



Aerospace - Case Study



Case Study Information

Customer	Aerospace Company
Location	UK

Equipment Supplied:

1 x Horizontal Positive Displacement Vane Pump - Bombas Trief BAL Series Range

Application	Very Low Temperature Coolant Circulating Pump
Fluid	Anti-Freeze (Water + Ethylene Glycol)
Concentration	40 / 60%
Temperature	-40°C
Viscosity	100 cPs
SG	1.3 - 1.5
Suction	Flooded
Flow Rate	500 L/min
Discharge Pressures	1 Bar
Geared Motor	4 kW / 220-400v / 3 Phase / 50 Hz / IP55
Output Speed	640 rpm
Body Material	Cast Iron
Shaft	F-114
Sealing	Mechanical w/ EPDM O-Rings

Enquiry:

- ✓ An Aerospace company was having issues sourcing a circulating pump for a test rig that could handle the extremely low fluid temperatures of -40°C. The idea for the test bed was to simulate the operating characteristics of an aircraft's coolant line at high altitudes and therefore low ambient temperatures.

Most pump manufacturers and suppliers could only supply a circulator pump suitable for temperatures down to -5°C.

Solution:

- ✓ Having previously assisted the customer with other special requirements we were happy to take up the challenge. After determining that the fluid was indeed a fluid at the operating temperature and concentration we then examined what type of circulator pump would be required to handle both the specific gravity and extreme temperature of the fluid. We selected a robust positive displacement vane pump with an oversized motor suitable for use with an inverter to enable ultimate control of the pump during their testing programme. The mechanical seal and shaft were selected to suit the arduous fluid temperature.

We subsequently offered and supplied bespoke fittings and connections to facilitate easy installation into the customers test rig therefore facilitating a "Plug and Play" supply.

Castle Pumps understood how important this positive displacement vane pump was to the client's operation, and we had confidence that we could supply them with a solution quickly, for a reasonable price and that was easily integrated into their set-up. The customer was happy with the relative ease that we selected such a bespoke solution within such a small time frame as well as the price!