



# Food and Grain Industry Contamination Detection and Completeness Inspection Solution

Foreign Defects Detection  
Package Completeness Inspection  
Overall Management of Production Quality

- X Ray Inspection Solution
- Metal Detection
- Check Weigher



Innovation



High Efficiency



Cost Save



Good Service





# About DVdetect



**Suzhou Dream Vision Co, Ltd. is a high-tech enterprise specializing in the R&D, production of detecting equipments for agricultural products, food and other related products. Conducting the philosophy of developed and manufactured in China with world quality, DVdetect strictly adhere to high indicators and quality to help customers create more value, by providing international advanced intelligent detection technology and system solutions.**

- National New Technology Enterprise.
- Focus on high-resolution intelligent identification and detection technology.
- Transformation of advanced technological achievements of china Institute of Atomic Energy.
- The Dvdetect core team has nearly 20 years of experience in the field of X-ray inspection.
- The company owns dozens of intellectual property rights.



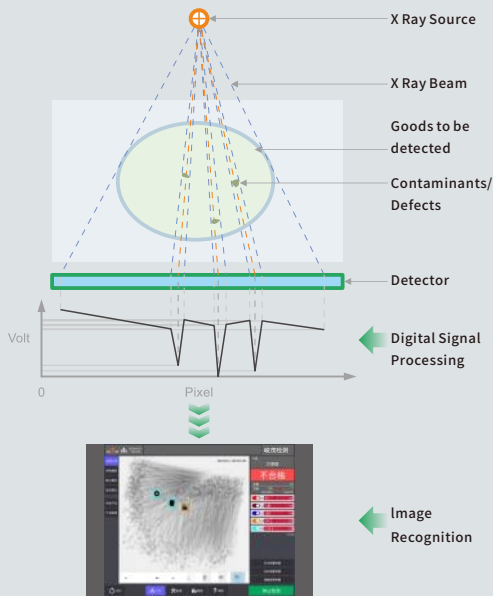
# X-Ray Inspection Technology



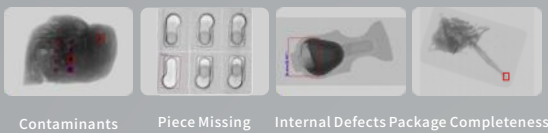
X-Ray systems are widely used in food and grain industries to ensure product safety and quality. Using X-Ray systems, food contaminants, shape and composition of goods, packaging completeness, etc. will be detected and rejected, whether the goods are packaged, in bulk state, in bottles or in cans. Food contaminants such as metal, glass, stone, bone, hard plastic, resin, shell, etc. can be detected, which are not affected by temperature, humidity, salt, or aluminum foil packaging.



## Principle of X Ray System



Detection of packaging, bulk goods, bottles, cans and other forms of food or pharmaceuticals



