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## CLASSIFICATION OF ROLL LOADERS OF LAYING COMPLEXES OF SEWING PRODUCTION

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Increasing the efficiency of cutting departments of sewing enterprises largely depends on the level of mechanization and automation of auxiliary operations, in particular, transportation and loading of roll materials. For rational selection of equipment, a systematic approach to the analysis of roll loader designs and their functionality is important [1, 2].

Roll loaders of laying complexes of sewing production can be divided into several categories depending on the functionality and level of automation of the loading process: hand-held mechanised devices; semi-automated loading systems; automated loading systems with robotic manipulators; comprehensive roll storage systems with an automated feeding function; conveyor systems for transporting and feeding rolls [3].

A number of global manufacturers of technological equipment for sewing and textile industries are engaged in the development of equipment for laying materials (Morgan Tecnica, Bullmer, Eastman Machine Company, Linda Sourcing, Cosma Technology, Cosmotex Textile Machinery, Hashima Co., Ltd., GuangDong YYC Scientific and Industrial Co., Ltd, Zhejiang Yalis Automation Equipment Technology Co., Ltd., Shishi Zhicheng Garment Machinery Co., Ltd., Kuris Spezialmaschinen GmbH), which offer a wide range of roll loader equipment, that differs by design solutions depending on operating conditions and specifics of production tasks [3, 4]. For example, market presents roll loaders that can lift rolls from floor level, from containers, transport them using conveyors or perform functions of mobile lifting and conveying devices.

The result of systematic analysis of technical solutions is development of classification scheme for roll loaders (Fig. 1), which fully reflects the main types of technological equipment and their functional features [3].

It has been established that expansion of sewing products range, emergence of new materials and methods of their processing necessitate the constant improvement of technical equipment of industry enterprises.

The proposed generalized classification scheme of roll loaders can be used when designing new and modernizing existing cutting departments of sewing enterprises. Increasing the level of mechanization and automation of process of loading roll materials is an important direction for improving technological processes of sewing production.

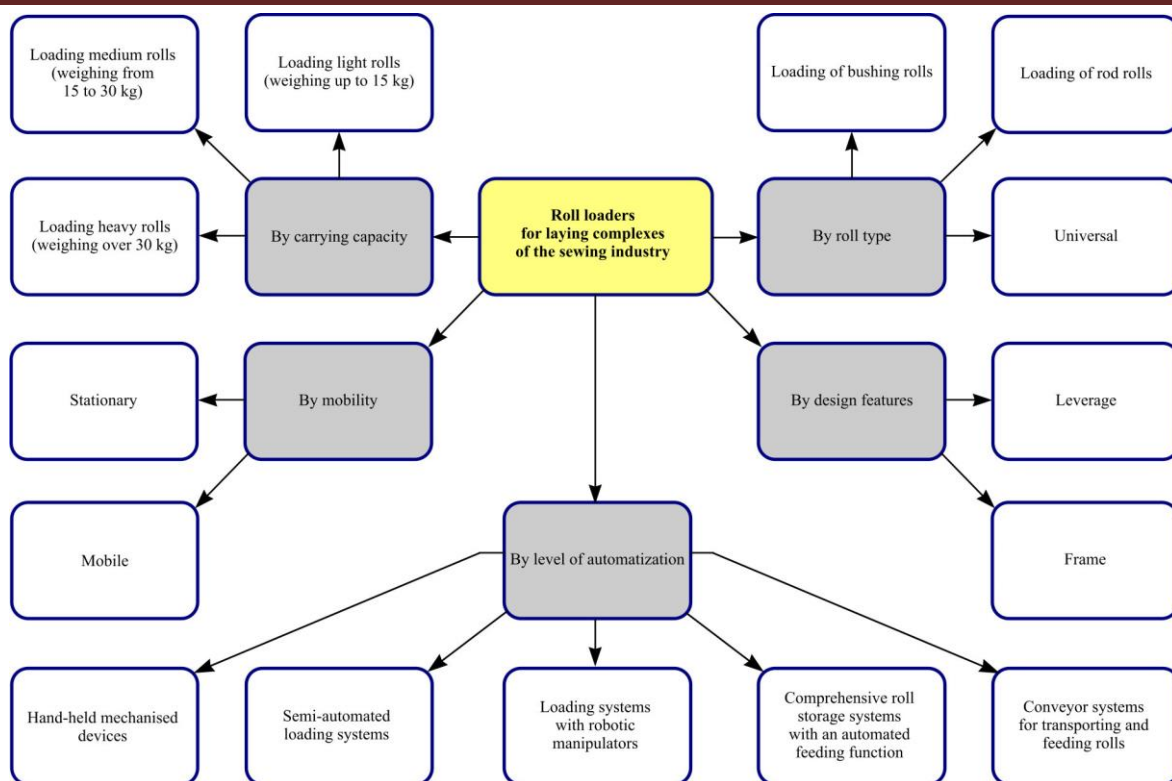


Figure 1 - Generalized classification scheme of roll loaders for laying complexes of sewing production

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