Techik 太易技术

Techik-IMD-I Metal Detector Using Guide

Before using the product,be sure to read this guide. Do keep the guide together with the product.

Chapter 1 Overview

1.1、the introduction of metal detector

Metal detector is the device,which detects products in the conveyor belt on transmission lines via electromagnetic fields. When the detected value over the metal signal, the output alarms if mixed with metal or makes order signal to remove it by selector .

1.2、Standard composition

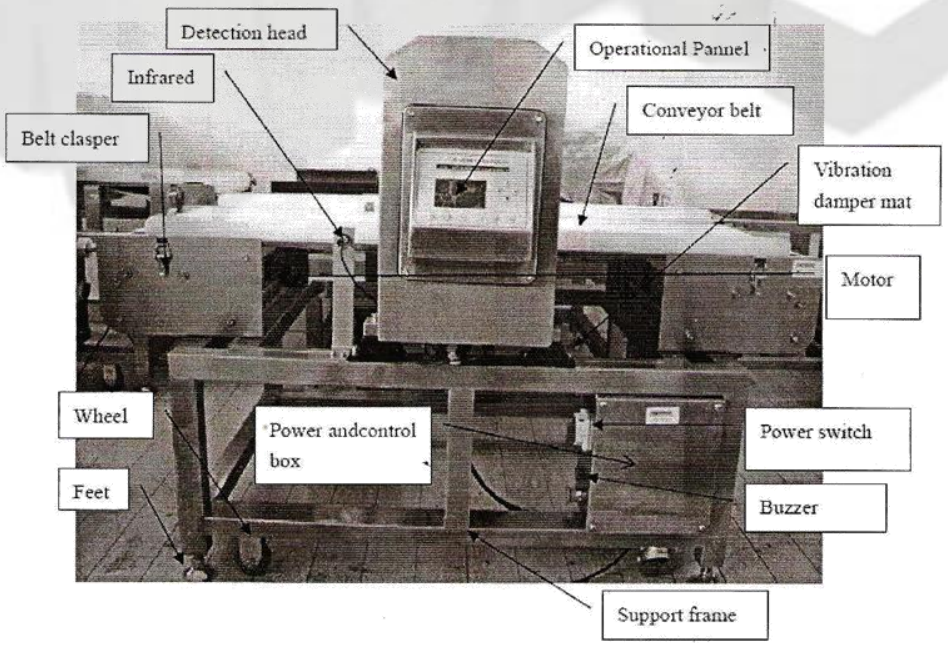
metal detector 1

drive belt 1

using guide 1

Test cards are purchasing things.

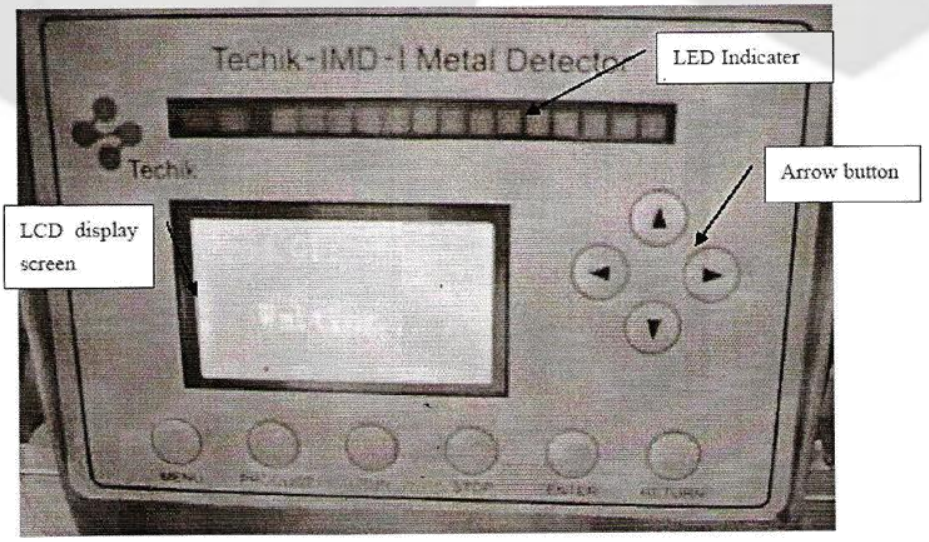
1.3、Various parts of the name and function



