Pumps for Cold Wet Bag Isostatic Presses

Cold Isostatic pressing is a method of compacting powdered materials in all directions simultaneously. A flexible mold is filled with powder and sealed, it is placed in a pressure vessel filled with fluid which is normally soluble oil and water, the fluid is pressurized thus compacting the powder inside the mold into what is generally termed a "Green Compact". This process is complementary rather than competitive to conventional mechanical pressing but offers certain benefits such as:-

- Higher and more uniform density for *a* given, pressure.
- Lower shrinkage and less distortion on sintering.
- Die wall friction minimized eliminating need for lubricants.
- More complex shapes and greater length to diameter can be achieved economically.
- Tooling costs are lower.

Description

A cold wet bag isostatic press consists of a pressure vessel assembly and hydraulic power unit.

The size of pressure vessels range from 50 mm (2”) internal diameter x 305 mm (12”) deep up to 1,500 mm (60”) internal diameter x 3.660 mm (144”) deep. Working pressures range from 700 bar (10,000 psi_ for largest vessel up to 7,000 bar (100,000 psi) for small laboratory type units.

Applications

Isostatics is being applied by companies in the following industries as a step in their process of manufacturing high quality parts and/or in laboratories (industrial and educational) for research.

Ceramic and Clay Industries - High Tension Insulator Blanks, Electra Ceramic Parts, Guiding Rolls for extrusion of Copper Wires, Spools for Textile Threads, Tubes for Sodium, Vapor Lamps, Sewer Pipes, etc.

Powder Metallurgy Industry - Tungsten Bars *for* Electrical Applications, Hard Metal Tools and Dies, Forging Preforms, Filter Elements, Bearings, Rock Drilling Bits and Picks, Cutting Tools, Turbine Blades etc.

Refractory Industry - Crucibles, Teeming Nozzles, Furnace Liners, Refractory Bricks, etc.

Others - PTFE and Ferrite Products and Grinding Wheels.