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Abstract.*Yzlozhenы results analysis development komponovochnoy scheme design-propelled chassis selskohozyaystvennoho purposes.*
Keywords:*mobylnoe эnerhetycheskoe funds, configuration, samohodnoe chassis, Constructions, development*

Annotation.*The results of the analysis of design-layout scheme of self-propelled chassis for agricultural purposes.*
Key words: *mobile power tool, layout, self-propelled chassis, design, development*

UDC 697.921.4: 514,174: 001.8

EXPERIMENTAL STUDY OF RATIONAL GEOMETRY POSITION holes in the heat recovery units Air

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Abstract. *As a result of experimental studies of rational geometry of the arrangement of openings in air-heat utilizers found that the location of the holes version (obtained by theoretical research) is the most effective because it provides even distribution of air flow along the length of heat utilizers.*
Keywords: microclimate vent, air duct, heat recovery units

Formulation of the problem. For maximum performance animals microclimate in livestock buildings (air and temperature) should ensure that, from the energy point of view, regenerative heat utilizers, the use of which saves the energy needed to heat the indoor air. Given the technological conditions

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air in livestock buildings (considerable dust - 6 mg / m3, high humidity - up to 80%, the presence of high concentrations of corrosive components - ammonia to 20 mg / m3, hydrogen sulphide 10 mg / m3 of carbon dioxide to 0.28%) and results analysis of constructions recuperative heat recovery units, it was found that for sanitation and performance, high energy efficiency and low cost design most suitable for ventilation casing is heat utilizers of the "pipe in pipe" [1]. Today there are many designs Casing pipe heat recovery units [2, 3] and the corresponding study of structural and process parameters [4, 5, 6]. However, in these studies little attention paid to the ventilation of heat utilizers component, such as geometry location of the holes.

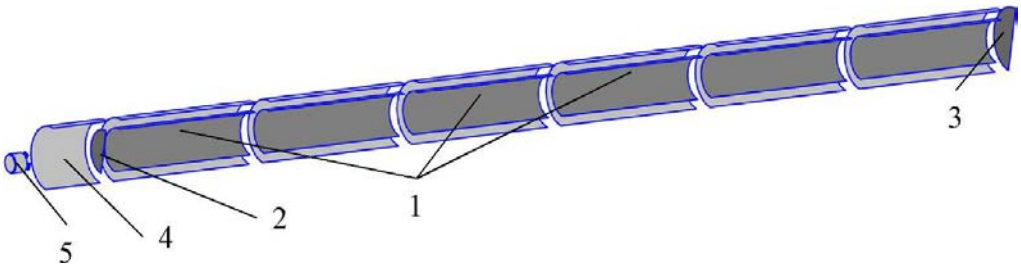
Analysis of recent research. As a result of theoretical studies [7] methodology and implemented on the basis of its algorithm for determining the location of the holes in geometry Air trytrubnoho concentric heat utilizers for livestock buildings [8]. Found that the distance between the holes gradually decreases to a certain value in a direction opposite to the movement of air flow. But in the end duct heat utilizers been a slight decrease in distance caused by reverse flow of air, which faces muffled end.

The purpose of research. Check correctness made in the theoretical research findings and geometry set rational arrangement of holes outer duct heat utilizers.

