

Method and Apparatus for Producing Nitrogen from Air

Abstract

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The air is compressed in a precompressor (1) to a prepressure, then cooled, cleaned and reheated. A heat exchanger (2) is used for simultaneous cooling and reheating. The separation of the nitrogen is effected in a separation device (4), which comprises a plurality of membrane separators. The concentrate, which is enriched with nitrogen, from the last stage is recirculated to the inlet side of the precompressor (1). The separated nitrogen is compressed to the nominal pressure in a final compressor (6) connected to the separation device (4). A pressure switch (8) controls the system such that the final compressor (6) only switches on during start-up when the working pressure of the separation device (4) has been reached. Up to this time the gas supplied from the separation device (4) is partially recirculated to the precompressor (1). There is also recirculation of the leakage nitrogen from the final compressor (6) to the precompressor (1).

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