

Hyjet Powerpack Refurbishment

Mecelec Design has refurbished a Hyjet power pack for a leading aerospace supplier. The original power pack wasn't big enough and didn't have all of the desired functionality.

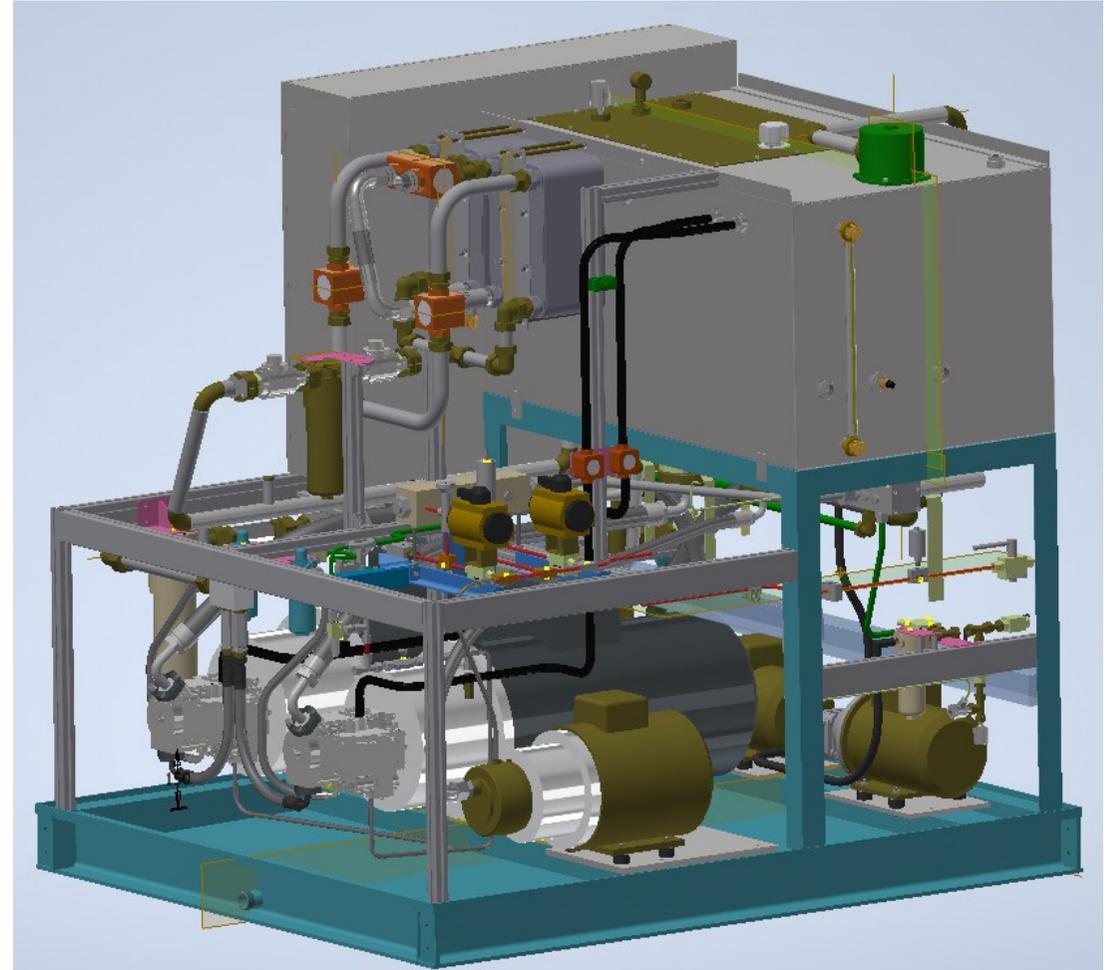
There was a requirement to double the flow rate, have remote pressure control of the main pumps and also have a 10,000 psi proof pressure test functionality.

