Operator Manual

It's manufactured in Korea

ISO 9001 : 2008

CE

INNOBIZ
기술혁신형중소기업

METAL DETECTOR FOR ALUMINUM-PACKAGED PRODUCTS

ALCON
NAD-4000 Series

Total Inspection Systems & solution
NOW SYSTEMS CO., LTD.
www.nowsystems.co.kr

REVISION HISTORY

REVISION	VERSION	DATE	AUTHORS	DESCRIPTION
1	1.0	2016-04-15		FIRST EDITION
1	1.2	2016-05-11		FIRST EDITION (REVISED)

Safety Signs

It is the precautions to prevent accident or risk by using a product safely and properly.

Signs on manual

⚠ Warning	**In case any violation of instruction might result in serious injury or death.**
⚠	**In case any violation of instructions might result in minor injury or failure of the machine**
ⓘ Infromation	**It explains information to operate machine.**

Waring for powerful magnet

⚠ WARNING 강력 자석	• **Don't close metallic tools and magnetic material to machine. It is caused by error and pinch points** • **Who use a pace maker and medical devices don't access to machine.** • **Don't close credit card, watch and mobile devices to machine.** **It could be damaged by powerful magnet.**

Precautions for safety

It is the precautions to prevent accident or risk by using a product safely and properly.

⚠ Warning

- ■ **Please make sure to plug the power cord to an outlet with waterproof**
  -There is a risk of fire and injury caused by an electric short circuit.
- ■ **Please do not disassemble the machine discretionally while power is on.**
  -There is a risk of injury by electric shock and fire by electrical short circuit.
- ■ **Please do not put hands in running parts while operating.**
  -There is a risk of injury by pinch points.
- ■ **Please do not damage the power cord, and when the outlet is loose, stop running the machine.**
  - If the electrical connection is unstable, there is a risk of heat and ignition

⚠

- ■ **Please prevent any excessive changes in temperature.**
  -Sudden changes in temperature might result in a fatal failure of the machine.
- ■ **Please install the machine by avoiding a heating element and direct sunlight.**
  -Excessive temperature change inside the machine might result in a fatal failure of the machine.
- ■ **Please avoid installation in a place with strong vibrations**
  - It may cause a malfunction.
- ■ **Please avoid installation around the high-frequency generator**
  -Electrical conduction and radiating noise might result in malfunction of the machine.
- ■ **Please be sure to connect the ground wire.**
  -It may result in electric shock due to electric leakage.

■ **Any person other than designated technicians and the personnel authorized by NOWSYSTEMS is not allowed to disassemble or repair / modify the product.**
(There is a risk of fatal injury and if after sales service is required, repairs will be made at cost even within the warranty period)

Contents

1 STRUCTURE OF AND NAME OF EACH PARTS

1.1 STRUCTURE

⚠️

Please don't put hands in running parts while operating.

1.2 MAIN SCREEN

⚠
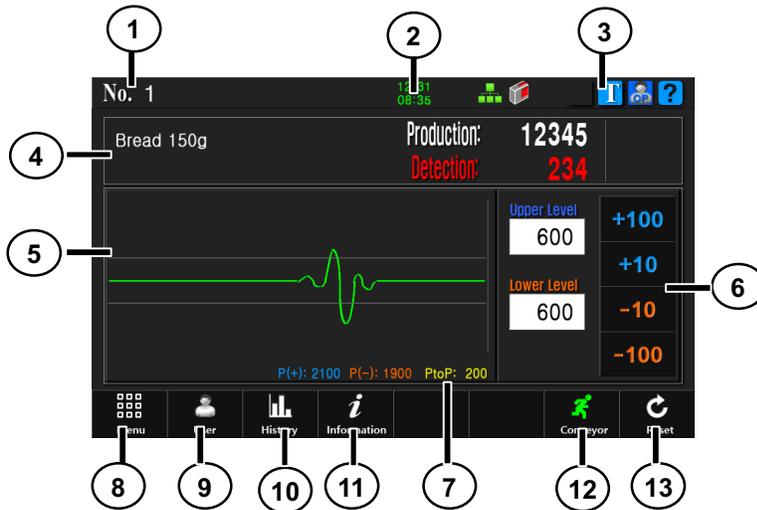
Please do not press the touch screen with sharp tools or nails.
Any failure of waterproof is might result in malfunction of the machine.

① Product Number

It shows the number of product that is in production.

② Current Time

It shows current time as Month/Date/ Hour/Minute.

③ Lan

It is activated when it is connected with management program through network

④ Product Area

It shows product name, products quantity, detecting quantity.

⑤ Wave Graph Area

It shows detection by upper/lower level and detecting signal in graph. You can adjust detecting level by +/-10 or +/-100 touching +/- 10 & +/- 100 each on the right screen.

⑥ Adjusting

It will be used to adjust detection level. It can be applicable for both upper / lower level.

⑦ Detecting Values

It currently shows peak value of detecting signal in real time with 4 channels.

⑧ Menu
It can go to submenus.

⑨ User
It can change the user level and security password.

⑩ Detection History

It can review various number records for detection history

⑪ Information
It can check machine number, version information, self-diagnosis and etc.

⑫ Conveyor

You can start or stop the conveyor. If you want to operate the conveyor, please touch it until the conveyor starts to move. A man shaped icon is activated in case conveyor is being operated.

⑬ Reset

You can stop operation of tower lamp and buzzer that are on after metal detection. They could stop their operation themselves after a certain amount of time depending on the setting of rejection.

1.2.1 DETECTION SIGN

Graph

- It shows detecting signal as graph, can check it easily.
- When any metal is detected, displays red vertical line. Even if there is abnormal signal due to vibration or others, if it does not show red line, it means metal is not detected.
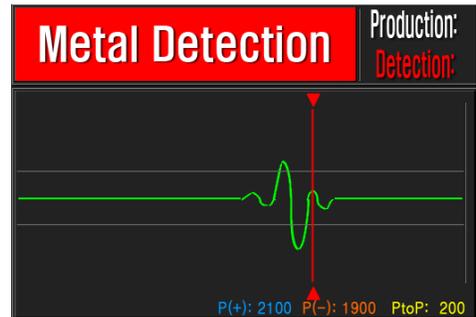
Detection Mark

Mark	Description
Metal Detection	It operates save history and rejecting when metal is detected.
Metal Detection	Detection Mark under Test Mode In this case, history is not saved and does not operate rejecting.

1.2.2 ICON

Icon	Decription
T	**Test mode** It is activated under test mode where there will be no rejecting operation such as conveyor stop and other rejecters even if metal is detected. Touch this icon for one second to go to normal mode (If there is no special reason, do not set the test mode. Rejecting fuction will not be operated)
OP QC SV	**User level** It shows the current user level. There is restriction for using menus depending on user level.
	Sensor It is activated when the product is perceived by product passing perception sensor.
	Lan It is activated when it is connected with management program through network.

1.2.3 SCREEN OPERATION

Main screen / Shortcut icon

You can go directly to a specific menu and setting or disable functions on main screen.

(Depending on user level, there is limited access.)

① Touch this [No] to go to [Item list].

② Touch this icon for one second to go to test mode or normal mode.

It is activated under test mode where there will be no rejecting operation such as conveyor stop and other rejecters even if metal is detected

③ Touch this icon to go to [Help].

④ If touch this area, can delete counting history.

Number input

When input number, popups [Number key]

1) Touch [←] key to delete input number.

2) Touch [C] key to delete all input numbers.

3) If touch [Cancel] key, go to previous menu.

4) If touch [Ok] key, all numbers are saved and go to previous menu.
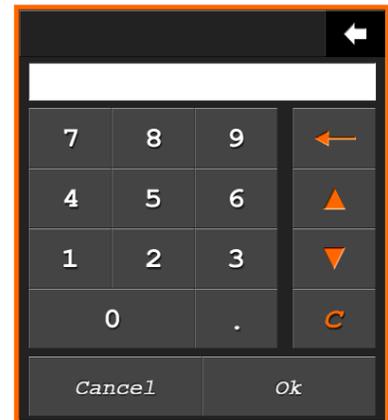
Password input

When login or change password, it displays the window.

The input number will be displayed as '*'.

1) Touch [Backspace] key to delete input number
2) Touch [Clear] key to delete all input numbers.
3) When the 5-digit password input is completed automatically exit the password input window.

| 1 | 2 | 3 | 4 | 5 | Backspace |
| 6 | 7 | 8 | 9 | 0 | Clear |

Letter input

When input product name, popup display

English/ number/ special characters can be entered up to 20 characters.

1) Touch [Caps Lockt] key to switch to uppercase letters or lowercase mode.
2) Touch [Shift] key will be entered in uppercase letters when typing in English.
3) Touch [Backspace] key to delete input letter.
4) Touch [Space] key to make for input one letter space.
5) If touch [Enter] key, all letters are saved and go to previous menu.

