

Over the last ten years, HEDELIUS Maschinenfabrik has become well known as a manufacturer of five-axis vertical CNC machining centres for a variety of production tasks. HEDELIUS has now developed a super-compact 5-axis machining-centre, the RS 505, that can work with great precision and accuracy, handling objects up to 1000 mm long and also complex cubic work-pieces up to 420 mm in diameter, and with a footprint of just 7 square metres.

5-AXIS ALL-ROUNDER WITH SMART WORK-SPACE – HEDELIUS REVOLUTIONISES 5-AXIS MACHINING

Measuring only about 3.5 metres in length and 2 metres in depth, the super-compact RS 505 from the ROTASwing® range, with its generous travel of 1000 x 510 x 480 mm (X/Y/Z), is just as well suited to the manufacture of machinery and vehicles as to manufacture of precision tools and dies. It handles work-pieces with the greatest precision, high surface quality and repeatability, and has a dazzling machining rate of up to 250 cm³/min in ST 60.

Two machines in one

The special feature of the new machine design from the HEDELIUS stable lies in the clever layout of the working space. The machining centre is equipped with a tilt-and-turn table unit (420 mm diameter) and a fixed machine table.



An impressive design with twin work-tables

Both tables are mounted at such a height that, for long-bed working, work-pieces with a maximum overall length of 1000 mm can be processed.

Using the two tables, all six sides of a work-piece can be processed very efficiently in a single machining operation. In the left-hand basic workspace, which has three NC-axes, the clamping surface or reference face is machined in the first pass. The work-piece is then finished in the right-hand basic workspace, with its 5-axis capability. In combination with the FORMINGSTAR®



Long work-pieces of up to 1000 mm can also be machined on the RS 505

package, the machine is also ideally designed for 5-axis HSC simultaneous machining.

High speed plus high precision

Digital drives for linear axes, and direct drives with water-cooled torque motors in the tilt-and-turn table unit, together with a Heidenhain type iTNC 530 CNC controller, provide the machining centre with very high dynamic response and accuracy.

Wear-free torque drives as standard

The direct drives support fast-traverse speeds of 45 metres/minute in the linear axes and 25/30 metres/minute in the tilt and turn axes, which allows extremely fast positioning. A further advantage of the direct drive is its high availability, since the absence of intermediate mechanical components such as gearboxes, couplings and drive-belts makes it practically free from wear.

The high positional accuracy of 10 µm, and the standard of quality in the work-piece which this allows, is achieved by means of a Heidenhain direct path-measurement system (measuring glass) in all five axes.

The main spindle is offered in two versions. For general machining, instrument and vehicle manufacture, the RS 505 is fitted with a robust, high-torque 8000 rpm spindle. For 12000, 14000 or 18000 rpm, the fluid-cooled CELOX® motor spindle is used, which is particularly useful for 3D machining. An

internal coolant supply at up to 75 bars permits optimal precision when drilling fine or deep holes.

The tool magazine holds 20 tools. By means of a 180-slot standby background magazine, which also allows



Whether for manufacture of machinery or die making - the RS 505 is a winner

charging during primary processing time, the machine's range of application is significantly extended. The typically stiff HEDELIUS machine-bed provides high-quality machining conditions, with optimal damping of vibrations.

Like all other machining centres from Meppener Maschinenfabrik, the RS 505 is ergonomically designed, with quick and easy access to the clamping devices and the tools. The height of the machining table, the sliding door, the swivelling NC terminal – everything is perfectly arranged to suit the operator. Control and monitoring devices, such as laser tool-control, tool lifetime monitoring, tool wear control, 3D sensor or motor-operated doors, all increase the level of automated production and make operator errors a thing of the past.