

HASHIMA

検 針 機
檢 針 机

NEEDLE DETECTOR

HN-2880C

HN-2790G

取 扱 い 説 明 書
使 用 説 明 書

INSTRUCTION MANUAL

この度はハシマ製品をご購入頂き、誠に有難うございます。
本機の性能を生かし、安全に使って頂くために、ご使用前にこの取扱い
説明書を必ずお読み下さい。
お読みになった後は、必ず保管して頂き、必要に応じてお読み下さい。

首先，非常感谢贵公司购买我司的产品。
为了更好地了解本机的性能并能
使用说明书
在阅读完后，请妥善保管； 以备必要时阅读使用。

Thank you very much for having bought our products.
Don't fail to fulfill the matters that demand special attention mentioned
below so that you could put this machine to use for a long time with safety.
Don't fail to read the user's manual first of all before use.
Keep this user's manual with care and read it as occasion demands.



HASHIMA CO., LTD.

Prior to use

- Please read this manual carefully before using the HN-2880C • HN-2790G to get the best results and stay safe follow maintenance procedures and practice good safety.
- Keep this user's manual treat it with care and read it as the occasion demands.

HASHIMA CO.,LTD.

BUSINESS OFFICE : 7-6, Ryoge Gifu City , Japan

Tel: 81-58-247-8400, 81-58-245-4501

Fax : 81-58-247-3366

SINGAPORE OFFICE : Tel: 65-62858131 Fax: 65-62858132

FACTORY/ KUNSHAN : Tel : 86-512-5777-1838 Fax : 86-512-5777-1848

Ensure the accessories

Test Piece



Spanner (24 mm)






PreCheck Bar







You should fulfill following explanations to prevent the user and the others from being hurt and the properties from being damaged.

- We classify and explain the degrees of peril and damage to be taken place when you neglect the contents of the display and the machine erroneously.

	DANGER	This display tells you the contents that imagine "the imminence danger that might result in death or a serious injury".
	WARNING	This display tells you the contents that imagine "the possibility of death or a serious injury".
	CAUTION	This display tells you the contents that imagine "the possibility of resulting in to be handicapped or material damages exclusively".

- We classify and explain the contents you should fulfill in accordance with the following illustrations. (Following is an example of the illustrations.)

	This illustration tells you the contents "that demand attention" you must pay.
	This illustration tells you the contents of "prohibition" you should not do at all.
	This illustration tells you the contents of "enforcement" you should execute without fail.

	DANGER
--	---------------

Don't get the children to use alone and don't use where the infants can make contact with.



For fear of burn, electric shock and injury.

Never remodel at all.



For fear of fire and injury due to unusual movement

Disassembly prohibited.

	WARNING
---	----------------

Don't disassemble and repair absolutely except the repair technician.



Disassembly prohibited.

For fear of fire and injury due to unusual movement. (Contact the dealers for repair in the case of damage and troubles.)

Connect with the power source with ratio consumption suitable to the machine and don't fail to ground.



Unusual heat might result in fire or electric leak, when you put machine to use along with other apparatus. (Contact the electric construction work shops nearest by.)

Disconnect the power source (the plug and installed breaker) out of the origin.



For fear of burn as well as electric shock and leak that might result in fire.



WARNING

Don't fail to disconnect such power source as the plug and the setting breaker from the origin, prior to the maintenance and inspection.



For fear that the personnel might be hurt due to electric shock and unusual movement.

Install the machine in accordance with the designated way of installation.



For fear of overturning or falling down resulting in injury.

Pay sufficient attention to the conveyors at the time you inspect the needles.



For fear that some part of your body and your clothes would be caught in the machine, resulting in injuries.

Don't mount nor put things on the main unit.



For fear of high temperature resulting in burn and fire, and there is a possibility of falling down to be injured.

Install the machine on the robust stand or onto the floor horizontally.



For fear of overturning or falling down resulting in injury.

Don't put things easy to burn around the machine.



For fear of causing fire and so on.



CAUTION

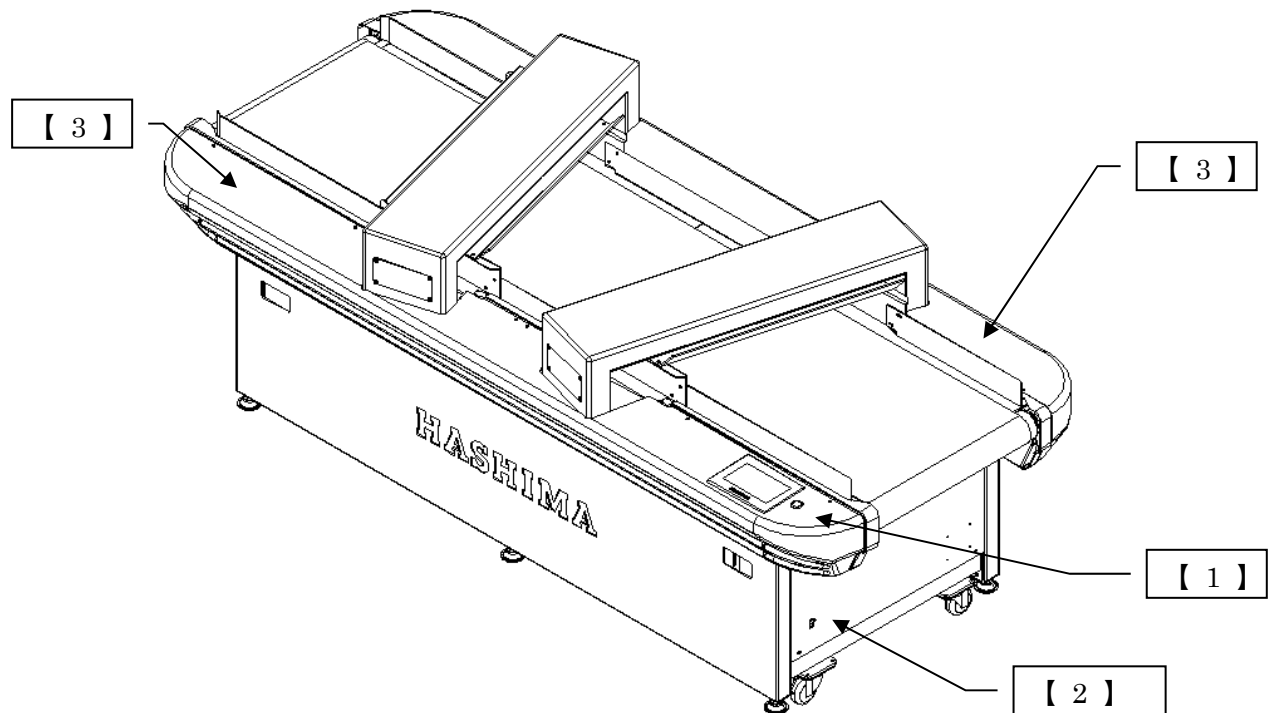
- Don't install the machine to the site with high humidity.
(For fear of causing electric leaks.)
- Don't bend nor crush the power source cord.
(For fear of electric shock and shortage, resulting in fire.)
- Don't get the human being to go nearby except the operators.