Tap button / list

Touch tap button to go to menu.

List
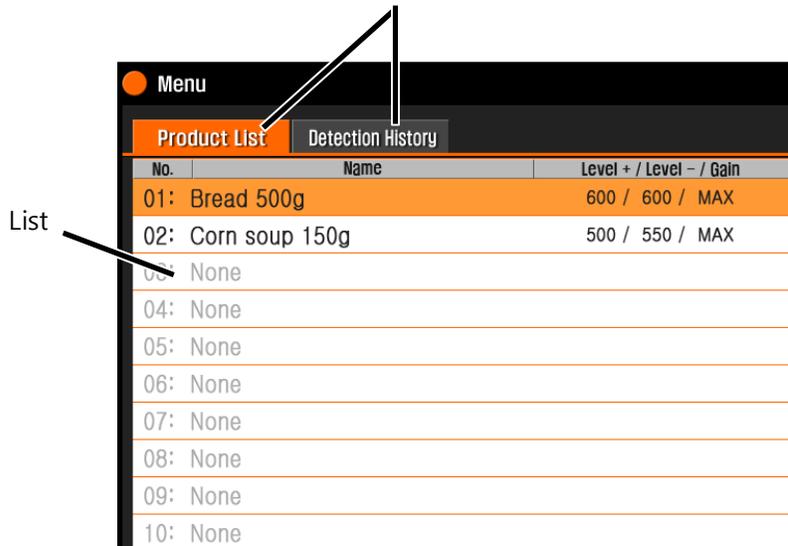
Help menu

Each screen has the Help menu.

1) Touch [?] or [?] icons to go to Help menu.
2) When touch [←] icon, go to previous menu.
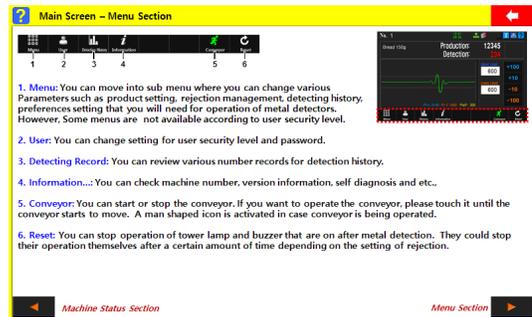
2   INSTALLATION

It explains about installation, transportation and running test.

2.1 INSTALLATION PLACE AND TRANSPORTATION

2.1.1 INSTALLATION PLACE

- Place at where is no vibration and hard floor.
- Don't place nearby equipment which generates strong static electricity.
- Place at as far as from motor and servo motor.
- Don't place any stuffs nearby machine which use strong electricity.
- Place at as far as from which generates electromagnetic wave and magnetic field.
- Especially avoid using an inverter motor.

2.1.2 TRANSPORTATION

- Be careful not to fall down the machine during transportation or impact to the sensor and the magnet part.
- Transport the upper part of the machine is always facing upwards.
- Don't put hands and any stuffs in the sensor and magnetic tunnel for transportation.
- Use the forklift prop.

Sensor and Magnet

Prop for forklift
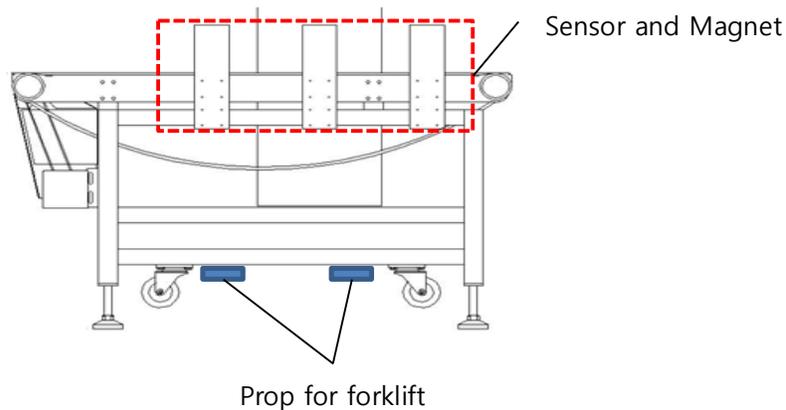
2.2 INSTALLATION

2.2.1 FIX ADJUSTMENT

1) Loosen lock nuts with a spanner.

Lock nut

Up

Down
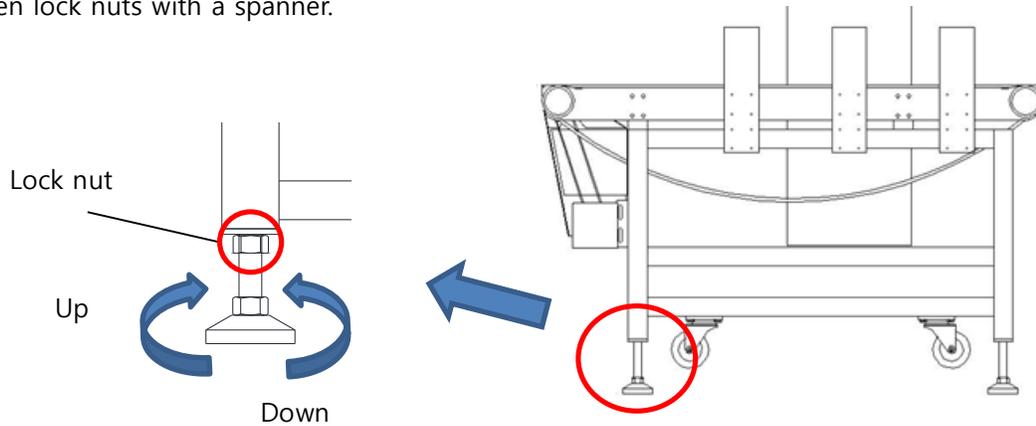
2) Adjust the height to be same with in-feeding /out-feeding conveyor.
   At this case, make some space between conveyors not to touch.

Be same height

In-feeding conveyor   ALCON conveyor   Out-feeding conveyor
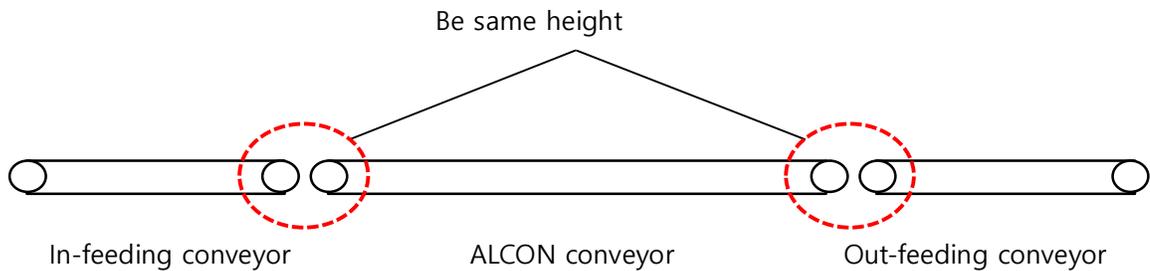
3) Tighten the nut and fix the adjustment.

2.2.2 CONNECTION TO EXTERNAL DEVICE

Connection to I/O or external device

⚠ Warning

Don't connect the power until the end of the work for safety.

If you work while connected to a power plug, electric shock or risk of damage to electronic components

ℹ **Refer to service manual for detail specification for connection.**

1) Open the back side door of controller.
   - Using a (+) screwdriver or coin to open the door.

2) Connect the cable wires for connection.
   - Insert the cables through cable hole that is at bottom of the power box.
   - Connect the cables to proper connector.

3) Close the door and tighten the calmlock.

Camlock
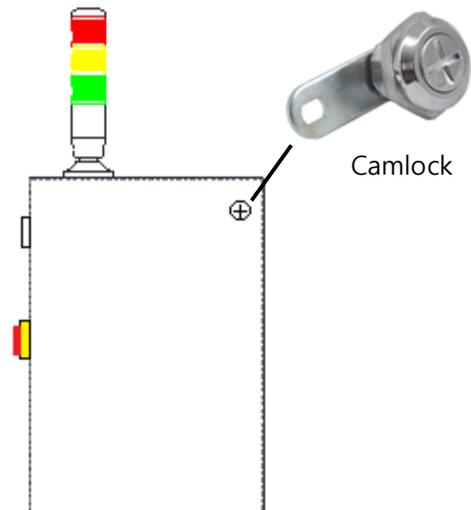
2.2.3 POWER –EARTHING

Power ground cable must be to ground.

