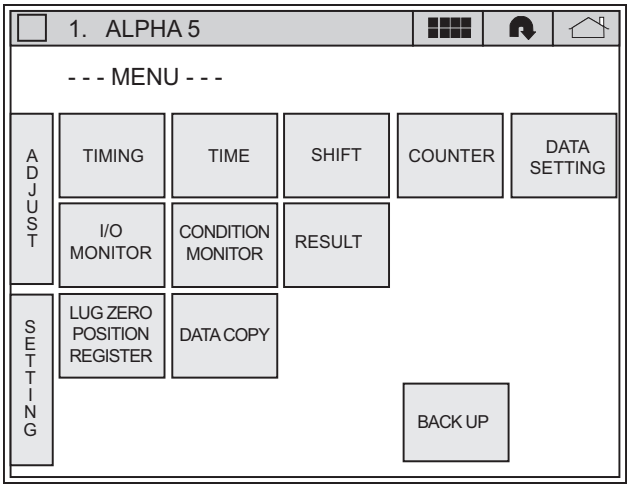
Date/Time

Setting Current Date and Time

①Touch DATE/TIME key on the Menu Screen.

②Enter the current date and time correctly by using the numerical keys.

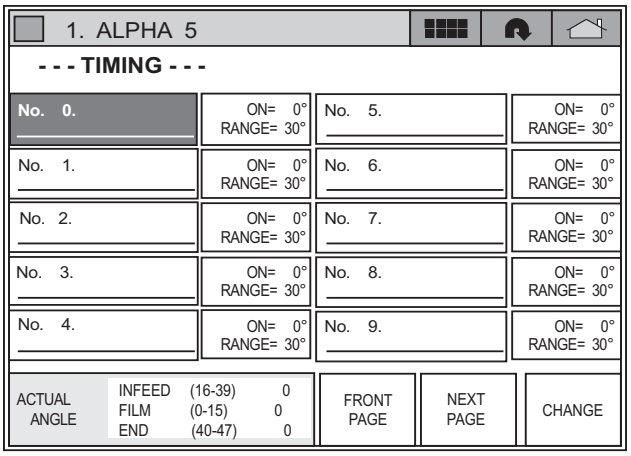
After entry, touch ENTER key.



Backing Up Data

BACK UP is the function to save in the internal memory or load product data, machine data, sequence ladder, character data.

①Touch BACKUP on the Menu Screen.



CAUTION

Please note that the backup data is not permanent. If you leave the machine power OFF for a week or more, the data will be cleared.

Note

No operation is available while the Backup Screen is displayed.

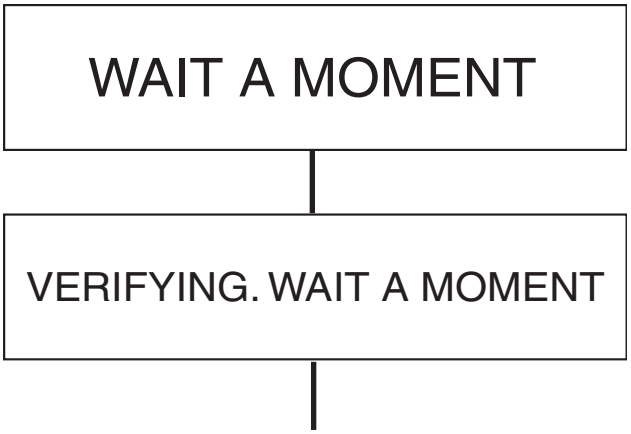
② Select SAVE DATA or LOAD DATA and touch ENTER key.

Note

SAVE DATA: Select this to save data in an internal memory.

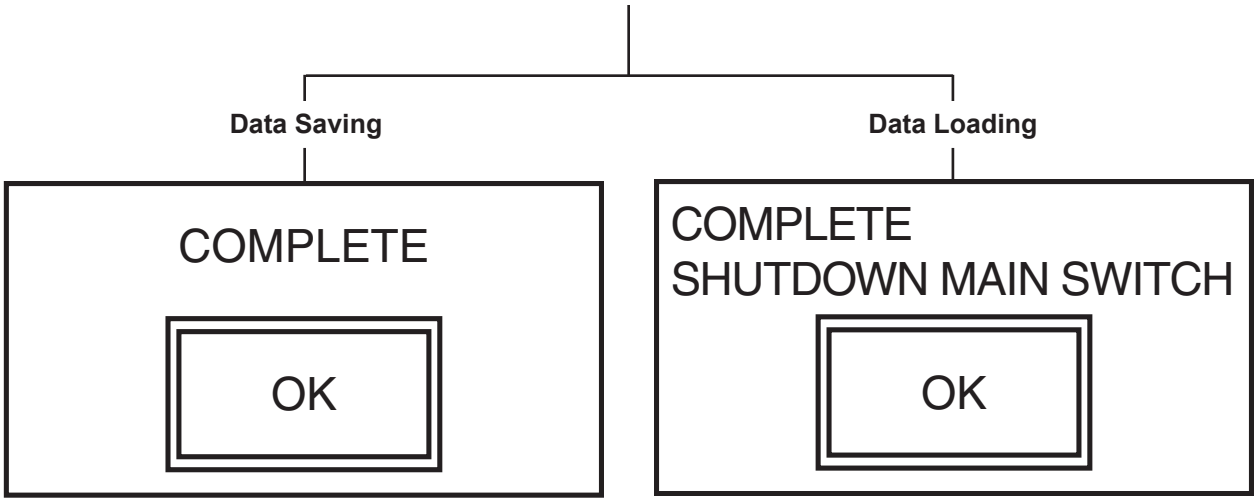
LOAD DATA: Select this to load the backup data. (In case of replacing a board or restoring the data to backup data).

③After confirming the message, touch YES. The message below appears.



Note

Touching NO key cancels operation, and the message goes off.



④After confirming the message, touch ENTER key.
The operation has now been completed properly.

Note

In case of data loading, the message, stating “PLS SHUTDOWN MAIN SWITCH” appears. Turn on the power of the machine again.

In Case of an Error in Data Saving or Loading

State	Displayed Message	Cause and Countermeasure
Data Saving	DATA SAVE ERROR	Data saving is executed on the Backup Screen, and it resulted in failure. Check again that the board is installed properly.
Data Loading	DATA READ ERROR	Data loading is executed on the Backup Screen, and is resulted in failure. Check again that the board is installed properly.
	THERE IS NO DATA	Data loading is executed on the Backup Screen, and the data to be loaded is not saved. Save the data first, and then load the data.
Data Verifying	VERIFY ERROR	As a result of verification after data saving or loading, it is found that the data of sequence board differs from the of servo board.
	DATA COPY ERROR	In verification after data saving or loading, verification data cannot be transferred. Check again that the board is installed properly.

Chapter 8
Error Messages

This chapter explains the messages displayed on the touch panel when something is wrong with the machine.

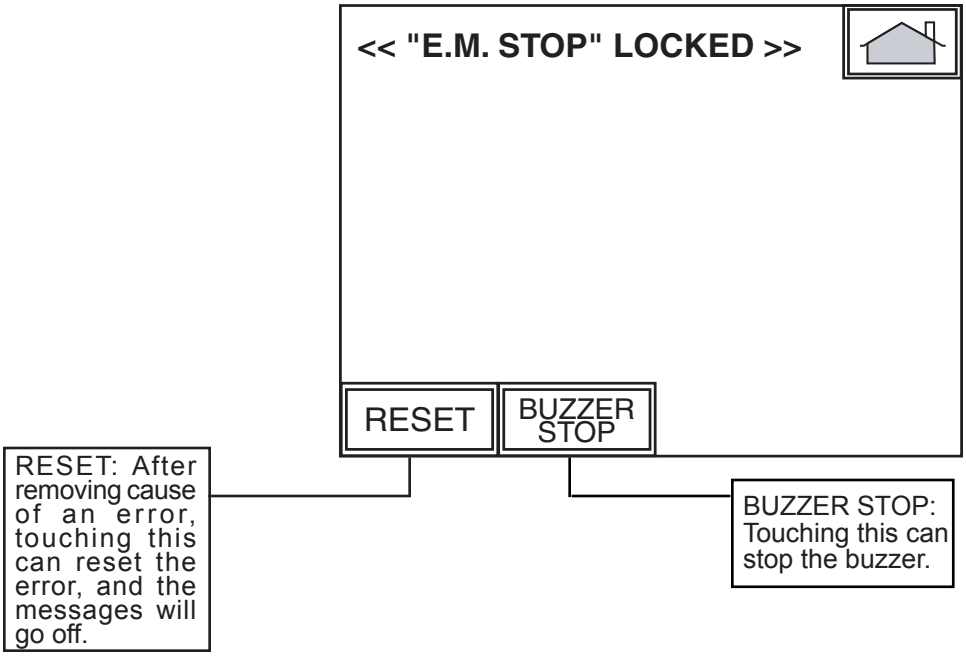
Machine Movement at Occurrence of Error and How to Reset

When an error (abnormal condition) has occurred in this machine, the buzzer sounds and displays an error message to inform you of the error. Machine's movement at occurrence of error is as follows:

ALARM	A buzzer sounds and a message is displayed on the touch panel. At this time, this machine will not stop and continue to work even in the process of operation.
CYCLESTOP	A buzzer sounds and a message is displayed on the touch panel. When the machine is in the process of operation, it will stop when a cycle has finished.
EMERGENCY STOP	A buzzer sounds and a message is displayed on the touch panel. When the machine is in the process of operation, it will stop at once.
SYSTEM ERROR	Some kind of error has occurred in the system. Turn OFF the main breaker, and 5 seconds later, turn it ON.

How to Reset Errors

Remove causes of errors or touch RESET key according to the countermeasures in the list of error mes-



List of Error Messages

This list shows error messages displayed on the touch panel, causes, and countermeasures. Please make sure before inquiring with us.

In case of other troubles than those shown below, refer to “Chapter 12 Troubleshooting”.

ALARM

DISPLAY	CAUSE AND COUNTERMEASURE	Reference Page...
MISSDETECT	Regi-marks have been detected over 10 times while feeding film for a bag. Make sure the position of the sensor in the width direction and the sensitivity of the sensor.	
*******BRUSH ERROR	The signal from thermocouple to detect the current temperature of the sealers is unstable. Clean the slip rings.	

CYCLESTOP

DISPLAY	CAUSE AND COUNTERMEASURE	Reference Page...
OUT OF TEMP. RANGE	The current temperature is higher or lower than the set temperature. If the set temperature cannot be obtained after waiting for awhile, check the items of "*****THERMO LINE BREAK" and "******HEATER LINE BREAK".	
REGI-CONTROLERROR	The timing to detect regi-mark is deviated from the specified position. Check with the pilot lamp that the film print pattern or wrinkle (waves) is not detected by mistake. Adjust film print pattern with "REGI CORCT" keys and wrinkle with the film entrance roller adjusting handle.	
REGI-DETECTERROR	During operation, regi-marks cannot be detected. Check that the position of the sensor is not deviated from the position where regi-marks pass. If the pilot lamp of the sensor does not light when marks pass through the correct position, adjust sensitivity of the sensor or replace the sensor.	

EMERGENCY STOP

<table>
<tr><th>DISPLAY</th><th>CAUSE AND COUNTERMEASURE</th><th>REF. PAGE...</th></tr>
<tr><td>SEQUENCE DATA ERROR</td><td>An error has been found in the data to control optional devices such as a printer. Though touching RESET key may operate this machine, optional devices cannot be operated. It is necessary to change the controllers. Please contact us.</td><td></td></tr>
<tr><td>*****THERMO LINE BREAK</td><td>The signal from the thermocouple to detect the current temperature of sealers is abnormal. The error occurs again in spite of cleaning the slip rings, it is necessary to replace the thermocouple. Please contact us.</td><td></td></tr>
<tr><td>*****HEATER LINE BREAK</td><td>This is caused when the temperature does not rise though the heater is energized. Check fuses, SSRs and breakage of heater wiring, and clean the slip rings.</td><td></td></tr>
<tr><td>*****SSR ERROR</td><td>This is caused when temperature rises too much though the heater is not energized. If the error occurs again even though the slip rings are cleaned, it is necessary to replace the SSRs. Please contact us.</td><td></td></tr>
<tr><td>INFEED ORIGIN ERROR</td><td>This is caused when the origin of the infeed chain cannot be detected during set operation.<table><tr><td>The infeed chain turns.</td><td>Check the infeed encoder.Check the infeed origin sensor.</td></tr><tr><td>The chain does not turn but the discharge belt turns.</td><td>Check the breakage of the belt driving the chain and mechanical overload.
Check the infeed motor movement on the Condition Monitor Screen.</td></tr><tr><td>Neither of them turns.</td><td>Check the item of INVERTER ERROR.</td></tr></table></td><td></td></tr>
</table>

EMERGENCYSTOP continued...

DISPLAY	CAUSE AND COUNTERMEASURE	REF. PAGE...
END SEAL ORIGIN ERROR	This is caused when the origin of the end sealers cannot be detected during set operation. Check the proximity sensor when the sealers turn, and breakage of the driving belt and overload when the sealers do not turn.	
CENTER SEALER DOESN'T OPEN	Opening and closing the center sealers have been out of control.	
CENTER SEALER DOESN'T CLOSE		
REGI-MARK/SENS. ERROR	This is caused when regi-marks cannot be detected in set operation. Check the position of the sensor. If the pilot lamp of the sensor does not light when regi-marks pass through the correct position, the sensor may be abnormal. If the problem cannot be resolved by cleaning the sensor and the light reflector, replace them.	
REGI-MARK/PHS. ERROR	This appears at the fourth "REGI-MARK/SENS. ERROR" or later.	
FILM ROLL MOTOR OVERLOAD	Mechanical overload of the film feed roller unit has occurred. Check the film for winding around the rollers, or the bearings for any breakage.	
END MOTOR OVERLOAD	Most likely cause is that the end sealers have caught a product. If not, check mechanical overload such as breakage of bearings.	
CENTER MOTOR OVERLOAD	Mechanical overload of the center sealer unit has occurred. Check film jamming or breakage of bearings.	

EMERGENCYSTOP continued...

DISPLAY	CAUSE AND COUNTERMEASURE	REF. PAGE...
INFEED SPEED ERROR	The rotation of the infeed chain has become out of control. Check the item of INVERTER ERROR and the infeed motor and the encoder.	
SET-RUN TIME OVER	It took more than 3 minutes on set operation. This may be because of the abnormality in the infeed unit, the film feed roller unit, the end sealer unit, optional devices and so on. Conduct set operation again and make sure that they properly. If not, check the items.	
PLEASE SET FILM	A roll of film has run out. Please set another roll of film.	
<OPTION> OPTION COVER OPEN	A safety cover of an optional device is open. After verifying the safety around the machine, close it.	

EMERGENCY STOP/POWER SUPPLY OFF

DISPLAY	CAUSE AND COUNTERMEASURE	REF. PAGE...
INFEED CHAIN ERROR	The infeed chain is turned by an external force. Conducting set operation again enables this machine to work normally.	
FILM SERVO ERROR	Error has occurred in the servo motor or pack that drives the film feed rollers. After checking the error display of the pack, touch RESET key. When the error cannot be reset, turn OFF the main breaker, and 5 seconds later, turn it ON. When the same error still occurs, it is necessary to replace the motor or pack. Contact us. Also,this error may occur when the frequency of opening and closing the cover or turning ON and OFF the emergency stop button is high (more than 5 times/min.). This is caused to prevent the breakage of the servopack.	

EMERGENCY STOP/POWER SUPPLY OFF continued...

DISPLAY	CAUSE AND COUNTERMEASURE	REF. PAGE...
END SERVO ERROR	Error has occurred in the servo motor or pack that drives the end sealers. After checking the error display of the pack, touch RESET key. When the error cannot be reset, turn OFF the main breaker, and 5 seconds later, turn it ON. When the same error still occurs, it is necessary to replace the motor or pack. Contact us. Also, this error may occur when the frequency of opening and closing the cover or turning ON and OFF the emergency stop button are high (more than 5 times/min.). This is caused to prevent the breakage of the servopack.	
INVERT ERROR	Error has occurred in the inverter or motor that drives the infeed conveyor. Check the error display of the inverter in the control box. When the same error occurs even if the main breaker is turned OFF, and 5 seconds later, the main breaker is turned ON, it is necessary to replace the inverter.	Inverter Instruction Manual "Troubleshooting"
"E.M. STOP" LOCKED	The emergency stop button is pressed. After confirming the safety around the machine, release emergency stop button by turning it clockwise.	
COVER OPEN	A safety cover of the machine is open. After confirming the safety around the machine, close the cover.	
DATA COPY ERROR	Data cannot be transferred properly between boards at power-on. It is caused by board failure or loose connection of card-edge connectors.	

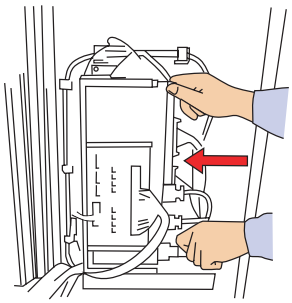
EMERGENCY STOP/POWER SUPPLY OFF continued...

DISPLAY	CAUSE AND COUNTERMEASURE	REF. PAGE...
PRODUCT No. ERROR	Product Nos. cannot be transferred properly between boards at power-on.	
ECCENTRIC DATA ERROR	Calculation of an operating curve of end sealers or rewriting of results cannot be finished properly. Conduct set operation again.	
CORRECTED PROD. DATA	The product data that was out of the setting range has been changed to that within the setting range.	
CORRECTED M/C DATA	The machine data that was out of the setting range has been changed to that within the setting range.	

SYSTEM ERROR

DISPLAY	CAUSE AND COUNTERMEASURE	REF. PAGE...
Sequence Board Error 0 Div. Sequence Board Error WDG(NMI). Sequence Board Error WDG(COUNTER). Sequence Board Error ** Sequence Board Non Dif INT. Sequence Board Stack Over. Sequence Board Error.87C51 Sequence Board Error System.	The sequence board has been broken. Turn OFF the main breaker and 5 seconds later, turn it ON. If something is still wrong after that, it is necessary to replace the sequence board. Please contact us.	
Servo Board 0 Div. Servo Board Error WDG(NMI). Servo Board Error WDG(COUNTER). Servo Board Error ** Servo Board Non Dif INT. Servo Board Stack Over. Servo Board Error 87C51. Servo Board Error System.	The servo 1 board has been broken. Turn OFF the main breaker and 5 seconds later, turn it ON. If something is still wrong after that, it is necessary to change the servo 1 board. Please contact us.	

SYSTEM ERROR continued...

DISPLAY	CAUSE AND COUNTERMEASURE	REF. PAGE...
PLS. SHUTDOWN MAIN SW	The set value that needs turning OFF the power supply has been changed. Turn OFF the main breaker, and 5 seconds later, turn it ON.	
NOT FIND BOARD	Either the sequence board or the servo board has been out of the specific position or broken. Turn OFF the main breaker, and reinstall the board in the control box. If something is still wrong after that it is necessary to replace the board. Please contact us. 	
ALL DATA CLEAR	This message is displayed in clearing all data by dip switches.	
The setting of the dip-switch (SW3-4) the SEQ BOARD is different.	Check the dip switches of sequence board.	
Communication error with main controller.	This message is displayed if the communication cable of the display is broken or the connectors are not connected properly.	

Errors of Sequence Board

DISPLAY	DESCRIPTION	RED LED
Sequence Board Error 0 Div.	A number is divided by 0 or overflow has occurred. (Data is broken).	Blinks once.
Sequence Board Error WDG(NMI).	The WDG hard counter has reached the preset number.	Blinks twice.
Sequence Board Error WDG(COUNTER).	The WDG soft counter has reached the preset number. (Loose connection of the bus, etc.)	Blinks 3 times.
Power Supply Off or Moment Power Failure	The power failure detection device has detected reduction of the power source.	Blinks 4 times.
Sequence Board Non Dif INT.	An undefined interruption has occurred.	Blinks 7 times.
Sequence Board Stack Over.	The system stack of the board exceeds the upper limit.	Blinks 8 times.
Sequence Board Error 87C51	Initialization error of 87C51. The IC for communication may be broken.	Blinks 10 times.
Sequence Board Error System.	The operation of CPU has stopped. (NMI cannot be accepted). Something is wrong with the power source, 5VDC. Connection of the bus is loose.	Blinks 11 times.

Errors of Servo Board

DISPLAY	DESCRIPTION	RED LED
Servo Board 0 DIV.	A number is divided by 0 or overflow has occurred. (Data is broken).	Blinks once.
Servo Board Error WDG(NMI).	The WDG hard counter has reached the preset number. (Generally, the CPU has stopped).	Blinks twice.
Servo Board Error WDB(COUNTER).	The WDG soft counter has reached the preset number. (Loose connection of the bus, etc.)	Blinks 3 times.
Servo Board Non Dif INT.	An undefined interruption has occurred.	Blinks 7 times.
Servo Board Stack Over.	The system stack of the board exceeds the upper limit.	Blinks 8 times.
Servo Board Error 87C51.	Initialization error of 87C51. The IC for communication may be broken.	Blinks 10 times.
Servo Board Error System.	The operation of CPU has stopped. (NMI cannot be accepted.) Something is wrong with the power source, 5VDC. Connection of the bus is loose.	Blinks 11 times.

VFD			
No.	Fault	Description	Action
F2	Auxiliary Input	Auxiliary input interlock is open	1. Check remote wiring 2. Verify communications programming for intentional fault.
F3	Power Loss	DC bus voltage remained below 85% of nominal.	1. Monitor the incoming AC line for low voltage or line power interruption 2. Check input fuses.
F4	UnderVoltage	DC bus voltage fell below the minimum value.	Monitor the incoming AC line for low voltage or line power interruption.
F5	OverVoltage	DC bus voltage exceeded maximum value.	Monitor the AC line for high line voltage or transient conditions. Bus overvoltage can also be caused by motor regeneration. Extend the decel time or install dynamic brake option.
F6	Motor Stalled	Drive is unable to accelerate motor.	Increase P039-A067 (Accel Time x) or reduce load so drive output current does not exceed the current set by parameter A089 (Current Limit 1).
F7	Motor Overload	Internal electronic overload trip	1. An excessive motor load exists. Reduce load so drive output current does not exceed the current set by parameter P033 (Motor OL Current). 2. Verify A084 (Boost Select) setting.
F8	Heatsink OvrTmp	Heatsink temperature exceeds a predefined value.	1. Check for blocked or dirty heat sink fins. Verify that ambient temperature has not exceeded 40°C (104°F) for IP 30/NEMA 1/UL Type 1 installations or 50°C (122°F) for IP20/Open type installations. 2. Check fan.
F12	HW OverCurrent	The drive output current has exceeded the hardware current limit.	Check programming. Check for excess load, improper A084 (Boost Select) setting, DC brake volts set too high or other causes of excess current.
F13	Ground Fault	A current path to earth ground has been detected at one or more of the five output terminals	Check the motor and external wiring to the drive output terminals for a grounded condition.
F29	Analog Input Loss	An analog input is configured to fault on signal loss. A signal loss has occurred. Configure with A122 (Analog In Loss).	1. Check parameters. 2. Check for broken/loose connections at inputs.
F33	Auto Rstrt Tries	Drive unsuccessfully attempted to reset a fault and resume running for the programmed number of A092 (Auto Rstrt Tries).	Correct the cause of the fault and manually clear.
F38	Phase U to Gnd	A phase to ground fault has been detected between the drive and motor in this phase.	1. Check the wiring between the drive and motor. 2. Check motor for grounded phase. 3. Replace drive if fault cannot be cleared.
F39	Phase V to Gnd		
F40	Phase W to Gnd		

VFD			
No.	Fault	Description	Action
F41	Phase UV Short	Excessive current has been detected between these two output terminals.	1. Check the motor and drive output terminal wiring for a shorted condition. 2. Replace drive if fault cannot be cleared.
F42	Phase UW Short		
F43	Phase VW Short		
F48	Params Defaulted	The drive was commanded to write default values to EEPROM.	1. Clear the fault or cycle power to the drive. 2. Program the drive parameters as needed.
F63	SW OverCurrent	Programmed A098 (SW Current Trip) has been exceeded.	Check load requirements and A098 (SW Current Trip) setting.
F64	Drive Overload	Drive rating of 150% for 1 minute or 200% for 3 seconds has been exceeded.	Reduce load or extend Accel Time.
F70	Power Unit	Failure has been detected in the drive power section.	1. Cycle power. 2. Replace drive if fault cannot be cleared.
F71	Net Loss	The communication network has faulted.	1. Cycle power 2. Check communications cabling. 3. Check network adapter setting. 4. Check external network status.
F80	SVC Autotune	The autotune function was either cancelled by the user or failed.	Restart procedure.
F81	Comm Loss	RS485 (DSI) port stopped communicating	1. If adapter was not intentionally disconnected, check wiring to the port. Replace wiring, port expander, adapters or complete drive as required. 2. Check connection. 3. An adapter was intentionally disconnected. 4. Turn off using A105 (Comm Loss Action).
F100	Parameter Checksum	The checksum read from the board does not match the checksum calculated.	Set P041 (Reset to Defaults) to option 1 "Reset Defaults".
F122	I/O Board Fail	Failure has been detected in the drive control and I/O section.	1. Cycle power. 2. Replace drive if fault cannot be cleared.

