

强力氮气弹簧是我们产品中靠柱塞杆密封的最矮、弹压力最大的氮气弹簧。它可以在很小的模具内提供非常大的弹压力。些系列氮气弹簧的弹压力从1700 N到 200000 N，工作行程从7至125mm。

此系列气弹簧在缸侧面有一个充气口，也可以使用这个充气口，用于微型管路连接系统。

缸体上部有一个C形槽，缸体下部有一个U形槽，它们同缸体底部二个M6螺孔一起，提供了各种安装可能性。

The Power Line Series includes our shortest and most powerful Piston Rod Sealed gas springs, offering impressive force in a very compact format.

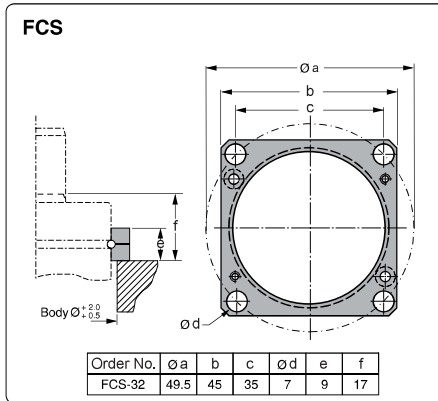
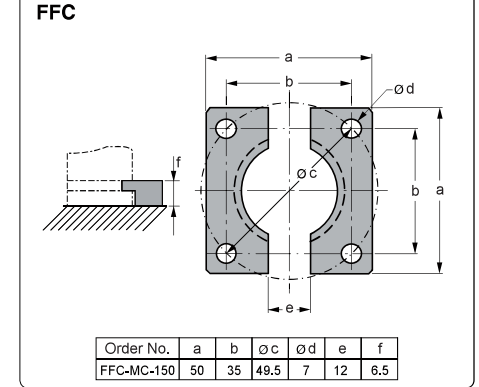
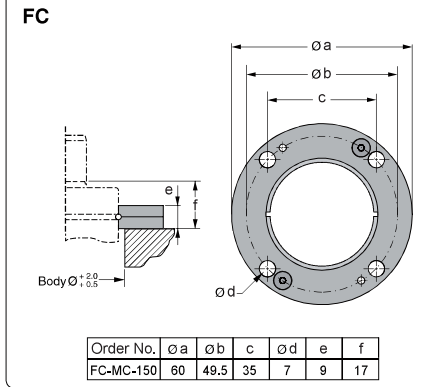
The Power Line springs are available with forces from 1,700 N up to 200,000 N and stroke lengths between 7 and 125 mm.

There is a side port for gas charging that can also be used to connect to a gas link system.

An upper C-groove, lower U-groove together with two M6 threaded holes allow various mounting possibilities using our standard mounts.

Order No.	行程 Stroke S	弹压力N在180bar/+20°C		L±0.25	Lmin
		初始力 Initial	终始力* End force*		
GX350-010	10	3600	5900	50	40
GX350-013	13		5200	56	43
GX350-016	16		5300	62	46
GX350-019	19		5600	68	49
GX350-025	25		5500	80	55
GX350-032	32		5500	94	62
GX350-038	38		5500	106	68
GX350-050	50		5600	130	80
GX350-063	63		5500	156	93
GX350-075	75		5500	180	105
GX350-080	80		5500	190	110
GX350-100	100		5500	230	130
GX350-125	125	5500	280	155	

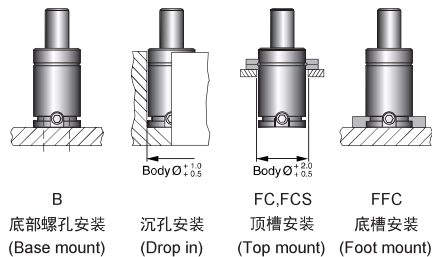
\*=在全行程 at full stroke



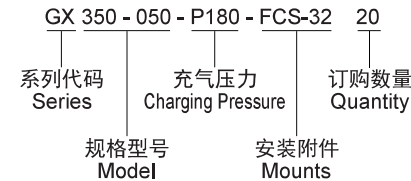
基本参数 Basic information

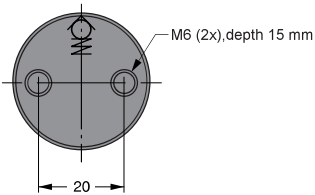
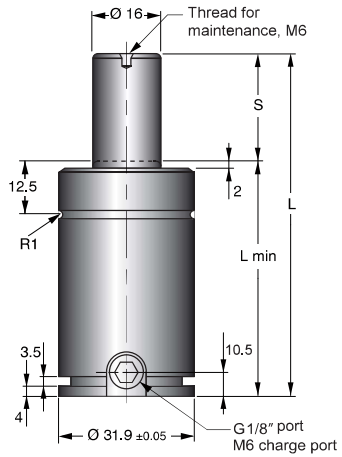
- 充气介质 ----- 氮气 Nitrogen  
Pressure medium
- 最大充气压力 ----- 180 bar(at 20°C)  
Max.charging pressure
- 最小充气压力 ----- 25 bar(at 20°C)  
Min.charging pressure
- 工作环境温度 ----- 0~80°C  
Operating temperature
- 单位温度弹压力增量 ----- ±0.3%/°C  
Force increase by temperature
- 推荐每分钟工作频率 ----- 20-80spm(20°C)  
Recommended working frequency
- 最大工作速度 ----- 96 m/min  
Max.piston rod velocity

几种安装可能性 Mounting Possibilities



订购方法 Ordering method





强力氮气弹簧是我们产品中靠柱塞杆密封的最矮、弹压力最大的氮气弹簧。它可以在很小的模具内提供非常大的弹压力。些系列氮气弹簧的弹压力从3600 N到 66000 N，工作行程从10至125mm。

此系列气弹簧在缸侧面有一个充气口，也可以使用这个充气口，用于管路连接系统。

缸体上部有一个C形槽，缸体下部有一个U形槽，它们同缸体底部二个M6螺孔一起，提供了各种安装可能性。

The Power Line Series includes our shortest and most powerful Piston Rod Sealed gas springs, offering impressive force in a very compact format.

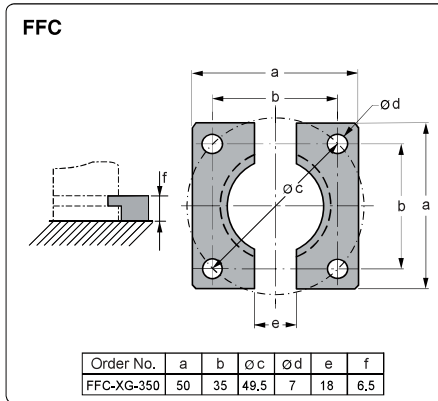
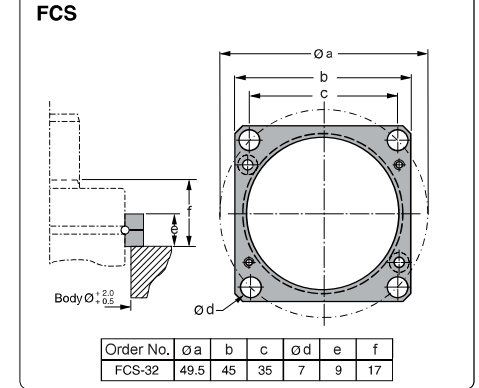
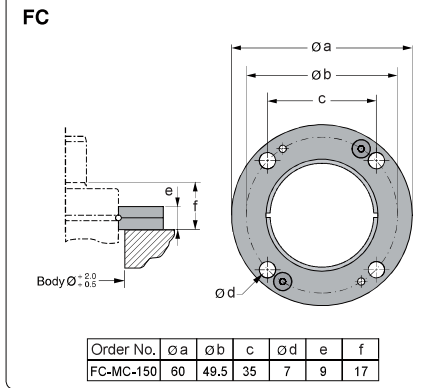
The Power Line springs are available with forces from 3,600 N up to 66,000 N and stroke lengths between 10 and 125 mm.

There is a side and a bottom port for gas charging that can also be used to connect to a hose system.

An upper C-groove, lower U-groove together with two M6 threaded holes allow various mounting possibilities using our standard mounts.

