
Jig grinding - a further application for the multi-talented KERN HSPC

(a high precision micro-milling- and drilling machine which can also be used for tapping, digitising, laser fine-cutting and now also for jig grinding).

So far, the KERN HSPC high precision micro-milling and drilling machine could already be used for milling, drilling, rigid tapping, digitising and laser fine-cutting up to 5 axis simultaneously. Now the KERN-team has put one more on top.

Some years ago the KERN specialists developed a jig grinding cycle - just for the fun of it. Only a few KERN customers were using this jig grinding cycle on the bench type KERN 1016 or 2216 machines equipped with analogue drives.

Now, with the newly developed digital drives in combination with the extremely anti-vibration properties of the polymer concrete machine base, the KERN HSPC type is ready to be used as a jig grinding machine as well. Initial trials for a well-known continental manufacturer of cutting inserts have shown excellent results. Of course an order was placed immediately for this type of machine. After only a very short period of grinding experience with this machine, that customer has placed an order for a second machine.

It may be of interest that this customer is using the KERN HSPC for milling punches and dies in steel 55 HRC at an accuracy $\leq 2,5$ micron and, in addition, jig grinds punches of sintered hardmetal at an accuracy of 1,5 micron (as per test protocol). A surface finish of RA 0,16 in X/Y and RA 0.11 in Z was achieved already in the first attempt. During the jig grinding operation the spindle oscillates vertically whereby lifting height and acceleration can be individually regulated.

The advantages are clear: in practically one set-up it is possible to mill and jig grind parts. This allows jig grinding of the smallest contours.

So far diamond grinding wheels down to 0,5 mm diameter have been used. These very small tools require spindles with high revolutions up to 160.000 rpm. If a KERN HSPC-user requires these extreme conditions it is certainly possible to equip the KERN HSPC with a multi-purpose spindle-bed which allows a quick spindle exchange within less than 10 minutes.

Of course it is also possible to feed the workpieces into the machine by using an automatic palletising system for unmanned operation. So far excellent results have been achieved in combination with SYSTEM 3R macro holders and the SYSTEM 3R WORKPAL.

One KERN HSPC-user ordered the KERN HSPC with a milling spindle and an additional grinding spindle. After 3 months of use he had never used the grinding spindle as he realised the great number of jobs he could do on his 5 axis KERN HSPC in much shorter time and with a superior surface finish not experienced on any other milling machine.

KERN
Micro- und Feinwerktechnik
GmbH & Co.KG
Ammergauer Str. 11
DE-82418 Murnau-Westried

Phone +49 8841 6130-0
Fax +49 8841 6130-40
Email:
kern@microtechnic.com
Website:
www.kern-microtechnic.com