



[Metal Detector • Deno A]

General Catalog

METAL DETECTOR
Deno A[®]
Metal Detector



NT series

Magnetized Metal Detector

METAL DETECTOR



Nikka Densok is an inspection equipment manufacturer which seeks to provide safety in your life.

Metal detector

● Conveyor belt metal detector	4
● Vertical drop metal detector	8
● Chute metal detector	8
● Pipe metal detector	9
● Detection method	10
● Description	11
● Magnetized metal detector	14

METAL DETECTOR **DENO A**®

Metal detector | **DenoA**

Our DenoA metal detector has met customers' requirements in every field, having established a long and credible service record.

We design and produce general-purpose conveyor belt metal detectors and also special models for powder or liquid inspection, which are designed specifically for your product and installation environment.

Additionally, you can use our metal detectors in conjunction with magnetic iron removal equipment, several types of rejector, and other optional accessories.



● You can see example specifications of some models on the following pages. Please contact our sales representatives when considering implementation.

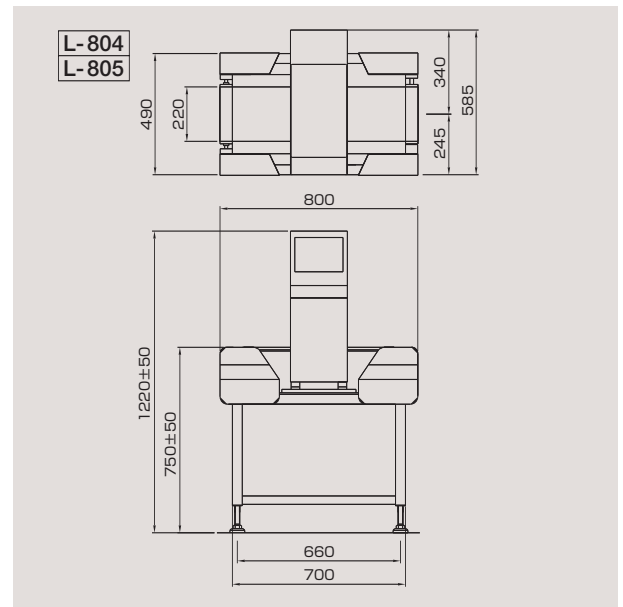
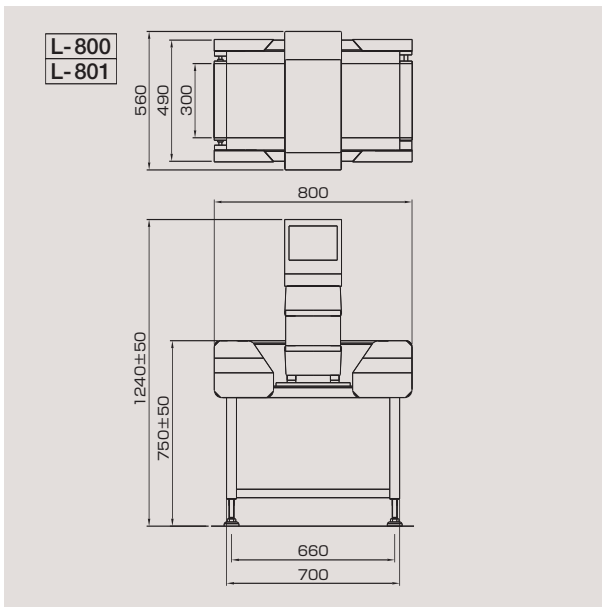
Conveyor Belt Metal Detector

- For small sachet/separate packaging (we also make a model capable of aluminum evaporated film).
- Simplified conveyor belt removal and attachment mechanism and adherence to stainless steel structure (L-805) provides superior cleanliness.

L-800



L-805



Type	L-800	L-801	L-804	L-805
Controller type	MELZ			
Passing height*1	100mm		80mm	
Sensitivity*2	Fe		φ 0.3	
	SUS		φ 0.7	
Rejection method	Conveyor stop and buzzer (through optional configurations).			
Belt width	300mm		220mm	
Detection unit	Opposing-type		Coaxial-type	Coaxial-type (SUS)
Conveyor frame	SS	SUS	SS	SUS
Conveyance speed	20m/min (50Hz) · 24m/min (60Hz)			
Power source*1	AC100V±10% · 50/60Hz			
Conveyor length/height of pass line	800mm/750±50mm			
Weight	80kg		90kg	