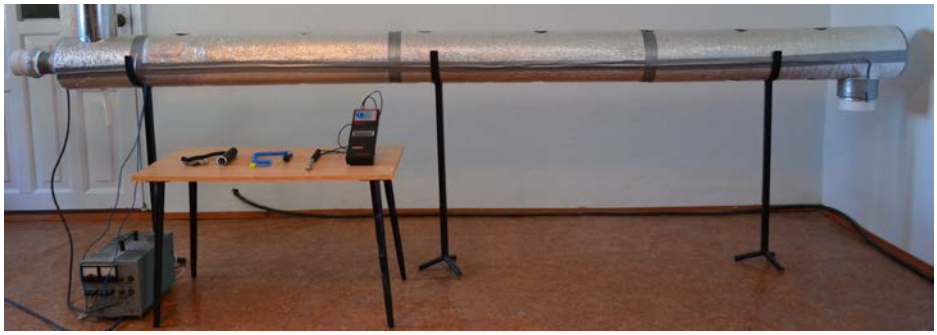
Research results. To implement experimental studies made stand flowsheet and the general view is presented in Fig. 1. Experimental stand consists of six two-pipe modules, two plugs, pipes and fan controller with performance. Given the theoretical studies [7] were adopted following design parameters of the two-pipe module length LM = 1 mDiameter external pipe DM = 0,4 mDiameter inner tube dM = 0.274 m, Pipe wall thickness δM =0.0005 m. The length of the duct heat utilizers are 14 holes in two versions (Fig. 2), with the same distance between them and the distance calculated by theoretical studies [7]. Experimental study of rational geometry location of holes in the heat utilizers Air amounted to determine the volumetric flow of air through the duct openings per unit of its length and calculated as follows:

$$\Omega = \frac{\sigma \cdot w_i}{x_i} = \frac{V}{L}, \quad (1)$$

where: wi - air flow rate through the i-th hole duct, m / s; σ - hole area, m2; L - length of heat utilizers, m; xi - the distance between the i-th and (i-1) -ym holes, m; V - volumetric air flow duct at the beginning, m3 / s.



and



b

Fig. 1. Technological scheme (s) and general view (b) experimental stand 1 - two-pipe module; 2 - small cap; 3 - large cap; 4 - trumpet; 5 - a fan controller performance.

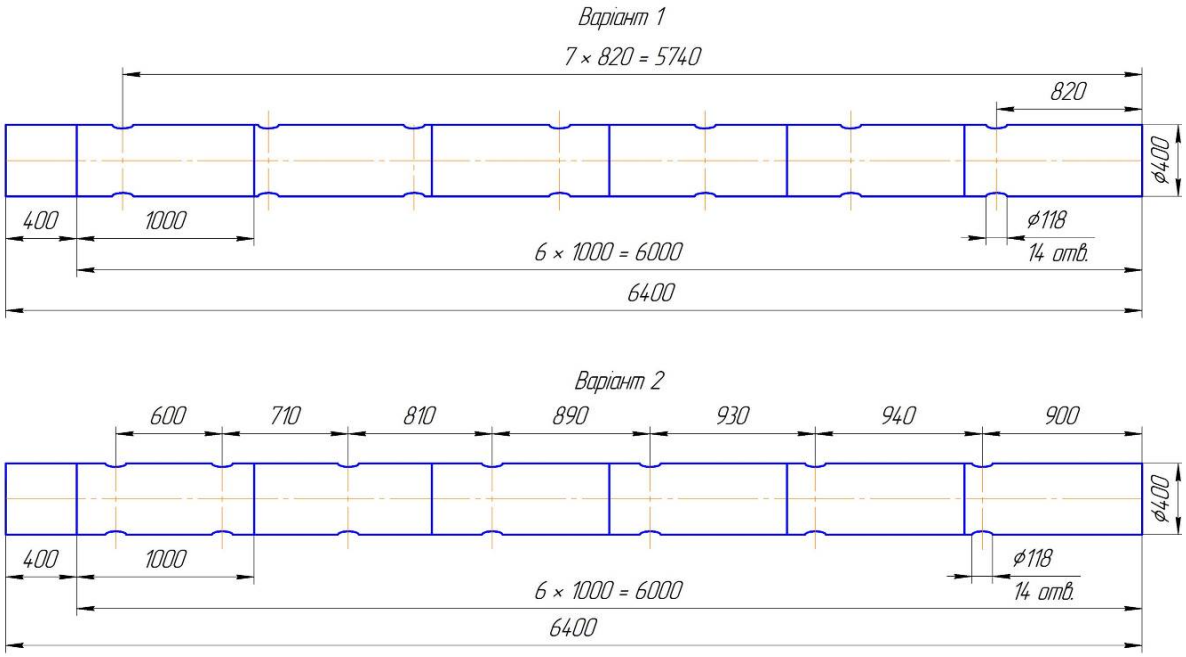


Fig. 2. Options for the location of the holes heat utilizers.

