sankosha
PRESS AND PROGRESS

# PM-460E

## Instruction Manual

For your safety, please read this Instruction Manual carefully and understand all instructions before starting operating of the machine.
If at any time you have any questions, please do not hesitate to contact us.

# Welcome

Thank you for choosing our PM-460E (Semiautomatic Bagging Machine).

This machine was delivered to you after thorough inspection at our plant.

Please read this manual carefully for proper usage of this machine.

## Product Specifications

| | |
|---|---|
| Model | PM-460E |
| Type | PM460E-V1 |
| Power | Three Phase 400V 50Hz 1.4kW |
| SCCR | 5kA |
| Air Consumption | 4.4 liter / cycle |
| Air Pressure | 0.6MPa |
| Air Pipe | 3/8B |
| Weight | 210kg |
| Dimensions<br>Width × Depth × Height | 760mm×825 mm×1900 mm |

## Available Film

| | |
|---|---|
| Shape | Tube Film |
| Material | PE, PP, LL, HDPE |
| Film Thickness | 10－18μm |
| Film Width | 600mm $^{+5}_{0}$ |
| Rolled Length/ Diameter | 1000m (MAX) ・ φ350mm |
| Inner Diameter of Tube/ Width | Up to φ80mm |

**CAUTION**

* If the film is unrolled, has bumps, or has blocking, it will cause problems.
* Be sure to use Film for automatic bagging machines.
* In winter or when the ambient temperature is low, keep the bagging film rolls in a warm place or change the film specifications (material or thickness) for winter use.

# Table of Contents

# Safety Guidelines

Warning labels are placed on the machine in order to prevent an operator and others from injury, and to ensure proper and safe operation. For the most part labels are placed on the operational area of the machine.

Use this product safely upon reading this manual and understand the warning labels on the machine.
Keep this manual, as it will be needed in the future.

■ Read the description of each warning label below. The following categories explain the degree of hazardous or damage caused by incorrect use of the product without following the safety label or the contents of this manual.

| | | |
|---|---|---|
|  | **DANGER** | This indicates a potentially hazardous situation which, if not followed, may result in death. |
|  | **WARNING** | This indicates a potentially hazardous situation which, if not followed, may result in serious injury. |
|  | **CAUTION** | This indicates a potentially hazardous situation which, if not followed, may result in minor or moderate injury. |

■ Regulations are shown in a table below.

| | | | |
|---|---|---|---|
|  | **General attention**<br>Indicate general dangers, warnings, and cautions not specified. |  | **General prohibitions**<br>Indicate general prohibited matter. |
|  | **Electric shock hazard**<br>The possibility of electric shock in specific conditions is indicated. |  | **General forced**<br>Indicate general attention what you have to do. |
|  | **Cut hazard**<br>Indicates the possibility of cutting hands or fingers. |  | **Prohibition of dismantling**<br>Notice of prohibition when there is a risk of electric shock or the like due to disassembly of the machine. |
|  | **Burn hazard**<br>The possibility of burns caused by high-temperature sites is indicated. |  | **Necessity to round**<br>This is used to indicate that the machine must be properly grounded. |
|  | **Pinch hazard**<br>The possibility of injuries caused by hand and fingers caught by rollers, etc. is indicated. |  | **Pinch hazard**<br>The possibility of injuries caused by hand and fingers caught by gears, etc. is indicated. |
|  | **Rotation hazard**<br>The possibility of injury caused by removing the guard of the rotation part of the motor, fan, etc. |  | **Pinch hazard**<br>The possibility of injuries caused by hand and fingers caught by moving part, etc. is indicated. |

Sankosha cannot be held legally responsible for any injuries to operators or damage to machines caused by alterations to machines or operations not described in the machine manual.

# ⚠ WARNING

## ■ Installation

Installation of this product must be performed only by authorized distributor or by qualified personnel who has read this manual.

**Improper installation or rigging of this machine may result in shock, injury or burn.**

## ■ Shock Hazard

Do not put a finger or metal into the machine or Control Box.

**It may cause electric shock or fire.**

## ■ Ground Connection

The green wire must be properly grounded. The electrical code must be conformed to the power.

**Incorrect connection may cause electric shock.**

## ■ In case of flooding

Call authorized personnel to inspect and repair the machine if necessary.

**It may cause electric shock.**

## ■ Fire Hazard

Flammable articles such as gasoline, etc should not be located near the machine.

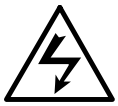
**It may cause fire or explosion.**

## ■ Maintenance

Call authorized service personnel.
Do not dismantle by yourself.

**It may cause electric shock, injury, fire or accident.**

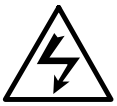
## ■ Shock Hazard



Do not touch plugs or switches with wet hands.

**It may cause electric shock.**

## ■ Shock Hazard



Parts must not get wet when cleaning the machine with water.

**It may cause electric shock.**

## ■ Alteration Hazard

Do not improve or dismantle the machine.

**It may cause accident.**

## ■ Do not Use During Disrepair

Turn the main power and breaker switches off in case of malfunctions.
Call authorized service personnel.

**It may result in injury or further damage to the equipment.**

## ■ Safety Instructions

For your safety, follow the instructions below.

- Only qualified trained personnel can operate the machine.
- Carefully read this Instruction Manual in full before using the machine.
- Make sure there is no one working near the machine before beginning operation.
- The machine should be operated individually at all times.
- Before conducting the proper maintenance, always keep following instruction: close the air and steam valves and release their residual pressures.

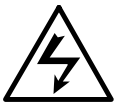
# ⚠ CAUTION

## ■ Damage by Water

When the machine is damaged by water, do not use. Ask a local distributor for maintenance or repair.

**It may cause electric shock, injury, fire or accident.**

## ■ Cleaning



Both the main power switch and the breaker should be off when cleaning.

**It may cause electric shock without power-off.**

## ■ Check and cleaning

Electric plugs and electric sockets need to be checked and cleaned periodically. If you find any damage, call your distributor.

**Breakage can cause electric shock and fire.**

## ■ Adequate space

Adequate space around the machine should be secured for service and maintenance.

**Potential injury to service/maintenance personnel may result.**

## ■ Inside use only

The machine must be located inside the facility.
Do not place it in a damp or wet area.

**It may cause an accident.**

## ■ Maintenance of warning labels

The labels need to be cleaned and replaced if necessary.

**It may cause an accident.**

## ■ Not in use abroad

Do not use the machine outside of designated countries.

**It may cause fire due to different electrical supply.**

## ■ Operation procedure

Make sure to follow the proper procedure of operations to the safety use of the machine.

**It may result in damage to the equipment or injury to the operator.**

## ■ Replacement of heaters and cutters

Be very careful not to touch the sharp edges or blades of the heaters and cutters when removing them.

**You may get hurt when touching them.**

## ■ Replenishment of grease

This bagging machine requires periodic replenishment of grease. Be sure to replenish grease periodically.

**Shortage of grease may promote abrasion of the sliding and rotating portions and finally "cause the machine to break."**

## ■ Regular Clean Up

It may cause dust in the machine if you do not clean the machine for a long time.

**It may result improper operation or damage to the equipment.**

# Hazardous Area

## Electrically Live Area

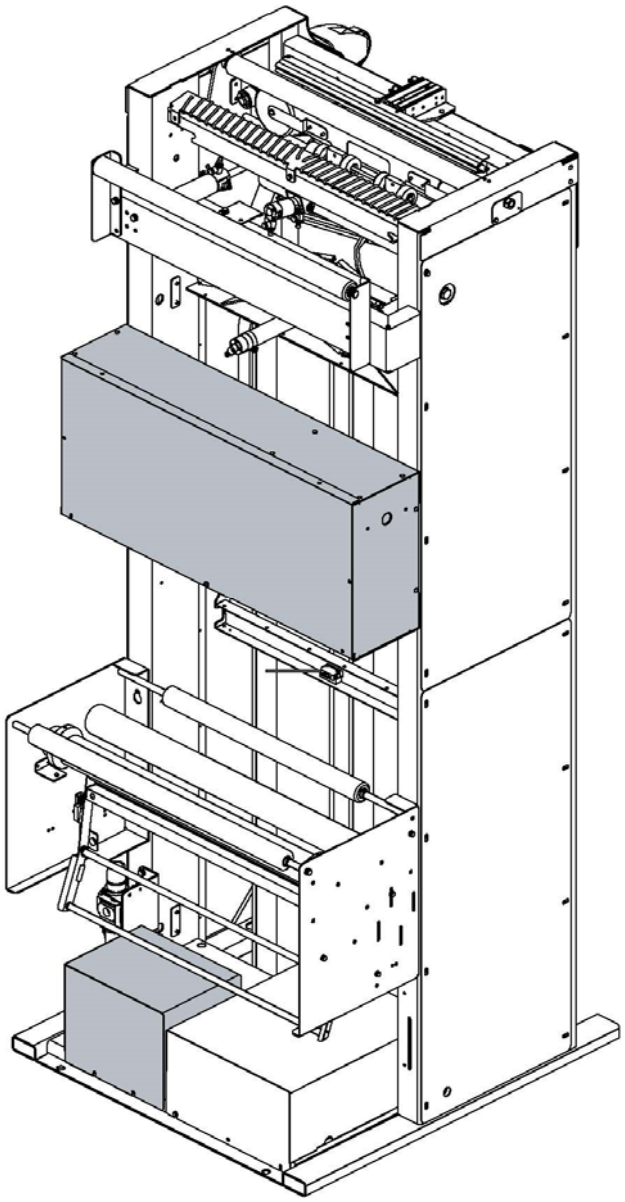
**DANGER**

Control box has terminals with lethal voltage.

-Only trained maintenance personnel can open the box.

-Turn off the power before opening the box.

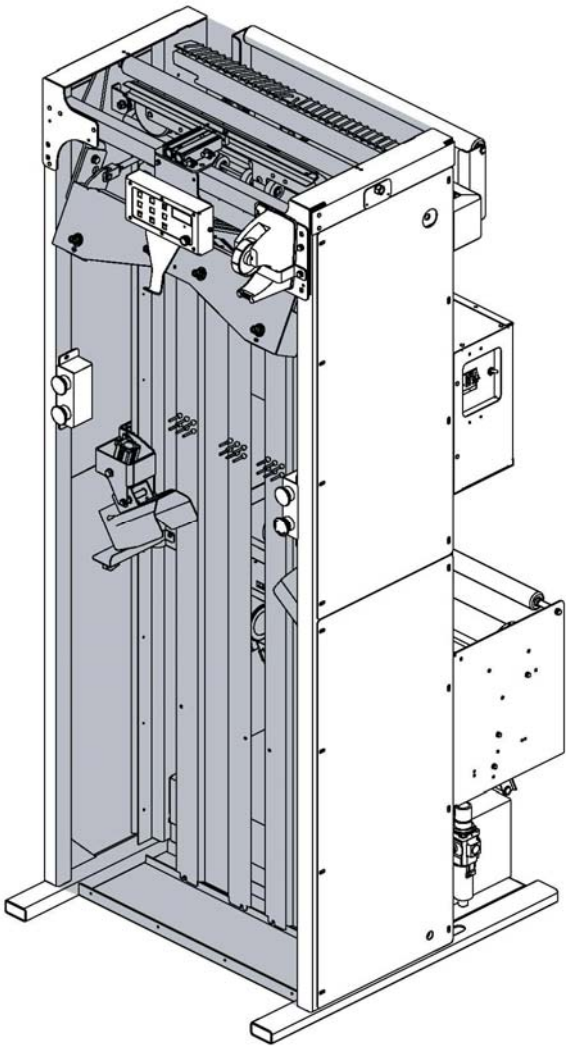
Ignoring this warning will result in serious injury or death due to electric shock.

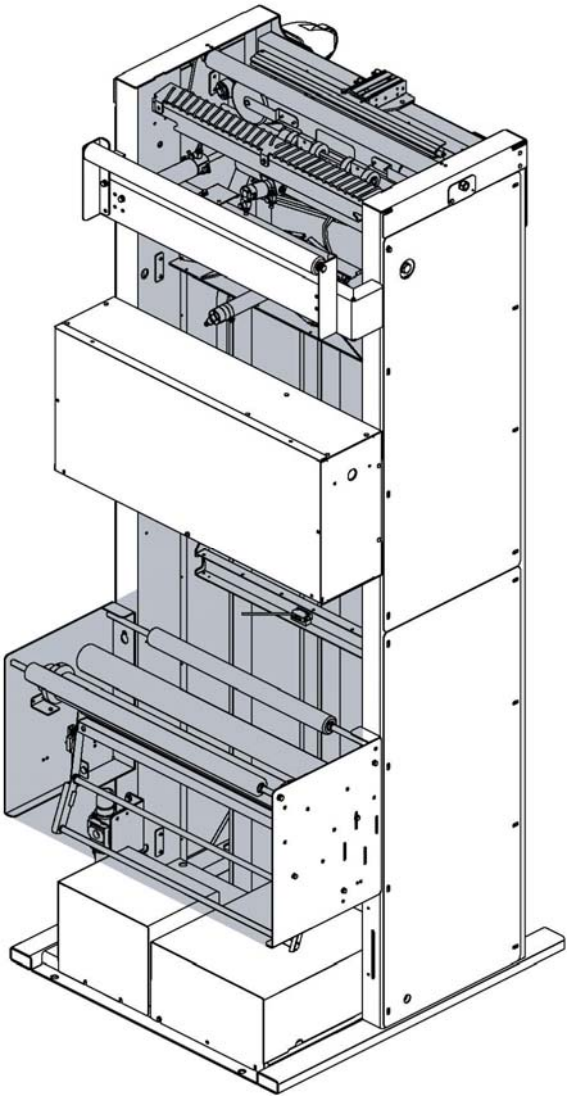


## Range of the Machine in Motion

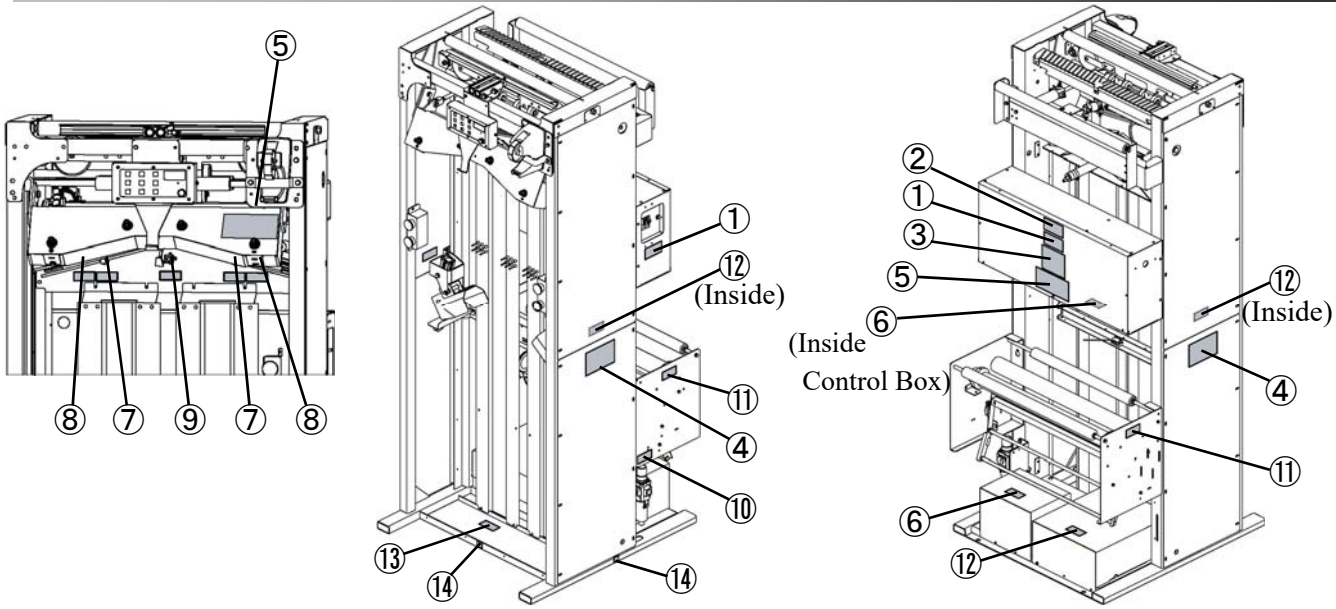
**WARNING**

The machine has a certain range of motion.
Keep your hands away from the moving area during operation.
Before starting up or checking for maintenance, turn off the air and power first.
Ignoring this warning could result in serious injuries.





# Safety Labels on the Machine




①

**DANGER**

- Hazardous Voltage inside!
- Disconnect power before opening control box.

②

**WARNING**

- Moving parts. Pinch Hazard !
- Keep body parts out of motion range.
- Single person operation only.

③

**SAFETY INSTRUCTIONS**

**WARNING** For your safety, follow these instructions.

Only qualified personnel trained for requirements by supervisor can operate the machine.

Carefully read the Instruction Manual to understand the content completely before operation.

Make sure there is no one working on the machine before operation.

Never operate the machine with anyone else.

Before maintenance,follow the following instructions.

Close the air and steam valves, and release their residual pressures.

④

**DANGER**

Shut off the power before removing the cover.
Otherwise your fingers or hands may get caught in the chain and suffer a serious injury.

⑤

**Caution**

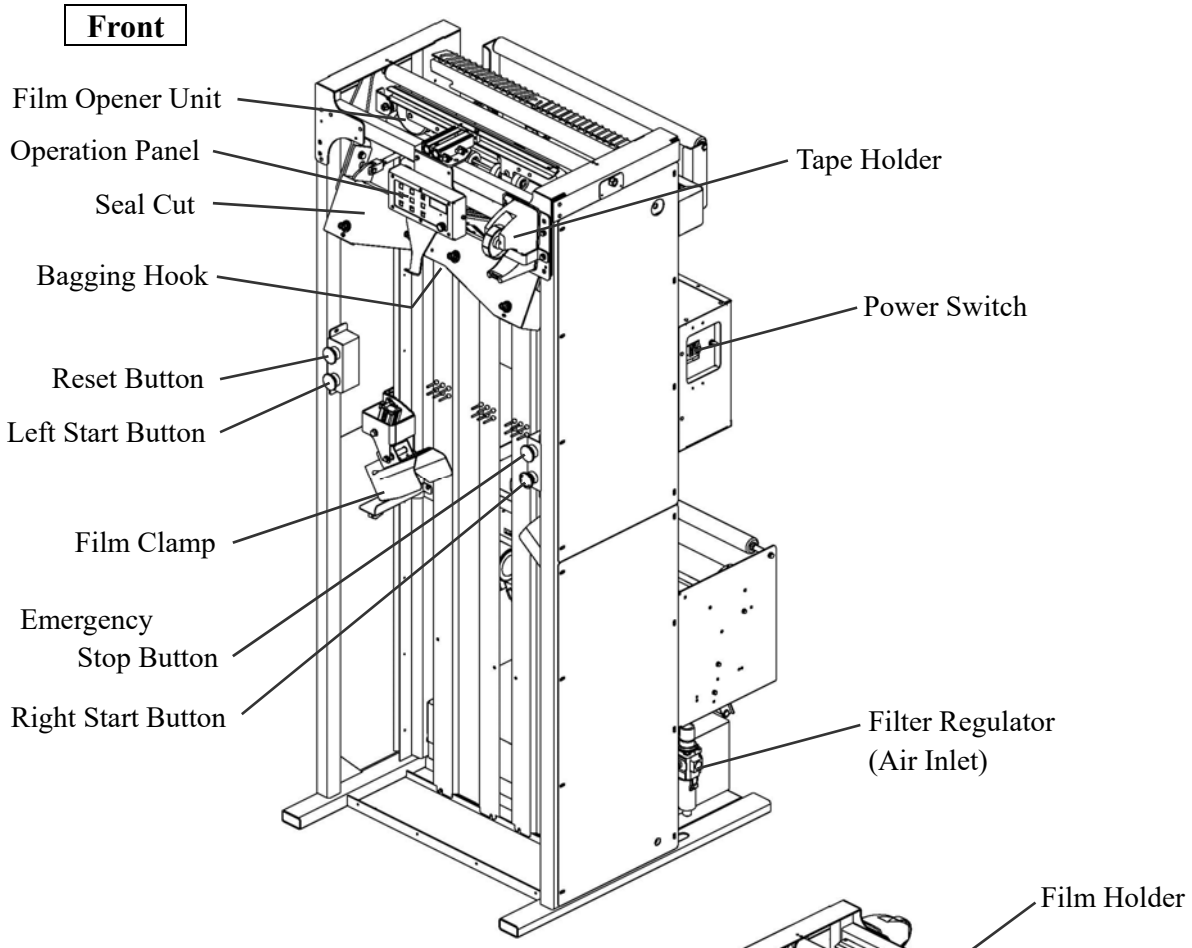
- For poly change, push "Poly change" button on the control panel.
- When you put your hand inside the machine, be sure to turn the power off.

| | | |
|---|---|---|
| ⑥ | Shock Hazard | It may cause electric shock.<br>Before opening Control Box or cover by repair etc, always turn the power off. |
| ⑦ | Burn Hazard | The sealing portion is hot enough to burn you.<br>Keep hands away from the machine. Do not touch while operating. |
| ⑧ | Cut Hazard | Cut hazard!<br>Keep hands away from the machine. Do not touch while operating. |
| ⑨ | Pinch Hazard | Pinch hazard!<br>Keep hands away from the machine. Do not touch while operating. |
| ⑩ | High Pressure Air | High pressure air!<br>Before maintenance, close air valve and drain residual pressure. |
| ⑪ | Pinch Hazard | Keep hands away from the machine. Do not touch while operating. |
| ⑫ | Pinch Hazard | Keep hands away from the machine. Do not touch while operating.<br>Turn the power off during maintenance or cleaning. |
| ⑬ | Pinch Hazard | Do not place films and any other object here.<br>The film clamps may come down and pinch your hands and feet. In addition, the machine may be broken, too. |
| ⑭ | | Center Mark<br>Indicating the center of gravity of the machine. |

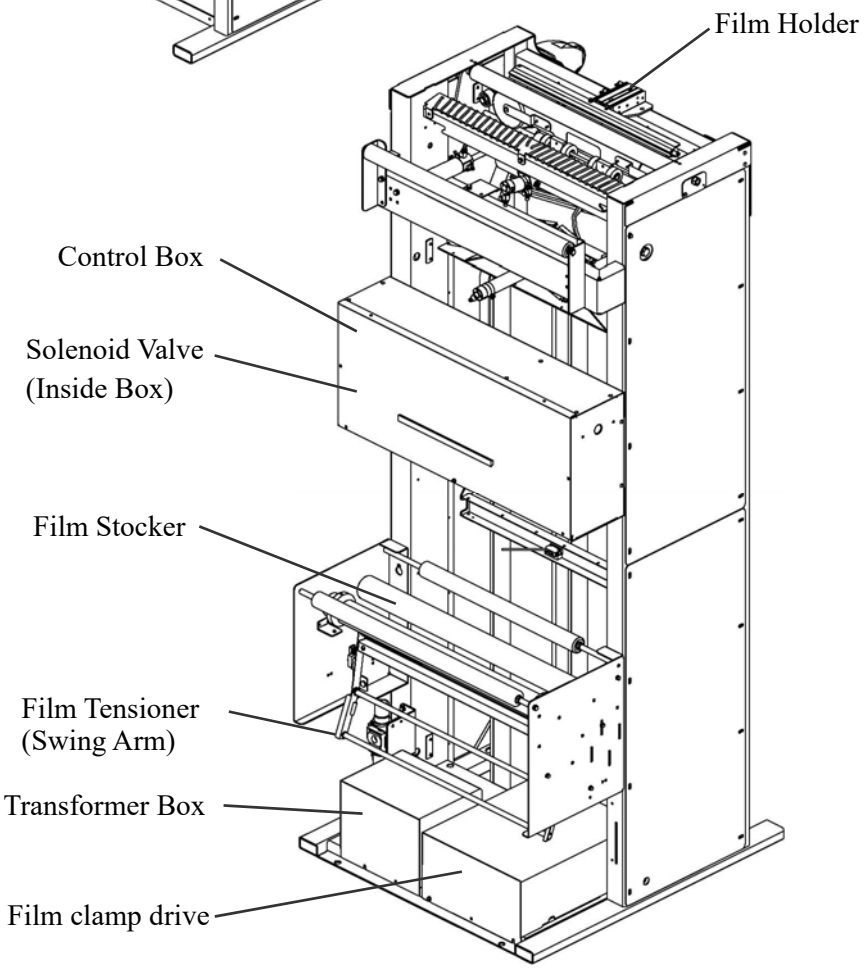
Make sure that each warning label is placed at the location shown above. If any of the labels is missing, damaged, or illegible, contact your distributor to obtain a new one.