Order No.	行程 Stroke S	弹压力N在180bar/+20°C		L±0.25	Lmin
		初始力 Initial	终始力* End force*		
GXG350-010	10	3600	5900	60	50
GXG350-013	13		5200	66	53
GXG350-016	16		5300	72	56
GXG350-019	19		5600	78	59
GXG350-025	25		5500	90	65
GXG350-032	32		5500	104	72
GXG350-038	38		5500	116	78
GXG350-050	50		5600	140	90
GXG350-063	63		5500	166	103
GXG350-075	75		5500	190	115
GXG350-080	80		5500	200	120
GXG350-100	100		5500	240	140
GXG350-125	125		5500	290	165

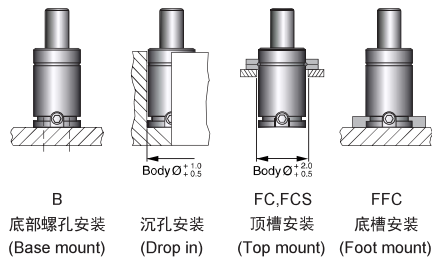
\*=在全行程 at full stroke



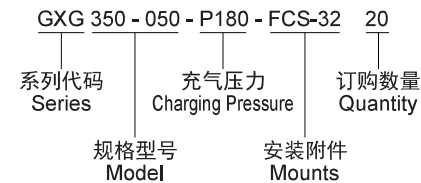
基本参数 Basic information

- 充气介质 ----- 氮气 Nitrogen  
Pressure medium
- 最大充气压力 ----- 180 bar(at 20°C)  
Max.charging pressure
- 最小充气压力 ----- 25 bar(at 20°C)  
Min.charging pressure
- 工作环境温度 ----- 0~80°C  
Operating temperature
- 单位温度弹压力增量 ----- ±0.3%/°C  
Force increase by temperature
- 推荐每分钟工作频率 ----- 20-80spm(20°C)  
Recommended working frequency
- 最大工作速度 ----- 96 m/min  
Max.piston rod velocity

几种安装可能性 Mounting Possibilities



订购方法 Ordering method



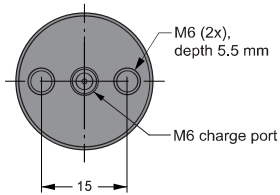
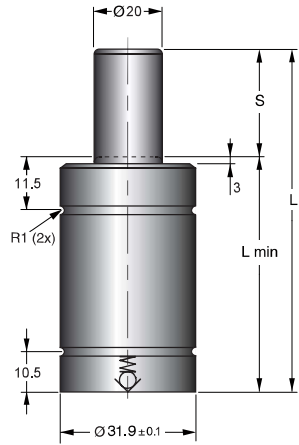


GCU是一种结构非常紧凑的活塞式氮气弹簧，在有效的空间中，能够提供非常大的弹压力，这种氮气弹簧最大频次数可达到100次/分。

此氮气弹簧行程超过25mm时，应当采用法兰安装或氮气弹簧底孔螺纹安装。我们推荐对于短行程的应用，最好也要紧固产品，以便获得最佳的使用寿命。

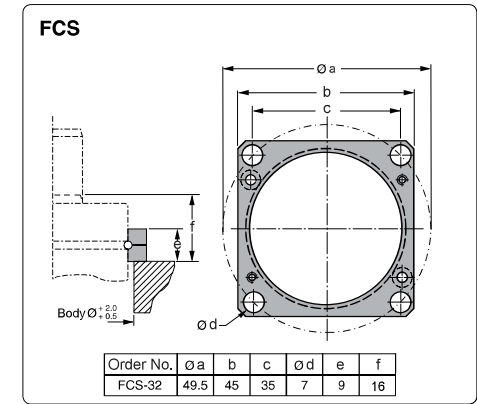
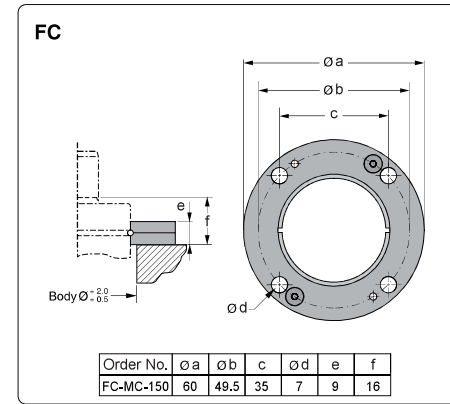
The GCU gas springs are a very compact Bore Sealed gas springs, offering impressive force in a compact body. The maximum frequency for the spring is 100 strokes/minute.

Springs with stroke lengths over 25 mm should always be attached to the tool, using a flange or the tapped holes in the bottom of the spring. We also recommend fixing of shorter stroke springs for optimal service life.



Order No.	行程 Stroke S	弹压力N在150bar/+20°C		L±0.25	Lmin
		初始力 Initial	终始力* End force*		
GCU740-006	6	7400	10000	63	57
GCU740-010	10		10000	75	65
GCU740-016	16		11000	93	77
GCU740-025	25		12000	120	95
GCU740-032	32		12000	140	108
GCU740-040	40		12000	165	125
GCU740-050	50		12000	195	145

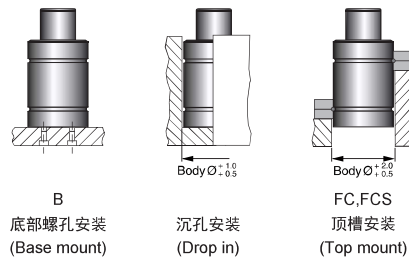
\*=在全行程 at full stroke



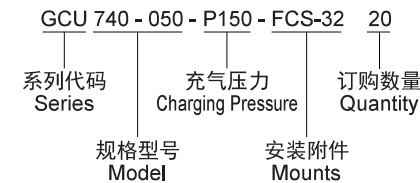
**基本参数 Basic information**

- 充气介质 ----- 氮气 Nitrogen  
Pressure medium
- 最大充气压力 ----- 150 bar(at 20°C)  
Max.charging pressure
- 最小充气压力 ----- 25 bar(at 20°C)  
Min.charging pressure
- 工作环境温度 ----- 0~80°C  
Operating temperature
- 单位温度弹压力增量 ----- ±0.3%/°C  
Force increase by temperature
- 推荐每分钟工作频率 ----- 20-80spm(20°C)  
Recommended working frequency
- 最大工作速度 ----- 96 m/min  
Max.piston rod velocity

**几种安装可能性 Mounting Possibilities**



**订购方法 Ordering method**





GMC170弹簧基于GM170弹簧, 使用相同的活塞杆和内部组件。GMC170系列是一种微型的ISO国际标准的模具专用氮气弹簧, 弹簧主体和底座的设计符合ISO 11901和VDI 3003中的ISO尺寸, 很多情况下可以直接代替金属弹簧。

充气压强: 可以根据用户要求按20-180Bar充气, 如无特殊要求则按150Bar, 此时初始弹力等于公称弹力: 1700N。

此系列气弹簧在缸侧面有一个充气口, 也可以使用这个充气口, 用于微型管路连接系统。

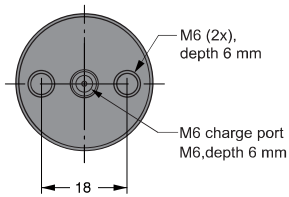
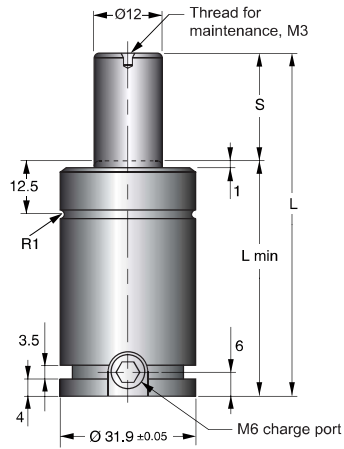
缸体上部有一个C形槽, 缸体下部有一个U形槽, 它们同缸体底部二个M6螺孔一起, 提供了各种安装可能性。

The GMC170 spring is based on the GM170 spring, using the same pistonrod and internal components. GMC170 series springs are ISO international standard and widelyused gas spring. The body of the spring and the mount are designed to meet the ISO-dimension found in ISO 11901 as well as in VDI 3003. Normally, it is self-contained and could take place of regular metal springs.

The force could be determined by customer's need from 20 to 180Bar. if there is no special requirement, please charge 150Bar that equals to initial force 1700N.

