

Hot Isostatic Processing



VENDOR

American Presses Inc.

MATERIALS

Common materials are super alloys, titanium and aluminum alloys, high strength steels (HSS) and stainless steels

Hot isostatic pressing (HIP) is a manufacturing process used to eliminate internal microporosity in metal castings and other materials. Enables the densification of metal, polymer, ceramic and composite powders in the solid state. Both of these methods result in superior material properties.

The HIP process subjects a component to both elevated temperature and isostatic (or equal) gas pressure in a high-pressure containment vessel. The chamber is heated, causing the pressure inside to increase. The pressure is then applied to the material from all directions.

APPLICATIONS

Primary applications are the **consolidation of powder metals and ceramic composites**. Hot isostatic pressing is also used as part of a **sintering (powder metallurgy) process and for fabrication of metal matrix composites**.

SPECIFICATIONS

- 30,000 psi of working pressure
- Interior: 10" diameter x 30" length
- Hot Zone: 6" diameter x 12" length
- Rapid Cooling
- Furnace 1400 C molybdenum two zone furnace with a 150mm diameter x 30mm long hot zone

Vessel Type ASME Section VIII

Div 2 code stamped pressure vessel, National Board registered. SA-723 steel.

Cooling

Treated closed loop cooling system with reservoir, pump and heat exchanger. Connects to customer coolant (city, re-circ, or chiller) at 15 gpm

Hydro

Tested and stamped.