Multi contaminants can be detected

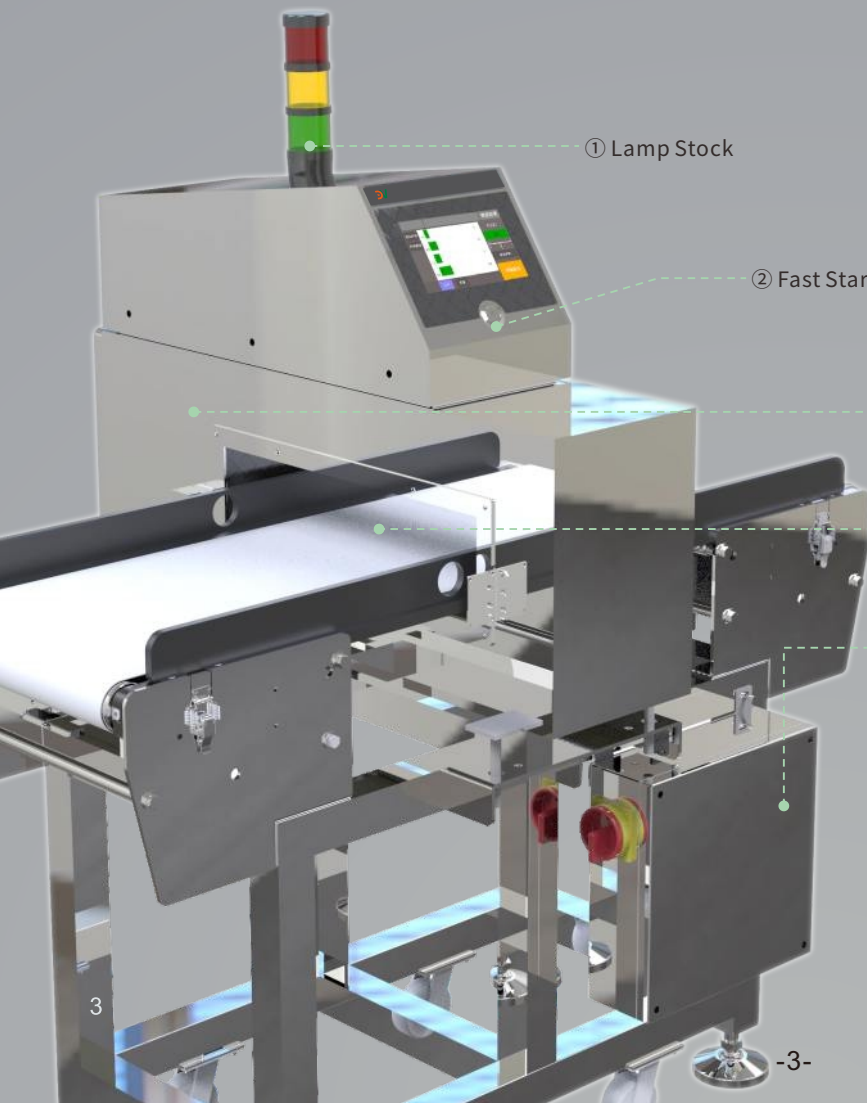
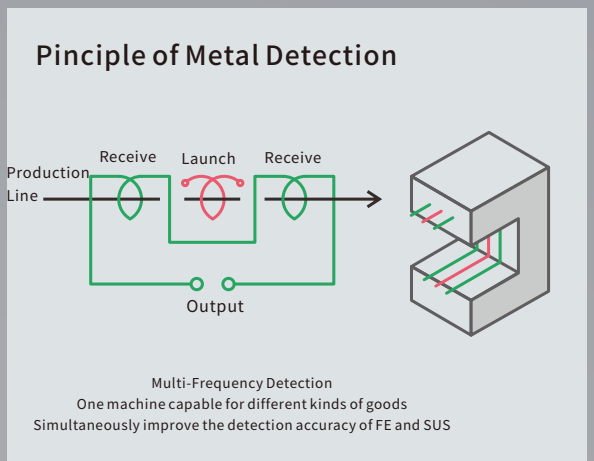


- ① Highly visible lamp stack
- ② 4G Antenna for remote support
- ③ Three X Ray condition indicator light
- ④ Lock Key
- ⑤ Radiation shield curtains
- ⑥ Conveyor
- ⑦ Safety Interlock Design



# Metal Detection

The DVdetect multi-frequency metal detection systems based on electromagnetic induction principle, are to detect metal contaminations in food and pharmaceutical. The system adopts the dynamic phase adjustment technology, which can effectively inhibit the product effect. It can not only detect conventional dry or semi-dry products, but also effectively detect various products that are difficult to detect and rich in salt, such as seafood products, salted products, frozen products and so on, with high sensitivity and great reliability.



① Lamp Stock

② Fast Start / Stop Button

③ Multi-Frequency to Detect Five Different Types of Goods

④ Conveyor

④ Water-proof Separate Electrical Box

### High Sensitivity for FE, NFE and SUS



FE



SUS



Copper



Aluminium

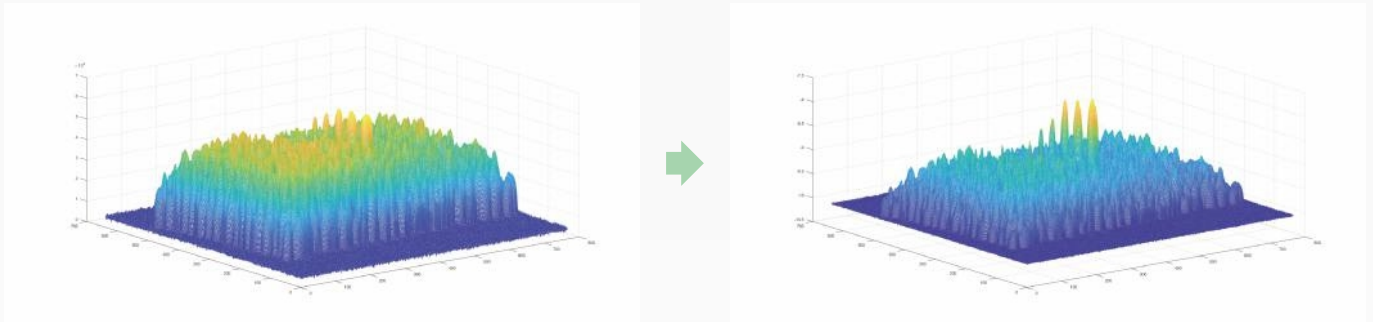


Other Metals



Dv detect has developed a highly sophisticated detection algorithm platform, to meet the HIGH-RESOLUTION detection requirements of the food and Grain industry.

