

CAPS & CLOSURES

VISION INSPECTION SYSTEMS
FOR THE
PLASTIC PACKAGING INDUSTRY



INTRAVIS

***WE SOLVE PROBLEMS.
BEFORE THEY OCCUR.***

HOW WE LIVE OUR VISION

Your quality control requirements present tasks that we gladly face and successfully solve every day. At INTRAVIS, engineers, skilled workers and technicians work every day to find solutions for challenges in the plastic packaging industry that have not been solved yet. Our customers benefit from more than 30 years of experience in the plastic packaging industry.

We are dealing with topics right now that will become challenges for the industry in the coming years. We ask ourselves: How can vision inspection systems deliver added value for pro-

spective production processes? What contribution will quality inspection solutions make to the smart factory of the future? How can inspection systems and analysis software help to increase production efficiency?

Finding answers together with customers and partners is what drives us every day.

INTRAVIS

ABOUT US

SIMPLY BETTER PRODUCTS

For more than 30 years, producers in the plastic packaging industry have relied on INTRAVIS solutions. In the areas of preforms, closures, stretch- and extrusion-blown bottles and containers, as well as decoration, we offer systems that meet all of the requirements of a sustainable quality inspection solution.

You have the choice: do you need a cost-effective standard system which fulfills fundamental inspection tasks, or a specialized solution ready to fit your specific needs? Whether you want to inspect inline or offline – all of our solutions are flexible and customizable.



PREFORMS

- PreMon
- PreWatcher Offline
- PreWatcher Inline
- Sample-PreWatcher
- ColorWatcher Lab
- LayerWatcher



BOTTLES & CONTAINERS

- SpotWatcher Basic
- SpotWatcher Customized
- SpotWatcher Pharma
- IntraOne
- BarrierWatcher

INTRAVIS SYSTEMS OFFER:

- 1.** Security that you will always deliver the best possible quality to your customer



CAPS & CLOSURES

CapWatcher Q-Line
CapWatcher B-Line
CapWatcher SC
CapWatcher FC
IntraOne
BarrierWatcher

PERIPHERY

CapFeeder
CapFeeder + Tower Hopper
Cross Conveyor
Cooling Conveyor

- 2.** Full production control and optimization of your production process
- 3.** High comparability of different production conditions and results
- 4.** Turnkey systems with complete commissioning and extensive 24/7 service
- 5.** Customized solutions for perfect integration into the customer's production or laboratory



LABELING & DECORATION

LabelWatcher
LabelWatcher 360°
IMLWatcher
SleeveWatcher
IntraOne

INTRAVIS

ABOUT US

YOUR ADVANTAGES

There are many reasons to buy an INTRAVIS inspection system. Some examples of how you can benefit from our solutions:

RENOWNED SOLUTIONS

- INTRAVIS technology helps you to be a global leader in the plastic packaging industry
- We are driven to develop innovative solutions to new and customized challenges
- INTRAVIS means quality “made in Germany” trusted by many global players



BARRIER LAYER

BarrierWatcher
LayerWatcher



SOFTWARE

IntraVision
IntraVisualizer
IntraRecommender

PROCESS OPTIMIZATION

- Get unique insights into your production process through comprehensive statistics, reports, diagrams and trend calculations
- Connect your INTRAVIS systems with your Manufacturing Execution System (MES) to take the next step towards your Smart Factory of the future
- Fast and space-saving integration into your production line or laboratory

SECURITY

- Enjoy the security of delivering only flawless products to your customers
- In-house programmed and userfriendly software interface to ensure that your machine operators easily handle the system on their own

- Assurance of regular maintenance and immediate troubleshooting thanks to our worldwide network of service centers and our free telephone hotline

PARTNERSHIP RELATIONS

- In cooperation with you, our team is looking forward to developing a customized solution for your individual inspection task
- We strive for long-term partnerships to provide our customers with a complete and interconnected inspection solution for an entire plant or even multiple sites

CAPS & CLOSURES

Due to the enormous speed of a closure production line and high-quality requirements, closure inspection can be a challenging task. During production, common defects like contamination, flashes, short shots and defects at the tamper-evident band might occur. Our closure vision systems detect these defects directly. In addition, the quality inspection of our systems include many other common and customized inspection criteria like color, cavity number reading, print control, high voltage micro hole inspection, diameter and ovality inspection.

No matter whether you produce standard or specialty closures like sports or push-pull caps, we offer the right solution for any kind of product. Even tethered caps do not pose a problem since our CapWatcher Q-Line is already prepared for the new EU regulation by means of special tethered cap inspection features.

