

SmartCameras with broad uses on the production line

AUTOMOBILE PRODUCTION – HOW TO ENSURE QUALITY

Recent years have seen significantly higher demands made in the automobile industry on product quality for both manufacturers and suppliers. The fact that vehicles are becoming ever more complex with increasing numbers of model variations also reinforces this trend. But you can still perform the various quality controls of your production process both simply and reliably. The BVS SC SmartCamera from Balluff is the key.

This intuitively operated camera provides brilliant images and opens up a broad range of applications for automated solutions to meet your production line inspection challenges.

The SmartCamera allows you, for example, to check objects like wheel lug nuts for completeness. It can also take over color checks, presence detection and ensure the product quality features of components.

It is also highly flexible when it comes to making the data available. You can pass the inspection results to higher level systems through digital in- and outputs, Profinet or Ethernet IP. Images can also be stored via Ethernet TCP/IP.

In addition, you can use the SmartCamera to stabilize the entire production process thanks to our camera allowing only the information needed by the controller to pass through the process network. It is the only camera on the market with this capability. All other data is sent to a separate Gigabit Ethernet network. This reduces the data load and secures your process network.

Features

- Simple to operate with intuitive software structure
- Universal software for different camera models
- Complete solution: everything on board (software, graphical interface, tool aids, manual) and any accessories (lenses, lights, etc.) available
- Intelligent data processing with flexible interfaces
- Direct visualization and control of the production sequences using IO-Link interface
- Rapid access through integrated web interface possible (remote access)

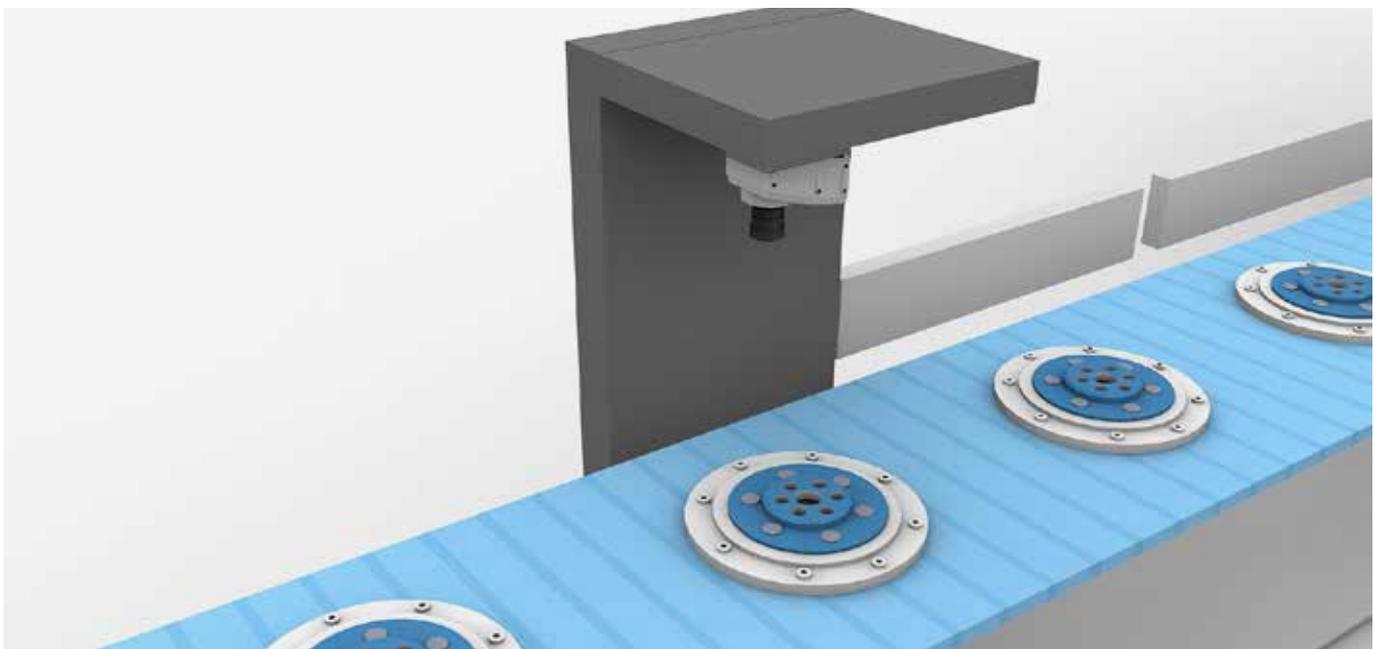




CHECKING LUG NUTS FOR COMPLETENESS

Do you need to ensure the correct number and type of wheel bolts and lock nuts are installed after the wheel assembly? With the SmartCamera all the features can be matched for various rim types regardless of the tire size.

