

Title (en)
Triple column air separation process

Title (de)
Dreifachsäulenverfahren zur Tieftemperaturzerlegung von Luft

Title (fr)
Procédé de séparation d'air à triple colonne

Publication
EP 0768503 A3 19980204 (DE)

Application
EP 96116124 A 19961009

Priority
DE 19537913 A 19951011

Abstract (en)
[origin: EP0768503A2] Process for the refrigerated separation of air in a 3 column system comprising a high (7), a medium (8) and a low pressure column (9), having the following steps: (a) Compression (2) of inlet air (1) to a first pressure. (b) Feeding of a first portion (101,103,104) of the compressed air (3) to the high pressure column (7), where this air is compressed (5,102) to a second pressure at least equal to the operating pressure of the high pressure column. (c) Feeding of a second portion (201,202) of air to the medium pressure column (8). (d) Work generating expansion (305) of a third portion (301,303,304) of air. (e) Feeding of expanded air (306) to the low pressure column (9). (f) Feeding (19) of at least one portion of a first oxygen enriched sump fraction (18) from the high to the low pressure column. (g) Condensation (11) of a first nitrogen enriched tops fraction (10) from the high pressure column and feeding condensate from this as reflux to the low pressure column. (h) Feeding (28) of at least one portion of a second oxygen enriched sump fraction (26) from the medium to the low pressure column. (i) Condensation (22) of a second nitrogen enriched tops fraction from the medium pressure column and feeding this condensate as reflux to the low pressure column. (j) The first pressure is lower than the operating pressure of the medium pressure column. (k) The second portion of feed air is compressed from a first to a third pressure, which is at least equal to the operating pressure of the medium pressure column, but lower than the second pressure. Also claimed is a device to carry out the above process.

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Citation (search report)
• [DA] DE 2903089 A1 19800731 - LINDE AG
• [PA] EP 0694745 A1 19960131 - BOC GROUP PLC [GB]
• [A] GB 2284880 A 19950621 - BOC GROUP PLC [GB]
• [DA] EP 0377117 A1 19900711 - LINDE AG [DE]

Cited by
EP0838647A3; FR2774753A1; DE19904527B4; DE19933558B4; DE19933558C5; GB2334085B; DE19904526B4; DE19964549B4; DE102009023900A1

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