

# CF6-80C ENGINES



## Servo Fuel/Oil Heat Exchanger

**UA538950-4**

**UA538950-7**

**UA538950-8 (A-E series)**

The heat exchanger provides oil to fuel heat transfer using heat from the engine scavenge oil system. This prevents icing of the main engine control servo fuel system. The UA538950-3, -4 and -7 Heat Exchangers consist of a stainless steel core, slide and thermal valve bodies, and two tube assemblies. The slide valve body contains all slide and bypass valve parts. The thermal valve body contains all thermal valve parts. The tube assemblies connect the two valve bodies. The UA538950-8 Heat Exchanger consists of a stainless steel core and bypass valve only.

Fuel enters through FUEL IN port, flows through core tubes and thermal valve, and then leaves through FUEL OUT port. Oil enters through OIL IN port, flows around core tubes, through tube assemblies, and leaves through OIL OUT port. Fuel temperature operates heat sensitive bi-metal discs in a thermal valve. The valve closes at a fuel temperature of 195°F (90, 6°C) and opens when below this temperature. The thermal valve is open when fuel is cold. This lets oil pressure equalize on both sides of slide valve and spring holding slide valve in to heat exchanger position. Oil flows through core in this position. When thermal valve closes, pressure on spring side of slide valve is bled off. Then valve inlet pressure, fed through a bleed hole in slide valve, compresses spring and holds slide valve in heat exchanger bypass position. In this position, oil flow is directed to OIL OUT port, bypasses cores, and fuel heating stops. A bypass valve for oil is in a circuit parallel to the slide valve. The bypass valve opens at an oil pressure of 60 psi (414 kPa), which allows cold oil to bypass core.

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