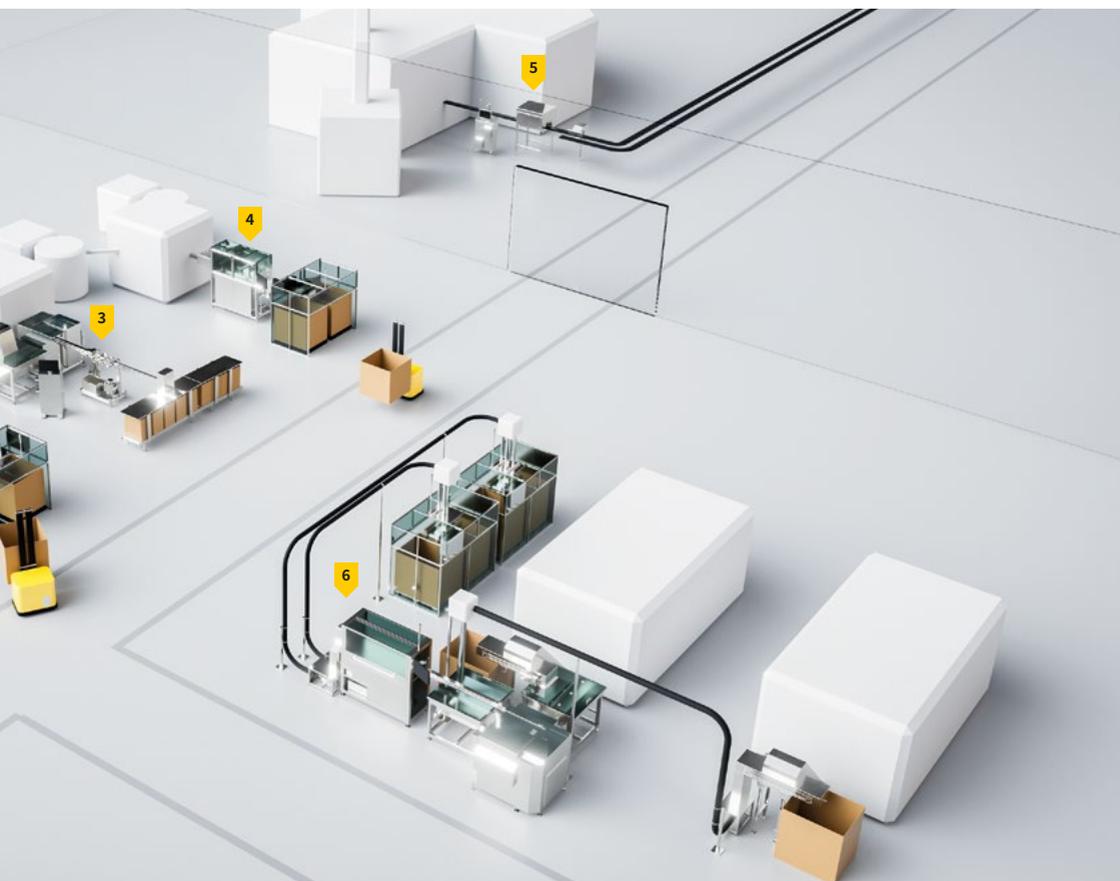
CAPS & CLOSURES

OVERVIEW

Our closure inspection systems offer you extensive choices and the whole range of application possibilities. We provide everything from customized systems, giving you the chance to decide which individual inspections you need, to fully comprehensive 100% inspection systems. Each of our systems is turnkey – you don't need to worry about the installation in your production because we take care of everything. Each of our inspection systems can be used inline directly behind the production line. As a highlight, our product portfolio includes systems for a normal production environment as well as a system for the wet area integrated into a filling line.

In addition to the inspection systems, we are also happy to support you with our extensive range of peripherals – from conveyor belts and sorters to various versions of packing stations. Thus, you have just one contact partner for all your downstream equipment.





1 CapWatcher Q-Line with periphery

2 CapWatcher Q-Line Slitter behind the slitting machine

3 CapWatcher B-Line with periphery

4 CapWatcher SC behind assembling

5 CapWatcher FC behind the filler

6 CapWatcher Q-Line with periphery behind two IMM

CAPS & CLOSURES

COMPARISON

Have a look at the product portfolio of our closure inspection systems with their various inspection criteria, specifically designed for the individual area of application.

	INSPECTED OBJECTS				MAX. INSPECTION SPEED parts / h		
	Standard one- & two-piece beverage closures ¹	Specialty closures ²	Tethered caps		Inline	Offline	Laboratory
CAPWATCHER Q-LINE	<input checked="" type="checkbox"/> ³	<input type="checkbox"/>	<input checked="" type="checkbox"/>	288,000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CAPWATCHER B-LINE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> ⁴	144,000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CAPWATCHER SC	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	288,000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CAPWATCHER FC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	43,200 ⁵	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
INTRAONE ⁶	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	180,000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
BARRIERWATCHER	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	36,000 ⁷	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

¹ 26/22, 29/25, 30/25, PCO1810, PCO1881, 38mm, CSD & Non-CSD

² Sports caps, Tube closures, Closures for chemical industry, Dosing inserts, Liner, Child protection, Closures > ø 38 mm

³ CapWatcher Q-Line Slitter available for slitted closures (behind slitting machine)

⁴ Inspection of tethered caps without tethered features



**WHICH ONE FITS YOUR NEEDS
BEST? GET IN TOUCH WITH
OUR SALES TEAM.**

INSPECTION CRITERIA

General inspections

Geometry	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Color	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Contamination	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flashes & short shots	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Cavity number	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Thread	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Tamper-evident band

Presence	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Damage	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Sealing elements

Seal cone	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Liner	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Additional inspections