# Main Devices

**Front**

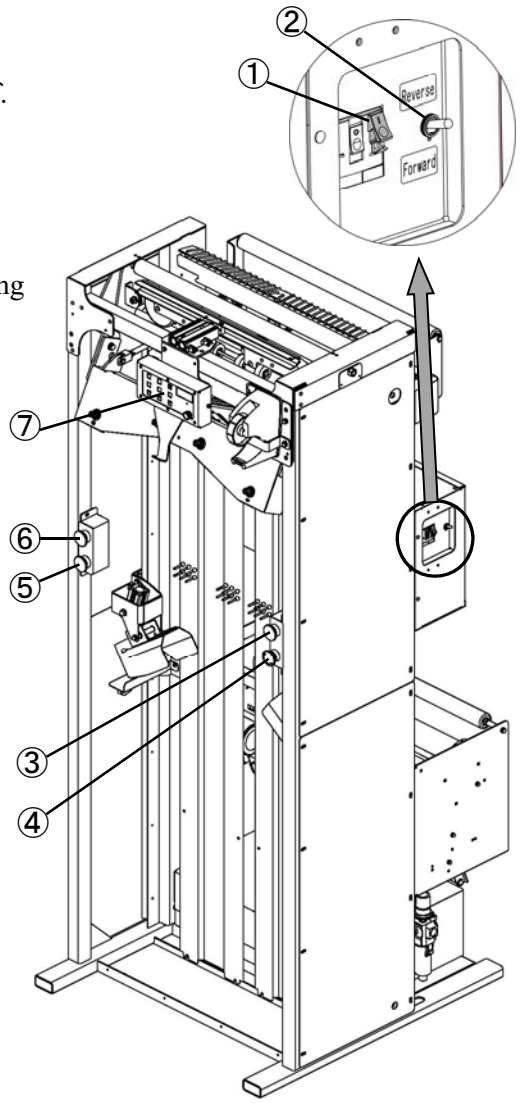



**Rear**



# Names and Functions of Operational Components

**Machine components**




① Power switch
Turns on and off power to the bagging machine.
Push the black button to turn on and the red button to turn off.

② Forward/Reverse switch
Used to select a rotational direction of the motor to feed a film.
Usually select "Forward" when using a plain film. When using a printed film, select "Forward" or "Reverse" according to whether the printed surface faces to the front or back of the garment.
For details, see Page 19.

③ Emergency Stop button
When this button is pushed, the machine in any process can be safely reset to the initial state. To return to the normal operation, turn this button clockwise (in the arrow direction) to unlock this pushed and locked button. Then push the "Reset" button ⑥. Now machine is ready for normal operation.

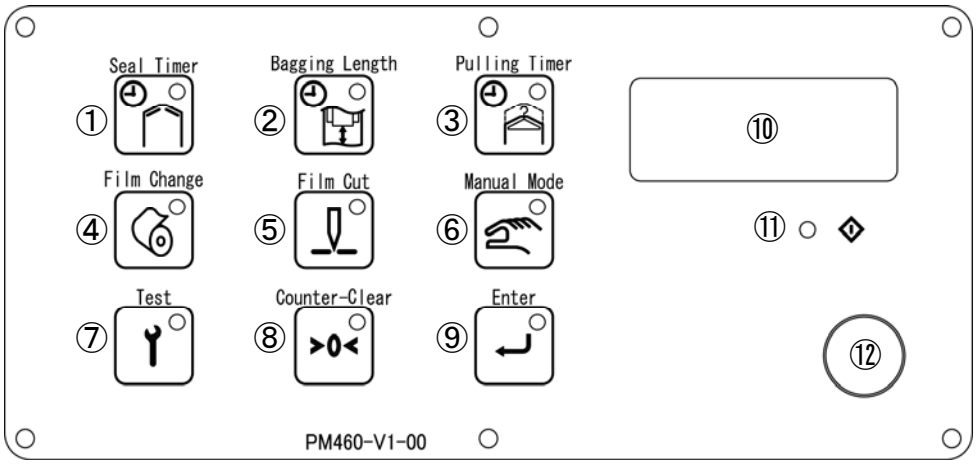
④ Right Start button
Push this “right Start" button together with the “left Start button” ⑤ after hanging the garment hanger on the hook (inside the machine). The machine starts bagging of the garment.

⑤ Left Start button
Push this “left Start" button together with the “right Start button” ④ after hanging the garment hanger on the hook (inside the machine). The machine starts bagging of the garment.

⑥ Reset button
This button has three functions which depend upon the switching timing as follows:
1. Push this button after turning on the machine to make the machine operable.
2. Push this button to return the machine to the normal operation after the machine stops by an Emergency Stop or the like.
3. Push this button to stop the buzzer that beeps to notify the occurrence of an error or alarm.

⑦ Operation panel
On this panel, you can change and check timer settings and manually operate the machine. For details, see "Operation Panel" on Page 12.

## Operation Panel




① Sealing Timer Button (The light turns green when the button is ON.)
Push this button to ON. You can use the "Set/Select" dial ⑫ to change the film sealing time setting. See Page 18 for details of method to change the setting.

② Bagging Length Timer Button (The light turns green when the button is ON.)
The lower part of the film package (under the garment hem) is set to be longer the length of garments. Push this button to ON. You can use the "Set/Select" dial ⑫ to change a time setting to make the film longer than the garment. See Page 18 for details of method to change the setting.

③ Secondary Pulling Timer Button (The light turns green when the button is ON.)
In film cutting, the film is cut with its center portion un-cut a little. The left and right film clamps go down to the shoulder portion of the hanger to cut out the film while clamping both ends of the film and opening the film wide.
Push this button to ON. You can use the "Set/Select dial" ⑱ to change a time setting to keep the film clamps closing. See Page 18 for details of method to change the setting.
When the specified time is too long, the garment may fall or the film may break (at the sealed portion).

④ Film Change Button (The light turns green when the button is ON.)
Used to change films.
When you push this button to ON, the film clamps go down to facilitate film change.

⑤ Film/Cut Button (The light turns green when the button is ON.)
Push this button to ON to Seal & Cut a film.
You can cut the unwanted film portion of the spliced film after change or a film portion left when the film clamps stop halfway in downward movement.

**CAUTION**

Do not put your hands into the machine when it is in operation.
You might get hurt with film cutters.

⑥ Manual Mode Button (The light turns green when the button is ON.)
Push this button to ON to manually pack a particular garment (for example, a thick hooded garment that may break the film, a jacket whose arms are longer than corsage, and slim pants) that is longer than ordinary film packages and cannot be automatically bagged. Push this button to ON for manual garment bagging.
For details of manual bagging, see "Manual bagging" on Pages 16 and 17.

⑦ Test Button (The light turns green when the button is ON.)
Push this button to ON to individually operate machine components to adjust and test their operations.
For details of test operations and items, see "Test Operation" on Page 30.

⑧ Counter Clear Button
Push this button for one second or longer to reset the bagging counter to "0."

⑨ Enter Button (for Timer Remember) (The light turns green when the button is ON.)
Push this button to ON to save (register) the settings made by ① "Sealing Timer," ② "Bagging Length Timer," and ③ "Secondary Pulling Timer" buttons.

⑩ Display Window
This display shows a bagging count value, count-down timer value, error number, or menu item (number).

⑪ Power Lamp
This lamp blinks red when the machine is powered on and blinks when the Emergency Stop button is pushed. When the Reset button is pushed, this lamp turns on and the machine becomes ready to run.

⑫ Set/Select Dial
You can use this dial to change timer settings and select a menu item (number).

# Operation Process

**⚠ CAUTION**

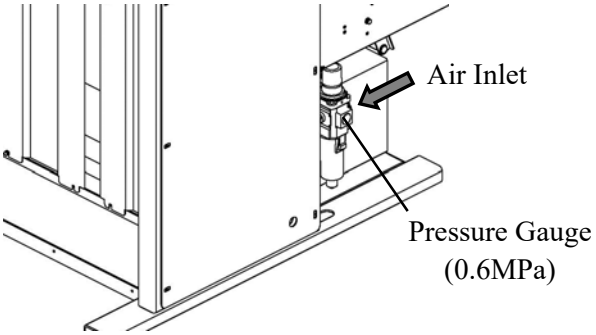
Follow the procedure for proper operation.
Improper operation can cause mechanical failure or injury to operators.

## 1. Make a film check below.

- Check the feeding direction and film installing procedure on the film stocker.
(See "Film Changing Procedure" on Page 19.)

## 2. Supply compressed air.

- The rated supply air pressure for this machine is 0.6MPa. Always make certain of the pressure on the pressure gauge.



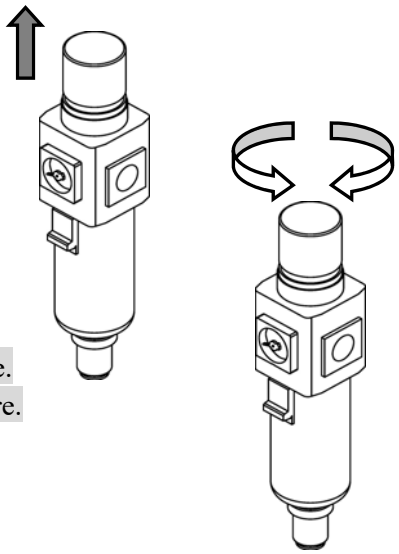

The supply air pressure lower than 0.6MPa may cause a machine problem.
Adjust the air pressure in the procedure below if it is lower than 0.6MPa.

■ Adjustment of air pressure

1. Pull up the adjustment knob of the regulator.

2. Turn the knob to get the rated pressure (0.6MPa).

| | | |
|---|---|---|
| Clockwise | → | Increases the pressure. |
| Counterclockwise | → | Decreases the pressure. |



3. Push down the knob at the end of adjustment.

**Check item**

- Inspect the air compressor if the rated air pressure (0.6MPa) cannot be obtained by adjustment.
- If rated air pressure cannot be obtained although the compressor is non-defective, contact your local Sankosha distributor.

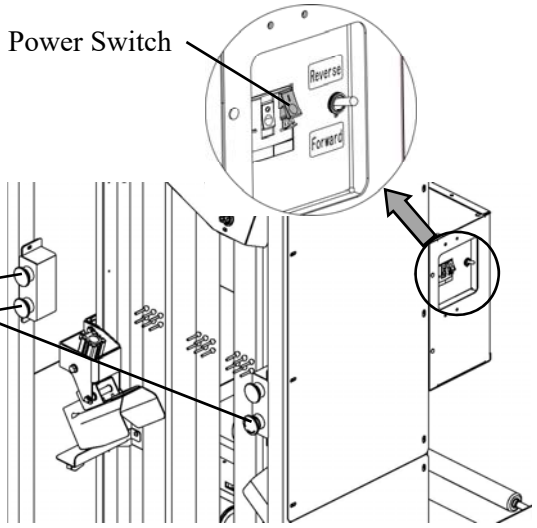
**Attention!**

The operating environment should be able to always supply the rated compressed air steadily. It is recommended to use an after-cooler to always supply clean air.

**⚠CAUTION**

- Make sure there is no one working near the machine before beginning operation.
- Please beware not to pinch the hand or garment at the moving part during the machine operation.
- There are cutter and heater in this machine, it might be injured or burned. Please do not touch the moving parts during the operation.

## 3. Turn on power to the machine.

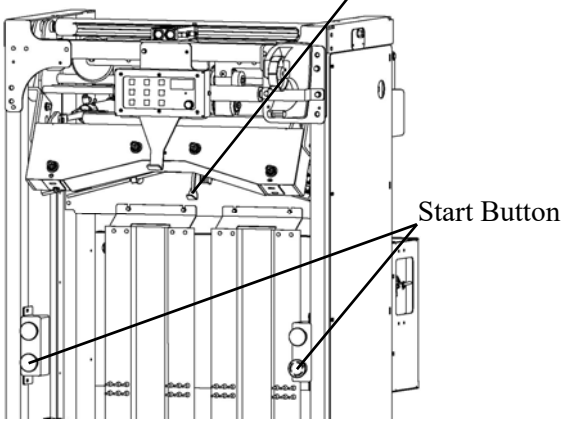



- Push the black power switch on the right side of the control box.
  → On the operation panel, the power lamp blinks and the display shows "----."
- Push the "Reset" button.
  → The power lamp remains ON and the machine is ready for operation. The display window shows a bagging count.

**Caution** Any operation is not available without pushing the Reset Button.

**Tips!** If Film Clamps are not in upper position, press Right and Left Start Button. They will go up to the right position.

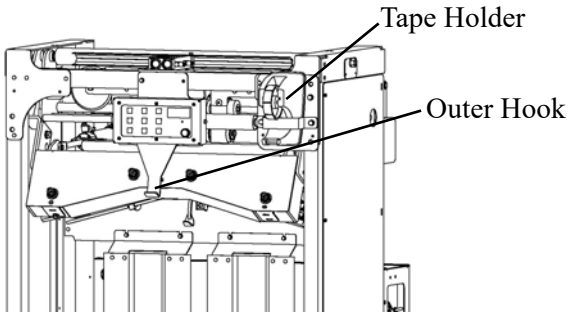
## 4. Start bagging.




- Hang the hanger of a garment you want to bag on the bagging hook.
- Push the left and right "Start" buttons together. The machine starts to bag the garment.
  →The machine starts to move down the film clamps, cuts the film to the length of the garment, puts the cut film over the garment, and moves up the film clamps.
- For bagging of the next garment, remove the bagged garment from the machine, hang the next garment hanger on the bagging hook and push the left and right "Start" buttons together.

**Information**

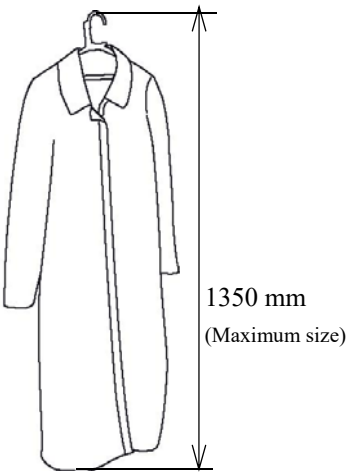
You can attach a tag and/or slip to a bagged garment. Hang the hanger of the bagged garment on a nearby hook outside the machine, cut out a piece of tape from the tape holder of the machine, and attach it to the garment film. (You can relocate the tape holder to the left side of the machine.)



**Information**

## ◎Bagging a long garment

This bagging machine can bag a garment of up to 1350 mm long (including the hanger portion. If a garment to be bagged is longer than 1350 mm, the film clamps stop at the Low Limit sensor position with beeps. (No sealing and cutting are done.) In this case, bag such a long garment in the procedure below.




① Push the "Reset" button to stop the buzzer.

② Hold both left and right ends of the film with your hands and pull down the film until the film covers the entire length of the garment.

③ Push the left and right "Start" buttons together.
→ The film is sealed and cut.

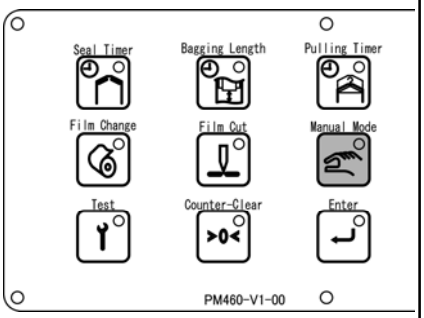
**CAUTION**
Do not put your hands into the machine when it is in operation.
You might get hurt with film cutters.

④ The film is a little uncut at the center.
Hold both left and right ends of the film with your hands and pull down the film to cut out the film.

⑤ Remove the bagged garment and push the left and right "Start" buttons together.
→ The film clamps move up to its home position.

## ◎Manual bagging

A "hooded thick garment" (that may break the bagging film) and a "very long garment" (that exceeds the ordinary bagging film) cannot be automatically bagged in ordinary films by this machine. You can bag these garments manually on this machine. In the Manual Bagging mode, you can select two kinds of bagging procedures by on/off-switching the "d6" bit of the DIP function. (See "5. diP (DIP Setting)" on Page 35.)
The manual bagging operations depend upon the on/off setting of the "d6" bit as follows:
**※The "d6" bit is factory-set to the ON position (by default).**




**a. When the "d6" bit is in the ON position (factory-set)**
(Mainly used for thick garments that may break the bagging film)

① Push the “Manual Mode” button on the operation panel.
→ Its green lamp lights.

② Push the left and right "Start" buttons together.
→ The film clamps move down to pull the film a little.
(The clamps unclamp the film and move down to the Low Limit position.)

③ Hang the garment hanger on the bagging hook, hold the film with your hands, put the film over the garment, and pull down the film until the entire garment is covered.

④ Push the left and right "Start" buttons together.
→ The film is sealed and cut.

**CAUTION** Do not put your hands into the machine when it is in operation. You might get hurt with film cutters.

⑤ Hold the film with your hands, pull down the film to the hanger shoulder, remove the bagged garment, and push the left and right "Start" buttons together.
→ The film clamps move up and the machine returns to the normal operation.

**b. When the "d6" bit is in the OFF position･･･**(Mainly used for a long garment that is longer than the bagging film)

① Push the “Manual Mode” button on the operation panel.
→ Its green lamp lights.
② Hang the garment hanger on the bagging hook.
③ Push the left and right "Start" buttons together.
→ The film clamps start to move down and stop when detecting the length of the garment. (The film is not sealed and cut.)
④ Hold both left and right ends of the film with your hands and pull down the film until the film covers the entire length of the garment.
⑤ Push the left and right "Start" buttons together.
→ The machine seals and cuts the film and the film clamps move down to the hanger shoulder.

**CAUTION** Do not put your hands into the machine when it is in operation. You might get hurt with film cutters.

⑥ Remove the bagged garment, and push the left and right "Start" buttons together.
→ The film clamps move up.

**Tips!** To manually bag the next garment, set the "d4" bit of the DIP switch to the ON position according to "5. diP (DIP Setting)" on Page 35 of Service Menu. The manual bagging is valid until the “Manual Mode” button is pushed to OFF (its green lamp goes off).

## 5. At the End of Bagging

○ Make sure the machine is not in operation and push the red button of the power switch on the side of the control box.
→ The power lamp and the display window on the operation panel go off.

## 6. Other operations

### ◎Changing time (timer) settings

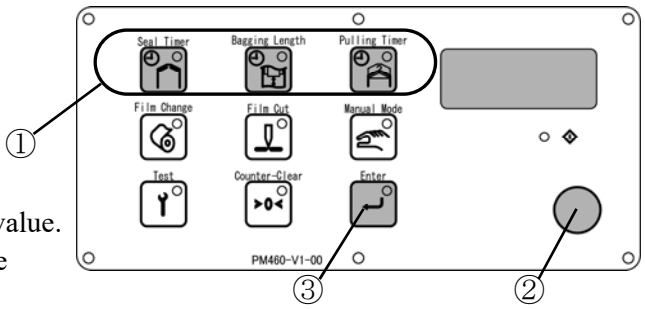
You can change "Sealing Timer," "Bagging Length Timer," and "Secondary Pulling Timer" settings if necessary.

Their initial values are as follows:

- ･Sealing Timer : 0.45sec. (Max 1.0sec)
- ･Bagging Length Timer : 0.20sec. (Max 0.5sec)
- ･Secondary Pulling Timer : 035sec. (Max 0.6sec)

You can change the settings (on the operation panel) in the following procedure:

① Select and push a Timer button whose setting you want to change.
→ The green lamp of the selected Timer button lights and the display shows the current setting value.




② Turn the "Set/Select dial" to get a new timer value.
* Turn the dial clockwise to increase the timer value.
* Turn the dial counterclockwise to decrease the timer value.

③ Push the "Enter" button.
→ The new timer value is saved.
※If you want to temporarily change a timer value and do not want it saved, push the same Timer button once more.

### ◎Recovering from Emergency Stop

When you push the "Emergency Stop" button, the bagging machine in any process safely stops and opens all cylinders excluding film clamp cylinders. At the same time, the display window on the operation panel shows "E 1" with beeps.
When pushed, the "Emergency Stop" button is temporarily locked at the bottom. To return the machine to the normal operation, turn "Emergency Stop" button clockwise (in arrow direction) to unlock the button. The display shows "---1" and the buzzer stops.
Then push the "Reset" button. The display shows the bagging count and the machine starts the normal operation.

# Film Changing Procedure

**CAUTION**

- The Seal Cut portion is equipped with cutters. Cutter blades are very sharp and dangerous. If you touch them, you may get hurt. Be very careful not to touch them when changing films.
- The work is a single-person work.

### ◎Forward/Reverse switch

You can select a rotational direction of the feed roller by the "Forward/Reverse" switch.

- Usually select "Forward" when using a plain film.
- When using a printed film (on which pictures and characters are printed), the printed surface comes to the front or back of the garment. This machine is equipped with a "Forward/Reverse" switch in the right of the power switch so that you can select a rotational direction of the feed roller according to the printed surface of the film. (Fig.1)

Fig.2 shows which rotational direction is selected according to the printed side of the film to bring the printed surface of the film before the front side of the garment.

