

# Metal separation for filler applications

The LIQUISCAN VF was specially developed for use in pump lines with high hygienic requirements. It reliably detects and separates magnetic and non-magnetic metal contaminants from liquid or pasty products and offers very good detection sensitivities even for products with high product effects. Thanks to its short installation length and optional quick-release fasteners, the metal separator can be easily attached to vacuum fillers and pumps. Various separating units ensure maximum flexibility and easy integration into complex line control systems.



## Powerful control units

Depending on your requirements, two different control units are available for the LIQUISCAN VF: the GENIUS ONE Control Unit with single or dual frequency technology for very good detection accuracy and the INTUITY Control Unit with multi-simultaneous frequency technology for highest detection performance, ideal for products with strong product effects.

## Simple integration

Thanks to its short installation length and optional quick-release fasteners, the metal separator can be easily integrated into existing piping systems with or without a separator unit.

## Stable structure

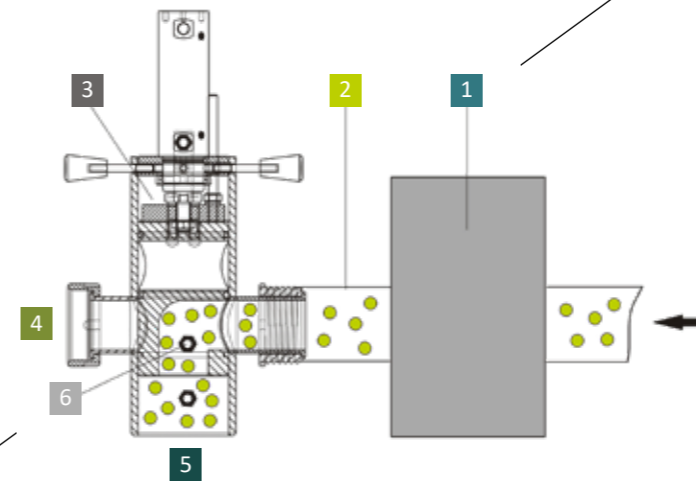
High stability against electrical interference due to a solid stainless steel design of the casing.

## Durable design

A stable, height-adjustable stand with rubberized rollers, a lateral rotation option for the detection unit, and a display that can be operated at an optimum height ensure maximum adaptability.



The turnout is shown in the bad runout position.



## Function

The LIQUISCAN VF is optionally available with three different separating units. Our diagram shows the operating principle when using a piston valve.

- 1 The integrated **detection coil** is characterized by optimum metal detection, high mechanical stability, and maximum interference immunity.
- 2 The thick-walled **sensing tube** is hygienically sealed and suitable for high pressures
- 3 **Separating diverter**
- 4 **Good outlet**
- 5 **Bad outlet**
- 6 **Metal contamination**

## Separating units for different product consistencies

Various valves, optimally matched to the product properties, guarantee reliable rejection of metallic contaminants.



**Piston valve**

For pulpy, pasty products without large pieces



**Ball valve**

For products with larger pieces, e.g. muscle meat



**Arc valve**

For soup filling and aqueous products

## High protection class

The closed system with high protection class (IP 66/69) allows easy cleaning:

- Etched safety instructions and nameplate
- optional holders for tools, test samples, and hoses

**Highest detection accuracy**

also for products with strong product effects

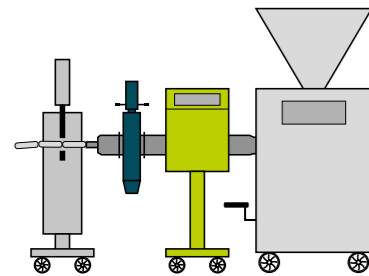
**IFS/HACCP compliance**

for maximum food safety detection accuracy

# Maximum flexibility for diverse applications

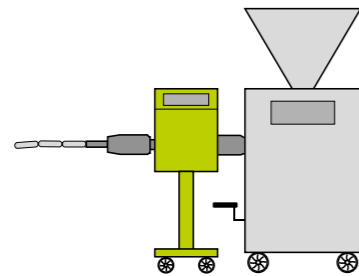
## Clipping

Connection to a clipper is possible with or without a separator unit.



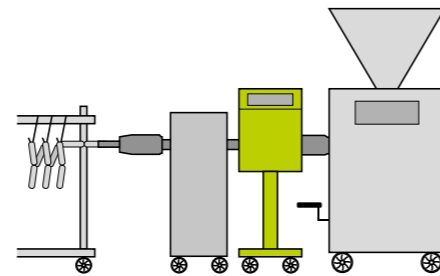
## Calibration

Manual calibration is only possible without a separator unit, while automatic calibration is optionally possible with or without a separator unit.