Detection Head	The key parts of metal detectors.Make metal detection signal.
Operation panel	For operation,setting and work
Control Box	Deal with the signal from detect head control of the equipment.
Infrared	Judge wether product pass or not,and start account
Conveyor belt	Be used to pass detected products
Motor	Carry the belt moving
Power box	Supply power for control box and conveyor belt motor
Vibration damper mat(Rubber)	To reduce the effection of vibration and shock
Power switch	Switch the power supply
Buzzer	Loud alarm
Wheel	For machine moving to other place
Feet	Support the machine steady away the ground

Note:When parameter loading , please do not cut off the power to avoid the program load error

1.3.1 Operation Control Box



Attention:In order to prevent the protective film from damages, please do not use sharp things (such as ball-point pen) to press the button.

Instruction Lights

From the left beginning,the first light is for running.In normal detection, it is green. The second light is for NG. when detecting metal , the light is red. The rest are display LED lights, showing metal element and detection level.

LCD display screen

Product number and its name, determining outcome, action, etc.

Start button

Press this button, conveyor belt light is on, the conveyor belt starts running.

Stop button

Press this button, the conveyor belt light is off, the conveyor belt stop running.

Product button

Press this button in the basic screen ,you can change another products.

Menu button

Press this button in the basic screen,and it appears a menu screen ,then you can select the menu.

Cancel button

End the current screen and return to the previous page.

Arrow button

For the selection screen and the page number switch.

Enter button

Using In determining the project or setting

1.3.2、detect head

detect head the sensors used to detect metal

Phototube to convince the detected products passing through

Reflection board phototube uses it

Phototube and reflection board are upper the conveyor.

Chapter 2 installation

2.1、Installation conditions

Please install the equiment to meet following occasions:

1.Temperature is not less than 0 ℃ and no more than 40 ℃.

2.Humidity is from the 30 to 85 percent without dew.

3.No direct sunlight, no heat equiment near the equiment.

4.Supply voltage range must be less than-15% and 10% of the biggest value.

5.Far away from the vibration source , no vibration at the best.

6.Fewer dust

7.non-volatile flammable,no corrosive gases and no salt

8.hot and cold air wind does not blow directly in front of the device.

2.2、installation notes

The power owns its system .it must be separate from the equipment with noise and other devices(large-scale motors, packaging machines, etc.) And it connects with the close socket.

Please do not keep multi-directional wire. If heavy things press on the power cables,it may happen a fire or cause a accident .

Power cables should be away from the heat apparatus. Before cutting off the power switch, choose and take out the plug.

When the equipment and other equipment (before and after the paragraph conveyors, etc.) connect , it may make a error action. In this case, please do not connect with other devices.Do give it a separate ground.

2.3、conveyor belt height between front and back the device adjustment

The conveyor belt height between front and back the device must adjust to the same level.There is no room between the pin bolts and the ground , so as not to shake. After the adjustment, the nut wrench must be tighted.