Conveyor Belt Metal Detector

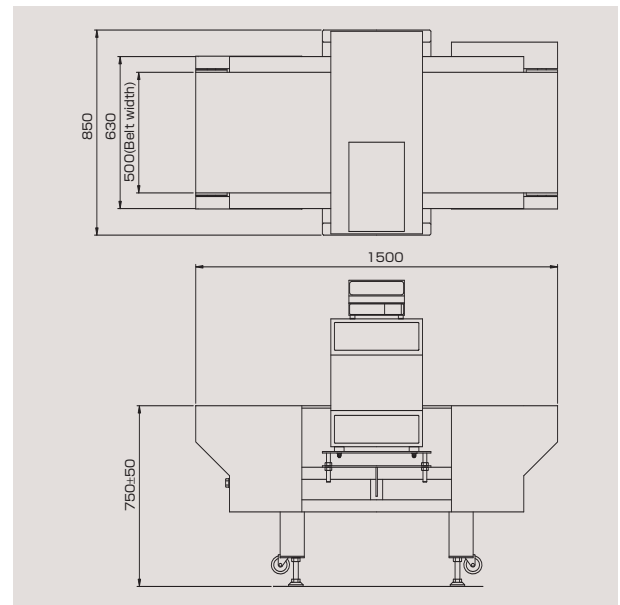
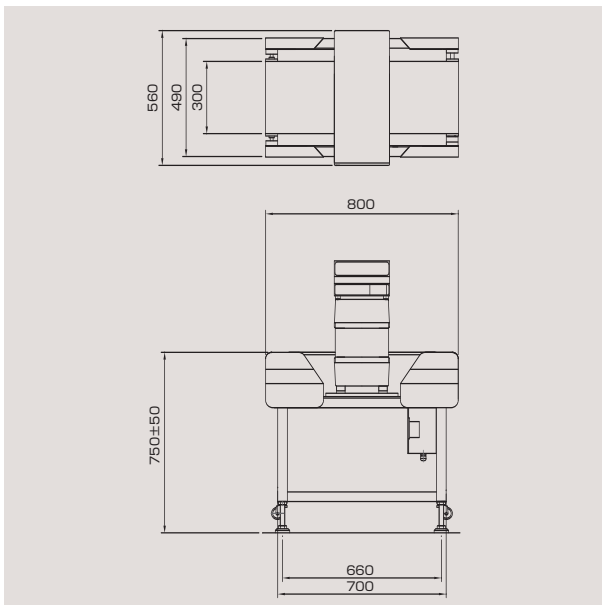
● For small sachet/separate packaging

V-800



● For large sachets/cardboard

V-1500



Type	V-800	V-1500
Controller type	MEVZ	
Passing height *1	100mm	200mm
Sensitivity *2	Fe	φ 0.5
	SUS	φ 1.0
Rejection method	Conveyor stop and buzzer (through optional configurations).	
Belt width	300mm	500mm
Detection unit	Opposing type	
Conveyance speed	20m/min (50Hz) · 24m/min (60Hz)	
Power source *1	AC100V±10% · 50/60Hz 200VA	AC200V±10% · 50/60Hz 1kVA
Conveyor length/height of pass line	800mm/750±50mm	1500mm/750±50mm
Weight	70 kg	240kg

* 1 It can be adjusted (as an optional accessory). * 2 Sensitivity may depend upon inspected product, use environment, etc.

Conveyor Belt Metal Detector

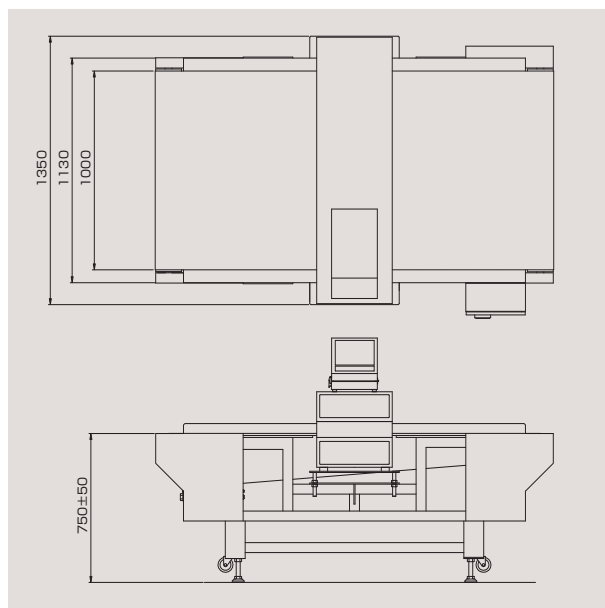
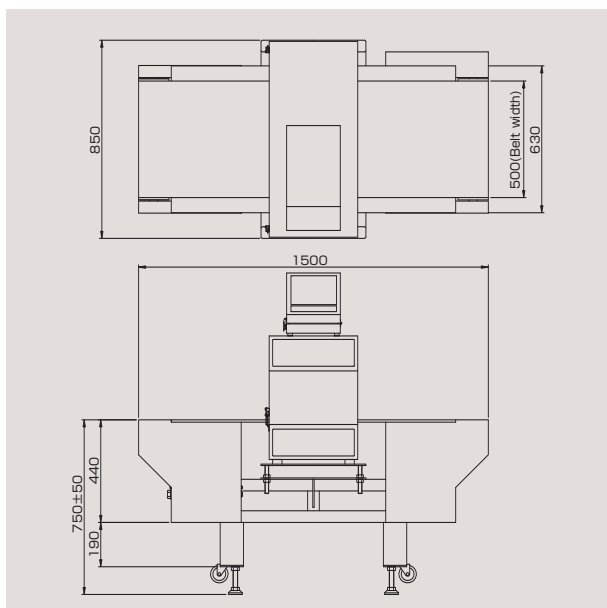
- For large sachets/cardboard

MLK-500B-CS



- For large sachets, rubber sheets, waste material, etc.

MLK-1000B-CS



Type	MLK-500B-CS	MLK-1000B-CS
Controller type	MELZ	
Passing height *1	200mm	100mm
Sensitivity *2	Fe	φ 0.7
	SUS	φ 1.5
Rejection method	Conveyor stop and buzzer (through optional configurations).	
Belt width	500mm	1000mm
Detection unit	Opposing-type	
Conveyance speed	20m/min (50Hz) · 24m/min (60Hz)	
Power source *1	AC200V±10% · 50/60Hz 1kVA	
Conveyor length/height of pass line	1800mm/750±50mm	2000mm/750±50mm
Weight	250kg	300kg

* 1 It can be adjusted (as an optional accessory).