PETITION

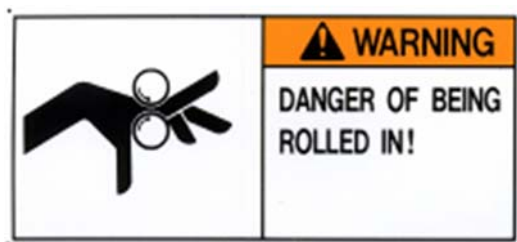
- Don't bring telephone cards, cash cards, wrist watches, cassette tapes, and so on close to the machine for fear that it might be in trouble, as this is the machine designed to detect the needles with the help of strong magnetism.
- Understand well the operation of the switches and so on prior to the manipulation.

By putting “alarm label” onto every part of the machine, we rouse you to prevent the user and others from being hurt and proprieties from being damaged.

- Ensure the position and contents in regard to the “alarm label” prior to the use.
- Never remove nor reform the “alarm label”.
- Put a new one as early as possible, when the old “alarm label” is hard to read or when it is coming off.



【 1 】



【 3 】



【 2 】



- In addition, the repair technicians should pay attention to the fact that the “alarm labels” are put even within the machine.

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INSTRUCTION MANUAL

FEATURES :

- This machine is equipped with the LCD panel for checking the current detecting level.
- Position lamp identifies exact location of Fe materials so that you can find it easily.
- This machine has the “Key Switch” as standard equipment ,and this switch can lock various settings not to be changed.
- When the device senses the material like the broken needle or setting pin, the buzzer sounds and stops the belt conveyor .Then the defective products will be returned to your side, which increases the efficiency.
- The device assures you of the setting of sensibility regulation, which can be finely adjusted by LCD panel, in accordance with size and kind of the accessories of your garment, enabling a detection of broken or forgotten needles mixed in the sewn products.

USEFULLNESS :

- The device is to be put to use to inspect Fe needles, broken needles and other Fe pieces remained in such sewn products as clothes for gentleman, ladies and children, underwear , kimonos, jackets, bedclothes and others.

SPECIFICATIONS

Model name	HN-2880C	HN-2790G
Detection method	Magnetic induction type	
Detection capacity	Iron ball Fe0.8 mm or more (120 mm high)	
Sensitivity adjustment	Decimal (100 steps) and direct reading (6 steps)	
Detection width	6 0 0 mm	
Detection height	120mm (standard)	
Warning device	Alarm and position detection	
Belt speed	4 0 ~ 1 5 m / min.	
Power supply	Single phase	
Power consumption	1 5 0 W	
Airframe dimensions	2423 (L) X 1040 (W) X 903 (H)	
Machine weight	374kg	
Product guider	Standard	

Precautions for Use

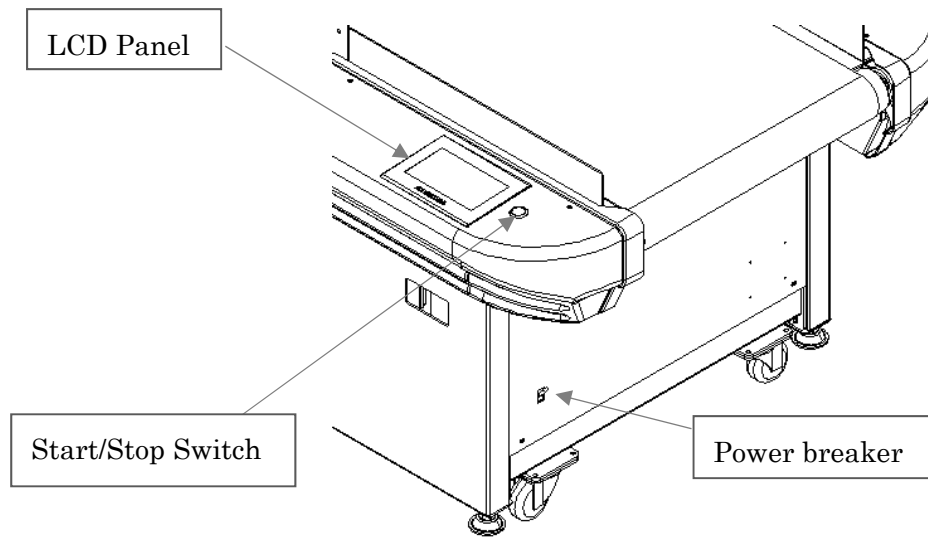
1. Pass a sample of the needle and iron pieces to be detected before use through the machine and check that the belt stops before starting work.
2. The material that can be detected is limited to steel.
Since stainless steel needles and marking pins cannot be detected, be sure to use iron.
3. For metal sewing accessories such as buttons, slide fasteners, and lock hocks, please designate those labeled as "Needle detector-compliant" at the stage of design and specifications.
4. The metal objects worn by the operator must be removed because the machine reacts with the moving metal objects.

Precautions for Installation

1. Install the machine in a horizontal position without vibration.
Secure the body horizontally with the four adjuster bolts on the main unit.
(If it's not level, the conveyor belt might warp.)
3. Do not install the machine in the vicinity of a steel workbench or shelf.
4. Do not install the machine near the other machine that generates the magnetic field.
Machines using electromagnetic clutch motors, sewing machines, cutting machines, packing machines, air conditioners, or inverters may cause electric or magnetic disturbance and cause malfunction.
5. Keep away from large moving metal bodies such as railways and automobiles.
6. Separate as far as possible from the reinforcement or steel frame of the building, and change the direction of the main body so that it can be installed in a place where no malfunction occurs.
7. The needle detector generates magnetism.
Please note that the contents may change when magnetic cards such as credit cards are brought closer.
8. Install the machine in a location within ambient temperature of 10°C to 40°C (non-condensing).
9. A needle detector may not be able to perform properly in a place where the installation environment is bad.
Select the appropriate location by performing an environmental level test.

