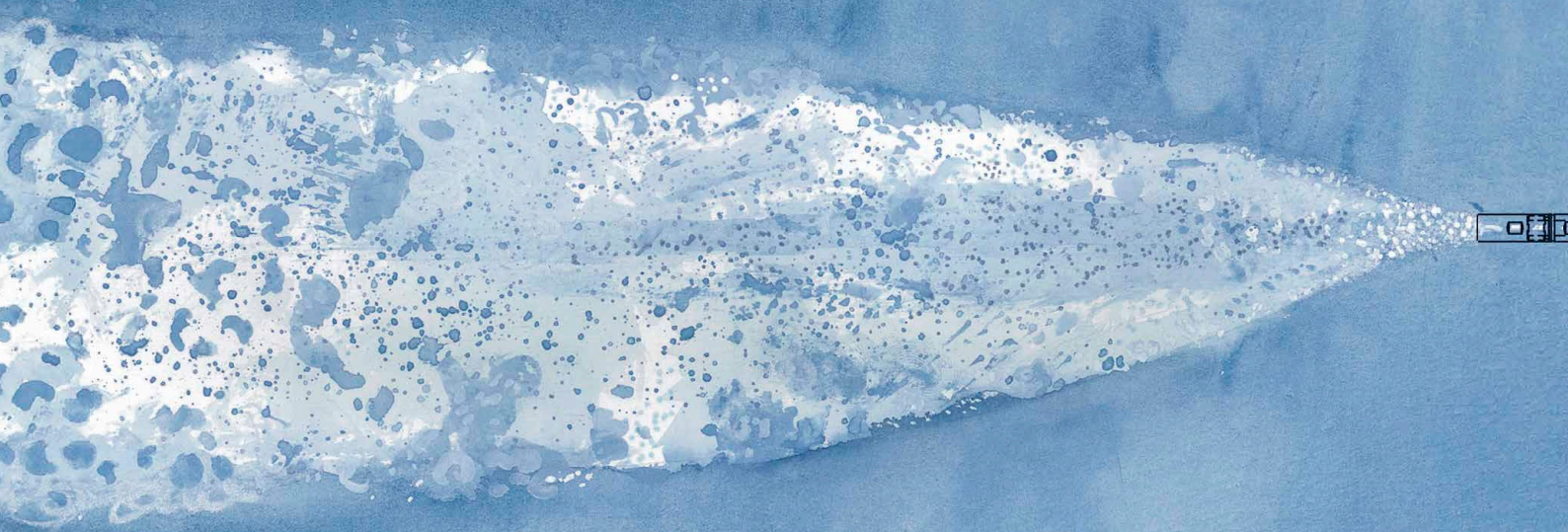




HyperSparge™ gas jet and microbubbles mean high gas utilisation and faster leach kinetics

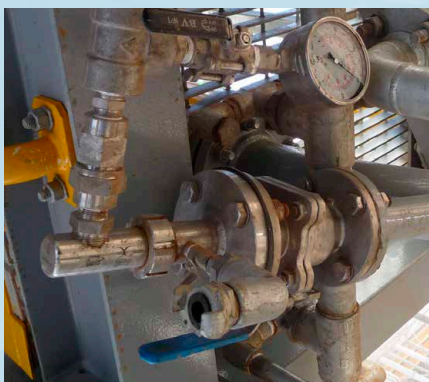


GLENCORE TECHNOLOGY

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Why choose HyperSparge™?

- **Intrinsically safe design** suitable for oxygen duty
- **Superior gas transfer rates** – the gas jet creates a high shear zone and a cloud of microbubbles peel off
- Oxygen transfer rate is **two to five times greater** than an open pipe sparger
- **Lower oxygen consumption** through higher oxygen utilisation
- Live removal, inspection, and insertion in just **15 minutes**
- Hard wearing ceramic **nozzles last up to 10 years**



HyperSparge™ in action

Oxidative leaching

Zinc Refinery, Nordenham, Germany

- 10 HyperSparges™ installed.
- 36,000 tpa zinc concentrate treated producing 16,000 tpa zinc metal at 99% recovery.
- Spargers mounted in Albion Leach Reactors in acidic conditions at elevated temperature.

Cobre Las Cruces, Spain

- 24 HyperSparges™ installed.
- Bornite leached into copper sulphate prior to conventional SX/EW copper recovery.

CIL leaching

Sukari Gold Mine, Egypt

- 34 HyperSparges™ retrofitted into CIL pre-ox tanks.
- Improved leaching performance.

Telfer Mine, Australia

- 12 HyperSparges™ retrofitted into CIL tanks.
- Improved leaching performance.

Pre-aeration duty

Telfer Mine, Australia and Phu Kham, Laos

- HyperSparges™ mounted inline through slurry pipes and flotation feed pump boxes.
- Air injection to treat pulp prior to copper cleaning.
- Delivers improved Eh and promotes faster recovery.