* 2 Sensitivity may depend upon inspected product, use environment, etc.

Conveyor Belt Metal Detector

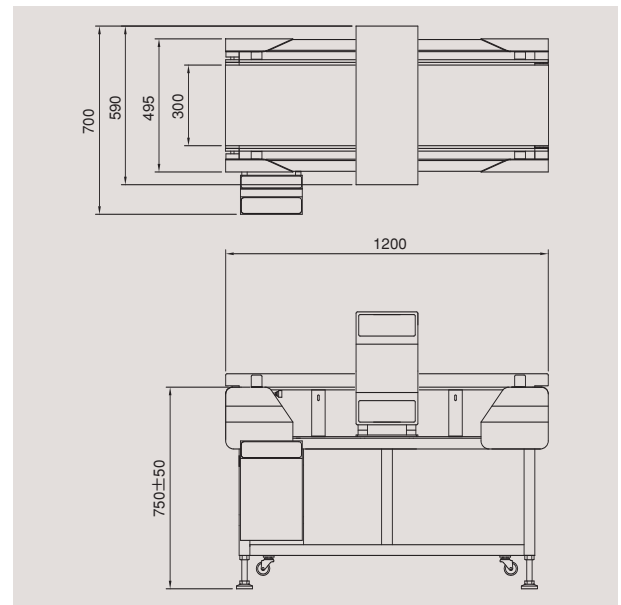
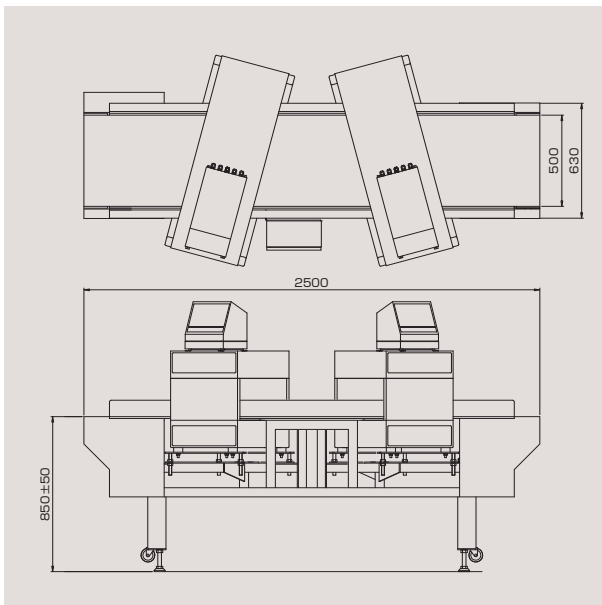
- For stainless injector needles used for raw meat

MLK-750B(W)-CS



- Ferrous detection for products packaged in aluminium foil such as retort food, spices, and snacks.

MTK-300G-CS



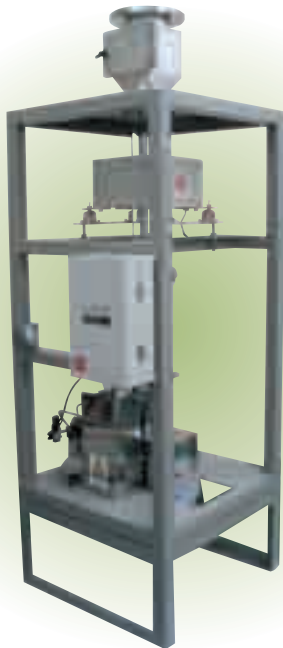
Type	MLK-750B(W)-CS	MTK-300G-CS
Controller type	MELZ	METZ
Passing height *1	100mm	100mm
Sensitivity *2	Fe	φ 1.0
	SUS	—
Rejection method	Conveyor stop and buzzer (through optional configurations).	
Belt width	500mm	300mm
Detection unit	Opposing-type	
Conveyance speed	20m/min (50Hz) · 24m/min (60Hz)	
Power source *1	AC200V±10% · 50/60Hz 400VA	AC100V±10% · 50/60Hz 200VA
Conveyor length/height of pass line	2500mm/750±50mm	1200mm/750±50mm
Weight	400kg	110kg

* 1 It can be adjusted (as an optional accessory). * 2 Sensitivity may depend upon inspected product, use environment, etc.

