

Title (en)

FORCE-CONTROLLED HANDLING APPARATUS FOR ROBOT-ASSISTED SURFACE MACHINING

Title (de)

KRAFTGEREGELTE HANDHABUNGSVORRICHTUNG FÜR DIE ROBOTERGESTÜTZTE OBERFLÄCHENBEARBEITUNG

Title (fr)

APPAREIL DE MANIPULATION COMMANDÉ PAR FORCE POUR USINAGE DE SURFACE ASSISTÉ PAR ROBOT

Publication

EP 4313506 A1 20240207 (DE)

Application

EP 22717564 A 20220322

Priority

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- EP 2022057458 W 20220322

Abstract (en)

[origin: WO2022200329A1] One embodiment relates to a handling apparatus ("handling apparatus") comprising a linear actuator which acts between a first flange which can be connected to a manipulator, and a second flange to which a tool or a machine tool having a tool can be mounted. According to a manipulated variable, the linear actuator exerts a force onto the second flange or onto an end stop. The apparatus further comprises a force sensor which is coupled between the second flange and the tool and is designed to measure a force exerted onto the tool by the handling apparatus when there is contact between the tool and a surface. A control unit has a state observer which is designed to determine, on the basis of the manipulated variable, an estimated value for the force exerted onto the tool by the handling apparatus. The control unit is also designed to detect contact between the tool and the surface, wherein the manipulated variable is adjusted on the basis of the estimated value and a target value as long as no contact is detected, whereas the manipulated variable is adjusted on the basis of the measured force and the target value as long as contact is detected.

IPC 8 full level

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