

November 2022

Swiss Rotary Table Technology

NEWSLETTER

Up to 7000 production hours per year

ROTOMATION

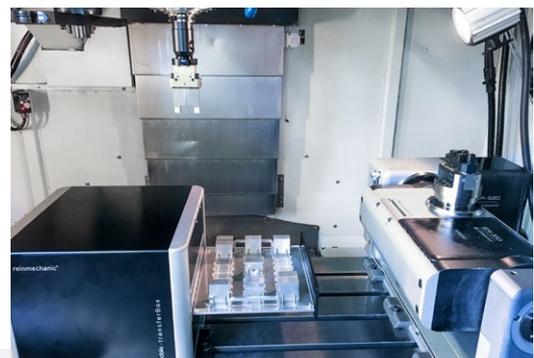


ROTOMATION is suitable for any 3-axis milling machine with an automated tool change function. Images: pL LEHMANN

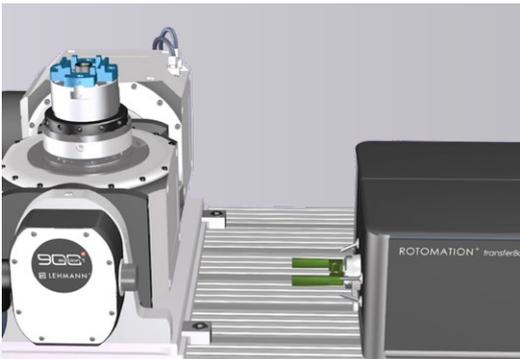
Simple automation system enables vertical machining centers operate around the clock

pL LEHMANN, Swiss manufacturer of high-quality CNC rotary tables, introduces ROTOMATION – an automation solution for vertical machining centers that is easy to install and operate. The tool spindle as a transfer unit and a transferBox mounted on the edge of the machine table – ideally combined with a single or dual axis pL CNC rotary table: Making cost-effective, fully automated complete machining of small parts possible.

The modular transferBox with a length of 350 mm (with valve box +88 mm), a width of 350 mm and a standard height of 205 mm is one key component of the new ROTOMATION indoor automation system from pL LEHMANN. It serves essentially as a workpiece magazine and, as such, can be equipped



A 5-axis machining center fully automated with ROTOMATION is able to completely machine parts in unmanned shifts.



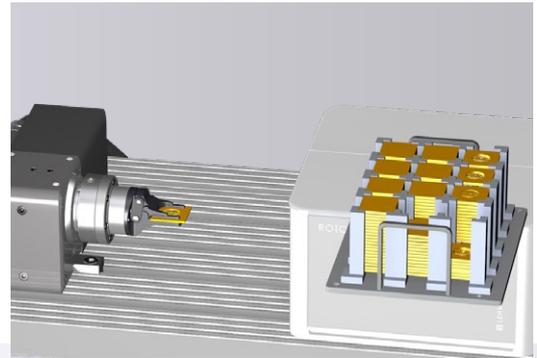
The transferBox can be equipped with a turning device, the so-called partReverser. This allows the part to be rotated through 180 degrees for machining on the rear side.

with drawers, pallets or a bar insert as required. The partReverser (a turning device for rear-side machining) and four air nozzles for blowing off the workpieces are available as complementary components.

The transferBox can be fastened to the machine table in the conventional way with tenon blocks and clamping bars. Thanks to the integrated positioning system, insertion and removal takes no more than ten minutes, and the box is in the reference position. Meaning that machine can be quickly retooled, for an automated night shift for example. This additional capacity utilization is extremely useful for contract manufacturers and allows machine hourly rates to be calculated in a new and cost-effective manner.

Hard to beat in terms of flexibility and efficiency

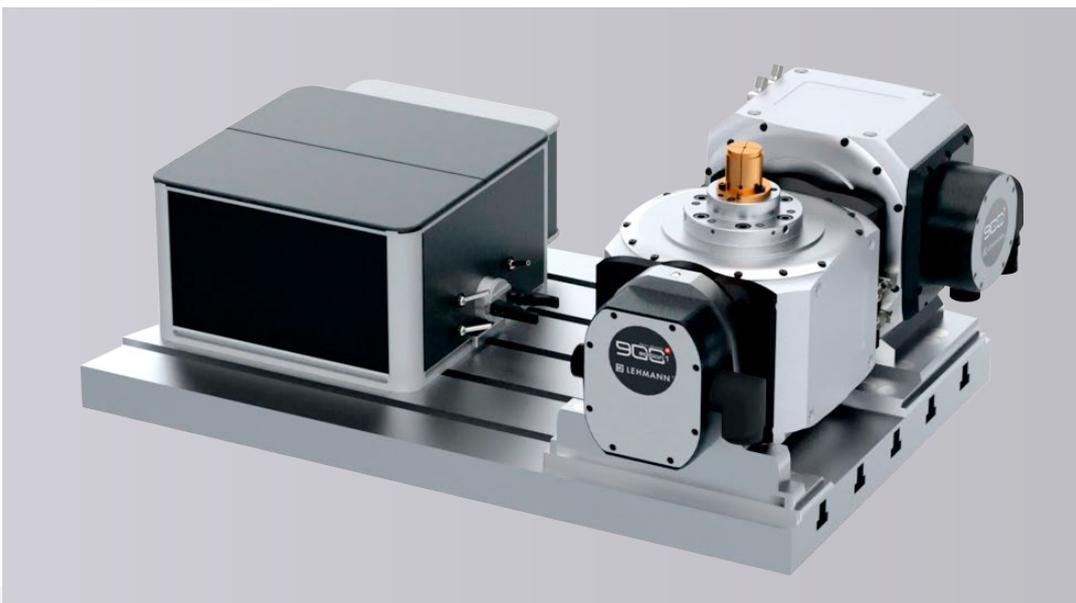
pL ROTOMATION is an ideal add-on, especially for contract manufacturers and other machining companies that need their machine tools to be extremely flexible. This high degree of flexibility is down in part to the modular design. The transferBox can be equipped either with two or more extending drawers, each containing one pallet (220 x 235 mm), or a pallet insert (260 x 245 mm) that can be accessed from above in order to re-