SERVO				
Error Code	Fault Message RSLogix (HIM)	Problem or Syptom	Potential Cause	Possible Resolution
		Power (PWR) indicator not ON	No AC power or auxiliary logic power	Verify AC control power is applied to the Kinetix 6000
			Internal power supply malfunction	Call your Allen Bradley representative to return module for repair
		Motor jumps when first enabled	Motor wiring error	· Check motor wiring · Run Hookup test in RSLogix 5000
			Incorrect motor chosen	Verify the proper motor is selected
		Digital I/O not working correctly	I/O power supply disconnected	Verify connections and I/O power source
E00	Bus Undervoltage Fault (Blown fuse)	A blown fuse was detected on the inverter PCB	Blown fuse	Call your Allen Bradley representative to return module for repair
E04	MotorOvertemp Fault (Motor Overtemp)	Motor thermal switch tripped	High motor ambient temperature and/or excessive current	·Operate within (not above) the continuous torque rating for the ambient temperature (40°C max) ·Lower ambient temperature, increase motor cooling
			Motor wiring error	Check motor wiring at MF connector on the IAM/AM
			Incorrect motor selection	Verify the proper motor has been selected
E05	DriveOvercurrent Fault (Power Fault)	Self protection of the Intelligent Power Module (IPM) is indicating a major power related fault condition.	Motor cables shorted	Verify continuity of motor power cable and connector.
			Motor winding shorted internally	Disconnect motor power cables from the motor. If the motor is difficult to turn by hand, it may beend to be replaced.
			Kinetix 6000 temperature too high	Check for clogged vents or defective fan Ensure cooling is not restricted by insufficient space around the unit.
			Operation above continuous power rating and/or product environment-al ratings	Verify ambient temperature is not too high Operate within the continuous power rating Reduce acceleration rates
			Kinetix 6000 has a short circuit, overcurrent, or failed component	Remove all power and motor connections and perform a continuity check from the DC bus to the U,V and W motor outputs. If a continuity exists check for wire fibers between terminals, or send drive in for repair.

SERVO				
Error Code	Fault Message RSLogix (HIM)	Problem or Syptom	Potential Cause	Possible Resolution
E34	GoundShortFault (Ground Fault)	Excessive ground current in the converter was detected	Wiring error	· Check motor power wiring · Check input power wiring (refer to Kinetix 6000 Installation Manual, publication 2094-IN001x-EN-P, regarding use of isolation transformer
			Motor internal ground short	Replace motor
			Internal malfunction	Disconnect motor power cable from drive and enable drive with current limit set to 0. If fault clears, then a wiring error or motor internal problem exists. If fault remains, call your AB representative.
E35	DriveUndervoltage Fault (Precharge Fault)	Converter pre-charge cycle failed	Low AC input voltage	Check input AC voltage on all phases
			Internal malfunction	Call your AB representative
E36	DriveOvertemp Fault (System Overtemperature)	Converter thermal switch tripped	Excessive heat exists in the power circuitry	· Reduce acceleration rates · Reduce duty cycle (ON/OFF) of commanded motion · Increase time permitted for motion · Use larger Kinetix 6000 converter · Check for clogged vents or defective fan · Ensure cooling is not restricted by insufficient space around the unit
E37	PowerPhaseLoss Fault (Phase Loss Flt)	One or more phases of the input AC power is missing. Axis was enabled when main (3-phase) power was removed. Expect the following symptoms with: Firmware v11: Shutdown, CED relay opens, motor coasts Firmware v12: Shutdown, motor stops		· Check input AC voltage on all phases · Disable axis before removing power · Clear fault
E38	SERCOSFault (SERCOS Ring Fit)	The SERCOS ring is not active after being active and operational	Cable disconnected	Check that fiber-optic cable is present and connected properly
E39	DriveHardFault (Self Sense Fit)	Self-sensing Commutation Startup Error	Motion required for self-sensing startup commutation was obstructed	· Verify that there are no impediments to motion at startup, such as hard limits. · Increase self-sensing current if high friction or load conditions exist · Check motor or encoder wiring using wiring diagnostics
E43	DriveEnableInput Fault (Drive Enable Flt)	Missing Drive Enable Input Signal	· An attempt was made to enable the axis through software while the Drive Enable hardware input was inactive · The Drive Enable input transitioned from active to inactive while the axis was enabled	· Disable the Drive Enable Input fault · Verify that Drive Enable hardware input is active whenever the drive is enabled through software
E50	SERCOSFault (SERCOS Same ADDR)	Duplicate node address detected on SERCOS ring		Verify that each SERCOS drive is assigned a unique node address
E60	DriveHardFault (Unknown Axis)	Illegal ID bits detected		Replace the module

SERVO				
Error Code	Fault Message RSLogix (HIM)	Problem or Symptom	Potential Cause	Possible Resolution
E61	AuxFeedbackFault (Aux Fdbk AQB)	Auxiliary Encoder State Error	The auxiliary encoder encountered an illegal transition	· Use shielded cables with twisted pair wires · Route the feedback away from potential noise sources · Check the system grounds · Replace the motor/encoder
E62	AuxFeedbackFault (Aux Fdbk Loss)	The feedback wiring is open, shorted, or missing		Check the motor feedback cable connectors/wiring to the IAM/AM and motor
E65	No Fault Message (condition indicated by on-screen message) (Hookup Fault)	Hookup procedure failed	Motor or feedback device malfunction	· Check motor power/feedback wiring · Refer to on-screen message for resolution
E66	No Fault Message (condition indicated by on-screen message) (Atune Flt)	Autotune procedure failed	Motor or feedback device malfunction	· Check motor power/feedback wiring · Refer to on-screen message for resolution · Perform Hookup in RSLogix 5000 · Consult RSLogix 5000 help screen
E67	DriveHardFault (Task init)	Operating system failed	Software initialization fault detected due to hardware failure	· Cycle power · If fault persists, replace module
E68	DriveHardFault (SCANport Comm)	DPI communication failed	The DPI device or cable is faulty	Check DPI connections
E69	DriveHardFault (Objects Init)	Non-volatile memory is corrupt due to control board software error		Load default parameters, save to non-volatile memory, and recycle power or reset the drive.
E70	DriveHardFault (NV Mem Init)	Non-volatile memory is corrupt due to control board software error		Load default parameters, save to non-volatile memory, and recycle power or reset the drive
E71	DriveHardFault (Memory Init)	RAM or Flash memory validation failure		· Cycle power · If fault persists, replace module
E72	DriveOvertemp Fault (Drive Overtemp)	Inverter thermal switch tripped	The fan on the IAM or an AM failed	Replace the failed module
			The cabinet ambient temperature is above rating	Check the cabinet temperature
			The machine duty cycle requires an RMS current exceeding the continuous rating of the controller	Change the command profile to reduce speed or increase time
			The airflow access to the Kinetix 6000 is limited or blocked	Check airflow and re-route cables away from the Kinetix 6000
E73	Communicate (Packplane Comm)	Power rail CAN communcatio-ns failed	Check module for proper mount	Power rail connection shorted or open
		Check power rail and module for foreign objects		
E74	DriveOvercurrent Fault (Bus OverCurrent)	DC link current exceeds rating	Motor or transmission malfunction	· Check for proper motor sizing · Check/replace transmission device · Check/replace motor
			IAM not properly sized	· Check for proper IAM sizing · Install larger kW rated IAM

SERVO				
Error Code	Fault Message RSLogix (HIM)	Problem or Syptom	Potential Cause	Possible Resolution
E75	DriveOvervoltage Fault (Shunt Time Out)	The IAM, AM or SM has exceeded its shunt resistor continuous rating		· Use a properly sized shunt or modify duty cycle of the application · System uses internal shunt and requires external shunt for additional capacity
E76	DriveHardFault (Can Init)	DPI hardware initialization fault detected	Control board hardware failure	· Reset System · If fault persists, replace system module
E77	DriveHardFault (Module Mismatch)	Either 230V AM is installed on power rail with 460V IAM, or 460V AM is installed on power rail with 230V IAM		Replace mismatched module
E78	DriveHardFault (SERCOS Init)	Control hardware fault detected		· Cycle power · If fault persists, replace module
E79	DriveOvervoltage Fault (Shunt Module Flt)	SM Temperature Fault LED status is Steady Red	Refer to Temperature FAult LED on page 4-9	
		SM Shunt Fault LED status is Steady Red	Refer to Shunt Fault LED on page 4-9	
		Module missing from power rail		·Install missing module on power rail · Fill empty slot with slot filler module
E80	HardwareFault (CPLD FLT)	Control hardware fault detected		Replace module
All Others	RESERVED			Call your local Allen Bradley representative

DRIVE STATUS LED			
If Drive Status LED is:	Status is:	Potential Cause	Possible Resolution
Off	Normal, no faults	N/A	N/A
Steady Red	Drive faulted	Seven segment LED displays error code	Refer to the section Error Codes and continue troubleshooting
COMM STATUS LED			
If Comm Status LED is:	Status is:	Potential Cause	Possible Resolution
Steady Green	Communication ready	No faults or failures	N/A
Flashing Green	Establishing communication	System is still in the process of establishing SERCOS communication	Wait for steady green LED status
		Node address setting on the drive module does not match SERCOS controller configuration	Verify proper node switch setting
Off	No communication	Loose fiber-optic connection	Verify proper fiber-optic cable connections
		Broken fiber-optic cable	Replace fiber-optic cable
		Receive fiber-optic cable connected to SERCOS transmit connector and vice versa	Check proper SERCOX fiber-optic cable connections

BUS STATUS LED		
If Bus Status LED is:	Status is:	Condition:
Steady Green	Bus power is present, axis enabled. No faults or failures	Normal when: · 24V is applied to Hardware Enable Input (I0D-2) · MS0 instruction is commanded in RSLogix 5000 software
Flashing Green	Bus power is present, axis disabled No faults or failures	Normal when: · 24V is not applied to Hardware Enable Input (IOD-2) · MSO instruction is not commanded in RSLogix 5000 software
Off	Bus power not present	· Normal when bus power is not applied · Fault exists, refer to seven segment Error Code and General Troubleshooting beginning on page 4-1

Chapter 9
Maintenance

This chapter explains Maintenance for this machine.

⚠ DANGER

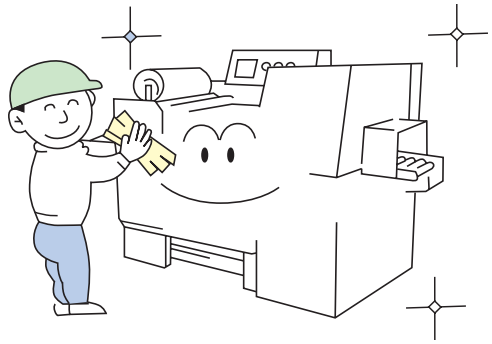
· Clean this machine after operation everyday.

· Before attempting to clean this machine, turn the power supply OFF. Be careful when it is necessary to turn it ON during cleaning.

· Protect the machine from water and moisture while cleaning.

· Never use thinner or benzine.

Cleaning External Surface



Wipe stains off the external surface of the machine with a wet cloth, then wipe it again with a dry cloth.

Infeed Chain and Chain Roll

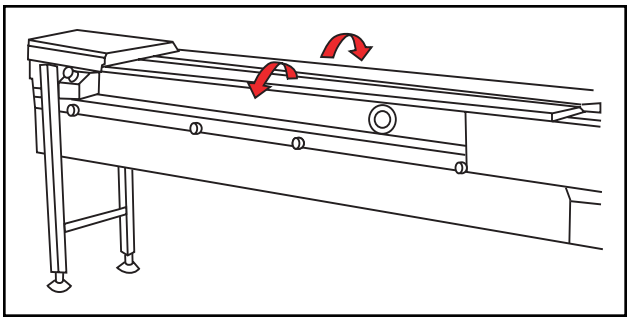
Tools Needed:

Hexagonal Wrench

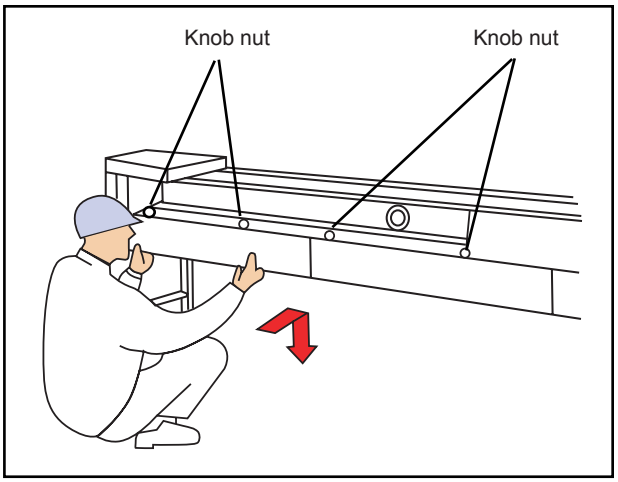
①Remove the infeed conveyor guide.

⚠ CAUTION

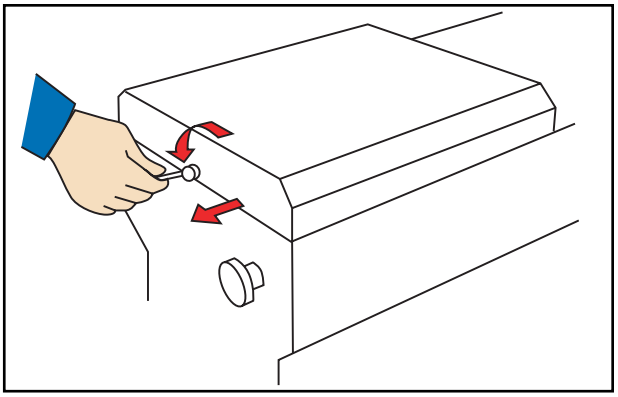
Be careful to clean chains, or your hands may get caught in chains and be unexpectedly injured.



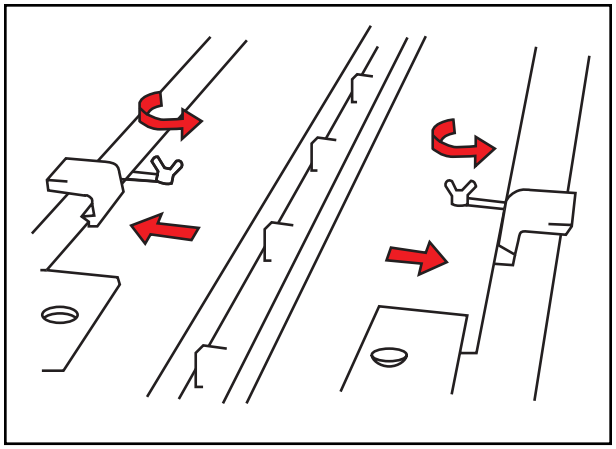
②Loosen the two knob nuts and then remove the 2 infeed conveyor covers on the operating side.



③Remove the bolt and the cover on the end of the infeed conveyor.

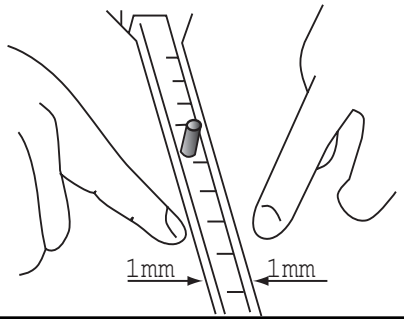


④Loosen the wing bolt to shift the infeed conveyor deck plates.

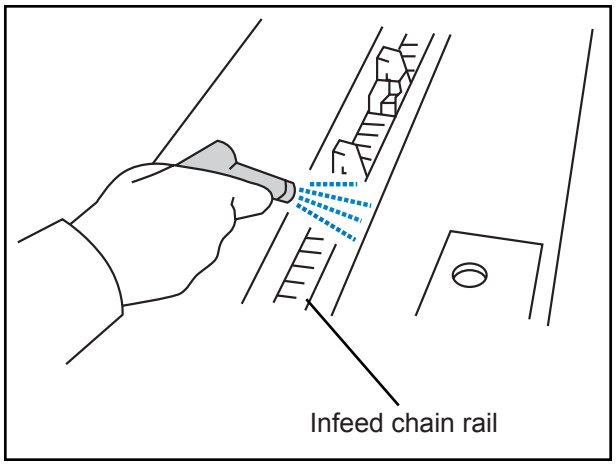


Note

When returning the plates, 1mm clearance is needed for both ends of the top plate.



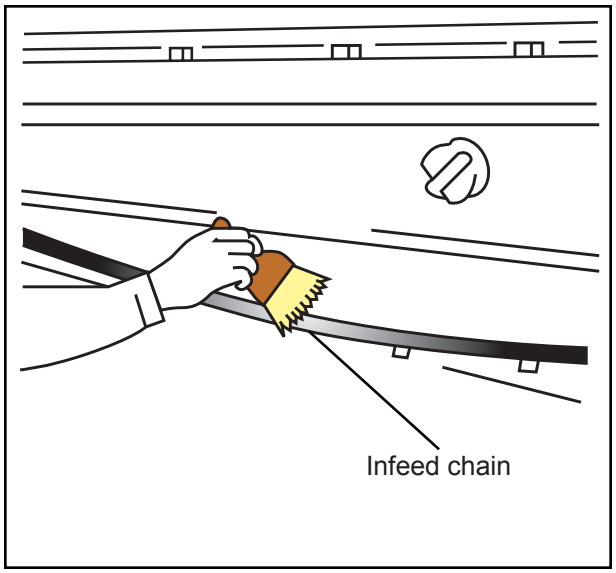
⑤Wipe any dust (product waste) away from the infeed chain and the chain rail with a brush or an air gun. In particular remove dust off of the pusher lugs so that they move smoothly.



Note

When touching the IDLING key and the ENTER key at product change, only the infeed chain turns when operating this machine.

⑥Install them to the original position in the reverse procedure.



Cleaning Center Sealers

WARNING

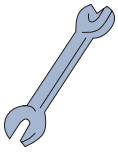
The heated center and end sealers do not get cold as soon as the power supply is turned OFF.

Never touch them with your hand, otherwise, you may get a serious burn.

After the power supply is turned OFF, they will get to normal temperature in 30 minutes.

Tools Needed:

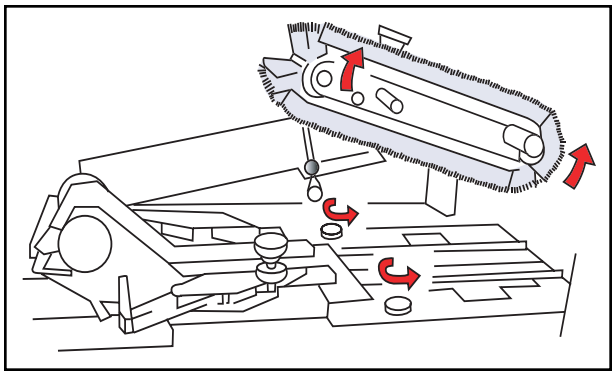
Hexagonal Wrench



Wrench

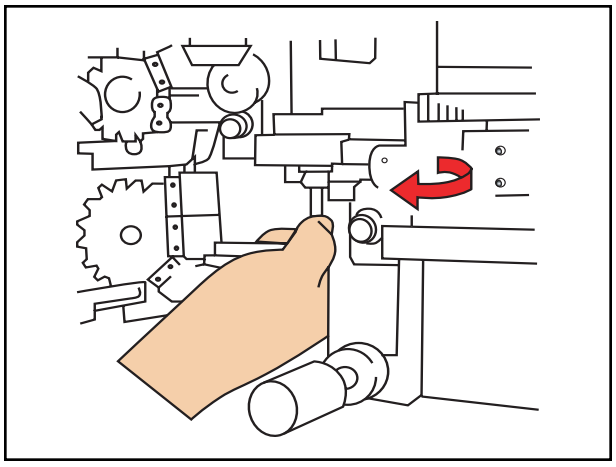
①Open the center cover and the transfer cover.

②Raise the hexagon head bolt and then the center deck plate.



③Remove the bolt and then the bag former.

④Remove the hexagon head bolt and then the center deck plate.



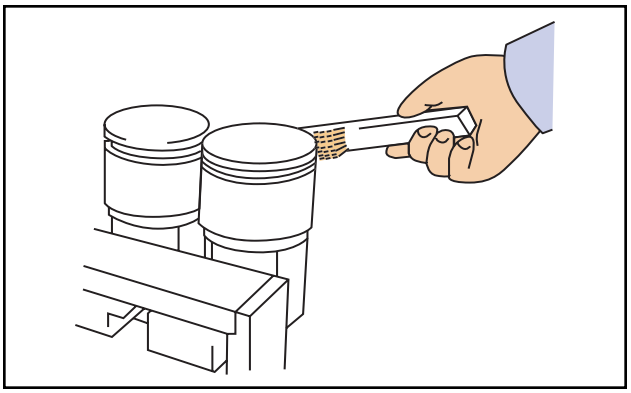
Note

First, remove the plate without a turning-up.

When returning it, install it later.

Turning-up plate

⑤Wipe waste wrapping film off the seal surface with attached wire brush, and lightly apply silicone to the seal surface.



Note

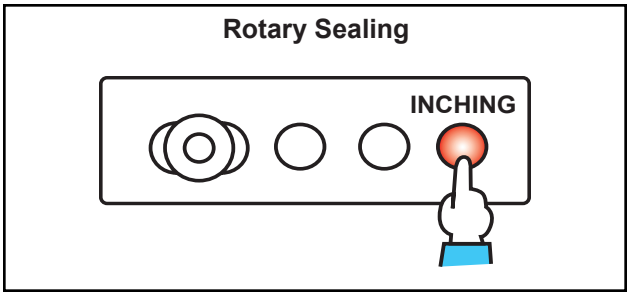
Clean off any stains around the center sealers as well.

Cleaning End Sealers

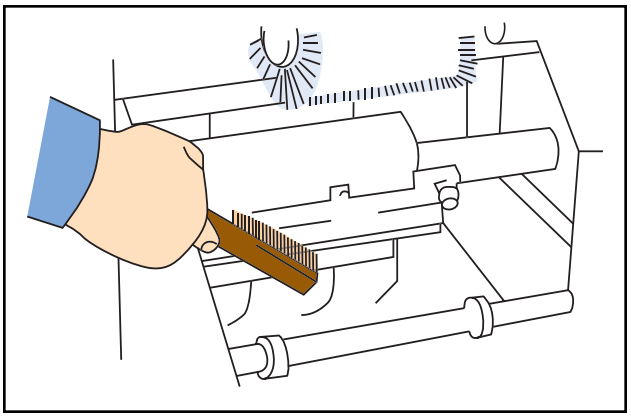
①Press the INCHING button. Stop pressing it when the lower end sealer moves to the position where it can be seen from the discharge side.

②Turn OFF the power supply and wiat until the end sealers become cold.

③Open the end (discharge) cover.



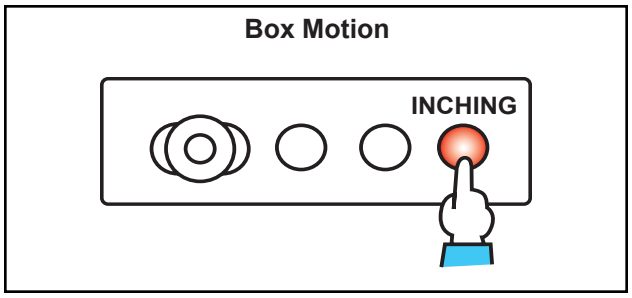
④Wipe waste wrapping film off the seal surface with attached wire brush, and lightly apply silicone to the seal surface.



Note

Clean off any stains around the end sealers and under the discharge conveyor as well.

