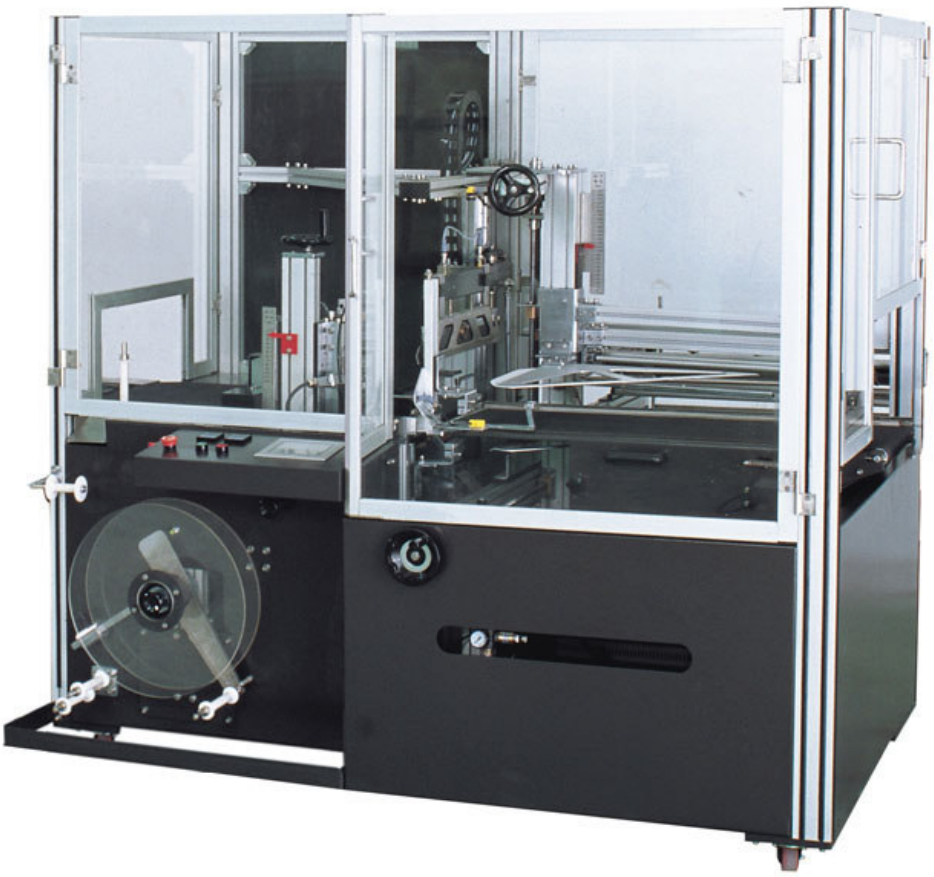
Pro Pack PPG 5022 High Speed Side Seal System

Instruction Manual

FULLY AUTOMATIC SIDE SEALING MACHINE
OPERATION MANUAL



Model: APSS-5022

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CONTENTS

Ⅰ Machine Introduction

1.1 General Description

This machine is designed for high speed fully automatic shrink packing with high quality. Heated constant-temperature sealing system can perform sealing continuously. Product changeovers are easy to achieve by turning of hand wheels without changing product guides. Length or horizontal product sensors are available for automatic check the product length. “Mitsubishi” PLC combined with “Proface” touch screen control system is easy for operation.

1.2 Specifications

Voltage	AC220V, single phase	Total Power	3KW
Packing Film Thickness	8-100micro	Compress air	6-5MPa
Max. Sealing Width.	500mm	Packing Speed	30-45packs/min.
Product Max. Height	220mm	Max. Conveyor Speed	30M/min.
Machine Weight	800kg	Machine Dimension	2100Lx1960Wx1900H
Applicable Packing Film	POF, PE		

P. S. Film roll is applicable for this machine. Max. film reel outer Ø≤400mm, film reel inner Ø 75mm.The surface of the film must be flat with out purples and there is not any print in the area 10mm from the edge. The color mark must have high contrast with the background.

Ⅱ Installation

2.1 Power Connection

Please make sure the power supply could meet the machine power requirements.

a. Please do not connect if the power supply is not proper.

b. Please keep away form the moist environment and make sure machine is properly grounded.

c. All the connection work should be carried out by technicians.

2.2 Safety Notes

a. Please read the operation manual carefully before operating. The operation manual serves the safety of the user and the environment to observe exactly all recommendations pertaining to safety.

b. Please do not try to open the electrical control cabinet or do the ground work if not allowed by an electrician or technician.

c. Please do not maintenance the machine by corrosive clean product to avoid any damage to the machine.

d. Please do not place any object on the machine or touch the moving elements when machine is under operation.

e. Push down the Emergency Button to stop the machine when accident occurs.

f. Please do not wash the work station, electrical cabinet or electrical elements directly to avoid damage or electricity leakage.

g. Machine must be kept away from dust, inflammable or corrosive environment.

h. Please keep away from the sealing guiding roller. It will keep extremely hot for a long time after machine turned off.

i. Danger of being taken along from the transport conveyor! Do not wear loose clothes!

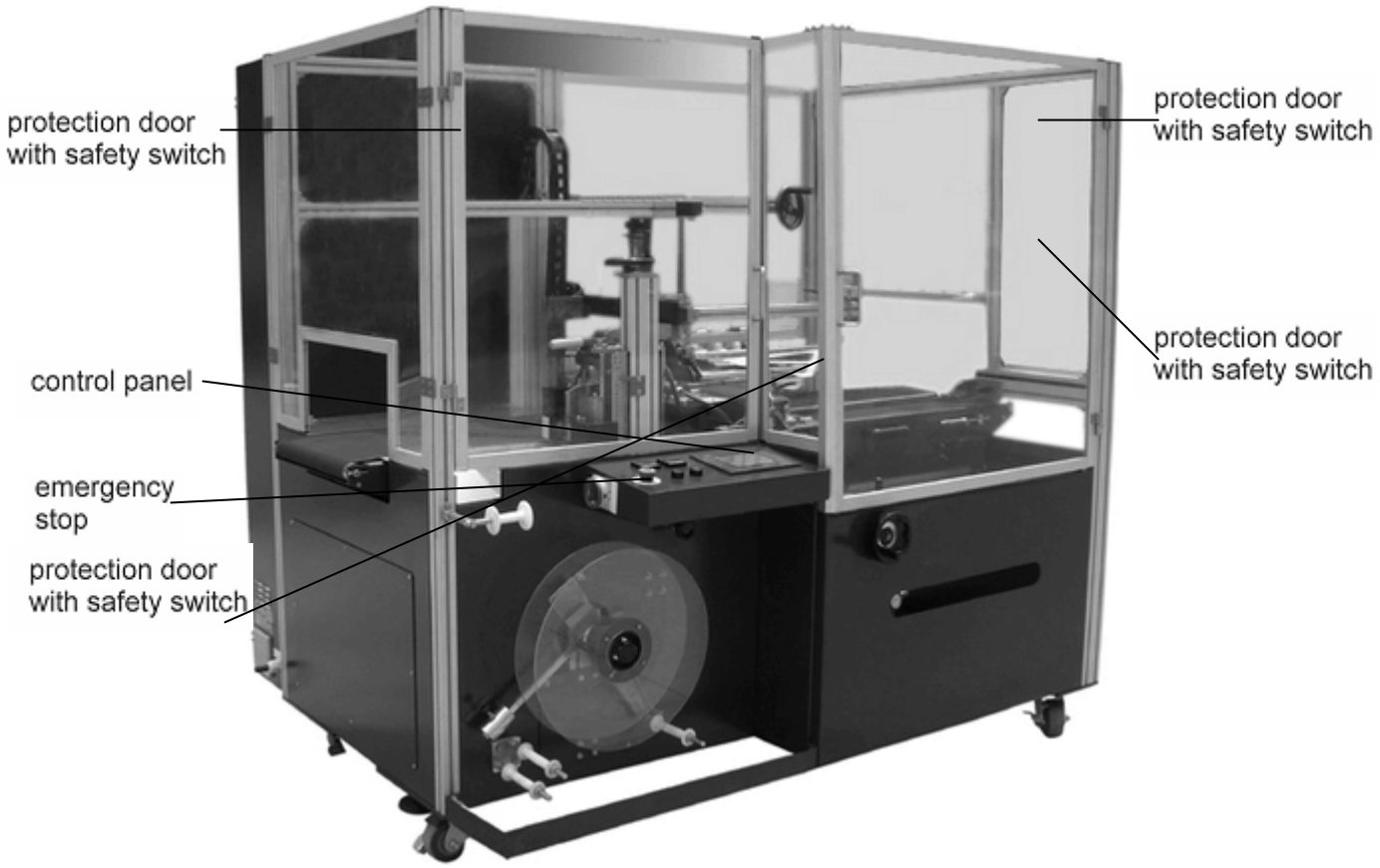
j. When the main switch is off, the socket in the control cabinet remains under power.

2.3 Safety Devices

The machine is fitted with state-of-the-art safety devices. They must not be made inoperable, removed or damaged.

These are especially

- protective guards, covers and doors
- safety switches
- safety controls and test programmes
- emergency stop switch
- electrical and electronic fuses and leakage current safety switches



A machine with defective safety devices, open or bridged doors must not be operated.