Brown (Neutral)

Blue (Live)

Green (Earth)
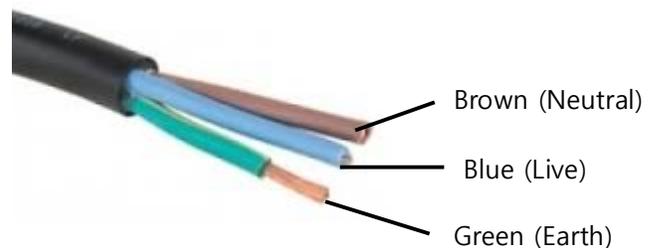
2.3 TEST OPERATION

2.3.1 BEFORE TESTING

CHECK BELOW BEFORE TURN ON THE POWER.

- Machine has been stabilized.
- Wiring of controller is connected as shown in the diagram.
- Wiring of the motor and earthing is correct.
- No foreign material inside the tunnel.
- No foreign material on the conveyor.
- Wiring of rejecter is correct.

2.3.2 RUNNING CHECK

1) Turn on power and check booting is going on.

2) Check if there is error message.
   It is only displayed if an error occurs.
   If it shows like right window, can check detail error message on [Information].
   (Refer to 3.5 Checking machine status and inquiry)

Check the system information.

Verify: Err=0x0000001

3) Conveyor switch ON/OFF, check the speed and running direction is correct.

4) Check whether there is abnormal noise.

2.3.3 RUNNING TEST

1) Check the waveform on the screen is stable. (at least 20 minutes)

   In case you drive only conveyor should be no change in the waveform. However, if the external environment can cause a changes waveform, but if the signal is smaller than the waveform of testing product, no matter to using the machine.

2) Passing a test piece through the tunnel and then check detecting metal function and rejecting output signal.

   (Under test mode, it doesn't output reject signal)

3 BASIC OPERATION

It explains about basic operation.

3.1 TURN ON / OFF

Turn on

Turn the power switch to clockwise.

Turn off

Turn the power switch to counterclockwise.

Power switch

ℹ️ **For stable operation, recommend turn on the power before 30 minutes to start production.**

3.2 START / STOP

Start

Touch the conveyor button or icon [컨베이어] for 1 second to run the conveyor belt.

Stop

Touch the conveyor button or icon [컨베이어] for 1 second to stop the conveyor belt.

Conveyor button
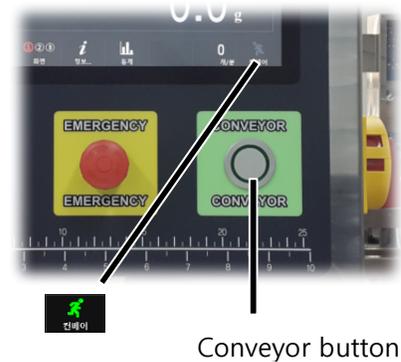
ℹ️ **Check if there is nothing on the conveyor before the conveyor drive. If there is a foreign material on, it could lead to malfunction.**

3.3 SPEED CONTROL

Adjust speed using the speed volume that is on the speed control box.

If the machine has a rejecter and when you changed the speed the rejecting timing should be adjusted.
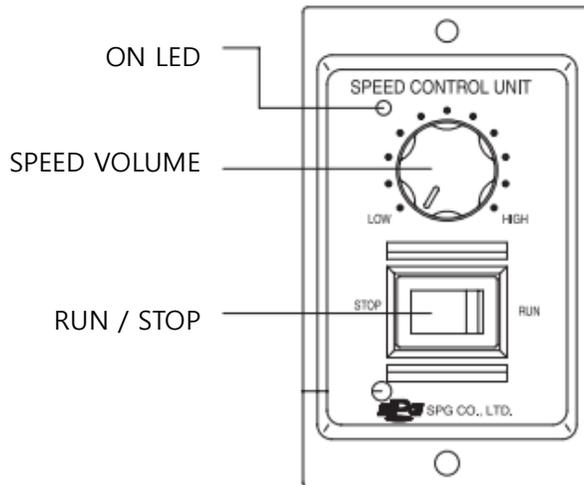
3.4 CHANGING USER SETTINGS / PASSWORD

There is restriction for using menus depending on user level.

This machine has 3 user levels.

Basically it is set on operator level.

- **Operator**: Available only basic operations such as start / stop, changing products.
  No need password
- **Quality manager**: Additional access: settings, management detection and sorting
   The initial password is "20000".
- **Engineer**: Accessible to all menus.
  The initial password is "30119".

  .

⚠ Cautions

Recommend changing the initial password

If you forget the password, please contact the manufacturer.

3.4.1 CHANGING USER

Ex) Changing to quality manager

1) Touch the user icon on the main screen, it shows user setting.

2) Check on the quality manager and touch [Login] it shows the input screen.
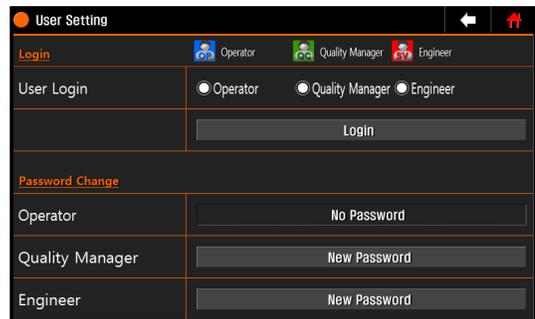
3) Input the password "20000". After changing, go back to main screen automatically.
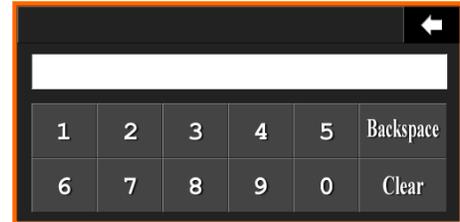
3.4.2 CHANGING PASSWORD

1) Touch [New Password] button to change the password. Input screen popups.
2) Input 5 digit new password, automatically closes window.
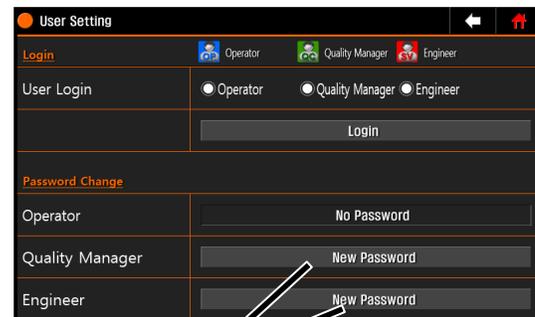
New Password

3.5 CHECKING MACHINE STATUS AND INQUIRY

It is for checking the system information and self-diagnosis status

(Main Screen → Information)

Basic Information

- It shows serial number, and board version.
- The version information is not displayed if there is a problem communicating with the board. In this case, reboot the machine. If the problem is not solved, contact a dealer or manufacturer for A/S.
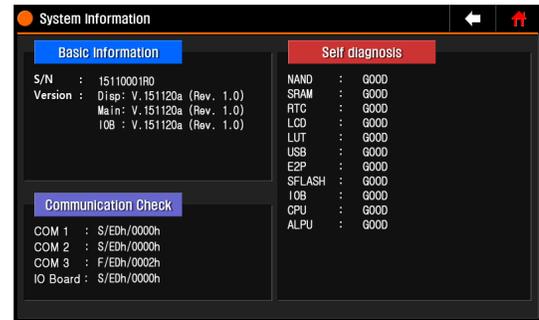
Communication Check

- When there is a communication error between the display board and IO board (or others), it shows the last error information.
- If you touch [Communication check] can reset the error information.
- When it occurs the communication error, it performs command by the retry communication.