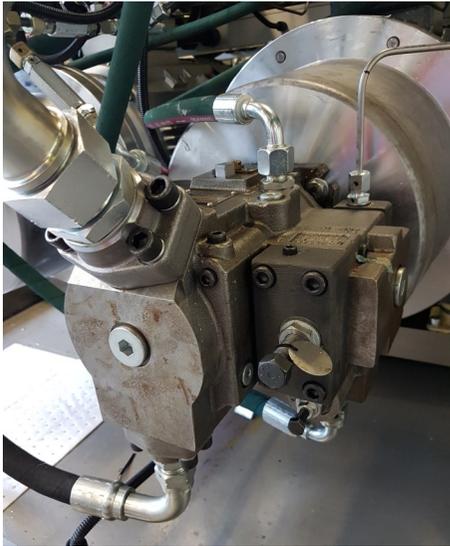
To double the flow rate, an additional high pressure pump was added therefore the refurbished power pack had two high pressure pumps running in parallel.

The remote pressure control functionality was achieved by using pressure compensated pumps with proportional pressure limiting valves on the pilot circuit. The proportional valves were controlled by the PLC in a closed loop PID circuit with a downstream pressure transducer.

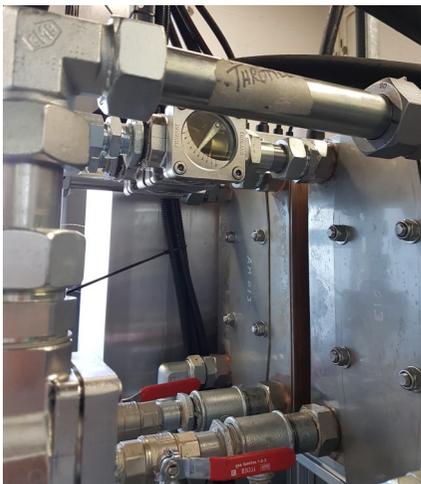
Hyjet is a very aggressive fluid and therefore the frame is raw stainless steel and all the hydraulic seals need to be EPDM.

Technical Data	
Hydraulic Fluid	Hyjet
Supply Pressure	350 Bar
Flow Rate	116 lpm
Electrical Power Supply	3 Phase 415VAC @ 120kW
Control System	Siemens PLC
Operator Interface	Siemens HMI

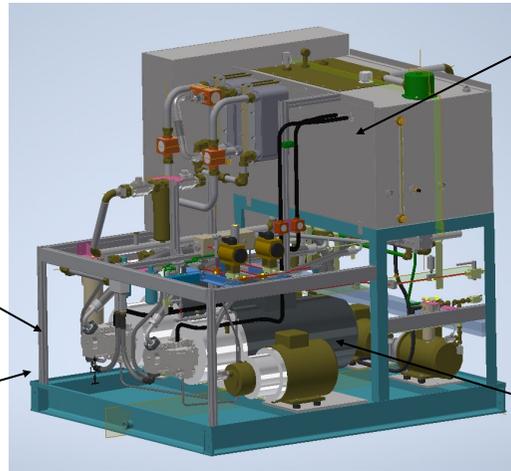




Two Hawe pressure compensated pumps were used to achieve the require flow rate. The Hawe pumps were driven with 45kW electric motors.

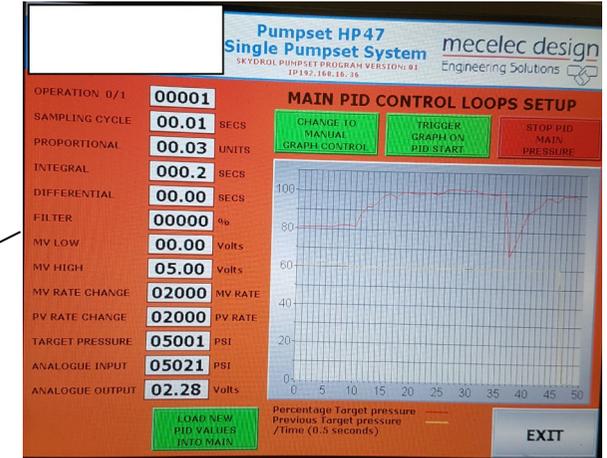


An additional heat exchanger was fitted to cope with the extra heat created by the second pump. These were plate heat exchangers connected to the factory chilled water system.



A Siemens PLC control system with touchscreen HMI was used on the powerpack.

This included a manual screen which allowed our customers engineers to adjust the PID settings without connecting with a laptop.



The rig was constructed with Hyjet resistant materials. The frame was raw stainless steel, cables were PTFE coated and the electric motors had a special paint.

Visual gauges were fitted to show pressures at different parts of the circuit. The largest gauge is for the 10,000psi proof pressure test.