

# NEEDLE DETECTORS



Wide Span Type

## SK-2200 / SK-12TR

Automatic online detection of iron pieces, needles,  
and other foreign objects in raw materials, semi-finished products,  
and finished products!

Capable of detecting small iron pieces even  
in aluminum packaging.



# Automatic online detection of iron piece contamination in wide-span objects.



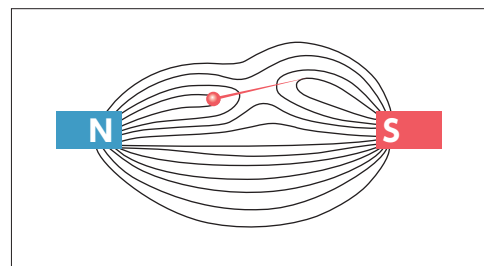
SANKO Iron Piece and Needle Detectors are high-performance detection devices that ensure quality control, protect equipment, and prevent harm to human bodies by automatically detecting small iron pieces (broken needles, wire, bolts, nuts, devices, etc.) during production and inspection processes.

## ◆ Application

1. Detection of iron-based foreign materials such as needles, wires, staple needles, and broken pieces in textiles, carpets, felts, bolts, non-woven fabrics, and original fabric rolls.
2. Detection of needles/broken needles in futons (Japanese style thick bed quilt/pad), gigging needles/broken gigging needles, and iron fragments in gigged products like blankets.
3. Detection of small iron pieces like wires, bolts, nuts, tacks, and needles in rubber, plastic materials, sheets, and other industrial materials and products.
4. Detection of small iron pieces in food, packaged food products, and medical supplies.
5. Detection of small iron pieces in aluminum foil packaging.

## ◆ Principles

A minute electromotive force is generated in the detecting coil when a magnetic objects, such as a needle or an iron piece, moves within the magnetic field of a permanent magnet. This amplified signal triggers the alarm circuit, activating a lamp and buzzer while simultaneously stopping the motor through an external contact output.



## Super High Sensitivity Type **SK-2200**

Main unit:



4 channels (optional)



Electrode (probe)

### ● Detection of minute iron pieces with Super High Sensitivity:

10 times higher sensitive (in-house comparison), capable of detecting an iron piece as small as  $\phi 0.3 \times L 0.5\text{mm}$  within 1mm of the detecting electrode surface.

### ● Latest High Stability Circuit:

Using the latest technologies, the unit offers continuous and stable performance with minimal interference from environmental factors like vibration and power source noise.

### ● High-Performance Detecting Electrode:

Developed through over 60 years of experience and know-how, this electrode minimizes the influence of nearby metals and supports a maximum detecting span of 4.4m in accordance with the necessary number of channels.

### ● Effective for aluminum packaging:

As this unit employs a magnetic induction method with a permanent magnet, it reacts minimally to aluminum foil while maintaining strong sensitivity to magnetic metals like iron, steel, and ferritic stainless steel.



Practical variation proven by numbers of cases:

# SK-12TR

Main unit:



2 channels (optional)



Electrode (probe)

## ●Numbers of delivery records:

Widely used in industries producing wide-span textile products such as textiles, carpets, futons (Japanese style thick bed quilt/pad), felts, and non-woven fabrics, as well as packaged goods, retort-packed foods, paper, rubber, and resin products.

## ●Excellent durability:

A high-performance electric circuit and permanent magnet electrode maintain initial high sensitivity and deliver outstanding stability.

## ●Highly effective for thick products:

Suitable for inspecting relatively thick wide-span products like futons, felts, and blankets.

## ◆ Back Panel (SK-2200)



- ① Probe connector
- ② Output terminal base
  - ②-1 No voltage output terminal
  - ②-2 Reset terminal
  - ②-3 GND terminal
- ③ Fuse holder
- ④ Power cord
- ⑤ Buzzer ON/OFF switch
- ⑥ Alarm buzzer