Operating instructions

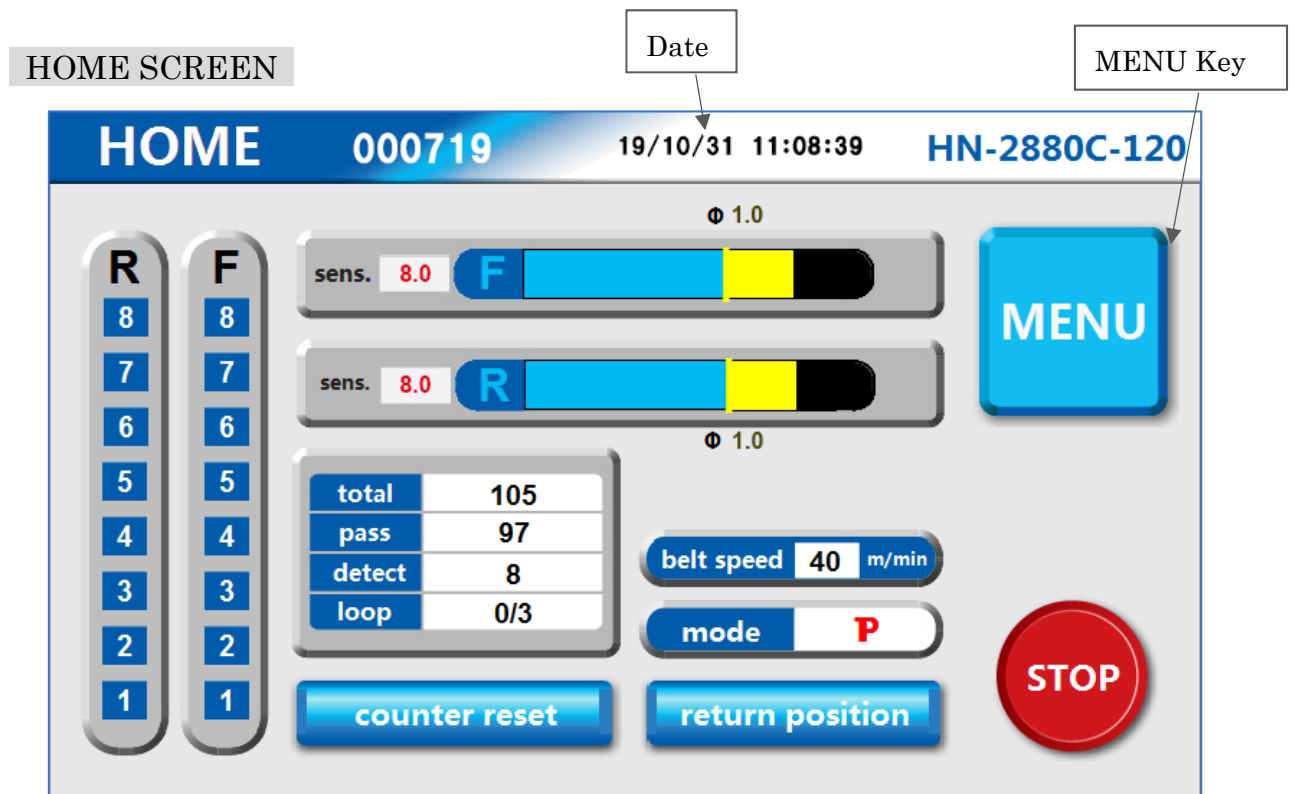
Set the date and time first.



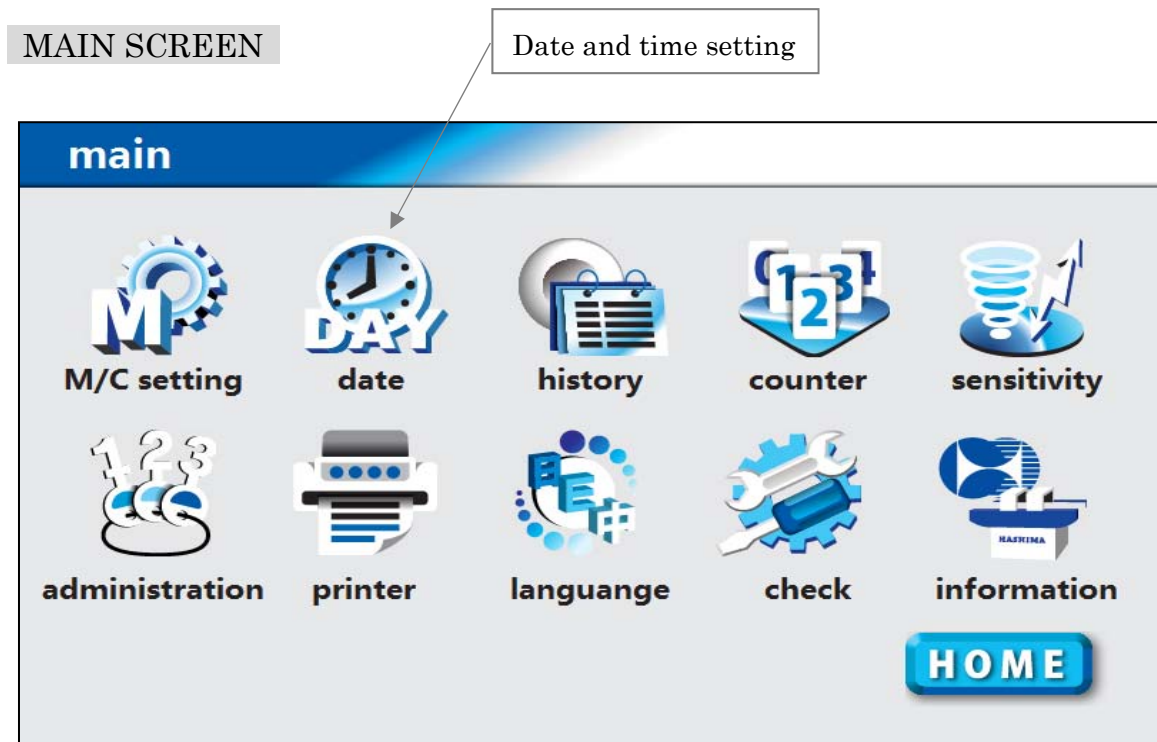
1. Turn on the power breaker.

