Invention relates to mechanical engineering technology and can be used to manufacture auger billet from cast iron, alloyed corrosion-resistant and heat-resistant metals and alloys in the production of extruder and thermoplastic injection molding machine screws, screw drills, and working elements of screw conveyors. The claimed method for manufacturing auger billets involves performing air-plasma cutting along a helical line on a billet to form a helical groove using an air-plasma jet tangent to a concentric surface that follows the contour of the profile of such a helical groove. Simultaneously with the air-plasma cutting of the workpiece, the surface of the resulting helical groove—heated as a result of such cutting—is subjected to static-pulse hardening along the helical trajectory by applying constant static and periodic pulse loads using a tool in the form of a deforming roller, whose working cylindrical surface is positioned parallel to the air-plasma flow and tangent to the concentric surface that follows the contour of the helical groove. The invention consists in simplifying the structure of the manufacturing process, reducing the need for production space and specialized equipment, reducing the time required to implement this method, as well as reducing structural defects and porosity, and increasing the density and hardness of the helical groove surfaces of the auger billet.