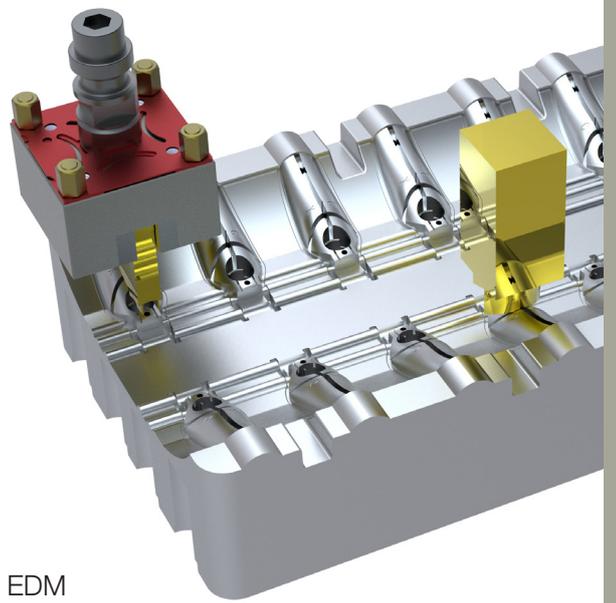


■ Alliance Tooling

VISI Electrode Triggers Process Revolution



A tooling manufacturer says the combination of a new Sodick EDM AG60L spark eroder and switching to Vero Software's dedicated electrode design module, VISI Electrode, has completely revolutionised the production of their copper electrodes.

The Managing Director of Alliance Tooling Ltd, Luke Parsons, cites an example of a mould they made recently for the trigger of a household cleaning spray. "We needed ten different electrodes for the tool, which, previously, would have taken ten hours to create. Each electrode used to take an hour to model, but VISI Electrode has reduced our design time by 80%, with each electrode now taking less than 10 minutes to produce."

Toolmaker Ian Jarvis says VISI Electrode has made his job considerably easier. "Once I'd made a few changes to the fillet rads on the trigger mould I simply clicked on the faces I wanted to spark and enclosed them with a 3D boundary. They were immediately extracted from the tooling model, providing a quick and simple way to arrive at the required electrode geometry." More complex areas are extracted just as easily using a graphical face selection.

An intuitive interface guides him through the process of creating the electrode nose, which he says makes further editing of extracted faces a simple procedure, as extension height can be added with either vertical, draft, or tangential extension. "If I want to extend the extracted faces, it's easy to add a bit of extra draft, and then add the stock. If I'm creating a rib with stock, I can add fillets to the stock so quickly and easily to give the rib strength."

For open-sided electrodes, he has made use of multiple extrusion directions for automatic side extension. The base and stock are interactively added, and he is able to utilise the dynamic animation and collision check features at any time during the creation process. "If I'm using Erowa holders, I can pull the geometry from the database and simulate the complete burning process, eliminating any potential clashes while it's being produced."

Leicester-based Alliance Tooling make aluminium and steel moulds for household goods, point-of-sale, garden products, the building industry, medical and dispensing products, and the automotive sector. They first realised they needed to improve their electrode design and manufacturing processes while building a mould for a drug dispensing component which required a large number of electrodes, but with a short production window. "This highlighted a bottleneck with producing electrode models and sparking them," says Luke Parsons.

Vero Software Limited

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About The Company:

Name: Alliance Tooling Ltd

Business: Plastic Injection Mould Tool Design & Manufacture

Web: www.alliancetooling.co.uk

Benefits Achieved:

- VISI Electrode has reduced design time by 80%, with each electrode now taking less than 10 minutes to produce
- Erowa holders can be taken from the database to simulate the complete burning process, eliminating any potential clashes
- The Sodick AG60L 6-station toolchange spark eroder maximises lights-out usage.

Comments:

"VISI Electrode gives our Sodick operator a visual picture of what he needs to achieve. This is of paramount importance for accuracy."

Luke Parsons
Managing Director

The Sodick AG60L 6-station toolchange spark eroder overcame the sparking bottleneck. “The roughing cycle is far faster than anything we’ve seen before, and with the tool-changer we can maximise lights-out usage.” The use of VISI Electrode means Alliance have electrodes ready before they need them. “In the past we’ve been sparking electrodes as soon as they’re available, then production stopped while we made another.”

Alliance realised VISI Electrode would be perfect for keeping the Sodick fed with electrodes for sparking, there was one further hurdle they had to overcome before their full electrode process was complete – toolpath production. “Until recently we only had one holder, but now we’ve created a dedicated jig comprising four new electrode chucks in specific datums on a hardened and ground steel plate. This is now a permanent fixture on our Hardinge Bridgeport, and we can machine electrodes in batches of four by linking individual programs together – again fully utilising lights-out machining.”

Luke Parsons continues to detail how the data export from VISI Electrode saves Alliance even more time, and material usage, too. “Previously, where we had the same feature on a tool, but in multiple positions and different orientations, we had to make different electrodes of the same feature, but at different angles. Now we can fit one electrode into all the necessary positions as VISI Electrode gives provides the XYZ and U position so we can use the same electrode to produce all the common features. We just physically rotate it on the machine.”

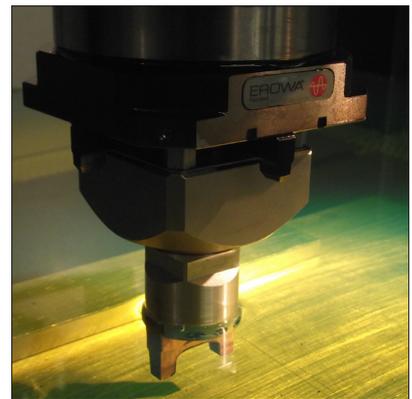
As well as overcoming the design bottleneck and improving the manufacturing process, Luke Parsons says VISI Electrode also gives them the confidence that their electrodes will be 100% accurate: “We only get one chance to spark an electrode in position, so there’s no margin for error. VISI Electrode doesn’t just create the electrode, it creates a co-ordinate sheet, a drawing report of the electrode and workpiece, XYZ and U co-ordinates, and the start and finish points. It gives our Sodick operator a visual picture of what he needs to achieve. This is of paramount importance for accuracy.”

He says while the combination of the Sodick spark eroder and VISI Electrode has already revolutionised the way they design and manufacture electrodes, it is absolutely key towards achieving their aim of doubling turnover within the next 12 months.

That objective will also be helped by their planned step-by-step switch to other software from the VISI portfolio, including VISI Machining to replace their existing CAM system. Their moulds are already modelled, designed and analysed using VISI Modelling, VISI Analysis and VISI Mould. “Part of the decision making process was that eventually we would design and manufacture all of our tools within a single environment, including VISI-PEPS wire for EDM.”

Switching to VISI Machining will greatly reduce Alliance’s CNC programming time. The software’s templates containing tooling, tool path operations, feeds, speeds and depth of cut, etc., all of which can be stored and re-used on similar electrode families. Applying them to a new electrode will automatically create a new set of toolpaths using the same settings and company standards which have already been proven on previous jobs.

Concluding Parsons says “Alliance has built up a very special know-how over the years and we have combined this with the latest machinery and CAD/CAM technology. Vero are key to our production plans and will ensure we remain in a position to meet the demands of our clients faster than ever.”



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