

Optical Surface Inspection OSI40

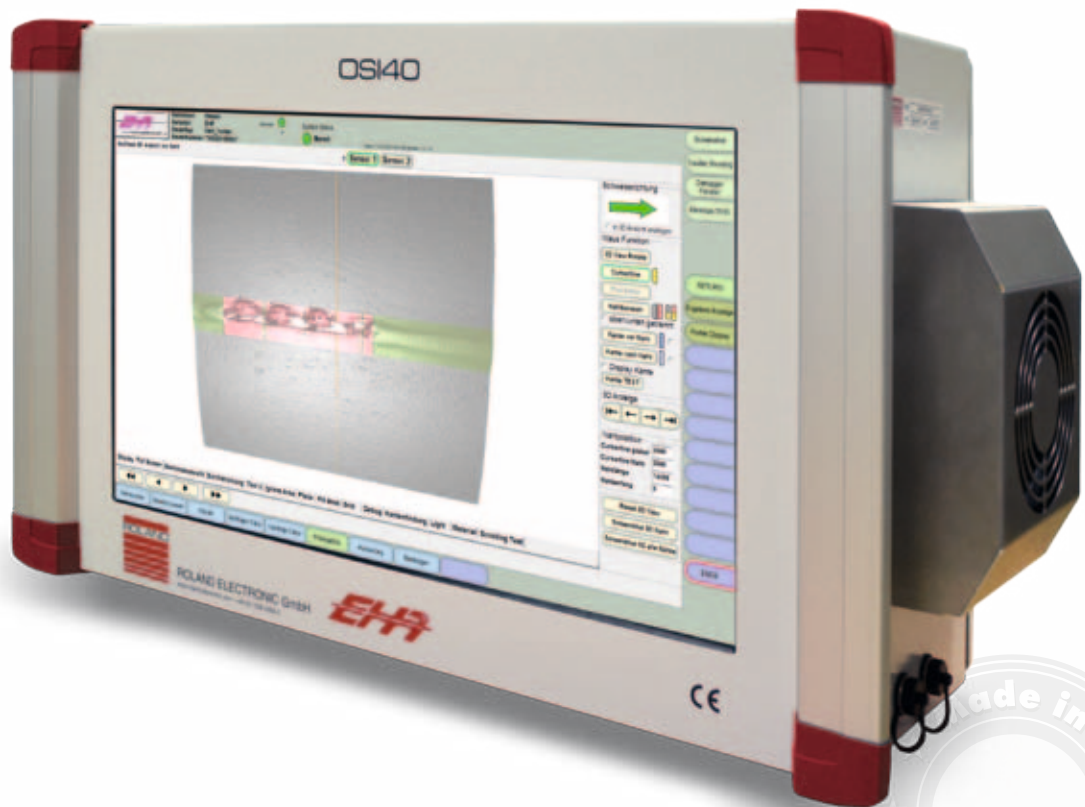
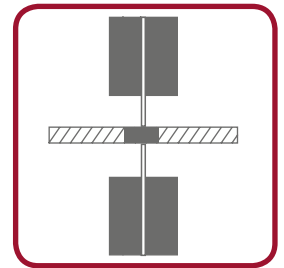
System for Surface Inspection
and Fault Detection

Laser based function principle

- For Weld Seam Geometry Inspection, Pore Inspection, Crater and Crack Testing
- Operating computer for TIVIS®
- For the connection of EHR® AluCheck components
- For the connection of standard laser triangulation sensors
- Fieldbus interface
- Interface for 1 axis drive

THE ROLAND PLUS

- ▶ Compact design
- ▶ Full HD graphics resolution



Description:

The System **OSI40** was designed for Surface Inspection and Fault Detection with **3D-Laser sensors** and **EHR® AluCheck 2D/3D Sensors**. Optionally sensors from **Keyence** can be also used.

Suitable applications are Weld Seam Inspection, Geometry Inspection, Pore Inspection, Crater and Crack Testing. The system consists of the operation computer equipped with the proven TIVIS® software and the proper sensor system.

