Title (en)

METHOD AND DEVICE FOR PRODUCING GASEOUS COMPRESSED OXYGEN HAVING VARIABLE POWER CONSUMPTION

Title (de)

VERFAHREN UND VORRICHTUNG ZUR ERZEUGUNG VON GASFÖRMIGEM DRUCKSAUERSTOFF MIT VARIABLEM ENERGIEVERBRAUCH

Title (fr)

PROCÉDÉ ET DISPOSITIF PERMETTANT DE PRODUIRE AVEC UNE CONSOMMATION D'ÉNERGIE VARIABLE DE L'OXYGÈNE SOUS PRESSION SOUS FORME GAZEUSE

Publication

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Application

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Abstract (en)

[origin: WO2014154361A2] The invention relates to a method and to a device for the variable production of compressed oxygen by means of low-temperature separation of air in a distillation column system which comprises a high-pressure column (5) and a low-pressure column (6). Process air in form of a total air stream (1) is cooled in a main heat exchanger (3). At least a part of the cooled process air is fed into the high-pressure column (5). A first oxygen stream (35) from the low-pressure column (6) is brought to an elevated pressure (36) in a liquid state, is vaporized, or pseudo-vaporized, and heated in the main heat exchanger (3), and is finally obtained as a gaseous compressed oxygen product. Prior to entering the main heat exchanger (3), a first and a second partial stream (12) of the process air are brought to a high pressure (9, 10), which is at least 4 bars higher than the operating pressure of the high-pressure column (5). The first partial stream is liquefied, or pseudo-liquefied, in the main heat exchanger (3), and is subsequently introduced into the distillation column system (14). The second partial stream (16) is expanded to perform work (17), and is subsequently introduced into the distillation column system (4). In a first operating mode, a first total air quantity is cooled in the main heat exchanger (3), and a first turbine amount as first partial stream (16) is fed to the expansion to perform work. In a second operating mode, a second oxygen stream (46) from an external source outside the distillation column system is introduced into the low-pressure column (6) in a liquid state. There is less total air (1) cooled in the main heat exchanger (3), and less air is fed to the expansion (17) to perform work than in the first operating mode.

IPC 8 full level

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