

Vacuum-gripping device for installing box girders on bridge cranes consists of manipulators with working elements in the form of rigid crossbeams, vacuum suction cups mounted on the crossbeams, stops positioned between the suction cups, and a vacuum source connected to the cavities of the suction cups. Each manipulator is additionally equipped with a frame mounted between the manipulator and the crossbeam parallel to the crossbeam, capable of equidistant movement relative to the crossbeam within a range of distances from B_1 to B_2 , where B_1 – furthest extended distance, B_2 – closest approach distance. The stops are attached to the frame, and when the frame is in its furthest extended position, the height of the suction cups relative to the crossbeam surface is greater than the height of the stops by the amount of the frame's maximum travel $\Delta = B_1 - B_2$, furthermore, the crossbeam and the frame are connected by elastic elements with a total stiffness of $C = \frac{P}{n \cdot \Delta}$, where P - is the maximum clamping force of the manipulator during the installation of the bridge crane beam; n - is the number of elastic elements.