

Device for pressing and extracting row of sheet piles comprises main beam positioned on the ground surface along the axis of designed row of sheet piles, consisting of two parallel rigid I-beams connected by support frames with hydraulic supports, equipped with removable clamps, which enable main beam to be anchored to already placed sheet piles, the required number of which (n_a) is determined by equation (1), and has mounting points at the ends for support beams with nut-screws and screw anchors, shafts of which have continuous threads, pitch of which is equal to that of screw anchor blades; mounted on main beam, with the ability for longitudinal movement and transmission of vertical reactions, are pressing mechanism and load-bearing platform, on which outriggers are provided and the following are installed: hydraulic manipulator, pump station, control panel, automatic control and leveling system for main beam, rollers, pulleys, and hydraulic cylinder for mutual movement of support platform and pressing mechanism relative to main beam. The other end of this hydraulic cylinder is connected to crossbeam, at ends of which clamps are mounted that slide along the flanges of main beam's I-beams

$$n_a = \frac{N-Q}{F_1} \left(\frac{n+1}{n-m} \right), (1)$$

where: N - pressing force required to sink single sheet pile into the ground under given soil conditions, kN;

Q - the portion of device weight applied along the axis of pressing mechanism, kN;

F_1 - the force required to pull a single sheet pile out of the ground, kN;

n - the number of sheet piles already sunken in section from the axis of hydraulic support on side A to the axis of the next sheet pile being pressed, pcs.,

$$m = \frac{N}{2F_1} - 0,5.$$