

Title (en)
COOLABLE OUTER AIR SEAL ASSEMBLY FOR A TURBINE

Title (de)
KÜHLBARER DICHTUNGSRING FÜR EINE TURBINE

Title (fr)
ENSEMBLE D'ETANCHEITE D'AIR EXTERNE A REFROIDISSEMENT POUR TURBINE

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Abstract (en)
[origin: WO9412775A1] An outer air seal assembly (44) cooled by a combination of impingement cooling and film cooling is disclosed. Various construction details are developed which provide impingement of cooling fluid on a radially outer side of an outer air seal assembly (44) and ejection of a film of cooling fluid over a radially inner surface (52) of the outer air seal assembly (44). In a particular embodiment, an outer air seal assembly (44) includes a substrate (54), an apertured cover (56) disposed outward of the substrate (54), and a layer of abradable material (58) extending radially inward of the substrate (54) and defining a flow surface (52). Cooling fluid is directed through the apertures (72), into a cavity (66), and impinges upon the outer surface of the substrate (54). A plurality of film cooling holes (76) extend through the substrate (54) and abradable layer (58) and provide fluid communication between the cavity (66) and flowpath (14). The cooling holes (76) are oriented to eject cooling in a film over the flow surface (52). In another embodiment, the cavity (66) includes a longitudinally extending chamber (112) disposed in an enlarged portion (108) of the air seal (46) to enhance cooling thereof and reduce stresses therewithin.

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