## Hanging

Automatic twisting off and hanging is possible with or without a separating unit.



## Typical fields of application



Sausage products



Minced meat products



Dairy products such as cheese



Fish products and fish fillings



Spreads and pastes



Delicatessen salads

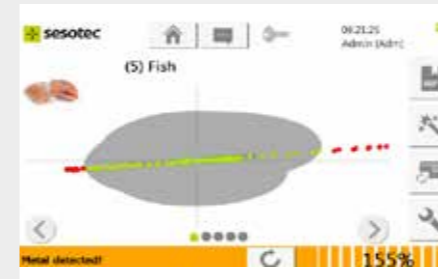


Soups



Pet food

# The Sesotec 6-Priority Concept



## P1 Conformity & accuracy

Very good detection sensitivities even with strong product effects due to single, dual or multi-simultaneous frequency technology, automatic product compensation, and digital signal processing

- Safe rejection in case of metal finds thanks to compressed air monitoring and ejection control (Reject Control System)
- Audit-Check: Runs through audit routines and logs all steps (quality monitoring)
- Optimal traceability due to complete logbook



## P2 Safety for people & products

Safe discharge, easy traceability, high access protection, and data security deliver products without contamination to the consumer.

- The definition of different user groups with specific rights facilitates access protection
- Stable design with high stability thanks to the flexibility of the adjustable base
- Lockable container (optional)



## P3 Simple operating concept

The 5"- or 7"-color touch display with intuitive menu navigation allows you to configure our systems easily and quickly for various applications. Operating errors are virtually impossible.

- Simple and intuitive auto-learn function
- Integrated product memory for up to 300 (500) products
- Quick access to important system functions through display on the start screen



## P4 Hygienic design concept

A robust and hygienic casing allows easy cleaning and ensures safe water drainage through inclined planes.

- Built entirely from stainless steel and food contact approved plastics (EG1935/1935/2004)
- Materials can be cleaned repeatedly and intensively
- High protection class with optional display cover for wet cleaning (IP66/69)
- No dirty edges on the stand



## P5 Efficiency in all areas

Adapted reject systems and high interference immunity prevent false findings and increase profitability.

- Different valves for liquid, pasty and lumpy products
- Various data interface enables direct communication with vacuum fillers and minimizes rejection quantity
- Easy attachment to vacuum fillers and pumps with optional quick-release fasteners



## P6 Reliable, fast service

For a smooth operation, we support you with warranty services, on-site and remote service, and targeted training.

- Wear and spare parts package for the rapid continuation of production
- Remote service via Teamviewer app
- Customer-specific training for operation, service, and maintenance
- High overall plant efficiency and stable operation
- Min. 10 years warranty on spare parts availability

# LIQUISCAN VF GO

Standard model with very good detection accuracy

2,0 mm

Detection\*

IP 66/69

Protection class

Single or dual

Frequency



For liquid and pasty products in filler applications

Free consultation

<https://www.sesotec.com/emea/en/contact-form>



## Constant monitoring

A lamp with a tricolor signal indicator shows the current operating status of the device.

## Hygienic structure

A cover over the operating unit protects the LIQUISCAN VF from contamination.

## Rugged design

The solid stainless steel housing provides high stability against electrical interference. The unit is designed for short setup times with changing applications.

## Optionally available

On request, a holder for an E2 box for the discharge material can be integrated into the stand. Optionally also with lockable lid.



## GENIUS ONE Control Unit

- New user interface with touch display for easiest operation
- Faster teach-in, fewer operating errors, and short operating times
- Cost and time savings through effective operating and service functions
- IoT-ready: USB port and integrated Ethernet interface for easy data transfer

## Optional interfaces and protocols

- **INTERLINK:** Integration of devices into the company network via OPC UA, possibility of visualization via Insight.WEB
- **COMGateway.Embedded:** Integration of devices into the company network via OPC UA, SSTProt, MQTT or REST API
- **PROFIBUS:** Data exchange via bus system

## Efficient audit check



For simplified functional testing, there is an opening on the unit for inserting **flexsticks** with ferrous, stainless steel, and nonferrous test samples.