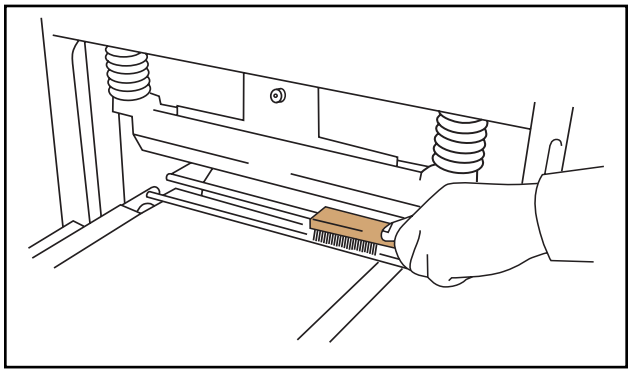
①Press the INCHING button. Stop pressing it when the lower end sealer moves to the position where it can be seen from the discharge side.



②Turn OFF the power supply and wait until the end sealers become cold.

③Open the end upper cover.

④Wipe waste wrapping film off the seal surface with attached wire brush, and lightly apply silicone to the seal surface.



Daily Inspection

Check the following items before starting the operation for safe and effective use of this machine.

① Does the machine stop when opening the safety cover?

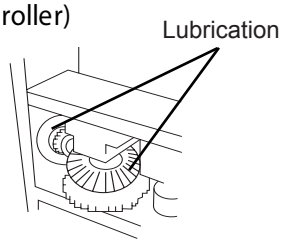
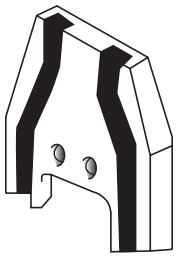
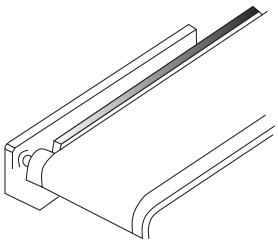
② Do the wiring and piping have an injury or crack?

③ Does the machine stop soon after pressing the EM STOP button?

④ Does the machine emit unusual sounds, smells or vibrations?

Lubrication

Lubricate parts below:

Lubricating parts	Grease to be used	Method	Period
Bevel gear in the center drive unit (Primary seal roller, Secondary seal roller) 	Idemitsu Kosan Daphney Colonex Grease EP-0.	Apply with a brush.	Every 3 months (if machine is run 8 hours per day)
(Box Motion) Cam in the front belt conveyor unit. 	Idemitsu Dosan Daphney Colonex Grease EP-0.	Apply with a brush.	Every 3 months (if machine is run 8 hours per day)
(Box Motion) Forward and backward belt conveyor sliding unit. 	Idemitsu Dosan Daphney Colonex Grease EP-0.	Apply with a brush.	Every 3 months (if machine is run 8 hours per day)

Chapter 10
Adjustment & Replacement
(Mechanical Edition)

This chapter explains mechanical adjustment and replacement for this machine.

Cautions for Maintenance Work

Cautions for Mechanical and Electrical Maintenance

Each user is requested to observe the following cautions in maintaining this machine.

⚠ DANGER

Serious accidents could occur if the following warnings are not followed.

- Mechanical and electrical maintenance must be done by people that specialize in these areas.

- Before maintenance on this machine is done, you must turn OFF the main breaker or power source.

- Please be careful and follow “Chapter 1 Safety Instruction” when power to the machine must be turned on for work.

- Watch out for residual risk.
When turning the power source to the machine OFF, the inverter, servopack, the controller and the noise filter do not discharge right away. Wait 3 minutes after the machine has been turned off before starting maintenance.

- Make sure to clean around the machine and keep everything in order before starting any work.

- Wear suitable and safe working clothes that will not hinder your work.

- Before starting work, prepare all necessary tools and spare parts.

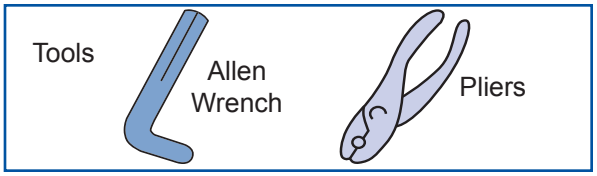
- After completing the work, make sure to clean around the machine and recheck for safety.

- Spare parts
Check spare parts with the Spare Parts List in the tool box.

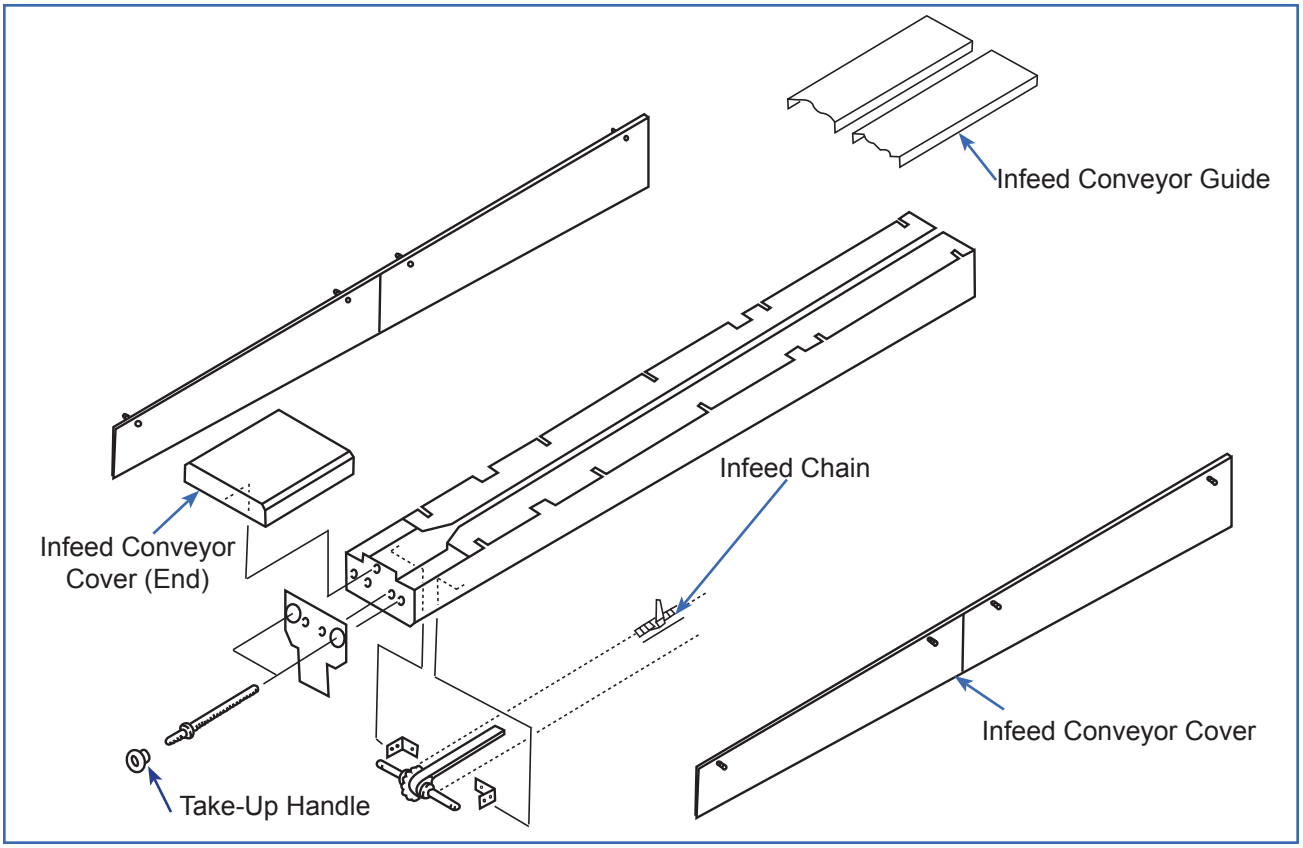
- Tools that come with the machine are options. When purchasing them, check them against the “Spare Parts List” and the list of “Standard Tools”.

Replacing the Infeed Chain

This work is necessary when replacing the infeed chain with a new one of a different pitch, or removing the chain for cleaning.



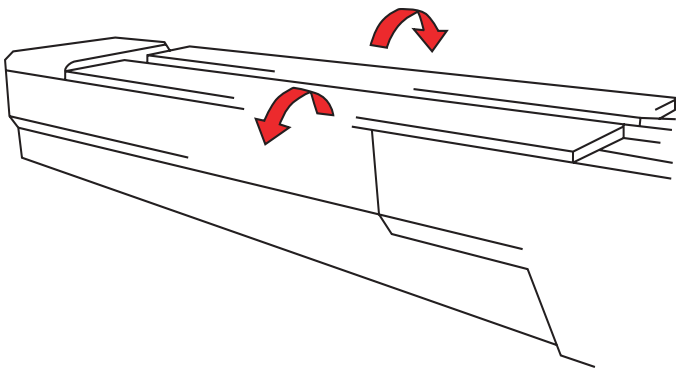
Construction



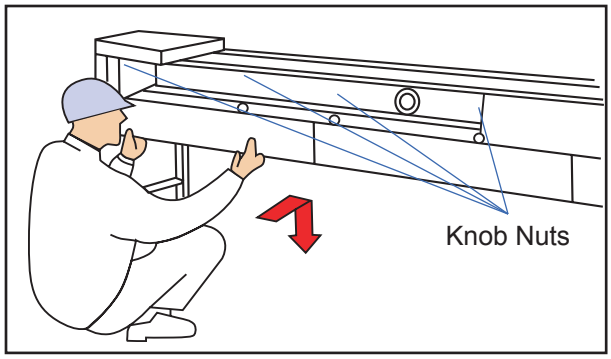
Procedure

(1) Turn the main breaker OFF. If the machine has an air source, turn that OFF as well.

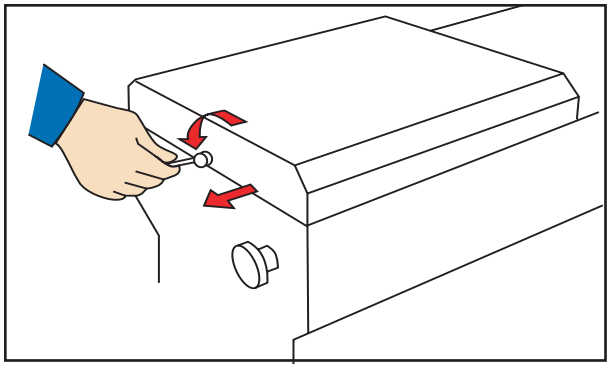
(2) Remove the Infeed Conveyor Guide.



(3) Loosen the knob nuts and remove the 2 infeed conveyor covers on the operating side.



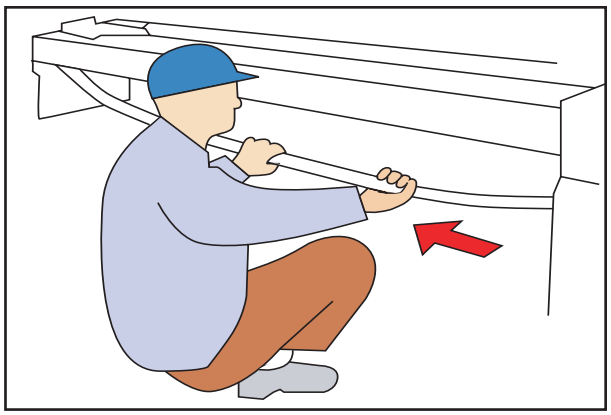
(4) Remove the bolt and the cover on the end of the infeed conveyor.



(5) Rotate the infeed chain manually and find the master link.

Note

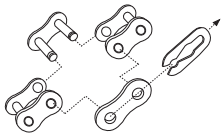
Rotate the infeed chain in its driving direction.

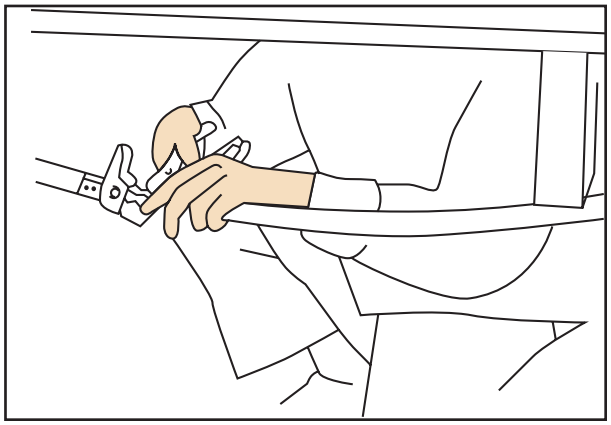


(6) Pull out the pin with the pliers and remove the master link.

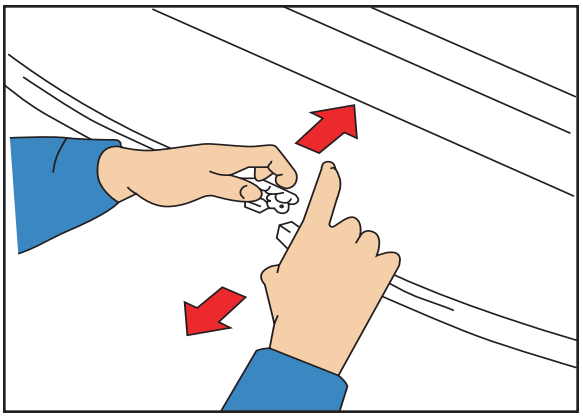
Note

Do not loose the the master link. Be sure to keep them in a safe place.





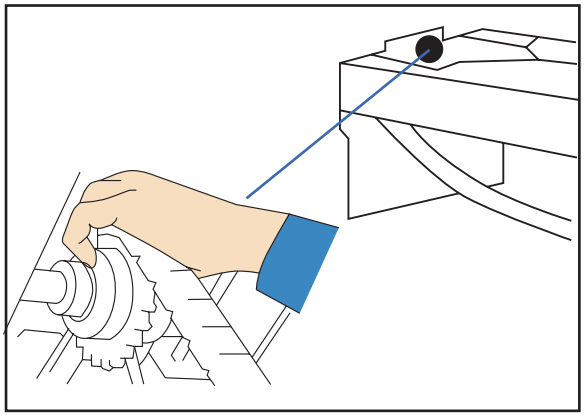
(7) Remove the infeed chain.



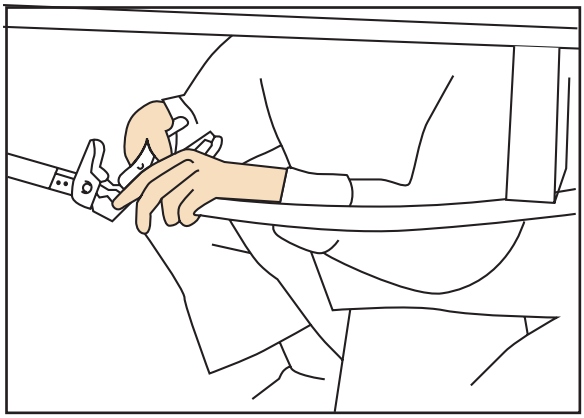
Note

Wash the removed infeed chain with hot water.

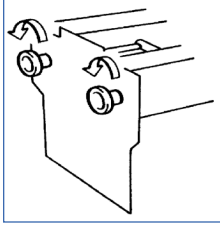
(8) Install the chain that you need.



(9) Attach the master link.

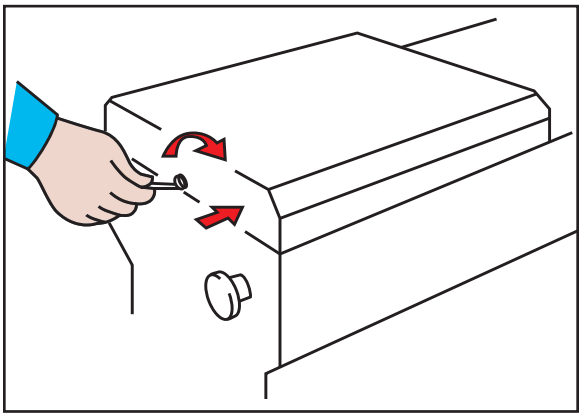


Note

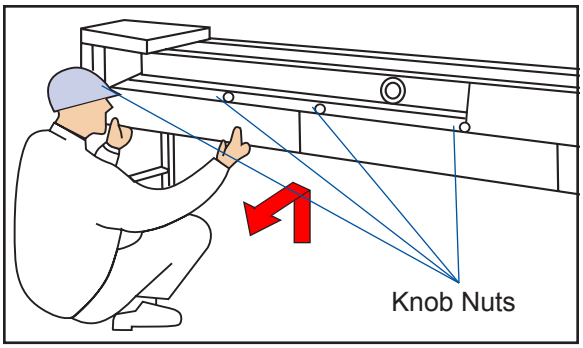


If you have difficulty in attaching the master link, then loosen the take-up handles.

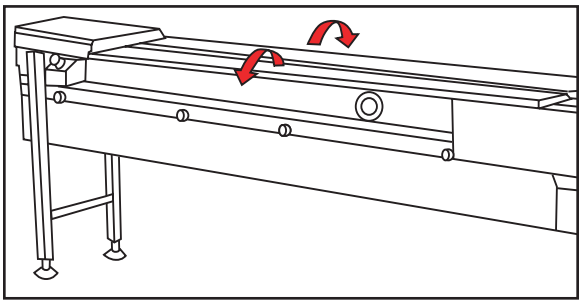
(10) Install the cover to the end of the infeed conveyor, and secure with a bolt.



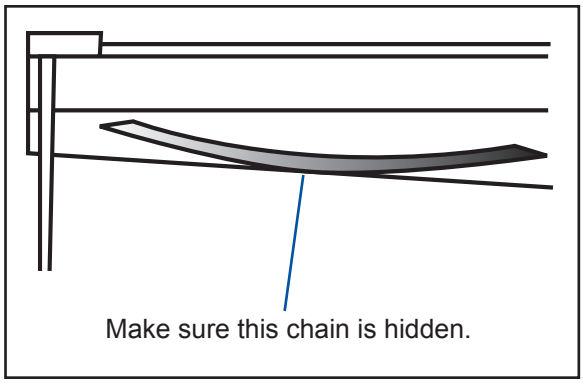
(11) Fix the 2 covers that you removed from the infeed conveyor by the knob nuts.



(12) Install the infeed conveyor guides.



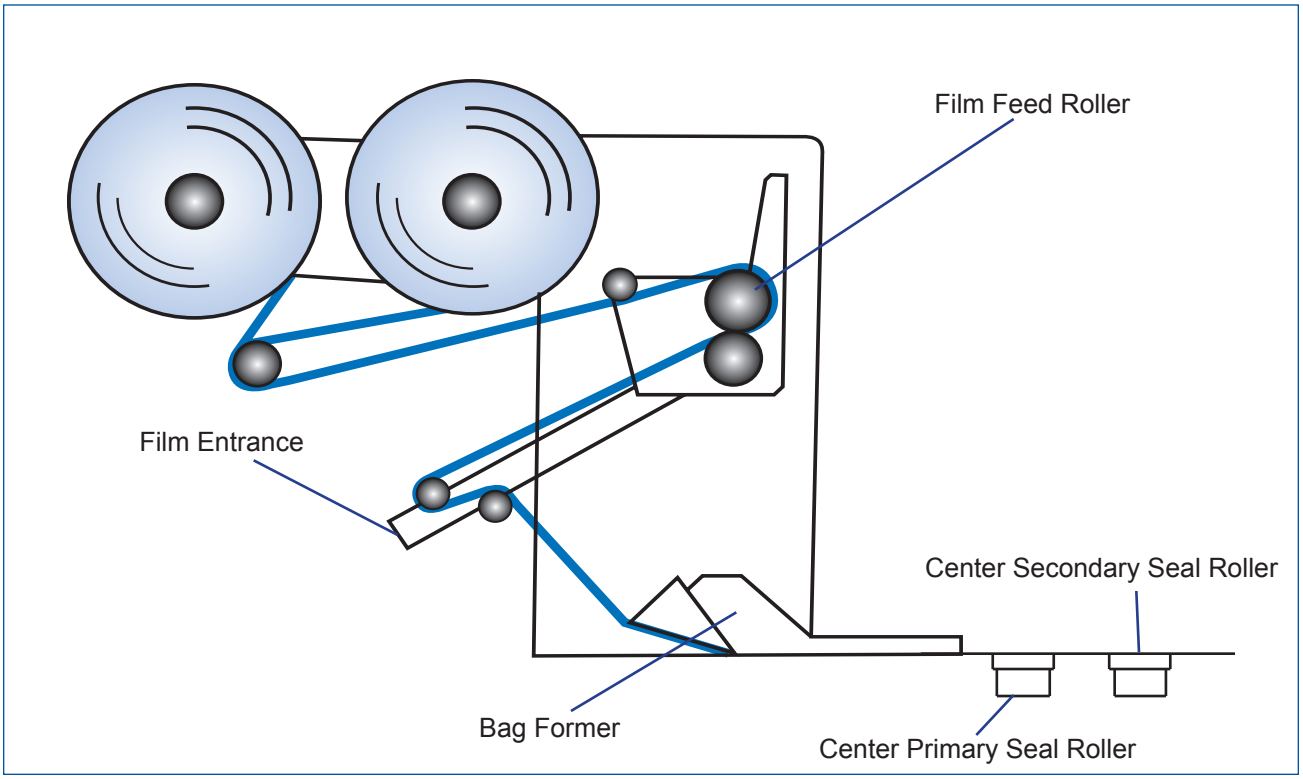
Fix the cover properly so that the chain is totally hidden by it. Use the take-up handles to adjust the position properly.



Adjusting the Bag Former

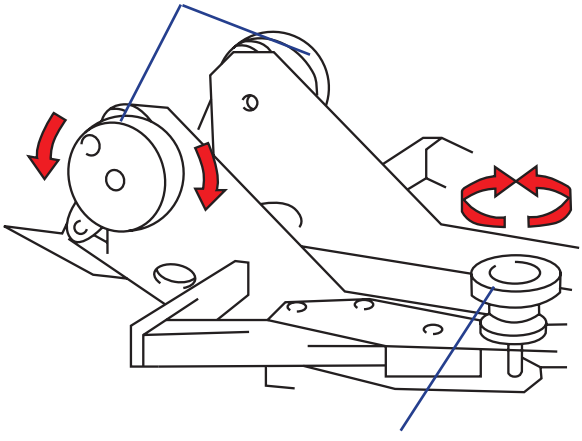
This work is necessary for stable wrapping.

Construction



Procedure

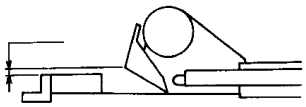
Bag Former Height Adjusting Handle



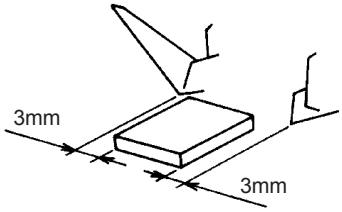
(1) Adjust the width of the bag former and the height of the wings.

Note

Set the wing height to about 3mm higher then the pusher lug (the product).

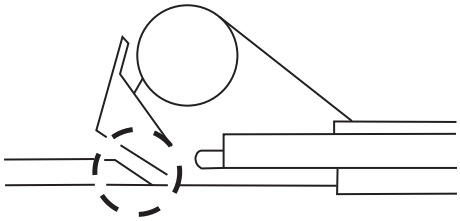


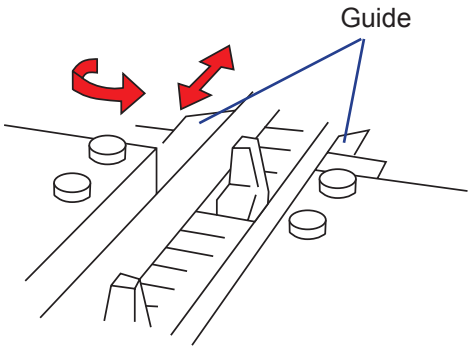
Set the width of the bag former to about 3mm wider then the product.



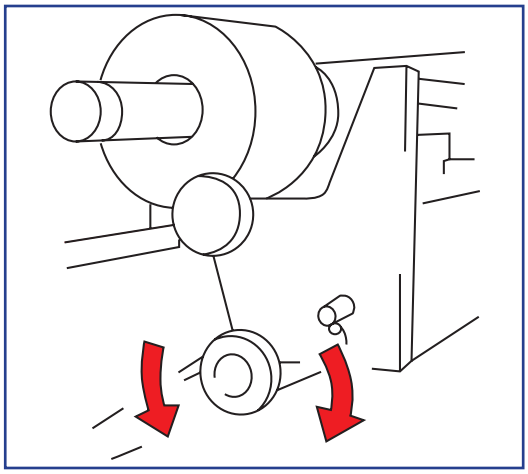
Note

Move the guide of the infeed conveyor or the bag former so that they do not hit each other at the section marked by a ( ) .