If the condition (1) established the location of the holes is an effective heat utilizers. The rate of air flow through the i-th hole duct wi measured using a multifunctional measuring device «Solomat MPM 500E». Required volumetric air flow at the beginning of air-V was set by regulation performance fans «FL FS1,6». Required volumetric air flow at the beginning of air-V ranged between 0.14 m3 / s to 0.64 m3 / s in steps of 0.1 m3 / s.

According Methods of experimental research location rational geometry of openings in air-heat utilizers 6 experiments implemented for each of the two options for the location of the holes heat utilizers. Graphical analysis of experiments (Fig. 3 - Fig. 5) revealed that the second option is the location of the holes (which is obtained by theoretical studies [7]) is the most effective, as it ensures even distribution of air flow along the length of heat utilizers. On this fact demonstrates consistency coefficient Ω. Fig. 3 - Fig. 5 shows that the rate of air holes increases with the distance between them. However, at the end of duct air velocity decrease, due to the reverse movement of air. This movement occurs because of the cap on the end of the duct.

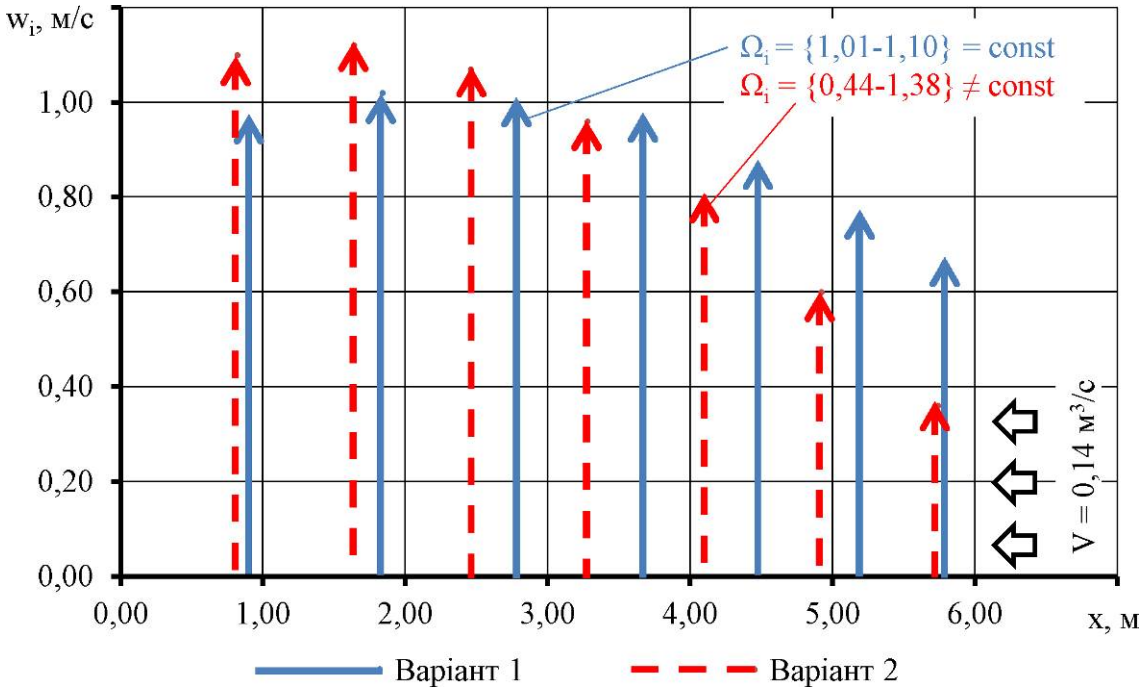


Fig. 3. Distribution of velocity air vents heat utilizers for a given volume of air flow at the beginning of duct V = 0,14 m3 / s.