Self-diagnosis

- It displays self-diagnosis results for the internal device checks after booting. If there is matter displays the "ERROR".
- You can check the error message in the [Info] menu if the window is displayed, such as right after booting.
- "If "ERROR" continues to display, contact a dealer or manufacturer for A/S.
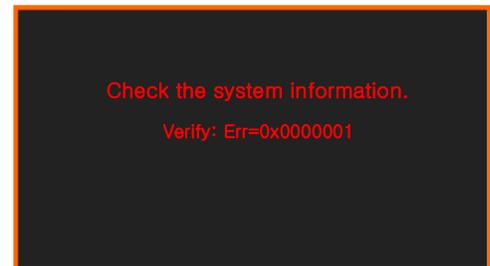
4 BASIC FUNCTION

It explains about basic function

4.1 MENU TREE

You can see when you login as quality manger.
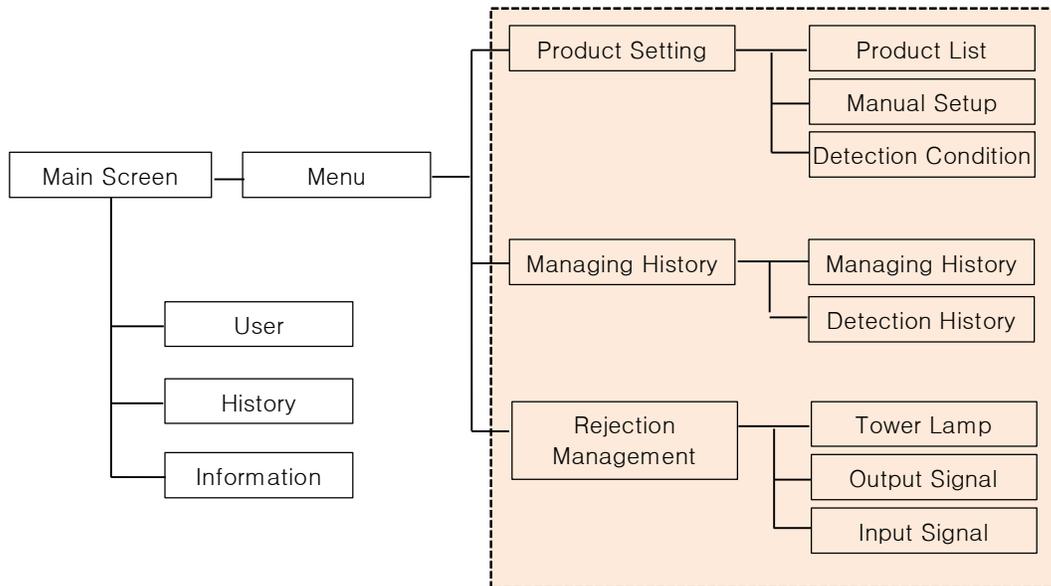
4.2 SETTING PARAMETER

It explains about the product setting for detection.

4.2.1 PRODUCT LIST

(Menu → Product Setting → Product List)

Item	Description
Product Name Registration	Input product name. Korean10 characters, English/ number/ special characters can be entered up to 20 characters.
Delete	Delete data.
Copy/Paste	It can copy the registered product to another number.
Product Change	It changes product number.

4.2.2 MANUAL SETUP

(Menu → Product Setting → Manual Setup)

Item	Description
Conveyor	It can start or stope the conveyor.
Detect Range	Limit the number of signals that exceed the detection level. Ex) If input 1/5, it judges the product to metal when the number of signals are between 2~4 in a given to determine.
Gain [S I]	Adjust the level of amplifier. (The sensor is located at the entrance of conveyor, rang: 0~255)
Gain [S II]	Adjust the level of amplifier. (The sensor is located at the exit of conveyor, rang: 0~255)
Upper Level	Setting for upper detection level. Range: 10 ~ 1500
Lower Level	Setting for lower detection level. Range: 10 ~ 1500

4.2.3 DETECTION CONDITION

(Menu → Product Setting → Detection Condition)

Item	Description
Product Passing Type	Select product passing type • **Single:** Individually packed and there is interval between products. • **Bulk:** Irregularly packed product, no interval between products. • **Metal:** For checking a deoxidizing additive and others Bulk: Counting function is not available.
Delay Time (msec)	Set the time when the rejecter restarts to operate after metal detection.
Operation Time (msec)	Set the time how long the rejecter is being operated.
Passing Time (msec)	The time set to be taken for the testing products to pass through the photo sensor installed at the entrance of the detection tunnel and completely out of the tunnel. This is only the value available when "Metal" (product passing method) was chosen. If product passing method is set to either Single or Bulk, this setting is not used.
Double Time (msec)	Set the time for how long you will make the machine not to detect right after metal detection.

4.2.4 REJECTION MANAGEMENT

(Menu → Rejection Management → Tower Lamp & Output Signal & Input Signal)

Output signal type

Type	Description
Metal Detector Power	It outputs when power comes in a metal detector head. In this case, the delay time, operating time and rejecting is ignored. When you turn on the power metal detector it can be used for give the signal to another device that the metal detector is switched on.
Conveyor Operation	It outputs while conveyor belt is running. In this case, the delay time, operating time and rejecting is ignored. When the conveyor is running it can be used for give the signal to another device that conveyor is switched on.
Rejector Operation	When metal is detected, a corresponding signal is output. It output for set "Operation time"
ETC 1	Reserved for expansion
ETC 2	Reserved for expansion
ETC 3	Reserved for expansion
ETC 4	Reserved for expansion
ETC 5	Reserved for expansion
ETC 6	Reserved for expansion
ETC 7	Reserved for expansion
ETC 8	Reserved for expansion

Input signal type

Type	Description
Conveyor Run/Stop	The input signal is to operate or stop the conveyor metal detector from external equipment. The hold time should be at least 100[ms].
Option A	Reserved for expansion
Option B	Reserved for expansion
Option C	Reserved for expansion
Option D	Reserved for expansion
Option E	Reserved for expansion
Option F	Reserved for expansion
Option G	Reserved for expansion

Output Signal/Delay Time/Operating Time/Operating Method/Active

Item	Description
Delay Time	Set the delay time until the output starts.
Operating Time	Set the time that the signal is maintained. It is available only if it is selected as a pulse.
Operating Method	• Pulse: Maintain ON status for operation time. • Hold: Maintain current status until next judgement.
On/Off	Output the ON / OFF signal to check whether corresponding port is operating.
Active	Set the start time when it starts for input signal. • Low: When this signal is to be ON at OFF. • High: when the signal is to be OFF in ON.

4.3 INPUT NEW PRODUCT

When registering a new product, proceed with the following procedure.

This machine can save Max.10 products.

(Menu → Product Setting → Product List → Manual Setup)

1) Select No.

- [Menu] => [Product Setting] => [Product List]
- After select No. to input and touch
  [**Product Change**]
- Touch [Manual Setup] to set sensitivity and level.

2) Setting sensitivity / level

- Run the conveyor and pass the product.
- Adjust the level that the waveform not to exceed the up and low level.
  Adjust it to be 1.5 to 2 times of the maximunm peak level of waveform.
- If the level is exceed 300, down the senistivity by 10.
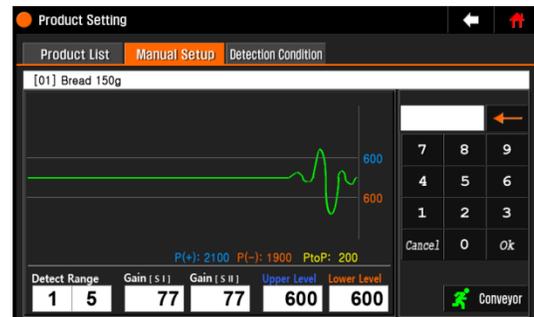
> ℹ **Sensitivity and level setting is to be appropriately adjusted according to the size that you want to detect metal and product characteristics.**

4.4 CHANGING PRODUCT/ DELETE/ COPY

(Menu → Product Setting → Product List)

4.4.1 CHANGING PRODUCT OR DELETE

Select the product on the list.

- Changing: Touch **[Product Change]** to change product
- Delete: Touch **[Delete]** to delete all data of the product. However, you can't delete the current production is in progress for the product.
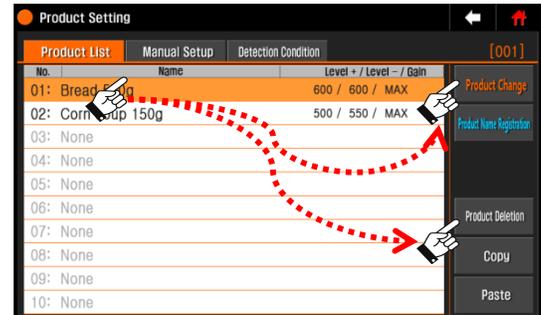
4.4.2 COPY

It can be used to copy the settings of the registered product.

1) Select the product and touch [**Copy**].

> ℹ **Counting information is not copied (product, NG).**

1) Select the product and touch [**Paste**].

2) When the copy is complete, product list is updated.
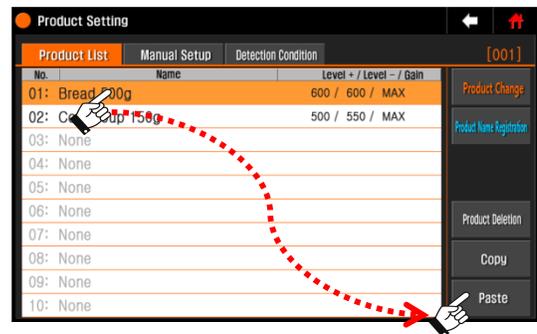
4.5 DETECTION CONDITION

It is for rejecting timing according to detection condition, delay / operation time.

