



## Aviation Company - Case Study



### Case Study Information

Customer	Aerospace Company
Location	UK

### Equipment Supplied:

#### **2 x Horizontal Long Coupled Side Channel Pump w/ Explosion Proof Motor, Baseplate & custom port arrangement (2")**

##### **Liverani Range**

Service	Aviation Fuel Transfer Pump
Fluids	Aviation Fuel JET A1 (Unleaded Kerosne 804 kg/m <sup>3</sup> @ 15°C) & TS1 (Similar to A1 but with a flash point of 28°C, 787 kg/m <sup>3</sup> @ 15°C)
Auto-Ignition Temperature	200°C
Operating Fuel Temperature	-50°C to +60°C
Capacity	175 l/min @ 15 PSI D
Power	1.5 kW
Voltage	230-400-III
Frequency	50 Hz
RPM	1400 rpm
Protection	II 2G EExd IIC T4
Execution	Horizontal
Pump Casing	Stainless Steel AISI 316
Impeller	Brass
Shaft	Stainless Steel AISI 316

#### **1 x Horizontal Long Coupled Side Channel Pump w/ Explosion Proof Motor & Baseplate**

Service	Aviation Fuel Transfer Pump
Fluids	Aviation Fuel JET A1 (unleaded Kerosine 804 kg/m <sup>3</sup> @ 15°C) & TS1 (Similar to A1 but with a flash point of 28°C, 787 kg/m <sup>3</sup> @ 15°C)
Auto-Ignition Temperature	200°C
Operating Fuel Temperature	-50°C to +60°C
Capacity	175 l/min @ 15 PSI D
Power	0.25 kW
Voltage	230-400-III
Frequency	50 Hz
RPM	1400 rpm
Protection	II 2G EExd IIC T4
Execution	Horizontal
Pump Casing	Stainless Steel AISI 316
Impeller	Brass
Shaft	Stainless Steel AISI 316
Sealing	Bi-Directional Mechanical Seal - Ceramic / Graphite / Viton
Connections	3/4" BSPM G



## Enquiry:

- ✓ The client wanted to develop some aviation fuel test rigs which would incorporate pumps that could handle aviation fuel at varying temperatures (-50°C to +60°C), varying flow rates (30 – 100% of rated duty) within an ATEX Zone 2 environment. Further to this the client wanted pumps which would minimise the heat input into the fuel during operation, have air cooled motors which could operate with ambient air temperatures of -10°C – 35°C and also allow fuel to flow through them whilst the pumps were idle.
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## Solution:

- ✓ Castle Pumps were able to select and customise suitable pumps from their extensive ATEX side channel pump range that fitted the exacting specification of the client and supply under their approved budget for the rigs. CAD drawings for the custom port configuration were made and supplied to the client during the quoting process and photos of the finished pumps sent to the client for their final approval ahead of delivery.

Within a matter of 3.5 working weeks, the pumps were fabricated, tested and delivered to the customers facility for integration into their testing rigs and put into successful operation (10 hrs on / 2 hrs off).