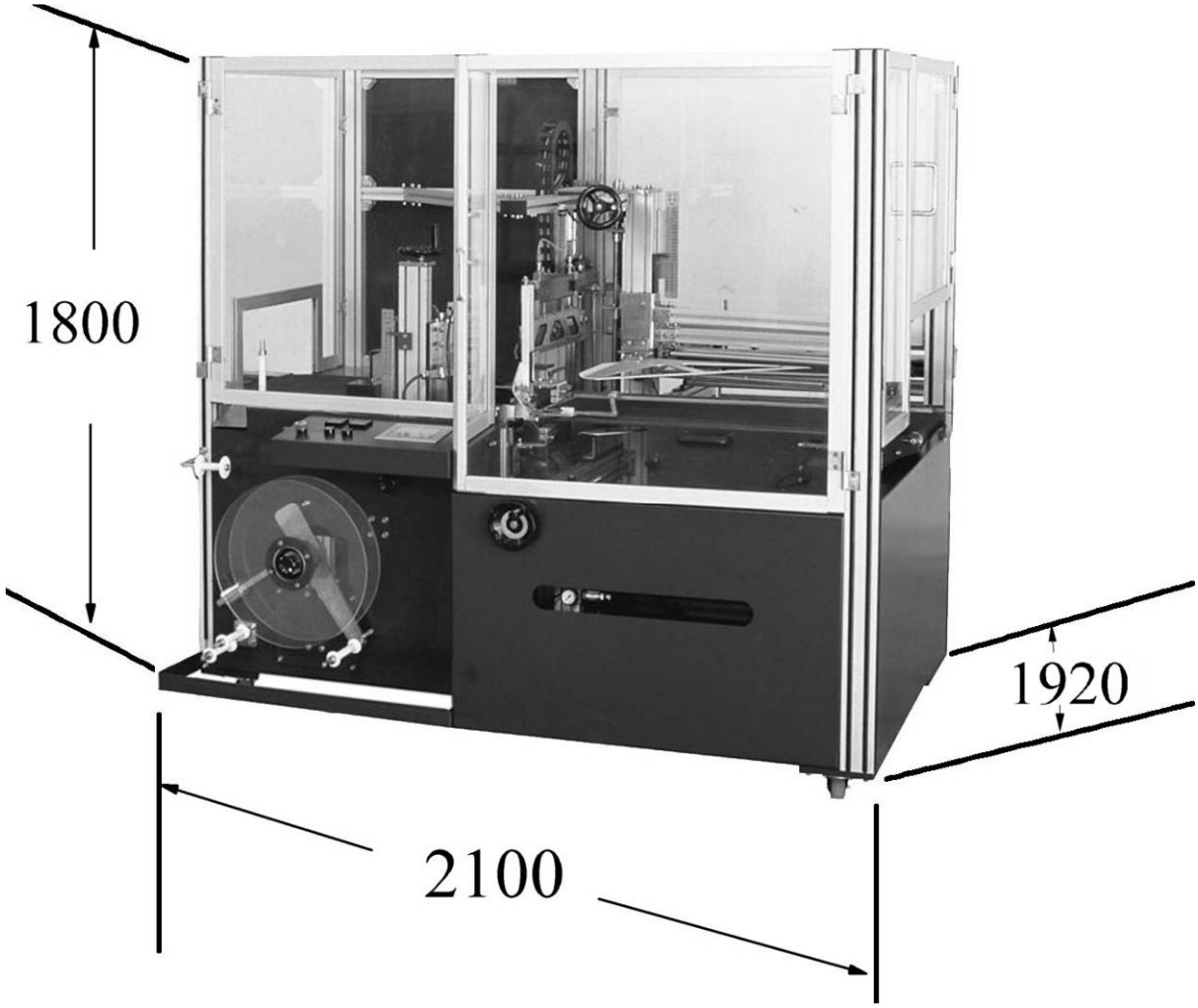
2.4 Workplace

The workplace is located at the operator panel in front of the machine. If the machine is fed by hand, the workplace is located at the appropriate infeed side.

2.5 **Space requirements / installation plan**

The space requirements of the Length Sealing under average operating conditions should be laid out such that sufficient free space is available for access to all important components and for all required manipulations. This applies especially to the mounting of the film reels at the top and bottom.

Please take the dimensions from the following diagram.



2.6 Install

The Length Sealing is intended for operation in a fixed location. Anchoring to the floor is normally not necessary.

Check with a spirit level that the mounted machine is level in both directions. The machine is fitted with height-adjustable calotte feet with the help of which irregularities in the floor of up to +*I*- 30 mm can be easily compensated.

Power and compressed air should be fed to the machine via supply lines of suitable dimensions and connected with due regard to the safety regulations.

- Single-phase supply 220V / 60Hz with 4mm² cable that is properly grounded
- Nominal pressure on site, 6 to 7 bar, dry and oil-free, connection: NW Ø 8.

ATENTION
Electrical connections must be made only by qualified personnel and safety regulations must be observed.

Ⅲ Test running

3.1 Prepare work for test run

1. Preparation and execution of the work prior to first commissioning must only be carried out by trained, skilled personnel. Please check whether the power switch on the control panel is turned off before switch on the main power.

Please make sure the machine is grounded properly.

3.2 Please check the phase of the machine

If the phase is not correct, please do as follow the steps:

①Switch off the main power

②Switch off the power supply

③Exchange either of the lines

④Recheck whether the voltage and phase is correct

Attention: Wrong connection of the supply voltage can cause damages at the electronic parts!

3.3 Checklist for checking the safety equipment

General check

Safety doors - infeed	Mounted and screwed tight	□
Safety doors - outlet	Mounted and screwed tight	□
Tunnel - infeed	Mounted and screwed tight	□

Functional check

Safety doors	closed	
Switch pins	engaged	
Main switch	ON	
Machine ON	press	
Machine / conveyor belts	running	□
Safety door	open	
Machine / conveyor belts	stand still	□
Machine / conveyor belts	running	

Emergency stop switch press

Machine / conveyor belts stand still □

Test date ..... Examiner

.....(signature)

3.4 Film Dimension

In general, the quality of the films used must meet the DIN requirements and they should have good sealing and shrinking properties.

Wrapping material for the Side Sealers:

1. High-density polyethylene centre-folded film, film thickness: 18 - 60 micron.

Or

2. Polyolefin centre-folded film, film thickness 15-38 micron.

Both types of film should have biaxial shrink values (50% width and 50% length).

The film to be used on the Side Sealers should be needle- or micro-perforated so that the air can escape from the film bag during the shrinking process. If there is only film sealing and no shrinking required, needle- or micro-perforation is not necessary.

Calculation of the theoretical film width

The film width is calculated as followings:

product height ⇨ 0 -100	infeed width of product	+	product height	+	approx. 100 mm	≈	width of double folded film
product height ⇨ 100 -200	infeed width of product	+	product height	+	product height	≈	width of double folded film

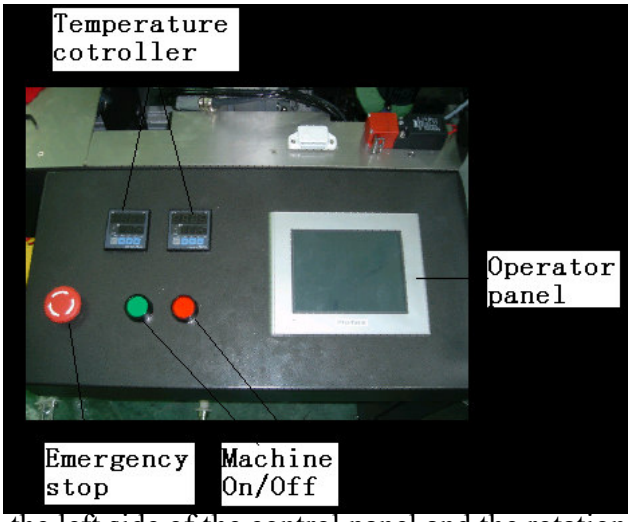
Please observe that the biggest product circumference is the basis for film calculation.

Needle perforation / perforation

As polyolefin films normally bought without needle or micro-perforation, if the pack shall be shrunk, the film has to be perforated in the packaging machine with suitable special equipment. (Our machine is equipped with a special pin perforation device designed for the customer's film.)

If no shrinking is required, a perforation of the film is not necessary.

Ⅳ Introduction of the components



The main switch is located on the left side of the control panel and the rotation-direction reverse switch for the film reels is located at the side of electrical cabinet.

The combined operation of the functional components which are described in the operating instructions will be explained in the following in detail.

Control cabinet

All the central electrical functions are combined in the control cabinet. All the parameters required for running operation can be set here.