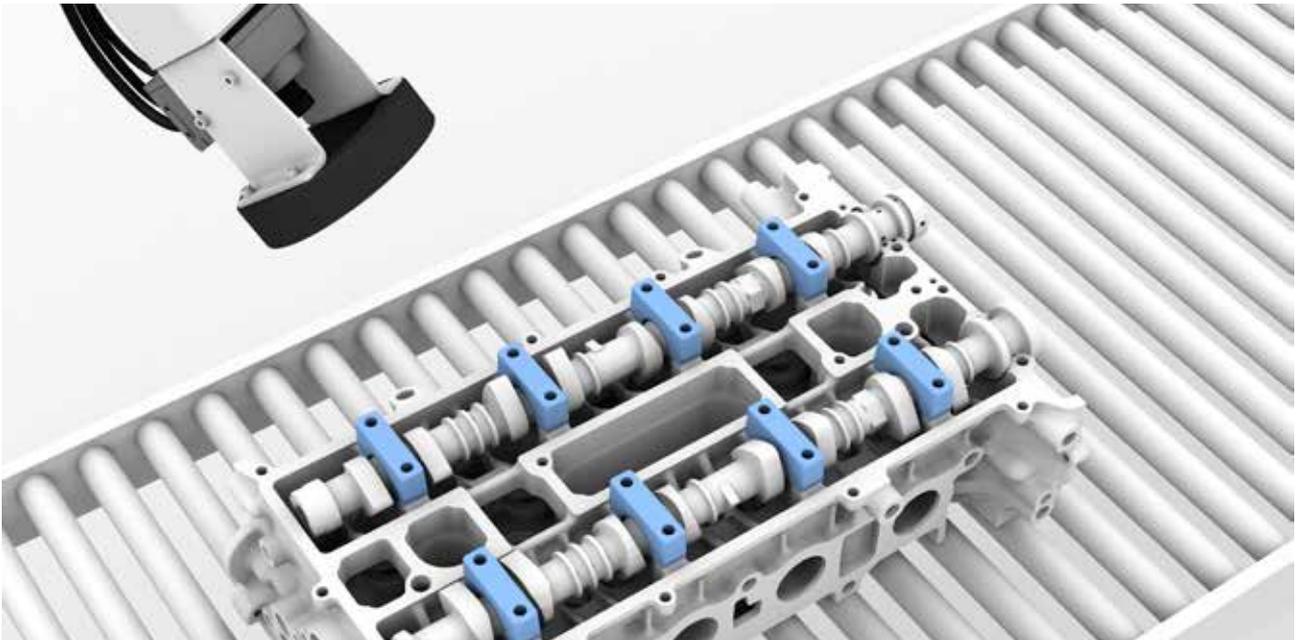
The camera uses the outer contours to reliably identify all the individually learned inspection parts. At the same time it detects the number and position. To ensure this essential quality feature of the wheels, we also provide you with the correct camera lens and the lighting system appropriate to your particular application.



CHECKING PRESENCE AND POSITION OF RIVETS

Whether in transmission or axle assembly – wherever components are welded – with our SmartCamera and the right lighting system you are on the safe side. It checks both the presence and correct position of the rivet to ensure reliable quality control.

And there are various ways to approach it: Depending on the ambient conditions the rivet can be checked based either on brightness or edge finding.



PREASSEMBLY OF BEARING COVERS IN THE CYLINDER HEAD

Without correct positioning of the bearing cover, the cylinder head will not work properly. With our SmartCamera you ensure correct seating of the bearing cover.

The camera takes a single image of the bearing cover and checks its position by inspecting the edges and performing a brightness check. Now this essential quality feature in the production of cylinder heads can be easily guaranteed.



DETECT CRACKS ON FORMED PARTS

To detect process-related cracks in formed parts immediately after the part is produced, our intelligent SmartCamera is the ideal solution. It sees even the smallest irregularities and can check bore holes and punch-outs absolutely reliably.

This complete inspection means you can reliably prevent inferior quality or follow-on costs from rework and complaints. Another advantage: The user interface is operator-friendly and simple to configure.



	BVS002C	BVS002A	BVS002F
Description	SmartCamera IO	SmartCamera Fieldbus	SmartCamera Color
Range of application	Identification, general image analysis	Identification, general image analysis	Identification, general image analysis
Principle	CMOS, 1/1.8", monochrome, Global Shutter	CMOS, 1/1.8", monochrome, Global Shutter	CMOS, 1/1.8", color, Global Shutter
Image resolution	1280 × 1024 pixels	1280 × 1024 pixels	1280 × 1024 pixels
Camera lens	C-mount	C-mount	C-mount
Data storage	4 GB	4 GB	4 GB
System interface	Gigabit Ethernet	Gigabit Ethernet	Gigabit Ethernet
Process interface	TCP, UDP	Profinet, Ethernet/IP, TCP, UDP, IO-Link	Profinet, Ethernet/IP, TCP, UDP, IO-Link
Digital interface	8 × input/output (potential isolated)	8 × input/output	8 × input/output
Housing material	Painted aluminum	Painted aluminum	Painted aluminum
Size	62 × 55 × 110 mm	62 × 55 × 110 mm	62 × 55 × 110 mm
Weight	360 g	360 g	360 g
IP rating per IEC 60529	IP67 (with protection tube)	IP67 (with protection tube)	IP67 (with protection tube)
Ambient temperature	0...+55 °C	0...+55 °C	0...+55 °C

Not included in the scope of delivery:
 protective tube, camera lens,
 filter, light, connection cable –
 see www.balluff.de



Matching accessories:

Camera lens Filters

Lights

Connection cables



Balluff offers you a highly broad range of solutions for camera-based object and process control as well as for optical identification in automation.

Learn more at www.balluff.com/local/de/solutions-and-technologies/machine-vision/