PRESS RELEASE

Absolute precision in seconds

The new SF-5 stream finishing machine from OTEC.

Perfect surfaces through edge rounding, polishing, deburring, smoothing… and all with the utmost of precision and with finishing times of as little as 3 – 4 seconds for a single workpiece (e.g. for edge rounding). The SF-5 stream finishing machine is the latest product from OTEC. This globally operating company is a typical example of a Baden-Württemberg SME. True to the motto, "Anything that is good can still be optimised“, OTEC is constantly striving to find better solutions for the surface finishing of workpieces, both from the point of view of performance and in terms of cost-effectiveness. And since even the highly sophisticated engineering of this machine needs the right media to produce the best results, OTEC also takes the lead in this area in order to ensure optimum results through the right choice of medium. The perfect match is essential.

Fig. 1

How can the SF-5 be so fast?

It's very simple: a key feature of this machine is that five workpieces can be finished at the same time and can be changed whilst the process is running. Down time for loading and unloading is a thing of the past. The machine has five grippers which can hold items such as thread taps or carbide drills of widely varying diameters: two with diameters of over 10 mm and three with diameters of less than 10 mm. All in all, workpieces with diameters ranging from 2 mm to 20 mm and with lengths of up to 350 mm can be inserted. The pneumatically operated three-finger grippers "know" everything: the depth to which each workpiece needs to be immersed into the um, the speed and the right processing time. And when the job is done, they move the workpiece into the changeover position.

A further technological advance is the use of purging air. This serves to prevent the cooling lubricant holes from becoming clogged during the rounding of cutting edges (see Fig. 2). With OTEC's patented process, air is blasted through at a pressure of 1.5 bar when the workpiece is immersed in the medium; then the pressure is reduced to 0.5 bar during the process and briefly increased again to 1.5 bar when the process is complete.

Fig. 2

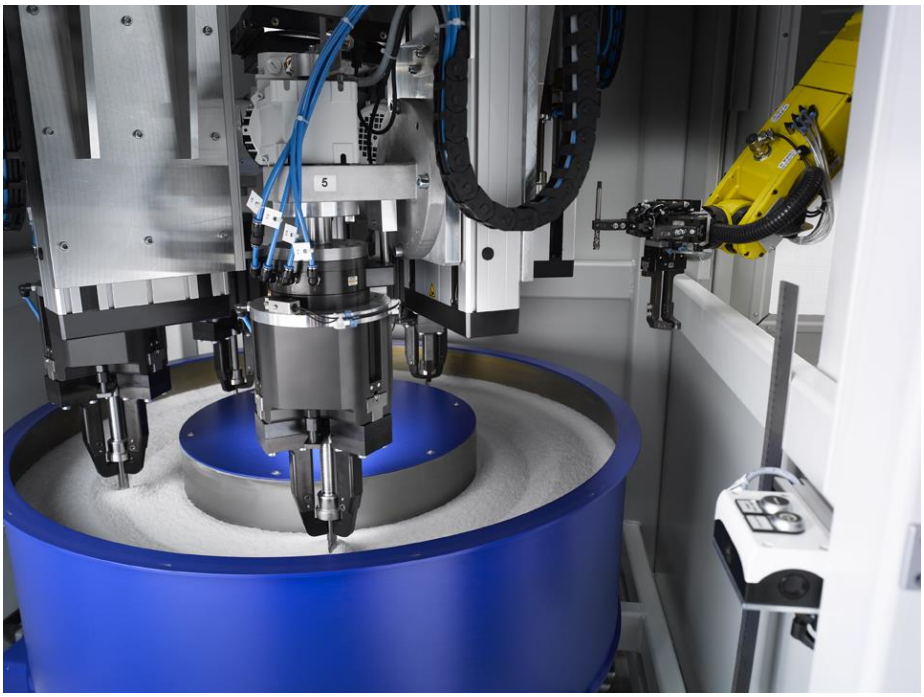

Fig. 3

The SF-5 as a fully automatic system

With the standard version of the SF-5, the only manual operation (as per process definition) is the loading and unloading of the individual workpieces. When linked to a robot, even this task is dispensed with. This second component therefore transforms the SF-5 into a fully automatic system, making it the most cost-effective solution for small and medium-sized batches.

The robot picks up the tools from marked pallets and in doing so receives all the data needed for inserting them into the gripper as well as the data needed for the respective process, such as immersion depth, speed and the processing time which must elapse before the changeover position is reached, from which the robot then collects the items concerned and sets them down again correctly.

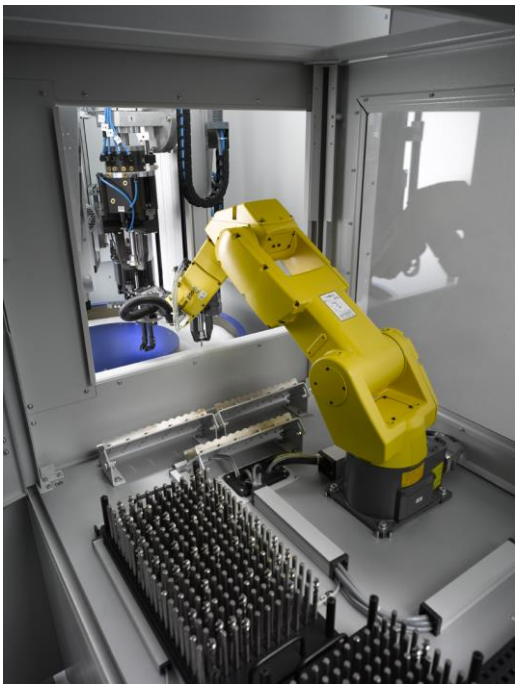

Fig. 4

An intensive series of tests with the SF-5 was carried out late last autumn. At trade fairs – most recently at Grindtec in Augsburg – the machine has attracted considerable attention from prospective customers. Some machines have already been delivered.

Typical applications for these machines include the edge rounding and polishing of drills and carbide cutters, the polishing of drill bodies and the deburring and rounding of thread taps etc.

A few typical applications:

Fig. 5 Polishing of carbide drills

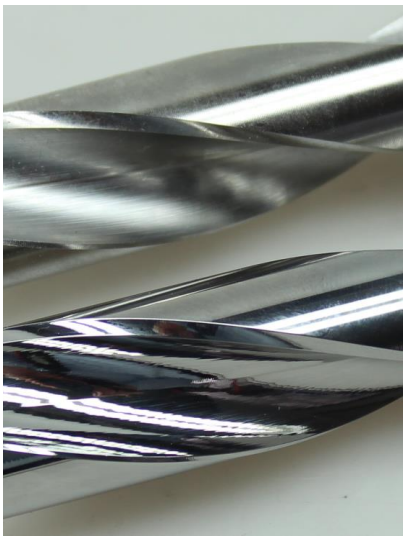

Fig. 6 Polishing of drill bodies

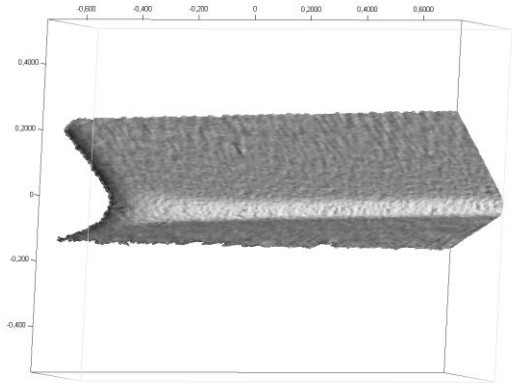

Fig. 7 Rounded cutting edge

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