Compressed air

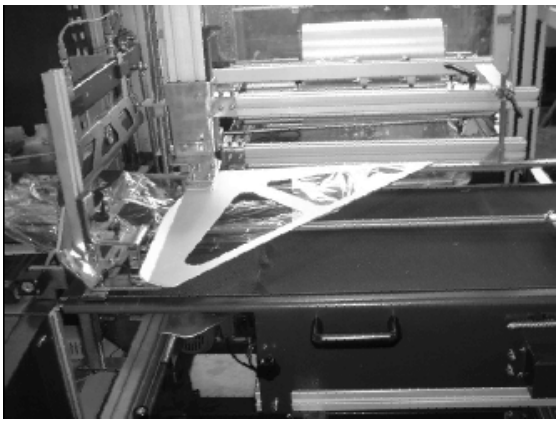
The compressed air connection is required for the operation of the pneumatic cylinders.

Film guide Device

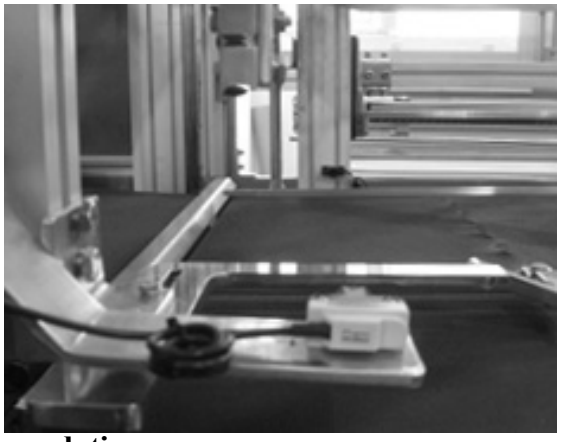
The centre-folded film is wound on a reel which is driven via a proximity switch control depending upon the tension and is then fed through the film feed of the inverting head. The film may first run through the perforation equipment.

The triangular inverting head allows a particularly simple feeding of the goods to be packed which can be placed in any sequence, either manually or automatically, upon the infeed conveyor.

One of the two halves of the centre-folded film is located above the goods to be packed and the other below the infeed conveyor.



Vertical and Horizontal photocell



Safety recommendation

When working on a hot machine it must be noted that the end-sealing unit may be hot so that danger of burning is present.

This applies also to the end seal itself.

As soon as the goods to be packed enter the area of the end seal station, the outfeed conveyor is started by the vertical or horizontal photocell and sealing units performs sealing.

For detecting small and thin product (for example, thin aluminum sheet with 5mm thickness), please use vertical sensors.

Length Seal

Safety recommendation

When working on a hot machine it must be noted that the cross sealing unit may be hot so that danger of burning is present.

At the same time the goods to be packed lying on the outfeed convey or pass through the length sealing station where the open sides of the centre-folded film are closed and the waste strip is simultaneously

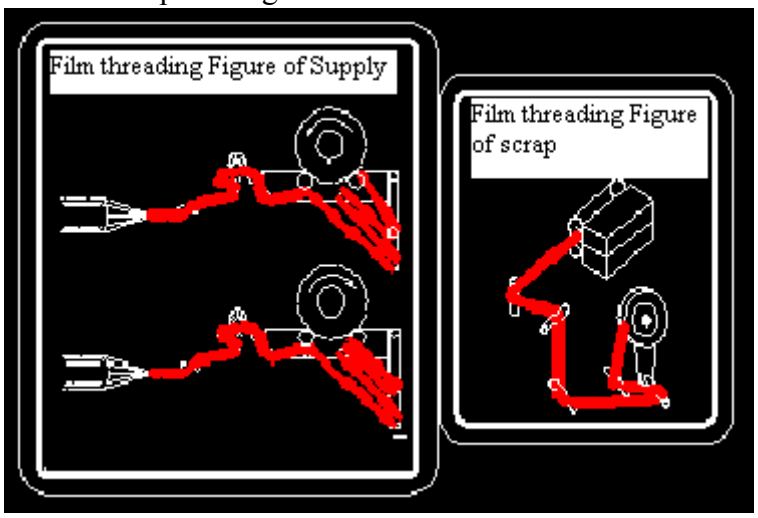
removed along the length. It is wound up with the film waste.

The pack, which is now sealed at all sides, is manually removed from the outfeed conveyor or transferred by the outfeed conveyor to another transporting device, e.g. to pass through the shrinking tunnel.

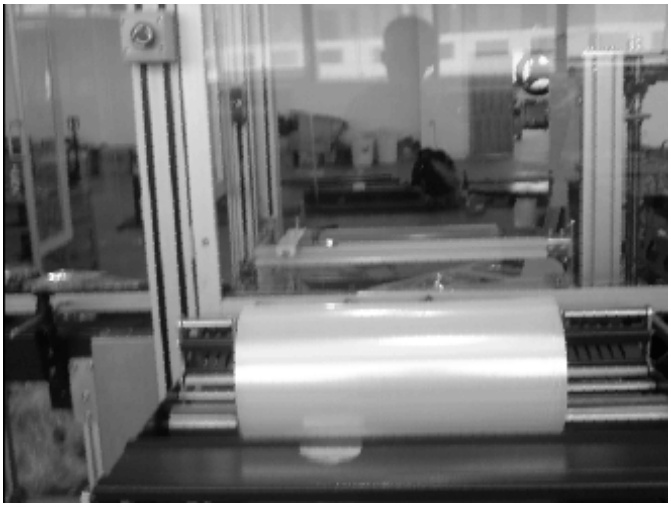
Mounting the film reel and threading the film

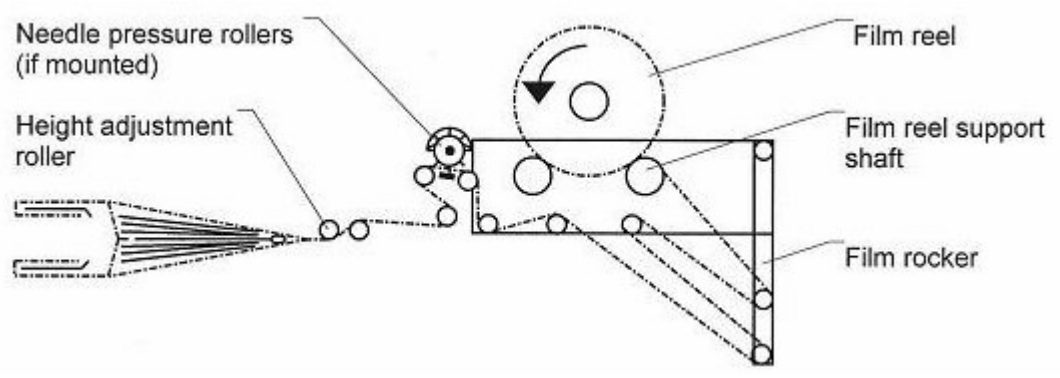
Mount the film reel on the support shaft; the closed side of the centre-folded film must lie on the infeed side. The film reel side restraint adjacent to the infeed should be aligned with the central guide roller. The other side restraint is positioned according to the width of the reel.

When threading the film use the film-path diagram which is located on the machine.



Film supply





The centre-folded film reel is located on the two alternatively driven support rollers the speed of which is preset by means of the operating-menu. The film feed motor is switched on and off, depending upon the tension, by means of a rocker switch.

The closed side of the centre-folded film is always on the infeed side. The direction of rotation of the motor is chosen, according to the direction in which the film is wound, by the motor rotation-direction reverse switch.

The film arrives at the perforation unit via guide and deflector rollers. The perforation unit consists of a foam roller and the adjustable needle pressure rollers with protective covers.

Film holder

The film holder supplied can be fitted above the central guide roller. It is required when goods with a height exceeding ca. 50 mm are to be sealed.

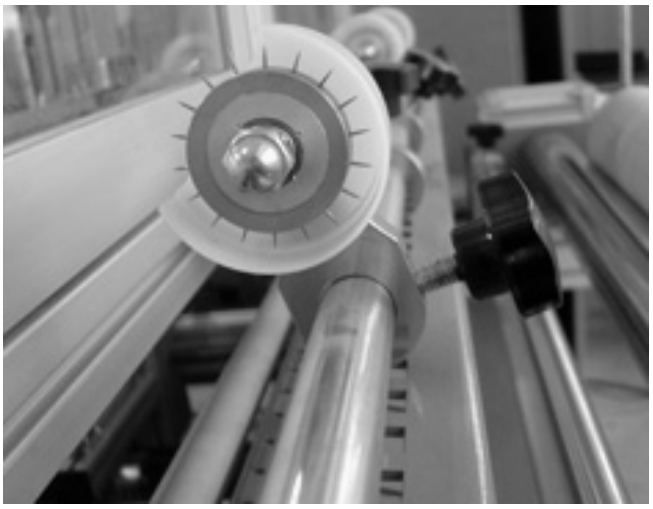
The support is fitted only after the threading of the film.

If by chance the support is already in its position, it should now be removed for the following operations by loosening the clamping lever. Open the two halves of the centre-folded film and pull them over the central guide roller.

Perforation equipment

Particular care is required when adjusting the perforation equipment with the needle pressure rollers. The pressure rollers must be adjusted such that, on the one hand, the holes allow the required quantity of air to escape on sealing and shrinking but, on the other hand, do not affect the rigidity of the film. To adjust the pressure rollers loosen the clamp with a socket or open ended wrench. When positioning the shaft consider the waste strip on the open film side which occurs later.

Next, pull the film through the last two deflector rollers. The height of the second one is adjustable and should be set such that the film is fed horizontally to the separating rod and the following central guide roller, i.e. at half of the height of the goods to be packed.