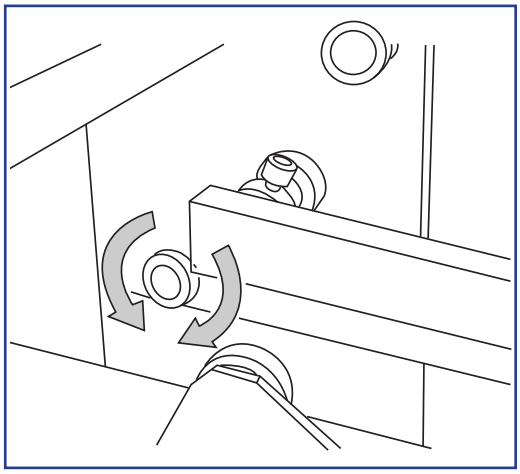




(2) Determine the angle at which the film enters the bag former.

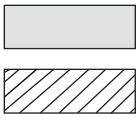


(3) Adjust the tension of the film by turning the primary roller adjusting handle



Adjustment of the Film Tension

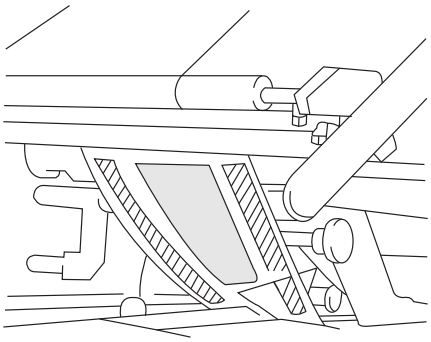
Adjust the tension of the film between the feed roller and the center primary seal roller.
The film tension should be adjusted so that
the tension on the left and right side of the film
is a little tighter than that of the center.



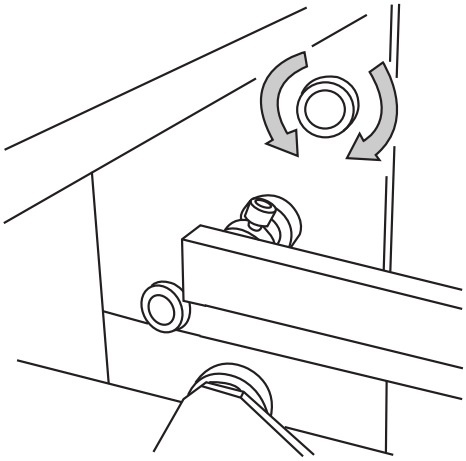
Tension is tight

Tension is loose

Turning the handle clockwise will turn the center primary seal roller faster, and the film tension will be tighter.
Turning the handle counterclockwise will turn the center primary seal roller slower, and the film tension will be looser.



(4) Adjust the center film tension by turning the secondary roller.



Adjustment of the Center Film Tension

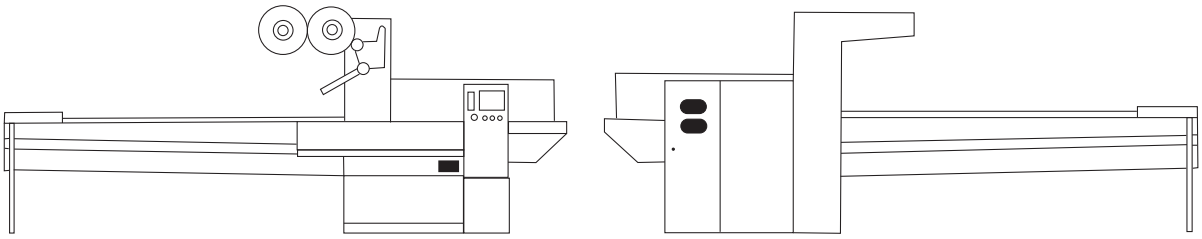
Adjust the film tension between the center primary seal roller and the center secondary seal roller.
Adjust the film so that a center sealed part will not be wrinkled.

Turning the center tension adjusting handle clockwise will turn the center secondary seal roller faster, and the tension of the film at the center sealed part will be tighter.

Turning the center tension adjusting handle counterclockwise will turn the center secondary seal roller slower, and the tension of the film at the center sealed part will be looser.

Cleaning The Slip Ring

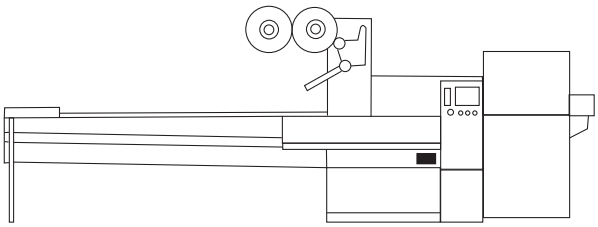
Rotary Sealing



Secondary Roller Unit

End Seal Drive Unit

Box Motion



Secondary Roller Unit

Cleaning the Slip Ring is necessary when a stable current temperature is not displayed due to dirt or other accumulation on the slip rings.

Tools

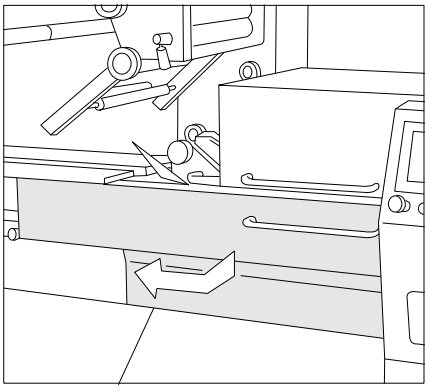
Allen Wrench

Pliers

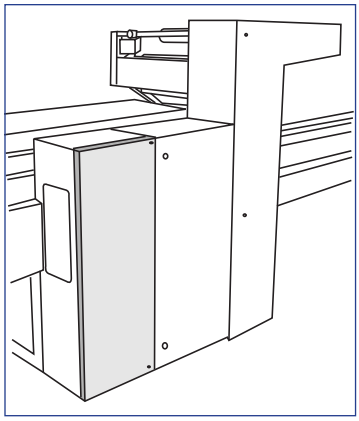
Procedure

(1) Turn the main breaker OFF.
If the machine has an air source turn it Off.

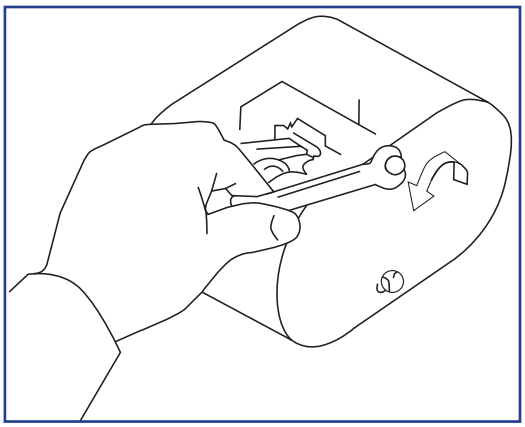
(2) If the machine has a secondary roller unit, open the center cover and lower the cover.



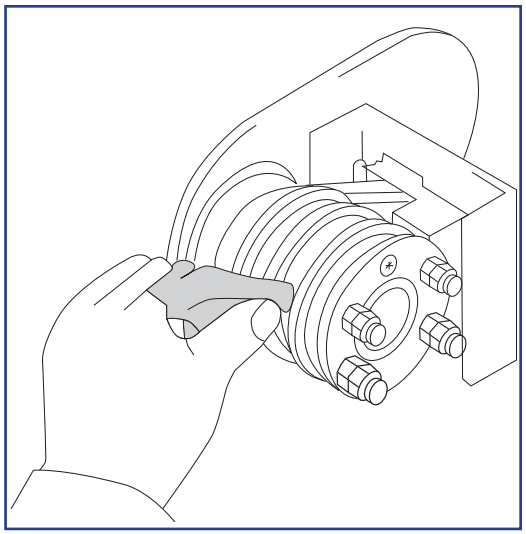
(2a) If the machine has an end seal drive unit, open the cover on the back side.



(3) Remove the slip ring cover.



(4) Completely remove the dirt from the slip ring surface with a cloth.



Note

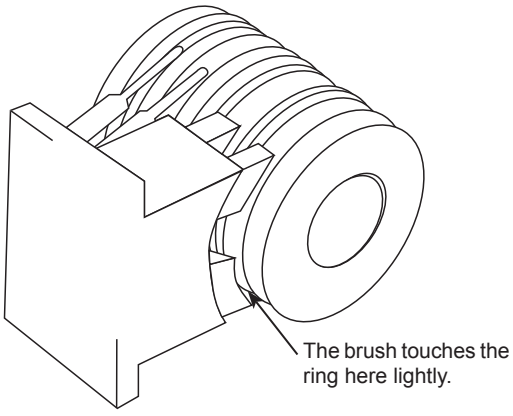
If the surface is too greasy, clean it with a cloth moistened with alcohol.

Recommended cleanser:
Contact point cleaner
Sanhayato RC-226 etc.

Note

Thoroughly clean the ring surface by turning the slip by hand.

Arrange the brush and ring positions so that the brush lightly touches the ring.



Replacing Timing Belt

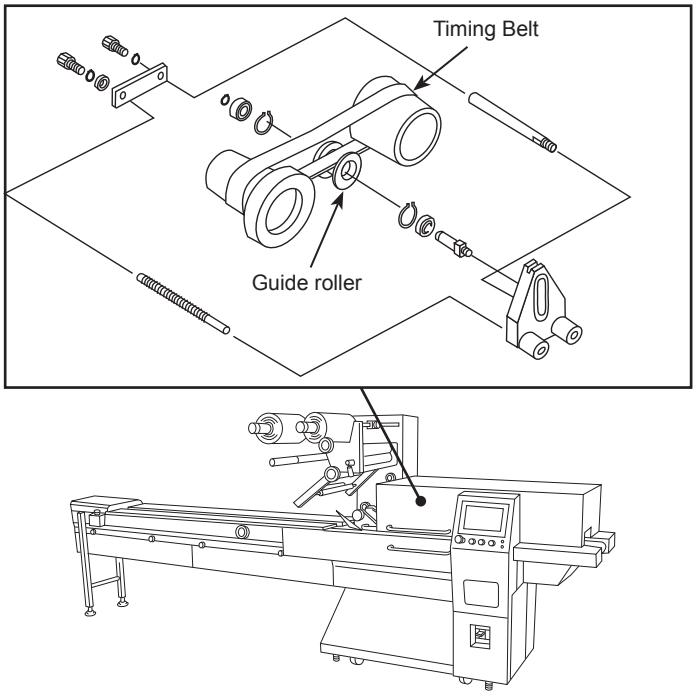
⚠ WARNING

The heated Center Sealers do not get cold as soon as the power supply is turned OFF. Never touch them with your hand, or a serious burn could result.

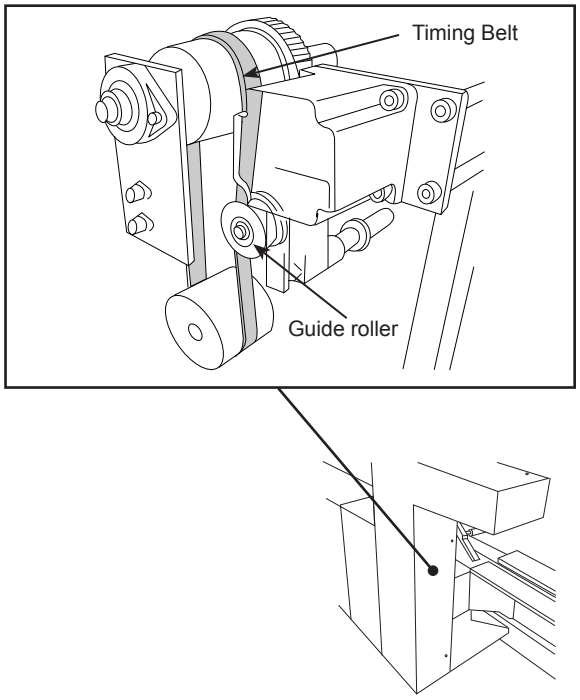
After power supply is turned OFF, the Center Sealers will return to normal temperature in 30 minutes. Use caution whenever handling the hot End Sealers.

Construction

Center Side

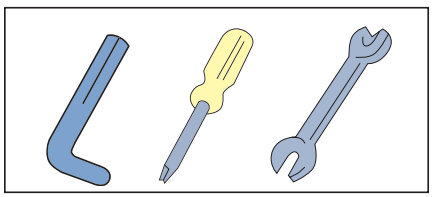


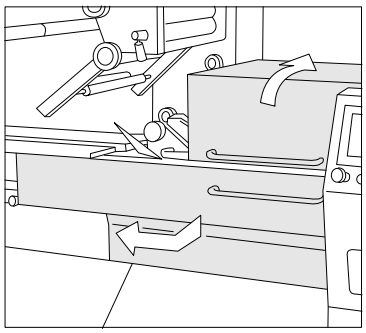
Film mounting from side



Procedure for Replacing the Timing Belt on the Center Side

Tools needed

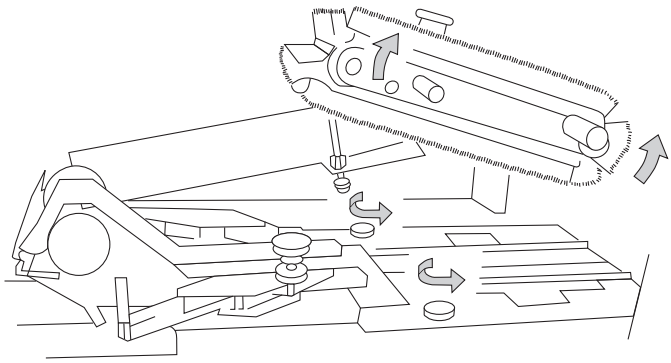




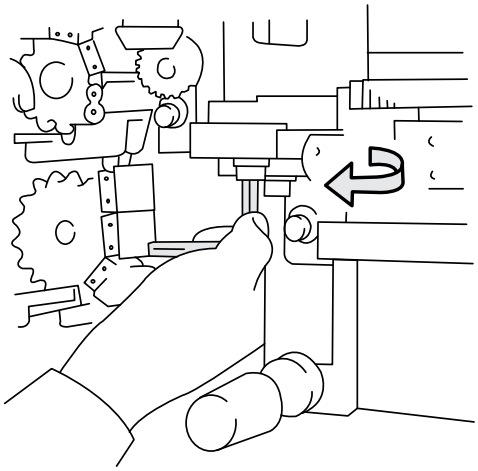
(1) Turn the main breaker OFF. If the machine has an air source, turn it OFF.

(2) Open the center cover and the transfer cover.

(3)Raise the Transfer Brush.



(4) Remove the bolt and the bag former.

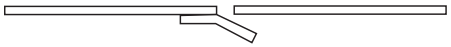


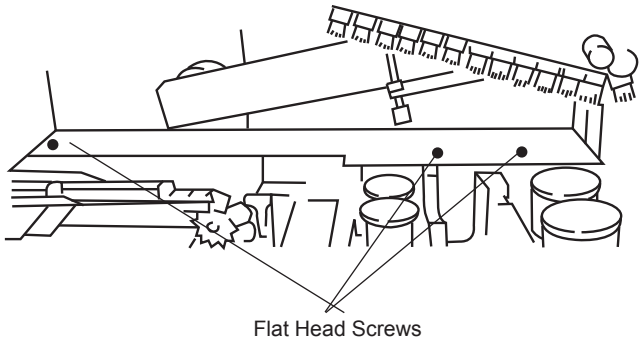
((5) Remove the hexagon head bolt and the center seal deck plates.

Note

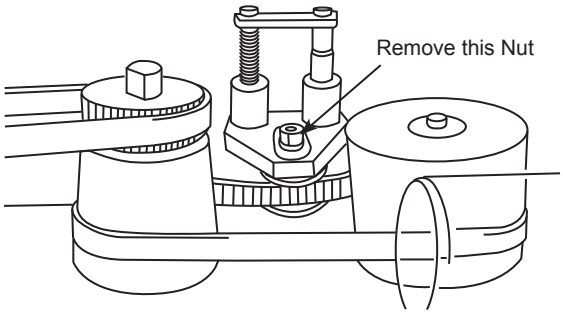
First, remove the plate without the fin seal fold tab turning up plate.

When installing, put the plate without the finseal turning-up plate on last.

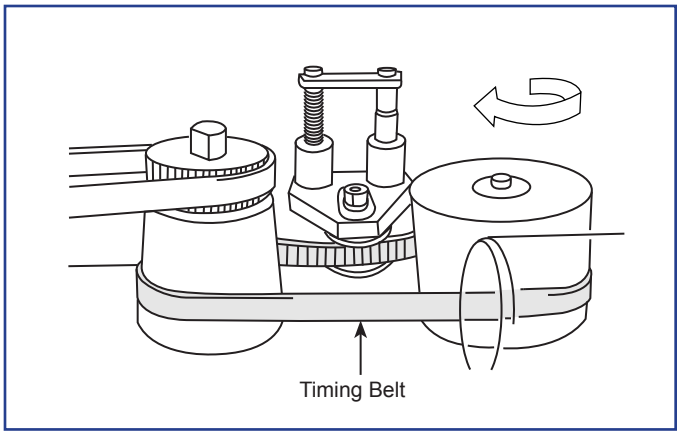




(6) Remove the cover above the center drive unit using a phillips-head screwdriver to remove the three flat head screws.



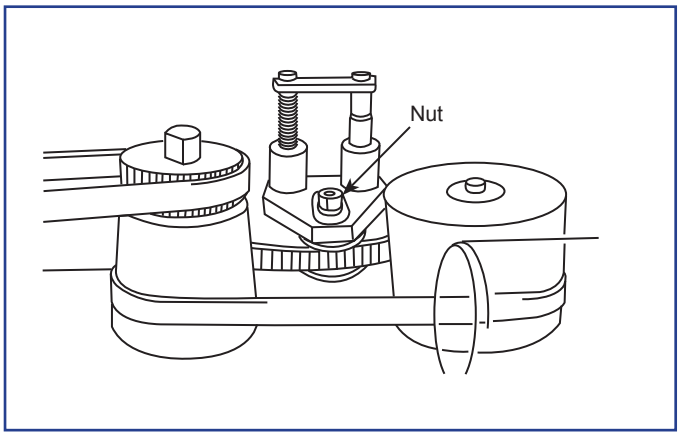
(7) Remove the nut to remove the nut so the guide roller canbe removed.



(8) Remove the timing belt and install the belt you want.

Note

After installing the timing belt, turn the cone pulley a few times manually. This will allow the tension of the timing belt installed to be adjusted properly.

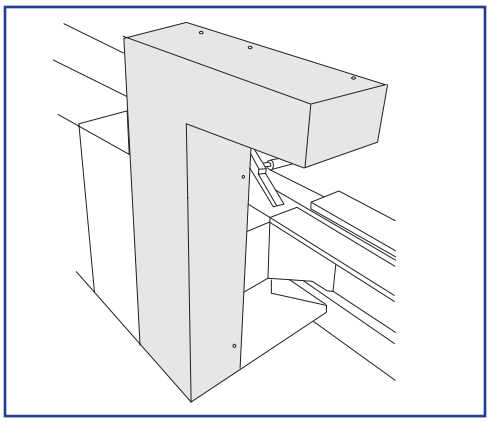


(9) Install the guide roller and tighten the nut.

Note

Install the guide roller so that the belt fits into it.

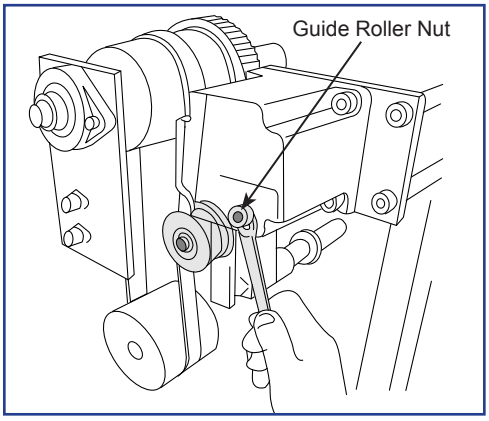
After installing the timing belt and the guide roller, install the cover and so on in the reverse procedures.



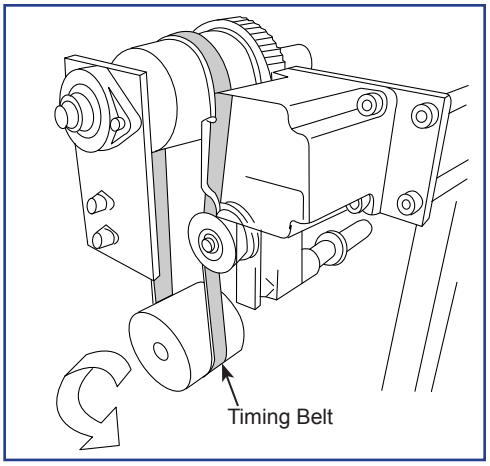
Replacing the Timing Belt on the Film Mounting Frame Side.

(1) Turn the main breaker OFF.
If the machine has an air source, turn it OFF.

(2) Loosen the screws and remove the Scaffold cover.



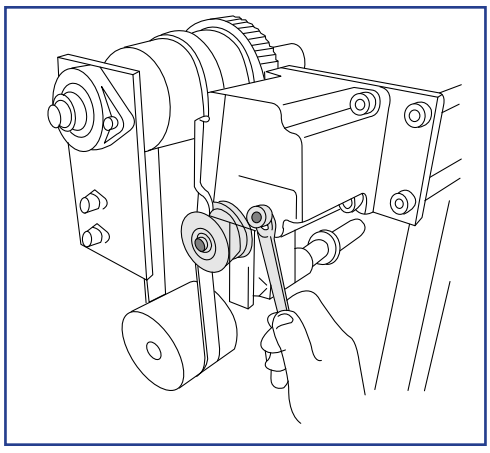
(3) Remove the guide roller nut and the guide roller.



(4) Remove the Timing belt and install the belt you want.

Note

After installing the timing belt, turn the cone pulley a few times manually. This will allow the tension of the timing belt installed to be adjusted properly.



(5) Install the guide roller and guide roller nut.

Note

Install the guide roller so that the belt fits into it.

Adjusting End Sealers (Rotary Sealing)

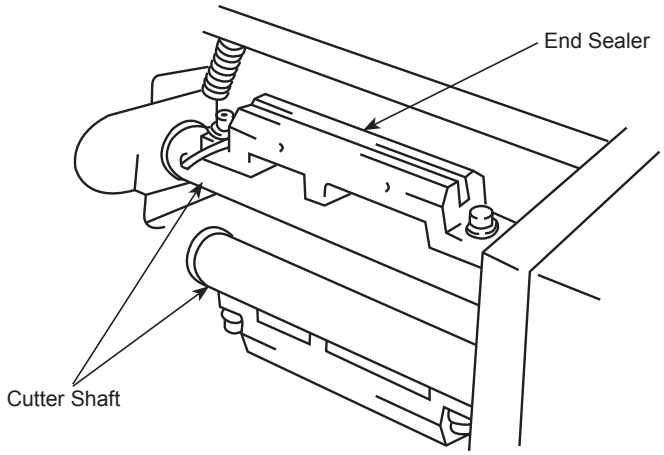
Adjusting the End sealers is necessary when the End sealers are disassembled for replacement or when the engagement of the upper and lower sealers is misaligned.

⚠ WARNING

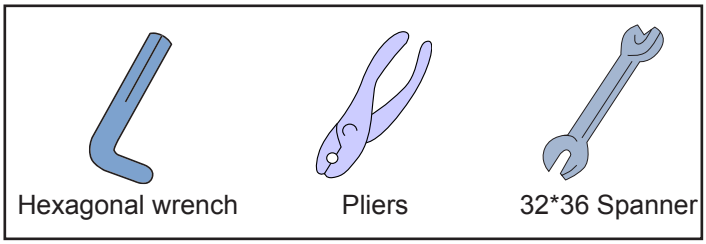
The heated center sealers do not get cold as soon as the power supply is turned OFF. Never touch them with your hand, otherwise serious burn injury may occur.