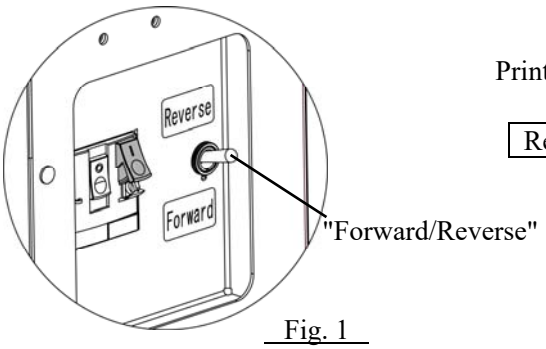



Fig. 1

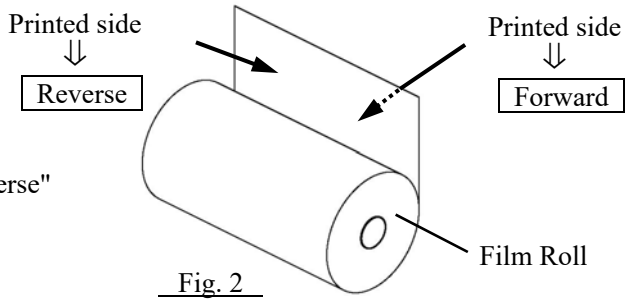



Fig. 2

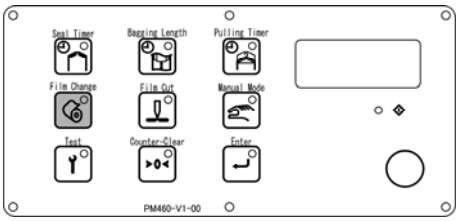
**Caution**

The film drawing direction and film installing procedure are partially dependent upon the rotational direction of the feed roller.

### ◎Film installing procedure

1. Turn on the power switch and push the "Reset" button. The machine becomes ready.

2. Push the "Film Change" button on the operation panel.
   →The film clamps move down and the film holder on the top of the machine opens.




3. Place the film roll on the film stocker.
   ① The film is drawn out in different directions according to the rotational direction of the roll. Place the film roll correctly on the feed roller according to Fig.3.

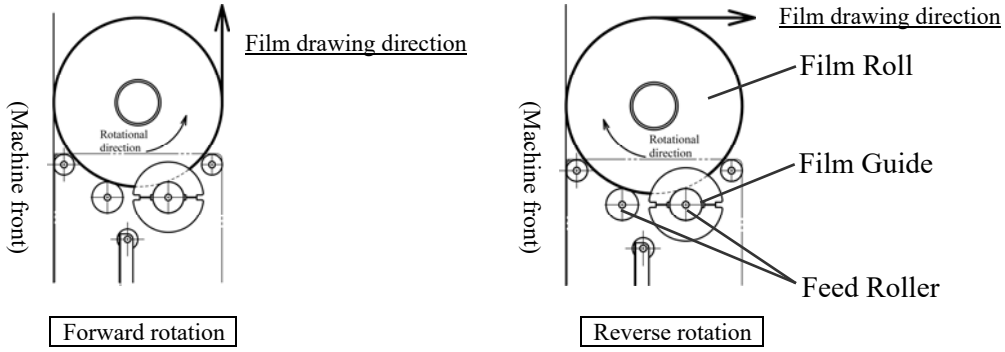



Fig. 3 (Viewed from the power switch side)

② Locate the film roll correctly on the film stocker by the film guides to align the film to the center of the film stocker.

③ Make a clearance of about 1 cm between the film guide and the end of the film roll at each side of the film stocker. (Fig.4)

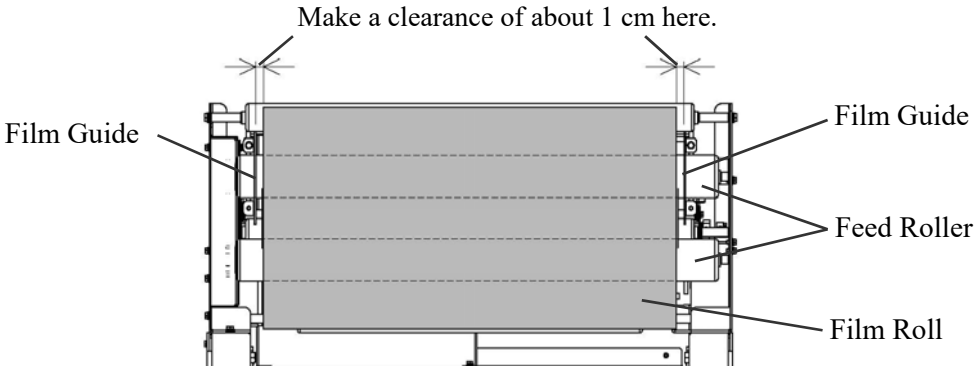



Fig. 4 (View from over the film stocker)

4. Pull the swing arm under the feed roller a little towards you. The feed roller turns. (Fig.4)
Install the film in the swing arm portion while pulling the film according to Fig.5.

**Caution**

- Note that the film is installed differently according to the rotational direction of the feed roller (the setting of the "Forward/Reverse" switch.
- Hold the connecting shaft at the center and pull the shaft when pulling the swing arm.
- When the rotation of the roll is not equal to the rotational direction selected by the "Forward/Reverse" switch, the power supply phases are reversed. Reverse the wires of the input power supply.

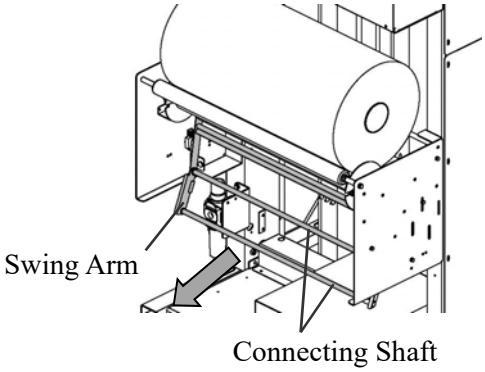



Fig. 4

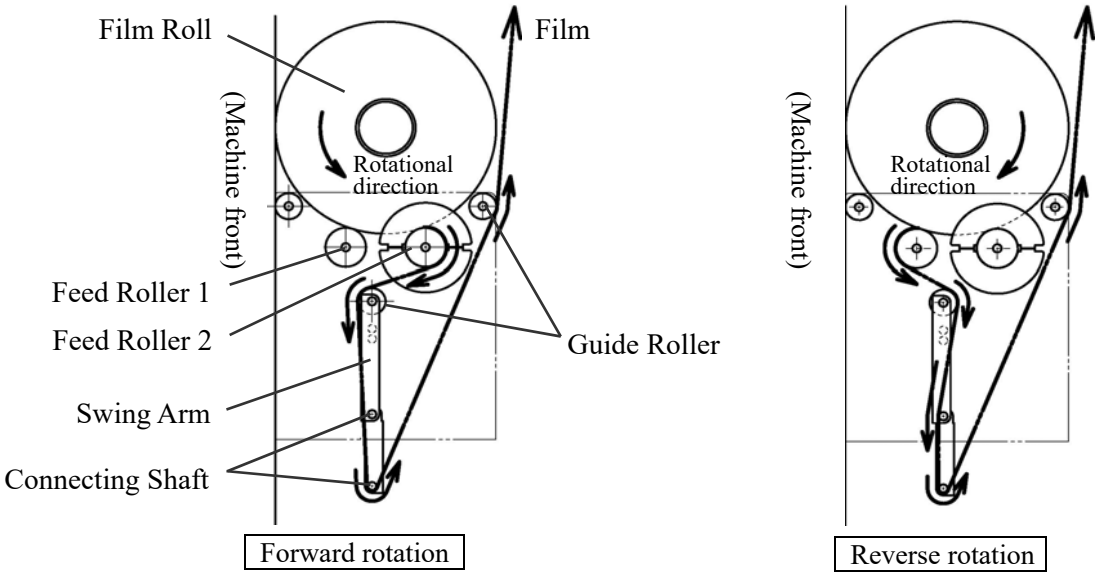
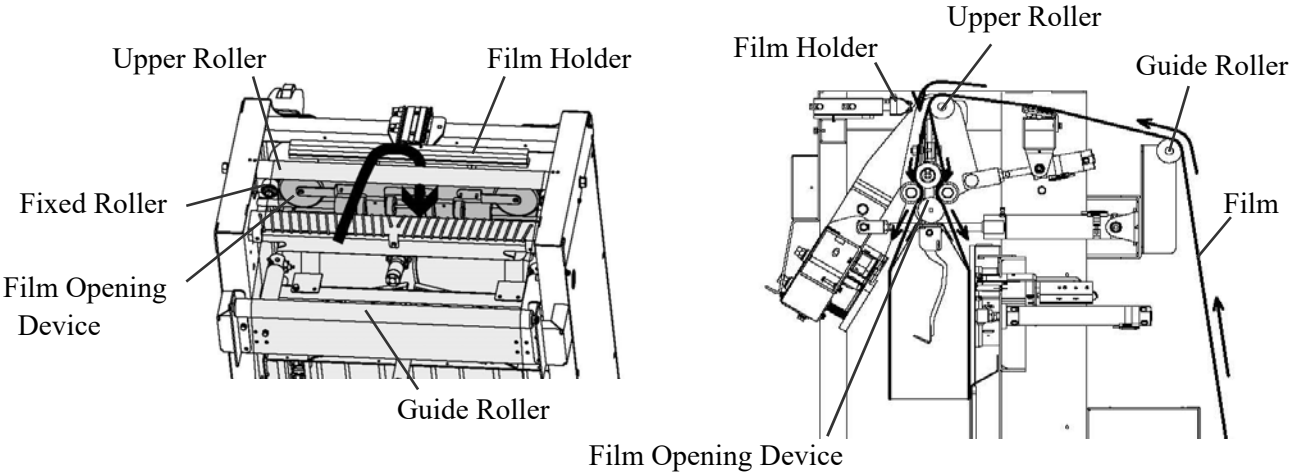



Fig. 5 (Viewed from the power switch side)

5. After installing the film in the swing arm portion, pull out the film by 2 more meters and then turn off the power switch.

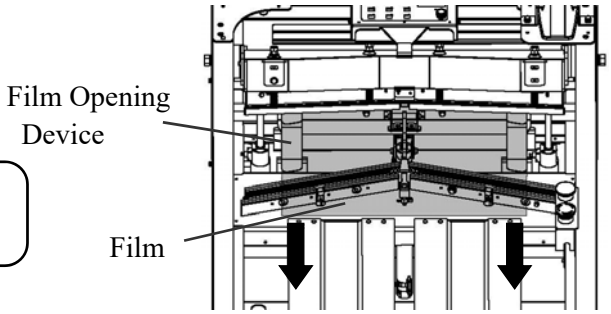
6. Guide the drawn film over the guide roller into the space between the upper roller and the film holder and then into the space between the film opening device and the fixed roller.
(The film opening device comes into the film sheets.)




Upper film installation route

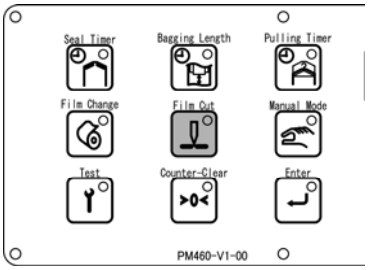
Fig. 6

7. Hold both left and right ends of the opened film and slowly pull down about 50 cm of the film. (Fig.7)




**Caution** Check the entire drawn film for kinks.

8. Turn on the power switch and push the "Reset" button.
→ The power lamp stops blinking and turns on. The machine is ready for bagging.




9. Push the "Film/Cut" button on the operation panel.
→ The drawn portion of film is cut.

**CAUTION** Do not put your hands into the machine when it is in operation. You might get hurt with film cutters.

10. Remove the cut film and push the left and right "Start" buttons together.
→ The film clamps move up.

With this, the film change work is completed. You can start bagging.

## ◎Adding film by splicing

When finding the end of the film, the machine automatically stops. You can quickly add a new film by splicing the new film to the existing film in the machine.

1. When finding the end of the film, the machine makes beeps with "E12" shown on the display window after completing the current bagging step. In this case, the film clamps do not move up.

2. Push the "Reset" button on the operation panel to stop the buzzer.

3. Place a new film roll on the film stocker.
   Repeat Steps 3 and 4 on Pages 19 and 20.

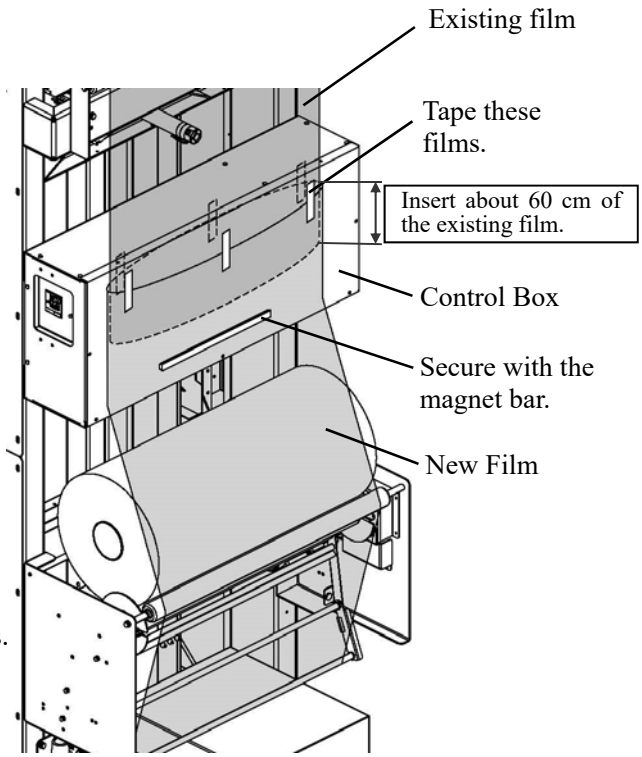
4. Draw out about 2 meters of the film coming from the swing arm portion.

5. Secure the leading portion of the drawn film on the control box with the magnet bar (accessory).

6. Put about 60 centimeters of the trailing portion of the existing film into the new film (tube) and firmly tape the new and existing films at 6 to 8 points.

7. Push the "Film Change" button on the operation panel.
   →The film holder on the top of the machine opens.

8. Turn off the power switch.




9. Remove the magnet bar that holds the film.

10. Hold both left and right ends of the film from the film opening device with your hands and slowly pull out the film until the overlapped film portion comes out from the film opening device.

11. Turn on the power switch and push the "Reset" button.
    →The power lamp stops blinking and turns on. The machine is ready for bagging.

12. Push the "Film/Cut" button on the operation panel to cut the film.

**CAUTION** Do not put your hands into the machine when it is in operation. You might get hurt with film cutters.

13. Remove the cut film portion and push the left and right "Start" buttons together.
    →The film clamps move up.

With this, the film change work is completed.

# How to Change Film Sealing Heater

**CAUTION**

- The dangerous sharp cutters are near the heater base. Be careful not to touch them when working on the heater base. If done, you may get hurt.
- The work is a single-person work.
- The machine is equipped with two left and right heater units. Replace both heater units together when they start to seal insufficiently.

If the film is not thermally sealed, the heater wire may be broken.
For continuity test of the heater wire by using a tester, remove one of the heater terminals and measure the resistance of the heater wire. (The heater wire resistance is normally 1 to 2Ω). If the resistance is too high, the wire may be broken. Replace the heater wire in the procedure below.

1. Push the "Manual Mode" button on the operation panel and then the left and right "Start" buttons together.
   →The film clamps move down.
2. Push the "Film/Cut" button on the operation panel and remove the cut film portion.
3. Turn off the power switch.
4. Pull out four heater terminals from the heater bases (two terminals per base) from behind the machine. (Fig.1)

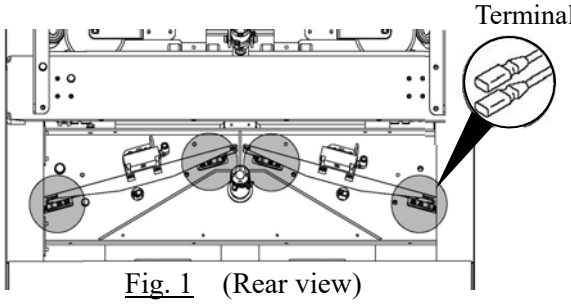
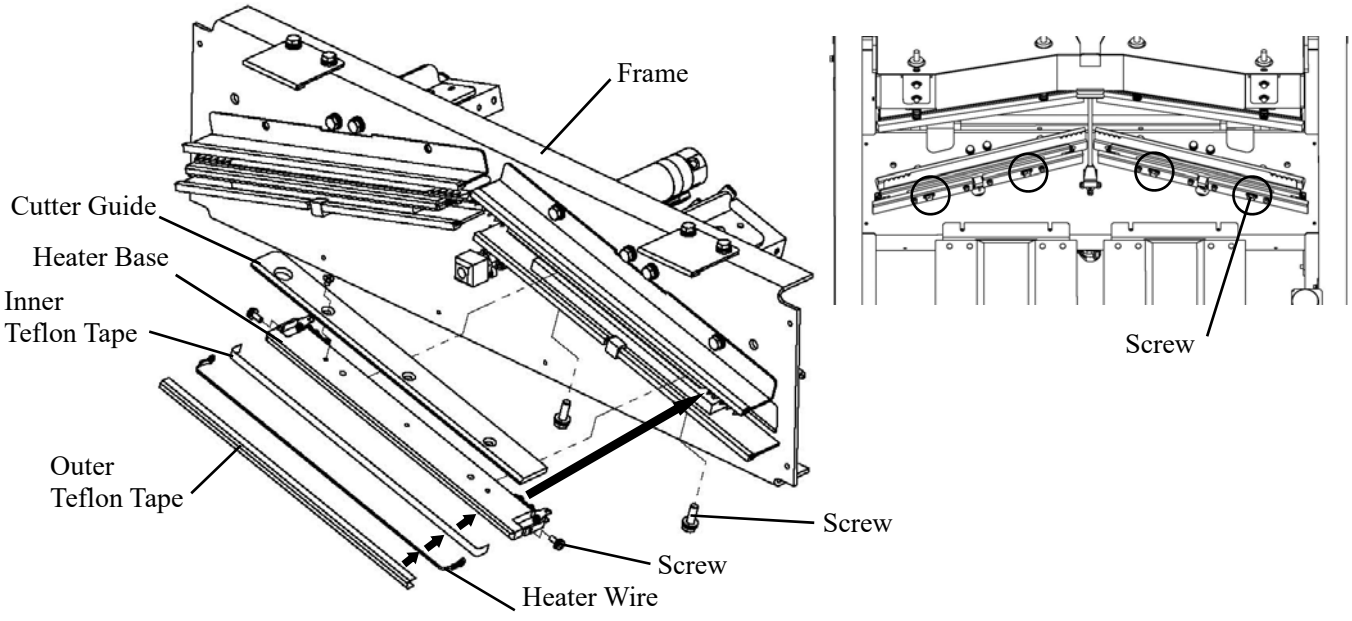


Fig. 1 (Rear view)

5. Loosen two mounting screws of each heater base and demount the heater bases.
6. Loosen three fixing screws of the cutter guide and demount the cutter guide from each heater base.
7. Remove the outer Teflon tape, loosen two heater wire fixing screws and remove the (broken) heater wire. (You need not replace the inner Teflon tape if it is not broken or damaged.)
8. Put a new heater wire straight on the inner Teflon base, secure the wire with heater wire fixing screws and attach the outer Teflon tape closely to the heater wire. (Be careful not to make the outer Teflon tape be twisted or wrinkled.)
9. Fit the cutter guide to the heater base and secure them with screws, Mount the heater base on the seal/cut base and secure them with two fixing screws while pushing the heater base against the seal/cut base.
10. Plug the heater terminals to each heater base.
11. Turn on the power switch and push the "Reset" button on the operation panel.
12. Push the left and right "Start" buttons together and make sure the film clamps move up.



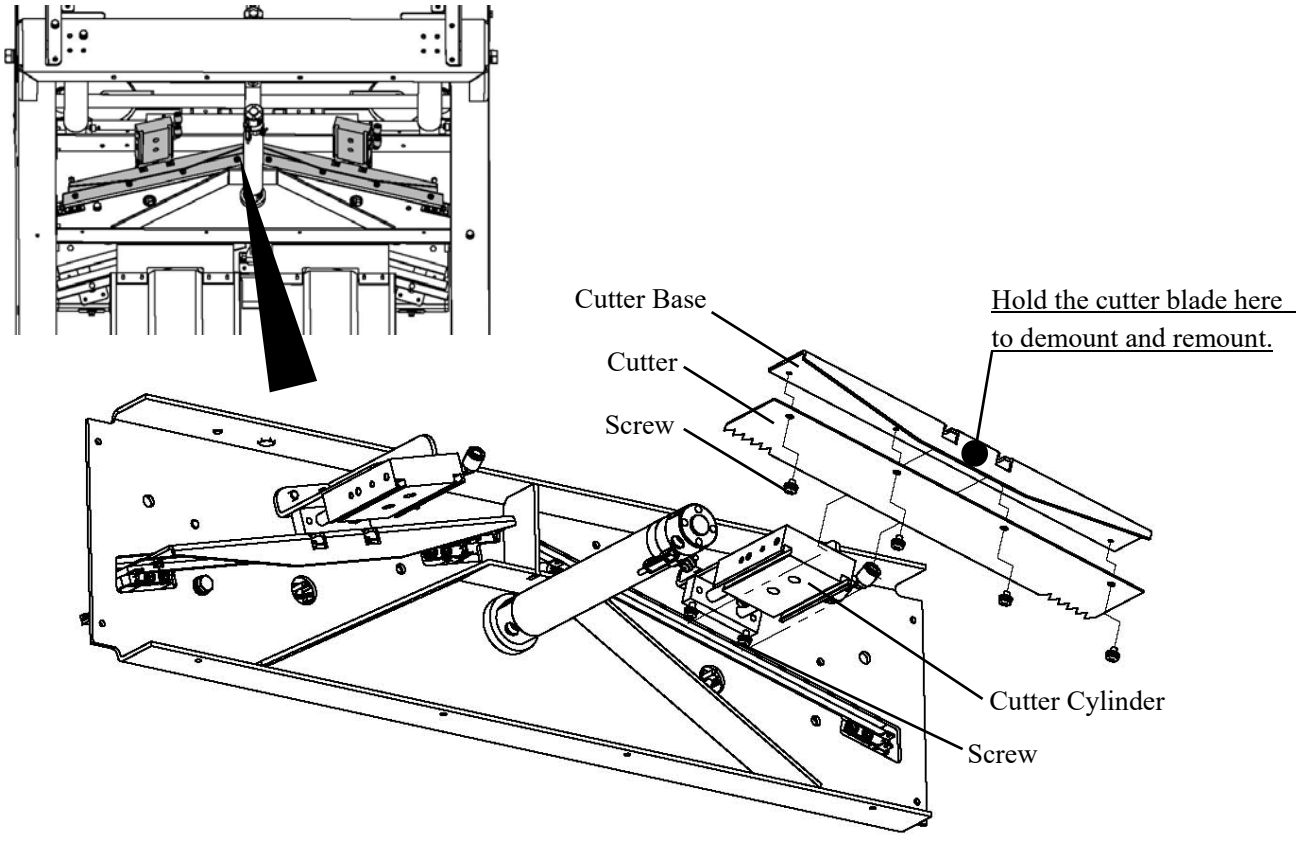
# How to Change Film Cutter

**CAUTION**

- Always be careful not to touch the cutter blade. If done, you may get hurt.
- The work is a single-person work.
- The machine is equipped with two left and right cutters. Replace both cutters together by new ones if they become blunt.

