

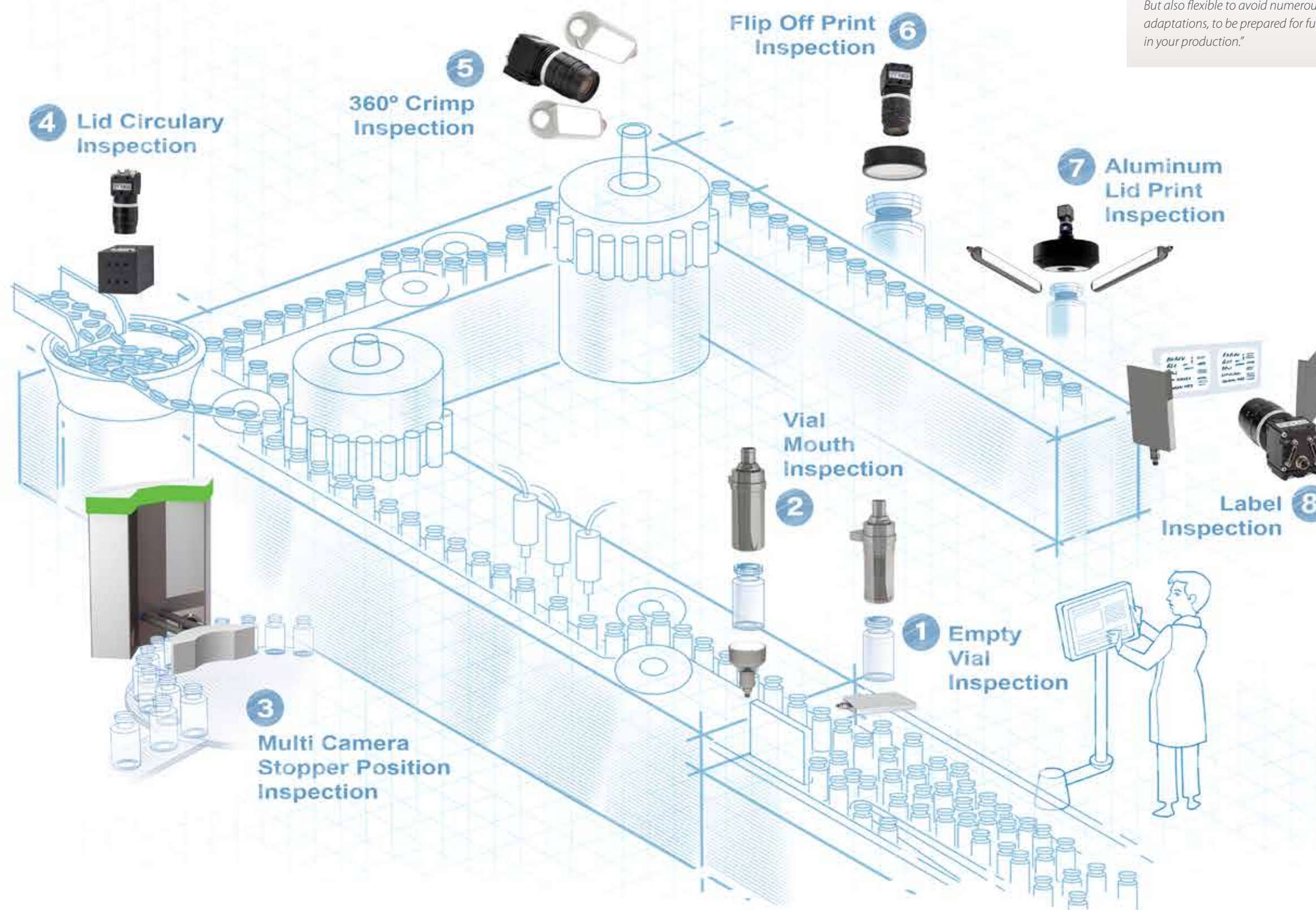
Inspection Solutions for Pharma

Liquid Filling Applications



- One platform for all applications
- GMP conform
- FDA conform
- Expandable by i-Automation

Overview: inspection tasks in a pharmaceutical liquid filling production line



Helge Preuschl
Key Account Manager Pharma



"Using one inspection platform for all applications - compliant, reliable, easy to use, and achieving the highest precision and performance. But also flexible to avoid numerous extensive adaptations, to be prepared for future demands in your production."

