

die-cutting challenging materials

## welded rule joints

Marbach offers its customers a solution for the best die-cutting results – even for challenging materials.

When cutting very thick material or material with fabric, conventional tools often reach their limits. The same counts for die-cutting plastic material, as it is the case with thermoforming tools with steel-rule technology. Because rule joints can open up through the enormous load at spots where different cutting rules meet. If this happened it would create a huge nick in the blank. As a result, not only the visual appearance of the packaging and its functionality would be affected, but also the production process itself. For this reason it is necessary to truly unite the rule joints for those challenging materials. Different methods can be used: Laser, TIG or punctual welding. Marbach offers laser welding upon special request by customers or for strongly carbonaceous materials.

The laser welding process reaches its limits quickly with conventional standard steel. For this reason Marbach uses a special TIG welding process.

The TIG welding process provides significantly greater stability and flexibility for rule joints of standard steel than conventional laser welding. For very fine welds with low energy input. During this special welding process less heat occurs than through conventional welding. So the structure of the cutting rule's edge only changes minimally with TIG welding. This results in identical rule heights and hardnesses on both connection points. The rules are therefore not only being connected optimally but also the rule joint is on one level. The material can be cut neatly.

Special machine equipment as well as relevant know-how is necessary for this kind of welding. Marbach has both.

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Solid and precise connection of rule joints

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Minimum height tolerances

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Almost no influence on hardness of cutting edge

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