Replace the cutters when the films are not cut well or the cutter blade is damaged.
Always pay attention to cutter blades to protect yourself against cut injuries.

1. Push the "Manual Mode" button on the operation panel and then the left and right "Start" buttons together.
   →The film clamps move down.
2. Turn off the power switch.
3. Loosen two fixing screws of the cutter base on the cutter cylinder from behind the machine and move back the cutter base to demount. (You need not remove the fixing screws. Just loosen them.)
4. Remove four cutter mounting screws on the demounted cutter base and replace the cutter by a new one.
5. Push the cutter base from the back side to the front side to catch the fixing screws and tighten the fixing screws.
6. Turn on the power switch and push the "Reset" button on the operation panel.
7. Push the "Film/Cut" button on the operation panel to cut the drawn film and remove the cut film portion.
8. Push the left and right "Start" buttons together and make sure the film clamps move up.




**Tips!** Any film cutting dust sticking to the cutter blade will make the cutter blunt. The cutter blade may cut well again when the cutting dust is removed. However, this is a temporary measure. It is recommended to replace the cutters as early as possible.
The cutter may become blunt also when the cutter receiving rubber opposite to the cutter is contaminated with cutting dust or worn out. Check the rubber state.

# Adjustment

**⚠ CAUTION** Never let any other person operate the bagging machine while you are adjusting the machine. (The work is a single-person work.)

## 1. Film width adjustment

1-1. Film opening device

Perform the width adjustment below when the film clamps fail to clamp the film (clamping failure) or when the film opening portion tears the center of the film.

（1） Turn on the power supply and the air source with the film installed in the machine.

（2） Push the "Manual Mode" button on the operation panel and then the left and right "Start" buttons together.

→The film clamps move down.

（3） Push the left and right "Start" buttons together once more and remove the cut film portion.

（4） Turn off the power switch.

（5） When you look up inside the machine, you can see left and right film opening plates (leaf springs). Loosen four M4 screws (two screws each) in the center of the leaf springs and perform either of the following according to the symptom.

① When the film clamps fail to clamp the film (clamping failure) (because of loose film in the film opening device)

→Equally move the film opening plates outwards (leftward and rightward) from the center to give a proper tension to the film.

② When the film opening device tears the film at the center (because of tightly-tensioned film in the file opening device)

→Equally move the film opening plates inwards (to the center) to lessen the film tension to a proper tension.

（6） At the end of adjustment, firmly tighten the four M4 screws (two screws per opening plate) in the center of each opening plate.

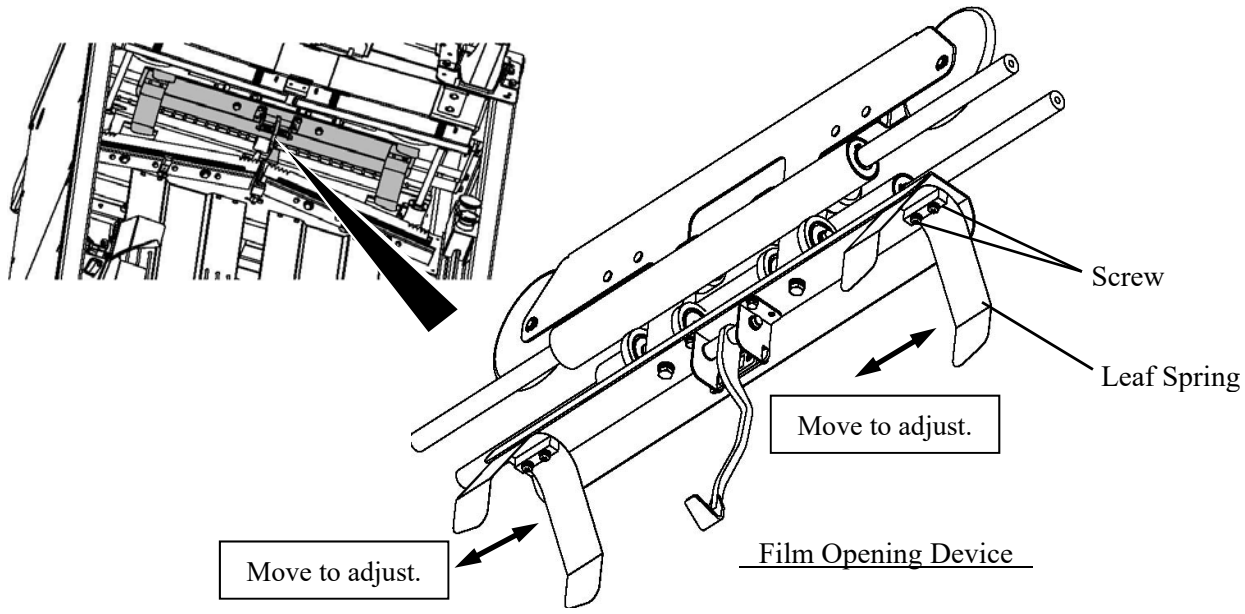
（7） Turn on the power switch and push the "Reset" button on the operation panel.

→The power lamp lights.

（8） Push the left and right "Start" buttons together and make sure the film clamps move up.

（9） Push the "Manual Mode" button on the operation panel. Then push the left and right "Start" buttons together to move down the film clamps. Push the "Film/Cut" button on the operation panel to cut the film. Check the opening state of the film.

（10） When the film is opened properly, push the left and right "Start" buttons together to move up the film clamps. Push the "Manual Mode" button on the operation panel to OFF (where its green lamp goes off).




Film Opening Device

1-2. Film clamp portion

Adjust the film clamp portion as follows when the clamped film tears at the center.

（1）Turn on the power supply and the air source with the film installed in the machine.

（2）Set the "d6" bit of the DIP function on the Service Menu to "OFF" if it is "ON." (See Page 29.)

（3）Push the “Manual Mode” button on the operation panel and then the left and right "Start" buttons together.

→The film clamps move down.

（4）Check the film opening state (film tension) and turn off the power switch.

（5）Loosen six M6 fixing bolts (3 bolts per film clamp) of the left and right film clamps and move the left and right film clamps equally to adjust the film tension according to the current tensional state.

（6）At the end of adjustment, firmly tighten the six M6 fixing bolts (3 bolts per film clamp).

（7）Turn on the power switch and push the "Reset" button on the operation panel.

→The power lamp lights.

（8）Push the “Film/Cut” button on the operation panel to cut the drawn film and remove the cut film portion.

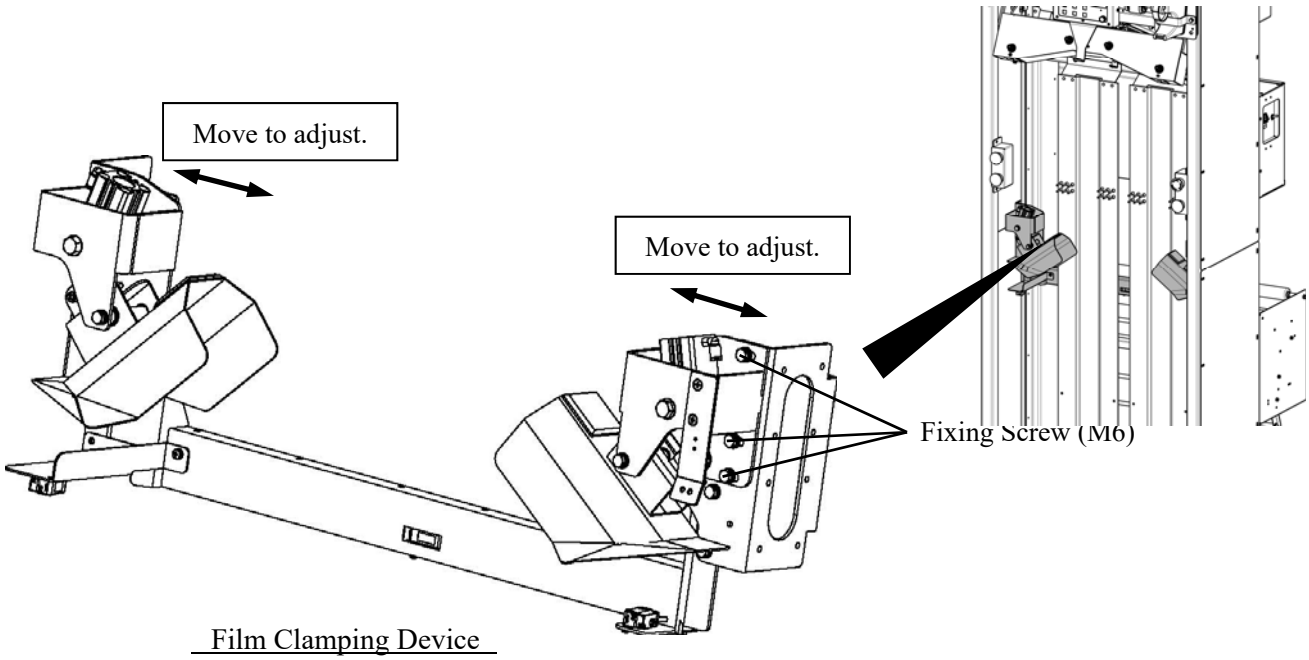
（9）Push the left and right "Start" buttons together and make sure the film clamps move up.

（10）Push the “Manual Mode” button on the operation panel. Push the left and right "Start" buttons together to move down the film clamps.

In this state, check the film opening state (film tension).

（11）After checking, push the “Film/Cut” button on the operation panel to seal and cut the film. Remove the cut film portion and push the left and right "Start" buttons together to move up the film clamps.

（12）Reset the "d6" bit of the DIP function to "ON" (if it has been changed to "OFF" in Step 2.)



## 2. Sensor Adjustment

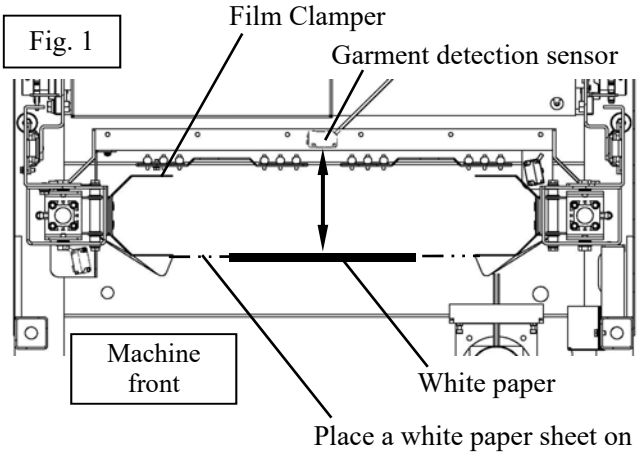
**⚠ CAUTION** Never let any other person operate the bagging machine while you are adjusting the machine. (The work is a single-person work.)

### 2－1. Garment detection Sensor (Center)

This sensor detects the length of a garment by light reflected on the garment.

（1）Push the "Film Change" button on the operation panel to move down the film clamps
（2）Make sure there is no film and garment to be detected and push the "SET" button on the sensor.
→The digital monitor of the sensor alternately shows SEt and a value.
（3）Place a white paper sheet on a line connecting front input clamp arms of the left and right film clampers. (Fig.1)
（4）Push the "SET" button on the sensor once more.
→The digital monitor of the sensor blinks a set value a several times and returns to the normal display state.
（5）Place your hand to shield the sensor and check how far your hand is detected by the sensor while moving your hand away from the sensor. (Fig.2)
The sensor detection is normal as far as you hand is detected on the line connecting front input clamp arms of the left and right film clampers.
＊The sensor can detect a range between the red and green lamps that light.

Fig. 1



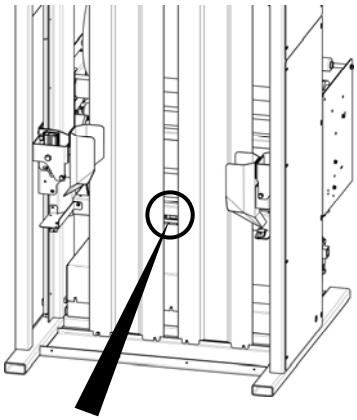
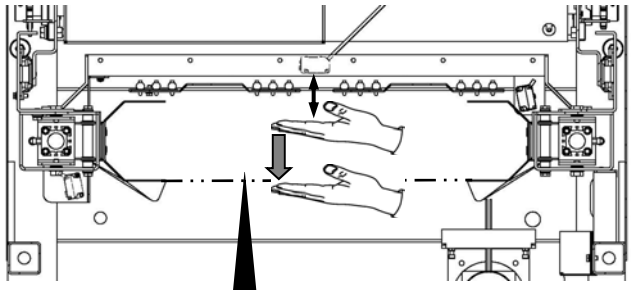
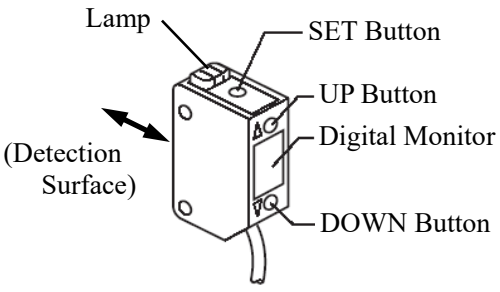



Fig. 2






**Caution** If the sensor is made to detect beyond this line, the sensor may detect the operator or a garment on the front hanger.

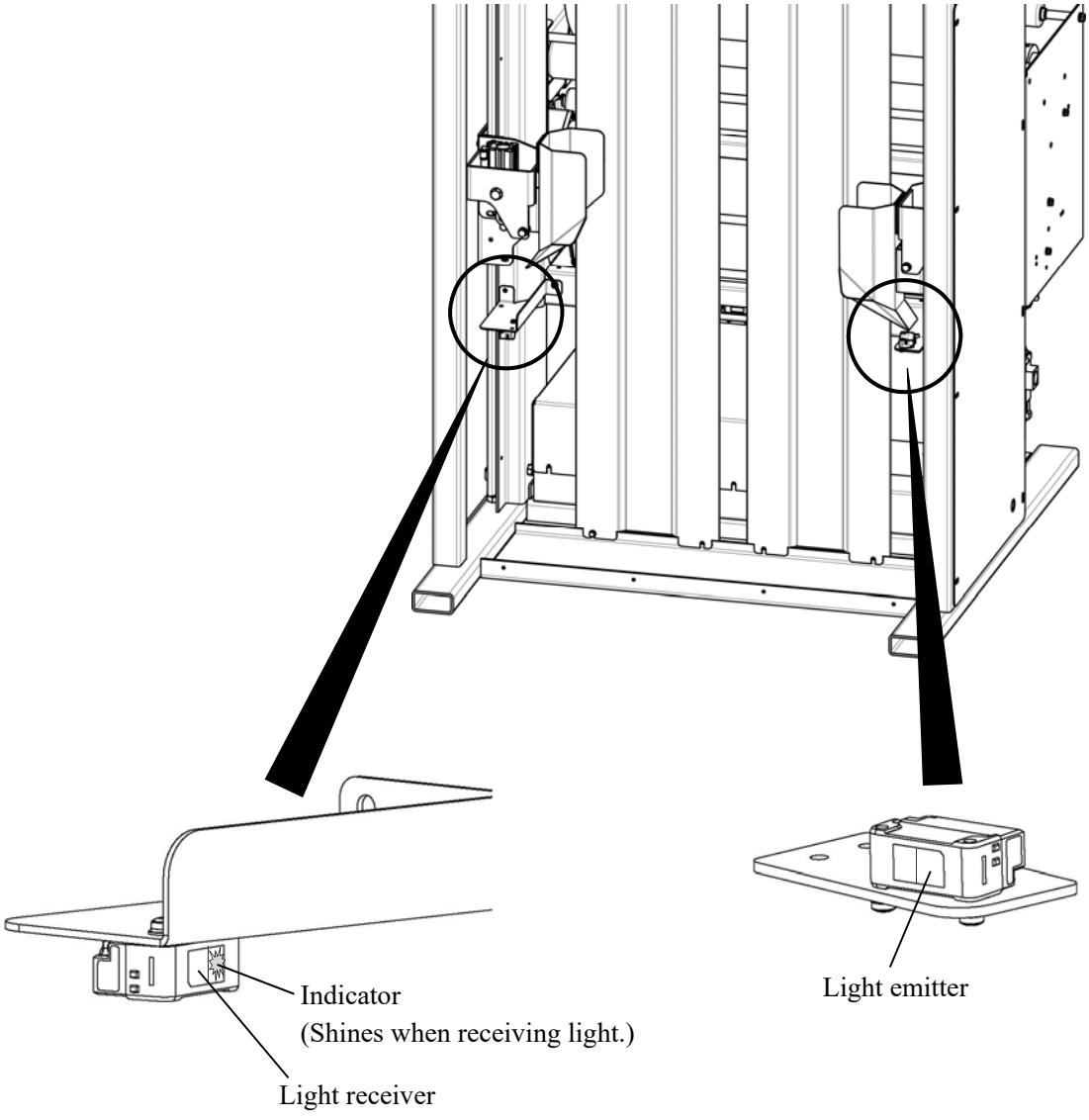
## 2－2. Garment detection Sensor (Right and Left)

This sensor detects the length of a garment by transmitted light.
This sensor consists of a light emitter (unit for emitting light) and a light receiver (unit for receiving light).

This sensor detects the length of a garment while the film clamps are moving down. The lamp of the light receiver is off while a garment is between the light emitter and the light receiver and on while a garment is not between them.

※Adjustment

Keep the bagging area clear (without any garment) and orient the light receiver (or light emitter) correctly to the light emitter (or light receiver) so that the lamp of the light receiver lights.



## 2－3. Cylinder Sensor

This sensor detects the cylinder operation.

When a cylinder sensor is shifted, a cylinder position error occurs and its error number (E27 to E30) is shown on the display window of the operation panel. Locate the cylinder sensor of the displayed error number in the "Sensor Diagram" (attached to the end of this manual) and adjust its position in the procedure below.

1. Turn on the power switch and make sure the lamp of the “Manual Mode” button is on.

2. Loosen the sensor fixing screw.

3. Slide the sensor on the rail, determine a range in which the red lamp of the sensor lights, position the sensor in the center of the range, and tighten its fixing screw. (Fig.1)

4. When the sensor position cannot be adjusted in Step 3, loosen the fixing screw of the sensor fixing band having the sensor in the center of the detection range, slide the sensor band on the cylinder body, determine a range in which the red lamp of the sensor lights, position the sensor in the center of the range, and firmly tighten the fixing screw of the sensor fixing band. (Fig.2)

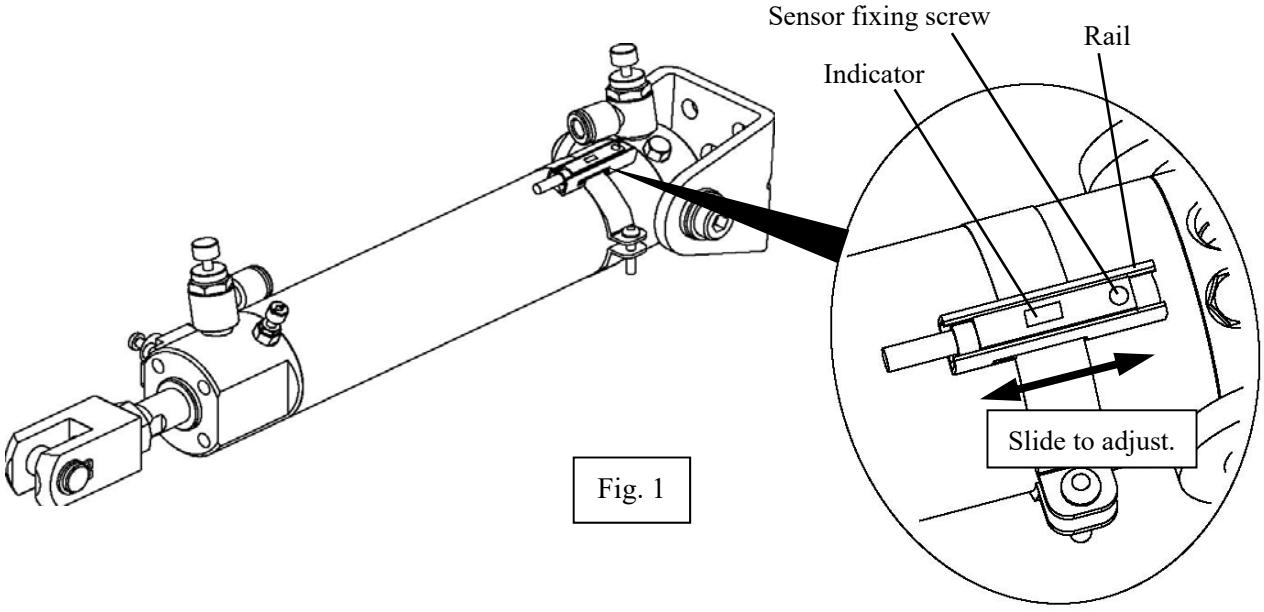



Fig. 1

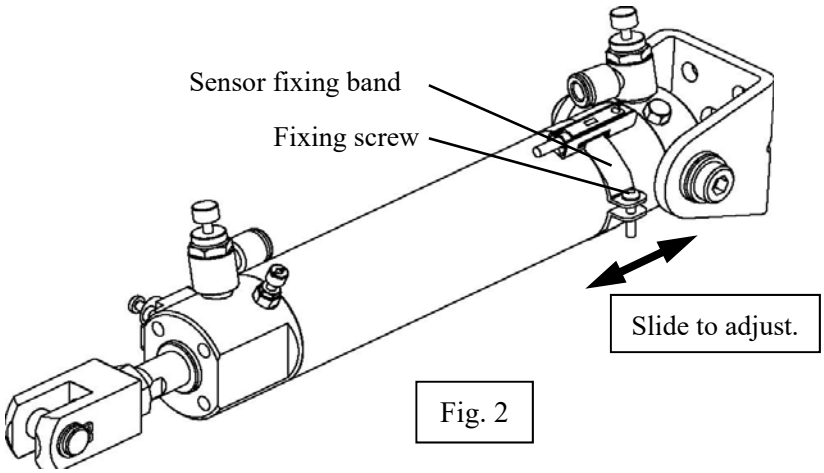
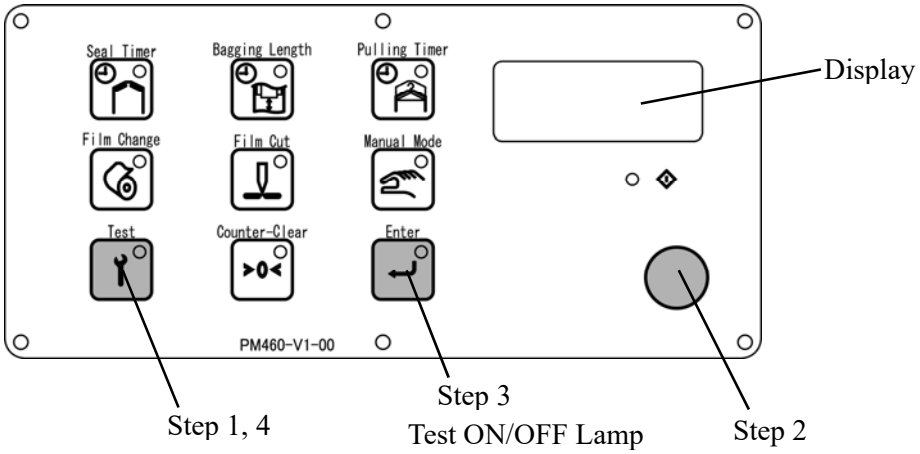



Fig. 2

# Test Operation

**WARNING** Before using the test operation, make sure there is no one working near the machine.

The test function runs machine components individually for adjustment and operation checks. If a component may interfere with the other component, the test function stops the operation (driving) of its cylinder with its sensor number shown on the display for one second. If the sensor operation is not proper, the cylinder may work abnormally. Therefore, sensor operations must be checked for safety prior to the test operation.




