



HPE Press System for HP / HT Experiments

Machine design

The HPE Press system is a piston-cylinder press designed specifically for high-pressure testing up to approx. 6 GPa and 2000° C. The press frame is stripwound, and the press is equipped with a pneumatic-hydraulic power pack solution. This unique machine design offers a strong, compact, safe, quiet, and easy to operate press equipment. The low energy consumption furthermore ensures an environmentally friendly system. To ensure correct test conditions of the high-pressure cell, the control panel allows for easy reading, adjustment, and data log of the applied pressure and temperature of the test cell.

The overall equipment dimensions for a HPE 320T press are W1450 x D700 x H1710 mm and include the electrical cabinet and hydraulic power pack. The total press weight including the high-pressure tooling is approx. 1200 kg. The 320T press force can be split between the end-load and the cell process pressure, with a maximum of 90T for cell process pressure.

The cooling and cell heating systems are integrated into the HPE press. That way, there is no need to provide temperature control features inside the vessel. That means that the more frequently exchanged part of the machine (i.e. the tooling) can be kept as simple and cost-effective as possible. The vessel is placed on a sliding table which both offers an easy and safe setup of the high-pressure experiment outside of the press, and a safe and easy alignment of the vessel inside the press.

Use in Industry

The press can be offered up to 1000T in total press force, which can be split and adjusted between the needed cell pressure and the end-load. This is also a unique product feature of the STRECON HPE Press.

Examples of HPE systems:

Process pressure of 5.8 GPa can principally be achieved with $\varnothing 14$ mm bore size, and Process pressure of 3.2 GPa can principally be achieved with $\varnothing 19$ mm bore size.

The press is built to order and based on a mutually approved equipment specification. Normally the equipment project includes both the press and the high-pressure tooling.



The HPE Press machine



The vessel positioned in the press



HP vessel with quick-connecting external cooling rings