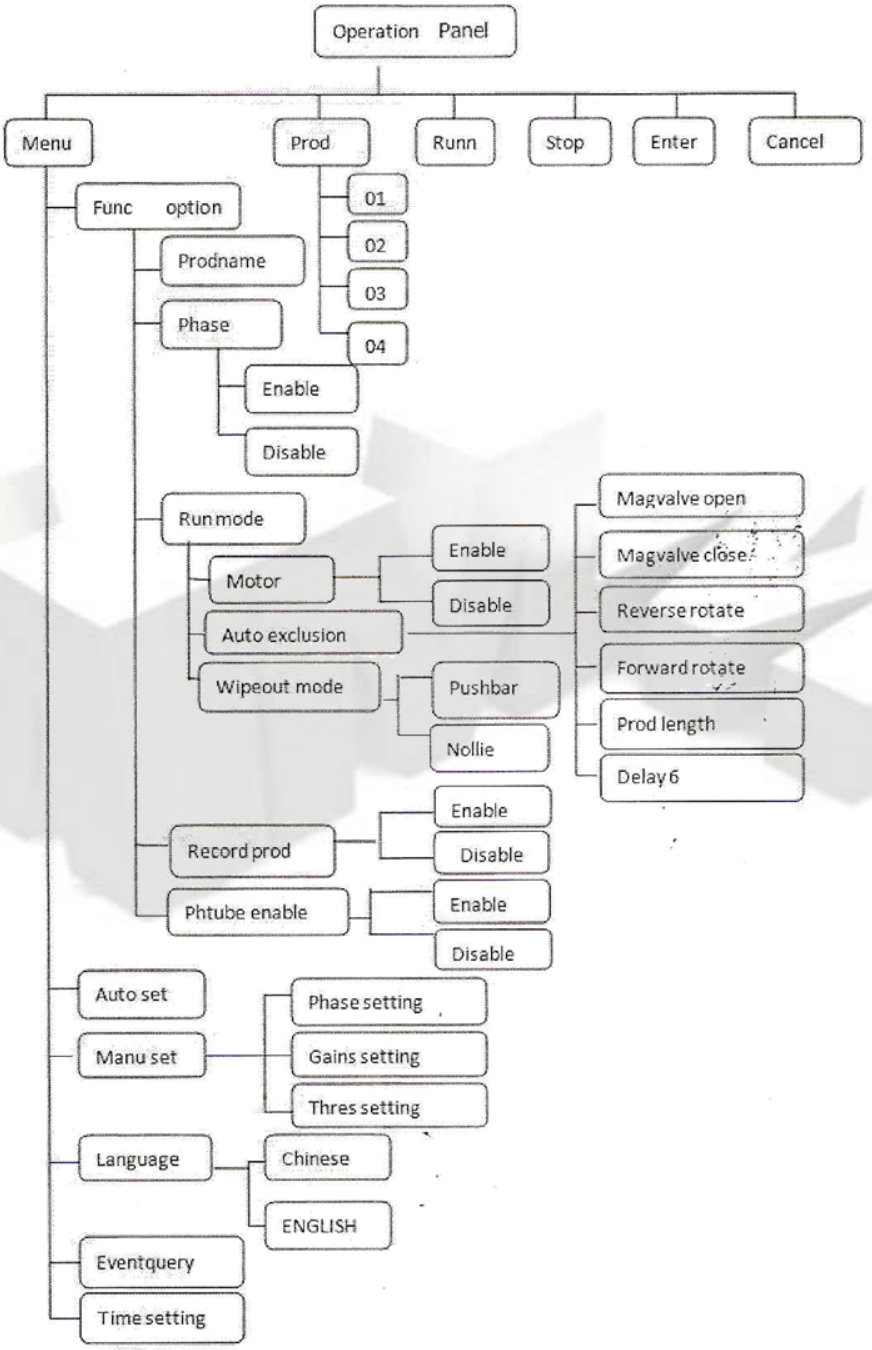
2.4、Power, grounding connections

In order to avoid danger the power should install circuit breakers half-way, if used in the humidity environment, leakage circuit breakers have to be installed.

In order to avoid electric shock and ensure the stability of the operation, the power must be grounded. (Grounding line with a diameter of 1.6mm or soft copper wire with the same intensity and difficult to corrosion of the metal lines. Grounding resistance must be less than 100Ω.)

Chapter 3 the use of Metal detector

3.1 Basic use



3.1.1、Open the power

Open the distribution box in the lower right corner, press the power switch, let power on. First LED lights are on one by one from left to right, then turn to [basic] screen.

[basic] screen.

3.1.2、Registrate new product

Registrating new products includes product number, product name, phase selection, run mode, gains, phase, threshold setting.

