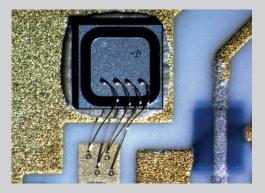


Wire bond inspection



Systems for the reliable inspection of wire bond connections in electronics manufacturing







Missing wire on wedge

Bond connections reliably inspected

Inspection of thin and thick wire bond connections as needed

Modular camera technology, scalable to inspection depth and throughput

Combined inspection of bonds and SMD placement

Innovative transport concepts for different substrate materials

In order to check the adhesive integrity of bonds or to detect missing wires on multiple bonds, an electrical test alone is often insufficient. Viscom has the right inspection systems for this and many other tasks. Whether it is ball-wedge, wedge-wedge or security bonds, Viscom offers special algorithms adapted to a reliable inspection of all modern bond processes. Diverse substrates and workpiece carriers can be handled with the corresponding Viscom transport solutions.

Customized analysis of the widest range of defect types

Bond sites, wire paths, dies and component position are only a part of the wide inspection scope. Camera heads developed especially for wire bond inspection are available for multiple loop or multi-wire connections and for balls and wedges of different wire thicknesses. It makes no difference whether the connections are of copper, aluminum or gold, or whether ribbon or thick or thin wires are involved.

Even at wire diameters down to 17 μ m, a secure inspection can still be depended on. Damaged components and position deviations are also reliability detected. The standard library from Viscom contains inspection patterns for die, ball-wedge, wedge-wedge and security bonds. The inspection scope can also be individually adapted for further applications beyond the range of standard defects. Inspection programs can also be created and



Wire bond inspection with Viscom SI software



Bonded substrate from power electronics

optimized off-line on a Viscom programming station. The image material of a previously captured video base can be called up for support. Together with a high-power SPC evaluation (statistical process control), the inspection provides the basis for a perfect optimization of the production process.

- **■** Top image quality
- **■** Optimum illumination
- **■** Best performance

The inspection systems can be optimally configured for an especially good performance where throughput, cycle time and defect detection are concerned. Among the features offered by the camera module, the resolution and illumination options are particularly significant for wire bond inspection.

Systems for every need

Viscom has offered automatic inspection systems which guarantee reliable optical defect detection on widely differing bonds for many years now. Alongside the S6053BO-V and S6056BO, the X7056BO brings a combined solution for automatic X-ray (AXI) and bond inspection. And with the S2088BO-II F, Viscom offers a solution combining the performance capabilities of the high-end systems with

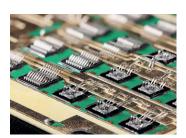
the advantages of an ergonomic, compact form in the best way possible. The manually operated desktop system was developed for quality control of small and medium product runs. During inspection, a high-resolution camera captures all bond sites and wires. The S2088BO-II F is one hundred percent compatible with in-line-capable systems such as the Viscom S6053BO-V or S6056BO, so it can also be used as an off-line programming station. The inspection programs are directly transferable.



Viscom has been developing and manufacturing its systems in-house for decades; with this extensive experience, there are practically no limits and even individual system solutions can be realized quickly and effectively. One example of this is the multifaceted S2012BO, the space-saving way to inspect bonds. This inspection system can be integrated into existing production systems without any problems. Alternatively, the entire electronics can be installed in a very compact system rack or in the technology of the production system.



Barely visible to the human eye



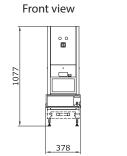
Wire bond connections

The right inspection system for every wire bond inspection



S2012BO - intelligent, customized solutions for customer requirements

- Universal integration solution for individual requirements
- Technology that can also be integrated into an existing production system
- Especially well-suited for fixed applications



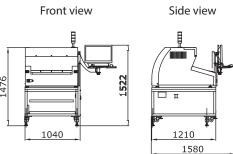


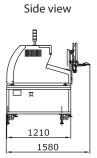


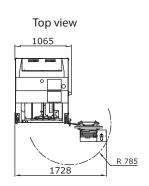


S2088BO-II F - ergonomic quality control for medium and small production runs

- Robust inspection with manual loading
- Economical desktop solution
- Additional advantages as programming system

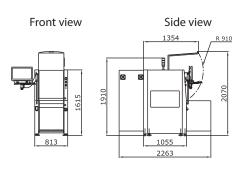


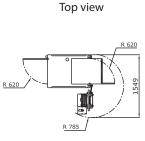




S6053BO-V – systems for automatic optical wire bond inspection with configurable transport

- High-end solution for in-line inspection with transport system
- Compatible with all Viscom bond camera modules
- Especially high precision

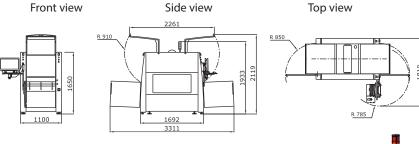






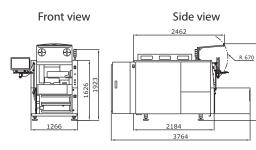
S6056BO – the best in-line technology for maximum performance

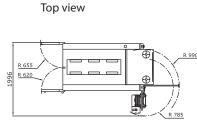
- Ideally suited for double track operation and high throughput
- Proven Viscom machine concept from the most widely varying applications
- Superbly suited for large inspection objects



X7056BO – additional inspection options with automatic X-ray

- Combined solution for bond AOI and bond AXI
- Versatile selection of bond camera modules for thick and thin wire
- X-ray application with the option of high-performance sealed or open microfocus X-ray tube







Selection guide

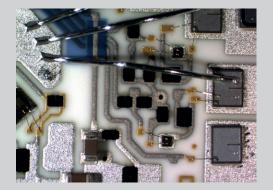
Wide selection of economical AOI solutions

Precise, positive inspection down to 17 μm wire diameters

Full compatibility with other Viscom systems

Support with remote diagnosis, hotline and on-site service

	Camera heads:	8M1 SRW Bond Robust camera module with large field of view and special bond illumi- nation	8M1 VHR 5 High resolution, universal bond camera module
	Resolution:	10 μm/pixel	5 μm/pixel
Applications	Post-placement		
	Ribbon		
	Thick wire		_
	Thin wire		
Systems	S2012BO Universal integration solution		
	S2088BO-II F Manual loading		•
	S6053BO-V High end inspection with configurable transport		
	S6056BO Ideal for double track at high throughput		•
	X7056BO Combined solution for bond AOI and bond AXI		





= Also well-suited for this application

Missing thick wire

Torn thin wire

8M1 VHR 2.5 Very high resolution camera module for inspecting thin wires	8M1 UHR 1.8 Ultra high resolution camera module for special applications in thin wire bond inspection	XM Bond HR Universal high resolution camera module for excellent image and illumination quality with large field of view	XM Bond LR High resolution bond camera module for inspecting thick wires and ribbons with excel- lent image and illumination quality and large field of view
2.5 μm/pixel	1.8 μm/pixel	4.5 μm/pixel	In development

= Standard application

Worldwide sales and customer support at the highest level



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