The system is based on neural network. Using dynamic features recognition method. it adopts the best algorithm parameters automatically to detect really small contaminants in goods .



### Safety

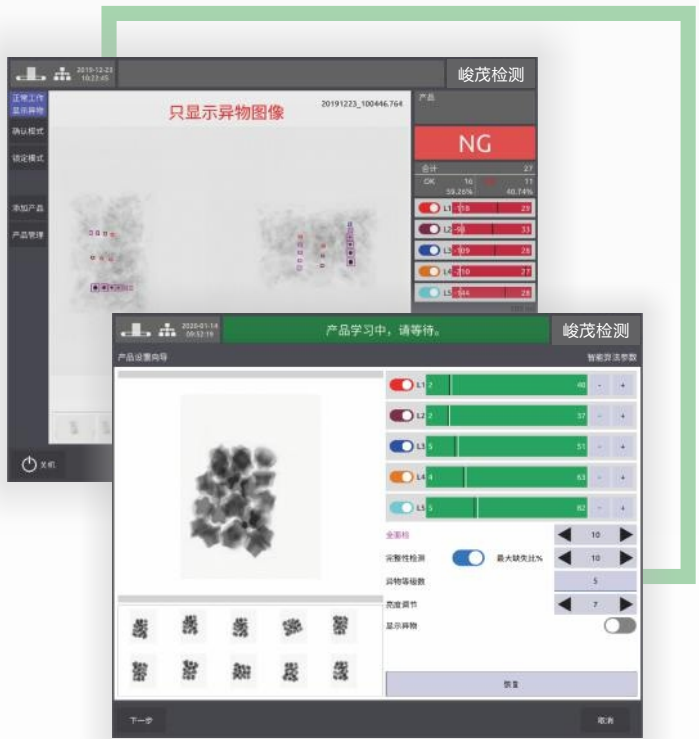
- Transformation of technical achievements of China Atomic Energy Institute.
- Three-dimensional simulation verification of X-ray space radiation leakage.
- Integrated multiple optical motor mechanical safety interlock.

### Intelligent

- Based on AI neural network model
- Highly sophisticated algorithm platform
- Fully automatic learning process, user-friendly
- Preset standard AI algorithm, complete training in 15 seconds.
- Customized AI algorithm can be selected to improve detection accuracy.
- Wireless networking function, support remote technical support.

### Stability

- Server - level Linux system, natural virus immunity
- High reliable design of industrial grade component machine ensures long-term stable operation
- Fully enclosed design for food and drug environments
- Double layer thermal cycle and anti-condensation module



# For Packaged Goods



Dvdetect X-ray standard foreign body detection system includes a variety of models, which can achieve accurate and reliable foreign body detection for packaging products with different specifications, such as, medium and so on. The system is in products, medicines and chemicals.

It has been applied in many different fields, and the detection result will not be affected by temperature, humidity, salt or aluminum foil packaging, and can effectively detect packaging products. Metal, glass, ceramics, hard rubber, resin, head, shell, and other foreign bodies, to help enterprises effectively improve the stability of production quality.

