

INTEGRAL SWIRL KNIFE EDGE INJECTION ASSEMBLY

ABSTRACT OF THE DISCLOSURE

The present invention relates to a system for delivering cooling air to a seal arrangement in a turbine stage of a gas turbine engine. The system comprises at least one vane having a passageway extending from an outer platform of the at least one vane to an inner platform of the at least one vane. A tube insert is positioned within the passageway. The tube insert has an inlet at one end for receiving cooling air from a source of cooling air and an outlet at a second end. A cover assembly is attached to the second end of the tube for receiving cooling air from the tube and delivering the cooling air to the seal arrangement. In a preferred embodiment, the cooling air is pre-swirled in the direction of rotation of a rotor stage of the turbine stage.

Figure 1