**Optionally available: Inline test device** for IFS-compliant testing in the product stream

## NEW: optimized stand for maximum flexibility and high stability

- Stable oscillating axle to compensate for uneven floors or slopes
- Rubberized rollers for optimal rolling characteristics
- Easily adjustable both horizontally and vertically
- Can be slid under upstream and downstream devices of different manufacturers due to low overall height
- Detection unit is rotatable to the stand. This avoids collisions with other feet of the device
- Flexibility due to three-dimensionally adjustable chassis and short installation length

\*Detection of stainless steel with product

# LIQUISCAN VF IC

The premium model for best detection accuracy



For liquid and pasty products in filler applications

Free consultation

<https://www.sesotec.com/emea/en/contact-form>

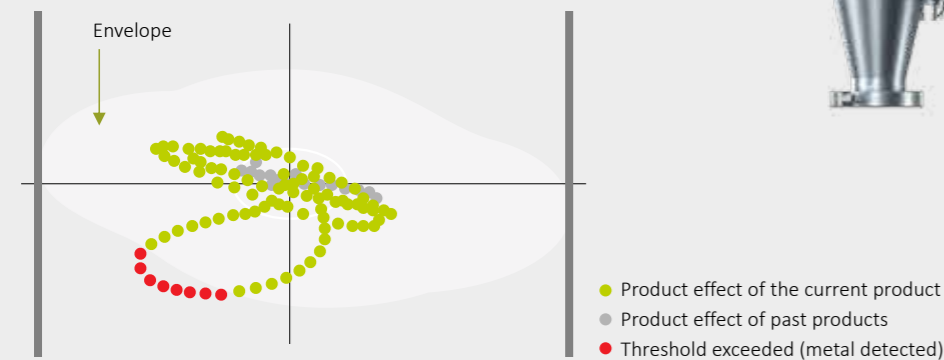


<b>1,5 mm</b> Detection*	<b>IP 66/69</b> Protection class	<b>Multi-simultaneous</b> Frequency
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## Multi-simultaneous frequency technology

INTUITY uses a combination of two frequencies depending on the product characteristics and applies them simultaneously to the product under investigation. Each product leaves a "digital fingerprint" (product effect, blue point cloud). A metal trigger threshold (envelope) is calculated and stored around these points. All signals outside this threshold are automatically detected as metal. Signals within the threshold are assigned to the product effect. With the help of this technology, the product effect is compensated much better and thus a very high detection accuracy and a reduced risk of false ejections are achieved.

## Signal visualization with a detection threshold



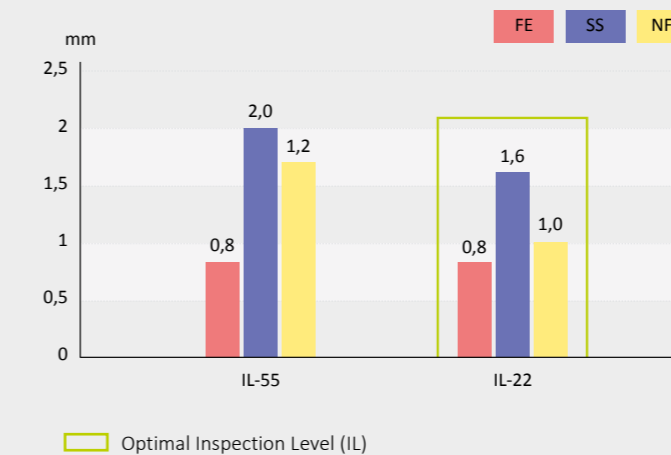
## Auto Tracking

Dynamic Auto Tracking enables intelligent tracking of product compensation parameters when product properties change, e.g. if the recipe or temperature changes.



## Sensitivity prediction

After the teach-in process, the software automatically indicates the most suitable Inspection Level (IL) with associated sensitivities for ferrous, stainless steel, and non-ferrous metals. The IL with the predicted sensitivities that most reliably meet customer requirements. Customer requirements can then be selected.

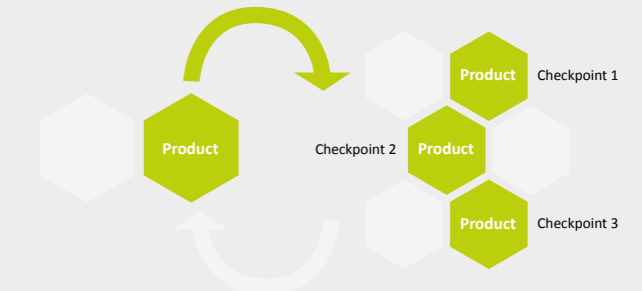


## INTUITY Control Unit

- Intuitive user interface with 7" color touch display
- Quick access to important system functions through configurable start screens
- Permanent self-monitoring of all important system functions
- Simple setup process through assistants guided by the menu
- Clear display of all operating messages and system states
- IoT-ready: USB port and integrated Ethernet interface for easy data transfer