(Menu → Product Setting → Detection
Condition)
Ex) Delay Time = 1000ms,
    Operating Time = 500ms
    Double Entry = 1000ms

ℹ **This machine can set different delay time, the operating time for each output port. Refer to [4.7] for detail explains. This page does not consider delay/ operation time for output signal.**

1) On Single mode
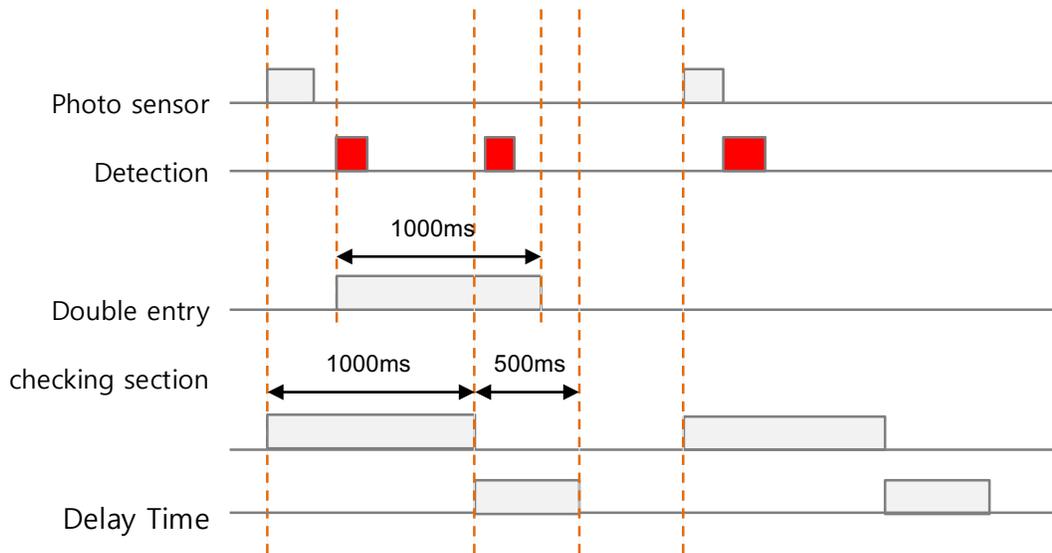
2) On bulk mode
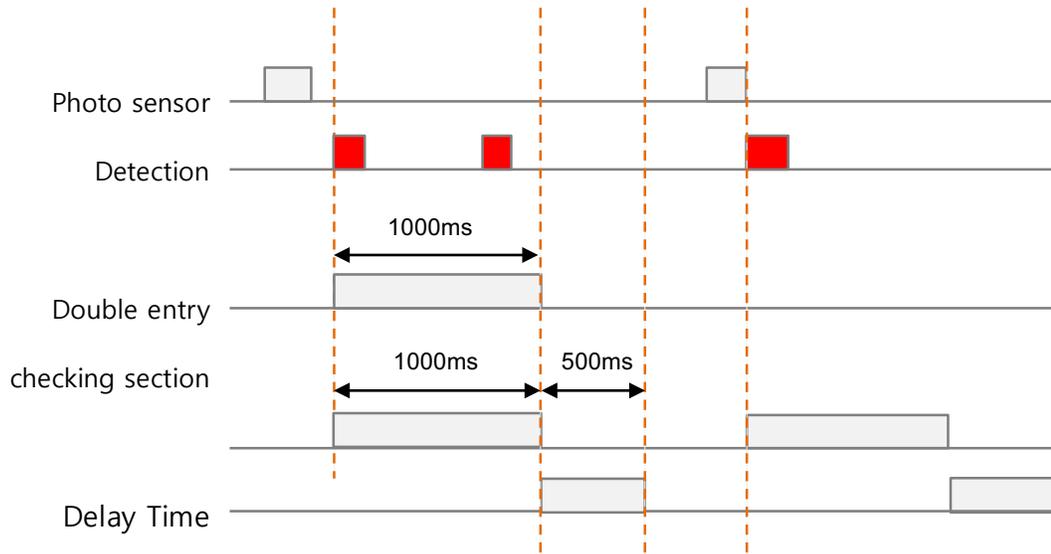
4.6 DETECTION HISTORY

4.6.1 MANAGING HISTORY

(Menu → History → Managing History)

Save detection history

When the setting is ON, save the production history in internal memory.
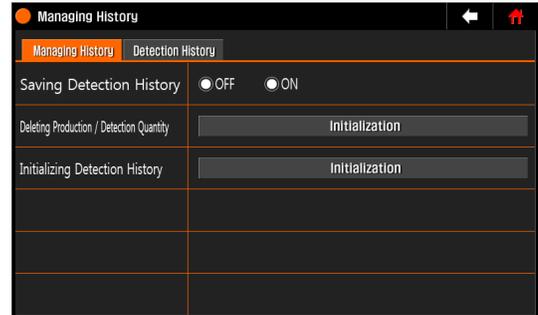
Delete product / N.G

Touch [Initialization] button, pop up appears asking if you want to delete. Touch [Ok] can make a production / N.G of all registered products to zero. .
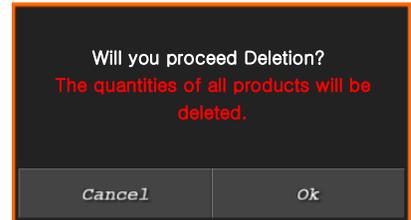
Initialization of detection history

Touch [Initialization] button, pop up appears asking if you want to delete. Touch [Ok] to initialize the history.
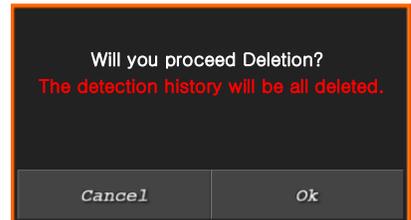
4.6.2 OUTPUT DETECTION HISTORY

(Menu → History → Detection History)

1) Input period

   • Daily, weekly, and monthly period can be set.

   • Weekly: Monday~Sunday

   • Monthly: 1st~the end of month

   • Period: Designate start and end date
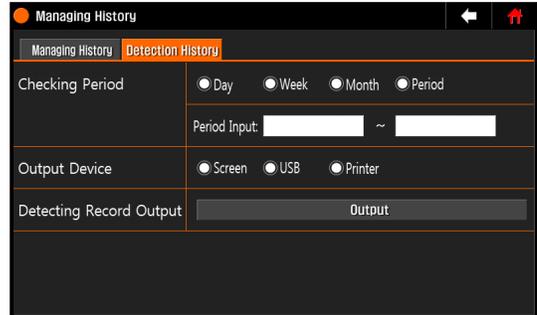
2) Select input method.

   • Screen: It displays on screen.

   • USB: It saves it in USB memory.

   • Printer: It prints out. (The printer is an optional device.)

3) Touch [Output] key.

Screen

It displays the detection history by date.

   • Former/Next Date: Look up former or next date.

   • Former/Next Page: If it exceeds 10 cases, shows the next or previous page.
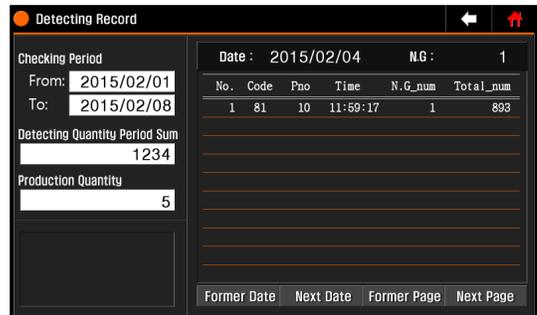
Item	Description
No.	Number
Code	80: Metal detection, 81: Missing part detection, 82: Switch ON
Pno	Product number
Time	Detection time, HH:MM:DD
N.G num	Accumulated detection quantity
Total num	Accumulated production quantity

USB

It saves detection data in USB memory.

You can check the history though the viewer program of manufacturer.

Printer

This is example that is set to period.

```
==============================
Period Sum. 16/02/01-15/02/08
Total :      1234
Reject:         5
S/N : 16010023R0
VER.: Disp: 160102a
      Main: 160102a
      IOB : 160102a
==============================

[16/02/01] Reject: 2
------------------------------
CODE PNO   TIME     NG    TOTAL
------------------------------
 80    1 10:32:23     1     231
 80    1 14:42:52     2     752


[16/02/03] Reject: 3
------------------------------
CODE PNO   TIME     NG    TOTAL
------------------------------
 80    1 09:34:53     3     941
 80    1 16:32:12     4    1012
 80    1 20:10:01     5    1143
```

```
==============================
Inquiry period
Total products quantity
Total detection quantity
Serial number
Version


==============================

[Date] Reject: 2
------------------------------
CODE PNO   TIME     NG    TOTAL
------------------------------
```

4.7 SETTING OUTPUT PORT (TOWER LAMP)

Set the signal, delay and / operating time to send to output port. This machine can be set to add a delay / operating time per output signal. Tower lamp setting is the same with output signal setting (OUT1 ~ 8).

