

Patent Claims

1. A machine for moulding, especially for manufacturing moulded semi-finished products for producing composite for implants, having a pressing unit and a mould form unit, characterised in that it has a portioning assembly comprising a dosing unit (6) and a preliminary moulding unit (8), whereby above the mould form unit (14) there is a guiding unit (11) situated opposite the dosing unit (6) and above the aforementioned guiding unit (11) there is a pressing assembly (20) slidably mounted on a vertical frame (19) and equipped with at least one piston rod (25) with a rammer (27) at its end, whereby the piston rod (25) is placed in a casing (24) into which pneumatic pipes (23) are connected and, moreover, the portioning assembly is mounted slidably in parallel plane relative to the guiding unit (11), and whereby all the drives of operating units are connected with a control unit (31).
2. The machine for moulding in accordance with claim 1, characterised in that the rammer (27) has a cylindrical shape with a narrowing (28) and on its side rings (29) there are shallow furrows (30) running along the axis of the rammer (27).
3. The machine for moulding in accordance with claim 1, characterised in that the portioning assembly is mounted on a plate of a carriage (2) equipped with a linear drive (3).
4. The machine for moulding in accordance with claim 1, characterised in that the preliminary moulding unit (8) has at least one trough (9).
5. The machine for moulding in accordance with claim 1, characterised in that the mould form unit (14) is fastened with clamps and thus detachable.
6. The machine for moulding in accordance with claim 1, characterised in that the dosing unit (6) is equipped with at least one push rod (7) moved by a linear drive (3).
7. The machine for moulding in accordance with claim 1, characterised in that the number of push rods (7) and troughs (8) relates to the number of piston rods (25) and mould forms (15).
8. A method of producing composite based on calcium phosphate ceramics mixed with curdlan, characterised in that into a water suspension containing 76-175 grams of β -1,3-glucan (hereinafter referred to as curdlan) per one litre of water calcium phosphate ceramics in the form of porous granules weighing 300-800 g in total, favourably from 415 to 800 g, are added and mixed until an optimum homogeneity is achieved and then preliminary moulding takes place whereby a preform trough is thoroughly filled with the matter and after that the matter is pushed into a mould where each portion of the matter is rammed separately until consistency containing less than 15% air is achieved and, after accurate ramming, the matter together with the mould is being kept for 5-120 minutes in temperatures between 80-100°C, and after that the finished product is removed from the mould.
9. The method in accordance with claim 8, characterised in that the granules have a diameter of between 0.1 to 0.9 mm and an open porosity ratio of between 50% and 70%.
10. The method in accordance with claim 8, characterised in that, favourably, the porosity of the granules is between 60% and 70%.
11. The method in accordance with claim 8, characterised in that the mould containing the rammed matter, prior to heat treatment, is plugged or, alternatively, the air exposure of the rammed matter is restricted by using other means.