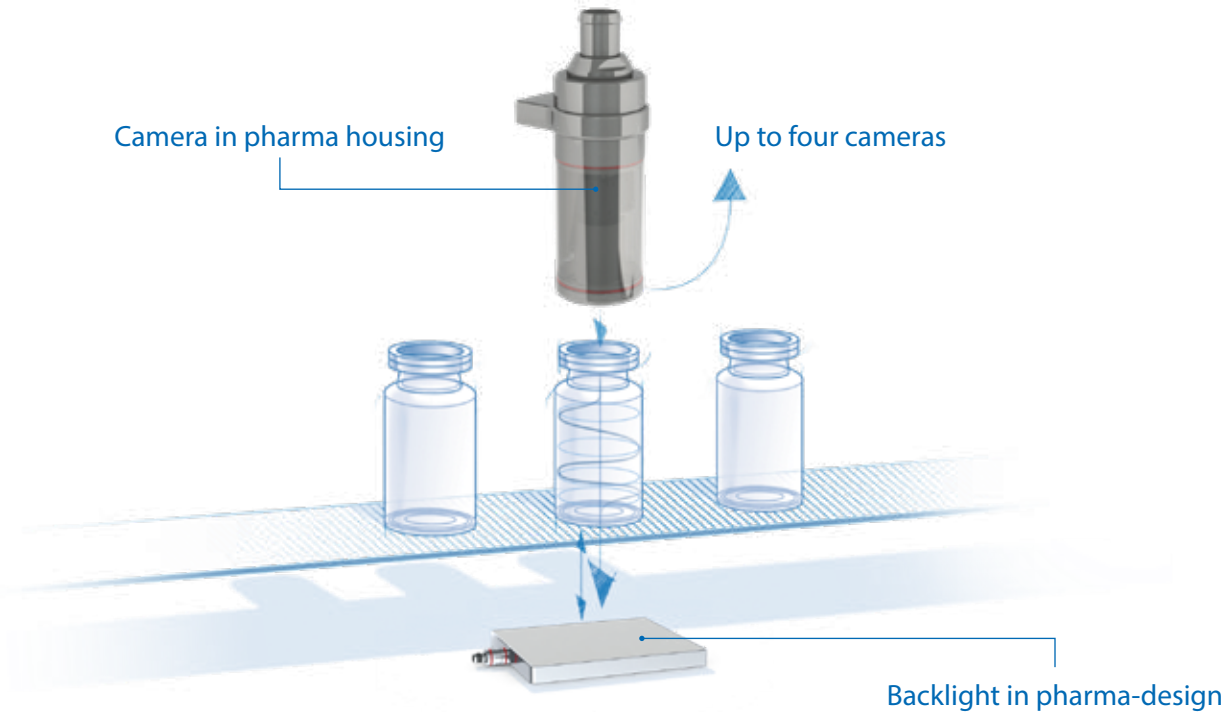
1 Empty vial inspection



Scope of inspection

- Checking for contamination in vial
- Detects pieces of broken glass
- Foreign material detection
- Display of foreign material
- Optional: Up to four cameras for simultaneous inspection of multiple objects

Machine infeed: Empty vial inspection



Characteristics

- Format range from 2R up to 50R
- Typical evaluation time <100ms
- A single optical setup for checking all formats
- Inspection of moving objects (on the fly)

Carlo Ritter
Application Specialist Pharma
Key Account Team



“With it’s modularity and flexibility OMRON’s i-Automation offers nearly any solution for any task.”

Integration service

Pcs	Code	Description
1		Integration of system into machine environment
1		Consulting, Tests in laboratory
1		Customizing inspection tasks / view
1		Qualification documentation
1		Qualification support at site (2x)
1		Operators training

Machine: Module Empty vial Inspection

Pcs	Code	Description
1	FH-SMX05	High resolution FH camera 5 Megapixels
1	PCHI023	Hole inspection optics Manufacturer: Opto Engineering
1	CBS-P70-220-GK-21-21-00E-VA0	Protection Housing for camera and optics, Suitable for pharma applications Manufacturer: ETW Wollmershäuser GmbH
1	3Z4S-LE SV-EXR	Spacer set
1	FZ-VS3 10M	Camera connection cable straight 10m
1	BL-050-050-GD-RT-12-M04-VA0	Backlight 50mm x 50mm, LED, red Manufacturer: ETW Wollmershäuser GmbH
1	XS3F-E421-410-A	Lighting Cable

Panel: Vision Controller with accessories

Pcs	Code	Description
1	FH-2050	Vision controller
2	XW2R-P34G-T	I/O Connector MIL
2	XW2Z-0050EE-L	Cable for XW2R-P34G-T I/O Connector
1	S8VK-S24024	Power Supply 24V 240VA

HMI: Display with accessories (optional)

Pcs	Code	Description
1	NYM15W-C1000	15" Industrial Multitouch Display
1	FH-VUAB 5M	5m USB cable
1	NY000-AC00 5M	5m DVI cable