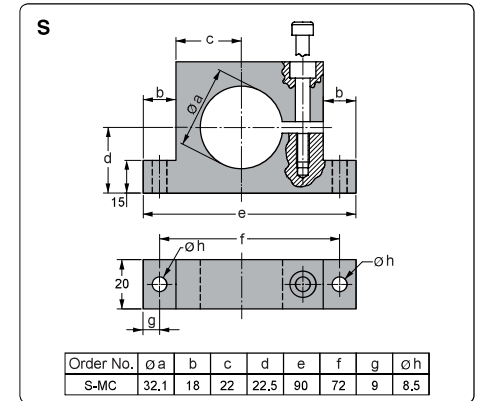
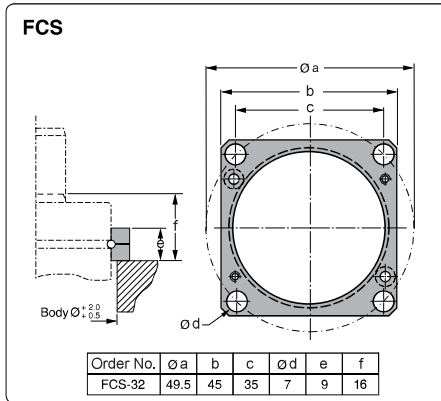
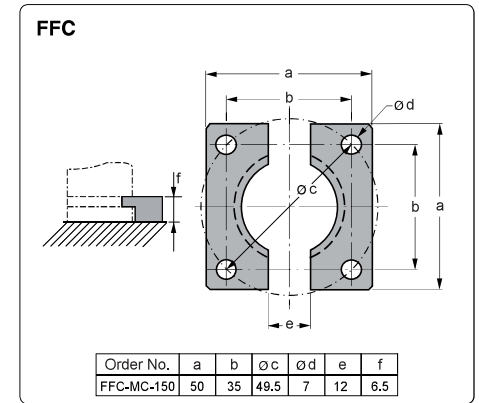
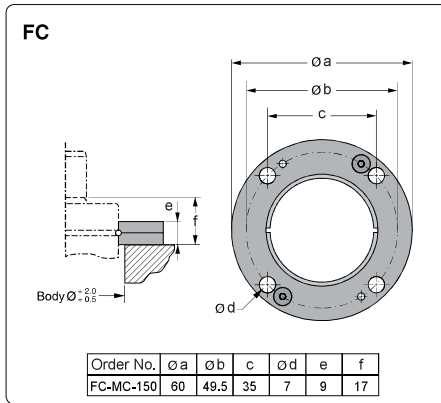
There is a side port for gas charging that can also be used to connect to a gas link system.

An upper C-groove, lower U-groove together with two M6 threaded holes allow various mounting possibilities using our standard mounts.



Order No.	行程 Stroke S	弹力N在+20°C		L±0.25	Lmin
		初始力 Initial	终始力* End force*		
GMC170-010	10	1700	3060	70	60
GMC170-013	12.7		3070	75.4	62.7
GMC170-016	16		3070	82	66
GMC170-025	25		3080	100	75
GMC170-038	38.1		3090	126.2	88.1
GMC170-050	50		3090	150	100
GMC170-064	63.5		3020	177	113.5
GMC170-080	80		3040	210	130
GMC170-100	100		3050	250	150
GMC170-125	125		3060	300	175

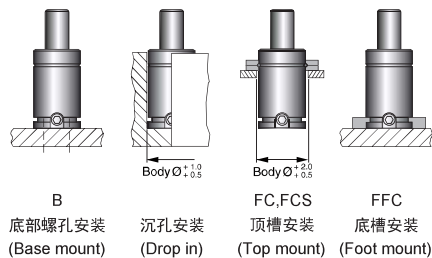
\*=在全行程 at full stroke



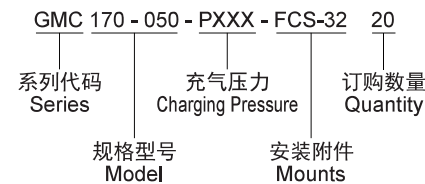
基本参数 Basic information

- 充气介质 ----- 氮气 Nitrogen  
Pressure medium
- 最大充气压力 ----- 180 bar (at 20°C)  
Max. charging pressure
- 最小充气压力 ----- 25 bar (at 20°C)  
Min. charging pressure
- 工作环境温度 ----- 0~80°C  
Operating temperature
- 单位温度弹力增量 ----- ±0.3%/°C  
Force increase by temperature
- 推荐每分钟工作频率 ----- 20-80spm (20°C)  
Recommended working frequency
- 最大工作速度 ----- 96 m/min  
Max. piston rod velocity

几种安装可能性 Mounting Possibilities



订购方法 Ordering method



# Nano technology series

Nitrogen gas springs for dies / Cilindri all'azoto per stampi

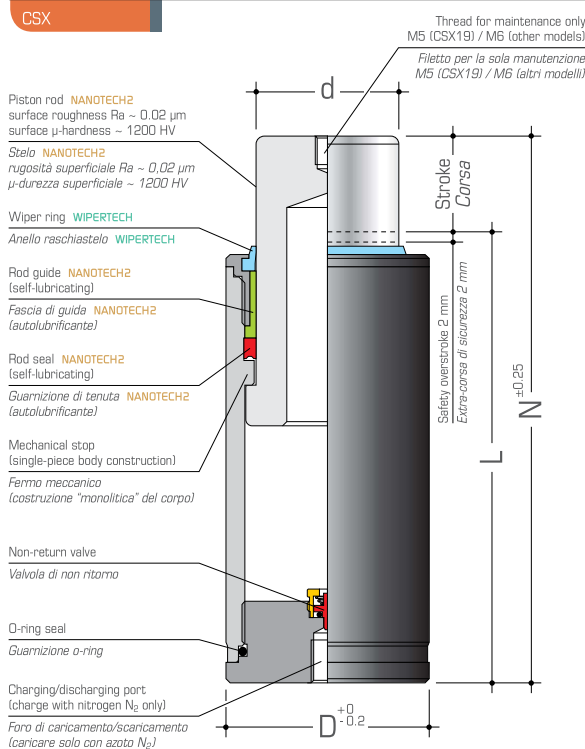


## CSX

**THE COMPACT POWER:** as a rule, the CSX models generate the highest available force, up to +50% in comparison with the other nano-technology series and up to 4 times the force of ISO 11901-1 standard models (diameter being the same).  
**WHAT'S NEW:** upgraded with the new WIPERTECH and NANOTECH2 nano-technologies. New 2XCSX32 models with diameter 32 mm and increased force are available in addition to the CSX32 models. New stroke lengths available for all diameters.  
**FOR THE DIE MAKER:** gas springs with reduced diameters allow to manufacture more compact press dies, cutting all your costs in a drastic way.  
**FOR THE DIE USER:** gas springs with a long service life and high working cycles per minute allow to drastically cut the production costs, die maintenance costs and production stops.  
**SELF-LUBRICATED** for millions of working cycles thanks to the nano-technologies (patent pending).  
**PROTECTED AGAINST CONTAMINANTS** with WIPERTECH protective wiper ring.  
**RECOMMENDED** as the first choice for all projects and applications, thanks to the most advanced technology and the highest available forces.  
**THE NEW MODELS WILL BE SUPPLIED ONLY WHEN THE OLD ONES ARE OUT OF STOCK.**

**I COMPATTOPOTENTI:** a parità di diametro sviluppano generalmente la forza in assoluto più alta, fino al 50% in più rispetto ai modelli delle altre serie con nano-tecnologie e fino a 4 volte quella dei modelli standard ISO 11901-1.  
**NOVITÀ:** aggiornata con le nuove nano-tecnologie WIPERTECH e NANOTECH2. Disponibili i nuovi modelli 2XCSX32, con diametro 32 mm e forza maggiorata, in aggiunta ai già presenti modelli CSX32. Nuove corse disponibili per tutti i diametri.  
**PER LO STAMPISTA:** cilindri con diametro minore permettano la realizzazione di stampi più compatti, riducendo notevolmente tutti i vostri costi.  
**PER L'UTILIZZATORE:** cilindri con lunga durata ed elevati cicli di lavoro al minuto permettono la drastica riduzione dei costi di produzione, dei costi di manutenzione sugli stampi e dei fermi macchina.  
**AUTOLUBRIFICATI** per milioni di cicli grazie alle nano-tecnologie (in corso di brevetto).  
**PROTETTI DA CONTAMINANTI** con anello raschiastelo di protezione WIPERTECH.  
**CONSIGLIATI** come prima scelta per tutti i progetti e applicazioni, grazie alla tecnologia più avanzata e alle forze in assoluto più alte.

**I NUOVI MODELLI SARANNO FORNITI SOLO AD ESAURIMENTO SCORTE DEI VECCHI.**

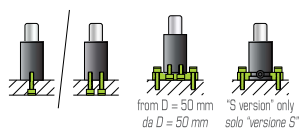


### Fixing possibilities

(see also our "Accessories for nitrogen gas springs for dies" catalogue)

### Fissaggi possibili

(vedi anche il nostro catalogo "Accessori per cilindri all'azoto per stampi")



### TECHNICAL NOTES

#### Important use instructions and maximum number of cycles per minute on pages 10-17.

For accessories and other mountings, see the "Accessories for nitrogen gas springs for dies" catalogue. Different stroke lengths on request.