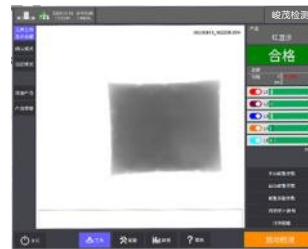


**标准型号**

- DV-C2412-SE
- DV-C4016-SE
- DV-C5025-SE
- DV-C6030-SE
- DV-C7040-SE

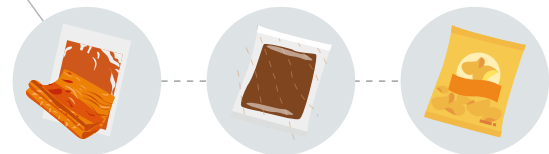
## Advantages

- Based on the advanced algorithm platform, the precision detection can be realized.
- The standard AI algorithm is simple and intelligent, requiring any experience, and can quickly add new products according to the guided learning.
- Customized AI algorithms are suitable for special products, and standard algorithms and customized algorithms can be tested together.
- Step up the detection accuracy;
- According to the product form, a variety of elimination methods can be selected to accurately eliminate unqualified products.
- 4G cable connection, remote fast technology, dynamic push equipment failure;
- Server-level Linux system, computer virus immunity, abnormal power failure without data loss;
- The conveying system and the main machine can be separated, and can be directly washed and cleaned;
- It is superior to the international radiation safety standards and specifications, and has the function of safety interlock monitoring.



## Application

- Snacks
- Meat
- Dairy Food
- Baked and Steamed Food
- Frozen Food
- Sauces and condiments



## Contaminants

Metals, Glass, Ceramic, Hard Plastic, Resin, Bones, Shells, etc.

## Specification

型号	DV-C2412-SE	DV-C4016-SE	DV-C5025-SE	DV-C6030-SE	DV-C7040-SE
X Ray Source	150W	210W	210W/350W	350W	350W/480W
Detection Sensitivity	SUS Ball :0.3mm SUS Wire :0.2*2mm Ceramic/Glass Ball :1.0mm	SUS Ball :0.3mm SUS Wire :0.2*2mm Ceramic/Glass Ball :1.0mm	SUS Ball :0.3mm SUS Wire :0.2*2mm Ceramic/Glass Ball :1.0mm	SUS Ball :0.3mm SUS Wire :0.2*2mm Ceramic/Glass Ball :1.0mm	SUS Ball :0.5mm SUS Wire :0.4*2mm Ceramic/Glass Ball :1.5mm
Operating System	Linux System				
Interface	17 inch Touch Screen				
Conveyor Speed	5~60 m/min				
Products Weight	Max 5kg	Max 10kg	Max 20kg	Max 30kg	Max 40kg
Aperture Dimension	MaxWidth 240mm Max Height 120mm	MaxWidth 400mm Max Height 160mm	MaxWidth 500mm Max Height 250mm	MaxWidth 600mm Max Height 300mm	MaxWidth 700mm Max Height 400mm
Power	AC220V,50-60Hz				
Temperature/Humidity	Environment temperature 0~45°C, Humidity 30~85% no condensation				
IP Grade	Conveyor IP66, Other parts IP40				
Machine Material	Mirror/Brushed 304 stainless steel/Sandblasted				

Remarks: The most detectable foreign body ruler is closely related to the material composition, packaging material, thickness and other parameters in the product. In the actual production environment, please refer to the actual product test results. The international standard tests that the ceramic glass is 1.0mm at most, and the actual accuracy of empty glass ceramics will be better than this standard.



# For Thin Packaged Goods | 100W X Ray Source



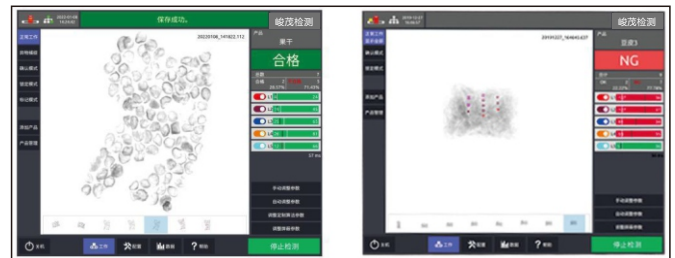
The low-power model of DVdetect X-ray standard foreign body detection system is mainly designed for packaging products with small and thin specifications to achieve high-precision and high-reliability foreign body detection. The systems are widely applied in various fields such as food, medicine and chemical industry. It is not affected by temperature, humidity, salt or aluminum foil packaging, and can effectively detect metal, glass, ceramic, hard rubber, resin, bone, shell, stone and other foreign bodies in packaging products, helping manufacturers to effectively improve the stability of production quality.



**标准型号**  
**DV-C3915-SC**

## Advantages

- Based on the advanced XDET vision algorithm platform of Dream vision, excellent high-precision detection can be achieved.
- Standard AI algorithm is simple and intelligent, without any experience, according to the wizard automatic learning can quickly add new products; Customized AI algorithm is suitable for special products.
- Standard algorithm and customized algorithm can detect in parallel to further improve the detection accuracy.
- Using lightweight culler, small size, wide applicability; 4G network wireless connection, remote and fast technical support, automatic push device failure.
- Server-level Linux system, computer virus immunity, abnormal power failure without data loss.
- The conveying system and main machine can be split, can be washed directly, clean and sanitary.
- It is superior to the internationally accepted radiation safety standard and has the safety interlock monitoring function.