The system on the LCD panel starts and the HOME screen opens.

2. Year, month, day, hour, minute, and second are displayed at the top of the screen.
3. At least , year, month, day, hour, and minute should be adjusted to local time as precisely as possible.
4. If not, touch MENU key.

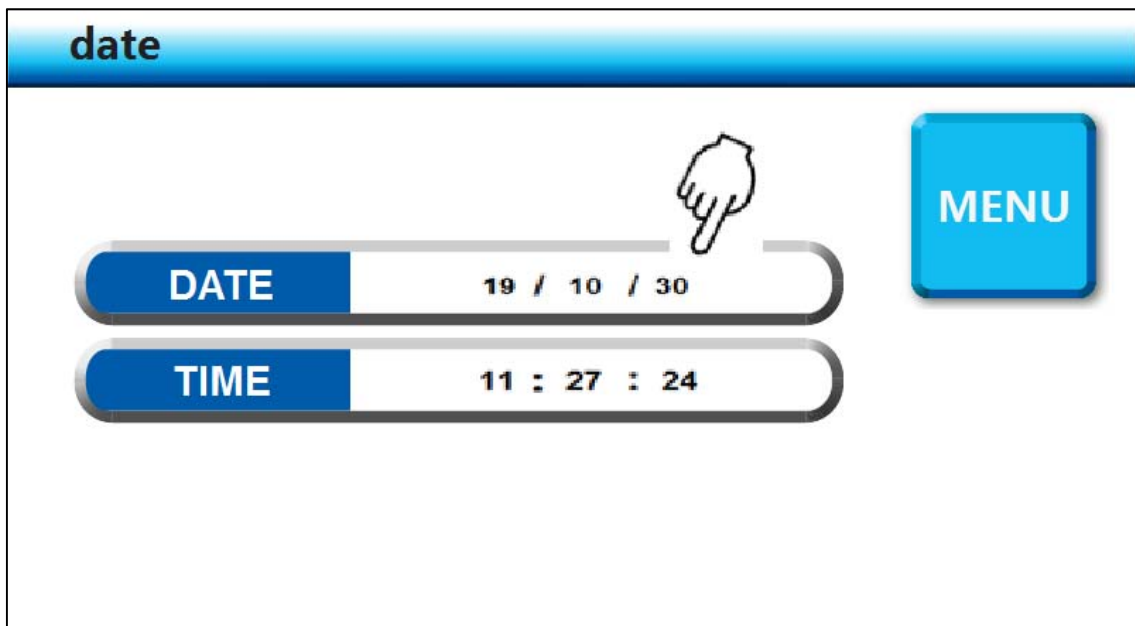


5. Touch "Date and time setting" on the MAIN screen.



6. Touch the number to display the numeric keyboard.

Enter the correct value using the numeric keypad and press ENT to change the value.



7. Touch Back to return to the MENU screen.
8. Touch Back to return to the HOME screen.

*** The machine operates normally without setting the date and time.**

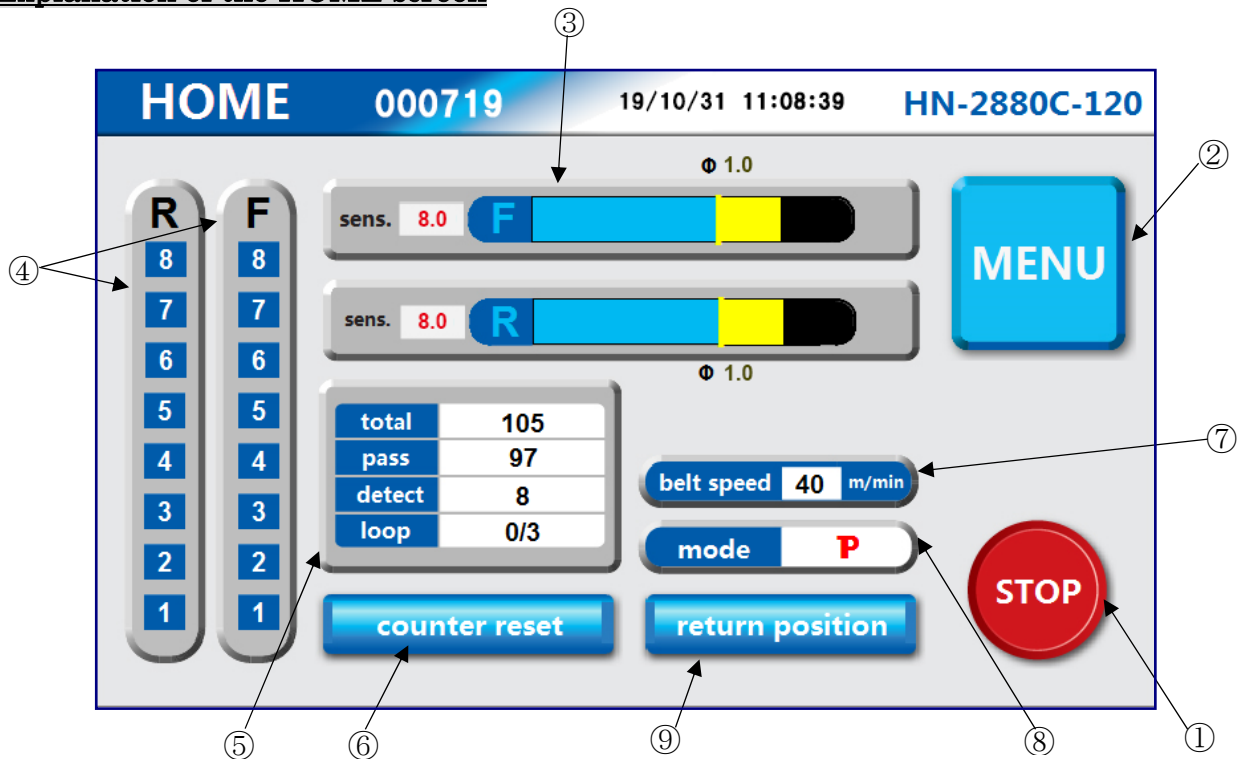
If the LAN is used to connect and expand the machine to other equipment in the future, the data may become inconsistent if the time between the devices does not match.

