Subsequent ranking of factors allowed the selection of four most significant ones from the fourteen influencing immersion cleaning [3]:

1) solution temperature,
2) frequency of low-frequency oscillations,
3) amplitude of low-frequency oscillations,
4) average velocity of object movement during high-frequency oscillations.

Conclusions. The study identified the factors most affecting the cleaning quality of machine components during repair. This enables determination of optimal parameter values for solution temperature, low-frequency oscillation frequency, low-frequency oscillation amplitude, and average velocity of object movement during high-frequency oscillations.

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METHODOLOGY FOR DETERMINING THE NATURE AND DYNAMICS OF WEAR OF PLUNGER PAIR PARTS

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Problem Statement. The work is part of a series of articles devoted to increasing the durability of plunger pairs of axial piston pumps. The purpose of the research is to increase the durability of mobile machines and improve the operational characteristics of axial piston pumps by minimizing power losses based on modeling of tribological processes in plunger pairs [1 – 3].

Primary Research Materials. To achieve the stated goal, the experimental research program should include the following:

1. Conducting research to identify the nature and magnitude of wear of parts in the couplings of the plunger pair: “block sleeve-plunger”, “ring support of the plunger heel-swash plate”.

2. Experimental determination of the influence of wear of parts in the plunger pair of the pumping unit of an axial-piston hydraulic pump on its volumetric and mechanical losses.

3. Substantiation of constructive design solutions for parts of the plunger pair of an axial-piston hydraulic pump taking into account the results of analytical and experimental research.

It was previously noted that structural changes in the parameters of the technical condition of parts in the plunger pair are characterized by wear of working surfaces in the couplings: “block sleeve-plunger”, “ring support of the plunger heel-swash plate”.

The nature and values of wear of the connections “block sleeve - plunger”, “annular support of the heel - inclined washer” are assessed by direct visual inspection, photographing of the working surfaces, and measuring using the following methods [4, 5].

The type of wear of the parts of the plunger pair is determined visually.

The wear of the parts of the connection “block sleeve - plunger” is determined by determining the actual dimensions of the parts.

Plungers are measured in four cross-sections and in two mutually perpendicular planes (Fig. 1, a) lever clamp *CP* - 25ДСТУ 11098-2005 with the division price – 0,002 mm.

The bushings are measured in four sections and in two mutually perpendicular planes (Fig. 1, б) calipers *HI* 18 - 50 ДСТУ 9244-2005 with the division price – 0,001mm.

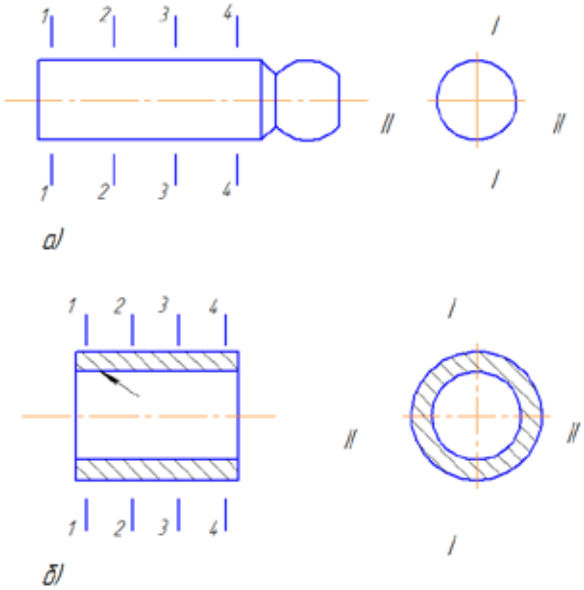

Fig. 1. Measurement scheme of the mating parts “block sleeve - plunger”: a) – plunger; b) – sleeve

The wear of the height of the plunger heel ring support is determined by

a micrometric depth gauge of the type $ГМ-100$ ДСТУ 7470 – 2008 with the division price – 0,01mm (рис. 2). The depth gauge rod is installed in the central part of the heel, which is not subject to wear, which makes it possible to detect the actual height of the ring support. The measurement is carried out in two mutually perpendicular planes, and the obtained measurement results are calculated as an average value.

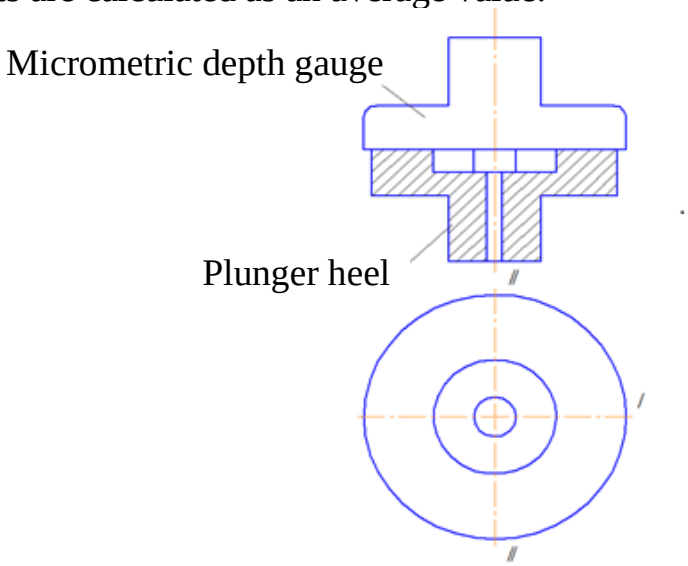

Fig. 2. Scheme for measuring the height of the ring support of the plunger heel

The height wear of the ring support is determined by [6]:

$$h_w = h_{nom} - h_{ae}, \quad (1)$$

де h_w – wear of the ring support in height, mm;

h_{nom} – nominal height of ring support, mm;

h_{ae} – average effective height of the ring support, mm.

The analysis of the results of the simulation is carried out in accordance with the methods of mathematical statistics and the theory of plausibility.

Conclusions. For experimental monitoring of the functional properties between changing the structural parameters of the technical mill of the parts of the plunger pair of the pumping unit of the axial piston hydraulic pump and its volumetric and mechanical losses, it is necessary Conducting laboratory studies to determine the complexity of the design of hydraulic units, as well as the minds of their robots.

As of today, the industry does not produce stands for running-in operations and testing of axial piston hydraulic machines. In connection with this arises the need to develop an experimental setup that could ensure the conduct of work of a pre-investigative nature, which would make it possible to identify functional relationships between the main parameters technical development of hydraulic units.

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ANALYSIS OF SYSTEMS FOR EVALUATING THE EFFICIENCY OF WORKPLACES IN A SERVICE ENTERPRISE

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Problem Statement. It is well established that the workplace plays a crucial role in the economic performance of an enterprise and its structural subdivisions due to the following circumstances [1]:

1) the workplace constitutes the primary unit of the enterprise,
2) the internal environment of the organization is formed from the aggregate of workplaces,
3) the profit generated by the enterprise derives from the cumulative financial and economic results achieved at individual workplaces,