The CS models are replaceable with the CSX models.

#### "S" VERSION

With fixing groove and G1/8 side port, linkable to open system, from D = 50 mm,

- » **L and N dimensions: + 20 mm**
- » Add an **-S** to order them
- Example: no. 8 pcs. CSX50-50-**S**

### NOTE TECNICHE

#### Importanti istruzioni d'uso e numero massimo di cicli/minuto alle pagine 10-17.

Per accessori e altri montaggi, consultare il catalogo "Accessori per cilindri all'azoto per stampi". Corse di lavoro diverse a richiesta.

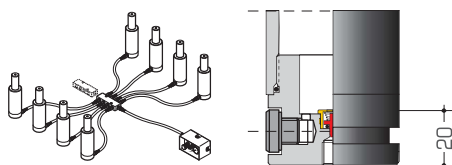
I modelli CS sono sostituibili con i modelli CSX.






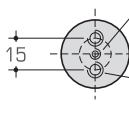
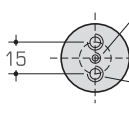
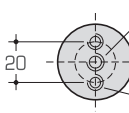
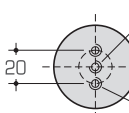
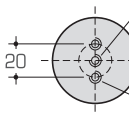
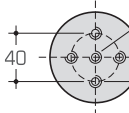
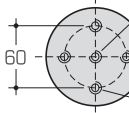
#### VERSIONE "S"

Da D = 50 mm, scanalatura di fissaggio e foro laterale G1/8, per collegamento a sistema.

- » **Quote L e N: + 20 mm**
- » Per ordinarli, aggiungere una **-S**
- Esempio: n° 8 CSX50-50-**S**

### "S" version



MODEL MODELLO	MAX STROKE mm CORSIA MAX mm	L mm	N mm	D mm	d mm	 bar	 daN	 daN	GAS SPRING BASE BASE DEL CILINDRO	
CSX19-10	10	65	75	19	10	191	150	200	 <p>M6 x 8 for charging/discharging for fixing per il caricamento/scaricamento per il fissaggio</p>	
15	15	70	85					210		
20	20	75	95					220		
25	25	80	105					230		
32	32	88	120					230		
38	38	97	135					230		
45	45	105	150					240		
50	50	110	160					240		
56	56	119	175					240		
63	63	127	190					240		
80	80	140	220	250						
CSX25-10	10	65	75	25	14	195	300	430	 <p>M6 x 10 for charging/discharging for fixing per il caricamento/scaricamento per il fissaggio</p>	
15	15	70	85					450		
20	20	75	95					480		
25	25	80	105					500		
32	32	88	120					520		
38	38	97	135					530		
45	45	105	150					540		
50	50	110	160					550		
56	56	119	175					550		
63	63	127	190					550		
80	80	145	225	580						
CSX32-10	10	65	75	32	18	197	500	680	 <p>M4 for charging/discharging per il caricamento/scaricamento M6 x 9 (2x) for fixing per il fissaggio</p>	
15	15	70	85					770		
20	20	75	95					800		
25	25	80	105					840		
32	32	88	120					870		
38	38	97	135					870		
45	45	105	150					890		
50	50	110	160					900		
56	56	119	175					910		
63	63	132	195					910		
80	80	150	230	920						
<b>New model!</b>	2XCSX32-10	10	65	75	32	20	210	660	950	 <p>M4 for charging/discharging per il caricamento/scaricamento M6 x 9 (2x) for fixing per il fissaggio</p>
	15	15	70	85					1000	
	20	20	75	95					1050	
	25	25	80	105					1100	
	32	32	88	120					1150	
	38	38	97	135					1150	
	45	45	105	150					1160	
	50	50	110	160					1170	
56	56	119	175	1180						
63	63	132	195	1190						
80	80	150	230	1200						
CSX38-10	10	65	75	38	25	205	1000	1530	 <p>M8 for charging/discharging per il caricamento/scaricamento M6 x 10 (2x) for fixing per il fissaggio</p>	
15	15	70	85					1730		
20	20	75	95					1880		
25	25	80	105					2000		
32	32	88	120					2080		
38	38	97	135					2090		
45	45	105	150					2100		
50	50	110	160					2110		
56	56	119	175					2130		
63	63	142	205					2140		
80	80	160	240	2150						
CSX50-10	10	80	90	50	35	209	2000	3000	 <p>M8 for charging/discharging per il caricamento/scaricamento M8 x 12 (2x) for fixing per il fissaggio</p>	
15	15	100	115					3050		
20	20	105	125					3100		
25	25	110	135					3200		
32	32	118	150					3500		
38	38	127	165					3600		
45	45	135	180					3700		
50	50	140	190					3800		
56	56	149	205					3900		
63	63	157	220					4100		
80	80	175	255	4400						
CSX63-10	10	85	95	63	45	189	3000	3900	 <p>M8 for charging/discharging per il caricamento/scaricamento M8 x 12 (2x) for fixing per il fissaggio</p>	
15	15	100	115					4000		
20	20	105	125					4200		
25	25	110	135					4400		
32	32	118	150					4600		
38	38	127	165					4700		
45	45	135	180					4900		
50	50	140	190					5000		
63	63	157	220					5200		
80	80	175	255					5500		
CSX75-10	10	90	100	75	58	190	5000	6400	 <p>M8 for charging/discharging per il caricamento/scaricamento M8 x 12 (4x) for fixing per il fissaggio</p>	
15	15	110	125					6500		
25	25	120	145					7000		
38	38	137	175					7700		
50	50	150	200					8100		
63	63	177	240					8200		
80	80	195	275	8500						
CSX95-10	10	100	110	95	75	182	8000	10900	 <p>M8 for charging/discharging per il caricamento/scaricamento M8 x 14 (4x) for fixing per il fissaggio</p>	
15	15	120	135					11100		
25	25	130	155					11800		
38	38	147	185					12600		
50	50	165	215					12900		
63	63	192	255					13200		
80	80	210	290					13600		
100	100	240	340					13900		

# Nano technology series

Nitrogen gas springs for dies / *Cilindri all'azoto per stampi*



PATENTS PENDING

## SMLX

THE SHORTEST AND MOST POWERFUL SINCE 2001: extremely compact with minimum height clearance and with forces up to 3 times the ones of ISO 11901-1 standard models (diameter being the same).

WHAT'S NEW: upgraded with the new WIPERTECH and NANOTECH2 nano-technologies. New SMLX120 models available, with diameter 120 mm and an initial force of 9000 daN. New stroke lengths available for all diameters. FOR THE DIE MAKER: gas springs with reduced diameters and reduced lengths allow to manufacture more compact press dies, cutting all your costs in a drastic way.

FOR THE DIE USER: gas springs with a long service life and high working cycles per minute allow to drastically cut the production costs, die maintenance costs and production stops. SELF-LUBRICATED for millions of working cycles thanks to the nano-technologies (patent pending). PROTECTED AGAINST CONTAMINANTS with WIPERTECH protective wiper ring. RECOMMENDED for all projects and applications, thanks to the most advanced technology, reduced dimensions and high forces.

THE NEW MODELS WILL BE SUPPLIED ONLY WHEN THE OLD ONES ARE OUT OF STOCK.

IL PIÙ BASSO E PIÙ POTENTE DAL 2001: estremamente compatti con minimo ingombro in altezza, con forza fino a 3 volte quella dei corrispondenti modelli standard ISO 11901-1.

NOVITÀ: aggiornata con le nuove nano-tecnologie WIPERTECH e NANOTECH2. Disponibili i nuovi modelli SMLX120, con diametro 120 mm e forza iniziale di 9000 daN. Nuove corse disponibili per tutti i diametri.

PER LO STAMPISTA: cilindri con diametro ed altezza minori permettono la realizzazione di stampi più compatti, riducendo notevolmente tutti i vostri costi. PER L'UTILIZZATORE: cilindri con lunga durata ed elevati cicli di lavoro al minuto permettono la drastica riduzione dei costi di produzione, dei costi di manutenzione sugli stampi e dei fermi macchina.

AUTOLUBRIFICATI per milioni di cicli grazie alle nano-tecnologie (in corso di brevetto).

PROTETTI DA CONTAMINANTI con anello raschiastelo di protezione WIPERTECH.

CONSIGLIATI per tutti i progetti e applicazioni, grazie alla tecnologia più avanzata, alle dimensioni ridotte e alle forze elevate.