In addition, the system is able to control a linear axis of Nanotec type. This leads to a cost-effective mechanization of the measurement procedure.

The TIVIS® software was developed by the EHR® company for the video inspection of stamped parts in high-speed punch presses. TIVIS® is the acronym for “**T**ool **I**ntegrated **V**ision **S**ystem” and it covers meanwhile a wide range of measuring and inspection tasks, for example the automated testing of welds seams on automotive parts or at measuring machines for serial production parts.

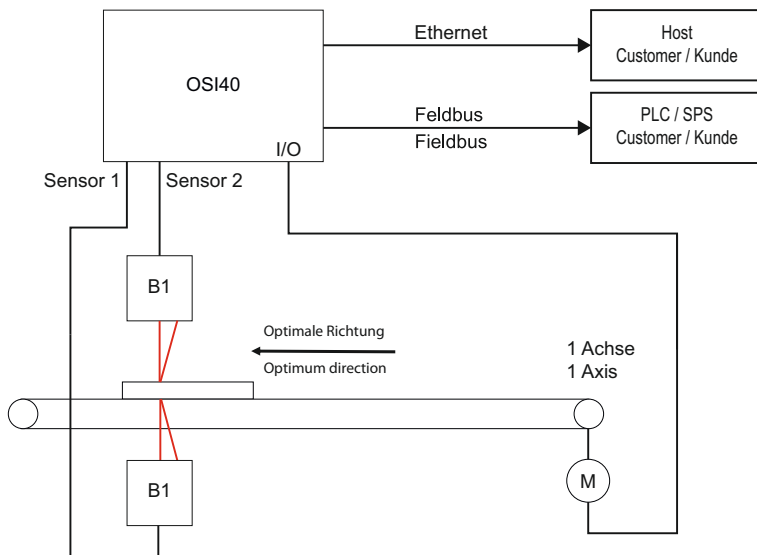
Function:

The system is based on principles of laser triangulation and permits surface inspection of different parts.

The surface is measured by the sensors.

Hereby the sensor has a constant distance to the surface of the object to be inspected.

Alternatively, the material is transported along a permanently mounted sensor. Depending on the task, a two-sensor array is advisable and leads to better results. In this case the surface is measured in the gap between the sensors.



The measurement data provided from the sensors is processed by using the TIVIS software. The system reports instantly the result of the measurement as „OK“ or „not OK“ to the customer's control.

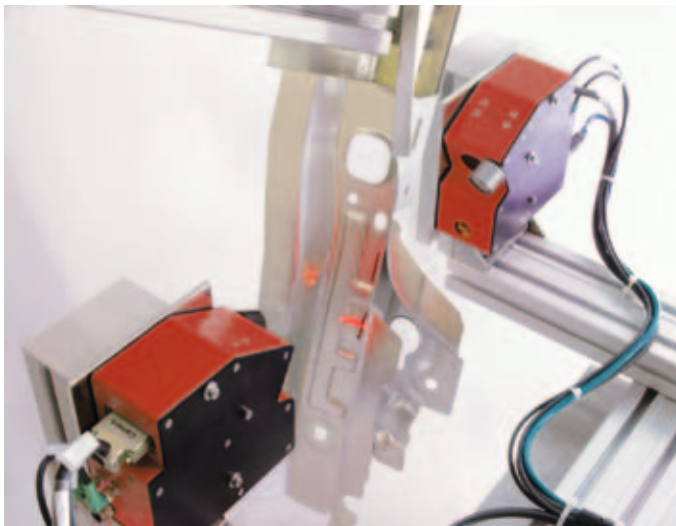
Unlike conventional systems, the TIVIS® software is not limited to Geometry Inspection. Therefore, complex tasks such as Weld Seam Inspection, Pore Inspection, Crater and Crack Testing result in high process reliability and security.

