

FPS-200/300/400 MODEL

# COIL WRAPPING MACHINE

# OPERATION MANUAL

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### Reference Picture:



## **I. Application Note**

This machine can be used to conduct relatively closed packaging for different dimensions of coiled objects so as to play a role of anti-rust, waterproof, dustproof, anti-damage and anti-aging etc.

The packaging material mating with this machine is stretch film.

## **II. Important Alert**

- I. Abuse will lead to serious result.
- II. Do have the machine grounded.
- III. In the event of urgent failure occurrence, do shut off or cut off power supply, and then carry out relevant troubleshooting operations after safety confirmation.
- IV. Never modify the control program and relevant parameter settings of this machine without authorization.
- V. Never tear off various signs marked on the machine.
- VI. Never open the electrical box when the machine is working.
- VII. In the case of the lifting and lowering of unpackaged object, do ensure safe, steady and orderly operation, and unpackaged object's collision with the machine shall be strictly forbidden.
- VIII. Stand apart from the machine when it's working to avoid accident
- IX . Do not wear long hair, long gown or other long garments to avoid being involved into the machine.

### III. Technical Parameter

Model	FPS-200	FPS-300	FPS-400
Coil OD	800-1000	800-1100	800-1200
Coil ID	508/610	508/610	508/610
Coil width	50-200mm	100-300mm	150-400mm
Coil weight	100-700kg	100-800kg	100-1000kg
Roller speed	2-4m/min	2-4m/min	2-4m/min
Rotating speed	40-90 r/min	40-90 r/min	40-90 r/min
Wrapping material	LLDPE/PE/PAPER/PVC/	LLDPE/PE/PAPER/PVC/	LLDPE/PE/PAPER/PVC/
Material width	70-120mm	90-130mm	100-150mm
Material OD	100-300mm	100-300mm	100-300mm
Material ID	50mm	50mm	50mm
Power output	App. 2.5kw	App. 3kw	App. 4kw
Power voltage	380V/50Hz	380V/50Hz	380V/50Hz
Wrapping speed	15-30sec/pcs	20-40sec/pcs	30-50sec/pcs
Overlapping rate	20%-90%	20%-90%	20%-90%
Air Supply	5-7Bar	5-7Bar	5-7Bar

## **IV. Machine Installation**

1. Prevent against the occurrence of bruise, compression injury, crushing injury, contusion and other accidents during the installation.
2. As the machine has been transported and moved, all flexible parts shall be inspected carefully.
3. The entire installation shall be completed under the condition that the power supply is cut off.
4. The machine shall be mounted on flat and hard ground. External power supply should be in accordance with stated on the machine plate.
5. Only trained personnel can be allowed to enter the installation site.
6. Next working procedure can be executed only after all the installation operations are completed.
7. The machine shall be mounted in dry and dust free environment.

## **V. Machine Operation**

### **1. Introduction to operating panel and switch function:**

**POWER:** The main switch of machine power supply which is used to connect or shut off the machine power supply.

**EMERGENCY STOP:** The control switch which is used to control circuit.  
Press this switch to shut down the whole machine in the case of emergency.

**MANUAL/AUTO:** The working mode of this machine is classified into manual operating mode and automatic operating mode.

“MANUAL” mode is generally used for inspection, adjustment, troubleshooting and specific conditions. In normal operation conditions, “AUTO” mode is adopted.

**RING START:** It is usually used as startup button in “Auto” mode, can make the ring run in “Manual” mode.

**RING STOP:** Can stop the complete machine in “Auto” mode, can make the ring stopped in “Manual” mode

**RESET:** It is used to have the ring reset (can be operated in both “Auto” and “Manual” mode.)

**RING JOG:** It is used to have the ring jog operation (can be operated in both “Auto” and “Manual” mode). Can make the ring run slowly through the object center and confirm if the object is placed in center.

**CUTTER:** It is used to cut the packaging tape. (can be operated in both “Auto” and “Manual” mode.)

**RING RESET:** this button can make the ring stop in a fixed position, make it convenient for packaging, and it’s also the precondition of ring movement.

**ROLLER (FWD/REV):** Used to put the roller run under clockwise or anticlockwise in “MANUAL” mode.

Roller space (extend/narrow): when the ring is in reset statue, can operate cylinder to push out the object to make it easy for moving it away manually.(air pressure can not be too big to avoid the object jumping out and hurting people.)