All test operations are done on the operation panel.

Step 1: Press the "Test" Button on the control panel.
→ The Green lamp will light up, and show "o1A" on the display.

Step 2: Select the test number with the “Set/ Select Dial”
→ Test number will go up with counterclockwise, and the number goes down with clockwise (The number is displayed with order of test number chart at page 31. )

Step 3: Press the “Enter Button”.
→ Test mode is now ON, and the function starts working. The “Enter” Button is blinking while the test is ON.
Press the “Enter Button” again to stop the test operation.

**Caution**
- The Test button is not pushed ON when a component (cylinder) has a problem. Its sensor number is shown on the display for one second with beeps.
- Be sure to set the Test button to OFF. Otherwise, you cannot go to the next test.

Step 4: Press the “Test” Button when you finish the test.
→ The Test Button lamp goes off. The Display Window shows shirt counter and the normal operation is ready to work.

## Test Number List

| No. | Test Item | Operation |
|---|---|---|
| o1A | Film Clamp Downward | Moves down the film clamps. The film clamps move down while the button is pushed on or stops when reaching the Low Limit position. |
| o1b | Film Clamp Upward | Moves up the film clamps. The film clamps move up while the button is pushed on or stops when reaching the High Limit position. |
| oLo | Film Clamp Downward Slow | Moves down the film clamps more slowly than that of "o1A." |
| ouP | Film Clamp Upward Slow | Moves up the film clamps more slowly than that of "o1A." |
| o3b | Film Feed Motor | Rotates the Film Feed motor (roller). |
| o4A | Film Clamp Solenoid (No.2) | Drives the Film Clamp cylinder. |
| o4b | Film Hold Solenoid(Open) (No.3) | Drives the Film Brake cylinder. |
| o4C | Cutter Solenoid (No.4) | Drives the Cutter cylinder.<br>**※Always keep your hands away from the moving cutter for safety.** |
| o5A | Garment Ejection Solenoid (No.5) | Drives the Garment Ejection cylinder. |
| o5b | Seal and Cut Solenoid (No.6) | Drives the Seal & Cut cylinder.<br>(This solenoid does not work when the film clamps are in the High Limit position.)<br>**※Always keep your hands away from the Seal & Cut unit for safety.** |
| o6A | Heater Main Relay | Turns on the electromagnetic contactor (KM02) for heater power.<br>The contactor does not turn off because of its self-holding circuit. |
| o6b | Heater | Turns on the heater relay (SSR01). The power to the heater relay is automatically turned off in 0.2 second to prevent overheating. For the first test, the heater power is turned on and the heater relay is not turned on. |
| o10A | Film Hold Solenoid (Closed) (No.7) | Moves the Film Brake cylinder toward the film holder. |
| o10b | Buzzer | Keeps the buzzer beeping while you are pushing the button. |
| oinP | Input Test | When you press each Input Button, you can see its button number. (Please see each button number on page 34.) |
| odsP | Panel Display Test | By turning Set/Select Dial, you can check if the Display Window properly shows various numbers.<br>Press the Enter Button to finish. |
| obtn | Panel Button Test | By pressing each Button on the Operation Panel, you can check if each button properly works. The green light goes ON. Press the Enter Button to finish. |

# Service Menu

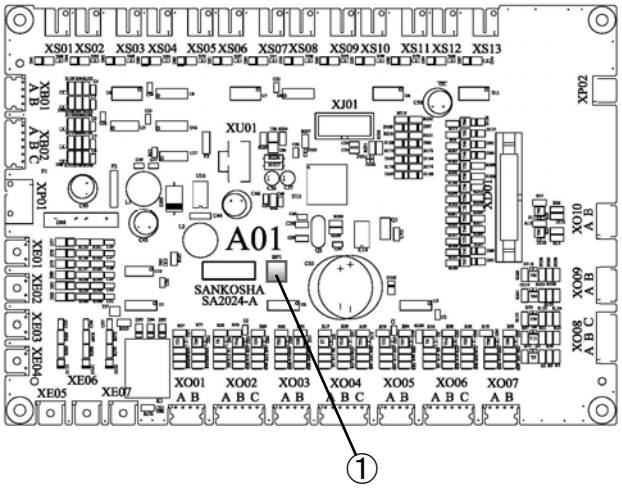
**WARNING**

It is extremely dangerous in Control Box.
Do not touch anywhere unless otherwise specified.

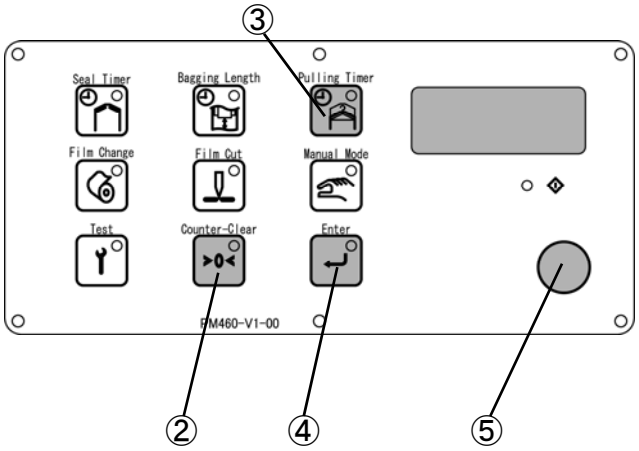
Press the Service Button (BP1) on the main circuit board in the control box; you can check the “Input Test”, “Output Test”, “Volume Setting”, “Dip Setting” and “Timer Setting”. Furthermore, you can reset all the settings to factory initial setting and check the software version.

■ The location of the Service Button on the main Circuit Board, all the Button for Service Menu and their functions are as follows.

Main Circuit Board




Operation Panel




① Service Button
Press this button. “In1” shows up and the Service Menu is ready to work.

② Counter Clear Button
When the Service Menu works, this button functions as the return button.

③ Secondary Pulling Timer Button
On Input Test 2, the light turns ON when the test is ON. The light turns OFF when the test is OFF.

④ Enter Button
Press this button in order to determine the selected menu or change the setting.

⑤ Set/Select Dial
Turn this dial to select each Menu or change the setting.
- Turn to the right: going forward and the number increases.
- Turn to the left: going back and the number decreases.

■Service Menu List (Please see “Service Menu Explanation” for further details.)

| Display | Displayed word | Function |
|---|---|---|
| in 1 | in1 | Input test 1 is operated. |
| in2 | in2 | Input test 2 is operated. |
| out | out | Output test is operated. |
| VoL | VoL | Each volume setting. |
| diP | diP | Dip function setting. |
| tou | tou | Time setting displayed in display window. |
| dEF | dEF | Initialization of volume setting is operated. |
| VEr | VEr | Running program version display. |

■ Operation process

1. Press ① “Service Button”.→ in 1 shows on the Display Window.
2. Turn ⑤ ”Set / Select Dial” and select the Service Menu you want to work.
3. Press ④ ”Enter Button” to start the selected Service Menu.
4. Work or set on the selected Menu. See “Service Menu Explanation” for further details.
5. After completion of the Menu, press ② “Counter Clear Button”, and return to the normal operation. (Normal operation will resume after a certain period of time goes by without pressing this button.)

## ■ Service menu explanation

1. in1 (Input Test 1)

・Display [in 1] by Operation Procedure 1. Press ④ the “Enter Button” to select.

・If you press each Button/Pedal (Chart-1), the number shows up.

Chart-1 “Input Test 1” List

| Input Button／Sensor Name | No. | Input Button／Sensor Name | No. |
|---|---|---|---|
| Reset Button | b1A | Safety Guard Sensor (Left) * | S 6 |
| Film Empty Sensor * | b2A | Safety Guard Sensor (Right) * | S 7 |
| Left Start Button | b2C | Seal and Cut Close Sensor * | S 8 |
| Length Detection Sensor (Center) * | S 1 | Seal and Cut Open Sensor * | S 9 |
| Length Detection Sensor (Side) * | S 2 | Film Opener Sensor (Return) * | S 10 |
| Clamp Assy. Top Sensor * | S 3 | Ejection Home Position Sensor * | S 11 |
| Clamp Assy. Safety Sensor * | S 4 | | |
| Clamp Assy. Bottom Sensor * | S 5 | Right Start Button | S 13 |

* When a sensor changes its ON/OFF state, its number is shown on the display.

2. In2 (Input Test 2)

・Display [in2] by Operation Procedure 1 and 2. Press ④ the “Enter Button” to select.

・Turn ⑤ the "Set/Select Dial". The number (Chart -1) and its status (ON or OFF) shows up one by one. When it is ON, the lamp of ③ the " Secondary Pulling Timer Button" also turns ON.

3. out (Output Test)

**CAUTION**

An output test should stop air and steam.
There is possibility of machine failure or burn.

・Display [out] by Operation Procedure 1 and 2. Press ④ the “Enter Button” to select.

・Turn ⑤ the “Set/Select Dial”. Select the number (Chart-2) you want to test, then press ④ the “Enter Button”. The selected test menu is ready to work.

Chart-2 “Output Test” List

| No. | Output Name | Remarks |
|---|---|---|
| o03A | Clamp Brake Release Relay | KM04 |
| o03b | Film Drive Relay | KM01 |
| o04A | Film Clamp Solenoid | YV2 |
| o04b | Film Hold Solenoid (OFF) | YV3 |
| o04C | Cutter Solenoid | YV4 |
| o05A | Garment Ejection Solenoid | YV5 |
| o05b | Seal and Cut Solenoid | YV6 |
| o10A | Film Hold Solenoid (ON) | YV7 |
| o10b | Buzzer | |

4. VoL (Volume Setting)
・Display [UoL] by Operation Procedure 1 and 2. Press ④ the "Enter Button" to select.
・Turn ⑤ "Set/Select Dial". Select the number (Chart-3) you want to change, then press ④ the "Enter Button". The timer of the selected Volume Setting shows up.
・Change the timer by turning ⑤ the "Set/Select Dial". Set the timer by pressing ④ the "Enter Button" once again.

Chart-3 "Volume Setting" List

| No. | Setting | Default Setting |
|---|---|---|
| V 1 | Set a time period between the end of bagging and the start of up-movement of the film clamps. | 0.5sec. (Max 2.0sec) |
| V 2 | Set a seal holding time to keep on closing the seal cut portion after sealing is done for the specified seal time period (set by the sealing timer) to make the sealed film portion stable in the seal cut operation. | 0.5sec. (Max 1.0sec) |
| V 3 | Set a minimum time period required to move down the film clamps. | 0.75sec. (Max 3.0sec) |
| V 4 | Set a time period required to close the film clamps at the High Limit position when starting the bagging. | 0.3sec. (Max 1.0sec) |
| V 5 | Set a time period until the Film Feed motor stops after the swing arm detects a sensor (SQ10) in the film stocker. | 0.1sec. (Max 0.5sec) |
| V 6 | — | |
| V 7 | Set a time for a machine to judge it as continuation bagging. (Time from Heater OFF to the following heater ON) | 5.0sec. (Max 20.0sec) |
| V 8 | The number which makes decrease seal timer at continuous bagging. | 3. (Max 9 ) |
| V 9 | Set time for poly supply motor stops after poly clamps stop after detecting garment length by the garment detection sensor in the center. (In automatic operation mode.) | 0.0sec. (Max 2.0sec) |

5. diP (DIP Setting)
・Display [diP] by Operation Procedure 1 and 2. Press ④ the "Enter Button" to select.
・Turn ⑤ the "Set/Select Dial". Select the number (Chart-4) you want to change, then press ④ the "Enter Button". The current setting will show up.
・Turn ⑤ the "Set / Select Dial" to change ON or OFF. Press ④ the "Enter Button" again. The new setting is now saved.

Chart-4 "DIP Setting" List

| No. | ON/OFF | Setting | Default Setting |
|---|---|---|---|
| d 1 | ON | Disables detection of moving-up of a garment while the film clamps move up. | ON |
| | OFF | Enables detection of moving-up of a garment while the film clamps move up. | |
| d 2 | ON | Disables detection of film shortage in the film stocker. | OFF |
| | OFF | Enables detection of film shortage in the film stocker. | |
| d 3 | ON | Enables start reservation (to start bagging of the next garment after the film clamps reach the High Limit position) when the Start button is pushed while the film clamps are moving up. | OFF |
| | OFF | Disables start reservation and stops the film clamps at the High Limit position when the Start button is pushed while the film clamps are moving up. | |

| No. | ON/OFF | Setting | Default Setting |
|---|---|---|---|
| d 4 | ON | Enables manual continuous bagging of garments in the Manual Operation mode. | OFF |
| | OFF | Enables manual bagging of a single garment in the Manual Operation mode. | |
| d 5 | ON | Stops after seal cutting in the Manual Operation mode. | ON |
| | OFF | Moves down the film clamps after seal cutting in the Manual Operation mode. | |
| d 6 | ON | Enables manual bagging of a thick garment. | ON |
| | OFF | Enables manual bagging of a particular garment such as a garment whose sleeves are longer than the corsage and a garment (e.g., long pants) which is longer than the ordinary film length. | |
| d 7 | ON | NO USE （Operate the machine with factory setting ON.） | ON |

6. tou (Timer Setting)
   - Display [tou] by Operation Procedure 1 and 2. Press ④ the "Enter Button" to select.
   - Turn ⑤ the "Set/Select Dial". Select the number (Chart-5) you want to change, then press ④ the "Enter Button". The selected timer shows up.
   - Change the timer by turning ⑤ the "Set/Select Dial". Set the timer by pressing ④ the "Enter Button" once again.

Chart-5 "Timer" List

| No. | Setting |
|---|---|
| t 1 | Change time to return to the normal position without pressing any buttons when each timer is set |
| t 2 | Change time to press Counter Clear Button in order to reset the Counter "0" |
| t 3 | Not in Use (Nothing happens even though you change the time) |
| t 4 | Change time to return to the initial display if you do nothing with Service Menu. |
| t 5 | Change time to return to the initial display if you do nothing with Input Test. |

7. Def (Default Setting)
   - Display [dEF] by Operation Procedure 1 and 2. Press ④ the "Enter Button" to select.
   - OFF" shows up at the Display Window. Turn ⑤"Set/Select Dial" to set it "ON".
   - Press ④"Enter Button" again, All the settings return to the factory original setting.

8. VEr (Program Version)
   - Display [VEr] by Operation Procedure 1 and 2. Press ④ the "Enter Button" to select.
   - The version number of the current program shows up.

# Trouble Shooting

◎ During the operation, an error number shows up at the Display Window on the Operation Panel if something is wrong. Check below List, and take the necessary action.
Call your dealer or Sankosha if the normal operation does not resume.

**WARNING**

**It is extremely dangerous in Control Box.**
Do not touch anywhere unless otherwise specified.

**CAUTION**

If any of [EEE], [EE1], [EE2], [EE3], [EE4], or [EE5] shows up,
Turn the power OFF and turn the power ON again **more than 5 seconds later**.
Call your dealer or Sankosha if the normal operation does not resume.

**Information**

* Please see the "Sensor Diagram" on the last page for the location of each sensor or button.
* You can make sure of the each sensor or button through "Input Test 1" in Service Menu. (Page 34)

| Error No. | 1. Error Item<br>2. Error Description<br>3. Check Point |
|---|---|
| **E 1** | 1. Emergency Stop Button<br>2. The button is staying activated.<br>3. (1) The Emergency Stop Button is not released. Insuring safety, release the Emergency Stop Button by turning the Button clockwise (→ direction), and press the Reset Button.<br>(2) Wiring may be the cause if E1 displays even after releasing it. Check the Button itself or check if the wire is cut. |
| **E10** | 1. Reset Button Error<br>2. Reset Button is being pressed over 10 seconds.<br>3. (1) In the case of keep pushing the button, please release the button. Also, please remove anything which is pushing the button. If you press the button again, the machine will return to its original position.<br>(2) Even if the button is not pressed, if it is showing "E10" error, it is a button problem. Please check whether the switch is broken or a wire connection is loose or disconnected. |
| **E11** | 1. Heater error<br>2. The heater is powered on for a long time.<br>3. Turn off the power switch of the machine and turn on the power switch. If this error occurs again, the error may be caused by a failure of the solid state relay (SSR) or circuit board.<br>※This error cannot be reset by the Reset button. To reset it, the power switch must be turned off. |

| Error No. | 1. Error Item<br>2. Error Description<br>3. Check Point |
|---|---|
| **E12** | 1. Film Detection Sensor error<br>2. The Film Detection sensor (SQ10) remains ON.<br>3. (1) No film is in the film stock. Supply a new film roll according to "Film changing procedure" (Pages 18 to 21).<br>(2) In the case this error occurs although the film is sufficient ...<br>① Check whether the film is installed correctly according to Pages 19 and 20.<br>② The film or paper tube may be caught by the film guide plate and the feed roller may rotate vainly. Move the film guide plate and check according to Page 19.<br>③ The blue feeding belt on the film roller in the film stocker may be contaminated or worn out and slippery. Clean or replace the feeding belt (if the belt is worn out). |
| **E13** | 1. Inverter error<br>2. The film clamp driving motor is overloaded.<br>3. ※ Turn off the power switch, wait 2 minutes or more (for inverter protection), and turn on the power switch again.<br>Turn off the power switch and check/inspect the clamp unit and the drive chain for problems. If the error occurs again immediately, read the error number displayed on the inverter unit in the control box and call your local Sankosha distributor or our customer service section.<br>※ To check the wiring of the inverter, turn off power and wait at least 15 minutes (until the red CHARGE lamp on the inverter panel goes off). The lamp is on while the inverter has electric charge. |
| **E14** | 1. Left Start Button Error<br>2. Left Start Button is being pressed over 10 seconds.<br>3. (1) In the case of keep pushing the button, please release the button. Also, please remove anything which is pushing the button. If you press the Reset button, the machine will return to its original position.<br>(2) Even if the button is not pressed, if it is showing "E14" error, it is a button problem. Please check whether the switch is broken or a wire connection is loose or disconnected. |
| **E20** | 1. Detection Sensor (Center) error 〈In the case of the "d1" bit of the DIP switch function is OFF〉<br>2. The Detection Sensor (PH01) works while the film clamps are moving up.<br>3. The garment is brought up by the film clamps while the film clamps are moving up. Remove the garment. |
| **E21** | 1. Length Detection Sensor (Left and Right) error<br>2. The Detection Sensor (PH02) works while the film clamps are moving up.<br>3. The garment is brought up by the film clamps while the film clamps are moving up. Remove the garment. |
| **E22** | 1. Film Clamp High Limit Sensor error<br>2. The Film Clamp High Limit Sensor (SQ01) does not work.<br>3. (1) The film clamps are not in the High Limit position. Push the left and right "Start" buttons together to move up the film clamps.<br>(2) In the case the film clamps are in the High Limit position ...<br>① The High Limit Detect sensor may be shifted. Move the sensor to a position at which the operation lamp lights.<br>② When the High Limit Detect sensor does not work still after the above adjustment, the sensor may be faulty or the wiring may be broken (or loose connector connection). Check them.<br>③ The film clamps started to move down 1 second before but the sensor does not work. The chain may be loose or the motor may be faulty. Check them. |

| Error No. | 1. Error Item<br>2. Error Description<br>3. Check Point |
|---|---|
| **E23** | 1. Clamp Assy. Safety Sensor error<br>2. The Clamp Assy. Safety sensor (SQ02) does not work but the High Limit sensor (SQ01) works while the film clamps are moving up.<br>3. (1) The Clamp Assy. Safety sensor may be shifted. Move the sensor to a position at which the operation lamp lights.<br>(2) When the Clamp Assy. Safety sensor does not work still after the above adjustment, the light shielding fitting may be deformed, or the sensor may be faulty, or the wiring may be broken (or loose connector connection). Check them. |
| **E24** | 1. Film Clamp Low Limit sensor error<br>2. The Low Limit sensor (SQ03) works or the Low Limit sensor does not work while bagging is in progress.<br>3. (1) In the case the Film Clamp Low Limit sensor detects ...<br>The film clamps started to move up 1 second before but the sensor does not work. The chain may be loose or the motor may be faulty. Check them.<br>(2) In the case the Film Clamps are not detected by the Low Limit sensor...<br>① The Low Limit Detect sensor may be shifted. Move the sensor to a position at which the operation lamp lights.<br>② When the Low Limit Detect sensor does not work still after the above adjustment, the sensor may be faulty or the wiring may be broken (or loose connector connection). Check them. |
| **E25** | 1. Catching Detection Left Sensor error<br>2. The Catching Detection Left sensor (SQ04) works when the seal cut portion is closed.<br>3. (1) The seal cut portion caught a foreign object. Remove it.<br>(2) In the case the seal cut portion catches nothing ...<br>① The catching detection bar may malfunction. Check whether the detection bar interferes with anything or the guide shaft spring of the detection bar is broken.<br>② Check whether the grease of the guide shaft of the detection bar is insufficient.<br>③ When the Catching Detection Left sensor does not work still after the above adjustment, the sensor may be faulty or the wiring may be broken (or loose connector connection). Check them. |
| **E26** | 1. Catching Detection Right Sensor error<br>2. The Catching Detection Right sensor (SQ05) works when the seal cut portion is closed.<br>3. (1) The seal cut portion caught a foreign object. Remove it.<br>(2) In the case the seal cut portion catches nothing ...<br>① The catching detection bar may malfunction. Check whether the detection bar interferes with anything or the guide shaft spring of the detection bar is broken.<br>② Check whether the grease of the guide shaft of the detection bar is insufficient.<br>③ When the Catching Detection Left sensor does not work still after the above adjustment, the sensor may be faulty or the wiring may be broken (or loose connector connection). Check them. |