1) Select output signal

Designate output signal in the output ports.

• Can select maximum 5.

• .

Ex1) Select "Conveyor Operation" to run the conveyor.
Ex2) Select "Rejecter Operation" to operate the rejecter.

2) Select delay/ operating time

Set it when you need to add the delay/ operating time on the output port.

No need delay/ operating time, if you set output signal as "Metal detector power" or "Conveyor operation"

• Touch the delay/ operating time key to input the values.
• Input the timing and touch [Ok].

3) Select operating method

Select output type.

• Pulse: Maintain ON status for operation time.
• Hold: Maintain current status until next judgement.

4.7.1 TIMING ACCORDING TO SETTING OF PORT (SINGLE MODE)

Example)

Detecting condition → Product passing type: Single, Delay time (Td1): 800ms, Operating time (Tr1): 400ms

Output signal menu → Delay time (Td2): 200ms, Operating time (Tr2): 200ms

NOW SYSTEMS CO., LTD.
Total Inspection Systems & solution
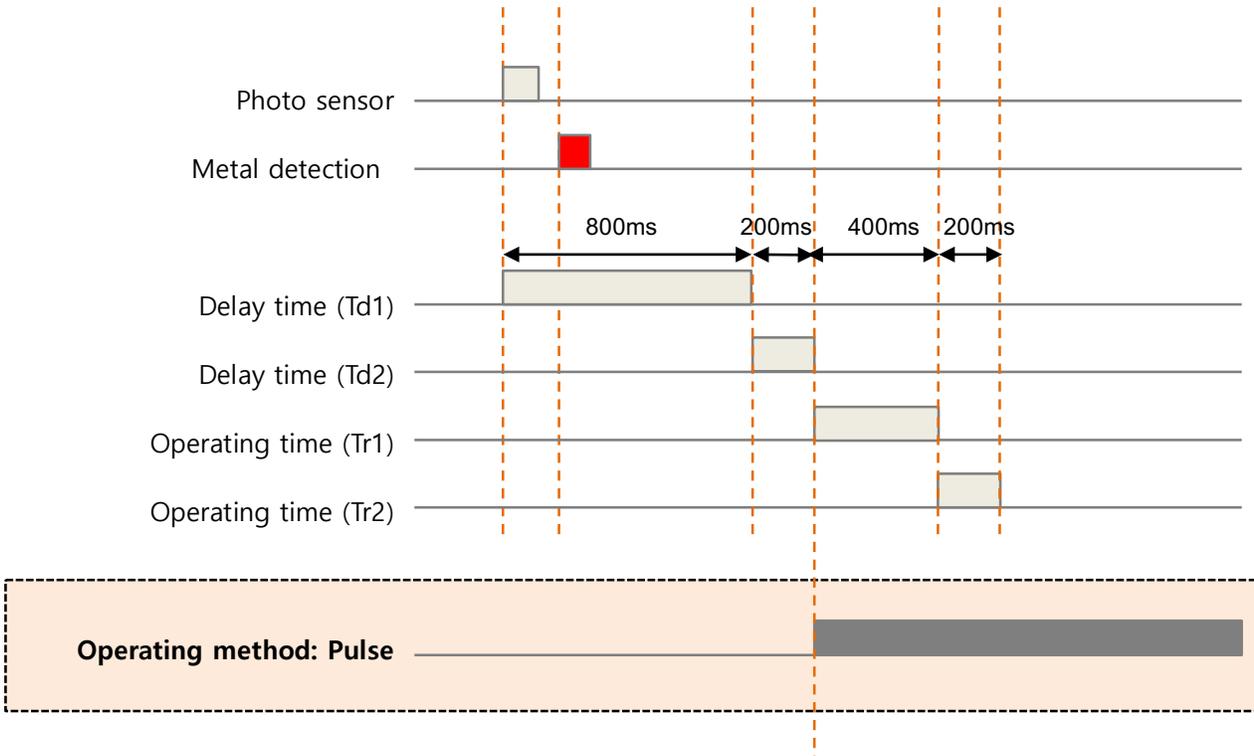
5 EXTRA FEATURES

It explains about extra features for each function.

5.1 SCREEN CONFIGURATION

This configuration is when login to engineer level.
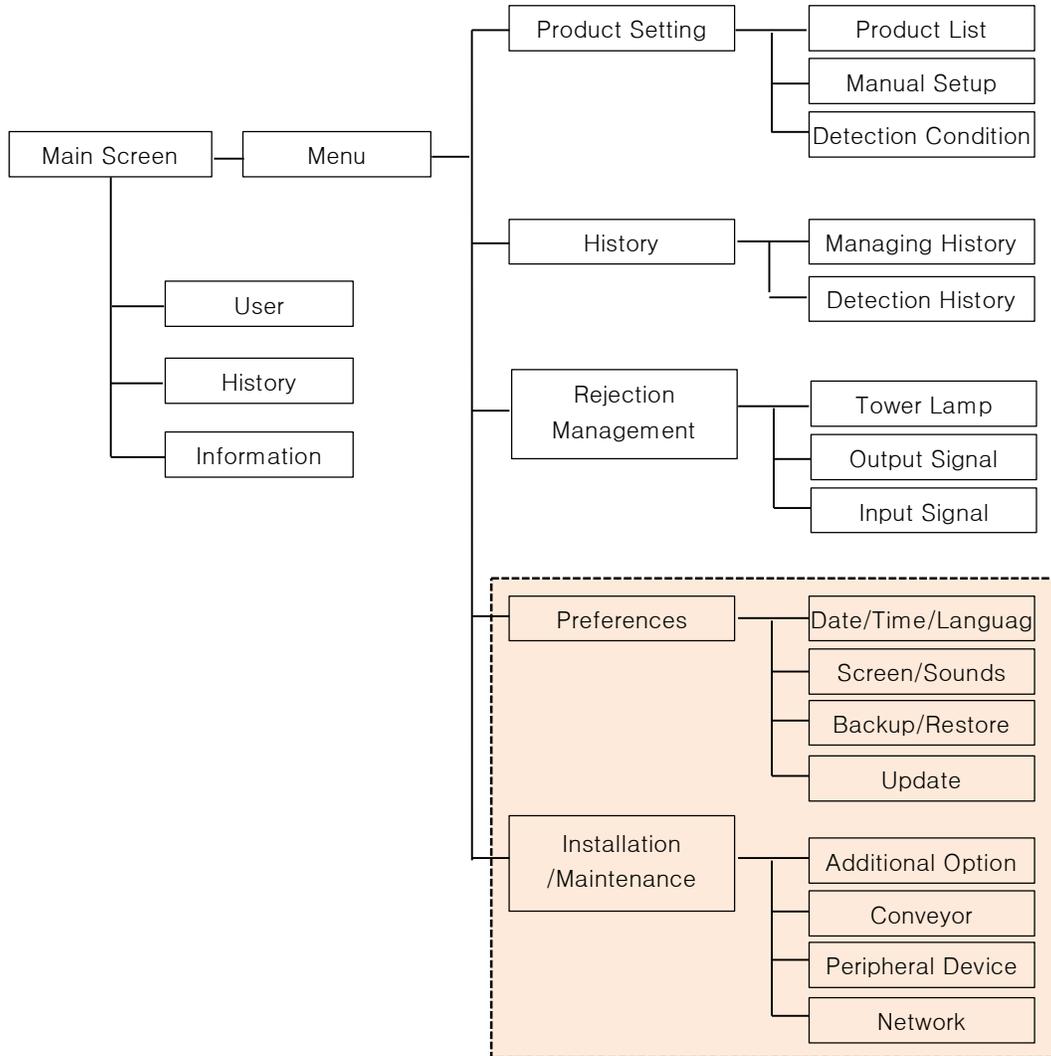
5.2 SETTING PARAMETER

It explains about main parameters.

5.2.1 SETTING PREFERENCES

(Menu → Preferences → Date/Time/Language & Screen/Sounds & Backup/Restore & Update)

It explains the functions of basic information and updates related to operation.

⚠ Caution

If you change the system date / time, you must reset the detection history.
The system date is based on the management of detection history, if you change it, an error occurs.

