

Title (en)  
QUICK-CHANGE DEVICE

Title (de)  
SCHNELLWECHSLER

Title (fr)  
DISPOSITIF DE CHANGEMENT RAPIDE

Publication  
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Application  
**EP 16735826 A 20160610**

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Abstract (en)  
[origin: WO2016198636A1] The invention relates to a quick-change device (12) comprising a receiving structure (22, 30) having an abutment (24, 32) having a bearing region (36), which is circular arc-shaped in section, with a housing radius (RG) about a centre point (MG) through which the circle centre point axis (A) extends, wherein furthermore the receiving structure (22, 30) comprises a locking bolt (26, 34) which has a planar clamping surface (38), wherein the locking bolt (26, 34) has a movement direction (VR) which is situated in the orthogonal direction to the circle centre point axis (A), wherein the clamping surface (38) encloses an acute clamping surface angle ( $\beta$ ) with the movement direction (VR), with the result that a cylindrical locking pin (16, 40) can be brought into contact between the clamping surface (38) and the bearing region (36), and furthermore the bearing region (36) extends at least over a bearing angle range ( $\alpha_B$ ) with respect to the movement direction (VR), wherein the bearing angle ( $\alpha$ ) changes in dependence on the position of a locking pin (16, 40) at the clamping surface (38), wherein the distance of an intermediate level (Z) on the clamping surface (38) from the parallel (Pv) of the movement direction (VR) through the circle centre point axis (A) of the centre point (MG) is situated in a range (X) between  $B_{minRG} = RG \cdot (V \cdot \cos(\beta) - ((1 - V) \cdot \sin(\alpha = 45^\circ)))$   $V_{min} = 0.75$ , and  $B_{maxRG} = RG \cdot (V \cdot \cos(\beta) - ((1 - V) \cdot \sin(\alpha = 45^\circ)))$   $V_{max} = 0.85$ , wherein the variable V lies between  $V_{min} = 0.75$  for the minimum range level  $B_{min}$  and  $V_{max} = 0.85$  for the maximum range level  $B_{max}$ , and the clamping surface (38) has an upper bearing level (O) and a lower bearing level (U) which can be brought into contact with the locking pin (16, 40) in dependence on the movement path, wherein an upper bearing level (O) is situated between the parallel (Pv) of the movement direction (VR) and the intermediate level (Z), wherein the locking bolt (26, 34) is movable in such a way that the intermediate level can be brought in the region (X) between the tangent (T), which is orthogonal to the movement direction (VR), to a circle about the centre point (MG) with the radius (RG) and the parallel (PT) to the tangent (T) through the centre point (MG). The variable V is obtained from the ratio  $V = Ra/RG$ , where  $Ra < RG$  and thus it is always the case that  $V < 1$ .

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