Title (en)

IDENTIFICATION OF MODEL PARAMETERS FOR A MANUFACTURING MACHINE, AND USE THEREOF FOR DETERMINING OPTIMISED TRAJECTORIES

Title (de)

IDENTIFIKATION VON MODELL-PARAMETERN FÜR EINE FERTIGUNGSMASCHINE SOWIE DEREN ANWENDUNG ZUM ERMITTELN OPTIMIERTER TRAJEKTORIEN

Title (fr)

IDENTIFICATION DE PARAMÈTRES DE MODÈLE POUR UNE MACHINE DE FABRICATION, ET SON UTILISATION POUR DÉTERMINER DES TRAJECTOIRES OPTIMISÉES

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Abstract (en)

[origin: WO2023011832A1] The invention relates to a method for parametrising a model of a manufacturing machine of a manufacturing machine system, wherein the manufacturing machine has at least one axis (X, Y, Z, A, B, C) with a position-controlled drive, by means of which at least a first machine element can be adjusted relative to a second machine element, wherein a maximum movement range, a maximum movement speed for the axis (X, Y, Z, A, B, C) and a maximum electrical power that can be supplied to the drive of the axis (X, Y, Z, A, B, C) are recorded, as boundary conditions for an identification run, in a control device comprised by the manufacturing machine system. The following steps are carried out by means of the control device: - ascertaining or receiving a maximum acceleration and/or a maximum jerk for the identification run; - ascertaining a travel profile for the identification run within the boundary conditions and the maximum acceleration and the maximum jerk for the identification run; - carrying out the identification run according to the determined travel profile; - determining the current (I) supplied to the drive during the identification run; - determining a current limit and/or torque limit of the drive according to a rotational speed of the drive; - determining at least one kinematics actual variable during the identification run; - determining at least one model parameter of at least one model of the axis according to the determined current (I) and the kinematics actual variable; - determining, on the basis of the model and the determined current limit and/or torque limit, at least one trajectory of the axis (X, Y, Z, A, B, C) that is optimised in relation to a minimum travel time or a maximum acceleration or minimum lost energy.

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