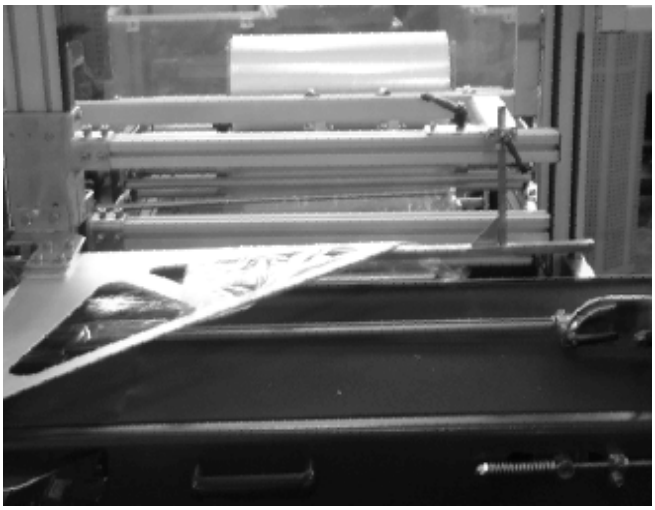


Care! Danger of injury by the needles.

lnfeed conveyor / guide rail

Caution!

Loose clothing con become caught in the transport conveyor!



The purpose of the infeed conveyor is the supply of the goods to be packed. It is driven by a frequency-controlled three-phase motor the speed of which can be preset in the operating-menu.

The infeed conveyor with the associated equipment is located on a guided moveable table which facilitates the threading of the film. In addition, the exact positioning of the goods to be packed is thereby made possible.

The table is fixed by a clamping mechanism on the inlet side.

The infeed conveyor is fitted with a laterally adjustable guide which, in the operating position, should be aligned with the cover of the Length-sealing unit.

In the case of high products (above ca. 100 mm) it may be necessary to set the guide rail such that there is a gap of approximately one half of the height of the goods between the rail and the cover of the Length-sealing unit so that a relief of the film between the product edge and the Length seal is possible.

Height adjustment

Turn the hand wheel clockwise until there is enough space left for the product to be packed.

Place the goods to be packed on the infeed conveyor such that the leftedge of the product is aligned with the right edge of the cover. Match the film guide to the width so that the product has sufficient room.

Set the guide rail on the infeed conveyor so that it is approximately aligned with the cover of the Length sealing unit.

Fix the table with the help of the clamping device.

Move the film guide sideways until the buffer touches the table. Do not use any force. On reaching the stop, do not move the film guide further.

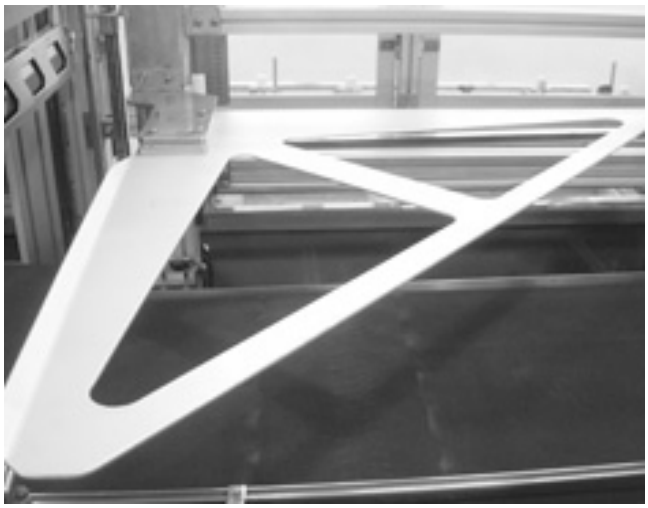
With the lever release the infeed conveyor and pull it out to the stop in order to make room for the further threading of the centre-folded film.

Film inverting head 90 degree

Pull the opened double folded film over the lower and upper film guides.

Go on drawing the double folded film over the film guides and then put it in a 90 degree angle into the inverting head.

Tighten and smooth down the double folded film by drawing it out of the Inner part of the film inverting head.



End Sealing Unit

When working on a hot machine it must be noted that the cross sealing unit may be hot so that danger of burning is present.

Sealing process:

1. Every end sealing performance requires the end sealing blade and the blade holder perform at the same time to seal the film.

2. End sealing performance:

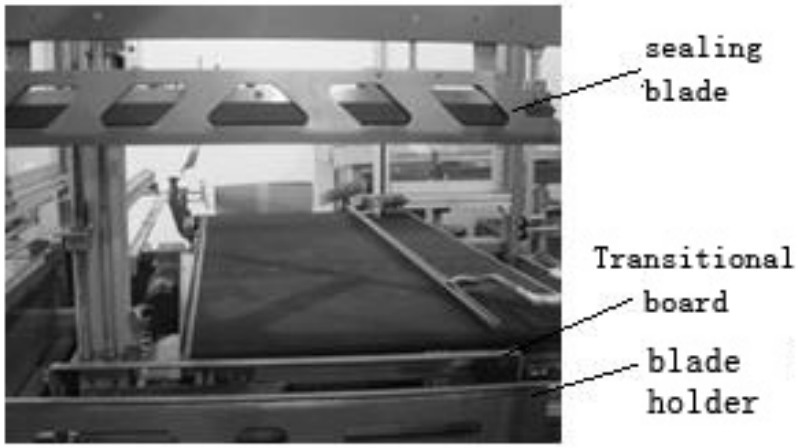
①. End sealing blade is heated after machine is turned on. Meanwhile, the silicone rubber of the lower blade holder acts as a buffer.

②. End sealing blade and the blade holder return after the set End sealing time.

③. You could manually perform End sealing once though the touch screen.

④. There is a transitional board beside the blade holder. Please adjust this board in the same level with

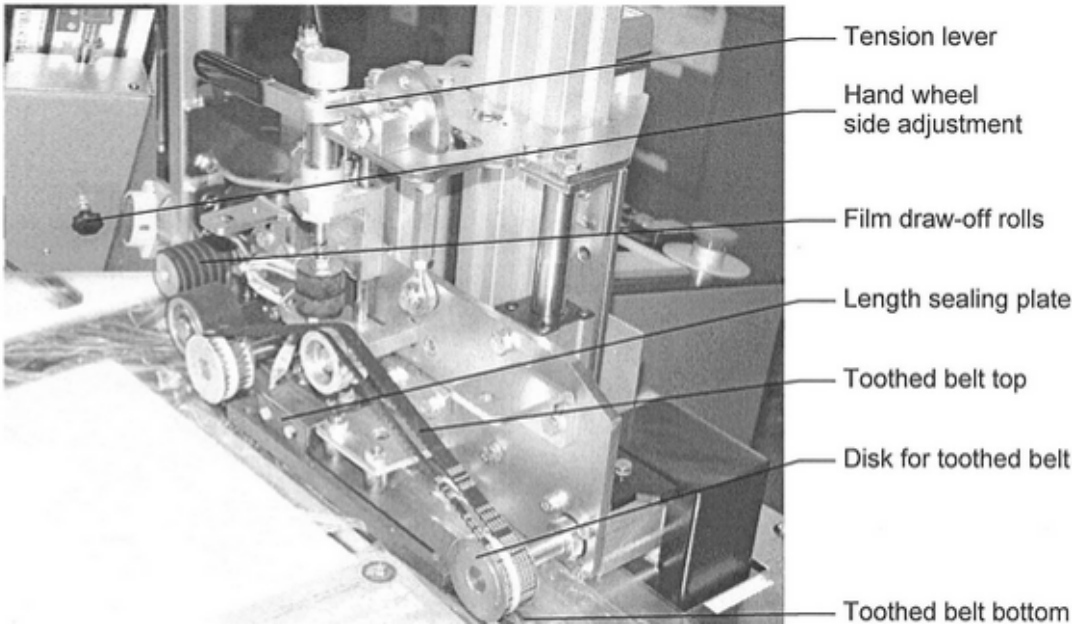
outfeed conveyor so that products could be conveyed smoothly. (Especially when the products are very small)



Length Sealing Unit

Safety recommendation

When working with a hot machine it must be noted that the length-sealing unit may be hot so that danger of burning is present.



Length Sealing Unit

Push the infeed table back to its basic position. If the goods to be packed are higher than 100 mm, fit the U-support to place the two halves of the film into the length-sealing unit, stand at the side of the outfeed conveyor.

The upper part of the Length-sealing unit must be raised by a lever before the film can be inserted.

The actual sealing equipment is located in the lower part of the length-sealing unit. For adjustment of the

machine, the upper part can be raised pneumatically by a lever.

Now place the two film halves such that, with a straight run of the film, a waste strip of 30 - 50 mm remains. With the continuous length sealing the centre-folded film is closed on the open side.

Tension rollers

The rubber-covered tension rollers above and below the infeed conveyor have the task of feeding the film, free of folds, through the end-sealing unit and into the Length-sealing unit. The axles of the tension rollers should not be exactly perpendicular to the direction of film movement; viewed from above, they should be rotated counter-clockwise by a few degrees. The optimum adjustment depends upon the type, width and thickness of the film and must be determined by experiment in test runs.

