

Improvement in Rotary Displacement Machines having Rotors of Asymmetrical Profile

Abstract

Rotary displacement machine (1) comprising un housing (2) and at least two twinned rotors (3, 4) referred to as being of asymmetrical profile,

- 5 • these twinned rotors (3, 4) each being made up of a core (5) on which projects a helicoidal thread (7) which extends above said core (5) in the manner of a tooth (8), which tooth (8),
- has a first predetermined dimension ("h") in a direction radial to the longitudinal axis of that of the twinned rotors (3, 4) under consideration and above the surface (51) of this rotor,

10 this machine being characterized in that instead of comprising a first flank (9) and a second flank (10) of which the conventional shapes (91) and (101) connect at a first point ("W") in such a way as to form a sharp edge along the helicoidal thread (7) :

 - on the one hand, said first flank (9) has a shape (92), referred to as
15 modified shape (92), of which the position and the length of arc are predetermined such that said modified shape (92) of this first flank (9) and the conventional shape (101) of the second flank (10) each connect to one of the opposite ends ("B") and ("C") of a short segment, referred to as connecting segment (12), which, by its presence along the entire helicoidal thread (7)
20 constitutes a helicoidal surface (13), referred to as flattened, eliminating the presence of a sharp edge,

 - on the other hand, said connecting segment (12) has a second predetermined dimension ("L") in a direction radial to the longitudinal axis (6) of that of the twinned rotors (3, 4) under consideration such that the ratio of the
25 second dimension ("L") over the first dimension ("h") ranges between 0.005 and 0.1 (five thousandths and one tenth).