

This invention relates to mechanical engineering technology and can be used to manufacture screw blanks from cast iron, alloyed corrosion-resistant and heat-resistant metals and alloys for the production of extruder and injection molding machine screws, screw drills, and working parts of screw conveyors. The claimed method of manufacturing a screw blank involves air-plasma cutting along a helical line on the workpiece using an air-plasma jet to form a helical groove. The air-plasma jet is directed tangentially to the concentric surface that follows the inner edge of the helical groove of the screw blank. Simultaneously with air-plasma cutting of the workpiece, the cylindrical surface of the workpiece positioned in front of the air-plasma jet is cladding with a hard alloy material along a helical line with a pitch equal to the pitch of the screw-shaped workpiece turns, accompanied by transverse oscillations of the cladding tool, the amplitude of which is no greater than half the thickness of the outer edge of the screw blank turn, until a multi-turn helical projection of carbide material is formed. In this case, air-plasma cutting of the workpiece is performed in the area between adjacent turns of the formed helical protrusion. The invention involves a simplified process structure, reduced requirements for production space and specialized equipment, reduced time required to implement this method, as well as a lower probability of cracks forming, increased wear resistance, and increased pitch of the screw blank.