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## **INFLUENCE OF THE DESIGN OF THE EQUIPMENT AND AUTOMATION EQUIPMENT OF ELECTRIC METHODS ON PROCESSING IMPROVEMENT OF QUALITY**

Let's consider three basic elements of the electrochemical machine, which are most subject to corrosion:

- the working surfaces which have been close located to the cathode and the processed detail (the working camera and basic surfaces of the detail and the adaptation);
- constructive elements of the machine remote from the working camera, for example bed, the service equipment into which the pump for supply of electrolyte and pipelines (the working camera and basic surfaces of a detail and the adaptation) enters.

When electrolyte proceeds on a detail surface as, for example, at a of shovels, its stream needs to be limited to the sizes of a working gap. In this case directing for a stream and actually all working camera can be made of blocks of acrylic plastic or plexiglass. This material doesn't react with acid and alkali solutions, and the working camera can be rather rigid to sustain electrolyte pressure. The same material can be used when electrolyte is brought perpendicular to a surface of a detail and taken away through a hollow electrode, as at an insertion of openings with a stream. When processing without a stream electrolyte moves through a hollow electrode and at an exit from a gap is under atmospheric pressure. In this case the protection is only protection from spraying and its design can be not rigid; for example, the leaf from polyethylene will be quite satisfactory. In certain cases it is desirable to produce the working camera from metal. For these purposes it became possible to use lowcarbonaceous provided that internal walls will be reliably protected. Coverings from pitch have to be reliable, and in this case it is possible to recommend not being dissolved epoxies. To minimize corrosion of the working camera, when the machine doesn't work, it is desirable to wash out at the end of processing it water. Electrodes sometimes project so that condensing rings under pressure of electrolyte nestled on a

surface of a detail and the tool, providing full sealing of a working zone, without application of additional protections.

The material used for production of clips of a detail during processing, is exposed to anode etching and therefore the titan owing to his anode passivity is better to use. Samples in which deep openings were stitched, were clamped in the titanic block: via this adaptation current was brought to samples and in the course of processing the surface of the titan wasn't exposed to etching. The titanic cartridges applied at electrochemical sharpening can be other example.

Such elements as heads of bolts, can be protected by organic coverings, for example, polyethylene or epoxies.

In the presence of electrolyte on the diverse metals being in contact, especially when the machine doesn't work, strong bimetallic corrosion can be observed. Therefore it is important that contacting metals not so differed on the electrochemical potentials.

For example, the metals being in contact, have to be picked up so that tension of a being formed galvanic cell didn't exceed 0,25 V.

The working camera in which there is a tool and a detail, contains the considerable volume of the electrolyte, capable to come into contact to machine elements, thanks to its inevitable spraying and sedimentation on unprotected surfaces. Corrosion can be considerable because of a free access of air to a metal surface, and also ability of the settled liquid to evaporation that, in turn, increases concentration of the corrosion environment.

The elements of the machine being in close proximity to the working camera, can be made of a corrosion-resistant material, for example, stainless steel, but probably it is better to do them of cast iron or low-carbonaceous steel and to protect paint or a plastic covering. Sheetings are put on big surfaces with a brush or dispersion. It is possible to give chlorine rubber which on the prepared surface of metal bring in the following order as an example: primer, bottom and top (last) coverings. Thickness of all covering is approximately equal 0,25 mm. Epoxy and polyurethane coverings also are satisfactory. It is necessary to wash often walls as the few coverings provide full protection for a long time. Directing machines, for example electrochemical turning, cover with greasing which protects open surfaces, and its protective properties can be

raised by addition of inhibitors.

Applied methods of division of metals allow, generally to carry out procuring operations where high precision and quality of a blanket which are provided at the subsequent stages of processing demanding considerable allowances on process, having high labor input and specific power consumption isn't required.

2 . Electrochemical processing provides process accuracy, but demands the subsequent operations for achievement of the set purity.

3 . Known designs of the disk tool for division give the big width of a groove or don't provide the demanded accuracy of process, quality of a blanket.

4. The available equipment for division of materials isn't equipped with demanded automation equipment of process, including elements of adaptive management with correction of modes on the set regularities.

5 . It is necessary to develop technological process, the equipment and means of technological equipment to division of materials applying development.

The list of the used sources

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