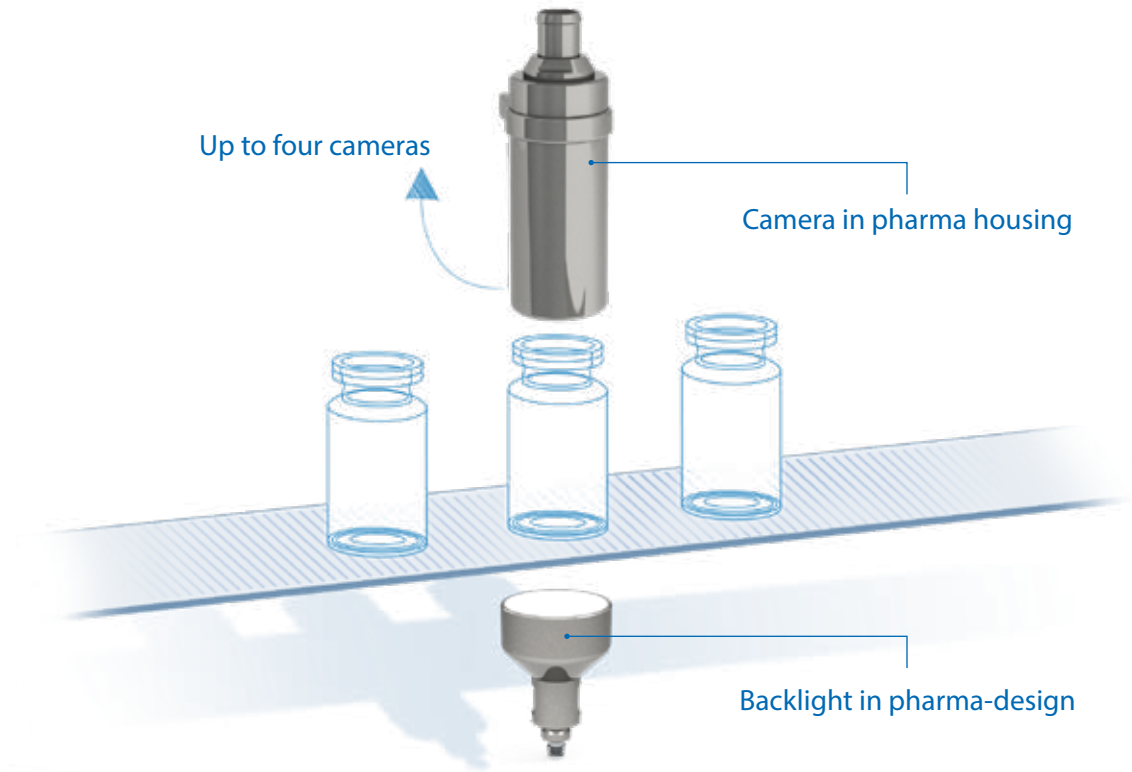
2 Vial mouth inspection



Scope of inspection

- Detection of defects (scratches, burst) on vial mouth
- Dirt detection included
- Display of detected defects
- Optional: Up to four cameras for simultaneous inspection of multiple objects

Machine infeed: Vial mouth inspection, schematics



Characteristics

- Formats from 2R up to 30R
- Typical evaluation time <75ms
- A single optical setup for all formats
- Inspection of moving objects (on the fly)
- Lighting design highly optimized for utilisation under laminar flow conditions

Seigo Kinugawa
CEO
Omron Europe



“Providing best technology and solutions for today’s and tomorrow’s demands is part of our contribution to a better society and to improve lives”

Integration service

Pcs	Code	Description
1		Integration of system into machine environment
1		Consulting, Tests in laboratory
1		Customizing inspection tasks / view
1		Qualification documentation
1		Qualification support at site (2x)
1		Operators training

Machine: Module vial mouth Inspection

Pcs	Code	Description
1	FH-SM04	High resolution FH camera 4 Megapixels
1	3Z4S-LE SV-10028H	High resolution lens 100mm
1	3Z4S-LE SV-EXR	Spacer set
1	F150-US=ZU-FI-830RG/M37,5	Daylight cut filter
1	CBS-P70-220-GK-21-21-00E-VA0	Protection Housing for camera and optics, Suitable for pharma applications Manufacturer: ETW Wollmershäuser GmbH
1	FZ-VS3 10M	Camera connection cable 10m
1	BLR-D40-GD-IR-12-D12-VA0-S1	ED Backlight 40mm diameter, IR, Laminar Flow suitable design Manufacturer: ETW Wollmershäuser GmbH
1	BR01-02A	Lighting controller; Manufacturer: ETW Wollmershäuser GmbH
1	30004595	Lighting cable 5m

Panel: Vision Controller with accessories

Pcs	Code	Description
1	FH-2050	Vision controller
2	XW2R-P34G-T	I/O Connector MIL
2	XW2Z-0050EE-L	Cable for XW2R-P34G-T I/O Connector
1	S8VK-S24024	Power Supply 24V 240VA

HMI: Display with accessories (optional)