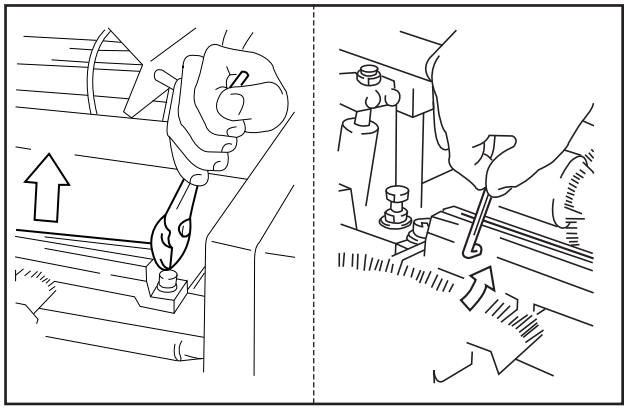
After the power supply is turned OFF, the sealers will return to normal temperature in 30 minutes. Use extreme caution when handling End sealers that are not completely cooled.

Construction



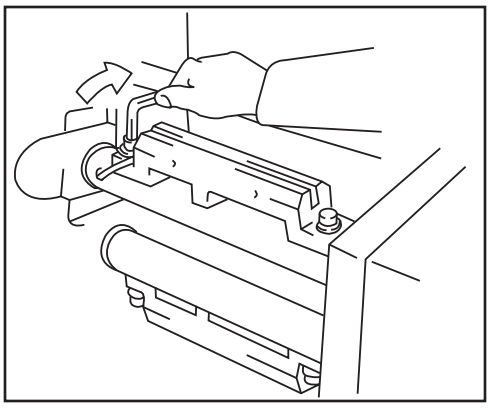
Tools needed



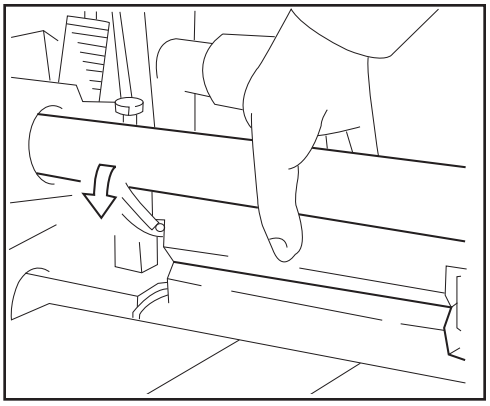


(1) Turn OFF the main breaker.
If the machine has an air source, turn it OFF.

(2) After making sure that the upper and lower end sealers have cooled sufficiently, loosen the set bolts and remove the knife.

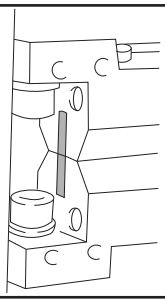


(3) Fix the upper and lower end sealers firmly onto the shaft.



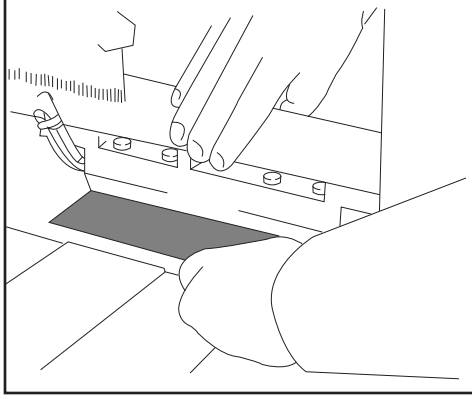
(4) Turn the shaft by hand and let the upper and lower end seal ers engage.

Note

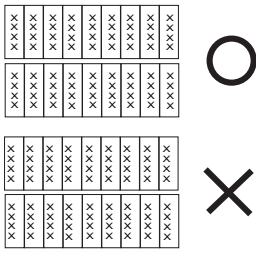


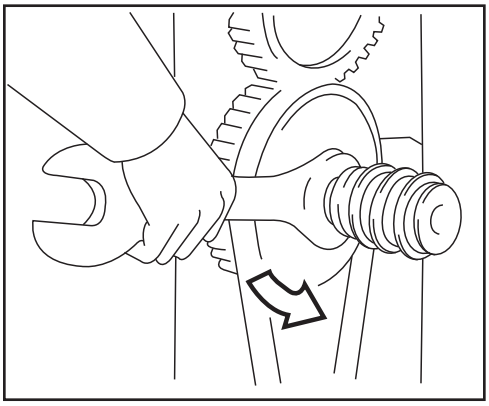
Repeat steps (3) and (4) until the knife grooves of both sealers match.

Note



Use two sheets of carbon paper and match the grooves as shown in the figure.





(5) If you fail to match them in this way, then loosen the lock nut once using the 32~36 wrench and adjust the sealers engagement properly.

Replacing and Adjusting Knife (Rotary Sealing)

When the cutting efficiency of the knives becomes poor, replace them.

⚠ WARNING

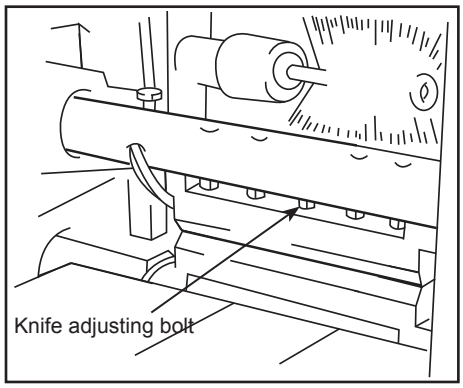
The heated center sealers do not get cold as soon as the power supply is turned OFF. Never touch them with your hand, otherwise serious burn injury may occur.

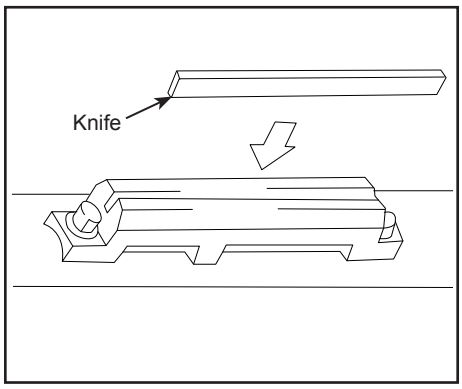
After the power supply is turned OFF, the sealers will return to normal temperature in 30 minutes. Use extreme caution when handling End sealers that are not completely cooled.

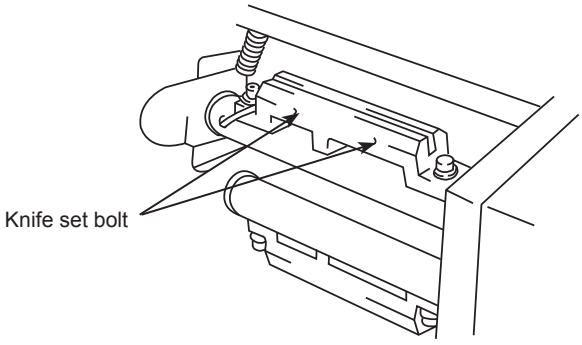
⚠ CAUTION

Be careful in replacing the knives and set film even after turning off the power supply. Your fingers may be cut by the blades of the knives.

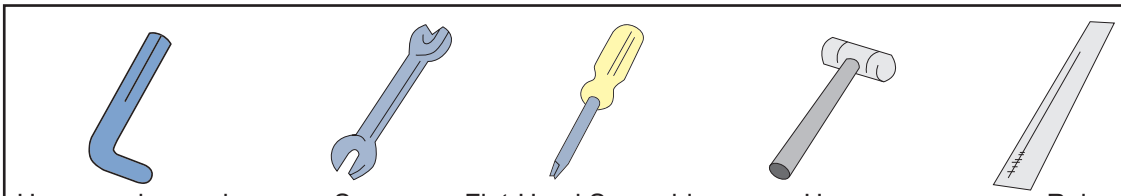
Construction





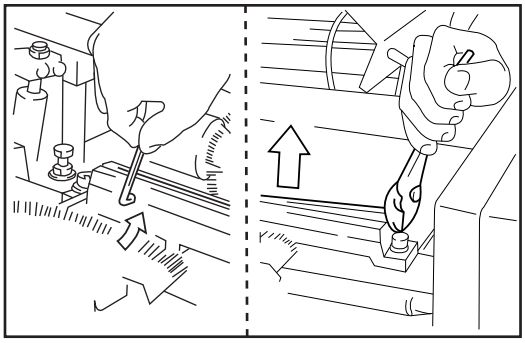


Tools needed:



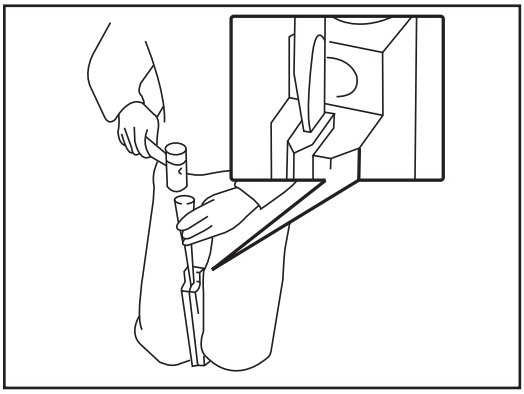
Replacing the Knife

Procedure



(1) Turn the main breaker OFF.
If the machine has an air source, turn it OFF.

(2) After making sure that the upper and lower end sealers have cooled sufficiently, loosen the set bolts and remove the knives.

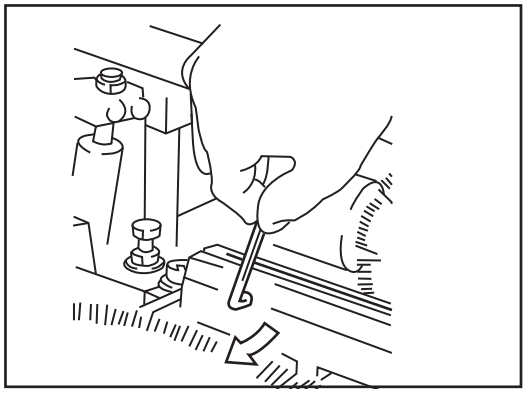


(3) If it is difficult to remove a knife, remove the sealer body with the knife attached to it. Strike the knife with the wooden hammer to remove it.

Note

Also clean the knife groove.

(4) Mount the end sealers.

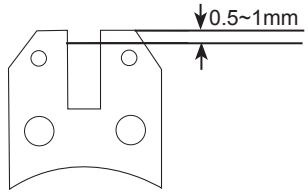


(5) Mount a new set of knives.

Note

Be sure to replace both the top and bottom knives at the same time.

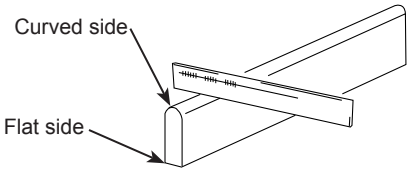
Apply attached silicone grease to the knives.



Note

Confirm that the blade tip of the bottom knife is 0.5-1mm below the sealing surface.

Before setting the tip knife, push back the push bolt before hand.

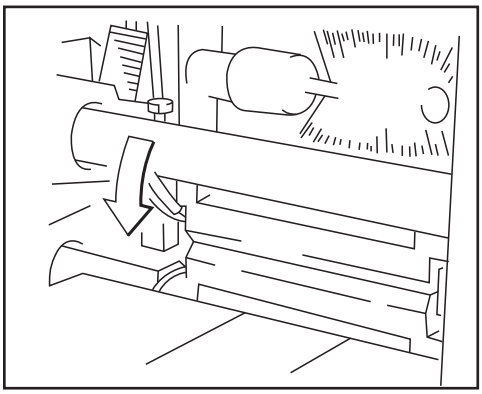


Note

In case of a straight knife, set the bottom knife with its' flat side facing up.

In case of a knife with teeth, set the bottom knife with its' curved side facing up.

Adjusting the Knife

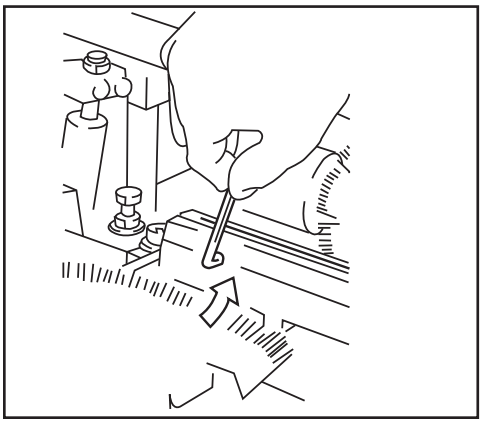


(1) Turn ON the main breaker.
If the machine has an air source, turn it OFF.

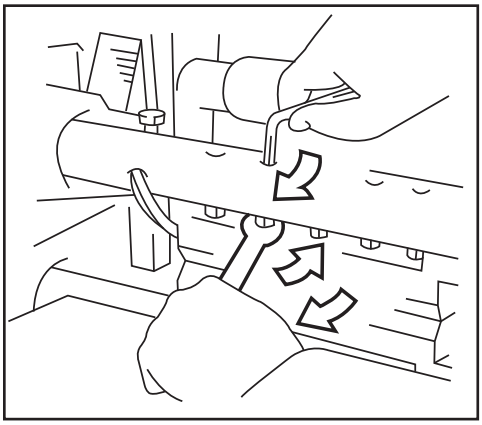
Note

Be sure to wear workin gloves during adjustment.

(2) After making sure that the heater is warm, let the upper and lower end sealers engage.



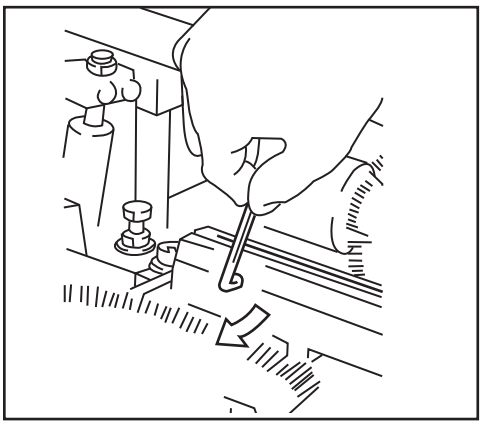
(3) Loosen the knives set bolts on the upper sealer.



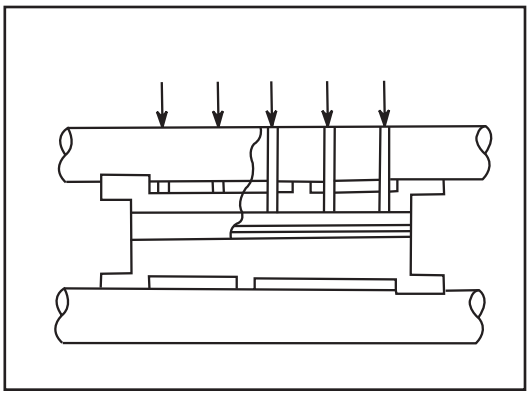
(4) Using the knife pushbolt, let the knife blade closely contact the knife blade of the lower sealer.

Note

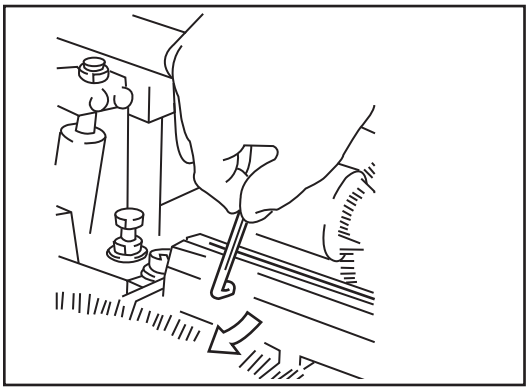
Tighten the bolt to adjust the knife position so that the knife blade end lightly contacts the bottom knife blade.



(5) Temporarily fix the knife with the knife set bolt.

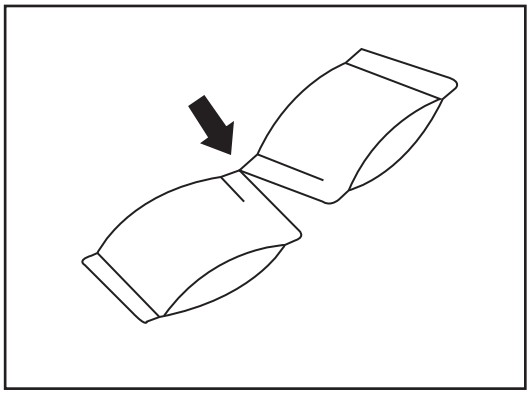


(6) As shown in the figure, tighten the knife adjusting bolts so that the bolts will press the knife lightly.



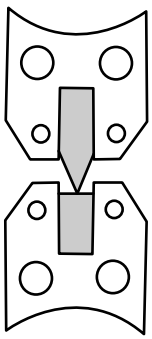
(7) Firmly tighten the knife set bolts.

(8) Pass the film through and operate the machine to check how the knives cut it.



(9) If the film is not cut properly and some portion is left uncut, returen to step (6) and retughten the bolts so that the uneven cutting is corrected.

Note



An excessively protruding top knife edge will produce a big shock when two knife blades engage.

In this case, the top knife blade should be slightly retracted and fixed evenly.

An excessively protruding knife also reduces the cutting efficiency.

Adjusting End Sealers (Box Motion)

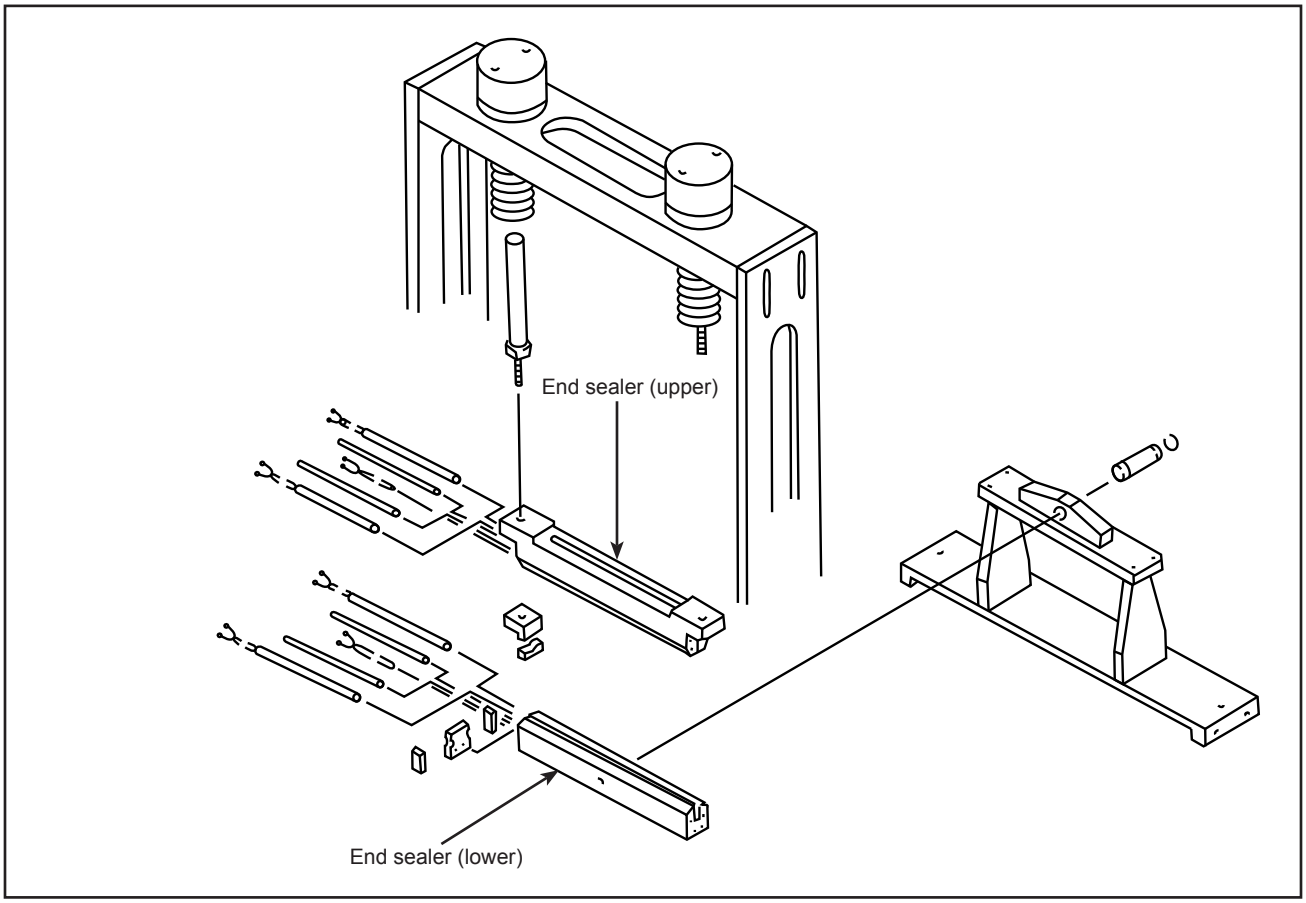
Adjusting the End Sealers is necessary when the end sealers are disassembled for replacement of the heater or when the engagement of the upper and lower sealers are misaligned.

⚠ WARNING

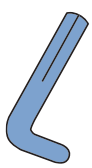
The heated Center Sealers do not get cold as soon as the power supply is turned OFF. Never touch them with your hand, or a serious burn could result.

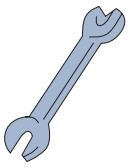
After power supply is turned OFF, the Center Sealers will return to normal temperature in 30 minutes. Use caution whenever handling the hot End Sealers.

Construction

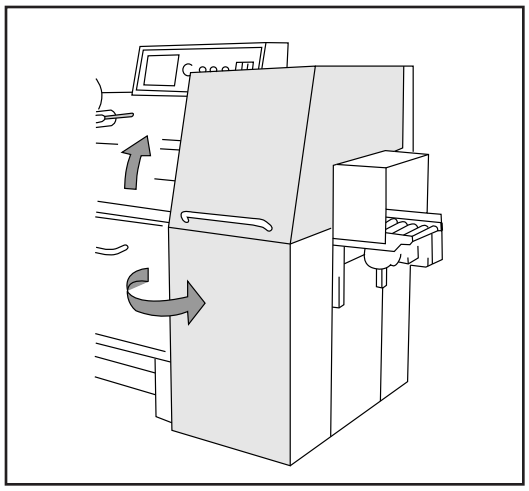


Tools needed:


Hexagonal wrench


Spanner

Procedure

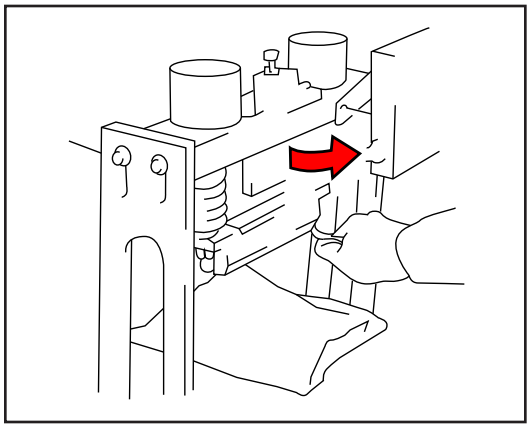


(1) Move the end sealers to the position where the opening is the widest.

(2) Turn OFF the main breaker and confirm that the heater has cooled.

(3) Open the end upper cover and the end lower cover.

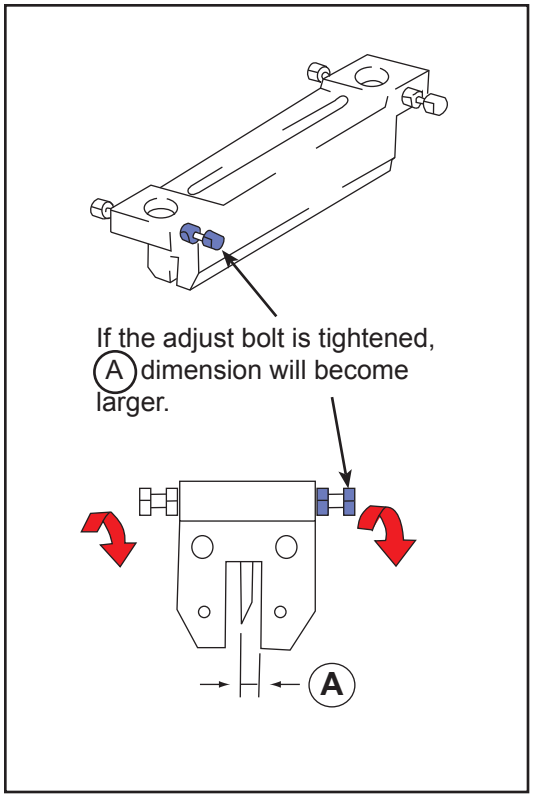
Positioning Upper End Sealer



(4) Loosen the set bolt at the far end of the sealer first and then temporarily tighten it.