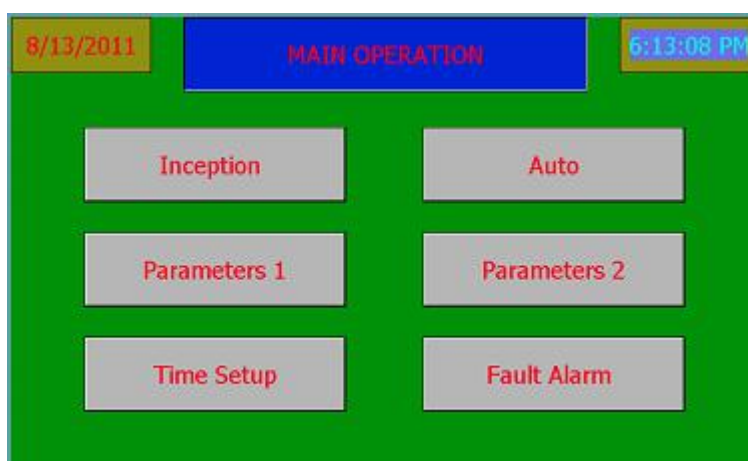
Note: frequency of the ring converter and roller converter not only determine the running speed of ring and roller respectively, but are also in connection with the overlapping of packaging tape. The two setting parameters can be set by touching HMI. If the ring speed is constant and roller speed is low, the packaging tape features a large overlapping range; on the contrary, the overlapping range is small.

## 2. Introduction to main content of HMI

2.1. Inception page (main page). Choose the language and go to the next pages.



2.2. It's the main operation page, can switch into application pages.



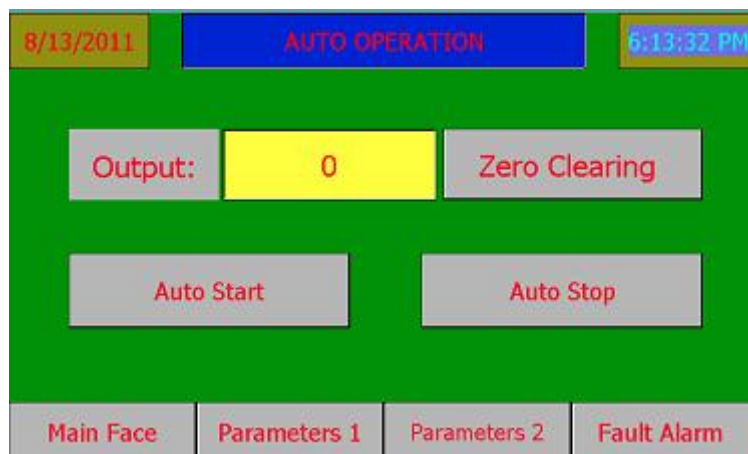
2.3. Auto operation page.

**Auto start:** used as the startup button in “AUTO” mode.

**Auto stop:** can stop the complete machine in “AUTO” mode.

**Output:** can record the output of packed objects in “AUTO” mode.

**Zero clearing:** used to clear up the output of wrapped object in AUTO mode.



## 2.4. Parameter 1 setting page.

**Object OD(exterior diameter):** Input in actual size, its unit is “mm”.

**Object ID(interior diameter):** Input in actual size, its unit is “mm”.

**Object width:** Input in actual size, its unit is “mm”.

**Repair Coefficient:** “PLC” can automatically calculate the length of required packaging tape, but the calculated value has a little discrepancy with the actual required one due to dimension of unpackaged object and the extension of packaging tape and etc. Thus it is a variable value. In auto mode, it can increase or reduce the tape length when error occurs about the length.

**Ring locate time:** Based on the automatic calculation of “PLC”, ring running time can be appropriately prolonged or shorten to adjust the stop position (locate position) of the packaged object.

**Roller orientation time:** normally 1~20. Based on the automatic calculation



of “PLC”, ring running time can be appropriately prolonged or shorten so as to adjust the stop position (locate position) of the packaged object.

## 2.5. Parameter 2 setting page.

**Roller diameter**: show actual roller diameter, unit: mm

**Strap perimeter**: show actual strap perimeter, unit: mm

**Cut off time**: 0.1~3. time of cutting operation from the beginning to the end.

**Once wrapping**: the packaging is completed at one time.

**Twice wrapping**: The packaging is completed at twice time. When the diameter and width of the unpackaged object is large, the tape storage on the ring cannot store enough packaging tapes at one time, so the “Twice Wrapping” mode shall be selected to package the object at twice. Touch corresponding button to select “Once Wrapping” or “Twice Wrapping”.

**Rev parameter**: the scope of the object running reversely. After the first part of “twice wrapping” finished, the object will run reversely to make it easier for connection with the second part of the packing material. It’s invalid in “once wrapping” state.

● touch other keys in bottom of the touch screen can enter into other pages.