Pcs	Code	Description
1	NYM15W-C1000	15" Industrial Multitouch Display
1	FH-VUAB 5M	5m USB cable
1	NY000-AC00 5M	5m DVI cable

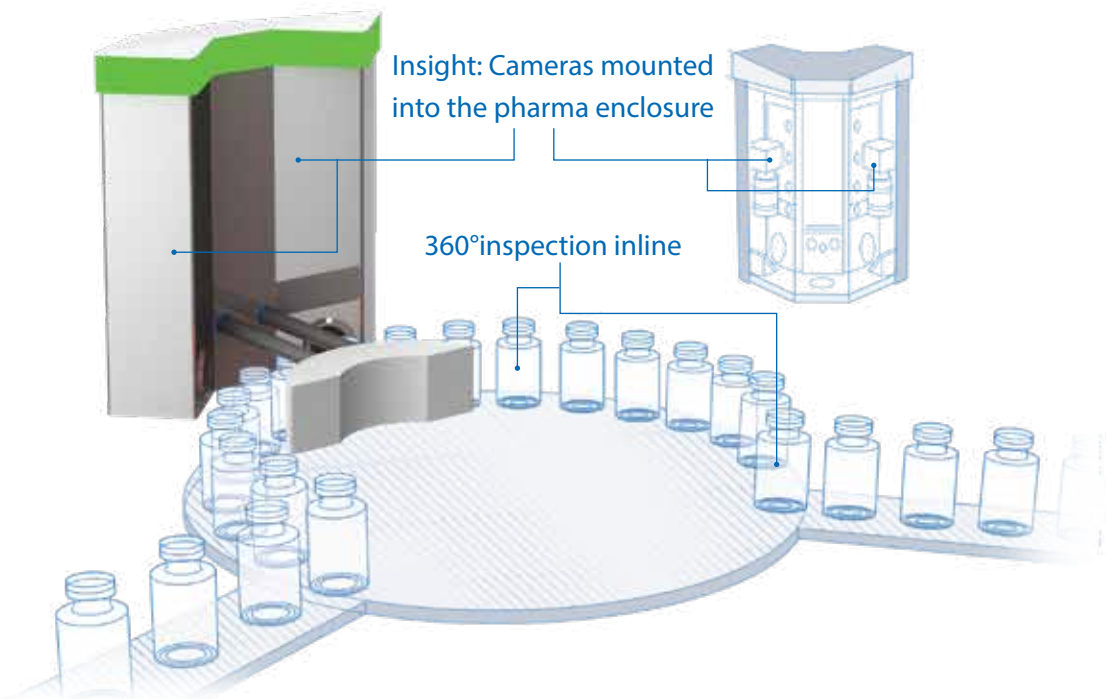
3 Multi Camera Stopper Position Inspection



Scope of inspection

- Stopper presence check
- Gap measurement on both sides of the stopper
- Gap and tilt display
- Two inspections in one display
- Optional: third camera checking for correct stopper type

Vial filling and capping: Stopper position inspection, schematics



Characteristics

- Stopper formats: Up to 32 mm
- Typical evaluation time <150ms
- Transparent and colored vials supported
- Inspection of moving objects (on the fly)

Manfred Wollmershäuser
CEO ETW



“Applied functional pharma enclosures and lightings are key for successful integration. Knowing the practical side within Pharma environment is our strength.”

Integration service

Pcs	Code	Description
1		Integration of system into machine environment
1		Consulting, Tests in laboratory
1		Customizing inspection tasks / view
1		Qualification documentation
1		Qualification support at site (2x)
1		Operators training

Machine: Module Stopper position Inspection

Pcs	Code	Description
2	FH-SM02	High resolution FH camera 2 Megapixels
2	3Z4S-LE VS-2514H1	High resolution Lens 35mm
8	3Z4S-LE SV-EXR05	Spacer 0,5mm
2	FZ-VS3 10m	Camera connection cable 10m
1	SKS-200-SA1	Camera enclosure with LED light Manufacturer: ETW Wollmershäuser GmbH

Panel: Vision Controller with accessories

Pcs	Code	Description
1	FH-2050	Vision controller
2	XW2R-P34G-T	I/O Connector MIL
2	XW2Z-0050EE-L	Cable for XW2R-P34G-T I/O Connector
1	S8VK-S24024	Power Supply 24V 240VA

HMI: Display with accessories (optional)

Pcs	Code	Description
1	NYM15W-C1000	15" Industrial Multitouch Display
1	FH-VUAB 5M	5m USB cable
1	NY000-AC00 5M	5m DVI cable

4 Lid Circularity Inspection



Scope of inspection

- Checks the shape of the aluminium lid
- Detects damaged parts of the lid
- Prevents machine blocking by early rejection of deformed lids

Vial filling and capping: Lid circularity inspection, schematics



Characteristics

- Cap formats: up to 32 mm
- Typical evaluation time <100ms
- Supports colored aluminium lids and flip offs
- Inspection of moving objects (on the fly)

Arndt Neues
Team Manager Key Account

“Working for a better society and processing the Sustainable Development Goals (SDGs) of the United Nations (UN), that’s our driver for a strong engagement in Pharma.”