| Error No. | 1. Error Item<br>2. Error Description<br>3. Check Point |
|---|---|
| **E27** | 1. Seal Cut (Cylinder) Close Sensor error (Left seal cut cylinder)<br>2. The seal cut cylinder solenoid valve (No.6) turns on and the seal cut portion closes. But the Seal Cut Close Sensor (SQ06) does not work.<br>3. (1) The supply air pressure may be under the specified pressure (0.6MPa). Adjust the pressure (if lower) according to Page 14.<br>(2) The cylinder sensor may be shifted.<br>Attach a magnet to the left Seal & Cut Cylinder sensor and check whether the red lamp of the sensor lights ...<br>① When the lamp lights: Adjust the sensor position according to Page 29.<br>② When the lamp does not light: The sensor may be faulty.<br>The sensor may be faulty or the wiring may be broken (or loose connector connection). Check them.<br>(3) When the cylinder does not work, the cylinder or solenoid valve (No.6) may be faulty. |
| **E28** | 1. Seal Cut (Cylinder) Open Sensor error (Right seal cut cylinder)<br>2. The Seal Cut Open Sensor (SQ07) does not work when the seal cut portion opens after seal-cutting is completed.<br>3. (1) The cylinder sensor may be shifted.<br>Attach a magnet to the right Seal Cut Cylinder sensor and check whether the red lamp of the sensor lights ...<br>① When the lamp lights: Adjust the sensor position according to Page 29.<br>② When the lamp does not light: The sensor may be faulty.<br>The sensor may be faulty or the wiring may be broken (or loose connector connection). Check them.<br>(3) When the cylinder does not work, the cylinder or solenoid valve (No.6) may be faulty. |
| **E29** | 1. Opener Return (Cylinder) Sensor error<br>2. The opener cylinder already returns after seal-cutting is completed, but the Opener Return sensor (SQ08) does not work.<br>3. (1) The opener cylinder sensor may be shifted.<br>Attach a magnet to the Opener Cylinder sensor and check whether the red lamp of the sensor lights ...<br>① When the lamp lights: Adjust the sensor position according to Page 29.<br>② When the lamp does not light: The sensor may be faulty.<br>The sensor may be faulty or the wiring may be broken (or loose connector connection). Check them.<br>(3) When the cylinder does not work, the cylinder or solenoid valve (No.6) may be faulty. |
| **E30** | 1. Ejection (Cylinder) Return Sensor error<br>2. The ejection cylinder already returns but the Ejection Return sensor (SQ09) does not work.<br>3. (1) The ejection cylinder sensor may be shifted.<br>Attach a magnet to the Ejection Cylinder sensor and check whether the red lamp of the sensor lights ...<br>① When the lamp lights: Adjust the sensor position according to Page 29.<br>② When the lamp does not light: The sensor may be faulty.<br>The sensor may be faulty or the wiring may be broken (or loose connector connection). Check them.<br>(3) When the cylinder does not work, the cylinder or solenoid valve (No.5) may be faulty. |
| **E31** | 1. Inverter Stop Signal error<br>2. The inverter does not output a Film Clamp Drive Stop signal.<br>3. The inverter may be faulty. Contact your local Sankosha distributor or our Customer Service section. |

| Error No. | 1. Error Item<br>2. Error Description<br>3. Check Point |
|---|---|
| **E32** | 1. Right Start Button Error<br>2. Right Start Button is being pressed over 10 seconds.<br>3. (1)n the case of keep pushing the button, please release the button. Also, please remove anything which is pushing the button. If you press the Reset button, the machine will return to its original position.<br>(2)Even if the button is not pressed, if it is showing "E32" error, it is a button problem. Please check whether the switch is broken or a wire connection is loose or disconnected. |
| **E98** | 1. Error in PC Board<br>2. Read-in error of PC Board<br>3. (1)Replace the PC Board<br>(2)Contact distributor or Sankosha |
| **E121**<br>**E122** | 1. Film Clamp Drive Motor error<br>2. The inverter is driven but the film clamps do not move.<br>3. The inverter, motor, or motor brake may be faulty. Contact your local Sankosha distributor or our Customer Service section. |

### ◎Other major troubles

1. Torn film

| Error Description 1 | The film is torn at the center when the film is clamped by the film clamps at the High Limit portion. |
|---|---|
| Check Point | The distance between the left and right film clamps is wider than the opening of the film.<br>Adjust the distance between the left and right film clamps according to "1-2. Film clamp portion" (Page 26). |
| Error Description 2 | The film is torn at the center of its opening before being clamped by the film clamps. |
| Check Point | The film opening device is wider than the opening of the film.<br>Adjust the distance between the left and right film clamps according to "1-1. Film opening device" (Page 25). |

2. Film clamping failure

| Error Description | The film clamps failed in clamping the film at the High Limit position but they moved down without the film. |
|---|---|
| Check Point | The film opening device is narrower than the opening width of the film and the film gets slacked. Therefore, the film clamps cannot clamp the film correctly.<br>Adjust the distance between the left and right film clamps according to "1-1. Film opening device" (Page 25). |

3. Insufficient or no film sealing

| Error Description 1 | The film is insufficiently sealed and sealing is easily broken or the seal lines have holes. |
|---|---|
| Check Point | Change the Sealing Timer setting according to "Changing time (timer) settings" on Page 18.<br>Make the timer setting longer when the film is insufficiently sealed and sealing is easily broken or shorter when the seal lines have holes. |
| Error Description 2 | The timer setting is adjusted but the film cannot be sealed still. |
| Check Point | The heater wire may be disconnected. Check and replace the heater wire according to Page 23. |

# Daily Maintenance

**CAUTION**

In order to provide the proper maintenance on your Sankosha equipment, please read and comprehend carefully this Daily Check Manual thoroughly before operation. Keep this manual in a safe place for easy access at all times. The Checking cycle will differ: daily, or monthly, annually, according to the item or area that requires maintenance. Use “Item Check List” for checking the correct service procedures.
If at any time you have any questions, please do not hesitate to contact your Sankosha dealer or us.

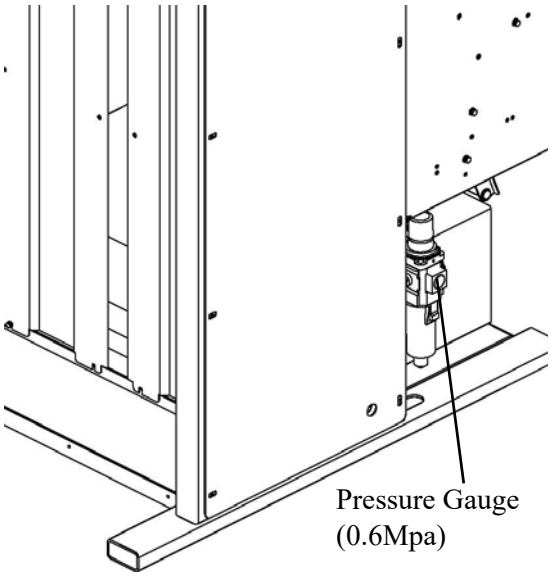
## Check Item List

| Check Item | Daily | Annual |
|---|---|---|
| 1. Air Pressure | ○ | |
| 2. Regulator / Mist Separator | ○ | |
| 3. Emergency stop | ○ | |
| 4. Film clamp unit | ○ | |
| 5. Detection sensor | ○ | |
| 6. Regulator / Sludge filter | | ○ |

# Check Item (Daily)

## 1. Air Pressure Check: Figure-1

Please make sure if the air pressure gauge at the regulator is at the standard level (0.6MPa).




［How to Adjust Pressure］

① Pull the adjustment knob up

② Turn the knob to adjust air pressure

- Clockwise → Pressure will increase
- Counterclockwise → Pressure will decrease

③ Pull the knob down

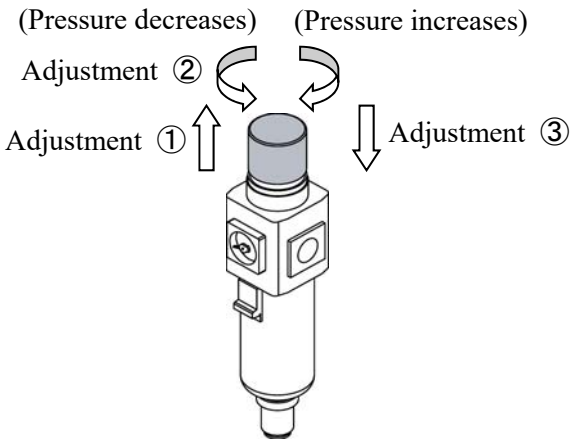



Figure-1

## 2. Regulator/Mist Separator Check: Figure-2

Check if the automatic drain function works properly at the Regulator/Mist Separator. The drain is automatically discharged when the quantity of the drain reaches over half of the drain case.
If the drain cannot be discharged even after over half of the drain case is filled, it might malfunction. Turn the dial under the Regulator to the left and let the drain discharge.

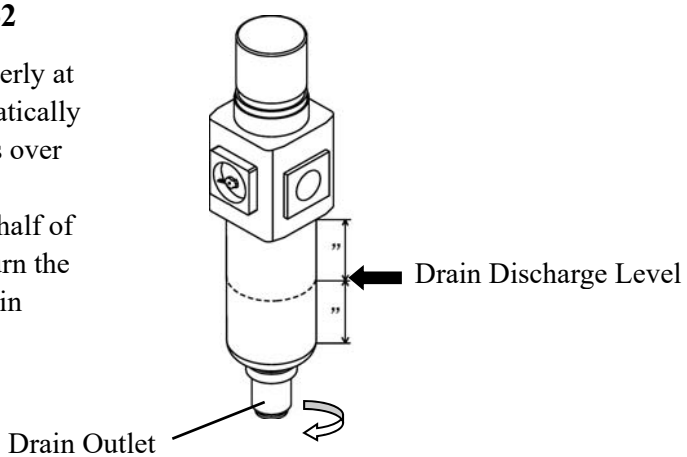



Figure-2

### 3. Emergency Stop Button Check: Figure-3

Press the emergency stop button to ensure that the machine stops.
After checking, turn the Emergency Stop button in the arrow direction to unlock the button and push the Reset button.

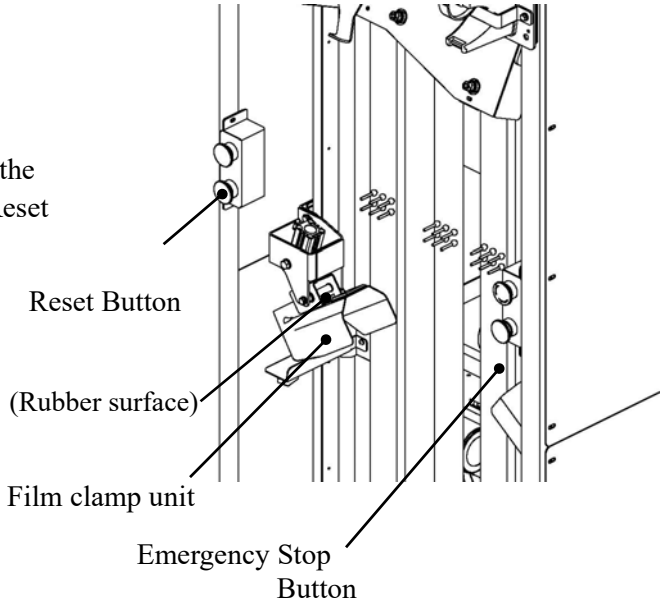



Figure-3

### 4. Film clamp unit Check: Figure-3

Confirm whether the film and the garbage don't adhere to the film clamp part. When adherent, clean.
When there is little unevenness of the rubber surface, exchange rubber.

### 5. Garment Detection sensor Check: Figure-4

Confirm whether the dust and the garbage don't adhere to the detection sensor. When adherent, clean.
There is possibility that the sensor malfunctions when the garbage and the dust are adherent.

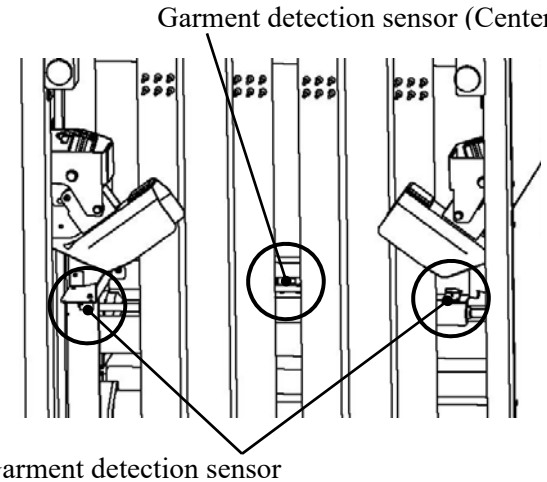



Figure-4

## Check Item (Annual)

### 6. Regulator/Sludge filter Cleaning: Figure-5

Clean regulator and case inside.
When the pressure drawdown happens frequently, exchange a filter element.

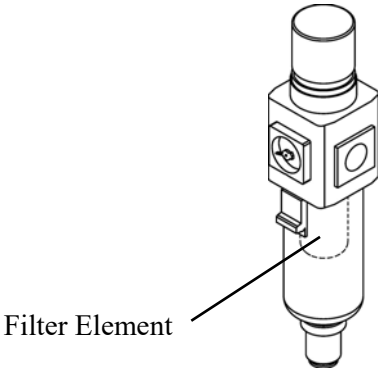



Figure-5

# Item Check List

Check Item (Daily)

| No | Item | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Air Pressure | | | | | | | | | | | | | | | |
| 2 | Regulator / Mist Separator | | | | | | | | | | | | | | | |
| 3 | Emergency stop Button | | | | | | | | | | | | | | | |
| 4 | Film clamp unit | | | | | | | | | | | | | | | |
| 5 | Detection sensor | | | | | | | | | | | | | | | |

| No | Item | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Air Pressure | | | | | | | | | | | | | | | | |
| 2 | Regulator / Mist Separator | | | | | | | | | | | | | | | | |
| 3 | Emergency stop Button | | | | | | | | | | | | | | | | |
| 4 | Film clamp unit | | | | | | | | | | | | | | | | |
| 5 | Detection sensor | | | | | | | | | | | | | | | | |

Check Item (Annual)

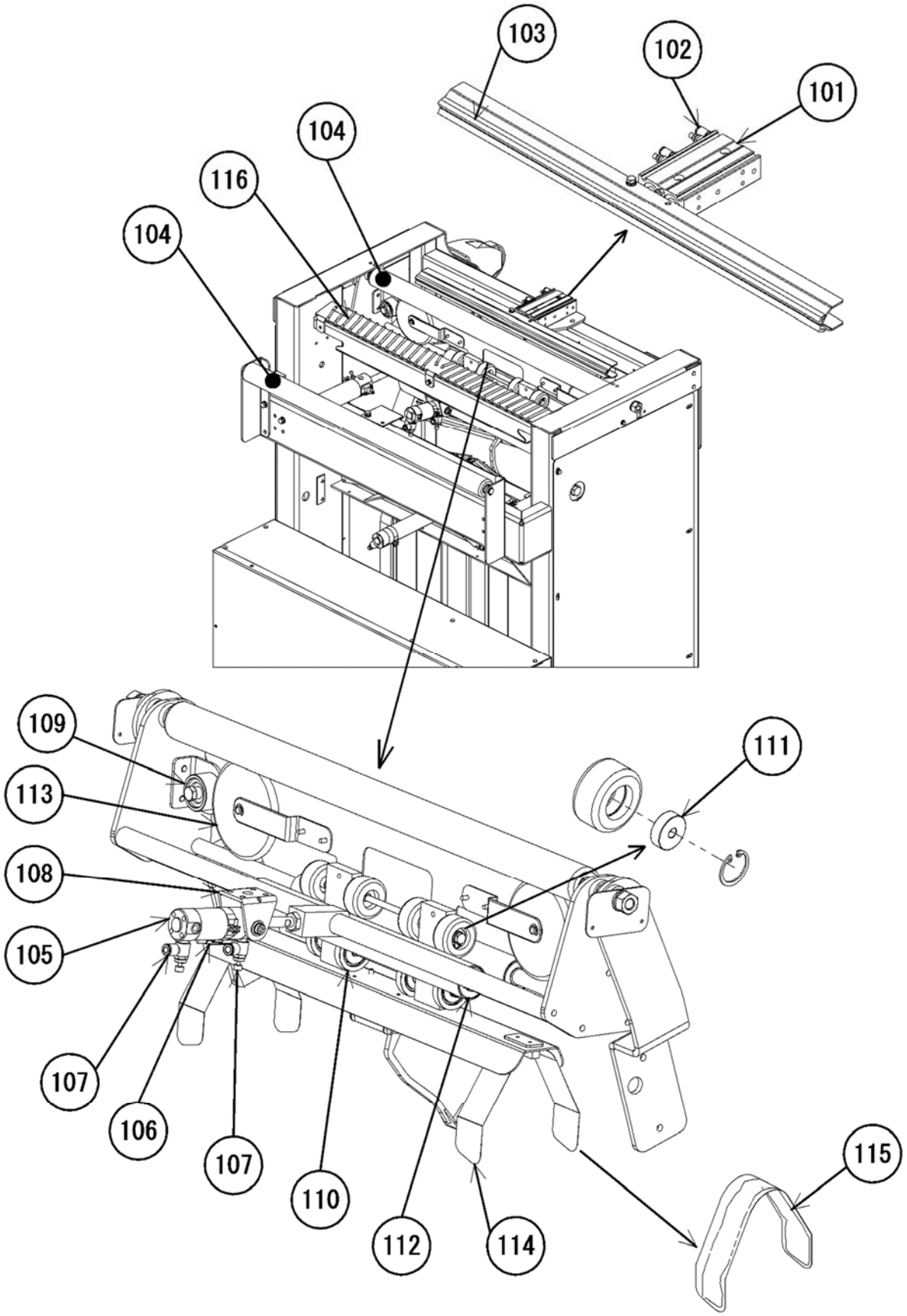
| No | Item | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | Regulator/Sludge filter | | | | | | | | | | | | | |

Photocopy this checklist for ongoing maintenance

# Spare Parts List

## Index

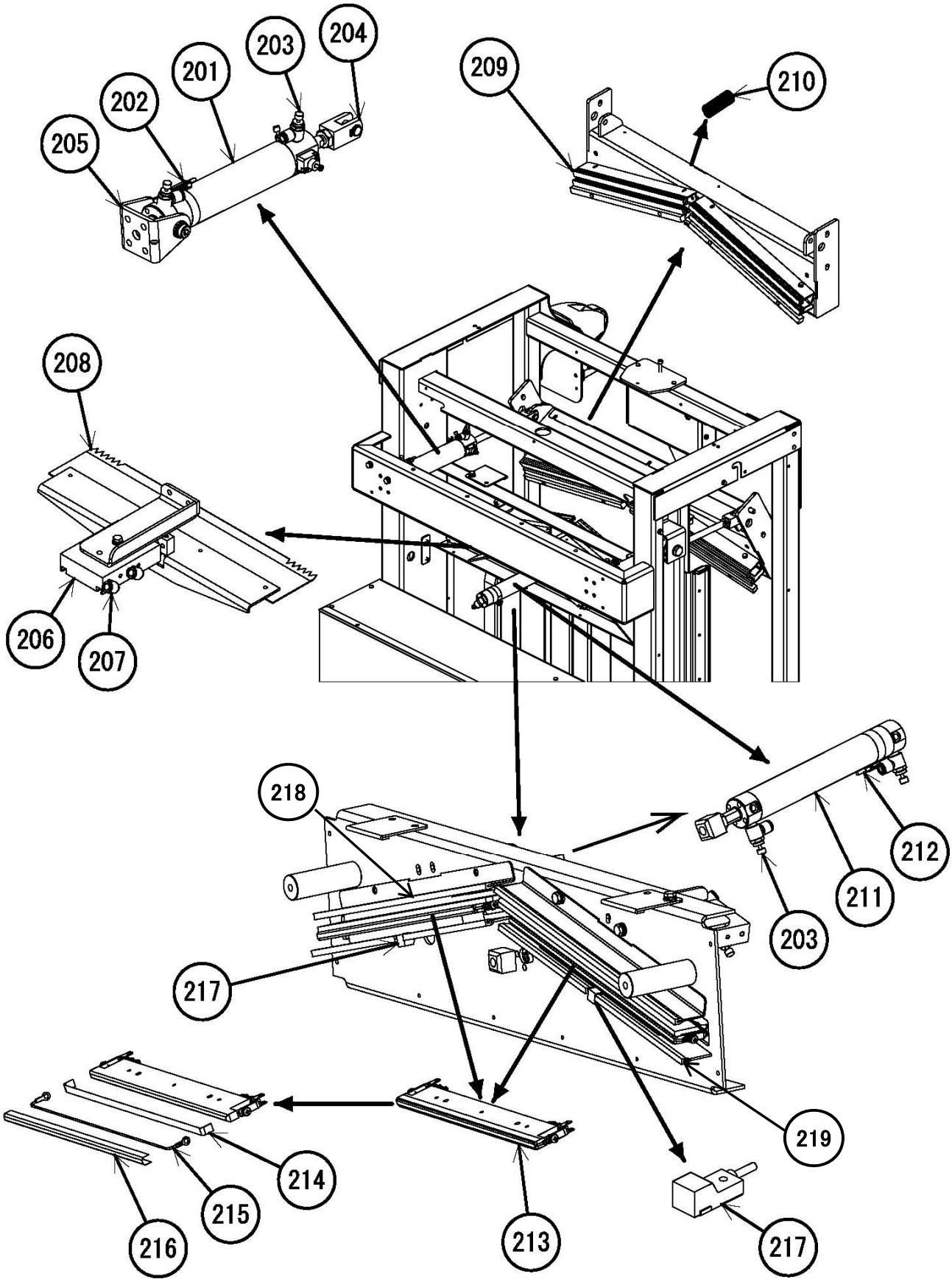
# 1 : Film Hold and Opener Diagram REV:1



# 1 : Film Hold and Opener Diagrar REV:1

| No. | Part Number | Part Name | Q'ty | Remark |
|---|---|---|---|---|
| 101 | B2L001 | Cylinder | 1 | Film Hold |
| 102 | C1A064 | Speed Controller | 2 | |
| 103 | E5V011 | Rubber Packing | 2 | Length: 520mm |
| 104 | E5M003 | Free Roller | 2 | |
| 105 | B2I035 | Cylinder | 1 | Film Opener |
| 106 | B5A006 | Cylinder Sensor | 1 | |
| | B5D002 | Sensor Band | 1 | |
| 107 | C1A065 | Speed Controller | 2 | |
| 108 | B6G003 | Cylinder Holder | 1 | |
| 109 | E5P001 | Plus Cap Roller | 2 | |
| 110 | E4H004 | Delrin Bearing | 4 | |
| 111 | E4B013 | Bearing | 4 | |
| 112 | E4B009 | Bearing | 4 | |
| 113 | Q0B058 | Film Opening Roller | 2 | |
| 114 | H6B006 | Leaf Spring | 2 | |
| 115 | S1F002 | Leaf Spring Cover | 2 | |
| 116 | E5V033 | Antistatic Rope | 2 | Length: 1550mm |