How to use

1. Turn on the power breaker.

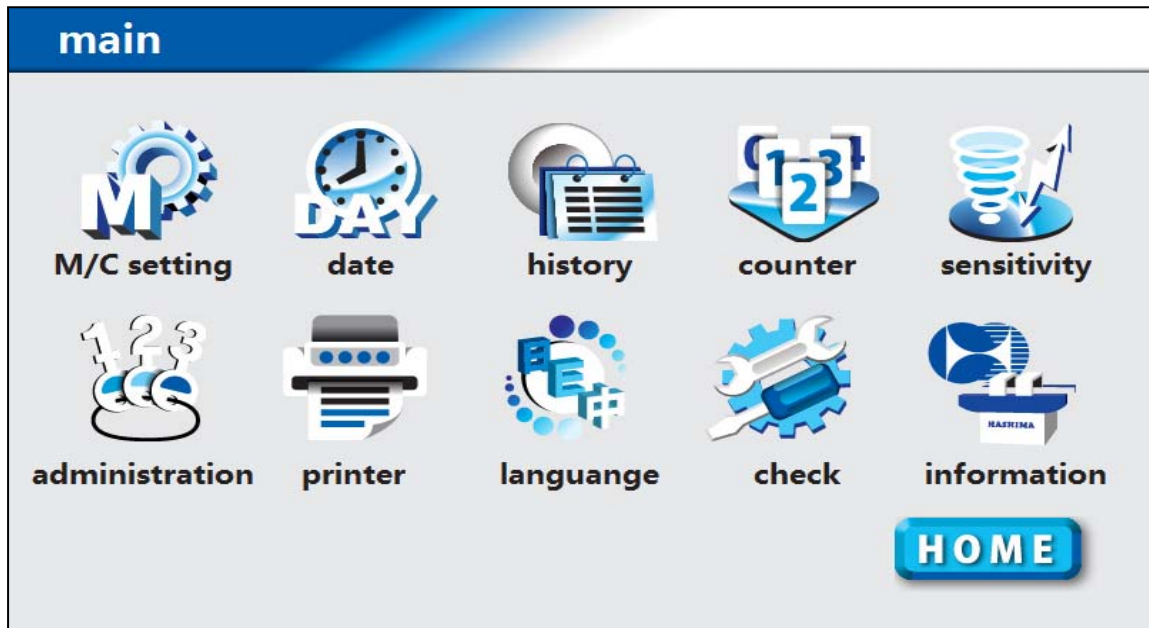
The system on the LCD panel starts and the HOME screen is displayed.

Explanation of the HOME screen



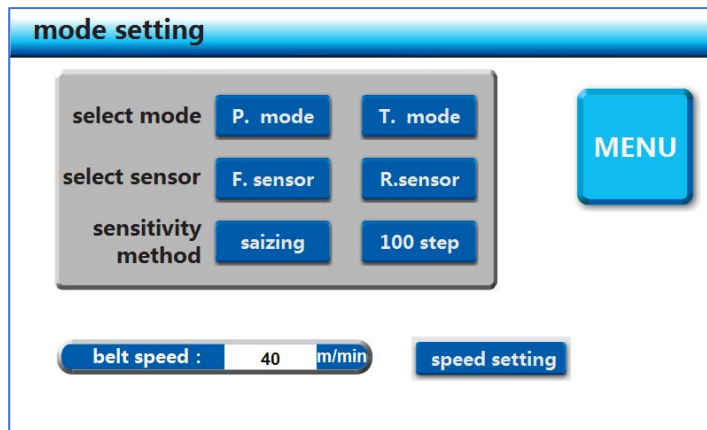
- ①Start/Stop button · · Start and stop the conveyor belt.
- ②MENU button · · · · Moves to the menu screen.
- ③Sensitivity display · · Indication of Sensitivity level.
- ④Position lamp · · · · The lamp at the position where foreign matter such as iron strips is detected lights.
- ⑤Counter display · · · Indicates the counted value of the total number, defective parts, defective parts, and round-trip number.
- ⑥Counter reset · · · · The count value to 0.
- ⑦Belt speed · · · · · Indicates the speed of the conveyor belt.
Adjusting the belt speed (40 m/min.-15 m/min.)
Touch the numeric value to display the numeric keyboard.
Enter a value and touch the ENT key.
The speed changes.
- ⑧Mode display · · · · Setting Mode.
P: Production mode T: Test card mode.
*HN-2790G is in test card mode only.
- ⑨Return position · · · Belt return distance is set. (3-10 stage switching)
Touch the button to display the numeric keyboard.
Enter the correct value using the numeric keypad and press ENT to change the value.

Main menu



- **M/C setting:** Sets various modes.
- **Date:** Sets year, month, day, hour, minute, and second.
- **History:** Displays the history.
- **Counter:** Sets the counter.
- **Sensitivity:** Set the sensitivity.
- **Administration:** Register the administrator.
- **Printer:** Prints data.
- **Language:** Sets Japanese, Chinese, and English.
- **Check:** Used for maintenance.
- **Information:** Displays the current machine information.
- **HOME:** Returns to the HOME screen.

1. Mode setting



The test card mode or the production mode can be selected.

* Set normally in production mode.

The photoelectric sensor recognizes the product passing through the belt in the production mode. When the inspecting sensor detects a piece of iron, the belt stops and returns the product to the front.

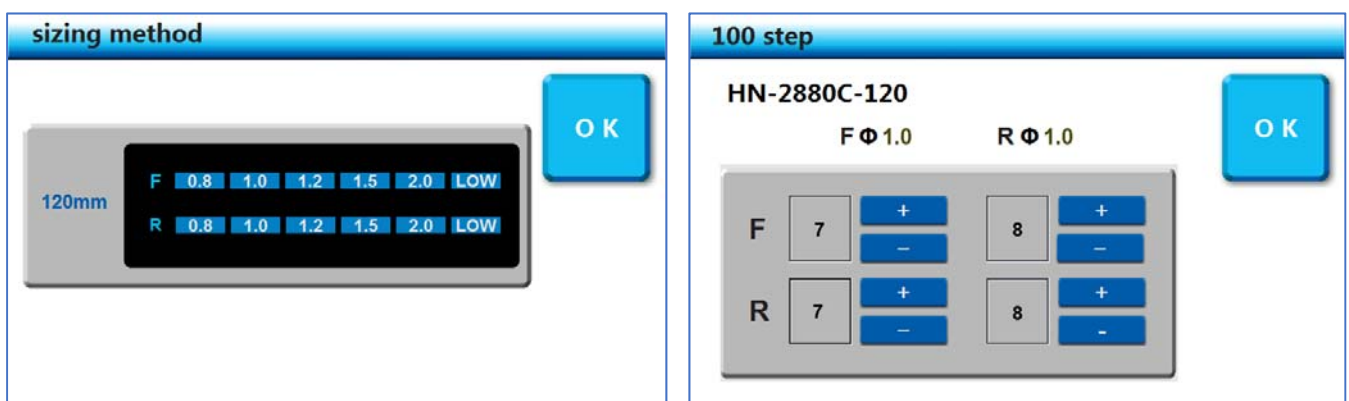
☆When the photoelectric sensor does not recognize a thin product (1 cm or less in thickness), switch to the test card mode.