Then, tension the lower centre-folded film by opening the tension roller pair against the force of the spring and inserting the film. Ensure that the tension rollers do not touch the infeed conveyor from below.

Adjust the upper pair to approximately the height of the goods to be packed and pull the film through the rollers.

Outfeed conveyor / length sealing

Safety recommendation

When working on a hot machine it must be noted that the length-sealing unit may be hot so that danger of burning is present.

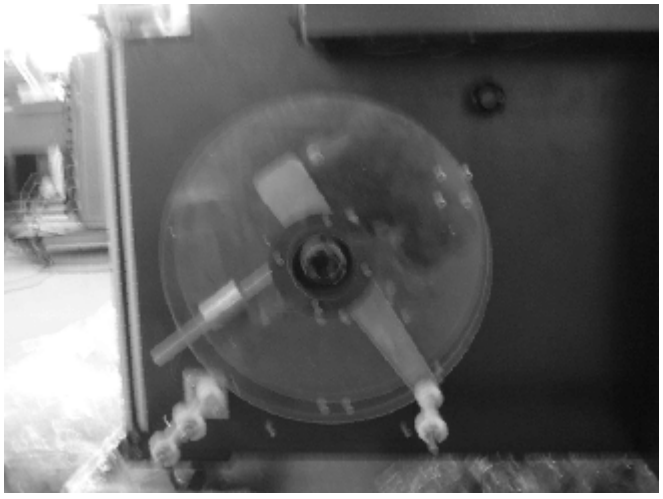
This is also true of the Length seal itself.

At the same time the goods to be packed lying on the outfeed convey or pass through the length sealing station where the open sides of the centre-folded film are closed and the waste strip is simultaneously

removed along the length. It is wound up with the film waste.

The pack, which is now sealed at all sides, is manually removed from the outfeed conveyor or transferred by the outfeed conveyor to another transporting device, e.g. to pass through the shrinking tunnel.

Waste film reel.



After separating it, pull the narrow waste strip over the deflector rollers and the film rocker into the waste film reel.

The tension of the film rocker has to be chosen according to the thickness and stability of the film so that it can be wound up exactly.

There is no use for the wide waste strip. It should be cut off and sent for processing.

Fastening the waste strip

To fasten the waste strip to the waste film reel, loosen the central locking handle on the front winding disc by turning it counter-clockwise. Clamp the waste strip between the two inner cones and retighten the handle.

It is only necessary to remove the winding disc completely when emptying a full waste reel.

If the adjustments have been made correctly the Length Sealing is now ready for production.

Ⅴ Operation

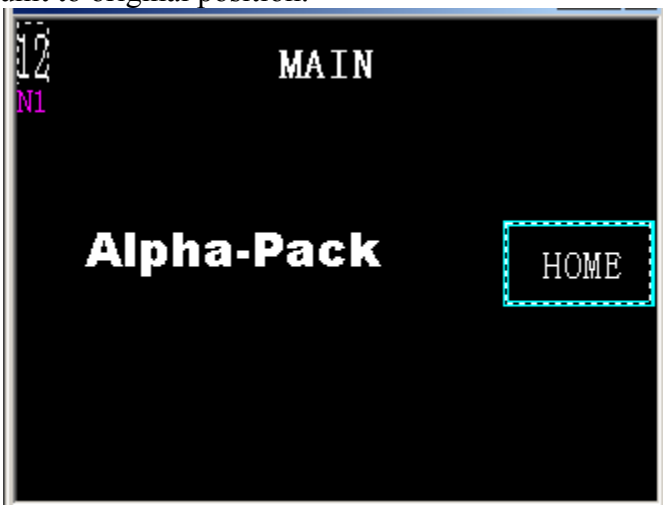
5.1 Introduction of function keys

Press 

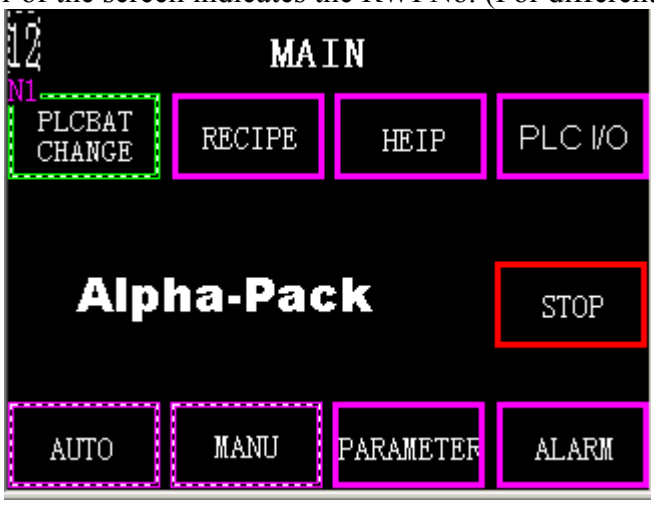
to enter English operation screens.

In the Main Screen, press 

. This key turns green and screen jumps to Main Screen2. HOME key could return the End sealing unit to original position.



The numbers in the left corner of the screen indicates the RWI No. (For different job parameter easy recall)



Main Screen

PLCBAT CHANGE：If this key turns green, please change the battery of PLC.

RECIPE: You can enter RWI screen by press this key.

HELP: Press this key to enter Help Screen.

PLC I/O: To jump to PLC I/O screen.

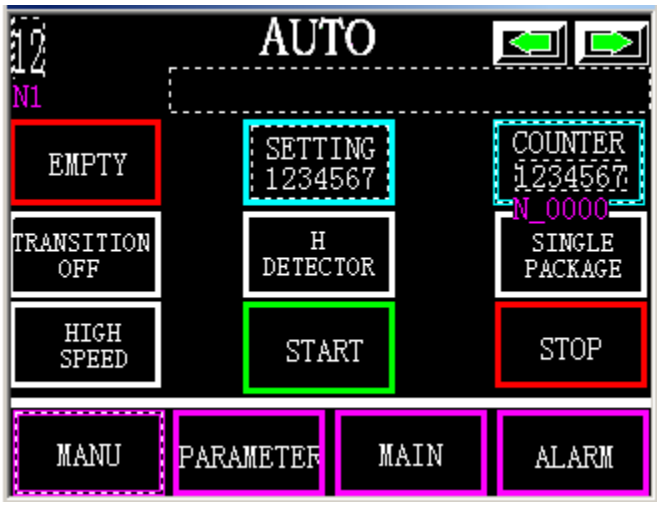
STOP: Press this key, and it turns red, machine will automatically stops.

AUTO: Press this key to enter Auto Screen.

MANU: Press this key to enter Manual Screen.

PARAMETER: Press this key to enter Parameter Setting Screen.

ALARM: Press this key to enter Alarm Screen.



Auto Screen

Press these two green arrows to turn screens.

SETTING: Press this key, a numeric keyboard jumps out. You could input the setting values in the keyboard and press ENT to confirm.

COUNTER: This is for automatically record the output. Press this key to reset this counter.

Notice: If COUNTER equals with SETTING, machine will automatically stop and jumps out alarm, displaying: PV GREATER THAN SV. You can clear this alarm and resume production by reset the counter.

HIGH SPEED/ LOW SPEED: The default setting is HIGH SPEED, press this key, Press this key, it will switch to LOW SPEED. (Turn red) For more details, you could refer to the Help Screen.

SINGLE PACKAGE/ MULTI PACKAGE: The default setting is single package. Press this key, it will switch to multi package. (Turn red)For more details, you could refer to the Help Screen.

H DETECTOR/ V DETECTOR: The default setting is horizontal sensor detect. Press this key, it will switch to vertical sensor detect. (Turn red) When the products to be packed are very small and thin, please choose vertical sensor detect.

EMPTY: Press this key, the outfeed conveyor will run for 2.5s and automatically stop after that.This is for easy product outfeed when you need to change the products to be packed.

TRANSITION OFF: This is for active the transitional board. The default setting is off. You can activate this function by press it when you have small or thin products to be packed.

START: Press this key, it turns green and machine starts production.

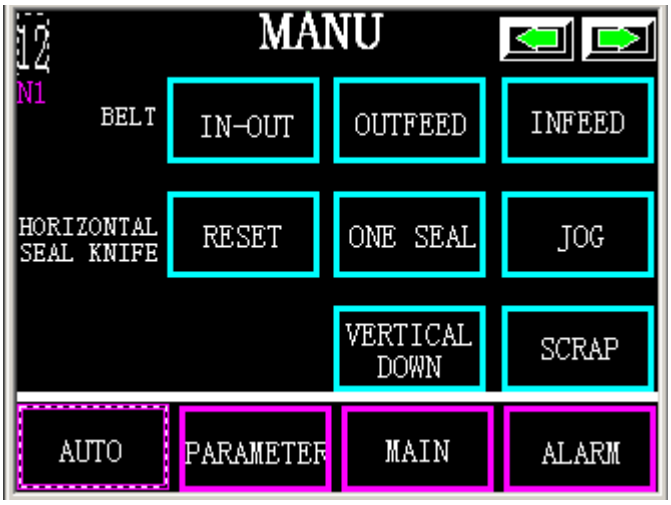
STOP: Press this key to stop the machine.