# 2 : Seal and Cut Diagram REV:1

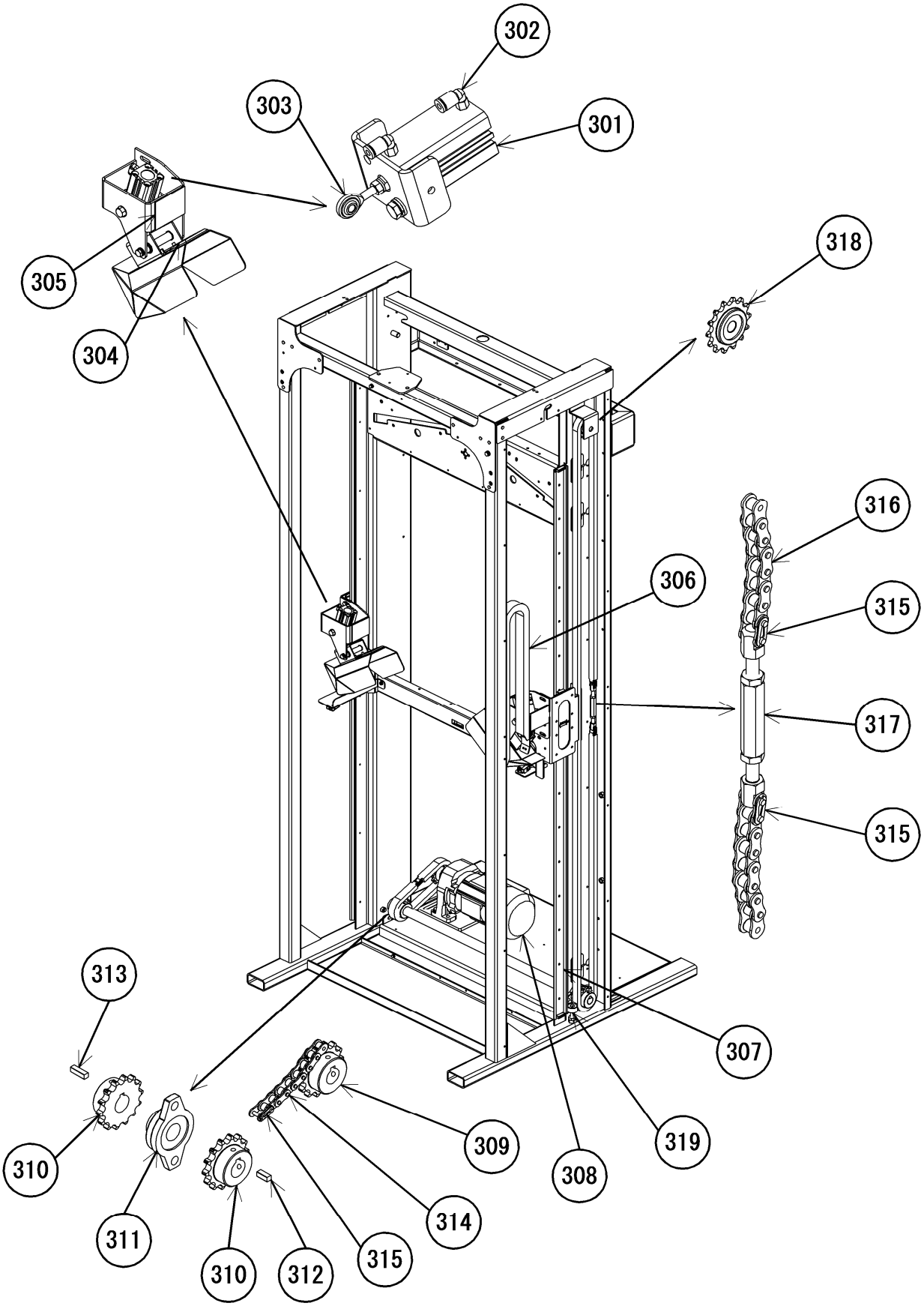


# 2 : Seal and Cut Diagram

REV:1

| No. | Part Number | Part Name | Q'ty | Remark |
|---|---|---|---|---|
| 201 | B2I036 | Cylinder | 2 | Seal and Cut |
| 202 | B5A006 | Cylinder Sensor | 2 | |
| | B5D004 | Sensor Band | 2 | |
| 203 | C1A065 | Speed Controller | 6 | |
| 204 | B6B017 | Knuckle Joint | 2 | |
| 205 | B6G004 | Cylinder Holder | 2 | |
| 206 | B2C016 | Cylinder | 2 | Film Cutter |
| 207 | C0C020 | Air Joint | 4 | |
| 208 | H0A002 | Film Cutter | 2 | |
| 209 | Q0B010 | Holder Rubber | 4 | |
| 210 | H0H003 | Spring | 4 | |
| 211 | B2I034 | Cylinder | 1 | Retrive |
| 212 | B5A006 | Cylinde Sensor | 1 | |
| | 5D002 | Sensor Band | 1 | |
| 213 | AP-05-AA08934 | Heater Unit | 2 | |
| 214 | 50A002 | Teflon Tape | 2 | Length: 310mm |
| 215 | PM460J-VT-817 | Heater Wire | 2 | |
| 216 | 50A002 | Teflon Tape | 2 | Length: 290mm |
| 217 | 20P001 | Sensor | 2 | Bites Detection |
| 218 | E5V011 | Rubber packing | 2 | 318mm |
| 219 | E5V011 | Rubber packing | 4 | 153mm |

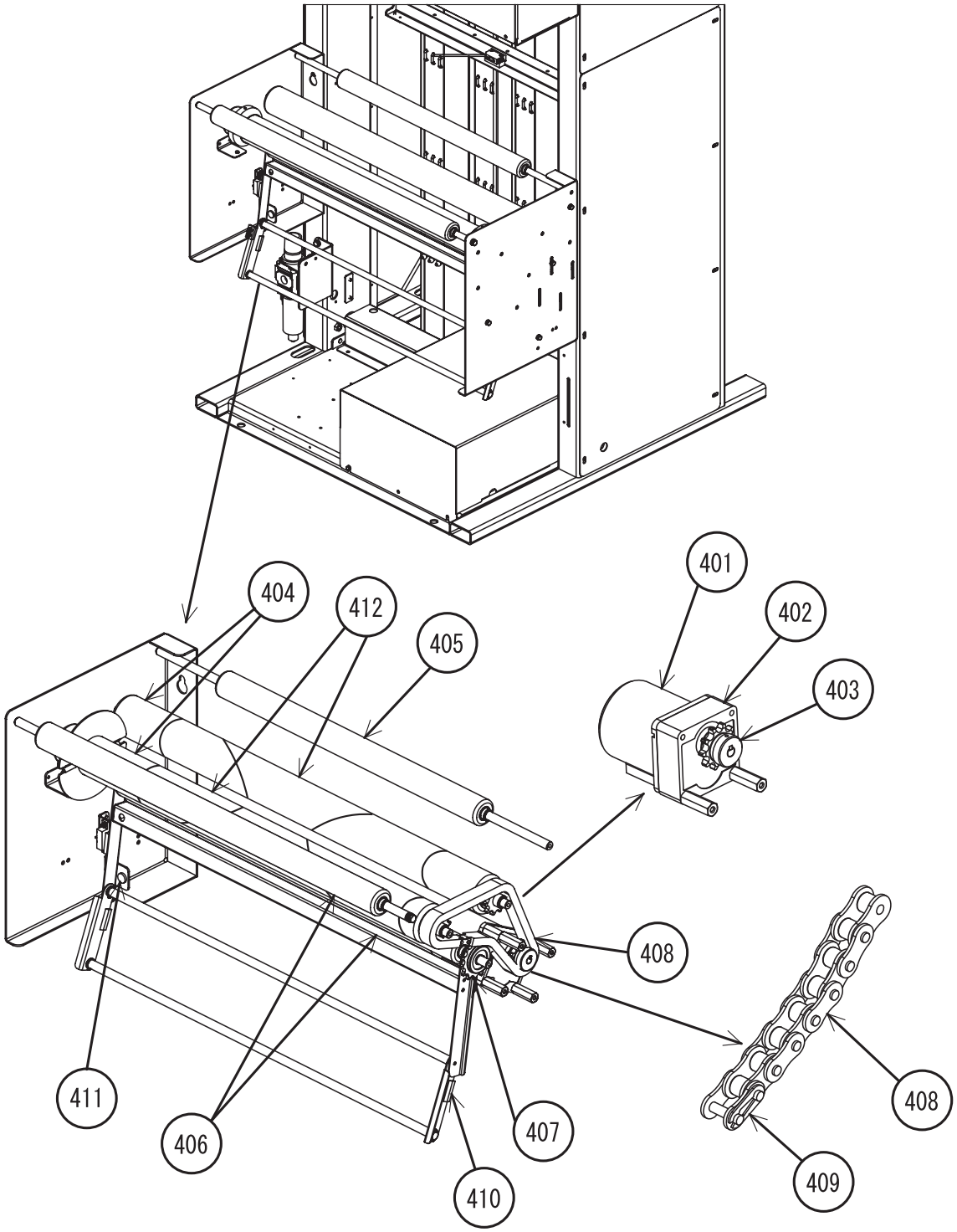
# 3 : Film Clamp / Drive Unit Diagram REV:1



# 3 : Film Clamp / Drive U REV:1

| No. | Part Number | Part Name | Q'ty | Remark |
|---|---|---|---|---|
| 301 | B2J052 | Cylinder | 2 | Film Clamp |
| 302 | C0C053 | Air Joint | 4 | |
| 303 | E5C004 | Rod End | 2 | |
| 304 | P0A009 | Rubber Plate A | 2 | |
| 305 | Q0B016 | Rubber Strip | 2 | Length: 60mm |
| 306 | K1B106 | EZ Chain | 1 | |
| 307 | E1B007 | Slide Pack | 2 | |
| 308 | PS-UNT-004 | Motor | 1 | |
| 309 | G3B009 | Sprocket | 1 | Motor side |
| 310 | G3B008 | Sprocket | 3 | Pillar side |
| 311 | E4A012 | Bearing Unit | 2 | |
| 312 | H5J015 | Parallel Key | 1 | |
| 313 | H5J001 | Parallel Key | 2 | |
| 314 | G2E015 | Roller Chain | 1 | |
| 315 | G2F001 | Chain Joint | 5 | |
| 316 | G2E007 | Roller Chain | 2 | |
| 317 | G2D001 | Turn Buckle | 2 | |
| 318 | G3A004 | Idler Sprocket | 2 | |
| 319 | F0E012 | Stopper Bolt | 2 | |

# 4 : Film Stock Diagram REV:1

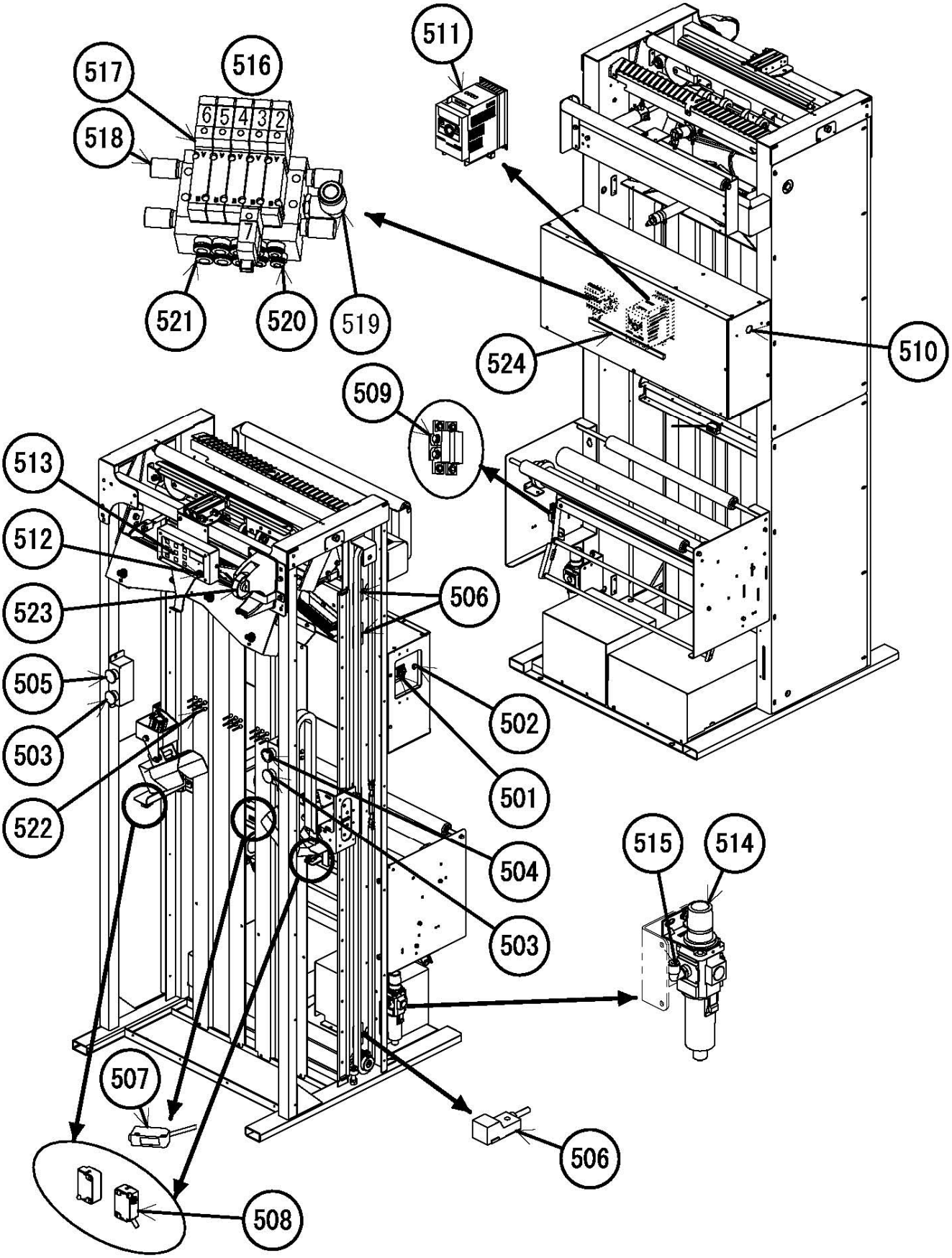


# 4 : Film Stock Diagram

REV:1

| No. | Part Number | Part Name | Q'ty | Remark |
|---|---|---|---|---|
| 401 | G0D021 | Motor | 1 | Film feed |
| 402 | G0D020 | Gear | 1 | |
| 403 | G3B016 | Sprocket | 1 | |
| 404 | E5M001 | Drive Roller | 2 | |
| 405 | E5M002 | Free Roller | 1 | |
| 406 | E5M003 | Free Roller | 2 | |
| 407 | G3A004 | Idler Sprocket | 1 | |
| 408 | G2E004 | Roller Chain | 1 | |
| 409 | G2F001 | Chain Joint | 1 | |
| 410 | E5V011 | Rubber Packing | 2 | Length: 30mm |
| 411 | 20Z006 | RUBBER LEG | 3 | |
| 412 | S1F007 | Drive Belt | 2 | |

# 5 : Switch/Solenoid Valve Diagram REV:1

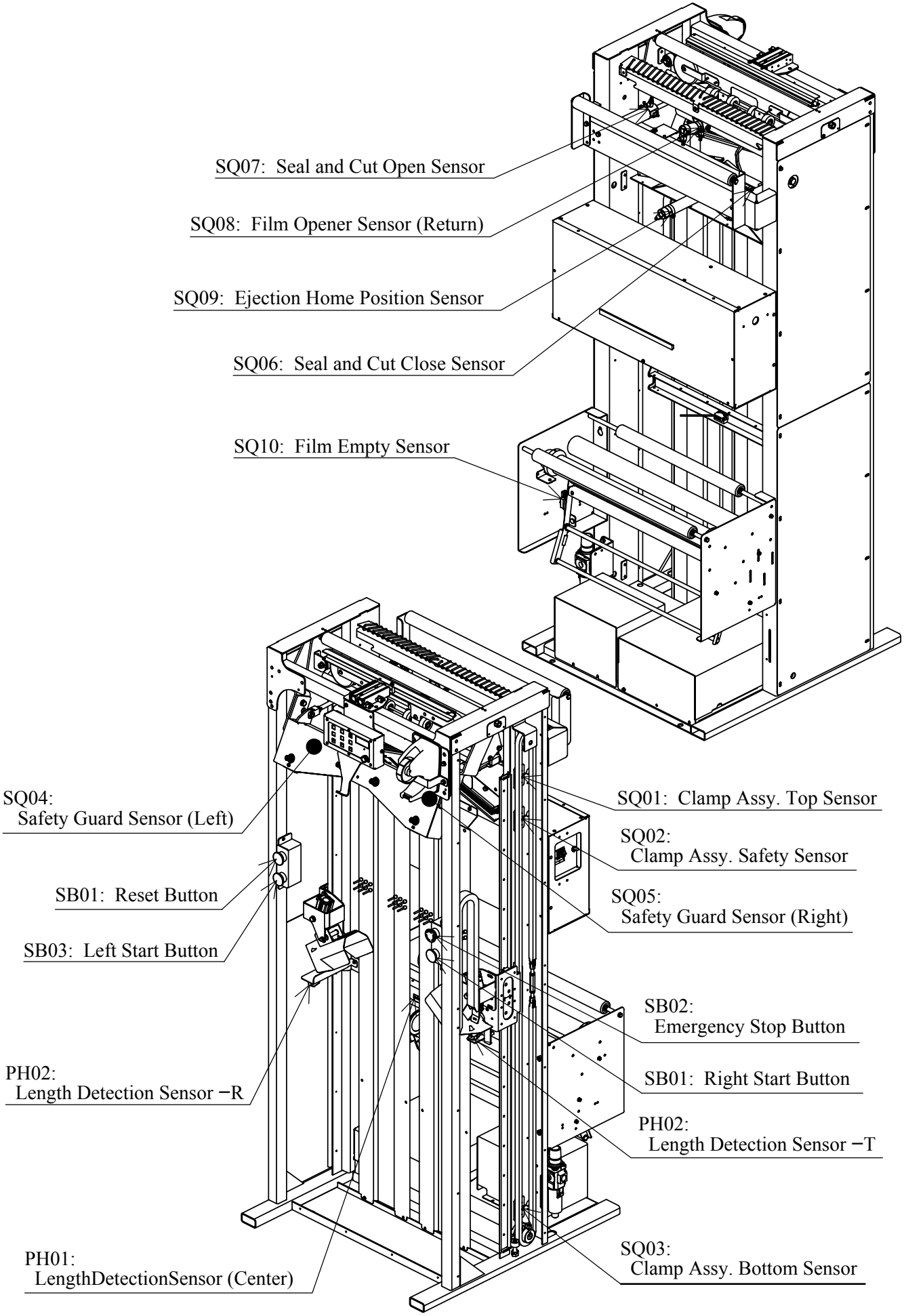


# 5 : Switch / Solenoid Valve Diagra REV:2

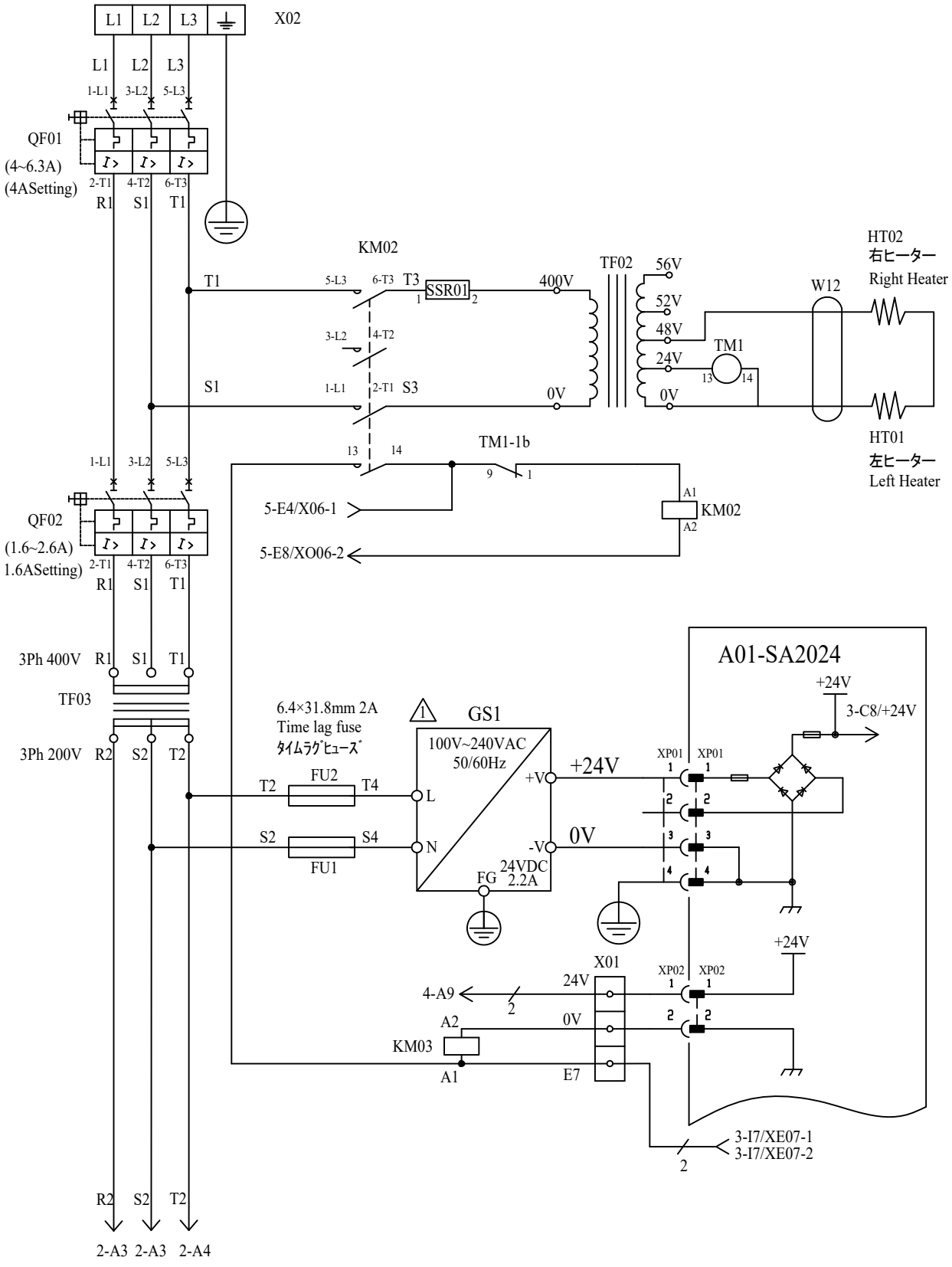
| No. | Part Number | Part Name | Q'ty | Remark |
|---|---|---|---|---|
| 501 | 21C006 | Breaker | 1 | |
| 502 | 20L014 | Toggle Switch | 1 | Reverse/Forward Switch |
| 503 | 21I169 | Push Button Switch | 2 | Start Button |
| 504 | 21I171 | Push Button Switch | 1 | Emergency Button |
| 505 | 21I170 | Push Button Switch | 1 | Reset Button |
| 506 | 20P001 | Proximity Sensor | 3 | Clamp Upper/Safety/Lower |
| 507 | 20P036 | Reflector Photoelectric Sensor | 1 | Article Detection(Center) |
| 508 | 20P037 | Thrubeam Photelectric Sensor | 1 | Article Detection(Left/Right) |
| 509 | 20P029 | Magnetic proximity sensor | 1 | Film Detection |
| 510 | 20Y003 | Buzzer | 1 | |
| 511 | 20C014 | Inverter | 1 | |
| 512 | 21D006 | Knob | 1 | |
| 513 | PM460E-V1-00 | Panel Sheet | 1 | |
| 514 | D0H010 | Filter Regulator | 1 | |
| 515 | C0C023 | Air Joint | 1 | |
| 516 | A0F127 | Manifold Valve | 1 | |
| 517 | A0E012 | Solenoid Valve | 1 | No.2: Film Clamp |
| | A0E017 | Solenoid Valve | 1 | No.3,7: Film Holding |
| | A0E012 | Solenoid Valve | 1 | No.4: Cutter |
| | A0E012 | Solenoid Valve | 1 | No.5: Retrive |
| | A0E012 | Solenoid Valve | 1 | No.6: Seal Cut |
| | A0J005 | Interface Gasket | 5 | |
| 518 | C0A003 | Silncer | 4 | |
| 519 | C0C021 | Air Joint | 1 | |
| 520 | A0J007 | Air Joint Assy | 4 | |
| 521 | C0J039 | Air Joint Assy | 6 | |
| 522 | E5V033 | Antistatic Rope | 6 | Length:150mm ～ 0035 |
| | | | 10 | Length:150mm 0036 ～ |
| 523 | Q0A043 | Tape Cutter | 1 | |
| 524 | Q0A044 | Magnet Bar | 1 | |