In the test card mode, regardless of the photoelectric sensor, the inspecting sensor detects a piece of iron, etc. Then, the belt stops and returns the product to the front.

☆When a test card or accessory unit is placed directly on the belt for detection test, or when carrying out the inspection of thinner products (fabrics or interlining with a thickness of 1 cm or less) Be sure to switch to test card mode.

Select sencer : F.sensor R.sensor

Sensitivity Set : Selection of direct reading (6-step) and decimal method (100-step)



Adjustment of the belt speed (40 m/min.-15 m/min.)

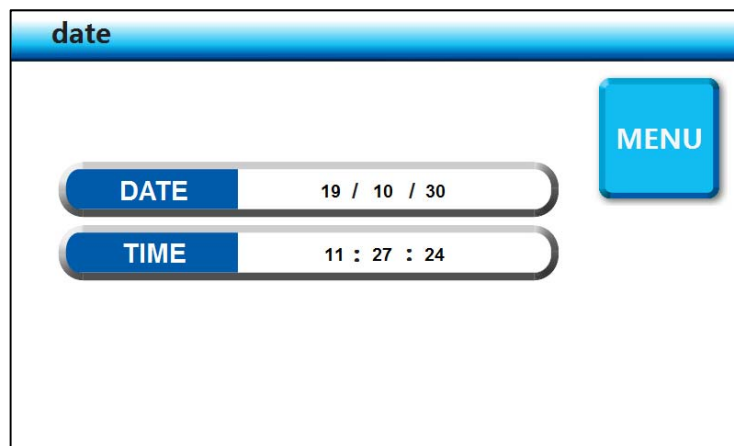
Touch the numeric value to display the numeric keyboard.

Enter a value and touch the ENT key.

The speed changes.



2. Date



Set the year, month, day, hour, minute, and second.

Touch the numeric value to display the numeric keyboard.

Enter the correct value and touch the ENT key.

3. History

history

Print

NO.	Event	F	R	Operator	Time
0	DETECT-3	5.7	5.7		2019-10-30 11:10:44
1	START	5.7	5.7		2019-10-30 11:09:41
2	STOP	6.0	6.0		2019-10-21 15:12:36
3	START	6.0	6.0	OP-D	2019-10-20 15:11:05
4	STOP	6.0	6.0		2019-10-20 18:35:19
5	START	6.0	6.0		2019-10-21 15:10:15
6	DETECT-6	0.8	0.8		2019-10-17 18:08:16
7	START-D	0.8	0.8	OP-B	2019-10-16 13:28:36

MENU

toward

backward

history list

print out

clear

NO. : 0 is the latest information.

Event : shows either START, STOP, or DETECT.

START: Press the Start button to display the time at which the meter reading starts.

STOP: Press the Start button to display the time at which the meter reading stops

DETECT - displays the time when DETECT - detection is performed and stopped.

The last number represents the coil number.

F / R : This property indicates the sensitivity of the meter reading.

Operator: When the operator password setting is turned on in the management screen, the operator name is displayed in the operator field to determine which operator has changed the sensitivity.

Time: Indicates the date of the meter reading operation.

Toward: Moves to the previous page.

Backward: Go to the next page.

History list: You can download to a PC via USB.

By inserting a USB into the USB port

Touch the History list button.

Print out: The optional printer can be used to print the history.

Clear: Delete recorded data.

4. Counter

counter	
pass counter	134
detect counter	18
total counter	152

MENU

loop counter 11 No: loop setting

sens.T setting 20 ms T.setting print out

Indication of defective products, defective products, and total number.

Set the number of loops.

Printing counter quantity Photoelectric tube setting

Loop Count Setting allows the User to set the number of times to restart automatically after detection.

You can set the number of times between 1 and 999 (maximum).

Photoelectric tube Set the minimum loading interval between the product and the product.

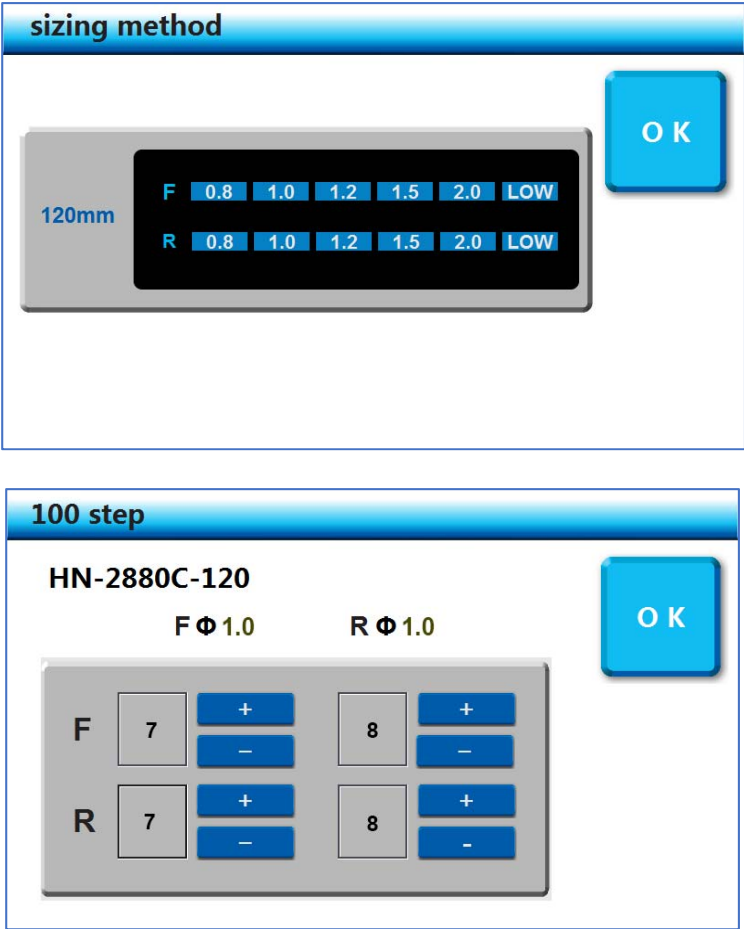
※Distance for sensitivity

SENSITIVITY	Distance
10ms	4.5mm
30ms	9.0mm
50ms	13.5mm
70ms	18.0mm
90ms	22.5mm
110ms	27.0mm
130ms	31.5mm
150ms	36.0mm
170ms	40.5mm
190ms	49.5mm
210ms	54.0mm
⋮	⋮
5070ms	2250mm

