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Pre-Stressing Units. Pump Equipment. Mining products.

[Hydro-Cell technical requirements and quality assurance requirements.](#)



Scope.

- This specification details the requirements for the Hydro-Cell side valve unit for the underground use in pre-stressing of mining support packs.

Requirements.

- **Material.**

Steel shall be MITTAL prime/ASTM CERTIFICATED cold rolled steel of 0.86 including the MITTAL (+-0.08) tolerance on thickness. Certification obtained and traceability established by Laser Metal Pressings Pty (Ltd). If a relief of over 25 Bar is required thickness of steel should be increased. Above specs in process since contract awarded.

- **Ambient operating temperature**

The plates and accessories shall operate at an ambient temperature of between -5°C and 45°C.

MANAGING DIRECTOR: JN VAN DER MERWE

- **Water pressure.**

Minimum Water pressure required will be 400KPA.

- **Operating lift.**

The maximum lift shall be 80 to 100 mm lift.

- **Overall dimensions and tolerances.**

Plate size specified by Goldfields as required. Tolerance of overall width and length dimensions shall be ± 5 mm.

- **Load carrying capacity.**

The carrying capacity shall commensurate with plate size. The inflated plate shall be able to sustain pressures of up to 3.5MPA.

- **Pressure relief valve**

Press. Relief valve to operate between 10 and 25 bar.

- **Construction.**

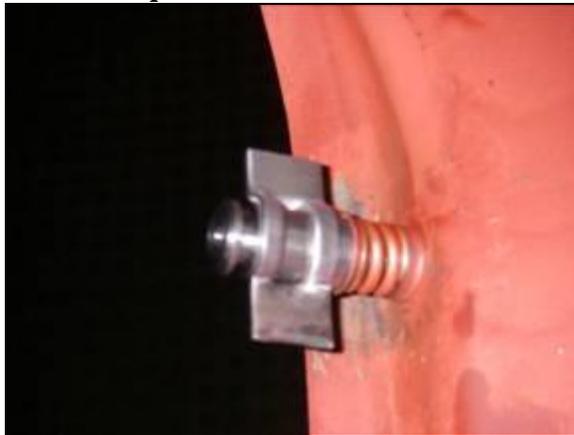
Welding: The two plates forming unit shall be resistance welded in accordance with **ISO/DIS 16433 INTERNATIONAL** Specification. The weld nugget will not be wider than 5.5mm. The weld nugget will be a minimum of 8mm up to 15mm from the edge of unit.

The weld shall be continuous only allowing for one crossing point at an angle to complete unit.

Handles: Suitable handle fitted to unit to enable safe transport and handling. Holes punched in corners of the unit for twine to be tied to monowinch.

Filler valve: The filler valve shall be a snap on quick release valve compatible with standard couplers supplied. The valve shall be fitted as close to edge as possible and formed to create a side valve for safer filling.

Valve fitted with device to prevent personnel from using one-Inch air hose to fill units with air. DME requirement.



Hydro-Cell MK2.



Hydro-Cell MK2

All standard specifications apply to this unit. Only difference is that plate has a filler valve and relief valve separate. Standard unit has a filler and relief valve in one. MK2 unit the filler valve is fitted with a Duckbill internal valve and not a non-return grommet as the standard units.

- Unit fills much faster.
- Allows full volume of Hydro Power.
- Seals at 0.3 of a bar.
- Valves much more protected.

The valve shall pressure relief within parameters of 10 to 25 bar. The valve shall be projection welded onto unit and not CO2 welded because of reliability and performance.



Finishing. Plates shall have no sharp edges and burrs and free of any weld splatter. Corners shall be cropped to a safe radius for handling.



Quality assurance, test and inspection methods.

In production testing will be done. Batch testing will be done to one unit out of every 100 units manufactured. Units to be inflated to a maximum pressure enabling pressure relief valve to relieve and then left to seal. Any leaks on resistance weld shall be cause for rejection. All records will be kept and held for inspection by Goldfields if required. All tests logged on database and graphs available at any stage.

Marking.

Every Hydro-Cell unit is marked with a traceability nr pressed into the unit for full traceability and batch controlle.



Packaging

Units packed onto wooden pallets and strapped with steel strapping for safe transport. Units are packed 100 units per pallet.



Painting.

Units painted with grey/red primer paint for rust prevention.

This is the specification for the manufacture and supply of Hydro-Cell units to Anglo Gold Ashanti Goldmine and Goldfields.