

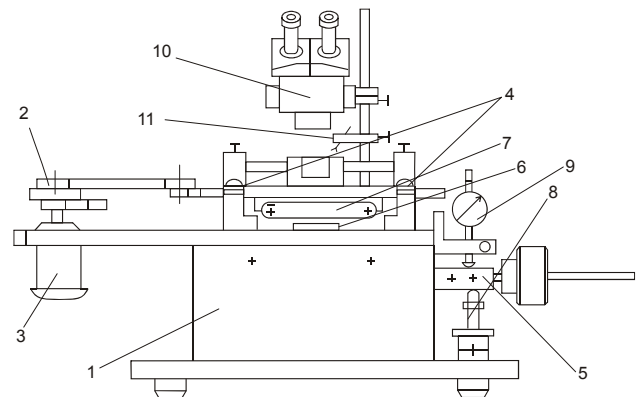
SMALL-SIZE DESKTOP MACHINE FOR CUTTING SEMICONDUCTOR AND OTHER MATERIALS



ALTEC - 13009

- The machine is designed for preparation in laboratory conditions of rectangular-shaped samples of different materials.
- Cutting is made by diamond-coated tungsten wires or wires with a free abrasive. The operating tool of the machine is a frame with the wires arranged in parallel. Guides fixed on the frame are used to set the required distance between the wires and, respectively, dimensions of samples. The machine allows cutting to be made under conditions of low deformation effects, thus achieving slight damages of near-surface material layers.
- The frame is fixed on the moving carriage by means of two hold-down nuts. The same nuts are used to set cutting wires in parallel to tool motion direction. Sliding bearings of carriage guides provide the accuracy and ease of their reciprocating motion.
- Removal of cutting products and cooling of the wires cutting edge is made by water which is delivered to processing zone under pressure.

Appearance and schematic of the machine



1-bed; 2- drive unit; 3- CJ-329 24B electric motor; 4- carriage fastening unit; 5 – table lift-lowering mechanism; 6 - material; 7 – cutting instrument; 8- system of cut depth regulation and control; 9 - ИЧ-10 indicator ; 10- МБС-10 microscope; 11- cooling liquid delivery.

- The machine consists of a carriage with cutting tool 7 whose reciprocating motion is realized by means of link 2; electric motor 3 (CJ-329 24B); carriage fastening units 4; table lift-lowering mechanism 5, with a counterbalance of pressure on cutting tool edge; system of cut depth regulation 8, indicator 9 (ИЧ-10) for cut depth control; cooling water delivery unit 11.

- As compared to similar analogs, the specific feature of desktop machine is the use of table lift-lowering mechanism by means of which the beginning and end of material cutting process is regulated and controlled; table regulation device by means of regulators along the X.,Y axes in a horizontal plane; two methods of material processing by cutting tool with deposited diamond abrasive, the error in cutting is ± 0.02 mm with a damage of near-surface layer 10-25 μ m, and material processing by cutting tool with a free abrasive ± 0.01 mm with a damage of near-surface layer 5-15 μ m.

Specifications

№	Parameter, unit of measurement	Value
1	Maximum dimensions of billet to be cut, mm	40x40x15
2	Number of wires $\varnothing 0,14$ on the frame, minimum, pcs.	1
3	Number of wires $\varnothing 0,14$ on the frame, maximum, pcs.	95
4	Cut width with a diamond coating, mm	0.22
5	Cut width with a free abrasive, mm	0.15
6	Weight, kg, not more	30
7	Electric power requirement, W	60
8	Power supply, V	6-14
9	Dimensions, mm	340x690x630

- The machine can be supplied together with equipment for diamond deposition on the wires and diamond powder deposition technology.

- **Orders and additional information:** General Post Office, Box 86, Chernivtsi, 58002, Ukraine; e-mail: ite@inst.cv.ua; fax: (380-3722)-41917; phone: (380-372)-585648, (380-3722)-44422, (380-3722)-41909; <http://ite.inst.cv.ua>.