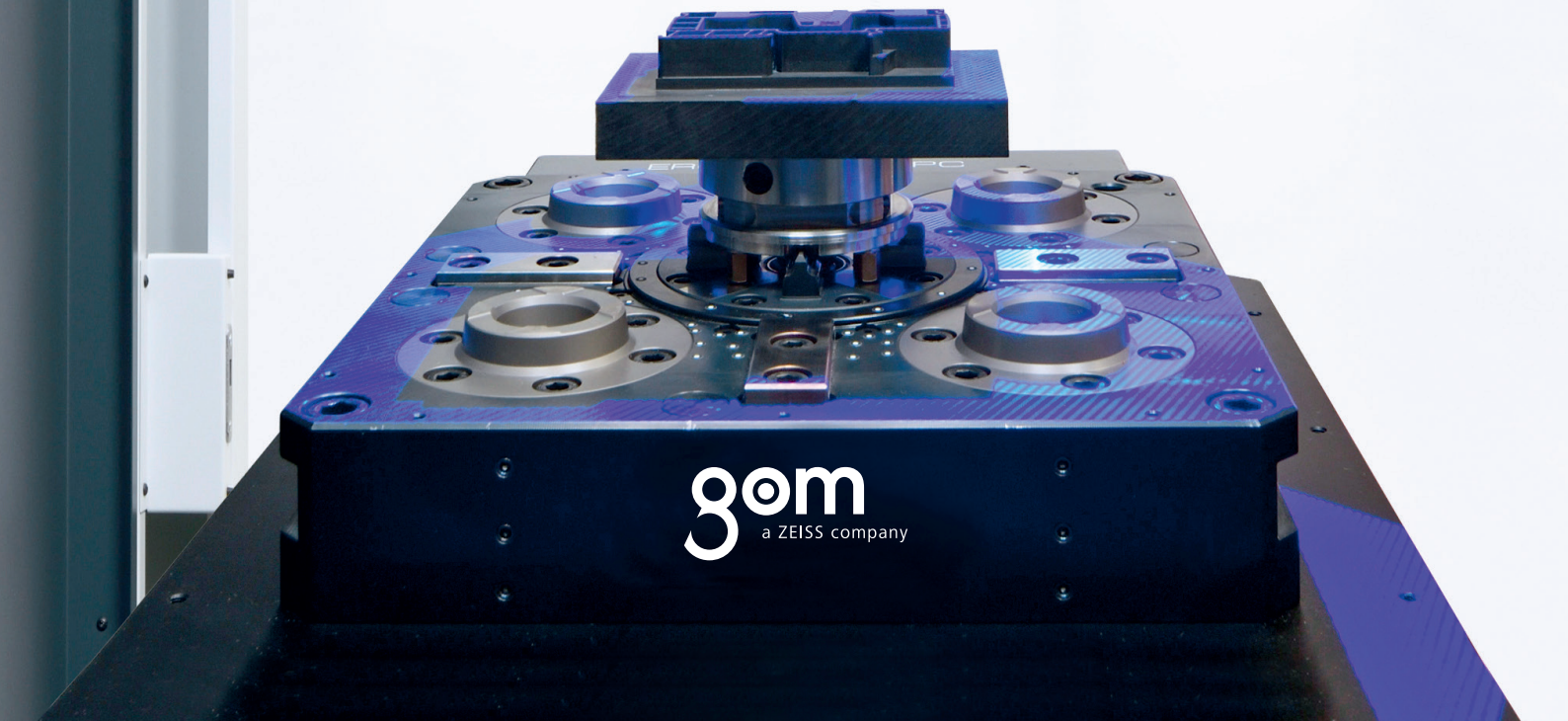
3D Metrology for Electrodes

ATOS ScanBox with Batch Processing System

Optical 3D coordinate measuring machine
Inspection integrated into production process
Fast determination of electrode presets



