# **Conveyorized Wrapping Machine**



# User Manual

Dear user:

Thanks for buying our products. Please be sure to read this manual carefully before using, so as to give a full play of its excellent performance. Please follow the security precautions and strictly operate the machine according to the technical parameters. If there is any question, please get contact with us in time, We will offer dedicated service to you.

Please preserve the manual and relevant technical files so that you may read it at anytime when necessary.

## Contents

<i>,</i>	PRECAUTIONS FOR USE	3
<u> </u>	Machine dimension	1
三,	Technical parameters	5
四、	Machine handling & installation	5
五、	Machine starting up & debugging	.7
六、	Specification of operation panel1	.1
七、	HIM specification1	2
八、	Manual/auto operation2	22
九、	Simple trouble shooting2	23
+、	Machine maintenance	24
+-	Circuit diagram…	25

### -、 **PRECAUTIONS FOR USE**

1.1, use environment

1. Place: indoor

2. Temperature:  $-0 \sim 50^{\circ}$ C

3.Relative humidity: 35~85%RH (no condensation) .....while using

4. Environment: keep out of direct sunlight, dust, corrosive gas, flammable gas, oil fog, steam and water-drop. Avoid salt heavy environment, no sharply temperature change result in condensation.

Attention: If the goods is black, white, transparent, dark or used in strong light, the photo sensor will be out of work, use something to cover the photo sensor, and use the position packing function of travel switch to pack, or you can also contact the manufacturer.

1.2, Security precautions

Please read this manual before installation, operation, maintenance, and check, so as to use it properly for a long time.

1) Please pay attention to the lifting of machine chassis and column during installation.

2) Since the column is relatively high and heavy, any careless of fix may cause damage to people, so please be very careful during machine transmission and installation,

3) The connection of electrical circuit should be carried out by professional electrician.

4) Make sure that all screws have been fixed before wiring, the outer wiring of the machine should be done firstly, connect the main power cord after accurate measurement.

#### HENO PACKAGING INDUSTRIES LIMITED

We manufacture the packing machine, the end of packing line system

such as palletizer robot, pallet dispenser/stacker/magazine stretch wrapper,

pallet strapping machine, pallet conveyor ,corner applicator, tray erector and

former, case erector & carton sealing machine

#### $\Box$ Machine dimension

## 2.1, Machine dimension



## 2.2 Parts name of the machine



## $\Xi$ , Technical parameters

Mechanical composition and parameter: turntable conveyorized wrapping machine (film feeding & cutting device) Work system: PLC+touch screen+inverter Goods size: L1200 \* W1000 \* H1800mm Max Goods weight: 2000kg Max Packing efficiency: 20-30 boxs/hour Turntable diameter: Ø2000mm Turntable speed: 5-15 cycles/min Column height: 2500mm Film carriage type: pre-stretch film carriage Auto feeding film, cutting film and wiping film (cylinder) Turntable height: 550mm Conveying type: roller conveyor Conveying speed: 8-15M/min Roller size: 3.0\*76\*1100mm Roller wheel base: 102.6mm Packing material: stretch film:  $\phi$ 200mm width 500mm, inner core  $\phi$ 76mm; Method of cutting film: heater Method of wiping film: rubber Air source: 0.4-0.6Mpa Power supply: 3 phases 5 wires AC380V/50Hz Power: 2.8kw (turntable 1.5kw/column 0.4kw/film carriage 0.2kw/conveyor 0.75kw)

## 四、Machine handling & installation

### 4.1 Security precaution of machine handling

- 1) please pay attention not to get crashed with other object.
- 2) While use forklift to handle the machine, make sure to get the forklift to the 2/3 length of the frame, and do not rise it too high.

## 4.2 Handling method

Picture 1:



Picture 2:



Attention: Insert the fork of the forklift into the square tube of chassis, and lift. Please handle according to above picture.

#### 4.3 Installation method

- 1) A smooth floor is needed for the installation of the machine.
- 2. move the machine to the pointed place, and put it according to the size.
- 3) install the column according to below picture;



4) reconfirm the position of the machine, and use drill to drill on the ground. drill diameter:10mm;

#### 4.4 Connecting to the power and air source.

- 1) connecting to air source according to the equipment parameters;
- 2) connecting to the power according to the phase demands and voltage.