Head plate	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Injection gate	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Temperature	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Application angle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fill level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Closure positioning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Barrier layer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5 Inspection speed scalable

6 Single-camera-system: Inspection criteria depend on area of application / camera position

7 Inspection speed scalable

CAPS & CLOSURES

CAPWATCHER

Q-LINE

OVERALL QUALITY ASSURANCE OF YOUR CLOSURES

The CapWatcher Q-Line brings the quality lab to your production line. With its up to nine high-resolution cameras, a precision of 1/100th of a millimeter, more than 40 inspection criteria per closure, and a speed of up to 80 closures per second, the Cap-Watcher Q-Line gathers 192,000 cavity related product information per min-

ute. Additionally, it visualizes all product data and offers comprehensive opportunities for statistical analysis.

The high-performance capacity in combination with sophisticated and unique inspections, like the patented temperature measurement and the contactless micro hole inspection, give you the security of flawless closures immediately when they are produced.



Sophisticated, high-speed closure inspection guarantees full product safety



EFFICIENT AND ECONOMICAL PRODUCTION

With our specially developed illumination technology and machine-learning algorithms for outstanding cavity recognition, you are able to fix cavity-related problems. Additionally, new resins and master batches are easily and quickly introduced, material fatigue is detected early and necessary maintenance can be planned.

Above all this stands the usability of your closure. Tamper-evident band, thread and sealing elements have to be perfect to secure the functionality of the closure. We are also able to find even the smallest defects – also for tethered and slitted closures!

Based on the generated data, necessary adjustments of the injection molding machine can be done automatically via a closed-loop connection between the CapWatcher Q-Line and

the injection molding machine to achieve a more efficient and economical production process in the sense of Industry 4.0. The CapWatcher Q-Line generates a lot of data to enable better decisions. This is an important aspect to fulfil our vision for our customers: “We Solve Problems. Before They Occur.”



Comprehensive closure quality assurance: full 360° closure inspection – also for tethered caps



Cavity number reading for cavity-related in-depth analysis



Sophisticated and patented inspections, e.g. temperatur and contactless micro hole inspection

CAPS & CLOSURES

CAPWATCHER

B-LINE

The CapWatcher B-Line is the basic solution for your closure inspection. By using this cost-effective vision system, major problems and substantial costs created by production of defective closures can be avoided. This compact system provides all significant inspection criteria for fast and ac-

curate quality control. Overall, this ensures flawless and efficient closure production.

MODULAR & BASIC CONCEPT

For the CapWatcher B-Line, INTRAVIS implemented a modular system concept. It can be adjusted to the individu-



Fundamental and low-budget closure inspection on a small footprint

al needs of the customer with regard to basic inspection modules as well as the periphery. With this concept, we enable a time-saving and convenient integration into the customer's production line without the necessity of further investments.

Moreover, with closure diameters of up to 63 mm, a wide range of products can be inspected with the CapWatcher B-Line. To guarantee optimal inspection results, the specific inspection modules are adjusted to the size of the closures.

PRODUCTION OPTIMIZATION

The CapWatcher B-Line, like any INTRAVIS system, is prepared for you on a turnkey basis. The IntraVision, our inhouse developed inspection software, is specially adapted to your requirements and all modules are installed by a trained technician from our company. Of course, the Cap-

Watcher B-Line with its comprehensively collected product-related quality data also provides you with important findings to optimize your production process.

Taking all of these aspects into account, INTRAVIS is proud to present the new CapWatcher B-Line as: **Basic. Budget-friendly. Beneficial.**



Compact and cost-effective system



Inspection of all significant criteria for flawless closure production



Modular & flexible: Adjusted to the individual needs of the customer

CAPS & CLOSURES

CAPWATCHER

SC

Special products require special solutions. The CapWatcher SC is the perfect solution for every type of specialty closure: push-pull closures, sports caps, flip-top closures, closures with multiple tamper-evident bands or dosing inserts. With the CapWatcher SC

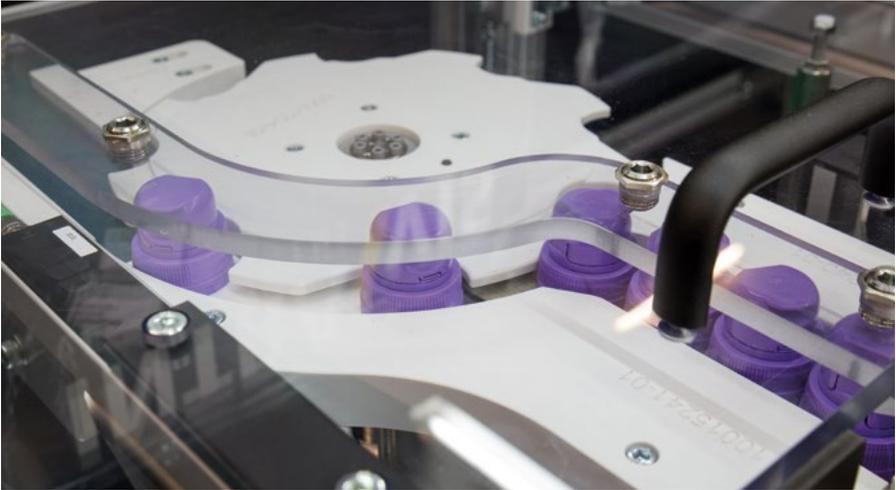
you get the security of flawless specialty closures.

