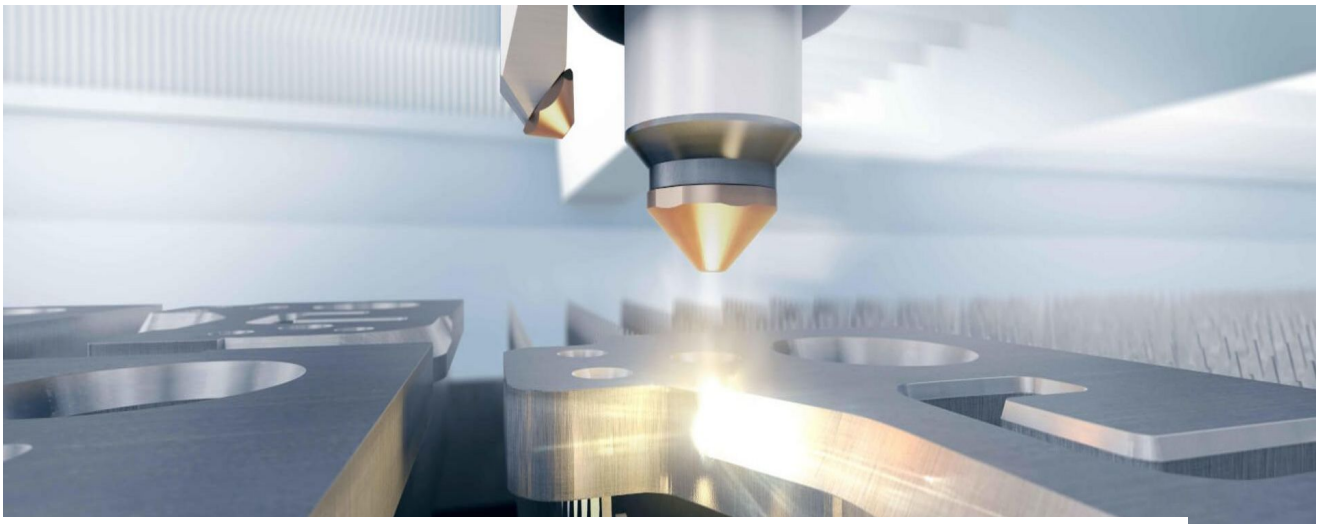


RAMONA HÖNL

Six benefits of EdgeLine Bevel

TRUMPF has launched a new technology that automatically prepares parts for welding. Known as EdgeLine Bevel, it helps users achieve significant time and cost savings. The method creates angled cuts known as bevels on the contours of parts. EdgeLine Bevel is particularly helpful in the following six cases.

01 – Thick sheets

Bevels are hard to avoid when it comes to welding together parts made of thick sheet-metal. The risk of undercut is particularly high in these situations. This is where too much energy enters the part during welding, causing the material to sag at the edges of the weld seam. The part loses stability and safety requirements can no longer be guaranteed. EdgeLine Bevel makes it possible to process sheets up to eight millimeters thick. It's a hugely useful technology for preparing the weld edges of thick sheets.

02 – Looking good

EdgeLine Bevel helps create flush seams by avoiding protruding welds. This gives parts a smooth, even surface and, in most cases, eliminates the need to grind parts after welding. Bevels can also be created on a part's inner contours, which are impossible for manual angle grinders to access. This can further enhance a part's appearance. The new method is particularly suitable for parts that have many visible seams, for example when fabricating machine frames.

03 – Exposed to the elements

Parts that are used outdoors must have completely leak-tight welds. Any gaps or overlaps could allow moisture to penetrate the seam and quickly raise the risk of crevice corrosion. EdgeLine Bevel creates gap-free welds without any post-processing, which makes it ideal for outdoor applications. It's the perfect choice for fabricating weatherproof parts for agricultural machinery.

04 – Every gram counts

EdgeLine Bevel supports lightweight construction. Bevels prevent deposits from forming at the edges of the weld, which ultimately makes parts lighter. They also eliminate the need for the flanges normally required for fillet welds. This makes EdgeLine Bevel particularly useful for applications that need to be as light as possible or that are subject to dynamic loads, especially in mechanical engineering, automaking and aviation.

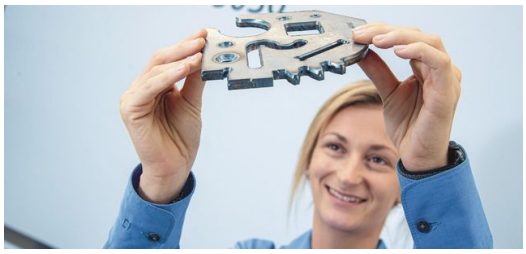
05 – Fewer steps

EdgeLine Bevel can be used to automatically create not just bevels, but also countersinks. These are required to screw together parts such as electronic enclosures. Countersinking is a very time-consuming process for workers. Once a part has been cut, the countersinks must be created using a drill; alternatively, a punch-laser machine must be used from the outset. EdgeLine Bevel eliminates this additional step in the process.

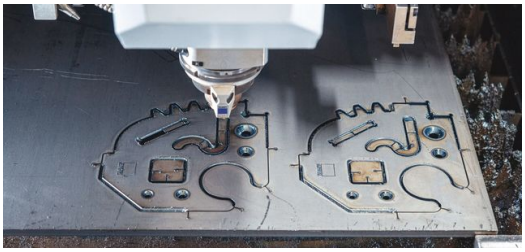
06 – Making the impossible possible

EdgeLine Bevel opens the door to new types of parts that used to be virtually inconceivable. If users wish to bend parts and then use heat conduction welding to weld them to a part with a circumferential, visible seam without rework, current laser-welding processes limit them to thin parts made of sheet metal no more than two millimeters thick. The part must be cut so that the material that the laser melts during welding does not protrude too much. In addition, it can only be 70 percent of the sheet thickness used, which is why this method only works with thin sheets. If the part has bevels, it is possible to leave more material protruding, thereby raising the limit to three to four millimeter-thick metal. This new flexibility in laser welding gives designers more creative freedom to design innovative components. It also simplifies the joining process.

The technology is hugely helpful with thick sheets: EdgeLine Bevel can process sheets up to eight millimeters thick.



No need to grind parts after welding: EdgeLine Bevel gives parts a smooth, even surface by creating flush seams by avoiding protruding welds.



Because of its gap-free welds without any post-processing, EdgeLine Bevel is ideal for outdoor applications.

EdgeLine Bevel enables bevels that prevent deposits from forming at the edges of the weld. As a result, the components lose weight.

In addition to bevels, EdgeLine Bevel can also automatically generate countersinks. This eliminates one work step.

EdgeLine Bevel opens the door to new types of parts that used to be virtually inconceivable - new creative freedom for designers.

RAMONA HÖNL

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https://www.trumpf.com/bg_BG/newsroom/stories/six-benefits-of-edgeline-bevel/