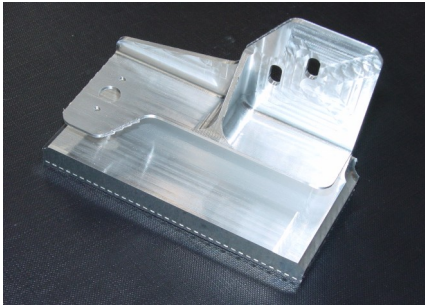


## Achieve repeatability and Save material with Makro Grip

The Lang Makro Grip vice, distributed by Thame Workholding in the UK and Ireland, supplies up to 20 tonnes of clamping force yet requires just 3mm of the workpiece to give a rigid fixing.



The system relies on Lang's Grip Fix stamping system to produce precise, contoured indentations in the raw material. These engage with a matching pattern on the jaws in the Makro Grip vice to lock the material in place. Markings on the jaws and the castellated indentations make lateral alignment simple, achieving repeatability

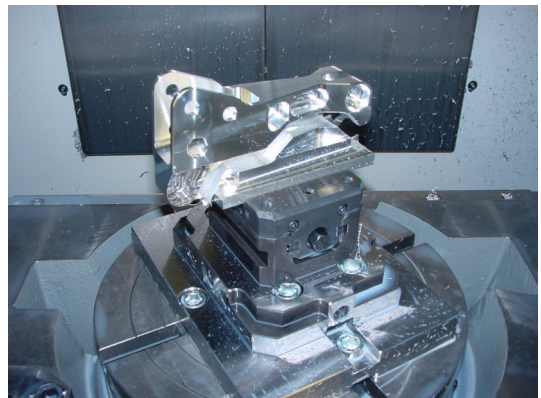
within  $\pm 0.02\text{mm}$ . To further speed up loading for batch manufacture, the system comes with an adjustable stop so that each new billet can be swiftly loaded without having to align it to the engraved scale.

Clamping is confined to 3mm of the billet. Not only does this save material, but it also allows access to more of the component in one setting. This makes it easier to achieve one hit machining and also perform complex 5-axis operations without interference with the tool or its holder.

To optimise repeatability and accuracy, clamping force can be regulated using a torque wrench. This ensures the workpiece will not be distorted through over tightening yet will provide clamping rigid enough for the heaviest machining operations. To add to its versatility the vice can be fitted with soft jaws. These are up to 40mm thick, big enough to accommodate most machined contours and hold awkward parts securely.



The Makro Grip is constructed with a hardened light weight base for easy handling and stability, and a TIN coated spindle for maximum wear resistance. The clamping bolts in the base are designed for precise alignment in Lang's Zero-point clamping system, simplifying machine setting and eliminating the possibility of error. However, adaptors are also available to fit other systems including Erowa and System 3R.



Vice sizes are available for parts ranging between 0 and 300mm and each size has reversible jaws to maximize working capacity. Maurice Day, Sales Director at Thame Workholding said, "Makro Grip provides users with the technology to save material, and at the same time achieve robust and repeatable workpiece clamping. This makes it ideal for many applications including the machining of electrodes and the manufacture of aerospace components."

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