## $\pm$ . Machine starting up and debugging

#### 1. air source

open air valve, adjust the air pressure to 0.5-0.7Mpa

#### 2. Power supply

turn on the breaker in the electrical box, and rotate power switch on the control panel.



3. Manual operation and debugging.





Click the buttons on the screen to check if the corresponding mechanism works, and whether the running direction is the same as the showed on the label; adjust the stretch speed of the cylinder, if the machine runs normally at manual status, it can enter into automatic running.

- 4. Install the stretch film
  - 1) choose stretch film with suitable size;
  - 2) Film installation diagram:



3) Steps of film installation:



1. insert the stretch film to film carriage, 2. twist the handle at anti-clockwise direction to open film carriage door. 3. pull out the stretch film, pull it across micro roller and guide roller as the picture shows. 4. close film carriage door.

#### 4) steps of clamping the film:

1. press the 'manual clamp' button on the column, clamp opens. 2. put the stretch film upon the clamp, 3. press 'manual clamp' button again, clamp closes.





4-1: connect the machine to power and rotate the power switch to ON position , check if power indicator light is on.

If not on: 1) , check if there is power supply

2) 、 check if the air switch is on

4-2: check if the 'emergency stop' button pressed down

4-3: click HIM to enter parameter setting page and set relevant parameters (refer to the 7<sup>th</sup> chart)

4-4: press start button, machine starts running and wrapping the goods.

<u>if the machine not start</u>: check if the chassis and film carriage is at origin position. Click 'reset' button.

## 七. HMI specification

## 7.1. Start up picture:





### 7.2. Menu (running page) :



Chinese

English

interface showed in Chinese

interface showed in English



Automatic : show the current page



show the request signal of feeding on the front conveyor

will give feeding permission signal, the goods can not enter without this signal.

**Check start condition** (Not encoded) when the machine is at standby status( not automatically run), it appears when he machine can not be started, click to check specific conditions.





Bypass

: switch between manual and auto mode

. mode switch button, click to switch between 'wrapping mode' and 'conveying mode'

## Start

: click this button, machine enters into automatic working mode, the green light on.

## Remove alarm

Pause

: when there is alarm, click this button to clear the alarm.

e click this button, machine pauses, not matter at manual or auto mode. One need to press ;start' button to re-start the machine.



7.3. Manual:



Manual

: show the current page: manual



: switch between manual mode and auto mode.

T/T home : click the button, turntable rotates to origin position. Click again, turntable stops running; if turntable is already at origin position, there will be no response.

# T/T runing

click the button, turntable rotates at clockwise direction, click again, turntable stops.

**Carriage up**: click the button, film carriage up, click again, it stops.



Carriage down: click the button, film carriage down, click again, it stops.

Conveyor#1

Conveyor#2

click the button, 1# conveyor runs, click again, it stops.

: click the button, 2# conveyor runs, click again, it stops.

email: sales1@henopac.com



**Conveyor#3**: click the button, 3# conveyor runs, click again, it stops.



: click the button, all conveyors run, click again, all conveyors stop.

**Cutter heatup**: click the button, thermal fuse heating, forbid excessive click to avoid burning out.

**Blow air** 

: click the button, blowing magnetic valve blows, click again, it stops blowing.

**Clamp cyl** : click the button, clamp cylinder opens, click again, it closes.

Swing arm cyl click the button, swing arm cylinder stretching out, click again, it retracts. (if not retract, gets film rushing cylinder back first)

Automatic . click this button and switch to running page.

7.4. parameters

Parameter setting

: click 'parameter setting', input password to the box as below picture:



recipe number

: choose the current recipe number

**Cyttr detection ON**: when film carriage wrapping the film, choose the function to detect film cutting. The machine will give an alarm and stop the machine when the film is broken. The equipment still works when the test is off and the film is broken

## AUTO CUT 1

: Select the mode of film break reset, there are two modes, one is when the goods leave the photo electricity on the turntable, the film break mechanism

reset, the other one is executing the time set here Cutter Reset Time

**tier** : set the wrap layers, from the bottom to the top is 1 layer, up and down is 2 layers.

#### \_

**Top cycles** : set the top cycles for the top of goods.

**Bottom cycles** : set the cycles for the bottom of goods.

Blow air time : when clamp opens, the film is blew up. Set the time of blowing air.