Integration service

Pcs	Code	Description
1		Integration of system into machine environment
1		Consulting, Tests in laboratory
1		Customizing inspection tasks / view
1		Qualification documentation
1		Qualification support at site (2x)
1		Operators training

Machine: Module Lid circularity Inspection

Pcs	Code	Description
1	FH-SM	Standard resolution FH cam 0,4 Megapixels
1	3Z4S-LE SV-1214H	High resolution lens 12mm
1	3Z4S-LE SV-EXR	Spacer set
1	FZ-VS3 10m	Camera connection cable 10m
1	FLV-CL60W	Coaxial light, LED, white
1	FLV-TCC1	Lighting controller

Panel: Vision Controller with accessories

Pcs	Code	Description
1	FH-L550	Vision controller
2	XW2R-P34G-T	I/O Connector MIL
2	XW2Z-0050EE-L	Cable for XW2R-P34G-T I/O Connector
1	S8VK-S24024	Power Supply 24V 240VA

HMI: Display with accessories (optional)

Pcs	Code	Description
1	NYM15W-C1000	15" Industrial Multitouch Display
1	FH-VUAB 5M	5m USB cable
1	NY000-AC00 5M	5m DVI cable

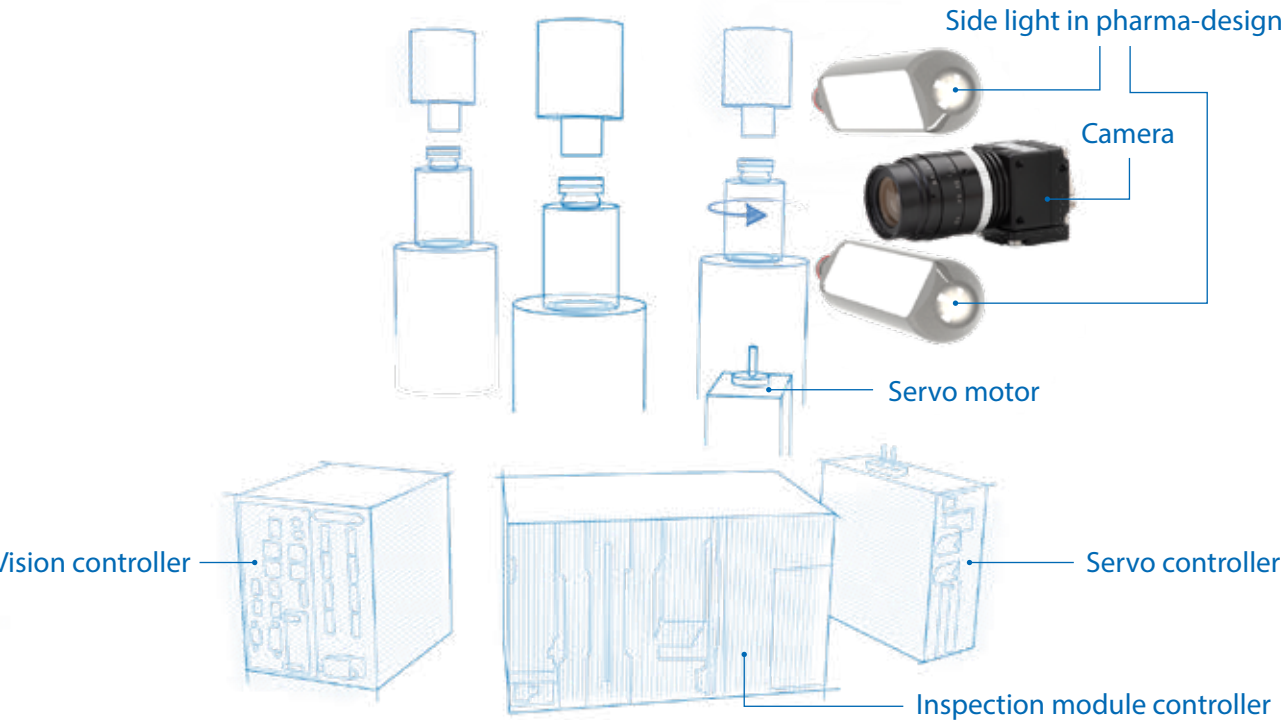
5 360° crimp Inspection



Scope of inspection

- Flip off presence and color check
- Checking for dirt and damages on aluminium lid
- Detection of partially or fully uncrimped aluminium lids
- Chattermark detection
- Optional: Additional cameras for simultaneous inspection of up to four vials

Vial filling and capping: 360° crimp inspection, schematics



Characteristics

- Formats from 8R up to 20R
- Typical evaluation time <500ms (rotation of vial included)
- High speed synchronisation between rotation and image acquisition
- Optional: Additional liquid lens for format change without mechanical readjustment

Robert Hölczl
Application Specialist Motion & Drives



“Utmost quality achievement through strong combination of high performing motion, vision and data processing is the key of i-Automation.”

