

Title (en)

HIGH-SPEED MOVABLE BEARING IN PARTICULAR FOR THE MOUNTING OF A MAIN SPINDLE OF A MACHINE TOOL

Title (de)

HOCHGESCHWINDIGKEITSLOSLAGER, INSBESONDERE ZUR LAGERUNG DER HAUPTSPINDEL EINER WERKZEUGMASCHINE

Title (fr)

ROULEMENT LIBRE HAUTE VITESSE DESTINE, EN PARTICULIER, A LOGER LA BROCHE PRINCIPALE D'UNE MACHINE-OUTIL

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Application

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Priority

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Abstract (en)

[origin: WO2006092120A1] According to the invention, the high-speed moving bearing (1) is embodied as an automatically-compensating movable ball bearing with several adjacent races of balls (6, 7, 8, 9, 10) with operation-dependent radial thermal expansion of the bearing rings (2, 3), the bearing rings (2, 3) of which are only in supporting contact with one ball race (8) in the cold state for the high-speed movable bearing (1), by means of a convex embodiment of the running surfaces (5) for the roller bodies (4) on the inner bearing ring (2). With increasing thermal expansion and expansion due to centrifugal force of both bearing rings (2, 3), the further ball races (6, 7, 9, 10) come sequentially into such a contact position with both bearing rings (2, 3) as a result of an elastic radially-flexible embodiment of both bearing rings (2, 3), that the bearing rings (2, 3) at the operating temperature for the high-speed moving bearing (1) are in supporting contact with all ball races (6, 7, 8, 9, 10).

IPC 8 full level

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CPC (source: EP US)

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