THE MAIN TOOLS USED IN THE FINISHING-STRENGTHENING OF DETAILS USING THE METHOD OF PLASTIC DEFORMATION OF THE INNER CYLINDRICAL SURFACE LAYER.

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Annotation: *This article identifies the most optimal conditions for the process of forming the surface of a cylindrical part machined on automated technological equipment under the influence of aerodynamic motion, examines the relationship between the physical and mechanical properties of the workpiece and the output characteristics.*

Keywords: *the processes of finishing-strengthening of the inner surface layer of cylindrical parts are obtained .*

Аннотация: *В данной статье определяются наиболее оптимальные условия процесса формирования поверхности цилиндрической детали, обрабатываемой на автоматизированном технологическом оборудовании под действием аэродинамического движения, исследуется взаимосвязь между физико-механическими свойствами заготовки и выходными характеристиками.*

Ключевые слова: *получены процессы доводки-упрочнения внутреннего поверхностного слоя цилиндрических деталей.*

The process of plastic deformation in rotary equipment is carried out according to the planetary scheme.

Planetary machining is carried out with equipment with deformable element under the influence of a rotating part or with mandrels with subsequent movement.

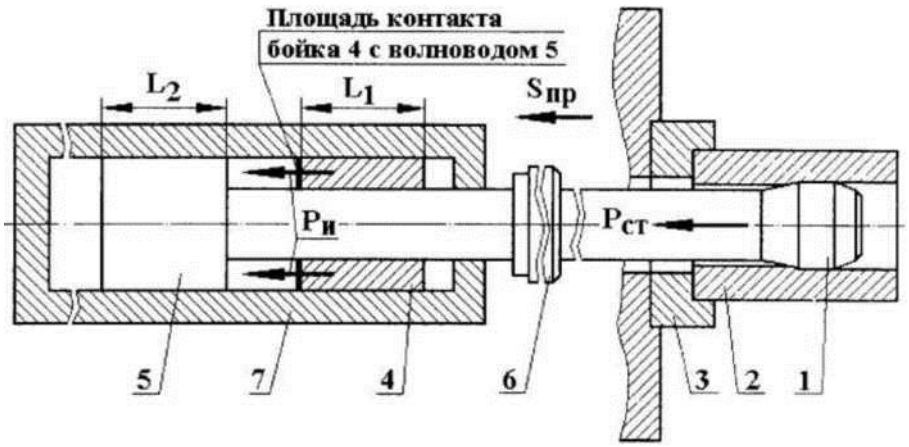
Independent signaling and orientation of the surface treatment of deforming balls are located in the slots of the separator, the axis of which is formed when the

device is connected at an angle of 0.5o .... 2o to the specified conductor. This helps prevent needle tension in the spread. The opposite side of the detail surface is in contact with the base conical balls. This ensures the conical size of the desired back angle and the required amount of tension of the balls.

Machining of internal cylindrical surfaces with a diameter of 25..250 mm. was carried out using a wide range of spherical, rigid differential distributions. In developed countries, this type of equipment, produced by Madison and Parker, is widespread. The widespread use of these devices is due to the simplicity of their design

In Figure 1.4, the rigid differential mandrel consists of deforming elements - balls 1, a support cone 2, a separator 3, a support bearing 4, a mandrel 6 body and springs7. The balls1 receive a reactive voltage attached to the housing during the tension during the propagation process, and the balls roll along the workpiece. When deformable balls without a forced rotation axis are required, the shape of the groove separator 3 on the surface of the part and the size of the deforming balls are fixed. The back angle of the desired deforming balls is determined by the ratio of the conical and base cone of the balls. In this case, the size of the diameter is controlled by moving the deforming balls to the separator, calculating the length of the tank body to the separator 3 within a few tens of millimeters.

Picture. Rigid differential frame 1 ball; 2 base cones; 3-separator; 4 base bearings; 5-nut; 6 with corpus mandrel



1.1. picture. Static-pulse drilling of holes.

One method of plastic deformation of surfaces is to smooth the surface layer using a diamond. This method is mainly performed on lathes. As a tool, it is a very precisely polished diamond, which in turn is nailed to the end. During machining, the diamond smooths out the roughness of the rotating parts when they are attached to the surface layer. A diamond handle is installed where the cutting tools of the machine are fastened. The shear force is generated by tightening and loosening the spring with a screw. The shear force in the device is controlled by a scale arrow. The norm of diamond planes: rotational speed 40-200 m / min, thrust 0.02-0.1 mm / rpm, shear force 5-20 kg.

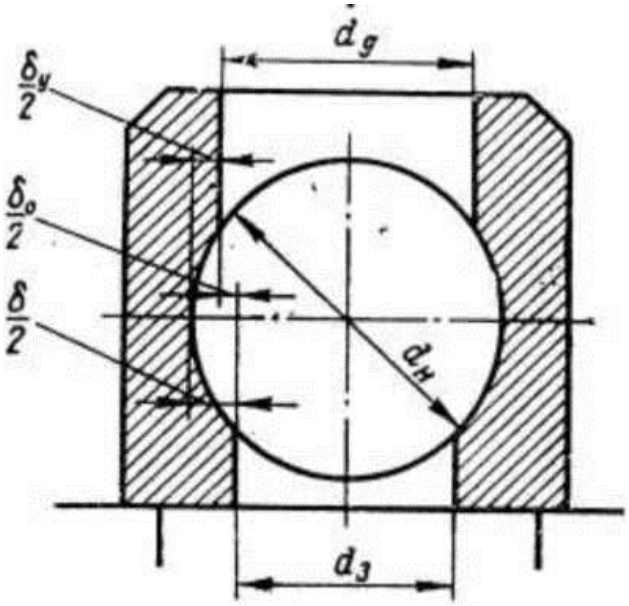
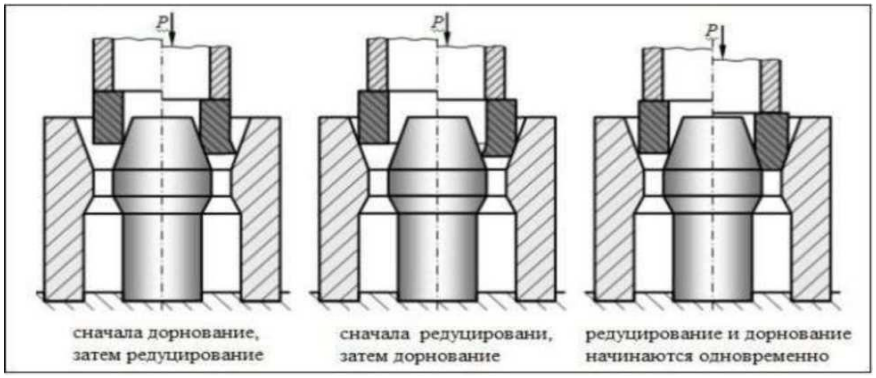


Figure 1.4. Deformation scheme in turning. This machining method is designed for large holes. Such parts include long pipes, cylinders and other details. When the grain is passed through the hole, the detail reaches the 11th quality, while maintaining the previous flat position.



1.5. picture. Turning scheme.

The following faults occur when turning thin-walled pipes:

• bending of the workpiece relative to the axis;

• reduction of stagnation on daily cutting;

• Poor leveling of metal.

In the plastic deformation of working surfaces, a roller is used. The balls on the roller are installed at an angle of 130 ° to the places where the wallpaper is inserted relative to the handle axle.

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