## Contaminants

Metals, Glass, Ceramic, Hard Plastic, Resin, Bones, Shells, etc.

## Application

For small and thin packaged goods.

- Snacks
- Sauce and condiments



## Specification

Model	DV-C3915-SC
X Ray Source	100W
Detection Sensitivity	SUS Ball:0.5mm, SuS Wire:0.4*2mm, Ceramic/Glass Ball:1.0mm
Operation System	Linux System
Interface	17inch touch screen
Conveyor Speed	5~60 m/min
Products Weight	Max 5kg
Aperture Dimension	Max Width 390mm, Max Height 150mm
Power	AC220V, 50-60Hz
Temperature/Humidity	Environment temperature 0~45°C, Humidity 30~85% no condensation
IP Grade	Conveyor IP66, Other parts IP40
Machine Material	Mirror/Brushed 304 stainless steel/Sandblasted

Remarks: The most detectable foreign body ruler is closely related to the material composition, packaging material, thickness and other parameters in the product. In the actual production environment, please refer to the actual product test results. The international standard tests that the ceramic glass is 1.0mm at most, and the actual accuracy of empty glass ceramics will be better than this standard.



# For Bulk Goods



Comprehensive detection of foreign bodies and defects before packaging of bulk materials can effectively detect a variety of foreign bodies such as metal, glass, ceramic, hard rubber, resin, bone, shell, stone, as well as product defects such as wormholes and debris, helping manufacturers to effectively improve the stability of production quality.



**标准型号**  
**DV-B4016-SE**  
**DV-B4016-SS**  
**DV-B6016-SS**

## Advantages

- Based on the advanced algorithm platform of Dvdetect, excellent high-precision detection can be achieved.
- Standard AI algorithm is simple and intelligent, with the automatic learning operators can add new products fast.
- Customized AI algorithm is suitable for special products. Standard algorithm and customized algorithm can detect together to further improve the detection accuracy.
- The main engine is integrated with 48-96 way array injection valve, which can accurately eliminate and reduce the good products out.
- 4G network wireless connection, remote and fast technical support.
- Server-level Linux system, computer virus immunity, abnormal power failure without data loss.
- The conveying system and main machine can be split, can be washed directly, clean and sanitary.
- It is superior to the internationally accepted radiation safety standard and has the safety interlock monitoring function.

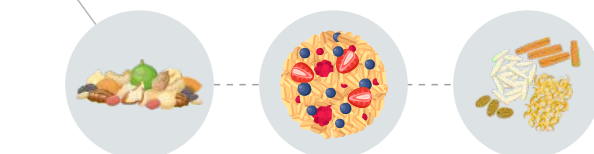


## Contaminants

Metals, Glass, Ceramic, Hard Plastic, Resin, Bones, Shells, etc.

## Application

- Nuts
- Tea leaves
- Fruit and veges
- Herbs
- Multi-grain beans
- Tobacco leaves
- Spices



## Specification

Model	DV-B4016-SE	DV-B4016-SS	DV-B6016-SS
X Ray Source	210W/350W		
Detection Sensitivity	SUS Ball:0.3mm,SUS Wire :0.2*2mm,Ceramic/Glass Ball:1.0mm		
Operation System	Linux System		
Interface	17 inch touch screen		
Conveyor Speed	5~110 m/min		
Products Weight	Max 10kg		
Aperture Dimension	Max Width 600mm, Max Height 160mm	MaxWidth 400mm,Max Height 160mm	Max Width 600mm,MaxHeight 160mm
Power	AC220V,50-60Hz		
Temperature/Humidit	Environment temperature 0~45°C, Humidity30~85% no condensation		
IP Grade	ConveyorIP66,Other partsIP40		
Machine Material	Mirror/Brushed 304stainless steel/Sandblasted		

Remarks: The most detectable foreign body ruler is closely related to the material composition, packaging material, thickness and other parameters in the product. In the actual production environment, please refer to the actual product test results. The international standard tests that the ceramic glass is 1.0mm at most, and the actual accuracy of empty glass ceramics will be better than this standard.

