

Title (en)
METHOD FOR THE CRYOGENIC SEPARATION OF AIR AND AIR SEPARATION PLANT

Title (de)
VERFAHREN ZUR TIEFTEMPERATURZERLEGUNG VON LUFT UND LUFTZERLEGUNGSANLAGE

Title (fr)
PROCÉDÉ DE SÉPARATION CRYOGÉNIQUE DE L'AIR ET INSTALLATION DE SÉPARATION D'AIR

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Application
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Abstract (en)
[origin: WO2016015860A1] What is proposed is a method for the cryogenic separation of air (AIR) in an air separation plant (100) having a main air compressor (2), a main heat exchanger (4) and a distillation column system (10) having a low-pressure column (11) operated at a first pressure and a high-pressure column (12) operated at a second pressure, in which a feed air flow (a), which comprises all of the feed air fed to the air separation plant (100, 200), is compressed in the main air compressor (2) to a third pressure that is at least 2 bar above the second pressure, wherein a first fraction (c) of the compressed feed air flow (b) is cooled at least once in the main heat exchanger (4) and is expanded from the third pressure in a first expansion turbine (5), a second fraction (d) is cooled at least once in the main heat exchanger (4) and is expanded from the third pressure in a second expansion turbine (6), and a third fraction (e) is further compressed to a fourth pressure, is cooled at least once in the main heat exchanger (4) and is expanded from the fourth pressure, wherein air of the first fraction (c) and/or of the second fraction (d) and/or of the third fraction (e) is fed into the distillation column system (10) at the first and/or at the second pressure. It is provided that the third fraction (e) is further compressed to the fourth pressure in sequence in a recompressor (7), a hot first turbine booster and a second turbine booster, and for expanding the third fraction (e) use is made of a dense fluid expander (8) to which the third fraction (e) is fed in the liquid state and at the fourth pressure. The invention also relates to an air separation plant (100).

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