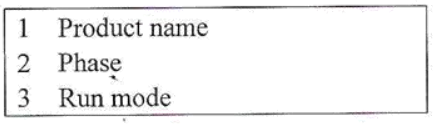
3.1.2.1 product number

From the [basic] screen, press the [product] button, it shows [product] screen.

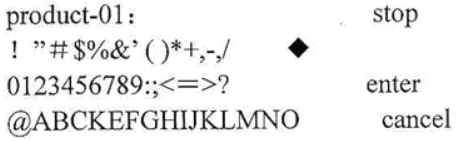
If choose [01], press [enter] button, registrate serial number, and return to the [basic] screen.

3.1.2.2 Function option

In order to registrate new products, show[Func option] menu screen, then go to products basic setting.



In the [product name] enter names,turn to next sceen:



Press [arrow] button ,put the curso into the entering text (English numbers , a false name, mark). Press [enter] button, you can put in the [name region] . Move to the left or to the right by moving [arrow] button. It can arrive at the [left], or [moving to the right] position, according to the [enter] button.Use [name region] to choose the location of the text to the left or right

Enter names, press [arrow] button, put the curso into [enter] , name registrate product name and return to the [product parameters] screen.

3.1.2.3 phase

From [Func option] screen, press [up] ∧, [down] ∨ button, select the [phase], press [enter] button

Phase	
Enable	Disable

Press [left] <, [right]> button, select [enable], press[enter] button, phase is allowed; choose[Disable], press[enter] button, phase is forbided, then return to the [Func option] screen.

3.1.2.4 motor

From the [Func option] screen, press [up] ∧, [down] ∨ button, select [Run mode], press[enter] button, then enter [Motor].

Motor	
Enable	Disable

Press[left] <, [right]> button, select [enable], press [enter] button, the belt stops running; please choose [disable], press [enter] key, the belt continues running but the alarm will ring.

3.1.2.5phase selection

From the [manu set] screen, press [up] ∧, [down] ∨ button, select [phase setting], press [enter] button, then enter [phase]

Phase setting
109. 5

Press[up] ∧, [down] ∨ button, increase and reduce the phase value, press[left] <, [right]> button, increase and reduce the phase doubly. press [enter] button, the current phase has been preserved,press[cancel] button, give up the operation,then return to the [product parameters] screen.

3.1.2.6 gains setting

From the [manual setting] screen, press [up] ∧, [down] ∨ button, select [gains setting], press [enter] button, then enter [gain].

Gains setting	
19.0	19.0

Because the equipment uses 2 bands to detect produces, the gain is as following19.Press [left] <, [right]> button, choose the left side (T Road), or the right side (P Road) gain.Press[up] ∧, [down] ∨ button, increase and reduce the gain value. Press [enter] button, the current gain value has been preserved.Press [cancel] button to give up the operation,then return to the [product parameters] screen.

3.1.2.7 threshold setting

From the [manual setting] screen, press [up] ∧, [down] ∨ button, select [Thres setting], press [enter] button, then enter the [Thres setting].

Thres setting
109. 5

Press [up] ∧, [down] ∨ button, increase and reduce the threshold, press[left] <, [right]> button, increase and reduce the threshold doubly. Press [enter] button, the current threshold has been preserved. Press[Cancel] button to give up the operation,then return to the [product parameters] screen.

Note:When quit the manual setting, the screen will display the parameter loading, and at this time please do not cut off the power to avoid program load error

3.1.3 auto set

Be ready to detecte products (we call it the standard work), the detected products senting on belt should be able to appear average characteristics (size, weight, ingredients and packaging in the form) .we can autoset it depending on programme.

In [basic] screen, press [menu] button, it shows [menu] screen; if you choose [autoset], press [enter] button, it shows [autoset] screen.

