

High-tech for sheet metal



Development trends for sheet materials need special joining technologies

New developments in sheet metal working also place special demands on the joining technology. Prof Hartmut Hoffmann of the Forming Technologies and Foundry Engineering Department at the Munich Institute of Technology has observed a rise in sheet material types in the high strength and super high strength categories. The professional journal "MaschinenMarkt" even reports of "new materials daily" – with a clear trend towards mixed building structures, above all of combined aluminium and steel.

On these new materials, above all the combinations of lightweight metals and steel sheet, conventional welding methods quickly come up against their technical limits. Furthermore, welding is often ruled out because it would otherwise damage sensitive surfaces, with the associated formation of rust. Among the "alternative" joining methods, detachable connections like screw and nut unions may be expected to gain more in significance. At the same time piercing elements have become established as a precision fit alternative that goes particularly easy on the surface. In addition they save up to 80% of the manufacturing and energy costs of welded variants. Also bonding techniques may be expected to gain in importance, although they nearly all must be supplemented and supported by an additional connecting technique.

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