CUSTOMIZED SYSTEM

As customized systems, the CapWatcher SC solutions offer two guarantees. On the one hand, your solution is spe-



Fast and precise quality control of specialty closures



cially adapted to your space conditions and your inspection needs for your closure. Even a space-neutral integration can be realized. On the other hand, you get the guarantee that typical defects in the hinges or joints, which commonly occur in the production of specialty closures, will be reliably detected and sorted out. We can draw upon more than 10 years of experience in the specialty closures market.

In addition, thanks to extensive statistics, you have the information ready in hand to realize process improvements. On request, this information can be communicated directly back to your

ERP system to generate an individual report for your customer's order.



Focus on specialty closures:
Inspection of even challenging
closure types



Customized solutions: Quality
control perfectly adapted to your
needs



Extensive statistics for in-depth
analysis & production optimization

CAPS & CLOSURES

CAPWATCHER

FC

WASHDOWN DESIGN

The CapWatcher FC completes the product portfolio of INTRAVIS in terms of closure production and further closure processing. The system ensures a comprehensive closure inspection behind the filler and capper. Our experience gained in the past few years helped us to develop a system that

meets the customers' expectations and hygienic demands. Thus, a new standard in the inspection technology with splash water protection could be set. The INTRAVIS Washdown Design is perfectly adjusted to the challenges in the wet area of the filling line. The adaptability to various products via automatic height adjustment in case of a product



The CapWatcher FC is perfectly adjusted to the application in the filling line



change contributes to the sophistication and convenience of the design.

TECHNOLOGICAL INNOVATIONS

In addition to the Washdown Design, we present another technological innovation in connection with the Cap-watcher FC: The inspection of the application angle. The determination of the relative angular position of a barely perceptible mark on the bottle to a mark on the closure guarantees a highly precise verification of the closure position. Thereby, the system ensures that only accurately applied and correctly sealed bottles find their way to the consumer.

The verification of the fill level gives you certainty about the completion of the filling process. In addition, the system inspects e.g. for defects of the tamper-evident band, as well as for elevated, crooked and domed closures. This means: No more complaints due

to leaking closures!

Via statistical analysis, malfunctions can be traced back to specific stations on the capping and/or filling machine. This enables quick corrective action to prevent further defects. Thus, a fast maintenance and a highly efficient production can be assured.



Washdown Design: Splash-proof design which fulfills the market's hygienic demands



Inspection of the application angle: Verifying the exact closure position



Process feedback: Inspection results are correlated with filler and capper stations

CAPS & CLOSURES

INTRAOONE

Designed as a single-camera-system, the IntraOne combines the advantages of a smart camera solution with the well-established IntraVision software. It can be used for the quality control of closures, bottles, containers as well as labels and decoration.

The IntraOne can be easily integrated into any production line. Its design allows for the use even in the most demanding environments. The vision system uses an integrated industrial PC and is therefore particularly space-saving. The system can be in-



Smart camera solution – universally applicable

stalled quickly and effortlessly. Together with you and on-site, our experienced service technicians will find the ideal configuration for your inspection task.

WIDE-RANGING CAPABILITIES

The IntraOne is based on INTRAVIS' long-time experience and expertise in the quality control of plastic packages. The well-known IntraVision software is installed on the system and enables the use of all proven inspection modules. All data collected is presented in the form of statistics and diagrams. Trends and possible countermeasures can be identified at an early stage.

The system inspects for typical defects such as contaminations, color, or contour deviations. In addition to the basic package consisting of a camera and appropriate lighting, further options like a rejector or IP65 protection are available.



Smart camera solution: ready-to-use, but full service and comprehensive training



Focus on 1 camera: budget-friendly and short delivery time



Space-saving design: integrable in any production line

CAPS & CLOSURES

BARRIER-WATCHER

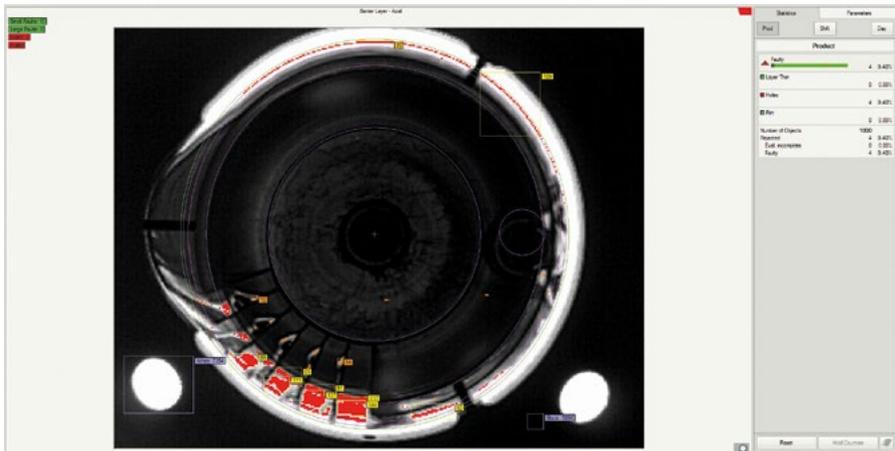
The BarrierWatcher accomplishes the inspection of the entire EVOH barrier layer without destroying the packaging. The system is easy to use and detects holes and thin areas in the barrier layer with a special measurement procedure.