Heatup time : set the heat-up time when cutting film.

**Over wrap delay**: the rising time of film carriage when photoelectric sensor detects the goods top. Change this parameter to change the film wrap height of goods top. **Rise time**: set the rise time of film carriage before wrapping.

**Cutter Reset Time**: When cutting film, set the return time of the film break mechanism after the conveyor line is sent forward;

	Тор	Bottom	Manual
T/T motor	0.0	0.0	0.0
UP/Down	0.0	0.0	0.0
Pre-stretch %T/T	0	0	0.0
	Auto		Manual
Conveyor#1	Auto		Manual
Conveyor#1 Conveyor#2	Auto 0.0 0.0		Manual

E. Display the parameters of the current

recipe; Displayed only, not modified on this page;

	Тор
T/T motor	0.0
UP/Down	0.0
Pre-stretch %T/T	0

: Set different speeds of turntable motor, elevator motor, pre-stretch motor (film motor) when the film is wrapped and film carriage rises;Different speed will have different overlap, thickness and tightness of the wrapping film.;



: Set different speeds of turntable motor, elevator motor, pre-stretch motor (film motor) when the film is wrapped film carriage descents;Different speed will have different overlap, thickness and tightness of wrapping film;



: Set the speed of turntable motor, elevator motor, pre-stretch motor (film motor) during manual operation; Different speeds will have different overlap degree, thickness and tightness of the wrapping film (wrapping film is generally not recommended under manual operation);

	Auto
Conveyor#1	0.0
Conveyor#2	0.0
Conveyor#3	0.0





: set the speed of conveyor motor in manual mode.

Recipe: Click this button to enter the recipe screen, as shown below:



		Re	cipe-1		
recipe number0	Тор	Bottom	tier	0	Rise time
T/T motor	0.0	0.0	Top cycles	0	0.0
UP/Down	0.0	0.0	Bottom cycles	0	Cutter Reset Time
Pre-stretch %T/T	0	0	Over wrap delay	0.0	0.0
recipe number1	Тор	Bottom	tier	0	Rise time
T/T motor	0.0	0.0	Top cycles	0	0.0
UP/Down	0.0	0.0	Bottom cycles	0	Cutter Reset Time
Pre-stretch %T/T	0	0	Over wrap delay	0.0	0.0
Manual	Automatic		Paramete	Next page	

## Next page

Click to enter the next screen: as shown below:



		Rec	ipe-2			
recipe number2	Тор	Bottom	tier	0	Rise time	
T/T motor	0.0	0.0	Top cycles	0	0.0	
UP/Down	0.0	0.0	Bottom cycles	0	Cutter Reset Time	
Pre-stretch %T/T	0	0	Over wrap delay	0.0	0.0	
recipe number3	Тор	Bottom	tier	0	Rise time	
T/T motor	0.0	0.0	Top cycles	0	0.0	
UP/Down	0.0	0.0	Bottom cycles	0	Cutter Reset Time	
Pre-stretch %T/T	0	0	Over wrap delay	0.0	0.0	
Previous page		Automatic	Parameter setting Next pa			

## Next page

Click to enter the next screen: as shown below:



Recipe-3									
recipe number4	Тор	Bottom	tier	0	Rise time				
T/T motor	0.0	0.0	Top cycles	0	0.0				
UP/Down	0.0	0.0	Bottom cycles	0	Cutter Reset Time				
Pre-stretch %T/T	0	0	Over wrap delay	0.0	0.0				
recipe number5	Тор	Bottom	tier	0	Rise time				
T/T motor	0.0	0.0	Top cycles	0	0.0				
UP/Down	0.0	0.0	Bottom cycles	0	Cutter Reset Time				
Pre-stretch %T/T	0	0	Over wrap delay	0.0	0.0				
Previous page		A		Parameter setting					

## Previous page

Click this button to return to the previous page;