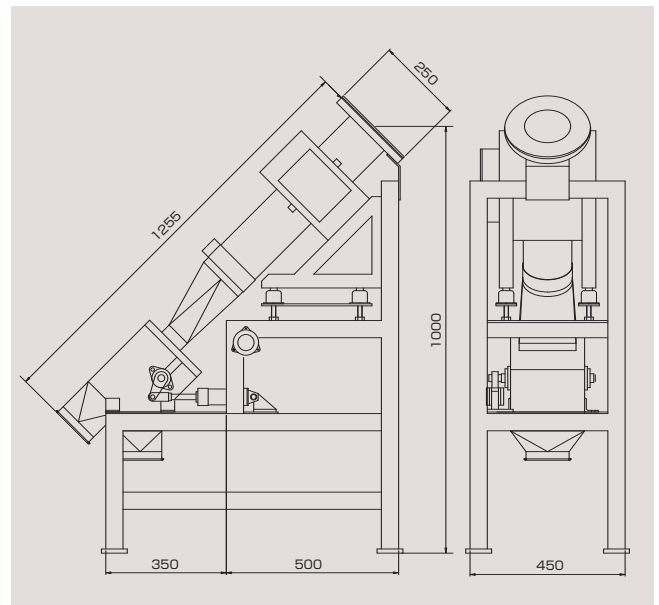
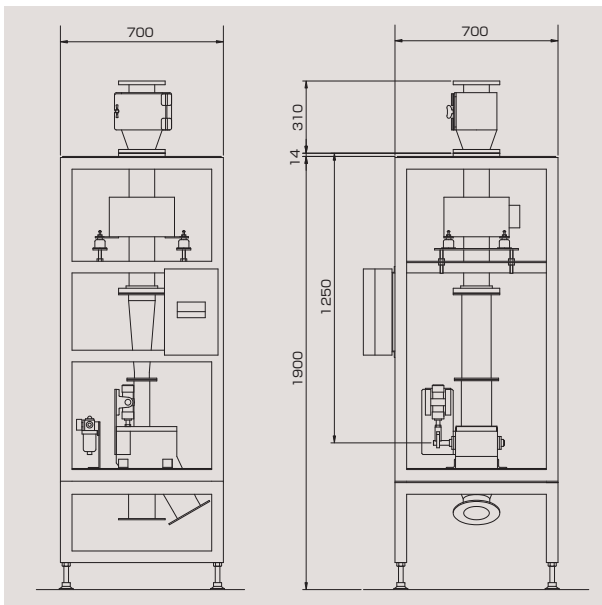
Vertical Drop/Chute Metal Detector

● For powder and grain such as flour, rice and grain pellets

MMVD-100R-RB



MVS-125R-RB



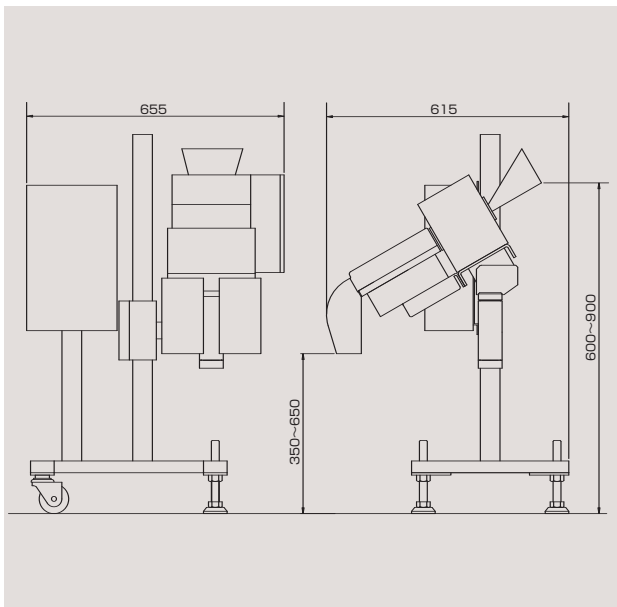
Type	MMVD-100R-RB	MVS-125R-RB
Controller type	MEVZ	
Size of chute	Inside diameter of chute 100 φ	Inside diameter of chute 125 φ
Sensitivity *2	Fe	φ 0.7
	SUS	φ 1.5
Rejection method	Revolving Bucket and Buzzer	
Detection unit	Coaxial-type	
Magnetic iron removal equipment	Clean flow magnet CFM-EK100	—
Conveyance type	Vertical drop	Chute-Sliding
Handling capacity	8 t /H	10 t /H
Power source *1	AC100V±10% · 50/60Hz 200VA	
Air pressure	0.4Mpa	
Weight	75kg+3 kg	110kg

* 1 It can be adjusted (as an optional accessory). * 2 Sensitivity may depend upon inspected product, use environment, etc.

