

Extra Module for vhf Manufacturing Software:

Optical Workpiece Recognition with Canon CCD

A common annoyance – a workpiece has been elaborately printed and then the contours will not be hit exactly when the workpiece is milled later on. In the worst case, the whole plate has to be discarded then. Reasons for this are inaccuracies of the printing process and while manually adjusting the workpiece on the CNC machining system. The new module Canon CCD offers a remedy here by optically measuring the printed workpiece.

This extra module for version 3.9 of the manufacturing software Cenon of vhf camufacture AG consists of a CCD camera with a clamp which will be fixed at the z axis of the machining system and an appropriate software extension. Cenon CCD recognizes register marks which are printed on the workpiece or the edges of the workpiece itself. A new shape of the register marks can always be easily taught to the software.

The software independently adjusts the machining paths for the output according to the captured positions of the register marks with the help of a flexible transformation grid. That means they will be aligned by rotating, scaled proportionally or they will be stretched respectively compressed in one direction. So all kinds of inaccuracies of the printing process can be compensated. The result will be an accurately machined outline which is exactly next to the printed contour.

This method is suitable for milling, engraving and drilling as well as for cutting with a tangential knife. Furthermore, it can be used for quite different kinds of applications: for instance an industrial manufacturer may want to process silk-screen printed front plates or plastic foil keyboards. And due to the more and more powerful and inexpensive large-format printers, the field of sign making constantly offers new possibilities and applications under the keyword "print & cut". Finally, another useful field of application is processing oversized workpieces: If they don't fit completely on the machine table, they can be moved in several steps under the bridge and then they will be processed stage by stage.

Cenon CCD can be used for the model ranges Classic, Premium and Active. vhf systems which are already in use at the customer's site can mostly be retrofitted with little effort – the camera clamp is available in different vari-

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ants for all z axes. And all previous Cenon versions can be upgraded to the latest version 3.9. The vhf service department would be glad to make an individual offer.

Jörn Vogt M. A.

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Contact

vhf camufacture AG
CNC Machining Systems
Im Marxle 3
72119 Ammerbuch/Germany
Phone: +49 (0)7032 97097-0
Fax: +49 (0)7032 97097-50

Internet: www.vhf.eu
E-Mail: info@vhf.eu

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CCD camera for recognizing register marks or edges of workpieces. It is mounted with a clamp at the z axis, next to the milling spindle. The workpiece on the machine table is printed with round register marks. The software uses them to calculate the exact rotation and scaling of the output paths.

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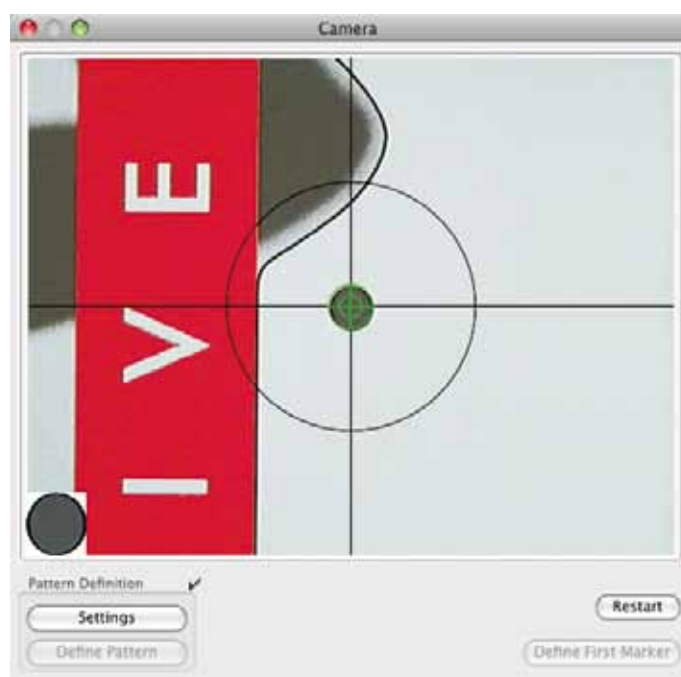
vhf camufacture AG
CNC Machining Systems
Im Marxle 3
72119 Ammerbuch/Germany
Phone: +49 (0)7032 97097-0
Fax: +49 (0)7032 97097-50

Internet: www.vhf.eu
E-Mail: info@vhf.eu

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The Cenon camera window shows a preview image during the whole measuring process. The green cross-hairs signalise that a register mark is recognized. The lower left corner of the preview window shows the shape of the register marks of the current project. This is the form which will be searched for on the workpiece.

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vhf camufacture AG
CNC Machining Systems
Im Marxle 3
72119 Ammerbuch/Germany
Phone: +49 (0)7032 97097-0
Fax: +49 (0)7032 97097-50

Internet: www.vhf.eu
E-Mail: info@vhf.eu