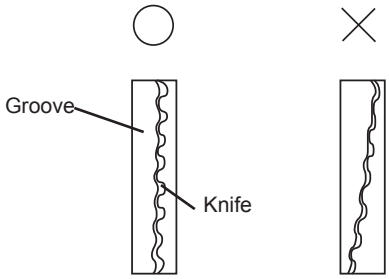
Note

If the setting of the nearer side is tight, unscrew the bolt by 1/4 revolution with a wrench.



(5) Adjust the sealer position so that the knife blade fits the center of the sealer groove.

Note

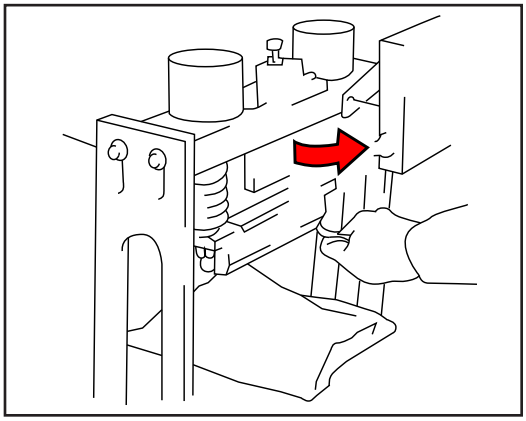


Note

Tighten the pair of adjusting bolts evenly to avoid uneven tightening or shaking of a knife.

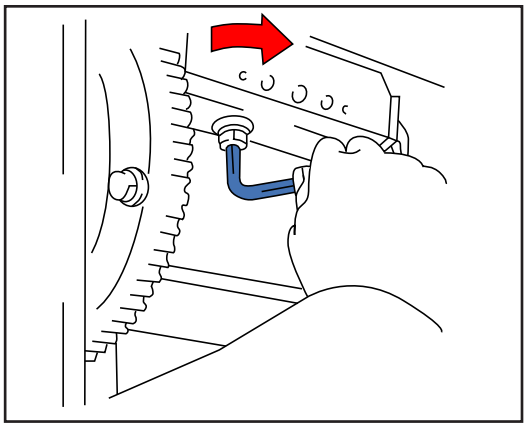
Note

Be careful to make sure that the nuts are tightened.



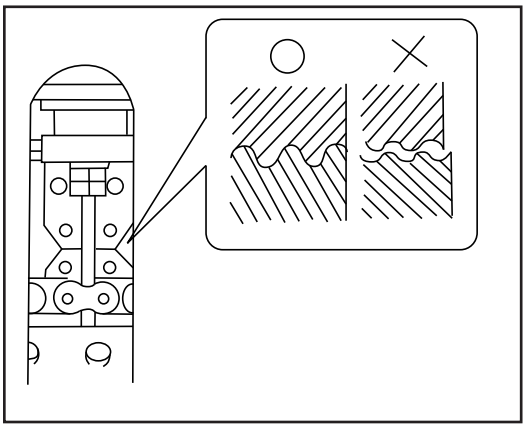
(6) Tighten the bolt at the far end of the sealer.

Positioning Lower End Sealer



(7) Loosen the bolt that fixes the bracket.

(8) Manually rotate the end sealer drive motor and let the upper and lower end sealers contact.



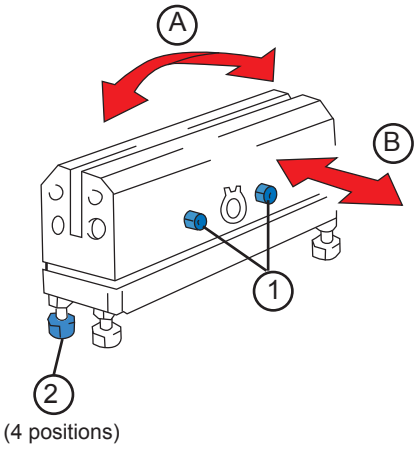
(9) Adjust the position of the lower sealer so that it fits the upper sealer properly.

(10) Firmly tighten the bolt that fixes the bracket.

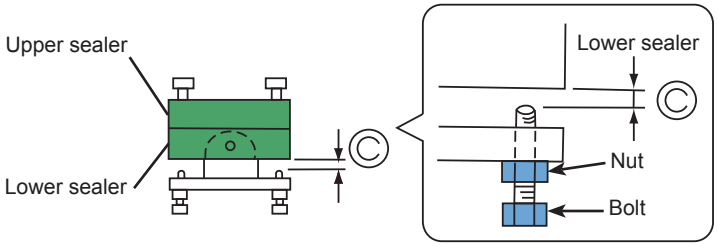
Note

Make sure that the position of the sealer is not misaligned.

Note



The bolt shown in the figure marked ① restricts the movement in the direction of Ⓑ. Excessive tightening of it will disturb the lower sealer movement in the Ⓐ direction.



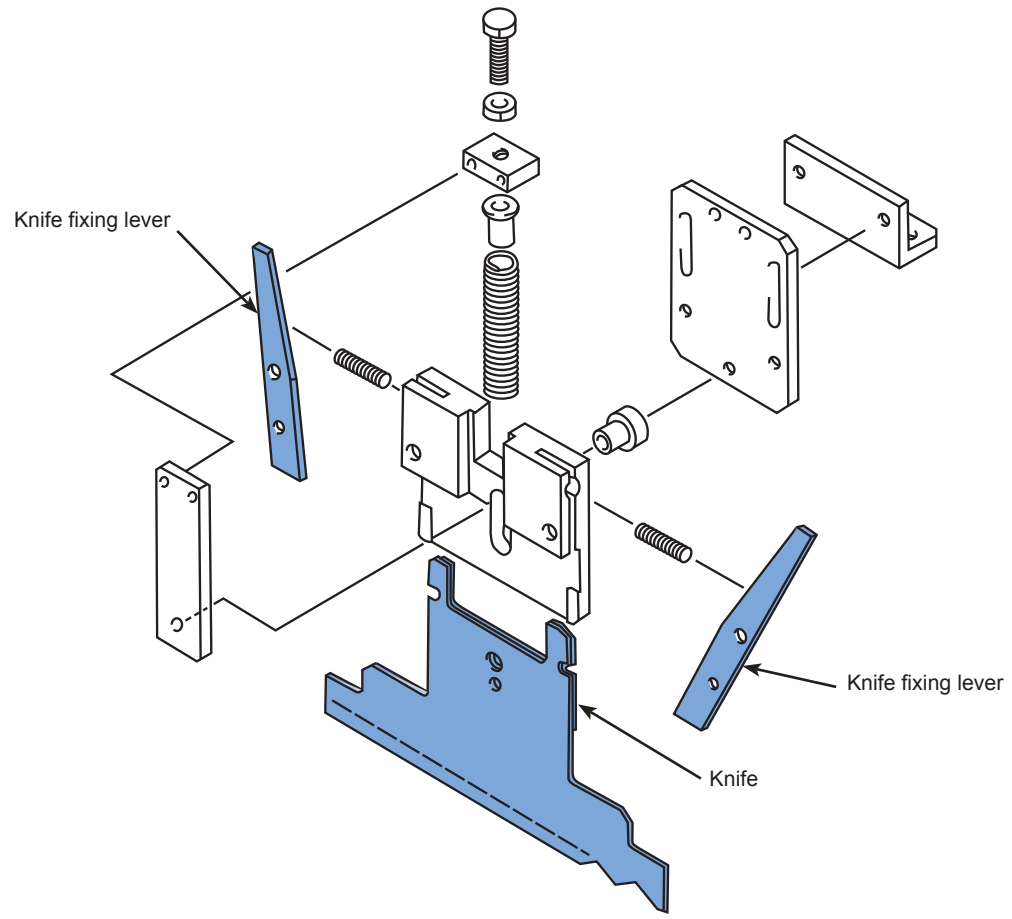
Tighten the nuts to fix the bolts marked ② so that the clearance manked Ⓒ in the figure becomes 0.3 to 0.5 mm at both ends when the upper and lower sealers completely engage.

Replacing Knife (Box Motion)

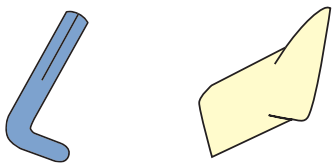
CAUTION

Be careful in replacing the knives and set film even after turning off the power supply. Your fingers may be cut by llades of the knives.

Construction

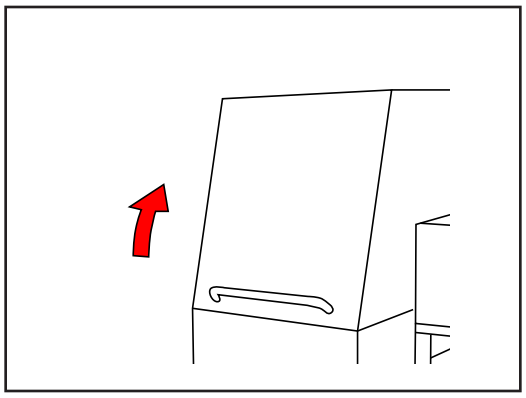


Tools needed



Hexagonal wrench Cloth

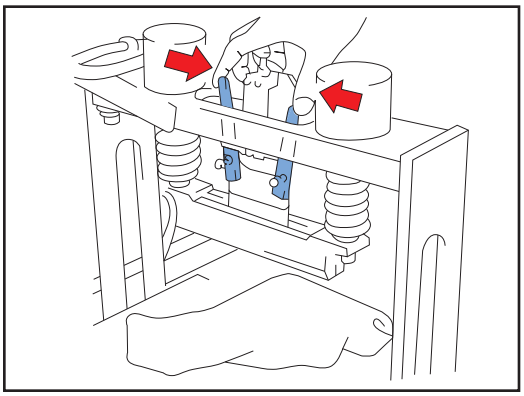
Procedure



(1) Move the end sealers to the position where the opening is the widest.

(2) Turn OFF the main breaker and confirm that the heater has cooled.

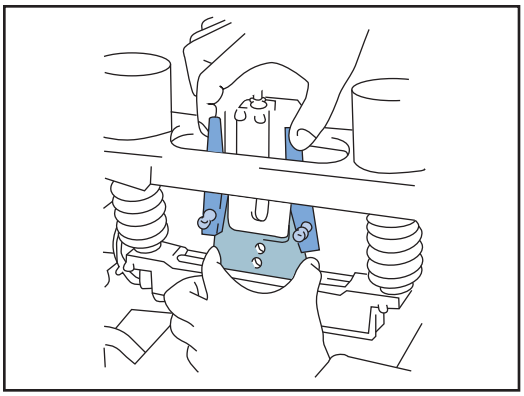
(3) Open the end upper cover.



(4) Pull down the two levers shich fix the knife, toward the inner side, and remove the knife.

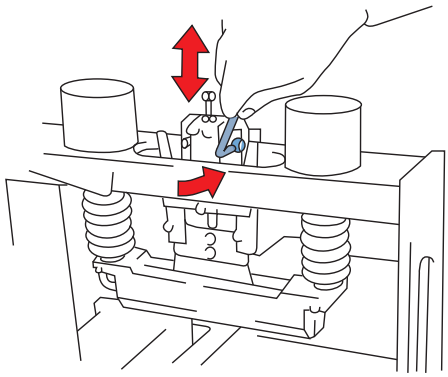
Note

Place a thick cloth on a flat surface and put the removed knife on it.

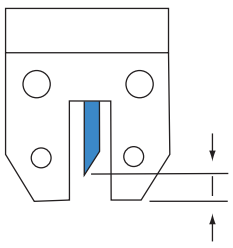


(5) fit a new knife into the groove, open the levers and fix it.

Note



If the knife is not set properly, loosen the bolts and fix it correctly.



Approx. 2mm is appropriate.

Chapter 11
Adjustment & Replacement
(Electrical Edition)

This chapter explains Electrical maintenance for this machine.

Cautions for Maintenance Work

Cautions for Mechanical and Electrical Maintenance

Each user is requested to observe the following cautions in maintaining this machine.

⚠ DANGER

Serious accidents could occur if the following warnings are not followed.

- Mechanical and electrical maintenance must be done by people that specialize in these areas.

- Before maintenance on this machine is done, you must turn OFF the main breaker or power source.

- Please be careful and follow “Chapter 1 Safety Instruction” when power to the machine must be turned on for work.

- Watch out for residual risk.
When turning the power source to the machine OFF, the inverter, servopack, the controller and the noise filter do not discharge right away. Wait 3 minutes after the machine has been turned off before starting maintenance.

- Make sure to clean around the machine and keep everything in order before starting any work.

- Wear suitable and safe working clothes that will not hinder your work.

- Before starting work, prepare all necessary tools and spare parts.

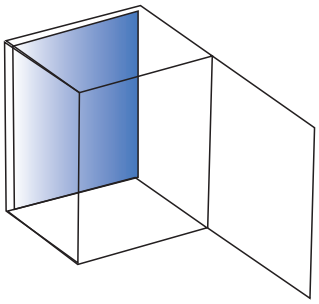
- After completing the work, make sure to clean around the machine and recheck for safety.

- Spare parts
Check spare parts with the Spare Parts List in the tool box.

- Tools that come with the machine are options. When purchasing them, check them against the “Spare Parts List” and the list of “Standard Tools”.

Make Sure

Layout inside Control Box



Relay	
(1)	When it turns ON, the electro-magnetic switch also turns ON.
(2)	When the emergency stop button is pressed, this relay turns OFF.
(3)	When the AC power is supplied, this relay turns ON.

Servo pack
drives the end seal-

Servo pack
drives the film feed roller.

Fan Motor
discharges the air in the control box.

Noise filter
cuts noise from the power supply.

Power fail-ure de-
detects the voltage reduction of 200 V AC.

Relay (2S)

Electromagnetic switch
shuts off the servo power by the system error of the board.

Circuit Protector
is a protective breaker for 200 V circuit.

Inverter
drives the motor for the infeed and discharge conveyor.

Relay (1)

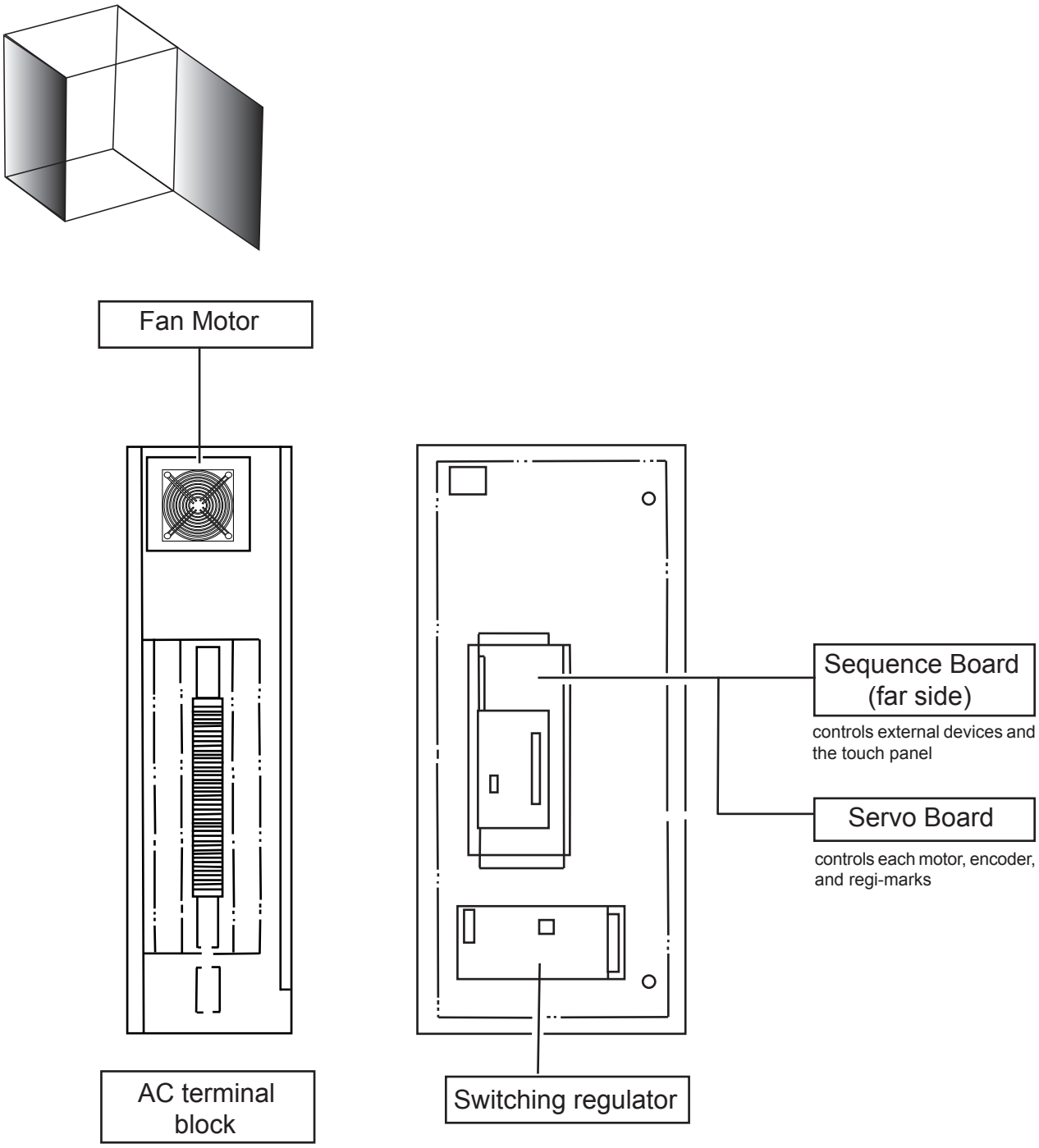
Relay (3)

Relay (4)

Fuse
shuts off the power to the heater.

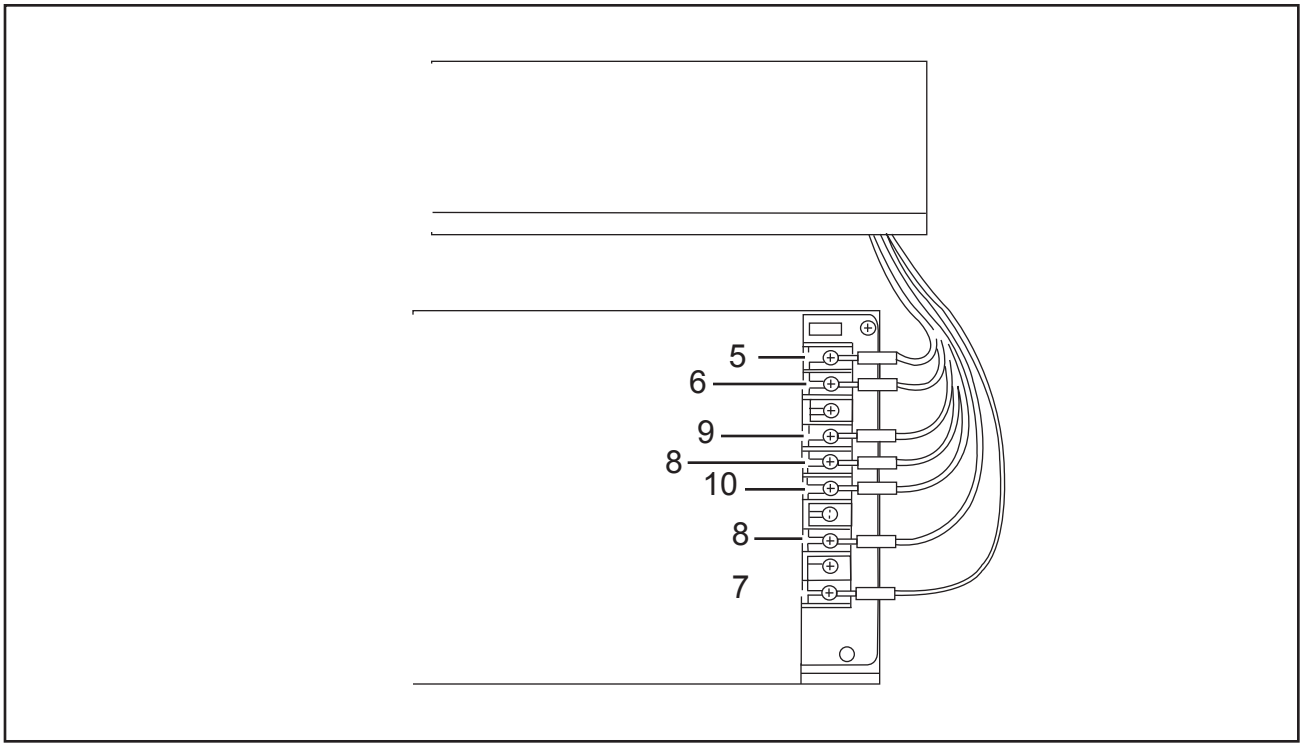
Solid state relay
turns on or off the heater power supply. (from the left, center front and back, end upper and lower.

Connector terminal block
connects the input/output signals of external devices.

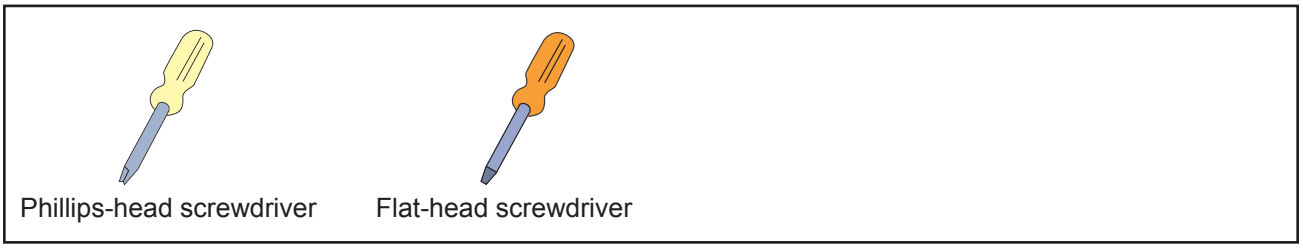

Fan Motor
Sequence Board
(far side)
controls external devices and
the touch panel
Servo Board
controls each motor, encoder,
and regi-marks
AC terminal
block
Switching regulator

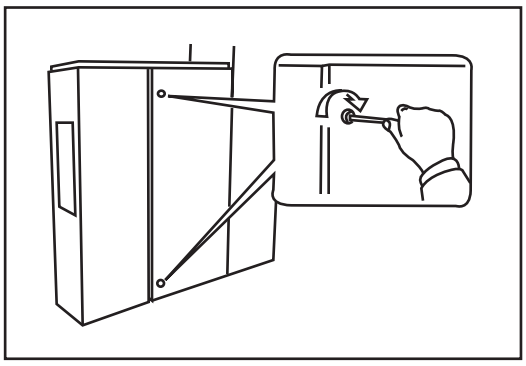
Replacing Switching Regulator

Construction



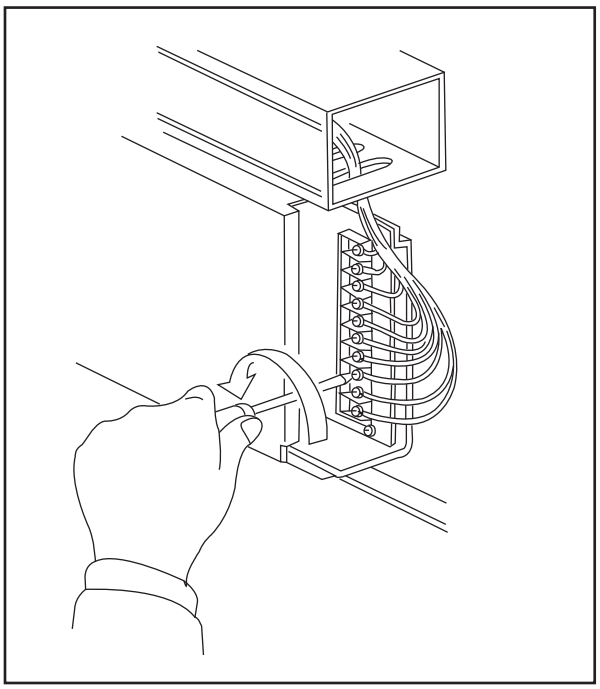
Tools needed



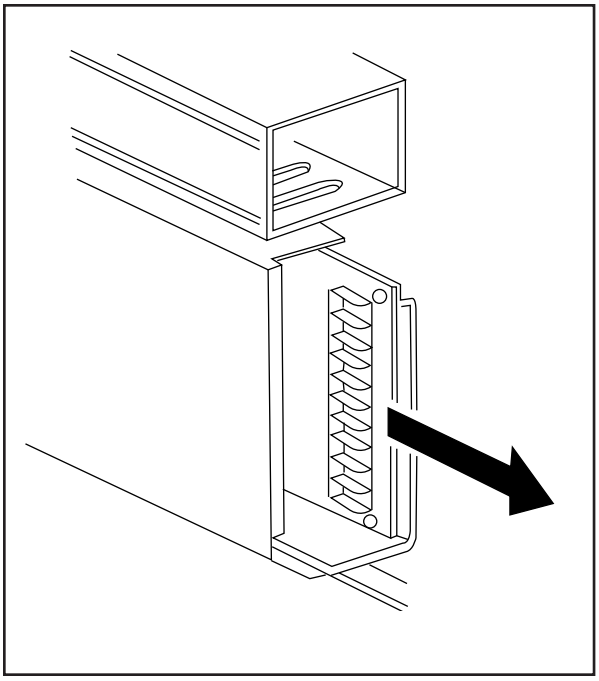


(1) Turn OFF the main breaker.
If the machine has the air source, turn it OFF.

