CS2 Series

Controllable Gas Springs

APPROVED PED 2014/68/EU
2 million

ANAB ACCREDITED

Certified to ISO 9001:2008

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Introduction

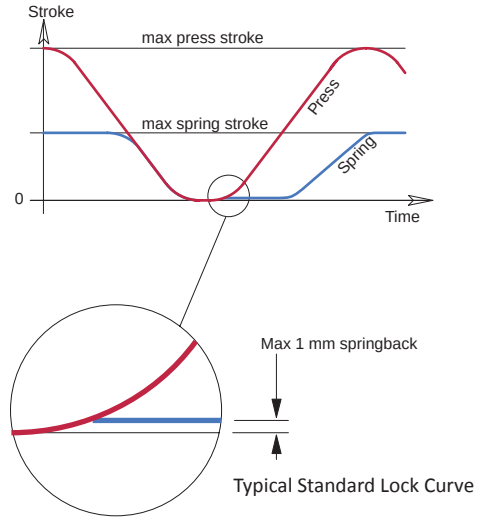
The CS2 Series of gas springs is used in metal forming dies, and features a piston rod that can be locked at bottom dead center (BDC) as well as a return stroke that is controlled pneumatically by a valve in the base of the gas spring. The CS2 springs are useful, for example, when the blank holder should be locked in its bottom position to avoid deformation of the part or when it is beneficial for transporting the part.

CS2 models 1500, 3000, 5000 and 7500 are available with contact forces from 15 to 75 kN and stroke lengths from 4 to 160mm. Springs are used in two different configurations: standard lock-CS2 and positive lock-CS2 + PS. In the standard lock configuration, the gas spring, locked in its bottom position, can have a maximum springback of 1mm. The springback can be completely eliminated with the positive lock configuration which connects the CS2 through a valve block to a PS passive spring.

A complete technical manual is available on request.

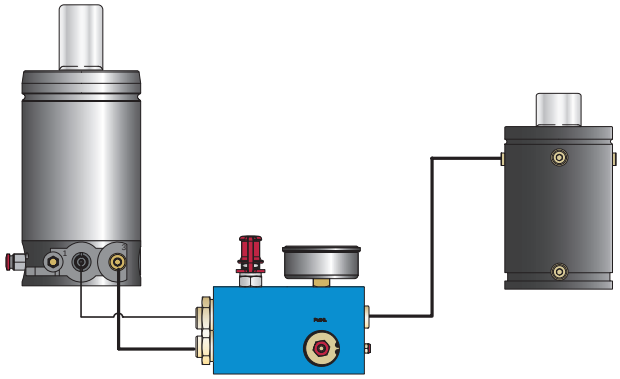
Standard Lock-CS2

CS2

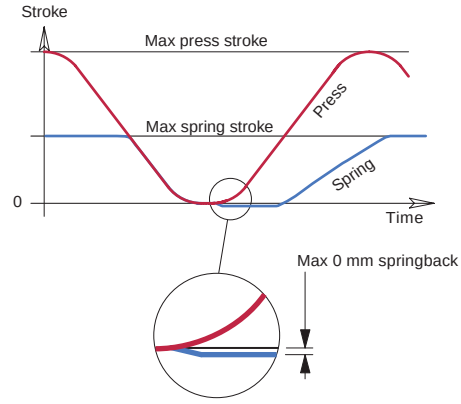


Typical Standard Lock Curve

Positive Lock-CS2 + PS



CS2 Spring [1] | Valve Block [2] | PS Spring [3]



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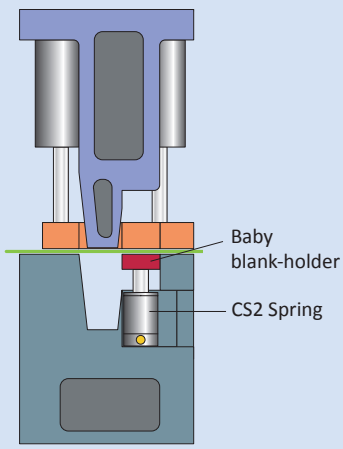
Application Examples

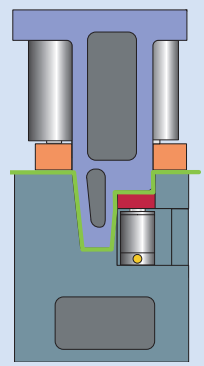
Standard Lock Configuration

Work Cycle

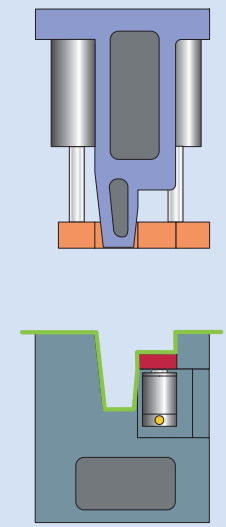
As the upper tool moves downward, the blank holder (1) is activated and controls the flow of the blank in the tool.



At bottom dead center (BDC), the CS2 spring locks. A small springback, for this application, does not damage the formed part.



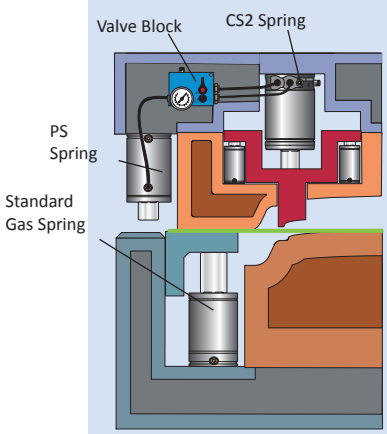
As the press opens, the baby blank holder stays locked until that time when the CS2 spring should be unlocked and eject the part.



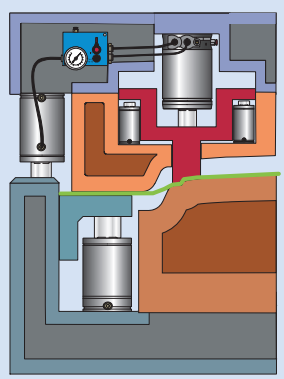
Positive Lock Configuration

Work Cycle

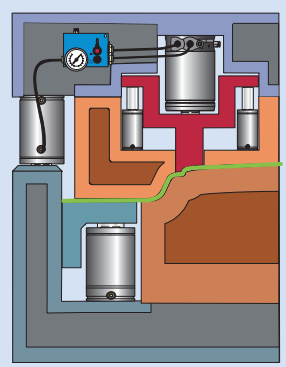
The upper tool contains the CS2 controllable gas springs that provide the active blank holding force for the locally-situated baby blank holders.



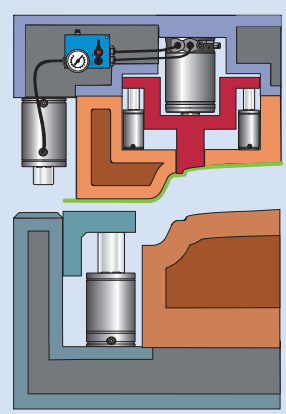
The baby blank holders are the first to hold the blank at the problem areas as the tool begins to close.



At press bottom dead center (BDC), the valve in the valve block opens and the PS spring is used to ensure zero springback in the CS2 springs.



As the tool opens, the CS2 springs stay locked until a signal from the press is given. At that time, the CS2 springs help eject the finished part from the tool.



Positive Lock System, CS2 + PS

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