

Press information

INDEX VerticalLine V160C Turn-grind center

Hard turning and grinding on a single machine

INDEX-Werke GmbH & Co. KG are presenting the turn-grind center V160 C from the VerticalLine vertical turning machine series at the AMB 2008. They have succeeded in integrating the grinding technology in the basic machine version of the modular INDEX modular system. The high precision of the standard machine, that is appreciated by many users, is the best requirement for the combination of hard turning with the system enhancement with grinding. The vertical turning machine also convinces with very good accessibility to the work area and the associated ease of set-up which is unparalleled.

The V160C is a complete machining center showing all the features of modern process integration. Hard turning and grinding on a single machine. With this machine, the user does not have to make any compromise. The full turning functionality is maintained and completed with the equally unlimited grinding functionality of the modular grinding components. Thus, for example, dressing cycles, wheel contact detection and grinding wheel balancing are fully automated.

The full grinding functionality includes, in addition to the uncompromising precision, of course, also the tightness of the working area and an independent control software in the form of a special programming interface for grinding. The modular design of the system even allows standard machines already delivered to the customer to be upgraded by means of the modular grinding components, likewise without any restriction to the turning or grinding functionalities. The high thermal stability known from the turning machines and appreciated by many users is also a characteristic feature of the V160C turn-grind center.

The automatic workpiece handling unit works through pickup by the motor spindle as the active handling unit. The linear drive in the X-axis, which is the usual handling axis of vertical machines, achieves dynamics, speed and short handling times. Its features include: rapid traverse 80 m/min, acceleration 1 g (9.81 m/s²) and a direct encoder system via glass scales. The automatic workpiece measurement offers all the advantages of in-process measurement and of all post-process measurements.

The complete machining machine is suitable for all application areas that require maximum precision, such as for the machining of components for diesel injection technology, nozzle bodies, HSK tool interfaces, hydraulic components requiring high-quality surface finish and wherever serrations have to be ground.

Machining precisions of the V160C turn-grind center up to:

- Grinding roundness: 0.3 μm
- Roughness Ra: 0.06 μm
- Roughness Rz: 0.6 μm
- Diameter: +/- 1 μm
- Straightness: 0.4 μm
- Parallelism: 0.4 μm

The technical data of the V160C turn-grind center:

- Maximum workpiece diameter: 200 mm
- Maximum workpiece length: 200 mm
- Assembly of up to two grinding spindles possible
- Speed range outside: up to 6000 rpm
- Speed range inside: up to 105,000 rpm
- Maximum grinding wheel diameter: 400 mm

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Fig. 1:
INDEX V160C: Hard turning and grinding on a single machine

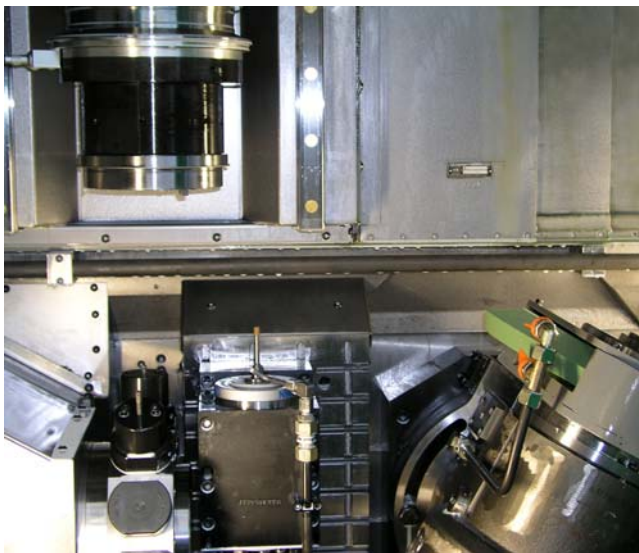


Fig. 2: Work space with inner and outer grinding systems

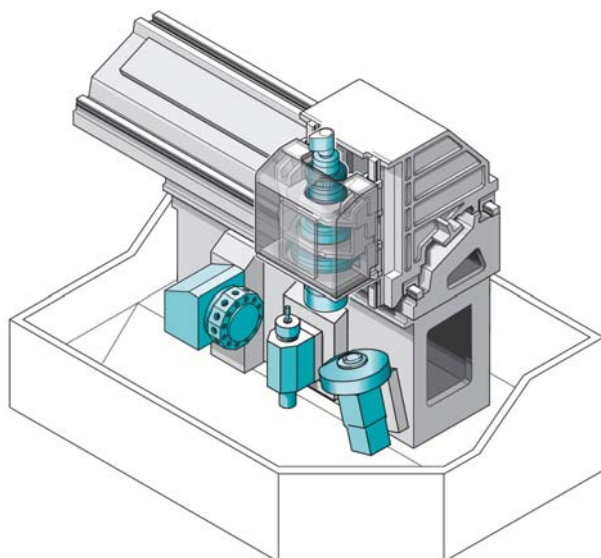


Fig. 3: Modular design of the INDEX V160C