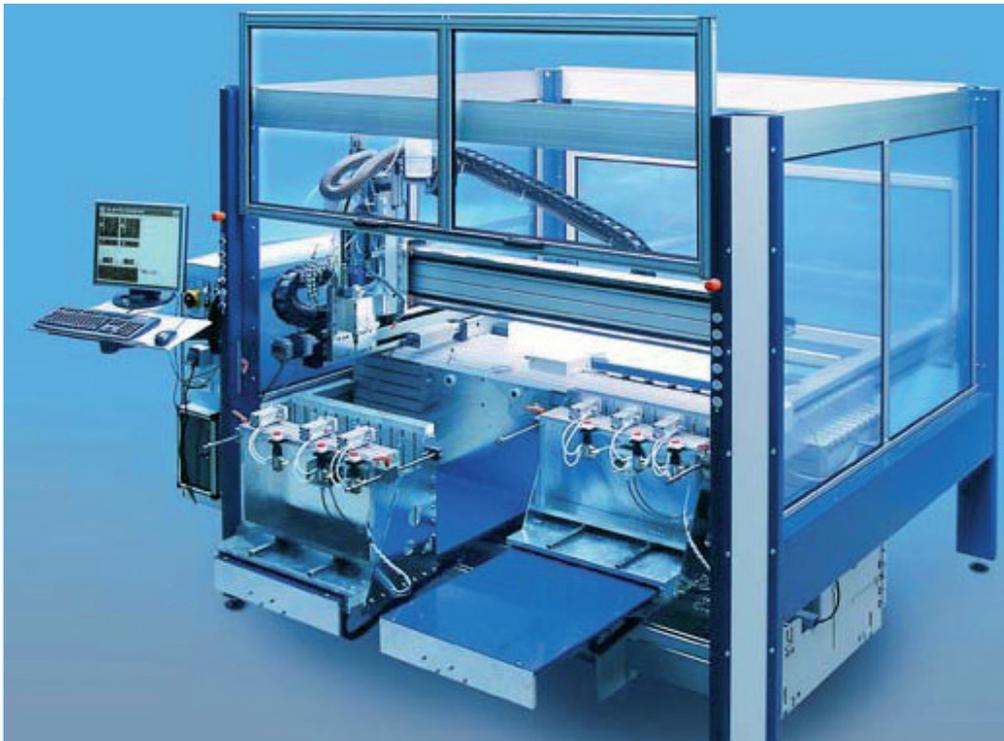


Data Specification

CNC milling machine Typ K1 WitWT2

CNC milling machine, specially for aluminum and plastics

A purpose-built CNC milling machine for aluminum and plastics has been developed by Knickmeier GmbH of Hüllhorst/Germany. This machine has some special features. As such, the machine can be operated from two ends (viz. from the front or rear sides). This machine of modular design is available in different frame sizes. A fast CNC continuous path or contouring control system for up to **8 axes** is provided to control the digital servo motors. The **two Y-axes** are each driven by a **servo motor**. This results in a very rigid H-frame. Also, an angular error that may occur between the axes can be easily corrected via the software. In the linear axes, recirculating ball screws with a pitch of **10 mm or 20 mm respectively** are provided to drive the **linear motion slides**.



This will result in straight line velocities of 400 mm/sec. This is equivalent to 24 m/min. or 700 mm/sec. respectively. This is equivalent to 42 m/min. for a resolution of 0.002 mm or 0.004 mm respectively. Reproducibility of the approached position is precise to the nearest 0.01 mm. An easy-to-operate CAD/CAM program is provided for data preparation. The machine operator will be in a position to generate his or her own programs after a training period of no more than two to three hours. This is especially important as training courses are usually rather costly.

At the front operator side, the machine has two interchangeable tables. Here, workpieces up to 600 mm wide and 250 mm deep and 400 mm high can be clamped.

These interchangeable tables facilitate processing of the workpieces without any auxiliary process time.

Especially for short running times of the workpieces, there is a major potential for savings here. Thus, one user was able to achieve an increase in productivity by 70 %. On the interchangeable tables, there are special pneumatic flat chucks that have been purposefully developed for this requirement.

The flat chucks are available in three widths: 290 mm (clamping pressure 140 kg at 6 bar), 230 mm (clamping pressure approx. 100 kg at 6 bar), and 180 mm (clamping pressure approx. 60 kg at 6 bar). The machine can be used to make part-specific milling grooves in the clamping bars of the chucks, such as to clamp flat covers or caps, for example. Moreover, short-stroke cylinders with a clamping face of 50 x 50 mm are also used. This will allow to clamp and process five smaller housings at the same time, for example. The front operator side of the machine is made safe by means of a guard door that can be opened for maintenance or servicing.

Another special feature is the machine table. This table has been manufactured in a purposefully designed steel frame and panel construction. The four-axial mechanical system is then installed on that platform. Various milling spindles are used, depending on the respective user requirements. For example, a fast-frequency spindle with an output of 2.2 kW at a speed of 40,000 rev/min, HSK32 clamping taper for chucks up to 10 mm. This spindle has four spindle bearings and is thus extremely stable and suited to withstand high loads.