



## Aerospace (ATEX) - Case Study



### Case Study Information

Customer	Aerospace Company - ATEX
Location	UK

### Equipment Supplied:

#### 1 x Self Priming, ATEX Zone 1 Side Channel Pump - Sero SOHB Range

Application	Test Rig Pump
Fluid	Aviation Fuel T4
Temperature	10 - 59°C
Specific Gravity	0.804
Viscosity	1 mm <sup>2</sup> /s
Vapour Content Ratio	1.5:1
Suction	Self Priming to 4.2m - Max Requirement
Flow Rate	3.4 m <sup>3</sup> /hr (+/- 10%)
Discharge Pressures	1.5 - 4 Bar
Motor	0.75 kW / 230 - 400 v / 3 Phase / 1450 rpm / IP55 / EExdeIICT4
Casing, Stages & Base	Ductile Iron GGG 40
Shaft	1.4021
Impellers	1.4059

### Enquiry:

- ✓ An Aerospace company approached us with the idea that they wanted to simulate and test the effects that a helicopter's pitch and roll in flight would have on the aviation line, specifically the fuel delivery system. Due to where the client wanted to fix the pump as well as the varying position and fluid levels in the tank (supply reservoir pressure was to be progressively reduced down to a minimum of 6.5 PSIA), there was expected to be a high amount of vapour pressure as well as suction lift for the pump to perform. This, coupled with the fact that the equipment needed to be located in an ATEX Zone 1 environment, meant that this selection was particularly problematic and required a very specific type of pump.

### Solution:

- ✓ We selected a self priming side channel pump for this arduous application based on the knowledge that these pumps can handle up to 50% entrained gases and were capable of performing within the differential pressure range required. We were also able to supply this unit in a close coupled arrangement which meant that the unit would quite easily sit within the frame of the test rig. After careful friction loss and weight calculations, we recommended to ultimately move the pump closer to the feed tanks which facilitated an easier suction lift and lightened the load on the tail of the rig assembly.

Furthermore, by supplying the motor with PTC thermistors the client was able to accurately control the flow rate and pressure of the side channel pump, consequently enabling them to test the pump under a wide range of flow rates and pressures.

The client was so impressed with our in house knowledge, fast response and ability to understand their bespoke request that they subsequently referred us to other partners and also registered us on their preferred supplier data base.