Illustration left: Overview of an **OSI40** system

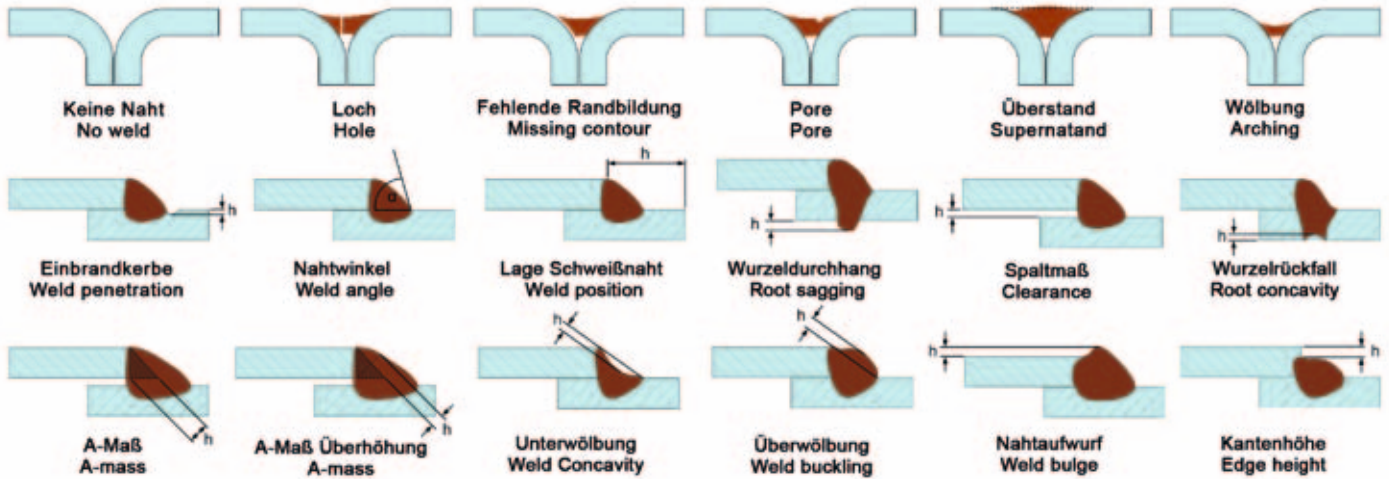
Illustration below: Application examples with EHR® AluCheck sensors.

Left: Two-sensor array for Weld Seam Inspection

Middle and right: Weld Seam Inspection with one sensor.