Chute/Pipe Metal Detector

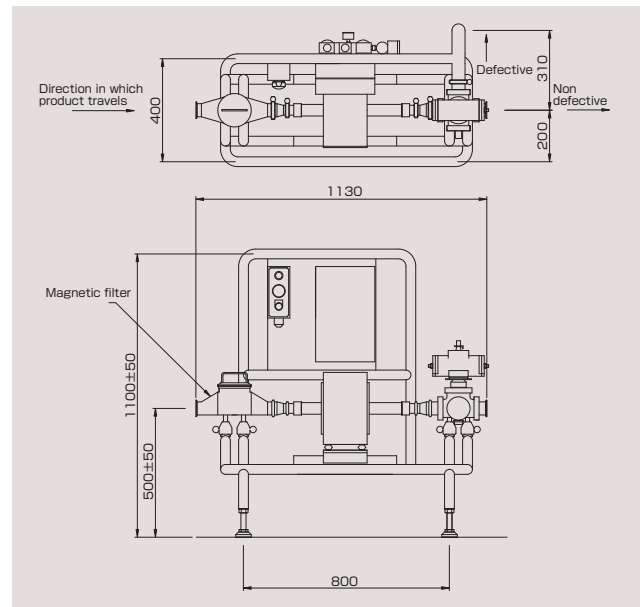
- For tablets

MVS-70T-TF



- For viscous food such as minced meat, soup, jam and liquid

MMVP-100R-BV

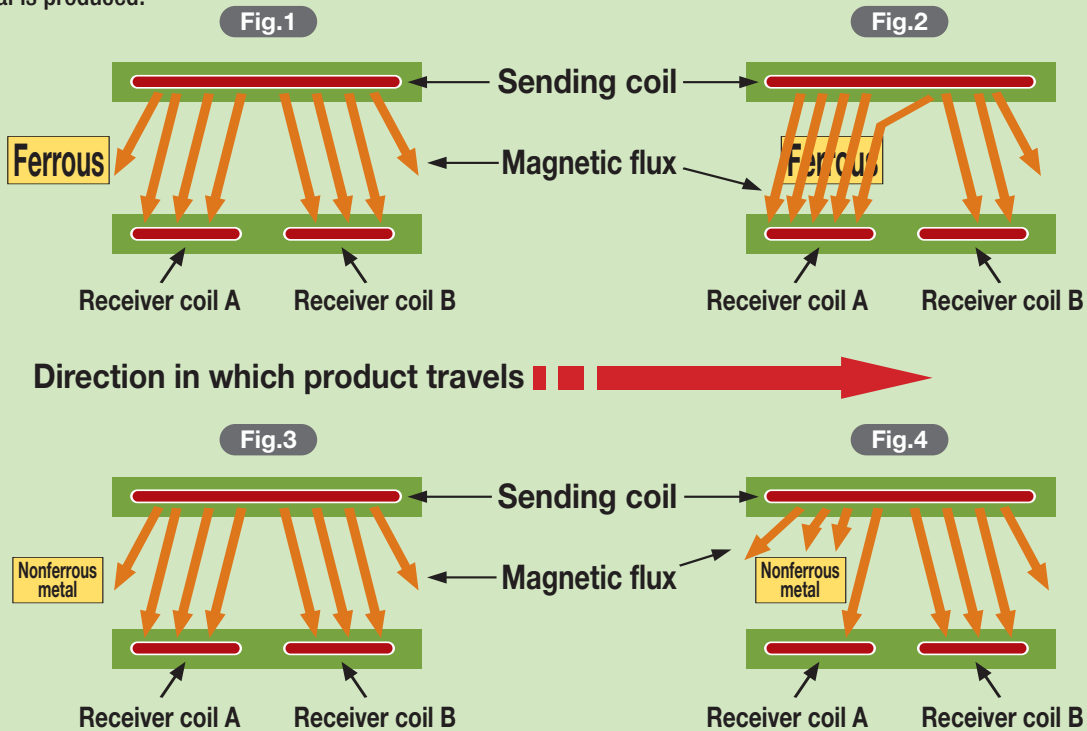


Type	MVS-70T-TF	MMVP-100R-BV
Controller type	MEVZ	
Size of chute or pipe	Inside dimension of chute 70×15	Inside diameter of pipe 100 φ
Sensitivity *2	Fe	φ 0.2
	SUS	φ 0.5
Rejection method	Swinging out and buzzer	Three-way ball valve and buzzer
Detection unit	Coaxial-type	
Magnetic iron removal equipment	—	Magnetic filter MFV-BN20HS
Conveyance type	Chute-Sliding	Pipe
Power source *1	AC100V±10%·50/60Hz 200VA	
Air pressure	0.4Mpa	
Weight	50kg	60kg

* 1 It can be adjusted (as an optional accessory). * 2 Sensitivity may depend upon inspected product, use environment, etc.

Detection Method

- When no metal is passing through (Fig.1 and Fig.3), there is no voltage difference between receiver coil A and receiver coil B ($A - B = 0$). This produces no detection signal.
- When metal (ferrous) is passing through (Fig.2), the magnetic flux density around the iron increases. As a result, increased voltage in receiver coil A causes a voltage difference between A and B, then a detection signal is produced.
- When metal (nonferrous metal) is passing through (Fig.4), magnetic flux entering the nonferrous metal is reduced due to overcurrent. As a result, the reduced voltage in receiver coil A causes a voltage difference between A and B, then a detection signal is produced.



Distribution of Detection Sensitivity

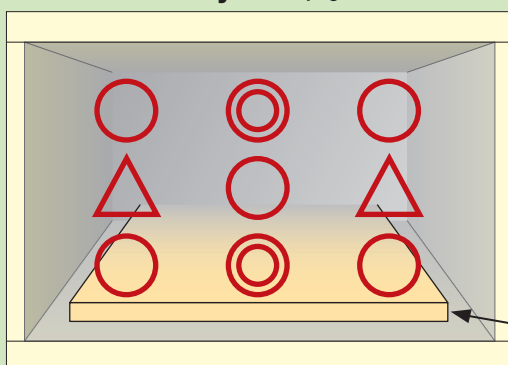
Detection sensitivity depends upon where metal is passing through.

Easy to detect $\odot > \circ > \triangle$ Difficult to detect

The following shows a detection unit from an anterior view.

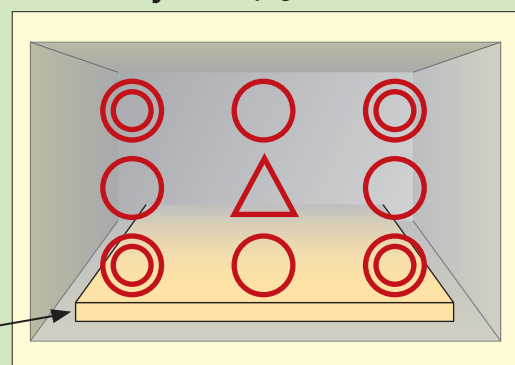
[Opposing type detection unit]

B.BY.F·G style (see page 12 for details)



[Coaxial-type detection unit]

T.R style (see page 13 for details)



For example, 1.0 ϕ of metal can be detected on a \odot point and cannot be detected on a \triangle point. At least 1.2 ϕ of metal can be detected on a \triangle point.