Integration service

Pcs	Code	Description
1		Integration of system into machine environment
1		Consulting, Tests in laboratory
1		Customizing inspection tasks / view
1		Qualification documentation
1		Qualification support at site (2x)
1		Operators training

Machine: Module 360° crimp Inspection

Pcs	Code	Description
1	FH-SC	Standard resolution FH color camera 0,3 Megapixels
1	3Z4S-LE VS-3514H1	High resolution lens 35mm
1	3Z4S-LE SV-EXR	Spacer set
1	3Z4S-LE SV-PL405-SS	Polarisation filter
1	FZ-VS3 10M	Camera connection cable 10m
2	ABE-Z30-050-GD-WS-12-D12-VA	Barlight, LED white, 50mm, pharma design
2	XS3F-E422-410-A	Lighting cable 10m
1	NX701-1600	Machine controller
1	NX-PD7001	Machine controller power supply
1	NX-ECC203	EtherCAT coupler
1	NX-EC0142	Encoder unit
1	NX-OD4256	Digital output unit
1	NX-ID4442	Digital input unit
1	R88M-1M10030T-BS2	Servo motor
1	R88D-1SN01HECT	Servo controller

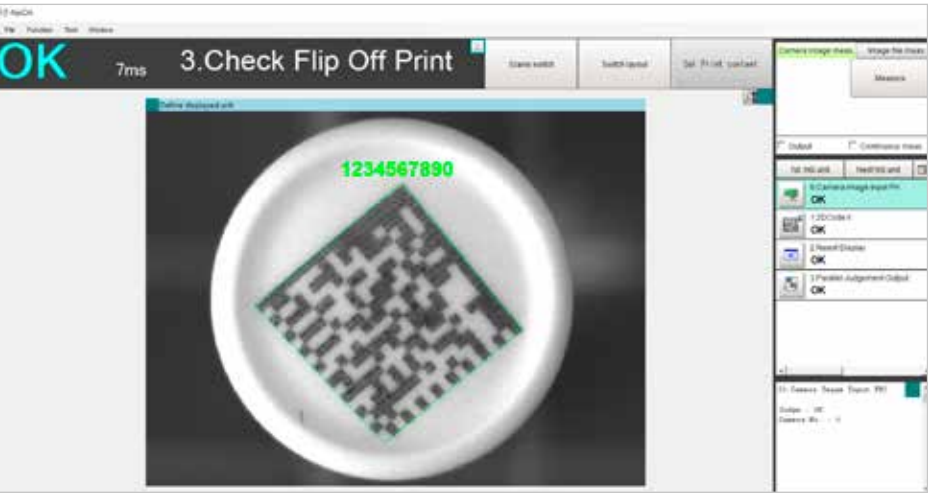
Panel: Vision Controller with accessories

Pcs	Code	Description
1	FH-5050	Vision controller
2	XW2R-P34G-T	I/O Connector MIL
2	XW2Z-0050EE-L	Cable for XW2R-P34G-T I/O Connector
1	S8VK-S24024	Power Supply 24V 240VA

HMI: Display with accessories (optional)

Pcs	Code	Description
1	NYM15W-C1000	15" Industrial Multitouch Display
1	FH-VUAB 5M	5m USB cable
1	NY000-AC00 5M	5m DVI cable

6 Flip Off Print Inspection



Scope of inspection

- Print position check
- 2D code reading
- Reading of plain text
- Code and text comparison against user specified content or serialised information
- Optional: alternative lighting for UV print inspection

Marking and Labeling: Flip off print inspection, schematics



Characteristics

- Cap formats: up to 20 mm
- Typical evaluation time <75ms
- Supports colored flip offs
- Inspection of moving objects (on the fly)

Christoph Nau
Application Specialist Pharma
Key Account Team



“Working in a strong international expert team ensures the creativity to respond on applicative challenges in Pharma environment.”