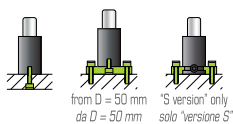
I NUOVI MODELLI SARANNO FORNITI SOLO AD ESAURIMENTO SCORTE DEI VECCHI.

### Fixing possibilities

(see also our "Accessories for nitrogen gas springs for dies" catalogue)

### Fissaggi possibili

(vedi anche il nostro catalogo "Accessori per cilindri all'azoto per stampi")



### "S" VERSION

With fixing groove and G1/8 side port, linkable to open system, from D = 50 mm.

» **L and N dimensions: + 20 mm**

» Add an **-S** to order them

Example: no. 8 pcs. SMLX50-50-S

### VERSIONE "S"

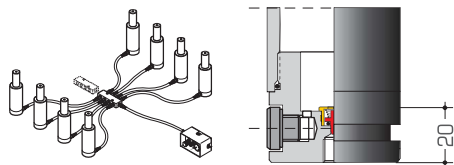
Da D = 50 mm, scanalatura di fissaggio e foro laterale G1/8, per collegamento a sistema.

» **Quote L e N: + 20 mm**

» Per ordinari, aggiungere una **-S**

Esempio: n° 8 SMLX50-50-S

### "S" VERSION



### SMLX

Piston rod NANOTECH2  
surface roughness Ra ~ 0.02 µm  
surface µ-hardness ~ 1200 HV

Stelo NANOTECH2  
rugosità superficiale Ra ~ 0.02 µm  
µ-durezza superficiale ~ 1200 HV

Wiper ring WIPERTECH

Anello raschiastelo WIPERTECH

Rod guide NANOTECH2  
(self-lubricating)

Fascia di guida NANOTECH2  
(autolubrificante)

Rod seal NANOTECH2  
(self-lubricating)

Guarnizione di tenuta NANOTECH2  
(autolubrificante)

Mechanical stop  
(single-piece body construction)

Fermo meccanico  
(costruzione "monolitica" del corpo)

Non-return valve

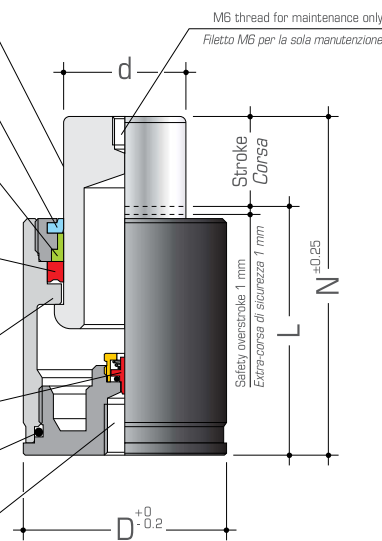
Valvola di non ritorno

O-ring seal

Guarnizione o-ring

Charging/discharging port  
(charge with nitrogen N<sub>2</sub> only)

Foro di caricamento/scaricamento  
(caricare solo con azoto N<sub>2</sub>)



### TECHNICAL NOTES

#### Important use instructions and maximum number of cycles per minute on pages 10-17.

For accessories and other mountings, see the "Accessories for nitrogen gas springs for dies" catalogue. Different stroke lengths on request.

The SML models are replaceable with the SMLX models.











### NOTE TECNICHE

#### Importanti istruzioni d'uso e numero massimo di cicli/minuto alle pagine 10-17.

Per accessori e altri montaggi, consultare il catalogo "Accessori per cilindri all'azoto per stampi". Corse di lavoro diverse a richiesta.

I modelli SML sono sostituibili con i modelli SMLX.

MODEL MODELLO	MAX STROKE mm CORSA MAX mm	L mm	N mm	D mm	d mm	bar	daN	daN	GAS SPRING BASE BASE DEL CILINDRO
SMLX25-05	5	35	40	25	14	195	300	450	M6 x 8 for charging/discharging for fixing per il caricamento/scaricamento per il fissaggio
10	10	40	50						
13	13	43	56						
15	15	45	60						
20	20	50	70						
25	25	55	80						
32	32	62	94						
38	38	68	106						
50	50	80	130						
63	63	93	156						
75	75	105	180						
80	80	110	190						
100	100	130	230						
125	125	155	280						

MODEL MODELLO	MAX STROKE mm CORSA MAX mm	L mm	N mm	D mm	d mm	 bar	 daN	 daN	GAS SPRING BASE BASE DEL CILINDRO	
SMLX32-05	5	35	40	32	18	196	500	750	 <p>M6 x 8 for charging/discharging for fixing per il caricamento/scaricamento per il fissaggio</p>	
10	10	40	50							790
13	13	43	56							830
15	15	45	60							850
20	20	50	70							870
25	25	55	80							880
32	32	62	94							880
38	38	68	106							890
45	45	75	120							900
50	50	80	130							900
56	56	86	142							910
63	63	93	156							930
75	75	105	180							930
80	80	110	190	930						
100	100	130	230	940						
125	125	155	280	940						
SMLX38-05	5	35	40	38	22	197	750	1050	 <p>M8 x 12 for charging/discharging for fixing per il caricamento/scaricamento per il fissaggio</p>	
10	10	40	50							1200
13	13	43	56							1250
15	15	45	60							1270
20	20	50	70							1280
25	25	55	80							1350
32	32	62	94							1370
38	38	68	106							1370
45	45	75	120							1400
50	50	80	130							1410
56	56	86	142							1420
63	63	93	156							1430
75	75	105	180							1440
80	80	110	190	1440						
100	100	130	230	1440						
125	125	155	280	1450						
SMLX50-05	5	40	45	50	30	212	1500	2600	 <p>M10 x 12 for charging/discharging for fixing per il caricamento/scaricamento per il fissaggio</p>	
10	10	45	55							2800
13	13	48	61							2900
15	15	50	65							3000
20	20	55	75							3040
25	25	60	85							3050
32	32	67	99							3060
38	38	73	111							3070
45	45	80	125							3080
50	50	85	135							3090
56	56	91	147							3100
63	63	98	161							3110
75	75	110	185							3120
80	80	120	200	3130						
100	100	135	235	3150						
125	125	160	285	3200						
SMLX63-05	5	40	45	63	40	159	2000	3000	 <p>M10 x 15 for charging/discharging for fixing per il caricamento/scaricamento per il fissaggio</p>	
10	10	45	55							3600
15	15	50	65							3800
20	20	55	75							3850
25	25	60	85							3880
32	32	67	99							3890
38	38	73	111							3900
50	50	85	135							3910
63	63	98	161							3930
75	75	110	185							3950
80	80	120	200							3980
100	100	135	235							4000
125	125	160	285							4020
SMLX75-05	5	45	50	75	45	189	3000	4400	 <p>M12 x 14 for charging/discharging for fixing per il caricamento/scaricamento per il fissaggio</p>	
10	10	50	60							5000
15	15	55	70							5400
20	20	60	80							5450
25	25	65	90							5500
32	32	72	104							5550
38	38	77	115							5600
50	50	90	140							5650
63	63	103	166							5700
75	75	115	190							5750
80	80	125	205							5800
100	100	145	245							5900
125	125	170	295							6000
SMLX95-05	5	55	60	95	58	189	5000	7200	 <p>M12 x 19 for charging/discharging for fixing per il caricamento/scaricamento per il fissaggio</p>	
10	10	60	70							8000
15	15	65	80							8500
20	20	70	90							8700
25	25	75	100							8900
32	32	82	114							9000
38	38	88	126							9050
50	50	100	150							9100
63	63	113	176							9200
75	75	125	200							9250
80	80	130	210							9300
100	100	150	250							9350
125	125	175	300							9400
SMLX120-15	15	75	90	120	75	204	9000	14000	 <p>M16 x 24 for charging/discharging for fixing per il caricamento/scaricamento per il fissaggio</p>	
20	20	80	100							14500
25	25	85	110							15000
32	32	92	124							15500
38	38	98	136							15700
50	50	110	160							16000
63	63	123	186							16300
75	75	135	210							16500
80	80	140	220							16600
100	100	160	260							16800
125	125	185	310	16900						

New models!

• No threaded hole on the piston rod / *Sullo stelo non è presente il foro filettato*

# Nano technology series

Nitrogen gas springs for dies / *Cilindri all'azoto per stampi*

WIPERTECH

NANOTECH2



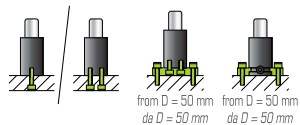
PATENTS PENDING

## Fixing possibilities

(see also our "Accessories for nitrogen gas springs for dies" catalogue)

## Fissaggi possibili

(vedi anche il nostro catalogo "Accessori per cilindri all'azoto per stampi")



## HOW TO ORDER

No. 8 pcs. CX38-50 750daN

No. 8 nitrogen gas springs series CX, D = 38 mm, stroke length = 50 mm, initial force = 750 daN.