## ◆ Indicator Display (SK-2200,optional)



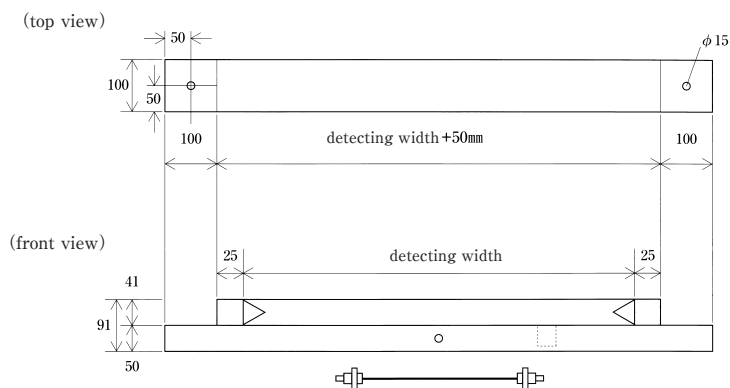
## ◆ Specifications

Model	SK-2200	SK-12TR
Detecting method	Magnetic induction	
	Depending on sizes and moving speeds of iron pieces(optimal speed: 30~50m/ minute)	
Detecting ability (detecting needles)	Max within 50-60mm from detecting surface for "setting pins" Max within 10mm from detecting surface for $\phi 0.3 \times L2$ mm needles.	Max within 70-80mm from detecting surface for "setting pins" Max within 5mm from detecting surface for $\phi 0.3 \times L2$ mm needles.
Passing width*	56~4448mm(adjustable by 72mm increments)	140-4500mm(adjustable by 500mm increments)
Detecting alarm	LED lamp, Electronic buzzer	Light bulb, High power buzzer
Output:	No-volt contact point type, Contact capacity 250V 5A	
Power source*	AC100 ~ 240V 50/60 Hz	AC100V 50/60 Hz
Dimensions & Weight	Main unit:280 (W) × 110 (H) × 230 (D)mm, 3kg Probe:306~4698 (W) × 91 (H) × 100 (D)mm about 3~55kg	Main unit:350 (W) × 140 (H) × 200 (D)mm, 4kg Probe: 390~4750 (W) × 91 (H) × 100 (D)mm about 3~50kg
Option	Detecting position division: 2~4 channel Indicator display	Detecting position division: 2~4 channel Modification of voltage: over AC110V upon request.

\*Custom-made detecting width is available upon request. Contact us for details.

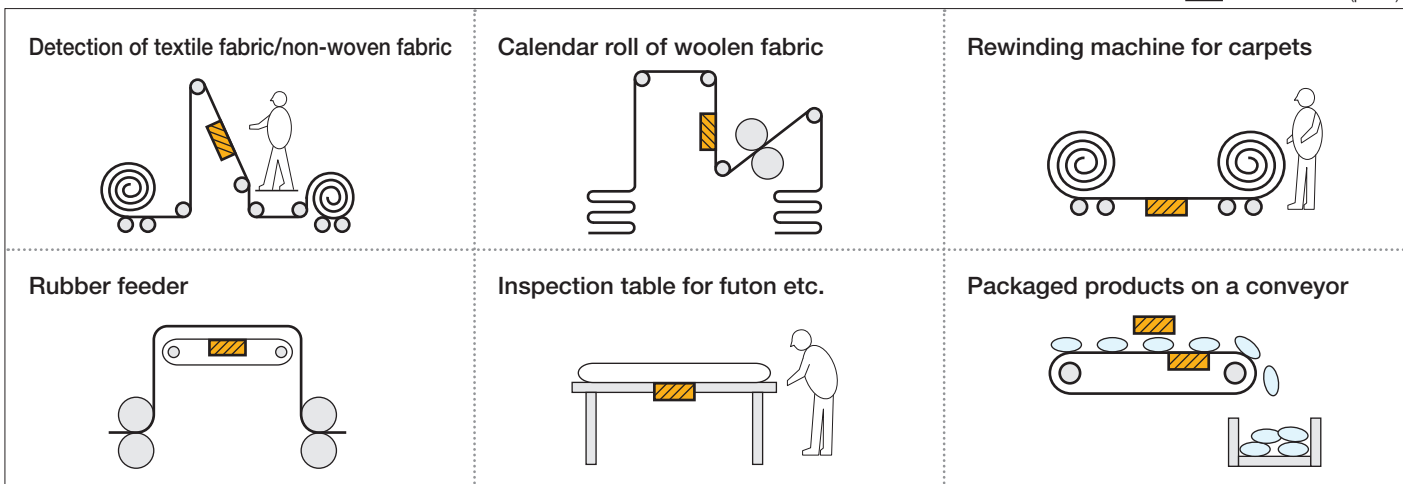
\*Other voltages are available at extra cost. Voltage must be specified before order

## ◆ Probe (Common)



## ◆ Installation Examples

..... Electrode (probe)



## ◆ Related products

### TY-30 Handheld type



Detecting method	Magnetic Induction
Alarm	LED & Electronic buzzer
Detection area	4 × 9cm (WIDE), 3.5 × 3cm (SPOT)
Detecting ability (Max.)	WIDE : about 3-3.5cm SPOT : about 3.5-4cm (against setting pin)
Power source	Dry battery LR6 x 2 Low battery indication
Dimensions & Weight (W) × (H) × (D)	55 × 57 × 245mm, 290g

### SC1-600 Conveyor type



Detecting method	Electromagnetic induction
Alarm	Buzzer, lamp, Belt stop (with backward run function)
Detecting ability	Steel ball $\phi 1.0$ , Stainless $\phi 2.5$
Passing width	600mm
Passing height	230mm (with guide: passing height 220mm)
Belt speed	25m/min(50Hz), 30m/min(60Hz)
Power source	AC100V 50/60Hz about 200W
Dimensions & Weight (W) × (H) × (D)	1800 × 1230 × 975mm, 250kg

## SANKO LINE OF BUSINESS

- Coating thickness meter (DUAL TYPE, Electro-magnetic & Eddy current)
- Pinhole / Holiday detectors (High voltage spark type and dampened type)
- Electric moisture meter (for Wood, Paper, Mortar, Plaster)

- Infrared moisture meters
- Needle and Iron piece detectors



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