Efficient Underwater Cutting Solutions with UHP Water Abrasive Suspension

Unique Advanced Waterjet Cutting System for Offshore Applications

- Abandonment
- Decommissioning
- Underwater Cutting
- Modification
- Repair
Why Water Abrasive Suspension?
The unique ANT Water Abrasive Suspension (WAS) system is the latest in waterjet cutting technology. Through innovative design waterjet cutting is now more efficient and safe, with lower water flow, greatly reduced abrasive/garnet consumption, minimisation of equipment downtime, and efficiencies of operation.

Ultra high pressure waterjet cutting has become a recognised method for the cutting of many materials. The ANT Water Abrasive Suspension system ensures a constant flow of abrasive is delivered through the nozzle, allowing uninterrupted flow, maximising cutting time and accuracy. Through the Abrasive Mixing Unit (AMU) the abrasive is added to the water in a vessel pressurized at up to 2,500 bar. The pressure ensures that the abrasive remains in a state of suspension in the water and eliminates blockages, allowing the abrasive mixture to flow freely to the cutting head.

Why Calder/ANT?
Calder and ANT have joined forces to provide the complete equipment package for offshore caisson, pipe and tube cutting in hazardous area environments.

Calder’s experience and reputation as a leading supplier of hazardous area, high pressure pump packages and ANT’s knowledge and experience of abrasive cutting technology makes for a great team. Together, we provide a full cutting system with expertise in all the relevant technologies.

As ANT’s partner in the UK offshore sector, Calder provides full service and spares support for all components of the system.

Features
• Up to 2,500 bar cutting pressure
• Subsea operation down to a water depth of 600 metres
• Low abrasive consumption
• 0.6mm nozzle for precision cutting
• High cutting speed
• Reduced kerf width
• Rated for hazardous area use
• Cut through multiple layers of steel and concrete
• Cut metal up to 500 mm thick
• Cut concrete up to 1,500 mm thick
• Use potable or sea water
• Low flow through precision nozzles
• Cutting manipulators available for ≥2” pipe
• Continuous cutting operation possible
• Cold cutting, suitable for explosive atmospheres
The Complete System

Calder supply the full WAS cutting system - abrasive mixing unit, high pressure pump, cutting devices, winch, abrasive storage, compressor, control station, manipulation systems, and accessories.

The Process

1. The high pressure pump creates water pressure up to 2,500 bar
2. That water is piped to the abrasive mixing unit (AMU)
3. The AMU introduces the abrasive into the water
4. The AMU maintains the abrasive at high pressure in suspension
5. The water/abrasive suspension is pumped to the cutting head
6. Cutting commences

The Abrasive Mixing Unit

These lightweight, small footprint, modular units are used by many industries for a variety of cutting applications. Ideally suited to underwater cutting through the unique technology employed to keep the abrasive in a state of suspension ready for deployment to the cutting head.

The High Pressure Pump

At the heart of this unit is the ever-reliable, Calder-built UHP jetting unit incorporating the low maintenance Hammelmann pump - a vertical reciprocating plunger pump which has been incorporated into Calder’s offshore equipment for over two decades. In addition to supplying water for the ANT system, this versatile pump unit is used for a variety of fabric maintenance applications.
Handling

A range of handling and lifting equipment for pipe, tubes and caissons.

Internal Cutting

A cutting head for every offshore application above or below water.

Options

Continuous Operation

Two AMUs operating in parallel allows for continuous cutting operations. Whilst unit A is in operation, unit B is refilled ready for uninterrupted switchover.

External Cutting

Cutting accessories to enable a multitude of external cutting processes for subsea and topside applications.

Manipulation

A range of manipulators to suit the specific applications required is available and bespoke manipulation solutions are a speciality.

Internal Cutting

A range of handling and lifting equipment for pipe, tubes and caissons.

Calder Ltd

Prescott Drive
Warndon
Worcester
WR4 9NE
United Kingdom

web : www.calderltd.com
email : sales@calder.co.uk
tel : +44 (0) 1905 759090
fax : +44 (0) 1905 759091

Calder Ltd reserve the right to alter specifications and data to incorporate improvements in design.

The UHP Water Jet Technology

Typically, the water/abrasive mixture is delivered to the cutting piece through a ≥0.6mm nozzle. The abrasive particles pass through the nozzle virtually in single file, thus creating a saw effect and providing a high quality, cold, precision cut. Increased flowrate/lower pressure solutions can also be accommodated.

Options

Continuous Operation

Two AMUs operating in parallel allows for continuous cutting operations. Whilst unit A is in operation, unit B is refilled ready for uninterrupted switchover.

External Cutting

Cutting accessories to enable a multitude of external cutting processes for subsea and topside applications.

Manipulation

A range of manipulators to suit the specific applications required is available and bespoke manipulation solutions are a speciality.

Internal Cutting

A cutting head for every offshore application above or below water.

Calder Ltd

Prescott Drive
Warndon
Worcester
WR4 9NE
United Kingdom

web : www.calderltd.com
email : sales@calder.co.uk
tel : +44 (0) 1905 759090
fax : +44 (0) 1905 759091

Calder Ltd reserve the right to alter specifications and data to incorporate improvements in design.