

Title (en)

DEVICE AND METHOD FOR CALIBRATING SWIVEL ASSEMBLIES, PARTICULARLY ON CUTTING MACHINES

Title (de)

EINRICHTUNG UND VERFAHREN ZUM EINMESSEN VON SCHWENKAGGREGATEN, INSBESONDERE AN SCHNEIDMASCHINEN

Title (fr)

DISPOSITIF ET PROCÉDÉ D'ÉTALONNAGE D'ENSEMBLES PIVOTANTS, EN PARTICULIER SUR DES MACHINES DE DÉCOUPAGE

Publication

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Application

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Abstract (en)

[origin: WO2008141608A2] The invention relates to a device and method for calibrating swivel assemblies (21), particularly on cutting machines. Calibration of a tool on the machines mentioned above, portal robots, and the like, to the so-called Tool Center Point (TCP) is done by a single movable measuring tip on the device, which has a direct operational connection to the tool, and a software-controlled measuring method for recording and repeatability of initial positions of a tool to be optimally adjusted. Determination of the TCP can be necessary after maintenance and repair work or after collisions on a machine tool or cutting machine. The invention is characterized in a device-related manner by a device for calibrating swivel assemblies (21), particularly on cutting machines, the device comprising a combination, as viewed from the frame (1), of three members, a first member (3), a second member (4), and a third member (5), displaceably connected among each other, with no play, to the frame (1) with no backlash by sliding joints (12, 13, 14) in all three axes of a Cartesian coordinate system, no mechanical reference position being present on any axis, and the third member (5) being connected to the frame (1) by the sliding joint (14), the second member (4) to the third member (5) by the sliding joint (13), and the first member (3) to the second member (4) by the sliding joint (12), the members (3,4,5) being monolithic, such that each member is made of a single component not formed by joining individual components, and a holder (3b) being present on the first member (3), furthest from the frame, for connecting a measuring adapter (16) in a non-positive manner opposite the direction of gravity, and in a positive manner in a plane orthogonal thereto, rotary measuring sensors (6, 7, 8) being associated with the first, second, and third members (3, 4, 5) and determining the relative motions thereof to the neighboring members (4, 5) and/or the frame by means of the measuring pinions (9, 10, 11) and the measuring toothed racks present on each member (3, 4, 5), the measured values of which are used in a conversion component (2) and an online connection being present between the conversion component (2) and a computer (24) via a data line (23).

IPC 8 full level

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Citation (search report)

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