The BarrierWatcher typically inspects

containers, cups, single-serve capsules and closures.

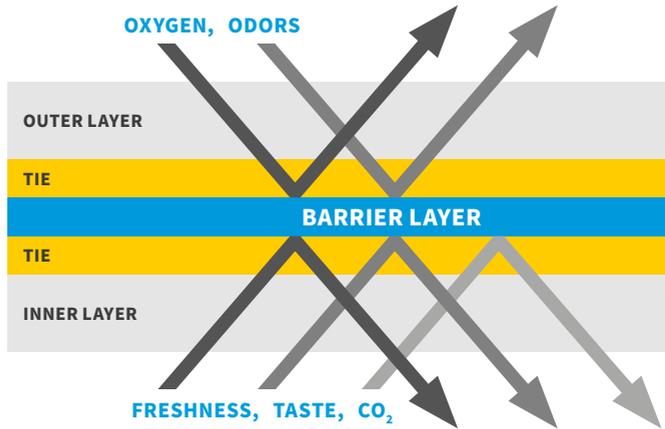
SPECIALIZED IN BARRIER LAYER INSPECTION

The specific characteristics of the objects are analyzed and a distinction between the base material and the barrier



Making invisible defects visible: Non-destructive inspection of EVOH barrier layers

layer can be made. Holes in the barrier layer are made apparent through comparison to a reference sample. Defective parts are automatically sorted out from the production line.



MULTIPLE WAYS OF APPLICATION

The BarrierWatcher is available as a laboratory system with manual feeding or as an inline system integrated into the production line. When used as an inline system, the BarrierWatcher identifies defects and correlates them to the specific cavity. This enables the operator to easily identify faults at the production machine and to carry out a targeted maintenance. As an inline system, the BarrierWatcher can be configured to all current production rates.



High inspection accuracy of 1x1 mm (at 50 mm object diameter)



Comprehensive quality control: inspection for presence, holes and thin areas



Non-destructive method: without cutting and delaminating the objects

CAPS & CLOSURES

PERIPHERY

Based on more than 30 years of industry experience, our periphery equipment provides an ideal solution for every closure production line. As a reliable partner, we offer customized developments based on your needs, simple integration, and worldwide service. Whether it's a vision inspection system, the packaging station or further periphery, we provide the entire equipment for your closure production – everything from a single source.

CAPS & CLOSURES PERIPHERY CAPFEEDER

With the INTRAVIS CapFeeder you get the most powerful feeder on the market for your closure production. With conveying speeds of more than 280,000 closures per hour, the CapFeeder forms an outstanding team in combination with the INTRAVIS Cap-Watcher.

The savings potential of the total cost of ownership (TCO) is particularly outstanding if you combine the CapFeeder with an INTRAVIS inspection system. At full capacity, an INTRAVIS Closure Line easily inspects, sorts, and packages the output of two 72-cavity machines with a 2-second cycle time –



One of various layout variants for closure feeding & inspection



saving you a complete inspection line! Different combinations of line layouts and intermediate buffers offer a wide range of configurations to meet different layout needs. In close cooperation with you, we will work out the optimal solution for your closure production.

EASY HANDLING, HIGH EFFICIENCY

In everyday use, the CapFeeder is characterized by easy and efficient handling. If closures are statically charged, the charge is completely neutralized by an integrated ion bar. This eliminates the risk of misaligned closures so the inspection line can reach its full potential.

Changing the closure design, for example from PCO1810 to PCO1881, can be done in just a few steps. Even larger format changes, such as from 26mm to 38mm, can be carried out in no time at all. The subsequent validation of your inspection

system can be quickly and easily performed thanks to the convenient infeed of the appropriate test parts.

The CapFeeder is an innovative, cost efficient and easy to handle solution, offering a truly valid production process with the security of high-quality closure production and great savings potential for your inspection line!



Wide range of configurations to meet all kinds of layout needs



Quick and easy format changes



High-speed and powerful:
Up to 80 closures per second

CAPS & CLOSURES PERIPHERY

CAPFEEDER + TOWER

The CapFeeder with the Tower Hopper is a new, compact feeding solution for modern closure production lines which addresses one of the biggest problems in modern production facilities: Space. Most customers are keen to save as much space as possible and maximize efficiency when creating or

modifying a production line.

COMPACT FOOTPRINT

This goal is achieved by arranging the Tower Hopper vertically above the CapFeeder on a footprint of just 3m². This innovation was developed for cramped production environments



High-performance feeder for your closures

HOPPER

and gives you the opportunity to maximize the use of your production space – even at highest production speeds of up to 288.000 closures per hour. The result is a space saving of up to 40% compared to previous layouts.