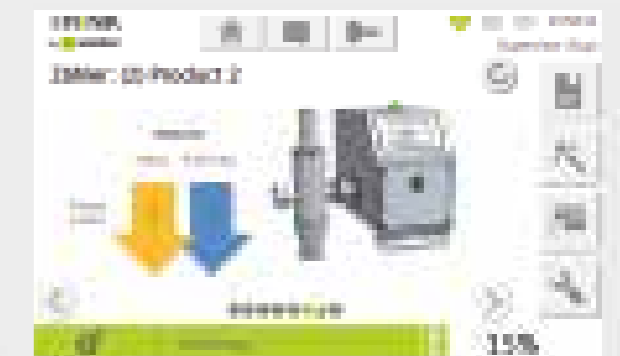
## Checkpoints

Checkpoints are used to restore product parameters. In the course of quality assurance, they allow a comparison between the current and previously saved product settings. This makes it possible to reconstruct individual products.



## Statistical evaluations

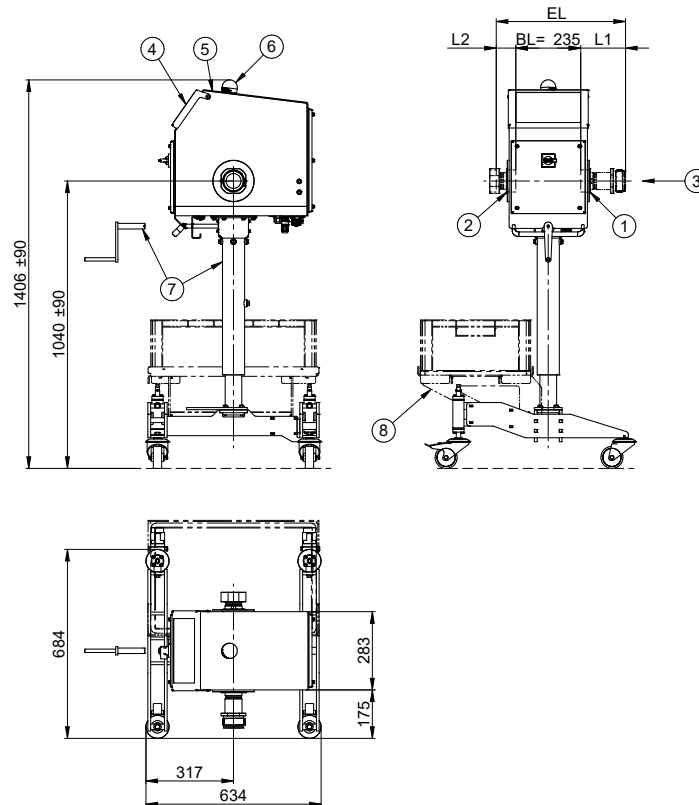
Various statistical evaluations are possible



\*Detection of stainless steel with product

# LIQUISCAN VF-GO metal separator

## ■ Dimensions



- |   |   |
|---|---|
| <p>1 Inlet with fitting RD80x1/4" (female), optional pipe connections</p> <p>2 Outlet with fitting RD80x1/4" (female), quick release, optional pipe connections</p> <p>3 Conveying direction</p> <p>4 Display with protective cover</p> | <p>5 Housing incl. detection coil and control unit</p> <p>6 Multi-coloured LED-signal lamp (red/yellow/green/blue/horn)</p> <p>7 Stand, height-adjustable with removable crank</p> <p>8 Holder for E2 box for separated product on stand under reject outlet (optional)</p> |
|---|---|

## ■ Technical data

Type	Scanning pipe nominal width $\varnothing$ NW	Installation length EL <sup>2)</sup>	Maximum sensitivity <sup>1)</sup>			Weight [kg]
			$\varnothing$ Fe-ball	$\varnothing$ Stainless steel ball	$\varnothing$ Non-Fe-ball	
LIQUISCAN VF-GO	54 mm	235+L	0.5 mm	0.9 mm	0.6 mm	115

All dimensions in mm

- <sup>1)</sup> The stated detection sensitivity (ferrous ball  $\varnothing$  in mm) applies for nonconductive products at the operation frequency FB7 and refers to the centre of the detection aperture (most disadvantageous position). Products that show intrinsic conductivity due to moisture content, electrolytes or other conductive contents may reduce the sensitivity as well as variations of product temperature, environmental effects (mechanical shocks and vibrations, electromagnetic pollution) or the set product angle. The detectable size of metal particles depends on their nature, shape and position while passing the metal detector.
- <sup>2)</sup> The total installation length is determined by the addition of the basic length BL=235 mm and all length specifications L for the respective options (pipe connections, reject mechanisms).

