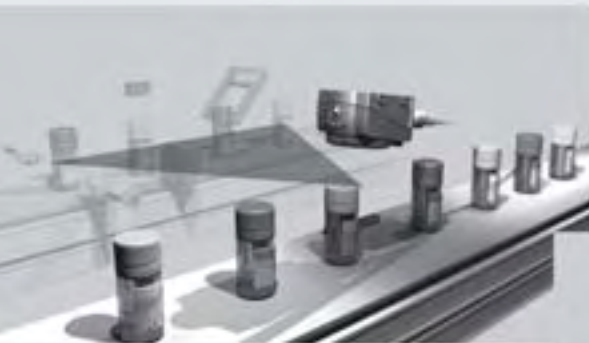


SHARPSHOOTER™



Sharpshooter™ Vision

Sharpshooter™ is the first vision-based sensor designed to be an extension of your present sensor-based error proofing system. It provides reliable part or feature presence/absence, position detection, and dimensional verification. Sharpshooter can be used like a sensor, but provides far more functionality than any discrete sensor. It's also far easier to use than more complex vision systems.

In most production situations, vision systems can be overkill – too expensive, too much functionality, and too complex. Instead, we designed a product that's easy to set up, simple to use, and quick to return your initial investment. It has just enough functionality to be the first vision-based sensor solution you adopt and may be the last vision product you need.

- Combines sensor simplicity with vision system performance
- Fast, simple, software-driven set up
- Provides flexible, powerful error proofing
- Small size allows for convenient operation
- One-unit operation replaces cumbersome multi-sensor arrays
- Provides faster return of investment than vision systems

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- BVS Vision

Easy software-driven set up is as simple as 1-2-3

Balluff ConVis® Software makes setting up Sharpshooter™ a simple, intuitive process.

Balluff's windows-based ConVis configuration GUI software uses a step-by-step configuration process to guide you through set up, including interactive help and a multiple image viewing buffer to identify an optimum reference image for setup, and to provide selectable images for operation testing. The ConVis software also operates as an emulator to allow you to set up and test projects off-line for greater flexibility, then download them to the sensor.

Use Ethernet connectivity to simply connect Sharpshooter™ to your production PC, or network several Sharpshooters to a PC using our exclusive SensorFinder® feature. The built-in assistant guides you through the configuration process in three easy steps. The screen shows you where you are throughout the entire process so adjustments and corrections are quick and easy to make.

1 Step 1 Image Set Up

In the ConVis software, each step provides a format, making set up an intuitive task. In Image Setup, the setup process is defined as on-line or off-line. A new or existing setup is defined and an off-line reference image is chosen or on-line image is configured and captured for use.

2 Step 2 Teach

In the Teach step, an external trigger type is selected, a part position Locator tool is selected and configured, and up to 32 Controls are selected and configured for detection and measurement.

3 Step 3 Run

The Run step allows set up and definition of the three outputs, image saving modes, and external teach button status. A completed project can also be tested both on-line or off-line for adjustments and refinement. Additionally, the Sharpshooter can be set to run and monitored on-line for operation results.

