Manufacturing Logistics

Xomidov Anvarbek Ahmadjon o'g'li Andijan Machine Building Institute, assistant, Andijan, Uzbekistan, xomidovanvarbek@gmail.com

Negmatov Bekzodbek Baxodir o'g'li Andijan Machine Building Institute, student, Andijan, Uzbekistan, neggmatov2324@gmail.com

ABSTRACT

Production is one of the main areas of logistics and plays an important role in the company's activities. In this process, it would be advisable to link the exchange of goods between manufacturing enterprises or the exchange between stores of the same enterprise directly with logistics. In this article we will consider Production Logistics - the essence, purpose and essence of the content

Keywords: Production, logistics, transportation, Warehouse, distribution, procurement, traditional concept, supply.

The material flow on its way from the primary source of raw materials to the final consumer passes through a number of production links. Material flow management at this stage has its own peculiarity and is called production logistics.

Production logistics encompasses the planning, management, execution and control of all material flows and the information flows belonging to them. Production logistics regulates the supply of production equipment, provides "transfer" between departments (intra-production transport and intermediate storage) and distribution.

Example: the location of production equipment in a workshop is planned in such a way that the shortest paths for raw materials and semi-finished products are possible.

The purpose of production logistics is to optimize material flows within enterprises that create material values or provide such material services as storage, packing, hanging, etc. A characteristic feature of the objects of study in production logistics is their territorial compactness. In the literature, they are sometimes referred to as "island logistics facilities".

Logistics systems considered by production logistics are called intra-production logistics systems. These include: an industrial enterprise; a wholesale enterprise with warehouse facilities; junction cargo station; nodal seaport, etc.

Intra-production systems can be viewed at the macro and micro levels.

At the macro level, intra-production logistics systems act as elements of macrological systems. They set the rhythm of the work of these systems, they are the sources of material flows.

At the micro level, intra-production logistics systems are a number of subsystems. These subsystems (procurement, warehouses, production services, transport, information, sales and personnel) ensure the entry of the material flow into the enterprise, passage inside it and exit from the system. enterprises.

Production types

The organization of production processes, the choice of preparation, planning and control methods largely depend on the type of production at the enterprise.

The type of production is a complex characteristic of the technical, organizational and economic features of production, due to the degree of specialization, the complexity and stability of the manufactured range of products, the size and repeatability of production. There are three main types of production - one-off, serial and mass production.

A one-off production is called a production in which a wide range of products are manufactured, different in purpose, but similar in design. The production of these products is carried out in limited quantities. An example of such production is the manufacture of products by fashion designers and the production of warehouse equipment to order. But even in the production of piece goods, individual processes can be organized according to a serial principle (warehouse equipment, for example, an exclusive product, and fasteners for shelves are serial).

Repetitive manufacturing is a process in which a product of a relatively limited range is cyclically manufactured in quantities determined by a batch (lot). A series should be understood as a number of structurally identical products.

Mass production is characterized by a continuous process of manufacturing a large number of goods of a narrow range of products. At enterprises of mass production, a high level of specialization of jobs is ensured.

The principles of organizing production. Modern production, especially of a fairly large-scale nature, is the subject of detailed study from a theoretical point of view. Observation, subsequent analysis and generalization of the obtained results of the work of real enterprises allow, in general terms, to formulate a number of principles for organizing highly efficient production processes:

1. Proportionality - the productivity per unit of time of all production departments of the enterprise (workshops, sections) and individual workplaces should be proportional.

2. Differentiation - the division of the production process for the manufacture of products of the same name between individual divisions of the enterprise (for example, on a technological basis).

3. Combination - the combination of all or part of diverse processes for the manufacture of a certain type of product within one area, workshop, production.

4. Concentration - the concentration of the implementation of certain production operations for the manufacture of technologically homogeneous products or the performance of functionally homogeneous work in separate areas and workplaces.

5. Specialization - assigning to each division of the enterprise a limited range of operations and products.

6. Universalization - a certain workplace or production unit is engaged in the manufacture of products and parts of a wide range or in the performance of various production operations.

7. Standardization - the development, establishment and application of uniform conditions that ensure the best course of the production process.

8. Parallelism - the simultaneous execution of a technological process in all or some of its operations. The implementation of this principle significantly reduces the production cycle of the product.

9. Straightness - the requirement of straightness of movement of objects of labor in the course of the technological process, that is, along the shortest path for the product to pass all phases of the production process without returns in its movement.

10. Continuity - minimizing all interruptions in the manufacturing process of a particular product.

11. Rhythm - the release of an equal number of products at regular intervals.

12. Automaticity - the maximum possible and economically feasible release of the worker from the costs of manual labor on the basis of the use of automatic equipment.

Organization and maintenance of effective rhythmic work of each enterprise and its production units in accordance with the above principles allow to eliminate the

traditional waste of working time resources of workers and equipment for organizational and technical reasons and provide competitive advantages due to leadership at a minimum cost.

Traditional and logistic concepts of production organization

The logistics concept of organizing production includes the following basic provisions: refusal from excess stocks; refusal of excessive time for performing basic and transport and storage operations; refusal to manufacture series of parts for which there is no order from buyers; elimination of equipment downtime; mandatory elimination of marriage; elimination of irrational intra-plant transportation; transformation of suppliers from an opposing side into benevolent partners.

In contrast to the logistic concept, the traditional concept of organizing production assumes: never stop the main equipment and maintain a high coefficient of its utilization; make products in as large batches as possible; have the largest possible supply of material resources.

The traditional concept is most appropriate for a "seller's market" and the logistics concept is most appropriate for a "buyer's market". When demand exceeds supply, you can be sure that the manufactured batch of products will be sold, therefore, the equipment is loaded to the maximum. Moreover, the larger the batch produced, the lower the unit cost of the product will be. The task of implementation is not in the first place.

Pushing material management systems in logistics.

Material flow management within the framework of intra-production logistics systems can be carried out in various ways, of which two main ones are distinguished: pushing and pulling.

The first option is called the "pushing system" and is a production organization system in which the objects of labor arriving at the production site are not ordered directly by this site from the previous technological link. The material flow is "pushed" to the recipient by a command arriving at the transmitting link from the central production control system. The pushing system controls the release of products through the master plan of production and, depending on it, sequentially determines the volume of stocks of work in progress. The pulling system, on the contrary, controls the stock of work in progress and controls the output of products.

Pusher models of production management are characteristic of traditional methods of organizing production. The possibility of their application for the logistics organization of production appeared in connection with the massive distribution of computers and corporate information systems (MRP and MRP II). These systems allow coordinating and promptly adjusting the plans and actions of all divisions of the enterprise, taking into account constant changes in real time.

The push system tries to anticipate the future and release the product when the product is planned. In this case, the main production plan is broken down into the main production plans for the individual components of the final product. Typically, a recurrent (return) mechanism for scheduling lot sizes and production schedules is used. It is implemented using complex information systems.

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