

HAZARDOUS AREA

MultiVac

CALDER

A PG FLOW SOLUTIONS COMPANY

THE VERY BEST IN HAZARDOUS AREA VACUUM RECOVERY SYSTEMS



INNOVATION THROUGH EXPERIENCE >>

www.calderltd.com

HAZARDOUS AREA

MultiVac

PACKAGED VACUUM SOLUTIONS

Industrial • Process • Oil & Gas • Chemical & Petrochemical

Our customers use the MultiVac range for:

- **Material/waste removal**
 - » of coatings from surface preparation
 - » from tanks, vessels, mud pits and silos
 - » from hazardous drainage systems
 - » of viscous, dense materials
 - » from confined spaces
- **Chemical, fuel, and liquid recovery from open/bunded areas**
- **Transfer of waste from open top skips to closed skips**
- **Bulk powder removal**
- **High flow ventilation of hazardous atmospheres**
- **Hydrocarbon heavy waste removal while atmospheric venting**
- **Pigging support operations**
 - » prevention of uncontrolled release of hydrocarbon materials
- **Descaling support**
 - » control of water discharge
- **Online/offline de-sanding operations**



Introduction

As a specialist manufacturer of high pressure systems we design and engineer market-leading solutions which set the standards for use in the harshest operating environments around the globe. We are an independent company with one focus – to build the best packaged vacuum recovery systems on the market.

The Calder range of hazardous area vacuum systems has been developed to suit the demanding requirements of the oil & gas industry worldwide. With liquid ring and blower technologies, we have the vacuum solution for your needs.

- Up to 810 mbar
- Up to 50 m³/minute
- Long operational design life
- Low maintenance
- Easy waste removal
- Simple to operate
- Noise attenuation options
- Fire and gas detection options

MultiVac is manufactured to the same exacting standards as our range of hazardous area MultiJet pumping units. With safety paramount and operational uptime critical to maintenance progress, we select only the best quality components and package them in unit designs which are subject to the continual improvement regime that keeps Calder at the forefront of offshore high pressure technology.



- Design
- Manufacture
- Test
- Install
- Commission
- Service

Crash Frame

The DNV-certified crash frame allows a reduced-weight lift and a smaller footprint than the containerised version. It offers basic protection against damage during loading and offloading operations.

Container

The DNV-certified container offers maximum protection from the elements and from damage in transit. The container aids noise attenuation with further noise attenuation options available. Controls and services are externally mounted to give easy operator access during set-up and operation.

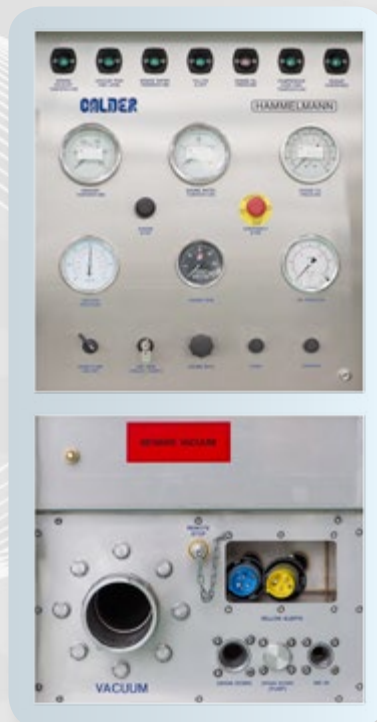
Optional Equipment

- NORSOK compliance
Including gas and fire detection, and fire suppression systems.
- Noise Attenuation
Various options to reduce noise levels to below 85 dBA @ 1 metre.
- High ambient temperature operation for environments up to 50°C.
- Maintenance Lifting Points
Located above internal components to enable fitting of chain hoist to assist with equipment removal/maintenance.
- Internal Hazardous Area Lighting



Technical Specifications

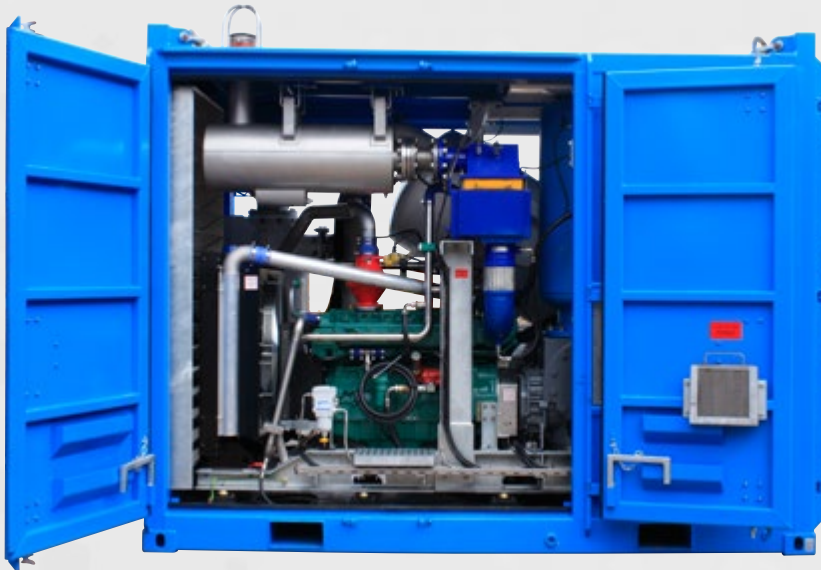
- Diesel engine: 57 kW at 2,000 rpm
- Exhaust gas cooler, spark arrestor
- Vacuum blower rated: 500 mbar @ 38m³/min
- Pneumatic control system and shutdowns
- Vortex separator for solids removal
- Solids tank capacity: 1.7 m³
- Waste tank drain pump - automatic
- Waste tray capacity: 1.0 m³
- Hazardous area rating:
Zone 2 IECEx, ATEX 94/9/EC Group II Cat 3G,
Gas Group IIA Temp Class T3
- Filter strainer 100 micron
- Container & slings – DNV 2.7.1
- Vacuum connection 100mm CamLock
- Diesel driven air compressor 9 cfm
- Noise attenuation 100 dBA at 1 metre
 - » Optional 79 dBA
- Fuel tank capacity: 1 shift
- Unit dimensions (approx.):
3353 x 2438 x 3195mm (h)
- Unit weight (approx.): 7,950 kg wet