Integration service

Pcs	Code	Description
1		Integration of system into machine environment
1		Consulting, Tests in laboratory
1		Customizing inspection tasks / view
1		Qualification documentation
1		Qualification support at site (2x)
1		Operators training

Machine: Module Flip off print Inspection

Pcs	Code	Description
1	FH-SC	Standard resolution FH color camera 0,3 Megapixels
1	3Z4S-LE VS-2514H1	High resolution lens 25mm
1	3Z4S-LE SVPL270SS	Polarizing filter
1	FZ-VS3 10M	Camera connection cable 10m
1	FLV-DR7030W	Ring light, LED white
1	FLV-DR7030PL	Polarizing filter for FLV-DR7030 ring light
1	FLV-TCC1	Light controller

Panel: Vision Controller with accessories

Pcs	Code	Description
1	FH-2050	Vision controller
2	XW2R-P34G-T	I/O Connector MIL
2	XW2Z-0050EE-L	Cable for XW2R-P34G-T I/O Connector
1	S8VK-S24024	Power Supply 24V 240VA

HMI: Display with accessories (optional)

Pcs	Code	Description
1	NYM15W-C1000	15" Industrial Multitouch Display
1	FH-VUAB 5M	5m USB cable
1	NY000-AC00 5M	5m DVI cable

7 Aluminium Lid Print Inspection



Scope of inspection

- 2D code reading and comparison against user specified content or serialised information
- Detection and reading of printed plain text and numbers
- Specialised optics for single-shot 360° surround view of the aluminium lid
- Two inspections in one display
- Optional: Alternativ standard optics and setup with side-mounted camera for inspection of a small part of the aluminium lid

Marking and Labeling: Aluminium lid print inspection, schematics



Characteristics

- Formats up to 30R
- Typical evaluation time <125ms
- Colored aluminium lids supported
- Supports types with or without Flip Off
- Inspection of moving objects (on the fly)

Marco Ceribelli
General Manager Sales Europe

"Global presence and support from local experts close to your production sites ensures high production availability."



Integration service

Pcs	Code	Description
1		Integration of system into machine environment
1		Consulting, Tests in laboratory
1		Customizing inspection tasks / view
1		Qualification documentation
1		Qualification support at site (2x)
1		Operators training

Machine: Module Aluminium lid print Inspection

Pcs	Code	Description
1	FH-SMX05	High resolution FH camera 5 Megapixels
1	PCCD023	Catadioptric lens for 360° top and lateral view Manufacturer: Opto Engineering
1	PCCDLFAT	Interchangeable attachment for extra-wide field of view Manufacturer: Opto Engineering
1	3Z4S-LE SV-EXR	Spacer set
1	FZ-VS3 10M	Camera connection cable 10m
2	ABE-Z30-050-GD-WS-12-Z12-VA0	Barlight, LED white, special pharma design Manufacturer: ETW Wollmershäuser GmbH
2	XS3F-E422-410-A	Lighting cable 10m

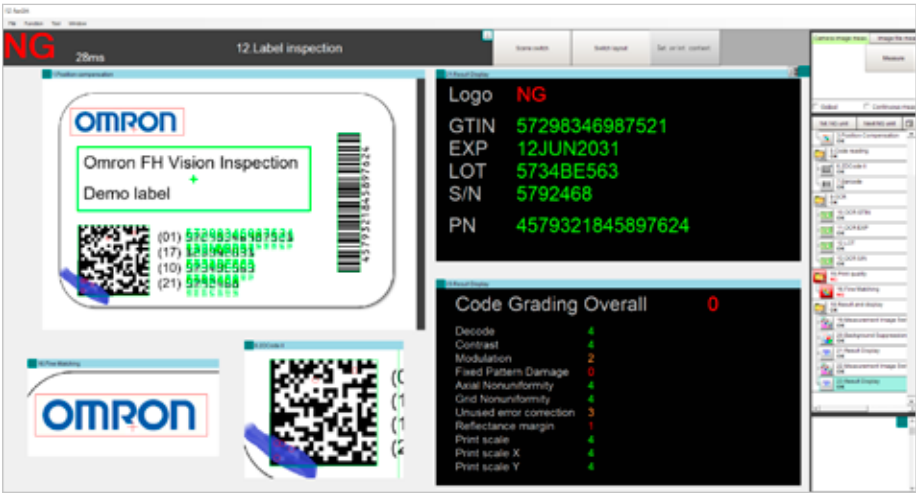
Panel: Vision Controller with accessories

Pcs	Code	Description
1	FH-2050	Vision controller
2	XW2R-P34G-T	I/O Connector MIL
2	XW2Z-0050EE-L	Cable for XW2R-P34G-T I/O Connector
1	S8VK-S24024	Power Supply 24V 240VA

HMI: Display with accessories (optional)

Pcs	Code	Description
1	NYM15W-C1000	15" Industrial Multitouch Display
1	FH-VUAB 5M	5m USB cable
1	NY000-AC00 5M	5m DVI cable