INTRAVIS takes customer requests into account and offers a wide range of configurations to meet all types of your layout requirements and maximize efficiency on a minimal footprint. Equipped with cutting-edge technology, our feeding solutions increase simplicity and accuracy of the closure production, saving you valuable time and resources.



Compact & space-saving feeding solution



Wide range of configurations to meet all kinds of layout needs



High-speed and powerful:
Up to 80 closures per second

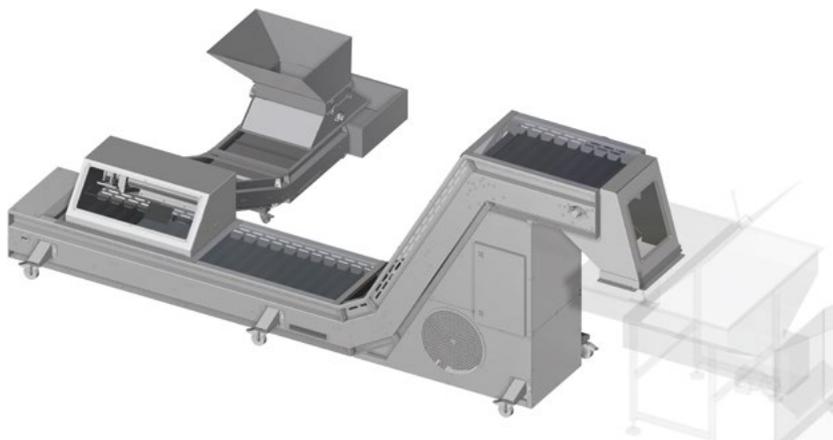
CAPS & CLOSURES PERIPHERY CONVEYOR

Z-COOLING CONVEYOR

Developed with more than 30 years of experience in the plastic packaging industry, our Z-Cooling Conveyor offers optimal conditions for the smooth processing of your closures, thanks to its powerful cooling and gentle transport.

The mobile stainless-steel housing and the low-wear, FDA-compliant module chain are just two highlights that make the Z-Cooling Conveyor an optimal part of your production line.

With a conveyor speed of up to 275,000 closures per hour, it keeps up with every pace.



Smart conveying solutions for your closure line

Thanks to customer-specific planning, uncomplicated integration and our worldwide service, INTRAVIS is your reliable partner for the entire periphery equipment of your closure production – from the cross conveyor to the inspection system to the packaging station.

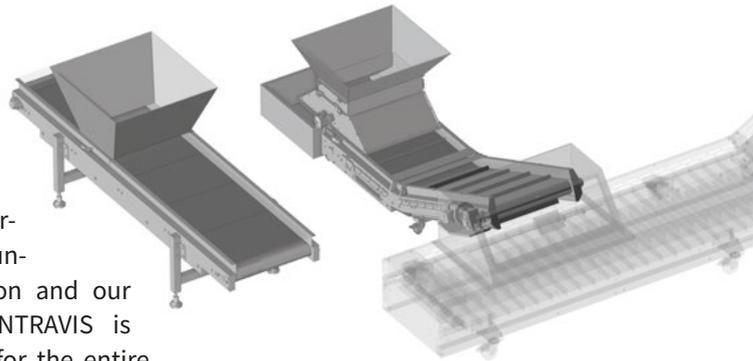
CROSS CONVEYOR

The INTRAVIS Cross Conveyors provide the optimal solution for your injection molding machine: From the ejection of the first shots during commissioning to the removal and separation of a single quality shot – the Cross Conveyors offer the right solution to meet your requirements.

Like the Z-Cooling Conveyor, our cross conveyor belts also offer a wear-resistant, FDA-compliant modular chain. In addition, thanks to defined interfaces, you have the option of connecting

your injection molding machine to the cross conveyor belts to guarantee a coordinated production flow.

With our individual funnel solutions, an integration into any injection molding machine is possible. In addition, under certain conditions, you even have the option of taking individual quality shots for further processing in the laboratory – even in case of short cycle times. Your entire periphery equipment from a single source!



SOFTWARE

INTRAVIS develops proprietary software for the vision inspection of plastic packages. It is our goal to develop inspection solutions customized to the packaging producers' requirements. Our software products are user-friendly, easy to handle and provide automatic functionalities. Thus, machine operators as well as production managers can focus on their core activities without spending much time setting up the inspection systems.

Our software products aim to reach two main goals:

1. Detect and eject defective products so that only products with the desired quality are delivered to your customers. Therefore, software is needed that can quickly and precisely identify and analyze defects.
2. Quickly react in the right way and prevent the production of faulty products. In this way, production costs can be reduced and profitability is improved. This goal can be achieved by permanently analyzing quality trends and by receiving detailed production insights.

SOFTWARE

INTRAVISION

The IntraVision is the inspection and administration software for every IN-TRAVIS system. Based on the customer's products, several suitable inspection modules are embedded in it. They are used to analyze parameters which present important quality characteristics for the products to be inspected.

STATISTICS & REPORTING

The user interface shows current statistical data in various time intervals and display modes about every inspection criterion separately. Do you need to submit these data in extensive, meaningful inspection reports to your customers? No problem for the export



IntraVision UI for an integrated LabelWatcher

function for reports! In addition, all data can be used for further processing by means of Factory Automation Services (FAS) – either as a database export or as a status message to higher-level systems.