(2) Open the control box door.



(3) Remove the terminal screws.



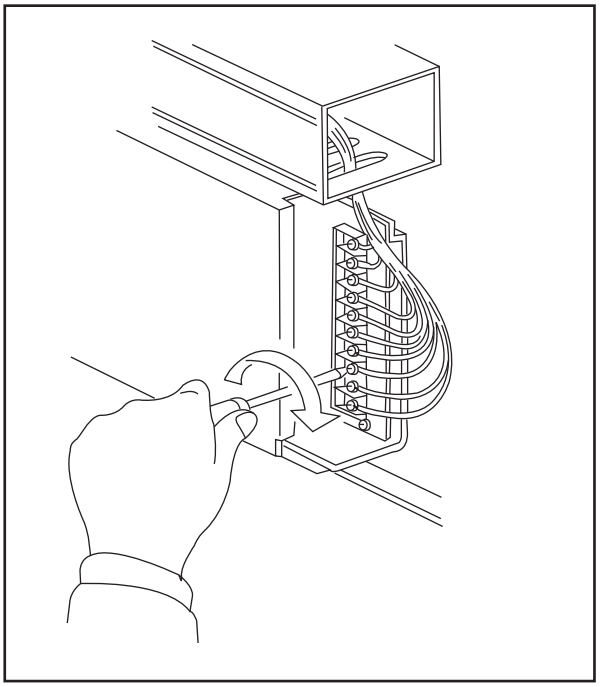
(4) Remove the switching regulator.

(5) Mount a new switching regulator.

Note

Confirm the model Number:

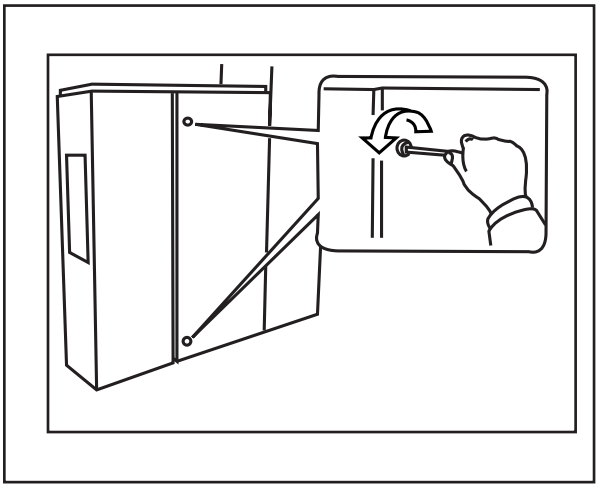
Model Number.
SYAG1212B



(6) Connect the terminals to the switching regulator.

Note

Be careful to connect them properly.



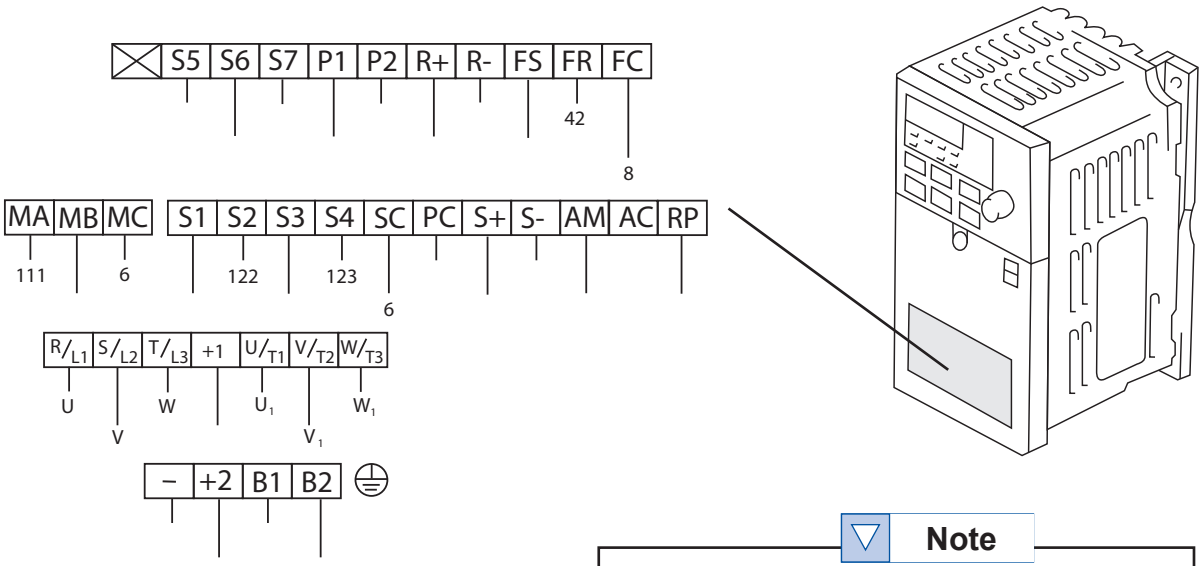
(7) Close the control box door.

Note

Make sure the door is locked.

Replacing the Inverter

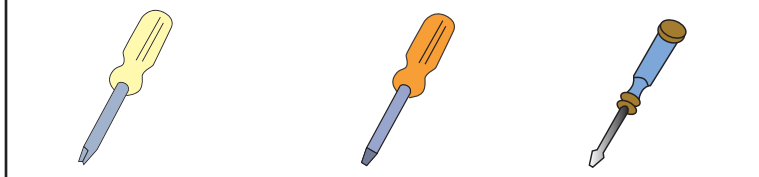
Construction



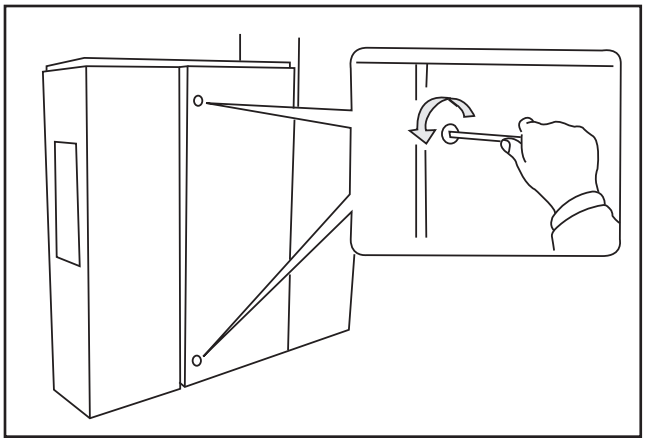
Note

Document wire connection before disconnecting the wires.

Tools needed

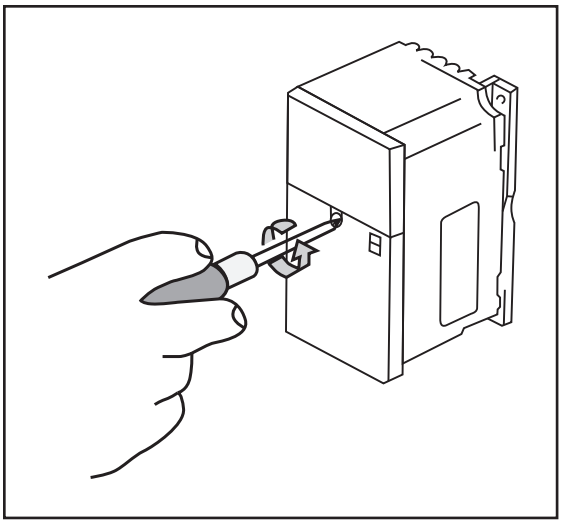


Phillips-head screwdriver | Flat-head screwdriver | Precision screwdriver (Flat-head Screwdriver)



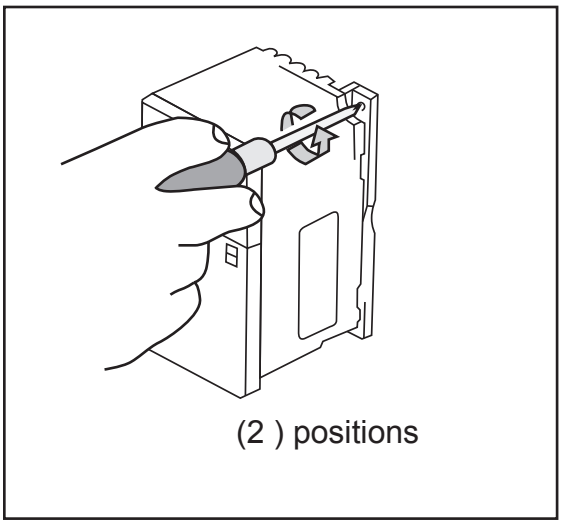
(1) Turn OFF the main breaker.
If the machine has the air source, turn it OFF.

(2) Open the control box door.



(3) Remove the terminal cover, and note the wire No.

(4) Remove the terminal screws by precision screwdriver.



(2) positions

(5) Loosen the mounting screws and remove the inverter.

(6) Install a new inverter.

Note

Confirm the model Number:
Model Number CIMR-VAA20P40

(7) Connect the terminals to the inverter.

Note

Be careful to connect them properly.

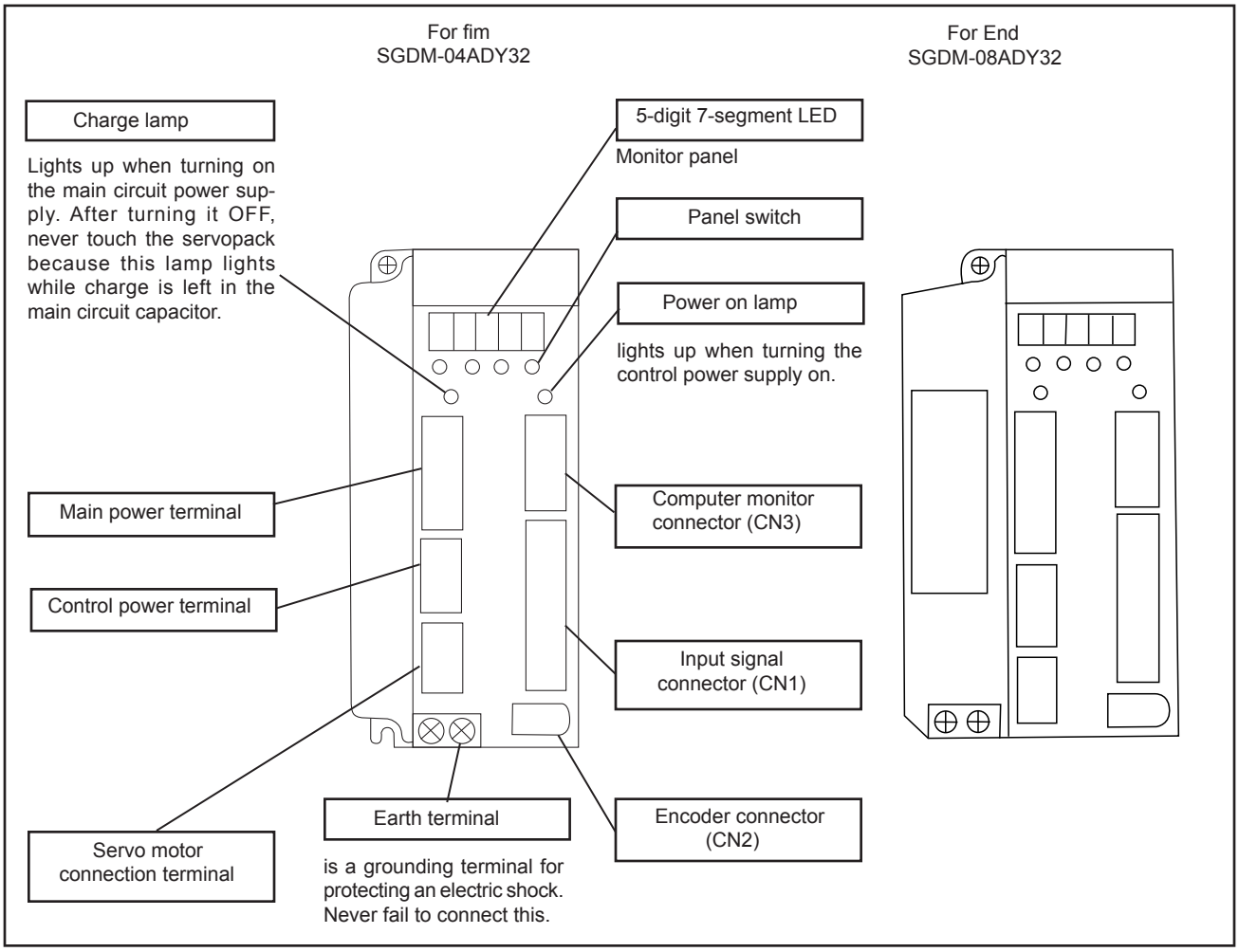
(8) Close the control box door.

Note

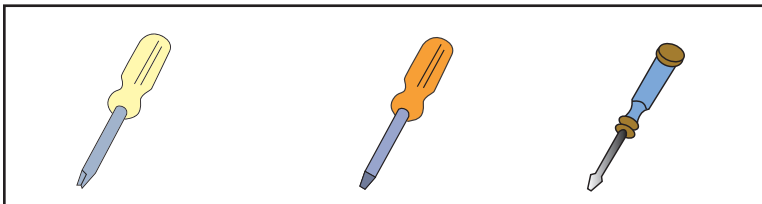
Make sure the door is locked.

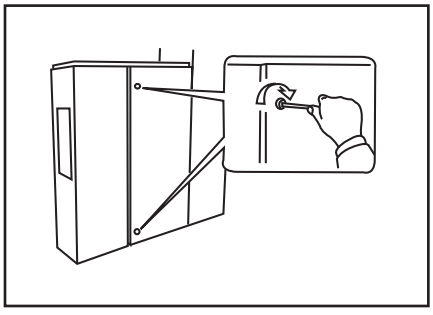
Replacing the Servopack

Construction



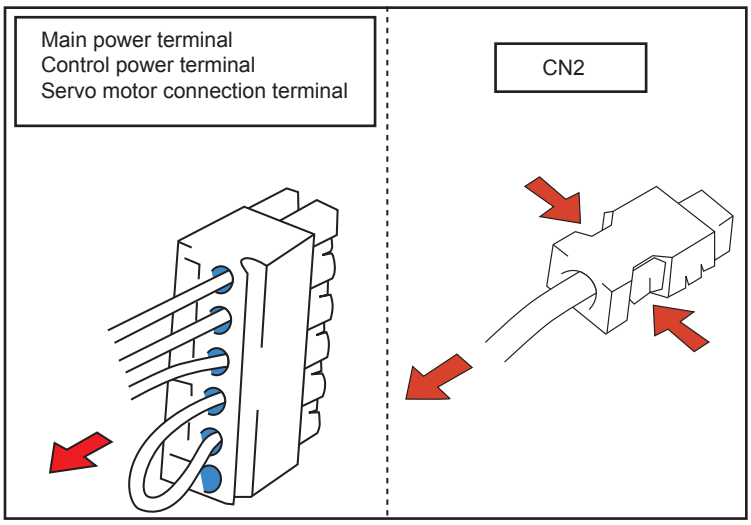
Tools needed





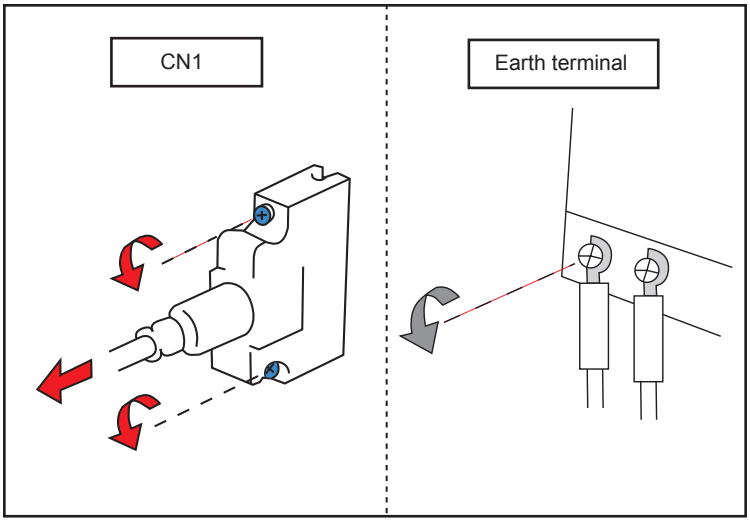
(1) Turn OFF the main breaker.
If the machine has an air source, turn it OFF.

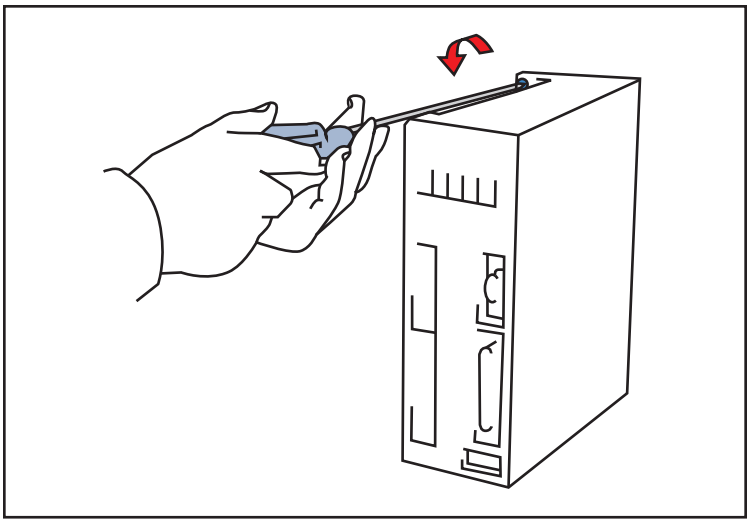
(2) Open the control box door.



(3) Remove these connectors and earth terminal according to the below procedures.

Main power terminal Control power terminal Servo motor connection terminal	--- Pull this out to the front.
CN2	--- Pull this out by pressint the protrusions at the right and left sides.
CN1	--- Loosen the lock screws with a precision driver, and pull this out.
Earth terminal	--- Loosen the screws.



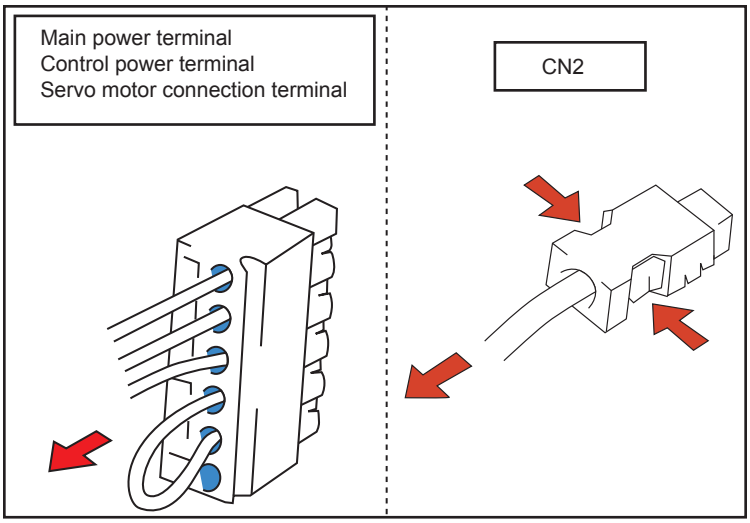


(4) Loosen the upper set screws and the lower ones, and remove the servopack.

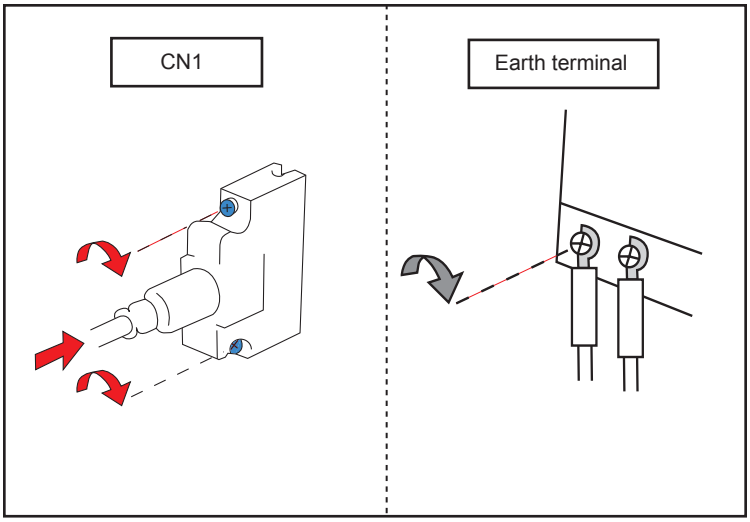
(5) Mount a new servopack.

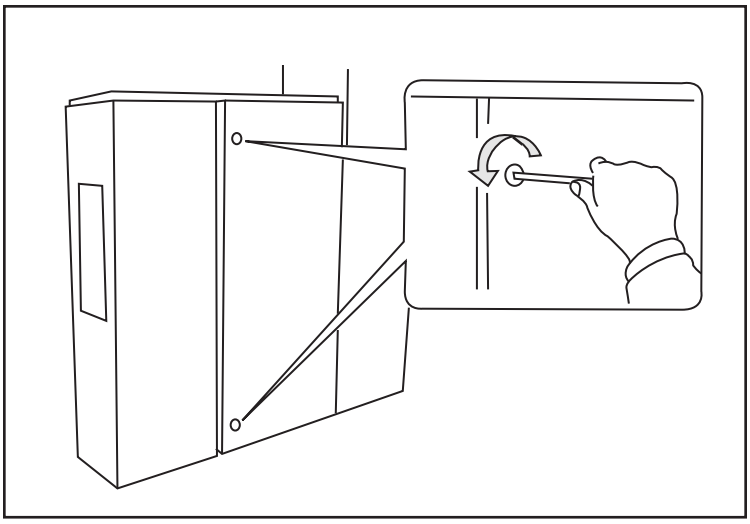
Note

Confirm the model Number:
Model Number:
For film: SGDM - 04ADY32
For end: SGDM - ADY32



(6) Connect these connectors and earth terminal.





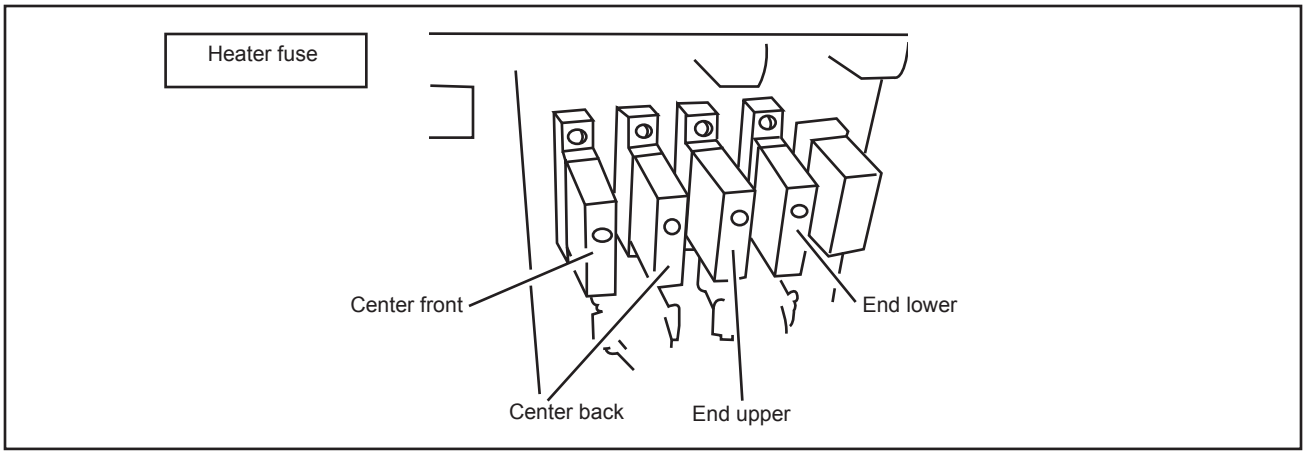
(7) Close the control box door.

