

Title (en)

CYCLONE SEPARATOR FOR THE PHASE SEPARATION OF A MULTIPHASE FLUID STREAM, STEAM TURBINE SYSTEM HAVING A CYCLONE SEPARATOR AND ASSOCIATED OPERATING METHOD

Title (de)

ZYKLONABSCHIEDER ZUR PHASENSEPARATION EINES MEHRPHASEN-FLUIDSTROMS, DAMPFTURBINENANLAGE MIT EINEM ZYKLONABSCHIEDER UND ZUGEHÖRIGES BETRIEBSVERFAHREN

Title (fr)

SÉPARATEUR CYCLONIQUE POUR LA SÉPARATION DE PHASES D'UN COURANT FLUIDIQUE À PLUSIEURS PHASES, INSTALLATION TURBINE À VAPEUR DOTÉE D'UN SÉPARATEUR CYCLONIQUE ET PROCÉDÉ DE FONCTIONNEMENT ASSOCIÉ

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Application

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Abstract (en)

[origin: WO2011047849A2] The invention relates to a cyclone separator (1) for the phase separation of a multiphase fluid stream, having a housing (2) which is configured substantially rotationally symmetrically about a mid-axis (M) and encloses a hollow chamber (3), having at least one feed line (6) for the fluid stream, which is designed for an inflow of the fluid stream that is directed substantially tangentially to the interior (11) of the housing, and having at least one discharge line (24) for the separated gaseous component of the fluid stream. Such a cyclone separator is to be improved to the effect that it is suitable for heating the gaseous content of the fluid stream and makes low demands on material and required space. In addition, the aim is to ensure a uniform and preferably homogeneous flow distribution of the steam to be heated as it enters the heating phase. To this end, the invention provides for the hollow chamber (3), when viewed in the radial direction from the mid-axis (M), to comprise an outflow chamber (16) having a substantially circular cross section and, following same in the aforesaid order, a heating chamber (14), an intermediate chamber (15), a dryer chamber (13) and an inflow chamber (12) having a substantially circularly annular cross section in each case, wherein the inflow chamber (12) is delimited on the outside by means of the housing (2), wherein the heating chamber (14) contains heating elements designed to heat the gaseous content, wherein at least one fine separator (28) and at least one associated condensate-collecting trough (32) are arranged in the dryer chamber (13), and wherein the at least one condensate-collecting trough (32) is connected to at least one condensate discharge pipe (34) which is arranged in the intermediate chamber (15) and through which the condensate forming in the at least one fine separator (28) during operation is led out of the hollow chamber (3).

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