PROCESS SAFETY

To meet all legal requirements, you can also set up a detailed Audit Trail to keep track of any change in the process settings. In addition, the IntraVision offers comprehensive possibilities of authorization assignment. Each operator gets exactly the access rights needed. Trend calculations are possible as well! The Warning Threshold issues a warning to the operator if the deviation of a measurement increases during a period of time and if it is expected that the adjusted tolerance will be exceeded soon.

MAINTENANCE

Every system requires regular maintenance for optimal performance. On the

one hand, the software supports you by establishing defined maintenance intervals, after which a warning message is displayed on the system. On the other hand, the System Self Monitoring helps you to recognize malfunctioning of all inspection-relevant components. Potential disruptions and failures are prevented and unwanted machine downtimes are reduced to a minimum.



Easy operation: simple setup and clear user interface



Customized software extensions: tailored to your production requirements



Overall production overview: through extensive statistics, diagrams and reports

SOFTWARE

INTRAVISUALIZER

IMPROVE YOUR PRODUCTION ...

Nowadays, inspection systems provide a huge amount of data and deep insights into your production lines. But: Are you already taking advantage of all this information?

... WITH THE INTRAVISUALIZER

The IntraVisualizer is a complete software solution that analyzes and visualizes the product data of all INTRAVIS systems in your production plant.

This key information supports you in your daily job to keep the product



Data analytics software for comprehensive analysis of all production lines simultaneously

quality at high level, by delivering crucial production insights to your management and by helping your manufacturing team to plan the production.

DEPLOYMENT CONVENIENCE

The IntraVisualizer is available for you as a cloud solution. This means: This means: Full flexibility and simplicity, scaling as needed, and connection of unlimited systems. We care for updates and backups so that you do not need any IT infrastructure.

Thanks to the browser-based software, you can use it from everywhere in the world on your computer and mobile device.

BENEFITS FOR YOUR TEAMS

Your quality team, manufacturing team as well as management team can exploit the IntraVisualizer's huge range of functionalities. It helps you to minimize recalls, assure quality standards, react promptly to unforeseen events,

and gain overall strategic insights.

YOU ALREADY HAVE A DATA ANALYTICS SOFTWARE?

If you prefer to export the data of your INTRAVIS inspection systems to your ERP, MES, IIOT or other analytics software, we can also offer you several solutions.



Performance monitoring of all inspection systems at a glance



Detection of quality issues and their reasons to increase production efficiency



Trend analysis to detect maintenance needs and minimize unplanned downtime

SOFTWARE

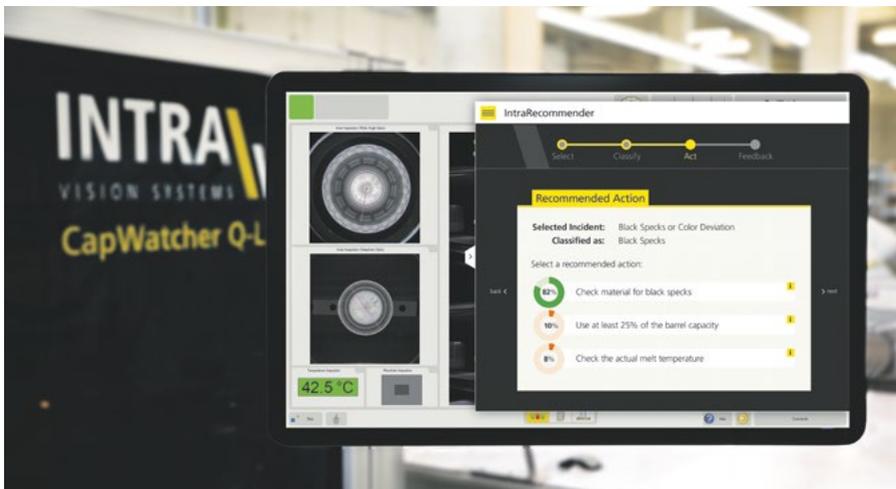
INTRA- RECOMMENDER

IMPROVE YOUR PRODUCTION ...

Is the IntraVisualizer not sufficient for your production data analysis and usage? Take your data analysis to the next level with recommended actions to optimize the production process.

... WITH THE INTRARECOMMENDER

The IntraRecommender is your intelligent production assistant. Through recommended actions, every machine operator can immediately make the right decisions to solve production issues and reduce machine downtimes significantly.



Well-founded recommendations for optimizing the production process

cantly. Production process optimization as well as the overall effectiveness of your production line will be raised to a new level.

DATA COLLECTION OF THE WHOLE PRODUCTION LINE

The IntraRecommender collects high-precision, comprehensive quality data from your INTRAVIS inspection system during production. At the same time, the IntraRecommender receives a variety of important process data from the injection molding machine, hot runner, cavity pressure sensors and more via a robust OPC UA interface according to the EUROMAP standard.