* Calculating formula

$$\begin{aligned} & \text{SENSITIVITY (ms) } \times 0.6\text{mm} \\ & = \text{Distance} \end{aligned}$$

5. Sensitivity



Displays either the straight-reading or decimal method selected in the device setting.

Note: If you set the password, you cannot change the sensitivity without entering the password.

6. Pass word change

pass word change

pass word input *****

O K return

administrator A *****

operator B 111111

operator C 222222

operator D 333333

O K

password entry input: You can set the password for one administrator and three workers on the machine.

Initial password	administrator A	88888	Always ON state
	operator B	111111	OFF status
	operator C	222222	OFF status
	operator D	333333	OFF status

The administrator can freely cancel and change the password of himself and three workers.

The operator cannot cancel or change the password.

When the operator's password is turned on (checked), the password is enabled.

When you set the password, the password is required when the following functions are used.

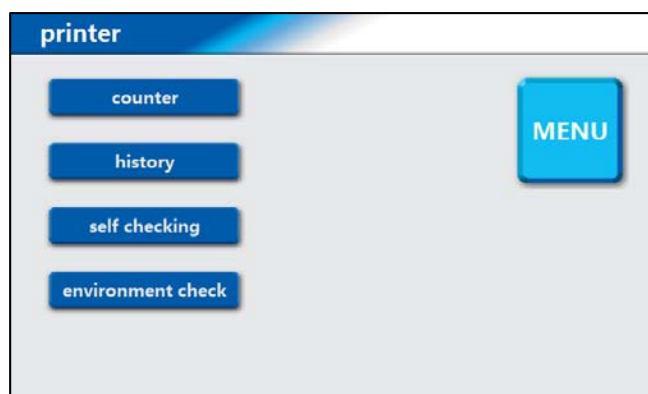
- Device settings
- Date
- Sensitivity change
- Deleting a history
- Inspection
- Information

For HN-2790G key button is displayed on the management screen.

When the key is turned on, the password is required at restart when the detection reaction stops.

7. Printer

You can print the following data



《Counter printing》

Print

counter			
19 / 11 / 01	pass		214
11 : 08 : 39	detect		38
	total		252

《Printing History》

Print

NO.	Event	F	R	Operator	Time
0	DETECT-3	5.7	5.7		2019-10-30 11:10:44
1	START	5.7	5.7		2019-10-30 11:09:41
2	STOP	6.0	6.0		2019-10-21 15:12:36
3	START	6.0	6.0	OP-D	2019-10-20 15:11:05
4	STOP	6.0	6.0		2019-10-20 18:35:19
5	START	6.0	6.0		2019-10-21 15:10:15
6	DETECT-6	0.8	0.8		2019-10-17 18:06:16
7	START-D	0.8	0.8	OP-B	2019-10-16 13:26:36

《Printing auto-pre-checker results》

Print

self checking				
19 / 11 / 01	MAX	MIN	mean	check
11 : 10 : 37				
00	49996	49993	49995	OK
01	50005	50000	50004	OK
02	50010	50002	50008	OK
03	50009	49998	50005	OK
04	50015	50005	50012	OK
05	50015	50014	50014	OK
06	50016	50013	50014	OK
07	50007	49998	50005	OK
08	50007	49993	49996	OK
09	50002	49995	49998	OK

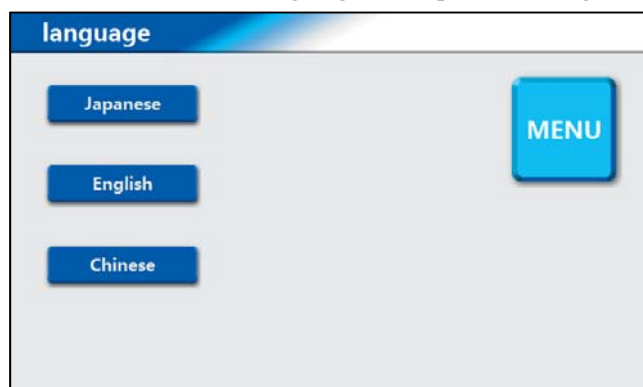
《Printing of environmental noise measurement results》

Print

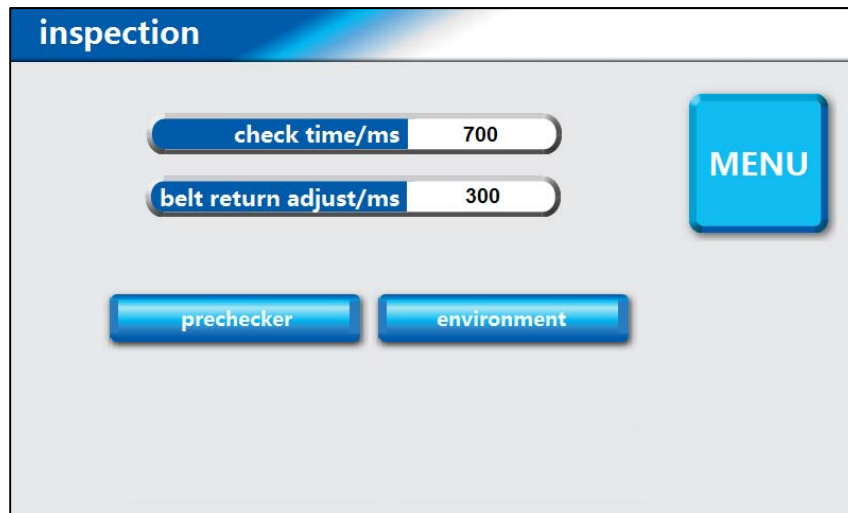
environment check		
19 / 11 / 01	mean	chek
11 : 09 : 17		
00	1	OK
01	2	OK
02	2	OK
03	2	OK
04	2	OK
05	2	OK
06	2	OK
07	2	OK
08	2	OK
09	2	OK

8. Language

You can switch the language to Japanese, English, or Chinese.



