



Double Ring

Container design

A double ring is a prestressing tool made of two hardened steel rings that are assembled by press fitting. A double ring is about 40% stronger than a 1-ring system but is approx. half as strong as a stripwound container. The stiffness is comparable with the SC 200 container as the ring is made of tool steel. Specific calculations are required in each case.

The purpose of a double ring is the same as a stripwound container and can in general be applied for both cold, warm, and hot working applications. A double ring is cheaper than a stripwound container but it is at the expense of reduced strength capability, and consequently a shorter service life of both the forming die and the double ring itself. The minimum diameter of a double ring can be approx. $\varnothing 50$ mm.

Use in Industry

The double ring is widely used in today's metal forming industry and applicable for both cold, warm, and hot forming operations. In many cases, the double ring would be sufficiently strong and cost-effective to withstand the tool load generated from the combined prestressing of the forming die and the process load. However, despite its merit of reasonable strength and robustness, its yield point is significantly lower than offered with a stripwound container (see product description of SC 200 / SC 400 container) and consequently limits its effectiveness and service life for high-loaded forming applications.

STRECON is a specialist in designing and manufacturing prestressing tools including double ring systems. The rings are made of tool steels, and the inner - and outer rings are hardened to 54 HRC and 46 HRC, respectively. The optimal interface between the outer and inner ring is determined by analytical calculations and assembled by press fitting. The inner surface of the double ring is conical by for example 1° and ground for ensuring a smooth assembly of the forming die and extension of the service life.

