

# b&m-CONTACTSCREW® eliminates ground cables

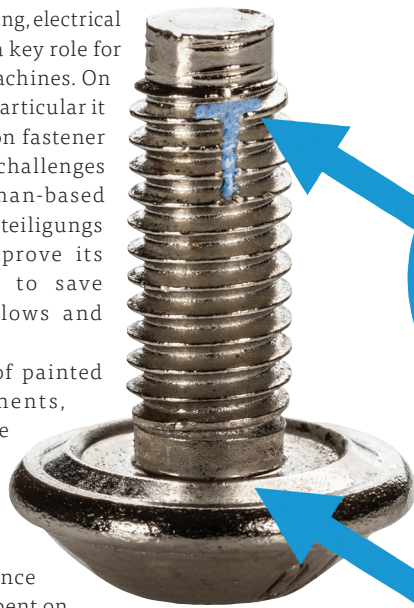
As part of a development project for reflow soldering systems, the design engineering team at mechanical engineering company Kurtz Ersa wanted to pursue new approaches beyond additional ground cables and washers, to ensure reliable electrical ground bonding. Collaborating with baier & michels, member of the Würth Group, the b&m-CONTACTSCREW® was created – a metric screw that provides electrical connection during application.

In industrial manufacturing, electrical ground bonding plays a key role for the safe operation of machines. On coated components in particular it places high demands on fastener technology. Identifying the challenges it faced in this area, German-based Kurtz Holding GmbH & Co Beteiligungs KG wanted to further improve its own assembly processes to save materials, simplify workflows and increase process stability.

Especially in the case of painted or electrocoated components, the lack of a ground cable can cause problems with equipotential bonding, which will then not function continuously or reliably. This causes delays in the acceptance process and increased time spent on rework. Kurtz Ersa therefore contacted baier & michels' engineers, who analysed the current situation and developed initial suggestions at the company's in-house application laboratory.

From this collaboration came a tool and fastener in one: The b&m-CONTACTSCREW®. As a metric screw with an added function, the screw replaces additional ground cables or washers to ensure reliable electrical ground

bonding – certified by the Testing and Certification Institute of the German Association for Electrical, Electronic and Information Technologies (VDE). Its key technical element is a circular blade on



the underside of the screw head that penetrates the coating of the fastened part to produce a conductive connection.

Olaf Ambros, member of management at baier & michels GmbH & Co KG and responsible for research and development, was involved from the outset: "We came to the line walk at Kurtz Ersa with a concrete idea, discussed it with the customer and directly moved on to working with actual components. Thanks to our completely digitalised manufacturing processes in Ober-Ramstadt, Germany, we were able to provide technical drawings and sample parts in the shortest time possible."

Olaf adds: "This is complemented by the visually appealing copper nickel surface coating, which additionally improves conductivity. This is particularly beneficial when the b&m-CONTACTSCREW® is used in visible areas." Another feature of the screw – which is available in variants from M4 to M10 – is a special dog point geometry that improves the installation properties. In addition to this, three grooves in the first four threads remove coating residue such as paint, weld spatter, or blasting media. This means the screw itself can create a reliable ground contact without an additional ground cable.

Martin Aulbach, design engineer at Kurtz Ersa highlights: "It took only four months from the first enquiry to the final screw installation and order placement – that is remarkably fast. The b&m-CONTACTSCREW® simplifies our processes, increases safety and saves resources, which is why we're now reviewing whether the screw could be used in other projects." +