01 Wait

After a few seconds, showing [flow products].

product-01 flow product

The detected products are sent by the operator, flowing products, if the failure of autosetting, press[cancel] button, return to the [menu] screen, repeat the steps until the first 1 autosetting success.After finishing autosetting ,we should confirm its detection sensitivity

Autosetting Notes

1.Standard workpiece should be accordance with the normal transmission of the products

2.When the standard workpiece is under 5mm thick and has not block at the view of the phototube, the standard workpiece should be blocked by hand.

3.Small things should be put into pocket when autosetting.

4.With autosetting function, we can set the most appropriate detection conditions, however, due to external noise and other interference factors, testing conditions may change

5.If the standard workpiece on the transmission line in the actual product are different characteristics ,the actual products would be occurr error detection.

3.1.4 selcet product

From the [basic] screen, press [product] button , it shows [product] screen.

01 HAM 500g 02 COOKIE 03 JAM 04 HAMBURGUR

Press [up] ∧, [down] ∨ button, select the products, press[enter] button.

3.1.5 start running and stop running

3.1.5.1start running

In order to move the metal detection machine stability, open the power supply and wait for 10 minutes ,then start running.

Before the operation beginning to detect metal on the conveyor belt in the preceding paragraph ,the goods are removed after the start-up inspection conveyor. Press[Start] button, as the conveyor belt just starting about 1 second, the action is to wait for stability, metal detection machines do not move. In addition, the conveyor belt of change in the operation of any species, the metal detector does not move about 10 seconds,.

3.1.5.2stop running

Press [stop] button,conveyor belt stops, then enter stopping state.

3.1.6 new function instruction

If the belt speed is 25m/min

3.1.6.1 Added the option to the product parameter(Func option)

Record Prodnu Enable/Disable(it will need to use the phototube)

3.1.6.2 Added the option of 'run mode'

1 Motor Enable+ Nollie= (suitable for)product in bulk (do not need the phototube detection)
2 Motor Enable+Pushbar= (suitable for)product in package(need the assistance of the phototube)

3.1.6.3 Motor disable+Pushbar

1 magvalve open=Value*4cm= Distance(from the phototube to the pushbar)
2 magvalve close=Value*4cm= Distance(from the magvalve open to the magvalve close)

3 product length=Value*4cm

3.1.6.4 Motor disable+nollie

1 magvalve open=Value*4cm= Distance(from the phototube to the pushbar)
2 magvalve close=Value*4cm= Distance(from the magvalve open to the magvalve close)

3.1.6.5 Added the option of ' Phototube Switch" in the 'auto set'

1 auto set+ phototube enable=use the phototube to auto setting
(1) Forward Rotate: Value*4cm= the forward distance from the product pass through the phototube
(2) Reverse Rotate: Value*4cm= gyration length

2 auto set+ phototube disable=do not use the phototube to auto setting
(1) Delay 6 Value*4cm=the distance of the product arrive in the detecting head
(2) Forward Rotate Value*4cm=the distance of the product pass through the detecting head
(3) Reverse Rotate Value*4cm= gyration length

3.1.6.6 Added the new function of 'event query ' and ' time setting ' to inquiry the alarm times and the alarm date and time.

Chapter 4 the daily maintenance

4.1.the daily maintenance

Daily inspection items

(1) Before the operation please chek as following: confirm whether to touch and sensitivity determine to be [OK], or else be not [OK].

(2) After the ending,the conveyor belt must be cleaned and swept both sides of conveyor belt. Carry out the following examinations every week and remove conveyor belt to check whether the crack face, Conveyor belt running state, the same sound, no wiggle phenomenon.

4.2 clean-up notes

1.Take off the power when cleaning
2.Do not use metal brushes and so on.
3.Do not use thinner and benzene and other organic solvents

4.3 the method of loading and unloading conveyor belt

The conveyor belt can be loaded and unloaded. In order to clean the back of the conveyor belt and pallets, please remove it by the orders:

1. Release four hasps outside.
2.Lift up the conveyor belt device from one side and relax motor-driven belt,torn off conveyor belt.
3.Belt transmission device to detect from the side of the head out.
4.Do not touch the attention of bad holes detected in the resin layer .