**ATTENTION: specify the required initial force.**

## ESEMPIO D'ORDINE

No. 8 CX38-50 750daN

N° 8 cilindri all'azoto serie CX, D = 38 mm, corsa = 50 mm, forza iniziale = 750 daN.

**ATTENZIONE: specificare la forza iniziale desiderata.**

# CX

CX series replaces the previous C series. Available with the same diameters and forces as the SMLX series, the CX gas springs have a less compact length but longer stroke lengths are available (starting from diameter 50 mm).

WHAT'S NEW: upgraded with the new WIPERTECH and NANOTECH2 nano-technologies.

SELF-LUBRICATED for millions of working cycles thanks to the nano-technologies (patent pending).

PROTECTED AGAINST CONTAMINANTS with WIPERTECH protective wiper ring.

RECOMMENDED when the required stroke lengths are not available for CSX and SMLX series.

THE NEW MODELS WILL BE SUPPLIED ONLY WHEN THE OLD ONES ARE OUT OF STOCK.

Sostituisce la precedente serie C. Disponibile negli stessi diametri e stesse forze della serie SMLX, presenta un ingombro in altezza più elevato ma è disponibile con corse di lavoro più lunghe (a partire dal diametro 50 mm).

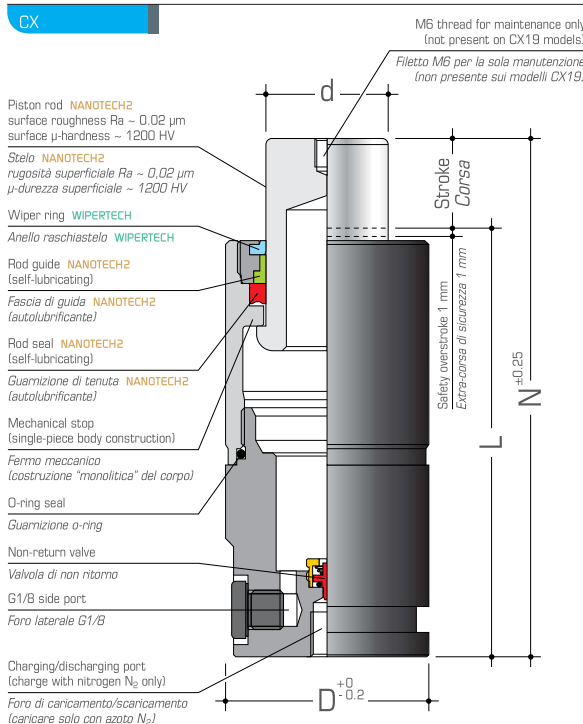
NOVITÀ: aggiornata con le nuove nano-tecnologie WIPERTECH e NANOTECH2.

AUTOLUBRIFICATI per milioni di cicli grazie alle nano-tecnologie (in corso di brevetto).

PROTETTI DA CONTAMINANTI con anello raschiastelo di protezione WIPERTECH.

CONSIGLIATI per applicazioni con corse di lavoro che non sono disponibili per le serie CSX e SMLX.

I NUOVI MODELLI SARANNO FORNITI SOLO AD ESAURIMENTO SCORTE DEI VECCHI.



## TECHNICAL NOTES

**Important use instructions and maximum number of cycles per minute on pages 10-17.**

For accessories and other mountings, see the "Accessories for nitrogen gas springs for dies" catalogue.

The C models are replaceable with the CX models.

**ATTENTION:**

**Rod diameter d = 40 mm for the CX63 models.**

**Rod diameter d = 36 mm for the C63 models.**

## NOTE TECNICHE

**Importanti istruzioni d'uso e numero massimo di cicli/minuto alle pagine 10-17.**

Per accessori e altri montaggi, consultare il catalogo "Accessori per cilindri all'azoto per stampi".

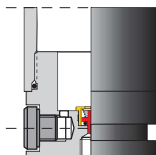
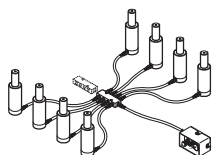
I modelli C sono sostituibili con i modelli CX.

**ATTENZIONE:**

**Diametro dello stelo d = 40 mm per i modelli CX63.**

**Diametro dello stelo d = 36 mm per i modelli C63.**

## Linkable / Collegabili








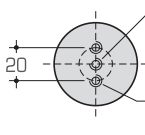

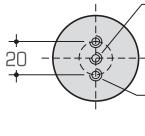
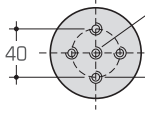
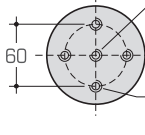
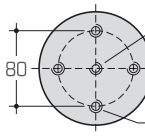


Ready with fixing groove and G1/8 side port, linkable to open system, from D = 50 mm.

**ATTENTION: make sure to fully discharge the gas spring before connecting it to open system (see the instructions supplied together with the charging and discharging set COMPL).**

Pronti, da D = 50 mm, con scanalatura di fissaggio e foro laterale G1/8, per collegamento a sistema.

**ATTENZIONE: assicurarsi di scaricare completamente il cilindro prima di collegarlo a sistema (vedi le istruzioni fornite assieme al set di carico e scarico COMPL).**

MODEL MODELLO	MAX STROKE mm CORSIA MAX mm	L mm	N mm	D mm	d mm	 bar	 daN	 daN	GAS SPRING BASE BASE DEL CILINDRO
CX19-10	10	70	80	19	10	191	150	190	 M8 x 14 for charging/discharging for fixing per il caricamento/scaricamento per il fissaggio
15	15	75	90					200	
25	25	85	110					220	
38	38	98	136					220	
50	50	110	160					240	
80	80	140	220					250	
CX25-10	10	70	80	25	14	195	300	380	 M8 x 11 for charging/discharging for fixing per il caricamento/scaricamento per il fissaggio
15	15	75	90					400	
25	25	85	110					440	
38	38	98	136					490	
50	50	110	160					500	
80	80	140	220					540	
CX32-10	10	60	70	32	18	196	500	700	 M8 x 8 for charging/discharging for fixing per il caricamento/scaricamento per il fissaggio
15	15	65	80					720	
25	25	75	100					770	
38	38	88	126					790	
50	50	100	150					800	
80	80	130	210					800	
CX38-10	10	65	75	38	22	197	750	980	 M8 x 9 for charging/discharging for fixing per il caricamento/scaricamento per il fissaggio
15	15	70	85					1060	
25	25	80	105					1100	
38	38	93	131					1150	
50	50	105	155					1200	
80	80	140	220					1250	
CX50-10	10	95	105	50	30	212	1500	1900	 M8 for charging/discharging per il caricamento/scaricamento M8 x 12 (2x) for fixing per il fissaggio
25	25	110	135					2150	
38	38	123	161					2250	
50	50	135	185					2320	
63	63	148	211					2430	
80	80	165	245					2430	
100	100	195	295					2500	
125	125	220	345					2520	
160	160	255	415					2550	
200	200	295	495					2600	
CX63-10	10	95	105	63	40 	159	2000	2900	 M8 for charging/discharging per il caricamento/scaricamento M8 x 12 (2x) for fixing per il fissaggio
25	25	110	135					3300	
38	38	123	161					3400	
50	50	135	185					3500	
63	63	148	211					3550	
80	80	165	245					3600	
100	100	185	285					3650	
125	125	220	345					3700	
160	160	255	415					3750	
200	200	295	495					3800	
CX75-10	10	105	115	75	45	189	3000	4200	 M8 for charging/discharging per il caricamento/scaricamento M8 x 12 (4x) for fixing per il fissaggio
25	25	120	145					4700	
38	38	133	171					5000	
50	50	145	195					5100	
63	63	158	221					5200	
80	80	175	255					5300	
100	100	200	300					5400	
125	125	225	350					5500	
160	160	265	425					5600	
200	200	310	510					5800	
CX95-25	25	130	155	95	58	189	5000	7800	 M8 for charging/discharging per il caricamento/scaricamento M8 x 12 (4x) for fixing per il fissaggio
38	38	143	181					8100	
50	50	155	205					8300	
63	63	168	231					8500	
80	80	190	270					8600	
100	100	210	310					8700	
125	125	245	370					8900	
160	160	280	440					9000	
200	200	330	530	9100					
CX120-25	25	140	165	120	75	204	9000	12600	 M8 for charging/discharging per il caricamento/scaricamento M10 x 15 (4x) for fixing per il fissaggio
38	38	153	191					13400	
50	50	165	215					13900	
63	63	178	241					14400	
80	80	195	275					14800	
100	100	215	315					15200	
125	125	250	375					15300	
160	160	290	450					16500	
200	200	340	540					16800	

• Without G1/8 side hole and groove / Senza foro laterale G1/8 e scanalatura

• Available on request / Disponibili a richiesta

 Attention: see note on page 26 /  Attenzione: vedere nota a pag. 26

# Nano technology series

Nitrogen gas springs for dies / *Cilindri all'azoto per stampi*



PATENTS PENDING

## CSMX

CSMX series replaces the previous CSM series. Available with the same diameters and forces as the SMLX series, the CSMX gas springs are the second-shortest as far as overall length. Longer stroke lengths are available in comparison with the SMLX series (starting from diameter 50 mm).

