REDUCING THE INTERNAL FRICTION OF THE PUMPS WITH EXTERNAL GEARING

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Abstract*: It is known that, in pumps with external gearing is obtained, called by different authors, squeezed or pinched volume of hydraulic fluid in the area of double gearing with coeficient of overlapping close or equal to 1.*

Key Words: *pumps, pinched volume, external gearing*

1. INTRODUCTION

The main objective of this paper is to reduce internal friction in a hydraulic pump with external gearing.

To achieve the objective it is necessary to solve the following tasks:

- count analytical to determine where to locate constructive windows or pockets overflow pinched volume;
- to replace involute tooth profile with cycloid;
- to develop a gair pair with coeficient of overlapping close or equal to 1, which leads to leakage of fluid facilitated before pinching.

The pinched volume increases the pressure (water hammer) in the gear, which aims to separate them. It is the duty be reduced to a minimum. This will improve the performance of the hydraulic pump.

This loaded shaft gears and bearings which are mounted. And further causes more noise of the pump. All this determines the relevance of the topic.

The object is to reduce pinched volum up to 1. Thus aims to improve the performance of dental couple to reduce the forces at work on the gear pump. All this will increase the efficiency of the hydraulic pump.

Reducing pinch volume will reduce internal friction during operation of the hydraulic pump. Thus it will be necessary less energy for its work.

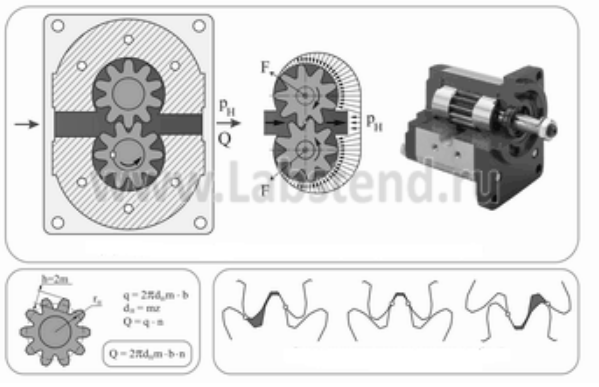

Figure 1

Then pinched volume depicted in fig. 1 of the latter scheme is obtained by double gearing