MANU: Press this key to enter Manual screen, meanwhile, all the elements automatically return to the original position.

PARAMETER: Press this key to enter Parameter Setting Screen.

MAIN: Press this key to return to Main sreen.

ALARM: Press this key to enter Alarm Screen.



Manual Screen

Only when MANU turns green, can you press the keys in this screen to perform the related perfoamance.

IN-OUT: Press this key, it turns green, the infeed and outfeed conveyor start at the same time.

OUTFEED: Press this key, the key turns green and outfeed conveyor starts.

INFEED: Press this key, infeed conveyor starts.

ONE SEAL: Press this key, End sealing unit performs sealing once.

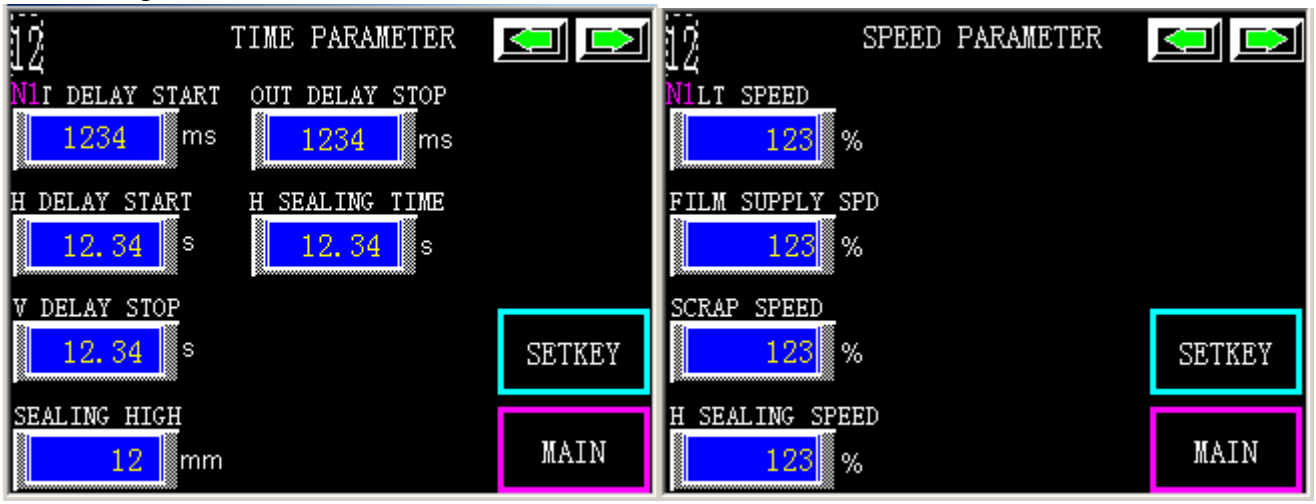
RESET: You can use this key together with JOG to return the H. sealing blade.

JOG: Press this key, sealing blade jogs.

VERTICAL DOWN: Press this key, Length sealing unit performs sealing.

SCRAP: Press this key, the waste film roller performs and winds once

AUTO: Press this key to enter Auto screen and meanwhile, all the elements return to the original position for auto running.



Parameter Screen

After setting all the values, you must press SETKEY to confirm the setting values, or the values are not set.

OUT DELAY START: This is for setting the delay time of staring outfeed conveyor after H. sensors or V. sensors detect the product.

OUT DELAY STOP: This is for setting the delay time of stopping the outfeed conveyor after H. sensors or V. sensors detect the product has passed.

H. DELAY START: This is for setting the delay time of stat the End sealing blade after the outfeed conveyor stops.

H. SEALING TIME: This is for setting the End sealing time.

V. DELAY STOP: When H. sensors or V. sensors detect the product, Length sealing blade performs sealing. When H. sensor or V. sensors detect the product has passed, Length sealing blade delays this time to stop sealing and return.

SEALING HEIGHT: You could set this value according the different product height. (Reference value)

BELT SPEED: This is for setting the speed of infeed and outfeed conveyor. 100% indicates the highest speed, which equals 75HZ. The higher percentage is, the higher conveyor speed will be.

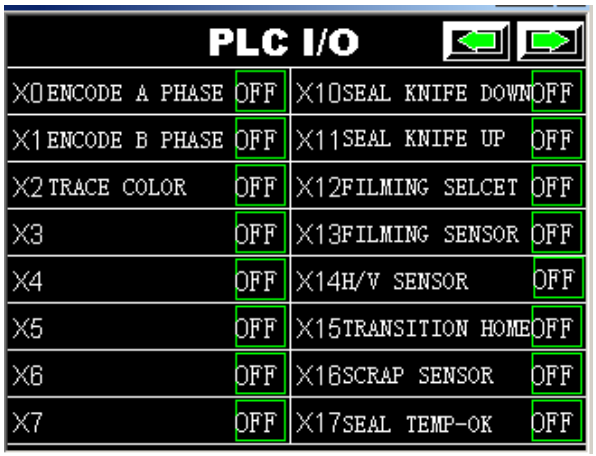
FILM SUPPLY SPEED: The speed of film supply motor.

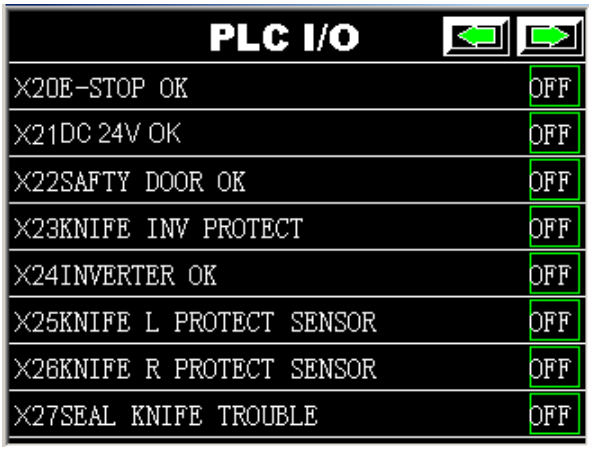
SCRAP SPEED: The speed of scrap for winding the waste film.

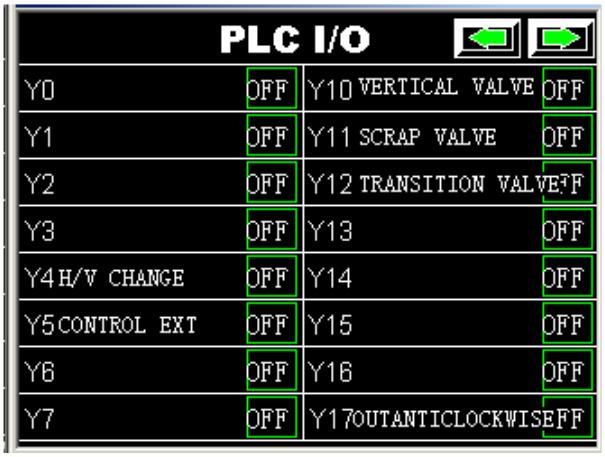
H. SEALING SPEED: The speed of H. Sealing blade performance. The bigger percentage is, the higher speed is.

PLC I/O Screens

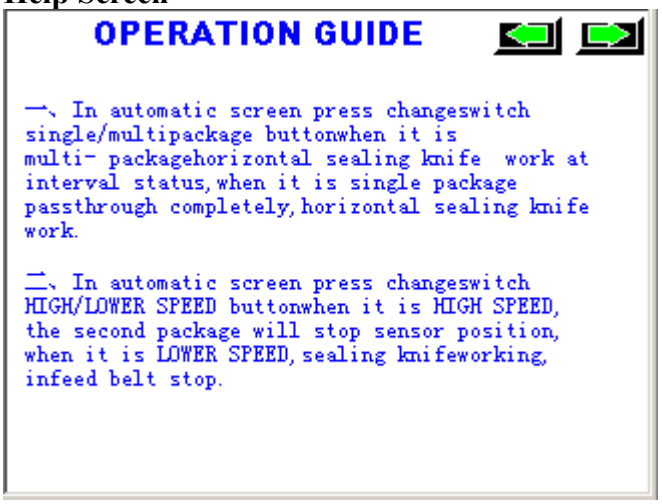
These screens display PLC input and output status.





