

THE CONSTRUCTION AND FUNCTIONS OF THE UNIVERSAL MILLING MACHINE

КОНСТРУКЦІЯ ТА ПРИНЦИП ДІЇ УНІВЕРСАЛЬНОФРЕЗЕРНОГО ВЕРСТАТА

Ananchenko H., student, Korotun M.M., associate professor, SumSU, Sumy

Ананченко Г., студент, Коротун М.М., доцент, СумДУ, Суми

The construction of new universal milling machine is consist of this next part: 1 - Arbor support; 2 - Arbor block (front block); 3 – Arbor arm; 4 – Arbor; 5 – Speed changing level; 6 – Longit feed handwheel; 7 – Elevating selection handle (auto/manual); 8 – Elevating handle; 9 – Cross feed handwheel; 10 – Arbor block (back block); 11 – Longit safety switch; 12 – Electric cabinet; 13 – Control panel; 14 – Coolant pump switch; 15 – Spindle inching switch; 16 – Rapid feed switch; 17 – Spindle rev switch; 18 – Spindle fer switch; 19 – Elevating automatic feed switch; 20 – Longit & cross automatic feed switch; 21 – Emergency stop; 22 – Spindle stop switch; 23 – Feed speeds selection button; 24 – Automatic lubricating system; 25 – Ampere meter (optional). The spindle heads, upper and lower part of heard, can match and revolve in angle so that the machine can mill the working pieces in any direction, vertical, horizontal, tilting, helical, etc. There is equipment to eliminate backlash on the left-right as well as back-forth lead screw lever. The handwheels, handles, etc., which are to be handled, are set at the front of the machine to facilitate operation. A hanging and movable control panel is set to keep the operator safe and to facilitate operation. Lubricating and cooling system: the speed changing gears and bearings are oil-bathing lubricated. Automatic lubricating system is to make sure that each sliding face, driving part, and lead screw levers can operate smoothly, to work precisely and to lengthen the working life of the machine. The coolant pump is set at the right side of the base block; the flow quantity can be adjusted. The high quality cast iron is used to form the column, the working table, the saddle and the base. The sliding faces are specially ground and treated. The sliding face of the base seat is specially treated with alloy steel. Therefore, the whole machine structure is suitable for heavy milling load and high precision requirement. The gears in speed changing box of the column are made of chrome molybdenum alloy steel and are heat treated and ground. Safety equipments are attached to the automatic back-forth and left-right feed and the elevating feed to make the operation safe. The horizontal milling arbor accessories can be set, the arbor support and horizontal arm of which are made of high quality strong graphite cast iron so that the arbor can work precisely. Automatic circulatory accessories can be set: during the operation process, from start to stop, the work piece can be united with left-right feed, back-forth feed, elevating feed and rapid feed, so that the production can be higher.

