



TOS KUŘIM
ALTA GROUP

Special NC machine tool for railway sole-plate machining



Serial number: 70404
Customer: Třinecké železářny, strojírenská výroba, a.s., The Czech Republic
Workpiece: Railway straight and wedge sole-plates



Workpiece material: Steel St. 52.P, St. 42.P
Strength 410 MPa – 640 MPa

Carried out operations: Drilling of holes with $D = 21$ mm up to $D = 44$ mm
Hole front edge chamfering
Hole back edge deburring

Number of simultaneously machined sole-plates: 2 pieces

Machine tact: Approx. 28 sec/2 workpieces in dependence upon the type and size of a sole-plate and upon the number of machined holes (the mentioned value applies to the sole-plates with four holes with a the diameter of 26 mm)

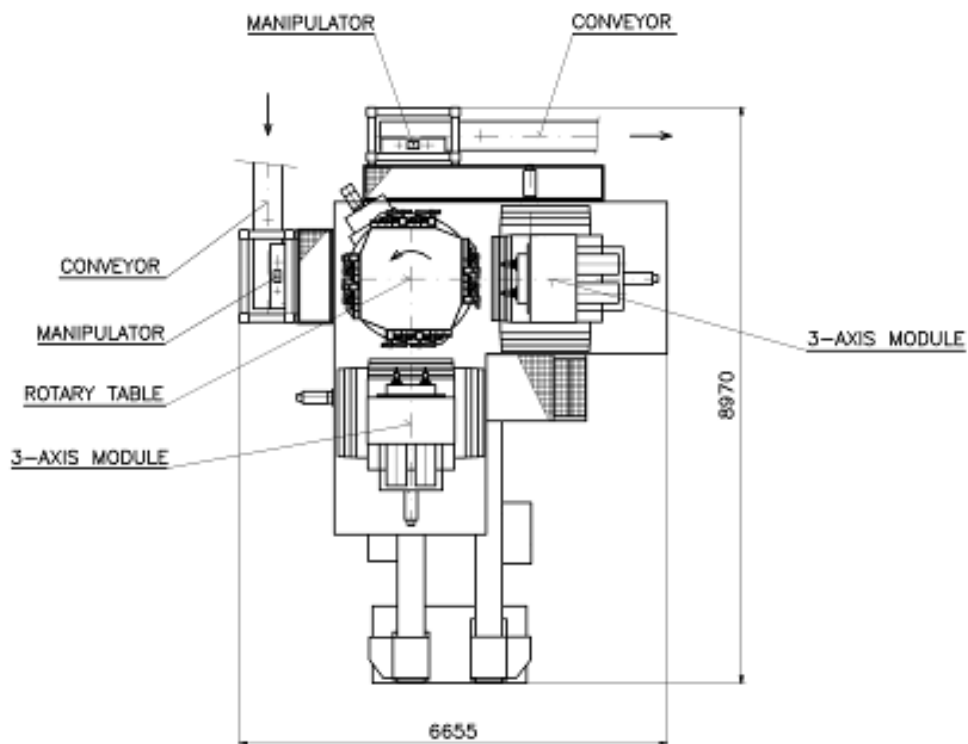
Production: Approx. 1,639 pieces/7.5 hrs. at 85% machine utilization (the mentioned value applies to the sole-plates with four holes with a the diameter of 26 mm)

Machine specification

A special NC machine tool with a four-position rotary table and two three-axis working units fitted with double spindle horizontal headstocks. There are four hydraulic clamps on the rotary table; each of these clamps is used for automatic clamping of two workpieces. Workpieces are loaded in the clamps and removed from them using manipulators. Roller conveyors are used for transport of workpieces towards and from the machine. A pan conveyor serves for removal of chips from the machine working area. A tool cooling system is provided with low- and high-pressure supply of cutting liquid with automatic filtration. The machine is fitted with a cabin guard.

The machine complies with the safety requirements defined by the EU directives and standards.

Machine layout



A detail of the pallet conveyor with workpieces



Headstock



A detail of the roller conveyor with workpieces



3D unit with rotary table and clamps



Hole drilling