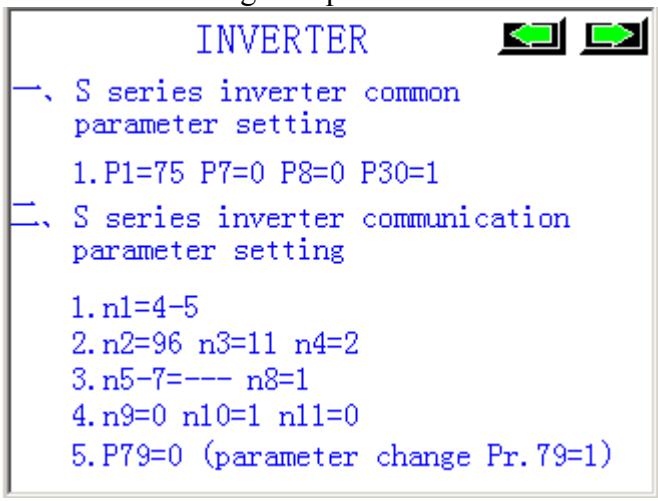


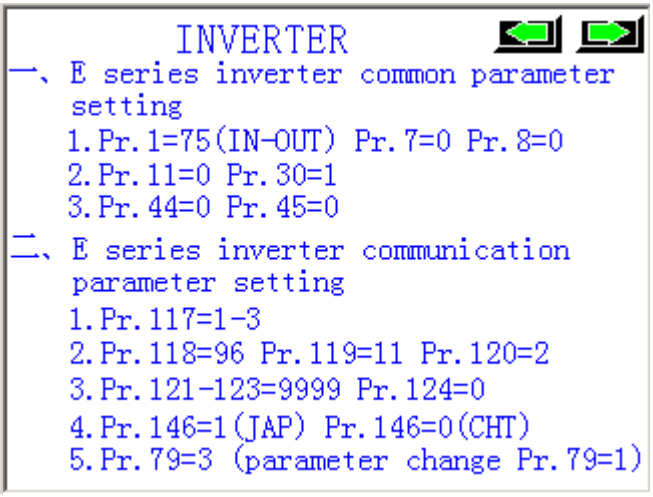
Help Screen

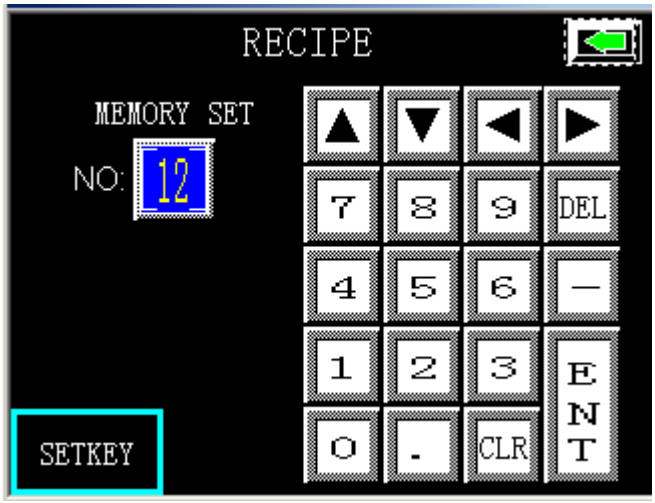


Inverter Screen

Please do not change the parameters related.







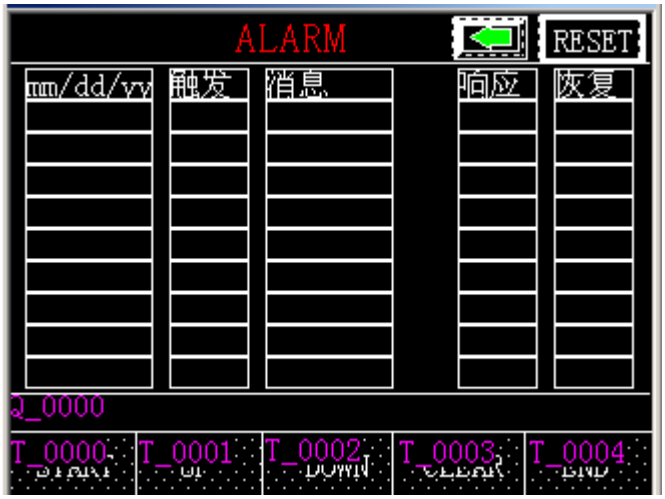
Recipe Screen

After setting the groups of parameters in the two parameter screens, you can enter this screen to save the group of parameters to the RWI. You can do as followings:

Press SETKEY, and then press the key beside NO..

Input the value in the numeric keyboard and press ENT to confirm.

Alarm Screen



When machine is operated unmorally or disordered, alarm screen jumps out and displays the alarm information. Please solve the problem and press RESET to return to Auto Screen. The information includes:

1.	DC24V ALARM
2.	SAFETY DOOR NG
3.	HORIZONTAL SEAL INVERTER
4.	OTHER INVERTERS ALARM
5.	LACK FILM
6.	SCRAP FILM
7.	HORIZONTAL KNIFE PROTECT
8.	EMERGENCY STOP
9.	ENCODE BAD
10.	PV GREATER THAN SV

To solve the related problems, please do as followings:

2. Please close all the safety covers to engage security

3.4 Turn off the machine and turn on after 15 seconds. Check whether there is error message on the frequency converter. If there is, please read error message on frequency converter; cancel error message with key, stop / reset' on frequency converter, after switching off the machine wait at least 30 seconds before switching on again. You could refer to the frequency inverter operation manual or contact us.

5. Manually feed the film or change a new film roll.

6. If the waste film breaks, rejoin the waste roll manually. Manually pull the crap to check whether there is Crap motor signal in the PLC. (Flash up and die away)

7. Check whether the left and right protect sensors of End sealing blade come to light when sealing blade is in the upper position and die away when joint together sealing. If not, please use a adjustable spanner to adjust the sensor.

8. Please check the Emergency Switch, if it is pushed down, please release it.

9. Return to Auto Screen and reset the COUNTER.

5.2 Auto Operation Steps:

Please read the followings carefully before you begin auto production.

1. Please connect the power supply, and make sure the machine is properly grounded. (AC220V, single phase.)
2. Connect the air supply.(5~6MPa)
3. Thread the film properly.
4. Switch on the main power, and then the temperature controllers are also switched on. Please set a proper temperature according to the property of film. Usually, you can set 170-200℃ for the End sealing blade and 300-330℃ for the Length sealing blade.
5. Push the green button to start the machine. Touch screen, PLC and frequency inverter are turned on at the same time.
6. Set H. Sealing Speed, H. Sealing Time and other parameters. (Please refer to the setting way in the former subsection)
7. Enter Recipe Screen and set a number for this group of parameters for easy recall.
8. Adjust the height of the triangle former and the width of the product path.
9. When the temperatures are reached, enter Manual Screen. Keep pressing INFEED to activate the infeed conveyor. The product to be packed is conveyed towards the End sealing unit. Release INFEED and press ONCE SEAL when product has passed the sealing blade for about 5 centimeters. The sealing units perform sealing. Press OUTFEED to feed out the packed product.
10. Press VERTICAL DOWN and SCRAP to wind the waste film. Enter Time Parameter screen and reset the related parameters according to the packing result. Please redo the sealing for 3~4 times for adjustment. Adjust the height of H. sealing blade.
11. Enter Auto Screen after all the above steps.
12. Set the production value according to the production demand and reset the COUNTER. Please refer to the Help Screen and choose HIGH SPEED or LOW SPEED and SINGLE PACKAGE and MULTI PACKAGE properly.
13. Press START and place the products on the infeed conveyor to begin auto production.

Notice: ① Emergency Stop

Please push Emergency button when an accident occurs. Machine will stop immediately. When the problem is settled, you can release the switch and resume production.

② Normal Machine Stop

Turn off the POWER switch after daily production

ⓘ **Important:** Please leave 10 minutes for cooling the sealing blades.

Ⅵ Trouble Shooting

0.	Emergency Stop	→	Turn the Emergency Switch clockwise to release it
1	Machine stops	→	Machine's main switch is off
2	SATETY DOOR NG	→	Close safety covers to engage security
3	Power circuit breaker / motor protection	→	Find out mechanical triggered reasons, motor protection re-engage motor safety switch Q...
4	OTHER INVERTER ALARM	→	Read error message on frequency converter; cancel error message with key, stop / reset' on frequency converter, after switching off the machine wait at least 30 seconds before switching on again
5	Error converter (flat film)	→	Read error message on frequency converter; cancel error message with key on frequency converter; after switching off the machine wait at least 30 seconds before switching on again
6	END KNIFE PROTECT	→	Press JOG in the Manual Screen. When the sealing blade has joint with the blade holder, use a adjustable spanner to screw the screws until the left and right sensor indicator lamp comes to light. (yellow) Or you can change the low spring of the sensor switch.
7	Fill supply	→	Please make sure that the film rotation-direction reverse switch is switched to clockwise direction. If it has been in clockwise direction, please check whether there is signal for the switch, if not, please replace this switch
8	Lack FILM/ SCRAP FILM	→	Rewind the waste film or make another waste strip.
9	Touch screen went black	→	Please check to make surer the green button is pushed down. Please check to make sure the Emergency Switch is released. If the touch screen is still black, please check the electricity and the battery.
10	The End Sealing unit can not joint together closely	→	Use a interior six angle to adjust the up and down sensor of H. sealing blade until the blade and the holder can joint together closely
11	The sealing is not tight	→	The sealing temperature is set too high, or the set sealing time is too long
12	Infeed conveyor does not perform	→	1. Release the emergency Switch 2. Adjust the belt and chain wheel

			3. The infeed frequency inverter is broken.
.13	Outfeed conveyor does not perform	→	1. Release the emergency Switch 2. Adjust the belt and chain wheel. 3. The outfeed frequency inverter is broken.

Ⅶ Maintenance

7.1 General notes for servicing and maintenance

IMPORTANT !

It is essential to observe these instructions! Observe carefully all necessary

Observe carefully all necessary precautionary measures to avoid blessures or dammages which might occur while working on the opened and partly hot machine.

