Press release dated October 12, 2020

Long and heavy? No problem.

INDEX G400 turn-mill center for efficient complete machining with three turrets

**In the fall of 2019, INDEX showcased the G420, a new design of a special class of large turn-mill center. The INDEX G400 is now due to launch in September 2020. The main difference from INDEX G420 is that the G400 has a built-in VDI-40 turret with 12 stations in place of the motorized milling spindle.**

The new INDEX G400 turn-mill center is ideal for anyone who wants to carry out complete machining of parts up to 2,300 mm long, where a large portion of the machining consists of turning, and where live tools are sufficient for drilling and milling. In contrast to its counterpart, the INDEX G420, which is equipped with a motorized milling spindle with a large tool magazine on the upper tool carrier, the INDEX G400 features a VDI-40 turret with 12 stations. The live tools used here also deliver impressive drilling and milling results thanks to a 7.5 kW motor with 35 Nm torque, and offer fast changeovers via the INDEX W-serration.

A particular feature of this turret is its quill, which enables a large Y stroke of ± 100 mm. Its excellent damping properties and minimal friction are the result of extensive expertise accumulated over many years and a great deal of development work. The quill is based on a polygon contour that can absorb high forces. Further technical highlights include the hardened quill material, which is given a special texture, and the slightly pretensioned sliding guide.

**Sturdy machine design**

With this equipment, the INDEX G400 perfectly complements the INDEX G420, which shares a similar design. The mineral cast bed in block design generates an extraordinarily high inherent rigidity and, together with the generously dimensioned linear guides in the X- and Z-axes, ensures the excellent stability and damping properties. In addition, the ratio of stationary to moving masses with a factor of significantly more than five not only promises excellent rigidity, but also delivers outstanding dynamic properties with a pronounced low level of vibration.

In the standard version of the INDEX G400, the two lower VDI-40 tool turrets can be moved ± 70 mm, both in the X and Z directions, and also by means of a linear Y-axis. They each provide 12 stations, all of which can be equipped with live tools. This means that there are enough tools available to cover even the most demanding tasks without any additional setup, and makes the large turn-mill center the right choice for small batch sizes too. If even more tools are required, the two lower turrets can be equipped with 18 stations each, but without the Y-axis.

**Efficient complete machining of shaft-type workpieces**

Thanks to the spacious working area and the large distance between the main and counter spindles, simultaneous use of all three tool turrets is possible at the main and counter spindles with no risk of collision. The turning length of up to 2,300 mm allows a wide range of parts to be machined economically. An optional turret steady rest can also be mounted on the turrets. Both working spindles are fluid-cooled.

In the A8 version, there is bar clearance of 102 mm or the possibility of using size 315 mm clamping devices (340 mm diameter in rotation). The A11 version is designed with a bar clearance of up to 120 mm, with a maximum chuck size of 400 mm. With their high dynamics, power, and torque (A8: 41 kW, 920 Nm/A11: 43 kW, 1,000 Nm), the motorized spindles are ideal for productive turning operations.

**Automation alternatives and digital networking**

To enable automated operation of the G400, INDEX offers two different integrated handling units for loading, unloading, and removal of remnants for small to medium-sized parts weighing up to 20 kg. Since the parts are discharged in the area above the spindle, the maximum diameter of the two-axis version is 160 mm. The three-axis tool handling system features an additional swivel axis, allowing parts up to 250 mm in diameter to be moved.

INDEX is your go-to supplier for high-end automation solutions with robot support the iXcenter. For the solution implemented on the INDEX G400, the development team chose a modular design that allows different units for operations such as loading, measuring, and cleaning to be docked to the largely autonomous standard robot cell from two sides. Loading and unloading takes place via the machine door.

The INDEX G400 is controlled by a Siemens Sinumerik 840D SL. Simple and safe operation is ensured by an 18.5" touch terminal and the INDEX iXpanel cockpit system, which makes it easy for users to integrate their machines in network structures and use INDEX’s own IoT platform iX4.0.

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**Photos:**

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# **Image 001:** INDEXG400 - The innovative turn-mill center for high-performance machining of large workpieces. Image: INDEX



**Image 002**: VDI-40 turret with 12 stations. Image: INDEX