Column conversion

Raglan Nickel Mine, Canada

- 42 HyperSparges™ retrofitted into existing spargers in 2010.
- Flotation cleaning duty.
- Uses existing gas handling equipment.
- Low cost plant improvement.

Water treatment

Indura Sa, Chile

- Inline CO₂ injection on pipeline delivery system.

HyperSparge™ design

The HyperSparge™ is a complete gas injection system consisting of three sub-assemblies that are designed to enable safe live insertion and removal of the sparger – minimising process downtime.

The three sub-assemblies are:

- Gas connection assembly,
- Insertion assembly, and
- Wet end sparger assembly.

The HyperSparge is inserted into the process vessel through a nozzle at waist height. This leaves the main components located outside the vessel for ease of access and maintenance.

Typical operating pressures range from 300 to 500 kPa(g) and the maximum operational pressure is 1000 kPa(g).

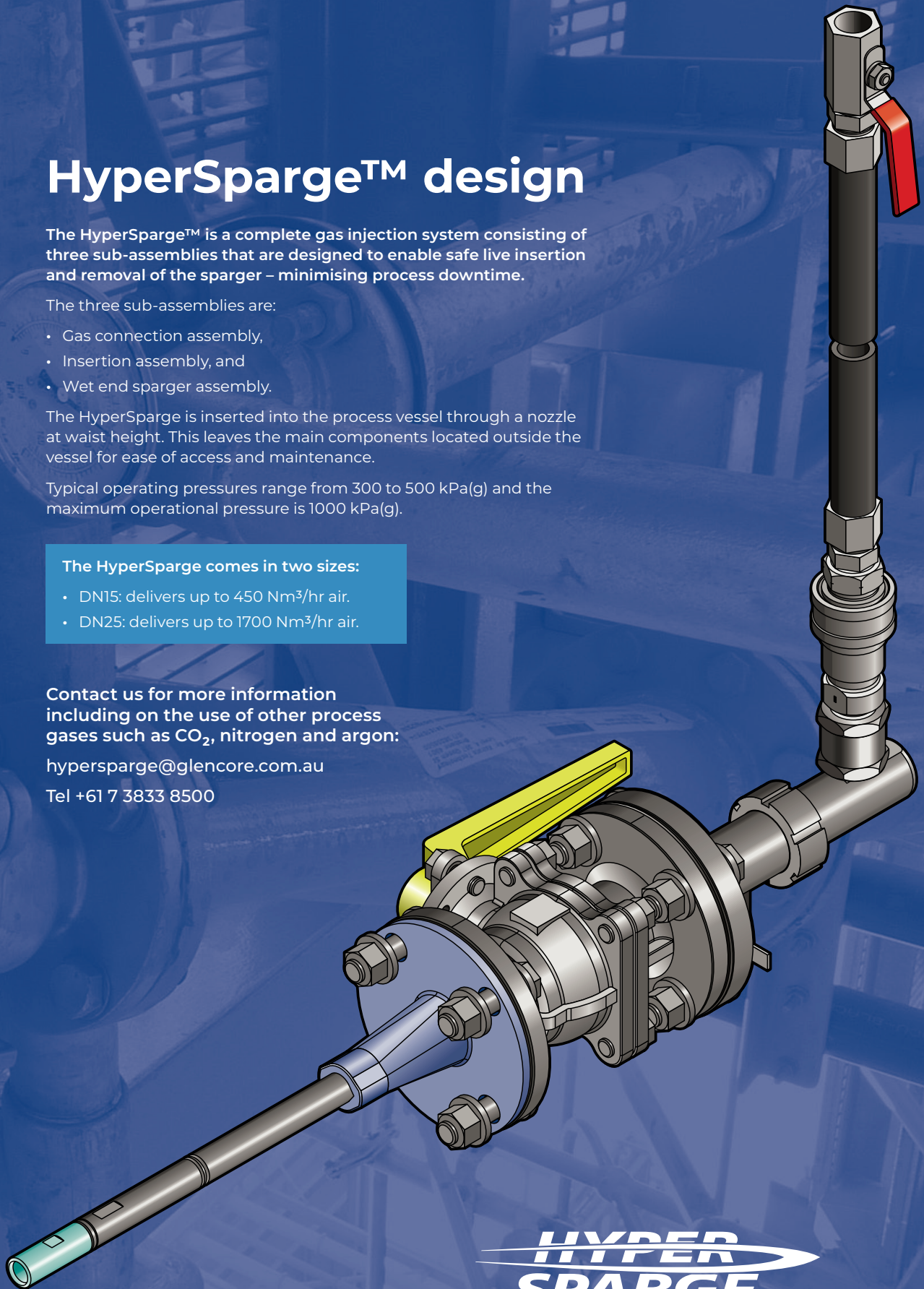
The HyperSparge comes in two sizes:

- DN15: delivers up to 450 Nm³/hr air.
- DN25: delivers up to 1700 Nm³/hr air.

Contact us for more information including on the use of other process gases such as CO₂, nitrogen and argon:

hypersparge@glencore.com.au

Tel +61 7 3833 8500



**HYPER
SPARGE**



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