# LIQUISCAN VF-GO metal separator

## ■ Conditions of use

<b>Use:</b>	For inspection of pumped liquid or paste foods e.g. sausage meat, gourmet salads, sauces and similar products with vacuum fillers
<b>Product temperature pumping pressure:</b>	POM scanning pipe:     -10 °C to +20 °C     with max. pumping pressure 30 bar -10 °C to +40 °C     with max. pumping pressure 15 bar  The service life of the plastic scanning pipe is essentially influenced by pumping pressure and product temperature as well as further environmental conditions. Use outside of the specified limits can considerably shorten the service life of the scanning pipe. Maximum short-term pumping pressure 50 bar. Please refer to the operating instructions for further information. Applications with higher temperature and/or pressure on request.
<b>Ambient conditions:</b>	-10 °C to +40 °C, 25 – 100 % r.h.
<b>Storage and shipping conditions:</b>	-10 °C to +40 °C, 25 – 85 % r.h., no condensation

## ■ Scope of delivery / Design / Connections

<b>Scope of delivery:</b>	Compact unit comprising an integrated detection coil with GENIUS ONE Control Unit, equipped with protective cover and multi-coloured LED-signal lamp (red/yellow/green/blue/horn). Standard meat pump fitting RD80 x 1/4" (female at both ends). Scope of supply includes a certificate of food conformity acc. to (EG) Nr. 1935/2004 and to FDA.
<b>Mechanical design:</b>	Design:                                     Stainless steel 1.4301 (AISI 304), bead blasted Scanning pipe:                           POM Stand:                                       mobile height-adjustable stand, level adjustable Parts in contact with product:       1.4404 (AISI 316L) POM, FKM  Option reject mechanism: Compressed air:                         6-8 bar, compressed air filtered 10 µm, oil-free Compressed air connection:         quick-release nipple with 6/8 hose connection Compressed air consumption:        see reject systems
<b>Electrical design:</b>	Nominal voltage:                        100-240V AC,N,PE Frequency:                                50/60 Hz Maximal current:                        0,8 A-0,4 A Fuse:                                       6,3 A, slow-blowing Ingress protection:                    IP 66/69 Mains cable:                             5 m with safety plug (IP 67) Connection plug for vacuum filler:  6-pin, IP67 min with cap Pollution degree:                        2 Overvoltage category:                 II Floating relay contacts:               3 changeover contacts, max. 24V/3V  Interface:                                 Ethernet (TCP/IP 100 Mbit/s), USB (on board – with hardware connectors IP66/67 with sealing cap) Reject duration (metal pulse):       adjustable from 0.05 to 60 sec Self-monitoring:                        Metal detection coil and outputs Operating altitude:                     2000 m over nn

## ■ Options

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li><input type="checkbox"/> Dual frequency - two different operating frequencies (only in conjunction with operating frequency 5/7 and GENIUS ONE Control Unit)</li> <li><input type="checkbox"/> UL/CSA certificate – see separate data sheet (only in combination with US-power cable)</li> <li><input type="checkbox"/> Power cable                         <ul style="list-style-type: none"> <li><input type="checkbox"/> US-power cable</li> </ul> </li> <li><input type="checkbox"/> Preparation for ejection mechanism (pneumatic valve, start-up valve with compressed air monitoring and compressed air connections)</li> <li><input type="checkbox"/> Separation system type piston valve (only in combination with preparation for reject mechanism)</li> <li><input type="checkbox"/> Separation system type ball valve (only available outside the EU) (only in combination with preparation for reject mechanism)</li> </ul> | <ul style="list-style-type: none"> <li><input type="checkbox"/> Separation system arc valve (in preparation) only in combination with preparation for reject mechanism)</li> <li><input type="checkbox"/> Holder for E2 box for separated product on stand under reject outlet</li> <li><input type="checkbox"/> Lockable ejection container incl. E2 box (600x400x200) (only in combination with option holder E2-box)</li> <li><input type="checkbox"/> COMGateway.Embedded (WLAN <sup>1)</sup> or LAN interface in IP66/69 for integration into the company network via OPC-UA, MQTT, Sesotec SSTProt (not in combination with X40 connection)</li> </ul> |
|---|--|
- <sup>1)</sup> WLAN not in combination with UL/CSA available

