

COOLING PASSAGE EXIT OPENING CROSS-SECTIONAL AREA REDUCTION FOR TURBINE SYSTEM COMPONENT

ABSTRACT

A turbine system component (200) includes a body (210) having an exterior surface (212), and a cooling passage (202) defined in the body (210). The cooling passage (202) has a first cross-sectional area in the body (210). The component (200) also includes a hollow member (220) defining a first exit opening (214) at the exterior surface (212) of the body (210) and coupled in the cooling passage (202). The hollow member (220), at the first exit opening (214), has a second cross-sectional area that is less than the first cross-sectional area, creating an exit opening (222) with a smaller dimension than the original cooling passage (202). The hollow member (220) is made of a material having a melt temperature higher than an operating temperature of the turbine system. The hollow member(s) (220) reduces the cooling capabilities of the cooling passage (202). A cooling profile of the component (200) can be generated to identify those cooling passages (202) having excess cooling so they can have their exit openings (214) reduced in cross-sectional area.

[Figure 11]