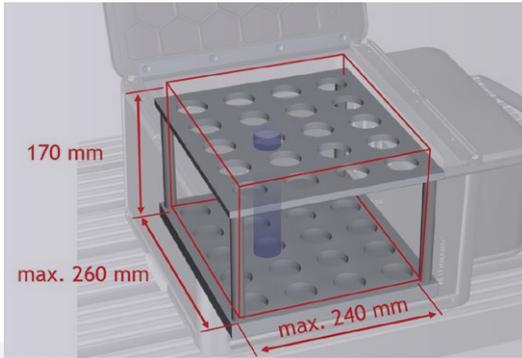
Example of ROTOMATION with a pallet insert in the transferBox: Complete machining of clockwork bridges

move and deposit a high volume of stacked small parts, for example.

The third alternative is a bar insert (260 x 240 mm) for part production from short bars. This requires the machine to contain, as well as the transferBox, at least one additional rotary ta-



Typical setup for bar machining with two-axis pL rotary table and transferBox



The bar insert for the transferBox

ble to swivel the bar – for cutting off for example – by 90 degrees. For bar machining, pL LEHMANN offers an integrated, fully automated bar feed for its CNC rotary tables.

Tool spindle takes on the robot's functionality

ROTOMATION does not require any additional robots or transfer units to retrieve the blanks from the transfer box and deposit the finished parts there again afterwards. The smart idea: The system does this using the tool spindle, which is equipped with an interchangeable, pneumatically controllable gripper. The processes are programmed via the machine CNC. All that is required is a complementary processBox, which is installed in the control cabinet and handles communication with the CNC by means of M functions. Because no other components are needed, effort and costs are kept to the minimum.

Ideal for simple standard machines

ROTOMATION can be installed on three-, four- or five-axis vertical machining centers, with the 4th or 5th axis always being realized with attached CNC rotary tables, ideally from pL LEHMANN. Pure 5-axis machining centers are not suitable for this purpose.

The automation system is focused on the production of small batches and approximate workpiece dimensions up to a cube of 60 mm or on short bars up to 300 mm in length with a diameter of 60 mm.

pL ROTOMATION can get the best out of unattended night and weekend shifts. According to pL LEHMANN, the approximately 1700 day shift hours, together with an additional 5300 unmanned hours, can amount to 7000 hours per year, and so the investment in the ROTOMATION system pays for itself in a short time.



Typical parts for chuck machining with ROTOMATION



Typical parts for bar machining with ROTOMATION

Further interesting details, features, explanatory videos and numerous practical examples can be found on the pL LEHMANN homepage <https://www.lehmann-rotary-tables.com/de/produkte/automation/transferbox>

The pL LEHMANN company, ...

... the Swiss manufacturer of CNC rotary tables and other components for metal machining, is an experienced machine construction company, whose rotary and swivel axes have proven their worth in production for over 40 years. In addition to these products, which are used to upgrade cost-effective standard vertical machining centers to productive four- and five-axis systems, the range also includes various workpiece clamping systems and the ROTOMATION automation system.

CNC rotary tables with Swiss quality

Founded in 1960 strictly as a contract manufacturer, pL LEHMANN has been developing and producing CNC rotary tables for over 40 years. With innovations and Swiss quality, the family-owned company in the Swiss town of Bärau (Emmental) succeeded in opening up new opportunities for its customers and developing lean machining solutions characterized by high productivity through use of additional NC axes. One of the highlights of the company's history is the powerful and flexible Series 500 - developed in 2009 - which is ideal for the most demanding tasks thanks to its modular design. With the backlash-free, preloaded PGD gear unit – developed in 2014 – pL LEHMANN reached another milestone. In 2017, the company introduced, among other things, the new pL-iBox generation, making their rotary tables ready for Industry 4.0 and digital production. This was followed in 2019 by the introduction of the Series 900 DD (Direct Drive) rotary tables with speeds of up to 5,450 rpm. As an additional new product, the AM-LOCK system, a special zero-point clamping system for 3-D printing, including preprocessing and postprocessing, was presented in 2019.

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