Designing of weighing-and-packing machines and high efficiency automatic machines is an actual task in the conditions of the increasing demand for prepacking and packing of food products. In the process of constructing them, at the first stage, the principle of such machine operation is chosen. The second stage of designing is the search for optimal structure of the automatic machine according to the chosen principle of action for the implementation of the specified functions. At the third stage, determine optimal values of the parameters of the selected structure of the machine.

Main structural elements of weighing-and-packing automatic machines are the variety of actuators, by means of which the given technological operations are performed. It is possible to apply such mechanisms as gear, lever, cam, with flexible links, with hydraulic and pneumatic connections, with electrical connections, with electro-hydraulic connections, in the process of designing actuating bodies of such equipment.

The type of the first link of the actuating mechanism, attached to the leading link – the basic mechanism – is the most important in the weighing-and-packing automatic machine. Joining additional links to the basic mechanism, and combining them, a set of target mechanisms is formed. They directly perform technological function with the help of a working body, which is the source of the actuator.

For today, during the design of weighing-and-packing automatic machines for food production, basic mechanisms with rigid links are widely used, but pneumatic, hydraulic, electromagnetic and flexible mechanisms are more often being used. Various cam mechanisms with a force or geometric closure are very often used as a basic mechanism.

In order to achieve maximum productivity with minimal costs for the development and design of new packing automatic machines, it is easier and more efficient to optimize the existing similar equipment, which has given a good account of itself. In order to increase productivity of the existing packing machine for 30–40%, it is enough to replace 1–2 actuating mechanisms, to change the cyclogram of work with a more productive operating system.

**Keywords:** actuator, automatic machine, machine, link, structural group, cyclogram.