16th International Research/Expert Conference
”Trends in the Development of Machinery and Associated Technology”
TMT 2012, Dubai, UAE, 10-12 September 2012

DRIVE INSTALLATION OF HARMONY FLOW ASSEMBLY IN PARALLEL
(part 2)

Bal Carmen
Technical University of Cluj Napoca
15 street Constantin Daicoviciu
Romania

ABSTRACT
In this paper we propose to analyses the alternative flow in the parallel installation including the capacity, and the friction resistance In this paper we show the caloric effect due to the displacement of the low in the friction resistance calculate. We propose to calculate the section of the friction resistance in the parallel installation, were we know the capacity and the flow and sonic pressure.
Keywords: sonic pressure, sonic flow, friction resistance, sonic condenser, temperature etc.

1. INTRODUCTION
In the last time, the development of the science and the technicians are realised the big progress and the level of the general knowledge of the persons implicated in this activity are advances and probable the knowledge of the sonicity are not brake by the wrong idea or disregarded by “incompressibility of flow”

Figure 1. The sonic installation about one friction resistance

The mathematical calculus used by the technicians of the last generation is strong and enable to once understand and the tackle creative the sonicity. This approaching by the actual technical calculus of the hydraulic system and the theory of the sonic transmissions are big, when we can affirmed the sonicity by power transmission through harmonic oscillations to the liquid colons represent a new modality by compression of the energies through the hydraulic system in the permanent regime harmonic.

To produce heat vibrations to build a sonic generator phase, this consists of a pump equipped with a moving piston and a cylinder alternative. Pump speed is given by a DC electric motor with variable speed. The cylinder leaves a pipe to a condenser (capacitive cylinder) filled with liquid steel. As fluid is preferably water, with a coefficient of elasticity than oil.

To protect the system against rust oil was used. This capacitor can be considered equivalent to a capacitor of electricity called capacitor. From the other end of the condenser leaving a pipeline that is connected to a tube of small diameter, the shape of a coil spring. Tubing (resistance of friction which acts as an electrical resistance) is linked with a second capacitor (capacitive cylinder) filled with liquid

[2]. This assembly of hydraulic viewpoint is nonsense as classical hydraulic fluid compressibility is not taken into account (figure 1).
If you take into account the liquid compressibility factor can be put in motion generator through a mechanism with eccentric (or rod crank), which produces alternative movement of the piston. As a result of the reciprocating piston pulsations occur in the first cylinders. Thus the tank becomes a kind of sonic generator.
Sonic waves are forced to pass inside the friction resistance and capacitor to reach its end. Movement is possible because of compressibility energy transmission waves [2]. Alternative energy via friction resistance thin tube made sonic friction loss, such losses caused by passing electric current through ohmic resistance to electricity.

2. EXPERIMENTAL RESEARCH IN THE HARMONIC PARALLEL INSTALLATION

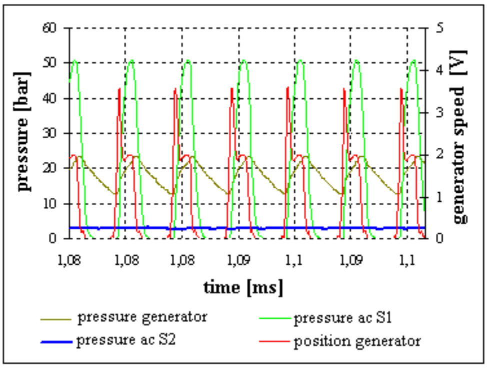

Figure 2. Evolution mounting pressure over time for small capacitor in parallel

Research focused on obtaining experimental heat effect as a result of heat transmission remote vibra-tion (sonic waves in liquids). These studies were conducted on the stand presented in figure 1, starting at different frequencies of the engine that drives the piston sonic generator. For each frequency measure-ments were performed for various static pressure in the system.(0,75Pa, 1 Pa)
Stand in figure 1, is large capacitor mounted in parallel with the resistance of friction [2].

n = 600 rot/min **p_s = 0,75E+05 Pa**

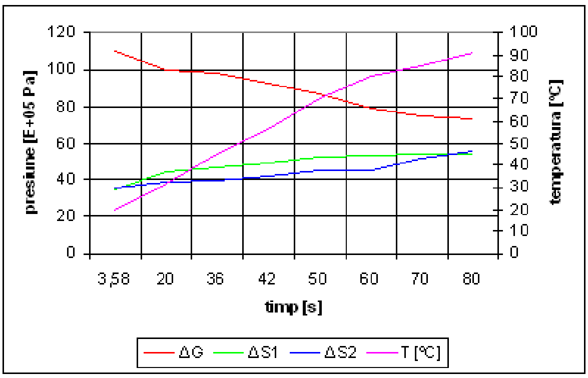

Figure 3. Diagram of prssures and temperature variation with time in static pressure of 0,75E+05 Pa

