Press release dated October 12, 2020

**Automation from Small to Extra Large**

INDEX iXcenter robot cell now also available for large machines

**INDEX has been offering highly productive robot automation solutions for small and medium-sized turning and turn-mill centers for the last three years. Now, customers with larger turning centers can also benefit from a easy-to-integrate automation system. Thanks to its modular design, the robot can be used not only for loading and unloading large, heavy workpieces, but also for a range of downstream tasks.**

Where would modern machine technology be today without the right automation solution? INDEX, one of the world's leading manufacturers of CNC turning machines, automatic lathes, multi-spindle machines, and turn-mill centers, is seeing strong demand for automation solutions across its entire machine range and is meeting these requirements through a wide variety of solutions. These solutions cover everything from simple workpiece removal devices integrated in the machines to sophisticated external robot solutions, which are attracting great interest.

INDEX has been supplying its iXcenter robot cell for more than three years, initially with a small version integrated with the machine, but now available in other sizes and versions.

**Fully-integrated automation for compact machines**

The compact TRAUB TNL20 sliding/fixed headstock automatic lathe can be configured with an iXcenter that is fully integrated with the machine. It essentially consists of a jointed-arm robot and a vertical pallet storage unit that holds up to 14 pallets (300 x 400 mm). With this automation solution arranged at the front, the robot can load and unload chucked parts. It is also capable of sorting components after bar machining. Additionally, the iXcenter is already prepared for the integration of additional process steps such as 3D measuring and deburring. For simple and ergonomic machine setup, the user can push the small robot cell completely to the side after releasing a lock, allowing unrestricted access to the machine.

**Automation cell for the medium-size machine segment**

INDEX offers a slightly modified version of its iXcenter robot cell for medium-size machines such as the INDEX C100/C200 production turning machines, the INDEX G200 turn-mill center, and now also the TNA and B series universal turning machines. Instead of being directly attached to the machine, the robot cell is located on a platform equipped with linear guides and is fixed in front of the machine’s work area during production. The 6-axis robot offers up to 12 kg load capacity and accesses the machine’s work area via the machine door, which opens automatically behind the robot cell. This version of iXcenter features a space-saving vertical storage system with up to 22 stacked pallets (600 x 400 mm). Pallets with blanks are loaded in the top storage area by the machine operator, while pallets with finished parts are removed from the bottom of the pallet storage unit. This can be done at any time without interrupting production. Downstream processes, such as cleaning, measuring, and deburring, can also be integrated in the robot cell.

**Modular robot solution for large machines**

The newest iXcenter automation solution is designed for the new, large G-series turn-mill centers and is currently being presented on the INDEX G400. Automation plays an important part in machines of this size (turning length up to 1,600 mm), as the weight of the parts typically causes the operator to require support during loading and unloading, such as using a crane. Additionally, manual chucking of these large parts takes a long time. Automated handling pays off relatively quickly in such cases.

The INDEX development team selected a modular design for the large iXcenter. The automation solution is essentially comprised of a largely autonomous standard robot cell positioned in front of the machine. It is a base unit on which a jointed-arm robot is installed with a load capacity of 165 kg as standard (optionally up to 270 kg). Different modules can be docked to this cell from two sides, including pallet/rack systems, measuring/testing stations, equipment for deburring, cleaning or laser marking, and much more. This means that the robot is not only responsible for loading and unloading the parts via the machine door, but can also deal with downstream processes during what are often long machining times.

**Great flexibility with standard modules and special solutions**

As far as the robot’s modules and operations are concerned, INDEX already covers a large spectrum with standard solutions, meaning that many customer requirements can be met quickly. These include, for example, the robot’s gripper change for automated and alternating handling of shaft and flange parts, which the robot loads into the machine from a pallet station. For this purpose, the robot automatically changes the corresponding grippers from the changing station.

INDEX is always developing new ideas and special solutions that expand the spectrum of the large iXcenter solution. As the robot can access both the main and counter spindles, solutions can be implemented for changing the clamping jaws in the machine, for example. For the G420 turn-mill center, there are plans to enable the changing of special tools in future as well, as the tool magazine and milling spindle are also within the robot’s field of action.

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**Photos:**



## **Figure 001:** TRAUB TNL20– Productive sliding and fixed headstock turning of medium and high complexity workpieces from bar stock or with an integrated robot cell. Figure: INDEX



**Figure 002:** INDEX C200 – Subsequent processes such as cleaning, measuring, deburring, etc. can be integrated in the robot cell. Figure: INDEX



**Figure 003:** INDEX G200–Robot cell is located on a platform equipped with linear guides and is fixed in front of the machine’s work area during production. Figure: INDEX



**Figure 004:** INDEX G400– Modular robot solution for large machines. Figures: INDEX