

STRECON Container for High-Pressure Synthesis & Sintering

Container design

The STRECON container for high-pressure synthesis and sintering of industrial diamonds/CBN belongs to the belt-type system technology, where the upper and lower anvils ensure the high-pressure load to the high-pressure cell in the carbide die. A typical pressure level starts from 55 kbar and goes up to 100 kbar in special high-pressure applications.

The STRECON container is made by the stripwinding technique. A special 0.1 mm thick steel strip material is wound around an inner steel core of the STRECON container, and several thousands of strip layers are needed to reach the calculated outer diameter of the high-strength container system.

The STRECON container system is up to 100% stronger than conventional multi-ring systems. The superior strength originates from the stripwinding process and the special materials used for the STRECON container.

The higher strength of the container itself allows for optimal compressive support of the carbide die used for the different high-pressure applications. A typical level of interference fit is 1.1 – 1.3%, which is not feasible with the multi-ring system. It would plastically expand, whereas the STRECON container remains fully elastic and therefore ensures a reliable, consistent, and safe tool performance for many years.

Use in Industry

The design of the STRECON container is customized with respect to the particular press equipment, high-pressure processes, die design, and other design and frame conditions. The STRECON container system can be designed up to 100 kbar in pressure. However, most container systems are designed to 65-80 kbar in pressure range and used for high-pressure synthesis and sintering of industrial diamonds and CBN products.

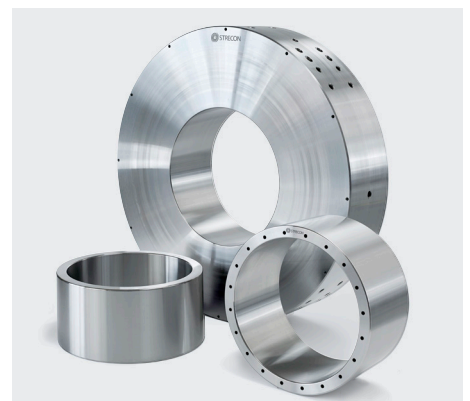
STRECON can offer a full prestressing tool package including the stripwound containers for the carbide die and anvils. The package also includes intermediate sleeves, wear rings, and systems for cooling, tool alignment, centering, and anti-tilt, as well as tool assembly and disassembly. STRECON can build stripwound containers up to $\varnothing 2200 \times H300$ mm. The typical container size ranges from $\varnothing 1200 - 1500$ mm.



The stripwinding process



STRECON high-pressure system for R&D work



STRECON container with wear ring and cooling sleeve