# Inside Defect



Automatic product processing line has a certain proportion of defective products, such products into the consumer market, will lead to customer complaints and affect the brand value. The XDET algorithm platform of Vixdetect includes two parts: standard algorithm and customized algorithm, which not only meets the requirement of foreign body detection function, but also can detect multiple product defects with additional targeted measures. The supported product defect types are as follows:

- Cheese Stick: stick missing, broken stick, cheese meat shortage, extrusion deformation and empty shell
- Nut detection: Detect wormholes and wizens in coffee beans, macadamia nuts, Pattan nuts, etc
- Tablet or needle crack detection: detection of cracks inside the tablet, needle cracks
- Detection of sand and tiny bones: detection of low-density foreign body sand in food such as pumpkin and plum, detection of tiny bones in pork processing products
- Parts defect: Can detect the missing parts and deformation inside the product packaging
- Other customized detection: Customized defect detection schemes based on customers' actual requirements

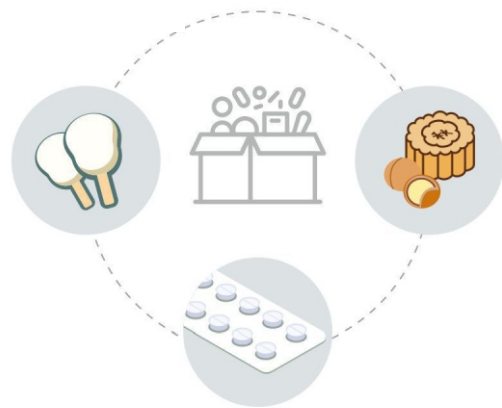


DV-B4016-UXX

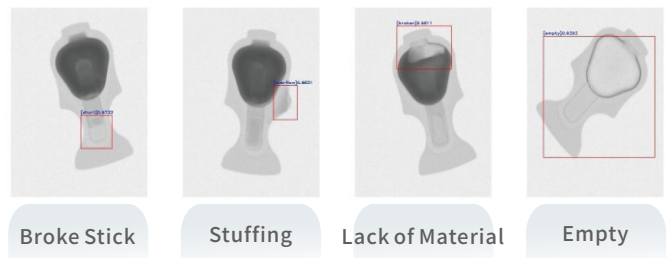
## Advantages

- Online detection, the dual-energy detection algorithm developed for chicken breast can effectively distinguish between chicken and bone ingredient.
- Multi-purpose with one machine, foreign body detection and internal defect detection are carried out simultaneously.
- High detection accuracy, based on Vixdetect patent algorithm platform, to achieve accurate positioning and identification.
- The main machine can be equipped with 48-96 array injection valve, which can accurately eliminate and reduce the good products out.
- 4G network wireless connection, remote and fast technical support.
- Simple and intelligent, the system is easy to maintain and debug.
- Server-level Linux system, computer virus immunity, no data loss after abnormal power outage.
- The conveying system and main machine can be detachable, and can be washed directly, clean and hygienic.
- Better than the internationally accepted radiation safety standards and specifications, with safety interlock monitoring function.

## Application



## Specification



<b>Model</b>	<b>DV-B4016-UXX</b>
X Ray Source	210W/350W
Detection Sensitivity	SUS Ball:0.3mm,SUS Wire:0.2*2mm,Ceramic/Glass Ball:1.0mm
Operation System	Linux System
Interface	17inch touch screen
Conveyor Speed	5~60 m/min
Products Weight	Max 10kg
Aperture Dimension	MaxWidth 400mm, Max Height 100mm
Power	AC220V,50-60Hz
Temperature/Humidity	Environment temperature 0~45°C, Humidity30~85% no condensation
IP Grade	ConveyorIP66, Other partsIP40
Machine Material	Mirror/Brushed 304 stainless steel/Sandblasted

Remarks: The most detectable foreign body ruler is closely related to the material composition, packaging material, thickness and other parameters in the product. In the actual production environment, please refer to the actual product test results. The international standard tests that the ceramic glass is 1.0mm at most, and the actual accuracy of empty glass ceramics will be better than this standard.



