

Product Information

SpeedLine INDEX C100

Production turning machine for highly productive bar machining

Esslingen. With their new production turning machine INDEX C100, the INDEX-Werke GmbH & Co. KG present another innovative highlight for highly productive bar machining. The aim of the INDEX design engineers was a further development of tried and tested concepts. Among those concepts ranks the INDEX SingleSlide plate-type slide system, which has already set standards in terms of damping, rigidity and tool lives. The principle of two opposite Y axes, which brings the user an enormous increase in productivity, was pursued further. In particular, the three independently traversable tool turrets for machining on main and counter spindles increase efficiency. The tool carrier 1 operates preferentially on the main spindle, the tool carrier 2 operates either on the main or counter spindle, and the tool carrier 3 operates exclusively on the counter spindle. The new production turning machine INDEX C100 is available in two spindle sizes: With bar capacities of 30 mm and 42 mm.

The INDEX SingleSlide plate-type slide system has already proven its effectiveness in practice. The tool slide for X and Z movement consists of a single piece and does not traverse the turrets on anti-friction guides, but on flat slideways. The tool carriers 1 and 2 slide on slideways that are firmly screwed down to the machine bed. The virtually wear-free sliding pair consists of through-hardened steel tool plates (slideways) and coated sliding elements (tool carrier). An exact adjustment ensures zero backlash of the sliding pair. This design combines the known advantages of slideways – such as good damping properties and high rigidity – with good acceleration and rapid traverse values, achieved until now only in machine tools based on linear slideways. We were able to significantly improve the drive kinematics of this innovative guiding principle by using scissor kinematics. Last but not least, this is also reflected in the low heat transfer and the high accuracy of the machine. Because of the low masses to be moved, accelerations of up to 1 g can be obtained.

The new production turning machine INDEX C100 meets the market's requirements of producing smaller workpieces of difficult-to-machine materials under continuously increasing precision requirements. In addition to that, more and more tools for machining are needed because of the increasing complexity of the workpieces. This

was taken into account by equipping all three tool turrets with 14 tool mounts according to DIN VDI 69880-20 as a standard feature. For users who want to continue working with the existing tool holders according to DIN VDI 69880-25, the turrets are optionally available with 10 tool stations. Both versions are equipped with the INDEX W serration, an INDEX-specific improved VDI interface. W-slots in the tool turret ensure repetitive accuracies of +/- 8 µm during setup even with angled tools – and at a distance of up to 100 mm from the tool mounting device.

High rapid traverse speeds of up to 60 m/min guarantee low non-productive times and thus a further reduction of cycle times. The vertical machine bed allows a free chip fall. The very good sealing-off of the working area is also worth mentioning. The machine is provided with completely enclosed guards with height-adjustable operating panel. The offset arrangement of the switchgear cabinet allows quick and comfortable access on the rear of the machine in case service is required. After removing the sheet metal cover, the drive kinematics and the complete electrical and hydraulic installation are freely accessible. Another important aspect for operator and setup engineer is the easy setup of the INDEX C100, due to the excellent access to the working area. Being an INDEX machine, it goes without saying that the compact turning machine requires only a small installation area.

Wherever speed and short production times, i.e. maximum productivity and economy, are essential, the INDEX C100 is setting standards: Its main and counter spindles feature a bar capacity of 30 mm (or 42 mm with identical machine size) and a maximum speed of 9,000 rpm (7,000 rpm). The main spindle has a driving power of 20/29 kW (25/29 kW) and a torque of 35/50 Nm (49/65 Nm). The counter spindle has a driving power of 13/19 kW (10.5/19 kW) and a torque of 23/33 Nm (32/43 Nm) at 100%/40% duty cycle. The C axis has a resolution of 0.001 degrees.

The production turning machine INDEX C100 will be used in all important sectors where complex turned parts are required. For example, in the sectors of automotive subcontractors, fittings manufacture, fluid technology and medical technology. As part of extensive field tests, the INDEX C100 has already exhibited its virtues in multi-shift operation. Under production conditions, excellent results have been achieved over long periods. The practical tests have shown that in terms of its performance values, for example acceleration, dynamics, rapid traverses that can be achieved and the driving power of the main and counter spindles, hardly anything comparable is to be found nowadays on the market.

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Figure 1: Compact production turning machine INDEX C100

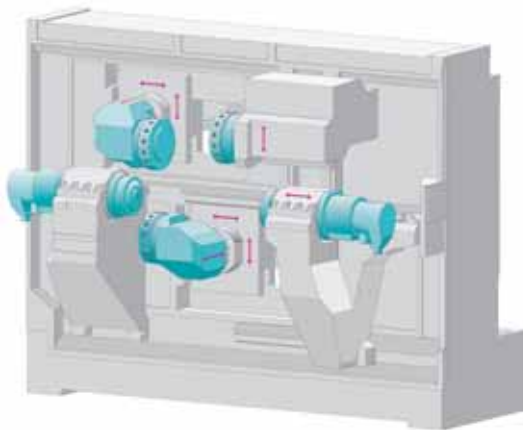


Figure 2: The kinematics of the INDEX C100



Figure 3: Three tools operating simultaneously

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Figure 4: Flexible
Y axis: 2 at the main
spindle or 1 each at the
main and counter
spindles.



Figure 5: INDEX
SingleSlide – innovative
guide system