

<u>Subject:</u> Controllable Spring Configurator Tool	<u>Date:</u> 2/12/2021	<u>Issue:</u> 21-01 CS Configurator
	<u>Issued By:</u> Russell Weaver	<u>Page(s):</u> 1 of 3

HYSON Metal Forming Solutions announces the launch of the Controllable Springs Configurator tool! Available for download from the HysonSolutions.com website, this latest interactive tool assists in the selection of CS2 springs and shows the performance and operating conditions for the application, making it easier to choose the ***RIGHT springs for your specific application.***

To utilize the configurator, you will need to know the type of application (low, or high volume) in addition to the cylinder's force, stroke and quantity. For a basic understanding of the CS2 cylinders, review the CS2 Catalog which can be downloaded from the HysonSolutions.com website.

Step 1: Select Spring Type (based on application volume, along with size, stroke length and quantity):

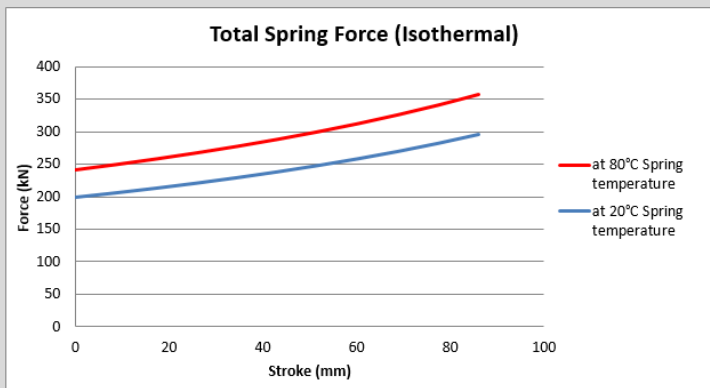
A: Adjustable – these springs can have their stroke adjusted from +7/-8mm from nominal. This makes them ideal for applications with lower volumes so the cylinders can be used in a future tool at a similar stroke or in try-out when the needed stroke is not fully determined.

B: Non-Adjustable – these springs are ideal for high volume application

From there you will input your charge pressure to achieve the required tonnage for your application; limits for the chosen cylinder is displayed above the input.

Min. Charge Pressure 25 bar
 Max. Charge Pressure 150 bar
 Min. Stroke Length 82 mm
 Max. Stroke Length 97 mm

Charge Pressure bar



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Step 2: Heat Calculation

Next, enter the application's stroke per minute and the surrounding temperature (Catalog data assumes 20° C). This will calculate the Heat Factor defining the amount of cooling the application will require. Each cooling option will be marked with an "OK" or "Not OK" status; directing you towards an appropriate option. A graph is displayed showing the cooling utilization to show how efficient the cooling is being used. Choosing the cooling option will callout the quantity required to properly cool the system.

Select Cooling Alternative:

2 Nitro Coolers needed

Note:
 For some applications, the need for cooling can be eliminated by considering one of the following:
 Add more CS2 springs
 Use larger CS2 springs

Important! When using the Nitro Cooler, the return stroke speed of the piston rod decreases by approximately 40%

Cooling Utilisation %

Cooling Option	Utilization %
No cooling	276%
Liquid cooling	61%
Nitro Cooler	45%

Heat Calculation

Strokes per minute: spm
 Surrounding Temperature (Catalog values based on 20°C): °C

Heat Factor: 770 mm/min
 Total Power: 3.74 kW

	Max Heat Factor mm/min	Max Power kW	Utilization	Status	Cooler Capacity for 20°C
No cooling	279	1.35	276%	Not OK	10 kW Liquid Cooler: 10.7 kW
Liquid cooling	1263	6.13	61%	OK	25kW Liquid Cooler: 26.8 kW
Nitro Cooler	1722	8.36	45%	OK	Nitro Cooler: 1.61 kW

External Cooling Need: 2.38 kW
 Min External Cooling per spring: 0.60 kW

Product Announcement

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CS Spring Motion		
Cycle Time		6 s
Return Time		0.56 s
Return Speed		0.14 m/s
Selection Summary		
Gas Spring	Order No.	Quantity
CS2-A 5000	CS2-A 5000-80-075-CJ	4
Cooler	Order No.	Quantity
Liquid Cooler Unit	CS-CU-10KW	1

The Controllable Spring Configurator tool can be accessed at <https://www.hysonsolutions.com/en-us/resource-center/cs-Configurator/> It includes images and descriptions for each section to explain options throughout the tool.