

Title (en)

DRY TYPE PRIMARY VACUUM PUMP AND METHOD FOR CONTROLLING THE INJECTION OF A PURGING GAS

Title (de)

PRIMÄR-VAKUUMPUMPE VOM TYP TROCKENPUMPE UND KONTROLLVERFAHREN DER EINSPRITZUNG EINES REINIGUNGSGASES

Title (fr)

POMPE À VIDE PRIMAIRE DE TYPE SÈCHE ET PROCÉDÉ DE CONTRÔLE DE L'INJECTION D'UN GAZ DE PURGE

Publication

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Application

**EP 19198698 A 20190920**

Priority

FR 1858887 A 20180927

Abstract (en)

[origin: TW202012788A] The invention relates to a primary vacuum pump (1) of dry type comprising: at least two pumping stages (2a-2e) mounted in series between a suction (3) and a discharge (4) of the vacuum pump (1), two rotors (5) extending in the pumping stages (2a-2e), the rotors (5) being configured to rotate synchronously in reverse direction to drive a gas to be pumped between the suction (3) and the discharge (4), an injection device (9) configured to distribute a purge gas in at least one pumping stage (2a-2e), comprising: at least one injection member (12a-12e), and at least one injection valve (13; 16a-16e) with an on or off control intended to be interposed between a purge gas supply source and the at least one injection member (12a-12e), characterised in that the vacuum pump (1) further comprises a control device (10) configured to control the opening and the closing of the at least one injection valve (13; 16a-16e) to inject a purge gas by successive pulses into at least one pumping stage (2a-2e). The present invention relates also to a method for controlling the injection of a purge gas in such a vacuum pump.

IPC 8 full level

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Cited by

CN115388005A; FR3137139A1; WO2023247083A1

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