Title (en)

METHOD AND DEVICE FOR PRODUCING COMPRESSED NITROGEN

Title (de)

VERFAHREN UND VORRICHTUNG ZUR ERZEUGUNG VON DRUCKSTICKSTOFF

Title (fr)

PROCÉDÉ ET DISPOSITIF DE PRODUCTION D'AZOTE COMPRIMÉ

Publication

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Application

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Abstract (en)

[origin: WO2015014485A2] The invention relates to a method and to a device that serve for producing compressed nitrogen by low-temperature decomposition of air in a distillation column system which has a high-pressure column (202), a low-pressure column (203), a high-pressure column head condenser (204) and a low-pressure column head condenser (205). A main air compressor (9) constitutes the only gas compressor powered by external energy. In the main air compressor (9) the feed air is compressed to a total air pressure which is at least 5 bars above the operating pressure of the high-pressure column (202). A first part-stream (56) of the high-pressure total air stream (11, 811) from the main air compressor (9) is expanded to perform work as operating pressure of the high-pressure column or a higher pressure (57) and is introduced into the distillation column system (201). A second part-stream (52, 55) of the high-pressure total air stream (11, 811) is cooled in a main heat exchanger (51) and is introduced at least partially in liquid form into the distillation column system (206, 210). An internally compressed nitrogen stream is formed by a part-stream (319) of the liquid nitrogen stream (215) from the high-pressure column head condenser (204) and/or a part-stream (234, 334) of the liquid nitrogen stream (232) from the low-pressure column head condenser (205); the internally compressed nitrogen stream is brought in the liquid state to a product pressure (235, 335a, 335b) which is between 15 and 100 bars; then the internally compressed nitrogen stream is heated in the main heat exchanger (51) and then extracted as a gaseous compressed nitrogen product (60) below the product pressure.

IPC 8 full level

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