Title (en)

VOLUMETRIC ROTARY MACHINE WITH ROTORS HAVING ASYMMETRIC PROFILES

Title (de)

VOLUMETRISCHE ROTATIONSMASCHINE MIT ASYMMETRISCHE PROFILE AUFWEISENDEN ROTOREN

Title (fr)

MACHINE ROTATIVE VOLUMÉTRIQUE AVEC ROTORS À PROFILS ASYMÉTRIQUES

Publication

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Application

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Priority

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Abstract (en)

[origin: WO2006087038A1] The invention relates to a volumetric rotary machine (1) comprising a housing (2) and at least two twin rotors (3, 4) that have asymmetric profiles each having at least one helicoidal thread (7) that, in a direction radial to the longitudinal axis (6) of the one considered of the twin rotors (3, 4) and above the surface (51) of this rotor, has a first predetermined dimension (h) and, on the one hand, a first flank (9) has a modified curve. This volumetric rotary machine (1) comprising a housing (2) and at least two twin rotors (3, 4) having asymmetric profiles, is characterized in that these twin rotors (3, 4) are each comprised of a hub (5) from which at least one helicoidal thread (7) projects that extends above said hub (5) like a tooth (8). This tooth (8), in a direction radial to the longitudinal axis (6) of the one considered of the twin rotors (3, 4) and above the surface (51) of this rotor, has a first predetermined dimension (h). This machine is further characterized in that it does not comprise a first flank (9) and a second flank (10) whose conventional curves (91) and (101) meet at a first point (w) whereby forming a sharp edge along the helicoidal thread (7). Rather, on the one hand, the first flank (9) has a curve (92), called modified curve (92), of which the position and the length of arc are predetermined in such a manner that this modified curve (92) of the first flank (9) and the conventional curve (101) of the second flank (10) each join one of the opposite ends (B) and (C) of a short joining section (12) that, due to its presence all along the helicoidal thread (7), constitutes a helicoidal surface (13) that eliminates the presence of a sharp edge and, on the other hand, this joining section (12), in a direction radial to the longitudinal axis (6) of the one considered of the twin rotors (3, 4), has a second predetermined dimension ("L") such that the ratio of the second dimension (L) to the first dimension (h) ranges from 0.005 and 0.1 (five thousandths and a tenth).

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