Work in the area of the mains electricity supply should always be carried out with the main switch off. For the purposes of service work, the socket in the control cabinet has a voltage, even when the main switch is off.

Please observe these points for your own safety and for that of your colleagues.

The machine is nearly maintenance free. All bearings are permanently greased, all guidings and movements, with few exceptions, have not to be greased due to their design.

Survey of the greasing		
Greasing points	**Frequency of greasing**	**lubricants**
Roller chains	≈ all 500 working hours	Oil for roller chains
gearwheels	≈ all 200 working hours	Grease, graphitized
Guiding cross sealing	≈ all 500 working hours	ball bearing grease
Threaded spindles	yearly	To be cleaned, oil
slide bearings (synthetic material on aluminum)	yearly	To be cleaned, Teflon spray

Before starting maintenance and repair work the machine must be disconnected and secured against re-starting by unauthorized persons or by mistake.

The machine has to be disconnected from the compressed air supply and vented. This is done at the cut-off valve in front of the maintenance unit by putting the lever in position „closed. In this position the lever has to be secured by means of a padlock in order to exclude a re-starting by mistake during the maintenance and repair work.

7.2 Maintenance unit of the compressed air supply

The service unit should be regularly checked to see if the pressure reducer is set to the correct pressure of 6 bar. The water separator must be regularly checked and the water drained. If this is not done it can lead to severe problems in the pneumatic system.

7.3 Sealing system

The sealing system should be regularly checked to ensure that the silicone rubber is in the correct condition. If necessary, change it! The result of sealing is largely dependent upon a sealing system which is maintained in perfect order.

7.4 Cleaning of the sealing jaw

- The Teflon layer on the sealing jaw is sensitive to contact with hard objects (knives, screw drivers, emery paper, etc.). Therefore, it should never come into contact with them.

After the cleaning process, please do not forget to reset the correct sealing temperature, should it have been changed.

7.5 Replacing the silicone rubber on the sealing lower sealing jaw

If the silicone rubber on the lower jaw is worn it must be replaced as follows:

1. Remove lower jaw with the silicone rubber.
2. Mount new lower jaw with silicone rubber already fitted.

7.6 Preparation of the removed lower jaw for the next change

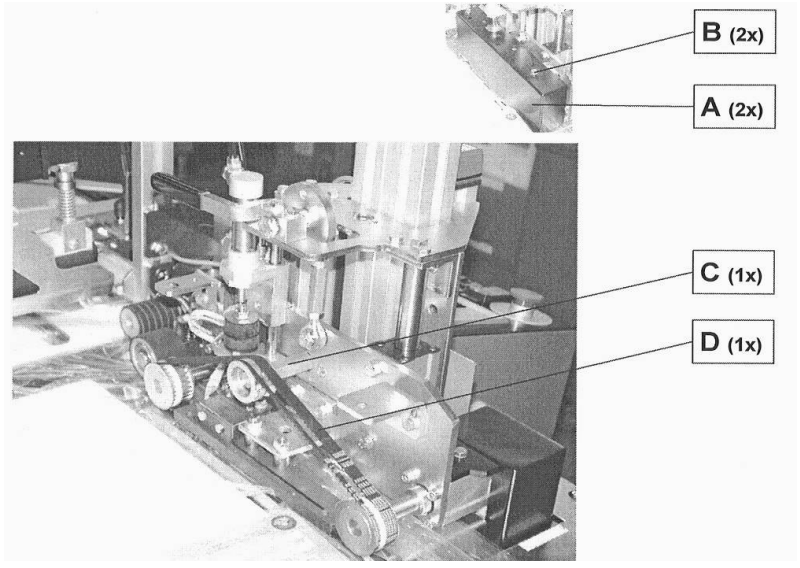
1. Remove old silicone rubber on jaw plate
2. Remove adhesive and degrease area of attachment.
3. Stick the silicone rubber to the lower jaw plate using supplied special silicone glue.

Ensure that the silicone rubber is fixed parallel with the edges!!

4. Allow the silicone adhesive to set minimum 6 hours, better 12 hours

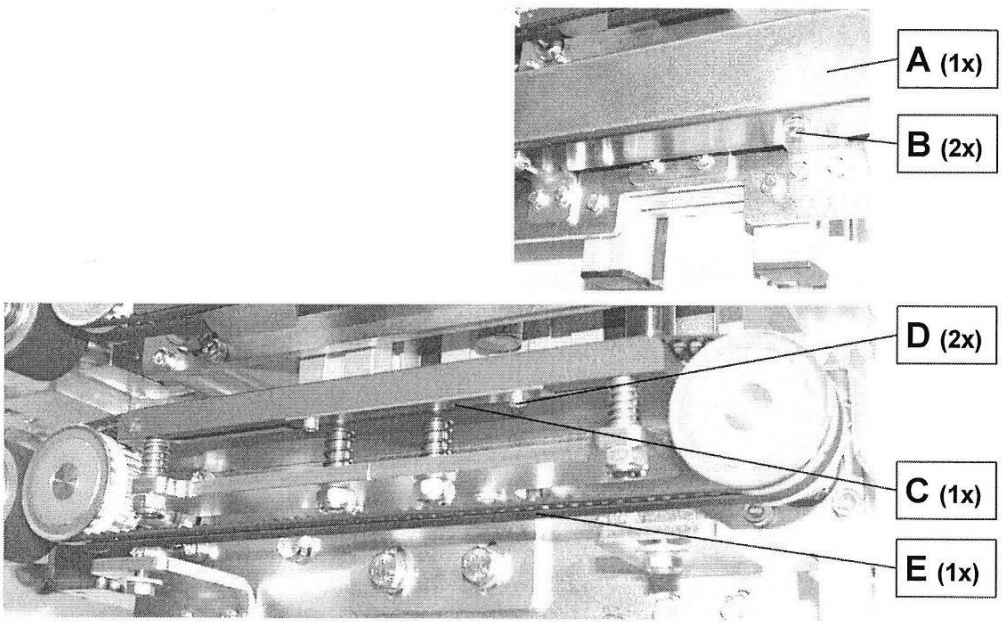
7.7 Exchange of the toothed belts at the length sealing unit

①Exchange of upper toothed belts



1. Dismount the black protection hood (A) by loosening the two fastening screws (B).
2. Loosen the upper tension roll (C) from the back with two open end wrenches (SW 13 und SW 17) and push them downwards till you can draw the belts off from the pulleys.
3. Draw the new toothed belt of the same type on the pulleys.
4. Move the tension roll (C) upwards and re-tighten it under tension.
5. Check the correct position of the toothed belts (D) by turning them several times. The toothed belts have to run parallel and have to be adjusted parallel to each other.
6. Fasten the protection hood (A) with the two fastening screws (B).

②Exchange of lower toothed belts



1. Dismou
2. Remove the separation plate **(C)** by removing the two fastening screws **(D).**
3. For draw off the upper toothed belts **(E)** from the pulley turn it and draw the belt to the side at the same time.
4. Install the new toothed belts of the same type in opposite order and have them run in the guiding grooves.
5. Check the correct position of the toothed belts (E) by turning them several times.
6. Re-mount the separation plate **(C)** with the two fastening screws **(D)**.
7. Fasten the protection hood **(A)** with the two fastening screws **(B).**

7.8 Adjust the belt course at the transport conveyors

lnfeed conveyor

Belt runs e. g. to the right-hand side in passing direction:

Tension the belt at the right-hand side.

Turn the inner hexagon screw at the left-hand side (A) at the infeed conveyor by a quarter of a rotation in clockwise and wait 15 seconds till the belt is in its new position. This process has to be repeated till the belt is in the centre.

Belt runs e. g. to the left-hand side in passing direction:

Same procedure as above at the inner hexagon bolt at the right-hand side **(B).**

You can adjust the outfeed conveyor in similar way.

Ⅷ Circuit Diagram

Please refer to the attached sheets.

Ⅸ Spare Parts List

ITEM	QTY
tool box	1pcs
adjustable spanner	1pcs
"+" SCREW KNIFE	1pcs
"-" SCREW KNIFE	1pcs
interior six angle	1pcs
exterior six angle	1pcs
Tooth Belt 270XL (13mm)	1pcs
Tooth Belt 270XL (4mm)	1pcs

Tooth Belt 280XL (4mm)	1pcs
Tooth Belt 280XL (13mm)	1pcs
Heating element for length seal	1pcs
Heating element for Length seal	1pcs
Thermocouple for length seal heater	1pcs
Red silicon rubber	2pcs
teflon tape	1roll
three type spring	2pcs/item
start button	1pcs
stop button	1pcs
pin perforator	3pcs
Proximity sensor	1set
Thermocouple for Length seal heater	1pcs
Blade for Length	1pcs
Blade for length	1pcs
Relayer	1pcs
Relayer	1pcs
Manual for Mitsubishi INVERTOR	1pcs
Manual for PLC	1pcs
Manual for Panasanic INVERTOR	1pcs
Operation manual	1pcs
Manual for temperature controller	1pcs
Manual for Motor	1pcs
CD for touch screen and PLC	1pcs
BANNER sensor's manual	1pcs

X Electrical Parts List