

Title (en)
MULTI-STAGE OR MULTI-CHANNEL PUMP, COMPRESSOR OR MOTOR

Title (de)
PUMPE, VERDICHTER ODER MOTOR MEHRSTUFIG ODER MEHRFLUTIG

Title (fr)
POMPE, COMPRESSEUR OU MOTEUR MULTI-ÉTAGÉ OU MULTIFLUX

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Abstract (en)
[origin: WO2012084290A2] The invention relates to a rotary piston machine which operates as a pump, as a compressor or as a motor and which has a rotor (8), an intermediate rotor (6) and a counter rotor (4), wherein the intermediate rotor (6) is arranged between the rotor (8) and the counter rotor (4). The counter rotor (4) has a first end surface (12) with a first toothing (14). The intermediate rotor (6) has a second end surface (16) with a second toothing (18) and a third end surface (20) with a third toothing (22). The rotor (8) has a fourth end surface (24) with a fourth toothing (26). Each toothing (14, 18, 22, 26) is formed from at least one tooth (15, 19, 23, 27) and one tooth space (10). The toothings (14, 18, 22, 26) engage with one another such that first working chambers (28) are formed by meshing of the teeth (15) of the first toothing (14) with the teeth (19) of the second toothing (18) and such that second working chambers (30) are formed by meshing of the teeth (23) of the third toothing (22) with the teeth (27) of the fourth toothing (26), wherein volumes formed by the first (28) and second working chambers (30) are varied by the meshing of the teeth (15, 19, 23, 27). The rotors (4, 6, 8) are rotatably guided in a housing (32) which accommodates the rotors (4, 6, 8). An inner wall (34) of the housing (32) is formed so as to substantially match an outer contour of the rotors (4, 6, 8). The counter rotor (4) has a first axis of rotation (I), the intermediate rotor (6) has a second axis of rotation (II), and the rotor (8) has a third axis of rotation (III), wherein the first axis of rotation (I) and the second axis of rotation (II) enclose a first angle (f1) and the second axis of rotation (II) and the third axis of rotation (III) enclose a second angle (f2). Here, the first (f1) and the second angle (f2) are not equal to 0°. Furthermore, the rotor (8), the intermediate rotor (6) and the counter rotor (4), when mounted in the housing (32), form a truncated hemisphere.

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