RECOMMENDED ACTIONS

Machine learning algorithms analyze product and process data in real time, recognizing correlations and combining them with your process know-how. Based on this comprehensive database, the machine operator receives

well-founded recommendations for optimizing the production process. As a result, the IntraRecommender continuously learns and creates an extensive knowledge database, specialized to your production process. Every machine operator receives the same reliable recommendations for action and can immediately make targeted decisions in the event of a problem.



Increased OEE through analysis of product and process data



Multiplication of expert knowledge through an extensive knowledge database



Significant reduction of machine downtimes through real-time recommendation

SERVICE

At INTRAVIS, we recognize our customers as partners and invest in a long-term relationship. Therefore, our work does not end with the successful acceptance of the system.

Whenever questions or problems occur, INTRAVIS is ready to support you with skilled technicians and service locations spread over four continents.



SERVICE WORLDWIDE

RETENTION OF SYSTEM VALUE

If you decide to purchase an inspection system, you expect that it performs its tasks reliably and permanently. Regular service visits by our

qualified service technicians increase the average service life and ensure consistently high performance. How? Our technicians identify failing parts before they break, adjust your system



At your service at any time: our INTRAVIS service technicians

optimally for your inspection tasks, and train your team to keep your system performing at peak performance.

MINIMIZE DOWNTIME AND COSTS THROUGH SERVICE VISITS

Schedule service visits so that they match the service intervals of your upstream and downstream machines. In this way, your production line will have less downtime and you can resume production faster. A variety of service contracts are available that allow you to calculate your costs clearly in advance.

RELIABILITY THROUGH SERVICE CHECKS

Imagine your products must be shipped to the customer uninspected because your inspection system failed due to a missing wear part. Regular service checks ensure your inspection system operates reliably and without problems. Thanks to our service hot-

line and worldwide service centers, a technician can be at your site within the shortest possible time.

PROCESS OPTIMIZATION BY TRAINED PERSONNEL

An inspection system can only achieve optimum performance through the correct handling by a trained operator. Therefore, we offer training sessions for your key users with a final user certificate for every installation of a system. This training helps to perfectly operate the system in everyday life, and to draw the right conclusions from the comprehensive data that is generated by the system. Of course, you can receive additional training for new employees at any time.

SERVICE CONTRACTS

Focus on your strengths, we take care of everything else. It does not matter how many INTRAVIS systems you have – a service contract guarantees maximum system availability.

To offer you full flexibility, our service contracts consist of a basic package and possible optional packages. Among other things, our basic contract contains:

- an annual service check,
- free software updates,
- telephone support, and
- the exclusive availability of a service technician departing within 96 hours.

For extra protection, you can include optional packages. For example, you can add 24/7 telephone support and faster availability of a service technician.

ANNUAL SERVICE CHECK

INTRAVIS systems are stable and durable. Nevertheless, annual service checks are recommended for each of our systems. With an annual service check, you can make sure that your systems are in an optimal condition, so you can ensure a flawless inspection performance. This increases the effectiveness of your system and thus the efficiency of your entire production line.

HIGHER SUPPORT AVAILABILITY

If you need a service technician on site, a service contract means that you are of highest priority. With an optional package, you have the security to reach a technician of our service department at any time and every day of the week.

REMOTE ASSISTANCE

Some challenges need more than phone calls and email support. In



**MAXIMUM SYSTEM AVAILABILITY
DESIRED? GET IN TOUCH WITH
OUR SERVICE TEAM.**

these moments, remote assistance provides us the tools to assist you as if we were there.

- **REMOTE SUPPORT:** Our service technicians support you remotely by accessing your system with TeamViewer via Internet connection. In this way, we can quickly solve many problems from a remote location.
- **REMOTE GUIDANCE:** Our technicians will guide you with TeamViewer Pilot in a video call with augmented reality via smartphone, tablet, or even smart glasses. Thus, our technicians see what you see as if they were directly at your production site.

SPARE PARTS KITS AND TRAININGS

We provide kits with the most frequently used spare parts. With these kits, you have the most important parts

for a maintenance job already on site.

And if you have new employees, you can always book training for your IN-TRAVIS systems whenever you need it. For more information, please contact us.



Remote guidance by our service technicians

KEEP UP-TO-DATE



Do you already **follow us on our social media channels**? There are many different ways to stay connected with us. We are constantly sharing information about new developments, company insights, events and trade fairs as well as industry news.

Weekly updates can be found in LinkedIn whereas Youtube is the right channel for watching our vision systems live in action. If you prefer to receive **the latest news directly in your digital inbox**, subscribe to our email newsletter. Last but not least, you can find in-depth articles about our innovations in the blog on our website.



Scan the QR codes to check us out across our different social media channels!

CAREER AT INTRAVIS



The corporate culture among our employees is very amicable: whether during coffee breaks, lunch, cross-team meetings or company parties – we place great value on personal and professional exchange.

Open and respectful communication, feedback and a good working relationship are very important to us.



Individual development and the promotion of personal initiative are essential components of our corporate policy.

Our fields of activity are just as diverse as our entry-level opportunities. Whether in form of an apprenticeship, an internship, a student job or a permanent employment – with or without professional experience, as a career changer, full-time or part-time, with leadership responsibility or as a technical expert – the opportunities are diverse.



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