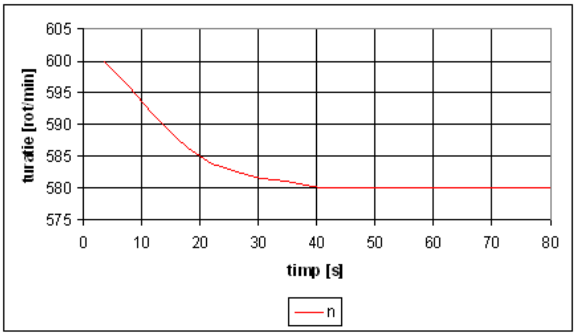

Figure 4. Diagram of pressures and temperature variation of speed according to the static pressure of 0,75E+05 Pa

After processing the files with experimental data from three sensors mounted in the system resulting histograms represented the primary form in figure 2. This illustrates the pressures developments in

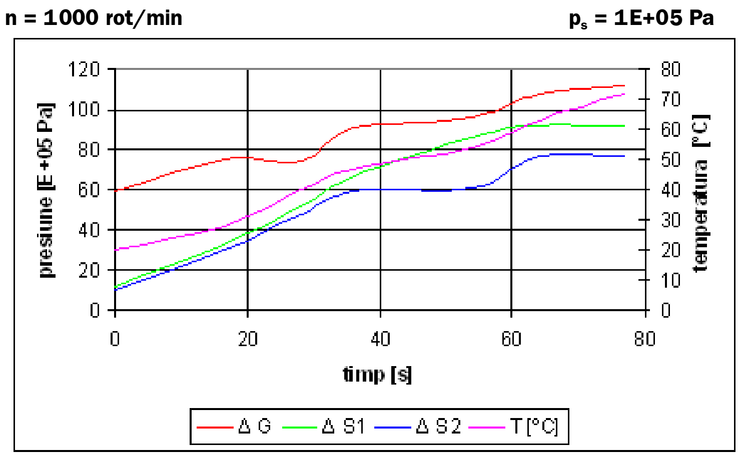

Figure 5. Diagram of prssures and temperature variation with time in static pressure of 1E+05 Pa

general and two capacitors. You can also view the generator speed (position viewed by curve generator). Evolution of pressure curves reveal a phase shift between pressure from the pressure generator and capacitors [2].

The graphs in figures 3 and 4 were built for a static pressure of 0,75E+05 Pa and starting speed n = 600 rpm. The pressure is constatnt all the time of experiment. [3]
The temperature reached after about 80 seconds of running to 92 °C. Pressure generator stabilizes at 75E + 05 Pa, having a pressure drop on the strength of asbestos by 28E + 05 Pa.

The graphs in figures 5. and 6 were bild for a static pressure of 1E + 05 Pa starter speed n = 1034. rpm. The generator sensor pressure has stabilised around 110E + 05 Pa producing a pressure drop on the strength of asbestos by 20E + 05 PA. After 75 seconds the temperature reached the value of 72 °C.

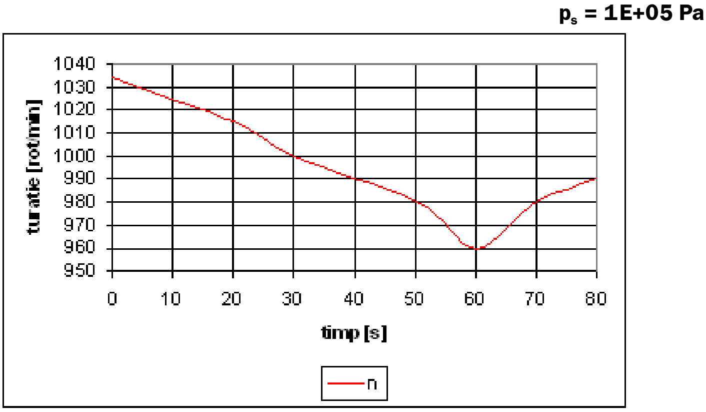

Figure 6. Diagram of pressures and temperature variation of speed according to the static pressure of 1E+05 Pa

3. CONCLUSION

The analysis of diagrams for assembly in parallel in Figure 1 the following conclusions can be drawn [3]:

- the link in parallel after about a minute stabilized speed;
- pressure drop across the resistance friction is around 20E 05 Pa to that calculated which is 25,86 $\cdot 10^{-5}$ Pa. Deviation between the two pressure was 22% deviation acceptable given the complexity of phenomena that occur across the system;
- after pressure stabilization is found that the speed remains constant;
- static pressure in the system does not influence significantly the pressure drop;
- based on the measurements it can be concluded that the optimal speed for a friction resistance with a diameter of 3 mm and length 1 m is comprised between 600 and 1000 rpm, as confirmed by the calculation.
- on the basis of measurements made it may be concluded that the revolution to a resistance of asbestos with a diameter of 3 mm and length of 1 m is included in the range of 600 rpm and 1000 rpm, a fact confirmed by calculation

4. REFERENCES

[1] Constantinescu, G., (1985), pg.7, The theory of the sonicity, Bucureşti, Ed.Academiei
[2] Carmen Bal, (2007), Caloric effect in the circuits by harmonic flow, Cluj Napoca, pg. 132, pg. 133, Ed. ALMA MATER
[3] Carmen Bal, (2006), Research and contributions about the drive systems with the harmonic flow, pg. 154, The doctoral thesis Technical University of Cluj Napoca
[4] Pop I. Ioan, Carmen Bal, Marcu Lucian ş.a., (2007), The sonicity applications. Experimental results, Iaşi, Ed. Performantica