Quintus®
Cold Isostatic Presses

Cold isostatic pressing (CIP) is a compaction process for powders enclosed in an elastomer mold. The mold is placed in a pressure chamber, a liquid medium is pumped in, and high pressure is applied uniformly from all sides.

CIP Applications

CIP is used with powdered metallurgy, cemented carbides, refractory materials, graphite, ceramics, plastics, and other materials.

Process Benefits

- High compaction and uniform density provides predictable shrinkage during the subsequent sintering process.
- Ability to process large, complicated, and near-net shapes saves time and cost in after-treatment.
- Capability to produce large aspect ratio parts (>2:1) with uniform densities.
- Green strength allows in-process handling and treatment, and lowers production costs.

Capacities: Avure Autoclave's Quintus® series CIPs are specifically designed for continuous, high-volume operations requiring large work zones and maximum cycle life. Vessel diameters range from 20 to 100 inches, with lengths approaching 12 feet. Operating pressures extend from 5,000 to 60,000 psi.

Operation: The work basket containing parts is loaded into the vessel, usually via overhead crane. After loading, the operator initiates the automatic cycle operation, which includes closing of the vessel, pressing to set pressure, holding, let down, and opening of the vessel. The operator removes the work basket and a new cycle begins.

Quintus Model QIC 44-78.7-36
Installed at a midwestern manufacturing plant.
Vessel dimensions: 44" dia. x 78.7" high.
Operating pressure: 36,000 psi.

Design: The Quintus press utilizes a prestessed wire-wound vessel and yoke frame, and is considered the safest and most reliable pressure containment system available today. Both upper and lower closures are threadless and are held in place by the yoke frame, thus avoiding any stress raisers in the body. An important design consideration is that the vessel meets the "leak-rather-than-break" criteria, with a calculated fatigue value of more than 300,000 cycles.

System components: Quintus pressure vessel, yoke and frame, pressurizing pump, pressure valve system, fluid reservoir with feed pump, and electronic control system with PLC.

Options:

- Fine decompression rates
- Automatic product handling with conveyor
- Dual filter with dirt alarm and filter pumps
- Tandem Quintus vessel

Standard Models

(Other pressures and sizes available on request)

20,000 psi Max Working Pressure	30,000 psi Max Working Pressure	60,000 psi Max Working Pressure	Vessel Size (inches) Inside Dia.	Height
QIC 20-_*_-20	QIC 20-_*_-30	QIC 20-_*_-60	20	* Insert standard inner height which is 2 or 3 times the vessel diameter.
QIC 26-_*_-20	QIC 26-_*_-30	QIC 26-_*_-60	26	
QIC 32-_*_-20	QIC 32-_*_-30	QIC 32-_*_-60	32	
QIC 38-_*_-20	QIC 38-_*_-30	QIC 38-_*_-60	38	
QIC 44-_*_-20	QIC 44-_*_-30		44	
QIC 50-_*_-20	QIC 50-_*_-30		50	
QIC 56-_*_-20	QIC 56-_*_-30		56	
QIC 62-_*_-20	QIC 62-_*_-30		62	

Contact factory for ASME code stamping, PED design, CE mark, or other national code requirements.

CIP Applications

Cold isostatic applications include cemented carbide rolls and wear parts, nozzles, blocks, and crucibles for the refractory industry, isotropic graphite, ceramic insulators, tubes for chemical applications, ferrites, metal filters, preforms, and plastic tubes and rods.

Cemented carbide products

Parts produced from isostatically pressed graphite

Long refractory nozzles and stoppers

Metal filters produced to net shape

High voltage ceramic insulators

Molybdenum billets weighing approx. 1000 kg

AVURE

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Quality System Certified

CE

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