Alarm Display

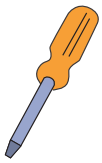
Display on Monitor Panel	Alarm Name	Contents
_____A.02	Parameter Failure	The servopack EEPROM is abnormal.
_____A.03	Main circuit detect NG	The detecting data of the power circuit is abnormal.
_____A.04	Parameter NG	The user's fixed number is set over the set range.
_____A.05	Motor Unmatch	Combined capacity of the motor and the servopack is not applicable.
_____A.10	Over current	The current with heat has passed on IGBT, or the heat sink of the servopack has more heat.
_____A.30	Regenerative Trouble	- reking wire of regenerative resistant. - reakdown of regenerative transistor.
_____A.32	Regenerative Overload	The regenerative energy is over the capacity of regenerative resistant.
_____A.40	Over voltage	The DC voltage of the main circuit is too high.
_____A.41	Under voltage	The DC voltage of the main circuit is too low.
_____A.51	Over Speed	The rotational frequency is too high.
_____A.71	Instantaneous Overload	Operated the machine for several seconds with torque over the rating.
_____A.72	Continuous Overload	Operated the machine with the torque over the rating continuously.
_____A.73	DB Overload	The rotating energy of dynamic braking is over the capacity of dynamic braking resistant.
_____A.74	Resistant Overload	The main circuit power has been turned on/off frequently.
_____A.7A	Heat sink Overheat	The heat sink of the servopack has more heat.
_____A.81	Encoder backup ALM	All the power supplies of the encoders have shut off, and the position data has been cleared.
_____A.82	Encoder sumcheck ALM	"Sumcheck" result of the encoder memeory is abnormal.
_____A.83	Encoder battery ALM	The batteries' voltage for backup of the absolute value encoder has been lower.
_____A.84	Encoder absolute ALM	The received absolute value data is abnormal.
_____A.85	Encoder over speed	When the power supply was turned on, the encoder rotated with high speed.
_____A.86	Encoder over heat	The temperature inside the encoder is too high.
_____A.b1	Velocity A/D Trouble	The A/D converter for inputting vilocity order is abnormal.
_____A.b2	Torque A/D Trouble	The A/D converter for inputting torque order is abnormal.
_____A.C1	Over run	The servo motor has overrun.
_____A.C8	Encover clear Trouble	The multi-rotating quantity of the absolute value encoder is failed to be cleared or to be set correctly.
_____A.C9	Encoder com Trouble	The encoder and the servo pack can not communicate.
_____A.CA	Encoder parameter NG	The parameter of the encoder has been broken.
_____A.Cb	Encoder ecoback Trouble	The content of communication with the encoder is wrong.
_____A.d0	Position dif. over	The position deviation pulse is over the set value of the user's fixed number (Pn. 505)
_____A.F1	Power supply Trouble	A phase of 3-phase main circuit power is not connected.
_____CPF00	Digital operator ALM	The digital operator (JUSP-OP02A-2) and the servo pack can not communicate.
_____CPF01		
_____A.--	Normal Status	Shows normal status.
_____A.91	Overload (Warning)	Warning before it comes to error "A.71" or "A.72". The wrapper does not stop.
_____A.92	Regenerative Overload (Warning)	Warning before it comes to error "A.32". The wrapper does not stop.

Replacing the Heater Fuse

Construction

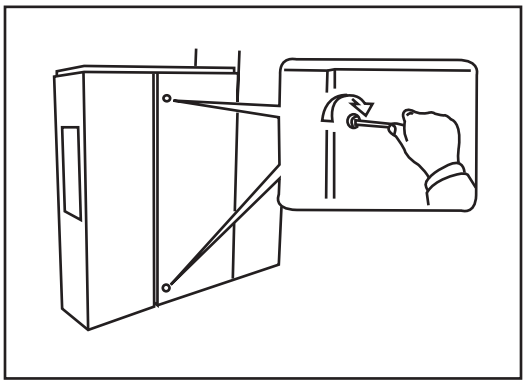


Tools needed



Flat-head screwdriver

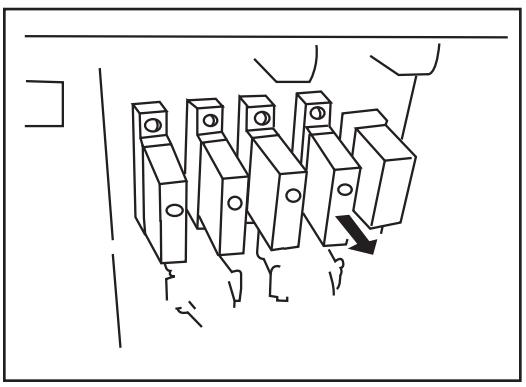
Procedure



(1) Turn OFF the main breaker.
If the machine has an air source, turn it OFF.

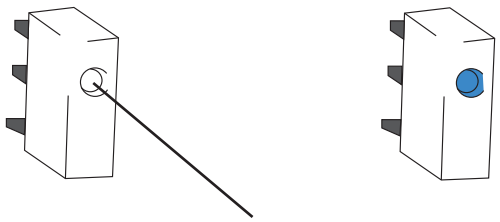
(2) Open the control box door.

(3) Replace the blown fuse with a new one.



Note

Blown fuse **A new fuse**



If a fuse has blown, this section becomes whitish.

Chapter 12
Troubleshooting

This chapter explains cause and countermeasure against troubles while operating for this machine. Consult this chapter before inquiring with us.

Error message is displayed

When an error (abnormal condition) has occured in this machine, the buzzer sounds and displays an error message to inform you of the error.

• • •▶ Refer to “Chapter 8 Error Messages.”

Normal screen is not displayed though the main breaker is turned ON

● Nothing appears on the display

Cause	Countermeasure	Ref. Page • • •▶
The display has broken down.	Inquire us.	———
The power supply of the display has broken down.	Inquire us.	———
The controller has broken down.	Inquire us.	———

● The screen is displayed in black, but does not change to the initial screen

Cause	Countermeasure	Ref. Page • • •▶
The software of the controller has broken down.	Inquire us.	———
The controller has broken	Inquire us.	———

● The initial screen is displayed, but does not change to the normal screen

Cause	Countermeasure	Ref. Page • • •▶
The software of the controller has broken down.	Inquire us.	———
The controller has broken down.	Inquire us.	———

Wrapping film wanders and is sagging

● Wrapping film wanders and either side of film shifts from bag former

Cause	Countermeasure	Ref. Page ● ● ● ▶
Each section is not positioned properly.	Check the plates for passing films affixed on this machine. If the film is not passed correctly, pass it again.	Chapter 4 page 38
	Check the position of each section based on the product data table. If some sections are not positioned correctly, adjust the position again.	Chapter 4 page 35
The wrapping film width is insufficient.	The wrapping film width should be the outside dimensio of the largest product to be wrapped plus 30 to 50mm.	———
The wrapping film is not centered.	Center the wrapping film using the film position adjusting handle.	Chapter 2 pages 22 & 23
The wrapping film entering angle is not appropriate.	The wrapping film tightness is tight at both ends between the film entrance roller and bag former wings while it is loose in the center portion of the film. It should be adjusted so that the tightness in the center portion of the film is adequately tight.	Chapter 10 page 111
Height or width of the bag former is not appropriate.	Adjust both the width and height of the bag former to 2 to 5mm larger than a product.	Chapter 10 page 111
Mounting position of the bag former is appropriate.	Mount the bag former so that the bottom section is 3 to 5mm below from the upper of the infeed conveyor.	Chapter 10 page 111
	Mount the bag former so that the distance between triangular section of the bag former and the tip of the infeed conveyor becomes 3 to 5mm.	———
Film tightness from the film feed roller to the center primary seal rollers is not appropriate.	Adjust the tension by the primary roller afjusting handle.	Chapter 2 pages 22 &23 Chapter 10 page 112 &113

● Wrapping film is sagging

Cause	Countermeasure	Ref. Page ● ● ● ▶
The bag former width is too wide and the height is too high.	Adjust the width and the height of the bag former to less wide and high, so that the bags will be smaller.	Chapter 10 page 111
The wrapping film entering angle is not appropriate.	Lower the position of the film entrance roller by the film entrance adjusting handle. (Lowering the roller too much may cause the film to wander.	Chapter 10 page 111

Finishing of center sealing is not good

● Center sealing part is wrinkled

Cause	Countermeasure	Ref. Page ● ● ● ▶
Film tightness from the primary center rollers to the secondary is no appropriate.	Adjust the appropriate tightness with the center tension adjusting handle.	Chapter 10 page 113

● Adhesion of center sealing part is not good

Cause	Countermeasure	Ref. Page ● ● ● ▶
The heater temperature is not appropriate.	Set the heater temperature to a suitable temperature for better adhesion.	Chapter 6 page 57
The wrapping film material adhesion is poor	Use the wrapping film material with good adhesion.	———

Movement on the deck plate is not good

● Film (product) does not move on the product deck plate smoothly

Cause	Countermeasure	Ref. Page ● ● ● ▶
The center sealer temperature is too high; the sealing portion melts.	Adjust the center sealer temperature to an appropriate level.	Chapter 6 page 57
The transfer brush is to low.	Adjust the transfer brush height so that it lightly presses products.	Chapter4 page 36
The end sealer rotating speed is too low.	Adjust it with “ECCENTRIC” key on the Control Panel Screen	Chapter 6 page 59

Products are cought at end sealing unit

● Product feeding position has shifted and products are caught by end sealers

Cause	Countermeasure	Ref. Page ● ● ● ▶
The infeed chain movement is not smooth.	Check for pusher lug pin bending or chain twisting. Correct the chain so that the pin lightly falls backward when the pusher lugs are off the rail.	———
The chain vibration is eminent.	1. Adjust the infeed chain take up and the tension of the chain. 2. Clean the guide rail of the infeed chain.	Chapter 10 page 107 Chapter 9 page 99
A product is not contacting the infeed attachment. (The product is fed lying on the top chain plate).	1. Lower the chain rail. 2. Mount a stop brake on the conveyor, if it is suitable, depending on products.	———
The end sealer engaging height is too high.	Adjust the height with the end sealer vertical adjusting handle so that the sealers engage in the center of the product height.	Chapter 4 page 37

Wrapping film winds around end sealers

● Wrapping film winds around end sealers (Especially when wrapping film material is polypropylene)

Cause	Countermeasure	Ref. Page ● ● ●▶
End sealer temperature is too high.	Set the temperature to an adequate level.	Chapter 6 page 57
The wrapping film and the machine do not match well.	Change the film with one that matches the machine well. If no such film is available, apply the attached silicone on the film surface.	———

Finishing of end sealing is not good

<Rotary Sealing>

● End sealers do not provide good adhesion.

Both the front and rear sealers do not adhere well.

Cause	Countermeasure	Ref. Page ● ● ●▶
The heater temperature is not appropriate.	Set the temperature to an appropriate level that ensures good adhesion..	Chapter 6 page 57
The upper and lower sealers contacting force is weak.	Adjust the sealer contacting state properly with the adjusting bolt.	Chapter 10 page 120
The wrapping film material has poor adhesion.	Use the wrapping film material of proper adhesion.	———

Only one side of the front and rear sides of the film has adhered.

Cause	Countermeasure	Ref. Page ● ● ●▶
The end sealer rotating speed is to high against wrappping film length.	Adjust it with “ECCENTRIC” key on the Control Panel Screen.	Chapter 6 page 59
The cutting knife blade is excessively protruding.	Adjust the cutting knife blade position not to protrude too much.	Chapter 10 page 123

● Wrapping film is not cut well

Cause	Countermeasure	Ref. Page ● ● ●▶
The knife is not fixed at the correct position	Adjust the knife position so that the wrapping film is easily cut.	Chapter 10 page 123
The knife blades are worn.	Replace the knives with spares or grind them with a gringing stone and then us them again. (Both the top and bottom knives should be replaced together as a set.	Chapter 10 page 122

<Box Motion>

● End sealers do not provide good adhesion.

Cause	Countermeasure	Ref. Page ● ● ● ▶
The heater temperature is not appropriate.	Set the temperature to an appropriate level that ensures good adhesion..	Chapter 6 page 57

● Wrapping film is not cut well

Cause	Countermeasure	Ref. Page ● ● ● ▶
The knife blades are worn.	Replace the knives with spares or grind them with a grinding stone and then use them again.	Chapter 10 page 130

Products do not move to the discharge conveyor smoothly

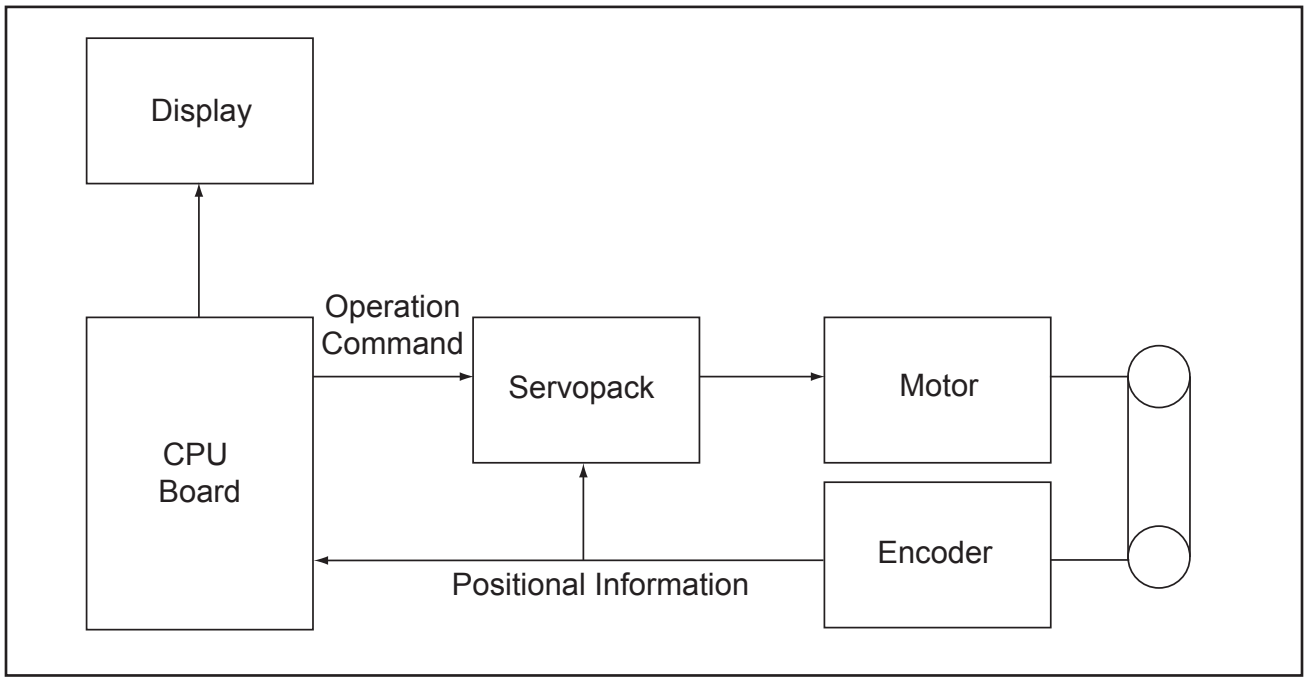
<Rotary Sealing>

Cause	Countermeasure	Ref. Page ● ● ● ▶
The distance between the discharge conveyor end and the end seal shaft is too wide.	Move the discharge conveyor fixing position toward the end sealer side to make the distance narrower. (However, do not make them too narrow, otherwise, the end sealer edge and conveyor end may contact with each other.)	———
The discharge brush position is too low.	Adjust the discharge brush height so that the brush lightly contacts product.	Chapter 4 page 36
The discharge conveyor is not properly installed.	Install the discharge conveyor properly.	———

Chapter 13
Effective Use of Condition Monitor

Effective Use of Condition Monitor

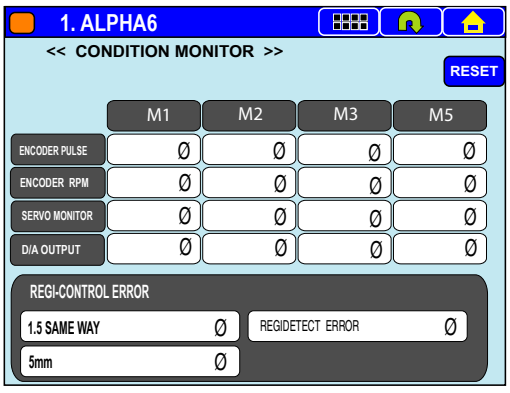
In this machine 3 motors are installed in the main drive system. 3 sets of encoders are also incorporated to enable all the motors to be synchronously operated. 2 motors out of 3 are the servo motors which contain their own encoders.



Besides the “SERVO MOTOR ERROR” which this machine automatically detects, if any motor error occurs, such as “the machine won’t start even by pressing the START button” or “operation cannot be stopped even by pressing the CYCLE STOP button”, component device failure or cable connection failure/disconnection errors are probable. (Trouble/disconnection of push buttons are not included here.)

In the case of “Servo motor error”, look at the LED display of the servopack and take action accordingly.

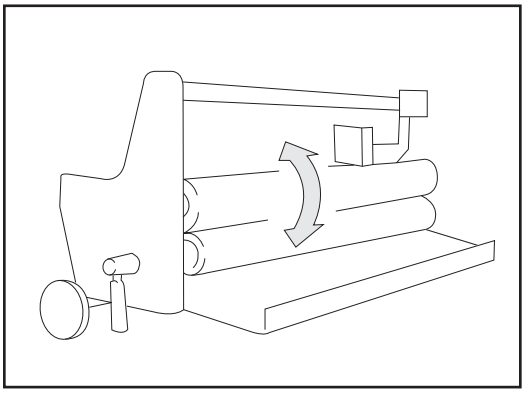
The following shows the procedure to check the condition (and wiring) of motors.



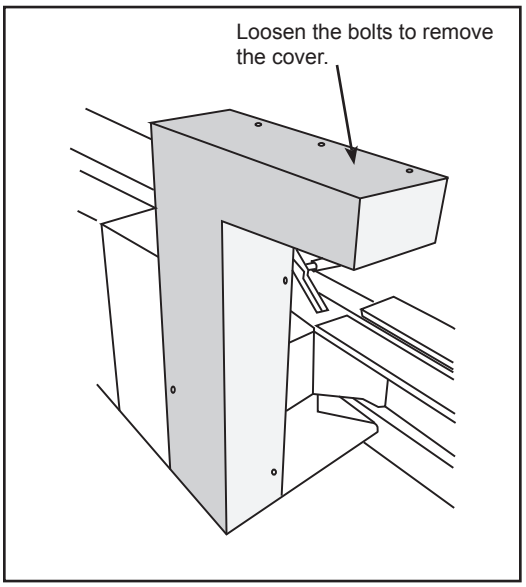
Check the encoder (and wiring) condition making sure that it is not defective.

(1) With the power supply turned ON, open the cover (any cover will do) and have the monitor display a red screen.

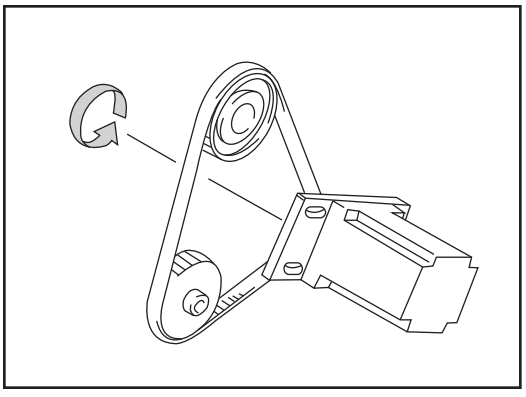
(2) Touch the  key and get the Menu Screen. Select the “CONDITION MONITOR” on the Menu Screen.



(3) Manually rotate the film feeding roller and check that the “ENCODER PULSE” value in the “FILM FEED” of the screen changes. Depending on the rotating direction, the figure increase of decreases. If the figure shows no change, it means an error of encoder related parts.



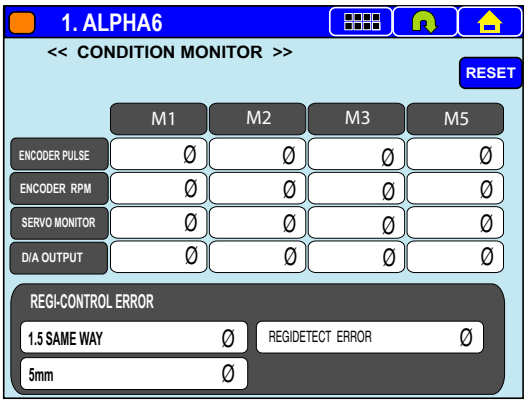
(4) Although the figure changes, if the encoder seems to be wrong, first open the back cover of the machine.



(5) Then, let the motor rotate for one turn. After that, if the figure does not show any change, that means the encoder is in good condition.

Note

The resolution of the encoder is 1500 pulses. Therfore the figure after 1499 should be 0. In case of reverse rotation, 0 should turn to 1499. However, infeed encoder is 1024 pulses which should be noted.



Check the encoder (and wiring) condition making sure that it is not defective.

(1) Close the cover, get the machine in the operable condition and have it be in the error condi- tion. If the error code can be released by pressing start, then press “Start”.

(2) Go to the Menu Screen and select the “CONDITION MONITOR” screen. On the screen, check the “D/A output” numbers.

“D/A output” is an operation speed command issued by the control section. “0” means stop and a figure other than “0” means operation. *(see picture at left)*

If a figure other than “0” is issued when the machine has to be stopped, or if “0” is issued where the machine has to be operated, it is a servo board error.

Note

In the setting speed is 0 or the process is interlocked with the forward and backward processes, 0 may be issued by the control section when operation is required. In this case the servo board is not the problem.

On the contrary, if the machine has to be stopped and the indication is “0” and yet the motor is still rotating, or a figure other than “0” is issued and the motor has to be operated and yet the motor has stopped, then the motor (or servopack) may be the trouble.

Note

To find whether the motor or the pack has a problem, use a tester. Also check for any mechanical overload.

Chapter 14
In Inquiring

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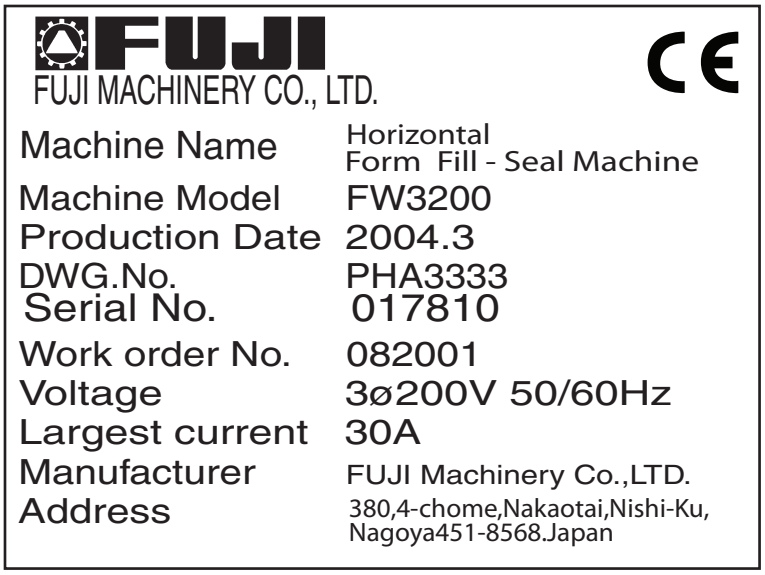
In Inquiring

When inquiring about a machine, call us after checking the plate on the the machine *(see picture below).*

The items with an asterisk are essential for inquiries.

Your Name (*):	Production Data:			
Machine Name:	Dwg. No. :			
Machine Model (*):	Serial No. (*):			
Voltage, Electric Current:	phases	V	Hz	A

Check this plate.



MEMO

[Reference]

For any inquiries about proper use and trouble with this machine, contact our service department at the following address and telephone number:

FORMOST FUJI CORP.

19211 144th Avenue NE
Woodinville, Washington 98072-8421
PHONE: (425) 483-9090
FAX: (425) 486-5656

We will exchange if the pages are missing, or out of order.

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