Item	Description
Date	Input date (YYMMDD type)
Time	Input time (HHMMDD, 24hrs type)
Language	Set the language. Operating language can be added at the request of the customer.
Menu Termination Time	When the set time is time-out, return to main screen. When set to OFF, keep the current menu.
Display Time	When metal is detected, it displays screen for setting time. When set to OFF, keep the detection screen until touch the reset key.
Sound Effects	• Notification: If checked notification, beeps sound in case of power-on, the task is completed. • Touch: If checked touch, beeps sound in case of touch the LCD. • Detecting: If checked detecting, when metal is detected, beeps sound. • Error: If checked error, when error is occurred, beeps sound.
Main Screen Button Lock	It restricts the shortcut function on the main screen. • Product: When set to ON, going to [Product list] is limited. • Test: When set to ON, can't go to test mode. • Sensitivity: When set to ON, can't go adjust the sensitivity and level. • Quantity: When set to ON, can't reset the product and error quantity.
Touch Calibration	It is for setting of touch calibration.
Built-in Memory Backup	The data is stored in the internal memory. A pop-up window displays the progress during storage.

Built-in Memory Restoration	It reads the stored data stored in the internal memory. After restoration is completed, reboot the power.
USB Backup	The data is stored in the USB memory. A pop-up window displays the progress during storage.
USB Restoration	It reads the stored data stored in the USB memory. After restoration is completed, reboot the power.

5.2.2 INSTALLATION/MAINTENANCE

(Menu → Installation/Maintenance → Additional Option/Conveyor/Peripheral Device/Network)

⚠ Caution

These items are set before deliver to customer, don't change without special reasons.

If changes are necessary, request A / S to the service engineer or manufacturer.

Item	Description
Sensor Timing	It adjusts the sensitivity of the photo sensor. Change it, when the packaging material is transparent of translucent, so the sensor may not check entry and out. In this case, set to Front/Rear.
Option 1/2/3	This setting is not used in the standard model. According to requests, the purpose will be set.
Normally detection mode	When set this, it can operate the detection and rejecting regardless conveyor running.
Stop Mode	When set this, conveyor will be stopped when metal is detected.
Automatic Start	When set this, the conveyor will run automatically after system stabilization when switch on.
Function Restriction	When set this, conveyor runs only power is switched on.
Moving Direction	It shows the moving direction of conveyor.
Standby Time	Once conveyor is operated, the metal detector ignores metal detecting signal for standby time that you set. You can use this function to ignore metal detecting operation right after you start to operate heavy weights or highly-vibrating products on the conveyor.
Printer Option	Setting for using a printer. • OFF: Disable • ON: Enable. • Individual Printing: Set for individual printing. When set this, whenever metal is detected it prints out the date, product number and others. ** [Time Setting]: synchronize both system time and time for printer.

Baud rate	It sets up the speed between printer and communication. • COM1: User for sensor board and serial communication. (It cannot be used for any other purpose) • COM2: Only for printer port (Supply RS232, RS485) • COM3: For debugging. It can be used for serial communication according to options. (Supply RS232, RS422)
DHCP	If the network supports IP automatic setting function, you can make IP setting assigned automatically. You will have to consult with a network manager for proper IP setting values. Inputting IP address, subnet mask and gateway are limited once "Obtaining an IP Address automatically" is set. **After changing, touch the [Applying Setting Value] and reset the network.**
IP Address	It is for IP address setting. Ex) 172.016.50.4 **After changing, touch the [Applying Setting Value] and reset the network.**
Subnet Mask	It is Subnet Mask setting. Ex) 255.255.255.000 **After changing, touch the [Applying Setting Value] and reset the network.**
Gateway	It is for Gateway setting Ex) 172.016.050.254 **After changing, touch the [Applying Setting Value] and reset the network.**
Port Number	It is for Port Number setting. **After changing, touch the [Applying Setting Value] and reset the network.**
Server IP Address	It is for Server IP Address setting.
Server Port Number	It is for Server Port Number setting.
Access to Remote Server	Access to the designated port of server IP.

5.3 TOUCH CORRECTION

Reset the touch coordinates of the LCD screen

 (Menu → Preferences → Screen/Sounds)

1) Touch [Calibrations Start] key.

2) If pops-up right window, touch [Ok].

3) 이 touch along "+ shape" by using of the thin end (such as ball point pen and etc.)

Will you proceed Touch Correction?
(For touch correction, please touch along "+" on the screen by using a thin end shaped device like ball pen and etc.,)

| Cancel | Ok |

4) Order: Upper-Left corner, Lower-Right corner and center.

5) When completed, it saves calibration value and returns to the main screen.

+ Please, Touch the center of blue cross appeared on the top of the left side	Please, Touch the center of blue cross appeared on the bottom of the right side	Please, Please, Touch the center of red cross +
	+	
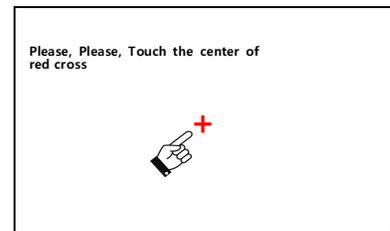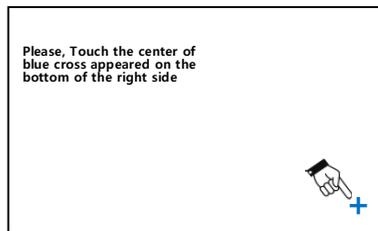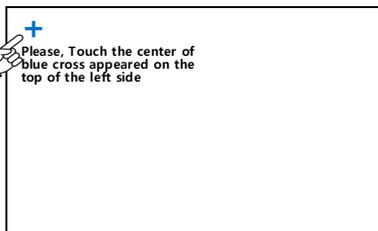
If touch calibration is not in a normal condition, machine operation might be impossible. It is set before deliver to customer, don't change without special reasons.

5.4 BACKUP / RESTORE

Backup and restore all setting values for the machines and all registered products

(Menu → Preferences → Backup/Restoration)

File name for Backup / Restoration

You can specify the file name to use for backup or restoration. Unless otherwise specified, the file name is the machine number.

Ex) Serial number is "12345678)
    file name"12345678.DAT"
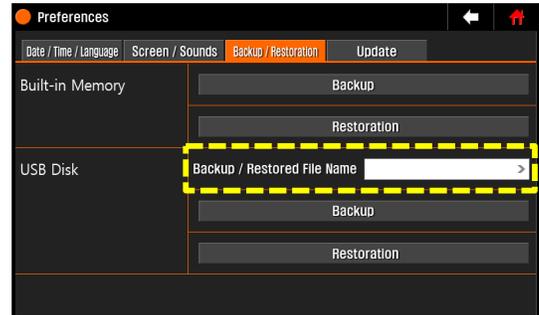
Backup

Store machine information, settings and preference in USB.

Ex) Serial number is "12345678)
    file name"12345678.DAT"

ℹ️ **Recommend backup current settings before operating.**

Restoration

Restore to backup data. In this case, all set data will be deleted.

Insert the USB memory before restoration.

When there is error massage, check first if there is a backup file on the USB.

Set the file name [Backup / Restored File Name] if the file exists.

5.5 UPDATE FIRMWARE

Update the firmware

(Menu → Preferences →Update)

⚠ Caution

Do not take out the USB memory or turn off the power during upgrade process

Use only manufacturer firmware.

Update

Insert an USB Disk before upgrade.

Corresponding firmware should exist in ROOT directory of USB memory.

1) Select file, window pops-up.

2) Touch [Ok]

The machine automatically reboots once update is completed.
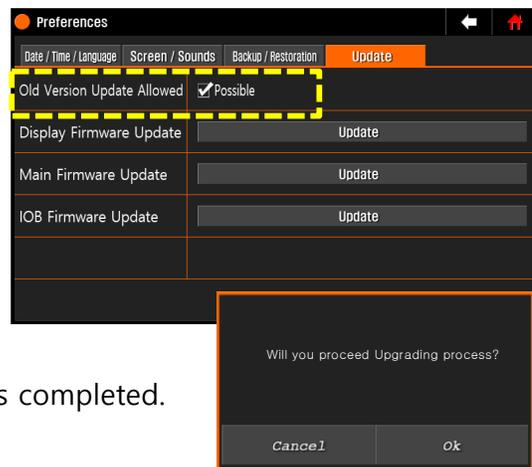
ℹ **When upgrade to previous or same version, check [Old Version Update Allowed]**

6 MAINTENANCE

6.1 DAILY CHECK

6.1.1 DAILY CHECK POINTS

Check below before operation.

- No contact with in-feeding, out-feeding conveyor.
- Conveyor belt alignment. (In case of urethane belt)
- No foreign material inside the tunnel.
- Check Electronic noise from motor and power box.
- Check detecting function with test piece and rejecting.

6.1.2 WEEKLY/ MONTHLY CHECK POINTS

- Check uneven wear or damage on the conveyor belt after take off the belt.
- Check abnormal sound while conveyor is running.
- Conveyor belt alignment. (In case of urethane belt)

6.1.3 CLEANING

⚠ Warning

Turn off the power switch before cleaning.

