

Title (en)

Air film cooling device for the flame tube of a gas turbine engine.

Title (de)

Vorrichtung zur Luftfilmkühlung für das Flammrohr eines Gasturbinenriebwerks.

Title (fr)

Dispositif de refroidissement par film d'air pour tube à flamme de moteur à turbine à gaz.

Publication

EP 0049190 A1 19820407 (FR)

Application

EP 81401447 A 19810917

Priority

FR 8020558 A 19800925

Abstract (en)

1. Air-film cooling device for the flame tube of a gas-turbine engine, the said device forming an annular connecting member between a downstream section (1) and an upstream (2) of the flame tube, comprising an external wall (7) and an internal wall (8) defining between them a chamber (9) supplied in a radial direction by at least one series of orifices (10) provided in the external wall, the internal wall defining with the external wall an annular slot (13) for outlet purposes through which flows a cooling air-film and serving to insulate the internal wall of the downstream section of the flame tube, the external wall (7) and the internal wall (8) each having a cylindrical portion (14, 15) extending axially, the said portions being co-axial and spaced one from the other, the cylindrical portions of the external and internal walls being connected upstream by at least one portion of approximately conical shape (17) to the upstream (2) of the flame tube, characterized in that the cylindrical portion (14) of the external wall (7) is connected downstream by a conical portion (16) to the downstream section (1) of the flame tube in such a manner that the dimensions of the chamber are defined by the following values : $H \geq 2 h$ $c \geq 1.2 H$ $L \geq 2 h$ $d \leq 0.5 h$ h = width of the slot H = height of the chamber c = projected length of the conical portion between the internal wall and the downstream section of the flame tube L = length of the annular duct of the slot d = diameter of the orifices.

Abstract (fr)

Dispositif de refroidissement par film d'air pour tube à flamme de moteur à turbine à gaz formant une pièce de raccordement entre une section aval (1) et une section amont (2) du tube. Il est constitué d'une paroi externe (7) et d'une paroi interne (8) présentant chacune une portion cylindrique (14, 15). La paroi externe porte des orifices radiaux (10). La portion cylindrique (14) de la paroi externe (7) est raccordée en aval par une portion conique (16) à la section aval (1) du tube. La paroi externe, en aval de la portion conique, et la paroi interne constituent la fente (13) en forme de canal annulaire. Les portions amont des parois interne et externe se raccordent à la section amont (2) du tube à flamme par des portions coniques (17).

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IPC 8 full level

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