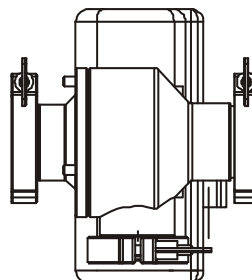
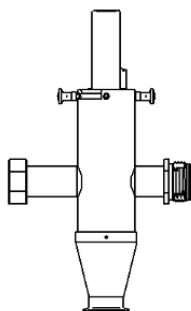
# LIQUISCAN VF-GO metal separator

## ■ Pipe connections

<p><input type="checkbox"/> <b>Inlet side</b></p> <ol style="list-style-type: none"> <li>1) Filling pipe RD80 x 1/4" male/male L 97.5 mm</li> <li>2) Filling pipe RD80 x 1/4" male/male L162 mm</li> <li>3) Filling pipe RD80 x 1/4" male/male L162 mm with Handtmann quick release</li> <li>4) Adapter RD80 x 1/4" male/female L 70.5 mm</li> </ol>	<p><input type="checkbox"/> <b>Outlet side</b></p> <ol style="list-style-type: none"> <li>5) Adapter RD80 x 1/4" male/female L 70.5 mm</li> <li>6) Adapter RD80x1/4" male/female L 90 mm (Required in combination with adapter 7 for AL- PVLH without reject mechanism)</li> <li>7) Adapter RD80 x 1/4" male/male for connection to Handtmann AL-PVLH</li> <li>8) Adapter RD80 x 1/4" male/male (Polyclip)</li> </ol>

## ■ Optional rejection mechanisms (only in conjunction with optional preparation for ejection mechanism)

- |   |  |   |
|---|--|---|
| <p><input type="checkbox"/> <b>Rejection mechanism piston valve <sup>3)</sup></b></p> <ul style="list-style-type: none"> <li>- for pasty products (not suitable for liquid products)</li> <li>- Parts in contact with product: stainless steel 1.4404 (AISI 316L), EPDM, PTFE (Teflon) and POM</li> <li>- Installation length L 339 mm</li> </ul> | <p><input type="checkbox"/> <b>Ball mechanism 2" and tri-clamp connections <sup>3)</sup></b></p> <ul style="list-style-type: none"> <li>- for pasty products containing solid parts (e.g. tongue sausage, ham)</li> <li>- Parts in contact with product: stainless steel 1.4404 (AISI 316L) and PTFE (Teflon)</li> </ul> | <p><input type="checkbox"/> <b>Arc valve in preparation</b></p> |
|---|--|---|



<sup>3)</sup> Reliable rejection up to a constant pumping speed of 0.6 m/s (approx. 83 l/min).

# LIQUISCAN VF-GO metal separator

## ■ Filler-specific versions / options

### HANDTMANN version/options

- short hinge suspension at inlet <sup>4)</sup>
- Linker drive for twist-off gearbox and hinge at outlet <sup>3)</sup>
- X30/X31 Cable connection via 14-pin connector to VF 600/VF 800 series with control of rejection by filler (not in combination with X40 connection)
- X40 connection via EtherCAT integrates the Liquiscan VF into the Handtmann machine network. This enables the transmission of digital signals (fault, metal and rejection) and the implementation of product changes directly via the vacuum filler (not in combination with X30/31 connection or COMGateway.Embedded).

<sup>4)</sup> Caution: not suitable for Handtmann VF611, 612, 616 filling machines due to hopper rocker arm!! Suitable version with linker drive and hinge suspension at inlet on request.

- Versions/options for older filling machines or other manufacturers (Rex, Frey, Risco, etc.) and in conjunction with clip machines (Polyclip, Tipper Tie, Alpina, International Clip, etc.) on request.**

### VEMAG version/options

- 35-pin round plug incl. cable for filler stop in case of metal for VEMAG
- 35-pin round plug incl. cable for connection to VEMAG with second plug connection

## ■ Accessories

- Inline test device liquid (for IFS-compliant testing in the product stream)
- Flexstick Blue test samples and test ball mini for inline test device liquid
- Data exchange between GENIUS ONE and a central company network (not in combination with UL/CSA certificate)
  - Insight.NET (Visualization, data saving and remote maintenance and saving of the logbook data)
  - INTERLINK