## 6.5.1/0 monitoring page

## SIEMENS

## SMART LINE

		I	/O Monitor 1				
NC	[0.0]			Manual/Auto	I1.0 🔴		
NC	I0.1	Õ		Start	I1.1 🔴		
T/T home	I0.2			Pause	I1.2 🔴		
NC I0.3				Reset			
Clamp cyl rea position	I0.4			Emergency stop	I1.4 🔴		
Clamp cyl front positio	I0.5			External safety	I1.5 🔴		
Delivery in place optoelectonic	[0.6		E	ntrance light curtair	n I1.6 🔴		
lift cyl lower position	I0.7			Exit light curtain	I1.7 🔴		
Manual			Automatic		I/O Monitor2		

This screen mainly displays the operating state of each input point of PLC;

click **I/O Monitor2** to enter monitoring page 2, as shown below:



		I/O	Monitor 2			
Cutter CYL rear posi	ition I2.0 🔴	)	Fron	t-end loading reques	st I3.0	
Clamper CYL front pos	sition I2.1 🦲	)	Pre-stretch switch		I3.1	
Clamper	I2.2 🥚	)		NC	I3.2	
	I2.3 🦲		Ca	rriage safety door	I3.3	
	I2.4 🦲		Ca	arriage upper L/S	I3.4	
Pre-stretch inverter	error 2.5 🔴	)	Heig	ht detect photocel	I3.5	
Conveyor#1optoelectonic I2.6		)	C	I3.6		
Conveyor#3optoelectonic I2.7			Carriage lower L/S2		. I3.7	
I/O Monitor1			Automatic		I/O Mon	itor2

Click

I/O Monitor2

to enter monitoring page 3, as shown below:

SIEMENS				SM	ART LINE	-
	I/O	Мо	nitor 3			_
NC	I4.0 🥚	)		NC	Q0.0 🔴	Ć
	I4.1 🔴	)		T/T 5HZ	Q0.1 🔴	C
Conveyor#1 inverter error I4.2			T/T OHZ		Q0.2 🔴	<u> </u>
Conveyor#3 inverter er	ror I4.3 🥚	)		Conveyor#2	Q0.3 🔴	_
				Carriage up	Q0.4 🔴	
				Carriage down	Q0.5 🔴	
				Pre-stretch	Q0.6 🔴	
			Pr	re-stretch speed B	Q0.7 🔴	
I/O Monitor2			Automatic		I/O Monitor4	



to enter monitoring page 4, as shown below:



		onitor 4			_
	1/0 M	onitor 4			
Main power source	Q1.0 🔴	Swin	g arm cylinder	Q2.0 🔴	Ć
NC	Q1.1 🔴	Blow air		Q2.1 🔴	$\subseteq$
NC	Q1.2 🔴		Clamp cylinder	Q2.2 🔴	$\subseteq$
Cutter heatup	Q1.3 🔴		Line reverse	Q2.3 🔴	
Buzzer	Q1.4 🔴		Conveyor#1	Q2.4 🔴	
yellow light	Q1.5 🔴		Conveyor#3	Q2.5 🔴	
green light	Q1.6 🔴	Fro	nt-end enty permi	t Q2.6 🔴	
NC	Q1.7 🦲 _		NC	Q2.7 🤴	
Manual		Automatic		I/O Monitor1	

This screen mainly displays the running state of each output point of PLC;

## 八、Operation

#### 8.1 Manual running

1) turn on the power: turn the power switch to the right and the machine is powered on. At this time, the "indicator" light is on.

(if no power is available, open the door of the electric box to check if the internal breaker is closed)









email: sales1@henopac.com



5) Carriage up: press" Carriage up " button, film carriage stops after rising to the upper limit switch, press this button again, it stops rising

6) Carriage down: press "**Carriage down**" button, film carriage stops after falling to the lower limit, press this button again, it stops falling.

7) turntable runs anti-clockwise: press **T/T runing** button, turntable runs anti-clockwise, Press the button again, it stops.



8) turntable runs clockwise: press

button, turntable runs clockwise, click

again, it stops

9) Other operations refer to the introduction in 'manual page'

#### 7.2 Automatic running



1) auto/manual:

this picture means auto mode.