# Dvdetect Metal Detector

GEN II

5 Detection Modes

Widely Applied for Different Types of Goods

**HIGH ACCURACY**



- **Multi-Frequency** Technology
- Five Detection Modes for Mostly Application
- Easy to Use, **only Two steps to Integrate**
- **High Accuracy** for Fe, Non-Fe and Stainless Still Contaminants Detecting
- Stable Performance



INNOVATION



HIGH EFFICIENCY



COST SAVE



GOOD SERVICE

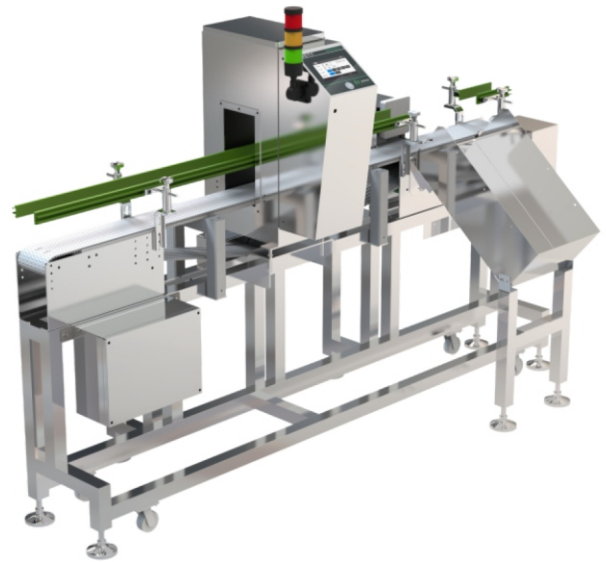


# Metal Detector

GEN II

## ● Feature

- The automatic phase adjustment technology is adopted to effectively reduce product effect and achieve high detection sensitivity.
- Multi-frequency detection, metal contaminants such as ferrous, non-ferrous metals and stainless steel can be detected under high sensitivity.
- Five detection modes for mostly application, including Dry, Wet, Super Wet, Wet&Salty, Aluminizer Package.
- Intelligent setting, automatic learning, only two steps to complete the new product Settings.
- Two hundred recipes could be stored.
- LCD Touch Screen, easy-to-use design.
- SUS304 material, IP67 water-proof motor is applied.
- Detachable rack design, no need to use tools, easy for daily cleaning and maintenance.



**Metal Contaminants** Product Effect Reduced Efficiently



Fe



SUS



Copper



Aluminium



Tin

## ● Models

Item	Detection Wide (cm)					
	30	40	50	60	70	80
Model	3005	4006	5008	6009	7007	8005
	3008	4009	5010	6012	7010	
	3010	4012	5012	6015	7025	
	3012	4015	5015	6020	7040	
	3015	4017	5020	6025		
		4020	5025	6035		
			5030	6040		
			5035			

## ● Specifications

Item	VMD	VMS
Conveyor Length	1.2m、1.5m、1.8m Optional	
Frequency	Five Detection Modes, Dry, Wet, Super Wet, Wet&Salty,	
Touch Screen	7 inch Industrial Touch Screen	
External Interface	USB / Ethernet / Printer / 4G Connect Optional	
Conveyor Speed	Constant 20, 30, 40 m/ min	IP67 Water-Proof Motor, Speed Adjustable 5~45 m/min
Power	AC220V, 50-60 HZ	
Alarm	Sound and Light Alarm / Alarm and Stop /Automatic Rejector (Optional)	
Conveyor Material	Food-Grade PU Conveyor / Modular Belt (Optional)	
Environment	Temp 0~45°C, Relative humidity 30~85% no condensation	
IP Grade	IP 67	
Machine Material	304 SUS, Mirror/ Brushed / Sandblasted (Optional)	



# Check Weigher

## ● Feature

- The fast speed and excellent precision models with a dynamic accuracy of up to  $\pm 0.1g$  and a weighing speed of up to 250 times per minute.
- Option of the belt width is 150/220/300/360/450mm, and the range is 200/1kg/4kg/10kg.
- Excellent performance electronic circuits composition by FPGA LSI, low noise amplification, 24bit ADC, data lossless storage technology.
- Easy operation by automatic parameter setting and intelligent product sampling.
- Excellent interference proof by FPGA hardware filter with intelligent algorithms.
- Better stability by ultra-fast dynamic weight tracking and automatic compensation.



