

Title (en)

CENTRIFUGAL COMPRESSOR DIFFUSER PASSAGE BOUNDARY LAYER CONTROL

Title (de)

STEUERUNG DER GRENZSCHICHT DES DIFFUSORDURCHGANGS EINES ZENTRIFUGALVERDICHTERS

Title (fr)

COMMANDE DE COUCHE LIMITE DE PASSAGE DE DIFFUSEUR DE COMPRESSEUR CENTRIFUGE

Publication

EP 3204616 A1 20170816 (EN)

Application

EP 15750907 A 20150811

Priority

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- US 2015044673 W 20150811

Abstract (en)

[origin: WO2016057112A1] A centrifugal compressor diffuser (42) includes a plurality of diffuser flow passages (22) extending through an annular diffuser housing (20) and circumferentially bounded by diffuser vanes (23) and axially bounded by forward and aft walls (101, 100). A diffuser boundary layer bleed (96) for the passages may include boundary layer bleed apertures (106) or slots (130) disposed through the forward wall (101) and a downstream facing wall (142) canted at an acute cant angle to a downstream diffuser airflow direction (103) in the passages. Diffuser bleed flow (112) is bled from a diffuser boundary layer. Boundary layer bleed apertures can be located downstream of throat sections (28) of the flow passages near pressure sides of the vanes. A centrifugal compressor (18) may include the diffuser surrounding an annular centrifugal compressor impeller (32) and apparatus for flowing impeller bleed flow (102) from a radial clearance between an impeller tip (36) and a diffuser annular inlet (27) with diffuser bleed flow either mixed or separately to cool a turbine (16).

IPC 8 full level

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Citation (search report)

See references of WO 2016057112A1

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