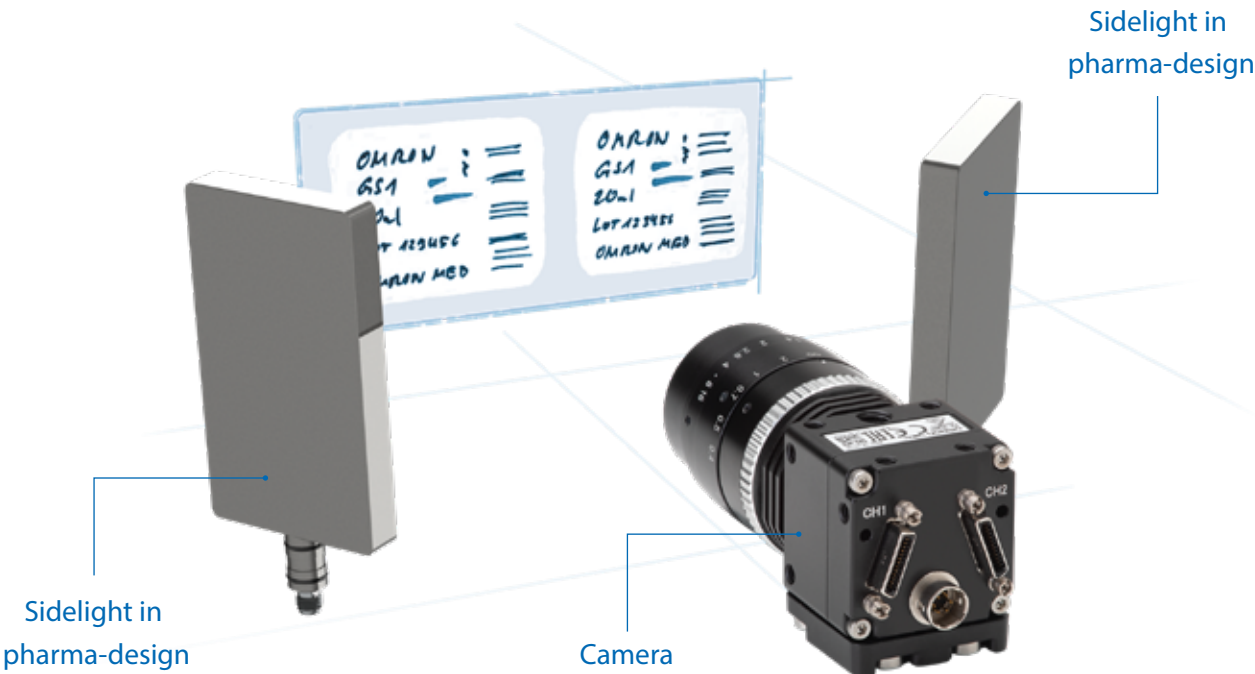
8 Label Inspection



Scope of inspection

- Check presence and position of the print
- Plain text reading and comparison to user specified content
- Checking position, quality and defects of logos, symbols, etc. Detection of missing print or additional print/dirt
- Reading of 1D and/or 2D codes and comparison to user specified content or serialised information

Marking and Labeling: Label inspection, schematics



Characteristics

- Labelsize up to 100 mm x 70 mm
- Typical evaluation time <100ms
- Inspection of moving objects (on the fly)
- Easy and quick input of user specific print content
- Flexible number of regions for quality checking

Johannes Schade
CEO isys vision

"Ease of use, performance and support are the keys for our customers using OMRON. We provide all necessary documentation and additional services required by regulations and own production standards."



Integration service

Pcs	Code	Description
1		Integration of system into machine environment
1		Consulting, Tests in laboratory
1		Customizing inspection tasks / view
1		Qualification documentation
1		Qualification support at site (2x)
1		Operators training

Machine: Module Label Inspection

Pcs	Code	Description
1	FH-SM04	High resolution FH camera 4 Megapixels
1	3Z4S-LE VS-2514H1	High resolution lens 25mm
1	3Z4S-LE SV-EXR	Spacer set
1	FZ-VS3 10M	Camera connection cable 10m
2	BL-100-100-AD-RT-12-004-AL1	Rectangular light 100mm x 100m, LED red Manufacturer: ETW Wollmershäuser GmbH
2	XS3F-E422-410-A	Lighting cable 10m

Panel: Vision Controller with accessories

Pcs	Code	Description
1	FH-2050	Vision controller
2	XW2R-P34G-T	I/O Connector MIL
2	XW2Z-0050EE-L	Cable for XW2R-P34G-T I/O Connector
1	S8VK-S24024	Power Supply 24V 240VA

HMI: Display with accessories (optional)

Pcs	Code	Description
1	NYM15W-C1000	15" Industrial Multitouch Display
1	FH-VUAB 5M	5m USB cable
1	NY000-AC00 5M	5m DVI cable

Would you like to know more?

OMRON EUROPE

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All integration services performed by qualified and certified OMRON partners

*Products and their position are just schematically.
Final positioning and appearance of components
might slightly differ.*

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