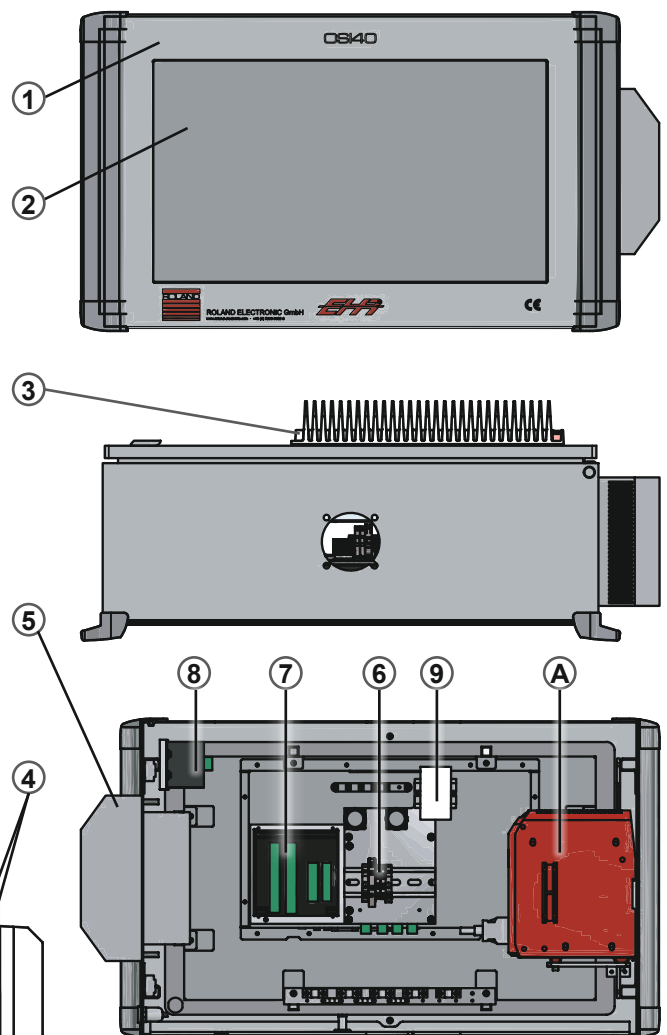


Typical faults of the weld seam geometry



Technical Data

OSI40 Control Unit
Rittal protective housing CP6320.500 for Rittal support arm system (1), with 21,5 inch Touch display, Full-HD Graphics (2)
Material: Aluminum / plastic / steel
Built-in Industrial PC with external peltier cooling block (3)
Connections: 2x USB lateral, internal terminals, plug connector (4)
Cooling by fan or by Peltier cooler (5)
Voltage supply 24 VDC, supply via terminals (6)
24 V I/O interface with terminal connection (7)
USB-Hub internal for dongle etc. (8)
Thermal switch monitoring via I/O (9)
Processor type and memory equipment depending on software requirement.
Voltage supply: 24 VDC +/- 10%
Power consumption: approx. 300 W, depending on equipment
Connections:
- Network interface 1: 10/100/1000 MBit/s Ethernet for data exchange with measuring controller
- Network interface 1: 10/100/1000 MBit/s Ethernet free
- 2x PCIe-Slots
- 2x USB 2.0, 2x USB 3.0
- 1x RS232
Weight: approx. 23 kg (fan), approx. 25 kg (peltier cooler)
Protection class enclosure: IP 54 (fan) IP 55 (peltier cooler)
Ambient temperature: +10°C ... 40°C (50°F ... 104°F)
Dimensions in mm (W x H x D): 620 x 380 x 220 (fan), 675 x 380 x 220 (peltier cooler)



A: option with Keyence Controller

Illustration: OSI40 Control Unit - Components

Order Data:

Ordering key: OSI40-YUU-ZSn-X					
CPU + operating system		PLC interface	Sensor connection	Extra equipment	Software
Versions:					
Y: CPU + operating system	UU: PLC interface	Z: Sensor connection	Sn: Extra equipment	X: Software (EHR®)	
C: CPU Type C installed, Microsoft Windows Embedded Standard 7, 32 Bit, multilingual.	Without: No PLC interface	Without: No sensor connection	Without: Filter fan	Without: No software	
	IO: only I/O	E: Gigabit-Ethernet Switch, e.g. EHR® AluCheck	S1: Internal ventilation instead filter fan, only sensor connection: E	A: TIVIS® for Weld Seam Detection	
	PN: ProfiNet-IO with M12 plug	K: Keyence LJ-V7000P	S2: Peltier cooler instead filter fan	B: TIVIS® for Pore inspection	
	PF: ProfiNet-IO with fiber-optic connection SC-RJ-Push-Pull (IP65)			C: TIVIS® for Crack testing	
	PR: Profibus DP with M12 plug			D: TIVIS® for Geometry inspection	
Further in preparation					
Example: As shown in the options above multiple order information is possible:					
OSI40-CPF-KS2-A					
Unit with CPU Type C, ProfiNet- I/O mit fiber SC, Keyence-Controller LJ-V7000P, Peltier cooler, Weld Seam Detection					

Cables:	
Part name	Description
For input	
SC16M23-G	Cable with straight M23 socket, 16-pin, the other end with cable bushings for terminal connection.
SC16M23S-GG	Cable with straight M23 connector, 16-pin. and straight M23 socket 16-pin.
For output	
SC19M23-G	Cable with straight M23 socket, 16-pin, the other end with cable bushings for terminal connection.
SC19M23S-GG	Cable with straight M23 connector, 19-pin and straight M23 socket 19-pin.

Accessories:	
Part name	Description
22G6301	Filter mat (5 pack) for units with fan cooling

EHR® AluCheck sensors and TIVIS® software are products of EHR® GmbH & Co. KG

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