WHAT'S NEW: upgraded with the new WIPERTECH and NANOTECH2 nano-technologies.

SELF-LUBRICATED for millions of working cycles thanks to the nano-technologies (patent pending).

PROTECTED AGAINST CONTAMINANTS with WIPERTECH protective wiper ring.

RECOMMENDED when the required stroke lengths are not available for CSX and SMLX series.

THE NEW MODELS WILL BE SUPPLIED ONLY WHEN THE OLD ONES ARE OUT OF STOCK.

Sostituisce la precedente serie CSM. Disponibile negli stessi diametri e stesse forze della serie SMLX, è – dopo di quest'ultima – la serie con ingombro in altezza più contenuto. Rispetto alla serie SMLX, è disponibile con corse di lavoro più lunghe (a partire dal diametro 50 mm).

NOVITÀ: aggiornata con le nuove nano-tecnologie WIPERTECH e NANOTECH2.

AUTOLUBRIFICATI per milioni di cicli grazie alle nano-tecnologie (in corso di brevetto).

PROTETTI DA CONTAMINANTI con anello raschiastelo di protezione WIPERTECH.

CONSIGLIATI per applicazioni con corse di lavoro che non sono disponibili per le serie CSX e SMLX.

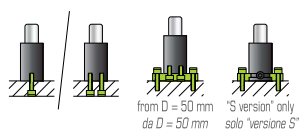
I NUOVI MODELLI SARANNO FORNITI SOLO AD ESAURIMENTO SCORTE DEI VECCHI.

### Fixing possibilities

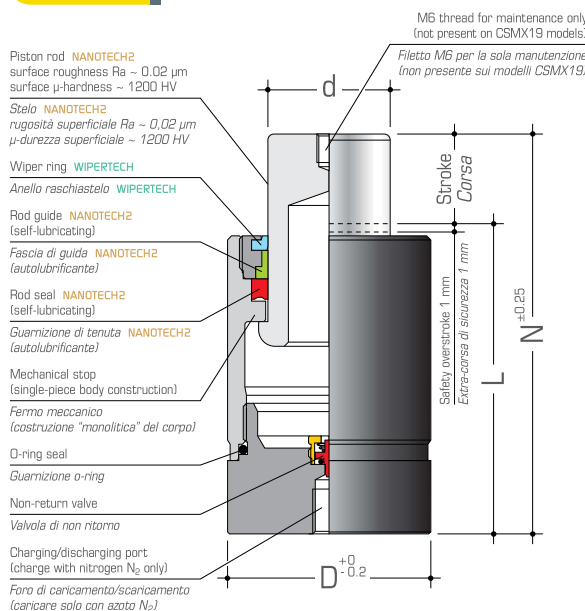
(see also our "Accessories for nitrogen gas springs for dies" catalogue)

### Fissaggi possibili

(vedi anche il nostro catalogo "Accessori per cilindri all'azoto per stampi")



### CSMX



### HOW TO ORDER

### ESEMPIO D'ORDINE

No. 8 pcs. CSMX38-50 750daN

No. 8 CSMX38-50 750daN

No. 8 nitrogen gas springs series CSMX, D = 38 mm, stroke length = 50 mm, initial force = 750 daN.

N° 8 cilindri all'azoto serie CSMX, D = 38 mm, corsa = 50 mm, forza iniziale = 750 daN.

**ATTENTION: specify the required initial force.**

**ATTENZIONE: specificare la forza iniziale desiderata.**

### TECHNICAL NOTES

### NOTE TECNICHE

**Important use instructions and maximum number of cycles per minute on pages 10-17.**

For accessories and other mountings, see the "Accessories for nitrogen gas springs for dies" catalogue.

The CSM models are replaceable with the CSMX models.

**ATTENTION:**

**Rod diameter d = 40 mm for the CSMX63 models.**

**Rod diameter d = 36 mm for the CSM63 models.**

**Importanti istruzioni d'uso e numero massimo di cicli/minuto alle pagine 10-17.**

Per accessori e altri montaggi, consultare il catalogo "Accessori per cilindri all'azoto per stampi".

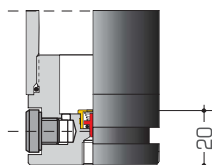
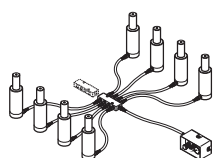
I modelli CSM sono sostituibili con i modelli CSMX.

**ATTENZIONE:**

**Diametro dello stelo d = 40 mm per i modelli CSMX63.**

**Diametro dello stelo d = 36 mm per i modelli CSM63.**

### "S" version



### "S" VERSION

With fixing groove and G1/8 side port, linkable to open system, from D = 50 mm,

» **L and N dimensions: + 20 mm**

» Add an **-S** to order them

Example: no. 8 pcs. CSMX50-50-**S**








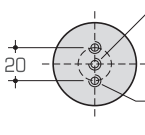

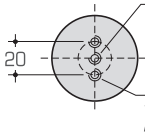
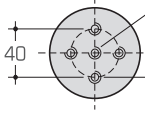
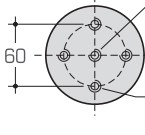
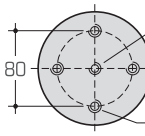
### VERSIONE "S"

Da D = 50 mm, scanalatura di fissaggio e foro laterale G1/8, per collegamento a sistema.

» **Quote L e N: + 20 mm**

» Per ordinarli, aggiungere una **-S**

Esempio: n° 8 CSMX50-50-**S**

MODEL MODELLO	MAX STROKE mm CORSIA MAX mm	L mm	N mm	D mm	d mm	 bar	 daN	 daN	GAS SPRING BASE BASE DEL CILINDRO	
CSMX19-10	10	50	60	19	10	191	150	200	 M6 x 8 for charging/discharging per il caricamento/scaricamento for fixing per il fissaggio	
15	15	55	70							210
25	25	65	90							240
38	38	78	116							240
50	50	90	140							250
80	80	120	200							250
CSMX25-10	10	50	60	25	14	195	300	440	 M6 x 8 for charging/discharging per il caricamento/scaricamento for fixing per il fissaggio	
15	15	55	70							510
25	25	65	90							520
38	38	78	116							550
50	50	90	140							560
80	80	120	200							580
CSMX32-10	10	55	65	32	18	196	500	710	 M6 x 8 for charging/discharging per il caricamento/scaricamento for fixing per il fissaggio	
15	15	60	75							720
25	25	70	95							760
38	38	83	121							800
50	50	95	145							820
80	80	125	205							830
CSMX38-10	10	55	65	38	22	197	750	1090	 M8 x 11 for charging/discharging per il caricamento/scaricamento for fixing per il fissaggio	
15	15	60	75							1130
25	25	70	95							1180
38	38	83	121							1230
50	50	95	145							1240
80	80	125	205							1280
CSMX50-10	10	60	70	50	30	212	1500	2460	 M8 for charging/discharging per il caricamento/scaricamento M8 x 12 (2x) for fixing per il fissaggio	
25	25	75	100							2460
38	38	88	126							2510
50	50	100	150							2590
63	63	113	176							2590
80	80	130	210							2590
100	100	150	250							2650
125	125	190	315							2670
160	160	235	395							2680
200	200	275	475							2690
CSMX63-10	10	65	75	63	40 	159	2000	2900	 M8 for charging/discharging per il caricamento/scaricamento M8 x 12 (2x) for fixing per il fissaggio	
25	25	80	105							3270
38	38	93	131							3430
50	50	105	155							3490
63	63	118	181							3500
80	80	135	215							3500
100	100	160	260							3580
125	125	190	315							3580
160	160	235	395							3690
200	200	275	475							3750
CSMX75-10	10	65	75	75	45	189	3000	4800	 M8 for charging/discharging per il caricamento/scaricamento M8 x 12 (4x) for fixing per il fissaggio	
25	25	80	105							5200
38	38	93	131							5300
50	50	105	155							5400
63	63	118	181							5500
80	80	135	215							5600
100	100	155	255							5700
125	125	200	325							5800
160	160	250	410							5900
200	200	300	500							6000
CSMX95-25	25	90	115	95	58	189	5000	8500	 M8 for charging/discharging per il caricamento/scaricamento M8 x 12 (4x) for fixing per il fissaggio	
38	38	103	141							8700
50	50	115	165							8800
63	63	128	191							8900
80	80	155	235							9000
100	100	185	285							9100
125	125	220	345							9200
160	160	260	420							9300
200	200	310	510	9400						
CSMX120-25	25	100	125	120	75	204	9000	14000	 M8 for charging/discharging per il caricamento/scaricamento M10 x 15 (4x) for fixing per il fissaggio	
38	38	113	151							15000
50	50	125	175							15400
63	63	138	201							15500
80	80	160	240							15600
100	100	190	290							15700
125	125	225	350							15800
160	160	270	430							17800
200	200	320	520							18000