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**SETUP PARAMETERS 2**

Roller dia.  
0 mm

Strap perimeter  
0 mm

Cut off time  
0.0 s

Calculation + coef  
Once wrapping

Calculation time  
0 10ms

Rev. parameter  
0 s

Main face Parameters 1 Parameters 3 Auto face

## 2.6. Parameter 3 setting page.

**Ring speed:** ring speed during normal operation, unit: HZ

**Ring speed 2:** speed of ring reset, motor, stop speed, unit: HZ

**Roller running:** roller speed during normal operation, unit: HZ

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**SETUP PARAMETERS 3**

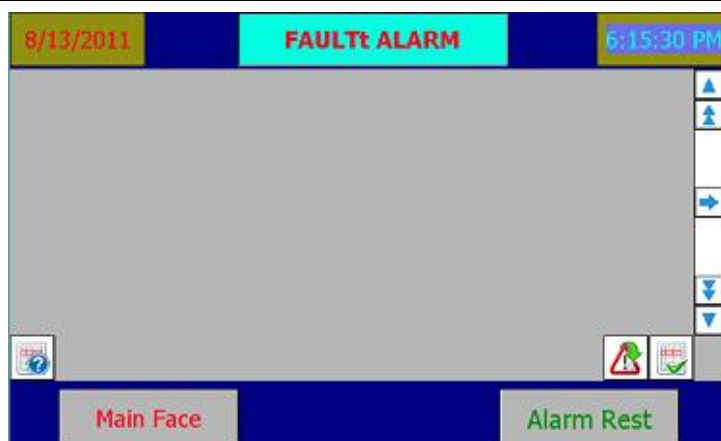
Ring Speed  
0 mm

Ring Speed 2  
0 mm

Roller Running  
0 mm

Main Face Parameters 1 Parameters 2 Auto Face

**2.7. when error occurs, related alarming instructions will popped out in HMI screen. And there is alarming records in alarming page.**



## 2.8. Time setting page.



## 3、 Operation:

- 1) Check if the exterior power of machine is correctly connected.
- 2) Adjust the up& down rollers to a suitable position. In principle, the gap of up rollers and gap of down rollers should be wider than the width of the object.
- 3) Narrow the roller by operating the roller switch; reset the cylinder to origin position.
- 4) Push the object into the support roller position manually and check if the state is normal.
- 5) Adjust the tension of packing tape appropriately and confirm the ring position to ensure the ring can run through the center of the object smoothly.

- 6) Set the object OD, object ID, object width and other parameters in HMI touch screen.
- 7) Switch the “Manual/Auto” button to “Auto” and the machine is in auto working mode.
- 8) Press “Ring start” and the machine operates automatically, if any abnormal occurs in the packing process, press “Ring stop” to stop the machine.
- 9) The machine will stop automatically when a packing process is completed. Cut the packing tape and fix it on the object manually.
- 10) Extend the roller by operating the roller switch; the cylinder pushes the packed object out.
- 11) Move away the object manually, thus a packing process is finished.
- 12) Narrow the roller to reset the cylinder.
- 13) Start next new packaging operation according to the above-mentioned operating process.
- 14) The ring should be in a suitable position for easy packing. One hand, the ring and the packing tape can't crash with the object during packing process; on the other hand, locate the object near the center place of the ring to make the packing tape wrap the object evenly.
- 15) Pay attention to safe operation during package in& out. Cut off the power supply after using the machine.
- 16) “Ring jog” button can be operated to make the ring stops at the most suitable position for packaging.
- 17) When ID, OD, width of the object change, the gap between the support rollers, ring height and packing tape tension also should be readjusted according to actual requirement.

## VI. Troubleshooting

Problem	Possible cause	Solution
Package too loose	1. The package tension belt is too loose. 2. The ring is too high or too low.	1. Adjust the screw on the film carriage to suitable tightness. 2. Adjust the height of the ring.
The packing tape is easier to drop off	1. The relative time of the ring & roller running is too short.	1. Make the value of the “time setting” larger.
The object turns difficultly or shakes seriously.	1. The gap between the up and down rollers is too small or too big.	1. Adjust the up and down rollers to a proper place.
The packing tape is stretched out unsmoothly.	1. Incorrect tape threading or inappropriate running direction of the ring.	1. Check the tape threading method or reconfirm the ring turning direction.
The ring don't run smoothly	1. Improper direction of ring running 2. The transmission friction wheel of the ring is too loose.	1. Confirm the ring running direction. 2. Adjust the position of the friction wheel to make its pressure to the ring equal.

Packaging tape is too loose or tight when packing	1. The relative speed of the roller and the ring is improper.	1. Adjust the turning speed of the roller and the ring properly.
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**Electrical diagram:**