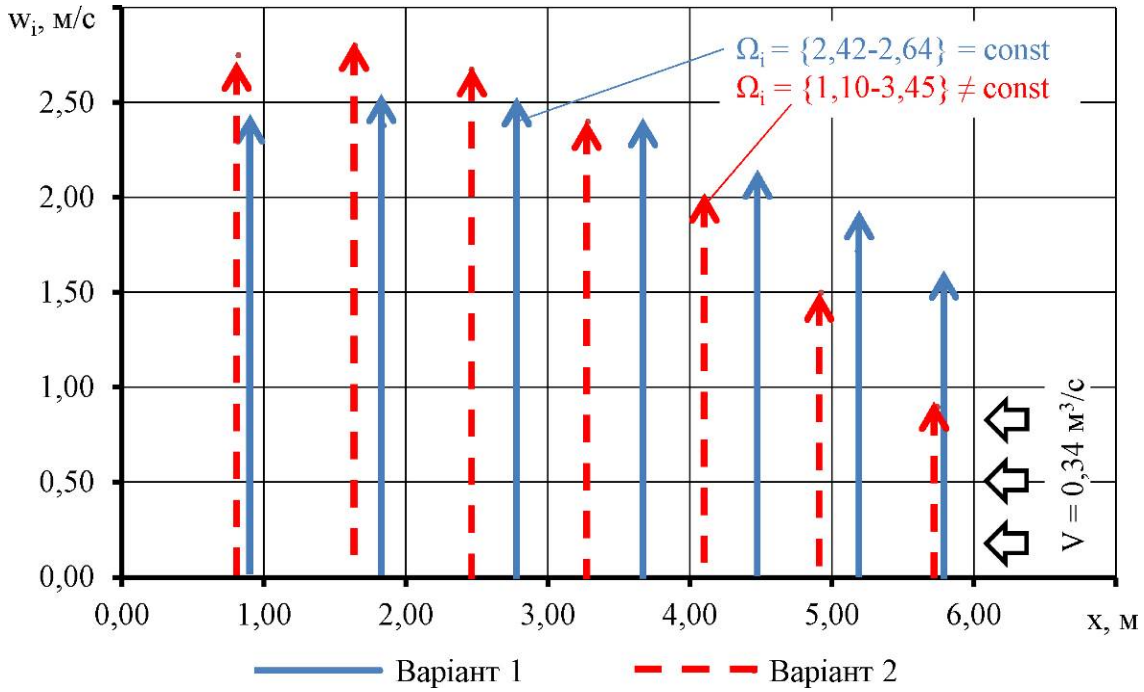


Fig. 4. Distribution of velocity air vents heat utilizers for a given volume of air flow at the beginning of duct V = 0,34 m3 / s.