Control panel and outlet panel.

MultiVac 120-810-D-Z2-CS

Positive Displacement Blower



Technical Specifications

- Diesel engine: 160 kW at 2,100 rpm
- Exhaust gas cooler, spark arrestor
- Vacuum blower rated: 810 mbar @ 20m³/min
- Pneumatic control system and shutdowns
- Vortex separator for solids removal
- Solids tank capacity 1.7 m³
- Waste tray capacity 1.0 m³
- Hazardous area rating:
Zone 2, ATEX 94/9/EC Group II Cat 3G,
Gas Group IIA Temp Class T3
- Filter strainer 100 micron
- Container & slings – DNV 2.7.1
- Vacuum connection 100mm CamLock
- Diesel driven air compressor 20 cfm
- Noise attenuation optional to 78 dBA
- Fuel tank capacity: 1 shift
- Unit dimensions (approx.):
3353 x 2438 x 3195mm (h)
- Unit weight (approx.): 8,500 kg wet



Technical Specifications

- Diesel engine: 93 kW at 2,100 rpm
- Exhaust gas cooler, spark arrestor
- Liquid ring rated: 500 mbar and 41 m³/min
- Pneumatic control system and shutdowns
- Syphon filter tank capacity: 0.25 m³
- Drain for solids removal
- Water recovery tank: 1 m³
- Hazardous area rating:
Zone 2, ATEX 94/9/EC Group II Cat 3G, Gas Group IIA Temp Class T3
- Crash frame DNV 2.7.3, slings DNV 2.7.1
- Vacuum connection 100mm CamLock
- Diesel driven air compressor 9 cfm
- Fuel tank capacity: 1 shift
- Unit dimensions (approx.):
3000 x 2000 x 2200mm (h)
- Unit weight (approx.): 5,200 kg wet



Control panel.



MultiVac 130-500-D-Z2-CS

Liquid Ring Vacuum Pump



Technical Specifications

- Diesel engine: 145 kW at 1,500 rpm
- Exhaust gas cooler, spark arrestor
- Oil free liquid ring pump
- Liquid ring rated: 500 mbar and 50 m³/min
- Pneumatic control system and shutdowns
- Syphon filter tank capacity: 0.25 m³
- Drain for solids removal
- Water recovery tank: 1 m³
- Hazardous area rating:
Zone 2, ATEX 94/9/EC Group II Cat 3G, Gas Group IIA Temp Class T3
- Container & slings – DNV 2.7.1
- Vacuum connection 100 mm CamLock
- Diesel driven air compressor 20 cfm
- Noise attenuation 85 dBA at 1 metre
- Fuel tank capacity: 1 shift
- Unit dimensions (approx.):
4200 x 2438 x 2743mm (h)
- Unit Weight : 9,000 kg wet



Control panel.



Outlet panel.



CALDER

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Ideally situated for both Heathrow and Birmingham international airports, Calder's Worcester premises are a modern facility where our equipment is designed, built and tested by our skilled workforce.

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| Standards & Specifications:

Calder pump packages can comply with most international standards and specifications including:

ATEX | IEC | GOST | EN | DNV | API | ANSI | PED | AS/NZ | Norsok | NACE | CE | PED

| **ISO 9001** Quality standard has been practised by Calder since 1987 with award of certification in 1999. Our rigorous application of this highly respected International Quality Standard has ensured that we consistently meet and exceed our customers' most demanding expectations for both quality and reliability.

| **ISO 14001** Environmental Standard has been held by Calder since 1999. Careful and judicious management of our working environment with the application of sound and well informed design applications utilising the latest and most efficient technologies helps us to produce equipment which minimises the environmental footprint of our production facility and the operating equipment in the field.

| **OHSAS 18001** We at Calder pride ourselves on our safety record. As members of the British Safety Council we practise the strictest safety procedures within our factory and working environments, applying rigorous risk assessments to all activities and equipment which we design and build.

