

The clamping apparatus contains a first coupling element and a second coupling element, that can be fastened with possibility of disconnection to the first coupling element. The first coupling element has four, at least, partially conical centering pins adapted to engage four grooves correspondingly arranged on the second coupling element. Both coupling elements have stopping surfaces, which serve as Z-references and interact at clamping of coupling elements together to determine the position of the second coupling element with regard to the first coupling element in Z-direction, when they are clamped together. The centering pins are made with respect to the grooves in such a way that each centering pin rests only on one wall of the groove corresponding to it, allowing a clearance between it and other wall of groove. The centering pins in all cases rest on two pairs of diametrically opposite walls of grooves and they do not rest on other two pairs of oppositely located walls of four grooves.