## ● Models

Model	S-Series Checkweigher			
	CW-150	CW-220	CW-300	CW-360
Weighing Range ( g )	1-200 ( max 300)	2-1000 (max 1200)	2-3000 (max 4000)	3-10000
Minimum Scale ( g )	0.01	0.1	0.1	1
Best Accuracy ( g )	$\pm 0.1$	$\pm 0.3$	$\pm 0.5$	$\pm 5$
Max.Throughput(pcs/min)	250	150	100	60
Parameter Setting	Intelligent self learning			
Weight Belt Width ( mm )	150(220)	220(300)	300(360)	360(450)
Weight Belt Length ( mm )	250/350/450	350/450/550	350/450/550	550/700
Belt Height ( mm )	700-820/780-900 or Customized			
Alarm Mode	Aural and visual			
Rejection Option	Air jet/Pusher/Flipper/Flap Down/Down Belt			

## ● Specifications

Model	Heavy Duty Checkweigher			
	CW-500	CW-600	CW-700	Other
Weighing Range ( kg )	0.01-35	0.01-100	0.01-100	Details please refer to the model sheet or customized
Minimum Scale ( kg )	0.001	0.001	0.001	
Best Accuracy ( g )	$\pm 5$	$\pm 10$	$\pm 10$	
Max.Throughput(pcs/min)	60	40	40	
Parameter Setting	Intelligent self learning			
Weight Belt Width ( mm )	500	600	700	
Weight Belt Length ( mm )	600/800	1200	1200	
Belt Height ( mm )	700-820/780-900 or Customized			
Alarm Mode	Aural and visual			
Rejection Option	Pusher/Flap Down/Down Belt			



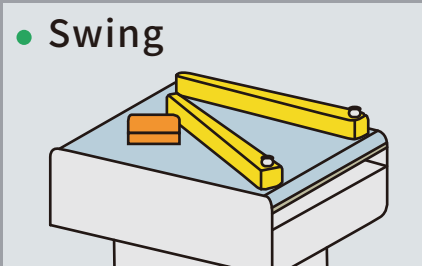
## ● Rejector

The sorting machine is used together with the food foreign matter detection system. The contaminants detection system provides an alarm signal to control the rejector to remove the defective products from the conveyor line and avoid flowing into the next production link.

- Use cylinder or electric cylinder drive, a variety of sorting methods are optional, suitable for a variety of products.
- High precision, eliminate fast, improve the qualified rate of products, reduce user complaints.
- Reinforced stainless steel frame with high waterproof rating
- All contact parts are made of food grade materials to ensure that the product is not contaminated.
- Used in all kinds of automatic assembly line and logistics conveying system.
- Widely used in pharmaceutical, food and other industries online sorting.
- It can directly replace manual sorting to improve production efficiency and reliability.

## ■ Type of Rejectors

### ● Swing



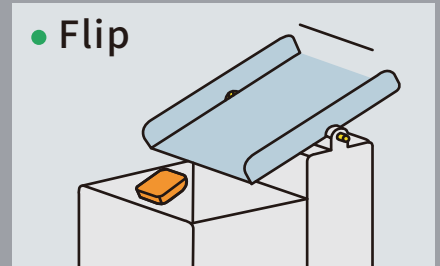
Use left and right swinging arm to sort the product under test, suitable for thicker products.

### ● Drop



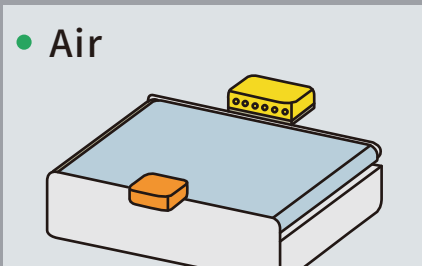
Use up and down swinging conveyor to sort the products under test, suitable for lighter products.

### ● Flip



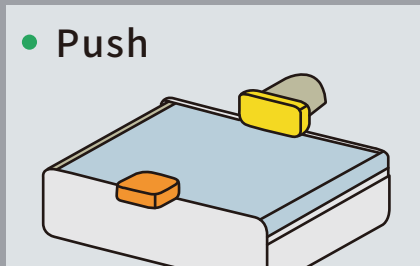
Use an up-and-down flip plate to sort the product under test, suitable for bulk food.

### ● Air



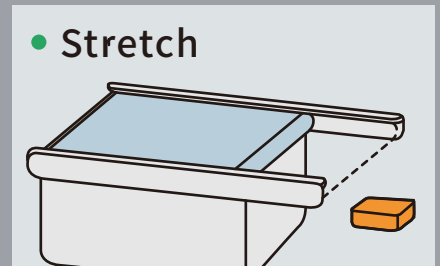
Use high pressure air to separate the tested products suitable for light food or bulk food.

### ● Push



The push rod driven by the cylinder is used to sort the product under test, which is suitable for medium and large packaging products.

### ● Stretch



Use a telescopic conveyor to sort the product under test, suitable for small packaging or sticky bulk food.





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Manufacture building