Description

When you order models other than the standard model L series (L-800/801/804/805) or the V series (V-800/V-1500), the apparatus is configured to your specifications.

Select the items you require from the lists contained on the following pages. White characters on a black background represent the model symbol.

Ex) **M L K - 3 0 0 B - C S**

M	Metal detector
MM	Magnetic iron removal equipment and metal detector

Effective detection width (mm)

Rejecting method (see page 13 for details)
CS/AJ/AD/AF/LC...

Type of detection unit (see pages 12 and 13 for details)	
B/BY/F·G	Opposing-type
T/R	Coaxial-type

Controller type

L MELZ

- Integrated computer
- Can be used with 100 different models
- Automatic registration (automatically set)
- Manually adjustable
- Waterproof



V MEVZ

- Manual adjustment of detection range
- Circuit configures detection range for both iron and stainless-steel
- Automatic balance
- Phase angle configuration



T METZ

- Ferrous detection purpose
- Improved operability
- Locking key to prevent operational error



Conveyance type

K Conveyor

You can inspect products conveyed on a conveyor whether they are packaged or not. It is incredibly versatile.

D Vertical drop

You inspect products by vertically dropping them through a pipe. It is suitable for inspecting powder and grain before filling.

S Chute-Sliding

You inspect products by sliding through an inclined chute. It is suitable for inspecting powder and grain before filling.

P Pipe

You inspect liquid in a conveyance pipe. You can also inspect viscous food such as minced meat and jam.

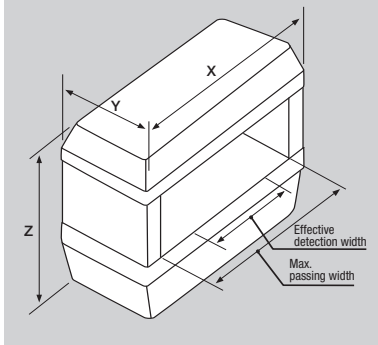
■ Single-unit component numbers

Ex) When composed of a controller (MELZ), a detection unit (T-300), and optional accessories (buzzer, chute, etc.):

ML3-300T

Type of Detection Unit (Opposing-type)

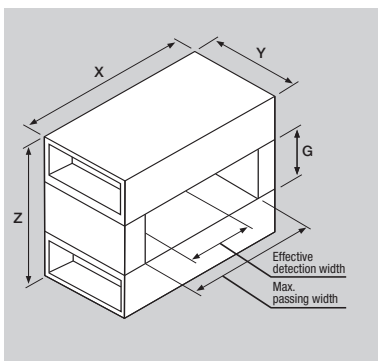
B B type



250W · 300W type

- The maximum height of passing product can be adjusted.
- It can be disassembled into 4 pieces.
- Suitable for high-frequency applications.
- ※ Waterproofing is available as an option.

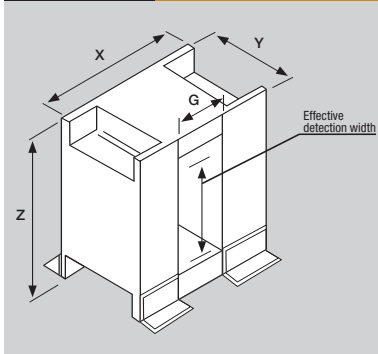
	Effective detection width	Passing width	Outer dimension (mm)		
			X	Y	Z
B-250	250	366	460	235	240+G
B-300	300	466	560	235	240+G
B-400	400	640	740	380	300+G
B-500	500	740	840	380	300+G
B-600	600	840	940	380	300+G
B-750	750	990	1090	380	300+G
B-1000	1000	1240	1340	380	300+G
B-1200	1200	1440	1540	380	300+G



400W over type

- The maximum height of passing product can be adjusted.
- It can be disassembled into 4 pieces.
- Suitable for high-frequency applications.
- ※ Waterproofing is available as an option.

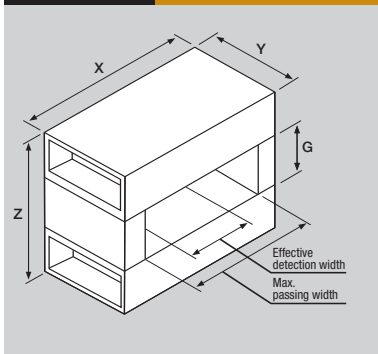
BY BY type



- Vertical A type/B type configuration.
- Can be used with vertically large products.
- It can be disassembled into 4 pieces.
- Suitable for high-frequency applications.
- ※ Waterproofing is available as an option.

	Effective detection width	Outer dimension (mm)		
		X	Y	Z
B-250Y	250	240+G	230	490
B-300Y	300	240+G	230	590
B-400Y	400	300+G	380	740
B-500Y	500	300+G	380	840
B-600Y	600	300+G	380	940
B-750Y	750	300+G	380	1090

F·G F·G type

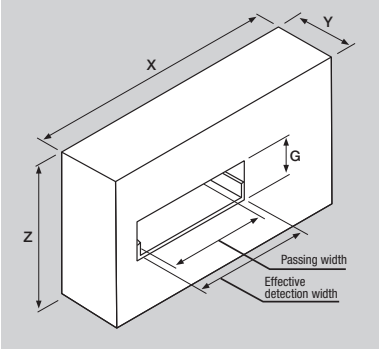


- Ferrous detection purpose for aluminum foil bags etc.
- The maximum height of passing product can be adjusted.
- It can be disassembled into 4 pieces.