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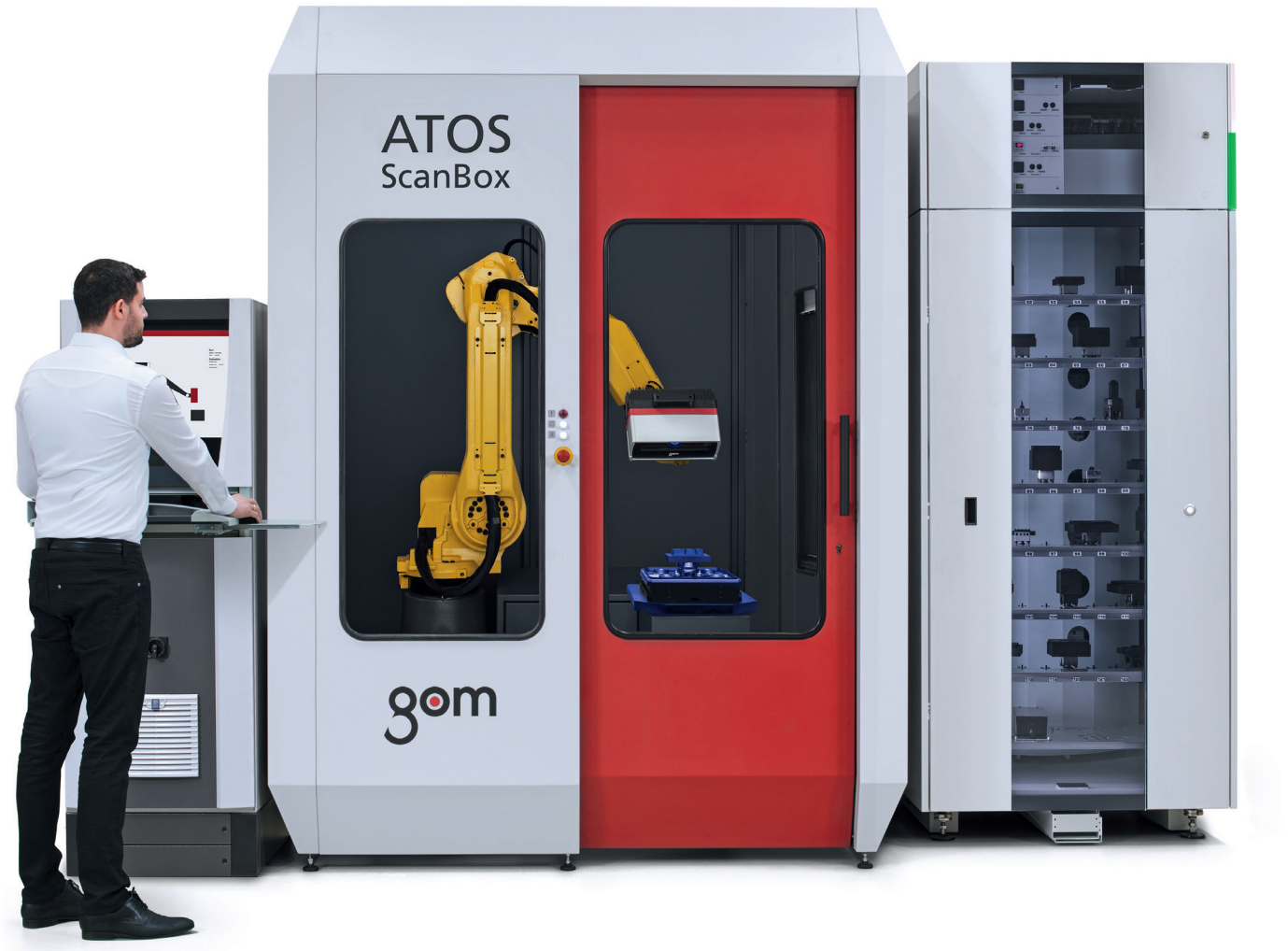
ATOS ScanBox BPS for Electrode Production

In plastic injection molding, the production of a single tool often requires up to 50 electrodes. GOM optimizes the production of electrodes by bridging the gap between automation, efficient presetting and surface-based geometry checks of electrodes and workpieces.

