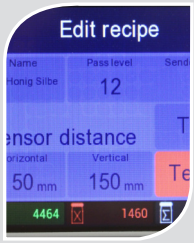
INDEC
VACUUM INSPECTION

SPECIFICATIONS

Dud Dector

INDEC delivers solutions for the vacuum inspection of jars, bottles, cans and similar containers. Non-contact, 100% in-line vacuum inspection is carried out within the production process. An optical sensor measures the cap panel deflection which is dependent on the vacuum inside the container. Non-metal caps present no problem. Containers which show insufficient vacuum, cocked/tilted caps or missing caps are reliably identified and can be automatically rejected. All components are made of stainless steel (1.4404), are detergent and disinfectant-proof and comply with protection class IP69K.

Central unit



The central unit processes the data acquired by the vacuum sensor and the light barrier unit and calculates the control signals for the ejector. The touch screen and/or membrane keypad are used for the manual entry of all system-relevant data.
The recipe parameters for the container to be tested are generated and saved via programme routines (teach-in).

- Processing unit with vacuum test software
- Control panel with colour graphical display, membrane keypad and multilingual user interface
- Data transfers and remote maintenance / Industry 4.0 preparation

Operating voltage		88...264 VAC, 47...63 Hz
Wattage		max. 200 W
		VD 100
Inputs	Semi-conductor input channel 24 V DC	1
	Rotary encoder input 10...30 V DC	1
Outputs	Semi-conductor output channel 24 VDC, 0.5 A	1
Ethernet / USB		-
Colour graphics display / keys		3.5"/ 4
Recipe memory		36
Housing material		Stainless steel (1.4404)
Ambient temperature		0...50 °C
Dimensions (L x W x D) mm		300 x 200 x 120

Connection unit

The stainless steel housing of the connection unit is fixed directly to the central unit. The supply voltage and all signal leads are assigned in the connection unit. All installations by users are also carried out via the connection unit.

Dimensions (L x W x D) mm		200 x 150 x 100

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Vacuum sensor

Infrared sensor for non-contact testing of the vacuum-dependent deflection of a wide range of container closures made of any material. Because of the large working distance, the system is fully tolerant of varying conditions, including variations in the dimensions of the containers, vibration of the conveyor and horizontal misalignment of containers. Unlike other measuring methods, the optical INDEC system is unaffected by the presence of single water droplets.

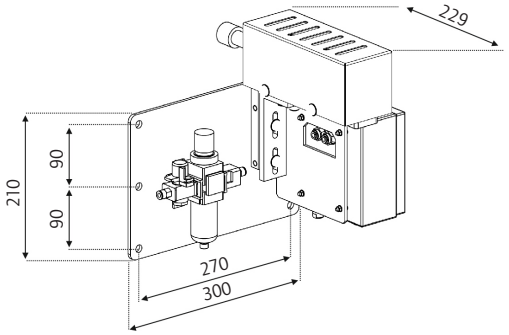
- Fixtures for the sensor holding bracket and light barrier holding bracket
- Fast format changeover
- Settings via scale, values saved in the recipe data

Measurement principle	Optical, infrared sensor
Field of application	Any kind of closure materials
Closure diameter	30...110 mm
Test speed max. units/minute	0...600
Working distance	> 100 mm
Sensor cable	3 m long, hard-wired
Dimensions (L x W x D) mm	150 x 150 x 80

Ejector unit

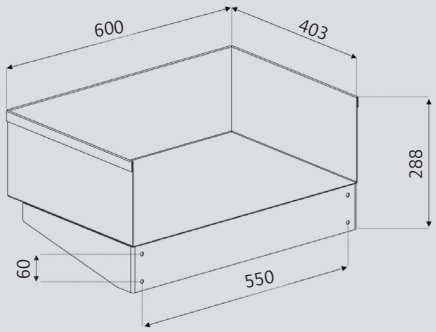
Containers which have been identified as defective by a test system can be removed from the production flow with the ejector unit. Control and adjustment in line with container parameters is performed with the central unit.