9. Inspection

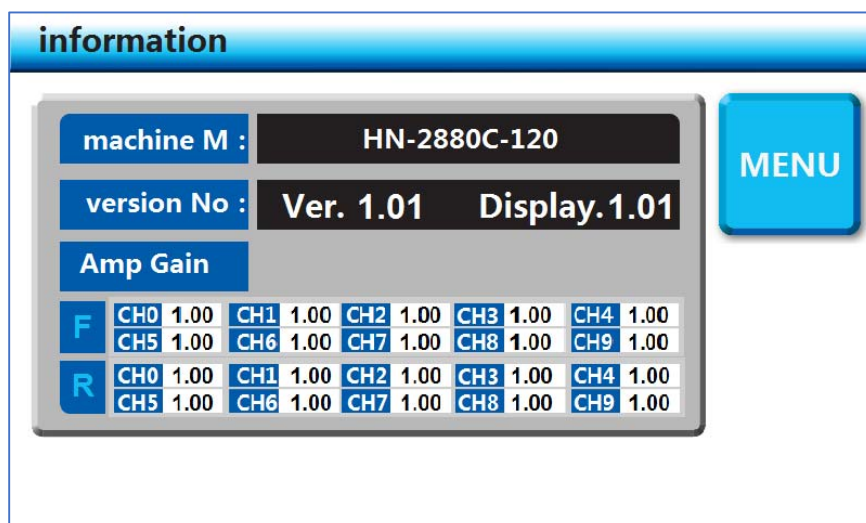


- Check time/ms:** Touch the numeric value to display the ten-key board.
Enter a value and touch the ENT key.
- Belt return adjust/ms:** Touch the numeric value to display the numeric keyboard.
Enter a value and touch the ENT key.
- Prechecker :** Place the pre-check bar in the conveyor loading unit before the metering operation.
Selecting Pre-check automatically tests the detection sensor.

Check the sensitivity setting of the assay specification after the *pre-check test.
After passing through the test piece of the sensitivity setting and checking that it is detected start the meter reading operation.

Environment : Inspect the location where the meter is installed.

10. Information



- **Machine M** Shows the machine model.
- **Version NO** Shows the version of the software.
- **AMP GAIN** Shows the GAIN value of each coil.

IN REGARD TO NEEDLE DETECTIVE OPERATION:

1. Consecutive detection of the needle is possible as it is designed to let the non-defective products pass through when you put the products to be detected in order onto the conveyor in rotation.
2. When the device has sensed such a material as the broken needle during the needle detective operation, the buzzer sounds and the belt conveyor stops and the defective products will be returned to your side. The materials like a broken needle will be displayed by the lamp, telling you the position.
3. Be sure to detect the products again after removing the piece of Fe. (There may be a case where 2 or 3 pieces of Fe are contained within the product.)
4. Set the operation mode.

《PRODUCTION MODE》

The product detective sensor recognizes the product when it passes through the sensor head. If the needle detector detects any foreign objects, the conveyor belt stops.

Then the belt returns the product to the operator's side.

※For very thin products (1cm or thinner), please switch to TEST CARD MODE.

《TEST CARD MODE》

Regardless of whether or not the products get recognized by the sensor, the needle detector ALWAYS detects foreign objects if any. Then the belt returns the product to the operator's side.

※Be sure to switch to TEST CARD MODE when you perform needle detection for TEST CARD, accessories, very thin product (1cm or thinner) like cloth or interlining.

5. In case that sensitivity from Accessories is strong by inspecting, this sensitivity can be Adjusted to mild sensitivity by conveyor speed from Normal to Low speed.
Speed adjust to Normal speed after Re-boot the machine or during Pre-Check test.

MATTERS THAT DEMAND SPECIAL ATTENTION AT THE TIME OF NEEDLE DETECTION

1. Don't fail to pass the material to be detected through the needle detector within the width of its guide concerning that needle detective operation. It is impossible to detect the material when it protrudes out of the guide. And the material to be detected is desirable to pass through the center of the guide as near as possible.
Lower surface of the detective head above the belt is covered with strong magnetism.
Remove the staple or broken needles adhered to it using the adhesive tape and others for the prevention of erroneous movements.
2. Take metallic materials away when they are adhered onto the conveyor belt, as the detective position lamp is designed to light up every round of the belt for certification.
3. Clean up the products detective sensor portion lest the dust should pile up on it.
4. Don't disassemble, repair nor remodel the machine as this is a precision instrument. Never give shocks and others to the machine.
5. Please don't hold the front and rear rollers when you move the machine.

Contact the dealer or our company for reference.

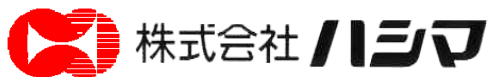
HOW TO ADJUST THE BELT POSITION

1. Take out the bothside covers.
2. Loose the fixing bolts(2pcs).



3. Use the hex wrench to turn the hex holed screw and adjust the roller position.





管理センター	〒500-8241 岐阜市領下7丁目6番地	TEL 058-245-4501(代)	FAX 058-247-6666	
営業直通		TEL 058-247-8400(代)	FAX 058-247-3366	
岐阜支店	〒500-8241 岐阜市領下7丁目6番地	TEL 058-246-2700	FAX 058-240-5775	
東京ショールーム	〒108-0074 東京都港区高輪4-24-38	TEL 03-5793-8400	FAX 03-5793-8434	
西日本営業所	〒578-0984 大阪府東大阪市菱江1丁目28-28	TEL 072-961-8400	FAX 072-961-8404	
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BUSSINESS OFFICE : 7-6 RYOGE GIFU-CITY JAPAN
TEL 81-58-247-8400, 81-58-245-4501 FAX 81-58-240-5775
SINGAPORE OFFICE : TEL 65-2858131 FAX 65-2858132
CHINA OFFICE : TEL 86-51257771838 FAX 86-51257771848
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We reserve the right to change the specification without previous notice for improvement.