Manifold Assembly for a Fluid Cooled Generator

ABSTRACT

A concentric manifold ring assembly comprises an internal distribution manifold for a generator. The manifold is for use in a direct-liquid-cooled alternator together with a mating housing to form a concentric fluid distribution channel that enables the transport and distribution of chilled coolant from a heat exchanger to select locations in the alternator via channels, ducts, and jets. The external heat exchanger feeds chilled coolant through a feed port where the incoming fluid is directed circumferentially via a channel formed by the manifold body and housing. From the circumferential flow, streams of coolant flow from drilled jet ports, while the circumferential flow back-cools rectifier mounting surfaces. Fluid flows flowing axially out of ducts to create an active end-to-end circulation of chilled fluid within the alternator to absorb thermal energy from alternator components before being drawn out of a return flow channel via a return flow port.

Fig.3