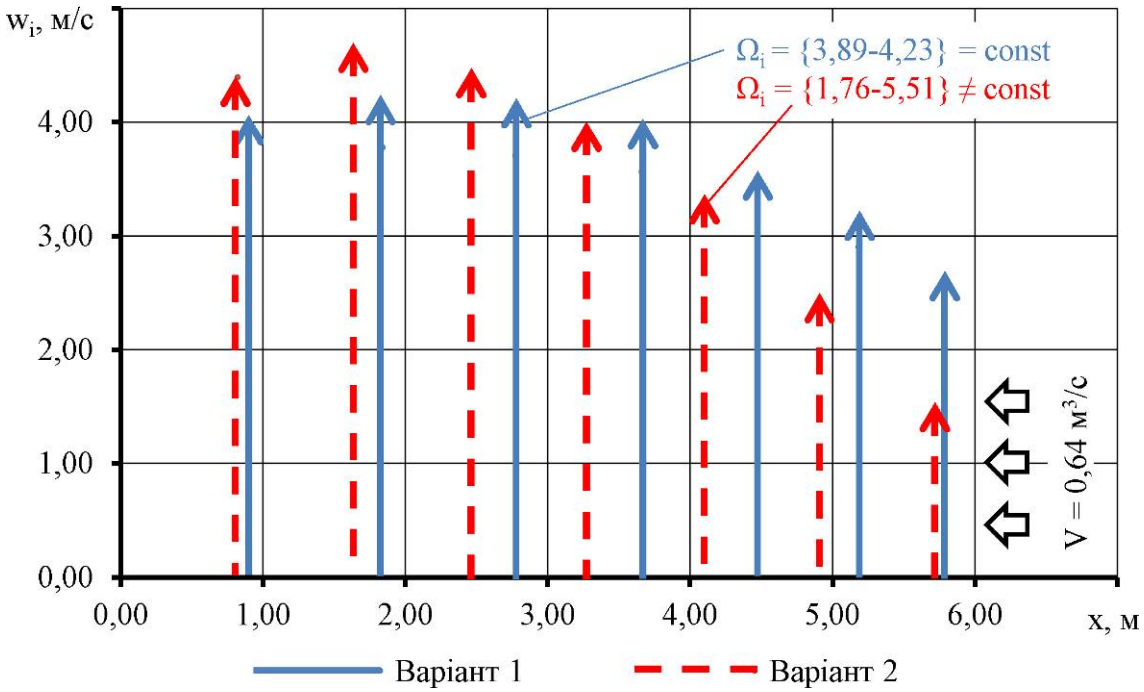


Fig. 5. Distribution of velocity air vents heat utilizers for a given volume of air flow at the beginning of duct V = 0,64 m3 / s.

To test the adequacy of the established algorithm for calculating the geometry of the location of the holes in the heat utilizers Air trytrubnoho compared the theoretical and experimental velocity distribution of the air vents heat utilizers for a given volume of air flow at the beginning of the airways. For each volume air flow at the beginning

of duct calculated the correlation coefficient between the theoretical and experimental data sets, which is in the range R = 0,92-0,98.

Conclusions

1. As a result of experimental studies of rational geometry of the arrangement of openings in air-heat utilizers found that the location of the holes version (which is obtained by theoretical research) is the most effective because it provides even distribution of air flow along the length of heat utilizers.

2. established that created an algorithm calculating the geometry of the location of the holes in the heat utilizers Air trytrubnoho is adequate and can be used for engineering calculations, as evidenced by the high correlation coefficient between theoretical and experimental data R = 0,92-0.98.

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Abstract.*As a result of эksperymentalnыh of research ratsyonalnoy geometry otverstyy Location of a duct teploutylyzatora set, something Option Location of otverstyy (Theoretically According poluchennыy of research) javljaetsja most эffektyvnым so on obespechyvaet As ravnomernoe ALLOCATION flow of air through dlyne teploutylyzatora.*

Keywords: microclimate, otverstye, air, duct, teploutylyzator

Annotation.*Experimental studies rational geometry of the openings in the duct heat exchanger is installed, what version of the hole (prepared according to the theoretical studies) it is the most effective since it ensures a uniform air flow distribution along the length of heat exchanger.*

Key words: climate, hole, air pipe, heat recovery units

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EXPERIMENTAL STUDY OF CONCRETE ELEMENTS compressed-bent circular SECTION The action of transverse forces

AA Davydenko Engineer

Abstract.*The results of experimental studies of reinforced concrete columns with round cross-section to bend the previous compression and without compression, showed an increase bearing capacity of the columns from the previous compression to 43.7%.*

Keywords: testing, concrete construction

Formulation of the problem. In recent years, concrete elements of circular cross section have been used widely for columns frame buildings, frame elements operating in earthquake zones, bored pile retaining walls, anti buildings. However, the research strength of compressed concrete elements bent-round section under the action of transverse forces are practically absent, and accounting for lateral oblique sections force, under the rules of performing both bending elements, excluding the impact of longitudinal compressive force.

Analysis of recent research. Research on the columns of rectangular section [1, 2] showed that application of longitudinal compressive force with eccentricity relative to the geometrical axis of the column, directed towards cross bending or in the opposite direction, the convergence or divergence of longitudinal and transverse bending, the number of transverse reinforcement has a significant impact on strength and crack resistance sloping sections.

the purpose of the following study was to evaluate the influence of noncentral applied longitudinal compressive force that compressed