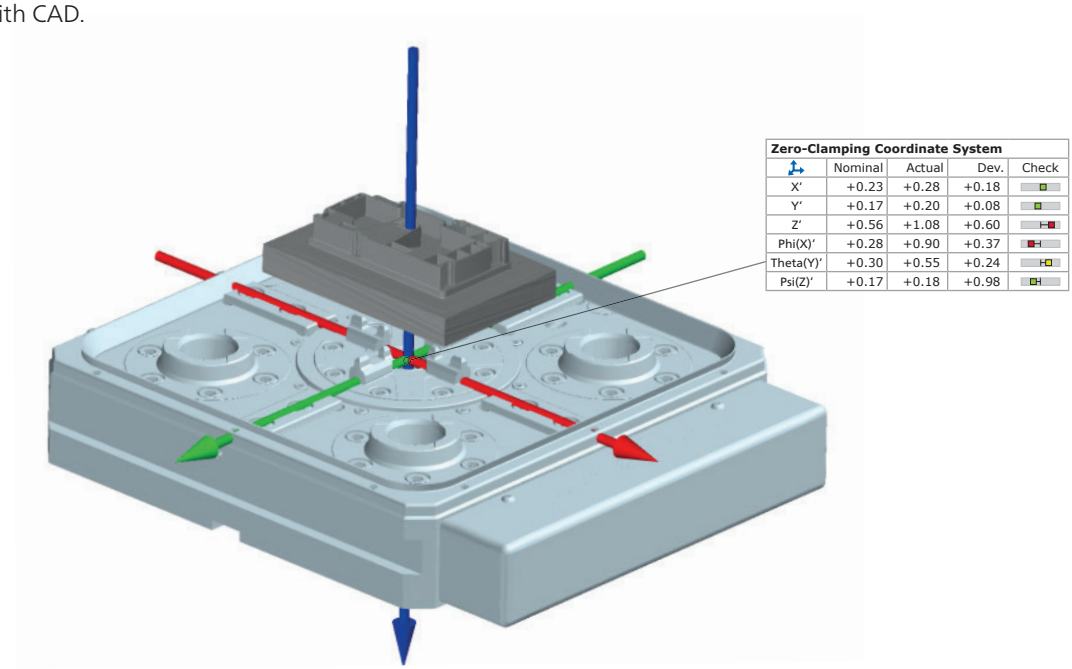
In order to enable automated loading and unloading of the optical 3D coordinate measuring machine, the established ATOS ScanBox system was extended by a handling system and a programmable logic controller (PLC). The handling system serves for loading the measuring machine with the workpieces to be inspected, which are marked with an RFID chip, for example. The marking includes all necessary information to choose the appropriate measuring program. During loading, the ATOS ScanBox BPS detects without any manual intervention which measuring program must be executed and which inspections are to be performed. All information on position, offset or geometry is stored and transmitted to the connected eroding systems.

- Automated handling of electrodes and workpieces
- Optical 3D scanning of the electrode geometry and offset
- Short machine setup times
- 24 / 7 production
- Reduced manual intervention



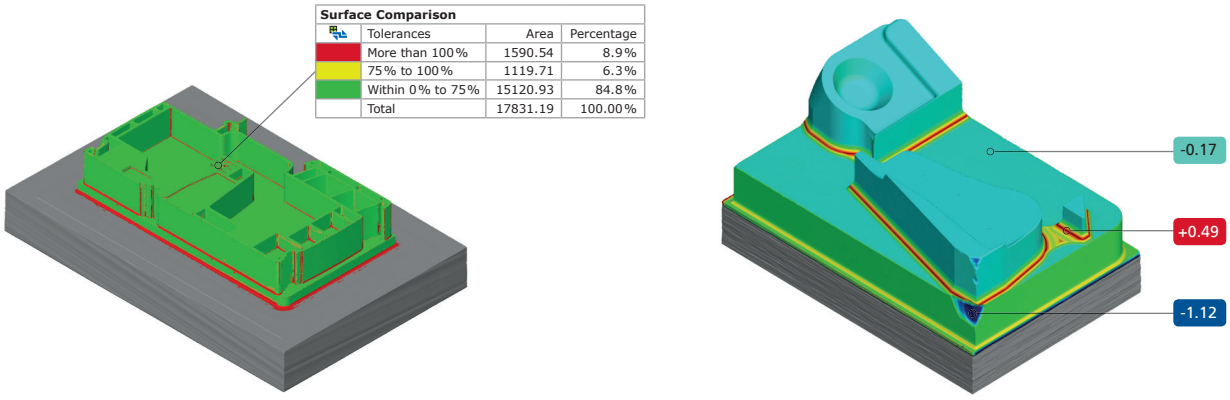
Software Functions for Electrodes and Sink Erosion Processes

In contrast to tactile coordinate measuring machines, ATOS ScanBox with Batch Processing System captures full-field measuring results. Apart from fast position determination, this enables various analyses of shape and dimension or also comparison with CAD.



Fast presetting

The machining of the electrodes requires an exact presetting of each individual electrode. To this end, the ATOS ScanBox BPS determines the exact position of the electrodes in relation to the zero-point clamping system. Throughout the entire manufacturing process, all information about the position in 6DoF is passed on automatically. This provides all values required for control, such as the preset data of the translational lateral and vertical displacements as well as the rotary C-axis. With this information, the electrode can be positioned on the eroding system with repeatable accuracy at any time.



Surface-based geometry check

The surface information forms the basis for full-field nominal-actual comparisons. Thanks to the full-field data, the allowance and spark gap can be checked against tolerances over the entire surface. Both milling results and electrode breakouts can be quickly evaluated with the visualization. The easily interpretable quality information can be recalled at any time for further analysis. Dimensions, angles and material thicknesses can be inspected, for example. Furthermore, the free software version GOM Inspect makes it possible to share projects with other departments or customers.

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