

## Case Study

# Hydraulic Power Unit (HPU)

Designed and Manufactured



## Challenge

We were approached by our client to design and manufacture a Hydraulic Power Unit (HPU) for a crane at the Rothera Research Station, the largest British Antarctic facility.

Providing power for the crane used for the unloading of vital cargo for the base, the HPU needed to operate reliably in extreme conditions - namely between -40°C and 30°C.

Another challenge was the need to supply fresh air to the engine without significantly compromising the ambient heat within the container housing the HPU.

It was also imperative that no harmful fluids should ever be transferred to the fragile surrounding environment.

Quiet operation was additionally required.



3D Design Render

## Solution

Prior Power Solutions designed a bespoke self-contained 74kW HPU.

- To achieve the required operating temperature of -40°C to 30°C, suitable components were carefully sourced and selected.
- Pre-heat systems were installed to ensure reliable operation alongside storage heat solutions for when the crane was not in operation.
- All hydraulic components were also chosen for their compatibility with special bio hydraulic fluids.
- The unit was banded to protect the environment from any spillages as stipulated by our client.
- The container was acoustically treated to minimise the effects of operating noise to the environment.
- Thermostatically controlled louvres were used to react automatically to changes in ambient temperature to ensure the supply of fresh air to the engine without compromising appreciably the container's ambient heat.

## Features

- Single skid for compact footprint.
- High quality design and workmanship.
- Superior components to ensure reliability in remote environment as well as compatibility with bio-hydraulic fluids and operating temperature range.
- Designed with reliability and ease of maintenance in mind.
- Supplied with full redundancy spares for routine ongoing maintenance.

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A CHANGING WORLD**



Design & Build



Repair



Refurbish



Upgrade



Recertification