• Available on request / Disponibili a richiesta

 Attention: see note on page 28 /  Attenzione: vedere nota a pag. 28

# Standard series

Nitrogen gas springs for dies / *Cilindri all'azoto per stampi*



## TOP

Gas springs with bore seal design. The TOP25 models are still the most powerful gas springs with diameter 25 mm, generating an initial force of 400 daN (when possible, the use of MSML25 models is recommended, since they feature a more advanced technology and generate an initial force of 360 daN). TOP series gas springs must be manually lubricated, as they are not self-lubricated. TOP series gas springs must be protected against contaminants, as they cannot be provided with a wiper ring. RECOMMENDED only for diameter 25 mm, in case the initial force of 360 daN generated by the MSML25 models is not enough for the specific application. For the other diameters, the use of CSX models is recommended because of the more advanced technology.

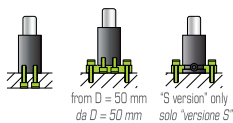
*Cilindri con tenuta di tipo pistone (tenuta della guarnizione sulle pareti interne del corpo del cilindro). Rimangono i cilindri più potenti per quanto riguarda il diametro 25 mm, che sviluppa una forza iniziale di 400 daN (si valuti comunque la possibilità di utilizzare i modelli MSML25, che a parità di diametro sviluppano una forza iniziale di 360 daN e sono dotati di una tecnologia più avanzata). I cilindri della serie TOP devono essere lubrificati manualmente, non essendo autolubrificati. I cilindri della serie TOP devono essere protetti da contaminanti, non potendo essere dotati di anello raschiastelo. CONSIGLIATI per il solo diametro 25 mm qualora la forza iniziale di 360 daN sviluppata dai modelli MSML25 non sia sufficiente per l'applicazione. Per gli altri diametri, si consiglia l'utilizzo dei modelli CSX data la tecnologia più avanzata.*

### Fixing possibilities

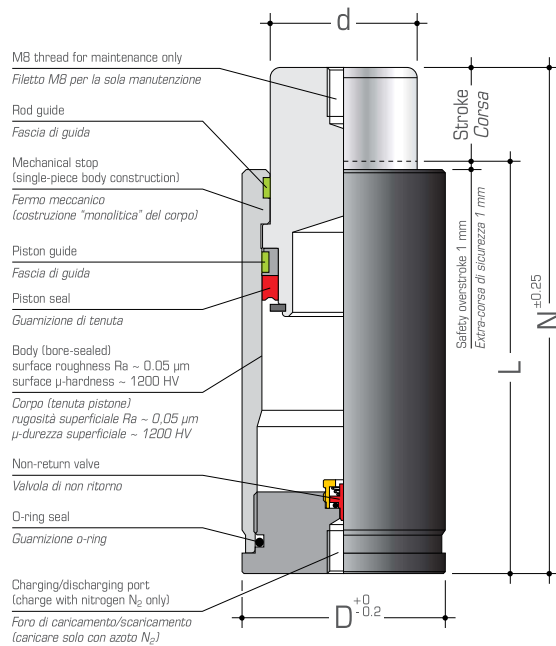
(see also our "Accessories for nitrogen gas springs for dies" catalogue)

### Fissaggi possibili

(vedi anche il nostro catalogo "Accessori per cilindri all'azoto per stampi")



### TOP 25/120



### TECHNICAL NOTES

#### Important use instructions and maximum number of cycles per minute on pages 10-17.

For accessories and other mountings, see the "Accessories for nitrogen gas springs for dies" catalogue.

### NOTE TECNICHE

#### Importanti istruzioni d'uso e numero massimo di cicli/minuto alle pagine 10-17.

Per accessori e altri montaggi, consultare il catalogo "Accessori per cilindri all'azoto per stampi".

### "S" VERSION

With fixing groove and G1/8 side port, linkable to open system, from D = 50 mm,

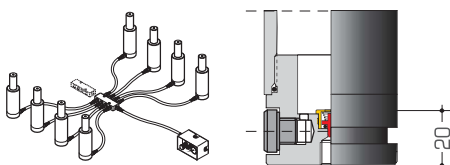
- » **L and N dimensions: + 20 mm**
- » Add an **-S** to order them
- Example: no. 8 pcs. TOP50-50-**S**




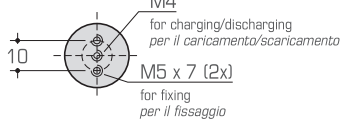
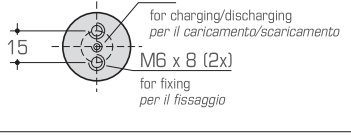




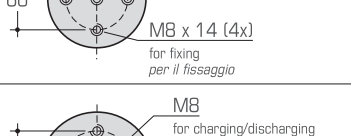
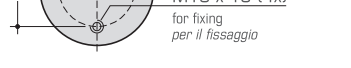
### VERSIONE "S"

Da D = 50 mm, scanalatura di fissaggio e foro laterale G1/8, per collegamento a sistema.

- » **Quote L e N: + 20 mm**
- » Per ordinarli, aggiungere una **-S**
- Esempio: n° 8 TOP50-50-**S**

### "S" version



MODEL MODELLO	MAX STROKE mm CORSA MAX mm	L mm	N mm	D mm	d mm	 bar	 daN	 daN	GAS SPRING BASE BASE DEL CILINDRO
TOP25-10	10	65	75	25	16	157	400	770	 <p>M4 for charging/discharging per il caricamento/scaricamento</p> <p>M5 x 7 (2x) for fixing per il fissaggio</p>
15	15	75	90					790	
25	25	95	120					800	
50	50	145	195					810	
TOP32-10	10	65	75	32	20	154	700	1500	 <p>M4 for charging/discharging per il caricamento/scaricamento</p> <p>M6 x 8 (2x) for fixing per il fissaggio</p>
15	15	75	90					1520	
25	25	95	120					1530	
50	50	145	195					1540	
TOP38-10	10	65	75	38	24	162	1000	1870	 <p>M8 for charging/discharging per il caricamento/scaricamento</p> <p>M6 x 10 (2x) for fixing per il fissaggio</p>
15	15	75	90					1880	
25	25	95	120					1930	
50	50	145	195					2000	
TOP50-10	10	70	80	50	36	159	2000	3750	 <p>M8 for charging/discharging per il caricamento/scaricamento</p> <p>M8 x 12 (2x) for fixing per il fissaggio</p>
15	15	80	95					3850	
25	25	100	125					3900	
50	50	150	200					3950	
TOP63-10	10	75	85	63	46	153	3000	5300	 <p>M8 for charging/discharging per il caricamento/scaricamento</p> <p>M8 x 12 (2x) for fixing per il fissaggio</p>
15	15	85	100					5650	
25	25	105	130					5690	
50	50	155	205					5790	
TOP75-10	10	75	85	75	56	142	4000	6900	 <p>M8 for charging/discharging per il caricamento/scaricamento</p> <p>M8 x 12 (4x) for fixing per il fissaggio</p>
15	15	85	100					7100	
25	25	105	130					7100	
50	50	155	205					7300	
TOP95-10	10	80	90	95	70	154	7000	10800	 <p>M8 for charging/discharging per il caricamento/scaricamento</p> <p>M8 x 14 (4x) for fixing per il fissaggio</p>
15	15	90	105					11700	
25	25	110	135					11800	
50	50	160	210					11900	
TOP120-10	10	90	100	120	90	141	10000	15000	 <p>M8 for charging/discharging per il caricamento/scaricamento</p> <p>M10 x 16 (4x) for fixing per il fissaggio</p>
15	15	100	115					16000	
25	25	120	145					17000	
50	50	170	220					18000	