2) automatic running: Press the "start" button on the panel, and the machine enters the automatic state. When the front equipment has cargo to enter, the machine starts automatically and completes the cargo entry - start wrapping -- breaking film -- feeding film -- brushing film --- cargo output.

3) Pause: During automatic operation, press the "stop" button on the panel and the machine will stop;

4) Reset: when the machine is stopped during automatic running, it needs to be reset firstly before running again.

## Remove alarm

If an alarm occurs in use, press button to clear the alarm and eliminate the cause of alarm, and then press the reset button to start. 5)

### 7.3. not wrapping film, get out directly



1) Auto/manual:

this picture means auto mode.

SIEMENS				SMA	RT LINE	-
Lang	uage selectio	o <mark>n </mark> Chin	ese l	English		-
Current output	0 Clear	Automati	C Check st	art condition	Not enough	C
Front-end loading req	uest I3.0 🔴	Front-end e	nty permit Q2.6		Manul AUTO	S
		▲ ★	Bypass	:	$\bigcirc$	
			Star	t F	Pause	
		_		Remove ala	rm	
		¥	Rese	et 📕	STOP	
Manual	Parameter set	tting	I/O Monitor1	1	/O Monitor2	
		Bypass				

choose the conveyor mode on this page\_\_\_\_\_, (two modes: wrapping mode/conveying mode);

## 7.4. Turn the power switch to OFF position after use $_{\circ}$



2)

## 九、Simple trouble shooting

Fault	Possible causes	Measures
phenomenon		
Turntable	① 'start' button of turntable	① change the button
doesn't rotate	broken	② check the reasons according to the user
	② converter gives an alarm	manual of converter, check the resistance
	3no connection to the mot	of 3 phases connection, if there is any
	or	default phase.
	④ 'emergency stop' pressed	③check whether the plug of the motor is
	down	connected.
		④ pull up 'emergency stop' button
Film carriage	① 'down' button broken	① change the button
doesn't rise	② converter gives an alarm	② check the reasons according to the user
	③ no connection of motor	manual of converter
	wire	③ check whether the wire connected to the
	④ upper limit switch or low	motor is tight
	limit switch or lower	④ change the limit switch
	limit switch broken	5 pull up 'emergency stop' button
	⑤ 'emergency stop' pressed	<sup>(6)</sup> expose the goods to the photoelectric sensor
	down	
	6 film carriage door not	
	closed.	
Film carriage	① film carriage door not	1 close the door.
doesn't feed	closed.	(2) check the reasons according to the user
film	② converter gives an alarm	manual of converter
	3 no connection of motor	3 check whether the wire connected to the
	wire	motor is tight
	(4) 'emergency stop' pressed	④ pull up 'emergency stop' button
	down	⑤ close the film door, check its distance to
	⑤ security proximity switch	the proximity switch, it shall between

	loosen	2-4mm;
	6 micro-switch not touched	(6) swing micro roller to check whether
	$\bigcirc$ chain falls off	X31onPLC is on.
		$\bigcirc$ open film carriage cover and install the
		chain.
conveyor not	(1) the contacts of conductive	① use multimeter to check the circuit
work	slip ring broken	(2) check the reasons according to the user
	② converter gives an alarm	manual of converter
	③ no connection of motor	③ check whether the wire connected to the
	wire	motor is tight
	(4) 'emergency stop' pressed	④ pull up 'emergency stop' button
	down	⑤ open film carriage cover and install the
	⑤chain falls off	chain
Clamp	① no air source	① check the air source, 0.4-0.6Mpa
doesn't open	2 no power to magnetic	2 check the circuit, or press magnetic valve
	valve	(3) open and readjust he throttle
	③throttle completely closed	④ pull up 'emergency stop' button
	(4) 'emergency stop' pressed	⑤ open the cylinder, re-install the connecting
	down	rod and bolt.
	⑤ parts stucked or loosen	

## +, Machine maintenance

#### Attention: All the cleaning and maintenance work should be done at power-off status.

1) adjust the transmission chain of the parts in half year, and add lube, as the following picture shows:



- 2) Check if the screws is loose due to the shake while using, if loose, please tighten the screw.
- 3) Check if the machine is well-grounded.
- 4) Strictly control the dust to ensure the normal work of machine system. Regularly clean the dust and rubbish which attached on the machine, especially on magnetic valve, proximity switch and some other parts.