Setup Steps
Configure the sensor in three easy steps

Control Panel
All characteristics at a glance

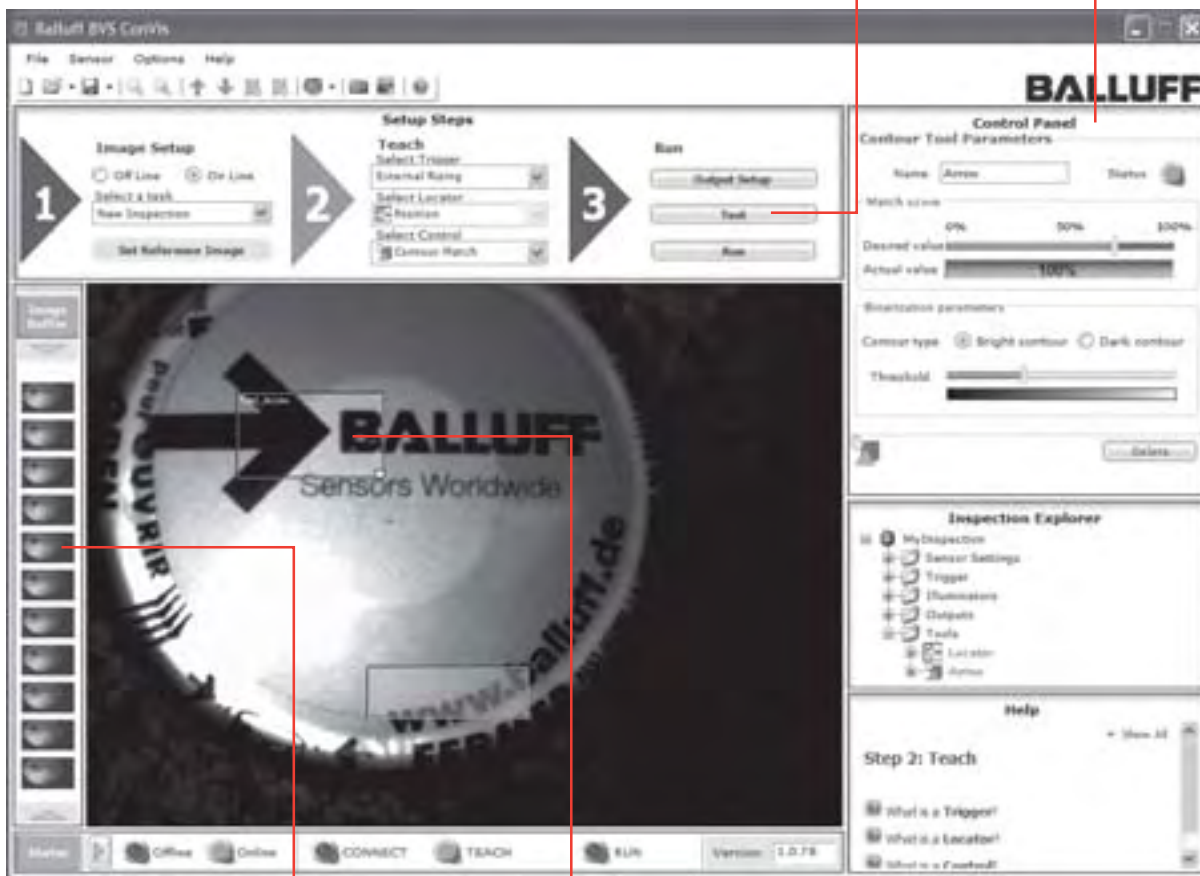
















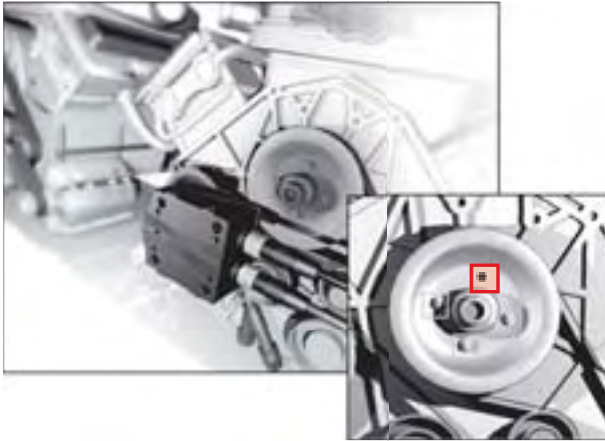
Image Buffer
for image previewing

Control Region
The Region Of Interest used by the control for detection or inspection

Tool Icon	Name	Description	Example
	Brightness	Calculates the average intensity of the pixels in the Region Of Interest (ROI).	
	Contrast	Calculates the differences between the lightest to the darkest pixels in the ROI.	
	Contour	Searches for the taught outline or contour image in the ROI.	
	Edge Count	Counts the number of edges inside the ROI.	
	Width	Measure the distance between two edges in pixels like a caliper tool.	
	Pattern Match	Searches for the taught pattern (this is the pattern in the ROI) inside the search area.	
	Position	Locates the position of a horizontal edge in pixels within the ROI.	

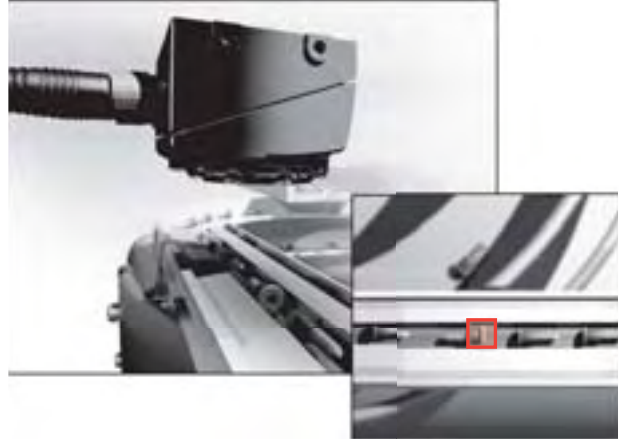
Presence check

These V-belt pulleys are attached with four nuts. Sharpshooter™ inspection can confirm the presence of all the nuts to guarantee product quality. Inspection is possible even if the nut position varies.