- Complete unit consisting of:
  - Pneumatic valve and pneumatic cylinder
  - Compressed air service unit with manual shut-off valve
  - Pressure regulator and filter
  - Adjustable holding fixture
- Mounted on a base plate for easy fixing to the conveyor system



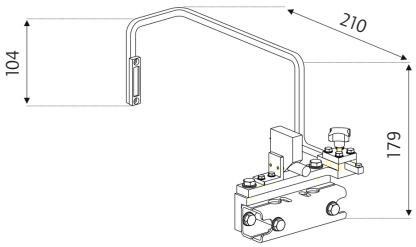
Pneumatic connection	Plug-in coupling 6 mm
Electrical control	24 V DC; 50 mA
Operating pressure	6...10 bar
Compressed air quality	Cleaned and unoiled compressed air
Dimensions base plate	210 x 300 mm
Connection cable	2 m long

Collection tray	Stainless steel tray for rejected containers. ■ Crimped edges ■ Four mounting holes	
	Dimensions (L x W x H) mm	605 x 403 x 185



System synchronisation	Software extension for system synchronisation including a rotary encoder which is ready for connection. A coupling and the holding bracket for the rotary encoder must be provided by the customer.	
	Shaft parameters (D x L) mm	10 x 18
	Operating speed	3.600 min^{-1}
	Pulse frequency max.	200 kHz
	Connection cable	5 m

Light barrier unit for product detection	Reflective light barrier complete with reflector and adjustable holding fixtures for product detection to start the measurement. ■ Robust compact light barrier • High immunity to optical interference • Metal housing which is detergent and disinfectant-proof and able to withstand high pressure cleaning • Signal intensity can be set using a potentiometer • Highly visible status LEDs ■ Adjustable fixture for mounting on the sensor and light barrier holding bracket ■ Holding fixtures made of rust-resistant stainless steel, adjustable in a vertical and horizontal direction	
	Range	Horizontal: 0...100 mm Vertical: 0...400 mm

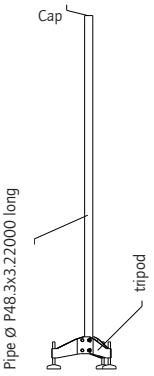


Stand for central unit and connection unit

Robust, stable stand for the central unit and connection unit.

- Tripod base and stand tube made of rust-resistant stainless steel
- Levelling feet with base plates made of anti-bacterial plastic

Diameter tripod base	496 mm
Diameter stand tube	1 ½" (nominal diameter 48.3 mm)
Length stand tube	2 m

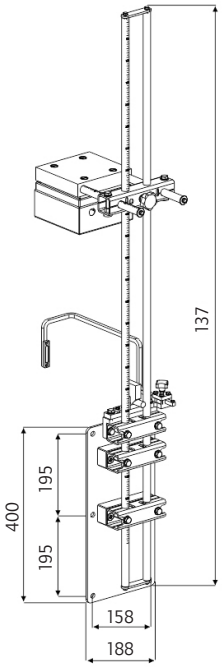


Sensor and light barrier holding bracket

Holding bracket with fixtures for the vacuum sensor and light barrier unit.

- Adjustable in a vertical and horizontal direction
- Integrated scales
- Rust-resistant stainless steel
- Base plate with mounting holes

Range	Horizontal: 0...150 mm Vertical: 0...800 mm
Dimensions base plate	400 x 188 mm



Equipment / Model	Central unit	Connection unit	Vacuum sensor	Light barrier	Sensor holding bracket	Stand	Ejector unit	Ejector monitoring	Collection tray	System synchronisation	Data transfer/ remote maintenance	Industry 4.0 preparation
VD 100	●	●	●	●	●	◎	◎	○	◎	◎	○	○

Legend: ● included ◉ optional ○ not available

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KoCoS Optical Measurement GmbH
Döbereinerstr. 22
99427 Weimar, Germany
Tel. +49 3643 906 38-0
info@kocos.com
www.kocos.com

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