	Effective detection width	Passing width	Outer dimension (mm)		
			X	Y	Z
F·G-250	250	390	490	230	240+G
F·G-300	300	490	590	230	240+G
F·G-400	400	640	740	380	300+G
F·G-500	500	740	840	380	300+G

Type of Detection Unit (Coaxial-type)

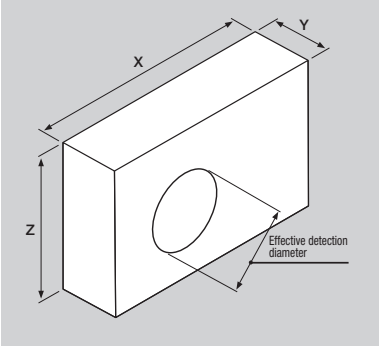
T T type



- Suitable for high-frequency applications.
- Maximum height of passing product cannot be adjusted.
- Can be used with wet products.
- Can be used with thin products.
- Can be used with horizontally large products.
- High structural integrity resists vibration.
- ※ Waterproofing is available as an option.
- ※ Over 1200mm width models are available upon request.

	Effective detection width	Passing width	Outer dimension (mm)			
			X	Y	Z	G
T-70	100	70	302	120	200	~30
T-250	310	250	563	230	140+G	~140
			593	250	200+G	150~200
T-300	360	300	613	230	140+G	~140
			643	250	200+G	150~200
T-400	460	400	713	230	140+G	~140
			743	300	200+G	150~200
T-500	560	500	813	230	140+G	~140
			843	300	200+G	150~200
T-600	660	600	913	230	140+G	~140
			943	300	200+G	150~200
T-750	810	750	1063	230	140+G	~140
			1093	300	200+G	150~200
T-1000	1120	1000	1373	230	140+G	~140
			1403	300	200+G	150~200

R R type

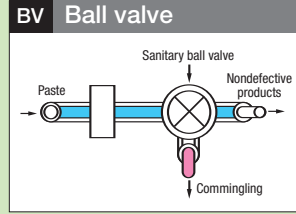
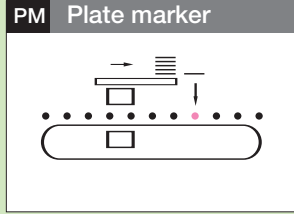
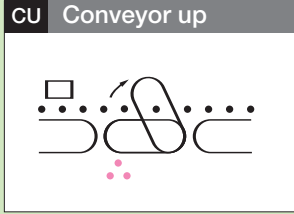
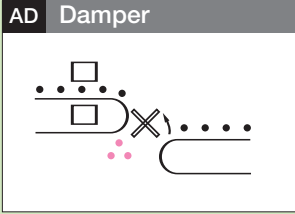
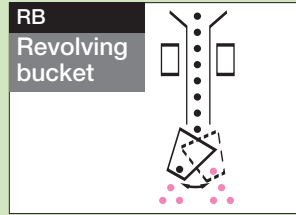
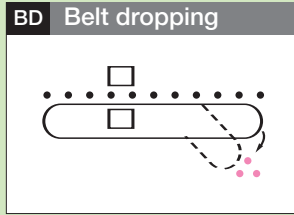
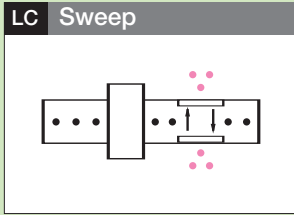
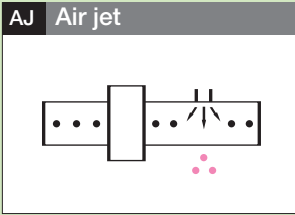
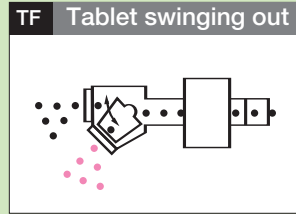
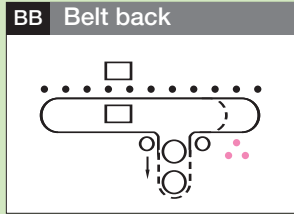
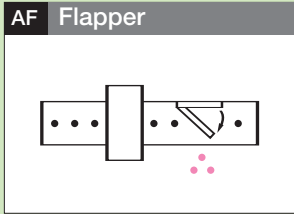
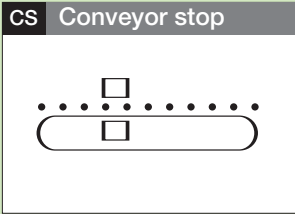


- Suitable for high-frequency applications.
- Can be installed in a small space on the pipe line.
- You can use it for any substance including powder, liquid, paste, and kneaded food.
- High structural integrity resists vibration.
- ※ Waterproofing is available as an option.

	Effective detection width	Passing width	Outer dimension (mm)		
			X	Y	Z
R-50	70	50	333	120	210
R-100	125	100	403	120	280
R-125	150	125	403	120	280
R-150	175	150	483	200	360
R-200	225	200	483	200	360
R-250	280	250	603	200	480
R-300	330	300	603	200	480

If you require a detection unit not listed above, feel free to consult with our sales representatives.

