

Sinterteknik AB
Huskvarnavägen 168
SE-561 32 HUSKVARNA
Tel +46 36 440 10 00
Fax +46 36 440 10 09
www.sinterteknik.se



Fig. 1 front side

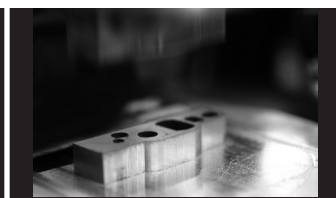


Fig. 2 back side

Hydraulic powder press - Hercules™

Hercules™ means a new construction technique and is available in a wide range of sizes from 150 tons up to 450 tons as the introduction size range.

A characteristic feature is the compact size, which contributes the largest benefit in the higher size range. This is illustrated in the example above (Fig. 1 and 2) where a 150 ton compacting press is shown. The total weight of this 150 tons hydraulic press is only 3 ton. Add to this, effective operating costs with an energy demand of just 15 kW. The weight for a 450 tons is 5 ton and the energy demand is 50 kW. The low weight and size allow installation in most plants without special investment, as reinforced flooring and sublevel placement are not required. Electricity, cooling water and compressed air are the three requirements for direct installation.

The construction technique for the hydraulic press Hercules™ is where the innovation is focused. The user criteria, remains as we are accustomed to in the powder metallurgy world. Multilevel tools are constructed with the same techniques and used in the same manner as production with any other press.

Thus the data is as follows (150 tons):

- Standard "A" cylinder is 150mm, with a further 80mm for fast transport of the upper punch (a patented feature).
- Standard "B" cylinder is 150mm.
- Four separate lower levels and 2 upper levels.
- The centre cylinder used for ejection upper punch.
- While the centre cylinder is for the core rod.
- The standard die size is 260mm.

High capacity manufacturing for today's competitive market is ensured with upwards of 10 to 12 parts per minute depending on component complexity and levels. The patented 80mm length fast transport of the upper punch with a speed of 100mm per second defines the movement. The "A" cylinder, "B" cylinder and bridge levels have a speed of 50mm per second.

Low noise levels from the hydraulic system are ensured by the Bosch Rexroths "Whispering power unit" built in pumps.

Sophisticated full computer control with programming, up to 32 axis, closed loop with a PC Mac 8. Bosch BTV 40 industrial PC, and 15" screen is available. However customer focus is central and when a less complex solution

is required a PLC is available. Customer specific requirements are satisfied in accordance with their end users demands.

Reliability is central to cost effective manufacturing. The Hercules™ hydraulic press series is assembled from standard components. This ensures that maintenance can obtain spare parts around the globe with short delivery times. As a small but responsible supplier we support our products when requested but large manufacturers with internal maintenance may choose internal solutions. The sensors, cylinders, electrical contacts etc. can all be supplied locally as they are major brand manufacturers. The hydraulic system from Bosch Rexroth is reliable and further secured by a global service support. Service of the Hercules™ hydraulic press series is simple and supported by the service handbook. The experience gained as a sintered components supplier leads to a high appreciation for values such as reliable and simple construction solutions. Expensive unique components or unique electronic boards can cause extended production stops and expensive service while undermining customer relations.

Simple adjustments are also a key feature. A traditional 450 tons hydraulic compacting press can be difficult to adjust with a large adapter for fitting and removing tools. The Hercules™ hydraulic press series is designed for simplicity and fast adjustment of tooling. There is no frame preventing access so one can reach all parts from any direction. This ensures shorter tool changing times, reduced down times for the production line and better economy.

Economy in production has many contributing factors one of which is the investment cost. The Hercules™ 450 tons press series is available at about 75% lower cost than a comparable press with traditional technology. A lean organisation allows cost effective manufacture, the advantages of which can be shared with our customers.

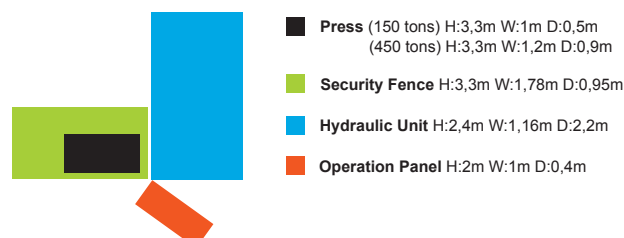


Fig. 3 Hercules™ seen from above