## +-, Circuit diagram

heno packaging industries limited www.henopac.com



heno packaging industries limited www.henopac.com















## +. Connecting specification

## 1. Q2.6 and Q2.7 in the circuit:



Q2.6 is the permission signal of conveyor input. Q2.6 is connected to the coil of KAI relay. When the front conveyor is at automatic waiting status (can be entered at any time) PLC gives signal, KA2 relay get connected.

System connected to the normally open contact of KA1 relay.

Q2.7 is the permission signal of conveyor output; Q2.7 is connected to the coil of KA2 relay. When the machine finished wrapping goods, PLC gives Q 2.7 signal only after receiving the I2.7 signal from the system, KA2 relay get connected. (if the back conveyor and the wrapping machine are controlled by the same system, this part is of no use. When wrapping finished, goods

## being automatically output.)

System connected to the normally open contact of KA2 relay.

2. I2.6 and I2.7 in the circuit:



I2.6 is the signal of the conveyor entrance, I2.6 is connected to the normally open contact of KA3 (coil of relay is controlled by the system), when I2.6 receives the signal of front system(palletizing conveyor), the roller in front of the wrapping machine runs.

X27 is the permission signal of conveyor output; X27 is connected to the normally open contact of KA4 (coil of relay is controlled by the system), when X27 receives the signal from system and the machine finish wrapping film, the roller runs. (if the back conveyor and the wrapping machine are 42

controlled by the same system, this part is of no use. When wrapping finished, goods being automatically output.)

- Q2.6, NOV input permission before wrapping out
- Q2.7, NOV output permission after wrapping out



As the picture, the conditions for goods 1 to enter the front conveyor of the wrapping machine: Q2.6 gives input permission signal, system (the palletizing line) receives 2.6 signal, and send signal I2.6 to the control system of conveyor. The conveyor control system receives the Q2.6 signal, cuts off the Q2.6 signal and starts the roller line at the same time.

Example 1:

## Example 2:



As shown in FIG. 2, the conditions for the transportation line to be entered: when the goods finish wrapping work on the wrapping machine, Q2.7 sends out the allowed output signal, the system receives the Q2.7 signal and sends out the I2.7 to the wrapping machine at the same time. The wrapping machine receives the I2.7 signal, cuts off the Q2.7 signal and starts the roller line at the same time.

If the wrapping machine does not receive the Q2.7 signal, the Q2.7 signal will be kept and the goods will not move.Until the wrapping machine receives the I2.7 signal sent by the system;

HENO PACKAGING INDUSTRIES LIMITED is a professional packing machine system manufacturer from China . we are specialized in manufacturing case erector , case packer, sealing machine, stretch wrapping machine, pallet strapping machine ,palletizer robot system, pallet handing solutions, the end of packing line system.

We supply most comprehensive ranges of stretch wrapping machine including semi-auto pallet wrappers, automatic pallet wrappers, rotary arms wrappers, conveyorized streth wrappers , horizontal wrapping machines, reel wrappers, orbital wrappers

and baggage wrapping machines. We are also assembling pallet wrappers with remote control device and weighting device.

We also supply most comprehensive ranges of pallet handing device including pallet roller conveyor, pallet chain conveyor , pallet lift conveyor, pallet turntable conveyor, pallet shuttle conveyor, pallet transfer conveyor , pallet inverter, pallet dispenser, flattening conveyor line, bags kicker, square roller conveyor line and so on.

We also supply most comprehensive ranges of pallet strapping machine including automatic Horizontal pallet wrapping machine, automatic vertical pallet wrapping machine.

We have R&D department to develop new products and support quality improvement. Our product sell to many countries, such as Australia, New Zealand, Turkey, Russia, India, Vietnam, Thailand, Europe and so on .

The company established in November 2013. We have 47 employees . We can make about 500 machines per year include the conveyor line .The Total turnover is 3 million USD, the export is about 0.7 milliom USD.