Impact or excessive force on the sensor and the magnet unit when cleaning machine would be damaged, it may critically affect the detection performance, please note.

Conveyor part
- Use a soft cloth with water and neutral detergent and wipe the dirty area.
- Metal brush may damage on the surface and it would be the cause of corrosion.

Conveyor belt
- Cleaning after take off from conveyor.
- Cleaning with water or neutral detergent.
- Dry absolutely after cleaning.

Controller part

- Use a soft cloth with water and neutral detergent and wipe the dirty area.

- In case of front panel of controller, wipe out with a dry cloth.

Metal brush may damage on the surface and it would be the cause of corrosion.

6.2 CONVEYOR BELT ATTACHMENT / DETACHMENT

6.2.1 REPLACEMENT CONVEYOR BELT (PLASTIC BELT)

⚠ Warning

Turn off the power switch before replacement.

Detachment of belt

1) Holding with both hands, force in the opposite direction to each other.

Force direction

Conveyor moving direction
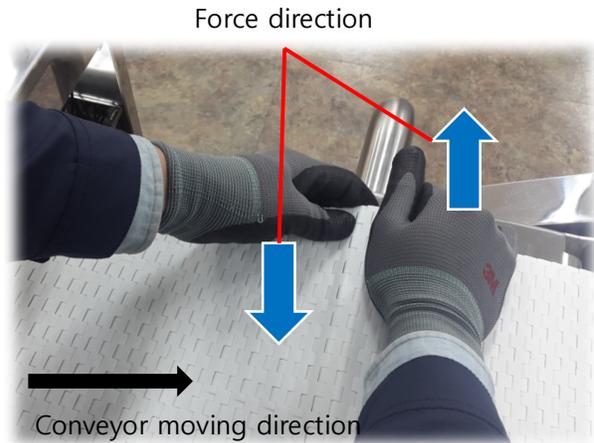
2) If the belt is opened, detach smoothly.

3) Detach carefully not to touch the floor.

Attachment of belt

Attachment and detachment is in the reverse order.

The two cogwheels must be engaged each other.

Sprocket
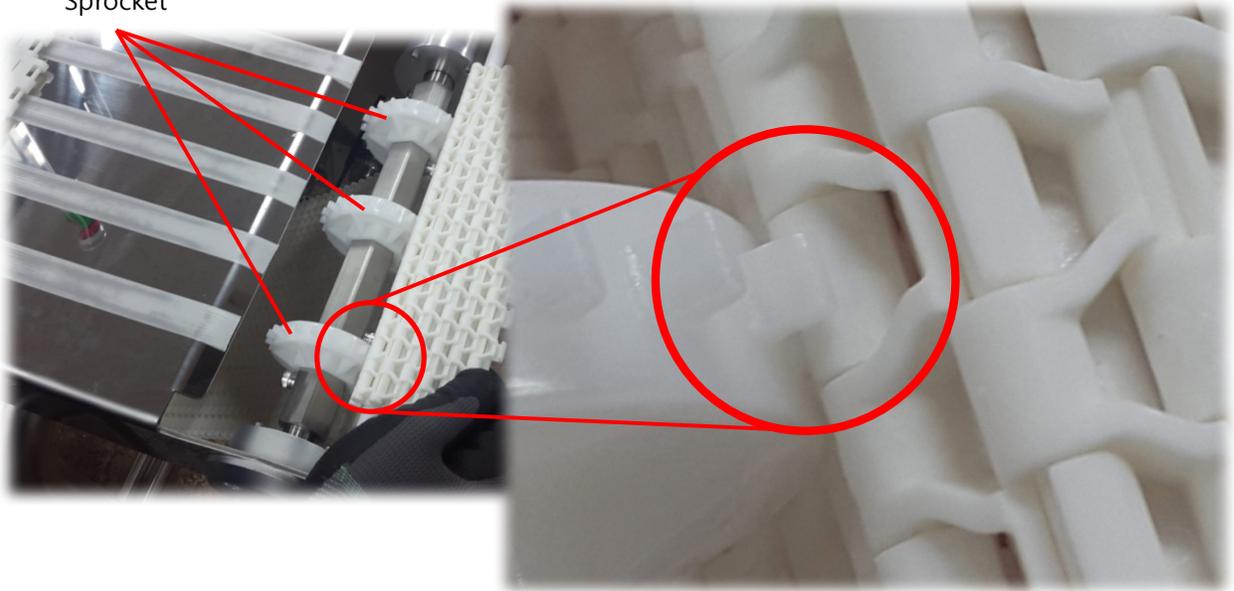
6.2.2 ADJUSTMENT BELT TENSION – (URETHANE BELT)

1) Running the conveyor and check alignment

2) If alignment is not good, adjust tension with the tension adjuster.

3) After adjustment, check alignment for at least 3 minutes.

How to adjust

- In case of pulling to left
  : Push left the tension or loosen the right tension.

- In case of pulling to left
  : Push right the tension or loosen the left tension.
  .

Tension adjuster

⚠️
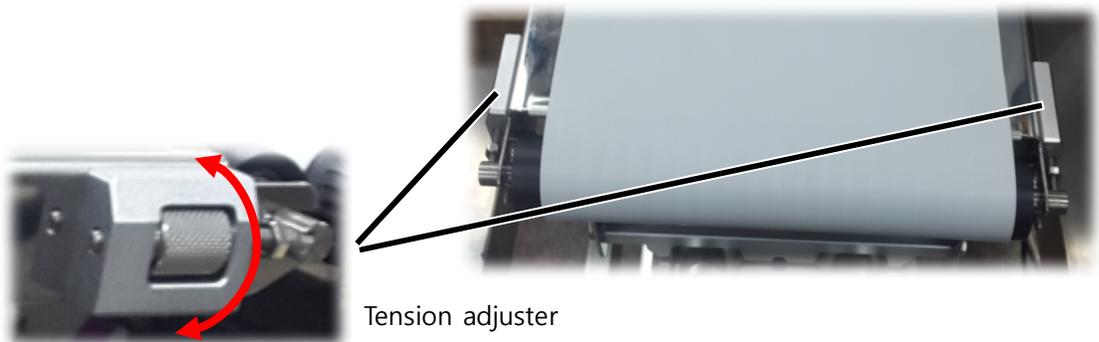
If it runs in abnormal alignment, it can cause problems such as damage to the rollers

6.3 FAILURE CAUSES AND COUNTERMEASURES

If a problem occurs in the machine, check the setting again with reference to the accompanying manual with the machine.
If you do not resolve the problem and have any questions, please contact your dealer or manufacturer.

6.3.1 REASONS AND HOW TO SOLVE

1) Nothing comes up on display. Or it displays only text without images.

Reasons	Power doesn't come to machine.
	Images has not been downloaded or breakage of file.
	Breakage of LCD diplay panel.
How to solve	Check the power switch is ON..
	Reboot the machine and reload the images.
	Redownlaod image files.
	Replace the display module.

2) Conveyor does not run.

Reseason	The voltage is unstable
	Conveyor switch is defective.
	Output port setting is wrong.
	The power is off on the speed control box
How to solve	Check whether power comes in.
	Conveyor switch ON and OFF.
	Set the output port again.
	Switch to RUN on the speed control box.

3) No metal is detected.

Reasons	In case sensitivity / level wrongly set up
	In case metallic substance is smaller than detectable test pieces.
How to solve	Product set up again and adjust sensitivity and level.
	Recheck whether or not it can detect with provided test pieces

4) Rejecter does not work properly after metal detection

Reasons	In case of rejecter wiring error In case of test mode Air is not supplied.
How to solve	Check output port setting. Check whether or not test mode is on Check the air pressure in the cylinder.

5) If operating conveyor, makes detection is made even if there is nothing on the tunnel.

Reasons	In case of the conveyor belt is contaminated. In case of the in-feeding and out-feeding is touched with metal detector conveyor.
How to solve	Washing the conveyor belt and remove particles. Make some space not to touch to metal detector conveyor.

6) Metal detection is made even if there is no test product.

Reasons	In case of there is change in balance adjustment.
How to solve	Check whether or not there has been any difference in working environment from when the detector was installed. Especially, if any inverter, a big sized motor, high voltage wire or a big sized construction around the metal detector are additionally installed or set up, put them away from the machine.

www.nowsystems.co.kr

NOW SYSTEMS CO., LTD.
Total Inspection Systems & solution

Head Office / Factory
NOWSYSTEMS CO.,LTD
61, Venture-ro, Yeonsu-gu, Incheon, Korea
Tel) +82-32-858-6655 & Fax) +82-32-858-6938
E-mail : nowsys@nowsystems.co.kr(Rep)