Position detection

A vibrating conveyor delivers screws for assembly. The system must be stopped if screws are incorrectly positioned or of a different type. Sharpshooter verifies screw type, positioning, and orientation.



Packing completeness check

Product completeness is checked following manual or automatic packing. Three configurable outputs allow monitoring the completeness of each row, or virtually any other aspect.



Pattern matching

Cans are checked for proper imprinting in a quality assurance process. Sharpshooter provides seven different functions, which can be combined differently depending on the application.



Package check

Every package needs a label – but sometimes it isn't where it belongs or is incompletely attached. Sharpshooter can verify each labels presence and its correct position.



Assembly check

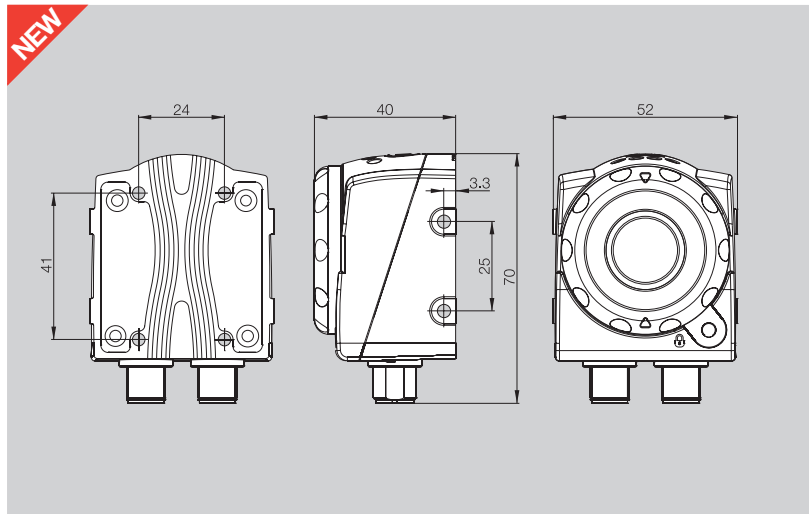
Injection molded or assembled parts are checked in final inspection. Sharpshooter has the ability to compensate for part misalignment, allowing for reliable inspection.



Series	Optical Vision Sensor	Optical Vision Sensor
Working Range (mm)	50...1000 mm	50...1000 mm
Field of View, Horizontal x Vertical (mm)	25 x 20...460 x 380 mm	17 x 12...320 x 210 mm



SHARPSHOOTER™



Ordering Code	8 mm Lens	12 mm Lens
PNP	BVS OI-3-001-E	BVS OI-3-003-E
NPN	BVS OI-3-002-E	BVS OI-3-004-E
Operating voltage U _B	24 Vdc ± 10%	
Switch inputs	1 x trigger, 1 x select (serial)	
Switch outputs	1 x lighting synchronization, 3 x PNP/NPN configurable	
Output current	100 mA	
Functions & Characteristics		
Parameterization software	ConVis® for Windows XP	
Typical detection rate	3...15 Hz (depending on analytical function)	
Optical Data		
Image sensor	CMOS-SW-VGA 640x480	
Working range	50...1000 mm	
Lights	LED, front illumination (red), can be switched off *	
Alignment assistance	4 LED green, can be switched off	
Mechanical Data		
Dimensions	58 x 52 x 40 mm	
Connector	2x M12 plug (8- and 4-pole)	
Protection type per IEC 60529	IP 54	
Ambient temperature T _a	-10...+55° C	
Ethernet Cables		
BKS-AD-05-RJ45/6S180-PU-1,5	M12 to RJ45 Ethernet Cable, 1.5 meter	
BKS-AD-05-RJ45/6S180-PU-03	M12 to RJ45 Ethernet Cable, 3 meter	
BKS-AD-05-RJ45/6S180-PU-05	M12 to RJ45 Ethernet Cable, 5 meter	
I/O Cables		
C04 ANT-00-PB-050MS	M12 I/O Cable, 5 meter	
C04 BNT-00-PB-050MS	M12 I/O Cable, 5 meter 90° connector	
Mounting Bracket		
BVS Z-MB-01	BMS L - Mounting Bracket	

* Contact Balluff sales for external lighting products and options.

Minimum System Requirements

- Processor(s): Pentium 4
- Operating system: Windows XP (Service Pack 2)
- Clock frequency: ≥1 GHz
- RAM: 1024 MB = 512 MB
- Free hard drive space: 35 MB
- Monitor resolution: 1280 x 768 pixels
- CD-ROM drive
- One free 10/100 Mbps Ethernet port at the PC