Description of rejecter



Magnetized Metal Detector

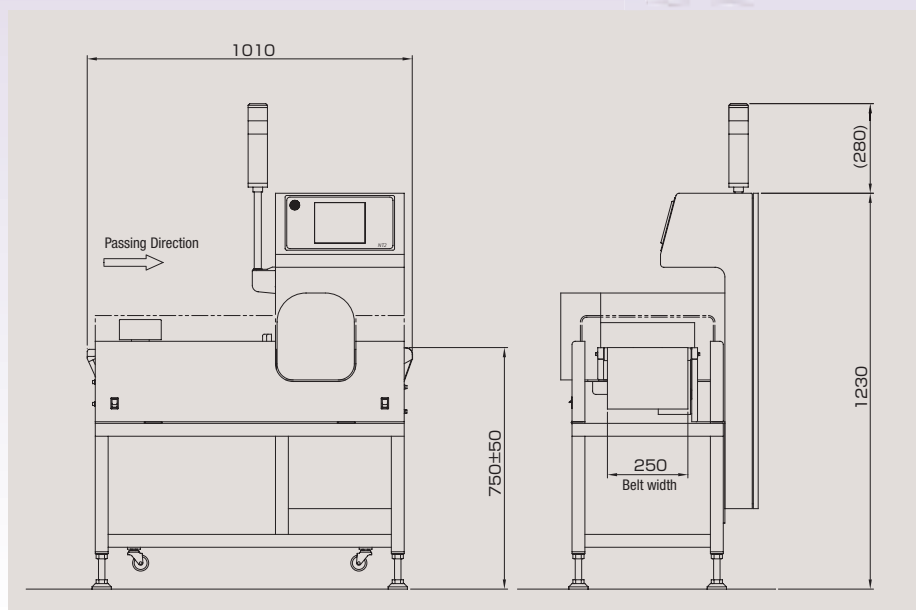
NT series

Magnetized Metal Detector, NT series, is super high sensitivity detecting device that can detect smallness magnetic metal*1, especially for stainless-steel wire cannot be detected by conventional metal detector.

Package material (aluminum foil and tray) and product character (temperature, salt or moisture content) do not affect the sensitivity because of the special magnetic sensor to catch only a small magnetic field radiated from magnetic metals.



*1. Iron and magnetizable stainless-steel subjected to stress by cutting or bending.



Model		NT2-J6B	NT2-K4B	NT2-L2B
Belt width		150mm	250mm	350mm
Sensitivity ※2	effective high: 40mm	Fe 0.8mm dia / SUS wire 0.2mm dia X 2mm		
	effective high: 60mm	Fe 1.2mm dia / SUS wire 0.2mm dia X 2mm		
Conveyance speed		from 10 to 60m per min. (adjustable)		
Conveyor length / Pass line height		1,010mm/750mm±50mm		1,310mm/750mm±50mm
Power source		AC100V±10% 50/60Hz or required		

※2. Sensitivity for all detection area.

SUPER HIGH SENSITIVITY

The sensitivity written on this catalog is the actual sensitivity in use, because NT series can detect only magnetic field radiated from magnetized metal.

MORE EFFECTIVE

SUS wire 0.2 x 2.0mm can be detected with little directionality compare with conventional metal detector or X-ray inspector. Ferrous wire can be detected smaller size than SUS wire.

SMALLEST RUNNING COST

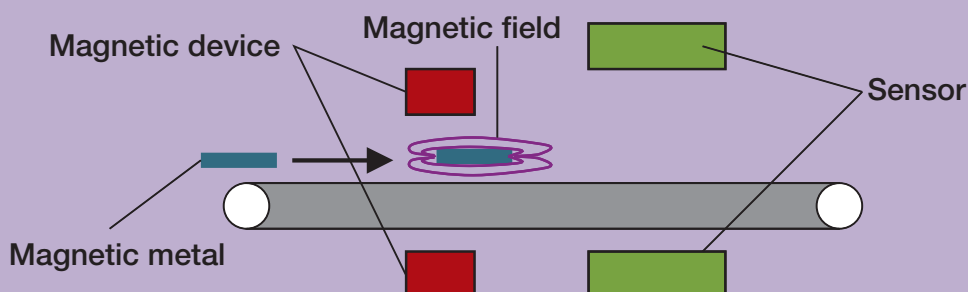
The running cost is the same level as conventional metal detector. X-ray inspector can see through aluminum package, too, but it 's so expensive such as changing X-ray tube and line sensor.

EASY OPERATION

It's not necessary for initial setting and sensitivity adjustment per product, so there is no human error for daily operation.

Detection Principle

Sensitivity on the surface of belt	Fe ϕ 0.3mm	SUS wire ϕ 0.2 x 2mm*
All area in 40mm height	Fe ϕ 0.8mm	SUS wire ϕ 0.2 x 2mm*
All area in 60mm height	Fe ϕ 1.2mm	SUS wire ϕ 0.2 x 2mm*



A contaminating magnetic metal is magnetized in the magnetic device and the special magnetic sensor detect a magnetic field around the magnetized metal. Passing through the magnetic device, stainless-steel can be magnetized because it is predisposed to magnetize when it is subjected to pressure of cutting or bending during processing or damaging. At this time, magnetized metal can be detected with no effect from the package however it is aluminum materials, because aluminum is nonmagnetic metal.

* The sensitivity of stainless-steel may depend upon the condition of magnetizing subjected to stress by cutting or bending.

Main products handled by Nikka Densok

- Metal detector
- X-ray Inspection System
- Magnetic iron removal equipment
- Checkweigher
- Pinhole inspector
- Security-related equipment
- Other various measuring machine, automatic rejector



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