# Attached Diagram

# Sensor(Operation Button)Diagram



# 3Ph 400V 50/60Hz

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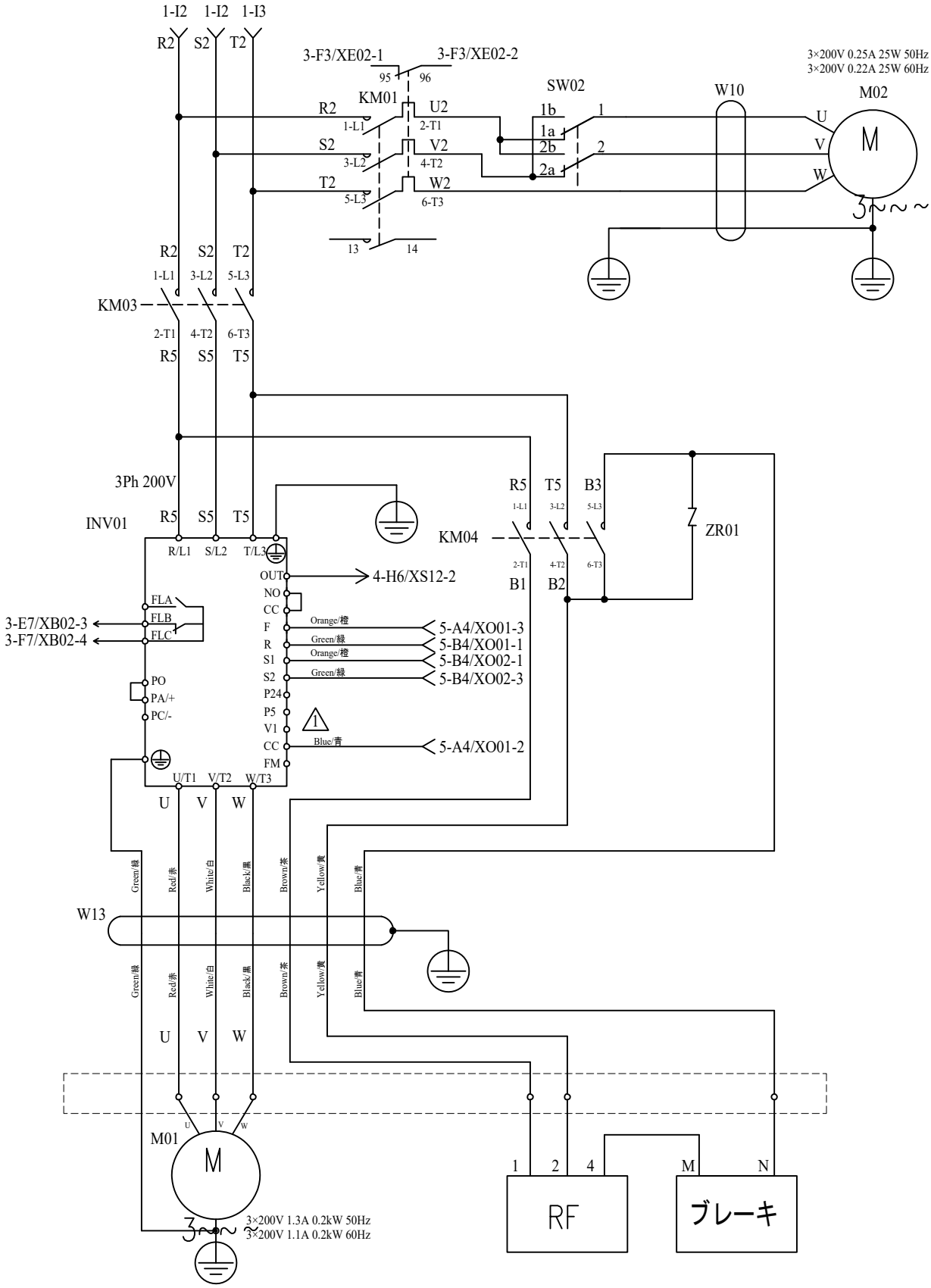
| | | | ② | | Serial No. | ～ | | |
| Koiso | | Koiso | ① | 電源ﾄﾗﾝｽをｽｲｯﾁﾝｸﾞ電源に変更。2022/12/09 maki | Drawing No. | 01-0 | | |
| | | | | Revision | SANKOSHA 三幸社 | | | |

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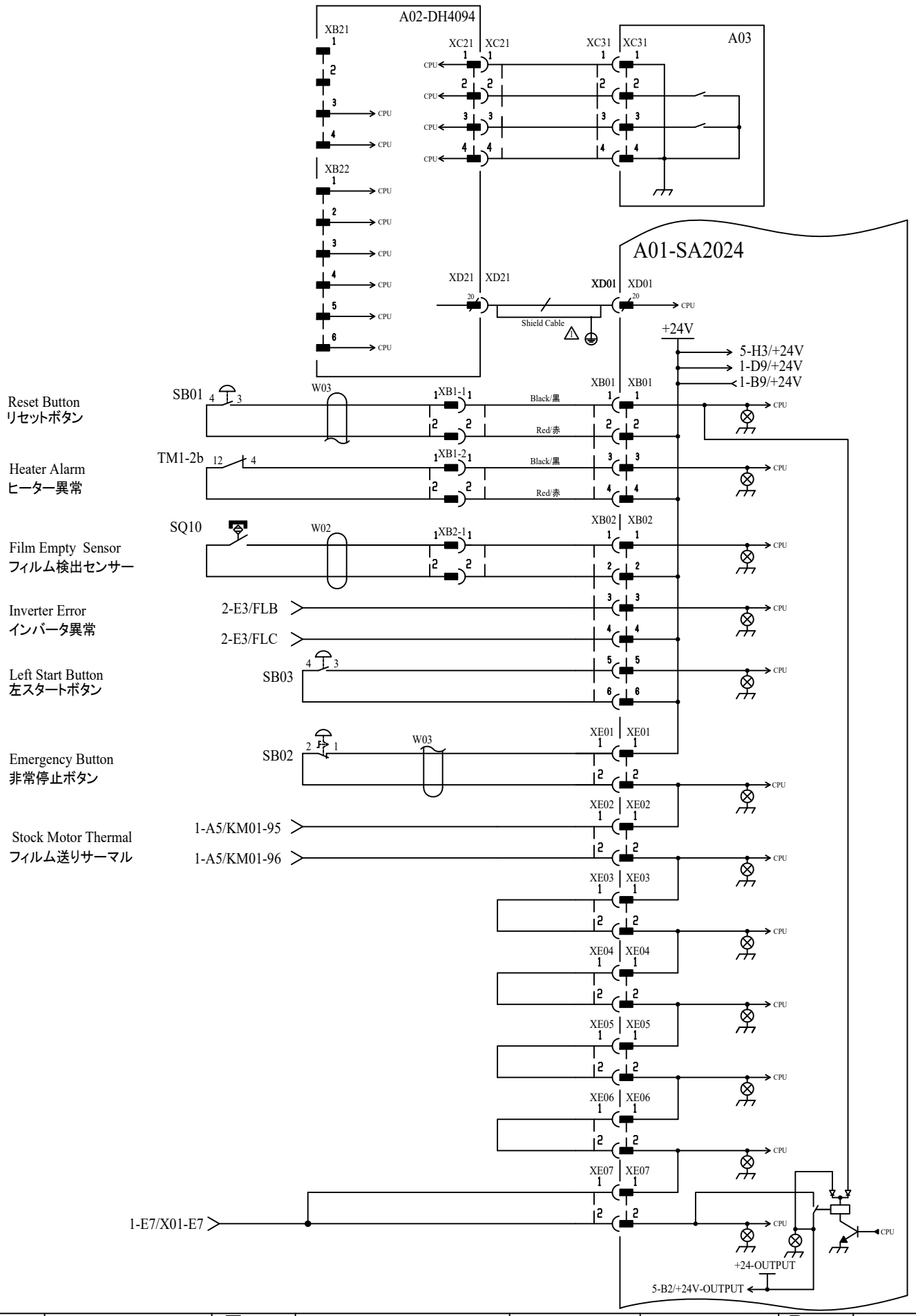
| | | | 2 | | Serial No. | ~ | | |
| Koiso | | Koiso | 1 | INV01(V1)を削除。2014/07/07 maki | Drawing No. | 01-0 | | |
| | | | | Revision | SANKOSHA 三幸社 | | | |

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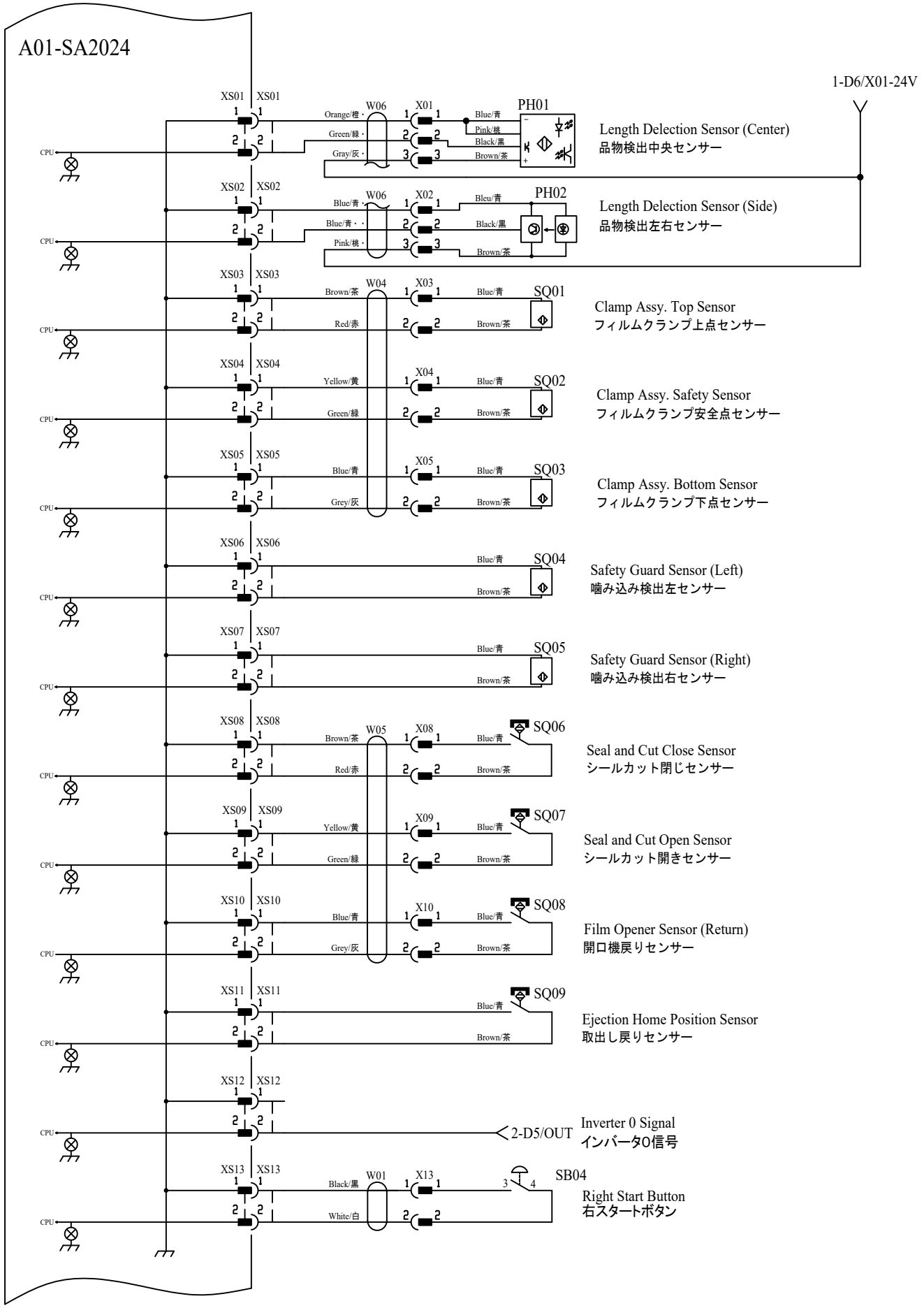
| | | | Revision | SANKOSHA 三幸社 | | | |

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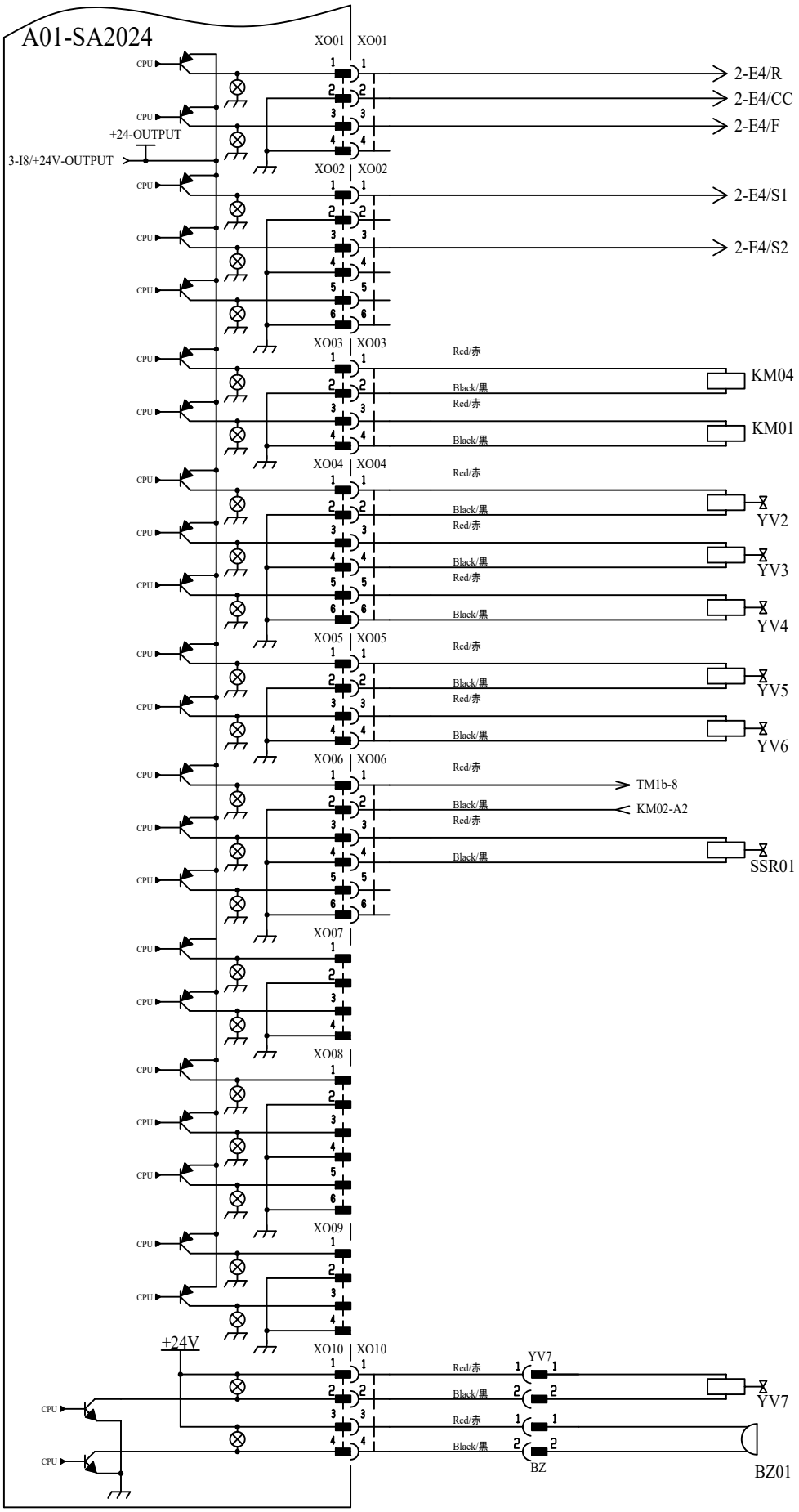
| | | | 2 | | Serial No. | ～ | | |
| Koiso | | Koiso | 1 | | Drawing No. | 01-1 | | |
| | | | | Revision | SANKOSHA 三幸社 | | | |

S.V. : Solenoid Valve




Clamp Assy. Down ward
クランプ下降
Clamp Assy. Up ward
クランプ上昇

Speed Select -1
スピード１
Speed Select -2
スピード２

Break Release Relay
クランプブレーキ解除
Film Drive Relay
フィルム送り電磁開閉器

Film Clamp S.V.
フィルムクランプ電磁弁
Film Hold S.V. (OFF)
フィルムブレーキＯＦＦ電磁弁
Cutter S.V.
カッター電磁弁

Garment Ejection S.V.
取り出し電磁弁
Seal and Cut Close S.V.
シールカット電磁弁

Heater Main Relay
ヒーター電源

Heater Relay
ヒーター

Film Hold S.V. (ON)
フィルムブレーキＯＮ電磁弁

Buzzer
ブザー

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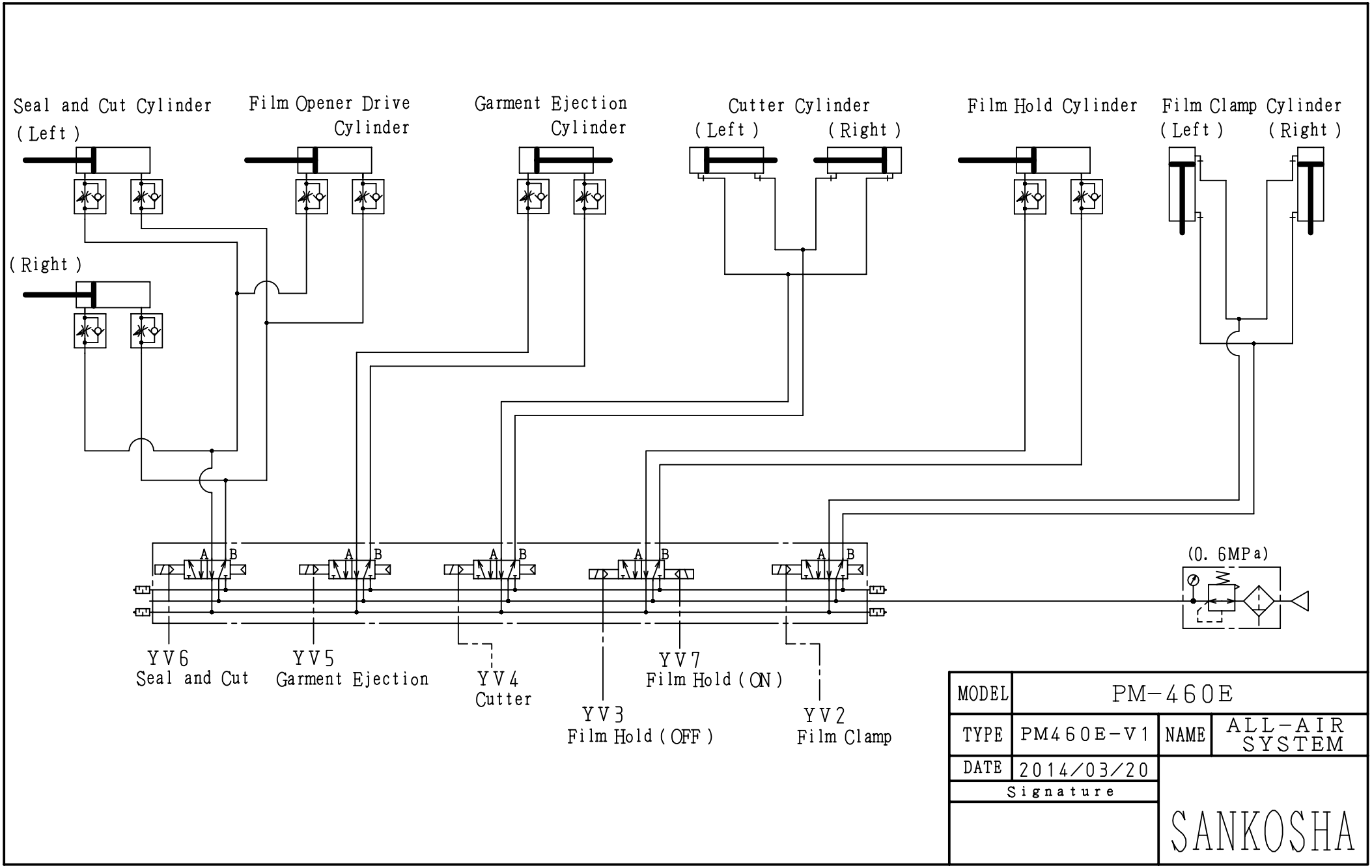


| | | | |
|---|---|---|---|
| MODEL | PM-460E | | |
| TYPE | PM460E-V1 | NAME | ALL-AIR SYSTEM |
| DATE | 2014/03/20 | | |
| Signature | | | |

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